Accepted by G.L.O. letter "E" April 28, 1913

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Original & Supplemental Standard
Book "C"

BOOK 2369

FEB 7 - 1912

FIELD NOTES

FEB. 24 1913

OF THE SURVEY OF THE

Resurvey & Retracement

of

Fifth Guide Meridian West

through

Tps 17, 18 & part of 20 N.

between Ps 18 & 19 West

Of the Gila & Salt River Base & Meridian,

Arizona.

AS SURVEYED BY

William D Alexander, *United States Deputy Surveyor,*

Under his Contract No. 157, *dated* May 26, 1909

Survey commenced November 24, 1911

Survey completed November 29, 1911

6—151

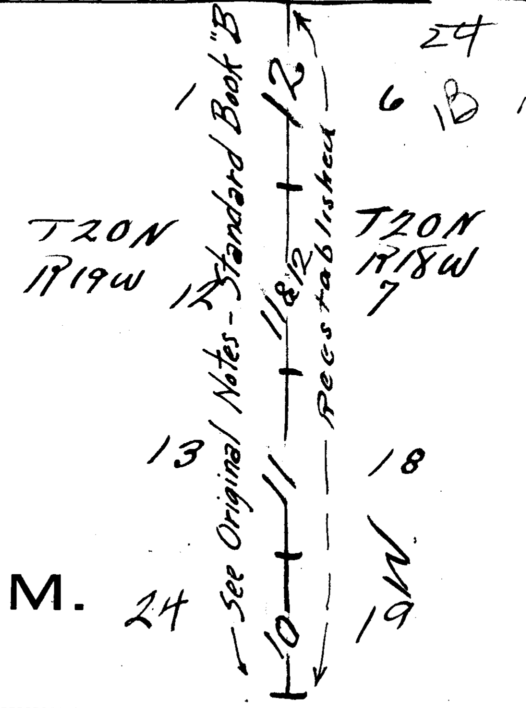
25 A

BOOK 2369 NAMES AND DUTIES OF ASSISTANTS.

David J. Moss	Chainman
Louie Van Master	"
Robt. G. Smoot	"
B. P. Wulfenstein	"
E. Westover	Rodman
Laurence Staler	"
Chas. Clayton	Axman
Jack Ray	"
W. J. Watkins	Flagman

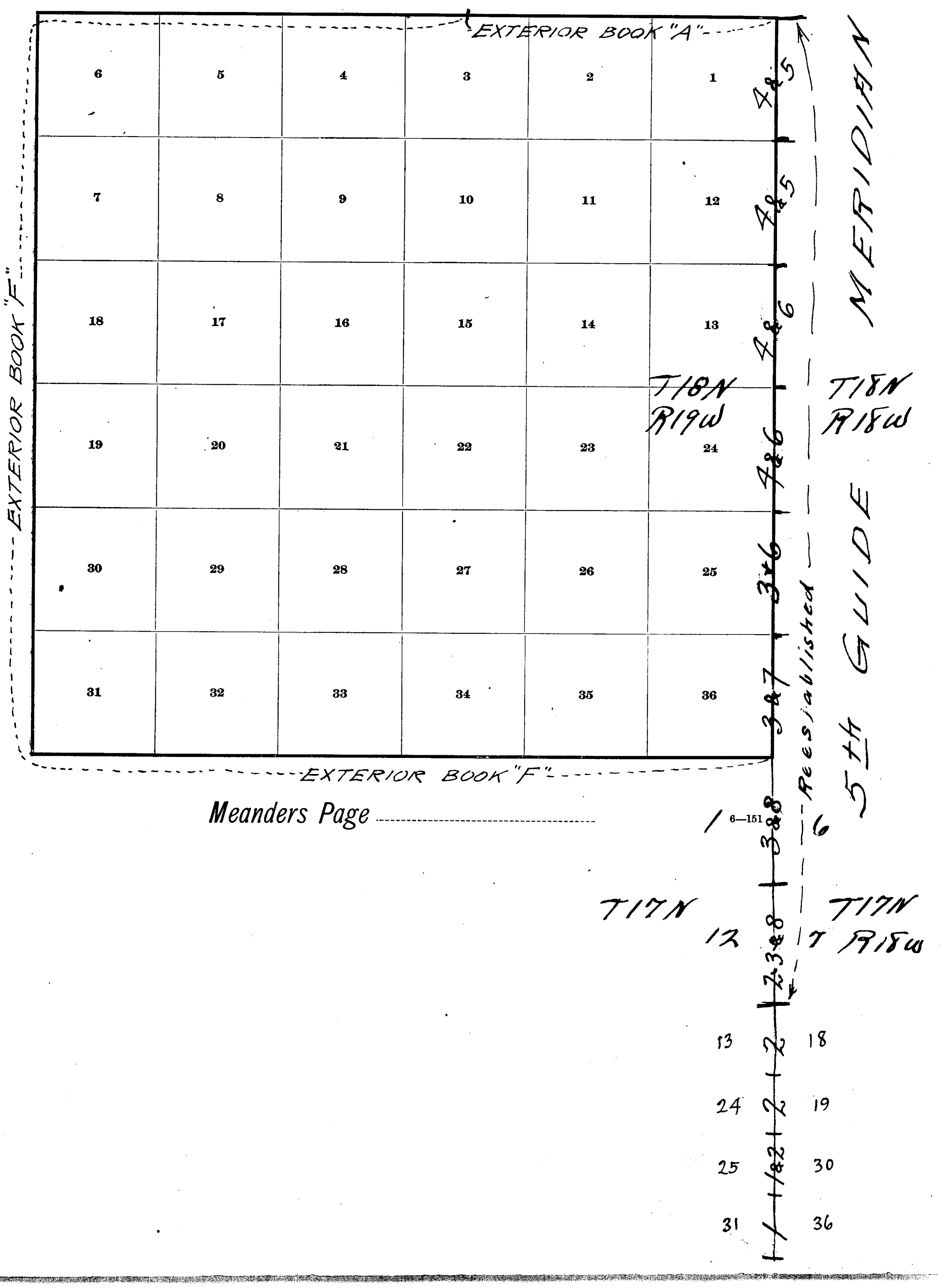
6—151

BOOK 2369



INDEX DIAGRAM.

