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BOOK 2210

Book D.

Accepted, Letter E Aug 10/1911

2210

FIELD NOTES

2210

OF THE SURVEY OF THE

East Boundary of Tp. 5 N. Rg. 13 W.

2210

2210

Of the Gila and Salt River Meridian,
Territory of Arizona.

AS SURVEYED BY

John F. Hesse, United States Deputy Surveyor,

Under his Contract No. 158, dated June 4th, 1909., 189

Survey commenced September 26, 1909., 189

Survey completed September 29, 1909., 189

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2210

NAMES AND DUTIES OF ASSISTANTS.

BOOK 2210

Fred Kesl

Chairman

Fred W. Rodolf

Chairman.

Norman Oliver.

Arman.

F. W. Schwalm

Flagman.

BOOK 2210

INDEX DIAGRAM.

Township 5 N., Range 12 W.

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PRELIMINARY OATHS OF ASSISTANTS.

BOOK 2210

WE, Fred Kesl and Fred W. Rodolf do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain over even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of the East boundary of Tp. 5 N. Rg. 12 W.

Fred Kesl, Chainman.
Fred W. Rodolf, Chainman.

Subscribed and sworn to before me this 26th day of September 1909, 189



John F. Hesse, U.S. Deputy Surveyor

WE, and do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of

Moundman.
Moundman.

Subscribed and sworn to before me this day of 189



WE, I. Norman Oliver and do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given me, to the best of my skill and ability, in the survey of the east boundary of Tp. 5 N. Rg. 12 W.

Norman Oliver, Axman.
Axman.

Subscribed and sworn to before me this 26th day of September 1909, 189



John F. Hesse, U.S. Deputy Surveyor

I, F. W. Schwalm, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of the east boundary of Tp. 5 N. Rg. 12 W.

F. W. Schwalm, Flagman.

Subscribed and sworn to before me this 26th day of September, 1909, 189



John F. Hesse, U.S. Deputy Surveyor

No notary available without loss of time and great expense.

East boundary of Tp. 5 N. Rg. 12 W.

Chains.

Survey commenced September 26, 1909, and executed with a Young and Sons light mountain transit with solar attachment, No. 7532. The horizontal limb is provided with two double verniers placed opposite to each other reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

The instrument was examined, tested on the true meridian at Phoenix, found correct, and was approved by the surveyor general for Arizona

I examine the adjustments of the transit, and find them correct; then, to test the solar apparatus, by comparing its indications, resulting from solar observations made during a.m., and p.m., hours, with a meridian determined by observations on Polaris, I proceed as follows;

At the standard cor. of Tps. 5 N. Rgs. 11 and 12 W. latitude $33^{\circ} 43' 27''$ N. longitude $113^{\circ} 27' 09''$ W.; I set off $33^{\circ} 43\frac{1}{2}'$ N. on the lat. arc; $1^{\circ} 14\frac{1}{2}'$ S. on the decl. arc; and at 3h. 00m., P. M., l.m.t., determine with the solar a meridian and mark a point thereof, on a stone firmly set in the ground, 5 chs. N. of the cor.

At 7h. 12m. p.m., by my watch, which has correct l.m.t. I observe Polaris at eastern elongation, in accordance with manual of instructions, and mark a point in the line thus determined, on a peg driven in the ground 5 chs. N. of my station.

September 26, 1909.

September 27: At 6h. 30m. a.m., l.m.t., I lay off the azimuth of Polaris, $1^{\circ} 25'$ to the west, and mark the meridian thus determined, by cutting a small groove in the stone set September 26, on which the meridian coincides with the mark determined by the solar.

At 7h. 00m., a.m., l.m.t., I set off $33^{\circ} 43\frac{1}{2}'$ N. on the lat. arc: $1^{\circ} 29'$ S. on the decl. arc: and mark a point in the meridian determined with the solar, by a cross on the stone already set 5 chs. N. of my station: this mark coincides with the meridian established by the Polaris observation.

