

July
1921

FIELD NOTES

OF THE RETRACEMENT OF

part of the Arizona-Utah boundary (10th and 11th miles)

OF THE RESURVEY OF

the East boundary,

AND OF THE SURVEY OF

the Subdivision lines of

Fractional Township 42 North, Range 15 West,

Of the Gila and Salt River Base and Meridian,

In the State of Arizona,

EXECUTED BY

Joseph P. Davis, U. S. Cadastral Engineer,

and

Claude F. Warner, U. S. Transitman,

In the capacity of U. S. Surveyors, under instructions dated September 29, 1920, issued by the United States Surveyor General to govern surveys included in Group No 112, Arizona, which were approved by the Commissioner of the General Land Office, November 10, 1920, and Assignment Instructions dated December 15, 1920.

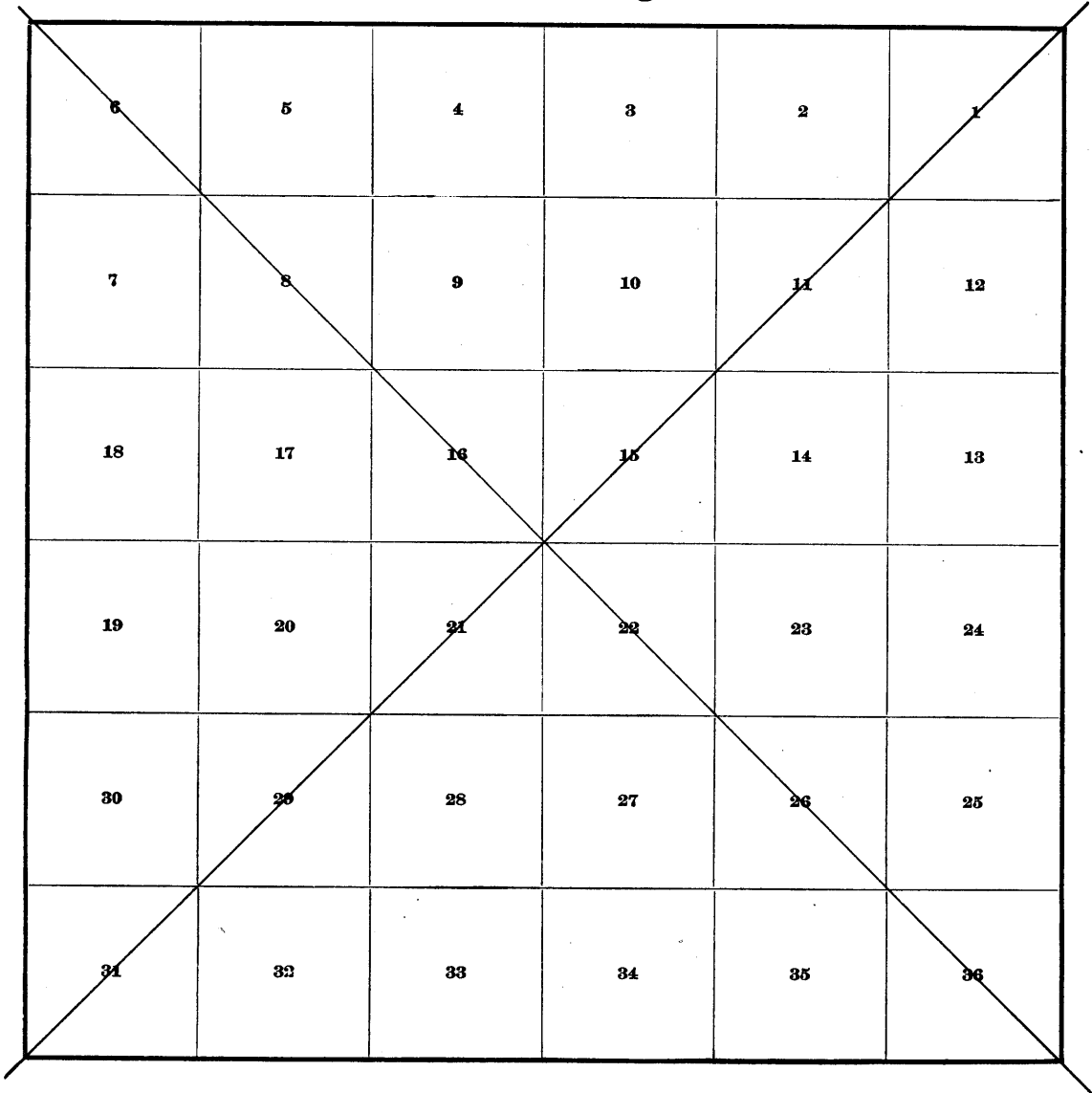
Retracement,
Resurvey and Survey commenced January 24, 1921