Township ...., Range ....



Meanders Page ....

25 1C

BOOK 2369

PRELIMINARY OATHS OF ASSISTANTS.

WE, David J. Moss / Louie Van Marter and Robt. G. Smoot / B. P. Whetfenster

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 resurvey and reestablishment in part of the 5th Guide Meridian W. through Ts 17 18 + 20 N. Rs 18 + 19 W.

David J. Moss — Robt. G. Smoot, Chainman.

Louie Van Marter — B P Whetfenster, Chainman.

Subscribed and sworn to before me this 24th day of November, 1911 } To save delay and expense I take these oaths myself.

William B. Alexander
U.S. Dep. Surveyor.

[redacted]

WE, E. Westover and Lawrence Skalor

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 resurvey and reestablishment in part of the 5th Guide Meridian West through Ts 17, 18, + 20 N. Rs 18 + 19 W.

E. Westover, Moundman.

Lawrance Skalor, Moundman.

Subscribed and sworn to before me this 24th day of November, 1911 } To save much delay and expense I take these oaths myself.

William B. Alexander
U.S. Deputy Surveyor.

[redacted]

WE, Chas Clayton and Jack Ray

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 resurvey and reestablishment in part of the 5th Guide Meridian West through Ts 17, 18, + 20 N. Rs 18 + 19 W.

Chas Clayton, Axman.

Jack Ray, Axman.

Subscribed and sworn to before me this 24th day of November, 19 } To save much delay and expense I take these oaths myself.

William B. Alexander
U.S. Deputy Surveyor.

[redacted]

I, W. J. Nations, 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 resurvey and reestablishment in part of 5th Guide Meridian W through Ts 17, 18 + 20 N. Rs 18 + 19 W.

W J Nations, Flagman.

Subscribed and sworn to before me this 24th day of November, 1911 } To avoid delay and expense I take these oaths myself.

William B. Alexander
U.S. Deputy Surveyor

[redacted]

6—151

Chains.

Survey commenced November 24, 1911, and was executed with a Young & Sons'Light Mountain Transit No.7520; the horizontal limb having two double verniers placed opposite to each other, and reading to single minutes of arc.

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

I begin at the Standard Corner of T.17 N., Rs.18 and 19 W., lat.34°48'44"N.; long.114°12'26"W., which is a granite stone 12x12 ins. in a mound of stones, marked and witnessed as described by the Surveyor General.

At 4h.00m.,p.m., l.m.t., I set off 20°26'S.on the decl. arc, and 34°49'N. on the lat.arc of the Smith Solar attachment with which this instrument is fitted, both of which read to single minutes, and, after having carefully examined all the standard and bubble adjustments, and found them correct, I determine a meridian and mark the line thus obtained by a tack driven in a stake set about five chains south of my station.

November 24, 1911.

November 25,1911. At 5h.12m.a.m., l.m.t., I observe Polaris at its western elongation in accordance with the instructions in the Manual, and mark the line thus determined by a tack driven in a stake set about 5 chs. south of my station.

At 8h.0m.,a.m.,l.m.t., I set off 34° 49'N.on the lat.arc; 20°34'S. on the decl.arc, and determine a meridian with the solar, and mark the line thus obtained by a tack driven in the same stake that was set yesterday by p.m. solar observation. This tack is about one-eighth of an inch east of the yesterday's meridian. I then set off 1°25' W. from the stake set this a.m. ,by Polaris observation, and find that this line passes between the two tacks set by a.m. and p.m. solar observations. I therefore conclude that the solar attachment is in good adjustment.

Magnetic variation at this point is N.15° 00'E.

Thence I run,

North on a random line, in order that I may determine the true bearings and distances between the corners of the 5th. Guide Meridian West, so that I may be in a position to intelligently initiate and close the lines of my proposed surveys under Contracts Nos. 156 and 157.

Position of the ¼ sec.cor.by

The 1st set of chainmen is 39.95 chs.

The 2nd set of chainmen is 40.05 chs., the average of which is

40.00 ¼ sec.cor. between secs.31 and 36, which is a lave stone marked and witnessed as described by the Surveyor General, bears W. 3½ lks.

Position of the sec.cor.by

The 1st set of chainmen is 79.93 chs.

The 2nd set of chainmen is 80.07 chs., the average of which is

80.00 Corner of secs.25,30,31 and 36, which is a lava stone 5 ins. above ground, marked and witnessed as described by the Surveyor General, bears west 7 lks. The bearing of this line is therefore N.0°03'W.,80.00 chs.

Thence I run,

North, on a random line, between secs.25 and 30.

Position of the ¼ sec.cor.by

The 1st set of chainmen is 40.00 chs.

