

JAN 31 1914

BOOK "E"

BOOK 2655

# FIELD NOTES

OF THE SURVEY OF THE

East, West and South Boundaries of Tp. 21 S. R. 24 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 September 19th, 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, September 27th, 1912, pursuant to authority contained in the Act of Congress dated August 23rd, 1912.

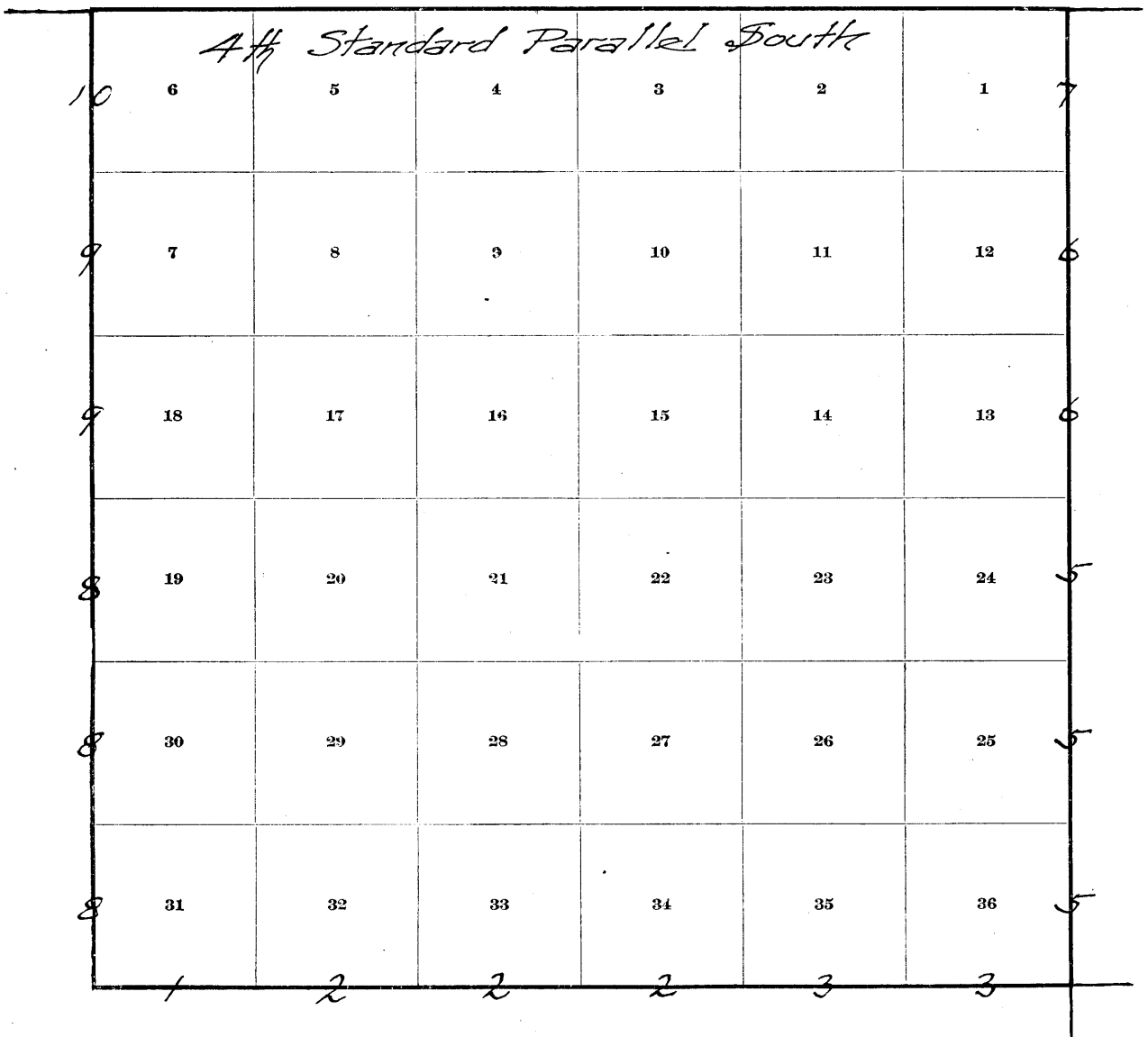
Survey commenced February 16, 1913.

