

1835 Book "A"

Mar 21/1905

BOOK 1835

FIELD NOTES

OF THE ^{Re} SURVEY OF THE

Resurvey.

Second Standard Parallel South
through
Range 17 East
and the
East 1/2 miles of Range 16 East

1835

-1835-

Of the Line and Salt River Base + Meridian,

Arizona

AS SURVEYED BY

William B. Alexander, United States Deputy Surveyor,

Under his Contract No. 117, dated June 13, ¹⁹⁰⁴~~189~~

Survey commenced July 15, ¹⁹⁰⁴~~189~~

Survey completed ~~October 25~~ July 27, ¹⁹⁰⁴~~189~~

BOOK 1835 NAMES AND DUTIES OF ASSISTANTS.

Frank C. Kelton Seaman

Edgar B. Allen do

Frank J. Howe do

H. W. Dennis do

Emmet T. Ford Mechanic

James L. Lopez do

Frank L. Dublin Seaman

J. Rutledge Flagman

BOOK 1835

INDEX DIAGRAM.

2nd Standard Parcel S
Township 10, Range 1677

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PRELIMINARY OATHS OF ASSISTANTS.

BOOK 1835

Frank Kelton
Edgar E. Allen
Frank J. Howe
H. W. Durlin

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

2nd Stan Parallel South through Range 17 and the E 1/2 miles of Range 16 East

Frank P. Kelton, Chainman.

Edgar E. Allen, Chainman.

Frank J. Howe
H. W. Durlin

Subscribed and sworn to before me this 10 day of July, 1891 1904

My Comm. Expires Sept 24 '06



Ralph W. Saugworthy
Notary Public
Pima County

WE, Emmet J. Ford and Jesus Lopez

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

2nd Stan Parallel South through Range 17 E and the E 1/2 miles of R 16 E.

Emmet J. Ford, Moundman.

Jesus Lopez, Moundman.

Subscribed and sworn to before me this 10 day of July, 1891 1904

My Comm. Expires Sept 24 '06



Ralph W. Saugworthy
Notary Public
Pima County

WE, I, Francis S. Durlin

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

2nd Stan Parallel South through R 17 E and the E 1/2 miles of R 16 E

Frank L. Durlin, Axman.

Axman.

Subscribed and sworn to before me this 10 day of July, 1891 1904

My Comm. Expires Sept 24 '06



Ralph W. Saugworthy
Notary Public
Pima County

I, S. Buttler, 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

2nd Stan Parallel South through R 17 E and the east 1/2 miles of R 16 E

S. Buttler, Flagman.

Subscribed and sworn to before me this 10 day of July, 1891 1904

My Comm. Expires Sept 24 '06



Ralph W. Saugworthy
Notary Public
Pima County

Chains

Survey commenced July 18th, 1904, and executed with a Young & Sons light mountain transit No. 7520; the horizontal limb having two double verniers placed opposite each other and reading to 1' of arc, which is also the least reading of the declination and latitude arcs.

The instrument was examined, tested on the true meridian at Phoenix, Arizona, found correct, and was approved by the Surveyor General for Arizona, June 25th, 1904.

I begin at the standard corner of secs. 33 and 34, T. 10 S., R. 18 E., and run

W. on a blank line to the standard corner of Ts. 10 S., Rs. 17 and 18 E. This corner is a post greatly decayed in a mound of stones. The marks on the post are nearly obliterated, therefore I destroy all traces of the old corner and re-establish it at the same point, as follows:

Set a granite stone 6 x 8 x 16 ins., 11 ins. in the ground, for standard corner of T. 10 S., Rs. 17 and 18 East, on S. Bdy. T. 10 S., marked S.C. on N; with 6 grooves on N.E., and W. faces; and raise a mound of stone, 2 ft. base 1-1/2 ft. high, N. of corner. Pits impracticable.

At a point 2.13 ft. S. of said standard corner in latitude $32^{\circ}-32.5'$ N. longitude $110^{\circ}-32.8'$ W., at 11 h. 4.8 m., p.m., by my watch, which is correct San Francisco time, but 37.8 m. slower than mean solar local time, I observe Polaris at eastern elongation, in accordance with instructions in the manual, and mark the line thus determined, by a tack driven in a wooden stake set in the ground, about 5 chains N. of my station.