The solar apparatus, by p.m. and a.m., observations, defines positions for meridians, which coincide with the meridian established by the Polaris observations: therefor, I conclude that the adjustments of the transit are satisfactory.

The magnetic bearing of the true meridian at 7h. 15m. a.m., is N. $14^{\circ} 15'$ W.; the angle thus determined gives the mag. decl. $14^{\circ} 15'$ E.

I commence at the standard cor. of Tps. 5 N. Rgs. 11 and 12 W., which is a stone marked and witnessed as described by the surveyor general.

Thence I run

North on a random line, along the E. bdy. of Tp. 5 N. Rg. 12 W. setting temp. $\frac{1}{4}$ sec. and sec. cors. at intervals of 40.00 chs. to the temp. point for cor. of secs. 25 30 31 and 36. From this cor. the line runs over extremely rough and rugged mountain very broken and impossible to run the line over, therefore from this cor. I offset 120 chs. W. then North on the offset line 160 chs. then E. 120 chs. to true line at point for temp. cor. of secs. 13, 18, 19 and 24. On account of the extremely broken and mountainous land along the line it is impossible to establish the sec. and $\frac{1}{4}$ sec. cors. on the E. bdys. of secs. 24 and 25, as the line cannot be run south from this cor. Then from point for temp. cor. of secs. 13, 18, 19 and 24 I run North on my random line setting temp. $\frac{1}{4}$ sec. and sec. cors. at intervals of 40.

East boundary of Tps. 5 N. Rgs. 12 W.

Chains. 00 chs.; and at 480.04 chs., intersect the N. bdy. of the Tp. 42 lks. E. of the true point for cor. of Tps. 5 and 6 N. Rgs. 11 and 12 W. which is a stone firmly set, marked and witnessed as described by the surveyor general. The falling answers to a correction of $0^{\circ} 03'$ or 7 lks. W. per mile, counting from the S. E. cor. of the Tp.

September 27, 1909.

September 28, 1909; At 7h. oom., a.m., l.m.t., I set off $33^{\circ} 48\frac{1}{2}'$ N. on the lat. arc: $1^{\circ} 52'$ S. on the decl. arc; and, determine a meridian with the solar at the true point for cor. of Tps. 5 and 6 N., Rgs. 11 and 12 W.

Thence I run

S. $0^{\circ} 03'$ E. bet. secs. 1 and 6, marking and blazing true line.

Over rolling land through dense brush.

14.70 Cross wash 25 lks. wide course N. W.

35.50 Cross wash 50 lks. wide course W.

40.04 Set a granite stone 18 x 12 x 6 ins. 12 ins. in the ground for $\frac{1}{4}$ sec. cor., marked $\frac{1}{4}$ on W. face; dig pits 18 x 18 x 12 ins. N. and S. of stone 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.

41.58 Dim road bears N. W. and S. E.

65.05 Cross wash 10 lks. wide course N. W.

74.10 Cross wash 60 lks. wide course W.

76.00 Cross wash 20 lks. wide course N. W.

80.04 Set a quartzite stone 18 x 12 x 6 ins. 12 ins. in the ground for cor. of secs. 1, 6, 7 and 12, marked with 5 notches on S. and 1 notch on N. edges; from which
 A paloverde 4 ins. diam., bears N. $78\frac{1}{2}^{\circ}$ E. 248 lks. dist., marked T5NR11WS6BT.
 A paloverde 4 ins. diam., bears S. $53\frac{1}{2}^{\circ}$ E. 230 lks. dist., marked T5NR11WS7BT.

No other trees available. Raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.

Land, rolling.

Soil, sandy and stony; 1st. and 4th. rate.

No timber.

Undergrowth; greasewood and paloverde.

Land covered with dense undergrowth 80.04 chs.

S. $0^{\circ} 03'$ E. bet. secs. 7 and 12.

Over rolling land through dense brush.

