

129-06  
1905  
FIELD NOTES

BOOK 1905

OF THE SURVEY OF THE  
Fourth Standard Parallel North  
through  
Ranges Nos. 6 and 7  
of the  
Principal Base and Meridian  
in the  
Territory of Arizona

1905

1905

Of the Gila and Salt River Meridian,  
Arizona

AS SURVEYED BY

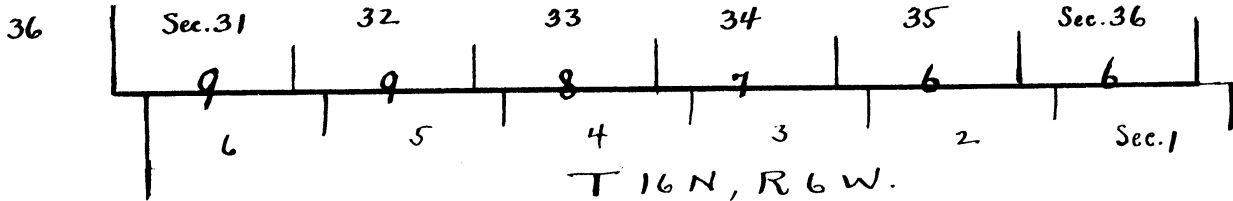
Arthur B. Mader, United States Deputy Surveyor,

Under his Contract No. 132, dated May, 26<sup>th</sup> 1905., ~~189~~  
Survey commenced August, 14<sup>th</sup> 1905., ~~189~~  
Survey completed August, 19<sup>th</sup> 1905., ~~189~~

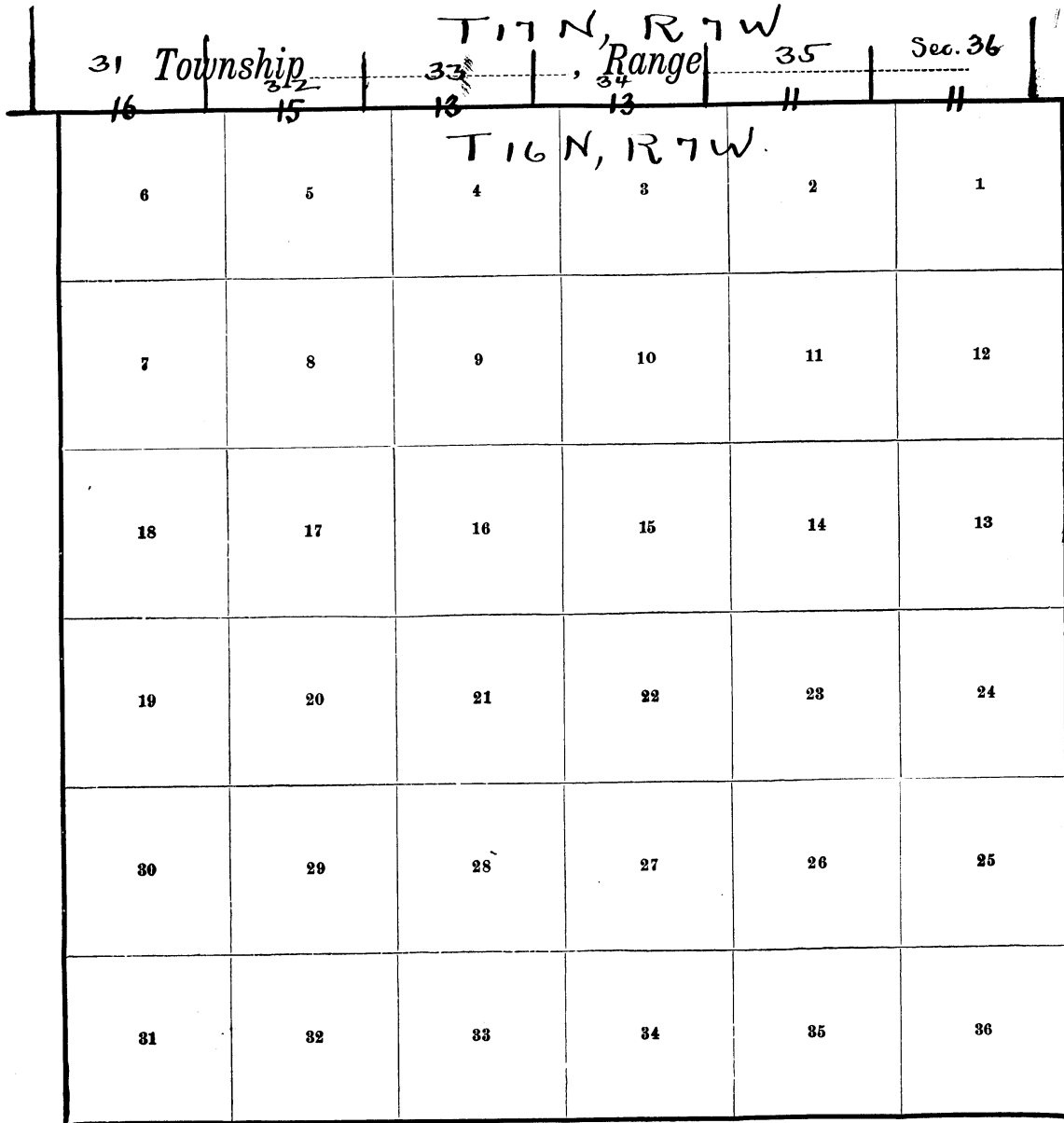
Shirley Wetmore	Chairman
H. W. Walker	Chairman
C. P. Boland	Chairman
Walter Atkeson	Chairman
H. A. Atkeson	Woundedman
H. A. Atkeson	Asman

FOURTH STANDARD PARALLEL

T 17 N, R 6 W



INDEX DIAGRAM.



Meanders Page.....

PRELIMINARY OATHS OF ASSISTANTS.

WE, Shirley Wetmore, H. W. Walker, and Walter Atkeson and C. P. Boland do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain over even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of

Fourth Standard Parallel N, thro' Ranges 6 and 7 West, 9 + S. R. M.

