

BOOK "A"

BOOK 2651

FIELD NOTES

OF THE SURVEY OF THE

West Boundary of Tp. 17 S. Rg. 16 E.

Of the Gila and Salt River Base and Meridian,

In the State of Arizona

EXECUTED BY

John F. Hesse

In the capacity of U. S. Surveyor..., under instructions dated May 22nd, 1912.,
issued by the United States Surveyor General to govern surveys included in
Group No. 18., which were approved by the Commissioner of the General Land
Office. June 20th., 1912., pursuant to authority contained in the Act of
Congress dated August 23rd, 1912.

Survey commenced September 14., 1912.

Survey completed September 18., 1912.

BOOK 2651

INDEX DIAGRAM.

Township 17 S., Range 16 E.

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West boundary of Tp. 17 S. Rg. 16 E.

Chains.

Survey commenced September 14, 1912, and executed with a W. & L. E. Gurley transit, with solar attachment, not numbered. The horizontal limb is provided with one double vernier, reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

The instrument was approved by the Supervising Surveyor August 28, 1912.

I examine the adjustments of the transit, and correct the level and collimation errors; 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 my camp which is situated near the cor. of secs. 17, 18, 19, and 20, Tp. 17 S. Rg. 16 E. latitude $31^{\circ} 56' 20''$ N., longitude $110^{\circ} 45' 37''$ W.; I set off $31^{\circ} 56\frac{1}{2}'$ N. on the lat. arc; $3^{\circ} 17\frac{1}{2}'$ N. on the decl. arc; and, at 4h. 30m. 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 my station.

At 7h. 56m. 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 14, 1912.

September 15¹⁹¹² At 7h. 00m. a.m. l.m.t., I lay off the azimuth of Polaris $1^{\circ} 23'$ to the west, and mark the meridian thus determined, by cutting a small groove in the stone set September 14, on which the meridian falls 0.4 ins. east of the mark determined by the solar.

At 7h. 30m. a.m., l.m.t., I set off $31^{\circ} 56\frac{1}{2}'$ N. on the lat. arc; $3^{\circ} 03'$ 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 falls 0.4 ins. east of the meridian established by the Polaris observation.

The solar apparatus, by p.m. and a.m. observations, defines positions for meridians, respectively about $0' 21''$ west and east of the meridian established by the Polaris observations; therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 8h. 00m. a.m., is N. $13^{\circ} 51'$ W; the angle thus determined gives the magnetic decl. $13^{\circ} 51'$ E.

September 15, 1912.

September 16¹⁹¹² At 8h. 00m. a.m., l.m.t., I set off $31^{\circ} 53\frac{1}{2}'$ N. on the lat. arc; $2^{\circ} 39'$ N. on the decl. arc; and determine a meridian with the solar at the true point for cor. of Tps. 17 and 18 S. Rgs. 15 and 16 E. 2.00 chs. N. of the witness cor. which is a stone marked and witnessed as described by the surveyor general.

Thence I run North on a random line, along the W. bdy. of Tp. 17 S. Rg. 16 E. setting temp. $\frac{1}{4}$ sec. and sec. cors. at intervals of 40.00 chs.; and at 471.04 chs. intersect the S. bdy. of Tp. 16 S. Rg. 16 E. 6.34 chs. S. $89^{\circ} 52'$ E. Of the cor. of Tps. 16 and 17 S. Rgs. 15 and 16 E. which is a stone marked and witnessed as described by the surveyor general.

September 16, 17, 1912.

September 18¹⁹¹² At 7h. 00m. a.m., l.m.t., I set off $31^{\circ} 53\frac{1}{2}'$ N. on the lat. arc; $1^{\circ} 54\frac{1}{2}'$ N. on the decl. arc; and

West boundary of Tp. 17 S. Rg. 16 E.

