

FIELD NOTES

OF THE SURVEY OF THE

Re-survey of 4th Standard Parallel South,

Through Ranges 23

Range 24 & 32 East,

Of the Gila and Salt River Base and Meridian,

In the State of Arizona,

EXECUTED BY

William H. Elliott,

In the capacity of U. S. Surveyor, ^{special & supplemental} under instructions dated Oct. 6, 1911, ~~and~~ ^{and} Jan. 13, 1913, issued by the United States Surveyor General to govern surveys included in Group No. 17, which were approved by the Commissioner of the General Land Office, October 14, 1911 & Jan. 18, 1913, pursuant to authority contained in the Act of Congress dated Aug. 24, 1912

Survey commenced Oct. 28, 1912., 191

Survey completed Jan. 31, 1913., 191

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1A

BOOK 2476

INDEX DIAGRAM.

Township _____, Range _____

<i>T. 20S., R. 32E.</i>					
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<i>T. 20S., R. 24E.</i>					
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<i>T. 20S., R. 23E.</i>					
31 31	32 32	33 33	34 34	35 35	36 36
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Chains.

Oct. 28, 1912.
 A preliminary examination of the line of the 4th Std. Par. S., through R. 32 E., and part of R. 31 E., develops the fact that many of the corners on this line are totally obliterated. Therefore, before beginning the subdivision of T. 21 S., R. 32 E., in order to properly close on this Standard line, it becomes necessary to re-survey same and re-establish the lost and obliterated corners thereon.

I use in this re-survey a Young & Son's light mountain transit No. 8492, with Smith patent solar attachment. The plates of the instrument are 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.

Knowing from recent and repeated tests as made on a true meridian established by observation of Polaris on Oct. 22, 23 & 24, heretofore recorded, that my instrument is in correct adjustment, I proceed as follows:-

At 9h a.m., l.m.t., at the standard $\frac{1}{4}$ sec. cor. on South bdy. sec. 36^{T.20S. R.31E.} which is a lava stone, 12x10x8 ins. above ground, faintly marked, and witnessed and described in the field notes as furnished by the Surveyor-General, which cor. I destroy, and in the original position of same I

Set a lava stone 16x10x8 ins. 11 ins. in the 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.

At this cor. at 9h a.m., as above noted, I set off 13°08'S. on the decl. arc, and 31°38'N. on the lat. arc, and determine a meridian with the solar. Thence I run,

East, over smooth grassy valley.

The orig. cor. of Tps. 20 S., Rs. 31 & 32 E., brs. N. 21 lks. dist., which is an old post with faint markings, as described by the Surveyor-General. This corner being in a very dilapidated condition, and the markings nearly obliterated, I destroy, and in the original position I

Set a malpais stone 24x14x10 ins. 18 ins. in the ground for Standard cor. of Tps. 20 S., Rs. 31 & 32 E., marked with 6 grooves on N., E. & W. faces, and raise a mound of stone 2 ft. base, 1 $\frac{1}{2}$ ft. high N. of cor. from which,

A high peak in the Chiricahua mts. brs. N. 31° W.
 A smaller peak in same mts. brs. N. 48°40' W. ^{T.20S. R.31E.}
 True line and distance back to $\frac{1}{4}$ sec. cor. sec. 36[^] is
 S. 89°43' W. 40.47 Chs.
 Land, rolling, smooth and open.
 Good grass, no timber or undergrowth.

40.47

324.60

From the above described corner, I run, East, on a random line, Through R. 32 E.
 Set flags at intervals of 40 and 80 chs. and at these points make diligent search for some trace of the orig. corners as described by the Surveyor-General. No sign or trace of any corners found till at

The original Std. cor. of secs. 34 & 35^{T.20S. R.32E.} brs. N. 75 lks. dist., which is a granite stone 24x12x6 ins. above ground, marked and witnessed[^] described by the Surveyor-General.

From this cor. the closing cor. of Tp. 20 S., R. 32 E. brs. N. 89°42' E., 18.37 chs. dist., which is a granite stone 32x16x12 ins. above ground, marked and witnessed as described by the Surveyor-General, from which closing corner the 369 mile cor. on East Bdy. of Arizona brs. North, 24.59 chs. dist.,

Chains.

which is a granite stone 14x5x12 ins. above ground, marked and witnessed as described by the Surveyor-General.

Oct. 28, 1912.

Oct. 29, 1912.

