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JAN 13 1915

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

JUN 3-1914
DEC 2-1915

FIELD NOTES

OF

HOMESTEAD ENTRY SURVEY NO. 87

SITUATED IN THE

COCONINO NATIONAL FOREST

ADMINISTRATIVE DISTRICT NO. 3

in

Section 14, --surveyed, Township 22 N, Range 8 E.

Section 15, --surveyed, Township 22 N, Range 8 E.

of the

Gila and Salt River Base and Meridian.

ARIZONA

Survey executed by W. H. Finigan, Forest Service Surveyor.

Under special instructions dated August 8, 1913.

Survey commenced October 21, 1913.

Survey completed October 23, 1913.

Under Acts of June 11, 1906 and March 4, 1913.

Applicant for listing J. S. Le Ray

Residence Flagstaff, Arizona.

Application No. 106, dated February 16, 1909.

List No. 3-642, dated August 26, 1910.

Applicant for survey J. S. Le Ray

Residence Flagstaff, Arizona.

H. E. No. 012935, dated December 29, 1910.

Land district Phoenix, Arizona.

OATH OF ASSISTANTS

We hereby certify that we assisted W. H. Finigan,
Forest Service Surveyor in surveying all those
parts or portions of Homestead Entry Survey No. 87, in
--surveyed Section 14, Township 22 N, Range 8 E.,
--surveyed Section 15, Township 22 N, Range 8 E.,

of the G. & S. R. P. meridian, State of Arizona, which
are represented in the following field notes as having been
surveyed by him and under his direction; and that said sur-
vey 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 fur-
nished by the United States Surveyor General for Arizona.

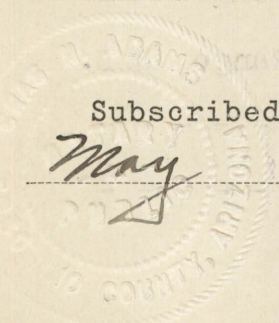
W. H. Power

W. B. Day

Subscribed and sworn to before me this 28th day of
May, 1914.

Chas. H. Adams

My Commission expires Aug. 12, 1916 NOTARY PUBLIC



OATH OF SURVEYOR

I W. H. Finigan, Forest Service Surveyor, do solemnly swear
that, in strict conformity with the special instructions of
the United States Surveyor General for Arizona, dated
August 8, 1913, and the laws of the United States, I have
well, faithfully, and truly, in my own proper person, sur-
veyed a tract of land ~~upon the application of~~ embraced in
List, No. 3-642, dated August 26, 1910, for
Patent, under the Act of June 11, 1906,
the same to be known as Homestead Entry Survey No. 87,
situated within the COCONINO National Forest, in
--surveyed Section 14, Township 22 N, Range 8 E., and
--surveyed Section 15, Township 22 N, Range 8 E.,

of the G. & S. R. P. 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 perpet-
uated in strict accordance with the stated special instruc-
tions, and in the specific manner described in the field
notes, and that the following are the original field notes
of such survey.

W. H. Finigan

Forest Service Surveyor.

Subscribed and sworn to before me this 26th day of
May, 1914.

Chas. C. Myers

Notary Public



U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

FIELD NOTES

OF

HOMESTEAD ENTRY SURVEY NO. 87

SITUATED IN THE **COCONINO** NATIONAL FOREST

ADMINISTRATIVE DISTRICT NO. 3

In Section 14 , - surveyed, Township 22 N. , Range 8 E.

In Section 15 , - surveyed, Township 22 N., Range 8 E.

of the

Gila and Salt River Base and Meridian.

State of

ARIZONA

Applicant for listing

Residence

Application No. , dated , 19

List No. , dated , 19

Applicant for survey

Residence

H. E. No. , dated , 19

Land District

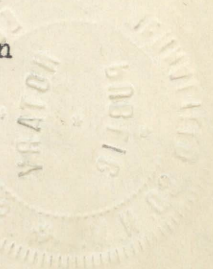
Survey executed by **Charles D. Hodson,** Surveyor - Draftsman
[Forest Service Title.]

Under special instructions dated June 2 , 1915

Survey commenced September 23 , 1915

Survey completed September 23 , 1915

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



OATH OF ASSISTANTS

We hereby certify that we assisted **Charles D. Hodson,**
Surveyor - Draftsman in ~~surveying all those re-~~
establishing cor. ^[Forest Service Title]secs. 10, 11, 14 and 15, and 1/4 cor. bet. secs. 14 and 15
~~parts or portions of~~ Homestead Entry Survey No. 87, 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 expensive and incon-
venient to appear before an
officer to administer oaths
to Assistants; hence, they
were taken by the Surveyor.

Douglas E. Smith, Chairman
Buck Owens, Chairman

Subscribed and sworn to before me this 1st day of
October, 1915.

