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Book F

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*Filing authorized, Letter E. 9/31/1910.*

BOOK ~~2186~~ 2186

# FIELD NOTES

Re-  
OF THE SURVEY OF THE

2186

Fourth and Fifth Standard Parallels North

2186

2186

Of the Gila and Salt River Meridian,

Territory of Arizona

AS SURVEYED BY

Alfred N. Oliver, United States Deputy Surveyor,

Under his Contract No. 153, dated November 19, 1908., 190

Survey commenced May 16, 1909., 190

Survey completed June 28, 1909., 190

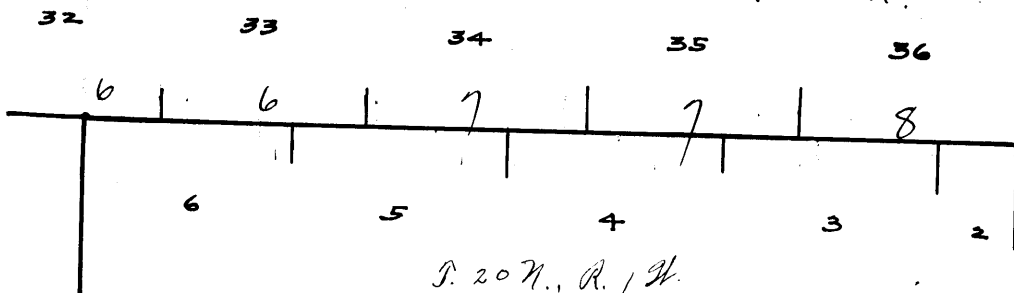
2186

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2186



T. 21 N., R. 1 W.  
5th Standard Parallel North.



T. 20 N., R. 1 W.

INDEX DIAGRAM.

BOOK 2186

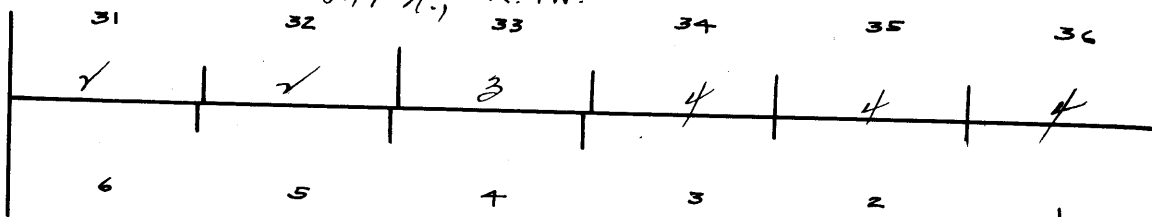
Township \_\_\_\_\_, Range \_\_\_\_\_

6	5	4	3	2	1
7	8	9	10	11	12
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BOOK 2186

4th Standard Parallel North.  
T. 17 N., R. 1 W.



T. 16 N., R. 1 W.

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PRELIMINARY OATHS OF ASSISTANTS.

WE, ~~Fred W. Rodolf, Will W. Shawk and Archie Johnston and Fred Keel~~  
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 4th. and 5th. Standard Parallels North

*Will W. Shawk*, Chainman.  
*Archie Johnston*, Chainman.

Subscribed and sworn to before me this 16th.  
day of May 1909., 190

*Fred Keel*  
*Fred W. Rodolf*  
*Alfred N. Oliver*  
U.S. Deputy 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 \_\_\_\_\_, 190



WE, I. W. R. Johnston 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 ~~me~~ to the best of ~~my~~ skill and ability, in the survey of  
the 4th. and 5th. Standard Parallels North

*I. W. R. Johnston*, Axman.  
\_\_\_\_\_, Axman.

Subscribed and sworn to before me this 16th. }  
day of May 1909., 190

*Alfred N. Oliver*  
U.S. Deputy Surveyor

I, R. R. Lane, 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 4th. and 5th. Standard Parallels North

*R. R. Lane*, Flagman.

Subscribed and sworn to before me this 16th. }  
day of May 1909., 190

*Alfred N. Oliver*  
U.S. Deputy Surveyor



## Fourth Standard Parallel North, through Rg. 1 W.

Chains.

