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BOOK 2234

Accepted, Letter E.  
Jan'y. 19, 1912 2234

# FIELD NOTES

OF THE SURVEY OF THE

Second Standard Parallel South, through Rg. 19 W.

2234

2234

Of the Gila and Salt River Meridian,

Territory of Arizona.

AS SURVEYED BY

John F. Hesse, United States Deputy Surveyor,  
Transitman

Under his *Group* Contract No. /, dated *August 25*, 1910

Survey commenced December 19, 1910, 19

Survey completed December 31, 1910, 19

2234

2234



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BOOK 2234

# INDEX DIAGRAM.

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PRELIMINARY OATHS OF ASSISTANTS.

WE, A. N. Oliver, A. E. Lyon, J. Hand Bates, and A. E. Beaumont  
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of the Second Standard Parallel South, through Rg. 19 W.

A. N. Oliver, Chainman.

A. E. Lyon, Chainman.

Subscribed and sworn to before me this 19th.  
day of December, 1910, 19

J. H. Bates  
A. E. Beaumont

John P. Hesse  
U. S. Surveyor



WE, \_\_\_\_\_ and \_\_\_\_\_  
do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of \_\_\_\_\_

\_\_\_\_\_, Moundman.

\_\_\_\_\_, Moundman.

Subscribed and sworn to before me this \_\_\_\_\_  
day of \_\_\_\_\_, 19



WE, I. T. C. Carroll and \_\_\_\_\_  
do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of the Second Standard Parallel South, through Rg. 19 W.

I. T. C. Carroll, Axman.  
I. T. C. Carroll, Axman.

Subscribed and sworn to before me this 19th.  
day of December, 1910, 19

John P. Hesse  
U. S. Surveyor



I, R. A. Coombs, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of the Second Standard Parallel South, through Rg. 19 W.

R. A. Coombs, Flagman.

Subscribed and sworn to before me this 19th.  
day of December, 1910, 19

John P. Hesse  
U. S. Surveyor



Second Standard Parallel South, through Rg. 19 W.

Chains

Survey commenced December 19, 1910, and executed with an A. Lietz Co. light mountain transit, No. 5631, with solar attachment. The horizontal limb is provided with two double verniers placed opposite to each other, reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

The instrument was examined and approved by the supervising surveyor for Arizona.

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 Tp. 9 S. Rg. 19 W.; latitude  $32^{\circ} 38' 14''$  N., longitude  $114^{\circ} 10' 33''$  W.; I set off  $32^{\circ} 38'$  N. on the lat. arc;  $33^{\circ} 22'$  S. on the decl. arc; and, at 4h. 00m. p.m., l.m.t., determine with the solar a meridian and mark a point there of, on a stone firmly set in the ground 5 chs. N. of my station.

December, 19, 1910.

December 20: At 1h. 33m. 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 6h. 50m. a.m., l.m.t., I lay off the azimuth of Polaris,  $1^{\circ} 23'$  to the east, and mark the meridian thus determined, by cutting a small groove in the stone set December 19, on which the meridian coincides with the mark determined by the solar.

At 8h. 00m. a.m., l.m.t.; I set off  $32^{\circ} 38'$  N. on the lat. arc;  $33^{\circ} 22'$  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 coincides with the meridian established by the Polaris observation.

The solar apparatus, by p.m. and a.m. observations, defines positions for meridians, which coincide with the meridian established by the Polaris observation; therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 8h. 10m. a.m.; is N.  $14^{\circ} 30'$  W.; the angle thus determined gives the mag. decl.  $14^{\circ} 30'$  E.

The Standard cor. of Tps. 9 S. Rgs. 18 and 19 W. is a post badly rotted and with marks nearly obliterated I therefore destroy this old cor. and reestablish it in the same place as follows:

Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for standard cor. of Tps 9 S. Rgs. 18 and 19 W., marked on brass cap.

T9S in N. half

R19WS36 in N. W. and

R18WS31 in N. E. quadrants; dig pits 30 x 24 x 12 ins. crosswise on each line E. and W. of post 4 ft. and N. of post 8 ft. dist., and raise a mound of earth 5 ft. base  $2\frac{1}{2}$  ft. high N. of cor. No bearings available.

