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~~Eggs (Mariposa) dry~~

~~Poultry~~

B. A. Gillespie

Red Rover Claims
in Cave Creek

Red Rover
Mining Co.

CAMP AT RED ROVER MINE, CAVE CREEK DISTRICT

Ore Deposits of Cave Creek District, in Arizona

Geology of Area Twenty-eight Miles North of Phoenix Described—Only Deposit Developed of Present Importance That of Red Rover Mine—Characteristics of Principal Type of Outcrops Discussed

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Written for *Engineering and Mining Journal*

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Having completed the study of the adjoining territory I proceeded to examine the Cave Creek district about July 1, 1919, and by Oct. 1, 1919, I had gone over all of the country which had exposures of the older pre-Cambrian formation. I found large areas within the district to be covered by volcanic agglomerate, which was not mineralized and was therefore of no economic importance. These areas I simply sketched in and did not attempt to differentiate. The final results of my work are embodied in the geological map on page 714.

The Cave Creek district is twenty-eight miles due north of Phoenix, Ariz. The road leading out of Phoenix is paved for the first eight miles and from that point passes through the Paradise Valley with slight grades. The elevation of the district varies from 2,100 ft. in the lowest part of the basin to a maximum of 5,000 ft. at the higher peaks. The main outlet for the drainage of the entire district is Cave Creek, which has an average fall of 200 ft. to the mile. At its headwaters near the Red Rover mine it has an elevation of about 4,000 ft. and twenty miles from here it emerges into the desert at an elevation of 2,000 ft.

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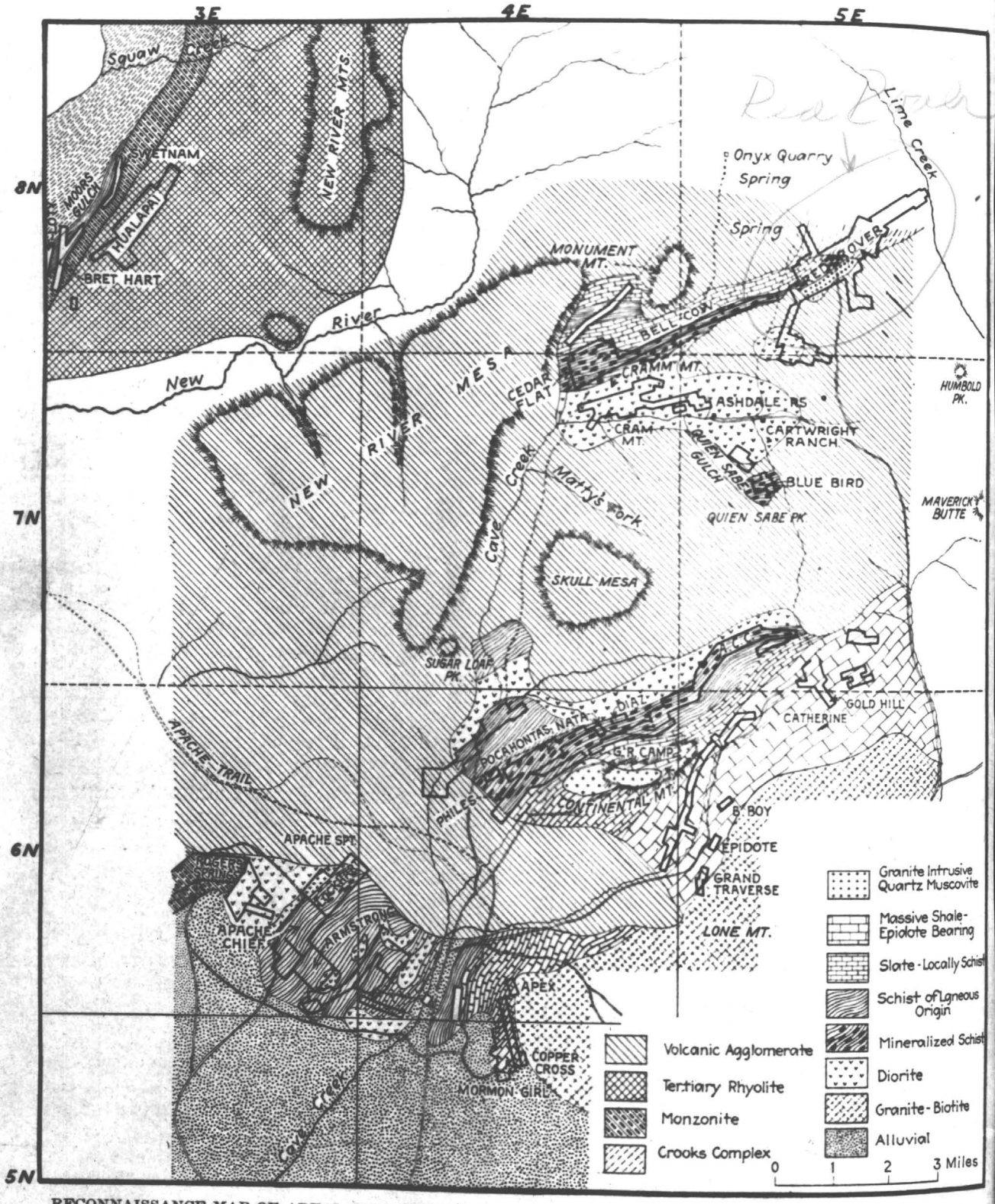