^ T.205-R.32E

At 8h a.m., l.m.t., at the standard corner of secs. 34 & 35 as hereinbefore described, which cor. I re-mark in original position, and rebuild the mound of stone 2 ft. base, 1½ ft. high N. of cor.;

I set off 13°26½'S. on the decl. arc, and 31°38'N. on the lat. arc, and determine a meridian with the solar. Thence I run,

S. 89°52' W., on a true line, on S. bdy. sec. 34.

Var. 13° E.

Over rolling land, in Deer creek bottom (dry).

6.00 Asc. steep bank.

6.50 Top of bank, brs. NW. & SE., thence desc. gradually.

40.57½ Re-establish Std. ¼ sec. cor.

Set a granite stone 22x16x10 ins. 16 ins. in the ground for Std. ¼ sec. cor., marked SC ¼ on N. face, and raise a mound of stone 2 ft. base, 1½ ft. high N. of cor.

81.15 Re-establish std. cor. of secs. 33 & 34.

Set a granite stone 20x20x12 ins. 15 ins. in the ground for std. cor. of secs. 33 & 34, marked SC on N., with 3 grooves on E. & W. faces;

dig pits 24x18x12 ins., crosswise on each line, E. & W. 3 ft., and N. of stone 7 ft. dist., and

raise a mound of earth 4 ft. base, 2 ft. high N. of cor.

No bearings available.

Land, rolling.

Soil, 3rd rate, sandy, gravelly, loose, dry.

Scattering mesquite brush, cacti, good grass.

S. 89°52' W., on a true line, on S. bdy. sec. 33.

Over rolling land, desc. grad.

24.00 Asc.

30.00 Top of S. side of round rocky hill, top is N. 8 chs dist.
Desc.

36.00 Desc. grad.

40.57½ Set a volcanic stone 16x10x8 ins. 11 ins. in the ground for Std. ¼ sec. cor., marked SC ¼ on N. face, and dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth 3½ ft. base, 1½ ft. high N. of cor.

56.60 Road, brs. NW. & SE.

66.40 Road, brs. NNW. & SE., in turn of same.

80.10 Old road, brs. NW. & SE.

81.15 Set a volcanic stone 16x8x6 ins. 11 ins. in the ground for Standard cor. of secs. 32 & 33, marked SC on N., with 4 grooves on E., and 2 grooves on W. faces, dig pits 24x18x12 ins., crosswise on each line, E. & W. 3 ft., and N. of stone 7 ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high N. of cor.

Land, rolling.

Soil, gravelly, stony, 3rd rate.

Sparse mesquite brush, cacti, fine grass.

Re-survey of 4th Standard Parallel South, through Range 32 East. 3

Chains.

S. 89°52' W., on a true line, on S. bdy. sec. 32.
 Over rolling land, desc. grad.

18.30 Old road, brs. NW. & SE.
 39.30 Road, brs. NNW. & SSE.
 40.57½ Set a volcanic stone 16x10x8 ins. 11 ins. in the ground for Std. ¼ sec. cor., marked SC ¼ on N. face; dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth 3½ ft. base, 1½ ft. high N. of cor.

46.90 Wash, 20 lks. wide, course NW.
 49.40 Wash, 20 lks. wide, course NNE.
 64.70 Road, brs. N. & S.
 65.80 Enter dense mesquite brush, brs. N. & S.
 81.15 Set a lava stone 18x12x10 ins. 12 ins. in the ground for Std. cor. of secs. 31 & 32, marked SC on N., with 5 grooves on E. & 1 groove on W. faces; dig pits 24x18x12 ins., crosswise on each line, E. & W. 3 ft., and N. of stone 7 ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high N. of cor.

Land, rolling.
 Soil, 3rd rate, gravelly, stony, covered in places with showered volcanic tufa.
 Mesquite brush, cacti, good grass.

S. 89°52' W., on a true line, on S. bdy. sec. 31.
 Over gently rolling valley, through dense scrub mesquite.

34.50 Leave mesquite, brs. N. & S.
 40.57½ Re-establish Std. ¼ sec. cor.
 Set a lava stone 20x10x8 ins. 16 ins. in the ground for Std. ¼ sec. cor., marked SC ¼ on N. face, dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth 3½ ft. base, 1½ ft. high N. of cor.

53.50 Wash, 25 lks. wide, course NW.
 57.00 Wash, 25 lks. wide, course NE.
 81.15 To std. cor. of Tps. 20 S., Rs. 31 & 32 E., recently re-established by me, and hereinbefore described.

Land, gently rolling, undulating.
 Soil, 3rd rate, sandy, loose, gravelly, dry.
 Mesquite, sage brush, few cacti, fine grass.
 At this cor. at noon, I set off 13°30' S. on the decl. arc, and observe the sun on the meridian.
 The resulting lat. is 31°38' N.