Survey commenced May 16, 1909 and executed with a Young and Sons light mountain transit, No. 7532, 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, tested on the true meridian at Phoenix found correct and was approved by the surveyor general 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 station at my camp, which is about one mile south of the standard cor. of Tps. 17 N. Rgs. 1 E. and 1 W. and which is marked by a stone set firmly in the ground and marked with a cross on top; latitude  $34^{\circ} 48' 1/2''$  N. longitude  $112^{\circ} 19'$  W. I set off  $34^{\circ} 48' 1/2''$  N. on the lat. arc;  $19^{\circ} 11' 1/2''$  N. on the decl. arc; and, at 6h. 00m., p.m., l.m.t., determine with the solar a meridian and mark a point thereof, on a stone set firmly in the ground, 5 chs. N. of my station.

May 16, 1909

May 17: At 3h. 52 $\frac{1}{2}$ <sup>m</sup> a.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.

At 5h. 30m. a.m., l.m.t., I lay off the azimuth of Polaris,  $1^{\circ} 26'$  to the west, and mark the meridian thus determined, by cutting a small groove in the stone set May 16, on which the meridian coincides with the mark determined by the solar.

At 6h. 00m., a.m., l.m.t., I set off  $34^{\circ} 48' 1/2''$  N. on the lat. arc;  $19^{\circ} 18'$  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 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 observations; therefore I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 6h. 15m. a.m. is  $14^{\circ} 50'$  E.; the angle thus determined gives the mag. decl.  $14^{\circ} 50'$  E.

I commence at the standard cor. of Tps. 16 and 17 N. Rgs. 1 E. and 1 W. which has been previously described  
Thence I run

West on a random line along the south boundary of Tp. 17 N. Rg. 1 W.

- 40.49 Fall 107 lks. N. of old standard  $\frac{1}{4}$  sec. cor.  
Thence from standard  $\frac{1}{4}$  sec. cor. I run west
- 39.74 Fall 49 lks. S. of old standard cor. of secs. 35 and 36  
Thence from standard cor. of secs. 35 and 36 I run west
- 40.09 Fall 80 lks. S. of Standard  $\frac{1}{4}$  sec. cor.  
Thence I run west from standard  $\frac{1}{4}$  sec. cor.
- Find no cors. until at
- 160.32 Fall 281 lks. S. of the standard  $\frac{1}{4}$  sec. cor. on the S. bdy. of sec. 33.  
Thence from standard  $\frac{1}{4}$  sec. cor. I run west.
- 40.15 Fall 72 lks. S. of the standard cor. of secs. 32 and 33.  
Thence I run west from standard cor. of secs. 32 and 33
- 39.33 Fall 14 lks. N. of standard  $\frac{1}{4}$  sec. cor.

## Fourth Standard Parallel North. Through Rgs. 1 W.

- Chains. Thence from standard  $\frac{1}{4}$  sec. cor. I run west  
 40.70 Fall 30 lks. S. of standard cor. of secs. 31 and 32.  
 Thence from standard cor. of secs. 31 and 32 I run west  
 40.30 Fall 43 lks. S. of standard  $\frac{1}{4}$  sec. cor.  
 Thence I run west from standard  $\frac{1}{4}$  sec. cor.  
 39.97 Fall 165 lks. S. of the standard cor. of Tps. 17 N. Rgs.  
 1 and 2 West.

May 17, 1909.

May 18: At 6h. 00m. a.m., l.m.t., I set off  $34^{\circ} 49' 1/2''$  N. on the lat. arc;  $19^{\circ} 31' 1/2''$  N. on the decl. arc; and determine a meridian with the solar at the standard cor. of Tps. 17 N. Rgs. 1 and 2 W., which is a granite stone  $32 \times 16 \times 8$  ins. marked and witnessed as described by the surveyor general, as the stone is cracked and the marks are faint I reestablish this cor. as follows; Set a quartzite stone  $24 \times 10 \times 8$  ins. 18 ins. in the ground for standard cor. of Tps. 17 & 18 N. Rgs. 1 and 2 W. marked SCON N., with 6 grooves on N., E., and W. faces; and raise a mound of stone 2 ft. base 2 ft. high N. of cor. Pits impracticable.

