

U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

NOV 1 1916 JUN 29 1917

**FIELD NOTES**

OF

HOMESTEAD ENTRY SURVEY NO. 310

SITUATED IN THE **CORONADO** NATIONAL FOREST

ADMINISTRATIVE DISTRICT NO. 3

In Section 18, un surveyed, Township 24 S., Range 21 E.,

of the

**Gila and Salt River Base and** Meridian.

State of **ARIZONA**

Applicant for listing **Ed Ratliff,**

Residence **Hereford, Arizona**

Application No. 182, dated **February 3**, 19 11

**Supplemental List No. 3-1676** dated **November 13**, 1914

List No. **3-1676**, dated **January 16**, 19 12

Applicant for survey **Ed Ratliff,**

Residence **Hereford, Arizona**

H. E. No. **021794**, dated **March 19**, 19 13

Land District **Phoenix, Arizona**

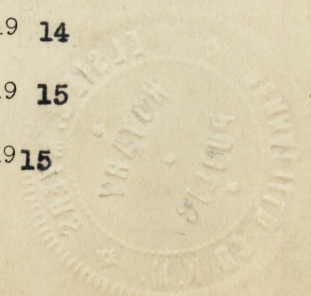
Survey executed by **R. P. A. Johnson, Surveyor-Draftsman**  
[Forest Service Title.]

Under special instructions dated **October 19**, 19 14

Survey commenced **March 11**, 19 15

Survey completed **March 12**, 19 15

Under Acts of **June 11, 1906 and June 30, 1914.**





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OATH OF ASSISTANTS

We hereby certify that we assisted **R. P. A. Johnson,**  
**Surveyor- Draftsman** in surveying all those  
[Forest Service Title.]

parts or portions of Homestead Entry Survey No. **310** , in the State  
of **ARIZONA** , which are represented in the following 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 estab-  
lished, according to the instructions furnished by the United States  
Surveyor General for **ARIZONA**.

**Note: It would have been  
very inconvenient and expen-  
sive to appear before an  
officer to administer  
oaths to Assistants; hence,  
they were taken by the Surveyor.**

*M. J. Doherty* Chairman  
*W. Baecht* Chairman

Subscribed and sworn to before me this *twenty six* day of  
*March* , 1915.

*R. P. A. Johnson*  
Surveyor Draftsman

OATH OF SURVEYOR

I, **R. P. A. Johnson, Surveyor-Draftsman**  
[Forest Service Title.]

do solemnly swear that, in strict conformity with the special instruc-  
tions of the United States Surveyor General for **ARIZONA** , dated  
**October 19** , 19 **14** , and the laws of the United States, I have  
well, faithfully, and truly, in my own proper person, surveyed a tract  
of land in **List 3-1676 dated January 16, 1912 and Supplemental**

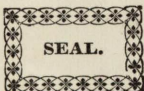
**List** , No. **3-1676** , dated **November 13** , 19 **14** , for  
**Patent** , under the Act of **June 11** , 19 **06** ,  
the same to be known as Homestead Entry Survey No. **310** ,  
situated within the **CORONADO** National Forest, in  
**un surveyed Section 18** , Township **24 S.** , Range **21 E.** , and  
**--- surveyed Section -----** , Township **-----** , Range **-----** ,

of the **G. & S. R. B. &** meridian, **ARIZONA** , and the  
related retracements and resurveys and section subdivisions, which are  
represented in the following field notes as having been surveyed by me;  
and I further solemnly swear that all the corners of said survey have been  
established and perpetuated in strict accordance with the stated special  
instructions, and in the specific manner described in the field notes,  
and that the following are the original field notes of such survey.

*R. P. A. Johnson*  
Surveyor Draftsman  
[Forest Service Title.]

Subscribed and sworn to before me this *twenty eight* day of  
*September* , 1915.

*Elmer C. Meyer*  
Notary Public



8-2349

My Commission expires April 29, 1916



HOMESTEAD ENTRY SURVEY NO. 310

1.