Survey completed February 21, 1913.

BOOK 2655

# INDEX DIAGRAM.

Township 21 South, Range 24 East



## Survey of S. Bdy. of Tp. 21 S. R. 24 E.

Chains

Survey commenced February 16, 1913 and executed with a W. and L.F. Garley 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 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 my camp, which is situated near the center of sec. 10, Tp. 21 S. R. 24 E., latitude  $31^{\circ}36\frac{1}{2}'$  N. longitude  $109^{\circ}53'47''$  W. I set off  $31^{\circ}36\frac{1}{2}'$  N. on lat. arc,  $13^{\circ}15\frac{1}{2}'$  S. on the decl. arc and 4h. 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 9h.38.3m. p. m. by my watch which has correct l.m.t. I observe Polaris at Western Elongation, in accordance with the 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.

February 16, 1913.

February 17, 1913. At 7h. 00m. a. m. l.m.t. I lay off the azimuth of Polaris  $1^{\circ}21''$  to east, and mark the meridian thus determined, by cutting a small groove in the stone already set 5 chs. N. of my station, on which the meridian falls 0.3 ins. E. of the mark determined by the solar.

At 7h.30m. a. m. l. m. t. , I set off  $31^{\circ}36\frac{1}{2}'$  N. on the lat. arc,  $13^{\circ}15\frac{1}{2}'$  S. on the decl. arc and mark a point in the meridian determined by the solar, by a cross on the stone already set 5 chs. N. of my station; this mark falls 0.3 ins. E. of the meridian established by the Polaris observation.

The solar apparatus, by p. m. and a. m. observations, defines positions for meridians, respectively about  $0^{\circ}16''$  West and East of the meridian determined 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. l.m.t. is N.  $13^{\circ}49'W$ . the angle thus determined gives the mag. decl.  $13^{\circ}49'E$ .

Chains.

February 17, 1913; At 9h.00m. a. m. l. m. t., I set off 31°33' N. on the lat. arc; 12°00' S. on the decl. arc; and determine a meridian with the solar at the cor. of Tps. 21 and 22 S, Rs. 24 and 25 E, which is a stone marked and witnessed as described by the Surveyor General.

Thence I run,

West on a random line, along the S. bdy. of Tp. 21 S., R. 24 E., setting temp.  $\frac{1}{4}$  sec., and sec. cors. at intervals of 40.00 chs.; and 476.27 chs., intersect the E. bdy. of Tp. 21 S., R. 23 E., 3.30 chs. N. of the cor. of Tps. 21 and 22 S., Rs. 23 & 24 E., recently estab. by me as described in Book "U" of Group 5.

Set a iron post 3 ft. long, 3 ins. in dia., 24 ins. in the ground, for closing corner of Tps. 21 and 22 S., R. 24 E., marked on brass cap, 1913;

CC W. of center.

R 24 E in E. and

T 21 S, S 36, S 1, T 22 S, R 23 E in W. half;

T 21 S, S 31 in NE. and

T 22 S, S 6 in SE. quadrant;

Raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, E. of cor. Pits impracticable. NOTE: I change markings on the cor. of Tps. 21 & 22 S. Rs. 23 & 24 E. to refer to Tps. 21 & 22 S. R. 23 E. only.

February 17, 1913.

February 19, 1913; At 8h.00m. a. m. l. m. t., I set off 31°33' N on the lat. arc; 11°18' S on the decl. arc; and determine a meridian with the solar, at the <sup>closing</sup> cor. of Tps. 21 and 22 S, R. 24 E, here ~~above~~ described previously described.

Thence I run,

East, bet. secs. 6 and 31, on true line

Mountainous country, dense brush, scattering timber.

