

Book N

4-679.

①

16

FIELD NOTES

OF THE SURVEY OF THE

1807

1807

Subdivision Lines
of
Township No. 4 South, Range No. 14 East

BOOK 1807

Of the Gila and Salt River Basins and Meridian,
In the Territory of Arizona

AS SURVEYED BY

Philip Conzen, United States Deputy Surveyor,

Under his Contract No. 114, dated March 15, 1891

Survey commenced July 1, 1891

Survey completed July 19, 1891

NAMES AND DUTIES OF ASSISTANTS.

John M. Sawyer, J. Bernard Wright, chairman ✓

Charles G. Aldridge, musician ✓

Austin A. Lynght, apman ✓

Arthur Rogers, flagman ✓

1807

BOOK 1807
 INDEX DIAGRAM.

Township 4 South, Range 17 East

6	50	5	37	4	25	3	15	2	9	1
49		48		36		27		18		8
7	47	8	35	9	26	10	17	11	8	12
		46		34		25		16		7
18	45	17	37	16	24	15	15	14	6	13
		44		33		23		14		6
19	43	20	36	21	22	22	13	23	5	24
		41		31		22		13		4
30	40	29	30	28	21	27	12	26	3	25
		39		29		20		11		2
31	37	32	28	33	19	34	10	35	2	36

Meanders Page.....

PRELIMINARY OATHS OF ASSISTANTS.

WE, John M. Prager and Bernard Wright
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain over even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of the subdivision lines of S 4 S, R 17 E

John M. Prager, Chainman.
Bernard Wright, Chainman.

Subscribed and sworn to before me this 1st
day of July, 1891904



Philip Contzen
U. S. Deputy Surveyor
(no notary available)

WE, 9 Chesley G. Aldridge 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 ^{me} us, to the best of ^{my} our skill and ability, in the survey of the subdivision lines of S 4 S, R 17 E

Chesley G. Aldridge, Moundman.
Moundman.

Subscribed and sworn to before me this 1st
day of July, 1891904



Philip Contzen
U. S. Deputy Surveyor
(no notary available)

WE, 9 Austin A. Lyquist 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 ^{me} us, to the best of ^{my} our skill and ability, in the survey of the subdivision lines of S 4 S, R 17 E

Austin A. Lyquist, Axman.
Axman.

Subscribed and sworn to before me this 1st
day of July, 1891904



Philip Contzen
U. S. Deputy Surveyor
(no notary available)

I, Arthur Pogue, 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 subdivision lines of S 4 S, R 17 E

Arthur Pogue, Flagman.

Subscribed and sworn to before me this 1st
day of July, 1891904



Philip Contzen
U. S. Deputy Surveyor
(no notary available)

chains

Survey commenced July 1, 1904, and executed with a Young & Sons light mountain transit, No. 5009, 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 latitudes and declination arcs.

The instrument was examined, tested on the true meridian at Phoenix, found correct, and was approved by the surveyor general for Arizona, June 10, 1904.

Examined the adjustments of the transit, and correct the level and collimation errors; 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, & proceeded as follows:

At the cor of ores 1, 2, 35 and 36 on the S leg of the Sp, as heretofore described; latitude $33^{\circ}2' N$, longitude $110^{\circ}33' W$; I set off $33^{\circ}2' N$ on the lat. arc, $23^{\circ}7' N$ on the decl. arc, and at 4:30 p.m., l.m.t., determined with the solar meridian and mark a point, thereof, on a stone firmly set in the ground, 5 chs N of the cor.

July 1, 1904.

At 12^{h 55^m} a.m., by my watch, which is correct, I observed Polaris at eastward 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.

July 2, 1904.

July 2: At 6:40 a.m., l.m.t., I lay off the azimuth of Polaris $9^{\circ}26'$ to the West, and mark the meridian thus determined, by cutting a small groove in the stone set July 1, in which the meridian falls 0.3 ins East of the mark determined by the solar.

At 8^{h 47^m} a.m., l.m.t., I set off $33^{\circ}2' N$ on the lat. arc, $23^{\circ}4'$ 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 falls 0.3 ins West of the meridian established by the Polaris observation.

The solar apparatus by p.m. and a.m. observations, defines positions for meridians, respectively about $0^{\circ}16''$ East and $0^{\circ}16''$ West of the meridian established by the Polaris observations; therefore I conclude that the adjustments of the instrument are satisfactory.

Subdivision of P 4 S, R 17 E.

- S. magnetic bearing of the true meridian at 8^h 20^m a.m. is
 N. 13° 45' W; the angle thus determined gives the mag-
 netic decl. 13° 45' E.
- Shaver Point
 N. 0° 1' W, bet sees 35 and 36.
- Over mountainous land, descending.
- 2.00 Deer creek, 60 lbs wide, course W. westerly; rivard to Manning's
 ranch, bears E. easterly and W. westerly; ascend.
- 36.00 S. of high ridge, 500 ft above Deer creek, bears E. easterly
 and W. westerly; descend.
- 40.00 S. of a sandstone, 18 x 10 x 8 ins, 12 ins in the ground, for $\frac{1}{4}$ sec
 cor. marked $\frac{1}{4}$ on W. face, from which
 A cedar, 24 ins diam, bears S 62 $\frac{1}{2}$ ° E, 113 lbs dist, marked
 $\frac{1}{4}$ S 36 B D.
- A cedar, 24 ins diam, bears N 77 $\frac{1}{2}$ ° W, 170 lbs dist, marked
 $\frac{1}{4}$ S 35 B E; rises a mound of stone, 2 ft base, 1 $\frac{1}{2}$ ft high,
 W. of cor.
- 48.00 Gulch, 200 ft below top of ridge, 30 lbs wide, course W. westerly;
 ascend.
- 57.00 S. of ridge, 200 ft above gulch, bears E. easterly and
 W. westerly; descend.
- 60.00 Bottomwood grove bears about 10 lbs W.
- 67.50 Galb's canyon, 175 ft below top of ridge, 80 lbs wide, course
 S. W. westerly; ascend.
- 80.00 S. of a sandstone, 18 x 10 x 6 ins, 12 ins in the ground, for cor. of
 sees 25, 26, 35 and 36, marked with 1 not on S and E
 sides. from which
 A Palo verde, 6 ins diam, bears N 74 $\frac{1}{2}$ ° E, 331 lbs dist, marked
 P 4 S R 17 E S 25 B D; within 100 yds within limit; rises a
 mound of stone 2 ft base, 1 $\frac{1}{2}$ ft high, W. of cor. Site imprac-
 ticable.
- Land, mountainous.
- Soil, gravelly and stony; 3rd and 4th roots.
- Similar, scattering cedar, Palo verde and mesquite;
 underground yucca, trillium, mesquite, palmilla, Spanish
 bayonet and cactus.
- Paint cactus.
- Mountainous land, 8000 lbs.
- East in a random line bet sees 25 and 36.
- 40.00 S. of top of $\frac{1}{4}$ sec cor.

Subdivision of S 4 S, R 17 E.

chains

- 50.04 Intersect E bay of Sp at the cor of sres 25, 30, 31 and 36, as hereinafter described.
Shaner & run
West on a town line bet sres 25 and 36.
Over mountainous land, ascending.
- 50.00 Top of ridge, 75 ft above sres cor, bears N. Easterly and S. Westerly; begin descent of W slope through dense undergrowth.
- 52.00 Set a limestone, 18 x 10 x 8 ins, 12 ins in the ground, for witness cor to 4 sres cor marked. It is 6 1/4 on N face; and rises in a mound of stone 2 ft base, 12 ft high, N. of cor. Site impracticable, descend abruptly to
- 54.00 Gulch canyon, 500 ft below top of ridge, 40 lbs wide, course Westerly; bears dense undergrowth.
- 40.02 Falls in canyon.
- 46.00 Level canyon, course S. Westerly; begin steep ascent.
- 56.00 Top of ridge, 200 ft above canyon, bears Northwesterly and Southwesterly; descend.
- 75.70 Gulch, 250 ft below top of ridge, 20 lbs wide, course S. Westerly; ascend.
- 80.04 Sres cor of sres 25, 26, 35 and 36.
Land, mountainous.
Soil, gravelly, stony and rocky; 3rd 4th path.
Timber, scattering, cedar, pale negro, pale verde and mesquite; undergrowth, jibora, tagata, mesquite, palmilla, mayeal, Spanish bayonet, and cacti.
Crown cactus.
Mountainous, or land covered with dense undergrowth, 80.04 chs.
July 2: At this cor set off 23° 3' 20" on the decl arc; and at 12° 6' mt, observe the sun in the meridian; the resulting lat is 33° 3' N, or within 0° 1' of the proper lat.
- N. 0° 1' W, bet sres 25 and 26.
Over mountainous land, ascending.
- 20.00 Top of ridge, 250 ft above cor of sres 25, 26, 35 and 36, bears N. Westerly and S. Easterly; descend.
- 25.50 Gulch, 26 lbs wide, course S. Westerly; ascend.
- 29.00 Gulch, 80 lbs wide, course S. Westerly.
- 35.00 Top of ridge, 100 ft above gulch, bears Easterly and Westerly; descend.

Chains
 Subdivision of S 4 S, R 17 E.

39.00	Crch, 20 lbs wide, course S. W. to top; ascend.
40.00	Set a malpais stone, 18 x 10 x 8 ins, 12 ins in the ground, for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on N. face; and raise a mound of stone 2 ft base, $\frac{1}{2}$ ft high, W of ev. Site impracticable.
52.00	Top of hill, 300 ft above $\frac{1}{4}$ sec ev; descend.
67.30	South fork of Guas canyon, 200 ft below top of hill, 35 lbs wide, course N. to top; ascend.
74.00	Top of spur, 100 ft above canyon, extending S. W. to top; descend.
80.00	See point. falls in gulch.
81.50	Set a malpais stone, 18 x 10 x 8 ins, 12 ins in the ground, for witness ev to ev of secs 23, 24, 25 and 26, marked N 6, with two notches on S and 1 notch on E side; and raise a mound of stone 2 ft base, $\frac{1}{2}$ ft high, W of ev. Site impracticable.
	Land, mountainous.
	Soil, gravelly, stony and rocky; 3rd and 4th water.
	Timber, scattering, piñon, palo verde, palo verde, mesquite, cedar and a few in the woods in canyon; underground, joboa, palo verde, mesquite, palmito, Spanish bayonet and cacti.
	Gravel in chs.
	Mountainous land, 8000 chs.
	East, on a random line bet secs 24 and 25.
40.00	Set $\frac{1}{4}$ sec ev.
80.12	Enter net & bay of S 5 lbs S of ev of secs 19, 24, 25 and 30, as here to four described.
	Shaver Firm
	S 39° 58' N, on a true line bet secs 24 and 25.
	Over mountainous land, descending along N. W. slope of ridge, through heavy piñon and cedar timber.
15.00	Gulch, 300 ft below sec ev, 20 lbs wide, course S. W. to top; broad heavy timber and ascend.
24.00	Top of S slope of ridge; ascend.
37.80	Same gulch, 20 lbs wide, course N. N. W.; ascend.
40.00	Set a malpais stone, 20 x 12 x 10 ins, 15 ins in the ground, for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on N. face; from which
	A piñon, 5 ins diam, bears S 53 $\frac{1}{2}$ ° W, 20 lbs dist, marked $\frac{1}{4}$ S 25 B S.
	A piñon, 6 ins diam, bears N 82 $\frac{1}{2}$ ° W, 29 lbs dist, marked $\frac{1}{4}$ S 24 B S; descend.
41.50	Same gulch, 20 lbs wide, course S. W. to top; ascend.
44.00	Top of rocky spur, extending S. W.; descend.

Subdivision of S 4 S, R 17 E.

Chains

22.50 South fork of Texas canyon, 250 ft below top of spur, 20 lbs wide, course S. Westerly; ascend.
 80.12 Cor point of secs 23, 24, 25 and 26.
 Ground, mountainous.
 Soil, gravelly, stony and rocky; 3rd and 4th rate.
 Similar, pines and cedar and scattering Laurel; underground, jubwa, oak, trista, palmillo, Spanish bayonet, mesquite and cacti.
 Grant cactus.
 Mountainous, or heavily timbered land, 80.12 chs

July 2, 1904

July 3: At 6⁴⁵ am, left, Boat off 33° 3' N. In the lat arc 290° N. on the level arc; and determined a meridian with the solar at the cor of secs 23, 24, 25 and 26.

Thence from

N. 0° 1' N, lat secs 23 and 24, from cor point in gulch.

Over mountainous land, ascending through dense undergrowth.

80 Gulch, 1 ch wide, course S. Westerly.

1.50 Witness cor.

12.00 Top of E slope of ridge; descend.

3000 Foot, bars E and W; begin ascent along W slope of ridge.

40.00 Set a sandstone, 18 x 8 x 8 ins, 12 ins in the ground, for cor marked 4 on N face; from which a probe was run, 8 ins diam, bars N. 29 1/4° E, 166 lbs dist, marked 1/4 S 24 B 3.

A corner, 14 ins diam, bars N. 8 1/2° W, 158 lbs dist, marked 1/4 S 23 B 3, and raised a mound of stone 2 ft base, 1 1/2 ft high, N of cor.

45.00 Top of slope descend.

55.00 Box canyon, 100 ft deep, 40 lbs wide, course S. Easterly; thence ascend along E slope of ridge.

80.00 Set a sandstone, 18 x 10 x 6 ins, 12 ins in the ground, for cor of secs 13, 14, 23 and 24, marked with 3 nails on S and 1 nail on E side; and raised a mound of stone 2 ft base, 1 1/2 ft high, N of cor. Site impracticable.

Ground, mountainous.

Soil, gravelly, stony and rocky; 3rd and 4th rate.

Similar, scattering cedar, palo negro and palo verde; underground, jubwa, trista, mesquite, palmillo, Spanish bayonet, mesquite, mesquite and cacti.

Grant cactus.