The 2nd set of chainmen is 39.92 chs., the average of which is,

39.96 ¼ sec.cor. between secs. 25 and 30, which is a lava stone in mound of stones, marked and witnessed as described

Chains.

by the Surveyor General, bears W. 3 lks.
Position of the sec.cor.by
The 1st set of chainmen is 79.95 chs.
The 2nd set of chainmen is 79.85 chs., the average of which is,

79.90 Cor.of secs. 19,24, 25 and 30, which is a lava stone, in mound of stones, marked and witnessed as described by the Surveyor General, bears W., 7 lks. The bearing of this line is therefore N.0°03' W., 79.90 chs.

Thence I run,
North on a random line, between secs.19 and 24.
Position of W.C. for ¼ sec.cor., between secs.19 and 24 is
By 1st set of chainmen, 40.92 chs.
By 2nd set of chainmen, 40.88 chs., the average of which is

40.90 Witness corner to ¼ sec.cor., between secs.19 and 24, which is a lava stone, in mound of stones, marked and witnessed as described by the Surveyor General, bears west 4 lks.
Position of corner of sections 13,18,19 and 24 is
By 1st set of chainmen, 79.96 chs.,
By 2nd set of chainmen, 79.92 chs., the average of which is

79.94 Corner of secs. 13,18, 19 and 24, which is a granite stone 5 ins. above ground, marked and witnessed as described by the Surveyor General, bears west 7 lks. The bearing and distance of this line is therefore N.0°03'W., 79.94 chs.

Thence I run north on a random line, between secs.13 and 18.
Position of the ¼ sec.cor., between secs.13 and 18 is
By 1st set of chainmen, 39.85 chs.,
By 2nd set of chainmen, 39.95 chs., the average of which is

39.90 ¼ sec¼ cor., between secs.13 and 18, which is a lava stone in mound of stones, marked and witnessed as described by the Surveyor General, brs. west 3½ lks.
Position of the sec.cor. of secs.7, 12, 13 and 18 is
By 1st set of chainmen, 79.82 chs.
By 2nd set of chainmen, 79.78 chs., the average of which is

79.80 Corner of secs. 7,12,13 and 18, which is a lava stone,in mound of stones, marked and witnessed as described by the Surveyor General, bears west 7 lks, The bearing and distance of this line is therefore N.0°03'W., 79.80 chs.

Thence I run,
North on a random line, between secs.7 and 12.
Position of ¼ sec.cor., between secs.7 and 12, is
By 1st set, of chainmen, 38.04 chs.
By 2nd set of chainmen is 37.96 chs., the average of which is

38.00 ¼ sec.cor. between secs.7 and 12, which is a lava stone, 5 ins. above ground, marked and witnessed as described by the Surveyor General, brs.west 3 lks. The bearing and distance of this line is therefore N.0°03'W.,38.00 chs. and is 2.00 chs.short of the required and reported distance. This being out of limits in measurement, I proceed to continue my line north as a random line, setting ¼ and sec.cors. at intervals of 40.00 and 80.00 chs. respectively for the purpose of closing upon the corner of Ts.18 and 19 N., Rs.18 and 19 W., throwing the excess or deficiency as may be in the last ¼ mile

Chains.

to the north.
Difference of measurement of 40.00 chs. by two sets of chainmen is 8 lks.; position of middle point
By 1st set, 40.04 chs.,
By 2nd set, 39.96 chs., the mean of which is
40.00 Set temp. ¼ sec.cor. bet.secs.7 and 12.
Difference of measurement of 80.00 chs. by two sets of chainmen is 4 lks., position of middle point
By 1st set, 80.02 chs.,
By 2nd set, 79.98 chs., the mean of which is
80.00 Set temp.cor.of secs.1,6,7 and 12.

November 25, 1911.

November 26, 1911.
Thence I run,
North on a random line, between secs. 1 and 6.
Difference of measurement of 40.00 chs. by two sets of chainmen is 10 lks., position of middle point
By 1st set, 40.05 chs.,
By 2nd set, 39.95 chs., the mean of which is
40.00 Set temp. ¼ sec.cor., bet. secs.1 and 6.
Difference in the measurement of 80.00 chs. by two sets of chainmen is 8 lks., the position of the middle point
By 1st set, 80.04 chs.
By 2nd set, 79.96 chs., the mean of which is
80.00 Set temp.cor.to Ts.17 and 18 N., Rs.18 and 19 W.

Through Tp. 18 North.

Thence I run,
North on a random line, bet. secs.31 and 36 in T.18 N., Rs.18 and 19 W.
At 9h.00m., a.m., l.m.t., I set off 34° 54'N. on the lat. arc; 20°48'S. on the decl. arc, and determine a meridian with the solar at the temp.cor.of Ts.17 and 18 N.,Rs.18 and 19 W.
Difference of measurement of 40.00 chs. by two sets of chainmen is 6 lks., the position of the middle point
By 1st set, 39.97 chs.,
By 2nd set, 40.03 chs., the mean of which is
40.00 Set temp. ¼ sec.cor., bet secs. 31 and 36.
Difference between measurements of 80.00 chs. by two sets of chainmen is 4 lks.; the position of the middle point
By 1st set, 79.98 chs.,
By 2nd set, 80.02 chs., the mean of which is
80.00 Set temp. cor. to secs. 25,30, 31 and 36.