General Description.

The 4th Standard Parallel South, through R. 32 E., as re-surveyed by me runs over a smooth or rolling valley, well covered with good native grass. The soil is in general sandy, or gravelly, covered in places with loose showered volcanic stones. There is no water or timber on the line.

Oct. 29, 1912.

William H. Elliott

U. S. Surveyor.

Chains.

Observation of Polaris and instrument tests.
for instrument No. 8145, used by Jesse B. Wright, and
instrument No. 8492, used by William H. Elliott, in
surveys under Group No. 17, Arizona.

Jan. 26, 1913.

At 4h p.m., l.m.t., at our joint camp which is situated near
near the centre of T. 20 S., R. 23 E., we test and
adjust the levels and lines of collimations of our
instruments, (which are both Young & Son's light
mountain transits, with Smith solar attachments, all
verniers reading to 1' of arc, as heretofore described),
We set off $18^{\circ}37\frac{1}{2}'$ S. on the decl. arcs, and $31^{\circ}41'$ N. on
the lat. arcs, and determine meridians with the solars,
and mark the meridians thus determined by tacks in
a stake driven firmly in the ground 5 chs. N. of our
station.

At 11h 1m p.m., l.m.t., we observe Polaris at W. 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 6 chs. N. of our Station.

Jan. 26, 1913.

Jan. 27, 1913.

At 7h 45m a.m., l.m.t., we set off the azimuth of Polaris,
 $1^{\circ}21'$ to the East, and mark the true meridian thus
determined by a tack in the stake 5 chs. N. of our
station, which point falls .40 ins. and .45 ins. E.
of the line point as determined by instruments Nos.
8145 and 8492 respectively, on the preceding afternoon.

At 8h a.m., l.m.t., we set off $18^{\circ}27\frac{1}{2}'$ S. on the decl.
arcs, and $31^{\circ}41'$ N. on the lat. arcs, and determine
meridians with the solars, and mark the meridians thus
determined by pencil points on the stake 5 chs. N. of
our station, which points fall .60 ins., and .35 ins.
E. of the point in the true meridian as established by
observation of Polaris, for inst's. 8145 and 8492
respectively. By p.m. & a.m. observations,

Inst. No. 8145 defines positions for meridians about
21" W., and 31" E. respectively of the true meridian
established by Polaris observation.

Inst. No. 8492 defines positions for meridians about
24" W., and 20" E. respectively of the true meridian
established by Polaris observation.

These errors being no greater than the usual personal
errors of observation, we conclude that the instruments
are in satisfactory adjustment.

The magnetic bearing of the true meridian at 8h a.m. is
N. $12^{\circ}45'$ W.; the angle thus determined gives the
magnetic declination as $12^{\circ}45'$ E.

Jan. 27, 1913.

Jan. 28, 1913.

Wm. H. Elliott

U.S. Surveyor.

At 8h a.m., l.m.t., at the Std. cor. of Tps. 20 S., Rs. 22
& 23 E., which is a limestone 10x9x8 ins. above ground,
marked and witnessed as described by the Surveyor
General, Lat. $31^{\circ}38'34''$ N. Long. $110^{\circ}03'13''$ W.,
I set off $18^{\circ}12'$ S. on the decl. arc, and $31^{\circ}38\frac{1}{2}'$ N. on
the lat. arc, and determine a meridian with the solar,
thence I run,