Subdivision of S 4 S, R 14 E.

chains

	<p>Mountains, or land covered with dense undergrowth, 80.00 chs.</p>
4000 8006	<p>N. 89° 58' E, on a random line bet sees 13 and 24. Set a mark $\frac{1}{4}$ sec cor. Intersect E. bay of S/4 at cor of sees 13, 18, 19 and 24, as heretofore described. Shaner Brown S 89° 58' N, on a true line bet sees 13 and 24, through dense undergrowth. Over mountains land, along S. slope of ridge over 5 paces extending S.</p>
110.03	<p>Set a limestone 20 x 10 x 8 ins, 15 ins in the ground, for $\frac{1}{4}$ sec cor marked $\frac{1}{4}$ in N. face, from which A pale negro, 8 ins diam, bears N 10° E, 80 lbs dist, marked $\frac{1}{4}$ S 13 B S. A cedar, 24 ins diam, bears S 25° W, 54 lbs dist, marked $\frac{1}{4}$ S 24 B S; and near a mound of stone 2 ft base, $\frac{1}{2}$ ft high, N of cor.</p>
67.10	<p>bech, 10 lbs wide, course S northerly; ascend.</p>
72.00	<p>3 1/2 ft of ridge, bears Northerly and Southerly; descend.</p>
80.06	<p>Shore of sees 13, 14, 23 and 24. Land, mountains. Soil, gravelly, stony and rocky; ord and 4th rate. Timber, scattering cedar, pale negro, pale cedar and fir, undergrowth, jubara, pale cedar, pale negro, pale willow, amule, Spanish bugonst, mesquit and cactu. Joint cactus.</p>
	<p>Mountains or land covered with dense undergrowth, 80.06 chs July 3: At this cor set off 29^{58'} N on the steel wire and at 12^h 5^m 1st mt, observe the sun on the meridian; the resulting lat is 33° 4' N. ✓</p>
20.40 40.00	<p>N. 0° 1' W, bet sees 13 and 14. Over mountains land, ascending through dense undergrowth. bech, 50 lbs wide, course S. Westerly. Set a limestone 18 x 10 x 6 ins, 12 ins in the ground, for $\frac{1}{4}$ sec cor marked $\frac{1}{4}$ in W face, from which. A pale negro, 8 ins diam, bears N 10° E, 70 lbs dist, marked $\frac{1}{4}$ S 13 B S. A pale negro, 6 ins diam, bears N 70° W, 50 lbs dist, marked</p>

Subdivision of S 4 S, R 17 E

basins

	<p>$\frac{1}{4}$ S 14 B Sand raise a mound of stone 2 ft base, $\frac{1}{2}$ ft high, W of ev.</p>
55.00	<p>Enter gulch, corner S. Westerly</p>
61.00	<p>Leave gulch, corner S.</p>
72.00	<p>Top of ridge, 600 ft above ev of sees 13, 14, 23 and 24, bears Easterly and Westerly; begin steep descent.</p>
80.00	<p>Set a limestone, 20x10x8 ins, 15 ins in the ground, for ev of sees 11, 12, 13 and 14, marked with 4 notches on S and 2 notches on E edge; and raise a mound of stone 2 ft base, $\frac{1}{2}$ ft high, W of ev. Pits impracticable. Land, mountainous. Soil, gravelly, stony and rocky; 3rd and 4th rate. Timber, scattering <i>Fraxo nigra</i>, <i>erocary</i>, <i>pinus</i> and <i>fraxo viridis</i>; undergrowth; <i>juniper</i>, oak, <i>palmito</i>, Spanish bayonet, <i>umck</i>, <i>myrsine</i> and cacti. Grass cactus. Mountainous or land covered with dense undergrowth, 5.000 chs.</p>
	<p>N. 89° 55' E, on a random line bet sees 12 and 13.</p>
40.00	<p>Set trip $\frac{1}{4}$ see ev.</p>
80.14	<p>Enter set & body of S 1/2 S of ev of sees 7, 12, 13 and 18, as hereinafter described. Bearing S 1/2 W S 89° 56' W, on a true line bet sees 12 and 13. Over mountainous land, descending through dense undergrowth.</p>
25.00	<p>Head of Bull gulch, 300 ft below see ev, corner S. E; as usual.</p>
38.00	<p>Ridge, bears N. and descends.</p>
40.07	<p>Set a limestone, 18x8x8 ins, 12 ins in the ground, for $\frac{1}{4}$ see ev marked $\frac{1}{4}$ on N. face; and raise a mound of stone 2 ft base, $\frac{1}{2}$ ft high, N of ev. Pits impracticable.</p>
22.00	<p>Point, 200 ft below $\frac{1}{4}$ see ev, bears N. Easterly and S. Westerly; as usual.</p>
80.14	<p>3rd ev of sees 11, 12, 13 and 14. Land, mountainous. Soil, gravelly and stony; 3rd and 4th rate. Timber, scattering <i>erocary</i> and <i>fraxo viridis</i>; undergrowth; <i>juniper</i>, oak, <i>lambert</i>, <i>palmito</i>, Spanish bayonet, <i>umck</i>, <i>myrsine</i> and cacti.</p>

Subdivision of S 4 S, R 17 E.

6 hours

Gravitometer.
Mountains or land covered with dense undergrowth, 8000
chs.

July 3, 1904.

July 4: At 7:00 am, mt, Port off 33° 5' N in the
lat. arc; 22° 55' N on the arc; and determine
meridian with the solar at the eve of arcs 11, 12, 13 and 14.

Shower & rain
N 0° 1' W, bet arcs 11 and 12.

Over mountainous land, ascending through dense under-
growth.

5000 Gulch, 10 lbs wide, course S. Westerly; ascend.
1600 Top of ridge, 100 above gulch, bears N. E. and S. W.
ascend.

3275 Gulch, 250 ft below top of ridge, 20 lbs wide, course N.
Easterly; ascend.

4000 Set a limestone, 18-8-7 ins, 12 ins in the ground, for
screw marked $\frac{1}{2}$ on W face; and raise a mound of
stone, 2 ft base, 1 1/2 ft high, W of ev. Pits impracticable.

6850 Top of ridge, 300 ft above gulch, bears Easterly and
Westerly; descend.

8000 Set a limestone, 18 x 12 x 10 ins, 12 ins in the ground, for ev
of arcs 1, 2, 11 and 12, marked with 5 notches on S and
1 notch on E edge; from which
A rod, 24 ins diam, bears N 20° E, 55 lbs dist, marked
S 4 S R 17 E S 1 B S.

A rod, 20 ins diam, bears S 10° W, 120 lbs dist, marked
S 4 S R 17 E S 11 B S. no other bears within limit; and
raise a mound of stone, 2 ft base, 1 1/2 ft high, W of ev.
Pits impracticable.

Ground, mountainous.

Soil, gravelly, stony and rocky; 3rd and 4th rats.

Similar scattering grass, pine and oak; under-
growth oak, gopher, palmilla, Spanish bayonet, myrtle,
musk and cacti.

Mountains, or land covered with dense undergrowth,
8000 chs.

N. 89° 56' E, on a random line bet arcs 1 and 12.

4000 Set camp $\frac{1}{2}$ arc ev.

Continuation of S 4 S, R 17 E.

6 lines

8010 Entersect E. bay of Sp 3 lbs S of cor of sres 1, 6, 7 and 12, as heretofore described
Shiner & run
S 89° 55' W, on a true line bet sres 1 and 12.
Over mountainous land, ascending.

200 Top of ridge, bears N. and S; described.

600 Deep gulch, 20 lbs wide, course Northerly; begin steep ascent through dense oak brush and palo negro undergrowth.

34.00 Top of S.E. end of limestone ridge, 700 ft or more gulch; broad, dense undergrowth and sandy.

40.05 In the limestone, 18 x 10 x 6 ins, 12 ins in the ground, for 1/4 sec cor marked 1/4 on N. face; from which
A rod, 10 ins diam, bears S 20° 7' E, 104 lbs dist, marked 1/4 S 12 B.

A rod, 10 ins diam, bears N. 38° W, 104 lbs dist, marked 1/4 S 1 B; this cor stands on N.E. end of old megal pit.

53.00 Gulch, 400 ft below top of ridge, 20 lbs wide, course N. Westerly; ascend.

75.00 Begin steep ascent over limestone bluffs.

80.10 The cor of sres 1, 2, 11 and 12.

Land, mountainous.
Soil, generally stony and rocky; soil and 4th rate.
Timber, scattering Pinon, palo negro and cedar; undergrowth, oak, palo negro, jiboa, palo verde, tesota, amole, palmito, Spanish bayonet, megal and cacti.
Mountainous or land covered with dense undergrowth,
80.10 chd.

July 4: If this cor part off 22° 53' N on the level road; and at 12.5 m l mt, observe the sun on the meridian, the resulting lat. is 33° 6' N.

40.00 N. 0° 1' W, on a random line bet sres 1 and 2.
Set camp 1/4 sec cor.

8002 Entersect N. bay of Sp at cor of sres 1, 2, 35 and 36, as heretofore described
Shiner & run

S. 0° 1' E, on a true line bet sres 1 and 2.
Over mountainous land, ascending.

Gulch, 30 lbs wide, course N. Easterly; ascend.

Top of spur, extending N. E.; described.

Subdivision of S 4 S R 17 E.

chains.

- 13.00 Gulch, 100 ft below top of spur, 20 lbs wide, course N. Easterly; ascend.
- 25.00 Top of ridge, 200 ft above gulch, bars N. Easterly and S. Westerly; ascend.
- 40.02 Set a point for $\frac{1}{4}$ sec ev falls on limestone in place, 10x10 ins, 11 ins above ground, on which
but a cross at the exact ev point for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on N side of cross; and raise a mound of stone, 2 ft base, $\frac{1}{2}$ ft high, N of ev. Pits impracticable.
- 55.00 Gulch, 250 ft below top of ridge, 25 lbs wide, course N. Easterly; ascend.
- 77.00 Ascend over bluffs
- 78.00 Top of bluffs, bars E. and N; ascend.
- 80.02 Set ev of sres 1, 2, 11 and 12.
Land, mountainous.
Soil, stony and rocky; with trap.
Timber, scattering cedar, pine and paulo negro; undergrowth, jubara oak, paulo negro, tricot, paulo melle, Spanish bayonet, bunch, mesquite and cacti.
Mountainous land, 80.02 chs.

July 4, 1904.

July 5: At 6^h 45^m a.m. cut S 4 S off 32° 2' N in the lat. arc; top 49' N in the decl arc; and determine a meridian with the survey at the ev of sres 2, 3, 34 and 35, on the S body of the Sp, as heretofore described.

Shaded Brown

N. 0° 1' N, lat sres 34 and 35

Over mountainous land, descending through some jubara undergrowth.

- 37.50 Corral, bars about 15.00 chs E.
- 38.30 Dry creek, 500 ft below sec ev, 80 lbs wide, ^{course} S. Westerly; road to Mannings ranch, bars N. Easterly and S. Westerly.
- 39.50 Sap² bank, 50 ft high, ascend.
- 40.00 Set a sandstone, 20x10x8 ins, 15 ins in the ground, for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on N face; and raise a mound of stone, 2 ft base, $\frac{1}{2}$ ft high, N of ev. Pits impracticable.
- 60.50 Gulch, 250 ft above creek, 40 lbs wide, course S. Westerly.
- 80.00 Set a conglomerate stone, 20x10x8 ins, 15 ins in the ground, for ev of sres 26, 27, 34 and 35, marked with 1 notch on E and 2 notches on S edge; and raise a mound of stone, 2 ft base, $\frac{1}{2}$ ft high,

blains

	<p>Top of ev. pits impracticable. Land, mountainous. Soil, gravelly, stony and rocky; 3rd and 4th rates. Timber, scattering mesquite, palo verde, palo verde, cedar and a few cottonwoods along deer creek; undergrowth, jilwood, tosta, mesquite, palmillo, Spanish bayonet and cacti. Giant cactus. Mountainous or land covered with dense undergrowth, 80.00 chs.</p>
40.00	<p>East on a ravine line bet secs 26 and 35. Set camp $\frac{1}{4}$ sec ev.</p>
80.08	<p>Pyriset N. and S. line, 5 chs N. of ev of secs 25, 26, 35 and 36; Thruver Point N. 89° 58' W, on a line bet secs 26 and 35. Over mountainous land, descending through dense undergrowth.</p>
6.00	<p>Gulch, 100 ft below sec ev, 15 chs wide, course southerly; ascend.</p>
5.00	<p>Top of ridge, bars N. Easterly and S. Westerly; descend.</p>
10.00	<p>Gulch, 15 chs wide, course southerly; ascend.</p>
14.00	<p>Top of ridge, 100 ft above gulch, bars Northerly and Southerly; descend.</p>
20.00	<p>High hill, bars N., about 15.00 chs dist.</p>
40.04	<p>Gulch in deep gulch, 250 ft below top of ridge, 20 chs wide, course S. Westerly; ascend.</p>
41.50	<p>Set a sandstone, 18 x 8 x 4 ins, set in the ground, for witness ev to $\frac{1}{4}$ sec ev marked N 6 $\frac{1}{4}$ W, N. face, and raise a mound of sand, 2 ft base, 1 $\frac{1}{2}$ ft high, W. of ev, pits impracticable.</p>
46.00	<p>Ridge, 150 ft above gulch, descend.</p>
49.00	<p>Gulch, 30 chs wide, course southerly; ascend.</p>
55.00	<p>Top of ridge, bars Northerly and Southerly; begin steep ascent.</p>
58.30	<p>Deep gulch, 100 ft below top of ridge, 20 chs wide, course S. Westerly; ascend.</p>
70.00	<p>Top of ridge, 150 ft above gulch, bars Northerly and Southerly; ascend.</p>
80.08	<p>Top ev of secs 26, 27, 34 and 35. Land, mountainous. Soil, gravelly and stony; 3rd and 4th rates. Timber, scattering cedar, palo verde and palo verde; undergrowth, jilwood, tosta, palo verde, palo verde, palmillo, amole, Spanish bayonet, mesquite and cacti. Giant cactus.</p>

Subdivision of S 4 S, R 17 E

Journal

Mountains or land covered with dense undergrowth 8000
chs.

July 3. At this ev I set off 2248' N. on the steel wire; and
at 12th 4' mlyt, observed the sun on the meridian; the resulting
lat. is 33° 3' N or within 1" of the proper lat.

N. 0° 1' N, bet 26 and 27.

Over mountains land, ascending through dense undergrowth.

- 5.00 Top of ridge, bears N. easterly and S. Westerly; ascend.
- 13.40 Gulch, 100 ft below top of ridge, 30 lbs wide, course S. Westerly; ascend.
- 17.00 Top of ridge, 125 ft above gulch, bears N. easterly and S. Westerly; ascend.
- 19.70 Gulch, 30 lbs wide, course S. Westerly; ascend.
- 23.25 Top of spur, extending S. N.; ascend.
- 29.60 Gulch, 150 ft below top of spur, 20 lbs wide, course S. Westerly; ascend.

36.00 Top of spur, 100 ft above gulch, extending S. Westerly; ascend. stop.

40.00 Set a sandstone, 20 x 10 x 10 ins, 15 ins in the ground, for 1/4 sec
or marked 7 on N. face; from which

A crater, 14 ins diam, bears N. 76 1/2° E, 171 lbs dist, marked
1/2, S 26 1/2 S; no alteration within limit; and raise a mound of
stone, 2 ft base, 1 1/2 ft high, N. of ev. Site impracticable.

This ev stands on N. slope of spur, 100 ft above Abasco canyon.
44.00 Abasco canyon, 40 lbs wide, course N. turned S. Westerly; ascend.

- 73.00 Top of N. slope of ridge, 200 ft above canyon; ascend.
- 76.00 Gulch, 75 ft below top of slope, 10 lbs, course Westerly; begin
stop ascent.

80.00 Set a conglomerate stone, 20 x 10 x 9 ins, 15 ins in the ground,
for ev of sites 22, 23, 26 and 27, marked with 2 notches on
S. and E. edges; and raise a mound of stone 2 ft base, 1 1/2
ft high, N. of ev. Site impracticable.

