"A" (1).

NORTH and WEST BOUNDARIES
of
Ts. 29, N., Rs. 1, 2, 3 and 4 W.
by
Carl R. Caudle.

1704

4–671

FIELD NOTES

GENERAL LAND OFFICE.

Preliminary Oaths of Assistants.

BOOK 1704

We Marvin Caudle

and J. M. Meredith

do solemnly swear that we will well and faithfully execute the duties of Chain Carriers; 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 distance to all notable objects, and the true length 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 North & West boundaries of Townships 29 N. Ranges one, two, three, & four west

of the principal base and meridian in the Territory of Arizona.

Marvin Caudle. Chainman.

J. M. Meredith Chainman.

Subscribed and sworn before me, this 22nd day of August 1900

Carl R. Caudle

~~Notary Public.~~

U. S. Deputy Surveyor

2 3

We Fred A. Byer, W. C. Whittington

J. Henry Norman

olemnly swear that we will well and truly perform the 1704

duties of Moundmen E. of flagman

BOOK 1704

he establishment of corners and other duties according to

tructions given us, and to the best of our skill and ability,

he survey of the North E. of West

oundaries of Township 29 N.

anges one, two, three E. of fourwest

the principal base and meridian in the Territory of Arizona.

Fred A Byer

W C Whittington

Henry Norman

Subscribed and sworn to before me this 22nd

y of August 1900 900.

Carl R Caudle 900.

~~Notary Public.~~

U. S. Deputy Surveyor

A 1704

3

BOOK 1704

FIELD NOTES

of the survey of the

North and West Boundaries

of

T. 29, N., R. 1, 2, 3 and 4, W.

of the

Gila and Salt River Base and Meridian

in the

TERRITORY of ARIZONA

as surveyed by

Carl R. Caudle

U.S. Dep. Surv.

Under his Contract No. 70.

dated June 13, 1900.

Survey commenced Aug. 22nd, 1900.

Survey completed Sept. 6th, 1900.

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West boundary of T. 29 N. R. 1 W.

Survey commenced August 22, 1900, and executed with a W. and L. E. Gurley Light Mountain transit (not numbered) with solar attachment, and Jones patent latitude arc. 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 declination arc. The verniers of the latitude arc read respectively to single minutes and ten seconds. The instrument was examined tested on the true meridian at Tucson, found correct

and approved by the Surveyor General for Arizona, August 20, 1900.

I examine the adjustments of the transit and correct the level and collimation errors, then test the solar apparatus by comparing its indications resulting from solar observations made during p. m., and a. m. hours with a true meridian determined by observations on Polaris, & proceed as follows:

At the standard corner of Townships 29 N. Ranges 1 and 2 W, Latitude 35° 49' 23" N, Longitude 112° 25' 24.3" W., which is a limestone 8 x 8 x 12 ins. above ground, firmly set, marked and witnessed as described by the

West boundary of T. 29 N. R 1 W.

surveyor general, I set off
11° 43' N. on the decl. arc; 35° 49'
W. on the lat. arc; and at 9h 35m p.m., l.m.t. determined
a true meridian with the
solar, and mark a point
thereof, by a tack on a plug
set firmly in the ground
5.00 chs. N. of the cor.

At 0h 22m, p.m., l.m.t., I observed
Polaris at eastern elongation
in accordance with the manual
and mark a point in the line
thus determined by a tack in
a plug set firmly in the
ground 5.00 chs. N. of the cor.

August 22, 1900.

Aug. 23: at 7h a.m. I lay off
the azimuth of Polaris 1° 30.8

to the west and the true meridian thus determined coincides with the tack point in the plug already set by the solar observations 5.00 chs. N. of cor.

At 7h 46m A. M., l. m. t., I set off 11° 28½' N. on the decl. arc; 35° 49' W. on the lat. arc; and determine a true meridian with the solar, which coincides with the meridian established by the Polaris observations. The solar apparatus by p. m. and a. m. observations defines positions for true meridians respectively coinciding with the meridian established by the Polaris observations; therefore I conclude that the adjustments of the instrument are satisfactory.

