

U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

MAY 7 1917

430

**FIELD NOTES**

JUN 25 1917

MAY 24 1918

OF

HOMESTEAD ENTRY SURVEY NO. 421

SITUATED IN THE TONTO NATIONAL FOREST

ADMINISTRATIVE DISTRICT NO. 3.

In Section 28 , unsurveyed, Township 11 N., Range 11 E.

of the

Gila and Salt River Base and Meridian.

State of

ARIZONA

Applicant for listing A. J. Franklin,

Residence Payson, Arizona

Application No. 213 , dated February 10 , 1910

List No. 3-631 , dated August 17 , 1910

Applicant for survey A. J. Franklin,

Residence Payson, Arizona

H. E. No. 014464 , dated May 29 , 1911

Office  
Land District Phoenix, Arizona

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

Under special instructions dated September 23 , 1915

Survey commenced April 25 , 1916

Survey completed April 27 , 1916

Under Acts of June 11, 1906 and March 4, 1915.

OATH OF ASSISTANTS

We hereby certify that we assisted

*R. P. Johnson*

*Surveyor Draftsman*  
[Forest Service Title.]

in surveying all those

parts or portions of Homestead Entry Survey No. *421*, 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 established, according to the instructions furnished by the United States Surveyor General for *Arizona*

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

*Nelson Newman*, Chairman

*Ferry P. Lewis*, Chairman

Subscribed and sworn to before me this *twenty fourth* day of *May*, 19*16*.

*R. P. Johnson*  
*Surveyor Draftsman*

OATH OF SURVEYOR

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

do solemnly swear that, in strict conformity with the special instructions of the United States Surveyor General for *Arizona*, dated *September 23, 1915*, and the laws of the United States, I have well, faithfully, and truly, in my own proper person, surveyed a tract of land *embraced in*

*Quit* *patent*, No. *3-631*, dated *August 17, 1910*, for *June 11, 1906*, under the Act of *June 11, 1906*, the same to be known as Homestead Entry Survey No. *421*, situated within the *Sonto* National Forest, in *unsurveyed* Section *28*, Township *11N*, Range *11E*, and *surveyed* Section *---*, Township *---*, Range *---*,

of the *Gila and Salt River Basins* 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.

DISTRICT OF COLUMBIA  
CITY OF WASHINGTON

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

Subscribed and sworn to before me this *second* day of

*January*, 19*17*.

*Sylvester L. Mc Laurin*  
NOTARY PUBLIC, D. C.



Commission expires  
June 20, 1918.

Chains Applicant for listing, A. J. Franklin; Application No. 213, dated February 10, 1910; List No. 3-631, dated August 17, 1910; H. E. 014464, made in the Phoenix Land Office on May 29, 1911 by A. J. Franklin.

List 3-631 in this case was made by legal subdivisions in a Township which was never legally surveyed. No attempt was made to locate original list lines on ground. This survey is in the nature of a cooperative survey and will be used as a basis for amendatory listing and entry.

Township 11 N., R. 11 E. was surveyed under Contract No. 116 by U. S. Deputy Surveyors, Campbell and Oakes, dated April 18, 1904. The East boundary and subdivisions were finally rejected on January 8, 1909. The retracement of portions of South and West boundaries under this contract were accepted on same date. Surveyed under special instructions from the Surveyor General for Arizona, dated September 23, 1915 and designated as Homestead Entry Survey No. 421.

Situated in what will probably be, when surveyed, Sec. 28, T. 11 N., R. 11 E., Gila and Salt River Base and Meridian, Tonto National Forest, Arizona.

Surveyed under the Acts of June 11, 1906 and March 4, 1915.

Survey commenced April 25, 1916 and executed with a Buff and Buff transit, equipped with Smith solar attachment.

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

All distances are horizontal and were reduced from measurements made directly on the slope with a 500 link

Chains

link steel tape. The slope angles were determined with a clinometer.

April 26, 1916.