Shirley Wetmore H. W. Walker, Chainman.
Walter Atkeson C. P. Boland, Chainman.

Subscribed and sworn to before me this 12th day of August, 1905, 189

Carroll Sanford Notary Public

My Commission Expires September 28, 1908

H. A. Atkeson

do solemnly swear that I will well and truly perform the duties of moundman in the establishment of corners, according to the instructions given me to the best of my skill and ability, in the survey of

Fourth Standard Parallel N, thro' Ranges 6 and 7 West, 9 + S. R. M.

H. A. Atkeson, Moundman.

Subscribed and sworn to before me this 12th day of August, 1905, 189

Carroll Sanford Notary Public

My Commission Expires September 28, 1908

H. A. Atkeson

do solemnly swear that I will well and truly perform the duties of axman in the establishment of corners and other duties, according to instructions given me to the best of my skill and ability, in the survey of

Fourth Standard Parallel N, thro' Ranges 6 and 7 West, 9 + S. R. M.

H. A. Atkeson, Axman.

Subscribed and sworn to before me this 12th day of August, 1905, 189

Carroll Sanford Notary Public

My Commission Expires September 28, 1908

I, \_\_\_\_\_, 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 \_\_\_\_\_, Flagman.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 189



## Fourth Standard Parallel North, through Range 6 West

chains

Survey commenced Aug. 14<sup>th</sup>, 1905, and executed with a W. and S. E. Gurley slight mountain transit, not numbered, <sup>with plates of quartz</sup> the horizontal limb having two double verniers placed opposite to each other, and reading to 30 sec. of arc. At a point, in the City of Prescott, <sup>lat. 34°-32' N and long. 112°-27' W</sup>, on Aug. 1<sup>st</sup>, 1905, at 10<sup>h</sup>. 24.9<sup>m</sup> p. m. local mean time by my watch, which is nearly correct, I observe Polaris at eastern elongation in accordance with instructions in the manual and mark the line thus determined by a small tack driven in a wooden stake set in the ground, 140 ft. N. of my station.

August, 1905.

Aug. 2<sup>nd</sup>, 1905. At 8<sup>h</sup>. a. m., I lay off the azimuth of Polaris 1°-27.5' to the West, and mark the true meridian thus determined by a tack in a stake west of the point established last night. At 8<sup>h</sup>. 30<sup>m</sup> a. m. l. m. t., at my station, I set off 17°-51' N on the decl. arc and 34°-32' on the lat. arc and make a solar observation, which meridian falls .009 ft. W. of the tack marking the meridian determined by the Polaris observation. At 3<sup>h</sup>. 30<sup>m</sup> p. m. with 17°-46½' N set off on the decl. arc and 34°-32' on the lat. arc, I make a solar observation, which meridian falls .011 ft. E. of the tack marking the Polaris meridian. These fallings appeared to be less than ½' of arc on the plates of the instrument. The instrument being found in correct adjustment, was approved by the Surveyor General for Arizona, Aug. 4<sup>th</sup>, 1905.

August, 14<sup>th</sup>, 1905.

I begin at the standard cor. of Tps. 17 N, Rgs. 5 and 6 W. which is a granite stone, 10 x 8 x 10 ins. above the ground, firmly set, and marked and witnessed as described by the Surveyor General.

At a point, 2.31 ft. S. of said standard cor. in lat. 34°-49'-10" N. and long. 112°-49' W, at 9<sup>h</sup>. 58.4<sup>m</sup> p. m., by my watch, which is 1<sup>m</sup> east of local mean time, I observe Polaris at E. elongation, in accordance with instructions in the Manual, and mark the line thus determined by a scratch on a granite boulder, firmly set, five chains south of my station. The sight could not accurately nor conveniently be taken to the N. because the mountain side ascends steeply and is very broken and covered with brush.

August, 14<sup>th</sup>, 1905.

August 15<sup>th</sup>, 1905. At 8<sup>h</sup>. a. m. I lay off the azimuth of Polaris, 1°-27.5' to the E. (instrument pointing S.) and mark the true meridian thus determined by a groove cut on the granite ledge to the E. of the point set last night. The magnetic bearing of such meridian is N 13°-45' E. At this station (i.e. the point 2.31 ft. S. of the standard cor.) I turn off from the meridian an angle

## Fourth Standard Parallel North, through Range 6 West.

	<p><u>chain</u> of 89°-58.2' from the N. towards the W. and run N 89°-58' W on the secant S of Sec. 36 descend over granite rocks through dense brush</p>
9.50	Cross Pole Creek, 20 lbs. wide, course S 80° E, brs. N 80° W.
15.75	Recross Pole Creek, course N 75° E.
19.60	Recross Pole Creek, course N 70° W.
	ascend through dense brush, over broken land Difference between measurements of 40 chus. by two sets of chainmen, is 2.2 lbs.; position of middle point
	By 1 <sup>st</sup> set 40.11 chus.
	By 2 <sup>nd</sup> set 39.89 chus., the mean of which is
40.00	N 1.04 ft. from the secant, Set a granite stone 16x10x4 ins., 1/2 ins. in the ground for stan- dard 1/4 sec. cor. marked S C 1/4 on N face and raised a mon. of stone 2 ft. base 1 1/2 ft. high N. of cor. An oak 4 ins. diam. brs. N 48°-12' W, 7.16 chus. dist. marked S C 1/4 S 36 B.T. No other trees available.
57.50	top of hill, and descend, brush more scattering
59.50	Cross gulch, 10 lbs. wide, course N brs. S, and ascend
64.96	top of hill
68.75	descend
76.00	Cross gulch, 15 lbs. wide, course N.W. brs. S.E. Difference bet. measurements of 80 chus. by two sets of chain- men is 12 lbs.; position of middle point - By 1 <sup>st</sup> set - 80.06 chus. By 2 <sup>nd</sup> set - 79.94 chus. the mean of which is
80.00	The point for standard cor. of secs 35 and 36 falls on a granite rock in place, 22x17x10 ins. out of the ground, firmly set. Cut a cross (+) for the exact cor. point and marked S.C. on N with 5 grooves on E and 1 groove to W of cross. An oak, 8 ins. diam. brs. N 17°-47' E, 84 lbs. dist. marked S C T 17 N R 6 W S 36 B.T. An oak, 8 ins. diam. brs. N 22°-20' W, 1.00 chu. dist. marked S C T 17 N R 6 W S 35 B.T. Land mountainous. Soil rocky, with large granite boulders, 4 <sup>th</sup> rate. No timber. Oak and Madroñita undergrowth. Mountainous land - 80 chus.
	N 89°-58.8' W, on the secant, through Sec. 35.
22.00	ascend, over rolling hills, through dense undergrowth enter heavy pine timber
25.50	cross gulch, 15 lbs. wide, course N brs. S.
33.00	leave pine timber Difference between measurements of 40 chus. by two sets of chainmen is 5 lbs. position of middle point - By 1 <sup>st</sup> set, <sup>40</sup> 39.025 chus. By 2 <sup>nd</sup> set, <sup>39</sup> 79.975 chus. the mean of which is