Chains	
	determine a meridian with the solar at the true point for cor. of Tps. 17 and 18 S. Rgs. 15 and 16 E. 2.00 chs. N. of the Witness cor. previously described.
	Thence I run
	North bet. secs. 31 and 36, marking and blazing true line. Ascend steep slope, covered with loose rock, out of wash.
1.25	Ridge bears E. and W. descend.
8.25	Cross wash 15 lks. wide course N. W. and ascend
14.75	Ridge bears E. and W. descend.
23.50	Cross wash 60.lks. wide course N. W. and ascend high mountain ridge.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., marked on brass cap ¹⁹²¹ S36 on W. and S 31 on E. half; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
45.00	Top of high ridge, bears E. and W. and descend rough N. slope covered with loose rocks.
80.00	Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 25, 30, 31 and 36, marked on brass cap, ¹⁹¹² T17N in N. half; R15ES25 in N. W. R16ES30 in N. E. S31 in S. E. and S36 in S. W. quadrant; 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. Timber, none. Undergrowth, cactus and scattering mesquite.

	North, bet. secs. 25 and 30,
	Descend rough N. slope, covered with loose rocks.
9.80	Cross wash 60 lks. wide, course N. W. and over rolling land, through scattering brush.
40.00	Point for $\frac{1}{4}$ sec. cor. falls in wash 15 lks. wide course N. W. so at
40.25	Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground for witness ^{set to} $\frac{1}{4}$ sec. cor., marked on brass cap, ¹⁹¹² WC $\frac{1}{4}$ in N. half, S30 in S. E. and S25 in S. W. quadrants; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
53.00	Cross wash 12 lks. wide course N. W.
54.00	Ridge bears N. W. and S. E.
55.80	Cross wash 25 lks. wide course N. W.
59.50	Cross road bears E. and W.
65.20	Cross wash 15 lks. wide course N. W.
75.40	Cross wash 30 lks. wide course N. W.
80.00	Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 19, 24, 25 and 30, marked on brass cap, ¹⁹¹² T17 $\frac{1}{2}$ in N. half; R15ES24 in N. W. R16ES19 in N. E. S30 in S. E. and S25 in S. W. quadrants; from which A mesquite 6 ins. diam., bears N. $10\frac{1}{4}^{\circ}$ W. 313 lks. dist., marked T17SR15ES24BT. No other trees available. Raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable. Land, mountainous, rolling and hilly. Soil, rocky; 4th. rate. No timber. Undergrowth, mesquite, catclaw, cactus.

	North, bet. secs. 19 and 24
	Over rolling land, through dense brush.
7.00	Cross wash 20 lks. wide course N. W.
24.00	Cross wash 900 lks. wide course N. W.,

4. West boundary of Tp. 17 South, Range 16 East. 3.

Chains.

Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground for $\frac{1}{4}$ sec.cor., marked on brass cap, 1912, $\frac{1}{4}$ S 24 in W., and S 19 in E.half; dig pits 18x18x12 ins., N.and S.of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft.base, $1\frac{1}{2}$ ft. high, W. of cor.

76.04 Cross road brs.NW. and SE.

80.00 Set an iron post 3 ft.long, 3 ins. in diam., 24 ins. in the ground for cor.of secs.13,18,19 and 24, marked on brass cap,

1912, T 17 S in N.half; R 15 E S 13 in NW., R 16 E S 18 in NE., S 19 in SE., and S 24 in SW. quadrant; and raise a mound of stone 2 ft.base, $1\frac{1}{2}$ ft. high, W.of cor. Pits impracticable.

Land, rolling.
Soil, very rocky, 3rd rate.
No timber.
Undergrowth, mesquite, catclaw, cactus.

North, bet. secs.13 and 18.

Over rolling land,through dense brush.

23.00 Cross wash, 50 lks.wide,course NW.,and over level land.

40.00 Set an iron post 3 ft.long,1 in.in diam.,26 ins.in the ground for $\frac{1}{4}$ sec.cor.,marked on brass cap, 1913, $\frac{1}{4}$ S 13 in W., and S 18 in E.half; dig pits 18x18x12 ins.N.and S.of post 3 ft.dist.,and raise a mound of earth $3\frac{1}{2}$ ft.base. $1\frac{1}{2}$ ft.high,W.of cor.

