FIELD NOTES

OF THE SURVEY OF THE

Sixth Standard Parallel North, through Range 10 East.

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 5, 1910, *190*

Survey completed September 8, 1910., *190*

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1878

BOOK 2214

NAMES AND DUTIES OF ASSISTANTS.

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

BOOK 2214

INDEX DIAGRAM.

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Sixth Standard Parallel North

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BOOK 2214

PRELIMINARY OATHS OF ASSISTANTS.

WE, Len Hall, R. A. Coombs, A. N. Oliver and C. A. Reed
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 Sixth Standard Parallel North, through Range 10 East.

Len Hall, *Chainman.*

R. A. Coombs, *Chainman.*

A. N. Oliver Chainman
C. A. Reed Chainman

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 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 _____, 190

SEAL

_____

_____

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 Sixth Standard Parallel North, through Range 10 East.

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.

Sixth Standard Parallel North, through Range 10 East.

Chains.

Survey commenced September 5, 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. 9 and 10 E. latitude 35° 30' 34" N., longitude 111° 20'52"" W.; I set off 35° 30½' N. on the lat. arc; 6° 53½' N. on the decl. arc; and, at 4h. 00m. p.m., l.m.t., determine with the solar a meridian and mark a point therof, on a stone firmly set in the ground, 5 chs. N. of the cor.

At 8h. 35m. 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.

Sept 5, 1910.

September 6: At 7a.m., l.m.t., I lay off the azimuth of Polaris, 1° 27' to the west, and mark the meridian thus determined, by cutting a small groove in the stone set September 5, on which the meridian coincides with the mark determined by the solar.

At 8h. 00m. a.m., l.m.t., I set off 35° 30½' N. on the lat. arc; 6° 39' 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 8h. 30m. am, 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. 9 and 10 E. which is a stone marked and witnessed as described by the surveyor general, I run

East, on S. bdy. sec. 31

Over level land covered with loose volcanic rock, through dense timber.

Difference between measurements of 40.00 chs., by two sets of chainmen is 4 lks; position of middle point

By 1st. set, 39.98 chs.

By 2nd. set, 40.02 chs.; the mean of which is

40.00 Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for standard ¼ sec. cor., marked SC¼ on N. face; from which

A cedar 10 ins. diam., bears N. 87° 20' E. 176 lks. dist., marked SC¼S31BT.

No other bearing available. Raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits impracticable.

52.00 Cross wash 15 lks. wide course N. E.

58.00 Leave timber, descend steep N. E. slope.

Difference between measurements of 80.00 chs., by two sets of chainmen is 6 lks.; positione of middle point.

Chains	
	By 1st. set, 79.97 chs. By 2nd. set, 80.03 chs., the mean of which is
80.00	Set a malpais stone 18 x 8 x 8 ins. 12 ins. in the ground for standard cor. of secs. 31 and 32, marked S C on N. with 5 grooves on E. and 1 groove on W. faces; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits impracticable.
	Land, level and mountainous and covered with loose volcanic rock.
	Timber, cedar.
	Soil, rocky; 4th. rate.
	Mountainous or heavily timbered land 80.00 chs.
	September 6: At this cor. I set off 6° 34½' N. on the decl. arc; and observe the sun on the meridian at noon, the resulting lat. is 35° 30½' N.
	East on S. bdy. sec. 32.
	Descending Steep N. E. slope covered with loose volcanic rock.
10.00	Over rolling land.
15.00	Cross old road bears N. and S.
	Difference between measurements of 40.00 chs., by two sets of chainmen is 6 lks., position of middle point By 1st. set, 39.97 chs. By 2nd. set, 40.03 chs.; the mean of which is
40.00	Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for standard ¼ sec. cor., marked SC¼ 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 3 ½ ft. base 1½ ft. high N. of cor.
48.50	Cross wash 25 lks. wide course N. E.
60.00	Ridge bears N. E. and S. W.
67.00	Cross wash 15 lks. wide course N. E.
	Difference between measurements of 80.00 chs. by two sets of chainmen is 6 lks.; position of middle point By 1st. set, 79.97 chs. By 2nd. set, 80.03 chs.; the mean of which is
80.00	Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for standard cor. of secs. 32 and 33, marked SC on N., with 4 grooves on E. and 2 grooves on W. faces; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits impracticable.
	Land, rolling and mountainous.
	Soil, rocky; 4th. rate.
	No timber.
	Mountainous land 10.00 chs.
	September 6, 1910.
	September 7: At 8h. 00m. a.m., l.m.t., I set off 35° 30½' N. on the lat. arc; 6° 16½' N. on the decl. arc; and determine a meridian with the solar at the standard cor. of secs. 32 and 33
	Thence I run
	East, on S. bdy. of sec. 33
	Over rolling land covered with loose volcanic rock.
8.00	Cross drain 8 lks. wide course N. E.
	Difference between measurements of 40.00 chs. by two sets of chainmen is 8 lks.; position of middle point By 1st. set, 39.96 chs. By 2nd. set, 40.04 chs.; the mean of which is
40.00	Set a malpais stone 18 x 8 x 6 ins. 12 ins. in the ground for standard ¼ sec. cor., marked SC¼ on N. face; and raise a mound of stone 3 ft. base 1½ ft. high, N. of cor. Pits impracticable.
53.00	Cross wash 15 lks. wide course N. E.
64.00	Cross wash 15 lks. wide course N. ascend.
80.00	Top of mesa and over mesa.

Sixth Standard Parallel North, through Range 10 East.