Chains.	through R. 23 E.
	East, on a random line, S. of sec. 31.
40.00	The orig. Std. $\frac{1}{4}$ sec. brs. South, 14 lks. dist., which is a limestone 10x10x4 ins. above ground, marked and witnessed as described by the Surveyor-General.
80.05	The orig. Std. cor. of secs. 31 & 32, brs. South, 18 lks. dist., which is a limestone 10x7x3 ins. above ground, marked and witnessed as described by the Surveyor-General.
	From this orig. Std. cor. I run,
	East, on a random line, S. of sec. 32.
40.00	The orig. Std. $\frac{1}{4}$ sec. cor. brs. South, 72 lks. dist., which is a limestone 10x9x4 ins. above ground, marked and witnessed as described by the Surveyor-General.
80.25	The orig. Std. cor. of secs. 32 & 33 brs. South, 85 lks. dist., which is an old stake, with faint markings as described by the Surveyor-General.
	From this orig. Std. cor., I run,
	East, on a random line, S. of sec. 33.
40.00	The orig. Std. $\frac{1}{4}$ sec. cor. brs. South, 25 lks. dist., which is a limestone 10x7x3 ins. above ground, marked and witnessed as described by the Surveyor-General.
80.00	The orig. Std. cor. of secs. 33 & 34, brs. South, 58 lks. dist. which is a limestone 18x12x6 ins. above ground, marked and witnessed as described by the Surveyor-General.
	From this orig. Std. cor. I run,
	East, on a random line, S. of sec. 34.
39.76	The orig. Std. $\frac{1}{4}$ sec. cor. brs. South 18 lks. dist., which is a granite stone 18x12x6 ins. above ground, marked and witnessed as described by the Surveyor-General.
	From this orig. Std. cor. I run,
	East, on a random line, S. of sec. 35.
40.00	No trace of orig. Std. $\frac{1}{4}$ sec. cor. found after diligent search.
80.25	The orig. Std. cor. of secs. 35 & 36 brs. South, 33 lks. dist., which is an old stake, with faint markings as described by the Surveyor-General.
	From this orig. Std. cor. I run
	East, on a random line, S. of sec. 36.
40.00	No trace of orig. Std. $\frac{1}{4}$ sec. cor. found after diligent search.
80.00	No trace of orig. Std. cor. of Tps. 20 S., Rs. 23 & 24 E. found after diligent search. Set a flag at this point, and run thence,
	East, on a random line, ^{through Range 24 E.} setting flags at intervals of 40.00 and 80.00 chs., and make diligent search at these points for the orig. std. corners as described in the field notes furnished by the Surveyor-General.
160.50	I find no trace of any of the orig. Std. cors. till at The orig. Std. cor. of secs. 32 & 33 brs. South, 108 lks. dist., which is a limestone 10x8x3 ins. above ground, marked and witnessed as described by the Surveyor-General.
	From this orig. Std. cor. ^{of secs. 32 & 33} I run,
	East, on a random line, S. of sec. 33.
40.04	The orig. Std. $\frac{1}{4}$ sec. cor. brs. South 57 lks. dist., which is a limestone 10x10x4 ins. above ground, marked

Chains

80.00 and witnessed as described by the Surveyor-General.
No trace of the orig. Std. cor. of secs. 33 & 34
found after diligent search. Set a flag at this point,
for temporary corner.
Jan. 28, 1913.

Jan. 29, 1913.

At 8h a.m., l.m.t., at the point above described,
I set off $17^{\circ}56'S$. on the decl. arc, and $31^{\circ}38\frac{1}{2}'N$. on
the lat. arc, and determine a meridian with the solar.,
thence I run,

40.17 East, on a random line, S. of sec. 34, T. 20 S., R. 24 E.
The orig. Std. $\frac{1}{4}$ sec. cor. brs. South, 67 lks. dist.,
which is a limestone $14 \times 8 \times 5$ ins. above ground, marked
and witnessed as described by the Surveyor-General.

79.00 The orig. Std. cor. of secs. 34 & 35 brs. North, 2 lks.
dist., which is a limestone $13 \times 8 \times 5$ ins. above ground,
marked and witnessed as described by the Surveyor-
General.

From this orig. cor. I run,

40.06 East, on a random line, S. of sec. 35.
The orig. Std. $\frac{1}{4}$ sec. cor. brs. South 46 lks. dist.,
which is a limestone $12 \times 6 \times 6$ ins. above ground, marked
and witnessed as described by the Surveyor-General.

80.13 The orig. Std. cor. of secs. 35 & 36 brs. South 59 lks.
dist., which is a Flintstone $10 \times 8 \times 5$ ins. above ground
marked and witnessed as described by the Surveyor-
General.

From this orig. Std. cor. I run,

40.00 East, on a random line, S. of sec. 36.
The orig. Std. $\frac{1}{4}$ sec. cor. brs. South, 20 lks. dist.,
which is a flint stone $10 \times 8 \times 3$ ins. above ground, marked
and witnessed as described by the Surveyor-General.

80.13 The Std. cor. of Tps. 20 S., Rs. 24 & 25 E., brs. South,
65 lks. dist., which is an iron post 3 ins. in diam.
1 ft. above ground, with the brass cap, marked and witnessed
as described by the Surveyor-General.

From the results of these retracements it is evident
that it is necessary to re-survey the 4th Std. Par. S.
through Rs. 23 & 24 E. before these Tps. can be
subdivided. Since there are no subdivisions closed
upon this line as yet from the South, I proceed to
re-survey same. The total South falling in 12 miles is
448 lks.

