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Accepted Dept. letter *May 7-1911*

Book B.

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BOOK 2171 BOOK 217.1

FIELD NOTES

OF THE SURVEY OF THE

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RE-SURVEY OF THIRD STANDARD PARALLEL SOUTH

through

RANGE 28 EAST.

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Of the Gila & Salt River Base & Meridian,

Arizona.

AS SURVEYED BY

Jesse B. Wright, United States Deputy Surveyor,

Under his Contract No. 159, dated June 4, 1909

Survey commenced August 2, 1909

Survey completed August 3, 1909

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BOOK 2171 NAMES AND DUTIES OF ASSISTANTS.

Edgar M. Darnall. Chairman.

Santiago Vindiola,..... Chairman.

Walter L. Morrison,.....Chairman.

Silverio Peralto,.....Chairman.

Guadalupe Pacheco,.....Moundman.

Frank Yanes,..... Axeman.

Manuel Vindiola,..... Flagman.

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BOOK 2171

INDEX DIAGRAM.

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Third Standard Parallel South

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PRELIMINARY OATHS OF ASSISTANTS.

BOOK 2171

WE, Edgar M. Dornell Walter D. Morrison and Santiago Vindola Silvano Perato

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of Re-survey of 3rd Standard Par. South, through R. 28 E.

Edgar M. Dornell, Chairman.

Santiago Vindola, Chairman.

Subscribed and sworn to before me this 2nd day of August, 1909

Walter D. Morrison
Silvano Perato

My commission expires August 11, 1909



J. H. Penstemmer
Notary Public

I, Guadalupe Pacheco and

do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of Resurvey of 3rd Standard Par. South, through R. 28 E.

Guadalupe Pacheco, Moundman.

Moundman.

Subscribed and sworn to before me this 2nd day of August, 1909

My commission expires August 11, 1909



J. H. Penstemmer
Notary Public

I, Frank Jones and

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of

Frank Jones, Axman.

Axman.

Subscribed and sworn to before me this 2nd day of August, 1909

My commission expires August 11, 1909



J. H. Penstemmer
Notary Public

I, Manuel Vindola, 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 Re-survey of 3rd Standard Par. South, through R. 28 E.

Manuel Vindola, Flagman.

Subscribed and sworn to before me this 2nd day of August, 1909

My commission expires August 11, 1909



J. H. Penstemmer
Notary Public

Re-survey of 3rd Standard Parallel South, through Range 28 East.

Chains

Before beginning the subdivision of T. 15 S. R. 28 E., I examine the 3rd Standard Parallel South, along the south boundary of the Tp. and find several of the corners destroyed and others in a very dilapidated condition, and the markings and accessories obliterated, making them impossible of identification except by measurement. Therefore, before I can properly initiate my lines of the subdivision therefrom, it is necessary for me to re-survey the 3rd Standard Parallel South, through Range 28 East.

Survey commenced August 2, 1909, and executed with a Young & Son's light mountain transit No. 6492, with Smith's patent solar attachment on side.

The horizontal limb of the instrument is provided with two double verniers placed opposite to each other and each reading to 1' of arc, which is also the least reading of the verniers of the latitude and declination arcs.

I examine and test the levels, the line of collimation, and standards of the instrument and find same correct. Then, to test the solar apparatus by comparing the results of observations for meridians made during a.m. & p.m. hours with a true meridian determined by Polaris observations, I proceed as follows :-

at 5h p.m., l.m.t., at the Standard cor. of Tps. 15 S., Rs. 28 & 29 E., which is a quartzite stone 2x6x6 ins. above ground, marked S.C. on N., with 6 grooves on E.N. & W. faces, with mound of stone 3 ft. base 2 ft. high on N. of cor., I set off 17° 46' N. on the decl. arc and 32° 4' 30" N. on the lat. arc and determine a meridian with the solar and mark a point in the meridian thus determined by a tack in a stake driven firmly in the ground 5 chs. N. of my station.

At 10h 47m p.m., l.m.t., I observe Polaris at E. elong. in accordance with instructions in the "Manual" and mark the line thus determined by a tack in a stake driven firmly in the ground 7 chs. N. of my station.

August 2, 1909.

August 3, 1909.

At 7h a.m., l.m.t., I set off the azimuth of Polaris, 1° 23' to the W. and mark the true meridian thus determined by a tack in the stake 5 chs. N. of my station., which point falls .20 ins. W. of the point given by the solar on preceding evening.

Then I set off 32° 04' 30" N. on the lat. arc and 17° 37' N. on the decl. arc and determine a meridian with the solar, which meridian coincides with the meridian established by Polaris observation.