10.40 Cross wash 75 lks. wide course N. W.

13.00 Cross same wash course N. E.

15.25 Cross same wash course N. W.

40.00 Set a quartzite stone 18 x 10 x 8 ins. 12 ins. in the ground for $\frac{1}{4}$ sec. cor., marked $\frac{1}{4}$ on W. face; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.

49.00 Enter wash 20 lks. wide course N. W. and cross and ree cross same to

54.00 Leave wash bears S. E. and begin to ascend rough N. slope of Harqua Haha Mountains.

80.00 Set a granite stone 18 x 12 x 4 ins. 12 ins. in the ground for cor. of secs. 7, 12, 13 and 18, marked with 4 notches on S. and 2 notches on N. edges: from which
 A paloverde 5 ins. diam., bears N. 35° W. 114 lks. dist., marked T5NR12WS12BT.

No other trees available. Raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.

Land, rolling and mountainous.

Soil, stony; 4th. rate.

East boundary of Tp. 5 N. Rg. 12 W.

Chains. September 28: At this cor. I set off 1° 59' S. on the decl. arc; and observe the sun on the meridian at noon, the resulting lat. is 33° 47' N.

S. 0° 03' E. bet. secs. 13 and 18
 Ascending along rough N. E. slope of mountain.
 3.00 Cross wash 10 lks. wide course N. E.
 16.50 Cross wash 10 lks. wide course N. E.
 38.00 Cross wash 25 lks. wide course N. E.
 40.00 Set a granite stone 18 x 18 x 6 ins. 12 ins. in the ground for $\frac{1}{4}$ sec. cor., marked $\frac{1}{4}$ on W. face; and raise a mound of stone 2 ft/ base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
 54.60 Top of mountain and descend steep rocky slope.
 80.00 Set a granite stone 18 x 10 x 6 ins. 12 ins. in the ground for cor. of secs. 13, 18, 19 and 24, marked with 3 notches on N. and S. edges; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
 Land, rough and mountainous.
 Soil, rocky; 4th. rate.
 No timber.
 Mountainous land, 80.00 chs.

September 28, 1909.

September 29, 1909: At 7h. 00m. a.m., l.m.t., I set off 2° 15 $\frac{1}{2}$ ' S on the decl. arc; 33° 46' N. on the lat. arc; and determine a meridian with the solar at the cor. of secs. 13, 18, 19 and 24

Thence I run

S. 0° 03' E. bet. secs. 19 and 24.
 On account of the extremely broken character of the land it is impossible to run S. on this line, therefore I off set 120 chs. W. then S. 0° 03' E. on offset line
 40.00 Impossible to set $\frac{1}{4}$ sec. cor. on line or within 20.00 chs. of its true position.
 80.00 Impossible to set sec. cor. on line or within 20 chs. of its true position.
 Land, extremely rough and unsurveyable.
 Soil, rocky 4th. rate.
 No timber.
 Mountainous land 80.00 chs.

S. 0° 03' E. bet. secs. 25 and 30
 On offset line 120 chs. W. of true line.
 40.00 Impossible to set $\frac{1}{4}$ sec. cor. on line or within 20.00 chs. of its true position.
 80.00 From this point I run E. 120 chs. to true point for cor. and mark a cross on a granite stone in place 6 x 3 x 2 ft. above ground for exact point for cor. of secs. 25, 30, 31 and 36, marked with 5 notches N. and 1 notch S. of cross; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high W. of cor.
 Land, extremely rough and unsurveyable.
 Soil, rocks; 4th. rate.
 No timber.
 Mountainous land 80.00 chs.

September 29: At this cor. I set off 2° 22' S. on the decl. arc; and observe the sun on the meridian at noon, the resulting lat. is 33° 44' N.

S. 0° 03' E. bet. secs. 31 and 36

East boundary of Tp. 5 N. Rg. 12 W.