Fourth Standard Parallel North, through Range 6 West.

40.00	<p>South, 0.81 ft. from the secant                  Set a porphyry stone, 20x10x4 ins., 15 ins. in the ground, for standard 1/4 sec. cor. marked SC 1/4 on N face, and raised a mon. of stone 2 ft. base 2 ft. high N. of cor.                  A juniper, 14 ins. diam. bears N 10°-36' W, 1.51 chus. dist. marked S.C. 1/4 S 35 BT. No other trees available.                  August 15<sup>th</sup>, I set off 14°-6' on the decl. arc and at 12<sup>h</sup>. 01<sup>m</sup>. by my watch, which is 1<sup>m</sup>. fast of local mean time, observe the sun on the meridian and obtain on the lat. arc, <del>34°-49'</del> <sup>34°-49'</sup> <del>34°-49'</del> <sup>34°-49'</sup> nearly 49' which agrees closely with other data.</p>
64.00	<p>enter pine timber</p>
76.00	<p>A running Spring, 3.5 chus. S. of line. Flows N and sinks in a few ft.</p>
78.00	<p>Leave pine timber</p>
	<p>The difference between measurements of 80 chus. by two sets of chainmen is 8 lks.; position of middle point, By 1<sup>st</sup> set 80.04 chus. By 2<sup>nd</sup> set 79.96 chus., the mean of which is,</p>
80.00	<p>S 1.39 ft. from the Secant</p>
	<p>Set a granite stone 24x12x5 ins., 18 ins. in the ground for standard cor. of sec's 34 and 35, marked SC on N face and 4 grooves on W and 2 grooves on E face.                  An oak, 10 ins. diam. brs. N 20°-50' E, 2.85 chus. dist. marked S.C.T 17 N R 6 W S 35 BT.                  An oak, 36 ins. diam. brs. N 35°-48' W, 2.18 chus. dist. marked S.C.T 17 N R 6 W S 34 BT.                  Land mountainous.                  Soil rocky, 4<sup>th</sup> rate. Timber pine and oak.                  Mountainous land or land covered with heavy timber or dense undergrowth - 80.00 chus.</p>
0.10	<p>N 89°-59.4' W on the secant through Sec. 34                  Cross gulch, 1/2 ch. wide, course N 80° E, brs. S 30° W.</p>
12.00	<p>over rolling mountains                  Enter heavy pine timber</p>
	<p>The difference between measurements of 40 chus. by two sets of chainmen is 6 lks. position of middle point is: By 1<sup>st</sup> set 40.03 chus. By 2<sup>nd</sup> set 39.97 chus., the mean of which is</p>
40.00	<p>S 1.73 ft. from the secant.</p>
	<p>Set a granite stone 21x12x7 ins., 16 ins. in the ground, for stan. 1/4 sec. cor. marked SC 1/4 on N face.                  A pine, 12 ins. diam. brs. N 30°-8' W, 161 lks. dist. marked S.C. 1/4 S 34 BT.                  A pine, 16 ins. diam. brs. N 11°-15' E, 77 lks. dist. marked S.C. 1/4 S 34 BT.</p>
49.00	<p>over rolling land, through heavy pine timber</p>
	<p>A running Spring, 1 ch. N. of line, flows E and sinks in a few ft.</p>
	<p>The difference between measurements of 80 chus. by two sets of chainmen is 8 lks. position of middle point is: By 1<sup>st</sup> set - 80.04 chus. By 2<sup>nd</sup> set - 79.96 chus. the mean of which is,</p>
80.00	<p>S 1.84 ft. from the secant.</p>
	<p>Set a red sandstone 26x8x4 ins. 19 ins. in the ground,</p>

Fourth Standard Paralel North through Range 6 West.

chains  
for standard sec. cor. of sec's. 34 and 33, marked  
SC on N with 3 grooves on W and 3 grooves on E faces  
A juniper, 14 ins. diam. brs. N32°-9'E, 63 lks. dist. marked  
SCT 17 N R 6 W S 34 B T.  
A juniper, 16 ins. diam. brs. N30°-42' W, 1.06 chus. dist. marked  
SCT 17 N R 6 W S 33 B T.  
Land mountainous.  
Soil rocky, 4<sup>th</sup> rate. underbrush oak timber pine.  
Mountainous land and land covered with heavy timber, 80 chus.  
August, 15<sup>th</sup> 1905.