Therefore I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian at 7h a.m. is N. 13° 10' W. The angle thus determined gives the magnetic declination as 13° 10' E.

From the above described cor. I run, West, on a random line, on 3rd Standard Parallel South, on S. bdy. of Sec. 34.

40.00 No trace of old cor. found after diligent search. I set temp. $\frac{1}{4}$ sec. cor. and continue West.

80.00 No trace of old cor. found after diligent search. I set temp. cor. and continue West, on S. bdy. Sec. 35

40.30 Find old stake 40 lks. N. of line, markings obliterated. from which I run, West.

40.10 Find remains of old cor. 14 lks. N. of line, from this old cor. I run,

West on a random line, on S. Bdy. sec. 34.

40.00 No trace of old cor. found after diligent search. I set temp. $\frac{1}{4}$ sec. cor. and continue West.

80.16 Find old cor. 24 lks. N. of line, markings almost obliterated, accessories destroyed.

Re-survey 3rd Standard Parallel South, through Range 28 East.

Chains	From this old cor. I run, West on a random line on S. bdy. sec. 33.
40.11	Find old stake lying loose on ground near by. I set temp. $\frac{1}{4}$ sec. cor. and continue West.
80.22	Find remains of old cor. 9 lks. N. of line, from this old cor. I run, West on random line on S. bdy. sec. 32
40.09	Find remains of old stake lying loose on ground near by. I set temp. $\frac{1}{4}$ sec. cor. and continue West.
80.00	Find no trace of old cor. after diligent search. I set temp. sec. cor. and run thence, West on a random line on S. bdy. sec. 31
40.27	Find old $\frac{1}{4}$ sec. cor. 14 lks. N. marked as described by the Surveyor General, accessories destroyed. From this old cor. I run, West.
40.09	The Standard cor. of Tps. 15 S. Rs. 27 & 28 E. brs. N. 4 $\frac{1}{2}$ lks. dist., which cor. was re-established by me under contract No. 145, and is a quartzite stone 10x8x6 ins. above ground marked SC. on N. with 6 grooves on N E. & W. faces and mound of stone 2 ft. base 1 $\frac{1}{2}$ ft. high N. of cor. Having determined by my random line the true distance and bearing bet. corners of the 3rd Standard Parallel South on S. bdy. of T. 15 S. R. 28 E., I now proceed to re-establish the corners on this line in accordance with instructions. Therefore from the Standard cor. of Tps. 15 S. Rs. 27 & 28 E. above described, I run, on true line, S. 89° 56' E. on S. bdy. sec. 31. Over gently rolling land, Old road, brs. NW. & SE.
36.00	Old road, brs. NW. & SE.
40.09	Set a quartzite stone 24x15x10 ins. 18 ins. in ground for Standard $\frac{1}{4}$ sec. cor. marked SC. $\frac{1}{4}$ on N. face and raise a mound of stone 2 ft. base 1 $\frac{1}{2}$ ft. high N. of cor. No bearings available. Pits impracticable.
44.85	Closing cor. of secs. 5 & 6 of T. 16 S. R. 28 E. on line. which is an old stake properly marked.
76.00	Draw 5 chs. wide, course SW.
80.18	Set a granite stone 24x12x10 ins. 18 ins. in ground for standard cor. of secs. 31 & 32, marked SC. on N., with 5 grooves on E. & 1 groove on W. faces and raise a mound of stone 2 ft. base 1 $\frac{1}{2}$ ft. high N. of cor. No bearings available. Pits impracticable. Land, gently rolling plain. Soil, 2nd & 3rd rate, sandy, loamy. No timber, or undergrowth. Good native grass. Rolling land, 80. 18 chs.

	S. 89° 56' E. on a true line on S. bdy. sec. 32. Over gently rolling plain.
15.84	Telephone line, brs. NW. & SE. Dos Cabezos to Ranches on S.
17.19	Road, brs. NW. & SE. Dos Cabezos to Chiricahua Mts.
40.09	Re-establish $\frac{1}{4}$ sec. cor. by setting a quartzite stone 20x10x10 ins. 15 ins. in ground for Standard $\frac{1}{4}$ sec. cor. marked SC. $\frac{1}{4}$ on N. face and raise a mound of stone 2 ft. base 1 $\frac{1}{2}$ ft. high N. of cor. No bearings available. Pits impracticable.
72.00	Wash 80 lks. wide, course SW.
80.18	Re-establish cor. of secs. 32 & 33 by setting a limestone 20x12x10 ins. 15 ins. in ground for Standard cor. of secs. 32 & 33 marked SC. on N. with 4 grooves on E. and 2 grooves on W. faces and raise a mound of stone 2 ft. base 1 $\frac{1}{2}$ ft. high N. of cor. No bearings available. Pits impracticable. Land, gently rolling plain. Soil, 2nd rate, sandy. No timber. Undergrowth, scattering palmeo & yucca. Good grass. Rolling land, 80. 18 chs.

