

Book A.

Accepted G.L.O. letter "E." dated Dec. 17, 1912.

# FIELD NOTES

2325

OF THE SURVEY OF THE

BOOK 2325

139

South and West Boundaries of T19S. R75E.

Of the Gila and Salt River Meridian,

In the State of Arizona

EXECUTED BY

John F. Hesse

Alfred N. Oliver

In the capacity of U.S. <sup>Assistant</sup> Surveyor, under instructions dated Aug 25, 1910, 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 9, 1910, pursuant to authority contained in the Act of Congress dated March 4, 1911.

Survey commenced July 21, 1911

Survey completed July 26, 1911

# INDEX DIAGRAM.

Township \_\_\_\_\_, Range \_\_\_\_\_

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BOOK 2325

# INDEX DIAGRAM.

Township 19 P, Range 75 E

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7	7	8	9	10	11	12
7	18	17	16	15	14	13
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	✓	✓	3	3	✓	✓

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BOOK 2325  
WE

PRELIMINARY OATHS OF ASSISTANTS.

J. H. Bates  
C. Y. Brown  
L. F. Bates, R. A. Coombs and

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 south and west boundaries of Tp. 19 S. Rg. 25 E.

J. H. Bates  
C. Y. Brown, Chainman.  
L. F. Bates  
R. A. Coombs, Chainman.

Subscribed and sworn to before me this 20th. day of July, 1911



John P. Hesse

U. S. Transitman.

WE, R. L. Bates and H. R. Harvey

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 the south and west boundaries of Tp. 19 S. Rg. 25 E.

R. L. Bates, Moundman.  
H. R. Harvey, Moundman.

Subscribed and sworn to before me this 20th. day of July, 1911



John P. Hesse

U. S. Transitman.

WE, E. E. Mills and E. Barnes

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 south and west boundaries of Tp. 19 S. Rg. 25 E.

E. E. Mills, Axman.  
E. Barnes, Axman.

Subscribed and sworn to before me this 22nd. day of July, 1911



John P. Hesse

U. S. Transitman.

I, We, Ralph Brown and P. B. Hilderbran

do solemnly swear that we will well and truly perform the duties of flagman according to instructions given us, to the best of our skill and ability, in the survey of the south and west boundaries of Tp. 19 S. Rg. 25 E.

Ralph Brown  
P. B. Hilderbran, Flagman.

Subscribed and sworn to before me this 20th. day of July, 1911



John P. Hesse

U. S. Transitman.

## South boundary of Tp. 19 S. Rg. 35 E.

Chains. Survey commenced July 21, 1911 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

I examine the adjustments of the transit, and correct the level and collimation errors; 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 the cor. of Tps. 19 and 20 S. Rgs. 35 and 36 E. latitude  $31^{\circ} 43' 47''$  N.; longitude  $109^{\circ} 45' 29''$  W.; I set off  $31^{\circ} 44'$  N. on the lat. arc;  $20^{\circ} 34\frac{1}{2}'$  N. on the decl. arc; and, at 5h. 00m. p.m., l.m.t., determine with the solar a meridian and mark a point thereof, on a stone firmly set in the ground 5 chs. N. of the cor.

At 11h. 36m. p.m., by my watch, which has correct l.m.t., I observe Polaris at eastern 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.

July 21, 1911.

July 22: At 6h. 30m. a.m., l.m.t., I lay off the azimuth of Polaris,  $1^{\circ} 23'$  to the west, and mark the meridian thus determined, by cutting a small groove in the stone set July 21, on which the meridian falls 0.2 ins. west of the mark determined by the solar.

At 7h. 00m. a.m., l.m.t., I set off  $31^{\circ} 44'$  N. on the lat. arc;  $20^{\circ} 27\frac{1}{2}'$  N. 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 0.2 ins. west of the meridian established by the Polaris observation.