Charles D. Hodson
Surveyor - Draftsman

OATH OF SURVEYOR

I, **Charles D. Hodson,** **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
June 2, 1915, and the laws of the United States, I have
well, faithfully, and truly, in my own proper person, ~~surveyed a tract~~
~~of land~~ re-established cor. secs. 10, 11, 14 and 15, and 1/4 cor. bet.
secs. 14 and 15,

, No. , dated , 19 , for
, under the Act of , 19 ,
the same to be known as Homestead Entry Survey No. 87
situated within the **COCONINO** National Forest, in
- surveyed Section 14 , Township 22 N. , Range 8 E. , and
- surveyed Section 15 , Township 22 N. , Range 8 E. ,

of the **G. and S. R. B. and** 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.

Charles D. Hodson
Surveyor - Draftsman.
[Forest Service Title.]

Subscribed and sworn to before me this eighth day of
October, 1915.

Elsie C. Myers
Notary Public



COCONINO NATIONAL FOREST

STATE OF ARIZONA

Chains Applicant for listing; J. S. Le Ray; Application No. 106, dated February 16, 1909; List No. 3-642, dated August 26, 1910; Serial No: 012935, made in the Phoenix Land Office on December 29, 1910 by J. S. Le Ray.
 Surveyed under special instructions from the Surveyor General for Arizona, dated August 8, 1913 and designated as Homestead Entry Survey No. 87.
 Situated in secs. 14 and 15, surveyed T. 22 N., R. 8 E., of the Gila and Salt River Base and Meridian, in the Coconino National Forest, Arizona.

Surveyed under the Acts of June 11, 1906, March 4, 1913, and March 4, 1915.

This survey was executed with a W. and L. E. Gurley light mountain transit equipped with a Burt solar attachment.

The distances were measured with a 200 and 400 link steel tape directly on the slope and the slope angles determined with a clinometer.

The courses of this survey were deflected from the true meridian as determined by solar observation.

October 22, 1913, at 9h. 50m., a.m., l.m.t., I observe the sun for azimuth at cor. No. 4 as follows:

Angle rt. from Ref. pt. to Sun.	Obs. alt. Sun	Position Sun	Position Telescope
135° 12'	37° 33'	♂	Direct
135° 40'	37° 16'	♀	Reversed

Lat. 35° 18' N. Long. 111° 30' 15" W.

Therefore bearing of reference point is N. 11° 16' E.

I test the Burt solar on the meridian corresponding to the above and find it to be in adjustment.

Chains October 23, 1913, at 8h. 40m., a.m., l.m.t., I observe the sun for azimuth at cor. No. 3 as follows:

Angle rt. from Ref. pt. to Sun.	Obs. alt. Sun	Position Sun	Position Telescope
164° 24'	26° 32'	†	Direct
164° 56'	27° 33'	‡	Reversed

Lat. 35° 18' N. Long. 111° 30' 15" W.

Therefore bearing of reference point is N. 35° 30' W., which checks the courses from the meridian previously established.

October 21, 1913, p.m.

Beginning at the cor. of secs. 14, 15, 22 and 23, T. 22 N., R. 8 E., which is a malpais stone 10 x 10 x 8 ins. above ground, marked and witnessed as described by the Surveyor General; thence N. 88° 49' E. 40.77 chs. to the 1/4 sec. cor. bet. secs. 14 and 23, which is in sight, which is a malpais stone 10 x 9 x 8 ins. above ground, marked 1/4 on North face. No witness objects. I set points on this line for future reference.

Return to cor. of secs. 14, 15, 22 and 23, and run North on random line bet. secs. 14 and 15 and at 40 chs. fail to find any evidence of 1/4 sec. cor. and at 79.22 chs. fall 1.41 chs. E. of position for cor. secs. 10, 11, 14 and 15, which is missing but which I determine by running S. 70° 00' E.; 14 lks. from a 24 in. pine scribed T 22 N R 8 E S 10 B, T. The two other witness trees have fallen but the position of cor. as above determined is verified by course and distance to stump of one of the other witness trees, the markings of which I find on the fallen log. No evidence of the third witness tree was found.

135

COCONINO NATIONAL FOREST

STATE OF ARIZONA

Chains Therefore true line is S. 1° 01' E., 79.23 chs.

I return on true line and set temporary points for future reference.

W. H. Finigan.

September 23, 1915.

Charles D. Hodson, Surveyor - Draftsman.

All courses in retracement of township line and restoration of corners in connection with H. E. S. No. 87

were run with a Buff and Buff transit No. 9700-6.

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

All distances were measured on the slope with an 800 link Lufkin steel tape and the slope angles reduced to the horizontal with a clinometer.

September 23, 1915.

At 4h. 50m. 35s. p.m., l.m.t., I observe the altitude of the sun for azimuth at the 1/4 sec. cor. bet. secs. 14 and 23. The reading on the reference object is set at zero and the sun was observed in the upper left and lower right quadrants of the field. My watch is set for local mean time.

Latitude 35° 17' 30" N. Long. 111° 31' 10" W.