Thence I run,
North, between secs. 25 and 30, on a random line.
Difference between the measurement of 40.00 chs. by two sets of chainmen is 10 lks., position of middle point
By 1st set, 39.95 chs.,
By 2nd set, 40.05 chs., the mean of which is
40.00 Set temp. ¼ sec.cor., between secs.25 and 30.
Difference between the measurements of 80.00 chs. by two sets of chainmen is 8 lks., position of the middle point,
By 1st set, 79.96 chs.
By 2nd set, 80.04 chs., the mean of which is
80.00 Set temp. cor. to secs. 19,24,25 and 30.
At 12h.00m.noon, l.m.t., I set off 20°50'S.on the decl. arc, and observe the sun on the meridian. The resulting lat.reading is 34° 56'N.

Thence I run,
North, between secs.19 and 24, on a random line.

Chains.

Thence I run,
North, between secs.19 and 24.
Difference between the measurement of 40.00 chs, by two sets of chainmen is 2 lks., the position of the middle point,
By 1st set, 39.99 chs.,
By 2nd set, 40.01 chs., the mean of which is
40.00 Set temp. ¼ sec.cor., bet. secs.19 and 24.
Difference between the measurement of 80.00 chs. by two sets of chainmen is 6 lks., the position of the middle point,
By 1st set, 79.97 chs.
By 2nd set, 80.03 chs., the mean of which is
80.00 Set temp. cor.of secs.13,18,19 and 24.

Thence I run,
North, bet. secs.13 and 18, on a random line.
Difference between the measurements of 40.00 chs. by two sets of chainmen is 4 lks., the position of the middle point,
By 1st set, 39.98 chs.,
By 2nd set, 40.02 chs., the mean of which is
40.00 Set temp. ¼ sec.cor., bet. secs.13 and 18.
Difference between the measurements of 80.00 chs. by two sets of chainmen is 6 lks.; the position of the middle point,
By 1st set, 79.97 chs.,
By 2nd set, 80.03 chs., the mean of which is
80.00 Set temp. cor.of secs.7,12,13 and 18.

Thence I run,
North, between secs.7 and 12, on a random line.
Difference between the measurements of 40.00 chs. by two sets of chainmen is 2 lks., the position of the middle point,
By 1st set, 39.99 chs.,
By 2nd set, 40.01 chs., the mean of which is
40.00 Set temp. ¼ sec.cor., bet.secs.7 and 12.

November 26, 1911.

November 27, 1911.
Thence I continue on random line,
North, between secs.7 and 12.
Difference between the measurements of 80.00 chs. by two sets of chainmen is 4 lks., the position of the middle point,
By 1st set, 79.98 chs.,
By 2nd set, 80.02 chs., the mean of which is
80.00 Set temp. cor.to secs.1,6,7 and 12.

Thence I run,
North, bet. secs.1 and 6, on a random line.
Difference between the measurement of 40.00 chs. by two sets of chainmen is 6 lks., the position of the middle point,
By 1st set, 39.97 chs.,
By 2nd set, 40.03 chs., the mean of which is
40.00 Set temp. ¼ sec.cor. to secs.1 and 6.
Difference between the measurement to a closing on the south boundary of T.19 N., R.18 W. by two sets of chainmen is 4 lks.; the position of the middle point
By 1st set, 77.68 chs.
By 2nd set, 77.72 chs., the mean of which is
77.70 Cor.of Ts.18 and 19 N., Rs.18 and 19 W., a lava stone 7 ins.above ground, marked and witnessed as described by the Surveyor General, brs,W.55 lks.
The bearing of the true line between this corner, and

Chains.

the corner of secs.7,12,13 and 18, T.17 N., Rs.18 and 19 W. is therefore S.0°03'E. I therefore, shall proceed to reestablish the 5th Guide Meridian West, through T.18 N., between Rs.18 and 19 W., setting ¼ sec. and sec.cors. at intervals of 40 and 80 chs. respectively, except the last half mile to the north, which I shall fix at 37.70 chs. in accordance with the instructions in the Manual, and reestab. the last two miles to the N. of T.17 N., Rs.18 and 19 W.

From the corner of Ts. 18 and 19 N., Rs.18 and 19 W. above described, I run,
S.0. 03' E. on a true line, between secs.1 and 6, over rolling land, covered with malpais boulders and dense undergrowth of greasewood and cactus plants. No grass.
Ascending.

37.70 Set a malpais stone 5x8x16 ins., 12 ins. in the ground for the ¼ sec.cor., between secs.1 and 6, marked ¼ on the W. face, and raise a mound of stones 3 ft. base, 1½ ft. high, W. of corner. Pits impracticable.

39.95 Old ¼ sec.cor. on line, a porphyry stone 6 ins. above ground, marked and witnessed as described by the Surveyor General. This corner I destroy.

45.60 Cross ridge, course E. and W. Descend.

77.70 Set a malpais stone 8x12x18 ins., 12 ins. in the ground for the cor. of secs.1,6,7 and 12, marked with 1 notch on the N. and 5 notches on the S. edges; raise a mound of stones 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable. Destroy old C.C. of secs.6&7, T.18 N., R. 18 W., set by me May 30, 1910, at this point.

Land, mountainous, sloping to N. and E., covered with dense undergrowth of greasewood, cactus, and some catsclaw; no grass.
Mountainous land, or land covered with dense undergrowth 77.70 chains. Soil, rocky, 4th rate.

Thence I run,
S.0°03' E., between secs.7 and 12.
Ascend extremely rough mountains, covered with loose malpais rock.

2.30 Old section corner to secs.1,6,7 and 12, a lava stone, 5 ins. above ground, marked and witnessed as described by the Surveyor General, brs. E. 1 lk. This I destroy.

22.00 Cross ridge, bears E. and W. Descend.

30.00 Wash, 30 lks. wide, course E. Ascend.

40.00 Set a malpais stone 6x8x20 ins., 15 ins. in the ground for the ¼ sec.cor., marked ¼ on the W. face. Raise a md. of stones 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.

