

Exterior  
BOOK "AP"

BOOK 2569

2569

FIELD NOTES

OF THE SURVEY OF THE

North Boundary of Tp 31 N. R 13 E.

Of the Gila and Salt River Base and Meridian,

in the Territory of Arizona

EXECUTED  
AS SURVEYED BY

Van L. White, U.S. Mathematician, ~~United States Deputy Surveyor,~~

Special Instructions from the Commissioner of the General Land Office

Under ~~his Contract No.~~, dated ~~Oct 2<sup>nd</sup> 1907~~ and ~~May 16<sup>th</sup> 1908~~

Survey commenced March 4<sup>th</sup> 1911, ~~190~~

Survey completed March 6<sup>th</sup> 1911, ~~190~~

NAMES AND DUTIES OF ASSISTANTS.

T. Y. White	Chairman
Richard L. Shumway	Chairman
George B. Seig	Moundman
Harry Keyops	Moundman
Nelson Polacca	Asman
William R. Carson	Flagman

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PRELIMINARY OATHS OF ASSISTANTS.

WE, T. Y. White and Richard L. Shumway  
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 N. Bdry. Tp 31 N. R 13 E. of the G. & S. P. Base & Mer, Arizona

T. Y. White, Chainman.  
Richard L. Shumway, Chainman.

Subscribed and sworn to before me this 5<sup>th</sup>  
day of March 1911, ~~190~~



Van L. White  
U.S. Transitman

WE, George B. Seig and Harry Keyopt  
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 N. Bdry Tp 31 N. R 13 E. of the G. & S. P. Base & Mer, Arizona

George B. Seig, Moundman.  
Harry Keyopt, Moundman.

Subscribed and sworn to before me this 2<sup>th</sup>  
day of March 1911, 190



Van L. White  
U.S. Transitman

WE, Nelson Polacca and  
do solemnly swear that we will well and truly perform the duties of axman 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 N. Bdry Tp. 31 N. R. 13 E. of the G. & S. P. Base & Mer, Arizona

Nelson Polacca, Axman.  
Axman.

Subscribed and sworn to before me this 5<sup>th</sup>  
day of March 1911, 190



Van L. White  
U.S. Transitman

I, William R. Carson, 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 N. Bdry of Tp 31 N R 13 E. of the G. & S. P. Base & Mer, Arizona

William R Carson, Flagman.

Subscribed and sworn to before me this 5<sup>th</sup>  
day of March 1911, ~~190~~



Van L. White  
U.S. Transitman

## North Boundary of Twp. 31 N. R. 13 E

Chain

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Survey commenced March 4<sup>th</sup> 1911 and executed with a W. & L. E. Gurley engineers transit No. 76 with a Burt solar attachment, the horizontal limb being provided with one double vernier reading to single minutes of arc. The verniers of the latitude and declination arcs read to 0'30" of arc.

Examined 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 established by observation on Polaris & proceed as follows

At my camp which is located near the cor. of Secs. 15, 16, 21 and 22. T 31 N. R 13 E., Latitude  $36^{\circ}04\frac{1}{2}'$  N., Longitude  $110^{\circ}57'$  W.

March 4<sup>th</sup> 1911 at 8<sup>h</sup> 35<sup>m</sup> p.m. l.m.t. by my watch which is correct local mean time observe Polaris at western elongation in accordance with instructions in the Manual and mark the direction thus determined by a tack driven in a stake set firmly in the ground 5.00 chs. N. of my instrument

March 4<sup>th</sup> 1911.

March 5<sup>th</sup> 1911 at 7<sup>h</sup> 30<sup>m</sup> a.m. l.m.t. Lay off the azimuth of Polaris  $1^{\circ}27'$  to the east and mark the meridian thus determined by a nail driven in a stake set in the ground 5.00 chs. N. of my instrument

At 8<sup>h</sup> 03<sup>m</sup> a.m. l.m.t. Set off  $36^{\circ}04\frac{1}{2}'$  N. on the lat. arc,  $6^{\circ}17'$  S. on the decl. arc and determine a meridian with the solar and mark a point there of by a tack driven in the stake already set 5.00 chs. N. of my instrument on which the meridian falls 0.3 ins East of the meridian established by the Polaris observation.

