Book. G. Thing authorized letter 6. 8/3/1910

FIELD NOTES

OF THE SURVEY OF THE

West boundary of Tps. 17, 19, and 20 N. Rg. 1 W.	2187
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OA OIN	
2187	
· 	
Of the Gila and Salt River Meridian,	
Territory Of Arizona.	
AS SURVEYED BY	
Alfred N. Oliver , United States Deputy Sur	
Under his Contract No. 153, dated November 19th. 1908,	190
Survey commenced May 18, 1909.	190
Survey completedJune 27, 1909.	190 -

2187



NAMES AND DUTIES OF ASSISTANTS.

	Will W. Shawk		Chainman		
	Archie Johnston		Chainman		
	W. R. Johnston		Axman.		
	R. R. Lane		Flagman.		
		re.			
		:		,	
			·	·	
		- ·			
6—151					

INDEX DIAGRAM.

Tou	vnship		, Range	<u>-</u>	
6	5	4	8	2	1
8	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	28	24
80	29	28	27	26	25
81	82	83	34	85	86

Meanders Page

PRELIMINARY OATHS OF ASSISTANTS.

WE, Will W. Shawk	and Archie Johnston
do solemnly swear that we will well and faithfully e	execute the duties of chainmen; that we will level the
chain upon even and uneven ground, and plumb the t	ally pins, either by sticking or dropping the same; that
we will report the true distances to all notable object	cts, 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
the West boundary of Tps. 17, 19,	
VIII III VIII VIII VIII VIII VIII VIII	
\sim	Helf Eff. Vhay Ghainman.
	or chil which Chainman.
	7
Subscribed and sworn to before me this 18th.)
day of May, 1909, 190	alles In Olins
**************************************	1150 Lite house
XXXXX	0 4, 2 Lifus surry
WE,	erform 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	\int
* SEAL (*)	
paaaaa	
WE, I, W. R. Johnston	and
do solemnly swear that 4e will well and truly perfe	orm the duties of axmen in the establishment of corners
and other duties, according to instructions given	to the best of Tr skill and ability, in the survey of
ANY HOLE NEEDS	WR Johnston, Axman.
	Mr forms wor , Axman.
•	, Axman.
•	
Subscribed and sworn to before me this 18th.	•)
day of May, 1909, 190	om an Mi
	legno 11, geiss,
SEAL()	US Defuty Sunsyn
- D. D. Lone	, do solemnly swear that I will well and truly
1,	ctions given me, to the best of my skill and ability, in the
_	
survey of the West boundary of Tps.	17, 19 and 30 N. Rg. 1 W.
•	MADVL, Flagman.
Subscribed and sworn to before me this18th	2.)
day of, 1909, 190	' Whish M. Hurs
SEAL W	U.S. Defuts Surveyor
No netary available without loss	of time and great expense.

boundary of To. 17 N. Rg

Chains

Survey commenced May 18, 1909, and executed with a Young and Sons light mountain transit, No. 7532, with 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 least count of the verniers of the latitude and declination arcs.

The instrument was examined, tested on the treu meridian at Phoenix, found correct and was approved by the surveyor general for Arizona.

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

At my station, at my camp, which is about one mile south of the standard cor. of Tps. 17 N. Rgs. 1 E. and 1 w. and which is marked by a stone set firmly in the ground and marked with a cross on top; latitude 34° 48 1/2' N. longitude 112° 19' W. I set off 34° 48 1/2' N. on the lat. arc; 19° 38' N. on the decl. arc; and, at 6h. 00m., 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 my station.

May 18, 1909

May 19: At 3h. 45m. a.m., by my watch which has correct 1.m.t., I observe Polaris at eastern elongation, in accordance with Manual of Instructions, and mark a point in the line thus determined, on a peg driven in the ground, 5 chs. N. of my station.

At 5h. 30m. a.m., l.m.t., I lay off the azimuth of Polaris, 1° 26' to the west, and mark the meridian thus determined, by cutting a small groove in the stone set May 18, on which the meridian coincides with the marks determined by the solar.

At 6h. 00m. a.m., l.m.t., I set off 34° 48 1/2' N. on the lat. arc; 19° 44 1/2'\N. on the decl. arc; and mark a point in the meridian 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 p.m. and a. m. observations, defines positions for meridians which coincide with the meridian established by the Polaris observations; there fore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic hearing of the true meridian, at 6h. 15m. a.m., is 14° 45' w.; the angle thus determined gives the mag. decl. 14° 45' E.

I commence at the standard cor. of Tps. 17 N. Rgs. 1 and 2 W. Which has been previously described.

Thence I run on a random line
North bet. secs. 31 and 36.
Descending N. slope over granite boulders.
Cross drain 5 lks. wide course S. W. and ascend steep

S. W. slope over bare rock.

5.00

Ridge bears E. and W. and descend rough N. slope over 17.00 large boulders.

cross drain 10 lks. wide ourse N. W. 33.00

Cross drain 10 lks. wide course N. W. and ascend steep 34.25

S. W. slope. Could find no trace of the $\frac{1}{4}$ sec. cor. 40.00

Ridge beras E. and W. and descend. 41.00

Cross granite Creek, water in pools, 50 lks. wide course 57.00 w. and ascend steep S. slope.

Ridge bears E. and W. and descend steep N. slope. Cross wash in canyon 25 lks. wide course N. W. and 63.50 74.00 along steep W. slope of canyon.

west boundard of Tp. 17 N. Rg. 1

chains. 80.08

brs. E. 88 lks. The cor. of secs. 25, 30, 31 and 36 marked and witnessed as described by the surveyor general and set in a mound of stone. I destroy this cor. and in the same place set a quartzite 20 × 8 × 4 ins. 15 ins. in the ground for cor. of secs. 25, 30, 31 and 36, marked 09 on N. E. face; with 1 notch on S. and 5 notches on N. edges; and raise a mound of stone 2 ft. base 1 1/2 ft. high W. of cor. Pits impracticable.

