4—679. BOOK 2215

NOV 17 1910

Book I

Accepted, Letter E. Aug 10 1911

2215

FIELD NOTES

2215

OF THE SURVEY OF THE

North and East boundarys of Tp. 35N. Rg. 10 E.

2215

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, *190*

Survey commenced September 8, 1910., *190*

Survey completed September 13, 1910., *190*

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BOOK 2215

NAMES AND DUTIES OF ASSISTANTS.

Len Hall	Chainman
R. A. Coombs	Chainman
A. N. Oliver	Moundman
A. E. Lyon	Flagman.

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(1B)

BOOK 2215

INDEX DIAGRAM.

Township 25 N, *Range* 10 E

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*Meanders Page*_____

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BOOK 2215

PRELIMINARY OATHS OF ASSISTANTS.

WE, Len Hall and R. A. Coombs do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of the North and East boundaries of Tp. 25 N. Rg. 10 E.

Len Hall, *Chainman.*

R. A. Coombs, *Chainman.*

Subscribed and sworn to before me this 5th. day of September, 1910, 190

SEAL

John P. Hesse
U. S. Deputy Surveyor

~~We~~, I, A. N. Oliver 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~~ me, to the best of ~~our~~ my skill and ability, in the survey of the North and East boundaries of Tp. 25 N. Rg. 10 E.

A. N. Oliver, *Moundman.*

, *Moundman.*

Subscribed and sworn to before me this 5th. day of September, 1910, 190

SEAL

John P. Hesse
U. S. Deputy Surveyor

WE, 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 us, to the best of our skill and ability, in the survey of

, *Axman.*

, *Axman.*

Subscribed and sworn to before me this day of , 190

SEAL

I, A. E. Lyon, 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 North and East boundaries of Tp. 25 N. Rg. 10 E.

A. E. Lyon, *Flagman.*

Subscribed and sworn to before me this 5th. day of September, 1910, 190

SEAL

John P. Hesse
U. S. Deputy Surveyor

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No notary available without loss of time and great expense.

East boundary of Tp. 25 N. Rg. 10 E.

Chains.	
	Survey commenced September 8, 1910 and executed with an A. Lietz Co. light mountain transit No. 5631, with solar attachment. 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. 25 N. Rgs. 10 and 11 E. latitude 35° 30' 34" N., longitude 111° 14'31" W.; I set off 35° 30½' N. on the lat. arc; 5° 46½' N. on the decl.arc; and, at 5h. 00m. p.m., lm.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 8h. 33m. 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 8, 1910.

	September 9; At 6h. 30m. a.m., l.m.t., I lay off the azimuth of Polaris, 1° 37' to the west, and mark the meridian thus determined, by cutting a small groove in the stone set September 8, on which the meridian coincides with the mark determined by the solar.
	At 7h. 00m. a.m., l.m.t., I set off 35° 30½' N. on the lat. arc; 5° 33' N. 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. there fore I conclude that the adjustments of the instrument are satisfactory.
	The magnetic bearing of the true meridian. at 7h. 15m. a.m., is N. 14° 30' W.; the angle thus determined gives the mag. decl. 14° 30' E.
	From the standard cor. of Tps. 25 N. Rgs. 10 and 11 E. previously described, I run
	North bet. secs. 31 and 36.
	Over rolling land.
40.00	Set a malpais stone 18 x 6 x 6 ins. 12 ins. in the ground for ¼ sec. cor., marked ¼ 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 3½ ft. base 1½ ft. high, W. of cor.
58.00	Cross wash 30 lks. wide course N. E.
80.00	Set a sandstone 30 x 14 x 4 ins. 15 ins. in the ground for cor. of secs. 25, 30, 31 and 36, marked with 1 notch on S. and 5 notches on N. edges; dig pits 18 x 18 x 12 ins. in each sec. 5½ ft. dist., and raise a mound of earth 4 ft. base 3 ft. high, W. of cor.
	Land, rolling.
	Soil, rocky; 4th. rate.
	No timber.

	North bet. secs. 25 and 30

Chains.	
	Over rolling land
34.00	Cross wash 15 lks. wide course N. E.
40.00	Set a sandstone 24 x 10 x 4 ins. 12 ins. in the ground for ¼ sec. cor., marked ¼ 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 3½ ft. base 1½ ft. high, W. of cor.
80.00	Set a malpais stone 18 x 6 x 6 ins. 12 ins. in the ground for cor. of secs. 19, 24, 25 and 30, marked with 2 notches on S. and 4 notches on N. edges; and raise a mound of stone 3 ft. base 1½ ft. high, W. of cor. Pits impracticable.
	Land, rolling.
	Soil, rocky; 4th. rate.
	No timber.
	September 9; At this cor. I set off 5° 27' N. on the decl. arc; and observe the sun on the meridian at noon, the resulting lat. is 35° 32½' N.