Telescope	l.m.t.	Horizontal Angle	Vertical Angle
Direct	4h. 50m. 10s.	81° 04' 00"	12° 26' 30"
Reverse	4h. 50m. 59s.	80° 39' 30"	12° 50' 30"
Mean	4h. 50m. 35s.	80° 51' 45"	12° 38' 30"

Azimuth of sun at obsn., S. 80° 50' 24" W.

Bearing of reference object S. 0° 01' 21" E.

At 4h. 52m. 07s. p.m., l.m.t., on the same date, I again observe the altitude of the sun for azimuth.

Chains	Telescope	l.m.t.	Horizontal Angle	Vertical Angle
	Direct	4h. 51m. 50s.	81° 19' 30"	12° 05' 30"
	Reverse	4h. 52m. 25s.	80° 52' 00"	12° 32' 00"
	Mean	4h. 52m. 07s.	81° 05' 45"	12° 18' 45"
Azimuth of sun at obsn., S. 81° 05' 20" W.				
Bearing of reference point, S. 0° 00' 25" E.				
The mean of these two observations defines an azimuth within the required limits, and from this azimuth all courses of this survey are deflected.				

RETRACEMENT

Beginning at the cor. of secs. 14, 15, 22 and 23, T. 22 N. R. 8 E., a malpais stone 10 x 10 x 8 ins. above ground, marked and witnessed as described by the Surveyor General.

Thence N. 1° 01' W.

On a random line bet. secs. 14 and 15.

8.39 Intersect cor. No. 3 and C. C. of this survey, a malpais stone 6 x 6 x 10 ins. above ground, marked and witnessed as hereinafter described.

16.84 Intersect cor. No. 6 and C. C. of this survey, a malpais stone 14 x 14 x 10 ins. above ground, marked and witnessed as hereinafter described.

40.00 Set temporary point for 1/4 sec. cor.

79.23 Intersect point for cor. secs. 10, 11, 14 and 15, which I determine by running S. 70° 00' E., 14 lks. from a pine tree 24 ins. dia., blazed and scribed as described by the Surveyor General.

At this point I set a post 4 ft. long, 4 ins. square, marked T 22 N S 11 on NE. face; R 8 E S 14 on SE. face; S. 15 on SW. face; and S 10 on NW. face, with 2 notches on E. edge and 4 notches on S. edge. No new bearings

COCONINO NATIONAL FOREST

STATE OF ARIZONA

Chains available, therefore dig pits 18 x 18 x 12 ins. in each sec. and raise a mound of earth, 4 ft. base, 2 ft. high, West of cor.

Thence S. 1° 01' E.

On true line bet. secs. 14 and 15.

39.615 Set a malpais stone 24 x 16 x 12 ins., 14 ins. in the ground, over a stone marked with a cross, marked 1/4 on West face, dig pits 24 x 24 x 12 ins. North and South 3-1/2 ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high, West of cor., from which:

A yellow pine 8 ins. dia., marked 1/4 S B T, bears N. 78° 52' E., 111 lks. dist.

A yellow pine 6 ins. dia., marked 1/4 S B T, bears N. 21° 58' W., 24 lks. dist.

62.39 Cor. No. 6 and C. C. of this survey.

70.84 Cor. No. 3 and C. C. of this survey.

79.23 Cor. secs. 14, 15, 22 and 23.

Charles D. Hodson

Surveyor - Draftsman

October 22, 1913.

W. H. Finigan.

Beginning at cor. No. 1.

Identical with 1/4 sec. cor. bet. secs. 14 and 23, and cor. No. 7 of list, heretofore described, which I chisel C. C. on NW. face and 1 - H E S 87 on side facing claim. No bearing objects available, therefore dig pits 18 x 18 x 12 ins. crosswise on section line, 3 ft. East and West of cor.; and raise mound of earth 3-1/2 ft. base, 1-1/2 ft. high, 3-1/2 ft. North of cor.

Chains Mag. Va. at 2 p.m., 15° 01' E. Mean Mag. Va. 15° 03' E.
 Long. 111° 29' 43" W., from special instructions from
 the Surveyor General.

Thence S. 88° 49' W.

Along line bet. secs. 14 and 23, over level ground.

12.00 Road bears NE, and SW.

12.40 Wire fence bears NE. and SW., enter plowed ground.

34.95 Wire fence bears NW. and SE., leave plowed ground.

35.03 To cor. No. 2 and C. C. on line bet. secs. 14 and 23.

A malpais stone 24 x 13 x 6 ins., set 14 ins. in ground,
 over stone marked +, chiseled C C on NW. face, 3 grooves
 on S. face and 2 - H E S 87 on side facing claim; raise
 mound of stone 2 ft. base, 1-1/2 ft. high, 3-1/2 ft.

N. 35° 30' W. of cor., whence:

A pine 30 ins. dia., scribed 2 H E S 87 C C B T,
 bears N. 37° 32' W., 107 lks.

A pine 34 ins. dia., scribed 2 H E S 87 C C B T,
 bears S. 75° 24' W., 210 lks.

No other bearing objects available. Pits
 impracticable.

