4—679.

Accepted, Dept. letter E.
Nov. 5—1909.

Book B.

MAR 1 - 1909

89
(1)

2122

BOOK 2122

FIELD NOTES

OF THE SURVEY OF THE

2122 2122

Third Guide Meridian West
through Tps. 5 and 6 N. and the
Fourth Guide Meridian West
through Tps. 5, 6, and 7 N.

2122

Of the Gila and Salt River Meridian,
Territory of Arizona

AS SURVEYED BY

John F. Hesse, United States Deputy Surveyor,

Under his Contract No. 150, dated October 10, 1908

Survey commenced December 17th, 1908

Survey completed January 8th, 1909

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2122

2122 2122

85
(1A)

BOOK 2122

NAMES AND DUTIES OF ASSISTANTS.

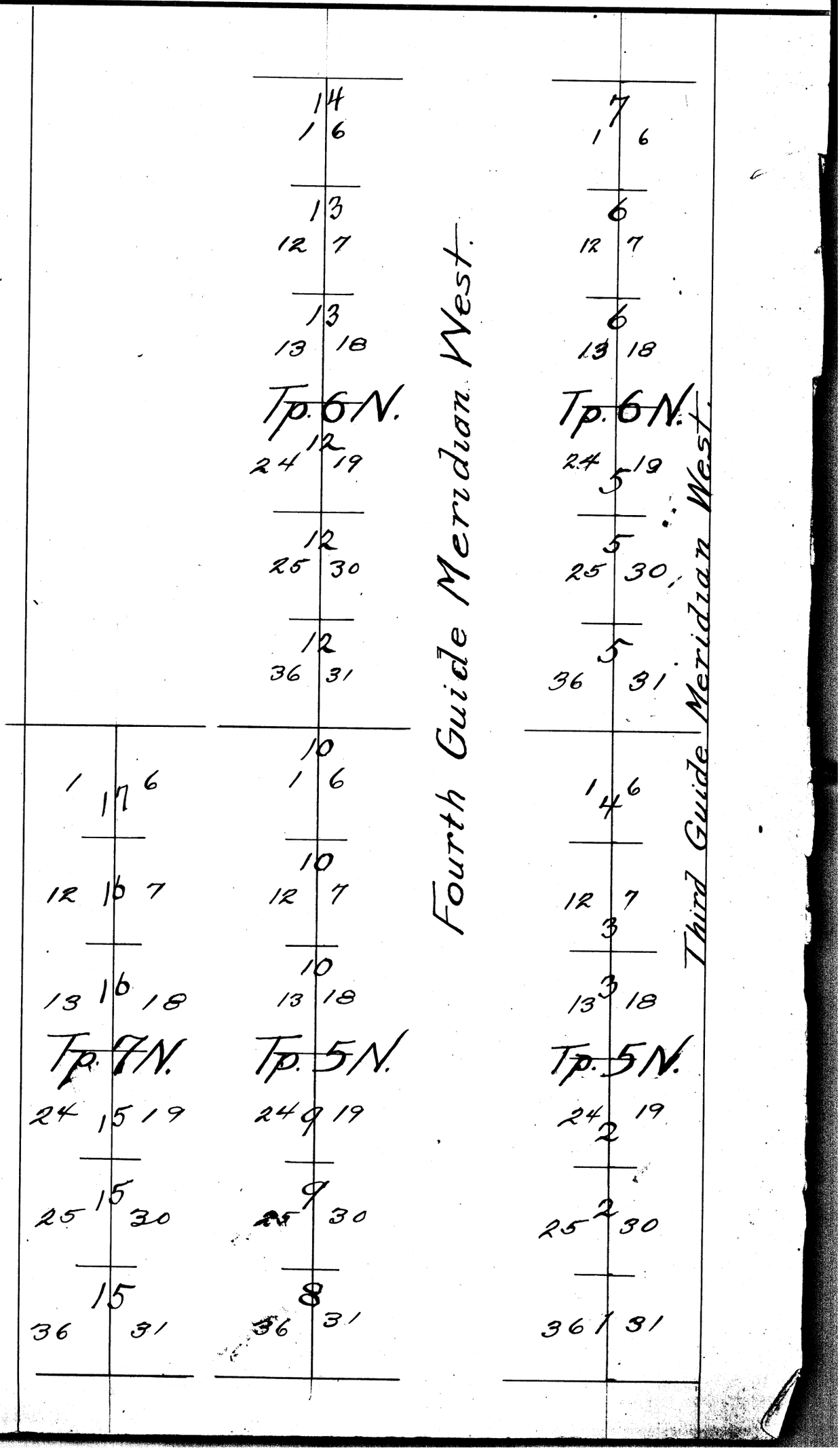
Harry S. Digalls	Chainman
Wilfred B. Helm	Chainman
Norman Oliver	Chainman
Fred W. Rodolf	Chainman
A. R. Saunders	Flagman

6—151

INDEX DIAGRAM

BOOK 2122 86

Third & Fourth Guide Meridians West. (13)



INDEX DIAGRAM.

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Meanders Page.....

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(1C)
BOOK 2122

PRELIMINARY OATHS OF ASSISTANTS.

WE, Harry S. Ingalls, Wilfred B. Helm, Norman Oliver and Fred W. Rodolf, and 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 Third Guide Meridian West and 4th Guide Meridian West through Tps. 5, 6 & 7 N.

Harry S Ingalls, Chainman.

Wilfred B. Helm, Chainman.

Norman Oliver "

Fred W. Rodolf "

Subscribed and sworn to before me this 5th day of December, 1908

My commission expires March 29, 1910

SEAL

M. E. Leverich
Notary Public

WE, _____ 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 _____

_____, Moundman.

_____, Moundman.

Subscribed and sworn to before me this _____ day of _____, 190

SEAL

_____

_____

WE, _____ 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 _____

_____, Axman.

_____, Axman.

Subscribed and sworn to before me this _____ day of _____, 190

SEAL

_____

I, A. R. Saunders, 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 the 3rd and 4th Guide Meridian W. through Tps. 5, 6 and 7 N.

A. R. Saunders, Flagman.

Subscribed and sworn to before me this 17th day of December, 1908

SEAL

John F. Hesse
U.S. Dep. Surveyor

6—151

No notary available without great expense and loss of time.

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(1D)

Third Guide Meridian West through Township 5 North.

chains

Survey commenced December 17th,1908,and excuted with a Young and Sons light mountain transit,No. 7532 with a solar attachment. The horizontal limb is provided with two double verniers placed opposite to each other,reading to single minutes of arc, which is also the lest count of the verniers of the latitude and declination arcs.

The instrument was examined,tested on the true meridian at Phoenix,found sorrect,and approved by the Surveyor General for Arizona.