Land, mountainous.

Soil, gravelly, stony and rocky; ev and 4th rate.

Plants, scattering cedar, pale yucca, pale weed and mesquite;
undergrowth, pale yucca, pale weed, mesquite, hawthorn, juba,
palmilla, Spanish bayonet, amole, mesquite and cacti.
Climat cactus.

Mountains or land covered with dense undergrowth,
8000 chs.

July 5, 1904.

Submission of S 4 S, R 17 E.
Chamis

- July 6: At 6^h 35^m am by land, set off 33° 3' N on the lat
arc, 229° 44' W on the decl arc, and determine a meridian
with the solar at the ev of sres 22, 23, 26 and 27.
Shaded S. mm.
- 89° 58' E, on a promontory line bet sres 23 and 26.
4.00 Set lamp 4 sres ev.
8.10 Enter set N. and S. line, 5 lks S of ev^{ht} of sres 23, 24, 25
and 26.
Shaded S. mm
- Not on a line bet sres 23 and 26, from ev point.
Over mountainous land, ascending through dense under-
growth.
- 1.25 Top of spur, extending S. descend.
23.00 Gulch, 200 ft below top of spur, 30 lks wide, E. and S. W;
and ascend along S. slope of spur.
28.00 Top of slope, 225 ft above gulch; ascend.
30.00 Gulch, 20 lks wide, E. and S. W. mostly; ascend.
40.00 Set a malpais stone, 18 x 8 x 6 ins, 12 ins in the ground, for 1/4
sre ev. marked 1/4 in N. face, and raise a mound of stone,
2 ft base, 1 1/2 ft high, N. of ev. Site impracticable.
44.00 Top of peak, 150 ft above 4 sres ev. descend.
54.00 Gulch, 150 ft below top of peak, 30 lks wide, across S. mostly,
begin ascent along S. E. slope of mountain.
8.10 The ev of sres 22, 23, 26 and 27; 450 ft above gulch.
Round, mountainous.
Soil, gravelly, stony and rocky; soil under 4th rate.
Timber, scattering cedar, pale green and pale red; under-
growth, juncos, huda, mesquite, palmito, Spanish bayonet.
Sand earth.
Gravit easter.
Mountainous or land covered with dense undergrowth,
8.10 etc.
-
- N. 0° 1' W, bet sres 22 and 23.
Over mountainous land, ascending through dense undergrowth.
3.00 Top of ground small; descend.
10.00 Shot, bars E. and W; ascend.
15.00 Top of spur, bars E. and W; Shaded along W. slope of
mountain.
16.00 High point, bars about 1500 etc E.
40.00 Set a malpais stone, 20 x 10 x 8 ins, 15 ins in the ground.

BOOK 1807

Chains

Subdivision of S 4 S, R 17 E

- (R) $\frac{1}{4}$ sec on marked $\frac{1}{4}$ on N. face; from which
A rod, 24 ins diam, bears N 24 $\frac{1}{2}$ ° E, 212 lbs dist, marked $\frac{1}{4}$
S 23 B S.
 - A rod, 12 ins diam, bears N. 17° N, 255 lbs dist, marked $\frac{1}{2}$ S 22
B S; and raised a mound of stone, 2 ft base, $\frac{1}{2}$ ft high, N. of
rod; discond.
 - 48.00 Gulch, 200 ft below Knoll, 30 lbs wide, course S. Westerly; as cond.
 - 48.70 Bore shaft, bears 1.00 ch E.
 - 55.00 Top of spur, 100 ft above gulch, extending Westerly; dis cond.
 - 58.00 Bore shaft, bears 2.00 ch E.
 - 60.00 Gulch, 30 lbs wide, course S. Westerly; as cond.
 - 62.00 Spur, extending S. Westerly; dis cond.
 - 63.00 Gulch, 10 lbs wide, course S. Westerly; as cond.
 - 77.00 Top of ridge, 200 ft above gulch, bears N. Easterly and S.
Westerly; dis cond.
 - 80.00 Falls on sandstone rock, 6 x 15 ft, 6 ins above ground, on which
(R) but a cross (x) at the exact point, for cor of sec 14, 15, 22
and 23, marked with 3 notches on S. and 2 notches on E. side
of cross; from which
A rod, 16 ins diam, bears S. 52° E, 63 lbs dist, marked
S 4 S R 17 E S 23 B S.
 - A rod, 14 ins diam, bears S 82 $\frac{1}{2}$ ° N, 152 lbs dist, marked
S 4 S R 17 E S 22 B S.
 - A rod, 24 ins diam, bears N. 84° N, 145 lbs dist, marked
S 4 S R 17 E S 15 B S; no other rods within limits; and raised a
mound of stone, 2 ft base, $\frac{1}{2}$ ft high, N. of cor. Pits untract-
able.
- Land, mountainous!
Soil, gravelly, stony and rocky; soil and 4th rate.
Timber, scattering cedar and white oak; undergrowth, juncos,
mesquite, hickory, pawpaw, Spanish bayonet, amole, mesquite
and cacti.
Sprint cactus.
Mountainous or land covered with dense undergrowth,
8000 chs.
Only: If this cor is set off 22° 42' N on the cor line, and
at 12° 00' on the stone the same as the meridian; the result-
ing lat. is 38° 4' N

40.00

East on a random line bet sec 14 and 23.
Set temp $\frac{1}{4}$ sec cor.

Subdivision of S 4 S, R 17 E.

Chains

8.004 Between N. and S. line, 5 lbs S of the cor of secs 13, 14, 23 and 24.

Shower Pump
S 89° 53' N, on a true line bet secs 14 and 23.
Over mountainous land, ascending through dense undergrowth.

4.00 Gulch, 60 lbs wide, course southerly; ascend.

6.00 Ascend steeply.

8.00 Top of ridge, 100 ft above gulch, bears Northwly and Southwly, descend.

11.00 Gulch, 30 lbs wide, course southerly; ascend.

15.50 Old megal pit, bears 59 lbs S.

17.70 Top of ridge, bears Northwly and Southwly; begin steep descent.

18.20 Old megal pit, bears 20 lbs N.

36.00 Box canyon 3.50 ft below top of ridge, 100 ft wide, 30 lbs wide, course southerly; ascend.

40.021 The point for 1/4 sec cor fully on limestone rock in place, 3 x 2 ft 6 ins above ground, on which but a cross (x) at the exact cor point. for 1/4 sec cor marked 1/4 on N. side of cross; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of cor. Site impracticable.

40.50 Top of ridge, 150 ft above canyon, bears Northwly and Southwly; thence descend along S slope of mountain.

8.004 The cor of secs 14, 15, 22 and 23.

Land, mountainous.

Soil, stony and rocky; 4th vert.

Timber, scattering cedar, pale green, pale red, mesquite, pines and cactus; undergrowth, jolva, oak brush, mesquite, tostar, laurel, manzanita, palmello, Spanish bayonet, megal, amole and cacti.

Arvint cactns.

Mountainous or land covered with dense undergrowth, 8.004 chs.

July 6, 1904.

July 7: At 6^h 30^m AM, LMT; S set off 33° 4' N. on the lat and 32° 38' N on the equal arc; and determine a meridian with the solar at the cor of secs 14, 15, 22 and 23.

Shower Pump

N. 0° 1' N, bet secs 14 and 15.

Over mountainous land, ascending through dense undergrowth.

Subdivision of S 4 S, R 17 E.

- 2.00 Gulch, 30 lbs wide, course S. Westerly; begin strip ascent.
- 26.00 Top of ridge, 500 ft above gulch, bears N. Easterly and S. Westerly; as usual.
- 30.00 Gulch, 100 ft below top of ridge, 30 lbs wide, course S. Westerly; as usual.
- 40.00 Set a limestone, 18 x 12 x 10 ins, 12 ins in the ground, for $\frac{1}{4}$ sec cor
marked $\frac{1}{4}$ on N^o face; from which
A error, 24 ins diam, bears N. $64\frac{3}{4}^{\circ}$ E, 270 lbs dist, marked $\frac{1}{4}$ S 14 B S;
A error, 20 ins diam, bears S 75° N, 196 lbs dist, marked $\frac{1}{4}$ S 15 B S;
and raised mound of stone, 2 ft base, 1 $\frac{1}{2}$ ft high, N. of cor.
- 41.00 Top of ridge, 200 ft above gulch, bears N. Easterly and S. Westerly; as usual.
- 46.00 Gulch, 100 ft below top of ridge, 20 lbs wide, course S. Westerly; as usual.
- 51.00 Top of spur, 100 ft above gulch, extending S. Westerly; as usual.
- 57.00 Gulch, 120 ft below top of spur, 40 lbs wide, course S. Westerly; as usual.
- 74.50 Lower dense undergrowth, bears N. Easterly and S. Westerly.
- 76.00 Top of ridge, 300 ft above gulch, bears Easterly and Westerly; as usual.
- 81.00 Set a limestone, 18 x 8 x 8 ins, 12 ins in the ground, for cor of sec
10, 11, 14 and 15, marked with 4 notches on E and 2 notches on E
edges; from which
A error, 24 ins diam, bears N. 71° W, 92 lbs dist, marked
S 4 S R 17 E S 15 B S; no other cor within limit; and raised
mound of stone, 2 ft base, 1 $\frac{1}{2}$ ft high, N. of cor. Site impracti-
cable.
Land, mountainous.
Soil, gravelly and stony; cor and 4th rates.
Timber, scattering cedar, pale green, pale red and mesquite;
undergrowth, gopher, oak bush, mesquite, palmilla, mesquite, umble,
Spanish bayonet and acacia.
Sprint across.
Mountainous or level covered with dense undergrowth, 80.00 chs.
- N 89 $^{\circ}$ 58' E, on a random line bet sec 11 and 14.
- 40.00 Set Kemp's $\frac{1}{4}$ sec cor
- 79.98 Antisect N. and S. line 7 lbs S of cor of sec 11, 12, 13 and 14.
Shovel β iron
S 89 $^{\circ}$ 55' N, on a line bet sec 11 and 14.
Over mountainous land, ascending through dense oak brush.
- 35.00 Top of ridge, 250 ft above sec cor, bears N. Easterly and S. Westerly

Subdivision of S 4 S, R 17 E.

Chard

<p>39.99 (519)</p>	<p>Turner as end along S slope. Set a limestone, 18x10x7 ins, 12 ins in the ground, for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on N. face; and raise a mound of stone, 2 ft base, $1\frac{1}{2}$ ft high, N. of ev. Pits impracticable.</p>
<p>53.00 74.00</p>	<p>Slope of slope; as end Head of gulch, 300 ft below top of slope, course N. Westward, broad dense brush, and as end.</p>
<p>79.98</p>	<p>Shr ev of sees 10, 11, 14 and 15. Land, mountainous. Soil, gravelly, stony and rocky; end end 4th north, timber, scattering cedar and hickory; undergrowth, oak, yellow, birch, palm, Spanish bayonet, amole, myrtle and cacti. Brint cactus. Mountainous or land covered with dense undergrowth. 79.98 chs. July 7: At this ev I set off ^{22-35'} 22-35' N. on the 10th sec ev; and at 12th $\frac{1}{4}$ mile N. E. toward the sun on the meridian; the resulting lat is $33^{\circ} 5' N$ or within $0^{\circ} 1'$ of the true par lat.</p>
<p>4.00</p>	<p>N. $0^{\circ} 1' W$, bet sees 10 and 11. Over mountainous land, as ending.</p>
<p>10.00</p>	<p>Gulch, 20 lbs wide, course N. Westward; as end.</p>
<p>25.00</p>	<p>Spur, extending N. W.; as end.</p>
<p>40.00</p>	<p>Same gulch, 20 lbs wide, course N. Eastward; as end.</p>
<p>40.00 (OK)</p>	<p>Top of ridge, 200 ft above gulch, bears N. Eastward and S. Westward. Set a quartzite stone, 18x8x6 ins, 12 ins in the ground, for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on N. face; and raise a mound of stone, 2 ft base, $1\frac{1}{2}$ ft high, N. of ev. Pits impracticable.</p>
<p>42.00</p>	<p>As end.</p>
<p>50.00</p>	<p>Gulch, 150 ft below $\frac{1}{4}$ sec ev, 30 lbs wide, course N. Eastward; as end.</p>
<p>62.20</p>	<p>Top of ridge, 200 ft above gulch, bears N. Eastward and S. Westward; as end.</p>
<p>71.00</p>	<p>Gulch, 175 ft below top of ridge, 25 lbs wide, course N. Eastward; as end.</p>
<p>80.00 (OK)</p>	<p>Set a limestone, 18x10x10 ins, 12 ins in the ground, for ev of sees 2, 3, 10 and 11, marked with 5 inches on S. and 2 inches on E. edge; and raise a mound of stone, 2 ft base, $1\frac{1}{2}$ ft high, N. of ev. Pits impracticable. Land, mountainous. Soil, gravelly, stony and rocky; end end 4th north.</p>

Subdivision of P 4 S, R 17 E.

Timber, scattering cedar, palo negro and palo verde; undergrowth, jehova, oak, palo verde, palmilla, magueal, amole, Spanish bayonet and cacti.
Grunt cactus.
Mountainous land, 80.00 chs.

July 7. 1904.

July 8; At 6^h 40^m a.m. I met, & set off 33° 5' N. on the lat arc, 22° 31' W. on the decl arc: and determine a meridian with the solar at the ev of sres 2, 3, 11 and 11.

Shaner & run

N 89° 55' E on a random line bet sres 2 and 11.

40.00 Set trap 1/4 sec ev.

80.04 Antisect N. and S. line, 7 lbs N of ev of sres 1, 2, 11 and 11.

Shaner & run

S 90° 58' W, on a true line bet sres 2 and 11.

Over mountainous land, descending.

30.10 Gulch, 400 ft below sres ev, 40 lbs wide, course N. Easterly; ascend.

40.02 Set a limestone, 18 x 12 x 10 ins, 12 ins in the ground, for 1/4 sec ev marked 1/4 sec N. here; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev. Sets impracticable.

53.00 Gulch, 25 lbs wide, course N. Easterly

80.04 Sre ev of sres 2, 3, 11 and 11.

Large, mountainous.

Soil, generally, stony and rocky; 3rd and 4th rate.

Timber, scattering cedar, palo negro and palo verde; undergrowth, jehova, oak, palmilla, Spanish bayonet, magueal, amole and cacti.

Grunt cactus.

Mountainous land, 80.04 chs.

N. 11° 1' N, on a random line bet sres 2 and 3.

40.00 Set trap 1/4 sec ev.

79.96 Antisect N. body of 1/4 sec 20 lbs E of ev of sres 2, 3, 24 and 35, as far as fur described.

Shaner & run

S 0° 13' E, on a true line bet sres 2 and 3, from ev point.

In box canyon.