I return to my 40.00 chain point and run thence 4 lks. N. and 44 lks. E. and at this point which is N. 0° 38 E. 40.04 chs. dist., from the standard cor. of Tps. 17 N. Rgs. l and 2 W. I markaa cross on a granite rock in place 10 x 4 x 2 ft. above ground, for \(\frac{1}{4} \) sec. cor., marked 09\(\frac{1}{4} \) on \(\text{w.} \) of cross; and raise a mound of stone 2 ft. base 1 1/2 ft. high W. of cor. Pits impracticable. Length of this mile is 80.08 chs. Course of mile is N. 0° 38' E.

Land, extremely rough and mountainous.

Soil, rocky 4th. rate.

No timber.

Mountainous land, precipitous and covered with boulders, exceptionally difficult to survey, 80.08 chs,

North bet. secs. 25 and 30.

Along steep W. slope of canyon covered with loose rocks.

Ascend along S. W. slope, very steep.
Top and descend along N. W. slope very steep. 20.00 28.00

38.75

Cross wash, 10 lks. wide course S. W. wall 60.lks. E. of dosec. cor. a malpais stone 14 x 10 x 5 ins. above ground. I remark stone 09 d on W. face; 41.54 and raise a mound of stone 2 ft. base 1 1/2 ft. high W.

of cor. Pits impracticable.

Course of this half mile is N. 0° 50' W. 41.55 chs.

Thence from \(\frac{1}{4} \) sec. cor. North.

Cross wash 10 lks. wide and ascend S E. slope covered 40.10 with loose rock. course of wash SW.

Spur bears E. and W. and descend steep N. slope. 54.00

Cross wash 20 lks. wide course W. and ascend steep S. W. 62.50 slope.

Spur bears E. and W. and descend Steep N. slope. 68.50

Cross wash 50 lks. wide course W. and ascend steep S. 77.3.0 slope.

Fall 17 lks. E. of cor. of secs. 19, 24, 25 and 30, which I destroy and in the same place set a malpais stone 20 x 8 x 4 ins. 15 ins. in the ground for cor. of 80.85 secs. 19, 24, 25 and 30, marked 09 on N. E. face; with 2 notches on S. and 4 notches on N. edges; and raise a mound of stone 2 ft. hase 1 1/2 ft. high W. of cor.

pits impracticable. Course of this half mile is N. 0° 14' E. 39.30 chs.

Land, rough and mountainous.

Soil, rocky; 4th rate.

No timber. Mountainous land covered with loose rocks, exceptionally difficult to survey, 80.85 chs.

North bet. secs. 19 and 24.

Ascend steep S. slope covered with loose boulders.

12:00 Ridge bears E. and W. and descend steep N. slope.

21.00 Cross wash, 30 lks. wide cousre W. and ascend steep S. slope.

Ridge hears N. E. and S. W. and along steep W. slope.