The true course of the line is therefore $N. 89^{\circ}44' W.$

From the Std. cor. of Tps. 20 S., Rs. 24 & 25 E., as
above described,

I run, through Range 24 East,

Chains.

- N. $89^{\circ}44'$ W., S. of sec. 36.
Over gently rolling grassy plain.
- 40.00 Difference between measurements of 40 chs. by 2 sets of chainmen is 2 lks.; position of middle point,
by 1st set 40.01 chs.,
by 2nd set, 39.99 chs., the mean of which is
Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for Std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 36 in N. half;
dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
- 68.00 Telephone line, Bisbee to Gleeson, brs. NNE. & SSW.
- 71.00 Wash, 20 lks. wide, course SE.
Difference between measurements of 80.00 chs. by 2 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 an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for Std. cor. of secs. 35 & 36, marked on brass cap, T 20 S R 24 E, in N. half,
S 35 in NW., and
S 36 in NE. quad.;
dig pits 24x18x12 ins. crosswise on each line, E. & W. 3 ft., and N. of cor. 7 ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high N. of cor.
Land, bearings available.
Land, rolling.
Soil, 2nd rate, sandy, loose, gravelly.
No timber or undergrowth.
-
- N. $89^{\circ}44'$ W., S. of sec. 35.
Over gently rolling grassy plain.
- 4.00 Wash, 30 lks. wide, course SE.
- 26.00 Wash, 50 lks. wide, course SSE.
Difference between measurements of 40 chs. by 2 sets of chainment is 2 lks.; position of middle point,
by 1st set 39.99 chs.,
by 2nd set 40.01 chs., the mean of which is
- 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for Std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 35 in N. half;
dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
- 50.00 Wash, 85 lks. wide, course S.
- 72.00 Road, brs. NNW. & SSE.
- 74.00 Wash, 10 lks. wide, course S., asc. grad.
Measurements of 80 chs. by 2 sets of chainmen being the same, at
- 80.00 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for Std. cor. of secs. 34 & 35, marked on brass cap, T 20 S R 24 E, in N. half,
S 34 in NW., and
S 35 in NE. quad.;
raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
No bearings available, pits impracticable.
Land, rolling.
Soil, 2nd rate, sandy, loose, dry, gravelly.
Sparse sage brush, cacti.
At this cor., at noon, I set off $17^{\circ}54\frac{1}{2}'$ S. on the decl. arc, and observe the sun on the meridian.
The resulting lat. is $31^{\circ}38\frac{1}{2}'$ N.

Re-survey of 4th Std. Parallel South, through Range 24 East. 9

Chains.	N. 89°44' W., S. of sec. 34. Over rolling land, asc. grad.
11.00	Asc. steep.
21.00	Ridge, brs. N. & S., desc. steep.
40.00	Difference between measurements of 40 chs. by 2 sets of chainmen is 4 lks.; position of middle point, by 1st set, 40.02 chs., by 2nd set, 39.98 chs., the mean of which is
40.00	Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 34 in N. half; raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor. Desc. grad. from cor.
60.00	Wash, 30 lks. wide, course SSE., thence over gently rolling, grassy plain. Difference bet. measurements of 80 chs. by 2 sets of chainmen is 6 lks.; position of middle point, by 1st set, 80.03 chs., by 2nd set, 79.97 chs.; the mean of which is
80.00	Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for std. cor. of secs. 33 & 34, marked on brass cap, T 20 S R 24 E, in N. half, S 33 in NW., and S 34 in NE. quad.; dig pits 24x18x12 ins., crosswise on each line, E. & W. $\frac{3}{4}$ ft., and N. of cor. $\frac{7}{8}$ ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high N. of cor. Land, mts., rolling. Soil, 3rd rate, gravelly, sandy, loose, dry. Sparse sage brush, cacti, fine native grass.
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	N. 89°44' W., S. of sec. 33. Over gently rolling, grassy plain, loose stones.
19.00	Wash, 30 lks. wide, course S.
38.00	Wire fence, brs. N. & S. Difference bet. measurements of 40 chs. by 2 sets of chainmen is 2 lks.; position of middle point, by 1st set, 39.99 chs., by 2nd set, 40.01 chs., the mean of which is
40.00	Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 33 in N. half; dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
49.00	Road, brs. NNW. & SSE. Measurements of 80 chs. by 2 sets of chainmen being the same, at
80.00	Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for std. cor. of secs. 32 & 33, marked on brass cap, T 20 S R 24 E, in N. half, S 32 in NW., and S 33 in NE. quad.; raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor. No bearings available, pits impracticable. Land, rolling. Soil, 2nd & 3rd rate, sandy, gravelly, stony, dry, loose. Sage brush, cacti, good grass.