From this cor. I now run

West on the S. bdy. of sec. 36

Over level land through dense brush.

14.00

Cross wash 100 lks. wide course N. E.

39.00

Cross wash 50 lks. wide course N. W.

## Second Standard Parallel South, through Range 19 West.

Chains.	Difference between measurements of 40.00 chs. by two sets of chainmen, is 6 lks.; position of middle point By 1st. set, 39.97 chs. By 2nd. set, 40.03 chs.; the mean of which is
40.00	Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S36 in N. half; from which A paloverde 6 ins. diam., bears N. $46\frac{3}{4}^{\circ}$ E. 125 lks dist., marked SC $\frac{1}{4}$ S36PT A paloverde 8 ins. diam., bears N. $54\frac{1}{2}^{\circ}$ W. 171 lks dist., marked SC $\frac{1}{4}$ S36BT..
80.00	Difference between measurements of 80.00 chs. by two sets of chainmen, is 8 lks.; position of middle point By 1st. set, 79.96 chs. By 2nd. set, 80.04 chs.; the mean of which is Set an iron post, 3 ft. long, 3 ins. diam., 31 ins. in the ground, for standard cor. of secs. 35 and 36, marked on brass cap T9SR19W in N. half S35 in N. W. and S36 in N. E. quadrants; dig pits 24 x 18 x 12 ins. crosswise on each line, E. and W. 3 ft. and N. of post 7 ft. dist., and raise a mound of earth 4 ft. base 3 ft. high N. of cor. No bearings available. Land level. Soil, rich sandy loam, medium texture, dry. 1st. rate. No grass. No timber. Undergrowth, greasewood and chico.
40.00	West on S. bdy. of sec. 35 Over level land through dense brush. Difference between measurements of 40 chs. by two sets of chainmen, is 8 lks. position of middle point By 1st. set, 39.96 chs. By 2nd. set, 40.04 chs.; the mean of which is Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S35 on N. half; dig pits 18 x 18 x 12 ins. E. and W. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high, N. of cor. No bearings available.
43.00	Croze road bears N. W. and S. E.
80.00	Difference between measurements of 80.00 chs. by two sets of chainmen is 6 lks.; position of middle point By 1st. set, 79.97 chs. By 2nd. set, 80.03 chs.; the mean of which is Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for standard cor of secs. 34 and 35, marked on brass cap T9SR19W in N. half S34 in N. W. and S35 in N. E. quadrants; dig pits 24 x 18 x 12 ins. cross wise on each line, E. and W. 3 ft. and N. of post 7 ft. dist., and raise a mound of earth 4 ft. base 3 ft. high N. of cor. from which An ironwood 10 ins. diam., bears N. $35^{\circ}$ W. 45 lks. dist., marked SCT9SR19WS34BT. No other bearing available. Dec. 20; At this cor. I set off $23^{\circ} 35'$ S. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is $32^{\circ} 35\frac{1}{2}'$ N. Land, level. Soil, rish sandy loam, medium texture, dry, 1st. rate, no grass. No timber. Undergrowth, greasewood and chico.

Second Standard Parallel South, through Range 19 West.