Chains Descending S. E. slope of mountain.
 10.67 Cross road bears N. W. and S. E.
 19.00 Cross wash 25 lks. wide course S. W. and over rolling
 land, through dense brush.
 29.25 Cross wash 20 lks. wide course S. W.
 40.00 Set a limestone 18 x 10 x 8 ins. 12 ins. in the ground
 for 1st sec. cor., marked 1st on W. face; and raise a mound
 of stone 2 ft. base 1 1/2 ft. high, W. of cor. Pits
 impracticable.
 55.00 Cross wash 15 lks. wide course N. W.
 80.00 The standard cor. of Tps. 5 N. Rgs. 11 and 12 W. which
 has been previously described.
 Land, mountainous and rolling.
 Soil, stony; 4th. rate.
 No timber.
 Undergrowth, paloverde and greasewood.
 Mountainous land and land covered with dense undergrowth
 80.00 chs.

September 29, 1909.

Boundaries of Tp. 5 N. Rg. 12 W.

Latitudes, departures, and closing errors.

Line designated	True bearing	Distance	Latitudes		Departures	
			N.	S.	E.	W.
2 nd Standard Parallel N.	West	480.00				480.00
W. bdy. T. 5 N. R. 12 W.	North	480.00	480.00			
N. bdy. T. 5 N. R. 12 W.	East	479.52			479.52	
E. bdy. T. 5 N. R. 12 W.	S 0° 03' E	480.04		480.04	.42	
Convergency.					.48	
Totals			480.00	480.04	480.42	480.00
			480.04			480.42
Error in lat.			.04	Error in dep.		.42

General Description.

This township is rough an mountainous in the central portion through which runs the Harqua Hala Mts., is rolling in the south while the northern portion is level. There is no water or timber in the township.

John P. Hesse
 U. S. Deputy Surveyor.

LIST OF NAMES.

A list of the names of the individuals employed by John F. Hesse
....., United States Deputy Surveyor, to assist in running, measuring, and
marking the lines and corners described in the foregoing field notes of the survey of
the east boundary of Tp. 5 N. Rg. 12 W.
showing the respective capacities in which they acted:

- Fred Kesl....., *Chainman.*
- Fred W. Rodolf....., *Chainman.*
-, *Moundman.*
-, *Moundman.*
- Norman Oliver......, *Axman.*
-, *Axman.*
- F. W. Schwalm......, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted John F. Hesse
....., United States Deputy Surveyor, in surveying all
those parts or portions of the the east boundary of Tp. 5 N. Rg. 12 W.

..... of the Gila
and Salt River meridian, Territory of Arizona......, which are represented
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the
corner monuments established, according to the instructions furnished by the United States Surveyor
General for Arizona.

- Fred Kesl....., *Chainman.*
- Fred W. Rodolf....., *Chainman.*
-, *Moundman.*
-, *Moundman.*
- Norman Oliver....., *Axman.*
-, *Axman.*
- F. W. Schwalm......, *Flagman.*

Subscribed and sworn to before me this 29th
day of September, 1909, 189

John F. Hesse
U. S. Deputy Surveyor



10
BOOK 2210
FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, John F. Hesse, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Frank S. Ingalls United States Surveyor General for Arizona, bearing date of the 4th day of June, 1909, 189 , I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for Arizona, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the east boundary of Tp. 5 N., Rg. 13 W.

of the Gila and Salt River 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 Arizona and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

John F. Hesse
United States Deputy Surveyor.

Subscribed by said John F. Hesse, and sworn to before me }
this 28th day of June, 189 1910

Chas. W. D. ...
Clerk District Court



APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Ariz. April 18, 189 1911.

The foregoing field notes of the survey of the East Boundary of
Tp. 5 N. Rg. 13 W. of the Gila and Salt River
Meridian, Arizona

executed by John F. Hesse U.S. Deputy Surveyor
under his contract No. 158, dated June 4, 1909, 189 , having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Frank S. Ingalls
United States Surveyor General.

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

United States Surveyor General.