Note: Sky overcast, observation on Polaris, not possible.  
West, on the Secant through Sec. 33.  
2.00 Leave pine timber, and enter heavy undergrowth.  
30.00 Ascend rapidly thro' dense brush of oak and manzanita.  
The difference between measurements of 40 chus. by two sets  
of chainmen is 10 lks.; position of middle point is,  
By 1<sup>st</sup> set, 40.05 chus.  
By 2<sup>nd</sup> set 39.95 chus.; the mean of which is  
40.00 S 1.73 ft. from the secant, top of mountain  
Set a granite stone 18x12x8 ins. 15 ins. in the ground  
for standard 1/4 sec. cor. marked SC 1/4 on N face and  
raised a mound of stone 2 ft. base, 2 1/2 ft. high, N of cor.  
A juniper, 8 ins. diam. brs. N13°-10'E, 76 lks. dist. marked  
SC 1/4 S 33 B T. No other trees available.  
over rolling mountain tops, through scattered brush,  
57.00 ascend steep slope, through dense manzanita brush  
66.00 top of white quartz ridge, brs. N25° E and S-25° W.  
Descend steep slope, brush more open.  
71.00 foot of slope - over broken ground  
The difference between measurements of 80 chus. by two  
sets of chainmen is 16 lks. position of middle point is;  
By 1<sup>st</sup> set - 80.08 chus.  
By 2<sup>nd</sup> set - 79.92 chus., the mean of which is,  
80.00 S 1.39 ft. from the secant  
Set a granite stone, 22x7x4 ins. 17 ins. in the ground  
for standard sec. cor. of sec's 32 and 33, marked  
SC on N with 2 grooves on W and 4 grooves on E faces  
A juniper, 18 ins. diam. brs. N71°-55'E, 1.07 chus. dist.  
marked SCT 17 N R 6 W S <sup>33</sup> B T.  
A juniper 18 ins. in diam. brs. N 24 3/4° W 92 lks. dist. marked P. C. T 17 N  
Land mountainous R 6 W S. 32 B T.  
Soil rocky, 4<sup>th</sup> rate.  
Timber pine and juniper  
Underbrush oak and manzanita.  
Mountainous land and land covered with dense  
undergrowth - 80.00 chus.



# Fourth Standard Parallel North, through Range 6 West.

chains	59°-54.8' W on the account through sec. 32.
27.7	over broken ground, scattering brush
31.50	ascend mountain, through dense monzonite brush
14.00	top of mountain and descent, granite slope
17.00	bottom and ascend over very broken granite slope
28.24	top of granite boulders on ridge bet N and S
30.00	blended, scattering brush
36.00	bottom and over broken ground through dense brush
	The difference between measurements of 46 lines by two
	sets of chainmen is 12 lbs; position of middle point
	By 1st set 80.11 chns.
	By 2nd set 99.92 chns, the mean of which is
40.00	3' 2.5" ft. from the account.
	Set a granite stone, 20 x 10 x 5 ins. in the ground,
	to be used for a standard 1/4 sec. cor. marked S C
	1/4 on N face and surrounded by a row of
	stones, 2 ft. base, 1 1/2 ft. high
	A pine, 12 ins. diam bears N 65° 35' W, 35 lbs. dist.
	marked S C 1/4 S 32 B T
44.75	an oak, 8 ins. diam. bears N 69° 34' E, 69 lbs. dist. marked S C 1/4 S 32 B T.
	Cross quadr. 10 lbs. wide, course S 45° W bet. N 65° W
	ascend broken mountain slope
48.90	top of hill
49.40	descend steep rough granite descent through dense
	oak brush
51.00	bottom, over large granite boulders, scattering brush,
	The difference between measurements of 46 lines by two sets
	of chainmen is 12 lbs; position of middle point is
	By 1st set 80.08 chns.
	By 2nd set 79.92 chns, the mean of which is
50.00	3' 10" ft. for the standard sec. cor. of this square
	falls on a granite boulder in place S East W
	by 10' N and S by 3' high
	Set a cross (c) at the center cor. point on the E face
	of boulder and marked 4' above S W and 6'
	above E of cross
	A pine, 10' diam. bears N 65° 35' W, 35 lbs. dist. marked
	S C 1/4 R 1/4 S 32 B T
	A pine, 10' diam. bears N 65° 35' W, 35 lbs. dist. marked
	S C 1/4 R 1/4 S 32 B T
	land mountainous, scattered
	Soil, rocky, covered with large granite boulders, white
	Timber, scattering pine, poplar, oak, etc.
	Dense oak and monzonite brush on S side
	S 89°-55.8' W on the account through Sec 31.
2.62	over rocky mountainous land, large granite boulders
16.80	on W. edge of large granite boulder, 4' high bet. on S side
	on granite ridge

Fourth Standard Parallel North, through Range 6 West.

chains  
27.45

on W. edge of large granite boulder  
The difference between measurements of 40 chns. by two sets of chainmen is 14 lbs. position of middle point  
By 1<sup>st</sup> set 40.07 chns.

40.00

By 2<sup>nd</sup> set 39.93 chns. the mean of which is  
N 7.04 ft. from the account.  
Set a granite stone, 17.5 x 12 x 4 ins., 17 ins. in the ground  
for standard 1/4 sec. cor. on <sup>of</sup> Sec SC 1/4 on N face  
of juniper, 12" diam. bears N 30° 52' E, 81 lbs. dist.

marked SC 1/4 S 31 BT  
A pine, 18 ins. diam. bears N 42° 30' W, 87 lbs. dist. marked SC 1/4 S 31 BT.  
over broken mountainous land, through scattering  
timber and brush.

71.50

cross gulch, 20 lbs. wide, course S.E. by N.W.

74.00

Cross Cook's wagon road, here N.W. and S.E.

75.00

enter oak grove, oaks 2" diam.

The difference between measurements of 80 chns. by two sets  
of chainmen is 8 lbs., position of middle point is  
By 1<sup>st</sup> set 80.04 chns.

80.00

By 2<sup>nd</sup> set 79.96 chns. the mean of which is  
N 2.31 ft. from the account

Set a granite stone, 26 x 12 x 10 ins., 20 ins. in the ground  
for the standard 1/4 Cor. of T<sub>1</sub> R<sub>6</sub> S<sub>1</sub> R<sub>6</sub> and T<sub>1</sub> W<sub>6</sub>  
marked S C on N with 6 grooves on N, E, and  
W faces.

An oak, 18" diam. bears N 29° 28' E, 74 lbs. dist. marked  
S C T<sub>1</sub> N R<sub>6</sub> W S<sub>1</sub> B T.

A pine, 30" diam. bears N 16° 40' W, 49 lbs. dist. marked  
S, C T<sub>1</sub> N R<sub>6</sub> W S<sub>1</sub> B T.