Thence I run

S.  $87^{\circ} 38'$  E. on S. bdy. of sec. 31.

2.00 Ascending rough W. slope over granite boulders.  
 30.00 Ridge bears N. and S. and descend.

Difference between measurements of 40.00 chs. by two sets of chainmen is 6 lks.; position of middle point

By 1st. set 40.03 chs.

By 2nd. set 39.97 chs.; the mean of which is

40.00 The standard  $\frac{1}{4}$  sec. cor. on the S. bdy. of sec. 31, I reestablish as follows; set a granite stone  $30 \times 8 \times 6$  ins. 22 ins. in the ground for standard  $\frac{1}{4}$  sec. cor. marked O9SC  $\frac{1}{4}$  on N. face; and raise a mound of stone 2 ft. base  $1 \frac{1}{2}$  ft. high N. of cor. Pits impracticable.

Thence from  $\frac{1}{4}$  sec. cor.

S.  $89^{\circ} 23'$  E.

43.50 Leave boulders.

47.60 Road bears N. and S., and over level land.

50.50 Drain 5 lks. wide course N. W., and ascend rough W. slope over large granite boulders.

68.25 Ridge bears N. and S. and descend.

Difference between measurements of 80.30 chs. by two sets of chainmen is 10 lks.; position of middle point

By 1st. set 80.35 chs.

By 2nd. set 80.25 chs.; the mean of which is

80.30 The standard cor. of secs. 31 and 32 a limestone  $10 \times 8 \times 6$  ins. above ground firmly set, marked and witnessed as described by the surveyor general.

Land, rough and mountainous, and level.

Soil, rocky and sandy; 2nd. and 4th rate.

No timber.

Mountainous land covered with boulders, exceptionally difficult to survey, 73.30 chs.

S.  $89^{\circ} 34'$  E. on S. bdy. of sec. 32.

6.40 Descend along N. E. slope, covered with loose rock.

Cross Granite Creek, dry, 100 lks. wide course N. W. and over level land.

26.75 Cross drain 5 lks. wide course S. W. and ascend W. slope over loose rocks.

30.00 Along N. slope.

Difference between measurements of 40.70 chs. by two sets of chainmen is 4 lks.; position of middle point

By 1st. set 40.72 chs.

By 2nd. set 40.68 chs.; the mean of which is

40.70 Old standard  $\frac{1}{4}$  sec. cor. As the stone is poorly set, and the marks nearly gone I destroy this cor. and in the same place set a granite stone  $20 \times 12 \times 6$  ins. 15 ins.