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The length of the Canadian boundary line from the Atlantic to the Pacific is 3,898 miles. The length of the Mexican boundary from the Gulf to the Pacific is 1,744 miles. The length of the Atlantic coast line is 5,560 miles and that of the Pacific coast line is 2,730 miles. The Gulf of Mexico borders the United States for 3,640 miles.

Nearly all maps of the United States show the parallels of latitude as curved lines and are likely to lead the ordinary observer to believe that certain eastern or western states are farther north than some of the central states that are actually in the same latitude. For this reason, one who is asked which extends farther south, Florida or Texas, is very likely to say "Texas," but, as stated, the mainland of Florida is nearly fifty miles farther south than the southernmost point in Texas. For the same reason errors are likely to be made in estimating position or extent in longitude. Few realize that the island of Cuba, for example, if transposed directly north, would extend from New York City to Indiana, or that Havana is farther west than Cleveland, Ohio, or that the Panama Canal is due south of Pittsburgh, Pa., or that Nome, Alaska, is farther west than Hawaii.

Ontario's Metalliferous Production Increasing

Returns received by the Ontario Department of Mines for the six months ending June 30, 1920, are tabulated below, and for purposes of comparison the quantities and values are given for the corresponding period in 1919. Tons throughout are short tons of 2,000 lb.

Product	Quality 1920	Quality 1919	Value 1920	Value 1919
Gold, oz.	277,656	231,729	$5,690,504	$4,666,759
Silver, oz.	4,474,322	5,744,172	5,077,028	5,951,362
Platinum metals, oz.	184.45	30.08	12,443	1,085
Cobalt (metallic), lb.	113,239	59,337	266,045	93,157
Nickel (metallic) lb.	4,854,979	5,147,745	1,696,687	1,825,347
Nickel oxide, lb.	3,491,544	5,503	814,070	1,567
Cobalt oxide, lb.	388,318	202,912	645,783	301,791
Other cobalt compounds, lb.	1,417	26,289	1,029	16,164
Nickel sulphate and carbonate, lb.	159,183	133,732	15,308	15,531
Lead, pig, lb.	749,820	1,481,204	71,006	54,802
Copper sulphate, lb.	89,939	.....	4,497	.....
Copper, blister, lb.	2,918,153	3,080,492	470,949	452,055
Nickel in matte exported tons	9,527	7,072	5,338,120	3,535,915
Copper in matte exported (*a*) tons.	4,434	4,341	1,241,520	1,128,759
Iron ore, exported (*b*) tons.	2,189	5,804	18,512	44,309
Iron, pig (*c*) tons	28,771	24,095	738,079	670,512
Totals			22,101,580	18,759,829

(*a*) Copper in matte was valued at 13c. and nickel at 25c. per lb. in 1919. For 1920 the values have been placed at 14 and 28c. per lb. respectively. The total matte produced contained 15,030 tons of nickel and 7,705 tons of copper.

(*b*) Total shipments of iron ore were 13,962 short tons, worth $74,073.

(*c*) Total output of pig iron was 321,826 tons, valued at $8,255,916. Figures in the table represent proportional product from Ontario ore.

The aggregate output from metalliferous mines, smelters, and refining works of the Province of Ontario for the six months ended June 30 shows a considerable increase in value over the 1919 figures. For the first time since 1903, when the Cobalt silver camp was discovered, the output of gold exceeds that of silver in value. The new electrolytic refinery of the British America Nickel Corporation is now in operation at Deschenes, near Ottawa.

Japan's Mining Industry Slack

Japanese mining industry, in which more American capital is invested than in any other line of business activity in Chosen, experienced an unusual slackness during 1919. The Mitsubishi Iron Foundry, at Kyomipo, was forced to reduce its output, as was also the Suan mine, worked by the Seoul Mining Co., and the Kapsan copper mine, worked by the Kuhara Mining Co. The reasons for this were difficulties experienced in the matter of transportation through the outbreak of rinderpest among the cattle and which totally stopped all transport, and the heavy death rate among the miners from cholera. The continual rise in the cost of supplies and living expenses gave added cause for the reduced output.