Re-survey 3rd Standard Parallel South, through Range 28 East.

Chains	
	<p>S. 89° 56' E. on a true line on S. bdy. Sec. 33. Over gently rolling plain.</p>
40.11	<p>Re-establish $\frac{1}{4}$ sec. cor. by setting a quartzite stone 20x12x10 ins. 15 ins. in ground for Standard $\frac{1}{4}$ sec. cor. marked SC. $\frac{1}{4}$ on N. face, dig pits 18x18x12 ins. E. & W. of stone 3 ft. dist. and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor. No bearings available.</p>
80.22	<p>Re-establish old cor. by setting a granite stone 15x12x8 ins. 10 ins. in ground for Standard cor. of secs. 33 & 34 marked SC. on N. with 3 grooves on E. & W. faces and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high N. of cor. No bearings available. Pits impracticable. The old corners on this line I destroy. Land, Rolling. Soil, 2nd rate, sandy, loamy. No timber. Undergrowth, Palmeo, yucca. Good grass. Rolling land, 80.22 chs. At this cor. at noon, I set off 17° 33' N. on the decl. arc and observe the sun on the meridian. The resulting lat. is 32° 4' 30" N.</p>
	<p>S. 89° 50' E. on a true line on S. bdy. sec. 34 Road, brs. N. & S. Camp Bowie to Chiricahua Mts.</p>
40.08	<p>Re-establish $\frac{1}{4}$ sec. cor. by setting a granite stone 15x12x6 ins. 10 ins. in ground for Standard $\frac{1}{4}$ sec. cor. marked SC. $\frac{1}{4}$ on N. face, and dig pits 18x18x12 ins. E. & W. of stone 3 ft. dist. and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor. No bearings available.</p>
44.85	<p>Closing cor. of secs. 2 & 3 of T. 16 S. R. 28 E. 2 lks. S. of line which is an old stake properly marked.</p>
69.00	<p>Old road, brs. N. & S.</p>
80.16	<p>Re-establish cor. of secs. 34 & 35 by setting a quartzite stone 20x12x10 ins. 15 ins. in ground for Standard cor. of secs. 34 & 35 marked SC. on N. with 2 grooves on E. and 4 grooves on W. faces, and raise a mound of stone 3 ft. base 2 ft. high N. of cor. No bearings available. Land rolling. Soil, 2nd rate, sandy, gravelly. No timber. Undergrowth, Palmeo, yucca. Fair grass. Rolling land, 80.16 chs.</p>
	<p>S. 89° 48' E. on a true line on S. bdy. Sec. 35. Over rolling land. through dense palmeo & yucca.</p>
40.10	<p>Re-establish $\frac{1}{4}$ sec. cor. by setting a granite stone 12x8x6 ins. 8 ins. in ground for Standard $\frac{1}{4}$ sec. cor. marked SC. $\frac{1}{4}$ on N. face and dig pits 18x18x12 ins. E. & W. of stone 3 ft. dist. and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor. No bearings available.</p>
80.20	<p>Re-establish cor. of secs. 35 & 36 by setting a quartzite stone 20x12x12 ins. 15 ins. in ground for standard cor. of secs. 35 & 36 marked SC. on N. with 1 groove on E. and 5 grooves on W. faces and raise a mound of stone 3 ft. base 2 ft. high N. of cor. from which, A willow tree 12 ins. diam. brs. N. 52° E. 187 lks. dist., marked T. 15 S. R. 28 E. S. 36 S.C.B.T. No other bearings available. Land rolling. Soil, 2nd & 3rd rate, stony, gravelly. Timber, some willow and mesquite in washes. Fair grass. Undergrowth, palmeo, yucca, willow. Rolling land covered with dense undergrowth, 80.20 chs.</p>

Re-survey 3rd Standard Parallel South, through Range 28 East.