The solar apparatus, by p.m., and a.m., observations, defines positions for meridians, respectively about  $0' 11''$  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 7h. 15m. a.m., is N.  $13^{\circ} 15'$  W.; the angle thus determined gives the mag. decl.  $13^{\circ} 15'$  E.

As the cor. of Tps. 19 and 20 S. Rg. 35 and 36 E. is nearly destroyed the post being badly rotted and the pits filled, I destroy all traces of this old cor. and re-establish it in the same place as follows:

Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of Tps. 19 and 20 S. Rgs. 35 and 36 E. marked on brass cap

T19S in N.

R26E in E.

T20S in S. and

R26E in W. half; and

S36 in N. W.

S31 in N. E.

S6 in S. E. and

S1 in S. W. quadrant; dig pits 24 x 24 x 12 ins. on each line N., E., and W., 4 ft. and S. of post 8 ft. dist.; and raise a mound of earth 5 ft. base  $2\frac{1}{2}$  ft. high, S. of cor.

Thence I run West on a random line, on the south bdy. of Tp. 19 S. Rg. 35 E., setting temp.  $\frac{1}{4}$  sec. and sec. cors. at intervals of 40.00 chs. and, at 495.70 chs. intersect the random west

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South boundary of Tr. 19 S. Rg. 25 E.

Chains. bdy. of Tr. 19 S. Rg. 25 E. and set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of Tps. 19 S. Rgs. 24 and 25 E. marked on brass cap T19S in N. R25E in E. and R24E in W. half; S36 in N. W. and S31 in N. E.

quadrant; and raise a mound of stone 3 ft. base 1 1/2 ft. high, S. of cor. Pits impracticable.

July 22, 1911.

July 25 : At 7h. 00m. a.m., l.m.t., I set off 31° 44' N. on the lat. arc; 19° 51' N. on the decl. arc; and determine a meridian with the solar at the cor. of Tps. 19 S. Rgs. 24 and 25 E.

Thence I run

Fast bet. secs. 6 and 31 marking and blazing true line. Over rolling land through dense brush.  
 40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for 1/4 sec. cor., marked on brass cap S31 in N. and S6 in S. half; and raise a mound of stone 3 ft. base 1 1/2 ft. high, N. of cor. Pits impracticable.  
 44.43 Cross road bears N. W. and S. E.  
 49.75 Cross wash 20 lks. wide course S.  
 55.25 Cross road bears N. E. and S. W.  
 57.03 Cross road bears N. and S.  
 74.39 Cross road bears N. W. and S. E.  
 76.71 Cross road bears N. W. and S. E.  
 79.75 Cross wash 20 lks. wide course S. E.  
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 5, 6, 31 and 32, marked on brass cap T19S in N. T20S in S. and R25E in W. half; and S31 in N. W. S32 in N. E. S5 in S. E. and S6 in S. W. quadrant: and raise a mound of stone 3 ft. base 1 1/2 ft. high, W. of cor. Pits impracticable. Land, rolling. Soil, rocky; 3rd. rate No timber Undergrowth, mesquite and oak brush.

Fast bet. secs. 5 and 32 Over rolling land through dense brush.  
 7.75 Cross road bears N. W. and S. E. and ascend.  
 20.00 Top of hill descend.  
 28.75 Foot of hill and over rolling land.

Cross road bears N. W. and S. E.  
 30.45 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for 1/4 sec. cor., marked on brass cap S32 in N. and S5 in S. half; dig pits 18 x 18 x 12 ins. E. and W. of post 3 ft. dist., and raise a mound of earth 3 1/2 ft. base 1 1/2 ft. high, N. of cor.  
 44.40 Cross wash 15 lks. wide course S. E.  
 46.05 Cross road bears N. W. and S. E.  
 48.07 Fence bears N. W. and S. E.  
 55.28 Fence bears N. W. and S. E.  
 59.75 Cross wash 100 lks. wide course S. E. and ascend.  
 63.75 Top of hill, descend.  
 66.25 Cross wash 5 lks. wide course S. E. ascend.  
 74.75 Top of hill descend.