38.18 Fall 117 lks. W. of ½ sec. cor. which I destroy and in the same place set a malpais stone 24 x 10 x 4 ins. 18 ins. in the ground for $\frac{1}{4}$ sec. cor. marked $09\frac{1}{4}$ on w. face; and raise a mound of stone 2 ft. base 1 1/2 gt. high w. of cor. Pits impracticable.

```
Course of this half mile is N. 1° 45' E. 38.20 chs.
chains.
              Thence from 4 sec. cor. North
           Descend steep N. slope.
 45.00
           Cross drain 5 lks. wide course N. W. Cross wash 10 lks. wide course W. and ascend S. W. slope.
 52.50
 54.70
 64.00
           Descend N. slope, and enter scattering timber.
 65.00
           cross wash 10 lks. wide course W. and ascend.
           Fallals 1ks. W. of the cor. of secs. 13, 18, 19 and 24. which I destroy and in the same place set a malpais stone 24x 12 x 12 ins. 18 ins. in the ground for cor. of secs.
 78.71
           13, 18, 19, and 24, marked 09 on N. E. face; with 3
           notches on N. and S. edges; and raise a mound of stone 2 ft. base 1 1/2 ft. high W. of cor. Pits impracticable Course of this half mile is N. 0° 13' E. 40.51 chs.
           Land, rough and mountainous.
           Soil, rocky; 4th. rate.
           Timber, a few cedars.
           Mountainous land, covered with loose rocks, exceptionally
           difficult to survey 78.71 chs.
May 19; At this cor. I set off 19° 46' N. on the decl.
           arc; and observe the sun on the meridian at noon, the resulting lat. is 34° 52' N.
           North bet. secs. 13 and 18.
           Ascending S. W. slope covered with loose rock.
           Spur bears E. and W. and descend N. W. slope.
  1.40
           cross wash 10 lks. wide course W. in canyon 50 ft. deep.
  9.50
  17.00 change to N. E. slope.
  40.30 Fall 39 lks. W. of \frac{1}{4} sec. cor., which is a malpais stone
          12 x 6 x 6 ins. above a mound of stone 3 ft. base 1 1/2 ft. high, marked 09 ¼ on W. face; from which

A cedar 16 ins. diam. bears S. 70° W. 16 lks.

dist., marked 09¼Sl3BT.
           No other tree available. Raise a mound of stone 2 ft.
           base 1 1/2 ft. high W. of cor. Pits impracticable.
Thence from 4 sec. cor. North.
Cross wash in ravine 10 lks. wide course N. W.
Cross wash in bend bears B. W. course N. W. 20 lks. wide
 47.50
 50.00
           and ascend S. W. slope.
           Change to N. W. slope. Fall 7 lks. W. of the cor. of secs. 7, 12, 13 and 18. Which is a malpais stone 30 x 14 x 12 ins. set 20 ins.
 69.00
 80.70
           in a mound of stone, marked 09 on N. E. face; with 4
            notches on S. and 2 notches on N. edges; and raise a
           mound of stone 2 ft. base 1 1/2 ft. high w. of cor.
           Pits impracticable.

Course of S. half mile is N. 0° 33' E. 40.30 chs.

Course of N. half mile is N. 0° 06' E. 40.40 chs.
           Land, mountainous and rough.
           Soil, rocky 4th. rate.
           Timber, scattering cedars.
           Mountainous land, covered with loose rock, exceptionally
           difficult to survey 80.70 chs.
           North bet. secs. 7 and 12
           Over top of mountain covered with loose boulders.
 4.25
           Descend into canyon.
           cross verde river, running water 12 ins. deep, 100 lks. wide course E. and ascend steep S. slope
 18.00
           Over rolling top of mountain covered with loose rocks
 35.50
           through cedar timber and underbrush.
           Fall 75 lks. E. of \frac{1}{4} sec. cor. which I reset as follows, set a malpais stone 22 \times 16 \times 6.ins. 16 ins. in the ground for \frac{1}{4} sec. cor. marked 09\frac{1}{4} on N. face; from which
 38.89
                     A cedar 6 ins. diam, bears. N. 40° E. 60 lks. dist. marked 09 4878T.
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A cedar 20 ins. diam., bears S. 65° W. 17 lks. dist. marked 09 S12BT.

344 - L. H., L., L., 1981

West boundary of Tp. 17 N. Rg. 1 W.

Chains

course of this half mile is N. 1° 06' W. 38.90 chs.

60.65 78.84 Thence from \(\frac{1}{4} \) sec. cor. North

Cross fence bears E. and W. and leave timber and brush.

Fall 6 lks. E. of cor. of secs. 1, 6, 7 and 12, which I

meestablish as follows; set a malpais 20 x 8 x81\(\text{Ons.}...\) 15 ins. in the ground for cor. of secs. 1, 6, 7, and 12 marked 09 on N. E. face; with 5 notches on S. and 1 notch on N. edges; and raise a mound of stone 2 ft. base 1 1/2 ft. high W. of cor. Pits impracticable. Course of this half mile is N. 0° 05' W. 39.94 chs.

Land, mountainous.

Soil, rocky; 4th. rate.

Timber cedar.

Underbrush, cedar. Mountainous land covered with loose rocks, and heavily timbered and covered with dense underbrush, exceptionally difficult to survey 78.84 chs.

40.03

North bet. secs. 1 and 6. Over rolling mountains covered with loose volcanic rock. Fall 87 lks. E. of $\frac{1}{4}$ sec. cor. which is a cross on a rock.in place 5 × 4 × 1 1/2 ft. above ground, marked 09 $\frac{1}{4}$ on W. of cross; and a mound of stone 2 ft. base 1 1/2 ft. high w. of cor. Pits impracticable. course of this half mile is N. 1° 15' w. 40.04.

Thence from $\frac{1}{4}$ sec. cor. North.

43.25

Cross drain 5 lks. wide course N. E. and through scatter ing timber.

50.00 80.07

Leave timber. top of bank, over rolling land.
Fall 58 lks. E. of the cor. of Tps. 17 and 18 N. Rgs.
1 and 2 W. which I destroy and in the same place set
a malpais stone 24 x 12 x 10 ins. 18 ins. in the ground
for cor. of Tps. 17 and 18 N. Rgs. 1 and 2 W. marked 09 on N. E. face, with 6 notches on each edge; dig pits $24 \times 24 \times 12$ ins. on each line, N., E., and W., 4 ft. and S. of stone, 8 ft. dist.; and raise a mound of earth 5 ft. base 2 1/2 ft. high S. of cor. Course of this half mile is N. 0° 50' W. 40.04 chs.

Land, mountainous.

Soil, rocky; 4th. rate.

Timber, a few cedara

Mountainous land, covered with loose volcanic rock, exceptionally difficult to survey, 80.08 chs.

May 19, 1909

General description

This township is rough and mountainous and is generally covered with a fair growth of cedar timber. The soil is generally rocky. The Verde River runs through the Northern part of the township. In running the boundaries of this Tp. I destroyed the old corners.

West boundary of Tp. 17 N. Rg. 1 W.

Boundaries of Tp. 17 N. Rg. 1 W. Latitudes, departures, and closing errors.

line decimated		Latite	udes	Departures			
Line designated	bearing	Distance	N"	S	E	W	
N. bdy. Sec 1	West	66.45				6645	
N. bdy. TITNRIW	West	413.48				gf) 3 g/8	
W. bdy. Sec. 6	50°50'E	40.04		40.4	58		
	51015E	40.04		40.3	87		
W. bdy. Sec. 7	50°05'E	39.94		3914	6		
	51º06'E	38.90		3989	75		
W. bdy. Sec. 18	50° 06' PY.	40.40		4040		7	
	50°33' W	40.30		40 30		40	
W. bdy. See. 19	50°13'N.	40.51		4051		15	
	51045 W	38.20		3818		1/7	
W. bdy. Sec. 30	50°14'E	39.30		3930			
	50°50' E	41.55		4154			
W. bdy. Sec. 31 S. bdy. Sec. 31	50°38'W	80.08		8008		59	
S. bdu. Sec. 31	587°38 E	40.00		165	3997		
	S89°23'E	40.30		(A)	4030		
Sbdy. Sec. 32	589°34'E	40.70		30	4070		
	N89° 48'E	39.33	14	7	3 3 3		
Sbdy. Sec. 33	188° 58'E	40.16		12	4015		
	589° 00'E	40.09		70	4018		
Sbdy, Sec. 34 Sbdy, Sec. 35	589° 00'E	80.78		140	8017		
564 Sea 35	589°00'E	40.09		70	4008		
	N88° 51 E	40.10	80		4009		
Sbdy. Sec. 36	S89° 18' E	39.74		49	3974		
- J	N 88° 29' E	40.50	107		4049		
G.+ S. R. Mer. thro TI7 N.	North	481.92	48192				
W. bdy. Sec. 31 TIBNAIE		3.50	350		1.7	46	
Convergency						51	
Totals			487.43	486.60	48412	483.58	
Error in la	/.		. 83	EPPOPT	n dep.	•	

Affred M. Chirar
U. S. Deputy Surveyor.

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West boundary of Tp. 19 N. Rg. chains. June 13; At 6h.00m., a.m., l.m.t., I set of 35° 000 on the lat.arc; 23°14'N. on the decl.arc; and determine a meridian with the solar at the cor. of Tps 18 and 19 N., Rgs. 1 and 2 W., preveiously set by me. Thence I run North bet.secs.31 and 38. Over level land covered with loose rocks thru dense timber and underbrush. rall 10 lks. west of \frac{1}{4} sec. cor. which is a post marked 40.02 as described by Surveyor General, which I destroy and in the same place set a limestone, 20 x 10 x 8 ins., 15 ins. in the ground, for ½ sec.cor., marked 09 ½ on w. face; from which A cedar l2ins.diam., bears N 10°W. 22 lks., dist., marked; 09 ½ S 36 RT. A cedar loins.diam., bears S 125E. 38 lks., dist., marked: 09 1 S 31 BT. Course of this halh mile is N 0°09'E. 40.02 chs. Thence from 1 sec.cor.North, Drain, course E. 43.10 54.45 Brain, course E. bratu, course E. 61.15 prain, course E. 70.30 Wash 450 lks.wide.course E. 78.60 Cor. of secs. 25,30,31 and 36, bears West 10 lks., dist. 80.04 which I destroy and in the same place ste a limestone, 16x10x6ins., llins.in the ground, for cor.of secs. 25, 30,31 and 36,marked 09 on NE.face, with 5 notches on Ne. and 1 notch on S. edge; from which; A cedar 30ins.diam., bears N 66°E. 23 lks., dist. marked; 09 T 20 N R 1 W S 30 BT. A dedar Sins.diam., bears S 10°30'E. 43 lks., dist. marked; 09 T 20 N R 1 W S 31 BT. A cedar loins.diam., hears S 60°30'W. 152 lks., dist marked; 09 T 20 N R 2 W S 36 RT. A cedar llins.diam., bears N 63°30'W. 32 lks., dist. marked; 09 T 20 N R 2 W S 25 RT. Course of this half mile is N 0°09'W. 40.02 chs. Land, rolling. Soil, rocky: 4th rate. Timber, cedar and pinon. underbrush, cedar and scrub oak. Mountainous land covered with loose rocks and dense timber and underbrush, exceptionally difficult to survey,80.04 chs. North bet.secs.25 and 30 Over rolling land covered with loose rocks thru dense timber and underbrush. Drain, course E. 10.45 Drain, course E. 27.25 wall 21 lks. H. of the dosectosecswhich I destroy and 40.01 in the same place set a sandstone, 18X8X6ins., 12ins. in the ground, for } sec.cor., marked 09 } on W. face; from which A cedar leins.diam., bears S 86°E. 31 lks., dist., marked; 09 4 S 30 BT. A cedar 18ins.diam., bears N 29°W. 64 lks.dist., marked: 09 ½ S 25 BT. Course of this half mile is N 0°18'W. 40.01 chs. North from } sec.cor. wash,25 lks.wide,course E. 52.60 A line cedar, 8 ins. diam., blazed on N. and S. sides. 55.75 Drain, course NE. 60.30 Wash, 400lks. wide, course E. 70.19 wall 14 lks. %. of the cor. of secs. 24,24,19 and 30, 79.91 which is a limestone, 16X10X6ins., marked with 2 notches on S., and 4 notches on N. egde, I mark 09 on NE. face and reset llins. in the ground, from which; -

West boundary of Tp. 19 N., Rg. 1 W.

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A cedar loins.diam., bears N 58° 45'E. 263 lks.dist.
                marked: 09 T 20 N R 1 W S 19 BT.
A cedar 14ins.diam., bears S 40°30'E.
marked: 09 T 20 N R 1 W S 30 BT.
                                                               40 lks.dist.,
                A cedar 12ins.diam., bears $ 30°15'W. 45 lks.dist.,
                marked: 09 T 20 N R 2 W S 25 BT.
A cedar l3ins.diam., bears N 61°W. 35 lks., dist.,
marked: 09 T 20 N R 2 W S 24 BT.
           Course of this half mile is N 0°12'W. 39.90 chs.
          Land, rolling.
          soil, rocky: 4th rate.
          Timber, cedar.
          underbrush, ceasi.
          Land, covered with loose rocks and dense timber and
          underbrush, exceptionally difficult to survey, 79.91 chs.
          North bet.secs.24 and 19.
          Over level land covered with loose rocks and dense
          timber and underbrush.
27.75
          Brain, course E.
          wall 40 lks. West of \frac{1}{4} sec. cor. which I destroy and in the same place set a limestone, 16x10x7 ins., llins. in the
39.95
          ground, for ½ sec.cor., marked 09 ¼ on W. face; from which A cedar 10ins.diam., bears N 54°30'E. 46 lks.dist.,
                      marked: 09 1 S 19 BT.
                A pinon lains.diam., bears S 28°45'W. 30 lks.dist., marked 09 ½ S 24 BT.
          Course of this half mile is N 0°34'E. 39.95 chs.
             North from \(\frac{1}{4}\) sec.cor.
          brain, course E.
40.35
          Drain, course SE. Asc. over loose rocks.
48.00
          Over level land covered with loose rocks.
60.00
          wall 61ks.W. of cor. of secs. 18,19,13 and 24which I destroy and in the same place set a malpais stone,
79.92
          16X8X8ins., llins.in the ground, for cor. of secs. 13 and
          24,T 20 N R 2 W., marked 09 on WE. with 3 notches on
                                 from which
          N. and S. enges.
                 A cedar Gins.diam., bears S 61°30'W. 26 lks.dist., marked; 09 T 20 N R 2 W S 24 BT.
                 A cedar 6ins.diam., bears N 40° 45'W. 10 lks.dist.,
                       marked: 09 T 20 N R 2 W S 13 BT.
             Course of this half mile is N 0°05'W. 39'97 chs.
          Land, level and mountainous.
           Soil, rocky; 4th rate.
           Timber, cedar and pinon.
           underbrush, cedar.
           Land covered with loose rocks and dense timber and
           underbrush, exceptionally difficult to survey, 79.92 chs.
             June 13; At this cor. I set off 23°13'N. Von the decl.
           arc, and observe the sun on the meridian at noon; the
           resulting lat. is 35°02,1/2'N.
           North bet.secs.13 and 18.
           Over level land covered with loose rocks thru dense
           timber and underbrush.
                                            er is recens.
           nescend steep slope over loose rocks.
12.60
           Wash, 40 lks. wide, course E. Asc. steep slope over loose
30.20
             rocks.
           Top of ridge, hears W. and W. Desc. steep slope over
37.00
           loose rocks.
           wall 81ks.E. of the 4 sec.cor., which I destroy and in
39.93
           the same place set a malpais stone, 23X14X6ins., 17ins.in the ground, for \( \frac{1}{4} \) sec.cor., marked 09 \( \frac{1}{4} \) on \( \text{W}. \) face. from wh
           which; -
                   A cedar loins.diam., hears N 649W. 28 lks.dist., marked: 09 1 S 13 RT.
           No other tree available raise a mou d of stones, 2ft. base
           1,1/2 ft.high, W. of cor. Pits impraticable.
```