CORONADO NATIONAL FOREST

STATE OF ARIZONA

Chains  
 Applicant for listing, Ed Ratliff; Application No. 182, dated February 3, 1911; List No. 3-1676 dated January 16, 1912 and Supplemental List No. 3-1676 dated November 13, 1914; H. E. 021794 made in the Phoenix Land Office on March 19, 1913 by Ed Ratliff.

Surveyed under Special Instructions from the Surveyor General for Arizona, dated October 19, 1914 and designated as Homestead Entry Survey No. 310.

Situated in T. 24 S., R. 21 E. in what will probably be, when surveyed, Sec. 18, Gila and Salt River Base and Meridian, Coronado National Forest.

Surveyed under the Acts of June 11, 1906 and June 30, 1914.

Survey commenced March 11, 1915 and executed with a Buff and Buff transit.

I test the adjustments of the transit and make necessary corrections.

All measurements were made directly on the slope with a 500 link steel tape. The slope angles were determined with a clinometer.

March 11, 1915.

At 3h. 40.2m., p.m., l.m.t., I observe the altitude of the sun for azimuth at Cor. No. 4 of this survey. The reading on the reference object is set at Zero and sun was observed in the upper left and lower right quadrants of the field. My watch is set for local mean time. Lat. 31° 20' 18" N. Long. 110° 14' 30" W. from Hereford Quadrangle.



Chains	Telescope	Time	Horizontal Angle	Vertical Angle
	Direct	3h. 39m. 42s.	64° 36' 00"	28° 38'
	Reversed	3h. 40m. 46s.	64° 13' 30"	28° 56'
Bearing of reference object N. 00° 31' 11" E.				

March 12, 1915.

At 8h. 8.2m., a.m., I again observe the altitude of the sun for azimuth at Cor. No. 4. The reading on the reference object is set at zero and the sun was observed in lower left and upper right quadrants of the field.

Telescope	Time	Horizontal Angle	Vertical Angle
Direct	8h. 7m. 44s.	70° 45' 30"	22° 56'
Reversed	8h. 8m. 40s.	71° 09' 30"	22° 38'

Bearing of reference object N. 00° 29' 52" E.

The mean of these is N. 00° 30' 31" E. and to corresponding meridian all the courses of this survey are referred.

Beginning at Cor. No. 1.

Identical with cor. H-4 of the list survey which is a quartzite stone 12 x 8 x 3 ins. in mound of stones marked and witnessed as described by the Forest Service.

I destroy all trace of the list cor. in place of which I set a diorite stone 24 x 16 x 16 ins. in a mound of stone 4 ft. base, 3 ft. high chiseled 1-H E S 310 on NE. face. Rocky, impracticable to set stone in ground, whence:



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STATE OF ARIZONA

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A white oak 18 ins. dia. bears N. 22° 44' W.,

226 lks. dist. scribed 1 H E S 310 B T

A white oak 8 ins. dia. bears N. 14° 47' W.,

264 lks. dist. scribed 1 H E S 310 B T

International Boundary Post No. 100 which is an

iron post six feet high marked 100 on west face

bears S. 54° 39' 20" W., 61.30 chs. dist. by

traverse, which appears at the end of these

notes.

Lat. 31° 20' 18" N. Long. 110° 14' W. from Herefordes

Quadrangle, U. S. G. S.

Mag. Va. at 3 p.m., 14° 32' E. Mean Mag. Va. 14° 34' E.

Thence N. 00° 05' W.

Descend 360 ft. to wash in timber.

24.40 Fence bears SE. and NW.

25.30 Road bears SE. and NW.

25.50 Montezuma Wash, 240 lks. wide, banks 3 ft. high, course

SE. Ascend 65 ft. to cor.