Retracement,
Resurvey and Survey completed March 11, 1921

3521

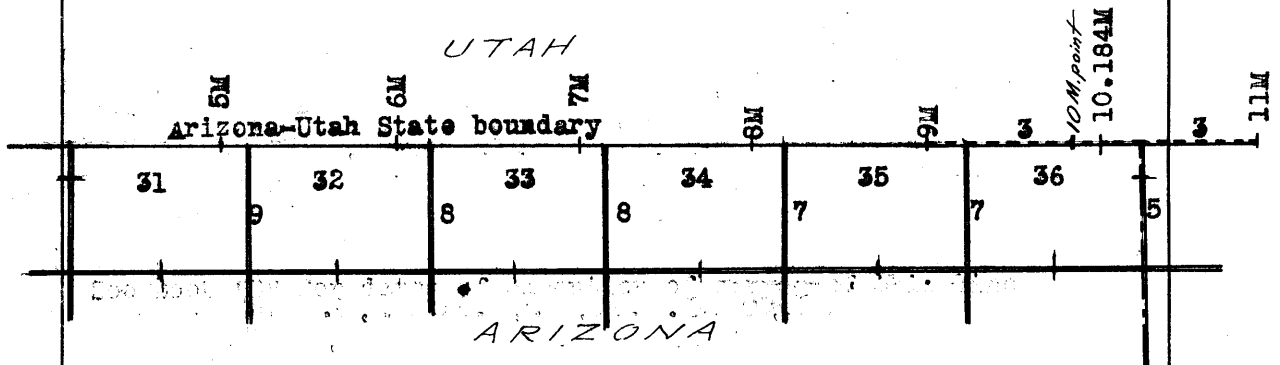
INDEX DIAGRAM.

Township ----- ; *Range* -----



Index Diagram

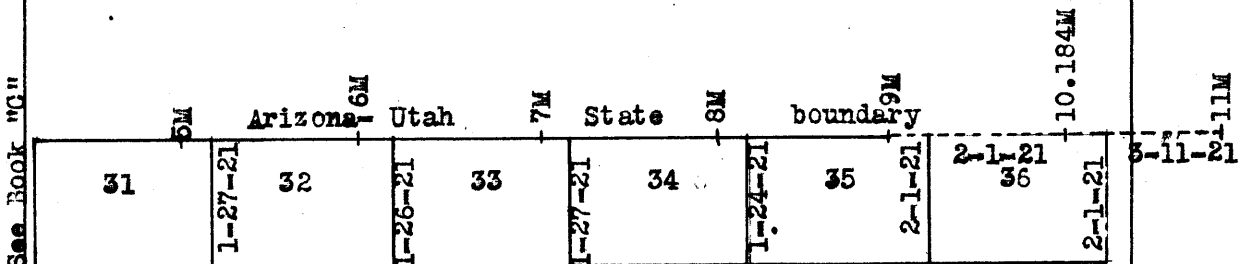
Fractional Township 42 North, Range 15 West,



- Lines retraced under this Group.
- Lines resurveyed under this Group.
- Lines surveyed under this Group.
- Accepted survey.

Date Diagram

Fractional Township 42 North, Range 15 West,



See Book "D" for dates of execution of survey of this line.

On the above diagram:-

Black lines indicate surveys, dotted black lines indicate retracements, and dot and dash black lines indicate resurveys, executed by Joseph P. Davis, U. S. Cadastral Engineer, and red lines indicate surveys and dotted red lines indicate retracements, executed by Claude F. Warner, U. S. Transitman, all on dates shown thereon.

See Book "D"

Retracements, resurveys and surveys hereinafter described executed by Joseph P. Davis, U.S. Cadastral Engineer and Claude F. Warner, U.S. Transitman, on dates shown on diagram on page 1 hereof, using respectively Buff light mountain transit No. 10125 and Young and Sons light mountain transit No. 8532. For description of instruments and certificate of approval, see Book "A".