I examine the adjustments of the transit and find them correct; then,to test the solar apparatus ,by comparing indications,resulting from solar observations made during a.m.,and p.m., hours,with a meridian determined by observations on Polaris, I proceed as follows;-

At the standard cor.of Tps.5 N.,Rs.12 and 13 W., latitude 33°43'30"N.,longtitude 113°33'24"W. I set off 33°43'30"N.,on the lat.arc; 23°19'S.,on the decl.arc; and at 4 p.m.,l.m.t.,determine a meridian with the solar and mark a point thereof,on a stone firmly set in the ground,5chs,N.of the cor.

December 17th,1908.

December 18th; At 1 h. 37 1/2 m.,,a.m. by my watch,which has correct l.m.t., I observe Polaris at Western elongation,in accordance with the Manual of Instructions, and mark a point in the line thus determine,on a peg driven in the ground, 5 chs.N.of my station.

At 7 a.m.,l.m.t., I lay off the azimuth of Polaris 1°25'30" to the East,and makk the meridian thus determined,by cutting a small groove in the stone set Dec.17 on which the meridian coincides with the one determined by the solar.

At 8 a.m.,l.m.t., I set off 33°43'30"N.on the lat. arc; 23°20'S. on the decl.arc; and mark a point in the meridian thus determined with the solar, by a cross on the stone already set 5 chs.N.of my station; this mark coincides with the meridian established by the Polaris observation.

The solar apparatus,by a.m. and p.m.,observations defines position for meridians identical with the meridian established by the Polaris observations; therefore,I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian,at 8 h. 30 m.,a.m.,is N 14 54'W.; the angle thus determined gives the mag.decl. as 14° 54' E.

I begin at the Standard Corner of Township 5 North Ranges 12 and 13 West,which I established December 16th, 1908.

From standard cor. I run
North between secs.31 and 36.
Over level land through dense brush.

15.10 Wash,30 lks.wide,course N.E.
24.50 Wash,30 lks.wide,course N.W.
29.30 Ascend.
36.20 Top of ridge,bears N.W.and S.E.; descend.

Difference between measurements of 40.00 chs.by two 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 a quartzite stone,18X10X6 ins.,12 ins.in the ground, for 1/4 sec.cor.,marked 1/4 on W.face; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor.Pits impracticable.

chains	
41.10	Foot of descent,bears N.W. and S.E.; over level land.
42.05	Road,bears E.and W.
48.10	Wash,50 lks.wide,course N.E.
59.15	Wash.15lks,wide,course N.E.
61.15	Road,bears N.E.and S.W.
69.90	Wash,25 lks.wide,course N.E.
77.00	Wask,15 lks.wide,course N.E.
79.75	Wash,20 lks.wide,course E.
	Difference between measurements of 80.00 chs.by two 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 a granite stone,14X10X5ins.,9ins.in the ground,for cor.of secs 31,36,30 and 25,marked with 1 notches on the S.,and5 notches on the N.edge; dig pits,18X18X12ins., in each sec.,6,1/2 ft.dist; and raise a mound of earth 4ft.base,2ft.high,W.of cor.
	Land,level.
	Soil,sandy and gravelly; 3rd and 4th rate.
	Timber,scattering mesquite and paloverde.
	Underbrush,greasewood,sage and cactus.
	Land covered with dense underbrush,80.00 chs.

North between secs.25 and 30.
Over level land through dense underbrush.

22.10	Wash,69 lks.wide,course N.E.
28.60	Road,bears N.W.ad S.E.
35.15	Enter Centenial Wash,course S.E.
40.00	Point for ¼ sec.cor.falls in wash.course SW.
45.20	Leave wash.
	Difference between measurements of 46.00 chs.by two sets of chainmen is 6 lks.; position of middle point
	By 1st set,46.03 chs.
	By 2nd set,45.97 chs.; the mean of which is
46.00	Set a granite stone,16X12X6ins.,10ins.in the ground,for witness cor.to ¼ sec.cor.,marked WC ¼ on W.face; dig pits,18X18X12ins.N.,and S.of stone,3ft.dist.; and ra se a mound of earth,3,1/2 ft.base,1,1/2 ft.high,W.of cor.
53.30	Road,bears N.W.and S.E.
60.45	Wash,40 lks.wide,course S.W.
78.70	Wash,25 lks.wide,course S.W.
	Difference between measurements of 80.00 chs.by two 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 a limestone,18X10X7ins.,12ins.in the ground,for cor.of secs.19,24,25 and 30,marked with 2 notches on S.and 4 notches on the N.edge; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor.Pits impraticable
	Landlevel and gently rolling.
	Soil,sandy and gravelly; 3rd and 4th rate.
	Timber,scattering mesquite.
	Underbrush,greasewood,mesquite and cacti.
	Land covered with dense underbrush,80.00 chs.

North between secs.19 and 24.
Over gently rolling land through dense brush.

7.25	Wash,35 lks.wide,course S.W.
18.10	Wash,30 lks.wide,course S.W.
22.50	mine bears E. about 4.00chs.
25.00	Begin gradual ascent.
39.80	Wash,30 lks.wide,course S.W.
	Difference between measurements of 40.00 chs.by two 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

Third Guide Meridian West through Township 5 North.

chains	
40.00	Set a malpais stone,21X8X6ins.,16ins.in the ground,for ¼ sec.cor.,marked ¼ on W.face; and raise a mound of st stone,2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.
43.70	Ascend steep rocky slope.
57.20	Top of ridge,bears N.W.and S.E.
60.14	Pipe line,bears N.E.and S.W.
61.30	Descend steep slope.
62.20	Water tank bears E. 140 lks.dist.
68.80	Mine bears E. 10.00 chs.
77.40	Foot of steep slope; over gently rolling land. Difference between measurements of 80.00 chs.by two 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 a porphyry stone,21X10X10ins.,16ins.in the ground, for cor.of secs.13,18,19and 24,marked with 3 notches on S.and 3 notches on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft.high,W.of cor.Pits impraticable. Land,mountainous and gently rolling. Soil,gravelly,stony and rocky; 4th rate. Timber,scattering pal overde. Underbrush,greasewood and cactus. Land mountainous and covered with dense underbrush, 80.00 chs.

North between secs.13 and 18.
Over gently rolling land through dense brush.

4.35	Wash,30 lks.wide,course N.W.
6.75	Road,bears N.W. and S.E.
17.50	Mining camp bears E. 20.00 chs.
28.40	Wash,20,lks.wide,course N.W.
35.50	Road,bears N,W. and S.E.
37.15	Wash,30 lks.wide,course N.W. Difference between measurements of 40.00 chs.by two 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 a malpais stone,24X8X8ins.,18ins.in the ground,for ¼ sec.cor.,marked ¼ on W.face; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.
57.00	Wash,20 lks.wide,course N.W.; over level land.
78.10	Wash,40 lks.wide,course N.W. Difference between measurements of 80.00 chs.by two sets of chainmen is 10 lks.; position of middle point By 1st set,80.05 chs. By 2nd set,79.95 chs.; the mean of which is
80.00	Set a malpais stone,24X8X8ins.,18ins.in the ground,for cor.of secs.7,12,13 and 18, marked with 4 notches on S.and 2 notches on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable. Land,gently rolling and level. Soil,sandy,gravelly and stony; 3rd and 4th rate. Timber,scattering mesquite. Underbrush,greasewood,mesquite and cactus. Land covered with dense underbrush,80.00 chs.