## South boundary of Tr. 19 S. Rg. 25 E.

Chains.	
80.00	<p>Set an iron post 3 ft. long, 3 ins. diam., 34 ins. in the ground for cor. of secs. 4, 5, 32 and 33, marked on brass cap            T19S in N.            T20S in S. and            R25E in W. half; and            S32 in N. W.            S33 in N. E.            S4 in S. E. and            S5 in S. W. quadrant; and raise a mound of stone 2 ft. base <math>1\frac{1}{2}</math> ft. high, W. of cor. Pits impracticable.            Land, rolling and hilly.            Soil, rocky 3rd. rate.            No timber.            Undergrowth, mesquite and oak brush.</p>
<p>1.55            3.35            6.35            8.75            12.00            29.75            40.00</p>	<p>East bet. secs. 4 and 33            Descending through dense brush.            Cross wash 10 lks. wide course N. E. and ascend.            Top of hill descend.            Cross wash 15 lks. wide course N. E. and ascend.            Top of hill and descend.            Over rolling land.            Cross road bears N. and S.</p>
80.00	<p>Set an iron post 3 ft. long, 1 in. diam., 36 ins. in the ground for <math>\frac{1}{4}</math> sec. cor., marked on brass cap <math>\frac{1}{4}</math> S33 in N. and S4 in S. half; dig pits 18 x 18 x 12 ins. E. and W. of post 3 ft. dist., and raise a mound of earth <math>3\frac{1}{2}</math> ft. base <math>1\frac{1}{2}</math> ft. high, N. of cor.</p> <p>Set an iron post 3 ft. long, 3 ins. diam., 34 ins. in the ground for cor. of secs. 3, 4, 33 and 34, marked on brass cap            T19S in N.            T20S in S. and            R25E in W. half; and            S33 in N. W.            S34 in N. E.            S3 in S. E. and            S4 in S. W. quadrant; dig pits 18 x 18 x 12 ins. in each sec. <math>5\frac{1}{2}</math> ft. dist., and raise a mound of earth 4 ft. base 2 ft. high, W. of cor.            Land, rolling and hilly            Soil, W. 40.00 chs. rocky; 3rd. rate; E. 40.00 chs. loam mixed with gravel; coarse texture; dry; 2nd. rate.            No timber.            Undergrowth, mesquite and cactus.            July 25: At this cor. I set off <math>19^{\circ} 47\frac{1}{2}'</math> N. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is <math>31^{\circ} 44'</math> N.</p>
33.30	<p>East bet. secs. 3 and 34            Over rolling land, gradually descending, through dense brush.</p>
40.00	<p>Cross wash 35 lks. wide course N. E.            Set an iron post 3 ft. long, 1 in. diam., 36 ins. in the ground for <math>\frac{1}{4}</math> sec. cor., marked on brass cap <math>\frac{1}{4}</math> S34 in N. and S3 in S. half; dig pits 18 x 18 x 12 ins. E. and W. of post 3 ft. dist., and raise a mound of earth <math>3\frac{1}{2}</math> ft. base <math>1\frac{1}{2}</math> ft. high, N. of cor.</p>
80.00	<p>Set an iron post 3 ft. long, 3 ins. diam., 34 ins. in the ground for cor. of secs. 2, 3, 34 and 35, marked on brass cap            T19S in N.            T20S in S. and            R25E in W. half; and            S34 in N. W.</p>

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South boundary of Tp. 19 S. Rg. 25 E.

Chains.

S35 in N. E.  
 S2 in S. E. and  
 S5 in S. W. quadrant; dig pits 18 x 18 x 12 ins. in each  
 sec. 5 $\frac{1}{2}$  ft. dist., and raise a mound of earth 4 ft.  
 base 2 ft. high, W. of cor.  
 Land, rolling.  
 Soil, sandy loam mixed with gravel; coarse texture;  
 dry; 3rd. rate.  
 No timber.  
 Undergrowth, mesquite.