42.30 Old ¼ sec.cor., a lava stone 6 ins. above ground, marked and witnessed as described by the Surveyor General, brs. west 2 lks. This I destroy.

Descend.

48.10 Gulch, wash, 30 lks. wide, course NE. Ascend.

80.00 Set a malpais stone, 8x10x15 ins., 10 ins. in the ground for the cor. of secs.7,12,13 and 18, marked with 2 notches on the N. and 4 notches on the south edges; raise a mound of stones 2 ft. base, 1½ ft. high, W. of corner. Pits impracticable. Destroy old C.C. of secs.7 &18, T.18 N., R.18 W., set by me May 30, 1910, at this point.

Land, mountainous, covered with dense undergrowth of greasewood, cactus, and some catsclaw; also loose boulders.
Very little grass. Soil, rocky, 4th rate.
Mountainous land, or land covered with dense undergrowth and difficult to survey, 80.00 chains.

Thence I run,
S.0°03' E. between secs.13 and 18.

6. Retracement & resurvey Fifth Guide Mer.W., thro.Tp.18 N.

Chains.	
	Descend.
2.30	Old section corner to secs.7,12,13 and 18, a lava stone 5 ins. above ground, marked and witnessed as described by the Surveyor General on line. This I destroy.
14.10	Wash, 30 lks.wide, course E. Ascend.
16.50	Ridge, brs. E. and W. Descend.
18.20	Wash, 25 lks.wide, course E. Ascend.
20.30	Ridge, brs. E. and W. Descend.
23.25	Wash, 100 lks.wide, course E. Ascend steep slope covered with boulders and loose rock.
40.00	Set a malpais stone 8x10x18 ins., 12 ins. in the ground for the ¼ sec.cor., marked ¼ on the W. face, and raise a mound of stone 2 ft.base, 1½ ft. high, W. of cor. Pits impracticable.
	Continue steep ascent, over loose rock.
80.00	Set a malpais stone 12x14x20 ins., 15 ins. in the ground for the cor.of secs.13,18,19 and 24, marked with 3 notches on the N. and S. edges, and raise a mound of stones 2 ft. base, 1½ ft. high, W.of cor. Pits impracticable.
	Land, extremely mountainous, covered with scattering greasewood and cactus undergrowth and loose rock. No grass.
	Soil, rocky, 4th rate.
	Mountainous land, difficult to survey, 80.00 chains.

	At noon, the sun is obscured by clouds, and a latitude observation cannot be taken.
	Thence I run,
	S. 0° 03' E., bet. secs.19 and 24.
	Ascend.
1.20	Summit. Descend.
2.20	Old corner of secs. 13,18,19 and 24, a lava stone 6 ins. above ground, marked and witnessed as described by the Surveyor General, 2 lks.E. of line. This I destroy.
40.00	Set a malpais stone 10x10x18 ins., 12 ins. in the ground for the ¼ sec.cor., marked ¼ on the W. face, and raise a moound of stones 2 ft.base, 1½ ft. high, W. of cor. Pits impracticable.
42.60	Wash, 40 lks.wide, course NW.
42.90	Old W C ¼ sec.cor., a lava stone 5 ins. above ground, marked and witnessed as described by the Surveyor General, brs. W. 18 lks. This I destroy.
	Ascend steep side of mountain.
80.00	Malpais boulder in place 16x30x15 ins. above ground, marked with a cross (x) at the point for the cor.of secs.19,24,25 and 30, and with 2 notches on the S.and 4 on the N. edges, and raise a mound of stones 2 ft. base, 1½ ft. high, W.of corner. Pits impracticable.
	Land, extremely mountainous, covered with boulders and loose rock.
	Some greasewood and cactus undergrowth. No grass.
	Soil, 5th rate, rocky.
	Mountainous land, extremely difficult to survey, 80.00 chs.

	Thence I run,
	S. 0°03' E., between secs.25 and 30.
2.40	Old sec.cor.of secs.19,24, 25 and 30, a lava stone in mound of stone, marked and witnessed as described by the Surveyor General, brs.W.30 lks. This I destroy.
	Descend steep mountain side.
17.50	Wash, 30 lks.wide, course NW. in deep canyon.
	Ascend; steep slope covered with loose rock.
40.00	Top of ascent. Set malpais stone 6x8x18 ins., 12 ins. in the ground for the ¼ sec.cor., marked ¼ on the W. face, and raise a mound of stones 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.
	Descend; slope covered with large malpais boulders, and loose rock.

Chains.	
78.00	Old W C to cor. of secs. 25, 30, 31 and 36, a lava stone in mound of stone, marked and witnessed as described by the Surveyor General on line. This I destroy.
80.00	Set a malpais stone 6x8x15 ins., 10 ins. in the ground for the cor. of secs. 25, 30, 31 and 36, marked with 1 notch on the S., and 5 notches on the E. edges, and raise a mound of stones 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.
	Soil, rocky, 4th rate.
	Scattering greasewood and cactus brush. No grass.
	Extremely mountainous land, and difficult to survey, 80.00 chains.

At 4h. 00m. p.m., l.m.t., I set off 34°55' S. on the lat. arc; 21°01' S. on the decl. arc, and determine a meridian with the solar at the cor. of secs. 25, 30, 31 and 36, above described.

Thence I run,

S. 0°03' E., between secs. 31 and 36.

Descend steep slope into deep canyon; ground covered with boulders and loose rock.