21.70 Lower canyon and begin steep ascent over bluffs.

30.00 Base of bluffs, 700 ft above canyon, course Easterly and

Subdivision of S 4 S, R 14 E.

chains

- 39.96 ✓ Westward; ascend through oak timber.
Set a limestone, 18 x 10 x 8 ins, 12 ins in the ground, for 1/4 sec cor marked 1/4 on N. face; from which
A wash, 20 ins diam, bears S 15° E, 90 lbs dist, marked 1/4 S 2 B S.
An oak, 10 ins diam, bears S 10° W, 55 lbs dist, marked 1/4 S 3 B S.
- 62.00 Top of E slope of ridge, 200 ft above 1/4 sec cor; bare oak timber and drs end.
- 79.96 Top cor of secs 2, 3, 10 and 11.
Land, mountainous.
Soil, stony and rocky; 4th water.
Timber, oak and scattering cedar and fraxino woods; m-
dogwood, juncos, oak, tanoak and cacti.
Mountainous land, 79.96 chs.

July 8, 1904.

- July 9: At 3⁰⁰ a.m., l.m.t., I set off 33° 2' N. on the lat. line; 22° 24' W. on the decl. arc; and determined meridian with the solar at the cor of secs 2, 4, 33 and 34, on the S. side of the Sp., as heretofore described.
Shower 8 min
N. 0° 2' W, lat secs 33 and 34.
Over mountainous land, descending through dense undergrowth.
- 17.00 Gulch, 15 lbs wide, course easterly; ascend.
- 55.00 Top of spur, extending N. easterly; descend.
- 40.00 Set a sandstone, 18 x 10 x 6 ins, 12 ins in the ground, for 1/4 sec cor marked 1/4 on N. face; and raise a mound of stone, 2 ft base, 1 1/2 ft high, W. of cor. Pits impracticable.
- 43.00 Dry wash, 20 lbs wide, course N. westerly.
- 51.20 Dry brook, 600 ft below sec cor, 30 lbs wide, course westerly; road to Munnings' ranch, bears easterly and westerly; ascend.
- 58.50 Spur, bears E and W; descend.
- 59.50 Bears canyon, 60 lbs wide, course W; begin steep ascent of S slope of ridge.
- 64.00 Top of ridge, 175 ft above canyon, bears easterly and westerly; descend.
- 66.50 Gulch, 20 lbs wide, course S. westerly; ascend.
- 71.00 Rocky spur, 150 ft above gulch, extending S. westerly; ascend.

Subdivision of S 4 S, R 17 E.

Chains

80.00 OK Set a sundstone, 18 x 11 x 8 ins, 12 ins in the ground, for cor
 of secs 27, 28, 33 and 34, marked with 1 notch on S and 3
 notches on E edge; from which
 A pale rock, 5 ins diam, bears S 4° E, 100 lbs dist, marked
 S 4 S R 17 E S 3 4 B S; no other trees within limit; and raise
 a mound of stone, 2 ft high, 1 1/2 ft base, N of cor. S to im-
 practicable.
 Land, mountainous.
 Soil, gravelly, stony and rocky; 3rd and 4th rates.
 Timber, scattering pale rock, pale negro, cedar and
 mesquite, undergrowth, tobacco, tobacco, pale rock, amole
 palmito, Spanish bayonet, mesquite and cacti.
 Fruit cactus.
 Mountainous or land covered with dense undergrowth, 80.00
 lbs.

40.00 East on a random line bet secs 27 and 34.
 Set trip 1/4 sec cor.
 80.12 Profound N. and S line at cor of secs 26, 27, 34 and 35.
 Shown & run
 West on a random line bet secs 27 and 34.
 Over mountainous land, along S slope of ridge, through
 dense juncal brush.

3.00 Dry creek.
 17.00 Bend, bears N. Westerly and S. Easterly.
 20.00 Gulch, 200 ft below cor of secs 26, 27, 33 and 34, 40 lbs
 wide, course S. Westerly; thence over rolling land.

34.00 Bears canyon, 40 lbs wide, course S. Westerly.
 40.06 OK Set a sundstone, 18 x 11 x 8 ins, 12 ins in the ground, for 1/4
 sec cor marked 1/4 on N. face; from which
 A pale rock, 4 ins diam, bears N 33° E, 80 lbs dist, marked
 1/4 S 2 1/2 B S.
 A pale rock, 6 ins diam, bears S 9 3/4° E, 54 lbs dist, marked
 1/4 S 3 4 B S; and raise a mound of stone, 2 ft base, 1 1/2 ft
 high, N. of cor.

51.00 Gulch, 15 lbs wide, course Southerly.
 72.00 Gulch, 20 lbs wide, course Southerly.
 80.12 Shores of secs 27, 28, 33 and 34.
 Land, rolling and mountainous.
 Soil, gravelly and stony; 3rd and 4th rates.
 Timber, scattering pale rock, pale negro and cedar;

Subdivision of S 4 S, R 17 E.
Lhamas

undergrowth, brodiaea, grasswood, jehora, palmillo, much,
Spanish bayonet and cacti.
Grant cactus.
Mountains or land covered with dense undergrowth, 80.12 chs.
July 9: At this eve I set off 22° 21' N on the steel arc; and
at 9 1/2 hrs limit, observed the sun on the meridian; the re-
sulting lat. is 33° 3' N. ✓

1. 0° 2' N, bet sres 27 and 28.
Over rolling land, through dense undergrowth.
8.40 Dry wash, 30 lbs wide, course S. Westerly.
27.70 Gulch, 30 lbs wide, course S. Westerly.
39.70 Dry wash, 20 lbs wide, course S. Westerly.
40.00 Set a limestone, 20 x 10 x 8 ins, 1 1/2 ins in the ground, for 1/4 sres
and marked 1/4 on W face; from which
A mosquito, 5 ins diam, bears N. 42° E, 57 lbs dist, marked
1/4 S 27 13 S.
A mosquito, 8 ins diam, bears N. 182° W, 23 lbs dist, marked
1/4 S 28 13 S; and raise a mound of stone, 2 ft base, 1 1/2 ft
high, W of ev.
52.70 Dry wash, 1 ch wide, course S. Westerly; as usual.
65.70 Road, bears E. N. E. and W. S. W.
71.30 Top of hill, 200 ft above wash; as usual.
78.60 Road from Diamond Drill to San Joaquin, bears N.
Easterly and S. Westerly.
80.00 Furth gulch, 150 ft below top of hill, 40 lbs wide,
course S. Westerly.
81.00 Set a sandstone, 18 x 12 x 10 ins, 1 1/2 ins in the ground, for
reference ev to ev of sres 21, 22, 27 and 28, marked N E
with 2 notches on S. and 3 notches on E. edge; from
which
A mosquito, 10 ins diam, bears N 81 1/2 E, 162 lbs dist, marked
N E S 4 S R 17 E S 22 13 S; no other trees within limit; and
raise a mound of stone, 2 ft base, 1 1/2 ft high, ^{W of ev} into in-
practicable.
Road, rolling and hilly.
Soil, gravelly and stony; 3rd and 4th crat.
Timber, containing pale green, mosquito, pale orange
and cedar. undergrowth, brodiaea, grasswood, jehora,
much, palmillo, Spanish bayonet and cacti.
Grant cactus.

Chimney

Division of S 4 S, R 17 E.

		Druse underground, 80.00 chs.
		East on a random line bet secs 22 and 27.
40.00		Set trap $\frac{1}{4}$ sec cor.
80.12		Intersect N. and S. line 5 lbs S of cor of secs 22, 23, 26 and 27. Shovel $\frac{1}{2}$ m
		S 89° 58' N, on a true line bet secs 22 and 27.
		Over mountainous land, ascending.
13.10		Gulch, 370 ft below sec cor, 20 lbs wide, course S. Westerly; as wind.
18.00		Top of spur, 100 ft above gulch, extending S; as wind.
20.00		Gulch, 40 ft deep, 20 lbs wide, course S. Westerly; as wind.
22.00		Top of spur, extending S. Westerly; as wind.
40.06		Set a sandstone, 20 x 8 x 6 ins, 1 1/2 ins in the ground, for $\frac{1}{4}$ sec cor marked $\frac{1}{4}$ mi N. face; and raised a mound of stone 2 ft base, 1 1/2 ft high, N of cor. Pits impracticable; enter druse under- ground, bears N.E. and S. W.
45.00		Gulch, 300 ft below top of spur, 40 lbs wide, course S. Westerly; thinner over rolling land.
50.00		Dry wash, 30 lbs wide, course S. Westerly.
57.60		Dry wash, 15 lbs wide, course S. Westerly.
63.66		Diamond Drill bears N 39° E, about 15.00 chs dist.
66.10		Road road, bears N. E. and S. W.
74.60		Road from Diamond Drill to Doolyville, bears N. Easterly and S. Westerly.
80.12		Sec cor point of secs 21, 22, 27 and 28. Land, rolling and mountainous. Soil, gravelly and stony; ord and 4th rate. Timber, scattering pale wood, mesquite, cedar and pale oaks, undergrowth, pale oaks, tricolored mesquite, pale oaks, oaks, palmello, Spanish bayonet, mesquite and cacti. Sunt cactus. Mountainous or land covered with druse underground, 80.12 chs.
		N. 0° N, bet secs 21 and 22; from cor point
		Over mountainous land, ascending from gulch.
100		Witness cor.
17.55		Diamond Drill bears N 84° E.
18.00		Top of sandstone ridge, 150 ft above sec cor, bears E. and N; as wind.

Subdivision of S 4 S, R 17 E.

chains

24.00 Gravel, 100 ft, below top of ridge, 15 lbs wide, errors Eastrly; around. along ridge.

36.20 Site of high point on N. end of ridge, 150 ft above gravel; around.

40.00 Set a sandstone, 18 x 12 x 10 ins, 12 ins in the ground, for $\frac{1}{4}$ sec cor marked $\frac{1}{4}$ on W face; from which
A error, 20 ins diam, bears N. 70° E, 274 lbs dist, marked $\frac{1}{4}$ S 22. B S.

A error, 8 ins diam, bears N. 4° W, 200 lbs dist, marked $\frac{1}{4}$ S 21 B S; and raise a mound of stone, 2 ft base, $1\frac{1}{2}$ ft high, W. of cor.

50.00 Begun ascent along E slope of Muzel mountain.

80.00 Set a sandstone, 18 x 10 x 8 ins, 12 ins in the ground, for cor of secs 15, 16, 21 and 22, marked with 3 notches on S. and E. side; from which

A error, 8 ins diam, bears N 81° E, 173 lbs dist, marked S 4 S R 17 E S 15 B S.

A mesquite, 12 ins diam, bears S $82\frac{1}{4}^{\circ}$ E, 170 lbs dist, marked S 4 S R 17 E S 22 B S.

A mesquite, 4 ins diam, bears S 80° W, 68 lbs dist, marked S 4 S R 17 E S 21 B S.

A mesquite, 6 ins diam, bears N. $56\frac{1}{4}^{\circ}$ W, 54 lbs dist, marked S 4 S R 17 E S 16 B S; and raise a mound of stone 2 ft base, $1\frac{1}{2}$ ft high, W. of cor.

Land, mountainous.

Soil, gravelly, stony and rocky; and and 4th rate.

Timber, scattering cedar, palo verde and mesquite; undergrowth, jabor, mesquite, tobacco, palmillo, Spanish bayonet, mesquite and cacti.

Grain cacti.

Mountainous land, 80.00 chs.

July 9, 1914.

July 10: At 4⁰⁰ am, went, I set off $33^{\circ}4'$ N. on the lat-
ures 22, 16 N on the decl arc, and determine a meridian
with the solar at the cor of secs 15, 16, 21 and 22.

Plumer Pinn

$89^{\circ}58'$ E, on a random line bet secs 15 and 22.

40.00 Set $\frac{1}{4}$ sec cor.

80.00 Intersect N. and S. line ~~at~~ of secs 14, 15, 22 and 23.

Plumer Pinn

6 hours

Subdivision of S 4 S, R 17 E.

N. 89° 58' W, on a line bet sres 15 and 22.
 Dry mountainous land, ascending.
 4.50 Bluff 100 ft high.
 14.50 Gulch, 20 lbs wide, course S. W. S. W. S. E.
 19.10 Top of spur, 400 ft above sres cor, extending S. W. S. W. S. E.; begin steep descent.
 22.50 Deep gulch, 350 ft below top of spur, 40 lbs wide, course S. W. S. W. S. E.; thence descend along E slope of mountain.
 40.01 Set a limestone, 18 x 10 x 8 ins, 12 ins in the ground, for 1/4 sec.
 (OK) For marked 1/4 on N. face; from which
 A pale rod, 10 ins diam, bears N. 30° E, 23 lbs dist, marked 1/4 S 15 B S.
 A misquite, 6 ins diam, bears S 8 1/4° W, 63 lbs dist, marked 1/4 S 22 B S; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N of cor.
 46.20 Gul shaft, bears 3.00 lbs S.
 48.00 Gulch, 15 lbs wide, course S. W. S. W. S. E.
 56.50 Sandstone boulder, 20 x 15 ft, 10 ft high, on line
 66.50 Gulch, 700 ft below top of spur, 90 lbs wide, course S. W. S. W. S. E.; as end.
 80.02 The cor of sres 15, 16, 21 and 22.
 Land, mountainous.
 Soil, stony and rocky; 4th rate.
 Timber, scattering. Palo negro, palo verde, misquite and cedar, undergrowth, palo verde, palo negro, trout, misquite, jilgova, puchillo, Spanish bayonet, amole, mesquite and coral.
 Quintas.
 Mountainous land, 80.02 lbs.

N. 0° 21' W, bet sres 15 and 16.
 Dry mountainous land, ascending along E slope of Mezcal mountain.
 8.70 Gulch, 40 ft deep, 25 lbs wide, course S. E. S. E. S. E.
 34.50 Gulch, 40 lbs wide, course S. E. S. E. S. E.; high spur bears N. about 10 lbs dist; and ascend spur.
 40.00 Set a sandstone, 18 x 12 x 10 ins, 12 ins in the ground, for 1/4 sec.
 (OK) For marked 1/4 on N. face; from which
 A pale rod, 8 ins diam, bears S 72 1/2° E, 80 lbs dist, marked 1/4 S 15 B S.
 A rod, 24 ins diam, bears N. 13 1/2° W, 230 lbs dist, marked 1/4 S 16 B S; and raise a mound of stone, 2 ft base, 1 1/2 ft

Subdivision of S 4 S, R 17 E.