10 Re-survey of 4th Std. Parallel South, through Range 24 East.

Chains.

N. 89°44' W., S. of sec. 32.
 Over gently rolling, grassy plain.
 12.00 Wash, 30 lks. wide, course S., heads 4 chs. N.
 15.00 Old road, brs. NW. & ESE.
 20.60 Road, brs. NW. & ESE.
 Measurements of 40 chs. by 2 sets of chainmen being the same, at
 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 32 in N. half;
 dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor. Difference bet. measurements of 80 chs. by 2 sets of chainmen is 2 lks.; position of middle point,
 by 1st set, 80.01 chs.,
 by 2nd set, 79.99 chs.; the mean of which is
 80.00 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for std. cor. of secs. 31 & 32, marked on brass cap, T 20 S R 24 E, in N. half,
 S 31 in NW., and
 S 32 in NE. quad.;
 dig pits 18x24x12 ins., crosswise on each line, E. & W. 3 ft., and N. of cor. 7 ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high N. of cor.
 Land, rolling.
 Soil, 2nd & 3rd rate, sandy, gravelly, loose, dry.
 Sage brush, cacti, good native grass.

N. 89°44' W., S. of sec. 31.
 Over gently rolling plain.
 Measurements of 40 chs. by 2 sets of chainmen being the same, at
 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 31 in N. half;
 dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor. Difference bet. measurements of 80 chs. by 2 sets of chainmen is 2 lks.; position of middle point,
 by 1st set, 79.99 chs.,
 by 2nd set, 80.01 chs., the mean of which is
 80.00 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for std. cor. of Tps. 20 S., Rs. 23 & 24 E., marked on brass cap,
 T 20 S, in N. half,
 R 23 E S 36 in NW., and
 R 24 E S 31 in NE. quad.;
 dig pits 30x24x12 ins., crosswise on each line, E. & W. 4 ft., and N. of cor. 8 ft. dist., and raise a mound of earth 5 ft. base, $2\frac{1}{2}$ ft. high N. of cor.
 No bearings available.
 Land, rolling.
 Soil, 2nd rate, sandy, loose, dry.
 Sparse sage brush, cacti, good grass.

Jan. 29, 1913.

Chains.	
	<p>Jan. 31, 1913. At 8h a.m., l.m.t., at the std. cor. of Tps. 20 S., Rs. 23 & 24 E., recently re-established by me, and heretofore described, I set off $17^{\circ}23'$ S. on the decl. arc, and $31^{\circ}38\frac{1}{2}'$ N. on the lat. arc, and determine a meridian with the solar. Thence I run, on a true line, N. $89^{\circ}44'$ W., S. of sec. 36. Var. 13° E.</p>
40.00	<p>Over rolling grassy land, through scrub mesquite. Difference bet. measurements of 40 chs. by 2 sets of chainmen is 2 lks.; position of middle point, by 1st set, 39.99 chs., by 2nd set, 40.01 chs., the mean of which is Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for Std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 36 in N. half; dig pits $18 \times 18 \times 12$ ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor. Leave mesquite, brs. N. & S.</p>
80.00	<p>Difference bet. measurements of 80 chs. by 2 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 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for std. cor. of secs. 35 & 36, marked on brass cap, T 20 S R 23 E, in N. half, S 35 in NW., and S 36 in NE. quad.; dig pits $24 \times 18 \times 12$ ins., crosswise on each line, E. & W. 3 ft., and N. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, 2 ft. high N. of cor. Land, rolling. Soil, 2nd & 3rd rate, sandy, gravelly, loose, dry. Sage brush, sparse mesquite, cacti, good grass.</p>
28.50	<p>N. $89^{\circ}44'$ W., S. of sec. 35. Over rolling land. Old road, brs. NW. & SE.</p>
40.00	<p>Difference bet. measurements of 40 chs. by 2 sets of chainmen is 4 lks.; position of middle point, by 1st set, 39.98 chs., by 2nd set, 40.02 chs., the mean of which is Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 35 in N. half; dig pits $18 \times 18 \times 12$ ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.</p>
52.50	<p>Centre of draw, 5 chs. wide, course S. Difference bet. measurements of 80 chs. by 2 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</p>
80.00	<p>Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for std. cor. of secs. 34 & 35, marked on brass cap, T 20 S R 23 E, in N. half, S 34 in NW., and S 35 in NE. quad.; raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor. Land, rolling. Soil, 3rd rate, sandy, loose. Sage brush, few cacti, good grass.</p>