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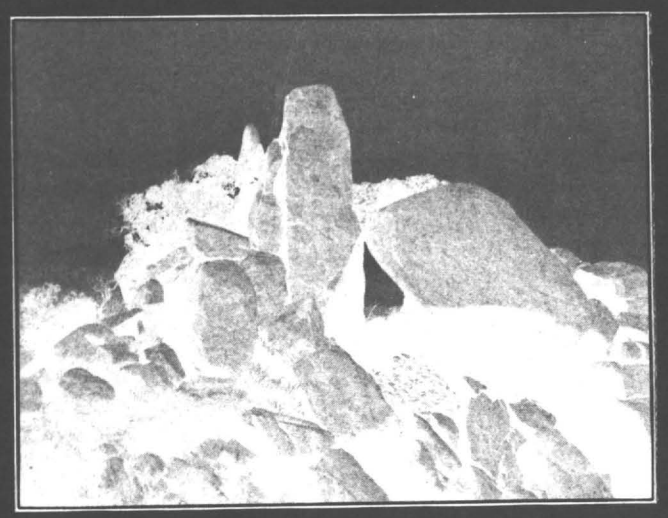

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From the southernmost point in Texas due north to the forty-ninth parallel, the boundary between the United States and Canada, the distance is 1,598 miles. From West Quoddy Head due west to the Pacific Ocean the distance is 2,807 miles. The shortest distance from the Atlantic to the Pacific across the United States is between points near Charleston, S. C., and San Diego, Cal., and is 2,152 miles.

The length of the Canadian boundary line from the Atlantic to the Pacific is 3,898 miles. The length of the Mexican boundary from the Gulf to the Pacific is 1,744 miles. The length of the Atlantic coast line is 5,560 miles and that of the Pacific coast line is 2,730 miles. The Gulf of Mexico borders the United States for 3,640 miles.

Nearly all maps of the United States show the parallels of latitude as curved lines and are likely to lead the ordinary observer to believe that certain eastern or western states are farther north than some of the central states that are actually in the same latitude. For this reason, one who is asked which extends farther south, Florida or Texas, is very likely to say "Texas," but, as stated, the mainland of Florida is nearly fifty miles farther south than the southernmost point in Texas. For the same reason errors are likely to be made in estimating position or extent in longitude. Few realize that the island of Cuba, for example, if transposed directly north, would extend from New York City to Indiana, or that Havana is farther west than Cleveland, Ohio, or that the Panama Canal is due south of Pittsburgh, Pa., or that Nome, Alaska, is farther west than Hawaii.

Ontario's Metalliferous Production Increasing

Returns received by the Ontario Department of Mines for the six months ending June 30, 1920, are tabulated below, and for purposes of comparison the quantities and values are given for the corresponding period in 1919. Tons throughout are short tons of 2,000 lb.

Product	Quality		Value	
	1920	1919	1920	1919
Gold, oz.	277,656	231,729	$5,690,504	$4,666,759
Silver, oz.	4,474,322	5,744,172	5,077,028	5,951,362
Platinum metals, oz.	184.45	30.08	12,443	1,805
Cobalt (metallic), lb.	113,239	59,337	266,045	93,157
Nickel (metallic) lb.	4,854,979	5,147,745	1,696,687	1,825,347
Nickel oxide, lb.	3,491,544	5,503	814,070	1,567
Cobalt oxide, lb.	388,318	202 912	645,783	301,791
Other cobalt compounds, lb.	1,417	26,289	1,029	16,164
Nickel sulphate and carbonate, lb.	159,183	133,732	15,308	15,531
Lead, pig, lb.	749,820	1,481,204	71,006	54,802
Copper sulphate, lb.	89,939	.....	4,497	.....
Copper, blister, lb.	2,918,153	3,080,492	470,949	452,055
Nickel in matte exported tons	9,527	7,072	5,338,120	3,535,915
Copper in matte exported (*a*) tons	4,434	4,341	1,241,520	1,128,759
Iron ore, exported (*b*) tons.	2,189	5,804	18,512	44,309
Iron, pig (*c*) tons	28,771	24,095	738,079	670,512
Totals			22,101,580	18,759,829

(*a*) Copper in matte was valued at 13c. and nickel at 25c. per lb. in 1919. For 1920 the values have been placed at 14 and 28c. per lb. respectively. The total matte produced contained 15,030 tons of nickel and 7,705 tons of copper.

(*b*) Total shipments of iron ore were 13,962 short tons, worth $74,073.

(*c*) Total output of pig iron was 321,826 tons, valued at $8,255,916. Figures in the table represent proportional product from Ontario ore.

The aggregate output from metalliferous mines, smelters, and refining works of the Province of Ontario for the six months ended June 30 shows a considerable increase in value over the 1919 figures. For the first time since 1903, when the Cobalt silver camp was discovered, the output of gold exceeds that of silver in value. The new electrolytic refinery of the British America Nickel Corporation is now in operation at Deschenes, near Ottawa.