Chains.	West on S. bdy. of sec. 34 Over level land, through dense brush
6.50	Cross wash 10 lks. wide course N. E. Difference between measurements of 40.00 chs. by two sets of chainmen, is 2 lks.; position of middle point By 1st. set, 39.99 chs. By 2nd. set, 40.01 chs.; the mean of which is
40.00	Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked on brass cap T9SR19W in N. half; dig pits 18 x 18 x 12 ins. E. and W. of post 3 ft. dist., and raise a mound of earth 3 $\frac{1}{2}$ ft. base 1 $\frac{1}{2}$ ft. high, N. of cor. No bearings available.
80.00	Difference between measurements of 80.00 chs. by two sets of chainmen is 6 lks.; position of middle point By 1st. set 79.96 chs. By 2nd. set 80.04 chs.; the mean of which is
80.00	Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for standard cor. of secs, 33 and 34, marked on brass cap T9SR19W in N. half S33 in N. W. and S34 in N. E. quadrants; dig pits 24 x 18 x 12 ins. crosswise on each line, E. and W. 3 ft. and N. of post 7 ft. dist., and raise a mound of earth 4 ft. base 2 ft. high, N. of cor. No bearings available. Land level. Soil, sandy loam, medium texture, dry, 1st. rate. no grass. No timber. Undergrowth, greasewood and chico.
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19.80	West on S. bdy. of sec. 33 Over level land, through dense brush Cross wash 50 lks. wide course N. Difference between measurements of 40.00 chs. by two sets of chainmen is 2 lks.; position of middle point By 1st. set, 39.99 chs. By 2nd. set, 40.01 chs.; the mean of which is
40.00	Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked on brass cap T9SR19W in N. half; dig pits 18 x 18 x 12 ins. E. and W. of post 3 ft. dist., and raise a mound of earth 3 $\frac{1}{2}$ ft. base 1 $\frac{1}{2}$ ft. high, N. of cor. No bearings available.
74.50	Cross wash 50 lks. wide course N. and over rocky land. Difference between measurements of 80.00 chs. by two sets of chainmen is 4 lks.; position of middle point. By 1st. set, 79.98 chs. By 2nd. set, 80.02 chs.; the mean of which is
80.00	Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground for standard cor. of secs. 32 and 33, marked on brass cap T9SR19W in N. half. S32 in N. W. and S33 in N. E. quadrants; and raise a mound of stone 2 ft. base 1 $\frac{1}{2}$ ft. high, N. of cor. Pite impracticable. no bearings available. Land, level. Soil; E. 74.50 chs. sandy loam, medium texture, dry, 1st rate., no grass. W. 5.50 chs. rocky and worthless; no grass. No timber. Undergrowth, greasewood, chico, paloverde and catclaw.

December 20, 1910.

Second Standard Parallel North, through Range 19 West

Chains	December 21: At 8h. 00m. a.m., l.m.t., I set off 33° 35' N. on the lat. arc; 23° 23' S. on the decl. arc; and determine a meridian with the solar at the standard cor. of secs. 32 and 33 Thence I run West on S. bdy. of sec. 32 Over rough rocky land through dense brush.
19.45	Cross wash 30 lks. wide course N. Difference between measurements of 40.00 chs. by two sets of chainmen is 6 lks.; position of middle point By 1st. set, 39.97 chs. By 2nd. set, 40.03 chs.; the mean of which is
40.00	Set an iron post 3 ft. long, 1 in. diam, 26 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{2}$ S32 in N. half; and raise a mound of stone 2 ft. base $\frac{1}{2}$ ft. high, N. of cor. No bearings available, pits impracticable.
44.35	Cross wash 30 lks. wide course N. E.
47.00	Over hilly land.
52.00	Cross wash 35 lks. wide course N.
60.60	Cross wash 30 lks. wide course N.
65.50	Ridge bears N. and S.
70.00	Cross wash 150 lks. wide course N.
74.00	Cross ridge bears N. and S. Difference between measurements of 80.00 chs. by two sets of chainmen is 10 lks.; position of middle point By 1st. set, 79.95 chs. By 2nd. set, 80.05 chs.; the mean of which is
80.00	Point for standard cor of secs. 31 and 32 falls in wash 150 lks. wide <sup>course N.W.</sup> where the cor. cannot be permanently established so at $\wedge$
82.50	Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for witness cor. to standard cor. of secs. 31 and 32, marked on brass cap WC S. of center T9SR19W S31 S32 in N. half; and raise a mound of stone 2 ft. base $\frac{1}{2}$ ft. high, N. of cor. No bearings available pits impracticable. Land, rolling and hilly. Soil, rocky and worthless; 4th. rate., no grass. No timber. Undergrowth, catclaw, chico and greasewood.
	West on S. bdy. of sec. 31 from true cor. point. Over rough rocky land.
2.50	Witness cor. to standard cor. of secs. 31 and 32
7.00	Cross wash 25 lks. wide course N.
35.10	Cross wash 15 lks. wide course N. E.
39.60	Ridge bears N. E. and S. W. Difference between measurements of 40.00 chs. by two sets of chainmen is 4 lks.; position of middle point By 1st. set, 39.98 chs. By 2nd. set, 40.02 chs.; the mean of which is
40.00	Set an iron post 3 ft. long, 1 in. diam. 26 ins. in the ground for <del>Standard</del> $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{2}$ S31 in N. half; and raise a mound of stone 2 ft. base $\frac{1}{2}$ ft. high, N. of cor. Pits impracticable, no bearings available.
43.40	Cross wash 10 lks. wide course N.
46.50	Ridge bears N. and S.
50.00	Cross wash 15 lks. wide course N.
52.50	Cross wash 50 lks. wide course N. E. and ascend.
65.35	Cross drain 15 lks. wide course N. E.
78.00	Ridge bears N. E. and S. W. descend. Difference between measurements of 80.00 chs. by two sets of chainmen is 8 lks. position of middle point By 1st. set 79.96 chs.