## Fourth Standard Parallel North, through Rg. 1 W.

Chains	
	in the ground for standard $\frac{1}{4}$ sec. cor. Marked 09SC $\frac{1}{4}$ on N. face; from which A cedar 15 ins. diam., bears N. 5° W. 268 lks. dist., marked 09SC $\frac{1}{4}$ S32BT. No other tree available. Raise a mound of stone 2 ft. base 1 1/2 ft. high N. of cor. Pits impracticable. Thence from standard $\frac{1}{4}$ sec. cor I run N. 89° 48' E.
45.00	Ridge bears N. and S. and descend.
60.00	Change to S. W. slope.
70.00	Along on top of ridge.
	Difference between measurements of 80.03 chs. by two sets of chainmen is 6 lks.; position of middle point By 1st. set 80.06 chs. By 2nd. set 80.00 chs.; the mean of which is
80.03	The standard cor. of secs. 32 and 33, a granite stone poorly set and poorly marked. I destroy this cor. and in the same place set a granite stone 20 x 10 x 6 ins. 15 ins. in the ground for standard cor. of secs. 32 and 33 marked 09SC on N. with 4 grooves on E. and 2 grooves on W. faces; and raise a mound of stone 2 ft. base 1 1/2 ft. high N. of cor. Pits impracticable Land, level, rough and mountainous. Soil, stony, 4th. rate. Timber, a very few cedars. Mountainous land covered with loose rocks, exceptionally difficult to survey 59.68 chs.
	S. 89° 58' E. along S. bdy. of sec. 33. Along on top of ridge over loose rocks.
3.80	Descend E. slope.
10.00	Cross drain 5 lks. wide course N. W. and ascend.
13.50	Descend, ridge bears N. and S.
31.25	Cross drain 5 lks. wide course S. E.
32.00	Cross drain 5 lks. wide course S. W. and ascend S. W. slope. Difference between measurements of 40.16 chs. by two sets of chainmen is 8 lks.; position of middle point By 1st. set 40.20 chs. By 2nd. set 40.12 chs.; the mean of which is
40.16	The standard $\frac{1}{4}$ sec. cor. which I destroy and in the same place set a limestone 20 x 10 x 8 ins. 15 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked 09SC $\frac{1}{4}$ on N. face dig pits 18 x 18 x 12 ins., E. and W. of stone 3 ft. dist., and raise a mound of earth 3 1/2 ft. base 1 1/2 ft. high N. of cor. Thence from standard $\frac{1}{4}$ sec. cor I run S. 89° E.
45.00	Descend S. E. slope. Difference between measurements of 80.25 chs. by two sets of chainmen is 10 lks.; position of middle point By 1st. set 80.30 chs. By 2nd. set 80.20 chs.; the mean of which is
80.25	Set a malpais stone 16 x 10 x 6 ins. 11 ins. in the ground for standard cor. of secs. 33 and 34, marked 09SC on N. with 3 grooves on E. and W. faces; dig pits 24 x 18 x 12 ins. crosswise on each line, E. and W. 3 ft. and N. of stone 7 ft. dist.; and raise a mound of earth 4 ft. base 2 ft. high N. of cor. Land, mountainous, and rolling Soil, stony 3rd. rate. No timber. Mountainous land covered with loose rocks, exceptionally difficult to survey 40.16 chs. At this cor. I set off 19° 32' 1/2' N. on the decl arc; and observe the sun on the meridian at noon May 18; the resulting lat. is 34° 49' 1/2' N.

## Fourth Standard Parallel North through Rg. 1 W.

Chains.	