Japan's Mining Industry Slack

Japanese mining industry, in which more American capital is invested than in any other line of business activity in Chosen, experienced an unusual slackness during 1919. The Mitsubishi Iron Foundry, at Kyomipo, was forced to reduce its output, as was also the Suan mine, worked by the Seoul Mining Co., and the Kapsan copper mine, worked by the Kuhara Mining Co. The reasons for this were difficulties experienced in the matter of transportation through the outbreak of rinderpest among the cattle and which totally stopped all transport, and the heavy death rate among the miners from cholera. The continual rise in the cost of supplies and living expenses gave added cause for the reduced output.

Report of the Lucky Boy Arizona Group of Mines

The Lucky Boy Arizona group of mines is situated in Cave Creek Mining District, Maricopa County, Arizona, and consists of the following claims, each 600' x 1500'

Lucky Boy No. 1,
Lucky Boy No. 2,
Lucky Boy No. 3,
Lucky Boy No. 4,
Lucky Boy No. 5,
Lucky Boy No. 6,
Lucky Boy No. 7,
Lucky Boy No. 8,
Lucky Boy No. 9,
Lucky Boy No. 10,
Lucky Boy No. 11,
Lucky Boy No. 12,
Lucky Boy No. xxx
Lucky Boy No. 14,
Lucky Boy No. 15,
Lucky Boy No. 16,
Lucky Boy No. 17,
Lucky Boy No. 18,
Lucky Boy No. 19

making a total area of 380 acres, and giving aggregate length along the lode system of 7,500'.

Location and accessibility:

The property is situated in the Cave Creek Mining District, Maricopa County, State of Arizona. The nearest railroad station is Phoenix about 50 miles away: from which the property is reached by truck and automobile. The nearest town is Phoenix, which is a first class supply point.

Title and present ownership: William Nellis
The title of the property is vested in Mr. W. L. Nellis of Phoenix, Arizona. All the claims are held by usual location work.

History of the property and other Mines in the District:
The Cave Creek was discovered about the year 1875 by two old French prospectors who located the famous Red Rover Mine and, as I am told, established the District. Other properties on the district have, and are producing gold ore also.

The Lucky Boy Arizona property was located about the year 1900, and has been worked more or less since that time.

Topography:
Topographical conditions are rough, High mountains on all sides.

Geology:
The prevailing country rock is schist. This schist is highly altered and only in one or two places does it retain its schistosity. The age is most likely pre-cambrian. Overlying this schist, on the east end of the claims appears a recent eruptive flow of Basalt. Most likely at one time this flow covered all of the schist but it has been eroded. The schist has been intruded by several eruptive dikes, both acid and basic. On the northern marginal area appears an immediate diorite dike. The mineralization on the Lucky Boy Arizona

claims has a general trend to east-west and dips to the south at about 65 degrees from horizontal. The widths, vary from 10 to 400 feet. The outcrop is traceable for 7,500 feet, is leached and oxidized, and in places, enriched. In my examination I was unable to determine where the hanging wallis and on of the impression that the diorite above mentioned, is the foot wall. So for as vein filling was concerned I was unable to note any. The ore occurs in lenticular deposits and, are no doubt replacements in the schist.

Mining Facilities:
Water for domestic purposes may be secured right on the property and for reduction purposes, the seven springs canyon will furnish an ample quantity. The canyon is only about one-half mile from the property. Power will cost about $100.00 per H.P. per year. Crude oil, or distillate engines will be the most economical to use. Wood for camp purposes is found all over the claims and will cost about $4.00 a cord. Mining timber and lumber will cost about $40.00 per M.

Transportation Facilities and Freight Costs:
Freighting can be done by auto trucks, and the cost should not exceed $2.00 per ton for supplies hauled into the property and on ore hauled out to Phoenix, the R. R. point.

Climate:
The climate is equable allowing of out door work to be done the year around.

Labor:
Labor is plentiful, miners receiving $4.00 per day for hand work; $5.00 for machine work, $3.50 for top men. This is on the basis of 8-hour shifts.

Surface Equipment:
The property has no equipment of any kind.

Method of working:
The work done so far has been in the nature of shallow cuts and holes all over the claims.