Cor. No. 1 of list, which is a malpais stone
 4 x 8 x 8 ins. above ground, marked and wit-
 nessed as described in field notes of list-
 ing survey, bears N. 35° 30' W., 6 lks.

Destroy all trace of List cor.

Cor. secs. 14, 15, 22 and 23, heretofore
 described, bears S. 88° 49' W., 5.74 chs.

Thence N. 35° 30' W.

Over level ground.

0.50 Wire fence, bears NW. and SE., enter plowed ground.

COCONINO NATIONAL FOREST

STATE OF ARIZONA

Chains
10.11

To cor. No. 3 and C. C. on line bet. secs. 14 and 15.

A malpais stone 24 x 6 x 6 ins., set 14 ins. in ground,
over stone marked +, chiseled C C on SE. face, 2
grooves on E. face, and 3 - H E S 87 on side facing
claim; raise mound of earth 4 ft. base, 2 ft. high,
3-1/2 ft. S. 35° 30' E. from cor., whence:

A pine 30 ins. dia., scribed 3 H E S 87 C C B T,
bears S. 24° 03' W., 143 lks.

A pine 33 ins. dia., scribed 3 H E S 87 C C B T,
bears S. 87° 21' W., 180 lks.

No other bearing objects available. Pits
impracticable.

Cor. secs. 14, 15, 22 and 23, heretofore de-
scribed, bears S. 1° 01' E., 8.39 chs.

Position for cor. secs. 10, 11, 14 and 15,
bears N. 1° 01' W., 70.84 chs.

Thence N. 35° 30' W.

Over level ground.

7.96 To cor. No. 4.

Identical with cor. No. 2 of list, which is a pine
26 ins. in dia., scribed H/2, witness trees have been
cut down but stumps are as described in field notes
of list survey. Destroy marks and scribe same tree
+ 4 - H E S 87 on side facing claim; raise mound of
earth 4 ft. base, 2 ft. high, 3-1/2 ft. dist. within
claim, whence:

A pine 16 ins. dia., scribed 4 H E S 87 B T,
bears S. 41° 15' W., 71 lks.

A pine 24 ins. dia., scribed 4 H E S 87 B T,
bears S. 59° 10' E., 128 lks.

THE COCONINO NATIONAL FOREST

STATE OF ARIZONA

Chains Lat. by Burt solar at 12 M., 35° 18' N.

Thence N. 11° 13' E.

Over level ground.

1.35 Wire fence, bears NE. and SW., leave plowed ground.

4.45 To cor. No. 5.

Identical with cor. No. 3 of list, which is a pine 17 ins. in dia., marked and witnessed as described in field notes of listing survey. Destroy marks and scribe same tree + 5 - H E S 87 on side facing claim; raise mound of earth 4 ft. base, 2 ft. high, 3-1/2 ft. dist. within claim; whence:

A pine 26 ins. dia., scribed 5 H E S 87 B T, bears S. 65° 05' W., 55.5 lks.

A pine 20 ins. dia., scribed 5 H E S 87 B T, bears N. 2° 10' W., 11.5 lks.

Thence S. 56° 33' E.

Over level ground.

1.05 Wire fence, bears NE. and SW., enter plowed ground.

4.30 To cor. No. 6 and C. C. on line bet. secs. 14 and 15.

A malpais stone 24 x 14 x 14 ins., set 14 ins. in ground over stone marked +, chiseled C C on NW. face, 2 grooves on E. face, and 6 - H E S 87 on side facing claim; raise mound of earth 4 ft. base, 2 ft. high, 3-1/2 ft. N. 56° 33' W., from cor., whence:

A pine 14 ins. dia., scribed 6 H E S 87 C C B T, bears N. 89° 17' E., 158 lks.

A pine 24 ins. dia., scribed 6 H E S 87 C C B T, bears N. 17° 47' W., 232 lks.

No other bearing objects available. Pits impracticable.

COCONINO NATIONAL FOREST

STATE OF ARIZONA

Chains T. S. 78 Cor. Esecs. 14, 15, 22 and 23, heretofore described, bears S. 1° 01' E., 16.84 chs.
Position for cor. secs. 10, 11, 14 and 15,

bears N. 1° 01' W., 62.39 chs.

Thence S. 56° 33' E.

Over level ground in plowed field.

12.74 To cor. No. 7.

Identical with cor. No. 4 of list, which is a pine 28

ins. dia., marked and witnessed as described in

field notes of listing survey. Destroy marks and

scribe same tree. + 7 - H E S 87 on side facing claim;

raise mound of earth 4 ft. base, 2 ft. high, 3-1/2 ft.

dist. within claim, whence:

A pine 8 ins. dia., scribed 7 H E S 87 B T,

bears N. 11° 35' W., 111.5 lks.

A pine 20 ins. dia., scribed 7 H E S 87 B T,

bears N. 89° 00' E., 182.5 lks.

Thence S. 66° 24' E.

Over level ground, along wire fence and along edge of plowed field.