Second Standard Parallel South, through Range 19 West.

Chains.

80.00

By 2nd. set, 80.04 chs.; the mean of which is  
 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in  
 the ground for standard cor. of Tps. 9 S. Rgs. 19 and 20  
 W. marked on brass cap  
 T9S in N. half  
 R20WS36 in N. W. and  
 R19WS31 in N. E. quadrants; and raise a mound of stone  
 2 ft. base 1½ ft. high, N. of cor. Pits impracticable  
 no bearings available.  
 Land, rough and hilly.  
 Soil, rocky and worthless; 4th. rate, no grass.  
 No timber.  
 Undergrowth, greasewood, palo verde and ironwood.

*John P. Hesse*  
 U. S. Dransitman

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

90

LIST OF NAMES.

BOOK 2234

A list of the names of the individuals employed by John F. Hesse

Transitman, United States ~~Deputy Surveyor~~, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Second Standard Parallel South, through Rg. 19 W. showing the respective capacities in which they acted:

- A. N. Oliver, Chainman.
- A. E. Lyon, Chainman.
- J. H. Bates, Chainman  
Mountman.
- A. E. Beaumont, Chainman  
Mountman.
- T. C. Carroll, Asman.
- T. C. Carroll, Asman.
- R. A. Coombs, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted John F. Hesse

Transitman, United States ~~Deputy Surveyor~~, in surveying all those parts or portions of the Second Standard Parallel South, through Rg. 19 W.

of the Gila and Salt River meridian, Territory of Arizona, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for Arizona.

- A. N. Oliver, Chainman.
- A. E. Lyon, Chainman.
- J. H. Bates, Chainman  
Mountman.
- A. E. Beaumont, Chainman  
Mountman.
- T. C. Carroll, Asman.
- T. C. Carroll, Asman.
- R. A. Coombs, Flagman.

Subscribed and sworn to before me this 21st day of December 1910., 19

John F. Hesse  
U. S. Transitman



BOOK 2234

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, John F. Hesse, United States <sup>Transitman</sup> Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from United States Surveyor General for Arizona, bearing date of the day of January, 1911, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for Arizona, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the Second Standard Parallel South, through Rg. 19 W.

of the Gila and Salt River meridian, in the Territory of Arizona, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for Arizona and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

John F. Hesse  
United States Deputy Surveyor.  
Transitman

Subscribed by said John F. Hesse, and sworn to before me }  
this 78<sup>th</sup> day of January, 1911



Frank J. Ingalls  
U.S. Surveyor General

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Ariz. April 17, 1911.

The foregoing field notes of the survey of the Second Standard Parallel South through Range 19 West Gila and Salt River Base and Meridian, Arizona

executed by John F. Hesse, U.S. Transitman under his <sup>contract</sup> No. 1, dated August 25, 1910, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Frank J. Ingalls  
United States Surveyor General.

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

United States Surveyor General.