6 brass

high, N of cor.
46.50 Sdr of watershed between Deer creek and Porphyry gulch, 200 ft above cor of secs 15, 16, 21 and 22, bears E. and N; cor and through dense oak bush.
52.40 Porphyry gulch, 25 lbs river, course N. West by; bear oak bush and ascend along N slope of high mountain.
77.00 Top of slope, 275 ft above gulch; ascend.
80.00 Set a sandstone, 20 x 10 x 8 ins, 15 ins in the ground, for cor of secs 9, 10, 15 and 16, marked with 4 notches on S and 3 notches on E edge; from which
A pinion, 12 ins diam, bears N 19° E, 20 lbs dist, marked S 4 S R 17 E S 10 13 S.
A Laurel, 6 ins diam, bears S 20° E, 142 lbs dist, marked S 4 S R 17 E S 15 13 S.
A cedar, 24 ins diam, bears S. 60° W, 189 lbs dist, marked S 4 S R 17 E S 16 13 S.
A cedar, 18 ins diam, bears N. 60° W, 54 lbs dist, marked S 4 S R 17 E S 9 13 S.
Land, mountainous.
Soil, generally, stony and rocky; 3rd and 4th rate.
Timber, scattering pinon, cedar, bruto negro, Laurel and mesquite; undergrowth, juncos, tosta, mesquite, oak, palmillo, Spanish bayonet, mesquite and cacti.
Giant cacti.
Mountains or land covered with dense undergrowth, 80.00 ch
July 14: At this cor I set off 22° 14' N. on the Deer arc; and at 12.6 m l m t, above the sun on the meridian; the resulting lat is 33° 5' N.

S 89° 58' E, on a random line bet secs 10 and 15.
4000 Set 1/4 sec cor.
8000 Intersect N. and S line 5 lbs S of cor of secs 10, 11, 14 and 15.
Placed 3 mm
Westerly a true line bet secs 10 and 15.
Over mountainous land, ascending through dense oak bush.
700 Top of mountain, 100 ft above sec cor, bears N. N. West by and S. S. East by; there dense bush and begin steep ascent.
4000 Set a limestone, 20 x 10 x 6 ins, 15 ins in the ground, for 1/4 sec cor marked 1/4 on N. face; from which
A cedar, 8 ins diam, bears N. 40° E, 148 lbs dist, marked 1/4 S 10 13 S.

Subdivision of P 4 S, R 17 E.

chains

- A corner, 8 ins diam, bears S 45° E, 7 lbs dist, marked $\frac{1}{4}$ S 15° B S, and raised on mound of stone, 2 ft base, 1 1/2 ft high, N. of cor.
- This cor stands 300 ft below top of mountain.
- 51.00 Gulch, 100 ft below $\frac{1}{4}$ sec cor, 15 lbs wide, course S. westerly; ascend.
- 54.00 Top of S slope of spur, descend.
- 69.90 Gulch, 20 lbs wide, course S. easterly; ascend
- 72.50 Top of spur, extending S; begin steep ascent.
- 80.00 Top cor of secs 9, 10, 15, and 16.

Land, mountainous:

Soil, stony and rocky; 3rd and 4th rates.

Timber, scattering cedar, pinon, prairie grass and laurel; underground, fibrous, oak, laurel, prairie grass, sage, pulsatilla, St. James bayonet, amole, and earth.

Mountainous land, covered with dense undergrowth, 80.00 chs

July 11, 1914.

July 11: At 15^h 15^m on mt, I set off 33° 5' N. on the cut wire; ²²⁻⁷ ²⁰⁻⁸ N. on the steel wire, and determine a meridian with the solar at the cor of secs 9, 10, 15 and 16, thence I run N. 0° 2' W, to sec 9 and 10.

- Over mountainous land, descending
- 3.00 Gulch, 60 lbs wide, course W. westerly; begin steep ascent of S. slope of mountain.
- 20.00 Top of spur, 300 ft above gulch, extending S. E.; descend through dense undergrowth.
- 38.25 Gulch, 250 ft below top of spur, 20 lbs wide, course S. easterly; ascend.
- 40.00 Hills are limestone ledge, bears N. and S. on which
- Set a cross (x) at the exact cor point for $\frac{1}{4}$ sec cor marked $\frac{1}{4}$ on N. side of cross, and raised on mound of stone, 2 ft base, 1 1/2 ft high, N. of cor. Site impracticable.
- 49.00 Top of ridge, 150 ft above gulch, bears N. easterly and S. westerly; ascend
- 64.00 Gulch, 160 ft below top of ridge, 20 lbs wide, course S. westerly; ascend.
- 71.00 Top of ridge, 100 ft above gulch, bears N. westerly and S. easterly; descend through dense rock break
- 80.00 Set a limestone, 20 x 10 x 8 ins, 15 ins in the ground, for cor of secs 3, 4, 9 and 10, marked with 5 notches on S and 2 notches on E. side; from which
- A corner, 12 ins diam, bears S 6° W, 249 lbs dist, marked

Chain

Subdivision of S 4 & R 17 E.

S 4 & R 17 E & 9 13 S; no other corners within limit; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of cor. Sits impracticable.

Land, mountainous.
Soil, gravelly, stony and rocky; 3rd and 4th rates.
Timber, scattering, cedar, white pine, larch and fir, undergrowth, oak, yellow pine, spruce, balsam poplar, mesquite, Spanish bayonet and cacti.
Mountainous or land covered with dense undergrowth.
80.00 chs.

40.00 East on a random line bet sres 3 and 10.
Set trip 1/4 sec cor.

79.94 Anterior N. and S line 5 chs S of cor of sres 2, 3, 10 and 11.
Shaner Point

S 89° 58' N, on a true line bet sres 3 and 10.
Over mountainous land, ascending.
25.00 Top of ridge, 350 ft above sec cor, bears N. Easterly and S. Westerly, as usual.

39.94 Set on limestone, 18 x 10 x 7 ins, 12 ins in the ground, for 1/4 sec cor marked 1/4 on N. face; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of cor. Sits impracticable.

50.40 Gulch 375 ft below top of ridge, 15 chs wide, course N. Westerly; as usual.

55.00 Top of spur, extending N. Westerly; as usual.

65.70 Gulch, 20 chs wide, course N. Westerly; as usual.

67.00 Top of spur, extending N. Westerly; as usual.

71.00 Gulch, 30 chs wide, course N. Westerly; as usual through dense oak brush.

79.94 S. cor of sres 3, 4, 9 and 10.

Land, mountainous.
Soil, gravelly, stony and rocky; 3rd and 4th rates.
Timber, scattering, cedar, white pine and fir; undergrowth, yellow pine, oak, spruce, mesquite, larch, balsam poplar, Spanish bayonet, mesquite and cacti.
Mountainous or land covered with dense undergrowth.
79.94 chs.

July 11: At this cor I set off 22° 6' N on the steel cord; and at 12th 4th m l mt, observed the sun on the meridian; the resulting lat is 32° 5' N or within 0.1' of the former lat.

Subdivision of S 4 E, R 17 E.

Chain

40.00
8.12.04 10° 2' N on a random line bet secs 3 and 4.
54+rep¹/₄ sec 32:
Intersect N bay of Sp 14 lbs E of cor of secs 3, 4, 33 and 34,
no frontoford described.

Shaner & run

50° 3' E, on a line bet secs 3 and 4.
Over mountains land, ascending over large boulders.

34.5 Rocky spur extending N. E.; ascend.
9.111 Gulch, 20 lbs wide, course N. N. E., thence Northw.;
10.00 Begin ascent over bluffs,
16.00 Top of bluffs, 300 ft above gulch; ascend through dense
brush.

37.80 Top of ridge, 800 ft above gulch, bears N. Easterly and S.
Westerly; ascend.

40.04 Falls on a limestone in place, 20 x 18 ins, 6 ins above ground,
on which
but across ex, at the exact cor point for 1/4 sec or marked
1/4 on N side of cross; and raise a mound of stones, 2 ft
base, 1 1/2 ft high, N of cor, also impracticable. This cor.
stands 1 ch N of iron ledge, bears N. and S.

49.00 Gulch, 200 ft below top of ridge, 20 lbs wide, course N.
Westerly, and ascend through dense oak brush.

55.00 Top of spur, 200 ft above gulch, extending N. Easterly,
ascend

66.00 Gulch, 150 ft below top of spur, 25 lbs wide, course N.
Easterly; ascend.

80.04 The cor of secs 3, 4, 9, and 10.
Ground, mountains.

Soil, stony over rocky; over and 4th water.
Similar, scattering cedar, spade negro, pinon, and Laurel;
undergrowth, juniper, oak, yucca, sagebrush, spade negro,
trout, palomillo, Spanish bayonet, mesquite, amole and cacti.
Mountains or land covered with dense undergrowth;
80.04 ch.

July 11, 1904.

July 12: At 6:30 am on mt. l. mt. Part off 33° 2' N on the
line and 32° 1' N on the level and; and determine a meri-
dian with the solar at the cor of secs 4, 5, 32 and 33, on
the S bay of the Sp as heretofore described.

Shaner & run
N. 0° 2' N, bet secs 32 and 33.

Subdivision of S 4 S, R 17 E.

Chains

17.00	Over mountainous land, descending through dense undergrowth. Gulch, 175 lbs below s.e. cor, 100 lbs wide, course N. Westerly.
40.00	Set a malpais stone, 18x10x6 ins, 12 ins in the ground, for $\frac{1}{4}$ s.e. cor marked $\frac{1}{4}$ on W face, from which
(K)	A pale negro, 4 ins diam, bears S 48 $\frac{1}{4}$ ° E, 50 lbs dist, marked $\frac{1}{4}$ S 33° B S.
	A rod, 24 ins diam, bears N 84 $\frac{1}{4}$ ° W 365 lbs dist, marked $\frac{1}{4}$ S 32° B S.
41.50	Gulch, 70 lbs wide, course N. Easterly.
51.61	Dry creek, 1 ch wide, course N. W. Westerly.
53.70	Run from Diamond Drill to Doolyville, bears Easterly and Westerly; thence over rolling land through dense grasswood.
69.00	Gulch, 20 ft deep, 20 lbs wide, course S. Westerly.
80.00	Set a malpais stone, 18x10x8 ins, 12 ins in the ground, for cor. of sres 28, 29, 32 and 33, marked with 1 notch on S and 4 notches on E edge; from which
(R)	A pale rod, 4 ins diam, bears N 63 $\frac{1}{4}$ ° E, 63 lbs dist, marked S 4 S R 17 E S 28 B S; no other structures in this limit; and raised a mound of stone, 2 ft base, 1 1/2 ft high. N of cor. Site impracticable.
	Land, mountainous and rolling. Soil, gravelly and stony; 3rd and 4th rates. Timber, scattering cedar, pale negro, mesquite and pale cedar; undergrowth, grasswood, toquilla, johora, amole and cacti. Mountainous or land covered with dense undergrowth, 2000 lbs.
	East on a random line bet sres 28 and 33.
40.00	Set trap $\frac{1}{4}$ s.e. cor.
80.00	Intersect N and S line at cor of sres 27, 28, 32 and 34. Shaver's Run West on a random line bet sres 28 and 33.
	Over rolling land, through dense johora and toquilla undergrowth.
15.00	Gulch, 30 ft deep, 20 lbs wide, course S. Westerly.
20.50	Box canyon, 50 ft deep, 30 lbs wide, course S. Westerly; ascend.
27.00	Top of ridge, 150 ft above canyon, bears N. Easterly and S. Westerly; descend.

Subdivision of S 4 S, R 17 E.

blains

- 40.00 Set a sundstone, 20 x 10 x 8 ins, 15 ins in the ground, for 1/4 sec cor marked 1/4 on N. face; from which
A mesq into, 6 ins diam, bears N 73° E, 17.2 lbs dist, marked 1/4 S 28 13 S.
- A rod, 24 ins diam, bears S 5° W, 165 lbs dist, marked 1/4 S 33 13 S; and raise a mound of stone 2 ft base, 1 1/2 ft high, N of cor.
- 43.00 Gulch, 10 lbs wide, course S. Westerly.
- 53.20 Gulch, 15 lbs wide, course S. Westerly.
- 54.60 Road from Diamond Drill, to Overbayville, bears N. Easterly and S. Westerly.
- 57.00 Gulch, 15 lbs wide, course S. Easterly.
- 71.80 Gulch 15 lbs wide, course S. Easterly.
- 80.00 S.W. cor of secs 28, 29, 32 and 33.
Land, rolling and mountainous.
Soil, gravelly and stony; 3rd rate.
Timber, scattering mesquite and cedar; undergrowth, yucca, mesquite, tobacco, palmito, Spanish bayonet, myrtle, amole and cactus.
Screw cactus.
Mountainous or land covered with dense undergrowth, 8000 lbs.

- N. 0° 2' W, bet secs 28 and 29.
Over mountainous land, ascending through scrub mesquite timber and dense undergrowth.
- 3.00 Ridge, bears N. Easterly and S. Westerly; ascent.
- 9.00 Gulch, 15 lbs wide, course S. Westerly; ascent.
- 22.00 Ridge, 175 ft above gulch, bears N. N. Easterly and S. S. Westerly; ascent.
- 26.00 Fork, bears E. and W; ascent.
- 40.00 Set a limestone, 18 x 8 x 9 ins, 12 ins in the ground, for 1/4 sec cor marked 1/4 on N. face, from which
A pale mesq, 6 ins diam, bears S 10 1/2° E, 21 lbs dist, marked 1/4 S 28 13 S.
A mesquite, 6 ins diam, bears N 53° W, 12 lbs dist, marked 1/4 S 29 13 S and raise a mound of stone, 2 ft base, 1 1/2 ft high, W of cor.
- 57.00 Gulch, 10 lbs wide, course S. Westerly; begin steep ascent.
- 63.50 Base of limestone ridge, 150 ft above gulch, bears

Subdivision of S 4 S, R 17 E.

Lebanon

N. Easterly and S. Westerly, measured.
Bar N 20 18 6.

16500 Tent.

7300 Begin gradual ascent.

7600 Water tank and tent bar 3.00 hrs W.

7652 Road from Diamond Drill to Limestone Spring bears
N. Westerly and S. Easterly.

8100 Set a limestone, 18x8x6 ins, 1 1/2 ins in the ground, for
at cor of sres 20, 21, 28 and 29, marked with 2 notches on S
and 4 notches on E. edge; from which
A pale negro, 6 ins diam, bears N 72° E, 121 lbs dist, marked
S 4 S R 17 E S 21 B S.
A pale negro, 6 ins diam, bears S 112° E, 228 lbs dist, marked
S 4 S R 17 E S 28 B S.
A pale negro, 10 ins diam, bears S 44° N, 41 lbs dist, marked
S 4 S R 17 E S 29 B S.
A pale negro, 6 ins diam, bears N 86° N, 49 lbs dist, marked
S 4 S R 17 E S 20 B S.

Land, mountainous and rolling.
Soil, gravelly and stony; soil under 4th water.
Timber, pale negro and scattering mesquite and
pale wood; undergrowth, pale negro, pale wood,
grasswood, jaboroa, palmito, Spanish bayonet, amole,
mazel and cacti.
Grant cactus.
Mountainous or land covered with dense undergrowth,
8000 lbs.

July 12: At this cor I set off 21° 58' W on the steel
rod; and at 12 1/4 m I observed the sun on the
meridian; the resulting lat is 33° 3' N.

East on a random line bet sres 21 and 28.
4000 Set camp 1/4 sec cor.