Descend broken E slope

15.17 Cross drain 8 lks. wide, course NW. ascend

21.37 Top of rocky ridge bears N and S, descend

36.27 Set a 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 31 in N. and

S 6 in S. half;

Raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, N. of cor. Pits impracticable.

37.37 Cross wash, 25 lks. wide, course NE. Ascend.

56.00 Enter timber.

71.00 Leave timber.

76.27 Set a iron post 3 ft. long, 3 ins. in diam, 24 ins. in the ground, for cor. of secs. 5, 6, 31 and 32, marked on brass cap, 1913;

T 21 S in N.,

T 22 S in S. and

R 24 E in W. half;

S 31 in NW,

S 32 in NE,

S 5 in SE. and

S 6 in SW. quadrant.

Raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.

Land, mountainous.

Soil, rocky. 4th rate.

Timber, oak.

Undergrowth, cacti, ocatilla.

East, bet secs. 5 and 32, on true line  
Mountainous country, dense brush  
Ascend along S. slope of ridge  
22.80 Top of small ridge, thence along steep N. slope of mountain peak. Ridge bears ESE. and WNW.  
34.20 Top of main ridge, bears SW. and NE., descend.  
40.00 Set a 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 32 in N. and  
S 5 in S. half;

Chains.

- Raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, N. of cor. Pits impracticable.
- 55.60 Cross drain 8 lks. wide, course SE, descend
- 80.00 Set a iron post 3 ft. long, 3 ins. in diam, 24 ins. in the ground, for cor. of secs. 4, 5, 32 and 33, marked on brass cap, 1913;
- T 21 S in N,  
T 22 S in S. and  
R 24 E in W. half;  
S 32 in NW,  
S 33 in NE,  
S 4 in SE. and  
S 5 in SW. quadrant.
- Raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.
- Land, mountainous.  
Soil, rocky, 4th rate.  
No timber.  
Undergrowth, ocatilla, cacti, blackbrush.
- 
- East, bet secs. 4 and 33, on true line  
Mountainous country, dense brush and scattering timber.  
Descend.
- 7.80 Cross drain, 8 lks. wide, course SE, ascend along S. slope.
- 27.60 Cross wash, 25 lks. wide, course NE, ascend.
- 40.00 Set a 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 33 in N. and  
S 4 in S. half; from which  
A oak, 8 ins. in diam, bears N. 70° W., 31 lks. dist., marked  $\frac{1}{4}$  S 33 B T.  
A oak 7 ins. in diam, bears S. 50° W., 28 lks. dist., marked  $\frac{1}{4}$  S 4 B T.
- 40.80 Cross drain, 8 lks. wide, course N, ascend.
- 47.90 Cross top of ridge, bears N. and S, descend.
- 52.20 Cross drain, 10 lks. wide, course N, ascend.
- 76.90 Cross top of ridge, bears NE. and SW, descend.
- 80.00 Set a iron post 3 ft. long, 3 ins. in diam, 24 ins. in the ground, for cor. of secs 3, 4, 33 and 34, marked on brass cap, 1913;
- T 21 S in N,  
T 22 S in S. and  
R 24 E in W. half;  
S 33 in NW,  
S 34 in NE,  
S 3 in SE. and  
S 4 in SW. quadrant.
- Raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.
- Land, mountainous.  
Soil, rocky, 4th rate.  
Timber, oak.  
Undergrowth, ocatilla, cacti, blackbrush.
- Note: ----- At this cor. I set off  $11^{\circ} 15\frac{1}{2}'$  S. on the decl. arc and observe the sun on the meridian at noon; the resulting lat. is  $31^{\circ} 33'$  N.
- 
- East, bet secs 3 and 34, on true line,  
Mountainous country, dense brush,  
Descend.
- 8.10 Cross drain, 8 lks. wide, course NE, ascend
- 36.90 Cross top of ridge, bears NE. and SW., descend along N. slope of ridge.
- 40.00 Set a 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 34 in N. and  
S 3 in S. half;
- Raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, N. of cor. Pits impracticable.

South Boundary of Tr. 21 S, R 24 E.