6.45 To cor. No. 8.

Identical with cor. No. 5 of list, which is a malpais

stone 4 x 12 x 10 ins. above ground, marked and witnessed as described in field notes of listing survey.

Destroy same and set a malpais stone 24 x 12 x 12 ins.

14 ins. in ground, over stone marked +, chiseled

8 - H E S 87 on side facing claim; raise mound of stone

2 ft. base, 1-1/2 ft. high, 3-1/2 ft. dist. within

claim; whence:

A pine 12 ins. dia., scribed 8 H E S 87 B T,

bears N. 54° 27' W., 175 lks.

COCONINO NATIONAL FOREST

STATE OF ARIZONA

Chains A pine 18 ins. dia., scribed 8 H E S 87 B T, bears N. 12° 07' E., 363 lks.

Thence N. 41° 08' E.

Over level ground, leave fence and plowed ground.

1.00 Ascend SE. slope ridge.

3.75 Top ascent on ridge, bears NW. and SE., descend.

5.50 Foot descent, over level ground.

8.85 To cor. No. 9.

Identical with cor. No. 6 of list, which is a pine 12

ins. in dia., marked and witnessed as described in

field notes of listing survey. Destroy marks and

scribe same tree + 9 - H E S 87 on side facing claim;

raise mound of earth, 4 ft. base, 2 ft. high, 3-1/2 ft.

dist. within claim; whence:

A pine 18 ins. dia., scribed 9 H E S 87 B T,

bears S. 58° 20' W., 50 lks.

A pine 12 ins. dia., scribed 9 H E S 87 B T,

bears N. 72° 45' W., 63 lks.

Thence S. 55° 09' E.

Over level ground.

2.93 Cor. wire fence, thence along fence.

4.30 Intersection of wire fence, bears SW.

5.55 Intersection of wire fence; bears SW.

10.05 Cor. wire fence, leave fence.

10.30 Road, bears NE. and SW.

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

Lat. at 1h. 44m., a.m., l.m.t., by Burt solar

35° 18' N.

A pine 12 ins. dia., scribed 8 H E S 87 B T,

bears N. 54° 37' W., 178 lks.

COCONINO NATIONAL FOREST

STATE OF ARIZONA

Chains

AREAS

Area in sec. 14, T. 22 N., R. 8 E. -----	34.68 acres
Area in sec. 15, T. 22 N., R. 8 E. -----	<u>2.79</u> acres
Total area H. E. S. No. 87 - - - - -	37.47 acres

IMPROVEMENTS.

The improvements on this claim, all of the claimant herein, consist of the following:

A log house, the NE. cor. of which bears from cor. No. 9 S. 40° 55' E., 1.05 chs., 12 x 15 ft., course of long side S. 45° W.

Value ----- \$25.00

A frame house, the NE. cor. of which bears from cor. No. 9; S. 22° 25' E., 1.05 chs., 10 x 16 ft., course of long side S. 70° W.

Value ----- \$ 50.00

A frame shed, the NE. cor. of which bears from cor. No. 9, S. 20° 55' W.; 2.20 chs., 10 x 12 ft., course of long side North.

Value ----- \$ 25.00

A pole barn, the NE. cor. of which bears from cor. No. 9, S. 44° 55' E., 5.00 chs. 20 x 24 ft., course of long side, N. 60° W.

Value ----- \$ 15.00

A log house, partly completed, the NE. cor. of which bears from cor. No. 9, S. 36° 45' W., 3.80 chs., 18 x 20 ft., course of long side N. 20° E.

Value ----- \$ 10.00

About one mile of wire fence, partly outside of claim.

Value ----- \$100.00

Total estimated value of improvements ----- \$225.00

Chains DESCRIPTION

This claim lies in a shallow valley and is practically level. The soil consists of a volcanic cinder. No timber on claim. No water on claim, the natural precipitation being depended upon to raise crops; and water for household use is hauled. The claim is used for agricultural purposes and is chiefly valuable for such. The claimant has about 35 acres under cultivation. No mineral observed or known to be on claim.

ADJOINING CLAIMS

This survey is bounded on the South by List No. 3-642, Phoenix Serial No. 012935 of claimant herein, and this survey is a part of that list and entry, and also by List 3-2016, Phoenix Serial No. 023316, which is additional to said Entry 012935. No other claims known adjoining or nearby. This survey is situated about 10 miles from Flagstaff, Arizona, and is readily reached by a good wagon road. No other nearby settlements. Survey completed October 23, 1913.

TRAVERSE IN SECTION 15.

Sta.	Course	Dist.	N	S	E	W
4-5	N. 11° 13' E.	4.45	4.36		0.87	
5-6	S. 56° 33' E.	4.30		2.37	3.59	
6-3	S. 1° 01' E.	8.45		8.45	0.15	
3-4	N. 35° 30' W.	7.96	6.48			4.62
		25.16	10.84	10.82	4.61	4.62
			10.82			4.61
Error in Lat. and Dep.			.02			.01
Error of closure 1:1123.						

COCONINO NATIONAL FOREST
STATE OF ARIZONA

Chains

TRAVERSE IN SECTION 14.