Production:
There has been shipped from the Lucky Day Arizona #1 claim, about 8 tons of copper ore which averaged 30% copper, some gold and a little silver. The ore taken out of a Glory Hole near the surface. Most of this high grade ore still remains on the dump. In my examination of the property I took samples from nine different places and below are the results

	Gold		Silver		Copper			Total
	Oz.	Value	Oz.	Value	Cent.%	T/Ton	Value	Value
#1 Schist 15' wide	Tr.	—			2.	40	$7.20	$7.20
2 " 7 " "			1.00	.65	3.5	70	12.60	13.25
3 Ore .10		$1.80	1.50	.97	19.0	360	64.80	67.57
4 Ore on Dump #1 claim(Oxide)	.06	1.08	2.00	1.30	28.0	560	100.80	103.18
5 Ore on Dump Consonate as above	.04	.72	1.60	1.04	40.0	800	144.00	145.76
6 Ore on Dump	Tr.	—	.80	.91	33.0	660	118.80	119.19
7 Jalcose Ore	Tr.	—	.50	.33	15.0	300	54.00	54.33
8 " "	"	—	.90	.20	10.0	200	30.00	36.20
9 " "	"	—	1.90	1.23	11.0	220	39.60	40.83

Copper 18¢ per pound
Silver 65¢ Oz.
Gold $18.00 Oz.

Summary and Recommendation:

I consider the Lucky Boy Arizona property a very attractive piece of territory, and if it has the proper and necessary amount of development work done on it, in my opinion it will make a valuable mine. I would recommend the sinking of two shafts. I am of the impression that the sulphide ore zone will be encountered at about 500 feet depth. One of these shafts should be sunk on #1 claim, and the other on claim #2. The best ore encountered so far has been at these two points. This is in about the middle of each claim. If this work is done, I predict that there will be sensational bodies of ore developed. I base this prediction on the fact that the schist and dike conditions are identical with those found in the two highest mines in Yavapai County's largest copper camp.

I recommend the Lucky Boy Arizona property as an attractive mining venture and I consider it the finest copper prospect I have ever examined, and its only disadvantage is lack of timber and its distance from the railroad.

Respectfully Submitted

(signed) B. W. Girvin, E.M.

Claims located See table 190

Mineral Survey No. 2678 A and B.

L.o.t. No.

Arizona Land District.

PLAT

OF THE CLAIM OF

Charles W. Cheney and F. H. Summeril

KNOWN AS THE

Henry W. Grady, Mormon Girl, Mormon Mine No. 2, and Mamie Maude Mine Lodes and Mormon Girl Mill-site

IN Cave Creek MINING DISTRICT,
Maricopa COUNTY, Arizona
Containing an Area of 65.525 Acres.
Scale of 300 Feet to the inch.
Variation 13°20' East
SURVEYED Aug. 22, - Sept. 2, 1909 BY

Oliver C. Thompson U.S. Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of Charles W. Cheney and F. H. Summeril known as the Henry W. Grady, Mormon Mine No. 2 and Mamie Maude Mine Lodes and Mormon Girl Mill-Site

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon, said Mining Claims by claimants or their grantors, or for each of and that said improvements consist of 1 shafts, 5 cuts and 1 tunnel, Total value, $16280.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office, Phoenix, Arizona
December 27, 1909

Frank D. Ingalls
U.S. Surveyor General for Arizona

Claims located.
Mormon Girl, Jan. 1, 1888.
Mormon Mine No. 2, Feb. 17, 1890.
Mamie Maude Mine, March 18, 1890.
Henry W. Grady, March 27, 1890.
Mormon Girl Mill-site, April 4, 1890.

Amt. deposited $124.50
Cost of O.W.S. $124.50
Amt. to be refunded 00.00

Tps. 5 and 6 N., R 4 E. Approx. Unsur.

N.E. Cor. T. 5 N. R. 3 E.

U.S.L.M. No. 2545 bears N. 36° 50½' W. 5250.19 Ft.

U.S.L.M. No. 2545 bears N. 39° 55' W. 4954.63 Ft.