West boundary of T. 29 N. R 1 W.

The magnetic bearing of the true meridian at 8h A.M. is N. 14° 42' W.; the angle thus determined reduced by the table page 100, of the manual gives the mean mag. decl. 14° 38' E.

I begin at the standard corner of Tps. 29 N. Rs. 1 & 2 W., previously described.

Thence I run

North

bet. secs. 31 & 36.

Over rolling land gradually descending from cor., through scattering cedar timber and dense buck & chic underground.

38.00 Descend limestone ledge 5 ft. high bears N. 10° W. & S. 10° E.; thence gradually descend over rough

West boundary of T. 29 N. R 1 W.

stony slope to E.

40.00 The point for 1/4 sec. cor. falls on a limestone 10 ft. N. + 4 ft. W. x 1 ft. high Cut a cross (+) at exact point for Cor. for 1/4 sec. cor. and mark 1/4 on W. & of 31 on E. side of cross; and raise a mound of stone 2 ft. base, 1 1/2 ft. high 10 lks. N.W. of Cor. Pits impracticable

46.00 Descend steep rocky N.E. slope

64.00 Canyon 200 ft. deep, course E. to N.E. ascend rocky Spur.

67.00 Spur 75 ft. high extends W. descend

72.00 Cataract Canyon 100 lks. wide course N.W. about 250 ft. below 1/4 Cor. ascend over limestone ledges and loose boulders.

75.80 Top of N. side of Canyon 250 ft. high bears N.W. & S.E. Continue to

West boundary of T. 29 N. R 1 W.

ascend over rough stony land.

78.00 Ridge 300 ft. above canyon, bears E. & W. Descend.

80.00 Set a limestone 18 x 8 x 8 ins. 5 ins. in the ground (cannot set deeper on account of bedrock) and in mound of stone 0 ins. high, for cor. of secs. 25, 30, 31, & 36, marked with 1 notch on S. & 5 notches on N. edges; and raise a mound of stone 2 ft. base 1½ ft. high. W. of cor. Pits impracticable. Land rolling & Mountainous. Soil sandy & stony 3rd & 4th Rate. Timber: scattering scrubby cedar, Mountainous land or land covered with dense undergrowth 80.00 chs. Aug 23: at this corner I set off 11° 25½' N. on the decl. arc; and at 0h 02.5m

West boundary of T. 29 N. R 1 W.

p. m., Lat., observe the sun on the meridian; the resulting lat. is ~~35° 49' 50" N.~~ 35° 5' 0" 15.3" N which is the proper lat.

North

bet. secs. 25 & 30.

Over mountainous land covered with scattering scrubby cedar and dense buck brush and chicobush.

Descend from cor over rocky N. slope

2.00 Ravine, course W. ascend.

12.00 Ridge 30 ft. high, bears E. & W.

Thence over rough slope to W.

40.00 Low spur extends W. from ridge 2 chs. E.

Set a limestone 16 x 10 x 6 ins., 10 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. & 30 on E. faces;

West boundary of T. 29 N. R. 1 W.

and raise a mound of stone
2 ft. base, 1½ ft. high W. of cor.
Pits impracticable.
Descend from cor. over slope to N.
80.00 Set a limestone 24x6x4 ins., 6 ins.
in the ground (cannot set deeper on
account of bed rock) and in mound
of stone 12 ins. high, for cor. of secs.
19, 24, 25 & 30, marked with
2 notches on S. and 4 notches on N.
edges; and raise a mound of
stone 2 ft. base, 1½ ft. high W. of
cor. Pits impracticable.
Land, Mountainous.
Soil, stony, 4th Rate.
Timber, scattering & scrubby cedar
Mountainous land covered with
dense brush 80.00 chs.

August 23rd, 1900.

Aug. 24; at 7h 47m a.m., l.m.t.,
I set off 11°09' N. on the decl. arc;
35° 51' 07.6" N
35° 51' 07.6" N on the lat. arc; and determine
a true meridian with the solar
at the cor. of secs. 19, 24, 25, & 30.
Thence I run

North

bet. secs. 19 & 24.