At 8h. 30m. a.m., l.m.t., I set off  $34^{\circ} 16'$  on Lat. arc,  $13^{\circ} 34'$  N. on decl. arc, and determine a meridian with the solar at cor. No. 8, hereinafter described. I observe the altitude of the sun for azimuth at cor. No. 8 of this survey, hereinafter described. The reading on the meridian determined with solar is set at zero and sun was observed in the lower left and upper right quadrants of the field. My watch is set for local mean time. Lat.  $34^{\circ} 16'$  N.; Long.  $111^{\circ} 13' 11''$  W., from special instructions from the Surveyor General and later verified.

Telescope	Time	Horizontal Angle	Vertical Angle
Direct	8h. 32m. 56s.	$77^{\circ} 41' 30''$	$40^{\circ} 38' 30''$
Reverse	8h. 33m. 55s.	$78^{\circ} 01' 00''$	$40^{\circ} 30' 00''$
Difference in meridians $0^{\circ} 01' 47''$ .			

I again observe the altitude of the sun for azimuth at cor. No. 8. The reading on the meridian determined with the solar is set at zero and the sun was observed in the lower left and upper right quadrants of the field.

Telescope	Time	Horizontal Angle	Vertical Angle
Direct	8h. 43m. 26s.	$76^{\circ} 30' 30''$	$41^{\circ} 58' 00''$
Reverse	8h. 44m. 53s.	$76^{\circ} 57' 00''$	$41^{\circ} 43' 00''$

Difference in meridians  $0^{\circ} 01' 21''$

RETRACEMENT

April 25, 1916.

At 8h. 10m. a.m., l.m.t, I set off  $34^{\circ} 16'$  on Lat. arc,

Chains 13° 14-1/2' N. on decl. arc, and determine a meridian with the solar at cor. No. 2 H. E. S. 419 which is a granite stone 12 x 5 x 10 ins. above ground, marked 2 - H E S 419 on NE. face, with pits 24 x 24 x 12 ins. crosswise on claim lines E. and N. of cor., 3-1/2 ft. dist. and mound of earth 4 ft. base, 2 ft. high NE.

of cor. Thence North.

On a random line along line 2-3 of H. E. S. 419.

19.90 Cor. No. 3 H. E. S. 419.

A granite stone 9 x 6 x 10 ins. above ground, marked 3 - H. E. S 419 on SE. face.

True line is North, 19.90 chs.

Thence East.

On a random along line 3-4 H. E. S. 419.

19.98 Fall 2 lks. N. of cor. No. 4 H. E. S. 419, a sandstone 8 x 6 x 10 ins. above ground, marked 4- H E S 419 on SE. face, with mound of stone 2 ft. base, 1-1/2 ft. high SE. of cor.

True line is N. 89° 56' W., 19.98 chs.

At this cor. I set off 13° 17' N. on decl. arc, and at 12h. 02m. 03s. l.m.t. observe the sun on the meridian.

The resulting Lat. is 34° 16'.

Thence North.

On a random line along line 4-5 H. E. S. 419.

39.85 Cor. No. 5 H. E. S. 419, a granite stone 10 x 9 x 10 ins. above ground, marked 5 - H E S 419 on SE. face, with mound of stone 2 ft. base, 1-1/2 ft. high SE. of cor.

True line is North, 39.85 chs.

TIE

April 27, 1916.

4.

GLENDALE TONTO NATIONAL FOREST

STATE OF ARIZONA.

Chains At 2h. 10m. p.m., l.m.t., I set off  $34^{\circ} 16'$  on Lat.  
 arc,  $13^{\circ} 57'$  N. on decl. arc, and determine a merid-  
 ian with the solar at cor. No. 1, hereinafter de-  
 scribed.  
 Thence South.  
 On random line for a tie.  
 30.11 Fall 9 lks. West of  $1/4$  sec. cor. bet. secs. 28 and 33  
 of rejected survey of T. 11 N., R. 11 E. In accord-  
 ance with special instructions from the Surveyor  
 General, I destroy all trace of this rejected cor.  
 110.34  $1/4$  sec. cor. of accepted survey bet. secs. 33 and 4,  
 Ts. 10 and 11 N., R. 11 E., which is a granite stone  
 8 x 5 x 6 ins. above ground, marked and witnessed as  
 described by the Surveyor General.  
 Return course North, 110.34 chs. dist.