39.27 To Cor. No. 2.

Identical with Cor. H-3 of the list survey which is a

quartzite stone 6 x 3 x 5 ins., above ground marked

and witnessed as described by the Forest Service. I

destroy all trace of this list cor. in place of which

I set a quartzite stone 24 x 10 x 4 ins., 14 ins. in

the ground over a small stone marked with a cross

chiseled, 2-H E S 310 on SE. face and raise a mound

of stone 3 ft. base, 2 ft. high, SE. of Cor. from

which: A black oak 18 ins. dia. bears N. 22° 44' W.,

186 lks. dist. scribed 3 H E S 310 B T



Chains

W 144 A black oak 14 ins. dia. bears N. 79° 46' E.,  
T B 083 lks. dist. scribed 2 H E S 310 B T  
W 174 A black oak 18 ins. dia. bears S. 11° 57' E.,  
T B 0123 lks. dist. scribed 2 H E S 310 B T

Thence N. 89° 47' E.

Along the SE. slope in timber.

- 1.90 Arroyo, 15 lks. wide, banks 1 ft. high, course SE.
- 10.00 Arroyo, 20 lks. wide, banks 1 ft. high, course SE.
- 13.29 Arroyo, 5 lks. wide, banks 1 ft. high, course SE.
- 19.12 Arroyo, 6 lks. wide, banks 1 ft. high, course S. 40° E.
- 20.20 Arroyo, 4 lks. wide, banks 1 ft. high, course S. 30° E.
- 28.10 Arroyo, 4 lks. wide, banks 1 ft. high, course S. 40° E.
- 38.90 Arroyo, 6 lks. wide, banks 1 ft. high, course S. 46° E.
- 39.75 Fence bears NW. and SE.
- 39.90 To Cor. No. 3.

Identical with Cor. H-2 of the list survey, which is a quartzite stone 6 x 4 x 6 ins. above ground marked and witnessed as described by the Forest Service. This is also Cor. H-3 of H. E. No. 022290. I destroy all trace of this list cor. which refers to this claim and at this point I set a diorite stone 24 x 8 x 8 ins., 14 ins. in the ground over a small stone marked with a cross chiseled 3-HES310 on SW. face and raise a mound of stone 3 ft. base, 2 ft. high SW. of cor. from which:

A white oak 18 ins. dia. bears N. 87° 00' W.,  
123 lks. dist. scribed 3 H E S 310 B T  
A black oak 18 ins. dia. bears S. 25° 12' W.,  
185 lks. dist. scribed 3 H E S 310 B T



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Thence S. 0° 08' E.

Along line H-3, H-4 of H. E. No. 022290. Descend 15 ft. to wash.

0.30 Fence, bears S. 35° E. and N. 35° W.

1.06 Wash, 20 lks. wide, banks 3 ft. high, course S. 26° E.

Ascend 15 ft. to ridge.

5.00 Ridge bears NW. and SE. Descend 25 ft. to arroyo.

5.60 Leave timber, bears E. and W.

7.60 Arroyo, 10 lks. wide, banks 2 ft. high, course S. 70° E.

Ascend 10 ft. to ridge.

9.00 Ridge bears NW. and SE. Descend 55 ft. to arroyo.

15.00 Arroyo, 10 lks. wide, banks 2 ft. high, course SE.

20.36 Arroyo, 8 lks. wide, banks 2 ft. high, course S. 57° E.

Descend 25 ft. to wash.

26.06 Road, bears S. 54° E. and N. 54° W.

26.11 Fence, bears S. 54° E. and N. 54° W.

26.81 Enter cultivated land, bears NW. and SE.

30.59 Leave cultivated land, bears NW. and SE.

30.88 Fence, bears N. 54° E. and S. 54° W.

31.64 Montezuma Wash, 446 lks. wide, banks 2 ft. high, course

E. Ascend 50 ft. to cor.

39.66 To cor. No. 4.

Identical with cor. H-1 of the list survey, which is a granite stone 6 x 3 x 6 ins. above ground, marked and witnessed as described by the Forest Service. This is also cor. H-4 of H. E. No. 022290. I destroy all trace of this list cor. which refers to this claim and at this point I set a quartzite stone 24 x 16 x 8 ins., 14 ins. in the ground, over a small stone marked with a cross, chiseled 4 - H E S 310 on NW. face; and raise



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STATE OF ARIZONA.

