

AUG 4 - 1914

Book "T"

BOOK 2710

2710

FIELD NOTES

OF THE SURVEY AND RESURVEY OF THE

West boundary of Fractional Township No 21 South

Range No 17 East

Of the *Gila and Salt River Base and Meridian,*

In the State of *Arizona.*

EXECUTED BY

John F. Hesse

In the capacity of U. S. Surveyor..., under instructions dated *August 24, 1911,*
issued by the United States Surveyor General to govern surveys included in
Group No. *5*..., which were approved by the Commissioner of the General Land
Office, *September 11*..., 1911..., pursuant to authority contained in the Act of
Congress dated *August 23*..., 1912

Survey commenced *December 22*..., 1912

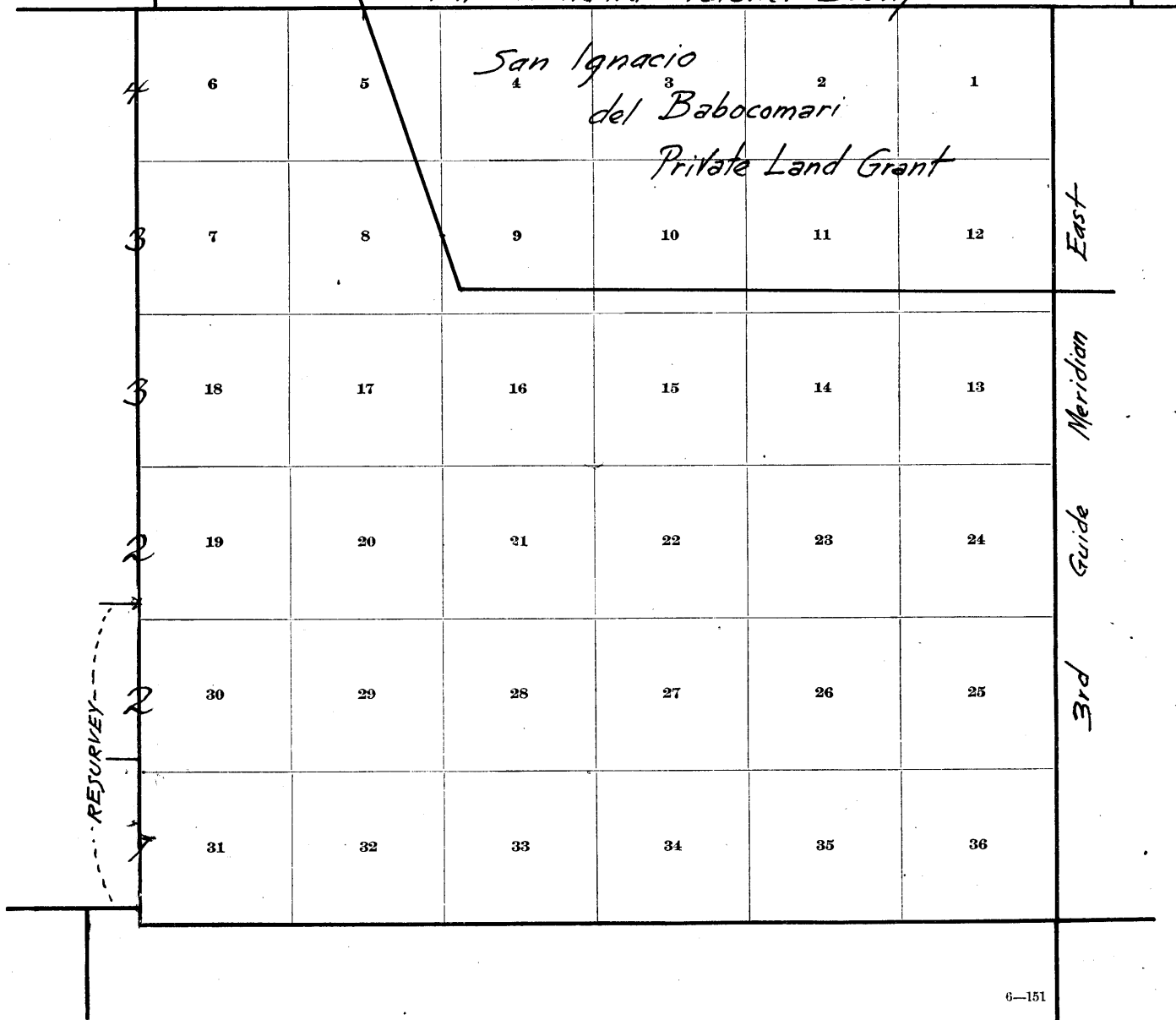
Survey completed *December 24*..., 1912

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INDEX DIAGRAM.