July 18th, 1904.

July 19th, 1904; At 5 a.m. I lay off the azimuth of Polaris, $1^{\circ}-25.7'$, to the West, and mark the true

Chains

meridian thus determined, by a tack, driven in a wooden stake set firmly in the ground, west of the point established last night; the magnetic bearing of said true meridian is N. $13^{\circ}-15'$ W., which gives the magnetic declination $13^{\circ}-15'E$.

At this station (i.e. a point 2.13 ft. south of the standard corner) I turned off from the true meridian an angle of $89^{\circ}-58'$ and run N. $89^{\circ}-58'$ W. on a blank line, south of sec. 36.

At 40 chains no traces of a previously established corner are found. At 79.40 chains, old corner of secs. 35 and 36 bears south, 40 lks. dist. Therefore I continue this line west on a secant.

At 40 chains I find no traces of old corner. At 80.15 old corner of secs. 34 and 35 bears south 95 lks dist. I continue my line west to the standard corner of Ts. 10 S., Rs. 16 and 17 E., and find no part in alignment, some corners lost, and others nearly obliterated.

At 6 miles and 75 lks., a mound of stones bears south 9.30 chains dist. As no subdivisional work is connected with this portion of the 2nd Standard Parallel South, through R. 17 E., I resurvey and reestablish the line. I examine the level and collimation adjustments of the transit, and find them to be correct. In order to test the solar apparatus, by comparing the results of observations made during a.m. and p.m. hours, with the true meridian made by observation on Polaris, I proceed as follows:

July 22nd, 1904; At a point 2.13 ft., south of the standard corner, (previously established by me, and hereinbefore described), of Ts. 10 S., Rs. 17 and 18 E., lat. $32^{\circ}-32-1/2'$ N., long. $110^{\circ}-32.8'$ W., at 3 h. 12 m., S.F. time (3h. 49.8 m., p.m., l.m.t.), I set off $32^{\circ}-32-1/2'$ on the lat. arc; $20^{\circ} 14-1/2'$ on the declination arc;

Chains

determine with the solar a true meridian; and mark a point thereof on the stake set July 19th, on which the true meridian, as determined by observation on Polaris, falls .3 ins. west of the mark determined by the solar.

July 22nd, 1904.

July 23rd, 1904: As 6 h. 30 m., a.m., S.F. t., (7 h. 7.8 m., a.m., l.m.t.), I set off $32^{\circ} 32' 1/2''$ on the Lat. arc; $20^{\circ} - 7''$ on the declination arc; determine a meridian and mark a point thereof on the stake already set about 5.00 chains north of my station; this mark falls on the true meridian established by the Polaris observation. The solar apparatus, by p.m. and a.m. observations, defines positions for true meridians respectively about N.0'-16" W. and N.0'-0"; therefore I conclude that the adjustments are satisfactory.

At this station (i.e., a point 2.13 ft. south of the standard corner) I turn off from the true meridian, an angle of $89^{\circ} - 58'$ toward the west and run North $89^{\circ} - 58'$ W., ^{on the descent} south of sec. 36.

- 8.00 Begin abrupt descent, slopes N.W.
- 10.00 Bottom, in wash.
- 23.50 Begin abrupt ascent, slopes S.E.
- 25.53 Top of bank, thence over ascending ground, sloping S.E.
- 33.63 Top. Begin abrupt descent into canon, bears E.N.E.
- 37.00 Bottom, thence along S. bank of wash, 60 lks. wide, bears E.
- 39.50 Ascend steep bank of canon, slopes E.N.E.
- 40.00 Point for $1/4$ sec. corner falls on steep bank; therefore I establish a W.C. on top of spur sloping N. The difference between measurements to the top of this spur, by two sets of chainmen is 10 lks; position of middle point

By first set, 41.22 chains

By second set, 41.32 chains; the mean of which is

Chains

41.27 N. ~~90~~ ft. from the secant, set a granite stone 6 x 9 x 12 ins., 8 ins. in the ground, for W.C. to 1/4 sec. corner, mark W.C. S.C. 1/4 on N. face; and raised a mound of stone, 2 ft., base 1-1/2 ft., high, N. of corner, pits impracticable.

No traces of old corner can be found.