i minamanida mas		West boundary of Tp.19 N., R1 W.	
CI	nains.	Course of last half mile is N 0°07'w. 39.93 chs.	
		North from \(\frac{1}{4}\) sec.cor.	
4	44.00	Drain, course E. Along steep W. side of Hells canyon	
	74.00	over loose rocks. Hells canyon wash, 200 lks.wide, course E. Across canyon	
	7.00	bottom over loose rocks thru dense underbrush.	
7	79.86	Fall 3 lks.E. of the cor. of secs. 7,12,13, and 18, which	
		I destroy and in the same place set a malpais boulder, 15x12x6ins., loins.in the ground, for cor. of secs. 12 and	
		13.T 19 N R 2 W., marked, 09 on W. face, with 2 notches on	
		N. and 4 notches on S. Edge. from which	
		An oak fins.diam., bears N 40°W. 29 lks., dist.,	
		marked: 09 T 19 N R 2 W S 12 BT. No other tree available. Raise a mound of stones,2ft.	
		hase, 1, 1/2 ft. high, w. of cor. Pits impraticable.	
-		course of half mile is N 0°02 W. 39.93 chs.	
		Land, level. and mountainous.	
		Soil, rocky; 4th rate.	
		Timber, cedar, and pine. underbrush, cedar and scrub oak.	
	,	tand covered with lose rocks and dense timber and	
1		underbrush, exceptionally difficult to survey, 79.86 chs.	
		North bet.secs.7 and 12.	•.
i de		Over canyon bottom over loose rocks thru dense underbruk	3 1
,	7.00	Asc.Sw.slope over loose rocks thru dense timber and underbrush.	
1	4.00	necessary steen NW slope over loose rocks.	
	5.00	Well's canyon wash, 100 lks.wide, course SW. Ascend bluff	
		40 ft.high. Top of bluff. over level land covered with loose rocks.	
i	8.80	o alow of 2 cec cor. Which I destroy and in	
4	0.27	the same place get a mainais stone Loadabilis. Availa. All	
	İ	the ground, for 4 sec. cor., marken; 09 4 on w. lace,	
		from which A cedar loins.diam., bears S 35°W. 44 lksdist.,	
		$OO = C \cdot RT$	
		No other tree available. Raise a maind of stones, 24t.	
İ		base, 1, 1/2 ft. high, W. of cor. Pits impraticable. Course of this half mile, N 0°06'E. 40.27 chs.	
		Course of curs harr mars ,	
1		North from \frac{1}{4} sec.cor.	
	00.00	Descend steep preceptitious slope into Hells canyon. Wash, 100 lks.wide, course E. Asc. steep slope over loose	
6	55.80		
g	30.55	-11 on the R of the old cor. of secs. 1.5.7 and 12.1	
		and in the same Diage Sti a mailed of	
		stone, 16X8X6ins., llins. in the ground, for cor. of secs. 1,6,7, and 12, marked 09 on NE. face, with 5 notches on S.	
		The second secon	
		A negar 12ing diam, Dears N U ou h. oo inse, and op	ŀ
		marked: 09 T 19 N R 1 W S 6 BT. A'cedar Sins.diam., bears S 35°15'E. 100 lks.dist.	
		$a_{1}a_{2}a_{3}a_{4} \wedge O = 0$ and $A = A = A = A = A = A = A = A = A = A $	
		ander gine diam bears S 7 45 W. 70 1KS. dist.,	
	į	marked: 09 T 19 N R 2 W S 12 BT. A cedar loins dism., hears N 32°30'W. 86 lks.dist.	
	- ADATOS	1 A A OO M IU M P 2 W S I HI A	
1	P Office Andread	Course of this half mile, N 0°19'W. 40.25 cms.	
	a sept Ambrida	rand mountainous and level.	
		Soil, rocky: 4th rate.	