## BOUNDARIES OF CLAIM

April 26, 1916.

Beginning at cor. No. 1.

Also cor. No. 1, H. E. S. 422.

Deposit broken glass 14 ins. in the ground, over  
 which set a conglomerate stone 24 x 8 x 5 ins.,  
 chiseled + for the point and 1 - H E S 421 on NE.

face and 1 - H E S 422 on NW. face; and raise a  
 mound of stone 3 ft. base, 2 ft. high NE. of cor.,  
 whence:

A juniper, 34 ins. dia., bears N.  $82^{\circ} 40'$  E.,  
 42 lks. dist., scribed 1 H E S 421 + B T.

A juniper, 6 ins. dia., bears N.  $6^{\circ}$  W., 160  
 lks. dist., scribed 1 H E S 421 + B T.

A juniper, 14 ins. dia., bears S.  $4^{\circ} 30'$  E.,  
 65 lks. dist., scribed 1 H E S 422 + B T.

A juniper, 8 ins. dia., bears N.  $85^{\circ} 45'$  W.,

Chains

55 lks. dist., scribed 1 H E S 422 + B T.  
Lat.  $34^{\circ} 15' 53''$  N., Long.  $111^{\circ} 13' 43''$  W., from special instructions from the Surveyor General and later verified.

Mag. Var. at 8:00 a.m.,  $14^{\circ} 20'$  E. Mean Mag. Var.  $14^{\circ} 17'$  E.

At 7h. 40m. a.m., l.m.t., I set off  $34^{\circ} 16'$  on Lat. arc,  $13^{\circ} 33'$  N. on decl. arc, and determine a meridian with the solar at cor. No. 1.

Thence North.

Descend 5 ft. to arroyo, in open.

0.28 Forest Service telephone line, bears NW. and SE.

0.86 Road, bears NW. and SE.

1.90 Arroyo, 20 lks. wide, 3 ft. deep, course SE.

Ascend 20 ft. to cor. in brush.

2.96 Fence, bears E. and W.

10.00 To cor. No. 2.

Also cor. No. 12 H. E. S. 422.

Deposit broken glass 10 ins. in the ground over which set a granite stone 20 x 12 x 6 ins. (no longer stone available) chiseled + for the point, 2 - H E S 421 on SE. face and 12 - H E S 422 on NW. face; dig pits 24 x 24 x 12 ins. crosswise on claim lines 7 ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high, 3-1/2 ft. dist. SE. of cor., whence:

An oak, 6 ins. dia., bears N.  $13^{\circ} 15'$  E.,

47 lks. dist., scribed 2 H E S 421 + B T.

A juniper, 6 ins. dia., bears N.  $83^{\circ} 50'$  E.,

42 lks. dist., scribed 2 H E S 421 + B T.

An oak, 5 ins. dia., bears N.  $60^{\circ} 15'$  W.,

53 lks. dist., scribed 12 H E S 422 + B T.

An oak, 6 ins. dia., bears N.  $11^{\circ}$  W., 46 lks.

dist., scribed 12 H E S 422 + B T.

6.

THE TONTO NATIONAL FOREST

STATE OF ARIZONA.

Chains	Thence S. 89° 57' E.
	Over level land in brush.
5.00	Arroyo, 20 lks. wide, 10 ft. deep, course S.
12.40	Road, bears S. and NE.
12.85	Fence, bears N. and S.
12.91	To cor. No. 3.
	Also cor. No. 11 H. E. S. 422.
	Deposit broken glass 14 ins. in the ground, over which set a granite stone 24 x 8 x 8 ins., chiseled + for the point and 3 - H E S 421 on SE. face and 11 - H E S 422 on NW. face; and raise a mound of stone 2 ft. base, 1-1/2 ft. high SE. of cor., whence:
	A juniper, 22 ins. dia., bears N. 55° 15' W., 103 lks. dist., scribed 3 H E S 421 + B T.
	A juniper, 10 ins. dia., bears N. 1° 45' E., 122 lks. dist., scribed 3 H E S 421 + B T.
	A juniper, 18 ins. dia., bears N. 48° 45' W., 96 lks. dist., scribed 11 H E S 422 + B T.
	A juniper, 8 ins. dia., bears N. 31° 15' E., 228 lks. dist., scribed 11 H E S 422 + B T.
	Thence North.
0.28	Fence, bears NE. and SW.
0.57	Road, bears NE. and SW. Descend 30 ft. to arroyo, in brush.
3.00	Arroyo, 10 lks. wide, 1 ft. deep, course SW. Ascend 30 ft. in brush to cor.
10.00	Cor No. 4.
	Also cor. No. 10 H. E. S. 422.
	Deposit broken glass 14 ins. in the ground, over which set a granite stone 24 x 8 x 8 ins., chiseled + for the point and 4 - H E S 421 on SE. face and 10 - H E S 422 on NW. face; and raise a mound of stone 2 ft. base,



