4—679. Book "2"

1824

BOOK 1824

FIELD NOTES

OF THE SURVEY OF THE

The East Boundary of Township No. 30 N., Range No. 4 East

1824

Of the Gila and Salt River Meridian,

Territory of Arizona

AS SURVEYED BY

John F. Hosse, United States Deputy Surveyor,

Under his ~~Contract No.~~ Spec. Instr., dated June 1st 1904,

Survey commenced July 10th 1904, 189

Survey completed July 12th 1904, 189

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1824

510 - 2*3

1A

BOOK 1824

NAMES AND DUTIES OF ASSISTANTS.

Russel E. Stone	Chainman
George W. Cassidy	Chainman
Louis Roberts	axman
Harry A. Cargile	axman
Lew Rasen	flagman

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INDEX DIAGRAM.

Township 30 N., *Range* 4 E.

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18	17	16	15	14	13	5
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30	29	28	27	26	25	3
31	32	33	34	35	36	2

Meanders Page.....

4C
1D

PRELIMINARY OATHS OF ASSISTANTS.

BOOK 1824

We, Russel E. Stone and George W. Cassidy 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. 30 N. Rg. 4 E.

Russel E. Stone, Chainman.

George W. Cassidy, Chainman.

Subscribed and sworn to before me this 10th day of July 1904, ~~180~~

SEAL

John P. Hesse
U.S. Dep. 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

SEAL

_____

_____

We, Louis Roberts and Harry A. Cargile 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 the east boundary of Tp. 30 N. Rg. 4 E.

Louis Roberts, Axman.

Harry A. Cargile, Axman.

Subscribed and sworn to before me this 10th day of July 1904, ~~180~~

SEAL

John P. Hesse
U.S. Dep. Surveyor

I, Len Raser, 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. 30 N. Rg. 4 E.

Len Raser, Flagman.

Subscribed and sworn to before me this 10th day of July 1904, ~~180~~

SEAL

John P. Hesse
U.S. Dep. Surveyor

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chains

Survey commenced July 10, 1904, and executed with a W. and L. E. Gurley solar compass. Compass not numbered. 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 vernier of the latitude arc.

The vernier of the declination arc reads to thirty seconds of arc.

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 compass 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 cor. of Tps. 29 and 30 N., Rs. 4 and 5 E.; latitude 35° 56' 48" N., longitude 111° 43' 26" W.; I set off 35° 57' N., on the lat. arc; 22° 13' N. 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 set firmly in the ground 5 chs. N. of the cor.

July 10, 1904

July 11: At 12h 20.1m a.m. by my watch, which has correct l.m.t. I observe Polaris at eastern elongation, in accordance with

chains

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.

At 6 a.m., l.m.t., I lay off the azimuth of Polaris 1° 29' to the west, and mark the meridian thus determined, by cutting a small groove in the stone set July 10, on which the meridian co-incides with the mark determined by the solar.

At 8h 00m a.m. l.m.t., I set off 35° 57' N. on the lat. arc, 22° 08' 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, respectively ~~which~~ which coincide with the meridian established by the Polaris observation; therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 8h 30m a.m., is N. 14° 30' W.; the angle thus determined gives the mag. decl. 14° 30' E.

O/K I commence at the cor. of Tps. 29 and 30 N. Rgs. 4 and 5 E. which is a granite stone marked and witnessed as described by the surveyor general

Thence I run

North bet. secs. 31 and 36.

Descend steep N.W. slope through pine timber and oak brush.

13.20 Cross wash course N.E. 10 lks. wide and ascend.

East boundary of Tp. 30 N. Rg. 4 E.

Chains	
21.50	Top ridge bears E. and W. and descend
39.75	Cross wash 10 lks. wide course N.E. and over rolling land.
40.00	Set a sandstone 22 x 10 x 8 ins. 18 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face; from which
OK	A pine 20 ins. diam. bears S. 53° W. 91 lks. dist. marked 1/4 S 36 B.T.
	An oak 6 ins. diam. bears S. 77 3/4° E. 41 lks. dist. marked 1/4 S 31 B.T.
60.00	Leave pine and through dense cedar and pinon timber.
67.10	Cross wash 15 lks. wide, course N.E.
80.00	Set a sandstone 18 x 14 x 10 ins. 12 ins. in the ground for cor. of secs. 25, 30, 31 and 36, marked with 5 notches on N. and 1 notch on S. edges; from which
OK	A pinon 8 ins. diam. bears N. 23 3/4° E. 18 lks. dist. marked T30NR5E S30 B.T.
	A pinon 8 ins. diam. bears S. 66° E. 34 lks. dist. marked T30NR5E S31 B.T.
	A pinon 10 ins. diam. bears S. 10° W. 47 lks. dist. marked T30NR4E S36 B.T.
	A pinon 8 ins. diam. bears N. 19° W. 17 lks. dist. marked T30NR4E S25 B.T.
	Land, mountainous and rolling.
	Soil, rocky; 4th rate.
	Timber, pine, pinon and cedar.
	Oak brush.
	Mountainous or heavily timbered land 80.00 chs.