Chains

80.00

Set a iron post 3 ft. long, 3 ins. in diam, 24 ins. in the ground, for cor. of secs. 2, 3, 34 and 35, marked on brass cap, 1913;

- T 21 S in N,
- T 22 S in S. and
- R 24 E in W. half;
- S 34, in NW,
- S 35, in NE,
- S 2, in SE. and
- S 3, in SW. quadrant.

Raise a mound of stone 2 ft. base, 1 1/2 ft. high, W. of cor. Pits impracticable.

Land, mountainous.

Soil, rocky, 4th rate.

No timber.

Undergrowth, ocatilla, cacti, blackbrush.

-----  
East, bet. secs. 2 and 35, on true line,  
Mountainous country, scattering brush.

Along top of ridge.

3.50 Intersect telephone line, bears NE. and SW.

12.50 Leave ridge, bears E. and W., descend.

40.00 Set a iron post 3 ft. long, 1 in. in diam, 26 ins. in the ground, for 1/4 sec. cor., marked on brass cap, 1913;

- 1/4 S 35 in N. and
- S 2 in S. half;

Raise a mound of stone 2 ft. base, 1 1/2 ft. high, N. of cor. Pits impracticable.

43.50 Leave mountainous country and enter rolling land.

54.10 Cross wash, 60 lks. wide, course NE., descend gradually.

57.15 Wire fence, bears NE. and SW.

59.35 Wire fence, bears NW. and SE.

67.70 Cross road, bears NE. and SW.

69.50 Cross road, bears NE. and SW.

80.00 Set a iron post 3 ft. long, 3 ins. in diam, 24 ins. in the ground, for cor. of secs. 1, 2, 35 and 36, marked on brass cap, 1913;

- T 21 S in N,
- T 22 S in S. and
- R 24 E in W. half;
- S 35, in NW,
- S 36, in NE,
- S 1, in SE. and
- S 2, in SW. quadrant.

Raise a mound of stone 2 ft. base, 1 1/2 ft. high, W. of cor. Pits impracticable.

Land, 1st 43 chs. mountainous, last 37 chs. rolling.

Soil, rocky and sandy loam, 3rd and 4th rate.

No timber.

Undergrowth, ocatilla, cacti, mesquite.

-----  
East, bet. secs. 1 and 36, on true line

Rolling country, dense brush.

40.00 Set a iron post 3 ft. long, 1 in. in diam, 26 ins. in the ground, for 1/4 sec. cor., marked on brass cap, 1913;

- 1/4 S 36 in N. and
- S 1 in S. half;

Raise a mound of stone 2 ft. base, 1 1/2 ft. high, N. of cor. Pits impracticable.

79.20 Cross wash, 60 lks. wide, course NE.

80.00 Corner of Trs. 21 and 22 S, Rgs. 24 and 25 E., heretofore described.

Land, rolling.

Soil, dry sandy loam mixed with gravel. 3rd rate.

No timber.

Undergrowth, cacti, ocatilla.

East Boundary of Tp. 21 S. Rg. 24 E:

Chains	
	<p>February 20, 1913. At 8h.00m. a. m. 1. m. t., I set off 31° 33' N., on the lat. arc; 10° 56½' S on the decl. arc; and determine a true meridian with the solar, at the cor. of Tps 21 and 22 S, Rs. 24 and 25 E., heretofore described. Particularly describe.</p> <p>Thence I run, on true line</p> <p>North, bet. secs 31 and 36, Rolling, dense brush.</p>
00.85	Wash, 60 lks. wide, course NE.
40.00	Set a iron post, 3 ft. long, 1 in. in diam, 26 in. in the ground, for ¼ sec. cor., marked on brass cap, 1913; ¼ S 36 in W. and S 31 on E. half. Raise a mound of stone 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.
59.30	Wash, 8 lks. wide, course SE.
75.45	Wash, 18 lks. wide, course SE.
77.27	Wash, 40 lks. wide, course SE.
80.00	Set a iron post, 3 ft. long, 3 in. in diam, 24 in. in the ground, for cor. of secs., 25, 30, 31 and 36., marked on brass cap, 1913; T 21 S in N. half; R 24 E S 25 in NW, R 25 E S 30 in NE., S 31 in SE. and S 36 in SW. quadrant; Raise a mound of stone 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.
	Land, rolling. Soil, dry sandy loam, and gravel. No timber. Undergrowth, mesquite, ocatilla and sparse grass.
-----	
	North, bet. secs. 25 and 30, on true line
	Slightly rolling, dense brush.
40.00	Set a iron post 3 ft. long, 1 in. in diam, 26 in. in the ground, for ¼ sec. cor., marked on brass cap, 1913; ¼ S 25 in W. and S 30 in E. half; Raise a mound of stone 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable,
80.00	Set a iron post 3 ft. long, 3 in. in diam, 24 in. in the ground for cor. of secs. 19, 24, 25 and 30, marked on brass cap, 1913; T 21 S in N. half; R 24 E, S 24 in NW, R 25 E, S 19 in NE., S 30 in SE. and S 25 in SW. quadrant. Raise a mound of stone 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.
	Land, rolling. Soil, dry sandy loam and small rocks. 3th rate. No timber. Undergrowth, mesquite and sparse grass.
-----	
	North, bet. secs 19 and 24, on true line,
	Level, dense brush.
5.00	Wash, 8 lks. wide, course NE.
40.00	Set a iron post 3 ft. long, 1 in. in diam, 26 in. in the ground, for ¼ sec. cor., marked on brass cap, 1913; ¼ S 24 on W. and S 19 on E. half. Dig pits, 18x 18 x 12 in., N. and S. of post, 3 ft. dist.; and raise a mound of earth, 3½ ft. base, 1½ ft. high, W. of cor.
42.95	Cross wash, 8 lks. wide, course SE.
65.50	Cross wash, 15 lks. wide, course SE.
80.00	Set a iron post, 3 ft. long, 3 ins. in diam, 24 ins. in the ground, for cor. of secs. 13, 18, 19 and 24, marked

## Chains.

on brass cap, 1913;

T 21 S on N. half;  
R 24 E, S 13 in NW;  
R 25 E, S 18 in NE,  
S 19 in SE. and  
S 24 on SW. quadrant;

Dig pits, 18 x 18 x 12 ins., in each sec., 5½ ft. dist; raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor.

Land, level.

Soil, dry sandy loam. 3th rate.

No timber.

Undergrowth, mesquite, cacti.

Note: ~~At this cor. I set off 10° 54' S. on the decl. arc and observe the sun on the meridian at noon; the resulting lat. is 31° 35½' N.~~

North, bet secs. 13 and 18, on true line,

Land level. Scattering brush.

5.00 Leave alkaline soil.

39.00 Set a iron post, 3 ft. long, 1 in. in diam, 26 ins. in the ground, for witness cor. to ¼ sec. cor., marked on brass cap, 1913;

WC ¼ in N. half  
S 18 in SE. and  
S 13 in SW. quadrant.

Dig pits, 18 x 18 x 12 ins. N. and S. of cor. 3 ft. dist.; and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.

40.00 Point for ¼ sec. cor. in drain 12 lks. wide, course NE.

52.83 Cross road, bears NW. and SE.

69.80 Cross wash, 30 lks. wide, course SE.

80.00 Set a 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, 1913;

T 21 S on N. half;  
R 24 E, S 12 on NW.  
R 25 E, S 7 on NE,  
S 18 on SE. and  
S 13 on SW. quadrant.

Dig pits, 18 x 18 x 12 ins., in each sec. 5½ ft. dist; raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor.

Land level.

Soil, first 5 chs. strongly impregnate with alkaline adobe. The remainder is a mixture of adobe and sandy loam slightly alkaline. 4th rate, and 3th rate.

No timber.

Undergrowth, mesquite, cacti.

North, bet. secs. 7 and 12, on true line,

Slightly rolling.