At 4<sup>h</sup> 03<sup>m</sup> p.m. l.m.t. Set off  $36^{\circ}04\frac{1}{2}'$  N. on the lat. arc,  $6^{\circ}09\frac{1}{2}'$  S. on the decl. arc and determine a meridian with the solar and mark.

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a point thru by a tack driven in the stake already set 5.00 chs. N. of my instrument. This point falls 0.2 ins. west of the meridian established by the Polaris observation

The solar apparatus by a.m. and p.m. observations defined positions for meridians, respectively about 0'16" East and 0'10" west of the meridian determined by the Polaris observation, therefore I conclude that the adjustments of the instrument are satisfactory

March 5<sup>th</sup> 1911

I begin at the cor. of townships 31 and 32. N., R<sub>13</sub> and 14 E., <sup>as described in Exterior Book "A5"</sup> which I established December 2<sup>nd</sup> 1910., Latitude 36° 07' 07" N., Longitude 110° 53' 38" W. March 6<sup>th</sup> 1911, at 8<sup>h</sup> 11<sup>m</sup> a.m. L.M.L. set off 36° 07' 00. on the lat. arc. 5° 54' S. on the decl. arc and determine a meridian with the solar at this cor. thence run S. 89° 57' W. on a random line along the N. line of T<sub>31</sub> N., R<sub>13</sub> E. setting temp 1/4 sec. and sec. cor. at intervals of 40.00 and 80.00 chs. and at 478.56 chs. intersect the 3<sup>rd</sup> Guide Meridian East 55 chs. S. of the cor. of townships 31 and 32. N. R<sub>12</sub> and 13 E. which I established March 4<sup>th</sup> 1911 as described in Standard Book "T"

The falling answers to a correction of 0° 04' or 9 chs. N. per mile counting from the N.E. Cor. of the T<sub>31</sub>; therefore I run S. 89° 57' E., bet. Sec. 6 and 31, marking and blazing the true line.

Ascend. N.W. slope over rolling sand hills.

- 23.50 Top of sand ridge bears N.E. and S.W. desc.
- 35.50 Foot of descent in depression bears N.E. and S.W. drains to the S.W. side.
- 38.56 Set an iron post 3 ft. long 1 in. in diam. 26 ins. in the ground for 1/4 sec. cor. marked out brass cap 1/4 S 31 on N. half and S 6 on S. half. Dig pits 18x18x12 ins. E and W. of post 3 ft. dia. and raise a mound of earth 3 1/2 ft. base, 1 1/2 ft. high N. of cor.
- 78.56 Set an iron post, 3 ft. long, 3 ins. in diam 24 ins. in the ground for cor. of sec. 5, 6, 31 and 32. marked out brass cap. R<sub>13</sub> E. in E half. T<sub>32</sub> N. S 32 in N.E. T<sub>31</sub> N. S 5 in S.E. S 6 in S.W.

North boundary of Tp 31 N. R 13 E

shown

3

and 531 in N.W.

quadrant.

Dig pits 18x18x12 ins. in each sec. 5 1/2 ft. dia. and raise a mound of earth 4 ft. base, 2 ft. high. W. of cor.

Land rolling sand hills.

Soil sandy 3<sup>rd</sup> rate

No timber

S 89° 59' E, bet. sec. 5 and 32.

Ascend N.W. slope over rolling sand hills through sage brush undergrowth and bunch grass

10.50 Road to Tuba, Arizona, bears N.E. and S.W.

29.00 Top of sand ridge bears N.E. and S.W. desc.

40.00 Set an iron post 3 ft. long 1 in. in diam. 26 ins. in the ground for 1/4 sec. Cor. marked on brass cap 1/4 S 32 on N. half and S 5 on S. half.

Dig pits 18x18x12 ins. E and W. of post 3 ft. dia. and raise a mound of earth 3 1/2 ft. base 1 1/2 ft. high. N. of cor.

41.00 North of descent in a depression bears N.E. and S.W. drains to the S.W. cor.

57.75 Top of sand ridge bears N.E. and S.W. desc.

71.05 Dry rocky ravine bears S 50° W. asc. steeply.

80.00 Set an iron post 3 ft. long 3 ins. in diam. 24 ins. in the ground for cor. of sec. 4, 5, 32 and 33. marked on brass cap T 13 E in E half, T 32 N, S 33 in N.E. T 31 N, S 4 in S.E., S 5 in S.W. and S 32 in N.W. quadrant.