North bet. secs. 25 and 30.
Over rolling land through dense pine, pinon and cedar timber.

4.20	Cross wash 15 lks. wide course E.
	Cross wash 15 lks. wide course E.

East boundary of Tp. 30 N. Rg 4 E.

chains	
29.80	Cross draw 15 lks. wide, course E.
40.00	Set a limestone 18 x 12 x 10 ins. 12 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face; from which A piñon 8 ins. diam. bears N. 69° E. 113 lks. dist. marked 1/4 S 25 B T. A pine 8 ins. diam. bears N. 85 1/2° W. 91 lks. dist. marked 1/4 S 25 B T.
80.00	Set a limestone 18 x 12 x 6 ins. 12 ins. in the ground for cor. of secs. 19, 24, 25 and 30, marked with 4 notches on N. and 2 notches on S. edges; from which A pine 24 ins. diam. bears N. 10 1/2° E. 220 lks. dist. marked T 30 N R 5 E S 19 B T. A pine 8 ins. diam. bears S. 86 1/4° E. 144 lks. dist. marked T 30 N R 5 E S 30 B T. A pine 24 ins. diam. bears S. 23° W. 126 lks. dist. marked T 30 N R 4 E S 25 B T. A piñon 8 ins. diam. bears N. 36° W. 151 lks. dist. marked T 30 N R 4 E S 24 B T. Land, rolling. Soil, stony; 3rd rate. Timber, pine, piñon and cedar. Heavily timbered land 80.00 chs. July 1: At this cor. I set off 22° 06' N. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is 35° 58 1/2' N.
	North bet. secs. 19 and 24 Over rolling land through pine and piñon timber.
0.50	Cross wash, 10 lks. wide, course E.
8.20	Cross wash, 10 lks. wide, course E.
8.85	Cross road, bears N.W. and S.E.
40.00	Set a limestone 16 x 10 x 8 ins. 11 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face; from which A piñon 8 ins. diam. bears N. 70° E.

chains	
	17 lks. dist. marked 1/4 S 19 BT.
	A piñon 8 ins. diam. bears S. 59° W.
	6 lks. dist. marked 1/4 S 24 BT.
75.85	Cross wash, 15 lks. wide, course S.W.
80.00	Set a limestone 18 x 12 x 5 ins. 12 ins.
	in the ground for cor. of secs. 13, 18, 19
	and 24 marked with 3 notches
	on N. and S. edges; from which
	A piñon 6 ins. diam. bears N. 59½° E.
	42 lks. dist. marked T30NR5ES18BT.
	A piñon 4 ins. diam. bears S. 74½° E.
	26 lks. dist. marked T30NR5ES19BT
	A pinon 10 ins. diam. bears S. 43° W.
	16 lks. dist. marked T30NR4ES24BT.
	A cedar 4 ins. diam. bears N. 11¼° W.
	7 lks. dist. marked T30NR4ES13BT.
	Land, rolling.
	Soil, rocky; 3rd rate.
	Timber, pine and piñon.
	Heavily timbered land 80.00 chs.

	North bet. secs. 13 and 18.
	Over rolling land through dense
	cedar and pinon timber.
40.00	Set a limestone 18 x 12 x 6 ins. 12 ins.
	in the ground for 1/4 sec. cor. marked
	1/4 on W. face; from which
	A piñon 10 ins. diam. bears N. 34½° E.
	39 lks. dist. marked 1/4 S 18 BT.
	A piñon 4 ins. diam. bears S. 33° W.
	10 lks. dist. marked 1/4 S 13 BT.
80.00	Set a limestone 22 x 10 x 6 ins. 17 ins.
	in the ground for cor. of secs. 7, 12,
	13 and 18 marked with 2 notches
	on N. and 4 notches on S. edges;
	from which
	A cedar 20 ins. diam. bears N. 43° E.
	223 lks. dist. marked T30NR5ES7BT.
	A pine 12 ins. diam. bears S. 34¾° E.
	265 lks. dist. marked T30NR5ES18BT.
	A pine 6 ins. diam. bears S. 70¾° W.

East boundary of Dp. 30 N. Rg. 4 E.

chains	
	115 lks. dist. marked T30NR4ES13BT.
	A pine 6 ins. diam. bears N. 66½° W.
	214 lks. dist. marked T30NR4ES12BT.
	Land, rolling.
	Soil, rocky; 3rd rate.
	Timber, pine, piñon and cedar.
	Heavily timbered land 80.00 chs.
	July 11, 1904.
	July 12; at 7h 00m a.m. l.m.t. I set off 36° 00' N. on the lat. arc; 20° 00½' N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 7, 12, 13 and 18
	Thence I run
	North bet. secs. 7 and 12.
	Over rolling land through dense cedar and piñon timber.
40.00	Set a limestone 20x16x10 ins. 15 ins. in the ground for ¼ sec. cor. marked 1/4 on W. face; from which
	A piñon 7 ins. diam. bears S. 72½° E.
	19 lks. dist. marked 1/4 S 7 BT.
	A cedar 14 ins. diam. bears N. 50½° W.
	22 lks. dist. marked 1/4 S 12 BT.
80.00	Set a limestone 24x18x10 ins. 18 ins. in the ground for cor. of secs. 1, 6, 7 and 12 marked with 1 notch on N. and 5 notches on S. edges; from which
	A piñon 6 ins. diam. bears N. 33½° E.
	38 lks. dist. marked T30NR5ES6BT.
	A cedar 7 ins. diam. bears S. 77° E.
	32 lks. dist. marked T30NR5ES7BT.
	A cedar 6 ins. diam. bears S. 27° W.
	25 lks. dist. marked T30NR4ES12BT.
	A piñon 7 ins. diam. bears N. 53° W.
	64 lks. dist. marked T30NR4ES1BT.
	Land, rolling.
	Soil, rocky; 4th rate.
	Timber, cedar and piñon.
	Heavily timbered land 80.00 chs.