Sta.	Course	Dist.	N	S	E	W	
3-6	N. 1° 01' W.	8.45	8.45			0.15	
6-7	S. 56° 33' E.	12.74		7.02	10.63		
7-8	S. 66° 24' E.	6.45		2.58	5.91		
8-9	N. 41° 08' E.	8.85	6.67		5.82		
9-1	S. 55° 09' E.	22.83		13.05	18.74		
1-2	S. 88° 49' W.	35.03		0.72		35.02	
2-3	N. 35° 30' W.	10.11	8.23			5.87	
			104.46	23.35	23.37	41.10	41.04
					23.35	41.04	

Error in Lat. and Dep. .02 .06

Error of closure 1:1654.

TRAVERSE OF CLAIM

Sta.	Course	Dist.	N	S	E	W	
1-2	S. 88° 49' W.	35.03		0.72		35.02	
2-4	N. 35° 30' W.	18.07	14.71			10.49	
4-5	N. 11° 13' E.	4.45	4.36		0.87		
5-7	S. 56° 33' E.	17.04		9.39	14.22		
7-8	S. 66° 24' E.	6.45		2.58	5.91		
8-9	N. 41° 08' E.	8.85	6.67		5.82		
9-1	S. 55° 09' E.	22.83		13.05	18.74		
			112.72	25.74	25.74	45.56	45.51
				25.74		45.51	

Error in Lat. and Dep. .00 .05

Error of closure 1:2254

Any discrepancy between these field notes and those of the listing survey is due to error in the latter.

W. H. Finigan
Forest Service Surveyor.

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NATIONAL FOREST

STATE OF ARIZONA

Chains

TRAVELER IN SECTION 1A.

Sta.	Course	Dist.	N	S	E	W
2-3	N. 88° 30' W.	10.11	8.83			1.28
1-3	S. 88° 49' W.	33.03		0.73		33.03
2-1	S. 55° 09' E.	32.83		13.05	18.74	
3-9	N. 41° 08' E.	8.33	6.37			3.82
7-8	S. 66° 24' E.	6.45		2.58	5.91	
6-7	S. 55° 33' E.	17.04		9.39	14.33	
4-5	N. 41° 13' E.	4.45	4.33			0.87
3-4	N. 53° 30' W.	18.07	14.71			10.43
1-2	S. 88° 49' W.	33.03		0.73		33.03

104.46 33.33 33.37 41.10 41.04
 33.33 41.04
 Error in Lat. and Dep. .00
 Error of closure 1:1684.

TRAVELER ON CLAIM

Sta.	Course	Dist.	N	S	E	W
2-1	S. 55° 09' E.	32.83		13.05	18.74	
3-9	N. 41° 08' E.	8.33	6.37			3.82
7-8	S. 66° 24' E.	6.45		2.58	5.91	
6-7	S. 55° 33' E.	17.04		9.39	14.33	
4-5	N. 41° 13' E.	4.45	4.33			0.87
3-4	N. 53° 30' W.	18.07	14.71			10.43
1-2	S. 88° 49' W.	33.03		0.73		33.03

113.73 33.74 33.74 43.33 43.31
 33.74 43.31
 Error in Lat. and Dep. .00
 Error of closure 1:2334

Any discrepancy between these field notes and those of the listing survey is due to error in the latter.

[Signature]
 Forest Service Surveyor.

Chains

Computations - Charles D. Hodson - Surveyor

Draftsman.

Direct Solar at 1/4 sec. cor. bet. secs. 14 and 23,
T. 22 N., R. 8 E., Gila and Salt River Base and Meridian.
September 23, 1915.

l.m.t.	Horizontal Angle	Vertical Angle
4h. 50m. 10s.	81° 04' 00"	12° 26' 30"
4h. 50m. 59s.	80° 39' 30"	12° 50' 30"
2) 9h. 41m. 09s.	161° 43' 30"	25° 17' 00"
4h. 50m. 35s.	80° 51' 45"	12° 38' 30"
	ref.	3' 19"
	Alt.	12° 35' 11"

Elevation 6700 ft.

Lat. 35° 17' 30" N., Long. 111° 31' 10" W. = 7h. 26m. 05s.

7h. 26m. 05s. + 4h. 50m. 35s. = 12h. 16m. 40s. = 12h. 28

58".4 x 12.28 = 0° 11' 57".2.

0° 15' 07".4 - 0° 11' 57".2 = 0° 03' 10".2, decl.