North between secs.7 and 12.
Over level land through dense brush.

7.60	Wash,60 lks.wide,course W.
25.85	Old road,bears E.and W. Difference between measurements of 40.00 chs.by two 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

Third Guide Meridian West through Township 5 North.

chains.	
40.00	~~Set a mesquite post,3ft.long,3ins.sq.,with marked stone 24ins.in the ground,for 1/4 sec.cor. 1/4 S 12 on W.face and 7 on E.face; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.~~ SET A GRANITE STONE 18×6×5 INS. 12 INS. IN THE GROUND FOR 1/4 SEC. COR. MK 0/4 ON W. FACE; DIG PITS 18×18×12 INS. N & S. OF STONE, 3 FT. DIST. & RAISE A MOUND OF EARTH 3 1/2 BASE, 1 1/2 FT. HIGH W. OF COR.
47.10	Wash,20 lks.wide,course W.
65.00	Road,bears E.and W.
71.30	Wash,15 lks.wide,course W.N.W.
	Difference between measurements of 80.00 chs.by two 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	Setporphyry stone,18X6X6ins.,12ins.in the ground,for cor. of secs.1,6,7,and 12,marked with 5 notches on S.and 1 n notch on N.edge; and raise a mound of stone,2ft.base, 1,1/2 ft.high,W.of cor. Pits impraticable.
	Land,level.
	Soil,sandy and gravelly; 3rd and 4th rate.
	Timber,a few mesquite.
	Underbrush,greasewood.
	Land covered with dense underbrush,80.00 chs.

North between secs.1 and 6 .
Over level land through dense brush.

2.65	Wash,20 lks.wide,course N.W.
7.50	Wash,40 lks.wide,course W.
8.20	Enter wash,course S.W.
12.70	Leave wash.
22.00	House bears E.,30.00 chs.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,18X8X5ins.,12ins.in the ground, for 1/4 sec.cor. marked 1/4 on W.face; dig pits 18X18X12ins N.and S.of stone,3ft.dist.; and raise a mound of earth, 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
	Difference between measurements of 80.00 chs.by two 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 a granite stone,18X12X10ins.,12ins.in the ground, for cor.of Tps.5 and 6 N.,Rs.12 and 13 W.,marked
	6 N on N.E.,
	12 W on SE.
	5 N on SW.,and
	13 W on NW.,face; with 6 notches on each edge; dig pits,24X24X12ins.,on each line,N.,E.,and W.,4ft., and S.of stone,8ft.dist; and raise a mound of earth, 5 ft.base,2,1/2 ft.high,S.of cor.
	At this cor.I set off 23°23'S.on the decl.arc, and observe the sun on the meridian at noon; the result- ing lat.is 33°48'30"N., which agrees with other data.
	Land,level.
	Soil,sandy and gravelly; 3rd rate
	No timber.
	Underbrush,greasewood.
	Land covered with dense underbrush,80.00 chs.

Tp.5 N.,R.13 W.,is nearly all level land covered with dense underbrush.
Tp.5 N.,R 12 W.is extremly rough and mountainous.
In surveying this Meridian I destroy all cor s. established by Deputy under Contract No 146.

chains	
	North between secs.31 and 36.
	Over level land through dense brush.
7.20	Road,bears NE.and SW.
7.71	Railroad,bears NE.and SW.
8.73	Telegraph line,bears NE.and SW.
13.25	Railroad ditch,bears NE.; 30 lks.wide.
19.60	Wash,10 lks.wide,course E.
28.15	Wash,10 lks.wide,course E.
35.80	Wash,15 lks.wide,course E.
37.05	Wash,15 lks.wide,course E.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,21X6X6ins., 16 ins.,in theground for $\frac{1}{4}$ sec.cor. marked $\frac{1}{4}$ on W.face; dig pits,18X18X12ins N.,and S.of stone,3ft.dist.; and raise a mound of earth 3,1/2 ft.base,1,1/2 ft high,W.of cor.
51.10	Wash,15 lks.wide,course E.
76.05	Road,bears SW. and NE.
77.85	Road,bears E.and W.
	Difference betweenmeasurements of 80.00 chs.by two sets of chainmen is 6 lks.; position of middlepoint
	By 1st set,80.03 chs.
	By 2nd set,79.97 chs.; themean of which is
80.00	Set a quartzite stone,22X8X5ins.,16ins.in the ground, for cor.of secs.25,30,31 and 36,marked with 1 notch on S.and 5 notches on N.edge; dig pits 18X18X12ins.,in each sec.5,1/2 ft.dist.; and raise a mound of earth, 4ft,base,2ft.high,W.of cor.
	Land,level.
	Soil,snady and gravelly; 3rd rate.
	Timber,scattering mesquite.
	Underbrush,greasewood,mesquite and cactus.
	Land covered with dense underbrush,80.00 chs.

	North between secs.25 and 30.
	Over level land through dense brush.
10.15	Wash,15 lks.wide,course SE.
28.10	Wash,15 lks.wide,course SE.
39.05	Wash,10 lks.wide,course E.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,21X10X5ins.,16ins.in the ground, for $\frac{1}{4}$ sec.cor.,marked $\frac{1}{4}$ on W.face; dig pits,18X18X12ins. N.and S.of stone,3ft.dist.; and raise a mound of earth, 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
50.30	Road,bears NW.and SE.
69.00	Wash,10 lks.wide,course E.
	Difference between measurements of 80.00 chs.by two 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 a quartzite stone,21X8X6ins.,16ins.in the ground, for cor.of secs.19,24,25 and 30, marked with 2 notches on S.,and 4 notches on N.edge; dig pits,18X18X12ins., in each sec.5,1/2 ft.dist.; and raise a mound of earth, 4ft.base,2ft.high,W.of cor.
	Land,level.
	Soil,sandy and gravelly; 3rd rate.
	No timber.
	Underbrush,greasewood,mesquite and cactus.
	Land,covered with dense underbrush,80.00 chs.

	North between secs.19 and 24.
	Over level land through dense brush.
5.05	Wash,10 lks.wide,course SE.