40.00 Set a iron post 3 ft. long, 1 in. in diam, 26 ins. in the ground, for ¼ sec. cor., marked on brass cap, 1913;

¼ S 12 on W. and  
S 7 on E. half;

Dig pits, 18 x 18 x 12 ins., N. and S. of cor. 3 ft. dist.; and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.

80.00 Set a iron post, 3 ft. long, 3 ins. in diam, 26 ins. in the ground, for cor. of secs. 1, 6, 7 and 12, marked on brass cap, 1913;

T 21 S on N. half;  
R 24 E, S 1 on NW,  
R 25 E, S 6 on NE,  
S 7 on SE. and  
S 12 on SW. quadrant.

Dig pits 18 x 18 x 12 ins., in each sec. 5½ ft. dist.; raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor.



BOOK 2655

East Boundary of T 21 S, R 24 E.

Chains.

Land slightly rolling.  
Soil, dry sandy loam. 2nd and 3rd rate.  
No timber.



North, bet. secs. 1 and 6, on true line,  
Slightly rolling.

21.50 Cross road, bears NW. and SE.

40.00 Set a 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 1 on W. and  
S 6 on E. half;

Dig pits 18 x 18 x 12 ins., N. and S. of cor. 3 ft.  
dist.; raise a mound of earth  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft.  
high, W. of cor.

48.95 Cross wash, 18 lks. wide, course SE.

70.50 Cross wash, 20 lks. wide, course SE.

85.35 Intersect, the Fourth Standard Parallel South of the Gila  
and Salt River Base Line; 16.07 chs. N89° 44' W. of  $\frac{1}{4}$  sec.  
cor. of sec. 36, T 20 S, R 24 E, which is a iron post with  
brass cap marked and witnessed as described by the Surveyor General.

Set a iron post 3 ft. long, 3 ins. in dia., 24 ins. in the  
ground, for closing corner of Tps. 21 S, Rs. 24 and 25 E.,  
marked on brass cap, 1913;

CC S. of center  
T 20 S, R. 24 E, S 36 and R 25 E S 31 in N. and  
T 21 S in S. half;  
S 6, R 25 E in SE. and  
S 1, R 24 E in SW. quadrant.

Dig pits, 30 x 24 x 12 ins., crosswise on each line,  
E. and W., 4 ft., and S. of cor. 8 ft. dist.; and  
raise a mound of earth, 5 ft. base,  $2\frac{1}{2}$  ft. high,  
S. of cor.

Land slightly rolling.  
Soil, sandy loam, 2nd rate.  
No timber.

February 20, 1913.



West boundary of Township 21 South, Range 24 East. 10.

Chains.

February 21, 1913: At 8h.00m.a.m., l.m.t., I set off  $31^{\circ} 33' N.$  on the lat. arc;  $10^{\circ} 35' S.$  on the decl. arc, and determine a meridian with the solar at the cor. of Ts. 21 and 22 S., R. 23 E., which was set by me under instructions for Group 5, as cor. of Ts. 21 & 22 S., Rs. 23 and 24 E., but recently changed to refer to Ts. 21 and 22 S., R. 23 E. only, as hereinbefore noted.

Thence I run, on true line,  
North, bet. secs. 31 and 36, over mountainous land, through dense brush.

3.30 Closing cor. of Ts. 21 and 22 S., R. 24 E., recently established by me, as hereinbefore described.

Note: Knowing from this closing distance that closing cors. will be necessary on the Subdivisional lines in Tp. 21 S., R. 24 E., I set and mark all  $\frac{1}{4}$  sec. and sec. cors. on this line to refer to the secs. in Tp. 21 S., R. 23 E. only.

8.00 Descend gradually rolling north slope.

40.00 Cross wash, 50 lks. wide, course NE. Road in wash, brs. NE. and SW. Point for  $\frac{1}{4}$  sec. cor. Ascend.

41.00 Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in the ground for witness cor. to  $\frac{1}{4}$  sec. cor. of sec. 36, marked on brass cap, 1913, W C  $\frac{1}{4}$  in N. half and S 36 in W. half; raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.