Log. sin.	0° 03' 10"	=	6.961670	
log. cos.	35° 17' 30"	=	9.911808	
log. cos.	12° 35' 11"	=	9.989436	
			7.060426	.00115

log. tan.	35° 17' 30"	=	9.849924	
log. tan.	12° 35' 11"	=	9.348844	
			9.198768	.15804

Cos. A = .15919

80° 51' 45"

A. = S. 80° 50' 24" W.

Bearing of Reference point = S. 0° 01' 21" E.

l.m.t.	Horizontal Angle	Vertical Angle
4h. 51m. 50s.	81° 19' 30"	12° 05' 30"
4h. 52m. 25s.	80° 52' 00"	12° 32' 00"
2) 9h. 44m. 15s.	162° 11' 30"	24° 37' 30"
4h. 52m. 07s.	81° 05' 45"	12° 18' 45"
	ref.	3' 25"
	Alt.	12° 15' 20"

Log. sin.	0° 03' 10"	=	6.961670	
log. cos.	35° 17' 30"	=	9.911808	
log. cos.	12° 15' 20"	=	9.989988	
			7.059874	.00115

log. tan.	35° 17' 30"	=	9.849924	
log. tan.	12° 15' 20"	=	9.336905	
			9.186829	.15375

Cos. A. = .15490

81° 05' 45"

A. = S. 81° 05' 20" W.

Bearing of Reference Point = S. 0° 00' 25" E.

Chains	Computations - Charles D. Hobson - Surveyor		Chains
	<p>Direct solar at 1:45 sec. cor. 14 and 23 T. 32 N., R. 8 E., 6th and Salt River base and meridian September 23, 1918</p>		
	Vertical Angle	Horizontal Angle	l.m.f.
	12° 38' 30"	81° 04' 00"	41.50m. 10a.
	12° 50' 30"	80° 37' 30"	41.50m. 22a.
	<u>24° 29' 00"</u>	<u>161° 41' 30"</u>	292.44m. 02a.
	12° 38' 30"	80° 31' 48"	41.50m. 32a.
	ref. 8' 12"		
	Alt. 12° 38' 11"		
			Elevation 5700 ft.
			Lat. 32° 17' 30" N., Long. 111° 51' 10" W. = 72.84m. 02a.
			72.84m. 02a. + 41.50m. 32a. = 124.34m. 40a. = 124.38
			55" 4 x 12.38 = 0.11' 57.8"
			0° 13' 07".4 - 0° 11' 57".8 = 0° 01' 10".2, decl.
			log. sin. 0° 01' 10" = 9.981570
			log. cos. 32° 17' 30" = 9.91808
			log. cos. 12° 38' 11" = 9.989233
			<u>7.080455</u>
			log. tan. 32° 17' 30" = 9.849224
			log. tan. 12° 38' 11" = 9.349244
			<u>9.198783</u>
			9.198783
			cos. A = .15212
			80° 31' 48"
			A. = 2.80° 50' 34" W.
			Bearing of Reference point = S. 0° 01' 31" E.
	Vertical Angle	Horizontal Angle	l.m.f.
	12° 08' 30"	81° 19' 30"	41.50m. 80a.
	12° 38' 00"	80° 52' 00"	41.50m. 22a.
	<u>24° 46' 30"</u>	<u>162° 11' 30"</u>	292.44m. 12a.
	12° 08' 30"	81° 08' 18"	41.50m. 02a.
	ref. 8' 32"		
	Alt. 12° 15' 30"		
			log. sin. 0° 01' 10" = 9.981570
			log. cos. 32° 17' 30" = 9.91808
			log. cos. 12° 15' 30" = 9.989233
			<u>7.080455</u>
			log. tan. 32° 17' 30" = 9.849224
			log. tan. 12° 15' 30" = 9.339205
			<u>9.198783</u>
			9.198783
			cos. A = .15212
			81° 08' 18"
			A. = 2.01° 03' 20" W.
			Bearing of Reference point = S. 0° 00' 25" E.

Observation at 9:50 A.M. Oct. 22, 1913. Lat. 35° 18'

← rt. to sun	obs. alt. sun	
135° 12'	37° 33'	direct
135° 40'	37° 16'	reversed.
2) <u>270° 52'</u>	2) <u>74° 49'</u>	
135° 26'	37° 24' 30"	
	Refrac. 1' 16"	
	True alt. 37° 23' 14"	

Decl. app. noon Greenwich = 10° 56' 12.8"
 Dif 5 hr. 20 min. 4' 43.79"
 Decl. at 9:50 A.M. 11° 00' 56.59"

sin. 11° 01' = 9.2812483	tan. 35° 18' = 9.8500575
cos. 35° 18' = 9.9117634	tan. 37° 23' 10" = 9.8831921
	<u>9.7332496</u>
cos. 37° 23' 10" = 9.9001277	.54106
	<u>9.4693572</u>
	.29468
	<u>-.83574 = 33° 18'</u>

Course to sun S. 33° 18' E.
 ↙ left to Ref. point 135° 26'
 Course to ref. pt. = N. 11° 16' E.