	North bet. secs. 19 and 24.
	Over rolling land.
1.75	Cross road bears N. E. and S. W.
18.00	Cross wash 15 lks. wide course N. E.
33.00	Cross wash 15 lks. wide course N. E.
39.65	Set a sandstone 18 x 8 x 6 ins. 12 ins. in the ground for witness ¼ sec. cor., marked WC¼, on W. face; and raise a mound of stone 3 ft. base 1½ ft. high W. of cor. Pits impracticable.
40.00	Cross wash 15 lks. wide course N. E.
68.00	Cross drain 7 lks. wide course N. E.
80.00	Set a malpais stone 30 x 8 x 6 ins. 15 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 3 ft. base 1½ ft. high, W. of cor. Pits impracticable.
	Land, rolling.
	Soil, rocky; 4th. rate.
	No timber.
	September 9, 1910.
	September 10; At 7h. 00m. a.m., l.m.t., I set off 35° 33' N. on the lat. arc; 5° 10½' N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 13, 18, 19 and 24
	Thence I run
	North bet. secs. 13 and 18
	Over rolling land.
6.90	Cross wash 15 lks. wide course N. E.
40.00	Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for ¼ sec. cor., marked ¼ on W. face; and raise a mound of stone 3 ft. base 1½ ft. high, W. of cor. Pits impracticable.
41.50	Cross wash 10 lks. wide course N. E.
80.00	Set a malpais stone 18 x 8 x 6 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; dig pits 18 x 18 x 12 ins. in each sec. 5½ ft. dist., and raise a mound of earth 4 ft. base 2 ft. high, W. of cor.
	Land, rolling.
	Soil, rocky; 4th. rate.
	No timber.

	North bet. secs. 7 and 12
	Over level land.
39.00	Cross road bears N. W. and S. E.
40.00	Set a malpais stone 30 x 8 x 8 ins. 15 ins. in the

Chains.	
	ground for ¼ sec. cor., marked ¼ 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 3½ ft. base 1½ ft. high, W. of cor.
44.35	Left bank of Little Colorado River, course NW. dry, water in pools.
60.80	Right bank of Little Colorado River.
80.00	Set a malpais stone 18 x 8 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 W. edges; and raise a mound of stone 3 ft. base 1½ ft. high, W. of cor. Pits impracticable.
	September 10; At this cor. I set off 5° 04' N. on the decl. arc; and observe the sun on the meridian at noon, the resulting lat. is35° 35' N.
	Land, level.
	Soil, rocky; 4th. rate.
	No timber.

	North bet. secs. 1 and 6
	Over rolling land.
40.00	Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for ¼ sec. cor., marked ¼ on W. face; and raise a mound of stone 3 ft. base 1½ ft. high, W. of cor. Pits impracticable.
46.50	Cross wash 10 lks. wide course S. W.
58.50	Cross wash 10 lks. wide course S. W.
80.00	Set a malpais stone 18 x 6 x 6 ins. 12 ins. in the ground for cor. of Tps. 35 and 36 N. Rgs. 10 and 11 E. marked 36N on N. E., 11E. on S. E., 35N on S. W., and 10E on N. W. face; with 6 notches on each edge; dig pits 24 x 24 x 12 ins. on each line N. E. and W. 4 ft., and S. of stone 8 ft. dist.; and raise a mound of earth 5 ft. base, 2½ ft. high, S. of cor.
	Land; rolling.
	Soil, rocky; 4th. rate.
	No timber.

September 10, 1910.

North boundary of Tp. 35 N. Rg. 10 E.