Chains

a mound of stone 3 ft. base, 2 ft. high, NW. of cor.,  
from which:

A white oak, 18 ins. dia., bears N. 22° 44' W.,  
226 lks. dist., scribed 4 H E S 310 B T.

A white oak, 8 ins. dia., bears N. 15° 07' W.,  
264 lks. dist., scribed 4 H E S 310 B T.

Thence N. 89° 49' W.

Ascend 200 ft. to ridge. Fence on line.

26.60 Ridge bears NNE. and SSW. Enter timber. Descend 30 ft.  
to ravine.

29.30 Ravine, 5 lks. wide, course SE. Ascend 160 ft. to cor.

36.93 End of fence.

40.04 To cor. No. 1, the place of beginning.

AREA.

Total Area - - - - - 157.72 Acres.

IMPROVEMENTS.

The improvements made upon and for the benefit of this  
claim and belonging to the applicant consist of the  
following:

A sheet iron dwelling, 20 x 18 ft., the long side of  
which bears E. and W. and NE. cor. of which bears  
S. 62° E., 15.95 chs. dist. from cor. No. 2.

Value - - - - - \$100.00

There is approximately 1-1/2 miles of wire fence and  
stockade corral.

Value - - - - - \$200.00

DESCRIPTION.

This claim is situated on Montezuma Wash at SE. end  
of Huachuca Mountains about one-half mile North of  
International line. The general slope of the land



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STATE OF ARIZONA

Chains

is to the SE. with NE. and SE. exposures.

There is no merchantable timber on this tract, but NE.

and SE. slopes are covered with oak timber whose only value is for posts and fire wood.

The bottom land along the creek is a sandy loam and will produce crops when irrigated. The NE. exposure is steep, rocky, non-tillable land suited only to pasture.

The SE. exposure is broken by arroyo with a shallow sandy soil of doubtful agricultural possibilities.

There is approximately 7 acres in cultivation.

There is no water for irrigation upon this tract. Water for domestic purposes can be obtained at about 30 ft.

I saw no indication of mineral upon this claim.

Hereford, the nearest postoffice and railroad point is approximately 15 miles to NE. and is reached by a good wagon road.

CONFLICTS AND ADJOINING CLAIMS

There are no conflicting claims.

This tract is joined on east by H. E. No. 022290 belonging to W. M. Ratliff, father of applicant. Mineral Survey No. 1280 mentioned in the Special Instructions is approximately 1-1/2 miles to NW. U. S. L. M. No. 1274 is approximately 3 miles NW.



Chains

TRAVERSES

Cor.	Course	Dist.	N.	S.	E.	W.
1-2	N.00° 05' W.	39.27	39.27			0.06
2-3	N.89° 47' E.	39.90	0.15		39.90	
3-4	S.00° 08' E.	39.66		39.66	0.09	
4-1	N.89° 49' W.	40.04	0.13			40.04
			158.87	39.55	39.66	39.99
					39.55	40.10
						39.99
Error in Lat. and Dep.					.11	.11

Closing error 1:1021

Traverse from Cor. No. 1 to International Boundary Post No. 100.

Course	Dist.	N.	S.	E.	W.	
S. 89° 49' E.	40.04		0.13	40.04		
S. 00° 08' E.	5.00		5.00	.01		
S. 25° 22' W.	46.16		41.71		19.78	
N. 84° 22' W.	61.94	6.08			61.64	
N. 58° 28' W.	10.13	5.30			8.63	
			163.27	11.38	46.84	40.05
					11.38	40.05
					35.46	50.00

Therefore International Monument No. 100 bears S. 54°

39' 20" W. 61.30 chs. dist. from Cor. No. 1.

Survey completed March 12, 1915.

*R. L. Johnson*  
 Surveyor - Draftsman



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Computations  
Azimuth

Direct Solar, March 11, at cor. No. 4.

Lat. 31° 20' 18" N., Long. 110° 14' 30" W.

Elevation 5000 ft.