Observation at 8:40 P. M. Oct. 23, 1913. Lat. 35° 18'

← rt. to sun	Obs. alt. sun	
164° 24'	26° 32'	direct
164° 56'	27° 33'	reversed
2) <u>329° 20'</u>	2) <u>54° 05'</u>	
164° 40'	27° 02' 30"	
	1' 52"	
	<u>27° 00' 28"</u>	

Decl. app. noon Greenwich = 11° 17' 25.1"
 Dif. for 4 hr. 10 min 3' 48.0"
 Decl. at 8.40 A.M. 11° 21' 13.1"

sin 11° 21' 10" = 9.2941340	tan 35° 18' = 9.8500575
cos. 35° 18' = 9.9117634	tan 27° 0' 30" = 9.7073220
	<u>9.5573795</u>
cos 27° 0' 30" = 9.9498487	.36089
	<u>9.4325219</u>
	.27072
	<u>-.63161 = 50° 50'</u>

Course to sun S. 50° 50' E.
 ↙ left to ref. point 164° 40'
 Course to ref. " N. 35° 30' W.

Observation at 9:50 A.M. Oct. 22, 1913. Lat. 35° 18'

rt. to sun obs. alt. sun
 135° 12' direct
 135° 40' reversed
 2) 274° 48'
 135° 20' 37° 24' 30"

Retrac. 1' 10"
 Time alt. 37° 23' 14"

Decl. app. noon Greenwich = 10° 56' 12.8"
 Diff. for 20 min. 4' 43.75"
 Decl. at 9:50 A.M. 11° 00' 56.55"

sin 11° 01' = 0.191483
 cos 35° 18' = 0.917034
 0.1762849
 0.4433575
 0.3001277
 0.4433575
 0.2468

Course to sun S. 33° 18' E.
 Alt. to ref. point 135° 20'
 Course to ref. pt. N. 11° 16' E.

Observation at 8:40 P.M. Oct. 22, 1913. Lat. 35° 18'

rt. to sun obs. alt. sun
 154° 24' direct
 154° 55' reversed
 2) 279° 20'
 154° 40' 27° 02' 30"

Retrac. 1' 52"
 27° 00' 38"

Decl. app. noon Greenwich = 11° 17' 22.1"
 Diff. for 4 hr 10 min. 5' 48.0"
 Decl. at 8:40 A.M. 11° 21' 13.1"

sin 11° 21' 10" = 0.1941840
 cos 35° 18' = 0.917034
 0.1762849
 0.3498487
 0.4433575
 0.2707

Course to sun S. 50° 50' E.
 Alt. to ref. point 154° 40'
 Course to ref. " N. 28° 30' W.

tan 35° 18' = 0.7032075
 tan 27° 02' 30" = 0.5097330
 0.3574785

0.35089
 0.37075
 0.3161 - 50° 50'

DIRECTIONS.—1. Carry out calculations to two decimals only.
2. In balancing Latitudes and Departures do not obliterate or change 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, 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. I. 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. 87, STATE OF ARIZONA - COCONINO.

CORNERS.	BEARING.	DISTANCE.	LATITUDES.		DEPARTURES.		DOUBLE M. D.	N. AREAS.	S. AREAS.
			NORTH.	SOUTH.	EAST.	WEST.			
4-5	N. 11° 13' E.	4.45	4 36	Area in Sec. 15.	0 87	3 79	0 87		
5-6	S. 56° 33' E.	4.30		2 37	3 59		5 33	12 63	
6-3	S. 1° 01' E.	8.45		8 45	0 15		2 08	76 82	
3-4	N. 35° 30' W.	7.96	6 48			29 89	4 62		
		25.16	10 84	10 82	4 61	33 68		89 45	
			10 83	10 83	4 62			33 68	
				Area in Sec. 14.		Area		2) 55 77	
6-7	S. 56° 33' E.	12.74		7 02	10 63		10 62		
7-8	S. 66° 24' E.	6.45		2 58	5 91		27 15		
8-9	N. 41° 08' E.	8.85	6 67	4	5 82	259 26	38 87		
9-1	S. 55° 09' E.	22.83		13 05	18 74		63 41	826 87	
1-2	S. 88° 49' W.	35.03		0 72			47 10	33 44	
2-3	N. 35° 30' W.	10.11	8 23			50 86	6 18		
3-6	N. 1° 01' W.	8.45	8 45			1 27	0 15		
		104.46	23 35	23 37	41 10	311 39	511-39-	1004 91	
			23 35	23 35	41 07			311 39	
						Area		2) 693 52	
								346 76	
						Area		34 68 acres.	

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APPROVAL

Office of the United States Surveyor General,

Phoenix, Arizona, March 17, 1916.

The foregoing field notes of Homestead Entry Survey No.

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J. S. Le Ray

executed by W. H. Finigan, Forest Service Surveyor.

under his special instructions, dated August 8, 1913, and Charles D. Hodson, Surveyor-Draftsman, under Ins. dated June 2, 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 Arizona, has been correctly copied from the original notes on file in this office.

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

Office of the United States Attorney General
Washington, D.C. 20530

Dear Sir:

I have the honor to acknowledge the receipt of your letter of the 10th instant, in relation to the above-captioned matter.

The Bureau is currently reviewing the information furnished to it and will advise you of the results of its investigation as soon as possible.

Sincerely,
[Signature]

Very truly yours,
[Signature]

Special Agent in Charge