Land mountainous, 80 chains.  
Soil rocky covered with large granite boulders, 4<sup>th</sup> rate.  
Timber, pine, juniper and oak.  
Undergrowth oak. August 19<sup>th</sup> 1905

At this cor. have standardized, i.e. the standard cor.  
T<sub>1</sub> R<sub>6</sub> S<sub>1</sub> R<sub>6</sub> and T<sub>1</sub> W<sub>6</sub>, at a point 2.31 ft. S. from the  
cor. I believe to be an Eastern elongated August  
18<sup>th</sup> 1905 at 9<sup>h</sup> 51<sup>m</sup> p.m. by my watch, which is 1<sup>m</sup>  
feet of local mean time and chart; the direction the  
determined by a cross on a granite stone in place,  
firmly set 5 chns. N. of my station.

August 19<sup>th</sup> 1905, at 7<sup>h</sup> 45<sup>m</sup> p.m. I lay off the  
bearing of P<sub>1</sub> line, 12.725' to the W, and locate the  
true meridian thus determined by a cross on a stone  
firmly set in the ground, west of the pine marked  
last night.

I measure the angle between the true meridian  
and a signal erected to the east on the corner  
therefrom. As of T<sub>1</sub> R<sub>6</sub> W<sub>6</sub>, as follows.

# Fourth Standard Parallel North through Range & about

same

- 1 - 19° 54'
- 2 - 29° 58'
- 3 - 29° 57'

The observed bearing is  $N 89^{\circ} 58' 5'' E$ .  
 The true bearing is  $N 89^{\circ} 58' 11'' E$ , and the diff. is  $7''$ , which is less than the error of observation.  
 Then deflect from the true bearing through  $90^{\circ}$ , an angle of  $3^{\circ} 36'$  from the  $S$  to the  $N$  and run

$N 89^{\circ} 58' W$  on the corner  $S$  of sec. 26  
 over broken granite country, through scattering pine and brush.

24.00  
 25.00

enter heavy pine timber  
 leave heavy pine timber  
 The difference between measurements of 80 chas by the  
 of chainmen is 6 lbs. portion of middle point  
 By 1<sup>st</sup> set 40.02 chas  
 By 2<sup>nd</sup> set 39.97 chas the mean of which is  
 40.00

$N 9.00$  ft. from the corner.  
 Set a granite stone,  $19 \times 20 \times 3$  ins., 16 ins. in the ground,  
 for standard sec. cor. marked  $SC \frac{1}{4}$  on  $N$  face  
 A juniper, 7 diam. bears  $N 23^{\circ} 33' E$ , 20 1/2 lbs. dist.  
 marked  $SC \frac{1}{4} S 36 BT$ .  
 A pine, 3 1/2 diam. bears  $N 46^{\circ} 44' W$ , 27 lbs. dist. marked  $SC \frac{1}{4} S 36 BT$ .  
 pine timber more weathering

60.50  
 74 ch.

cross rail fence, tra.  $N 27^{\circ} E$  about 400' and  $S 30^{\circ} 10' W$  at 400'  
 fence about 500 ft.  $S$  of line.  
 The difference between measurements of 80 chas by the  
 of chainmen is 4 lbs. portion of middle point  
 By 1<sup>st</sup> set 80.02 chas.  
 By 2<sup>nd</sup> set 79.98 chas.; the mean of which is

80.00

Set a granite stone, an Indian marked stone,  $29 \times 15 \times 4$  ins., 12 ins. in the ground, for standard sec. cor.  
 of sec. 36 and 35 marked  $SC$  on  $N$ , with  
 5 grooves on  $W$  and one groove on  $E$  face  
 A pine, 28 diam. bears  $N 41^{\circ} 41' W$ , 70 lbs. dist. marked  
 $SC T 17 N R 7 W S 35 BT$ .  
 a pine, 18 diam. bears  $N 51^{\circ} 4' E$ , 73 lbs. dist. marked  
 $SC T 17 N R 7 W S 36 BT$ .

Land mountainous.  
 Soil, rocky, 4<sup>th</sup> rate, 3<sup>rd</sup> rate inside of fence.  
 Timber, pine and juniper.  
 Undergrowth oak.

30.00  
 31.50

Mountainous and heavily timbered land, 80 chas.  
 $N 89^{\circ} 58' W$ , on the corner  $S$  of sec. 36.  
 over rolling mountainous lands, scattered pine  
 and brush, 50 lbs. dist., corner  $S$ , tra.  $N 18^{\circ} E$ .

Fourth Standard Parallel North, through Range 7 West.