Unless otherwise specified, all measurements are made with a Lufkin steel tape, 5 chs. in length, compared with a Chesterman standard steel tape and found correct. The measurements are made on the slope, the vertical angles determined and the slope measurements properly reduced to true horizontal distances.

We examine the adjustments of the transits and correct all errors; then, to test the solar apparatus, by comparing their indications, resulting from solar observations made during a.m. and p.m. hours, with a meridian determined by observations on Polaris at elongation, we proceed as follows:

Jan. 23, 1921. At our camp, near the center of the SE. $\frac{1}{4}$ of sec. 2, T. 41, N., R. 16, W., G. and S. R. B. and M., lat. $36^{\circ}58\frac{1}{2}'$ N., long. $113^{\circ}59\frac{1}{2}'$ W., using the meridian described in Book "C", at 9 hrs. 00 m., a.m., l.m.t., we set off $36^{\circ}58\frac{1}{2}'$ N, on the lat. arcs; $19^{\circ}25'$ S. on the decl. arcs; and determine a meridian with each solar, which in each case agrees with the true meridian.

At apparent noon, with the lat. arcs unchanged, we observe the sun on the meridian with each solar; the resulting decl. with each instrument is $19^{\circ}24'$ S., which is the computed decl. of the sun.

At 3 hrs. 0 m., p.m., l.m.t., with the lat. arcs unchanged, we set off $19^{\circ}21\frac{1}{2}'$ S. on the decl. arcs and determine a meridian with each solar, which in each case agrees with the true meridian.

As all of the solar observations during the usual hours of solar work come within $1'30''$ of the true meridian, we conclude that the adjustments of the solars are satisfactory.

Retracement of part of the Arizona-Utah State Boundary Line (10th and 11th Miles).

Chains.

That part of the Arizona-Utah State Line, forming the North boundaries of fractional Ts.42 N., Rs.14 and 15 W. was surveyed in March, 1901, by Howard B. Carpenter, U.S. Surveyor and Astronomer, and no retracement or re-survey of this portion of the line is of record, except a retracement of the 11th mile, executed in November, 1912, by Thomas B. Matthews, U.S. Surveyor, in connection with the establishment of closing cor. of fracl. Ts.42 N., Rs.14 and 15 W. thereon.

Preliminary to the Subdivision of fractional T.42 N., R. 15 W., hereinafter described, the entire north boundary of said township was retraced, and found for the most part to be in substantial agreement with the record. No description of said retracement is given in these notes except for that portion of the line forming N. bdy. of the secs. which failed to close by using the record bearings and lengths of the intervals between monuments on the State boundary.

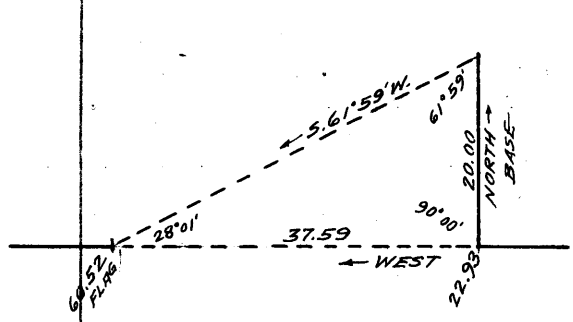
The 11 mile monument on Arizona-Utah State Line is a limestone, 12x10x10 ins. above ground, firmly set, marked "UTAH" on N. face, "37 N L" on E. face, "ARIZ." on S. face, and "11M" on W. face, and witnessed by a mound of stone E. of cor. No bearing trees.

Thence, West, on a random line on part of 11th mile. Over mountainous land, thru. scattering undergrowth. Descend.

2.00 Wash, 60 lks. wide, course N.20°E. Ascend 280 ft. over E. slope.

20.70 Spur, slopes N. Descend 45 ft. to

22.93 East rim of canyon, brs. N. and S. Discontinue chaining and triangulate across canyons, as described as follows, and as shown on the diagram hereon.



Measure a base North, 20.00 chs. Set flag on line beyond W. rim of canyon.

From N. end of base, flag brs. S. 61° 59' W.

Included angles are 61°59', 90° 00', and 28°01', the sum of which is 180°00'. Dist. on random line across canyon is obtained by $\text{tang. } 61^\circ 59' \times \text{base}$ or $1.87941 \times 20 = 37.59$ chs.

which added to 22.93 chs. gives 60.52 chs. west from 11 mile mon. as the position of the flag on random line on W. rim of canyon.