Soil, rocky: 4th rate.
Timber, cedar.
Underbrush, cedar and scrub oak.
Land covered with loose rocks and dense timber or
underbrush, exceptionally difficult to survey, 80.55 chs.

west bay. of Tp.19 N., Rg.1 Wi chains. North bet.secs.l and 6. Ascending over loose rocks thru dense timber and underhrush. Top of ridge, bears NW. and SE. Desc. over loose rocks. 10.00 Wash, 25 lks.wide, course SW. Asc.over loose rocks. wall 54 lks.E. of the old \(\frac{1}{4} \) sec.cor., which I destroy an 22.00 39.96 This is in a nold timber cutting and bearing ahle. trees have been cut down. Course of this half mile, N 0°46'W. 39.96 chs. North from \(\frac{1}{4} \) sec.cor. Telegrahp line, bears NW. and SE. 64.57 S.F.P. and P. By.track, bears NW. and SE. 65.06 Telegraph line, beams NW. and SE. 65.63 wall 105 lks.w. of the cor. of Tps 19 and 20 N., Rgs. 80.06 1 and 2 w., which I destroy and in the same place set a malpais stone,16X8X8ins., llins.in the ground, for the cor. of Tps.19 and 20 N., Rgs. 1 and 2. W., marked, 09 On NE., wace, with 6 notches on N., S., E., and W. edges. from which:-A cedar 4ins.diam., bears N 61°30'E, 145 lk.dist., marked: 09 T 20 N R 1 W S 31 BT.