Third Guide Meridian West through Township 6 North.

chains	
12.20	Wash,10 lks.wide,course SE.
39.55	Wash,10 lks.wide,course SE.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,21X8X5ins.,16ins.in the ground, for ¼ sec.cor.,marked ¼ on W.face; dig pits,18X18X12ins N.and S.of stone,3ft.dist.; and raise a mound of earth 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
51.20	Wash,10 lks.wide,course E.
63.30	Wash,15 lks.wide,course E.
72.15	Wash,10 lks.wide,course SE.
77.55	Wash,20 lks.wide,course SE.
	Difference between measurements of 80.00 chs.by two sets of chainmen is 8 lks.; position of middle point
	By 1st set,80.04 chs.
	By 2ns set,79.96 chs.; the mean of which is
80.00	Set a quartzite stone,21X8X6ins.,16ins.in the ground, for cor.of secs.13,18,19 and 24, marked with 3 notches on S.and 3 notches on N.edge; dig pits,18X18X12ins., in each sec.5,1/2 ft.dist; and raise a mound of earth, 4ft.base,2ft.high,W.of cor.
	Land,level.
	Soil,sandy and gravelly; 3rd rate.
	Timber,scattering mesquite.
	Underbrush,greasewood,mesquite and cactus.
	Land,covered with dense underbrush,80.00 chs.

North between secs.13 and 18.
Over level land through dense brush.

11.60	Wash,15 lks.wide,course SE.
14.60	Wash,15 lks.wide,course SSE.
	Difference between measurements of 40.00 chs.by two sets of chainman 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 a quartzite stone,21X8X5ins.,16ins.in the ground, for ¼ sec.cor.,marked ¼ on W.face; dig pits,18X18X12 ins.,N.,and S.of stone,3ft.dist.; and raise a mound of earth,3,1/2 ft.base,1,1/2 ft.high,W.of cor.
50.80	Road,bears NW.and SE.
56.15	Wash,10 lks.wide,course SE.
60.25	Wash,10 lks.wide,course SE.
75.50	Wash,10 lks.wide,cours SSE.
78.80	Wash,10 lks.wide,course SSE.
	Difference between measurements of 80.00 chs.by two 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 a quartzite stone,21X12X5ins.,16ins.in the ground, for cor.of secs.7,12,13 and 18,marked with 4 notches on S.,and 2 notches on N.edge; dig pits,18X18X12ins.,in each sec.5,1/2 ft.dist; and raise a mound of earth, 4ft.base,2ft.high,W.of cor.
	Land,level.
	Soil,sandy and gravelly; 3rd rate.
	Timber,scattering mesquite.
	Underbrush,greasewood,mesquite and cactus.
	Land covered with dense underbrush,80.00 chs.

North between secs.7 and 12.
Over level land through dense brush.

18.30	Wash,10 lks.wide,course SE.
30.10	Wash,10 lks.wide,course,SE.
	Difference between measurements of 40.00 chs.by two 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	

Third Guide Meridian West through Township 6 North.

chains	
40.00	Set a quartzite stone,21X6X6ins.,16ins.in the ground, for ¼ sec.cor.,marked ¼ on W.face; dig pits,18X18X12ins. N.,and S.of stone,3ft.dist.; and raise a mound of earth 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
40.70	Wash,10 lks.wide,course SE.
49.20	Wash,10 lks.wide,course SE.
57.40	Wash,15 lks.wide,course SE.
78.80	Wash,10 lks.wide,course SE.
	Difference between measurements of 80.00 chs.by two 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 a quartzite stone,21X8X6ins.,16ins.in the ground, for cor.of sec.1,6,7 and 12,marked with 5 notches on S.,and 1 notch on N.edge; dig pits,18X18X12ins.,in each sec.5,1/2 ft.dist.; and raise a mound of earth,4ft.base 2ft.high,W.of cor.
	Land,level,and gently rolling.
	Soil,sandy and gravelly; 3rd rate.
	Timber,scattering mesquite.
	Underbrush,mesquite,paloverde and greasewood.
	Land covered with dense underbrush,80.00 chs.

North between secs.1 and 6.
Over gently rolling land through dense brush.

12.35	Wash,15 lks.wide,course SE.
19.55	Wash,15 lks.wide,course SE.
26.90	Wash,10 lks.wide,course SE.
30.05	Wash,10 lks.wide,course SE.
36.15	Wash,10 lks.wide,course SE.
	Differene between measurements of 40.00 chs.by two 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 a quartzite stone,21X6X6ins.,16ins.in the ground, for ¼ sec.cor.marked ¼ on W.face; dig pits,18X18X12ins., N.,and S.of stone,3ft.dist.; and raise a moundof earth 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
59.55	Wash,10 lks.wide,course SE.
79.55	Wash,15 lks.wide,course SE.
	Difference between measurements of 80.00 chs.by two 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 a quartzite stone,14X10X6ins, 9 ins.in the ground, for cor.of Tps.6 and 7 N.,Rs.12 and 13 W.,marked
	7 N on NE.,
	12 W on SE.,
	6 N on SW.,and
	13 W on NW.face; with 6 notches on on each edge; dig pits,24X24X12ins.,on each line,N.,E.,and W., 4ft. and S.of stone,8ft.dist; and raise a mound of earth, 5 ft.base,2,1/2 ft.high,S.of cor.
	Land,level and rolling.
	Soil,sandy and gravelly; 3rd rate.
	Timber,scatterind mesquite.
	Underbrush,greasewood,mesquite and cactus.
	Land covered with dense underbrush,80.00 chs.

December 18th,1908.

Tp. 6 N.,R 13 W.,is level in the eastern and southern parts and mountainous in the northern part. The level porition of the Tp.is covered with underbrush.

Tp 6 N.,R 12 W.,is all level land covered with dense underbrush,

In Surveying this Meridian I destroy all cors.set by Deputy Santee under Contract No 146.

Fourth Guide Meridian West through Township 5 North.

chains.

Survey commenced January 6th,1909, and excuted with a Young and Sons light mountain transit, No.7532 with a solar attachment. The horzontal limb is provided with two double vreniers placed opposite to each other, reading to single minutes of arc, which is alse the least count of the verniers of the latitude and declination arcs.

The instrument was examined,tested on the true meridian at Phoenix,found correct,and approved by the Surveyor General of Arizona.

I examine the adjustments of the transit and find them correct; then to test the solar apparatus,by comparing indications,resulting from solar observations made during a,m.,and p.m.,hours,with a meridian determined by observations on Polaris.I proceed as follows:-

At the standard cor of Tps 5 N.,Rs.16 and 17 W., latitude 33°43'30"N.,longtitude 113°58'25"W I set off 33°43'30"N.on the lat.arc; 22°25'S.on the decl.arc;and at 4 p.m.,l.m.t.,determine a meridian with the solar and mark a point thereof,on a stone firmly set in the ground, 5 chs. N.of cor.

January 6th,1909.

January 7th; At 12 h. ~~00~~ 18½ m.,a.m.,by my watch,which has correct l.m.t., I observe Polaris at Western elongation,in accordance with the Manual of Instructions, and mark a ppint in the line thus determined,on e peg driven in the ground,5 chs.N.of my station.

At 7 a.m.,l.m.t.,I lay off the azimuth of Polaris, 1°25'30"to the East,and mark the meridian thus determined,by cutting a small groove in the stone set January 6th,on which the meridian coincides with the one determined with the solar.