Chains

1-1/2 ft. high SE. of cor., whence:  
 A juniper, 6 ins. dia., bears S. 30° W.,  
 100 lks. dist., scribed 4 H E S 421 + B T.  
 An oak, 12 ins. dia., bears S. 82° 30' E.,  
 44 lks. dist., scribed 4 H E S 421 + B T.  
 A juniper, 24 ins. dia., bears N. 4° 15' E.,  
 74 lks. dist., scribed 10 H. E S 422 + B T.  
 A pinon, 14 ins. dia., bears N. 81° 45' W.,  
 152 lks. dist., scribed 10 H E S 422 + B T.

Thence East.

Descend 30 ft. in brush to arroyo.

3.10 Arroyo, 10 lks. wide, 1 ft. deep, course SW. Ascend  
 30 ft. to cor.

5.35 Road, bears NE. and SW.

6.00 Fence, bears NE. and SW. Enter field.

7.00 To cor. No. 5.

Also cor. No. 9 H E S. 422.

Deposit broken glass 14 ins. in the ground, over  
 which set a granite stone 24 x 12 x 6 ins., chiseled  
 + for the point, 5 - H E S 421 on SE. face and 9 -  
 H E S 422 on NW. face; and raise a mound of stone 2  
 ft. base, 1-1/2 ft. high SE. of cor., whence:

A juniper, 8 ins. dia., bears N. 38° W., 85 lks.  
 dist., scribed 9 H E S 422 - 5 H E S 421 +  
 B T.

No other witness available. Pits impracticable.

April 26, 1916.

April 27, 1916.

At 7h. 40m. a.m., l.m.t., I set off 34° 16' on Lat.  
 arc, 13° 52-1/2' N. on decl. arc and determine a  
 meridian with the solar at cor. No. 5.

HOMESTEAD ENTRY SURVEY NO. 421

TONTO NATIONAL FOREST

STATE OF ARIZONA

8.

Chains	Thence North.
0.50	Fence, bears NE. and SW. Leave field.
1.10	Road, bears NE. and SW. Descend 40 ft. in brush to arroyo.
5.90	Arroyo, 10 lks. wide, 1 ft. deep, course SW. Ascend 40 ft. in brush to cor.
11.50	To cor. No. 6. Deposit broken glass 14 ins. in the ground, over which set a sandstone 24 x 10 x 8 ins., chiseled + for the point and 6 - H E S 421 on SE. face; dig pits 24 x 24 x 12 ins. crosswise on claim lines 7 ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high SE. of cor., whence: A juniper, 4 ins. dia., bears N. 26° 29' E., 39 lks. dist., scribed 6 H E S 421 + B T. A juniper, 6 ins. dia., bears S. 75° 07' E., 43 lks. dist., scribed 6 H E S 421 + B T. Cor. No. 8; H. E. S. 422; a granite stone 12 x 6 x 10 ins. above ground, marked + on top and 8 - H E S 422 on SW. face, with mound of stone 2 ft. base, 1-1/2 ft. high, SW. of cor. bears North, 8.50 chs. dist. by direct measurement.
	Thence East. Descend 40 ft. to arroyo in brush.
4.80	Fence, bears N. and S.
6.05	Fence, bears NW. and SE.
10.00	Arroyo, 10 lks. wide, 1 ft. deep, course SW. Ascend 40 ft. in brush to cor.
18.80	Fence, bears NE. and SW.
19.80	Road, bears ENE. and WSW.
20.02	To Cor. No. 7.