I set off $20^{\circ}-3'7''$ on the decl. arc; at 12 h. 10 m., p.m., 1. m.t., and observe the sun on the meridian; the resulting lat. is $32^{\circ}-32'7''$.

41.35 Descend abruptly west.

44.00 Bottom and middle of wash, 60 lks. wide, bears E.N.E.

47.35 Top of bank, bears E.N.E. Thence along rolling ascent.

Difference between measurements of 80.00 chains, by two sets of chainmen, is 16 lks; position of middle point is

By first set, 79.92 chains,

By second set, 80.08 chains; the mean of which is

80.00 Set a granite stone 7 x 13 x 16 ins., 11 ins. in the ground, for standard corner of secs. 35 and 36, marked S.C. on N.; with one groove on E., and 5 grooves on W. faces, and raised a mound of stone, 2 ft., base, 1-1/2 ft. high, N. of cor. Pits impracticable.

This cor. is on side of hill sloping gently S., about 125 ft. N. of edge of deep canon.

From this corner the remains of an old cor. bear S. $56^{\circ}-1/3$ east, 72 lks. dist. This I destroy.

Land, mountainous.

Soil, coarse gravel; 4th rate.

No timber; under growth of mesquite, cacti, Palo verde.

Mountainous land, 80.00 chains.

July 23rd, 1904.

July 24th, 1904:

North $89^{\circ}-59'$ west, south of sec. 35.

Var. $13^{\circ}-15'$ East.

6.85 Begin abrupt descent.

7.70 Small wash, bears S. Ascend.

Chains

- 8.30 Top of small hill, slopes S. Over very roughly rolling ground.
- 15.00 Descend, 50 ft.
- 16.70 Wash, 50 lks. wide, bears S.E. Ascend bank.
- 19.70 Top of bank. Over level ground.
- 24.00 Descend abruptly, 40 ft.
- 24.80 Wash, 40 lks. wide, bears N. Ascend.
- 26.70 Top of hill. Ascend gradually along N. side of canon.
- 33.20 Top of spur which slopes abruptly and immediately S. to canon. Descend hill sloping S.S.W.
- 34.80 Wash, 40 lks. wide, bears E.S.E. Ascend hill sloping N.N.E.
- 38.00 Top, whence over rolling ground. Difference between measurements of 40.00 chains, by two sets of chainmen is 12 lks.; position of middle point is
 By first set, 39.94 chains
 By second set, 40.06 chains; the mean of which is
- 40.00 S..75 ft. from the secant, set a granite stone, 6 x 7 x 16 ins., 11 ins. in the ground for 1/4 sec. corner, marked S.C. 1/4 on N. face; and raised a mound of stone, 2 ft. base, 1-1/2 ft. high, N. of cor. Pits impracticable. This cor. is on level ground, near S. bank of canon. A thorough search reveals no traces of a previously established cor.
- 44.10 Descend abruptly, 35 ft.
- 47.00 Middle of wash, 40 lks. wide, bears N.E. Ascend along N. bank of canon.
- 53.70 Top of bank.
- 54.20 Descend abruptly, 20 ft.
- 54.55 Small wash, bears S. Ascend abruptly.
- 55.60 Top, whence ascend gradually through undergrowth of Palo verde and mesquite.
- 75.00 Old Camp Condon road, bears S.W.
 Difference of measurement of 80.00 chains, by two sets of chainmen is 16 lks.; position of middle point is
 By 1st set, 79.92 chs.,
 By 2nd set, 80.08 chs.; the mean of which is

Chains

80.00

S. 1.28 ft. from the secant, set a granite stone 6 x 8 x 18 ins., 12 ins. in the ground, for standard cor. of secs. 34 and 35, marked S.C. on N.; with 2 grooves on E., and 4 grooves on W. faces; and raised a mound of stone, 2 ft. base, 1-1/2 ft. high, N. of cor. Pits impracticable.

This cor. is on comparatively level ground and is visible from old Camp Condon road.

From this cor. a mound of stones bears S. 9° west, 96 lks. dist. This mound of stones being the only indication of an old cor. I destroy same.

Land, mountainous. Soil, stony; 4th rate.

No timber; some mesquite and Palo verde underbrush.

Mountainous land, 80.00 chains.

July 24th, 1904: I set off 19°-51' on the decl. arc; and at 11 h. 55m., a.m., l.m.t., observe the sun on the meridian; the resulting lat. is 32°-32' North.