At 8 a.m.,l.m.t., I set off 33°43'30"N.on the lat. arc; 22°20'S.on the decl.arc, and mark a point in the meridian thus determined with the solar,by a cross on the stone already set 5 chs.N.of my station; this mark coincides with the meridian established by the Polaris observation.

The solar apparatus,by a.m. and p.m.,observations defines positions for the meridian,identical with the meridian established by the Polaris observations; therefore,I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian,at 8 h.30 m.,a.m.,is N 14° 55'W; the angle thus determined gives the mag.decl.as 14°55'E.

I begin at the Standard Corner point of Ts.5 North Ranges 16 and 17 West,which was established by me, January 6th,1909.

From standard cor.point, I run

North between secs. 31 and 36.

Over nearly level land through dense brush.

.70 STANDARD W.C. OF TPS. 5 N. RS. 16 & 17 W.

40.00 Point for ¼ sec.cor.falls in wash.

Difference between measurements of 40.65 chs.by two sets of chainmen is 4 lks.; position of middle point

By 1st set,40.62 chs.

By 2nd set,~~39.98~~ chs.; the mean of which is

40.~~00~~ 65 Set a quartzite stone,22X12X12ins.,16ins.in the ground, for ~~witness cor.to~~ ¼ sec.cor.,marked ~~WC~~ ¼ on W.face; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.

56.90 Wash,40 lks.wide,course NE.

69.00 Wash,30 lks.wide,course NE.

Difference between measurements of 80.00 chs.by two 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

Fourth Guide Meridian West through Township 5 North.

chains	
80.00	Set a quartzite stone,21X10X8ins.,16ins.in the ground, for cor.of secs.25,30,31 and 36,marked with 1 notch on S.,and 5 notches on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable. Land,level. Soil,gravelly and rocky;3rd and 4th rate. Timber,scattering ironwood and paloverde. Underbrush,greasewood and mesquite. Land covered with dense underbrush,80.00 chs.

	North between secs.25 and 30. Over level land through dense brush.
5.10	Wash,20 lks.wide,course E!
14.40	Wash,15 lks.wide,course E. Difference between measurements of 40.00 chs.by two 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 a quartzite stone,21X12X10ins.,16ins.in the ground, for 1/4 sec.cor.,marked 1/4 on Wface; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor.Pits impraticable
68.30	Wash,15 lks.wide,course NE.
77.10	Wash,20 lks.wide,course E. Difference between measurements of 80.00 chs.by two sets of chainman 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 a quartzite stone,24X12X10ins.,18ins.in the ground, for cor.of secs.19,24,25 and 30,marked with 2 notches on S.,and 4 notches on N.edge; and raise a mound of st stone,2ft.base,1,1/2 ft.high,W.of cor.Pits impraticable. FROM COR. A PALOVERDE 7INS. DIA. BRS. S42°W. 106 LKS. DIST. MKD. T5N. R17W. S25 B.T. A PALOVERDE 7INS. DIA. BRS. N.15°W. 289 LKS. DIST. MKD. T5N. R17W. S 24 B.T. AN IRONWOOD 6INS. DIA. BRS. S26°E. 168 LKS. DIST. MKD. T.5N. R16W. S.30 B.T. Land,level. Soil,gravelly; 3rd rate. Timber,scattering paloverde and ironwood. Underbrush,ironwood,greasewood and cactus. Land covered with dense underbrush,80.00 chs.

	North between secs.19and 24 . Over nearly level land through dense brush.
3.15	Wash,15 lks.wide,course NE.
19.90	Wash,20 lks.wide,course NE.
34.30	Wash,15 lks.wide,course E. Difference between measurements of 40.00 chs.by two 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 a quartzite stone,21X8X6ins.,16ins.in the ground, for 1/4 sec.cor.,marked 1/4 on W.face; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable FROM COR.
55.40	Wash,15 lks.wide,course E. A PALOVERDE 7INS. DIA. BRS. N.52°W. 102 LKS. DIST. MKD. 1/4 S. 24 B.T.
78.30	Wash,15 lks.wide,course E. A PALOVERDE 4 INS. DIA. BRS. N.24°E. 133 LKS. DIST. MKD. 1/4 S. 19 B.T. Difference between measurements of 80.00 chs.by two 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 a quartzite stone,24X12X10ins.,18ins.in the ground, for cor.of secs.13,18,19 and 24,marked with 3 notches on S.,and 3 notches on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable. FROM COR. AN IRONWOOD 4 INS. DIAM. BRS. S82°E. 36 LKS. DIST. MKD. T5N. R16W. S 18 B.T. AN IRONWOOD 6 INS. DIAM. BRS. S44°W. 87 LKS. DIST. MKD. T5N. R17W. S. 24 B.T. Land,nearly level. Soil,gravelly and rocky; 3rd and 4th rate. Timber,scattering ironwwod,mesquite and paloverde. Underbrush,mesquite,greasewood,paloverde and cacti. Land covered with dense underbrush,80.00 chs.
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chains	
	North between secs.13 and 18.
	Over nearly level land through dense brush.
11.60	Wash,15 lks.wide,course E.
24.30	Wash,10 lks.wide,course NE.
30.40	Wash,10 lks.wide,course NE.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,24X12X12ins.,18ins.in the ground, for $\frac{1}{4}$ sec. marked $\frac{1}{4}$ on W.face; and raise a mound of stone 2ft.base,1,1/2 ft.high,W.of cor.
58.60	Wash,10 lks.wide,course E.
64.80	Wash,30 lks.wide,course E.
	Difference between measurements of 80.00 chs.by two 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 a quartzite stone,22X12X10ins.,16ins.in the ground, for cor.of secs.7,12,13 and 18, marked with 4 notches on S.,and 2 notches on N.edge; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor.Pits impraticable
	Land,nearly level.
	Soil,gravelly and rocky; 3rd and 4th rate.
	Timber,paloverde and ironwood.
	Underbrush,greasewood,ironwood and cactus.
	Land covered with dense underbrush,80.00 chs.
	At this cor.I set off 22°21,1/2' S.on the decl. arc and observe the sun on the meridian at noon; the resulting lat.is 33°47' N. ✓

	North between secs.7 and 12.
	Over nearly level land through dense brush.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,24X12X10ins.,18ins.in the ground, for $\frac{1}{4}$ sec.cor.,marked $\frac{1}{4}$ on W.face; and raise a mound, of stone,2ft.base,1,1/2 ft.high,W.of cor.
	Pits impraticable. From cor.
	A paloverde,16ins.in diam.,bears S54°30'W.,129 lks. dist.,marked
	$\frac{1}{4}$ S 12 BT
68.90	Wash,15 lks.wide,course NE.
	Difference between measurements of 80.00 chs.by two 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 a quartzite stone,22X12X10ins.,16ins.in the ground, for cor.of secs.1,6,7,and 12,marked with 5 notches on S.,and 1 notch on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft,high,W.of cor. Pits impraticable.
	Land,nearly level
	Soil,gravelly and rocky; 3rd and 4th rate.
	Timber,scattering paloverde and ironwood.
	Underbrush,greasewood,paloverde,ironwood and cacti.
	Land covered with dense underbrush,80.00 chs.