40.00 (Approximate) Bottom of main canyon about 600 ft. deep, course NW. Ascend.

50.00 (Approximate) Point of spur, slopes N. Descend about 300 ft.

55.00 (Approximate) Bottom of side canyon, course N. Ascend about 300 ft. to

59.50 (Approximate) W. rim of canyon, brs. N. and S. Ascend steep NE. slope.

From flag point at 60.52 ch. station, measure E. 56 lks. to intersect the closing cor. of fracl. Ts.42 N., Rs.14 and 15 W., established by Thomas B. Matthews, U.S.S. in 1912. Remove this cor., and reset at proper point, as hereinafter described.

60.52 Flag point of above described triangulation. Continue line and measurement by chaining. Ascend along N. slope.

65.84 Intersect the 10.184 mile monument (witness monument, to point for 10 mile monument) which is a limestone 30x10x10 ins., firmly set in a mound of stone, marked "UTAH" on N. face, "37 N L" on E. face, "ARIZ." on S. face, and "10.184 M" on W. face, and witnessed by a mound of stone, E. of monument, No bearing trees.

Retracement of part-of the Arizona-Utah State Boundary
(10th and 11th Miles)

4.
Chains.

Land, broken and mountainous.
Soil, rocky, 4th rate.
No timber.
Undergrowth, sage brush.

True course and dist. bet. 11 mile monument and the
10.184 mile monument are therefore, West, 65.84 chs.

From the 10.184 mile monument, described above
West, on random line on part of 11th mile; and all of 10th
mile.

Over mountainous land, thru. scattering undergrowth.
Descend 720 ft., over NW. slope.

14.75 Point for 10th mile monument is in inaccessible position. Con-
tinue line and measurement on 10th mile.

36.70 Center of draw, 1 ch. wide, course S. 20° W. Ascend 15 ft.

40.60 Descend 90 ft.

50.00 Draw, 10 lks. wide, 3 ft. deep, course S. Ascend 195 ft.

56.20 Spur, slopes SE. Descend 175 ft.

69.50 Draw, course S. Ascend 10 ft.

77.26 Descend 30 ft.

80.75 Ascend.

84.25 Descend 20 ft.

87.65 Canyon, 60 lks. wide, course S. 30° E. Ascend 215 ft.

100.97 Intersect the 9th mile monument, which is a limestone,
36x9x9 ins. firmly set in a mound of stone, marked "UTAH"
on N. face, "37 N L" on E. face, "ARIZ." on S. face, and
"9M" on W. face, and witnessed by a mound of stone, E.
of monument.

No bearing trees:

Land, mountainous.

Soil, rocky; 4th rate.

No timber.

Undergrowth, sagebrush.

True course and dist. between the 10.184 mile monument, and
the 9th mile monument are therefore, West 100.97 chs.

Independent Resurvey of the East boundary of fractional Township 42 North, Range 15 West.

Chains.

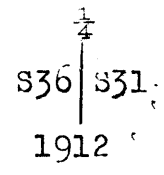
The East bdrs. of Ts. 41 N., R. 15 W., and fracl. T. 42 N., R. 15 W. were surveyed in 1912 by Thomas B. Matthews, U.S. S., and no retracement or resurvey of same is of record. A retracement of the N. 4 miles of the E. bdy. of T. 41 N., R. 15 W. disclosed the fact that the line was defective in measurement, and as such portion of the range line was subject to rectification, an independent resurvey of the same was made, as described in Book "D." of this group. The following notes describe an independent resurvey of the E. bdy. of fracl. T. 42 N., R. 15 W., in which the original cors. are removed, and reset at proper intervals.

From the reestablished cor. of T. 41 N., Rs. 14 and 15 W., and fractional T. 42 N., Rs. 14 and 15 W., described in Book "D.",

North, on true line, bet. fracl. secs. 31 and 30. Over mountainous land, along W. slope of Beaver Dam Mountain, thru. scattering undergrowth.

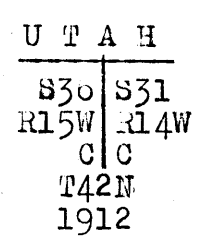
Ascend.