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 East bet. secs. 2 and 35  
 Over rolling land gradually descending through dense  
 brush.

3.43 Cross road bears N. and S.  
 10.35 Cross road bears N. W. and S. 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  $\frac{1}{4}$ S35 in  
 N. and S2 in S. 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.  
 52.37 Cross road bears N. W. and S. E.  
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in  
 the ground for cor. of secs. 1, 2, 35, and 36, marked on  
 brass cap  
 T19S in N.  
 T20S in S. and  
 R25E in W. half; and  
 S35 in N. W.  
 S36 in N. E.  
 S1 in S. E. and  
 S2 in S. W. quadrant; dig pits 18 x 18 x 12 ins. in  
 each sec. 5 $\frac{1}{2}$  ft. dist., and raise a mound of earth 4  
 ft. base 2 ft. high, W. of cor.  
 Land, rolling.  
 Soil, sandy loam mixed with gravel; coarse texture; dry;  
 2nd. rate.  
 No timber.  
 Undergrowth, mesquite.

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 East bet. secs. 1 and 36  
 Over nearly level land through dense brush.  
 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  $\frac{1}{4}$ S36 in  
 N. and S1 in S. 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.  
 50.03 Cross A. & E. R. R. bears N. and S.  
 58.82 Cross road bears N. and S.  
 77.21 Cross wash 18 lks. wide course S. E.  
 80.55 Cross road bears N. E. and S. W.  
 95.70 The cor. of Tps. 19 and 20 S. Rgs. 25 and 26 E. prev. descr.  
 Land, level.  
 Soil, sandy loam mixed with gravel; coarse texture; dry;  
 2nd. rate.  
 No timber.  
 Undergrowth, mesquite.

July 25, 1911.

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*John P. Hesse*  
*U. S. Pransitman*

Note: No cors. of the London claim could be found.



Chains

Survey commenced July 21, 1911 and executed with a W. and L.M. Gurley solar compass, not numbered. The horizontal limb is provided with two double verniers placed opposite to each other reading to single minutes of the arc, which is also the least count of the instrument. The verniers of the latitude and declination arcs.

The instrument was examined and approved by the Supervising Surveyor.

I examine the adjustments of the compass 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 the corner of Tps. 19 and 20 S., Rgs. 25 and 26 E. latitude 31 43' 47"N.; longitude 109 45' 29"W.; I set off 31 44' N. on the lat. arc; 20 34½' N. on the decl. arc and at 5h.00m. p.m. l.m.t., determine with the solar a meridian and mark a point thereof, on a stone firmly set in the ground 5 chs. N. of the cor.

At 1h.36m. p.m. l.m.t., by my watch, which has correct l.m.t., I observe Polaris at eastern elongation, in accordance with the 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.

July 21, 1911.

July 22; At 6h.30m. a.m. l.m.t., I lay off the azimuth of Polaris, 1 23' to the west, and mark the meridian thus determined, by cutting a small groove in the stone set July 21, on which the meridian falls 0.2 ins. W. of the mark determined by the solar.

At 7h.00m. a.m. l.m.t., I set off 31 44' N. on the lat. arc; 20 27½' N. 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 0.2 ins. W. of the meridian established by the Polaris observation.

The solar apparatus by p.m. and a.m. observations defines positions for meridians, respectively about 0' 11" E. and W. 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 7h.15m. a.m. l.m.t., is N. 13 15' W.; the angle thus determined gives the mag. decl. 13 15' E.

I commence at the corner of Tps. 19 and 20 S., Rgs. 24 and 25 E., a stone marked & wit. as described by the Sur. General. Thence I run,

South on a random line on West boundary of Tp. 19 S. Rg. 25 E., setting temp. ¼ sec. and sec. cors. at intervals of 40.00 chs. and at 485.52 intersect the south bdy. of Tp. 19 S. Rg. 25 E. at the cor. of Tps. 19 S. Rgs. 24 and 25 E., hereinbefore described.