	North between secs.1 and 6.
	Over level land through dense brush.
7.10	Road,bears E.and W.
39.45	Wash,15 lks.wide,course NE.
	Difference between measurements of 40.00 chs.by two sets of chainmen is 8 lks.;positon of middle point
	By 1st set,40.04 chs.
	By 2nd set,39.96 chs.; the mean of which is

Fourth Guide Meridian West through Township 5 North.

chains	
40.00	Set a quartzite stone,26X12X10ins.,20ins.in the ground, for 1/4 sec.cor.,marked 1/4 on W.face; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable. From cor. A paloverde,12ins.in diam.,bears S 45°30'W.,181 lks., dist.,marked 1/4 S 1 BT, A PALOVERDE 12 INS DIAM. BRS. S 50°E. 145 LKS. DIST. MKD 1/4 S 6 BT.
40.55	Wash,25 lks.wide,course E.
53.30	Wash,15 lks.wide,course E. Difference between measurements of 80.00 chs.by two 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 a silica stone,24X12X10 ins.,18ins.in the ground, for cor.of Tps.5 and 6 N.,Rs.16 and 17 W.,marked 6 N on NE., 16 W on SE., 5 N on SW.,and 17 W on NW.face,with 6 notches on each edge; and raise a mound of stone,2ft.base,1,1/2 ft.high,S.of cor. Pits impraticable. Land,level. Soil,gravelly and rocky; 3rd and 4th rate. Timber,paloverde and ironwood. Underbrush,greasewood,paloverde and cactus. Land covered with dense underbrush,80.00 chs.

General Description

Tp.5 N.,R 16 W.,is mostly level land covered with dense underbrush.

Tp.5 N.,R 17 W.,is nearly rough and mountainous.

In surveyin this Mreidian I destroy all cors. established by Deputy Santee under Contaact No 146.

chains	
	North between secs.31 and 36.
	Over nearly level land,through dense brush.
36.10	Wash,10 lks.wide,course E.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,24X12X10ins.,18ins.in the ground, for $\frac{1}{4}$ sec.cor.marked $\frac{1}{4}$ on W.face; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor.
	Pits impraticable.
54.90	Wash,10 lks.wide,course E.
65.40	Wash,15 lks.wide,course E.
	Difference between measurements of 80.00 chs.by two se 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 a quartzite stone,24X12X8ins.,18ins.in the ground, for cor.of secs.25,30,31 and 36,marked with 1 notch on S.,and 5 notches on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.
	Land,nearly level.
	Soil,gravelly and rocky; 3rd and 4th rate.
	Timber,ironwood and paloverde.
	Underbrush,greasewood,paloverde,ironwood and cactus.
	Land covered with dense underbrush,80.00 chs.

	North between secs.25 and 30.
	Over level land through dense brush.
29.50	Wash,10 lks.wide,course E.
38.00	Wash,10 lks.wide,course E.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,22X12X10ins.,16ins.in the ground, for $\frac{1}{4}$ sec.cor. marked $\frac{1}{4}$ on W.face; dig pits,18X18X12ins. N.and S.of stone,3ft.dist; and raise a mound of earth, 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
80.00	Point for sec.cor.falls in wash ,15 lks.wide,course NE.
	Difference between measurements of80.50 chs.by two sets of chainmen is 8 lks.; position of middle point
	By 1st set,80.54 chs.
	By 2nd set,80.46 chs.; the mean of which is
80.50	Set a quartzite stone,22X10X6ins., 16ins.in the ground, for witness cor.to cor.of secs,19,24,25 and 30,marked WC on NE.face,with 2notches on S.,and 4 notches on N. edge; dig pits ,18X18X12ins.,NE.,SE.,NW.,and SW.of cor. 5,1/2 ft.dist.; and raise a mound of earth,4ft.base, 2ft.high,W.of cor.
	Land,level.
	Soil,gravelly; 3rd rate.
	No timber.
	Underbrush,greasewood,paloverde,ironwood and cacti.
	Land covered with dense underbrush,80.00 chs.

January 7th, 1909.

January 8th,: At 8a.m.,l.m.t., I set off 33°~~48~~50'30"N on the lat.arc; and 22°12'30" S.on the decl.arc and determine a meridian with the solar at the cor.pt. of secs.19.25,24 and 30,;

	Thence I run;
	North between secs.24 and 19.
	Over level land through dense brush.
14.15	W.C. to Secs. 19-24-25 & 30. Wash,15 lks.wide,course NE.
19.20	Wash,15 lks.wide,course NE.
	Difference between measurements of 40.00 chs.by two sets of chainmen is 4 lks.; position of middle point

chains	
	By 1st set,40.02 chs.
	By 2nd set,39.98 chs.; the mean of which is
40.00	Set a quartzite stone,22X10X8ins.,16ins.in the ground, for ¼ sec.cor.,marked ¼ on W.face; dig pits,18X18X12ins. N.,and S.of stone,3ft.dist.; and raise a mound of earth 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
48.80	Wash,20 lks.wide,course NE.
	Difference between measurements of 79.00 chs.by two se sets of chainmen is 6 lks.; position of middle point
	By 1st set,79.03 chs.
	By 2nd set,78.97 chs.; the mean of which is
79.00	Set a quartzite stone,21X10X8ins.,16ins.in the ground, for witness cor.to cor.of secs.13,18,19 and 24.,marked WC on NE.face,with 3 notches on S.,and 3 notches on N. edge; dig pits,18X18X12ins.,NE.,SE.,NW.,and SW.of cor. 5,1/2 ft.dist.; and raise a mound of stone,2ft.base, 1,1/2 ft.high,W.of cor.
80.00	Point for cor.falls in wash,15 lks.wide,course NE.
	Land,level.
	Soil,sandy and gravelly; 3rd rate.
	No timber.
	Underbrush,greasewood,paloverde and ironwood.
	Land covered with dense underbrush,80.00 chs.

	North between secs.13 and 18.
	Over nearly level land through dense brush.
12.60	Road from Rouse to Desert Wells,bears SE and NW.
16.00	Wash,15 lks.wide,course NE.
30.30	Wash,20 lks.wide,course NE.
38.80	Wash,20 lks.wide,course NE.
	Difference between measurements of 40.00 chs.by two 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 a quartzite stone,21X10X8ins.,16ins.in the ground, for ¼ sec.cor.,marked ¼ on W.face; dig pits,18X18X12in N.,and S.of stone,3ft.dsit; and raise a mound of earth 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
53.30	Rouse wash,40 lks.wide,course NW.
60.50	Enter sand hills.
	Difference between measurements of 80.00 chs.by two 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 a silica stone,24X18X10 ins.,18ins.in the ground, for cor.of secs.7,12,13 and 18,marked with 4 notches on S.,and 2 notches on N.edge; dig pits, 18X18X12ins., in each sec.5,1/2 ft.dist.; and raise a mound of earth, 4ft.base,2ft.high,W.of cor.,
	Land,level and rolling.
	Soil,sandy and gravelly; 3rd and 4th rate.
	No timber.
	Underbrush,greasewood,paloverde and ironwood.
	Land covered with dense underbrush,80.00 chs.