Telescope	Time	Horizontal Angle	Vertical Angle	Pos. of Sun
Direct	3h. 39m. 42s.	64° 36' 00"	28° 38'	+
Reversed	3h. 40m. 46s.	64° 13' 30"	28° 56'	+
	2) 7h. 20m. 28s.	128° 49' 30"	57° 34'	
	3h. 40m. 14s.	64° 24' 45"	28° 47'	
	7h. 20m. 58s.		1' 30" ref. cor.	
	11h. 01m. 12s.		28° 45' 30"	

Dec. 3° 50' 35" S.

$$\text{Cos. } Q. = - \frac{\sin. 3^\circ 50' 35''}{\cos. 31^\circ 20' 18'' \times \cos. 28^\circ 45' 30''}$$

$$\tan. 31^\circ 20' 18'' \times \tan. 28^\circ 45' 30''$$

log. sin. = 3° 50' 35" = + 8.826227 ✓  
 log. cos. = 31° 20' 18" = - 9.931514 ✓  
 log. cos. = 28° 45' 30" = - 9.942829 ✓  
 8.951884 = log. - .089513 ✓

log. tan. = 31° 20' 18" = 9.784565 ✓  
 log. tan. = 28° 45' 30" = 9.739420 ✓  
 9.523985 log. - .33418 ✓

Cos. Q. = .42369 ✓

Q = 64° 55' 56" ✓

Bearing of reference object N. 0° 31' 11" E. ✓

Direct Solar March 12, at cor. No. 4.

Telescope	Time	Horizontal Angle	Vertical Angle	Pos. of Sun
Direct	8h. 7m. 44s.	70° 45' 30"	22° 56'	+
Reversed	8h. 8m. 40s.	71° 09' 30"	22° 38'	+
	2) 16h. 16m. 24s.	141° 55' 00"	45° 34'	
	8h. 8m. 12s.	70° 57' 30"	22° 47'	
	4h. 39m. 02s.		2' ref. cor.	
	3h. 29m. 10s.		22° 45'	

Dec. 3° 34' 23" ✓

$$\text{Cos. } Q. = - \frac{\text{Sin. } 3^\circ 34' 23''}{\text{Cos. } 31^\circ 20' 18'' \times \text{cos. } 22^\circ 45'}$$

$$\tan. 31^\circ 20' 18'' \times \tan. 22^\circ 45'$$

log. sin. = 3° 34' 23" = + 8.794634 ✓  
 log. cos. = 31° 20' 18" = - 9.931514 ✓  
 log. cos. = 22° 45' = - 9.964826 ✓  
 8.898294 = log. .07912 ✓

log. tan. = 31° 20' 18" = 9.784565 ✓  
 log. tan. 22° 45' = 9.622561 ✓  
 9.407126 = log. .25534 ✓