64.00 Top of ridge, brs. NE. and SW. Descend.

76.50 Cross wash, 20 lks. wide, course NE.; ascend.

80.00 Set an iron post 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of secs. 25 and 36, marked on brass cap, 1913,  
T 21 S in N half, and  
S 30, S 31 R 24 E in E. half;  
S 25 in NW., and  
S 36 R 23 E in SW. quadrant;  
raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.  
Land, mountainous. Soil, rocky, 4th rate.  
No timber. Undergrowth, cacti, ocatilla, blackbrush.

---

North, bet. secs. 25 and 30, on true line.  
Country, mountainous; dense brush; descend.

8.70 Cross wash, 15 lks. wide, course NE.; ascend.

30.00 Top of ridge, brs. E. and W.; descend.

40.00 Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in the ground, for  $\frac{1}{4}$  sec. cor., sec. 25, marked on brass cap, 1913,  $\frac{1}{4}$  S 25 in W. half;  
raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor. Pits impracticable.

80.00 Set an iron post 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of secs. 24 and 25, marked on brass cap, 1913,  
T 21 S in N. half; and  
S 19, S 30, R 24 E in E. half;  
S 24 in NW., and  
S 25 R 23 E in SW. quadrant; dig pits 18x18  
x12 ins. in each sec.  $5\frac{1}{2}$  ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high, west of cor.  
Land, mountainous. Soil, rocky, 4th rate.  
No timber. Undergrowth, cacti, ocatilla, blackbrush.

---

North, bet. secs. 19 and 24, on true line.  
Ascend rocky SW. slope, through dense brush.

6.20 Top of ridge, brs. NW. and SE. Descend.

17.00 Leave mountains and enter rolling 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., sec. 24, marked on brass cap, 1913,  $\frac{1}{4}$  S 24 in W. half;  
raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, west of corner. Pits impracticable.

62.20 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 and 24, marked on brass cap,

## 11. West boundary of Township 21 South, Range 24 East.

Chains.

1913,  
T 21 S in N. half; and  
S 18, S 19 R 24 E in E. half;  
S 13 in NW., and  
S 24, R 23 E 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, 2 ft. high, west of cor.  
Land, 1st 17 chs. mountainous; last 63 chs. rolling.  
Soil, dry, sandy loam and rocky, 4th and 1st rate.  
No timber.

Undergrowth, ocatilla, caeti, blackbrush.

Note: At this cor. I set off  $10^{\circ}32\frac{1}{2}'S$ . on the decl. arc, and observe the sun on the meridian at noon; the resulting latitude is  $31^{\circ}35\frac{1}{2}'N$ .

North, bet. secs. 13 and 18, on true line.

Over rolling country, 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., sec. 13, marked on brass cap,

1913,  $\frac{1}{4}$  S 13 in W. half;

dig pits 18x18x12 ins. N. and S. of cor. 3 ft. dist.; raise a mound of earth  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high, west of cor.

74.70 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. 12 and 13, marked on brass cap,

1913,

T 21 S in N. half, and

S 7, S 18 R 24 E in E. half;

S 12 in NW., and

S 13, R 23 E 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, 2 ft. high, west of corner.

Land, rolling.

Soil, dry, loose, sandy loam, medium texture, 1st rate.

No timber.

Undergrowth, caeti, ocatilla, blackbrush.

North, bet. secs. 7 and 12, on true line.

Over level country, 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., sec. 12, marked on brass cap,

1913,  $\frac{1}{4}$  S 12 in W. half;

dig pits 18x18x12 ins., N. and S. of cor. 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high, west of corner.

57.00 Leave brush.

80.00 Set an iron post 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of secs. 1 and 12, marked on brass cap,

1913,

T 21 S in N. half; and

S 6, S 7 R 24 E in E. half; and

S 1 in NW., and

S 12 R 23 E 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, 2 ft. high, west of corner.

West Boundary of T 21 S, R 24 E.

Chains.