A cedar 8ins.diam., bears S 67°E. 35 lks., dist., marked: 09 T 19 N R 1 W S 6 BT. A cedar Sins.diam., bears S 77°15'W. 83 lks., dist., marked; 09 T 19 N R 2 W S 1 RT.
A cedar 6ins.diam., bears N 38°15'W. 42 lks.dist.,
marked; 09 T 20 N R 2 W S 36 RT. Course of this half mile, N 1°30'E. 40.10 chs.

Timber, cedar.

Mountainous land covered with loose rocks and dense timber and underbrush, exceptionally difficult to survey, 80.06 chs.

June 13, 1909.

in the same place set a malpais stone, 15x10x6ins., 10ins in the ground, for 4 sec.cor., and raise a mound of stones 2ft.haseml, 1/2 ft.high, w. of cor. Pits impratic

Land, mountainous. Soil, rocky; 4th rate.

underbrush, cedar.

west boundary of Tp. 20 N. Rg. 1 W.

chains! June: 27; At 6h.00m.,a.m.,l.m.t.,I set off 35°05'N. on the glat.arc: 23°23'N. on the decl.arc; and determine a meridian with the solar at the cor. of Tps. 19 and 20 N., Rgs. 1 and 2 W., previously described. Thence I run North hat.secs.31 and 36. Ascend over loose rocks thru dense timber and underbrus 10.50 Top of ridge, bears NW. and SM. Desc. over loose rocks. 22.36 Telegraph line, hears NE. and SW. 23.04 S.F.P. and P. Ry.track hears NE. and SW. 23.61 Telegraph line, bears NE. and SW. wall 153 lks.E. of 4 sec.cor., which I detsroy and in 40.57 the same place set a malpais stone, 2%x12x10ins., 20ins. in the ground, for a sec cor, marked 09 a on w. face, from which A cedar loins.diam., bears West 3 lks.dist., marked; 09 1 S 36 TT. No other tree available. Raise a mound of stones, 2ft. base,1,1/2 ft.high,w. of cor. Pits impraticable.
Course of this half mile is N 2°10'w. 40.60 chs.
North from \(\frac{1}{4} \) sec.cor. Center of Hells canyon, course SW. Asc. over loose rocks. 46.00 wall 72 lks. E cor. of secs. 25,80,81, and 36, which I 81.24 destroy and in the same place set a malpais stone, 18x14x12ins.,12ins.in the ground, for cor. of secs.25 and 36, marked 09 on MF. face, with 5 notches on N., and 1 notch on S. edge. from which A cedar 12ins.diam., bears S 11°30'W. 91 lks.dist., marked; 09 T 20 N R 2 W S 36 RT. A cedar Sins.diam., hears N 28°30'W. 65 lks.dist., marked: 09 T 20 N R 2 W S 25 BT. Course of this half mile is N 1°02'W. 40.65 chs. Land, mountainous. Soil, rocky; 4th rate. mimber, cedar. Underbrush, cedar and scrub oak. Mountainous land covered with loose rocks and dense underbrush, evceptionally difficult to survey, 81.25 chs. North bet.secs.25 and 30. Ascend over loose rocks thru dense underbrush. Top of malpais sidge, hears NW. and SE. Desc. over loose 5.00 rocks. Wash, 25 lks.wide, course SE. Asc. over loose rocks. 15.00 Road, bears NW. and SE. 15.80 Telegraph line, hears NW. and SE. 20.60 S.w.P. and P. Ry., bears NW. and SE. 21.08 Telegraph line, bears NW and SE. 21.65 Over mesa covered with loose rocks wall 147 lks.E. of the 4 sec.cor.which I destroy and in the same place set a malpais stone, 18x16x6ins., 12ins. in the ground, for 4 sec.cor., marked 09 4 on W. face, 37.00 40.77 from which A cedar 4ins.diam., bears S 65°30'w. 135 lks.dist. marked: 09 ½ S 25 RT.

No other tree available. Raise a mound of stones, 2ft.
hase, 1,1/2 ft.high, W. of cor. Pits impraticable. Course of this half mile is N 2°04'W. 40.80 chs. North from 4 sec.cor. Fall 175 lks.E. of the cor. of secs.24,25,19 and 30, which I destroy and in the same place set a malpais 81.17 stone,15x8x6ins.,10ins.in the ground, for cor. of secs. 24 and 25, marked 09 on NE tace, with 2 notches on S., and 4 notches on N. eage. from which A cedar 12ins.diam., hears \$ 70°15'w. 97 lks., dist. marked: 09 T 20 N R 2 W S 25 HT. No other tree available. Dig a pit,24x24x12ins.,NW. of stone,6ft.dist.and raise a mound of earth 4ft.base,2ft. high w. of cor. True course of this half mile is N2°29 W 40.41 West houndary of Tp.20 N., Rg.1 W.

chains. 7.65 40.25 41.50 50.00 80.60 40.37

Land, mountainous and rolling.
Soil, rocky; 4th rate.
Timber, cedar.
Underbrush, cedar and buck brush.
Land covered with loose rocks and dense underbrush, evceptionally difficult to survey, 81.21 chs.

North het.secs.19 and 24.

Over level land covered with loose rocks and dense timber and underbrush.

Poad hears NW and SE

Road, hears NW. and SE.
Fall 62 lks.W. of \$\frac{1}{2}\$ sec.cor.which I destroy and in the same place set a malpais stone, 16X14X8 ins., llins.in the ground, for \$\frac{1}{2}\$ sec.cor., marked 09 \$\frac{1}{2}\$ on W. face, from which A cedar Sins.diam., hears N 20°W. 45 lks.dist.,

marked: 09 1 S 24 RT.

No other tree available. Raise a mound of stones, 2ft. base, 1, 1/2 ft. hig., w. of cor. Pits impraticable.

Course of this half mile is N 0°53'E. 40.25 ths. North from ½ sec.cordescend. Wash, 25 lks.wide, course SW. Asc.over loose rocks. Over lavel land covered with loose rocks.