	North between secs.7 and 12.
	Over rolling sand hills through dense brush.
4.80	Wash,25 lks.wide,course W.
19.75	Wash,20 lks.wide,course W.
27.15	Wash,20 lks.wide,course W.
30.30	Wash.40 lks.wide,course W.
	Difference between measurements of 40.00 chs.by two 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 a granite stone,24X10X8ins.,18ins.in the ground,for ¼ sec.cor.marked ¼ on W.face; and dig pits,18X18X12ins., N.,and S.of stone 3ft.dist.; and raise a mound of earth, 3,1/2 ft.base,1,1/2 ft.high,W.of cor.

Chains

Difference,between measurements of 80.00 chs,by two sets of chainmen is 8 lks.; position of middle point
By 1st set,80.04 chs.
By 2nd set,79.96 chs.; themean of which is

80.00 Set a granite stone22X12X8ins.,16ins.in the ground,for cor.of secs.1,6,7,and 12,marked with 5 notches on S., and 1 notch on N.edge; dig pits,18X18X12 ins.,in each sec.5,1/2 ft.dist.; and raise a mound of earth 4ft. base 2ft.high,W.of cor.
Land,rolling sand hills.
Soil,sandy; 3rd and 4th rate.
No timber.
Underbrush,greasewood.
Land covered with dense underbrush,80.00 chs.

North between secs.1 and 6.
Over rolling sandhills through dense brush.

32.00 Wash,10 lks.wide,course W.

Difference between measurements of 40.00 chs.by two 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 a granite stone,22X10X8ins.,16ins.in the ground,for $\frac{1}{4}$ sec.cor.,marked $\frac{1}{4}$ on W.face; dig pits,18X18X12ins., N.,and S.of stone,3ft.dist.; and raise a mound of earth 3,1/2 ft.base,1,1/2 ft.high,W.of cor.

58.75 Wash,10 lks.wide,course W.

Difference between measurements of 80.00 chs.by two 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 a silica stone,24X12X10ins.,18ins.in the ground,for cor.of Tps.6 and 7 N.,Rs.16and 17 W.,marked
7 N on NE.,
16 W on SE.
6 N on SW.,and
17 W on NW.face,with 6 notches on each edge; and dig pits,24X24X12ins.,on each line,N.,E.,and W.,4ft., and S.of stone,8ft.dist.; and raise a mound of earth, 5ft.base,2,1/2 ft.high,S.of cor.
Land,rolling sandhills.
Soil,sandy; 3rd rate.
No timber.
Underbrush,greasewood,paloverde and ironwood.
Land covered with dense underbrush,80.00 chs.

Tp. 6 N.,R 16 W.,is level land with the exception of the northeastern part which is mountainous.

Tp 6 N.,R 17 W.,is level in the north and east and mountainous in the SW.

In surveying this Meridian I destroy all cors. established by Deputy Santee underb Contract No 146.

chains	
	North between secs.31 and 36.
	Over level land through dense brush.
9.20	Wash,15 lks.wide,course W.
11.40	Road,bears NW.and SE.
13.10	Wash,40 lks.wide,course W.
19.00	Railraad,bears N48°30'W and S48°30'E.and telegraph line.
	Difference between measurements of 40.0 chs.by two 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 a lava stone,22X10X8ins.,16ins.in the ground,for $\frac{1}{4}$ sec.cor.,marked $\frac{1}{4}$ on W.face; dig pits,18X18X12ins., N.and S.of stone,3ft.dist.; and raise a mound,of earth, 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
41.00	Enter low sandhills.
49.15	Wash,15 lks,wide,course W.
	Difference between measurements of 80.00 chs.by two 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 a lava stone,22X12X10ins.,16ins.in the ground,for cor.of secs.25,30,31 and 36, marked with 1notch on S.,an 5 notches on N.edge; and raise a mound,of stone,2ft. base,1,1/2 ft.high,W.of cor. Pits impraticable.
	Land,level and hilly.
	Soil,sandy; 3rd and 4th rate.
	No timber.
	Underbrush,greasewood and cacti.
	Land covered with dense underbrush,80.00 chs.
	At this cor. I set off 22°13,1-2'√S.on the decl. arc, and observe the sun on the meridian at noon, the resulting lat.is 33°55'N.√

	North between secs.25 and 30.
	Over hilly and mountainous land through dense brush
11.15	Enter basin.
	Difference between measurements of 38.50 chs.by two sets of chainman is 8 lks.; position of middle point
	By 1st set,38.54 chs.
	By 2nd set,38.46 chs.; the mean of which is
38.50	Set a granite stone,22X10X8ins.,16ins.in the ground,for witness cor.to $\frac{1}{4}$ sec.cor.,marked WC $\frac{1}{4}$ on W.face ; and ra raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.
40.00	Point for $\frac{1}{4}$ cor.falls in wash,15 lks.wide,course W.
50.20	Wash,40 lks.wide,course W.
70.30	Wash,15 lks.wide,course W.
	Difference between measurements of 80.00 chs.by two sets of chainmen is 10 lks.; position of middle point
	By 1st set,80.05 chs.
	By 2nd set,79.95 chs.; the mean of which is
80.00	Set a lava stone,24X10X8ins.,18ins.in the ground,for cor.of secs.19,24,25 and 30, marked with 2 notches on S.,and 4 notches on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.
	From cor.
	The water tank at Rouse bears N 78° W.
	Land,mountainous.
	Soil,gravelly and rocky; 3rd and 4th rate.
	Timber,scattering paloverde.
	Underbrush,greasewood,paloverde and ironwood.
	Land mountainous or covered with dense underbrush, 80.00 chs.

	North between secs.19 and 24.
	Over mountainous land through dense brush.
	Difference between measurements of 40.00 chs.by two sets of chainmen is 8 lks.; position of middle point

chains	
	By 1st set,40.04 chs.
	By 2nd set,39.96 chs.; the mean of which is
40.00	Set a granite stone,22X10X8ins.,16ins.in the ground,for ¼ sec.cor.,marked ¼ on W.face; and raise a mound of stone,2ft.base,1,1/2 ft.high,W.of cor.Pits impraticable
	Difference between measurements of 80.00 chs.by two sets of chainmen is 10 lks,.; position of middle point
	By 1st set,80.05 chs.
	By 2nd set,79.95 chs.; the mean of which is
80.00	Set a granite stone,22X12X10 ins.,16ins.in the ground, for cor.of secs.13,18,19 and 24,marked with 3 notches S.,and 3 notches on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.
	Land,mountainous.
	Soil,rocky, 4th rate.
	Timber,scattering ironwood and paloverde.
	Underbrush,greasewood,paloverde,ironwood and cacti.
	Mand mountainous or covered with dense underbrush,80.00 chs.