	S. 89° E. on S. bdy. of sec. 34. Over level land.
	Difference between measurements of 40.09 chs. by two sets of chainmen is 2 lks., position of middle point, By 1st. set 40.10 chs. By 2nd. set 40.08 chs.; the mean of which is
40.09	Point for standard $\frac{1}{4}$ sec. cor. falls in wash 15 lks. wide
39.09	course S. W. so I measure back one chain and at Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked <sup>MC</sup> 09SC $\frac{1}{4}$ on N. face; and raise a mound of stone 2 ft. base 1 1/2 ft. high N. of cor. Pits impracticable.
42.50	Cross road bears N. E. and S. W. over rolling land.
60.00	Enter cedar timber, and dense brush.
77.00	Leave timber and brush.
	Difference between measurements of 80.18 chs. by two sets of chainmen is 6 lks.; position of middle point By 1st. set 80.21 chs. By 2nd. set 80.15 chs.; the mean of which is
80.18	Set a limestone 24 x 12 x 4 ins. 18 ins. in the ground for standard cor. of secs. 34 and 35, marked 09SC on N. with 2 grooves on E. and 4 grooves on W. faces; dig pits 24 x 18 x 12 ins., crosswise on each line, E. and W., 3 ft. and N. of stone 7 ft. dist.; and raise a mound of earth 4 ft. base 2 ft. high N. of cor. Land, level and rolling. Soil, stony 2 nd. rate. Timber cedar. Land covered with heavy timber, 17.00 chs. <i>Exceptionally difficult to Survey</i>
	<hr/>
	S. 89° 00' E. on S. bdy. of sec. 35. Over rolling land.
10.70	Cross drain 5 lks. wide course S. W.
39.80	Cross drain 5 lks. wide course S. W.
	Difference between measurements of 40.09 chs. by two sets of chainmen is 4 lks.; position of middle point By 1st. set 40.11 chs. By 2nd. set 40.07 chs.; the mean of which is
40.09	Set a malpais 18 x 10 x 6 ins. 12 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked 09SC $\frac{1}{4}$ on N. face; dig pits 18 x 18 x 12 ins. E. and W. of stone 3 ft. dist., and raise a mound of earth 3 1/2 ft. base 1 1/2 ft. high N. of cor.
	Thence ascend over rolling mountainous land. S 88° 51' E. Difference between measurements of 80.19 chs. by two sets of chainmen is 8 lks. position of middle point By 1st. set 80.23 chs. By 2nd. set 80.15 chs.; the mean of which is
80.19	The standard cor. of secs. 35 and 36 which I destroy and in the same place set a limestone 24 x 12 x 4 ins. 18 ins. in the ground for. standard cor. of secs. 35 and 36 marked 09SC on N., with 1 groove on E. and 5 grooves on W. faces; and raise a mound of stone 2 ft. base 1 1/2 ft. high N. of cor. Pits impracticable. Land, rolling and mountainous. Soil, sandy and stony; 3rd and 4th rate. No timber. Mountainous land, 40.10 chs.
	<hr/>
	S. 89° 18' E. on S. bdy. of sec. 36
16.50	Ascend W. slope of mountain covered with loose rocks. Top of spur, bears N. and S. and descend along N. E. slope.
27.00	Ascend steep W. slope. Difference between measurements of 39.74 chs. by two sets of chainmen is 8 lks.; position of middle point By 1st. set 39.78 chs. By 2nd. set 39.70 chs.; the mean of which is