12 Re-survey of 4th Std. Parallel South, through Range 23 East.

Chains.	N. 89°44' W., S. of sec. 34. Over rolling land, asc. grad.
15.00	Asc. steep.
31.50	Top of Ridge, brs. S. & N., near S. end, desc. steep on spur to W. Difference bet. measurements of 40 chs. by 2 sets of chainmen is 6 lks.; position of middle point, by 1st set, 40.03 chs., by 2nd set, 39.97 chs.; the mean of which is
40.00	Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 34 in N. half; raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
44.00	Desc. steep from spur.
60.00	Foot, brs. N. & S., thence over rolling land. Difference bet. measurements of 80 chs. by 2 sets of chainmen is 8 lks.; position of middle point, by 1st set, 80.04 chs., by 2nd set, 79.96 chs., the mean of which is
80.00	Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for std. cor. of secs. 33 & 34, marked on brass cap, T 20 S R 23 E, in N. half, S 33 in NW., and S 34 in NE. quad.; raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor. Land, rolling, mts. Soil, 3rd rate, sandy, gravelly, stony, dry, loose. Greasewood, sage brush, scrub mesquite, catclaw, cacti, good grass. At this cor., at noon, I set off $17^{\circ}22'$ S. on the decl. arc, and observe the sun on the meridian. The resulting lat. is $31^{\circ}38\frac{1}{2}'$ N.
	N. 89°44' W., S. of sec. 33. Over rolling land, through dense blackbrush, catclaw, greasewood, and sage brush. Difference bet. measurements of 40 chs. by 2 sets of chainmen is 4 lks.; position of middle point, by 1st set, 39.98 chs., by 2nd set, 40.02 chs., the mean of which is
40.00	Set an iron post 3 ft. long, $\frac{3}{4}$ ins. in diam. 26 ins. in the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 33 in N. half, dig pits $18 \times 18 \times 12$ ins. E. & W. of cor. 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
45.60	Road, brs. N. & S.
47.00	Wash, 100 lks. wide, course S.
52.00	Wash, 30 lks. wide, course SE. Difference bet. measurements of 80 chs. by 2 sets of chainmen is 2 lks.; position of middle point, by 1st set, 79.99 chs., by 2nd set, 80.01 chs., the mean of which is
80.00	Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for std. cor. of secs. 32 & 33, marked on brass cap, T 20 S R 23 E, in N. half, S 32 in NW., and S 33 in NE. quad.; dig pits $24 \times 18 \times 12$ ins. crosswise on each line, E. & W. 3 ft., and N. of cor. 7 ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high N. of cor. Land, rolling. Soil, 3rd rate, sandy, gravelly, dry, loose. Black brush, catclaw, mesquite, greasewood, cacti, fair grass.

Chains.

N. 89°44' W., S. of sec. 32.
 Over rolling land, through dense brush.
 Difference bet. measurements of 40 chs. by 2 sets of
 chainmen is 2 lks.; position of middle point,
 by 1st set, 39.99 chs.,
 by 2nd set, 40.01 chs., the mean of which is
 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in
 the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap,
 $\frac{1}{4}$ S 32 in N. half;
 raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
 Asc. grad. from cor.
 50.00 Ridge, brs. SE. & NNE., desc. grad.
 Difference bet. measurements of 80 chs. by 2 sets of
 chainmen is 6 lks.; position of middle point,
 by 1st set, 80.03 chs.,
 by 2nd set, 79.97 chs., the mean of which is
 80.00 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in
 the ground for std. cor. of secs. 31 & 32, marked on
 brass cap, T 20 S R 23 E, in N. half,
 S 31 in NW., and
 S 32 in NE. quad.;
 dig pits 24x18x12 ins. crosswise on each line, E. &
 W. 3 ft., and N. of cor. 3 ft. dist., and
 raise a mound of earth 4 ft. base, 2 ft. high N. of cor.
 Land, rolling.
 Soil, 3rd rate, gravelly, dry.
 Greasewood, catclaw, cacti, and other brush, fair grass.