July 22 & 24, 1911.

July 25, At 7h.00m. a.m. l.m.t., I set off 31 44' N. on the lat. arc; 19° 54' N. on the decl. arc and determine a meridian with the solar at the cor. of Tps. 19 S., Rgs. 24 and 25 E.

Thence I run

North bet. secs. 31 and 36, marking and blazing true line.

From this corner J.C. Henon's house bears N. 5° E.

R.R. Lockett's house bears N. 5 15' E.

Over rolling land.

14.10 Cross road,, bears N.E. and S.W.

26.40 Fence, bears E. and W.

37.44 Fence, bears E. and W.

37.58 Fence, bears E. and W.

40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the

## 6. West boundary of Township 19 South, Range 25 East.

Chains.

- ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}$  S 36 in W., and S 31 in E. half; dig pits 18x18x12 ins. N. and S. of cor. 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high, W. of cor.  
 From this cor., J.C. Henon's house bears S.  $88^{\circ}40'$  E.  
 R.R. Lockett's house bears S.  $34^{\circ}13'$  E.
- 56.30 Cross wash, 10 lks. wide, course E.  
 57.97 Fence brs. E. and W.  
 67.23 Fence, brs. E. and W.  
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 25, 30, 31 and 36, marked on brass cap,  
     T 19 S in N. half;  
     R 24 E, S 25 in NW.,  
     R 25 E, S 30 in NE.,  
     S 31 in SE., and  
     S 36 in SW. quadrant; dig pits, 18x18x12 ins. in each sec.  $5\frac{1}{2}$  ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high, W. of cor.  
 Land, rolling.  
 Soil, gravel, coarse, dry, 2nd rate.  
 No timber. No undergrowth.
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- North, bet. secs. 25 and 30.  
 Ascending through scattering brush.
- 11.00 Top of ridge, brs. E. and W.; descend.  
 20.30 Cross wash, 20 lks. wide, course NE.; ascend.  
 34.00 Top of ridge, brs. E. and W.; descend.  
 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  $\frac{1}{4}$  S 25 in W., and S 30 in E. half; from which,  
     An oak, 6 ins. diam., bears N.  $52\frac{3}{4}^{\circ}$  W., 92 lks. dist., marked T 19 S R 24 E  $\frac{1}{4}$  S 25 B T.  
     An oak, 6 ins. diam., bears S.  $58\frac{3}{4}^{\circ}$  E., 30 lks. dist., marked T 19 S R 25 E  $\frac{1}{4}$  S 30 B T.
- 52.35 Cross wash, 30 lks. wide, course NE.; ascend.  
 71.65 Top of ridge, brs. E. and W.; descend.  
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 19, 24, 25 and 30, marked on brass cap,  
     T 19 S in N. half;  
     R 24 E, S 24 in NW.,  
     R 25 E, S 19 in NE.,  
     S 30 in SE., and  
     S 25 in SW. quadrant; raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.  
 Land, mountainous.  
 Soil, rocky and worthless, 4th rate.  
 No timber.  
 Undergrowth, mesquite and oak brush.
- July 25: At this cor. I set off  $19^{\circ}47\frac{1}{2}'$  N. on the decl. arc, and observe the sun on the meridian at noon; the resulting lat. is  $31^{\circ}45\frac{1}{2}'$  N.
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- North bet. secs. 19 and 24.  
 Descending through scattering brush.
- 36.80 Cross wash, 15 lks. wide, course NE.; ascend.  
 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  $\frac{1}{4}$  S 24 in W. and S 19 in E. half; raise a mound of stone 2 ft base,  $1\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.
- 71.50 Top of ridge, brs. E. and W.; descend.  
 78.30 Cross wash, 10 lks. wide, course NE.; ascend.  
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 13, 18, 19 and 24, marked on brass cap,  
     T 19 S in N. half;  
     R 24 E, S 13 in NW.,  
     R 25 E, S 18 in NE.,  
     S 19 in SE., and  
     S 24 in SW. quadrant; raise a mound of stone 2 ft. base

West boundary of Township 19 South, Range 25 East. 7.