8000 Intersect N. and S line 7 hrs N of cor of sres 21, 22, 27 and 28.
Shade 3 am

N. 89° 57' N, on a true line bet sres 21 and 28; from cor point
Over broken ground, through dense undergrowth.

500 Top of ridge, bears N. and S; discerned.

1000 Gulch, 40 lbs wide, course S. Westerly.

1500 Gulch, 20 lbs wide, course S. Westerly.

2000 Gulch, 15 lbs wide, course S. Easterly; enter pale negro

Subdivision of S 4 S, R 17 E.

Lebanon

timber.
4000 Set a limestone, 18 x 8 x 6 ins, ¹² ins in the ground, for $\frac{1}{4}$ sec cor
marked $\frac{1}{4}$ on N. face; from which
A mosquito, 12 ins diam, bears N. 24 $\frac{1}{2}$ E, 16 lbs dist, marked
 $\frac{1}{4}$ S 21 B S.
A mosquito, 8 ins diam, bears S 55 W, 63 lbs dist, marked
 $\frac{1}{4}$ S 28 B S. and raise a number of stumps, 2 ft base, 1 $\frac{1}{2}$ ft
high, N of cor.

- 43.15 Gulch, 30 lbs wide, course S. westerly.
- 70.00 Gulch, 15 lbs wide, course S. westerly.
- 71.25 Gulch, 15 lbs wide, course S. westerly.
- 80.00 Shower of eyes 20, 21, 23 and 29.

Ground, rolling and broken.

Soil, gravelly and stony; 3rd and 4th cuts.

Timber, pale negro, and scattering mosquito, cedar and
pale verde; undergrowth, tobacco, tobacco, mosquito, pale
negro, pale verde, prairie, Spanish bayonet, mesquite
and cacti.

Corn cactus.

Dense undergrowth, 8000 lbs.

N. 0 $\frac{1}{2}$ W, bet eyes 20 and 21.

Over rolling land, ascending through pale negro timber
and dense undergrowth.

- 17.40 Gulch, 40 lbs wide, course S. Easterly.
- 19.57 Same gulch, 40 lbs wide, course S. Easterly.
- 29.40 Same gulch, 40 lbs wide, course S. Easterly; lower pale negro
timber and dense undergrowth and begin ascent of S slope

of Wreath mountain over beds of limestone.

4000 Falls on blanchet ledge of limestone, on which
cut a cross (x) at exact cor point for $\frac{1}{4}$ sec cor marked $\frac{1}{4}$ on
N. side of cross, and raise a number of stumps, 2 ft base, 1 $\frac{1}{2}$
ft high, N of cor. Pits impracticable.

57.50 Top of spur, 400 ft above gulch, extending S. Easterly; stumps
along N. W. slope.

63.15 Island about 40 ft

70.00 Gulch, 40 lbs wide, course S. Easterly; ascend

8000 Set a limestone, 18 x 10 x 8 ins, 12 ins in the ground, for cor of
eyes 16, 17, 20 and 21, marked with 3 notches on S. and 4 notches
on E. edge; from which
A pale negro, 8 ins diam, bears S. 65 $\frac{1}{2}$ E, 88 lbs dist, marked

Subdivision of S 4 S, R 17 E.

chains

S 4 S R 17 E S 21 B S; no other trees within limit; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N of ev. Pits impracticable.

Land, mountains and rolling.

Soil, stony and rocky; 4th rate.

Timber, scattering palo negro, mesquite, laurel and cedar, undergrowth, jatropha, grasswood, tosta, mesquite, laurel, palmito, Spanish bayonet, amole, mesquite and cacti.

Giant cactus.

Mountains or land covered with dense undergrowth, 80.00 chs.

July 12, 1904.

July 13: At 7⁴⁰ am, cont, I set off 33° 4' N. on the lat. arc, 21° 52' N on the decl arc; and determine a meridian with the solar at the ev of sves 16, 17, 20 and 21.

Shower P.m.

4.00 S 89° 57' E, on a random line bet sves 16 and 21.

80.12 Intersect N. and S line 31 lbs S of ev of sves 15, 16, 21, and 22.

Shower P.m.

S. 89° 50' N, on a true line bet sves 16 and 21.

Over mountains and rolling E slope of Mesquite mountain over bluffs.

34.00 Top of bluffs, 700 ft above sea ev, bears N. and S; thence along S slope of mountain over limestone beds.

40.06 Set a limestone, 18 x 8 x 8 ins, 1 1/2 ins in the ground, for 1/4 sec ev marked 1/4 on N. face; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev. Pits impracticable.

53.00 Descend.

62.00 Gulch, 50 lbs wide, course, somewhat; ascend.

70.00 Top of spur, extending S. W; ascend.

80.12 Per ev of sves 16, 17, 20 and 21.

Land, mountains.

Soil, stony and rocky; 4th rate.

Timber, scattering cedar, mesquite and palo negro, undergrowth, grasswood, mesquite, tosta, palo negro, amole, palmito, Spanish bayonet, mesquite and cacti.

Giant cactus.

Mountains or land, 80.12 chs.

In behavior of S 4 S, R 17 E.

6 runs.

N 0° 2' W, bet sees 16 and 17.
 Over mountainous land, ascending.
 6.00 Canyon, 2.00 lbs wide, course, S. West by S.
 4.00.00 Set a limestone, 20 x 10 x 8 ins, 15 ins in the ground, for 1/4 sec
 eye marked 1/4 on N face; and raise a mound of stone 2 ft
 base, 1 1/2 ft high, N. of ev. Pts unpracticable.
 63.00 Top of Mescal range, 700 ft above ev. of sees 16, 17, 20 and 21,
 cross N. W. corner S E. Begin steep descent over bluffs.
 71.00 Deep gulch, 25 lbs wide, course N. East by N; under pinnon
 and cedar timber and dense undergrowth.
 80.00 Set a granite stone, 20 x 12 x 10 ins, 15 ins in the ground, for ev
 of sees 8, 9, 16 and 17, marked with 4 notches on S. and E. edges;
 from which
 A pinnon, 6 ins diam, bears N. 38 1/2° E, 15 lbs dist, marked
 S 4 S R 17 E S 13 S.
 A pinnon, 6 ins diam, bears S 64 1/2° E, 50 lbs dist, marked
 S 4 S R 17 E S 16 S S.
 A pinnon, 10 ins diam, bears S 62 1/4° W, 61 lbs dist, marked
 S 4 S R 17 E S 17 S S.
 A larval, 10 ins diam, bears N. 50 1/4° W, 40 lbs dist, marked,
 S 4 S R 17 E S 8 S S.
 Land, mountainous.
 Soil, gravelly, stony and rocky; 3rd and 4th sect.
 Scrub, pinnon, cedar, larval and palo negro; undergrowth,
 yucca, larval, palo negro, palmito, Spanish bayonet,
 amole, mesquite and cacti.
 Mountainous or land covered with dense undergrowth,
 80.00 ch.

July 13: At this ev I set off 21° 50' N, on the steel wire; and
 at 12 1/2 mi N, observed the sun on the meridian; the
 resulting lat. is 33° 5' N or within 0.1' of the proper lat.

N. 89° 50' E, on a random line bet sees 9 and 16.

4.00.00 Set a pin 1/4 sec ev
 8.0.10 Pinned N. and S. line 24 lbs N. of ev of sees 9, 10, 15 and 16.
 Shaver's Run

Nest, on a knoll bet sees 9 and 16.
 Over mountainous land, descending through dense undergrowth.
 29.50 Porphyry gulch, 400 ft below sec ev, 30 lbs wide, course
 N. West by N; and ascends along N. slope of the Mescal
 range, through pinnon, cedar and larval timber.

Subdivision of S 4 S, R 17 E.

6 lines

41.05 Set a birch stone, 20 x 10 x 8 ins, 15 ins in the ground, for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on N face; from which
 A pinon, 4 ins diam, bears N 82° E, 5 lbs dist, marked $\frac{1}{4}$ S 9 B S.
 A cedar, 24 ins diam, bears N 88° W, 100 lbs dist, marked $\frac{1}{4}$ S 9 B S; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev. *No trees S. of line.*

75.00 Purple gneiss, 20 lbs wide, course Northwly.
 80.10 Str ev of secs 8, 9, 16 and 17.

Land, mountainous.
 Soil, generally, stony and rocky; 3rd and 4th rate.
 Pinon, fir, cedar, larch and scattering mesquite;
 undergrowth, yucca, mesquite, brodiaea, larch, pala vago,
 palmito, Spanish bayonet, myrtle and cacti.
 Mountainous or land covered with dense undergrowth,
 80.10 lbs.

July 13, 1904.

July 14: At 6:50 a.m., I set off 33° 5' N. on the
 latitude; 21° 43' W. on the meridian; and determine a
 meridian with solar at the ev of secs 8, 9, 16 and 17.

Staves from
 N. 0° 2' W, bet secs 8 and 9.

Over mountainous land, descending through pinon timber
 and dense undergrowth.

40.00 Set a granite stone, 18 x 12 x 10 ins, 12 ins in the ground,
 for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on N face; from which
 A larch, 4 ins diam, bears S 29 1/2° E, 22 lbs dist, marked
 $\frac{1}{4}$ S 9 B S.

A pinon, 6 ins diam, bears N 42 1/4° W, 41 lbs dist, marked
 $\frac{1}{4}$ S 8 B S; and raise a mound of stone, 2 ft base, 1 1/2 ft
 high, N. of ev.

41.30 Purple gneiss, 450 ft below sec ev, 30 lbs wide, course
 N 3° W, base pinon timber.

42.40 Gneiss, 40 lbs wide, course N. W; Staves over low staves extend-
 ing W.

54.50 Dry wash, 60 lbs wide, course W.

55 Dry wash, 50 lbs wide, course W. ? dist.

56 Begin steep ascent over grassy ledges.

57 Top of ridge, 250 ft above wash, bears E. and W. dist end.

58 Full size granite stone in place, 3 x 2 ft, 2 ft above ground.

Subdivision of S 4 S, R 17 E

6 chains

from which
 A cross (+) at the exact ev point for ev of secs 4, 5, 8 and 9 marked with 5 notches S and 4 notches on E side of cross;
 from which
 A larval, 6 ins diam, bears N. 40 1/2° E, 85 lbs dist, marked S 4 S R 17 E S 4 B S.
 A pinon, 12 ins diam, bears S 72 1/2° E, 238 lbs dist, marked S 4 S R 17 E S 9 B.
 A pinon, 12 ins diam, bears S 60° N, 81 lbs dist, marked S 4 S R 17 E S 8 B S.
 A pinon, 12 ins diam, bears N. 55° W, 37 lbs dist, marked S 4 S R 17 E S 5 B S.
 Land, mountainous.
 Soil, gravelly, stony and rocky; 3rd and 4th rate.
 Timber, pinon and scattering cedar, larval and mesquite, underground, jehova, oak, asota, mesquite, larval, palmately Spanish bayonet, manzanita, mesquite and cactus.
 Mountainous or land covered with dense underground, 80.00 lbs

East on a rounded line bet secs 4 and 9.
 40.00 Set camp 1/4 sec ev.
 80.00 Intersect N. and S. line 20 lbs S of ev of secs 3, 4, 9 and 10.
 Showers of rain
 S. 89° 52' W, marker line bet secs 4 and 9.
 Over mountainous land, along N slope of mountain, through dense oak brush.
 12.00 Low brush and mesquite through scattering cedar timber.
 14.00 Old mesquite pit, bears 200 lbs N.
 29.00 Set a pinon 20 x 10 x 10 ins, 15 ins in the ground, for witness ev to 1/4 sec ev marked N 6 1/4 on N. face; from which
 A cedar, 6 ins diam, bears S 85° W, 6 lbs dist, marked ^{we} 1/4 S 9 B S.
 A cedar, 18 ins diam, bears N. 44° W, 53 lbs dist, marked N 6 1/4 S 4 B S; and raised a mound of stumps, 2 ft base, 1 1/2 ft high, N. of ev; begin steep descent through pinon timber and some larval underground.
 40.03 The point for 1/4 sec ev falls on face of high ledge.
 50.00 Ledge, 700 ft below top of slope, 25 lbs under, corner S. 1/2; mesa.
 80.00 The ev of secs of secs 4, 5, 8 and 9.
 Land, mountainous.

Soil, generally, stony and rocky; 3rd and 4th rates.
 Similar, pinnon, scattering cedar, palo negro and mesquite; undergrowth, laurel, oak, jolva, tosta, mesquite, manjinto, mescal, palmillo, Spanish bayonet and cacti.
 Mountainous or land covered with dense undergrowth.
 80.00 chs.

40.00 N. 0° 2' N, on a random line bet srs 4 and 5.
 Set a mark $\frac{1}{4}$ srs ev
 80.02 Persect N. bay of Sp at end of srs 4, 5, 21 and 22, as heretofore described.

Plumer & run
 S 0° 2' E, on a true line bet srs 4 and 5.
 Over mountainous land, along E slope of ridge.

21.00 Begin steep descent.
 40.02 Set a limestone, 20 x 10 x 8 ins, 15 ins in the ground, for $\frac{1}{4}$ srs ev marked $\frac{1}{4}$ on N face; from which

ok A corner, 24 ins diam, bears N. 61 $\frac{1}{4}$ ° E, 88 lbs dist, marked $\frac{1}{4}$ S & B S.
 A corner, 24 ins diam, bears S 30 $\frac{1}{2}$ ° W, 237 lbs dist, marked $\frac{1}{4}$ S & B; and raise a mound of stone, 2 ft base, 1 $\frac{1}{2}$ ft high, N of ev.

58.00 Gutch, 350 ft below top, slope, 60 lbs wide, corner, W; ascend.

62.00 Top, bears E. and N; ascend.

67.30 Gutch, 175 ft below top, corner S. N. to top; ascend.

80.02 Spr ev of srs 4, 5, 8 and 9.
 Camp, mountainous.

Soil, generally stony and rocky; 3rd and 4th rates.
 Similar, scattering pinnon, palo negro, cedar, mesquite and palo verde; undergrowth, jolva, oak, tosta, mesquite, palmillo, Spanish bayonet, mescal, amole and cacti.
 Mountainous land, 80.02 chs.

July 14, 1904.

July 15: At 6:45 am, Lmt, set off 33° 2' N. on the lat. arc, $\frac{21^\circ-34'}{21^\circ-32'}$ N on the decl arc; and determine a meridian with the solar or the ev of srs 5, 6, 21 and 22 on the S bay of the Sp as heretofore described.
 Plumer & run
 N 0° 3' N, bet srs 21 and 22.

Subdivision

Mountains or land covered with grass and regrowth
80.00 chs.

East on a random line bet sres 29 and 32.

40.00 Set trap $\frac{1}{4}$ sec cor.

80.08 Intersect N. and S. line 8 chs S. of cor of sres 28, 29, 32 and 33.

Shaner & Penn

S 89° 57' W, on a true line bet sres 29 and 32.