## Fourth Standard Parallel North through Rg. 1 W.

Chains.	
39.74	The standard $\frac{1}{4}$ sec. cor. on the S. bdy. of sec. 36 marked and witnessed as described by the surveyor general. A malpais stone 12 x 12 x 8 ins. above a mound of stone 3 ft. base 1 ft. high. Thence from standard $\frac{1}{4}$ sec. cor. I run N. 88° 29' E.
60.00	Descend steep rough S. E. slope through scattering timber.
76.50	Cross wash 10 lks. wide course S. and ascend steep W. slope. Difference between measurements of 80.24 chs. by two sets of chainmen is 12 lks.; position of middle point By 1st. set 80.30 chs. By 2nd. set 80.18 chs.; the mean of which is
80.24	The standard cor. of Tps. 17 N. Rgs. 1 E. and 1 W. previously described. Land, rough and mountainous. Soil, rocky; 4th. rate. Timber, cedar. Mountainous land, covered with loose rocks, exceptionally difficult to survey 80.24 chs.

May 18, 1909.

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*Alfred N. Oliver*  
U. S. Deputy Surveyor.

## Fifth Standard Parallel North, through Range 1 W.

chains.	
	<p>June 28; At 6h.00m., a.m., l.m.t., I set off <math>35^{\circ} 10' N.</math> on the lat. arc; <math>23^{\circ} 20, 1/2' N.</math> on the decl. arc and determine a meridian with the solar at the closing cor. for. Tps. 20., Rs. 1 and 2 W., previously set by me.</p> <p>Thence I run</p> <p>East along N. bdy. of sec. 6.</p> <p>Over level land covered with loose rocks</p>
15.80	<p>Road, bears N. and S.</p> <p>Difference bet. measurements of 29.53 chs. by two sets of chainmen is 4 lks., position of middle point</p> <p>By 1st set, 29.55 chs.,</p> <p>By 2nd set, 29.51 chs., the mean of which is</p>
29.53	<p>Fall 21 lks. S. of Old standard cor. for secs. 32 and 33 which I destroy and in the same place set a malpais stone <math>18 \times 10 \times 8</math> ins., 12 ins. in the ground, for standard cor. of sec. 32 and 33., marked 09 SC on N. face, with 4 grooves on E., and 2 grooves on W. face; from which</p> <p>A cedar 28 ins. diam., bears <math>N 40^{\circ} E.</math> 407 lks. dist., marked 09 SC T 21 N R 1 W S 33 RT.</p> <p>A cedar limb 8 ins. diam., bears <math>N 25^{\circ} W.</math> 220 lks. dist marked; 09 SC T 21 N R 1 W S 32 RT.</p> <p>Course back to closing cor. <math>S 89^{\circ} 33' W.</math> 29.53 chs.</p> <p>Land, level.</p> <p>Soil, rocky; 4th rate.</p> <p>timber, scattering cedar.</p> <p>Land covered with loose rocks, 29.53 chs.</p>
	<p>East along S. bdy. of secs. 33.</p> <p>Over level land covered with loose rocks, thru scattering timber.</p>
11.00	<p>Thru dense timber and underbrush.</p> <p>Difference between measurements of 40.15 chs by two sets of chainmen is 10 lks., position of middle point</p> <p>By 1st set 40.20 chs.</p> <p>By 2nd set, 40.10 chs., the mean of which is</p>
40.15	<p>Fall 22 lks. S. of standard <math>\frac{1}{4}</math> sec. cor., which I destroy and in the same place set a malpais stone, <math>20 \times 7 \times 5</math> ins., 15 ins. in the ground, for standard <math>\frac{1}{4}</math> sec. cor., marked 09 SC <math>\frac{1}{4}</math> on N. face; from which</p> <p>A cedar 14 ins. diam., bears <math>N 80^{\circ} E.</math> 72 lks., dist., marked; 09 SC <math>\frac{1}{4}</math> S 33 RT.</p> <p>A cedar 12 ins. diam., bears <math>N 43^{\circ} W.</math> 39 lks. dist., marked; 09 SC <math>\frac{1}{4}</math> S 33 RT.</p> <p>Course of this half mile is <math>N 89^{\circ} 41' E.</math> 40.15 chs.</p> <p>East from Standard <math>\frac{1}{4}</math> sec. cor.</p> <p>Cor No. 2 of Tract No 38. bears S. 9 lks.</p>
51.94	<p>Asc, over loose rocks.</p>
60.00	<p>Difference between measurements of 80.32 chs. by two sets of chainmen is 8 lks., position of middle point</p> <p>By 1st set, 80.36 chs.,</p> <p>By 2nd set, 80.28 chs., the mean of which is</p>
80.32	<p>Fall 30 lks. N. of old standard cor. of secs. 33 and 34., which I destroy and in the same place set a malpais stone, <math>32 \times 10 \times 5</math> ins., 24 ins. in the ground, for standard cor. of secs. 33 and 34., marked 09 SC on N., with 3 grooves on E. and W. faces; from which</p> <p>A cedar limb 7 ins. diam., bears <math>N 33^{\circ} E.</math> 50 lks. dist. marked; 09 SC T 21 N R 1 W S 34 RT.</p> <p>A cedar limb 6 ins. diam., bears <math>N 52^{\circ} W.</math> 91 lks. dist. marked; 09 SC T 21 N R 1 W S 33 RT.</p> <p>Course of this half mile is <math>S 89^{\circ} 34' E.</math> 40.17 chs.</p> <p>Land, level and mountainous.</p> <p>Soil, rocky; 4th rate.</p> <p>timber, cedar.</p> <p>Underbrush, cedar.</p> <p>Land covered with loose rocks, 11.00 chs.</p> <p>Land covered with loose rocks and dense timber and underbrush, exceptionally difficult to survey, 69.32 chs.</p>