N. 89° 59-1/2^{on the secant} west, south of sec. 34.

Var. 13°-15' east.

Begin gradual descent.

3.30 Descend abruptly.

3.86 Wash, 10 lks. wide, bears N.E. Ascend abruptly.

4.50 Top of abrupt ascend. Thence along grade sloping E.

12.00 Top, thence over rolling ground.

16.00 Begin descent.

19.90 Small wash, 5 lks. wide, bears S.E. Ascend.

22.00 Top of spur. Descend.

25.50 Small wash, bears S.E. Ascend.

30.00 Ascent becomes more gradual.

Difference between measurements of 40.00 chains by two sets of chainmen is 6 lks.; position of middle point is

By 1st set, 39.97 chs.,

By 2nd set, 40.03 chs.; the mean of which is

40.00

S. 1.59 ft. from the secant, set a granite stone, 6 x 8 x 14 ins. 10 ins. in the ground, for 1/4 sec. cor., marked S.C. 1/4 on N. face; and raised a mound of stone,

Chains 2 ft. base 1-1/2 ft. high N. of cor. Pits impracticable.
 A mound of stones which bears S., 1 chain dist. is the only trace of an old cor. that can be found. This I destroyed.

Over rolling ground.

- 42.00 Descend.
 43.60 Small wash, bears N.E.
 50.00 Ascend.
 52.00 Top of prominent hill, slopes N. Descend over rolling hillside, 100 ft.
 69.00 Foot of hill.
 71.30 Middle of wash, 50 lks. wide, bears N.E.
 76.50 Begin abrupt ascent.
 77.00 Top. Ascend gradually over rolling ground.

Difference of measurement of 80.00 chains, by two sets of chainmen, is 10 lks.; position of middle point is

By 1st set 79.95 chs.,

By 2nd set, 80.05 chs.; the mean of which is

80.00 S. 1.70 ft. from the secant, set a granite stone, 6 x 8 x 18 ins., 12 ins. in the ground, for standard cor. of secs. 33 and 34, marked S.C. on the N. face; with 3 grooves on E., and 3 grooves on W. faces; and raised a mound of stones, 2 ft. base 1-1/2 ft. high, N. of cor. Pits impracticable.

Remains of old cor. bears south 7° -1/2 west, 2.29 chs. dist. This I destroy.

Land, mountainous, sharply rolling.

Soil, 4th rate.

No timber; some scrubby mesquite.

Mountainous land, 80.00 chains.

July 24th, 1904: At 4 h. 30 m., p.m., lim. t., I set off 32° $32\text{-}1/2'$ on the lat. arc; 19° -49' on the decl. arc; and determined a true meridian with the solar, at the new cor. of secs. 33 and 34.

July 24th, 1904.

Chains	July 25th, 1904. West, ^{on the Secant} south of sec. 33
	Var. 13°-00' East.
	Continue ascent.
3.00	Top of ascent. Descend gradually over rolling ground.
17.50	Descend abruptly.
18.60	Wash, 25 lks. wide, bears E.S.E.
22.00	Same wash, 25 lks. wide, bears E.N.E.
25.50	Wash, 25 lks., bears E.S.E.
26.50	Ascend abruptly.
27.50	Top, whence over gradual ascent.
29.00	Descend.
30.60	Wash, 25 lks. wide, bears N.
35.00	Wash, 25 lks wide, bears S.E.
38.50	Same wash, 25 lks. wide, bears N.
	Difference in measurement of 40.00 chs., by two sets of chainmen, is 4 lks.; position of middle point is By 1st set, 39.98 chs., By 2nd set, 40.02 chs.; the mean of which is
40.00	S. 1.59 ft. from the secant, Set a quartzite stone, 6 x 8 x 14 ins., 10 ins. in the ground for 1/4 sec. cor., marked S.C. 1/4 on N. face; and raised a mound of stone, 2 ft. base, 1-1/2 ft. high N. of cor. Pits impracticable. No indications of an old cor. can be found.
	Begin ascent.
53.50	Top, whence along side of hill sloping S.
59.00	Descend.
67.00	Small wash, bears S. Ascend.
69.00	Top of hill. Descend.
75.00	Small wash, coarse S. Ascend.
77.00	Top of hill. Whence along side hill sloping S.
	Difference of measurement of 80.00 chs., by two sets of chainmen, is 2 lks.; the middle point is By 1st set, 79.99 chs., By 2nd set, 80.01 chs.; the mean of which is