- 2.40 Spur, slopes W. Continue ascent, 135 ft.
- 11.55 Descend 105 ft.
- 23.10 Ascend 135 ft.
- 35.57 A point 60 lks. W. of the original 1/4 sec. cor. of secs. 31 and 30. Remove the iron post, and destroy all trace of the cor.
- 37.80 Descend 70 ft.
- 40.00 Reset old iron post 3 ft. long, 1 in. in diam., 10 ins. in the ground, with marked stone, for reestablished 1/4 sec. cor., and raise a mound of stone around post, with brass cap, marked

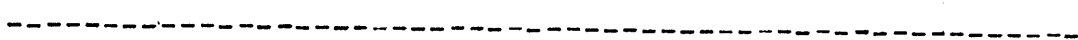


- 55.50 Descend 265 ft., over NE. slope, to Intersect the Arizona-Utah State Boundary Line, 5.30 chs. E. of the 10.184 mile mon., hereinbefore described, and 58 lks. W. of the original closing cor. of fracl. Ts. 42 N., Rs. 14 and 15 W. Remove the iron post monumenting the original closing cor., and destroy all trace of the cor.

At the point of intersection, reset the old iron post, 3 ft. long, 3 ins. in diam., on bed rock, with marked stone, for reestablished closing cor. of fracl. Ts. 42 N., Rs. 14 and 15 W., and raise a mound of stone around post, with brass cap, marked



Land, mountainous.
Soil, rocky, 4th rate.
No timber.
Undergrowth, sagebrush.



6

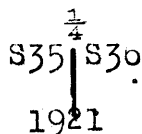
Boundaries of Fractional Township 42 North, Range 15 W.
 Latitudes, departures, and closing errors.

Line designated.	True bearing.	Dist.	Latitudes.		Departures.	
			N.	S.	E.	W.
South boundary,	N. 89° 50' W.	479.52	.54			479.52
West boundary,	North,	55.16	55.16			
North boundary, (Ariz.-Utah State Line).	East,	479.03			479.03	
East boundary,	South,	55.50		55.50		
Convergency,					.06	
Totals,			55.80	55.50	479.09	479.52
			55.50			479.09
	<u>Error in latitude,</u>		0.30			
	<u>Error in departure,</u>					0.43

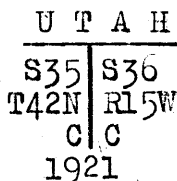
Survey of Subdivision of Fracl. Township 42 North, Range 15 West.

Chains.

From the cor. of secs. 1 and 2, and fracl. secs. 35 and 36,
 on the S. bdy. of the Tp., described in Book "D,"
 North, on a true line, bet. fracl. secs. 35 and 36.
 Over rolling land, thru. scattering undergrowth.
 Ascend over slight SW. slope, 55 ft.
 20.00 Thence over gently rolling land.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 14 ins. in
 the ground, with marked stone, for $\frac{1}{4}$ sec. cor., and
 raise a mound of stone around post, with brass cap,
 marked

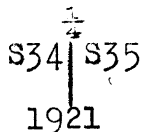


Descend 80 ft.
 54.80 Head of draw, course S. 45° E. Ascend.
 55.63 Intersect Arizona-Utah State Boundary Line, 26.27 chs. E.
 of the 9th Mile Mon., hereinbefore described.
 At the point of intersection, set an iron post, 3 ft. long,
 2 ins. in diam., 14 ins. in the ground, with marked
 stone, for closing cor. of fracl. secs. 35 and 36, and
 raise a mound of stone around post, with brass cap,
 marked



Land, slightly rolling, rolling and mountainous.
 Soil, sandy and rocky, 3rd rate.
 No timber.
 Undergrowth, sagebrush and greasewood.

From the cor. of secs. 2 and 3, and fracl. secs. 34 and 35,
 on the S. bdy. of Tp., described in Book "D,"
 North, on a true line, bet. fracl. secs. 34 and 35.
 Over rolling land, thru. thick undergrowth.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
 the ground, for $\frac{1}{4}$ sec. cor., marked on brass cap,



and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
 W. of cor.
 45.00 Descend over bank, 10 ft. high, brs. N. 10° W., and S. 10° E.
 51.70 Same bank, brs. N. 10° E. and S. 10° W. Thence over rolling
 land.
 55.54 Intersect the Arizona-Utah State Boundary Line, 26.58
 chs. East of the 8th Mile Mon., which is a limestone,
 11x12x12 ins. above ground, firmly set, marked "UTAH"
 on N. face, "37 N.L." on E. face, "ARIZ." on S. face, and
 "8 M" on W. face, witnessed by a mound of stone, E. of
 monument. No bearing trees.
 At the point of intersection,
 Set an iron post, 3 ft. long, 2 ins. in diam., 18 ins. in
 the ground, with marked stone for closing cor. of
 fracl. secs. 34 and 35, and raise a mound of stone
 around post, with brass cap, marked

8 Subdivision of fracl. Township 42 North, Range 15 West.

Chains.