<p>Chain 29.00</p>	<p>Cross edge of road, runs inside of fence, southerly about 1000 ft. to a gate to the rd. into land by outside of fence.</p>
<p>30.20</p>	<p>Cross rail fence, bears N 32° 00' W 100' then S 77° 12' E 200' and bears S 31° 30' E 245' then S 26° 40' E 800'</p>
<p>30.40</p>	<p>Cross wagon road, bears N 33° W and S 33° E ascend rough granite mountain slope through scattering pines</p>
<p>40.00</p>	<p>The difference between measurements of 40 chns. by two sets of chainmen is 6 lbs.; position of middle point is By 1<sup>st</sup> set 40.03 chns.</p>
<p>40.00</p>	<p>By 2<sup>nd</sup> set 39.97 chns. the mean of which is S 6.81 ft. from the summit.</p>
<p>49.00</p>	<p>The cor. pin falls on the E. face of a granite boulder in place, 3 1/2' x 2' x 4' high - part by a ledge.</p>
<p>49.00</p>	<p>Set a cross (+) for the exact cor. pin. for standard 1/4 sec. cor. with S C 1/4 marked N of cross on oak, 10' diam. bears N 25° 3' W, 62 lbs. dist. marked S. C. 1/4 S 35 B T.</p>
<p>49.00</p>	<p>A pine, 20' diam. bears N 79° 40' E, 150 chns. dist. marked S C 1/4 S 35 B T. Top of hill and descend through dense oak brush and scattering pine timber</p>
<p>57.00</p>	<p>bottom of hill, brush more scattering</p>
<p>65.90</p>	<p>cross wire fence, bears N 25° 10' E, 1000' and S 24° 10' W 500'</p>
<p>69.00</p>	<p>Cross wagon road, bears N 25° E and S 24° W.</p>
<p>76.00</p>	<p>over rolling land. Land more rolling. Land more rolling. Land more rolling. The difference between measurements of 80 chns. by two sets of chainmen is 8 lbs., position of middle point is By 1<sup>st</sup> set 80.00 chns.</p>
<p>80.00</p>	<p>By 2<sup>nd</sup> set 79.96 chns. the mean of which is S 15.89 ft. from the summit.</p>
<p>80.00</p>	<p>Set a malpais stone, 27 x 14 x 6 in., 20 lbs. in the ground, for standard sec. cor. of sec. 35 and 24, marked S C on N, with 4 grooves on W and 2 grooves on E face.</p>
<p>80.00</p>	<p>A pine, 16' diam. bears N 19° 05' E, 99 lbs. dist. marked S C T 17 N R 7 W S 35 B T.</p>
<p>80.00</p>	<p>A pine, 36' diam. bears N 25° 46' W, 120 lbs. dist. marked S C T 17 N R 7 W S 34 B T.</p>
<p>80.00</p>	<p>Land mountains. Soil, rocky, &amp; brack some 5' or more inside of fence. Timber pine and juniper Undergrowth oak. Mountainous land and land covered with dense undergrowth, 80 chns. August 17th, 1905.</p>
<p>80.00</p>	<p>Note: The present and former locations are not possible.</p>
<p>80.00</p>	<p>At 80.50 with same through sec. 34. Leave pine timber and granite country and enter malpais country</p>

## Fourth Standard Parallel North, through Range 7 West

chains	
0.15	cross small drainage gulch, 5 lbs wide, course S 27° E, to N 35° W.
5.00	commence ascent steep slope, dense brush or cedars
15.00	top of slope, ascend gradually over rolling top
25.15	malpais edge, bears W 75° 10' N and S 20° 10' E descend through heavy cedars
35.50	bottom cross gulch, 6 lbs wide, course S 27° E to N 35° E ascend to new malpais slope The difference between measurements of 40 chus. by two sets of chainmen is 10 lbs.; position of middle point is, By 1 <sup>st</sup> set 40.05 chus. By 2 <sup>nd</sup> set 39.95 chus. the mean of which is, 40.00 S 1.73 ft. from the secant.
	Set a malpais stone, 18 x 14 x 6 ins., 12 ins. in the ground, for standard 1/4 sec. cor. marked S C 1/4 on N face. Oak 10, 16" diam. bears N 32° 44' W, 85 lbs. dist. marked S C 1/4 S 34 B. T. 130 ins. diam. bears N 49° 01' E, 1.07 chus. dist. marked S C 1/4 S 34 B T.
54.00	top of hill - descend rough malpais slope, beattering brush and cedars
68.00	cross gulch, 5 lbs wide, course S E. The difference between measurements of 80 chus. by two sets of chainmen is 6 lbs. position of middle point is By 1 <sup>st</sup> set 80.03 chus. By 2 <sup>nd</sup> set 79.97 chus.; the mean of which is 80.00 S 1.84 ft. from the secant. top of hill - Set a malpais stone 17 x 10 x 6 ins., 13 ins. in the ground, for the standard sec. cor. of axis 34 and 33, marked S C on N with 3 grooves on W and 3 grooves on E face. No bearing trees available. Pits impracticable. Raised a mon. of stone, 2 ft. base 1 1/2 ft. high N. of cor. Land mountainous. Soil, rocky, 4 <sup>th</sup> rate. Timber pine and juniper and cedar. Undergrowth, oak. Mountainous land and land covered with dense undergrowth. 80 chus.
30.00	Start on the secant through Sec. 33. over rolling land, broken and stony, scattering brush descend gradually The difference between measurements of 40 chus. by two sets of chainmen is 9 lbs.; position of middle point is, By 1 <sup>st</sup> set, 40.05 chus. By 2 <sup>nd</sup> set, 39.98 chus. the mean of which is, 40.00 S 1.73 ft. from the secant. Point falls on a malpais stone in place 24" x 18" x 9 ins. above the ground. Cut a cross (+) at the exact point, for standard

## Fourth Standard Parallel North, through Range 7 West.

chains  
 ✓  $\frac{1}{4}$  sec. cor. and marked S. C  $\frac{1}{4}$ , N of the cross.  
 a juniper, 24" diam. bears  $N 28^{\circ} 15' W$ , 1.03 chus. dist. marked  
 S C  $\frac{1}{4}$  S 33 B T.  
 a juniper, 20" diam. bears  $N 57^{\circ} 8' E$ , 2.97 chus. dist. marked  
 S C  $\frac{1}{4}$  S 33 B T.  
 41.00 Malpais edge - descend abruptly,  
 45.00 bottom  
 46.00 center of gulch, 50 lks. wide, course S 400' then SE,  
 bears N, then NW.  
 ascend steep rocky slope  
 49.00 top and over rolling ground  
 71.50 descend abruptly  
 75.00 cross gulch, 20 lks. wide, course SE then N.W. Gulch is  
 wooded with pine trees and scrub oak to the N.  
 ascend  
 78.00 top  
 The difference between measurements of 80 chus. by two sets  
 of chainmen is 10 lks.; position of middle point is  
 By 1<sup>st</sup> set - 86.65 chus.  
 By 2<sup>nd</sup> set - 79.95 chus. The mean of which is  
 80.00 S 1.34 ft. from the secant.  
 Set a malpais stone, 18 x 8 x 4 ins.,  $\frac{12}{12}$  ins. in the ground  
 for standard sec. cor. of sec's 33 and 32, marked  
 S C on N, with 2 grooves on W and 4 grooves on  
 E face and raised a mon. of stone 2 ft. base  $\frac{1}{2}$  high N of cor.  
 a juniper, 36" diam. bears  $N 47^{\circ} 41' W$ , 2.10 chus. dist.  
 marked S C T 17 N R 7 W S 32 B T.  
 a juniper, 36" diam. bears  $N 17^{\circ} 56' E$ , 1.53 chus. dist.  
 marked S C T 17 N R 7 W S 33 B T.  
 Land mountainous.  
 Soil, rocky, 4<sup>th</sup> rate.  
 Timber juniper and pine.  
 Mountainous land, 80 chus. August, 17<sup>th</sup>, 1905.