chains	
	North bet. secs. 1 and 6.
	Over rolling land through dense cedar and piñon timber.
35.90	The rim of the Grand Cañon of the Colorado River. The point for witness cor. for 1/4 sec. cor. falls on a limestone in place 60 x 40 x 30 ins. above ground, I mark a cross (+) at exact point for cor. and W.C. 1/4 west of cross; from which
	A piñon 8 ins. diam bears S. 63° E. 26 lks. dist. marked W C 1/4 S 6 B T.
	A piñon 6 ins. diam. bears N. 2 1/2° W. 17 lks. dist. marked W.C. 1/4 S 1 B T.
	Land, rolling.
	Soil, rocky; 4th rate.
	Timber, cedar and pinon.
	Heavily timbered land 35.90 chs.

General Description.

This township is mountainous in the eastern part and nearly level in the western part while the Grand Cañon of the Colorado River cuts off the two northern tiers of sections. There is no water in the township. The township is covered with fine pine timber and produces a good crop of grass for grazing purposes. This township should be subdivided

John D. Hesse
U.S. Deputy Surveyor

July 12, 1904

BOOK 1824

Boundaries, of Tp. 30 N. Rg. 4 E.
Latitudes, departures and closing errors

Line Designated	True Bearing	Distance	Latitudes N.	Latitudes S.	Departures E.	Departures W.
S. bdy T.30N.R4E.	N89°58'W	~~482.90~~ 482.53	.28			~~482.90~~ 482.53
W. bdy. Sec.31 & 36	North	80.00	80.00			
Set. 30 & 31	S89°58'E	82.50		.05	82.50	
Set. 29 & 30.	N0°03'W	80.00	80.00			.07
Set. 19 & 20	N0°03'W	80.00	80.00			.07
Set. 17 & 20	East	80.00			80.00	
Set. 16 & 21	S89°59'E	79.86		.02	79.86	
Set. 15 & 22	S89°55'E	80.02		.12	80.02	
Set 14 & 23.	S89°57'E	80.04		.14	80.04	
Set 13 & 24	N89°59'E	80.04	.02		80.04	
E. bdy. T30NR4E	South	240.00		240.00		
Convergency.					.26 .07	483.04
Totals - - - - - - - - -			240.30	240.33	~~482.53~~ 482.72	~~482.97~~ ~~482.97~~ ~~482.53~~ 482.53
			~~240.33~~ 240.30			
Error in lat.			.03	Error in dep.		.44 .32

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

BOOK 1824

LIST OF NAMES.

A list of the names of the individuals employed by John P. 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. 30 N. Rg. 4 E. showing the respective capacities in which they acted:

Russell E. Stone, *Chainman.*
George W. Cassidy, *Chainman.*
, *Moundman.*
, *Moundman.*
Louis Roberts, *Axman.*
Harry A Cargile, *Axman.*
Len Raser, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted John P. Hesse, United States Deputy Surveyor, in surveying all those parts or portions of the east boundary of Tp. 30 N. Rg. 4 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

Russel E Stone, *Chainman.*
George W Cassidy, *Chainman.*
, *Moundman.*
, *Moundman.*
Louis Roberts, *Axman.*
Harry A. Cargile, *Axman.*
Len Raser, *Flagman.*

Subscribed and sworn to before me this 12th day of July 1904, ~~189~~

SEAL

John P. Hesse
U.S. Dep. Surveyor

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BOOK 1824

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, John D. Hesse, United States Deputy Surveyor, do solemnly swear that, in pursuance of ~~a contract~~ Speci. Instr. received from Frank S. Ingalls United States Surveyor General for Arizona, bearing date of the fourteenth day of June 1904, ~~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 T. 30 N. R. 4 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; 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 D. Hesse

United States Deputy Surveyor.

Subscribed by said John D. Hesse, and sworn to before me this 18th day of November, ~~189~~ 1904

Frank S. Ingalls

U.S. Surveyor General

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, A. T., January 31st 1905

The foregoing field notes of the survey of East Boundary of T. 30 N., R. 4 E. of the Gila and Salt River Base and Meridian, in the Territory of Arizona

executed by John D. Hesse, U. S., under special instructions ~~under his contract No.~~, dated June 14th 1904, ~~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.

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