U T A H	
S34	S35
T42N	R15W
C C	
1921	

Land, rolling.
 Soil, sandy and rocky, 3rd. rate.
 No timber.
 Undergrowth, sagebrush and greasewood.

40.00 From the cor. of secs. 3 and 4, and fracl. secs. 33 and 34, on the S. bdy. of Tp., described in Book "D," North, on a true line, bet. fracl. secs. 33 and 34. Over rolling land, thru. scattering undergrowth. Set an iron post, 3 ft. long, 1 in. in diam., 18 ins. in the ground, with marked stone, for $\frac{1}{4}$ sec. cor., and raise a mound of stone around post, with brass cap; marked

$\frac{1}{4}$	
S33	S34
1921	

50.00 Wash, 60 lks. wide, course S. 10° W.
 52.00 Road, brs. E. and W.
 55.56 Intersect the Arizona-Utah State Boundary Line, 26.62 chs. E. of the 7th mile mon., which is not a granite stone, as described in record, but is an iron post, 3 ins. in diam., projecting 24 ins. above ground, firmly set, with brass cap, marked in raised letters, "UTAH" in N. half; "ARIZ." in S. half, and stamped "7M" in center and witnessed by a mound of stone, E. of monument. No bearing trees.
 At the point of intersection, Set an iron post 3 ft. long, 2 ins. in diam., 12 ins. in the ground, with marked stone, for closing cor. of fracl. secs. 33 and 34, and raise a mound of stone around post, with brass cap, marked

U T A H	
S33	S34
T42N	R15W
C C	
1921	

Land, rolling.
 Soil, sandy and rocky, 3rd rate.
 No timber.
 Undergrowth, sage brush and greasewood.

31.50 From the cor. of secs. 4 and 5, and fracl. secs. 32 and 33, on the S. bdy. of the Tp., described in Book "D," North, on a true line, bet. fracl. secs. 32 and 33. Over rolling land, thru. thick undergrowth.
 53.90 Draw, 10 lks. wide, course S. 20° W.
 40.00 Old road, brs. N. 70° E. and S. 70° W.
 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., marked on brass cap,

$\frac{1}{4}$	
S32	S33
1921	

and raise a mound of stone, 2 ft. base. 1 $\frac{1}{2}$ ft. high, W. of cor.

Subdivision lines of fracl. Township 42 North, Range 15 West. 9

Chains.

55.36 Intersect the Arizona-Utah State Boundary Line, 26.62 chs. East of the 6th mile mon., which is a limestone, 10x15x6 ins. above ground, firmly set, marked "UTAH" on N. face, "37N L" on E. face, "ARIZ." on S. face, and "6M" on W. face, and witnessed by a mound of stone, E. of monument. No bearing trees.

At the point of intersection,
Set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground, for closing cor. of fracl. secs. 32 and 33, marked on brass cap,

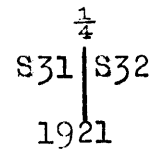


and raise a mound of stone 2 ft. base, 1 1/2 ft. high, S. of cor.

Land, rolling.
Soil, sandy and rocky, 3rd rate.
No timber.
Undergrowth, sagebrush and greasewood.

From the cor. of secs. 5 and 6, and fracl. secs. 31 and 32, on the S. bdy. of the Tp., described in Book "D," North, on a true line, bet. fracl. secs. 31 and 32. Over rolling land, thru. scattering undergrowth.

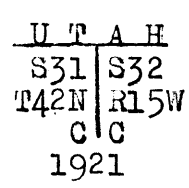
2.00 Draw, 5 lks. wide, course S. 20° E.
13.30 Old road, brs. N. 70° E. and S. 70° W.
40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for 1/4 sec. cor., marked on brass cap,



and raise a mound of stone, 2 ft. base, 1 1/2 ft. high, W. of cor.

55.25 Intersect the Arizona-Utah State Boundary Line, 26.60 chs. East of the 5th Mile Mon., which is an iron post 3 ins. in diam., firmly set in ground and mound of earth, with brass cap, marked in raised letters, "UTAH" in N. half, "ARIZ." in S. half, and stamped "7M" in center, and witnessed by pits, N., S.E. and W. No bearing trees.