Chains.

1½ ft. high, W. of cor. Pits impracticable.  
 Land, mountainous.  
 Soil, rocky and worthless, 4th rate.  
 No timber.  
 Undergrowth, mesquite and oak brush.

July 25, 1911.

July 26: At 7h.00m.a.m., l.m.t., I set off 31°46½'N. on the lat. arc; 19°38'N. on the decl. arc, and determine a meridian with the solar at the cor. of secs. 13, 18, 19 and 24.

Thence I run North bet. secs. 13 and 18.

Ascending through dense brush.

5.70 Top of ridge, brs. E. and W.; descend.  
 12.00 Cross wash, 15 lks. wide, course NE.; ascend.  
 14.85 Top of ridge, bears NE. and SW.; descend.  
 32.55 Cross wash, 10 lks. wide, course NE.; ascend.  
 37.60 Top of ridge, brs. NE. and SW.; descend.  
 40.00 Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in the ground for ¼ sec. cor., marked on brass cap ¼ S 13 in W. and S 18 in E. half; raise a mound of stone 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.  
 42.55 Cross wash, 15 lks. wide, course NE.; ascend.  
 46.70 Top of ridge, bears E. and W.; descend.  
 51.20 Cross wash, 15 lks. wide, course E.  
 59.35 Cross wash, 20 lks. wide, course E.; ascend.  
 72.40 Top of ridge, brs. E. and W.; descend.  
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 7, 12, 13 and 18, marked on brass cap,  
 T 19 S in N. half;  
 R 24 E S 12 in NW.,  
 R 25 E, S 7 in NE.,  
 S 18 in SE., and  
 S 13 in SW. quadrant; raise a mound of stone 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.

Land, mountainous.

Soil, rocky and worthless, 4th rate.

No timber.

Undergrowth, mesquite and oak brush.

North, bet. secs. 7 and 12.

Descending through dense brush.

22.15 Cross wash, 25 lks. wide, course E.  
 35.00 Cross road, brs. NW. and SE.  
 40.00 Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in the ground for ¼ sec. cor., marked on brass cap, ¼ S 12 in W. and S 7 in E. half; dig pits 18x18x12 ins. N. and S. of cor. 3 ft. dist., and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.  
 45.90 Cross wash, 30 lks. wide, course E.; ascend.  
 54.24 Top of ridge, brs. NE. and SW.; descend.  
 77.34 Cross wash, 40 lks. wide, course E.; ascend.  
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 1, 6, 7 and 12, marked on brass cap, T 19 S in N. half;  
 R 24 E, S 1 in NW.,  
 R 25 E, S 6 in NE.,  
 S 7 in SE., and  
 S 12 in SW. quadrant; dig pits 18x18x12 ins. in each sec. 5½ ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high, W. of cor.

Land, mountainous.

Soil, rocky and worthless, 4th rate.

No timber.

Undergrowth, mesquite and oak brush.

July 26: At this cor. I set off 19°34½'N. on the decl. arc, and observe the sun on the meridian at noon; the resulting lat. is 31°48'N.

8. West Boundary of Tp. 19 S. Rg. 25 E.

Chains. North bet. secs. 1 and 6  
 Ascending gradual slope, through dense brush.  
 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  $\frac{1}{4}$  S1 in W. and S6 in E. half; raise a mound of stone 2 ft. base, 1  $\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.  
 64.09 Top of ridge, bears E. and W., descend.  
 71.28 Cross wash 50 lks. wide, course N.E., ascend.  
 85.52 Intersect N. bdy. of Tp. 19 S. Rg 25 E. at the cor. of Tps. 18 and 19 S., Rgs. 24 and 25 E., as described by the Surveyor General.  
 Land, mountainous.  
 Soil, rocky and worthless, 4th rate.  
 No timber.  
 Undergrowth, mesquite and oak brush.