## Fifth Standard Parallel North through Rg. 1 West.

chains.	East along S. bdy. of sec. 34. Ascend over loose rocks thru dense timber and underbrush. Difference between measurements of 40.35 chs. by two sets of chainmen is 10 lks.; position of middle point By 1st. set, 40.40 chs. By 2nd set, 40.30 chs., the mean of which is
40.35	Fall 62 lks. N. of old standard $\frac{1}{4}$ sec. cor. which I destroy and in the same place set a malpais stone, 16X8X6 ins., 11 ins. in the ground, for standard $\frac{1}{4}$ sec. cor., marked 09 SC $\frac{1}{4}$ on N. face, from which A cedar 14 ins. diam., bears N 81° E. 68 lks. dist., marked; 09 SC $\frac{1}{4}$ S 34 RT. A cedar 24 ins. diam., bears N 37° W. 184 lks. dist., marked; 09 SC $\frac{1}{4}$ S 34 RT. Course of this half mile is S 89° 07' E., 40.35 chs.
52.52	East from Standard $\frac{1}{4}$ sec. cor. Cor No. 1 of Tract No. 38 bears S. 2 lks. Difference between measurements of 81.01 chs. by two sets of chainmen is 12 lks., position of middle point By 1st. set, 81.07 chs. By 2nd set, 80.95 chs., the mean of which is
81.01	Fall 8 lks. N. of old Standard cor. of secs. 34 and 35, which I destroy and in the same place set a malpais stone, 18X12X8 ins., 12 ins. in the ground, for standard cor. of secs. 34 and 35, marked 09 SC on N., with 2 grooves on E., and 4 grooves on W. face; from which A cedar 12 ins. diam., bears N 82° E. 22 lks. dist., marked; 09 SC T 21 N R 1 W S 35 RT. A cedar 12 ins. diam., bears N 53° W. 49 lks. dist., marked; 09 SC T 21 N R 1 W S 34 RT. Course of this half mile is S 89° 53' E. 40.66 chs.
	Land, mountainous. Soil, rocky; 4th rate. Timber, cedar. Underbrush, cedar. Mountainous land covered with loose rocks and dense timber and underbrush, exceptionally difficult to survey, 81.01 chs. June 28; At this cor. I set off 23° 18' N. on the decl. arc and observe the sun on the meridian at noon; the resulting lat. is 35° 10' N.
35.00	East along S. bdy. of sec. 35. Ascending over loose rocks thru dense timber and underbrush. Top of high hill. Desc. steep slope over loose rocks. Difference between measurements of 40.55 chs. by two sets of chainmen is 12 lks.; position of middle point By 1st. set, 40.61 chs. By 2nd set, 40.49 chs., the mean of which is
40.55	Fall 42 lks. N. of old standard $\frac{1}{4}$ sec. cor., which I destroy and in the same place set a malpais stone, 16X12X8 ins., 11 ins. in the ground, for standard $\frac{1}{4}$ sec. cor., marked 09 SC $\frac{1}{4}$ on N. face; from which A cedar 6 ins. diam., bears N 55° E. 55 lks. dist., marked; 09 SC $\frac{1}{4}$ S 35 RT. A cedar 6 ins. diam., bears N 5° W. 29 lks., dist., marked; 09 SC $\frac{1}{4}$ S 35 RT. Course of this half mile is S 89° 24' E., 40.55 chs.
47.80	Wash, 20 lks. wide, course SW. Asc. steep slope over loose rocks.
57.08	Cor. No. 2 of Tract No. 37 bears N 10 lks. Difference between measurements of 80.78 chs. by two sets of chainmen is 14 lks., position of middle point By 1st set, 80.71 chs. By 2nd set, 80.85 chs., the mean of which is
80.78	Fall 23 lks. S. of old standard cor. of secs. 35 and 36, which I destroy and in the same place set a malpais stone, 28X10X8 ins., 21 ins. in the ground, for standard cor.

## Fifth Standard Parallel North through Rg.1 W.

chains

of secs.35 and 36,marked 09 SC on N.,with 5 grooves on W.,and 1 groove on E. face; from which

A cedar 8ins.diam.,bears N 42°30'E. 286 lks.dist., marked; 09 SC T 21 N R 1 W S 36 RT.

A cedar 4ins.diam.,bears N 12°45'W. 181 lks.,dist. marked; 09 SC T 21 N R 1 W S 35 RT.

Course of this half mile is N 89°40'E.,40.23 chs.

Land,mountainous.

Soil,rocky; 4th rate.

Timber,cedar.

Underbrush,cedar.

Mountainous land covered with loose rocks and dense timber and underbrush,Exceptionally difficult to survey,80.78 chs.

East along S. bdy.of sec.36.

Asecd steep slope over loose rocks thru dense timber and underbrush.

34.30 Drain,course SW. Asc.steep slope over loose rocks.

Difference between measurements of 40.50 chs.by two sets of chainmen is 12 lks.,position of middle point,

By 1st.set,40.56 chs.

By 2nd.set,40.44 chs.,the mean of which is

40.45 Fall 194 lks.N.of standard  $\frac{1}{4}$  sec.cor.which I destroy and in the same place set a malpais stone,16X10X6ins., 11ins.in the ground,for standard  $\frac{1}{4}$  sec.cor.,marked; 09 SC  $\frac{1}{4}$  on N.face; from which

A juniper 30ins.diam.,bears N 53°30'E. 81 lks.dist marked; 09 SC  $\frac{1}{4}$  S 36 RT.