At the point just determined, on the secant, I observe  
 Polaris at  $9^{\text{h}} 42^{\text{m}}$  p. m. by my watch which is  $\frac{1}{2}$  m.  
 fast of local mean time (and mark) the direction  
 thus determined by a cross on a rock, firmly set,  
 5 chains N of my station.

August 19<sup>th</sup> 1905.

at 8 a. m. I lay off the azimuth of Polaris  $1^{\circ} 27.5'$   
 to the W, and mark the True Meridian thus determined  
 by a cross on a rock, firmly set, to the west of the  
 point marked last night.

I measure the angle between the true meridian and  
 a signal erected on the secant, east of my station,  
 and find the mean of 3 readings to be almost  
 $90^{\circ}$ , the difference between the mean and  $90^{\circ}$  being

Fourth Standard Parallel North, through Range 7 West.

chains

A juniper, 20" diam bears  $N 89^{\circ} 4' W$ , 2.29 chus. dist. marked S.C.T. 17 N R 8 W S 36 B +

A juniper, 17" diam bears  $N 21^{\circ} 33' W$ , 25.2 chus. dist. marked S.C.T. 17 N R 18 W S 36 B +

A juniper, 14" diam bears  $N 15^{\circ} 5' E$ , 44.08 chus. dist. marked S.C.T. 17 N R 17 W S 31 B +

Land mountainous. Soil, stony, of the nature met in this tract of country. Timber, juniper, trees being small. Undergrowth - oak.

Mountainside land, 80 chus. line to be run August, 19<sup>th</sup>, 1905. I set up the instrument at the last described ~~the~~ land and set off ~~the~~ on the decl. arc and ~~34~~ 49' from the lat. arc and at 4<sup>th</sup> p.m. by my watch which is nearly correct local mean time, I determine the sun and mark the meridian thus determined by a scratch on a rock in place, firmly set, 5 chus. N. of my station. From the same station, at ~~4~~ 49' p.m., by my watch which is nearly correct local mean time I observe Polaris at eastern elongation, in accordance with instructions in the Manual, and mark the line thus determined by a cut on a rock, firmly set, 5 chus. N. of my station. August, 19<sup>th</sup>, 1905.

August, 21<sup>st</sup>, 1905. At 8 a.m. I lay off the azimuth of Polaris  $1^{\circ} 27.5'$  to the west of the point determined last night, and mark the true meridian thus determined by cutting a small groove in the stone marked yesterday, on which the true meridian falls 0.25 in. west of the mark determined by the solar. With the instrument set on the secant, 2.37 ft. S of the Tp. cor. just occupied and in the same true meridian, I measure the angle between the meridian and a point on the Secant S of sec. 31 to the E of my station, and the mean of 3 observations give an angle of  $89^{\circ} 58'$  which is 2' less than the correct angle. This difference is less than the probable error of observation and I deem the standard parallel satisfactorily established. August, 21<sup>st</sup>, 1905.

General Description

Through Range 6 West this line runs across a rolling and rough granite mountainous country ascending rapidly in the 1<sup>st</sup> and

BOOK 1905

## Fourth Standard Parallel North, through Ranges 6 and 7 West.

chains

4<sup>th</sup> miles and traversing throughout the last 4½ miles a belt of heavy pine timber, averaging from 20" to 36" in diam. and extending from ½ to 2 miles N and S of the line. This area is well watered by numerous permanent springs about the middle of the pine belt and is used by stockmen for grazing cattle. The springs are well protected and curbed with heavy timbers. The growth of grass is not as good as on the open *malpais* lands further west. No timber has been cut in this tract of land except a few trees locally used.

Through Range 7 West the line traverses an extremely broken granite country in the first two miles and a broken *malpais* country in the last four miles, with cut hill gulches and canyons.

This is an excellent stock grazing country and supports many cattle.

Permanent water is confined to a N and S belt about 1½ miles W of T<sub>p.</sub> cor. 17N R66+7W.

Tank water, from rains is nearly always to be had in Pine creek N of the line and in Stubb Tanks some miles S of the line.

Timber is concentrated in the gulches.

The permanent water area just mentioned is however heavily timbered with large pines. No mineral bearing rocks were observed in this region.

Arthur B. Mader  
U.S. Deputy Surveyor.



Fourth Standard Parallel North through Range 7 West.

Chains	too small to read.
	This angle agreeing closely with other data, I proceed
	$339^{\circ} 59.4' W$ , on the section, through sec. 32
	ascend, over malpais boulders
26.00	top of hill
	over rolling mountain top, through cedar brush
33.00	commenced to descend
34.00	edge of malpais, bears S E and W W.
	descend abruptly, through heavy underbrush
37.00	bottom - small course S bears N $300'$ to head
	ascend
	The difference between measurements of 40 chus. by two
	sets of chainmen is 4 lks.; position of middle point is,
	By 1 <sup>st</sup> set 40.02 chus.
	By 2 <sup>nd</sup> set 39.98 chus; the mean of which is,
40.00	$\pm 0.81$ ft. from the secant.
	Point falls on a malpais stone in place, $2\frac{1}{2} \times 2 \times 1$
	ft. above the ground, firmly set marked a
	cross (+) for the exact $\frac{1}{4}$ sec. cor. point and S C
	$\frac{1}{4}$ to the N of the cross and raised a mon. of
	stone 2 ft. base $1\frac{1}{2}$ ft. high N of cor.
	A juniper, 24" diam. bears N $46^{\circ} 5' W$ , 2.24 chus. dist.
	marked S C $\frac{1}{4}$ S 32 B T.
	over rolling land
45.00	descend
49.00	malpais edge, descend steep rocky slope
60.50	cross gulch, 30 lks. wide, course N bears $810^{\circ} W 50'$ then S E.
	ascend gradually then growing more steep
76.00	through dense oak brush
79.00	top of steep slope, and leaves <sup>dense</sup> brush
	The difference between measurements of 80 chus. by two sets
	of chainmen is 12 lks.; position of middle point is
	By 1 <sup>st</sup> set 80.06 chus.
	By 2 <sup>nd</sup> set 79.94 chus. the mean of which is
80.00	Set a malpais stone $20 \times 12 \times 10$ ins., 15 ins. in the ground
	for standard sec. cor. of secs 32 and 31, marked
	S C on N, with 1 groove on W and 5 grooves on E face
	and raised a mon. of stone 2 ft. base by 3 ft. high
	N. of cor.
	No trees available. Pits impracticable.
	Land mountainous.
	Soil, rocky, 4 <sup>th</sup> rate;
	Timber juniper and pine.
	Undergrowth - oak.
	Mountainous land and land covered with dense
	undergrowth - 80 chains.