Dig pits 18x18x12 ins. in each sec. 5 1/2 ft. dia. and raise a mound of earth 4 ft. base, 2 ft. high. W. of cor.

Land rolling sand hills.

Soil sandy 3<sup>rd</sup> rate.

No timber

NOTE: At this cor. I set off 5° 51' S. on the decl. arc and at noon observed the sun on the meridian and obtain a reading of 36° 07' N. on the lat. arc.

S 89° 59' E, bet. sec. 4 and 33.

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around N.W. slope over low rolling sand hills through sage brush undergrowth and bunch grass.

- 8.00 Top of accret., leave hilly land bears N.E. and S.W. Enter level sandy lands.
- 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 in. in the ground for  $\frac{1}{4}$  sec. cor. marked on base cap  $\frac{1}{4}$  S 33 on N. half and S 4 on S. half. Dig pits 18x18x12 in. E and W. of post 3 ft. dia. and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high N. of cor.
- 80.00 Set an iron post 3 ft. long 3 in. in diam. 24 in. in the ground for cor. of sec. 3, 4, 33 and 34, marked on base cap R 13 E in E half. T 32 N. S 34 in N.E., T 31 N. S 3 in S.E. S 4 in S.W. and S 33 in N.W. quadrant. Dig pits 18x18x12 in. in each sec.  $5\frac{1}{2}$  ft. dia. and raise a mound of earth 4 ft. base, 2 ft. high. W. of cor.  
 Level, level and hilly  
 Soil sandy 2<sup>nd</sup> and 3<sup>rd</sup> rate.  
 No timber

S 89° 59' E., 1/4 sec. 3 and 34,  
 Over level sandy land, through sage brush undergrowth and bunch grass.

- 40.00 Set an iron post 3 ft. long 1 in. in diam 26 in. in the ground for  $\frac{1}{4}$  sec. cor. marked on base cap  $\frac{1}{4}$  S 34 on N. half and S 3 on S. half. Dig pits 18x18x12 in. E and W. of post 3 ft. dia. and raise a mound of earth  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high. N. of cor.
- 62.25 Road to Nuba City Ariz bears N 65° W and S 65° E.
- 80.00 Set an iron post 3 ft. long 3 in. in diam. 24 in. in the ground for cor. of sec. 2, 3, 34 and 35 marked on base cap R 13 E in E half, T 32 N. S 35 in N.E. T 31 N. S 2. in S.E., S 3 in S.W. and S 34 in N.W. quadrant. Dig pits 18x18x12 in. in each. sec.  $5\frac{1}{2}$  ft. dia. and raise a mound of earth 4 ft. base, 2 ft. high. W. of cor.



Chain

North boundary of T<sub>31</sub>N, R<sub>13</sub>E.

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Land level.  
Soil sandy 2<sup>nd</sup> rate.  
No timber

S. 89° 59' E., bet. secs. 2 and 35,  
One level sandy land through sage and  
greasewood bush undergrowth 3 ft high.  
and bunch grass  
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  
base cap  $\frac{1}{4}$  S 35 on N. half and S 2 on S. half.  
Dig pits 18 x 18 x 12 ins. East W. of post 3 ft.  
ditch and raise a mound of earth  $3\frac{1}{2}$  ft  
base,  $1\frac{1}{2}$  ft. high. N. of cor.

80.00 Set an iron post 3 ft. long 3 ins. in diam.  
24 ins. in the ground for cor. of secs. 1, 2, 35,  
and 36 marked on base cap R<sub>13</sub>E in E half  
T<sub>32</sub>N, S<sub>36</sub> in N.E. T<sub>31</sub>N, S<sub>1</sub> in S.E. S<sub>2</sub> in  
S.W. and S<sub>35</sub> in N.W. quadrant.  
Dig pits 18 x 18 x 12 ins. in each sec.  $5\frac{1}{2}$  ft. ditch  
and raise a mound of earth 4 ft base, 2 ft.  
high. W. of cor.

Land level.  
Soil sandy 2<sup>nd</sup> rate.  
No timber

S. 89° 59' E., bet. secs. 1 and 36,  
One level sandy land through sage and greasewood  
bush undergrowth 3 ft. high. and bunch  
grass.  
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 base cap  $\frac{1}{4}$  S 36 on N. half and S 1 on S.  
half., Dig pits 18 x 18 x 12 ins. East W. of post.  
3 ft. ditch and raise a mound of earth  
 $3\frac{1}{2}$  ft base  $1\frac{1}{2}$  ft. high. N. of cor.