Over mountains land, crossing through scattering
prairie woods timber and undergrowth.

17.50 Gulch, 200 ft below cor of sres 28, 29, 32 and 33, 30 chs wide,
course S. Easterly; ascend.

26.00 Top of spur, 100 ft above gulch, extending S. Easterly;
ascend.

39.00 Gulch, 150 ft below top of spur, 20 chs wide, course
Southwly; ascend.

40.04 Set a sandstone, 18 x 10 x 8 ins, 1 1/2 ins in the ground, for
 $\frac{1}{4}$ sec cor marked $\frac{1}{4}$ on N. face; and raise a mound of
stone, 2 ft base, 1 1/2 ft high, N. of cor. Pits - impracticable.

57.00 Top of spur, 100 ft above gulch, extending S; ascend.

64.20 Gulch, 150 ft below top of spur, 30 chs wide, course
Southwly; ascend.

69.00 Spur, 80 ft above gulch, extending Southwly; ascend.

73.80 Gulch, 80 ft below top of spur, 30 chs wide, course S.
Westerly; ascend.

80.08 Sh. cor point of sres 29, 30, 31 and 32.

Land, mountains.

Soil, stony; 4 chs water.

Timber, scattering prairie woods and woods; undergrowth,
prairie woods, tall grass, grassland, woods and etc.

Mountains land, 80.08 chs.

July 15: At this cor I set off, ~~21° 31'~~ ^{21° 31'} N. on the level and
and at 12^h 5 m I m t, observe the sun on the meridian;
the resulting lat is 33° 3' N. ✓

West on a random line bet sres 30 and 31.

40.00 Set trap $\frac{1}{4}$ sec cor.

79.49 Intersect N. bay of Sp 24 chs S of cor of sres 25, 30, 31 and 34,
as here of our described.

Shaner & Penn

S 89° 50' E, on a true line bet sres 30 and 31.

Subdivision of S 4 S, R 17 E.

	Over mountainous land, ascending.
6.40	Gulch, 15 lbs wide, course S. W. to S. E.
20.00	Top of mountain, 300 ft above sea level, bears N. W. to S. E. and S. E. to S. W.
25.00	Begin steep descent.
34.50	Deep gulch, 200 ft below top of mountain, 30 lbs, course Northward; ascend.
39.49	Set a granite stone, 20 x 12 x 12 ins, 15 ins in the ground, for $\frac{1}{4}$ sec or marked $\frac{1}{4}$ on N. face; from which A pale negro, 12 ins diam, bears N. 56° W, 124 lbs dist, marked 30 B S; no other tree within limit and raise a mound of stone 2 ft base, 1 1/2 ft high, N. of ev. pits impracticable.
50.00	High round hill bears N. about 10.00 lbs dist.
61.00	Top of mountain, 300 ft above $\frac{1}{4}$ sec ev, bears N. and S; descend.
65.00	Gulch, 20 lbs wide, course N. E. to S. E.; ascend.
75.00	Top of N. slope of mountain, 200 ft above gulch; descend.
79.49	See ev point of secs 29, 30, 31 and 32. Land, mountainous. Soil, gravelly, stony and rocky; 3rd and 4th rates. Similar, scattering cedar and pale negro; underground, tobacco, mosquito, tosta, palm tree, orange, Spanish bayonet and cacti. Fruit cactus. Mountainous land, 79.49 chs.
	N. 0° 3' N, bet secs 29 and 30, from ev point.
	Over mountainous land, ascending through dense undergrowth.
12.00	Top of spur, 150 ft above gulch, extending N. E. to S. E.; ascend.
18.00	Gulch, 100 ft below top of spur, 25 lbs wide, course N. E. to S. E.; ascend.
22.00	Top of spur, bears N. W. and S. E.; descend.
23.50	Gulch 50 ft deep, 30 lbs wide, course S. E. to S. W.; ascend.
32.00	Top of ridge, 100 ft above gulch, bears N. E. to S. E. and S. W. to S. E.; descend.
40.00	Set a limestone, 18 x 10 x 8 ins, 12 ins in the ground, for $\frac{1}{4}$ sec or marked $\frac{1}{4}$ on W. face; and raise a mound of stone 2 ft base, 1 1/2 ft high, W. of ev. pits impracticable.

43.00 Gulch, 150 ft below top of ridge, 30 lbs wide, course S. Westward; as end.

47.00 Sup of ridge, bears N. E. easterly and S. Westward; as end.

52.00 Gulch, 20 lbs wide, course S. Easterly; begin strip, as end of S slope of mountain, low dense undergrowth.

78.00 As end bluff 80 ft high.

80.00 Set a malpais stone, 18 x 10 x 8 ins, 1 1/2 ins in the ground, for cor of sves 19, 20, 29 and 30, marked with 2 notches on S. and 5 notches on E. edge; and raise in mound of stone, 2 ft base, 1 1/2 ft high, N of cor. Pits impracticable. This cor stands on top of bluff, 400 ft above gulch. Land, mountainous. Soil, gravelly, stony and rocky; 3rd and 4th rates. Timber, scattering palo verde, mesquite and palo verde, undergrowth, juncos, mesquite, locos, palmillo, Spanish bayonet, mesquite and cacti. Grunt cactus. Mountainous or land covered with dense undergrowth, 80.00 chs.

July 15, 1904.

July 16: At 7^h 00^m a.m. left, I set off 33° 3' N. on the latitude; 21° 24' N on the steel wire; and determine a meridian with the solar at the cor of sves 19, 20, 29 and 30.

Shower Storm

N. 89° 57' E, on a transverse line bet sves 20 and 29.

40.00 Set trap 1/4 sves cor

50.08 Enter set N. and S. line 12 lbs E of cor of sves 20, 21, 28 and 29.

Shower Storm

N. 89° 58' W, on a transverse line bet sves 20 and 29.

Over gently rolling land, through dense undergrowth.

180 Road from Diamond Drill to Brim Spring, bears N. Westward and S. Easterly.

3.50 As end

4.83 Pipe line to spring, bears N. N. W. and S. S. E.

5.90 Line spring canyon, 40 lbs wide, course Southward; as end.

200 Brim Spring bears N. about 50.00 chs dist.

5.00 Sup of ridge, 100 ft above canyon, bears Northward

Subdivision of S 4 S, R 17 E.

- 19.20 Slightly; descend.
- 20.50 Gulch, 40 lbs wide, course southerly; ascend.
- 21.90 Snp, bears N. and S; descend.
- 21.90 Gulch, 40 lbs wide, course southerly; ascend.
- 27.50 Snp of ridge, 150 ft above gulch, bears Northwly and southerly; descend.
- 29.00 Gulch, 40 lbs wide, course southerly; ascend.
- 36.00 Snp of ridge, 110 ft above gulch, bears Northwly and southerly; descend.
- 37.00 Set a marble stone, 18x12x12 ins, 12 ins in the ground, for witness ev to $\frac{1}{4}$ sec ev marked N. $6\frac{1}{4}$ on N. face; and raise a mound of stone, 2 ft base, $1\frac{1}{2}$ ft high; N of ev. Site impracticable, begin steep descent.
- 40.04 Falls in canyon, 100 ft drop, 20 lbs wide, course southerly; low dense undergrowth and begin steep ascent of E. slope of mountain.
- 76.00 Ascend over bluffs 100 ft high, 400 ft above canyon.
- 80.08 Snp ev of sves 19, 20, 29 and 30, 700 ft above canyon. Ground, mountainous and rolling. Soil, gravelly, stony and rocky, 3rd and 4th nat. Timber, scattering pale negro, mesquite and palo verde; undergrowth, jatropha, pale woods, pale negro, mesquite, Acacia, prachilla, Spanish bayonet, mesquite, mesquite and cacti. Light coverts. Mountainous or land covered with dense undergrowth.
- 80.08 chs
-
- N $89^{\circ}50'$ W, or a random line bet sves 19 and 30.
- 40.00 Set camp $\frac{1}{4}$ sec ev.
- 79.47 Intersect N. body of Snp 12 lbs N. of ev of sves 19, 24, 25 and 30, as front of ev described.
- Flower, S. run
- 89.55 E, or a random line bet sves 19 and 30.
- Over mountainous land, ascending.
- 2.00 Ascend over bluffs 100 ft high.
- 12.00 Snp of ridge, 200 ft above sec ev, bears N. easterly and S. westerly; begin steep ascent.
- 39.47 For joint falls in deep gulch, 500 ft below top of ridge, 30 lbs wide, course S. westerly; ascend over bluffs.

52.00 ^(P) Set a sandstone, 18x8x8 ins, 12 ins in the ground, for witness ev to 1/4 sec ev marked N 6 1/4 on N. face; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev. Pits impracticable.

57.00 Along gulch, course S. Westward, ascend steeply.

65.00 31/2 ft, 500 ft above gulch, bears N. W. and S. E.; thence along top of bluff, over large boulders.

79.47 Shreev of secs 19, 20, 29 and 30.
Land, mountainous.
Soil, stony and rocky; 4th rate.
Timber, scattering white wood and cedar; undergrowth, juniper, scrub wood, hickories and cacti.
Giant cacti.
Mountainous land, 79.47 hrs.
July 16: At this ev I set off 21° 24' N on the level ev; and at 12^h m l mt, 11 below the sun on the meridian; the resulting lat. is 33° 3' N. ✓

N. 0° 3' W, bet secs 19 and 20.
Over mountainous land, ascending.

25.00 Top of mountain, 300 ft above ev of secs 19, 20, 29 and 30, bears E. and W; ascend.

35.40 Gulch, 250 ft below top of mountain, 20 lbs wide, course S. S. Westward; ascend.

40.00 ^(P) Set a malpais stone, 18x10x6 ins, 12 ins in the ground, for 1/4 sec ev marked 1/4 on N. face; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev. Pits impracticable.

47.50 Top of N slope of malpais hill, 150 ft above gulch, ascend.

56.50 Point, 150 ft below top of slope, bears E. and W; ascend.

59.20 Top of red ridge, bears E. and W; begin steep descent.

68.00 Gulch, 200 ft below top of ridge, 20 lbs wide, course N. Westward; ascend.

70.00 Top of spur, extending N. W; descend.

72.00 Box canyon, 1,000^{ft} wide, course W; ascend.

80.00 ^(P) Set a limestone, 24x8x8 ins, 18 ins in the ground, for ev of secs 17, 18, 19 and 20, marked with 3 markers on S. and 5 markers on E. edge; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev. Pits impracticable.
Land, mountainous.

60 1/2

Submission of S 4 S, R 17 E.

blains

Soil, stony and rocky; 4th rate.
 Timber, scattering oaks, pale woods and pale
 fir, undergrowth, juncos, mosquito, trout, palmillo,
 Spanish bayonet, amole, megal and cacti.
 Grant cacti.
 Mountainous land, 80.00 chs.

July 12, 1914.

July 17: At 7^h 15^m a.m. in t, I set off 33° 4' N. on the
 lat arc, 21° 14' W. in the arc arc, and determined a
 meridian with the star at the ev of surs 17, 18, 19,
 and 20.

Plunge 8 mm.

S 89° 58' E, on a random line bet surs 17 and 20.

40.00 Set camp 1/4 sec ev.

80.15 Enter set N. and S. line 20 lbs S of ev of surs 16, 17, 20
 and 21.

Plunge 8 mm

S 89° 50' W, on a true line bet surs 17 and 20.

Over mountainous land, up ending along S. slope of
 the Mezcal mountain, through dense undergrowth.

7.00 Gulch, 100 ft below sec ev, 30 lbs wide, course southerly;
 ascend.

10.00 Top of spur, 100 ft above gulch, extending southerly; descend.

18.50 Gulch, 75 ft below top of spur, 20 lbs wide, course southerly;
 ascend.

28.00 Top of spur, 150 ft above gulch, bears Northwaly and southerly;
 descend.

32.00 Pine spring canyon, 40 lbs wide, course southerly; ascend.

40.07 1/2
 (2) Pits on blank ledge of limestone, on which
 bent a cross (x) at the exact ev point for 1/4 sec ev marked
 1/4 on N. side of cross, and raised a mound of stone 2 ft base,
 1 1/2 ft high, N. of ev. Pits impracticable.

41.50 Top of spur, extending S, begin descent from the Mezcal
 range.

46.00 Deep gulch, 30 lbs wide, course southerly; ascend.

47.50 Top, thinner along S. slope of ridge.

80.15 Sec ev of surs 17, 18, 19 and 20.

Land, mountainous.

Soil, stony and rocky; 4th rate.
 Timber, scattering pale negro, pale woods, mosquito and

Colours

Subdivision of S 4 S, R 17 E.

edges, undergrowth, jilora, mosquito, kista, mayal, umala, palmilla, Spanish bayonet and cacti.
Grant cactus.
Mountains or land covered with dense undergrowth,
80.15 chs.

40.00 N. 89° 55' N, on a random line bet sires 18 and 19.
Set stake 1/4 sec ev.

49.45 Port of N. bay of S 3 T 3 S of ev of sires 13, 18, 19 and 24,
as heretofore described.

Shaner P run
S 89° 34' E, on a line bet sires 18 and 19.

Over mountainous land, ascending along S slope of
sandstone ridge.

7.90 Top of spur, 100 ft above sec ev, extending S. E; desc end.

12.00 Foot, bears N. and S; ascend over conglomerate drift.

24.00 Top of ridge, 200 ft above foot, bears N. westerly and
southerly; ascend.

33.50 Deep gulch, 150 ft below top of ridge, 40 lbs wide,
course southerly; ascend through dense undergrowth.

39.45 Set a sandstone, 18 x 8 x 8 ins, 12 ins in the ground, for
1/4 sec ev marked 1/4 on N. face; and raise a mound
of stone, 2 ft base, 1 1/2 ft high, N. of ev. Pits impracti-
cable. High road ridge bears S. about 1/2 mile dist.

46.00 Gulch, 20 lbs wide, course N. N. Westerly.

58.00 Top, thence along S. slope of ridge.

65.00 Gulch, 40 lbs wide, bears S. 40° N.

79.45 S. ev of sires 17, 18, 19 and 20.

Land, mountainous.

Soil, gravelly, stony and rocky; 3rd and 4th roots.

Timber, scattering cedar, palo negro and palo verde,
undergrowth, jilora, kista, mosquito, palmilla, may-
yal, Spanish bayonet and cacti.

Grant cactus.

Mountains or land covered with dense undergrowth,

79.45 chs.

July 17. At this ev Port off 21° 11' N. on the decl. arc,
and at 12 1/4 m l. m. t. above the ev on the meridian
the resulting lat is 33° 4' N. or within 0' of the true lat.

N 0° 3' N, bet sires 17 and 18.