Chains
 S: 89° 48' E. on a true line on S. bdy. sec. 36.
 Over heavily rolling land, through dense palmeo.
 1.00 Middle of stony wash 150 lks. wide, course SW.
 29.00 wash 50 lks. wide, course SW.
 40.10 Re-establish $\frac{1}{4}$ sec. cor. by setting a granite stone
 24x15x10 ins. 18 ins. in ground for Standard $\frac{1}{4}$ sec. cor.
 marked SC. $\frac{1}{4}$ on N. face and raise a mound of stone 2 ft.
 base $1\frac{1}{2}$ ft. high N. of cor. No bearings available.
 47.00 Ridge, brs. SW. & NE.
 55.00 Drain, course SW. near head.
 63.00 Spur from ridge, brs. SW. & NE.
 80.20 To Standard cor. of Tps. 15 S. Rs. 28 & 29 E. as
 heretofore described.

Land, rolling.
 Soil, 2nd & 3rd rate, gravelly, stony.
 Timber, few mesquite & willow in washes.
 Undergrowth, palmeo, yucca, amole.
 Rolling land covered with dense undergrowth, 80.20 chs.

Although two sets of chainmen were used in the re-survey of this line, inasmuch as it was a re-survey and re-establishment of the corners, and no specimen notes being shown in the "Manual" for guidance in such cases, the results of the two measurements is not given, but the distances given in the notes is the mean of two measurements.

General Description.

This line runs along a rolling plain well covered with a good growth of fine native grass, being excellent for grazing.
 There is no water along the line. The soil is in general a rich sandy loam, and would produce well with irrigation. The old corner stakes as originally set for corners on this line were of very inferior wood and too small for permanent corners. The use of such stakes in the construction of corners should be discouraged.
 With considerable difficulty, I transported stones and erected stone corners and monuments on this line wherever possible. Pits as accessories in such soil are of very little use, soon becoming filled and obliterated.
 After the most diligent search it was impossible to find more than two of the C.C.s of T.16S;R.28E.

August 3, 1909.

Boundaries of T. 15 S. R. 28 E.
 Latitudes, departures, and closing errors.

Line Designated	True bearing.	Distance.	Latitudes.		Departures.	
			North.	South	East.	West.
S. Bdy.	N.89° 48' W.	160.40	.56	-----	-----	160.40
	N.89° 50' W.	80.16	.25	-----	-----	80.16
	N.89° 56' W.	240.58	.27	-----	-----	240.58
West Bdy.	North -----	479.01	479.01	-----	-----	-----
North Bdy.	East -----	223.15	-----	-----	223.15	-----
W. Bdy. CEMR.	S.0° 04' W.	123.16	-----	123.16	-----	.14
	S.0° 09' E.	240.00	-----	240.00	.63	-----
S. Bdy. CEMR.	N.89° 58' E.	258.30	.16	-----	258.30	-----
E. Bdy. T.15						
S. R. 28 E.	South	116.43	-----	116.43	-----	-----
Convergency					.45	-----
Totals.....			.480.25	479.59	482.53	481.28
			479.59		481.28	
Error in Lat.---			.66	Error Dep. 1.25		

Joseph B. Wright
 U.S. Deputy Surveyor.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Jesse E. Wright

....., 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

Re-survey of 3rd Standard Par. South, through R. 28 E.

showing the respective capacities in which they acted:

Edgar M. Darnall, and Santiago Vindiola......, *Chainman.*

Walter L. Morrison, and Silverio Peralto,....., *Chainman.*

Guadalupe Pacheco,....., *Moundman.*

....., *Moundman.*

Frank Yanes,....., *Arman.*

....., *Arman.*

Manuel Vindiola,....., *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Jesse E. Wright

....., United States Deputy Surveyor, in surveying all those parts or portions of the

Re-survey of 3rd Standard Parallel South, through Range 28 East.

..... 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.

Edgar M. Darnall....., *Chainman.*

Santiago Vindiola....., *Chainman.*

Walter L. Morrison, Silverio Peralto....., *Chainmen*

Guadalupe Pacheco....., *Moundman.*

Frank Yanes....., *Arman.*

....., *Arman.*

Manuel Vindiola....., *Flagman.*

Subscribed and sworn to before me this 7th

day of August, 1909

My commission expires August 11, 1909

J. H. Henderson
Notary Public

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Jesse B. Wright, 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 fourth day of June, 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

Removes of Third Standard Parallel South
through Range 28 East
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.

Jesse B. Wright
United States Deputy Surveyor.

Subscribed by said Jesse B. Wright, and sworn to before me }
this 30th day of August, 1909

W. H. Murray
U. S. Attorney



APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Ariz July 3, 1910.

The foregoing field notes of the survey of the 3rd Standard Parallel
South through Range 28 East Gila and Salt
River Base and Meridian, Arizona

executed by Jesse B. Wright U.S. Dep. Sur.
under his contract No. 159, dated June 4, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Frank S. Ingalls
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in
has been correctly copied from the original notes on file in this office.

United States Surveyor General.