At the point of intersection,
Set an iron post 3 ft. long, 2 ins. in diam., 26 ins. in the ground, for closing cor. of fracl. secs. 31 and 32, marked on brass cap,



and raise a mound of stone, 2 ft. base, 1 1/2 ft. high, S. of cor.

Land, rolling.
Soil, sandy and rocky, 3rd rate.
No timber.
Undergrowth, greasewood and sagebrush.

The continued satisfactory adjustment of the solar apparatus during the survey of this fractional township

10 Subdivision of fracl. Township 42 North, Range 15 West.

Chains.

is indicated from field tests, as described in Book "F."

GENERAL DESCRIPTION.

This fractional township consists of broken land in the eastern part, and rolling land in the remainder, all draining southerly, over which there is a growth of greasewood and sagebrush undergrowth. This township is uninhabited, and without water, and as the land is sandy and rocky in formation, and of 3rd rate, grazing seems the only possible industry.

There are no indications of valuable mineral.

CERTIFICATE OF UNITED STATES ~~TRANSITMAN~~

I, Claude F. Warner, U. S. Transitman, hereby certify upon honor that, in pursuance of special instructions received from the U. S. Surveyor General for Group 112, Arizona, bearing date of the 29th day of September, 1920, I have well, faithfully, and truly in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, ~~surveyed~~ ^{retraced} all those parts or portions of the Arizona-Utah State boundary, and surveyed all those parts or portions of the Subdivision lines of
Fractional Township 42 North, Range 15 West,

of the Gila and Salt River Base and Meridian, in the State of Arizona, which are represented in the foregoing field notes ~~as having been executed by me, and under my direction;~~ ^{and by diagram on page 1 hereof} and that all the corners of ~~said survey~~ ^{retracement} have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General for Group 112, Arizona,

and in the specific manner described in the field notes, and that the foregoing are the original field notes of ~~such survey~~ ^{retracement and}

Place Helena, Mont
 Date Jan 12, 1922

Claude F. Warner
 U. S. Transitman

~~APPROVAL.~~

~~OFFICE OF THE UNITED STATES SURVEYOR GENERAL,~~

~~101~~

~~The foregoing field notes of the survey of~~

~~executed by~~

~~under his special instructions dated~~ 191 ~~, having been~~
~~critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys~~
~~they describe, are hereby approved.~~

~~U. S. Surveyor General.~~

I certify that the foregoing transcript of the field notes of the above described surveys in
~~has been correctly copied from the original notes on file in this office.~~

~~U. S. Surveyor General.~~

CERTIFICATE OF UNITED STATES CADASTRAL ENGINEER.

I, Joseph P. Davis, U. S. Cadastral Engineer, hereby certify upon honor that, in pursuance of special instructions received from the U. S. Surveyor General for Group 112, Arizona,

bearing date of the 29th day of September, 1920, I have well, faithfully, and truly

in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instruc-

tions, and the laws of the United States, retraced surveyed all those parts or portions of the Arizona-Utah State

boundary, resurveyed all those parts or portions of the East boundary, and surveyed

all those parts or portions of the Subdivision lines of

Fractional Township 42 North, Range 15 West,

of the Gila and Salt River

Base and Meridian, in the State of Arizona, which are represented in

the foregoing field notes, and by diagram on page 1 hereof as having been executed by me, and under my direction; and that all the corners of retracement, resurvey and

said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instruc-

tions, and the special written instructions of the U. S. Surveyor General for Group 112, Arizona,

and in the specific manner described in the field notes, and that the foregoing are the original field notes of retracement, resurvey and such survey.

Place Bowie, Ark.

Date January 16, 1922

Joseph P. Davis U. S. Cadastral Engineer

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, January 25, 1922

The foregoing field notes of the survey of retracement of part of the Arizona-Utah State Bdy (10th and 11th miles) of the resurvey of the East boundary, and of the survey of the Subdivision lines of

Fractional Township 42 North, Range 15 West,

of the Gila and Salt River Base and Meridian,

in the State of Arizona,

executed by Joseph P. Davis, U.S. Cadastral Engineer, and Claude F. Warren, U.S. Transitman,

under his special instructions dated Sept. 29, 1920, for Group 112, Arizona, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Claude F. Warren

U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above described surveys in has been correctly copied from the original notes on file in this office.