July 26, 1911.

*Alfred N. Oliver*

U.S. Transitman.

General Description.

The western part of this township is very rough and mountainous while in the east it is nearly level. There is no water or timber in the township. Copper is found in the western part.

Boundaries of Township 19 South, Range 25 East.

Latitudes, departures, and closing errors.

Line Designated.	True bearing.	Distance.	Latitudes.		Departures.	
			N.	S.	E.	W.
South Bdy.	East,	495.70			495.70	
East "	N.2°05'W.	400.00	399.74			14.54
East "	N.2°17'W.	40.05	40.02			1.59
" "	N.2°51'W.	47.51	47.45			2.36
North Bdy.	S.89°47'W.	40.09		.15		40.09
North "	S.89°41'W.	40.03		.22		40.03
North "	S.89°46'W.	40.00		.16		40.00
North "	S.89°44'W.	40.02		.19		40.02
North "	S.89°46'W.	40.04		.16		40.04
North "	S.89°47'W.	40.04		.15		40.04
North "	S.89°41'W.	40.04		.22		40.04
North "	S.89°42'W.	80.01		.42		80.01
North "	S.89°37'W.	39.93		.27		39.93
North "	S.89°45'W.	40.00		.18		40.00
North "	S.89°31'W.	36.03		.30		36.03
West "	South,	485.52		485.52		
Convergency,						.45
Totals,			487.21	487.94	495.70	495.17
				487.21	495.17	
Errors in lat.,			.73		.53	
Error in dep.,						

*Assistant*  
FINAL OATHS OF ~~DEPUTY SURVEYOR~~ AND HIS ASSISTANTS. 9  
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LIST OF NAMES.

BOOK 2325

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

Transitman  
Deputy Surveyor, 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 south and west boundaries of Tp. 19 S. Rg. 25 E.

showing the respective capacities in which they acted:

J. H. Bates C. Y. Brown, Chainman.

L. F. Bates R. A. Coombs, Chainman.

R. L. Bates H. R. Harvey, Moundman.

E. E. Mills, Axman.

E. Barnes, Axman.

P. B. Hilderbran Ralph Brown., Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted John F. Hesse and Alfred N. Oliver

Transitmen  
Deputy Surveyor, United States ~~Deputy Surveyor~~, in surveying all those parts or portions of the south and west boundaries of Tp. 19 S. Rg. 25 E.

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

J. H. Bates C. Y. Brown, Chainman.

L. F. Bates R. A. Coombs., Chainman.

R. L. Bates., Moundman.

H. R. Harvey, Moundman.

E. E. Mills, Axman.

E. Barnes, Axman.

Ralph Brown P. B. Hilderbran, Flagman.

Subscribed and sworn to before me this 26th.

day of July, 19 11

John F. Hesse

U. S. Transitman



18210  
BOOK 2325

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

*Signatures*

Transitmen

I, We, John F. Hesse and Alfred N. Oliver, United States Deputy Surveyor, do solemnly swear that, in pursuance of <sup>instructions</sup> a contract received from *Frank S. Ingalls* United States Surveyor General for *Arizona* bearing date of the *25th* day of *August*, 19*10*, 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 south and west boundaries of Tp. 19 S. Rg. 25 E.*

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*  
*Alfred N. Oliver*

United States Deputy Surveyor  
Transitmen

Subscribed by said *John F. Hesse*, and sworn to before me

this *18th* day of *July*, 19*12* and

by said *Alfred N. Oliver* Aug. 2, 19*12* *Frank S. Ingalls*



U. S. SURVEYOR GENERAL OF ARIZONA

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

*Francis A. King* Aug. 3, 19*12*

The foregoing field notes of the survey of *the South and West*

*Boundaries of T19S. R25E.*

executed by *John F. Hesse* and *Alfred N. Oliver* under his contract No. *5*, dated *August 25*, 19*10*, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

*Frank S. Ingalls*  
United States 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.

United States Surveyor General.