22.00	Wash, 100 lks. wide, brs. NW. in canyon. Ascend.
40.00	Set a malpais stone, 8x10x20 ins., 15 ins. in the ground for the ¼ sec. cor., between secs. 31 and 36, marked ¼ on the W. face, and raise a mound of stones 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.
	Ascend steep canyon wall, covered with loose rock.
42.30	Old ¼ sec. cor., a lava stone in mound of stone, marked and witnessed as described by the Surveyor General, brs. west 20 lks. This I destroy.
65.00	Summit of mountain ridge, brs. E. and W. Descend.
80.00	Set a malpais stone 10x12x18 ins., 12 ins. in the ground for the cor. of Ts. 17 and 18 N., Rs. 18 and 19 W., marked with 6 notches on each edge, 18 N. on the NE. face, 17 N. on the SW. face, 18 W. on the SE. face, and 19 W. on the NW. face, and raise a mound of stones 2 ft. base, 1½ ft. high, S. of cor. Pits impracticable.
	Land, extremely mountainous, and covered with loose malpais rock.
	Soil, rock, 4th rate.
	Scattering greasewood and cactus brush. No grass.
	Mountainous land, extremely difficult to survey, 80.00 chs,

November 27, 1911.

Chains.	
	November 28, 1911.
	From the corner of Tps.17 and 18 N., Rs.18 and 19 W.,I run,
	S. 0°03' E. between secs.1 and 6, above described.
	Descend.
2.25	Old township cor.to Ts.17 and 18 N., Rs.18 and 19 W., a lava stone, 6 ins.above ground, marked and witnessed as described by the Surveyor General, brs.west 15 lks.
	This I destroy.
6.00	Wash, 30 lks.wide, course W. in canyon.
	Ascend.
13.10	Sharp ridge, 300 ft. high, bears E and W.
	Descend.
21.00	Wash,40 lks.wide, course W. in canyon.
	Ascend.
35.50	Ridge, bears E.and W. Descend.
40.00	Set a malpais stone, 4x8x15 ins., 10 ins. in the ground for the ¼ sec.cor., between secs. 1 and 6, marked ¼ on the W. face, and raise a mound of stones 2 ft. base,1½ ft. high, W.of cor. Pits impracticable.
	Descend.
52.00	Wash 50 lks.wide [illegible], course W. in canyon.
	Ascend.
80.00	Set a malpais stone, 8x10x20 ins., 15 ins. in the ground for the cor.to secs.1,6,7 and 12, marked with 1 notch on the N. and 5 notches on the S. edges, and raise a mound of stones 2 ft. base, 1½ ft. high,W. of cor. Pits impracticable.
	Soil, rocky, 4th rate.
	Land, extremely mountainous, and covered with loose rock.
	No grass or timber.
	Scattering greasewood and cactus brush.
	Mountainous land, very difficult to survey,80.00 chains.

	At 9h.0m.,a.m., l.m.t., I set off 21°10'S. on the decl. arc; 34°53'N.on the lat.arc, and determine a meridian with the solar at the cor.of secs.1,6,7 and 12,above described.
	Thence I run,
	S.0°03'E. between secs.7 and 12.
	Descend.
2.00	Old cor.to secs.1,6,7 and 12, a lava stone in mound of stones, marked and witnessed as described by the Surveyor General, brs. W. 15 lks. This I destroy.
15.00	Wash, 30 lks wide, course NW. in deep canyon. Ascend.
19.00	Ridge, brs. NW. and SE. Descend.
23.00	Wash, 30 lks.wide, course NW.in canyon. Ascend.
40.00	Set a malpais stone, 8x12x18 ins., 12 ins. in the ground for the ¼ sec.cor., between secs.7 and 12, marked ¼ on the W. face, and raise a mound of stones 2 ft. base, 1½ ft.high,W.of cor. Pits impracticable.
	Continue ascent.
75.00	Cross summit of high ridge, bears E.and W., approximately 1500 feet above elevation of principal canyon washes.
	Descend.
80.00	The cor.of secs.7,12,13 and 18, which is a malpais stone 4x12x18nins., above ground, marked andewitnessed as described by the Surveyor General.
	Land, extremely mountainous.
	Soil, rocky, 4th rate.
	Surface covered with loose rock and boulders.
	Scattering greasewood and cactus brush. Nomgrass.
	Mountainous land, very difficult to survey,80.00 chs.
	November 28, 1911.

	GENERAL DESCRIPTION.
	Townships 17 and 18 N., Rs.18 and 19 W.embrace over their greater area what is known as the Black Mountains,consisting of what formerly,in the early tertiary era,

Chains.

was probably a table land capped with a nearly horizontal bed of volcanic ejecta. This material has since largely broken down and eroded deep canyons, in some cases approximately fifteen hundred ft. in depth, so that today but little of the original surface character has been preserved, the area consisting of a succession of canyons and ridges, although from a distant view to the east this range of mountains, by the approximate uniform height of the mountains and ridges, has an appearance of a mesa land very deceiving to the eye.

There is no timber within these areas, very little grass, and the water supply is meager. The soil almost entirely is fourth rate, rocky and covered with malpais boulders, which make progress in the survey very difficult.

November 28, 1911.

William R. Alexander
U.S. Deputy Surveyor.

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BOOK 2369

Supplemental Notes of Retracements & Resurvey
~~[illegible]~~ Fifth Guide Meridian West, through portion of T.20 North.

Chains.