Chains

On line 4-5 of H. E. S. 419.

Deposit a broken glass 14 ins. in the ground, over which set a granite stone 28 x 10 x 8 ins., chiseled + for the point and 7 - H E S 421 on SW. face; and raise a mound of stone 3 ft. base, 2 ft. high SW. of cor., whence:

A juniper, 10 ins. dia., bears S. 37° 30' E., 40 lks. dist., scribed 7 H E S 421 + B T.

A pinon, 7 ins. dia., bears S. 62° 45' W., 81 lks. dist., scribed 7 H E S 421 + B T.

Cor. No. 5 H. E. S. 419, heretofore described, bears North, 18.35 chs.

Thence South.

Along line 5-4 of H. E. S. 419, over level land in brush.

12.40 Leave brush, bears NW. and SE. Enter open flat.

21.50 To cor. No. 8.

Identical with cor. No. 4 of H. E. S. 419, which is a sandstone 8 x 6 x 10 ins. above ground, marked and witnessed as heretofore described. I mark same stone 8 - H E S 421 on NW. face for cor. No. 8 of this survey, whence:

A juniper, 18 ins. dia., bears N. 56° 50' E., 157 lks. dist., scribed 8 H E S 421 - 4 H E S 419 + B T.

A juniper, 16 ins. dia., bears N. 67° 30' W., 234 lks. dist., scribed 8 H E S 421 - 4 H E S 419 + B T.

Thence N. 89° 56' W.

Along line 4-3 of H. E. S. 419, over level open land.

1.50 Enter brush.

10.

TONTO NATIONAL FOREST

STATE OF ARIZONA.

Chains

6.30 Wire fence, bears N. and S. Leave brush.

9.30 Enter cultivated field.

19.98 To cor. No. 9.

Identical with cor. No. 3 of H. E. S. 419, which is a granite stone 9 x 6 x 10 ins. above ground, marked and witnessed as heretofore described. I mark same stone 9 - H E S 421 on NW. face. No witnesses available, therefore dig pits 24 x 24 x 12 ins., crosswise on claim lines 3 ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high, 3-1/2 ft. dist. NW. of cor.

Thence South.

Along line 3-2 of H. E. S. 419, over level cultivated land.

10.00 To cor. No. 10.

On line 3-2 of H. E. S. 419.

Deposit broken glass 10 ins. in the ground, over which set a granite stone 20 x 8 x 4 ins. (no longer stone available) chiseled + for the point and 10 - H E S 421 on NW. face; and raise a mound of stone 3 ft. base, 2 ft. high NW. of cor., whence:

A juniper, 16 ins. dia., bears S. 85° 34' W.,

149 lks. dist., scribed 10 H E S 421 + B T.

A juniper, 10 ins. dia., bears S. 28° 13' E.,

164 lks. dist., scribed 10 H E S 421 + B T.

Cor. No. 2 H. E. S. 419, heretofore described, bears South, 9.90 chs. dist.

Thence West.

Over level open land.

0.20 Leave cultivated land, bears NNW. and SSE. Enter timber.

0.30 Fence, bears NNW. and SSE.

Chains	
2.50	Leave timber, bears N. and S. Enter open.
10.00	Leave open, enter timber, bears N. and S. Descend 15 ft. to arroyo.
11.63	Fence, bears NW. and SE.
18.10	Fork in road, road bears NW., NE. and SE.
18.15	Arroyo, 10 lks. wide, 1 ft. deep, course SW. Leave timber, bears NE. and SW. Enter open and ascend 5 ft. to cor.
19.20	Telephone line, bears NW. and SE.
20.00	To cor. No. 1, the place of beginning.

AREA

Total Area - - - - - 70.05 acres.

IMPROVEMENTS

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

An L shaped frame house, 50 x 40 ft., the long sides of which bear NW. and SE. and the SE. cor. of which bears S. 71° 50' W., 11.10 chs. dist. from cor. No. 7.

Value - - - - - \$ 500.00

A frame smoke house, 16 x 12 ft., the long sides of which bear NW. and SE. and the SE. cor. of which bears S. 72° 45' W., 10.45 chs. dist. from cor. No. 7.