Subdivision of S 4 S, R 17 E

- 6.10 Top of ridge, bears N. W. westerly and S. E. easterly; also end.
 - 23.00 Gulch, 275 ft below top of ridge, 30 lbs wide, course W. westerly; ascend. S. W. slope of M. Zealand mountain.
 - 40.00 SP Set a limestone, 18x10x8 ins, 12 ins in the ground, for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on W. face; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev. Pits impracticable.
 - 73.00 Top of range, 800 ft above gulch, begin steep ascent over bluffs.
 - 80.00 Set a limestone, 20x10x8 ins, 15 ins in the ground, for ev of secs 7, 8, 17 and 18, marked with 4 notches on S. and 5 notches on E. edge; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev. Pits impracticable.
- Comp. mountains.
Soil, stony and rocky; at the rate.
Pines, scattering poplar; undergrowth, julya, small, mulberry, Spanish bayonet, maple and cacti.
Mountains land, 8000 lbs.

July 17, 1904.

July 18. At 4:45 am in m. light, set off 33° 5' N. on the latitude; 21° 4' W. on the decl. arc; and determine a meridian with the solar at the ev of secs 7, 8, 17 and 18.

- Shower & rain
- 40.00 ~~69° 50' E~~; on a random line bet secs 8 and 17.
- Set a $\frac{1}{4}$ sec ev.
- 80.00 Intersect N. and S line at ev of secs 8, 9, 16 and 17.

Shower & rain
69° 50' N. on a true line bet secs 8 and 17.
Over mountainous land, ascending along N. slope of the M. Zealand range, through pine timber.

- 25.00 Bottom road spring bears N. 4 lbs dist.
- 40.00 Top of spur, 400 ft above sec ev, extending N. westerly.
- Set a granite stone, 18x10x8 ins, 12 ins in the ground, for $\frac{1}{4}$ sec ev marked $\frac{1}{4}$ on W. face; from which a line, 12 ins diam, bears N. 32° E, 52 lbs dist, marked $\frac{1}{4}$ S 13 S.
- A pinion, 14 ins diam, bears S 88° W, 57 lbs dist, marked $\frac{1}{4}$ S 17 S; and raise a mound of stone, 2 ft base, 1 1/2 ft high, N. of ev, begin steep ascent.

Subdivision of S 4 S, R 17 E.

6 lines

48.00 Rocky gulch, 200 ft below top of spur, on the wide, upward
 N. 70° W; upward.

80.12 Spur or of sees 7, 8, 17 and 18.
 Land, mountainous.
 Soil, gravelly, stony and rocky; 3rd and 4th rates.
 Timber, pinon, and scattering cedar and palo verde;
 underneath, laurel, jehoa, trista, Spanish bayonet,
 palmito, amole, magueal and cacti.
 Mountainous land, 80.12 chs.

N 89° 54' W, on a random line bet sees 7 and 18.

40.00 Set trap 4 see ev.

79.40 Intersect W bdy of Sp 3 the S of ev of sees 7, 12, 13 and 18,
 as previously described.
 Survey 3 run.
 S 89° 53' E, on a random line bet sees 7 and 18.
 Over mountainous land, ascending.

17.60 Canyon, on the wide, upward & W. 70° W.

35.00 Top of spur, extending S. W. 70° W.

36.00 Ascent.

39.40 The point for 1/4 see ev falls on a limestone in place,
 20 x 20 ins, 20 ins above ground, on which
 but a cross (x) at the exact ev point for 1/4 see ev
 marked 1/4 on N. side of cross, and raised a ground
 of stone 2 ft base, 1 1/2 ft high, N of ev. Pit impracticable.

85.00 Gulch, 20 the wide, upward.

81.00 Top of Magueal range, bears N. W. 70° W and S. E. 70° W;
 upward over bluffs.

79.40 The ev of sees 7, 8, 17 and 18.
 Land, mountainous.
 Soil, stony and rocky; 4th rate.
 Timber, scattering, cedar, pinon, laurel and palo verde;
 underneath, jehoa, laurel, trista, palmito,
 Spanish bayonet, magueal, amole and cacti.
 Mountainous land, 79.40 chs.

July 18: At this ev I set off 20' N on the steel wire,
 and at 12^h 4^m in t, observe the sun on the meridian,
 the resulting lat is 33° 5' N ✓

N 0° 3' W, bet sees 7 and 8.
 Over mountainous land, ascending.

Subdivision of S 4 S, R 17 E.

40.00

(OK)

Set a granite stone, 18 x 10 x 7 ins, 12 ins in the ground, for 1/4 sec cor, marked 1/4 on N face; from which a traverse, 5 ins diam, bears S. 4° E, 206 lbs dist, marked 1/4 S 8 13 S.

A corker, 24 ins diam, bears S 26 1/2° W, 510 lbs dist, marked 1/4 S 7 13 S; and raised a mound of stone 2 ft. base, 1 1/2 ft high, N of cor, under dense undergrowth, bears N 6 and S 6. This cor stands 200 ft below top of bluff.

60.60

barch, 40 lbs wide, course N. Westerly; as usual.

65.00

barch, 40 lbs wide, course N. Westerly.

75.00

Side of ridge, bears N. Westerly and S. Easterly; as usual

80.00

Set a granite stone, 20 x 12 x 10 ins, 15 ins in the ground, for cor of sees 5, 6, 7 and 8, marked with 5 notches on S and E faces; from which

A corker, 24 ins diam, bears N. 47° E, 39 lbs dist, marked S 4 S R 17 E S 5 13 S.

A pinon, 8 ins diam, bears S. 10° E, 58 lbs dist, marked S. 4 S R 17 E S 8 13 S.

A pinon, 8 ins diam, bears S 32° W, 206 lbs dist, marked S 4 S R 17 E S 7 13 S.

A pinon, 10 ins diam, bears N 35° W, 39 lbs dist, marked S 4 S R 17 E S 6 13 S.

Land, mountainous.

Soil, generally stony and rocky; 3rd class.

Vegetation, scattering pinon, cedar and larval; undergrowth, jicara, larval, oak, tricot, mesquite, palo verde, Spanish bayonet, much mesquite and cacti.

Mountainous or land covered with dense undergrowth.

80.00 chs.

July 18, 1904.

July 19: At 7:20 am, I set off 33° 3' N. on the lat arc; 20° 53' W on the circ arc; and determine a meridian with the solar at the cor of sees 5, 6, 7 and 8.

Shaner B run

N. 89° 50' E, on a random line bet sees 5 and 8.

40.00

Set 1/4 sec cor

80.20

Entered at W and S line 24 lbs N of cor of sees 4, 5, 6 and 9.

Shaner B run

Post on a line bet sees 5 and 9.

Chains Subdivision of S 4 S, R 17 E.

	Over mountainous land, descending through dense undergrowth.
15.00	Gulch, 300 ft below s.e. cor, 40 lbs wide, course S. W; ascend, through pinon knip bar.
21.00	Top of spur, 100 ft above gulch, bears Northwly and S. wly; ascend.
40.10	Set in sandstone, 20x10x10 ins, 15 ins in diameter, for 1/4 s.e. cor marked 1/4 on N. face; from which (P) A pinon, 14 ins diam, bears N. 76 E, 107 lbs dist, marked 1/4 S 5 13 S. A pinon, 10 ins diam, bears S 67 E, 83 lbs dist, marked 1/4 S 8 13 S.
42.00	Enter gulch, course W.
46.00	Leave gulch, course N. thence N. W.
58.50	Porphyry gulch, 50 lbs wide, course N. Westwly; ascend.
63.00	Top of spur, extending Northwly; ascend.
69.50	Porphyry gulch, 50 lbs wide, course E. Westwly.
71.50	Small gulch, 50 lbs wide, course Northwly; ascend.
77.50	Top of spur, 175 ft above gulch, extending Northwly; ascend.
80.20	S.e. cor of secs 5, 6, 7 and 8. Land, mountainous. Soil, generally, stony and rocky; soil and 4th water. Timber, Palo verde, arbut, pinon and laurel; undergrowth, jiskwa, laurel, tronta, mesquite, palmito, Spanish bayonet, mesquite and cacti. Grunt cacti. Mountainous or land covered with dense undergrowth. 80.20 chs.
40.00	N. 89° 53' W, on a random line bet secs 6 and 7. Set camp in s.e. cor.
79.33	Enter top N. bay of S 1/2 in lbs N. of cor of secs 1, 2, 7 and 10 as heretofore described. Thence S. W S 89° 57' E, on a random line bet secs 6 and 7 Over mountainous land, descending through dense undergrowth.
630	Run on, 20 lbs wide, course N. Westwly; ascend.
1000	Top of spur, extending Northwly; ascend.
12.30	Gulch, 35 lbs wide, course N. Westwly; ascend

Subdivision of S 4 E, B 17 E.

- 32.00 Top of spur, 200 ft above gulch, extending Northwly
ascend.
 - 39.33 low point falls in box canyon, 60 ft deep, 20 lbs wide,
course Northwly; ascend.
 - 40.32 On a granite stone 3 x 2 ft, 6 ins above ground
cut a cross (x) at the exact point for witness ev to $\frac{1}{4}$ sec
ev marked N 6 $\frac{1}{4}$ on N. side of cross, from which
A pinon, 12 ins diam, bears N. 22° E, 100 lbs dist, marked
N 6 $\frac{1}{4}$ S 6 13 S.
A pinon, 14 ins diam, bears S 40 $\frac{1}{4}$ N, 127 lbs dist, marked
N 6 $\frac{1}{4}$ S 7 13 S; under cross a mound of stone, 2 ft base, 1 $\frac{1}{2}$ ft
high, N. of ev.
 - 43.30 Top of spur, extending Northwly; ascend.
 - 46.30 Center gulch, course N. Westwly.
 - 54.30 Lower gulch, course N; ascend.
 - 61.30 Top of spur, extending N. Westwly; ascend.
 - 79.33 Pln ev of ores 5, 6, 7 and 8.
Low, mountains.
Soil, gravelly, stony and rocky; 3rd and 4th rates.
Pinon, scattering cedar, spruce, poplar, fir, yew, juniper,
sage and laurel, undergrowth, gilia, aster, laurel,
pricklypear, Spanish, ^{Coyote} mesquite and cacti.
Mountains or land covered with dense undergrowth,
79.33 hrs.
- July 19: At this ev I set off 20° 50' N. on the level ev; and
at 12^h 5^m L.M.T. observed the sun on the meridian; the re-
sulting lat is 33° 6' N or within 11" of the proper lat.
-
- 40.00 N. 0° 3' W, on a random line bet ores 5 and 6.
Set camp $\frac{1}{4}$ sec ev.
 - 49.98 Antiparet N. bay of the Sp 1 $\frac{1}{2}$ lbs E of ev of ores 5, 6, 31 and 32,
as previously described.
Shower from
S 0° 8' E, on a line bet ores 5 and 6.
Over mountains land, descending through dense un-
dergrowth
 - 12.00 Gulch, 140 ft below sec ev, 25 lbs wide, course S. Westwly;
ascend.
 - 13.00 Top of spur, extending S. Westwly; ascend.
 - 14.50 Gulch, 60 lbs wide, course S. Westwly; ascend.
 - 15.70 Top of spur, extending S. Westwly; ascend.

16

Subdivision of S 4 S, R 17 E.

Chains

- 19.50 Gulch, 20 lbs wide, course S. Westerly; as end.
- 22.30 Dip of spur, extending S. Westerly; as end.
- 27.10 Canyon, 25 lbs wide, course S. Westerly; as end.
- 30.50 Dip of spur, extending S. Westerly; as end.
- 34.50 Gulch, 30 lbs wide, course S. Westerly; as end.
- 36.00 Dip of spur, extending S. Westerly; as end.
- 39.98 Egr point falls in canyon, 40 lbs wide, course S. Westerly; begin strip account.

46.00 Dip of ridge, 200 ft above canyon, set a marker, 18x10x8 ins, 12 ins in the ground, for witness on the sec or marked N 6 1/4 on N. face; from which

(R)

A pinon, 5 ins diam, bears S 2 1/2 E, 71 lbs dist, marked N 6 1/4 S 5 B S.

A pinon, 6 ins diam, bears N. 14 N, 54 lbs dist, marked N 6 1/4 S 6 B S; as end.

57.00 Gulch, 20 lbs wide, course S. Westerly; as end.

64.00 Dip of spur, extending S. Westerly; as end.

70.20 Steep gulch, 100 lbs wide, course N. Westerly; as end.

79.98 Str of sec 5, 6, 7 and 8.

Land, mountainous.
Soil, gravelly, stony and rocky; 3rd and 4th water.
Timber, scattering pinon, cedar and spruce, aspen; undergrowth, juniper, locust, grasswood, prairie, Spanish bayonet, mesquite and cacti.
Slight crevices.
Mountainous or land covered with dense undergrowth, 79.98 lbs.

77

July 19, 1904

General Description.

This township is mountainous and the soil is mostly stony and rocky, there being scarcely any agricultural land. The township is chiefly valuable for its coal deposits which occur in the south half of the township and along Deer creek, which runs through the southern tier of sections. The northern portion is covered by the Mescal mountains. The Gila river runs through section 6. There are two railroad lines surveyed through the Gila canyon, which

are likely to be built in the near future. Cottonwood, mesquite, sycamore and ash timber is found along the Gila river, Deer creek, Porphyry gulch and in some of the larger canyons, there is some good pine timber found north of the Mescal range, white oak negro and oak ~~varieties~~ abundant in other localities. The Saddle Mountain Mining and Development Co. is at present being ^{run} with a diamond drill in section 22. There are no settlers in the township.

Philip Couzter
U.S. Deputy Surveyor.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Philip Conzgen
....., 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 subdivision lines of S 4 S. R 17 E
showing the respective capacities in which they acted:

John M. Drayer, Chairman.

J. Bernard Wright, Chairman.

Chesley G. Abney, Moundman.

....., Moundman.

Austin S. Lyggett, Axman.

....., Axman.

Arthur Pogue, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Philip Conzgen
....., United States Deputy Surveyor, in surveying all
those parts or portions of the
subdivision lines of S 4 S. R 17 E

..... 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

John M. Drayer, Chairman.

J. Bernard Wright, Chairman.

Chesley G. Abney, Moundman.

....., Moundman.

Austin S. Lyggett, Axman.

....., Axman.

Arthur Pogue, Flagman.

Subscribed and sworn to before me this 24th
day of August, 1891907



D. M. Perry
NOTARY PUBLIC PIMA COUNTY
My commission expires September 9, 1907

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Philip Coutzen, 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 15th day of March, ¹⁹⁰⁴1894, 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 subdivisions of T. 4 S. R. 17 E.

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; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Philip Coutzen
United States Deputy Surveyor.

Subscribed by said Philip Coutzen, and sworn to before me }
this 24th day of August, 1894.



Clinton D. Hoover
Clerk U.S. District Court,
First District of Arizona.

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona
Oct. 1st 1904, 1894

The foregoing field notes of the survey of the subdivisions of T. 4 S. R. 17 E. of the Gila & Salt River Base & Meridian, in the Territory of Ariz.

executed by Philip Coutzen, U.S. Dep. Surveyor
under his contract No. 114, dated March 15 - 1904, 1894, 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.
for Ariz.

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.
for Ariz.