Chains.	
	Difference between measurements of 80.00 chs. by two sets of chainmen is 10 lks.; position of middle point By 1st. set, 79.95 chs. By 2nd. set, 80.05 chs.; the mean of which is
80.00	Set a malpais stone 18 x 8 x 5 ins. 12 ins. in the ground for standard cor. of secs. 33 and 34, marked SC on N., with 3 grooves on E and W. faces; Dig pits 24 x 18 x 12 ins., crosswise on each line , E. and W. 3 ft. and N. of stone 7 ft. dist.; and raise a mound of earth 4 ft. base 2 ft. high N. of cor. Land, rolling. Soil, rocky; 4th. rate. No timber. September 7; At this cor. I set off 6° 12' N. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is 34° 30½' N.
	East on S. bdy. of sec. 34 Over level land. Difference between measurements of 40.00 chs. by two sets of chainmen is 2 lks., position of middle point By 1st. set, 39.99 chs. By 2nd. set, 40.01 chs.; the mean of which is
40.00	Mark a cross on a malpais rock in place 5 x 3 x 1 ft. above ground, for exact point for standard ¼ sec. cor., marked SC¼ on N. of cross; and raise a mound of stone 2 ft base 1½ ft. high, N. of cor. Pits impracticable.
40.05	Descend steep rocky E. slope of mesa.
48.00	Cross wash 15 lks. wide course N. and over rolling land. Difference between measurements of 80.00 chs. by two sets of chainmen is 8 lks.; position of middle point By 1st. set, 79.96 chs. By 2nd. set, 80.04 chs.; the mean of which is
80.00	Set a malpais stone 18 x 8 x 4 ins. 12 ins. in the ground for standard cor. of secs. 34 and 35, marked SC on N. with 2 grooves on E. and 4 grooves on W. faces; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits impracticable. Land, rolling. Soil, rocky; 4th. rate. No timber.
	September 7, 1910.
	September 8; At 8h. 00m. a.m., l.m.t., I set off 35° 30½' N. on the lat. arc; 5° 54' N. on the decl. arc; and determine a meridian with the solar at the standard cor. of secs. 34 and 35 Thence I run East, on S. bdy. of sec. 35 Over rolling land. Difference between measurements of 40. 00 chs. by two sets of chainmen is 4 lks., position of middle point By 1st. set 39.98 chs. By 2nd. set 40.02 chs.; the mean of which is
40.00	Set a malpais stone 18 x 10 x 6 ins. 12 ins. in the ground for standard ¼ sec. cor., marked SC¼ on N. face; and raise a mound of stone 2 ft. base 1½ ft. high, N. of Cor. Pits impracticable. Difference between measurements of 80.00 chs. by two set sets of chainmen is 6 lks.; position of middle point By 1st. set 79.97 chs. By 2ns. set 80.03 chs.; the mean of which is
80.00	Set a sandstone 20 x 10 x 4 ins. 15 ins. in the ground for standard cor. of secs. 35 and 36, marked SC on N., with 1 groove on E. and 5 grooves on W. faces; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits

Chains.	
	impracticable.
	September 8; At this cor. I set off 5° 49½' N. on the decl. arc; and observe the sun on the meridian at noon, the resulting lat. is 35° 30½' N.
	Land, rolling.
	Soil, rocky; 4th. rate.
	No timber.
	East on S. bdy. of sec. 36
	Over rolling land.
11.00	Cross wash 15 lks. wide course N. E.
23.00	Ridge bears N. E. and S. W.
27.00	Cross wash 15 lks. wide course N. E.
	Difference between measurements of 40.00 chs. by two sets of chainmen is 2 lks., position of middle point
	By 1st. set, 39.99 chs.
	By 2nd. set, 40.01 chs.; the mean of which is
40.00	Set a sandstone 20 x 12 x 6 ins. 15 ins. in the ground for standard ¼ sec. cor., marked SC¼ on N. face; and raise a mound of stone 3 ft. base 1½ ft. high N. of cor. Pits impracticable.
	Difference between measurements on 80 chs. by two sets of chainmen is 8 lks., position of middle point
	By 1st. set 79.96 chs.
	By 2nd. set 80.04 chs.; the mean of which is
80.00	Set a sandstone 20 x 14 x 4 ins. 15 ins. in the ground for standadr cor. of Tps. 35 N. Rgs. 10 and 11 E. marked SC35N on N. 11E on E., 10E on W.; with 6 grooves on N., E., and W., faces; and raise a mound of stone 3 ft. base 1½ ft. high, N. of cor., pits impracticable.
	Land, rolling.
	Soil, rocky; 4th. rate.
	No timber.

September 8, 1910.

GENERAL DESCRIPTION.

Through range 10 E. this line runs over nearly level land. There is no timber except that on the first 58.00 chains on the S. bdy. of sec. 31. The soil is volcanic rock.

John P. Hesse

U.S. Deputy SURVEYOR.

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 Sixth Standard Parallel North, through Range 10 East showing the respective capacities in which they acted:

Len Hall, *Chainman.*

R. A. Coombs, *Chainman.*

A. N. Oliver Chainman, ~~*Moundman.*~~

C. A. Reed Chainman, ~~*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 Sixth Standard Parallel North, through Range 10 East

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 Chainman, ~~*Moundman.*~~

C. A. Reed Chainman, ~~*Moundman.*~~

, *Axman.*

, *Axman.*

A. E. Lyon, *Flagman.*

Subscribed and sworn to before me this 16th. day of September, 1909, 190

SEAL

John P. Hesse
U. S. Deputy Surveyor

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No notary available without loss of time and great expense.

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BOOK 2214

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 Sixth Standard Parallel North, through Range 10 East

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 January, 1910

SEAL

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

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Ariz. Apr. 18, ~~190~~ 1911.

The foregoing field notes of the survey of the Sixth Standard Parallel North through Range No. 10 East Gila and Salt River 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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