Chains

80.00

S. 1.28 ft. from the secant, set a granite stone, 8 x 14 x 20 ins., 15 ins. in the ground, for standard cor. of secs. 32 and 33, marked S.C. on N: face; with 4 grooves on E. and 2 grooves on W. faces; and raised a mound of stones, 2 ft. base, 1-1/2 ft. high, N. of cor. Pits impracticable. Remains of old cor. bear S. 12°-1/2 W., 4.61 chs. dist. This I destroy.

Land, mountainous.

Soil, stony; 4th rate.

Underbrush, mesquite and cacti.

Mountainous land, 80.00 chs.

July 25th, 1904, I set off 19° 39-1/2' on the decl. and at 12 h. 0 m., l.m.t., observe the sun on the meridian; the resulting lat. is 32°-33' N.

S. 89°-59' ¹/₂ W. *on the secant*

South of sec. 32.

4.10

Descend.

4.55

Small wash, bears S.E.

6.00

Begin ascent, through dense chollas, along south side of hill.

18.00

Descend.

20.90

Small wash bears S.E. Ascend.

25.00

Top of hill.

Descend.

29.00

Small wash, bears S.S.E. Ascend.

32.10

Top of hill.

36.00

Small wash, course S.S.E. Ascend.

Difference in measurement of 40.00 chs., by two sets of chainmen, is 6 lks.; the position of the middle point is

By 1st set, 39.97 chs.,

By 2nd set, 40.03 chs.; the mean of which is

40.00

S. .75 ft. from the secant,

Set a quartzite stone, 6 x 7 x 15 ins., 10 ins. in the ground, for 1/4 sec. cor., marked S.C. 1/4 on N. face;

Chains

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

Dilligent search for indications of old corner reveals no
traces of same.

41.00 Top of hill.

46.00 Point of union of two small washed, the courses of which
are S. and S.S.E.

Ascend along N. side of hill.

58.50 Top of hill, thence over rolling ground.

72.00 Cross prominent ridge, bears E.N.E. Descend.

The difference of measurement of 80.00 chs., by two sets
of chairmen, is 10 lks.; the position of middle point is

By 1st set, 79.95 chs.,

By 2nd set, 80.05 chs.; the mean of which is

80.00 Set a quartzite stone, 10 x 12 x 16 ins., 11 ins. in the
ground, for standard cor. of secs. 31 and 32, marked
S.C. on N. face; with 5 grooves on E. and 1 groove on
W. faces; and raised a mound of stone, 2 ft. base, 2 ft
high, N. of cor. Pits impracticable.

From this point, the old sec. cor., which is a post,
4 x 4 ins. by 4 ft., with marks almost obliterated,
bears S. 4° W., 4.11 chs. dist. This I destroy.

Land, mountainous.

Soil, stony, 4th rate.

Underbrush, mesquite.

Mountainous land, 80.00 chs.

July 25th, 1904; at 3 h. 40 m., 1.m.t., p.m., I set off
32°-32-1/2' on the lat. arc; 19°-37' on the decl. arc;
and determine the true meridian by solar observation at
the new cor. of secs. 31 and 32.

July 25th, 1904.

July 26th, 1904.

S. 89°-59' W., ^{on the account} south of sec. 31.

Var. 12°-45' E.

7.60 Small wash, course E.N.E. Ascend.

Chains

12.00 Top of spur, slopes N.E. Descend.

16.51 Foot of hill, whence ascend wash. Numerous mesquite cats claw and cacti.

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

By 1st set, 39.98 chs.,

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

40.00 N..96 ft. from the secant,

Set a quartz stone, 6 x 10 x 16 ins., 11 lns. in the ground, for $1/4$ sec. cor., marked S.C. $1/4$ on N. face; and raised a mound of stone, 2 ft. base 3ft. high, N. of cor. Pits impracticable.

This cor. is near the left bank of wash, 40 lks. wide, I can find no traces of an old $1/4$ sec. cor.

July 26th, 1904: I set off $19^{\circ}-25'$ on the decl. arc, and at 12 h. 0 m., l.m.t., observe the sun on the meridian; the resulting lat. is $32^{\circ}-32'$. \mathcal{N}

Continue ascent of wash.