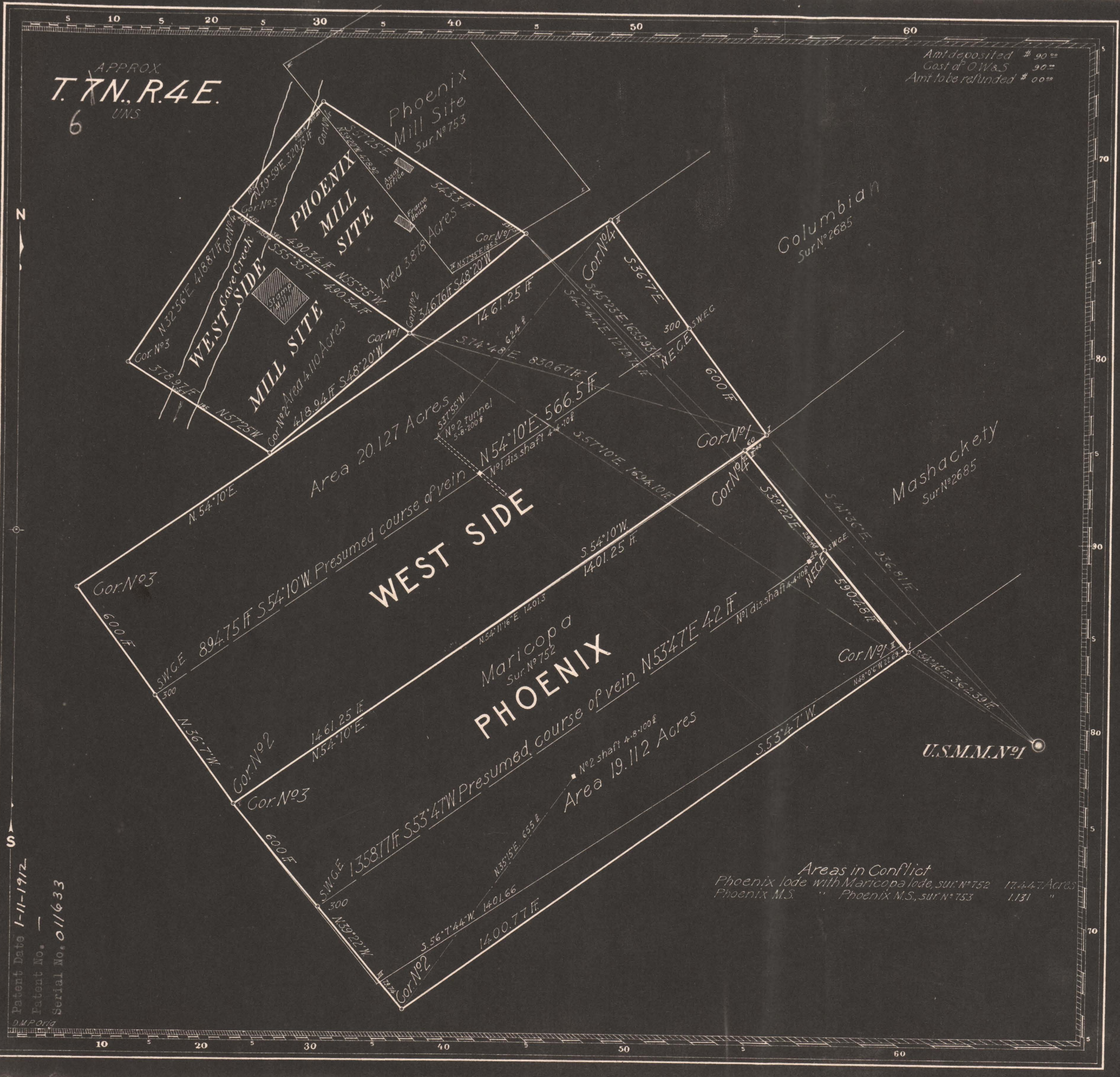
U.S.L.M. No. 2545 bears N. 76° 55' W. 4960.1 Ft.

U.S.L.M. No. 2545 bears S. 69° 45½' E. 8113.37 Ft.

Patent Date 4-1-1912.
Patent No. 25994
Serial No. 013728

Mamie Maude Mine Lode, 9.256 Acres.
Area in conflict with Mormon Mine No. 2. Lode this survey, 0.308 "

Orig. W.H.R.



Claims Located (Am'd) Phoenix, West Side Aug. 24, 1909
Phoenix and West Side Mill Sites Aug. 24, 1909.
Mineral Survey No. 2727 A & B

Lot No.
Arizona Land District

PLAT

OF THE CLAIM OF

Phoenix Gold Mining Co.

KNOWN AS THE

Phoenix, West Side,
Phoenix Mill Site, West Side Mill Site

IN Cave Creek MINING DISTRICT,
Maricopa COUNTY, Arizona
Containing an Area of 47.227 Acres.
Scale of 200 Feet to the inch.
Variation 14°20' E.
SURVEYED October 23-24 1909 BY
E. R. Rice,
U.S. Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of Phoenix Gold Mining Co.
known as the
Phoenix, West Side,
Phoenix Mill Site, West Side Mill Site