Cos. Q. = .33446 ✓  
 Q. = 70° 27' 38" ✓

Bearing of reference object N. 0° 29' 52" E. ✓



Chains	Computations			
	Telescope	Time	Horizontal Angle	Vertical Angle
	Direct	3h. 39m. 42s.	64° 38' 00"	28° 38' 38"
	Reversed	3h. 40m. 46s.	64° 15' 30"	28° 38' 38"
	3h. 40m. 28s.	128° 49' 30"	57° 34'	
	3h. 40m. 14s.	64° 34' 45"	28° 47'	
	7h. 20m. 58s.	1'	30" ref. cor.	
	11m. 01m. 12s.		38° 45' 30"	
	Dec. 3° 50' 35" S.			
	Cos. 6. = - sin. 3° 50' 35"			
	cos. 31° 20' 18" x cos. 38° 45' 30" = 0.78453			
	tan. 31° 20' 18" x tan. 38° 45' 30" = 0.57184			
	log. sin. = 3° 50' 35"	=	0.00000	
	log. cos. = 31° 20' 18"	=	0.921814	
	log. cos. = 38° 45' 30"	=	0.904822	
	0.921814 = log. = 0.08699			
	log. tan. = 31° 20' 18"	=	0.78453	
	log. tan. = 38° 45' 30"	=	0.759430	
	0.759430 - 0.78453 = -0.02510			
	Cos. 6. = 0.43399			
	0 = 64° 55' 58"			
	Bearing of reference object N. 0° 31' 11" E.			
	Direct Solar March 12, at cor. No. 4.			
	Telescope	Time	Horizontal Angle	Vertical Angle
	Direct	3h. 7m. 44s.	70° 45' 30"	22° 56' 38"
	Reversed	3h. 8m. 40s.	71° 09' 30"	22° 38' 38"
	3h. 10m. 24s.	141° 55' 00"	45° 34'	
	3h. 8m. 12s.	70° 57' 30"	22° 47'	
	4h. 32m. 02s.		21' ref. cor.	
	3h. 32m. 10s.		22° 45'	
	Dec. 3° 34' 23"			
	Cos. 6. = - sin. 3° 34' 23"			
	cos. 31° 20' 18" x cos. 22° 45' = 0.92181			
	tan. 31° 20' 18" x tan. 22° 45' = 0.12510			
	log. sin. = 3° 34' 23"	=	0.00000	
	log. cos. = 31° 20' 18"	=	0.921814	
	log. cos. = 22° 45'	=	0.944822	
	0.921814 = log. = 0.07297			
	log. tan. = 31° 20' 18"	=	0.78453	
	log. tan. = 22° 45'	=	0.43399	
	0.43399 = log. = 0.38458			
	Cos. 6. = 0.38458			
	0 = 70° 27' 38"			
	Bearing of reference object N. 0° 29' 52" E.			



DIRECTIONS.—1. Carry out calculation to two decimals only.  
 2. In balancing Latitudes and Departures do not obliterate or change the original figures. Do not change the footing of the original figures, but put below them the corrected footing in red ink. Put the corrected figure or figures above in red ink. Do not change the footing of the original figures. The corrections for balancing fallings should be proportional to the lengths of the lines.  
 3. In calculations of fallings take result to nearest link. In calculations of N. and S. areas drop all after second decimal. Surveyors are required to use the Standard Field Tables issued by the G. L. O.  
 4. Only three copies of this tabulation are necessary, for the District Office, the Surveyor General, and the Commissioner.

TABLING AND CALCULATIONS OF HOMESTEAD ENTRY SURVEY NO. 310, STATE OF Arizona

CORNERS.	BEARING.	DISTANCE.	LATITUDES.		DEPARTURES.		DOUBLE M. D.	N. AREAS.	S. AREAS.
			NORTH.	SOUTH.	EAST.	WEST.			
1-2	N. 00° 05' W.	<sup>29</sup> 39.27	39		39	<sup>04</sup> 06	04	1	57
2-3	N. 89° 47' E.	<sup>3</sup> 39.90	15	<sup>63</sup> 39	39	90	39	7	18
3-4	S. 00° 08' E.	<sup>3</sup> 39.66	<sup>16</sup> 13	39	09		79	98	61
4-1	N. 89° 49' W.	<sup>1</sup> 40.04	13			<sup>01</sup> 04	40	6	41
		158.87	39	39	39	40	40	15	16
			<sup>63</sup> 39	<sup>63</sup> 39	<sup>05</sup> 40	<sup>05</sup> 40		20	15
Closing Error 1:1081									
157.72 acres									

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APPROVAL

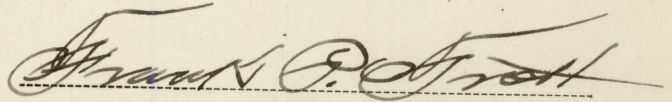
Office of the United States Surveyor General,

Phoenix, Arizona, August 8, 1917

The foregoing field notes of Homestead Entry Survey No.

310

executed by R. P. A. Johnson, Surveyor-Draftsman, [Forest Service Title.]  
under his special instructions, dated October 19, 1914, having  
been critically examined, and the necessary corrections and explanations  
made, the said field notes, and the surveys they describe, are hereby  
approved.

  
U. S. Surveyor General.

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

-----  
Frank P. Trott  
U. S. Surveyor General.