75.60 Cross wash,30 lks.wide,course NW.

77.40 Cross road brs.NE. and SW.

80.00 Set an iron post 3 ft.long, 3 ins.in diam.,24 ins.in the ground for cor.of secs.7,12,13 and 18,marked on brass cap,

1912, T 17 S in N.half ; R 15 E S 12 in NW., R 16 E S 7 in NE., S 18 in SE., and S 13 in SW. quadrant; from which, A mesquite 8 ins.in diam.,brs.S. $50\frac{1}{2}^{\circ}$ E.,116 lks. dist.,marked T 17 S R 16 E S 18 B T.

No other bearings available. Dig pits 18x18x12 ins., in each sec. $5\frac{1}{2}$ ftdist.,and raise a mound of earth 4 ft. base, 2 ft.high,W.of cor.

Land,level and rolling.
Soil, sandy loam,mixed with gravel and rocks; 3rd rate.
No timber.
Undergrowth,mesquite,catclaw and cactus.

North, bet. secs.7 and 12.

Over level land,through dense brush.

40.00 Set an iron post 3 ft.long,1 in.in diam.,26 ins.in the ground for $\frac{1}{4}$ sec.cor.,marked on brass cap, 1912, S 12 in W.and S 7 in E.half; dig pits 18x18x12 ins., N.and S.of post 3 ft.dist.,and raise a mound of earth $3\frac{1}{2}$ ft.base, $1\frac{1}{2}$ ft.high,west of corner.

40.35 Road brs.SE.,and along same to

43.30 Leave road brs. NE.

60.25 Road brs.NE.to Vail and SW. to Helvetia.

71.80 Cross telephone line brs.NE. and SW.

77.00 Cross wash, 50 lks.wide, course NW.

80.00 Set an iron post 3 ft.long,3 ins. in diam.,24 ins. in the ground for cor.of secs.1,6,7 and 12,marked on brass cap, 1912, T17 S in N.half; R 15 E S 1 in NW. R 16 E S 6 in NE., S 7 in SE. and S 12 in SW. quadrant; dig pits 18x18x12 ins. in each sec. $5\frac{1}{2}$ ft. dist., and raise a mound of earth 4 ft. base,

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West boundary of Township 17 South, Range 16 East.

Chains.

2 ft. high, west of cor.
Land, level.
Soil, sandy loam, mixed with gravel; 2nd rate.
No timber.
Undergrowth, greasewood, mesquite and catclaw.

- 40.00 North, bet. secs. 11 and 6.
Over level land, through dense brush.
Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap, 1912,
 $\frac{1}{4}$ S 1 in W., and
S 6 in E. half;
dig pits 18x18x12 ins., N. and S. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high, W. of cor.
- 71.04 Intersect the south bdy. of Tp. 16 S., Rg. 16 E., 6.34 chs., S. $89^{\circ}52'$ E. of the cor. of Ts. 16 and 17 S., Rs. 15 and 16 E., which is a stone, marked and witnessed as described by the Surveyor General.
I obliterate the marks on the south of the stone, and change the pits for corner of two townships on the N., and set an iron post 3 ft. long, 3 ins. in diam., 24 ins. in the ground for closing corner of Ts. 17 S., Rs. 15 and 16 E., marked on brass cap, 1912,
C C S. of center,
T 16 S R 15 E S 36 R 16 E S 31 in N., and
T 17 S in S. half;
S 6 R 16 E in SE., and
S 1 R 15 E in SW. quadrant; from which,
A mesquite 8 ins. in diam., brs. S. $25\frac{1}{4}^{\circ}$ E., 285 lks. dist., marked C C T 17 S R 16 E S 6 B T.
No other bearings available. Dig pits 30x24x12 ins., crosswise on each line E. and W. 4 ft. and S. of post 8 ft. dist., and raise a mound of earth 5 ft. base, $2\frac{1}{2}$ ft. high, south of corner.
Land, level.
Soil, rich sandy loam, over 2 ft. deep, dry, medium, texture; 1st rate.
No timber.
Undergrowth, greasewood, mesquite, catclaw and cactus.
September 18, 1912.