# Fourth Standard Parallel North, through Range 7 West.

chains

At the cor. just established, I set off  $12^{\circ}49\frac{1}{2}'$  on the ~~dist.~~ arc and at  $12^{\text{h.}} 00^{\text{m.}}$  by my watch which is nearly correct for local mean time I observe the sun on the meridian and obtain on the lat. arc the reading  $34^{\circ}-48\frac{1}{2}'$  which is about  $30''$  less than the proper lat.

14.00

23.00

S  $89^{\circ}-58.8'$  W on the skant through sec. 31 ascend rocky slope, scattering junipers. top and descend gradually over malpais boulders bottom, flat draw, course S  $110^{\circ}$  & bro. N ascend

The difference between measurements of 40 chus. by two sets of chainmen is 4 lks. position of middle point is

By 1<sup>st</sup> set 40.62 chus.

40.00

By 2<sup>nd</sup> set 39.98 chus. the mean of which is N 4.04 ft. from the secant.

Set a malpais stone,  $22 \times 6 \times 4$  ins., 17 ins. in the ground for a standard  $\frac{1}{4}$  sec. cor. marked S C  $\frac{1}{4}$  on N face a juniper, dead but sound, 16" diam. bears N  $24^{\circ}-14'$  W

4.39 chains, marked S C  $\frac{1}{4}$  S 31 B.T. and raised a mon. of stone 2 ft. base  $1\frac{1}{2}$  ft. high N of cor. descend gradually over very rough boulder strewn ground

The difference between measurements of 65.75 chus. by two sets of chainmen is 4 lks. position of middle point is

By 1<sup>st</sup> set 65.76 chus.

65.75

By 2<sup>nd</sup> set 65.74 chus. the mean of which is No. 92 ft. from the secant.

Set a malpais stone,  $20 \times 10 \times 8$  ins., 15 ins. in the ground for the Closing Corner of Tp. 16 N, Rgs 7 and 8 W according to instructions from the Surveyor General, marked C C on S, with 6 grooves on S, E and W faces, and raised a mon. of stone, 2 ft. base by  $2\frac{1}{2}$  ft. high S of cor.

No bearings available. Pits impracticable.

The difference between measurements of 80 chus. by two sets of chainmen is 2 lks.; position of middle point is

By 1<sup>st</sup> set 80.01 chus.

80.00

By 2<sup>nd</sup> set 79.99 chus. the mean of which is N 2.31 ft. from the secant.

Point falls on a malpais rock in place, part of a ledge of rock  $8' \times 6' \times 14$  ins. above the ground, cut a cross (+) at the exact point, for standard corner of Tp. 17 N, Rgs 7 and 8 W, and marked S C to N, with 6 grooves N, E and W of cross and raised a mon. of stone, 2 ft. base by  $2\frac{1}{2}$  ft. high N. of cor.

100 19  
FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES. BOOK 1905

A list of the names of the individuals employed by Arthur B. Mader

....., United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Fourth Standard Parallel North through R<sup>o</sup>s 6 and 7 W, G. & S. R. M. showing the respective capacities in which they acted:

Shirley Wetmore and H. W. Walker ..... Chainman.

Walter Atkeson and C. P. Boland ..... Chainman.

H. A. Atkeson ..... Moundman.

H. A. Atkeson ..... Moundman.

..... Axman.

..... Axman.

..... Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Arthur B. Mader

....., United States Deputy Surveyor, in surveying all those parts or portions of the Fourth Standard Parallel North, through Ranges N<sup>o</sup> 6 and 7 West,

..... of the Gila and Salt River 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.

Shirley Wetmore and H. W. Walker ..... Chainman.

Walter Atkeson and C. P. Boland ..... Chainman.

H. A. Atkeson ..... Moundman.

..... Moundman.

H. A. Atkeson ..... Axman.

..... Axman.

..... Flagman.

Subscribed and sworn to before me this 21<sup>st</sup> day of August, 1905.



Arthur B. Mader  
U. S. Dep. Surveyor  
Notary Public

my commission expires June 30, 1909.

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

BOOK 1905

I, Arthur B. Mader, 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 26<sup>th</sup> day of May 1905, ~~189~~, 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 The Fourth Standard Parallel North, through Ranges No 6 and 7 West, of the Gila and Salt River Meridian

~~of the~~ \_\_\_\_\_ meridian, in the Territory of Arizona, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for Arizona and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Arthur B. Mader  
United States Deputy Surveyor.

Subscribed by said Arthur B. Mader, and sworn to before me }  
this 27 day of January, 1896



Arthur W. James  
Receiver  
us found agree to s arpeles ten

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, A.T. Nov. 22<sup>nd</sup> 1906, 189

The foregoing field notes of the survey of the Fourth Standard Parallel North, thro Ranges 6 and 7 West of the Gila and Salt River Base and Meridian, Territory of Arizona

executed by A. B. Mader U. S. deputy surveyor under his contract No. 132, dated May 26, 1905, 1896, 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.