Fractional Township 21 South, Range 17 East
4th Standard Parallel South



Survey and Resurvey of West boundary of Tp. 21 S. Rg. 17 E.

Chains.

Survey commenced December 22, 1912, and executed with a W. and L. E. Gurley transit, not numbered, with solar attachment. The horizontal limb is provided with one double vernier reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

The instrument was approved by the supervising surveyor August 28, 1912.

I examine the adjustments of the transit and find them correct; then, to test the solar apparatus, by comparing its indications, resulting from solar observations made during a.m. and p.m. hours, with a meridian determined by observations on Polaris, I proceed as follows:

At my camp which is located near the center of sec. 27 Tp. 21 S. Rg. 17 E.; latitude $31^{\circ}34'$ N., longitude $110^{\circ}36'07''$ W.; At 1h. 24m. a.m., by my watch, which has correct l.m.t., I observe Polaris at western elongation in accordance with Manual of Instructions, and mark a point in the line thus determined, on a peg driven in the ground, 5 chs. N. of my station.

At 8h. 00m. a.m., l.m.t., I lay off the azimuth of Polaris, $1^{\circ}21'$ to the east, and mark the meridian thus determined, by cutting a small groove in a stone firmly set in the ground, 5 chs. N. of my station.

At 9h. 00m. a.m., l.m.t., I set off $31^{\circ}34'$ N. on the lat. arc; $23^{\circ}25'$ S. on the decl. arc; and mark a point in the meridian determined with the solar, by a cross on the stone already set 5 chs. N. of my station; this mark falls 0.3 ins. east of the meridian established by the Polaris observation.

I set off $23^{\circ}25\frac{1}{2}'$ N. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is $31^{\circ}34'$ N.

At 3h. 00m. p.m., l.m.t., I set off $31^{\circ}34'$ N. on the lat. arc; $23^{\circ}25'$ S. on the decl. arc; and mark a point in the meridian determined with the solar, by a cross on the stone already set 5 chs. N. of my station; this mark falls 0.3 ins. west of the meridian established by the Polaris observation.

The solar apparatus, by a.m., and p.m. observations, defines positions for meridians, respectively about $16''$ east and west of the meridian established by the Polaris observations; therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian at 9h. 15m. a. m., is N. $13^{\circ}40'$ W.; the angle thus determined gives the mag. decl. $13^{\circ}40'$ E.

December 22, 1912.

December 23: At 8h. 00m. a.m., l.m.t., I set off $31^{\circ}33'$ N. on the lat. arc; $23^{\circ}23'$ S. on the decl. arc; and determine a meridian with the solar at the closing cor. of Tps. 21 and 22 S. Rgs. 17 E., which is a stone firmly set, marked and witnessed as described by the surveyor general.

Thence I run

North on W. bdy. of sec. 31, resurveying.

Over rolling mountainous land, gradually ascending.

40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor.; sec. 31, marked on brass cap $\frac{1}{4}$ in W. S31 in E. and 1912 in S. half; from which

.An oak 10 ins. diam., bears N. 18° E. 167 lks. dist., marked $\frac{1}{4}$ S31BT.

.An oak 12 ins. diam., bears S. 57° E. 107 lks. dist., marked $\frac{1}{4}$ S31BT.

45.60 Cross wash 20 lks. wide course S. W.

55.30 Cross wash 18 lks. wide course S. W.

58.70 Cross same wash 15 lks. wide course S. E.

69.50 Cross same wash 8 lks. wide course S. W.

Survey and resurvey of West boundary of Tp. 21 S. Rg. 17 E.