80.00 Intersect the cor. of T<sub>31</sub>N, R<sub>13</sub>E  
and 14 E. described in Exterior Book "A5."  
Land level.  
Soil sandy 2<sup>nd</sup> rate.

North boundary of T31 N, R13E

Schaine

No timber

March 6<sup>th</sup> 1911

Boundaries of T31 N, R13E  
Latitudes Departures and Closing errors.

Line Designated	Bearing	Distance	Latitudes		Departures	
			N	S	E	W
South Bdy.	S. 89° 57' W.	479.35	.42			479.35
(3 <sup>rd</sup> West Boundary & 3 <sup>rd</sup> South Meridian Cont)	North	480.00	480.00			
North Bdy.	S. 89° 59' E	478.56		.14	478.56	
East Bdy.	South	480.00		480.00		
Convergence					.52	
TOTALS			480.42	480.14	479.08	479.35
	Error in Lat.		480.14			479.08
			0.28			
					Error in Dep.	0.27

General Description.

This township is nearly all low rolling sand hills although there is some level land along the north boundary. In general the township can nearly all be classed as a prairie country.

The township is poorly timbered and poorly watered. A small stream of alkali water flows in the Dot Klish Canyon which crosses the township in a south westerly direction. The township should be surveyed on account of the grazing facilities which it affords.

San L. White

U.S. Measurman

March 6<sup>th</sup> 1911

U.S. TRANSITMAN  
FINAL OATHS OF ~~DEPUTY SURVEYOR~~ AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Van L. White  
U.S. 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 N. Bdry.  
Tp 31 N. R. 13 E. of the G. & S. R. Base & Meridian, Arizona  
showing the respective capacities in which they acted:

- T. Y. White ..... Chainman.
- Richard L. Shumway ..... Chainman.
- George B. Seig ..... Moundman.
- Harry Keyopt ..... Moundman.
- Nelson Polacca ..... Axman.
- ~~Asman.~~
- William R. Carson ..... Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Van L. White  
U.S. Transitman, ~~United States Deputy Surveyor~~, in surveying all  
those parts or portions of the N. Bdry of Tp 31 N. R 13 E.

..... of the Sala and  
Salt River Base & 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~~ <sup>executed</sup>, and the  
corner monuments established, according to the instructions furnished by the ~~United States Surveyor~~  
~~General for~~ Commissioner of the General Land Office

- T. Y. White ..... Chainman.
- Richard L. Shumway ..... Chainman.
- George B. Seig ..... Moundman.
- Harry Keyopt ..... Moundman.
- Nelson Polacca ..... Axman.
- ~~Asman.~~
- William R. Carson ..... Flagman.

Subscribed and sworn to before me this 15<sup>th</sup>  
day of May 1911, ~~1908~~



Van L. White  
U.S. Transitman

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2009

~~DEPUTY SURVEYOR~~  
**TRANSITMAN**  
**FINAL OATH OF UNITED STATES DEPUTY SURVEYOR:**

I, Van L. White U.S. Transitman, ~~United States Deputy Surveyor~~, do solemnly swear that, in pursuance of ~~a contract~~ <sup>Special Instructions</sup> received from ~~The Commissioner of the~~ General Land Office, bearing date of the 2<sup>nd</sup> day of Oct. 1907 ~~day~~ and the 15<sup>th</sup> day of May, 1908, 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~~ <sup>Commissioner</sup> of the General Land Office, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the North boundary of Township No. 31 North, of Range No. 13 East.

of the Gila and Salt River Base and 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~~ <sup>Commissioner</sup> of the General Land Office and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Van L. White  
~~United States Deputy Surveyor~~  
Transitman

Subscribed by said Van L. White, and sworn to before me }  
this 27<sup>th</sup> day of December, 1902

Lytton R. Taylor  
U.S. Commissioner  
at Las Vegas, N.M.



**APPROVAL.**

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, APR 25 1904

The foregoing field notes of the survey of the

North boundary of

Township No. 31 North, Range No. 13 East of the  
Gila and Salt River Base and Meridian, Arizona

executed by VAN L. WHITE, U.S. Transitman, under Special Instructions from  
executed by the Commissioner of the General Land Office  
under his contract No. \_\_\_\_\_, dated October 2, 1907 and May 15, 1908, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Frank 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~~