Survey was commenced November 28, 1911, and was executed with a Young and Sons' Light Mountain Transit No.7520, fitted with two double verniers placed opposite to each other, and reading to single minutes of arc, which is also the least reading of the latitude and declination arcs of the Smith Solar Attachment upon this instrument.

I examine the standard adjustments, and the bubbles of the instrument, and find them correct.

This instrument was examined, tested on the true meridian at Phoenix, Arizona, found correct, and approved by the U. S. Surveyor General, of Arizona, June 25, 1904.

At the cor.of secs.19,24,25 and 30, on the Fifth Guide Meridian West, T.20 N., bet.Rs.18 and 19 W., which is a lava stone, 5 ins. above ground, marked and witnessed as described by the U. S. Surveyor General, I set off 35° 06'N. on the lat.arc; 21°12'S.on the decl.arc, and at 4h.00m.p.m., l.m.t., I determine a meridian with the solar, and mark the line thus obtained by a tack driven in a stake set about five chains N.of my station.

November 28th 1911.

November 29, 1911. At 2h.54m.a.m., l.m.t., I observe Polaris at its western elongation in accordance with the instructions in the Manual, and mark the line thus determined by a tack driven in a stake set about five chs. northerly from my station.

At 7h.30m. a.m., l.m.t., I turn off 1°25½'to the east, and find this line coincides with the line of yesterdays solar observation. Magnetic N.15°CO'E.

Thence I run,

North, on a random line, between secs.13 and 24.

Position of the ¼ sec.cor. previously reestablished by me by

1st set of chainmen is 39.98 chs.

2nd set of chainmen is 39,94 chs., the average of which is

39.96 ¼ sec.cor. between secs.19 and 24 on line.

Position of the cor.of secs. 13,18,19 and 24, being the locus of the C C of secs.18 and 19, T.20 N.,R.18 W., set by Deputy Surveyor Rodolf, under his contract No.155 is by

1st set of chainmen, 79.94 chs.

2nd set of chainmen, 79.90 chs., the average of which is

79.92 The locus of the aforesaid C C of Deputy Rodolf on line.

Set a malpais stone 6x10x18 ins., 12 ins. in the ground for the corner of secs.13,18,19 and 24, marked with 3 notches on the N. and 3 notches on the S.edges; dig pits 18x18x12 ins. in the four sections 5½ ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high, W.of cor.

Thence I run,

South on a true line, bet. secs.19 and 24.

Descend.

23.00 Wash, 60 lks.wide, course SE.

39.96 Set a malpais stone 8x10x20 ins., 15 ins. in the ground for the ¼ sec.cor., bet. secs.19 and 24, marked ¼ on the W.face; dig pits 18x18x12 ins., N.and S.of cor.3 ft.dist., and raise a mound of earth 3½ ft. base, 1½ ft. high, W.of cor.

45.00 Wash, 10 lks.wide, course SE.

69.70 Old wagon road, brs.NE.and SW.

79.92 The cor.of secs.19,24, 25 and 30, hereinbefore described.

Land, level.

Soil, 1st rate, sandy.

Dense undergrowth of greasewood, cactus and catsclaw.

No timber. Very little grass.

Land. covered with dense undergrowth, and exceptionally difficult to survey, 79.92 chains.

See Original Notes in Standard Book "B"

Supplemental Notes of
Retracement & Recurvey Fifth Guide Mer W., thru portion T.20 N. 11

Chains.

I proceed to the cor.of secs.13,18,19 and 24, hereinbefore described.
At 9h.0m.,a.m., l.m.t., I set off 35°07'N.on the lat.arc; 21°20½'S.On the decl.arc, and determine a meridian with the solar. This line coincides with the line I have been using this morning in running between secs.19 and 24.
Thence I run,
North,on a random line, between secs.13 and 18.
Position of the ¼ cor., previously reestablished by me,
By 1st set of chainmen is 40.00 chs.,
By 2nd set of chainmen is 39.96 chs., the average of which is
39.98 The ¼ sec.cor.is on the line.
Position of the C C to secs.7 and 18, T.20 N.,R.18 W.,as determined by Deputy Surveyor Rodolf under his Contract No.155, is on line, and by measure of
1st set of chainmen is 79.98 chs.
2nd set of chainmen is 79.94 chs., the average of which is
79.96 Set a malpais stone, 8x10x18 ins., 12 ins. in the ground for the cor.of secs.7,12,13 and 18, marked with 2 notches on the N. and 4 on the S.edges; dig pits 18x18 x12 ins.in each sec. 5½ ft.dist., and raise a mound of earth 4 ft.base, 1½ ft. high,W.of corner.
Obliterate all former corner markings at this point.
Thence I run,
South on a true line, between secs.13 and 18.
22.35 Wash,60 lks.wide, course SE.
39.98 Set a malpais stone 8x10x24 ins., 18 ins. in the ground for the ¼ sec.cor., marked ¼ on the W.face, and raise a mound of stones 3 ft.base, 1½ ft. high,W.of cor. Pits impracticable.
58.50 Wash, 20 lks.wide, course SE.
60.90 Wash,20 lks.wide, course SE.
69.80 Wash, 30 lks. wide, course SE.
76.00 Wash,30 lks.wide, course SE.
79.98 The cor.of secs.13,18,19 and 24, hereinbefore described.
Land broken by washes, but generally level.
Soil, 1st rate, sandy.
Dense undergrowth of greasewood, cactus, and catsclaw.
No trees; some grass.
Level land, covered with dense undergrowth, and exceptionally difficult to survey, 79.96 chs.