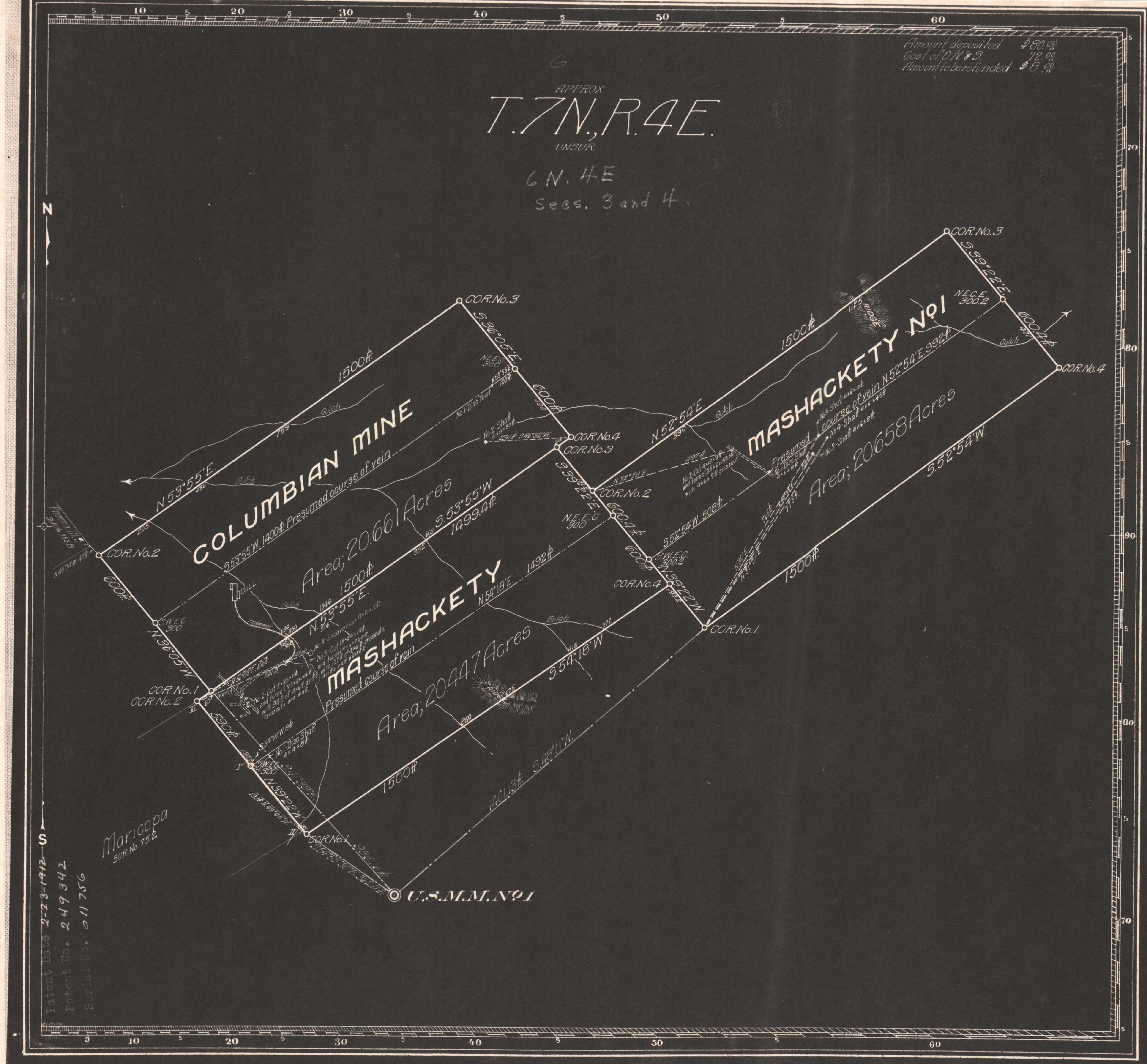
from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon each of said Mining Claims by claimant or its grantors, and that said improvements consist of 3 shafts and 1 tunnel, total value $5050.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office, Frank S. Ingalls
Phoenix, Ariz. U.S. Surveyor General for
April 21, 1910 Arizona



Claims Located Amd. July 2, 1909

Mineral Survey No. 2685

Lot No.

Arizona Land District.

PLAT

OF THE CLAIM OF

Cottonwood Creek Gold Mining Company

KNOWN AS THE

Mashackety, Mashackety No. 1 and Columbian Mine

IN Cave Creek MINING DISTRICT,
Maricopa COUNTY, Arizona
Containing an Area of 61.766 Acres.
Scale of 300 Feet to the inch.
Variation 14° to 14°25' E.
SURVEYED August 19-21, 1909 BY

Oliver C. Thompson, U.S. ~~Deputy~~ Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of Cottonwood Creek Gold Mining Company known as the Mashackety, Machackety No. 1 and Columbian Mine