Chains.	
80.00	<p>Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 30 and 31, marked on brass cap T21S in N. and 1912 in S. half; S30 in N. E. and S31 R17E in S. E. quadrant; and raise a mound of stone 2 ft. base 1½ ft. high, E. of cor. Pits impracticable. Land, mountainous. Soil, rocky; 4th. rate. Timber, scattering oak. Undergrowth, scattering oak. December 23: At this cor. I set off 23.25' S. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is 31° 33½' N.</p>
	<p>North on W. bdy. of sec. 30, resurveying. Ascend rough rocky S. W. slope of Canelo Hills through scattering brush and timber..</p>
15.30	Ridge bears E. and W.
20.60	Cross wash 15 lks. wide course S. W.
34.40	Ridge bears E. and W..
40.00	<p>Set an iron post 3 ft. long, .1 in. diam., 26 ins. in the ground for ¼ sec. cor. sec. 30, marked on brass cap ¼ in W., S30 in E. and 1912 in S. half; and raise a mound of stone 2 ft. base 1½ ft. high, W. of cor. Pits impracticable.</p>
71.70	Ridge bears E. and W. Top of Canelo Hills and descend through dense brush.
80.00	<p>Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 19 and 30, marked on brass cap T21S in N. and 1912 in S. half; S19 in N. E. and S30 R17E in S. E. quadrant; and raise a mound of stone 2 ft. base 1½ ft. high, E. of cor. Pits impracticable. Land, rough and mountainous. Soil, rocky; 4th. rate.. Timber, oak. Undergrowth, oak.</p>
	December 23, 1912.
	<p>December 24: At 8h. 00m. a.m., l.m.t., I set off 31° 34½' N. on the lat. arc; 23° 22' S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 19 and 30.</p>
	Thence I run
	North on W. bdy. of sec. 19.
	Descend through dense brush.
3.90	Cross wash 12 lks. wide course N. W. ascend.
15.70	Ridge bears N. W. and S. E. descend.
18.80	Cross wash 10 lks. wide course N. W. timber becomes heavy. Ascend.
28.20	Ridge bears N. W. and S. E. descend.
37.80	Cross wash 5 lks. wide course N. W. ascend.
40.00	<p>Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for ¼ sec. cor., sec. 19, marked on brass cap ¼ in W., S19 in E. and 1912 in S. half; from which An oak 8 ins. diam., bears N. 68½ E. 12 lks. dist., marked ¼ S19BT. An oak 7 ins. diam., bears S. 65¼ E. 54 lks. dist., marked ¼ S19BT.</p>
41.80	Ridge bears N. W. and S. E. descend.
55.60	Cross wash 10 lks. wide course N. W. ascend.
72.50	Ridge bears E. and W. descend.
80.00	Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the

Survey and Resurvey of West boundary of Tp. 21 S. Rg. 17 E.

Chains.

	ground for cor. of secs. 18 and 19, marked on brass cap T21S in N. and 1912 in S. half; S18 in N. E. and S19 R17E in S. E. quadrant; from which An oak 8 ins. diam., bears N. $36\frac{1}{2}$ E. 83 lks. dist., marked T21SR17ES18BT. An oak 5 ins. diam., bears S. 63 E. 138 lks. dist., marked T21SR17ES19BT.
	Land, rough and mountainous. Soil, rocky; 4th. rate. Timber, oak. Undergrowth, oak and sweet cedar.
	North on W. bdy. of secs 18 Ascend through dense brush and heavy timber.
15.80	Ridge bears N. W. and S. E. descend.
28.90	Cross wash 5 lks. wide course N. E. ascend.
34.30	Ridge bears N. W. and S. E. descend.
39.65	Cross wash 8 lks. wide course N. W. ascend.
40.00	Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., sec. 18, marked on brass cap $\frac{1}{4}$ in W., S18 in E. and 1912 in S. half; from which An oak 7 ins. diam., bears N. $7\frac{1}{2}$ E. 38 lks. dist., marked $\frac{1}{4}$ S18BT. An oak 7 ins. diam., bears S. $27\frac{3}{4}$ E. 62 lks. dist., marked $\frac{1}{4}$ S18BT.
43.50	Ridge bears N. W. and S. E. descend.
62.00	Cross wash 7 lks. wide course N. W. ascend.
71.00	Ridge bears N. W. and S. E. descend.
80.00	Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 7 and 18, marked on brass cap T21S in N. and 1912 in S. half; S7 in N. E. and S18 R17E in S. E. quadrant; from which A juniper 10 ins. diam., bears N. $46\frac{3}{4}$ E. 92 lks. dist., marked T21SR17ES7BT. An oak 16 ins. diam., bears S. 59 E. 70 lks. dist., marked T21SR17ES18BT.
	Land, rough and mountainous. Soil, rocky; 4th. rate. Timber, oak. Undergrowth, Oak, sweet cedar, manzanita and buckbrush. December 24: At this cor. I set off 23' 24" S. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is $31^{\circ} 36\frac{1}{2}'$ N.
	North on W. bdy. of sec. 7 Descend through scattering brush and timber.
0.50	Cross drain 5 lks. wide course N. E. ascend.
4.00	Ridge bears N. E. and S. W. descend.
13.00	Cross wash 5 lks. wide course N. E. and over rolling land.
32.70	Cross wash 10 lks. wide course N. E.
40.00	Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ in W. S7 in E. and 1912 in S. half; from which An oak 36 ins. diam., bears N. $68\frac{1}{2}$ E. 121 lks. dist. marked $\frac{1}{4}$ S7BT. An oak 6 ins. diam., bears S. $11\frac{3}{4}$ E. 118 lks. dist., marked $\frac{1}{4}$ S7BT.
42:40	Cross wash 25 lks. wide course N. W.
55.00	Cross wash 30 lks. wide course N. W.
58.20	Cross same wash 30 lks. wide course N. E.
64.60	Cross same wash 30 lks. wide course N. W.
69.30	Cross same wash 30 lks. wide course N. E.
78.90	Cross same wash 30 lks. wide course N. W. ascend.