Over lavel land covered with loose rocks.

Fall 14 lks.E. of the old cor. of secs. 18,19,13 and 24 which I destroy and in the same place set amalpais stone,25x8x6ins.,19ins.in the ground, for cor. of secs.

13 and 24, marked 09 on N.F. face, with 3 notches on S.,

and N. edges. from which
A cedar Sins.diam., bears S 57°W. 75 lks., dist.,
marked: 09 T 20 N R 2 W S 24 BT.

A cedar 5ins.diam., bears N 46°W. 42 lks.dist., marked: 09 T 20 N R 2 W S 13 BT.

Course of this half mile is N 0°12'W. 40.35 chs.

Land, rolling. Soil, rocky: 4th rate.

Timber, sedar.

Underbrush, cedar.
Rolling land covered with loose rocks and dense timber and underbrush, exceptionally difficult to survey,

30.60 chs.

June 27; At this cor. I set off 23°20,1/2'N. on the decl.arc and observe the sun on the meridian atthnon; the resulting lat.is 35°07,1/2'N.

North bet.secs.13 and 18.

Over rolling land covered with I cose rocks and dense timber and underbrush.

Wall 44 lks.E. of \(\frac{1}{4}\) sec.cor.which I destroy and in the same place set a malpais stone, 18X6X6ins, 12ins.in the

ground, for \(\frac{1}{4}\) sec.cor., marked; 09 \(\frac{1}{4}\) on W. face. from whice A cedar leins. diam., bears S 68°W. 256 lks. dist., marked; 09 \(\frac{1}{4}\) S 13 BT.

No other tree available. Raise amound of stones, 2ft base, 1,1/2 ft.high, w. of cor. Pits impraticable. Course of this half mile is N 0°38'w., 40.37 chs.

North from \(\frac{1}{4} \) sec.cor.

Wash, 30 lks.wide, course NW.

Same wash, course NE.
Fall 12 lks.E. of the cor. of secs. 7,12,13 and 19 which destroy and in the same place set a malpais stone,
18X8X8ins., 12ins.in the ground, for cor. of secs. 12
and 13, marked 09 on NE. face, with 4 not others on S, and 2 not others on N, edge. from which

A cedar 12ins.diam., bears S 23°W. 37 lks.dist., marked: 09 T 20 N R 2 W S 13 BT.

A cedar 7ins.diam., bears N 59°W. 115 lks.dist., marked: 09 T 20 N R 2 W S 12 BT.

Course of this half mile is N 0°10'W.,40.47 chs. Land, rolling.
Soil, rocky; 4th rate.
Timber, cedar.

67.00° 74.40 80.84

		West boundary of Tp.20 N. Rg.1 W.
ch	ains.	
		Underbrush, cedar. Rolling land covered with loose rocks and dense timber and underbrush, exceptionally difficult to survey, 80.84 chs.
And the second s		North bet.secs.7 and 12. Descend over loose rocks thru dense timber and under- brush.
	4.00	Wash, 20 lks. wide, course NW. Asc. over loose rocks.
i	.4.93 10.14	Road, heras NW. and SE. Fall 70 lks. E. of the 4 sec. cor. which I destroy and in the same place set a malpais stone, 18X8X6ins., 12ins. in the ground, for 4 sec. cor., marked 09 4 on W. face from which
		A cedar 16ins.diam., bears S 18°W. 90 lks.dist.,
nder (Kommerce) unterface (EV) - europeiste	,	marked: 09 ½ S 12 RT. No other tree available. Raise a mound of stones, 2ft. hase, 1, 1/2 ft. high, w. of cor. Pits impraticable. Course of this half mile is N 1°00'w. 40.15 chs. North from ½ sec.cor. descend.
	14.50	Wash, 20 lks. wide, course SW. Asc. over loose rocks.
	\$4.30° 80.23	Road, bears NE. and SW. Fall 111 1ks.E. of the old cor. of secs.1,6,7, and 12. Which I destroy and in the same place set a malpais stone, 20X9X4 ins., 15ins. in the ground, for cor. of secs.
one will be a server of the se		1 and 12, marked 09 on NE. face, with 5 notches on S., and 1 notch on N. edge. and raise a mound of stones, 2ft. base, 1, 1/2 ft. high, w. of cor. Pits impraticable. Course of this half mile is N 1°35'w. 40.10 chs.
		Land, rolling. Soil, rocky: 4th rate. Timber, codar.
to completeless amores or base to e	,	Underbrush, dedar and buck brush. Rolling land covered with loose rocks and dense timber or underbrush, exceptionally difficult to survey80.25chs
		which had some 1 and 6
a se se se se se se se se se se se se se	0.20	North bet.secs.l and 6. Over level land covered with loose rocks. Wall 26 lks.E. of the 2 sec.cor.which I destroy and in
, 4 '	VV	the same place set a malpais stone, 18A10A01115., 121115.111
The state of the s		the ground, for 7 sec. col., marked of the ground of stones, 2ft. base, 1, 1/2 ft. high, w. of raise a mound of stones, 2ft. base, 1, 1/2 ft. high, w. of cor. Pits impraticable. Course of this halfi mile is N 0°22'w. 40.20 chs.
5	5.50	North from \(\frac{1}{4}\) sec.cor. wall 20,1/2 lks.W. of the closing cor. of Tps.,20 N., Rs.,1 and 2 W., which I destroy and in the same place
-		set a malpais stone, 20x9x61ns., 151ns. In the graduation of closing cor. bet. Tp. 20 N., Rs. 1 and 2.W., marked 09 CC or closing cor. bet. Tp. 20 N., Rs. 1 and 2.W. marked 09 CC or closing cor. bet. Tp. 20 N., Rs. 1 and 2.W. marked 09 CC or closing cor.
4		on S., E., and W. faces. and raise a modaticable.
N	•	Land rolling.
		Soil, rocky; 4th rate. No timber or underbrush.
		Rolling land covered with loose rocks, 55.50 chs. June 27, 1909.

Chains.

West boundary of Tp. 20 N.