Chains.	
	September 11; At 7h. 00m. a.m., l.m.t., I set off 35° 36' N. on the lat. arc; 4° 47½' N. on the decl. arc; and determine a meridian with the solar, at the cor. of Tps. 35 and 36 N. Rgs. 10 and 11 E. Thence I run West on a random line, along the N. bdy. of Tp. 35 N. Rg. 10 E., setting temp. ¼ sec. and sec. cors. at intervals of 40.00 chs.; and, at 479.15 chs. intersect the E. bdy. of Tp. 36 N. Rg. 9 E., 2.52 chs. N. of the cor. of Tps. 35 and 36 N. Rgs. 9 and 10 E. which is a lime stone marked and witnessed as described by the surveyor general. The falling answers to a correction of 0° 18' or 42 lks. S. per mile, counting from the N. E. cor. of the Tp. September 10,11, 1910.
	September 12; At 7h. 00m. a.m., l.m.t., I set off 35° 36' N. on the lat. arc; 4° 35' N. on the decl. arc; and determine a meridian with the solar at the cor. of Tps. 35 and 36 N. Rgs. 9 and 10 E. Previously described. Thence I run N. 89° 42' E. bet. secs. 6 and 31, marking and blazing true line. Over rolling land.
39.15	Set a sandstone 20 x 10 x 4 ins. 15 ins. in the ground for ¼ sec. cor., marked ¼ on N. face; and raise a mound of stone 3 ft. base 1½ ft. high, N. of cor. Pits impracticable.
41.12	Cross wash 50 lks. wide course S. E.
57.10	Cross same wash, course N. E.
79.15	Set a sandstone 18 x 8 x 6 ins. 12 ins. in the ground for cor. of secs. 5, 6, 31 and 32, marked with 1 notch on W. and 5 notches on E. edges; and raise a mound of s stone 3 ft. base 1½ ft. high, W. of cor. Pits impracticable. Land, rolling. Soil, rocky; 4th. rate. No timber.
	N. 89° 42' E. bet. secs. 5 and 32. Over rolling land.
10.00	Cross wash 20 lks. wde course N. E.
40.00	Set a malpais stone 20 x 6 x 6 ins. 15 ins. in the ground for ¼ sec. cor., marked ¼ on N. face; dig pits 18 x 18 x 12 ins. E. and W. of stone, 3 ft. dist., and raise a mound of earth 3½ ft. base 1½ ft. high, N. of cor.,
80.00	Set a malpais stone 20 x 8 x 6 ins. 15 ins. in the ground for cor. of secs. 4, 5, 32 and 33, marked with 4 notches on E. and 2 notches on W. edges; and raise a mound of stone 3 ft. base 1½ ft. high, W. of cor. Pits impracticable. Land, rolling. Soil, rocky; 4th. rate. No timber. September 12: At this cor. I set off 4° 18½' N. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is 35° 36' N.
	N. 89° 42' E. bet. secs. 4 and 33 Over rolling land.
5.00	Cross wash 20 lks. wide course N. E.
14.00	Cross wash 25 lks. wide course N. E.
17.25	Cross wash 26 lks. wide course N. E.

North boundary of Tp. 35 N. Rg. 10 E.

Chains.	
32.25	Cross road bears N. E. and S. W.
34.80	Cross wash 30 lks. wide cours e N.
38.50	Ridge bears N. E. and S. W.
40.00	Set a malpais stone 18 x 6 x 6 ins. 12 ins. in the ground for ¼ sec. cor., marked ¼ on N. face; dig pits 18 x 18 x 12 ins. E. and W. of stone 3 ft. dist.; and raise a mound of earth 3½ ft. base 1½ ft. high, N. of cor.
44.35	Cross wash 35 lks. wide course N.
50.00	Cross wash 35 lks. wide course N.
66.10	Cross drain 10 lks. wide course N. W.
73.00	Ridge bears N. and S.
80.00	Set a malpais stone 20 x 10 x 6 ins. 15 ins. in the ground for cor. of secs. 3, 4, 33 and 34, marked with 3 notches on E. and W. edges; and raise a mound of stone 2 ft. base 1½ ft. high, W. of cor. Pits impracticable.
	Land, rolling.
	Soil, rocky; 4th. rate.
	No timber.

September 12, 1910.

September 13: At 7h. 00m. a.m., l.m.t., I set off 35° 36' N. on The lat. arc; 4° 02' N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 3, 4, 33 and 34

Thence I run

N. 89° 42' E. bet. secs. 3 and 34

Over rolling land.

7.00	Cross drain 10 lks. wide course S. E.
17.00	Ridge bears N. W. and S. E.
39.00	Cross wash 50 lks. wide course N.
40.00	Point for ¼ sec. cor. falls on bank of wash where it m. might be washed out so at
40.25	Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for witness ¼ sec. cor., marked WC¼ on N. face; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits impracticable.
52.00	Cross drain 15 lks. wide course N.
56.50	Cross drain 10 lks. wide course N. W.
65.00	Cross drain 10 lks. wide course N.
67.25	Cross drain 15 lks. wide course N.
80.00	Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for cor. of secs. 2, 3, 34 and 35, marked with 2 notches on E. and 4 notches on W. edges; and raise a mound of stone 2 ft. base 1½ ft. high, W. of cor. Pits impracticable.
	Land rolling.
	Soil, rocky; 4th. rate.
	No timber.