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Chains	
80.00	Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 6 and 7, marked on brass cap T21S in N. and 1912 in S. half; S6 in N. E. and S7 R17E in S. E. quadrant; from which An oak 8 ins. diam., bears N. 24 E. 73 lks. dist., marked T21SR17ES6BT. A juniper 14 ins. diam., bears S. 56 E. 112 lks. dist., marked T21SR17ES7BT. Land, mountainous, and rolling. Soil, 1.00 to 16.00 chs. rocky; 4th. rate. 16.00 to 42.00 chs. sandy loam, dry, medium texture, dry; 1st. rate. 42.00 to 80.00 sandy and rocky 4th. rate. Timber, oak and juniper. Undergrowth, oak, manzanita and sweet cedar.
	North on W. bdy. of sec. 6. Ascend steep rocky S. W. slope, through dense brush and heavy timber.
4.20	Ridge bears N. W. and S. E. descend.
9.70	Cross wash 5 lks. wide course N. W. ascend.
13.40	Ridge bears N. W. and S. E. descend.
20.00	Cross creek 3 lks. wide 1 in. deep, course N. E. pure water, Alamo Springs 50 ft. S. 20 W. water sinks about 50 ft. N. E..
22.30	Cross wash 40 lks. wide course N. W. leave brush and timber, and over rolling land.
27.80	Cross drain 5 lks. wide course S. W.
32.00	Cross drain 8 lks. wide course S. W.
40.00	Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ in W. S6 in E. and 1912 in S. half; from which An oak 12 ins. diam., bears N. 53 $\frac{1}{2}$ E. 89 lks. dist., marked S6BT. A juniper 14 ins. bears S. 30 E. 77 lks. dist., marked S6BT.
65.95	Cross road bears N. W. and S. E.
81.42	Intersect Fourth Standard Parallel South 8.59 chs. west of the standard cor. of Tps. 20 S. Rgs. 16 and 17 E. which is a stone marked and witnessed as described by the surveyor general, at point of intersection Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for closing cor. of Tps. 21 S. Rgs. 16 and 17 E. marked on brass cap CC S. of center; T20S R16E S36. R17E S31 in N. and T21S 1912 in S. half; S6 R17E in S. E. and S1 R16E in S. W. quadrant; from which An oak 12 ins. diam., bears S. 39 $\frac{1}{2}$ E. 210 lks. dist., marked T21SR17ES6BT. An oak 6 ins. diam., bears S. 16 W. 86 lks. dist., marked T21SR16ES1BT. Land, rolling and mountainous. Soil, S. 64.00 chs. rocky; 4th. rate. N. 17.42 chs. sandy loam, dry, medium texture; 1st. rate. Timber, oak and juniper. Undergrowth, oak.

December 24, 1912.

GENERAL DESCRIPTION:

The southwestern part of this township lies on the Canelo hills and is rough and mountainous, while the rest of the township is rolling. There is a good growth of

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oak and juniper on the hills.

In running this line careful search was made at 40.00 and 80.00 chs. for the old cors. which were established on the west boundaries of secs. 30 and 31 but without success.

Alamo Springs are located on the west boundary of sec. 6.

John P. Hesse

U. S. Surveyor.

FINAL OATH OF UNITED STATES SURVEYOR.

I, John F. Hesse, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for Arizona, for Group 5, bearing date of the 24th day of August, 1911, 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 ^{or resurveyed} all those parts or portions of the west boundary of Tp. 21 S. Rg. 17 E.

of the Gila and Salt River Base & 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 I do further solemnly swear that all the corners of said survey ^{and resurvey} have been established ^{or re-established} and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General for Arizona ⁵ for Group and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey. ^{and resurvey.}

John F. Hesse

U. S. Surveyor.

Subscribed by said John F. Hesse, and sworn to before me }
this 4th day of August, 1914

Frank S. Ingalls

Surveyor-General of Arizona.



APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona NOV 14 1914

The foregoing field notes of the survey ^{and resurvey} of the W. bdy. of T. 21 S., R. 17 E., of the Gila and Salt River Base and Meridian, in the state of Arizona

executed by John F. Hesse, U. S. Surveyor under his special instructions dated August 24, 1911, for Group 5, 1911, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the ^{and resurveys} surveys they describe, are hereby approved.

Frank S. Ingalls

U. S. Surveyor General of ARIZONA.

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.