I then proceed to the cor.of secs. 7,12,13 and 18,hereinbefore described,
Thence I run,
North, on a random line, between secs.7 and 12.
Position of the ¼ sec.cor., previously reestablished by me is
By 1st set of chainmen,40.00 chs.
By 2nd set of chainmen,40.00 chs., the average of which is
40.00 The ¼ sec.cor. is on line.
Position of the C C as determined by Deputy Surveyor. Rodolf under his Contract No.155 is on line,and in measure is
By 1st set of chainmen,80.01 chs.
By 2nd set set of chainmen, 79.99 chs., the average of which is
80.00 Set a malpais stone 6x8x18 ins., 12 ins. in the ground for the cor.of secs.1,6,7 and 12, marked with 1 notch on the N. and 5 notches on the S.edges; dig pits 18x18 x12 ins. in each sec.5½ ft. dist., and raise a mound of earth 4 ft.base, 1½ ft. high,W.of cor.
Thence I run,
South on a true line, between secs.7 and 12.
40.00 Set a malpais stone 5x10x18 ins., 12 ins.in the ground for the ¼ sec.cor., marked ¼ on the W.face, and raise

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Supplemental notes of

12. Retracements and Resurvey fifth Guide Mer.W.thro T.20 N.

Chains.

a mound of stones 3 ft. base, 1½ ft. high,W.of cor. Pits impracticable.

74.00 Wash,30 lks.wide, course SE.

80.00 The cor.of secs.7,12,13 and 18, hereinbefore described.
Land,level.
Soil, 1st rate, sandy.
Dense greasewood brush.
Land, covered with dense undergrowth, and exceptionally difficult to survey,80.00 chains.

I then proceed to the cor.of secs.1,6,7,and 12 hereinbefore described.
At noon, I set off 21°23'S. on the decl.arc, and observe the sun on the meridian. The resulting latitude reading is 34°08½'N.
Thence I run,
North on a random line, between secs.1 and 6.
Position of the ¼ sec.cor. previously reestablished by me is
By 1st set of chainmen 39.99 chs.
By 2nd set of chainmen 40.01 chs., the average of which is

40.00 ¼ sec.cor. brs.west 12 lks.
Position of the closing corner, which is a granite stone 5 ins. above ground, marked and witnessed as described by the Surveyor General, is
By 1st set of chainmen 80.89 chs.
By 2nd set of chainmen,80.91 chs., the average of which is

80.90 C C brs.W. 24 lks., closing upon the FIFTH STANDARD PARALLEL NORTH; this C C is situated 3.32 chs.west of the standard ¼ sec.cor. S.of sec.31, T.21 N., R.18 W.,a granite stone 5 ins.above ground, marked and witnessed as described by the Surveyor General.
Thence I run,
S.0°10' E., on a true line, bet. secs.1 and 6, as described by the Surveyor General.

29.50 Wash,30 lks.wide, course SE.

35.00 Wash,150 lks.wide, course SE.

40.90 Set a malpais stone 6x8x20 ins., 15 ins. in the ground for the ¼ sec.cor., bet. secs.1 and 6, marked ¼ on the W.face, and raise a moundof stone 3 ft.base, 1½ ft. high,W.of cor. Pits impracticable.

80.90 The cor.of secs.1,6,7 and 12, hereinbefore described.
Land,level and sloping to the S.and E.
Soil, 1st rate, sandy.
No trees. A small amount of grass.

November 29, 1911.

William P. Alexander
U. S. Deputy Surveyor.

November 29, 1911.

See Original Notes in Standard Book "B"

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by William D. 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 and restablishment in part of the 5th Guide Meridian West through Tps 17, 18, & 20 N Rs 18 & 19 W showing the respective capacities in which they acted:

David J. Moss, Chainman.
Louie Van Marter vice B. P. Wulffenstein, Chainman.
E. Westover, Moundman.
Laurence Skala, Moundman.
Chas Clayton, Axman.
Jack Ray, Axman.
W. J. Matoon, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted William D. Alexander, United States Deputy Surveyor, in surveying all those parts or portions of the 5th Guide Meridian reestablished the last 2 miles to the North in T 17 N Rs 18 & 19 W, the whole 6 miles in T 18 N Rs 18 & 19 W and the last 3 miles to the North in T 20 N Rs 18 & 19 W of the Gila 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.

Robt. G. Snook, David J. Moss, Chainman.
B. P. Wulffenstein, Louie Van Marter, Chainman.
E. Westover, Moundman.
Laurence Skala, Moundman.
Chas Clayton, Axman.
Jack Ray, Axman.
W. J. Matoon, Flagman.

Subscribed and sworn to before me this 30th day of November, 1917.

To avoid delay and expense I take this oath myself.
William D. Alexander
U.S. Deputy Surveyor.

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, William B. Alexander, 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 26th day of May, 1909, 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 a Resurvey reestablishment of the 5th Guide Meridian West through the last two miles to the north in T17N Rs 18+19W the whole six miles of T18N Rs 18+19W and the south 4 miles of T20 N Rs 18+19W. of the Gila & 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.

William B. Alexander
United States Deputy Surveyor.

Subscribed by said William B. Alexander, and sworn to before me this 6th day of February, 19

[illegible]
US Commissioner

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, Feb. 26 1913 19

The foregoing field notes of the ~~survey of~~ Retracement and Resurvey of the 5th Guide Meridian, West through Tps 17, 18 and part of 20 North, Gila and Salt River Base & Meridian, Arizona

executed by William B. Alexander, U.S. Deputy Surveyor under his contract No. 157, dated May 26, 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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