Value - - - - - \$ 30.00

A frame barn, 22 x 40 ft., the long side of which bears N. and S. and the NE. cor. of which bears S. 78° 30' W., 7.70 chs. dist. from cor. No. 7.

Value - - - - - \$ 300.00

A frame hen house 12 x 12 ft., sides extending in cardinal directions, the NE. cor. of which bears

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TONTO NATIONAL FOREST

STATE OF ARIZONA.

Chains

S. 77° 45' W., 9.45 chs. dist. from cor. No. 7.

Value - - - - - \$ 30.00

Approximately 1 mile of wire fence.

Value - - - - - \$125.00

There is a frame dwelling 30 x 24 ft., the long sides of which bear N. and S., and the SE. cor. of which bears N. 80° 15' W., 2.40 chs. dist. from cor. No. 10.

This house belongs to Mr. Blake.

Value - - - - - \$ 250.00

DESCRIPTION

This claim lies on the Tonto Creek Watershed at an elevation of approximately 5500 ft. The land is a

flat bench cut by small arroyo in Western portion.

The timber consist of oak, juniper and pinon, a heavy stand of which lies along N. and W. boundaries . It is used for fire wood and posts. There is no timber of commercial value on the claim.

The soil is a sandy loam fairly fertile and of good depth. It is producing fair crops without irrigation.

There is no water for irrigation and none is necessary.

Water for domestic use is obtained from a small seep near the house.

There are approximately 30 acres which have been cultivated.

I saw no indications of mineral upon the claim.

CONFLICTS AND ADJOINING CLAIMS

There are no conflicts. This claim is joined on the East by H. E. S. 419 of Rufus Brown and on the West by H. E. S. 422 of Floyd Lockwood.

Payson, Arizona, the nearest post office, is 8 miles

Chains

distant, and Globe, Arizona, the nearest railroad point, is 110 miles distant.

TRAVERSE

Cor.	Course	Dist.	N	S	E	W
1-2	North	10.00	10.00			
2-3	S.89°57' E.	12.91		0.01	12.91	
3-4	North	10.00	10.00			
4-5	East	7.00			7.00	
5-6	North	11.50	11.50			
6-7	East	20.02			20.02	
7-8	South	21.50		21.50		
8-9	N.89°56' W.	19.98	0.02			19.98
9-10	South	10.00		10.00		
10-1	West	20.00				20.00
		142.91	31.52	31.51	39.93	39.98
Error in Lat. and Dep.			<u>31.51</u>			<u>39.93</u>
			.01			.05

Closing error, 1:2807.

Survey completed April 27, 1916.

*R. P. A. Johnson*

Surveyor - Draftsman

TONTON NATIONAL FOREST

STATE OF ARIZONA.

Chains

Direct Solar at cor. No. 8, H. E. S. 421, April 26, 1916.

Latitude 34° 16' N. Long. 111° 13' 11" W. Elev. 5500 ft.

Telescope	Time	Horizontal Angle	Vertical Angle	Pos. Sun
Direct	8h. 43m. 26s.	76° 30' 30"	41° 58'	o+
Reversed	8h. 44m. 53s.	76° 57' 00"	41° 43'	+
	8h. 44m. 09s.	76° 43' 45"	41° 50' 30"	
		ref.	53"	
			41° 49' 37"	

Direct 8h. 43m. 26s. 76° 30' 30" 41° 58' o+

Reversed 8h. 44m. 53s. 76° 57' 00" 41° 43' +

8h. 44m. 09s. 76° 43' 45" 41° 50' 30"

ref. 53"

41° 49' 37"

Decl. 13° 33' 14" N.

$$\text{Cos. } Q. = \frac{\sin. 13^{\circ} 33' 14''}{\cos. 34^{\circ} 16' \times \cos. 41^{\circ} 49' 37''} - \frac{\tan. 34^{\circ} 16' \times \tan. 41^{\circ} 49' 37''}{\tan. 34^{\circ} 16' \times \tan. 41^{\circ} 49' 37''}$$

log. sin. = 13° 33' 14" = 9.369885 ✓  
 log. cos. = 34° 16' = 9.917204 ✓  
 log. cos. = 41° 49' 37" = 9.872251 ✓  
 9.580428 = log. .38056 ✓

log. tan. = 34° 16' = 9.833339 ✓  
 log. tan. = 41° 49' 37" = 9.951799 ✓  
 9.785138 = log. .60973 ✓

Cos. Q. = .22917 ✓  
 Q. = 76° 45' 06" ✓

Difference from meridian determined by solar attachment

0° 01' 21".