48.00 Leave wash. Begin steady ascent along hill sloping S.S.E

The difference in measurement of 80.00 chs., by two sets of chainmen, is 2 lks.; the position of middle point is

By 1st set, 79.99 chs.,

By 2nd set, 80.01 chs.; the mean of which is

80.00 N. 2.13 ft. from the secant,

Set a granite stone, 8 x 10 x 20 ins., 15 ins. in the ground, for standard cor. of T. 10 S., Rs. 16 and 17 E., marked

S.C. 10 S. on N.,

17 E. on E., and

16 E. on W. faces;

with 6 grooves of N., E., and W. faces; and raised a mound of stone, 3 ft. base, 2 ft. high, N. of cor.

Pits impracticable.

This cor. is on top of mesa sloping gently S.S.E.

The old cor., which is a post 4 x 4 ins. x 4 ft. with

Chains

marks scarcely discernable, bears S. 4°-55' W., 9.33 chs. dist. This I destroy.

Land, mountainous.

Soil, stony, 3rd and 4th rate; some grass.

Underbrush; mesquite, and cacti.

Mountainous land, 50.00 chs.

Dense undergrowth, 30.00 chs.

Survey commenced July 26th, 1904, and executed with a Young & Sons light mountain transit, No. 7520; the horizontal limb having two double verniers placed opposite each other and reading to one minute of arc, which is also the least reading of the declination and latitude arcs.

The instrument was examined, tested on the true meridian at Phoenix, Arizona, found correct, and was approved by the Surveyor General for Arizona, June 25th, 1904. At a point 2.13 ft. south of the standard cor. of T. 10 S., Rs. 16 and 17 E., in lat. 32°-32.5' N., long. 110°-39' W., at 4 h. 30 m., p.m., l.m.t., I set off 32° 32-1/2' on the lat. arc; 19° 23-1/2' on the decl. arc; and determined a true meridian by an observation on the sun, and mark the meridian thus determined by a tack driven in a wooden stake set firmly in the ground about 3-1/2 chs. north of the instrument.

At 10 h. 32.8 m., p.m., by my watch, which is correct S. F. time, but 37.4 m. slower than l.m.t., I observe Polaris at eastern elongation, in accordance with instructions in the manual and mark the line thus determined by a tack driven in a wooden stake set in the ground about 3-1/2 chs. north of my station, east of the point established this afternoon.

July 26th, 1904.

July 27th, 1904; At 7 h. 0m., a.m., l.m.t., I lay off the azimuth of Polaris 1°-26' to the west and mark the meridian thus established by a tack driven in a stake

Chains

set last night; the meridian thus determined falls .15 ins. west of the mark determined by the solar observation.

July 27th, 1904; At 8 h. 0 m., a.m., l.m.t., I set off $32^{\circ}-32-1/2'$ on the lat. arc; $19^{\circ}-14-1/2'$ on the decl. arc; and mark a meridian determined by observation on the sun by a nail driven in the stake already set about $3-1/2$ chs. north of the instrument. This mark falls 0.23 ins. west of the meridian established by observation on Polaris. The solar apparatus by p. m. and a.m. observations defines the position of meridian about $0' 17''$ W. and $0' 11''$ E. of the meridian established by observation on Polaris. These angles being less than the least possible readings of the vernier, I conclude that the adjustments of the solar are satisfactory.

I begin at a point 2.13 ft. south of the standard cor. of T. 10 S., Rs. 16 and 17 E., and turn off from the true meridian an angle of $89^{\circ}-58'$ toward the west and run N. $89^{\circ}-58'$ W., ^{on the secant} south of section 36.

Over gradual rolling ascent.

The difference in measurement of 40.00 chs., by two sets of chainmen, is 2 lks.; position of middle point is

By 1st set, 39.99 chs.,

By 2nd set, 40.01 chs.; the mean of which is

40.00 N. .96 ft. from the secant,

Set a quartzite stone, 5 x 12 x 12 ins., 8 ins. in the ground, for $1/4$ sec. cor., marked S.C. $1/4$ on N. face; and raised a mound of stone, 2 ft. base $1-1/2$ ft. high, N. of cor. Pits impracticable.

At this point I can find no traces of old cor.