Land, rolling.  
Soil, dry loose sandy loam of medium texture, over 2 ft. deep. 1st rate.  
No timber.  
Undergrowth, cacti, ocatilla, blackbrush.

-----

North, bet secs. 1 and 6, on true line,  
Over level land.  
No brush.

9.80 Cross road, bears NW. and SE.  
40.00 Set a iron post 3 ft. long, 1 in. in diam, 26 ins. in the ground, for  $\frac{1}{4}$  sec. cor. <sup>sec</sup> marked on brass cap, 1913;  
 $\frac{1}{4}$  S 1 in W. and  
S 2 in E half;  
Dig pits 18 x 18 x 12 ins., N. and S. of cor. 3 ft. dist.; raise a mound of earth 3 $\frac{1}{2}$  ft. base, 1 $\frac{1}{2}$  ft. high, W. of cor.

62.00 Enter scattering mesquite brush.

68.10 Cross road, bears NW. and SE.

90.78 Intersect the Fourth Standard Parallel South, 11.87 chs. N. 89° 44' W. of the  $\frac{1}{4}$  sec. cor. of sec. 36, T. 20 S., R. 23 E., which is a iron post <sup>with brass cap</sup> marked and witnessed as described by the Surveyor General.

Set a iron post 3 ft. long, 3 ins. in diam, 24 ins. in the ground, for closing cor. of Tps. 21 S. Rgs. 23 and 24 E., marked on brass cap, 1913;

CC S. of centre  
T 20 S, R 23 E S 36, R 24 E S 31 in N. and  
T 21 S in S. half;  
S 6 R 24 E in SE. and  
S 1 R 23 E in SW. quadrant.

Dig pits 30 x 24 x 12 ins., acrosswise on each line, E. and W. 4 ft., and S. of cor. 8 ft. dist.; and raise a mound of earth 5 ft. base, 2 $\frac{1}{2}$  ft. high, S. of cor.

Land, level.  
Soil, dry loose sandy loam of medium texture over 2 ft. deep. 1st rate.  
No timber.  
Undergrowth, mesquite.

February 21, 1913.

-----

Boundaries of T. 21 S., R 24 E.

Latitudes, departures, and closing errors.

Line designated.	Bearing.	Dist. Chs.	Latitudes.		Departures.		
			N Chs.	S Chs.	E Chs.	W Chs.	
SOUTH BOUNDARY	E. West.	476.27				476.27	
WEST BOUNDARY	E. North.	487.48	487.48				
NORTH BOUNDARY <small>(4th STANDARD PAR. SOUTH)</small>	S 89°44' E	475.80		2.21	475.80		
EAST BOUNDARY	E. South.	485.35		485.35			
Convergency							44'
Totals			487.48	487.56	476.24	476.27	
				487.48		476.24	
			Error				
Error in lat.			0.08 in dep.		0.03		

General Description.

This township is rough and mountainous in the southern, rolling in the central, and nearly level in the northern part. There is no water in the township.

*John P. Kessel*  
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 east,  
west and south boundaries of Tp. 31 S. Rg. 24 E

of the Gila and Salt River Base and Meridian, in the State of Arizona,  
which are represented in the foregoing field notes as having been executed by him, and under his direc-  
tion; 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.	
E. E. Lang	Sept. 6, 1912	March 7, 1913	Chairman
F. E. Ayers	Dec. 20, 1912	March 7, 1913	Chairman
B. S. Jackson	Feb. 9, 1913	March 7, 1913	Assman
J. S. Hughes	Feb. 9, 1913	March 7, 1913	Flagman
E. E. Kealey	Feb. 22, 1913	March 7, 1913	Coverman

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

John F. Hesse  
U. S. Surveyor.

128  
14  
BOOK 2655

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 19th day of September, 1913, 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 East, West and South boundaries of T 21 S. Rg. 24 E.

of the Gila and 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 31st 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

East, West and South boundaries of

Township N° 21 South, Range N° 24 East of the

Gila and Salt River Base and Meridian, Arizona.

executed by John F. Hesse, U. S. Surveyor under his special instructions dated September 19th, 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.