North between secs.13 and 18.

Over mountainous and rocky land.

21.10	Wash,15 lks.wide,course SW.
36.60	Wash,30 lks.wide,course NNW.
	Difference between measurements of 40.00 chs.by two sets of chainmen is 10 lks.; position of middle point
	By 1st set,40.05 chs.
	By 2nd set,39.95 chs.; the mean of which is
40.00	Set a lava stone,22X12X8ins.,16ins.in the ground,for ¼ sec.cor.,marked ¼ on W.face; and raise amound of stone 2ft.base,1,1/2 ft.high,W.of cor. Pits impratívable.
68.15	Wash,10 lks.wide,course NW.
79.95	Wash,20 lks.wide,course W..
	Difference between measurements of 80.00 chs.by two sets of chainmen is 12 lks.; position of middle point
	By 1st set,80.06 chs.
	By 2nd set,79.94 chs.; the mean of which is
80.00	Set a lava stone,22X12X8ins.,16ins.in the ground,for cor.of secs.7,12,13 and 18,marked with 4 notches on S., and 2 notches on N.edge; and raise a mound of stone, 2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable.
	Land,mountainous.
	Soil,rocky; 4th rate.
	Timber,scattering paloverde and ironwood..
	Underbrush,scattering greasewood,paloverde and cacti.
	Mountainous Land, 80.00 chs.

North between secs.7 and 12.

Over mountainous land.

3.20	Wash,15 lks.wide,course W.
21.15	Wash,25 lks.wide,course W.
35.50	Heave mountainous land,enter level land; through dense b underbrush.
40.00	Point for ¼ cor.falls in wash,10 lks.wide, course W.
	Difference betweenmeasurements of 40.20 chs.by two sets of chainmen is 8 lks.; position of.middle point
	By 1st set,40.24 chs.
	By 2nd set,40.16 chs.; the mean of which is
40.20	Set a granite stone,22X12X8ins.,16ins.in the ground, for witness cor.to ¼ sec.cor.,marked WC ¼ on W.face; and raise amound of stone,2ft.base,1,1/2 ft.high,W.of cor. Pits impraticable. From cor.
	A paloverde,12ins.in diam.,bears N63°W.,171 lks., dist.,marked
	WC ¼ S 12 BT
42.10	Wash,35 lks.wide,course W.
79.35	Wash,15 lks.wide,course W.

chains	
	Difference between measurements of 80.00 chs.by two 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 a granite stone,18X10X8ins.,12ins.in the ground,for cor.of secs.1,6,7 and 12,marked with 5 notches on S., and 1 notch on N.edge; dig pits,18X18X12ins.,in each sec.5,1/2 ft.dist.; and raise a mound of earth,4ft.base 2ft.high,W.of cor. Land,mountainous and level. Soil,stony,gravelly and rocky; 3rd and 4th rate. Timber,paloverde and ironwood. Underbrush,greasewood,paloverde and cacti. Land mountainous or covered with dense underbrush, 80.00 chs.
	North bewteen secs.1 and 6 . Over level land through dense brush.
6.05	Wash,20 lks.wide,course SW.
32.00	Wash,10 lks.wide,course SW.
39.10	Road,from Bouse to Clara mine,bears NE.and SW.
	Difference between measurements of 40.00 chs,by two 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 a granite stone,24X10X8ins.,18ins.in the ground,for $\frac{1}{4}$ sec.cor.,marked $\frac{1}{4}$ on W.face; dig pits,18X18X12ins., N.,and S.of stone,3ft.dist.; and raise a mound of earth 3,1/2 ft.base,1,1/2 ft.high,W.of cor.
41.10	Wash,11 lks.wide,course SW.
77.55	Wash,35 lks.wide,course SW.
	Difference between measurements of 80.00 chs.by two 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 a granite stone,26X12X10ins.,20ins.in the ground, for cor.of Tps.7 and 8 N.,Rs.16 and 17 W.,marked 8 N on NE., 16 W on SE., 7 N on SW.,and 17 W on NW.face;with 6 notches on each edge,and raise a mound of stone,2ft.base,1,1/2 ft.high,S.of cor. Pits impraticable. From cor. An ironwood,12ins.in diam.,bears S12,1-2°W.,300lks., dist., marked T 7 N R 17 W S 1 BT Land,level. Soil,sandy and gravelly; 3rd rate. Timber,paloverde and ironwood. Underbrush,greasewood,paloverde,ironwood and cacti. Land covered with dense underbrush,80.00 chs.
	January 8th,1909.
	Tp.7 N.,R 16 W.,is all rough and mountainous. Tp.6 N.,R 17 W.,is mountainous in the east and the rest of the Tp.is generally rolling land. In surveying this Meridian I destroy all cors. established by Deputy Santee under Contract No 146.

John F. Hesse.
U.S. Deputy Surveyor

and 8/30/09

Per authority for red ink corrections see Deputy's letter 7/1/09.

BOOK 2122

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FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by John P. Hesse, 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 3rd and 4th Guide Meridian W through Tps. 5, 6, and 7 N.

showing the respective capacities in which they acted:

Harry S. Ingalls, Chainman.
Wilfred B. Helm, Chainman.
Norman Oliver, ~~Moundman~~ Chainman.
Fred W. Rodolf, ~~Moundman~~ Chainman.
, Axman.
, Axman.
A. R. Saunders, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted John P. Hesse, United States Deputy Surveyor, in surveying all those parts or portions of the 3rd and 4th Guide Meridian W. through Tps. 5, 6 and 7 N.

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

Harry S Ingalls, Chainman.
Wilfred B. Helm, Chainman.
, Moundman.
Fred W. Rodolf, ~~Moundman~~ Chainman.
[redacted], ~~Axman~~ Chainman.
, Axman.
A R Saunders, Flagman.

Subscribed and sworn to before me this 8th day of January, 1909

SEAL

John P. Hesse
U. S. Dep. Surveyor

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No notary available without great expense and loss of time

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, John P. Hesse, 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 10 day of October, 1908, 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 Third Guide Meridian West through Tps. 5 and 6 N. and the Fourth Guide Meridian West through Tps. 5, 6 and 7 N.

of the Gila and Salt River 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.

John P. Hesse
United States Deputy Surveyor.

Subscribed by said John P. Hesse, and sworn to before me this first day of March 1909, ~~190~~

Frank S. Ingalls
U. S. SURVEYOR GENERAL.

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Ariz. Aug 25, 1909

The foregoing field notes of the survey of the Third Guide Meridian West through Tps. 5 and 6 North and Fourth Guide Meridian West through Tps. 5, 6 and 7 North of the Gila and Salt River Base and Meridian Arizona

executed by John P. Hesse U. S. Deputy Surveyor under his contract No. 150, dated October 10, 1908, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Frank S. Ingalls
United States Surveyor General.

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

_____
United States Surveyor General.

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