GENERAL DESCRIPTION.

This township is rough and mountainous in the southern part, level and rolling in the northwest, and hilly in the northeast. There is no water in the township. The land in the northwestern part of the township is fertile, and with water would raise crops.

West boundary of Township 17 South, Range 16 East.

Boundaries of Township 17 South, Range 16 East.
Latitudes, departures and closing errors.

Line designated.	True bearing.	Dist.	Latitudes,		Departures.	
			N.	S.	E.	W.
South bdy.,	East,	473.21			473.21	
	North,	75.22	75.22			
	N.0°01'W.	118.71	118.71			.04
	N.0°08'E.	78.54	78.54		.18	
East bdy.	N.0°04'W.	39.55	39.55			.05
	N.0°12'E.	39.52	39.52		.13	
	N.0°08'W.	39.53	39.53			.09
	N.0°15'E.	39.66	39.66		.17	
	N.0°05'W.	39.30	39.30			.06
	N.89°50'W.	79.90				79.90
	West,	40.19				40.19
North Bdy.,	N.89°53'W.	79.92	.16			79.92
	N.89°56'W.	80.12	.10			80.12
	N.89°44'W.	80.06	.38			80.06
	N.89°52'W.	111.99	.26			111.99
West bdy., convergency,	South,	471.04		471.04		
	Totals,		471.15	471.04	473.69	.45
			471.04			472.87
						473.69
	Error in latitude,		.11			
	Error in departure,					.82

West boundary of Tp. 17 S. Rg. 16 E.

Chains.

John P. Hesse
U. S. Surveyor.

CERTIFICATE OF ASSISTANTS.

We, the undersigned, hereby certify upon honor that we assisted, to the best of our skill and ability,

John F. Hesse, U. S. Surveyor, during the periods and in the capacities stated opposite our several signatures, in surveying all those parts or portions of the West boundary of Tp. 17 S. Rg. 16 E.

of the Gila & Salt River Base Meridian, in the State of Arizona, which are represented in the foregoing field notes as having been executed 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 executed.

NAME.	PERIOD OF SERVICE.		CAPACITY.
	BEGUN.	ENDED.	
<u>G. E. Lang</u>	September 6 1912	October 13 1912	Chainman
<u>D. L. Nicoll</u>	September 6 1912	October 13 1912	Chainman
<u>W. L. Boy</u>	September 16 1912	October 13 1912	Moundman
<u>S. K. Allegood</u>	September 16 1912	October 12 1912	Axman
<u>F. E. Ajers</u>	September 16 1912	October 13 1912	Flagman

Subscribed and certified to before me on the dates of the final service as shown above.

John F. Hesse
U. S. Surveyor.

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BOOK 2651

FINAL OATH OF UNITED STATES SURVEYOR.

I, John F. Hesse, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for Arizona, for Group 18 bearing date of the 22nd day of May, 1912, I have well, faithfully, and truly, in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the west boundary of Tp. 17 S. Rg. 16 E.

of the Gila & Salt River Base and Meridian, in the State of Arizona, which are represented in the foregoing field notes as having been executed 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 U. S. 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
U. S. Surveyor.

Subscribed by said John F. Hesse, and sworn to before me }
this 23rd day of January, 1914



Frank S. Ingalls
Surveyor General of Arizona

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, July 21, 1914

The foregoing field notes of the survey of the West boundary of Township No 17 South, Range No 16 East of the Gila and Salt River Base and Meridian, Arizona

executed by John F. Hesse - U.S. Surveyor under his special instructions dated May 22, 1912, 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
U. S. Surveyor General of Arizona

~~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~~