N. 89° 42' E. bet. secs. 2 and 35

Over rolling land.

1.50	Cross drain 10 lks. wide course N. E.
13.00	Over level sandy land.
19.00	Enter river bed of Little Colorado River in bend and and along in same without crossing it. Course N. W.
23.00	Leave bed of Little Colorado River course S. W. water in pools.
40.00	Set a malpais stone 18 x 8 x 5 ins. 12 ins. in the ground for ¼ sec. cor., marked ¼ on N. face; dig pits 18 x 18 x 12 ins. E. and W. of stone 3 ft. dist.; and raise a mound of earth 3½ ft. base 1½ ft. high, N. of cor.
41.44	Left bank of Little Colorado River, dry, course N. W.
53.54	Right bank of Little Colorado River.
80.00	Set a malpais stone 20 x 6 x 5 ins. 15 ins. in the

North boundary of Tp. 35 N. Rg. 10 E.

Chains.	
	ground for cor. of secs. 1,2, 35 and 36, marked with 1 notch on E. and 5 notches on W. edges; and raise a mound of stone 2 ft. base 1½ ft. high, W. of cor. Pits impracticable.
	Land, Rolling and level.
	Soil, rocky and sand; 4th. rate.
	No timber.
	September 13; At this cor. I set off 3° 56' N. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is 35° 36' N.
	N. 89° 42' E. bet. secs. 1 and 36
	Over rocky broken land.
13.20	Cross road Bears N. W. and S. E. and over level land.
40.00	Set a malpais stone 18 x 10 x 8 ins. 12 ins. in the ground for ¼ sec. cor., marked ¼ on N. face; and raise a mound of stone 2 ft. base 1½ ft. high, N. of cor. Pits impracticable.
80.00	The cor. of Tps. 35 and 36 N. Rgs. 10 and 11 E. previously described.
	Land, broken and level.
	Soil, rocky; 4th. rate.
	No timber.

September 13, 1910.

Boundaries of Tp. 35N. Rg. 10 E.
Latitudes, departures and closing errors.

Line Designated	True Bearings	Distances	Latitudes		Departures	
			N.	S.	E.	W
		chs.	chs.	chs.	chs.	chs.
6th Standard Parallel N.	East.	480.00			480.00	
E. bdy. T. 25 N. R. 10 E.	North	480.00	480.00			
N. bdy. T. 25 N. R. 10 E.	S. 89°42' W.	479.15		2.52		479.15
W. bdy. T. 25 N. R. 10 E.	South	480.00		480.00		
Convergency						.52
Totals.			480.00	482.52	480.00	479.67
				480.00	479.67	
				2.52	.33	

GENERAL DESCRIPTION.

This township is rolling and level. There is no timber excepting a narrow strip along the west boundary of the township. There is no water excepting a small spring in sec. 33.

John A. Hesse
U.S. Deputy Surveyor.

BOOK 2215 (1)

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

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 North and East boundaries of Tp. 25 N. Rg. 10 E. showing the respective capacities in which they acted:

Len Hall, *Chainman.*

R. A. Coombs, *Chainman.*

A. N. Oliver, *Moundman.*

, *Moundman.*

, *Axman.*

, *Axman.*

A. E. Lyon, *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 North and East boundaries of Tp. 25 N. Rg. 10 E.

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

Len Hall, *Chainman.*

R. A. Coombs, *Chainman.*

A. N. Oliver, *Moundman.*

, *Moundman.*

, *Axman.*

, *Axman.*

A. E. Lyon, *Flagman.*

Subscribed and sworn to before me this 16th day of September, 1910., 190

John F. Hesse
U. S. Deputy Surveyor

SEAL

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No notary available without loss of time and great expense.

BOOK 2215 (4)

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, 190 , 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 North and East boundaries of Tp. 25 N. Rg. 10 E.

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.

John F. Hesse
United States Deputy Surveyor.

Subscribed by said John F. Hesse, and sworn to before me this 17 day of November, 1909

SEAL

Frank S Ingalls
U. S. SURVEYOR GENERAL
for Arizona.

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix Ariz. Apr. 18, 1911.

The foregoing field notes of the survey of the North and East Boundaries of Tp 25 N. Rg. 10 E. of the Gila and Salt River Base and Meridian Arizona

executed by John F. Hesse U.S. Dep. Surv. under his contract No. 158, dated June 4, 1909, 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.

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