Direct Solar at cor. No. 8, H. E. S. 421, April 26, 1916.

Latitude 34° 16' N. Long. 111° 13' 11" W. Elev. 5500 ft.

Telescope	Time	Horizontal Angle	Vertical Angle	Pos. Sun.
Direct	8h. 32m. 56s.	77° 41' 30"	40° 38' 30"	o+
Reversed	8h. 33m. 55s.	78° 01'	40° 30'	+
	8h. 33m. 26s.	77° 51' 15"	40° 34' 15"	
			55"	
			40° 33' 20"	

Direct 8h. 32m. 56s. 77° 41' 30" 40° 38' 30" o+

Reversed 8h. 33m. 55s. 78° 01' 40° 30' +

8h. 33m. 26s. 77° 51' 15" 40° 34' 15"

55"

40° 33' 20"

Decl. 13° 33' N.

$$\text{Cos. } Q. = \frac{\sin. 13^{\circ} 33'}{\cos. 34^{\circ} 16' \times \cos. 40^{\circ} 33' 20''} - \frac{\tan. 34^{\circ} 16' \times \tan. 40^{\circ} 33' 20''}{\tan. 34^{\circ} 16' \times \tan. 40^{\circ} 33' 20''}$$

log. sin. = 13° 33' = 9.369761 ✓  
 log. cos. = 34° 16' = 9.917204 ✓  
 log. cos. = 40° 33' 20" = 9.880686 ✓  
 9.571871 = log. .37314 ✓

log. tan. = 34° 16' = 9.833339 ✓  
 log. tan. 40° 33' 20" = 9.932351 ✓  
 9.765690 = log. .58303 ✓

Cos. Q. = .20989 ✓  
 Q. = 77° 53' 02" ✓

Difference in meridian 0° 01' 47" ✓



DIRECTIONS.—1. Carry out calculations to two decimals only.

2. In balancing Latitudes and Departures do not obliterate or change the original figures. Put the corrected figure or figures above in red ink. Do not change the footing of the original figures, but put below them the corrected footing in red ink.

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. 421, STATE OF ARIZONA.

CORNERS.	BEARING.	DISTANCE.	LATITUDES.		DEPARTURES.		DOUBLE M. D.	N. AREAS.	S. AREAS.
			NORTH.	SOUTH.	EAST.	WEST.			
1-2	North	10.00	10 00				0 00		
2-3	S. 89° 57' E.	12.91		0 01	12 91		12 92		0 13
3-4	North	10.00	10 00				25 84	258 40	
4-5	East	7.00			7 00		32 84		
5-6	North	11.50	11 50				39 84	458 16	
6-7	East	20.02			20 02		59 87		
7-8	South	21.50		21 50	0 00		79 91	1718 86	
8-9	N. 89° 56' W.	19.98	0 02			19 98	59 95	1 20	
9-10	South	10.00		10 00			39 98	399 80	
10-1	West	20.00				20 00	19 99		
		142.91	31 52	31 51	39 93	39 98		717 76	2118 79
			31 52	31 52	39 96	39 96			717 76
								20 / 1401 03	
								70 05 Acres.	

1.9

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APPROVAL

Office of the United States Surveyor General,

Phoenix, Arizona JUL 19 1917 , 191

The foregoing field notes of Homestead Entry Survey No.

421

executed by *R. P. A. Johnson, Surveyor-Draftsman* [Forest Service Title.]  
under his special instructions, dated *September 23, 1915*, having  
been critically examined, and the necessary corrections and explanations  
made, the said field notes, and the surveys they describe, are hereby  
approved.

*Frank P. Trott*  
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.