Bounda	aries	of Tr	. 20	N.	Rg.	1	W.	
Latitudes,	Depar	tures	, and	i c	losi	ng	erro	rs.
						-		

	True Ditue		True Distance Latitudes			des	s Departures			
Line designated	bearing	DISPARCE	N	S	E	W				
5th Standard Parallel N.	N86°54'W	40.20	2/17			101				
5 % O74B441-41-41-41-41-41-41-41-41-41-41-41-41-	N87º 15'W	40.50				40 4.				
	589°40'N	40.23		23		402				
	N89°24'W	40.55	42			405.				
	N89° 53'W	40.66	08			406				
	N89°07'W	40.35	62			403				
	N89°34'W	40.17	30			401				
	589°41'W	40.15		22		401				
	S89°33'W	29.53		2/		295.				
Y. bdy. TRONAIN	S 0° 46 E	15.30		1530	20					
	50° 22'E	40.20		4020	 					
	51035'E	40.10		4000						
	S/00'E	40.15		4014	1					
· -	50° 10'E	40.47		4047	/ / 3					
	50°38'E	40.37		4037	44					
	50° 12'E	40.35		4035	1 14					
	50°53'W	40.25		4020	*	6				
	52°29'E	40.41		4037						
	52°04'E	40.80		4077	147					
	S1°02'E			4064	4					
SI I TOON BING	52° 10' E			405	1 1 5 3	+ + + + + + + + + + + + + + + + + + +				
S.bdy. T.ZON. RIW.		347.40			34740					
S.W.S.R. Mer. thro T20N.	NO°34'E	14.00			14					
	NO°25'W.		.3965			1 2				
	Noº18'W.		4014			2				
	W.1048' €	39.22	.3920		123					
	N. 1042'W		3988			1//				
	N. 2° 07'W		3969	$H \rightarrow H$		1 / 7				
	N.0°12' N.		 	H + H		27				
	N.3°09'E	39.73	3967		2-/8	1-1-1-1				
	N.0° 12' W.	ž.			 					
•	NO 09'W.		3960	 	11 1 1 1					
•	N0°04'W		39/3	 	11 1 1 1	0				
Convergency						3				
Totals		'	459.91	460.17	359.41	359.5				
Error in lat.	*		·	459.91	J. ,	159.4				
	•		•	Error	in dep.	.0				

Gereral description.
This township is is rough and cut by deep canyonsand covered with a dense growth of cedar timber. The soil is rocky. In running the boundaries of this Tp. I destroyed the old corners.

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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 Alfred N.	Oliver
	running, measuring, and
marking the lines and corners described in the foregoing field notes of the surve	w of the West
boundary of Tps. 17, 19 and 20 N. Rg. 1 W.	,
showing the respective capacities in which they acted:	
Archie Johnston	, Chainman.
	, Moundman.
W. R. Johnston	
R. R. Lane	, Flagman.
FINAL OATH OF ASSISTANTS.	
We hereby certify that we assistedAlfred N. Oliver	
, United States Deputy Su	rvevor, in surveying all
nose parts or portions of the West boundary of Tps. 17, 19, a	nd 20 N n a m
the foregoing field notes as having been surveyed by him and under his directions been in all respects, to the best of our knowledge and belief, well and faith rner monuments established, according to the instructions furnished by the leneral for Arizona.	f11 7 - 7 - 7
	. ~
(1) Clic Distant	Chainman.
wini your sion	, Chainman.
J	, Moundman.
2/ 2 1 //	, Moundman.
M.R. Johnston	$\dots, Axman.$
	Axman.
	Vil, Flagman.
scribed and sworn to before me this 27th.	·
day of June 1909, 190	
OCCOCC SEALO	in
-151 N	to Survey
To notary available without loss of time and great (xpense.

197

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Alfred N. pliver	, United States Deputy Surveyor, do
that in pursuance of a contract received from.	Frank S. Ingalia
ATIZONS ATIZONS	, Dearing date of the
19th day of November, 1909, 190 , I h	have well, faithfully, and truly, in my own
and in strict conformity with the instructions	furnished by the United States Surveyor
the Manual of S	Surveying Instructions, and the laws of the
Inited States surveyed all those parts or portions of Inc. We	BET DOURGALY OF The TI
and 20 N. Rg. 1 W.	
WHY BY ALL STEELS	
	of the Gila and Salt
River meridian, in the Territory of	Arizona which are represented in the
Goregoing field notes as having been surveyed by me, and und	der my direction: and I do further solemnly
foregoing field notes as having been surveyed by me, and und swear that all the corners of said survey have been established	d and perpetuated in strict accordance with
the Manual of Surveying Instructions, and the special written	instructions of the United States Surveyor
the Manual of Surveying Instructions, and the special written General for Arizona and in the specific m	nanner described in the field notes, and that
General for AIIZONA and in the speciment	
the foregoing are the original field notes of such survey.	
~ M	$^{\prime}$, $^{\prime}$ $^{\prime}$
alfr	United States Deputy Surveyor.
$oldsymbol{ u}$	
Subscribed by said Marsh & Climan, and swor this 18th day of America, 190	to hefore me
Subscribed by said Mary , and swor	n to before me
this day of funt, 190	, , ,
-Mi	and I sigalle
999999	unted States Surger bear
SEAL O SOCOOO	until Cales Purpy Sens
	for alizana
APPROVAL	<u>-</u> Y
	any no Av
OFFICE OF THE UNITED STATES SL	JRVEYOR GENERAL,
The state of the s	my Chan Opril 27, 190/9
The foregoing field notes of the survey of the We	at houndaries of If
17-19- and to North Pauge / West,	The wel Walt King
Base and Meridian	
	1 Deputy Ourses
executed by	1908, having been
under his contract No. 13, dated orman dated critically examined, and the necessary corrections and exp	
critically examined, and the necessary corrections and exp	Janations indus, 12
surveys they describe, are hereby approved.	if I bu zalle
C/I win	M I In Zalle United States Surveyor General.
I certify that the foregoing transcript of the field not	es of the above-described surveys in
, has been correctly copied	from the original notes on tile in this office.
	United States Surveyor General