N. 89°44' W., S. of sec. 31.
 Over rolling, broken land, desc. grad.
 Difference bet. measurements of 40 chs. by 2 sets of
 chainmen is 4 lks.; position of middle point,
 by 1st set, 39.98 chs.,
 by 2nd set, 40.02 chs., the mean of which is
 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in
 the ground for std. $\frac{1}{4}$ sec. cor., marked on brass cap,
 $\frac{1}{4}$ S 31 in N. half;
 dig pits 18x18x12 ins. E. & W. of cor. 3 ft. dist., and
 raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
 69.65 Road, brs. NNE. & SSW., Tombstone to Bisbee.
 71.00 Draw, 4 chs. wide, course SSW.
 72.55 Telephone line, brs. NNE. & SSW., Tombstone to Bisbee.
 79.80 To Std. cor. of Tps. 20 S., Rs. 22 & 23 E., herebefore
 described.
 Land, rolling.
 Soil, 3rd rate, gravelly, dry.
 Greasewood, catclaw, blackbrush, scrub mesquite, cacti,
 sage brush, fair grass.

General Description.

The 4th Std. Parallel South, through Rs. 23 & 24 E.,
 as resurveyed by me passes over a gently rolling, or
 hilly low divide, between the Sulphur Springs Valley
 to the East, and the drainage basin of the San Pedro
 River to the West.

The soil is in general sandy, or gravelly,
 rich and fertile in places, and would produce well,
 if irrigated. Some of the land could be cultivated
 without irrigation in good seasons.

There is no water or timber along or near
 the line, nor any settlers.

Jan. 31, 1913.

William C. Elliott

U. S. Surveyor.

CERTIFICATE OF ASSISTANTS.

We, the undersigned, hereby certify upon honor that we assisted, to the best of our skill and ability,
William H. Elliott, U. S. Surveyor, during the periods and in the capacities
 stated opposite our several signatures, in ^{re} surveying ^{under Group 17} all those parts or portions of
4th Standard Parallel South,
 through
Ranges 23, 24, and 32 East,
 of the Gila & Salt River Base Meridian, in the State of Arizona
 which are represented in the foregoing field notes as having been executed by him, and under his direc-
 tion; and that said ^{re} survey has been, in all respects, to the best of our knowledge and belief, well and
 faithfully executed.

NAME.	PERIOD OF SERVICE.		CAPACITY.
	BEGUN.	ENDED.	
<u>L. Eric Hanayan</u>	<u>Oct 10, 1912</u>	<u>Jan 31, 1913</u>	<u>Chamman</u>
<u>Robert M. Bonnell</u>	<u>Oct 24, 1912</u>	<u>Dec 24, 1912</u>	<u>Chamman</u>
<u>Thomas H. Shimpfuss</u>	<u>Oct 28, 1912</u>	<u>Jan 31, 1913</u>	<u>Chamman</u>
<u>Frank E. Shurtleff</u>	<u>Oct 16, 1912</u>	<u>Dec 8, 1912</u>	<u>Reman</u>
<u>Charles Crouch</u>	<u>Oct 16, 1912</u>	<u>Jan 31, 1913</u>	<u>Mannedman</u>
<u>Frank J. St. Perry</u>	<u>Oct 10, 1912</u>	<u>Apr 11, 1913</u>	<u>Chamman</u>
<u>Jesse H. Richardson</u>	<u>Jan 27, 1913</u>	<u>Jan 31, 1913</u>	<u>Chamman</u>

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

William H. Elliott
U. S. Surveyor.

FINAL OATH OF UNITED STATES SURVEYOR.

1520
BOOK 2476

I, William H. Elliott, U. S. Surveyor, do solemnly swear that, in pursuance of special ^{and supplemental} instructions received from the U. S. Surveyor General for Group 17 Arizona bearing date of the 6th day of October 1911 and 13th day of January, 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, ^{re}surveyed all those parts or portions of

The Fourth Standard Parallel South, through Ranges, 23 T 24 T 32 East

of the Great Salt Revs Base 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 ^{re}survey have been ^{re}established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General for Group Arizona and in the specific manner described in the field notes, and that the foregoing are the original field notes of such ^{re}survey.

William H. Elliott
U. S. Surveyor.

Subscribed by said William H. Elliott, and sworn to before me }
this 20th day of June, 1913



Frank S. Ingalls
SURVEYOR-GENERAL OF ARIZONA

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,
Phoenix, Ariz., Jan. 26, 1914

The foregoing field notes of the ^{re}survey of The Fourth Standard Parallel South, through Ranges 23, and 24, and 32 East,

executed by Frank S. Ingalls and William H. Elliott, U.S. Surveyors, under his special ^{and supplemental} instructions dated October 6, 1911 and January 13, 1913, 1913, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the ^{re}surveys they describe, are hereby approved.

Frank S. Ingalls
U. S. Surveyor General.

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