July 27th, 1904; I set off $19^{\circ}-12'$ on the decl. arc, and at 12 h. 0 m., l.m.t., observe the sun on the meridian. The resulting lat. is $32^{\circ}-32-1/2'$ N.

46.50 Old road bears, W.S.W.

A difference in measurement of 80.00 chs., by two sets of chainmen is 2 lks; position of middle point is

Chains

By 1st set, 79.99 chs.,

By 2nd set, 80.01 chs.; the mean of which is

80.00

Set a quartz stone, 6 x 10 x 14 ins., 10 ins. in the ground for standard cor. of secs. 35 and 36, marked S.C. on N.; with 1 groove on E., and 5 grooves on W. faces; and raised a mound of stones, 2 ft. base, 2 ft. high, N. of cor. Pits impracticable.

From this cor., the remains of the old cor. bear S. 6°-15' W., 10.69 chs. dist. This I destroy.

Land, mountainous.

Soil, 3rd and 4th rate; some grass.

Underbrush; mesquite.

Mountainous land, 80.00 chs.

~~N. 89°-59' W., south of sec. 35.~~
on the Secant

13.50 Begin decent rapidly, into canon.

24.50 Wash, 50 lks. wide, bears E.N.E. Ascend.

37.40 Top. Over gradual rolling ascent.

The difference of measurement of 40.00 chs., by two sets of chainmen, is 4 lks.; position of middle point is

By 1st set, 39.98 chs.,

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

40.00 S.. 75 ft. from the secant,

Set a granite stone 4 x 9 x 18 ins., 12 ins. in the ground for 1/4 sec. cor. mark S.C. 1/4 on N. face; and raised a mound of stones, 2 ft. base, 2 ft. high, N. of cor. Pits impracticable.

I can find no indications of an old cor.

General Description.

Through Range 17 E. the standard line passes through rough rocky land broken by deep canyon having a general E. by N. direction.

The standard line through the E. 1-1/2 miles of range 16 E. is over rolling land covered with grass. The line is here discontinued because it immediately enters the Santa Catalina Mts., and unsurveyable country.

July, 27, 1904.

Wm D. Alexander
U.S. Dept. Reconn

LIST OF NAMES.

A list of the names of the individuals employed by William B. Alexander

....., 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 2nd

Standard Parallel ^{South} through Range 17 and 1 1/2 miles of R 16 E

showing the respective capacities in which they acted:

Frank J. Howe, H. W. Dennis, Chainman.

Frank C. Kelton, Edgar E. Uler, Chainman.

Emmet T. Ford, Moundman.

Jesus Lopez, Moundman.

Frank L. Durlin, Axman.

..... Axman.

L. Butcher, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted William B. Alexander

....., United States Deputy Surveyor, in surveying all

those parts or portions of the Second Standard Parallel South

through Range 17 East and also the

East 1 1/2 miles of Range 16 East

..... of the Siola and

Salt River ~~base~~ 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

H. W. Dennis, Chainman

Frank J. Howe, Chainman

Frank C. Kelton, Chainman.

Edgar E. Uler, Chainman.

Emmet T. Ford, Moundman.

Jesus Lopez, Moundman.

Frank L. Durlin, Axman.

..... Axman.

L. Butcher, Flagman.

Subscribed and sworn to before me this 30

day of October, 1894 }
my Comm. Exp. Sept 29 '06



Ralph W. Langworthy
Notary Public
Pima County

I, William B. Alexander, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Frank S. Jagers United States Surveyor General for District of Arizona, bearing date of the 13 day of June, 1904, 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 Second Standard Parallel South through range seventeen East and the East 1 1/2 miles of the Second Standard Parallel South in range sixteen East of the Gila and Salt River base 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.

William B. Alexander
United States Deputy Surveyor.

Subscribed by said William B. Alexander, and sworn to before me

this 1 day of December, 18904

My Commission Exp Sept 24 '06 Ralph W Langworthy
Notary Public
Presidents



APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, A. T., Oct. 10, 1905, 189

The foregoing field notes of the survey of the Second Standard Parallel South through ranges sixteen and seventeen east of the Gila and Salt River Base and Meridian, in the Territory of Arizona,

executed by W. B. Alexander, U. S. Deputy Surveyor under his contract No. 115, dated June 13, 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. Jagers
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.