A cedar limb 6ins.diam.,bears N 47°W. 93 lks.dist. marked; 09 SC  $\frac{1}{4}$  S 36 RT.

Course of this half mile is S 87°15'E. 40.50 chs.

50.50 Cor.No.1 of Tract No. 37.bears S.

57.00 Top of highest ridge in Tp.bears N.and S.,desc.steep perceptitious slope over loose rocks.Leave dense timber.

60.00 Wash,80 lks.wide,course S. Asc.steep slope over loose rocks.

Difference bet.measurements of 80.64 chs.by two set. of chainmen is 14 lks.,position of middle point,

By 1st.set,80.71 chs.

By 2nd.set,80.57 chs.,the mean of which is

80.64 Fall 217 lks.N. of old cor. of Tps.20 and 21 N.,Rs.1 W. and 1 E.,which I destroy and in the same place set a limestone,20X10X10ins.,15ins.in the ground,for cor. of Tps. 20 and 21 N.,Rs. 1 W. and 1 E.,marked 09 SC T 21 N on NE., R 1 E on SE., 20 N on SW., and 1 W on NW.face, with 6 grooves on S.,N.,E.,and W. edges. and raise a mound of stones,4ft.base,2ft.high,S. of cor. Pits impraticable.

Course of this half mile is S 86°54'E. 40.20 chs.

Land,mountainous.

Soil,rocky; 4th rate.

Timber,cedar.

Underbrush,cedar.

Mountainous land covered with loose rocks and dense timber or underbrush,exceptionally diffisult to survey,80.70 chs.

June 28,1909.

*Alfred N. Oliver*  
S. Deputy Surveyor.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Alfred N. Oliver  
\_\_\_\_\_, 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  
4th. and 5th. Standard Parallels North  
showing the respective capacities in which they acted:

- Will W. Shawk, Archie Johnston \_\_\_\_\_, *Chainman.*
- Fred Kesl Fred W. Rodolf \_\_\_\_\_, *Chainman.*
- \_\_\_\_\_, *Moundman.*
- \_\_\_\_\_, *Moundman.*
- W. R. Johnston \_\_\_\_\_, *Asman.*
- \_\_\_\_\_, *Asman.*
- R. R. Lane. \_\_\_\_\_, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Alfred N. Oliver  
\_\_\_\_\_, United States Deputy Surveyor, in surveying all  
those parts or portions of the 4th. and 5th. Standard Parallels North

\_\_\_\_\_ 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.

- Will W. Shawk \_\_\_\_\_, *Chainman.*
- Archie Johnston \_\_\_\_\_, *Chainman.*
- Fred Kesl \_\_\_\_\_, *Chainman*
- Fred W. Rodolf \_\_\_\_\_, *Moundman.*
- W. R. Johnston \_\_\_\_\_, *Asman.*
- \_\_\_\_\_, *Asman.*
- R. R. Lane \_\_\_\_\_, *Flagman.*

Subscribed and sworn to before me this 28th. }  
day of June 1909. \_\_\_\_\_, 190



Alfred N. Oliver  
U.S. Deputy Surveyor

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Alfred N. Oliver, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Frank S. Ingalls United States Surveyor General for Arizona, bearing date of the 19th day of November 1909, 1909, 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 Fourth and Fifth Standard Parallels North

of the Gila and Salt River meridian, in the Territory o 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.

Alfred N. Oliver  
United States Deputy Surveyor.

Subscribed by said Alfred N. Oliver, and sworn to before me }  
this 18th day of November, 1909



Frank S. Ingalls  
United States Surveyor General  
for Arizona

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix Arizona April 27, 19010.

The foregoing field notes of the survey of the Fourth and Fifth Standard Parallels through Range 1 West of the Gila and Salt River Base and Meridian Arizona

executed by Alfred N. Oliver U.S. Deputy Surveyor under his contract No. 153, dated November 1909, 1909, 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.