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

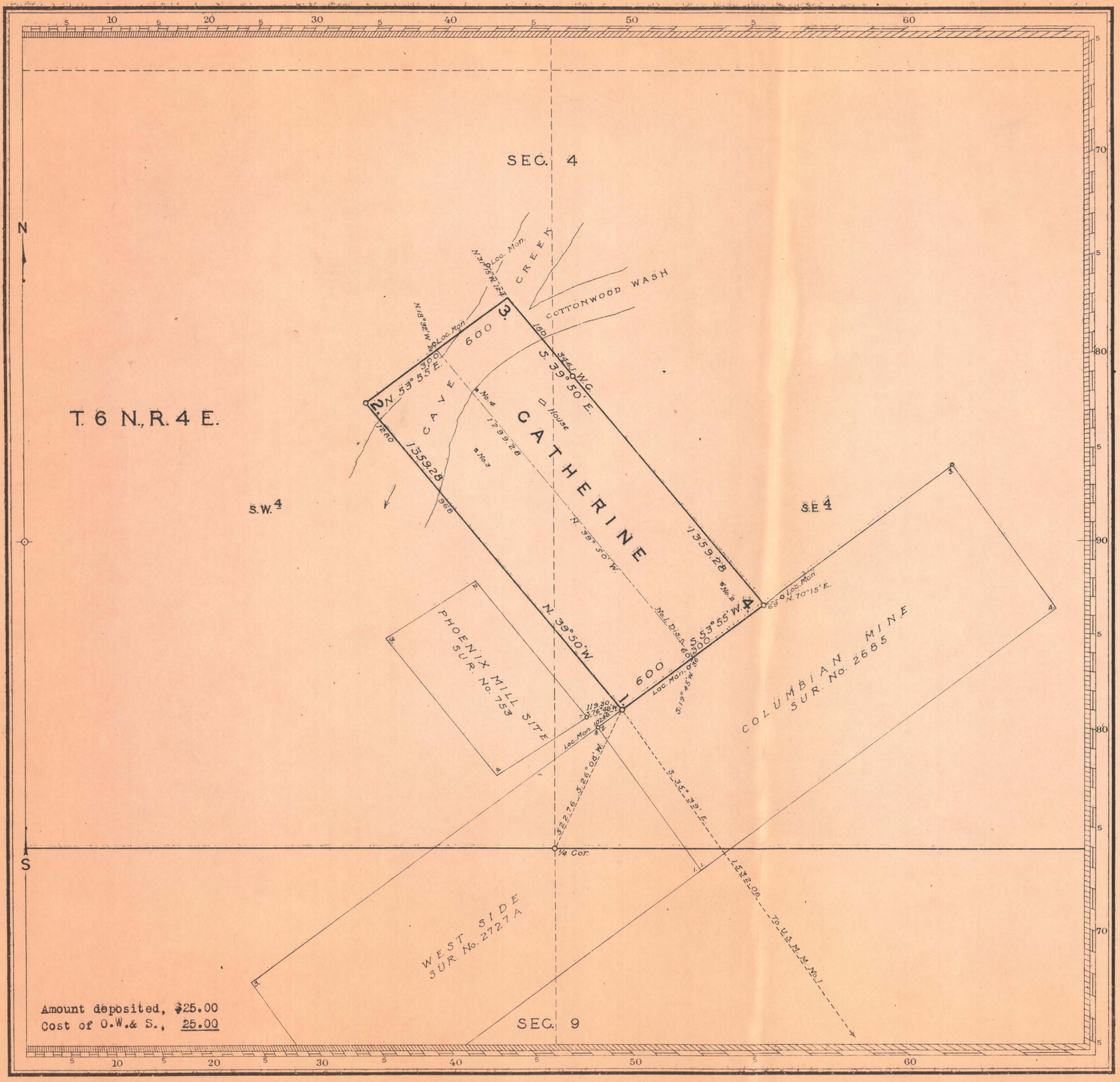
I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon or for each of said Mining Claims by claimant or its grantors, and that said improvements consist of 7 shafts, 3 tunnels, 3 cuts, 1 excavation and 2676 ft. of drifts, crosscuts and winzes; Value $10140.00, An undivided ½ interest, value $2275.00, in cut and tunnel No. 2 on the Mashackety lode is credited to each the Mashackety and Columbian Mine lodes that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office
Phoenix, Arizona
October 20, 1909

Frank S. Ingalls
U.S. Surveyor General for Arizona

THE NORRIS PETERS CO., WASHINGTON, D. C.



Mineral Survey No. 4096

ARIZONA Land District.

PLAT

OF THE CLAIM OF

Theodore B. Jones

KNOWN AS THE

CATHERINE lode

IN Cave Creek *MINING DISTRICT,*
Maricopa *COUNTY,* Arizona
Containing an Area of 18.683 *Acres.*
Scale of 300 *Feet to the inch.*
Variation 14° 35' E.
SURVEYED March 8 - 9 *19* 29 *BY*
Harry E. Jones ,
U.S. Mineral Surveyor;

The Original Field Notes of the Survey of the Mining Claim from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon, or for the benefit of, each location embraced in said mining claim by claimant or his grantors and that said improvements consist of 3 shafts and 1 cut, total value $840.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

Public Survey Office
Phoenix, Arizona,
March 23 , 19 29

John D. Adams
Office Cadastral Engineer
Phoenix, Arizona.