Over mountainous land covered
with scattering cedar & dead
buck and chico brush.

5.00 Descend into canyon
6.50 Canyon 60 ft. deep Course N.W.
12.70 Top of N. side of canyon bears
N.W. & S.E.
20.00 Drain, course W. ascend.
22.50 Rocky ridge 50 ft. high bears E. & W.
40.00 Set a limestone 18x16x8 ins., 12
ins. in the ground for 1/4 sec. cor.

West boundary of T. 29 N. R 1 W.

marked ¼ on W. and 19 on E. faces; and raise a mound of stone 2 ft. base, 1½ ft. high W. of cor. Pits impracticable.

44.00 Leave scattering cedar and ascend from Drain, course W.

51.00 Ridge 40 ft. above drain, bears E. & W.

65.00 Drain, course W. ascend.

80.00 Ridge 50 ft. high bears E. & W.

Set a limestone 16 x 10 x 8 ins., 11 ins. in the ground for cor. to secs. 13, 18, 19, & 24, marked with 3 notches on N. & S. edges; and raise a mound of stone 2 ft. base 1½ ft. high W. of cor. Pits impracticable.

Land, Mountainous.

Soil, stony, 4th, Rate.

Timber scattering scrubby cedar.

West boundary of T. 29 N. R. 14 W.

Mountainous land covered with dense chico brush, 8.00 chs.

Aug. 24; at this cor. I set off 11°05' N. on the decl. arc; and at 0h 02.2m p.m. Mnt., observe the sun on the meridian, the resulting lat. is 35° 52' 00" N 35° 52' 00" N which is correct.

North

bet. secs. 13 & 18.

Over mountainous land covered with dense chico undergrowth.

27.00 Descend, bears E. & W.

40.00 Set a limestone 16 x 12 x 5 ins. 11 ins. in the ground for ¼ sec. cor., marked ¼ on W. & 18 on E. faces; dig pits 18 x 18 x 12 ins. N. & S. of stone 3 ft. dist.; and raise a mound of earth 3 ft. base 1½ ft. high W. of cor.

West boundary of T. 29 N. R. 1 W.

57.20 Ravine 4 ft. deep course N.W. 2nd foot descent of 150 ft. ascend through scattering cedar timber

65.00 Ridge 60 ft. high bears E. & W.

79.00 Ravine 4 ft deep, course W.

80.00 Set a limestone 26 x 12 x 6 ins. 6 ins. in the ground (cannot set deeper on account of bed rock) and in mound of stone 12 ins. high, for cor. of secs. 7, 12, 13, & 18, marked with 4 notches on S. and 2 notches on W. edges, and raise a mound of stone 2 ft. base 1½ ft. high W. of cor. Pits impracticable.

Land, Mountainous.

Soil, stony, 4th Rate.

Timber, scattering cedar.

Mountainous land covered with dense undergrowth 80.00 chs.

August 24, 1900

West boundary of T. 29 N., R. 14 W.

August 25, At 8h 12m A.M., Asst. Surv. set off 10°43' N on the decl. arc; 35° 52' 52.2" N on the lat. arc; and determine a true meridian with the solar at the cor. of secs. 7, 12, 13 & 18.

Thence Due

North

bet. secs. 7 & 12.

Over Mountainous land covered with dense brush & chico underwood and scattering cedar timber.

18.00 Ridge bears E. & W.

20.50 Ravine, course W.

26.00 Ridge bears E. & W.

31.00 Drain, course W.

40.00 Set a limestone 16 x 10 x 6 ins. 11 ins. in the ground for ¼ sec. cor., marked ¼ on W. & 7 on E. face; and raised a mound of stone 2 ft. base, 1½ ft. high

West boundary of T. 29 N. R 1 W.

	high W. of cor. Pits impracticable.
42.00	Ridge, bears E. & W.
61.50	Drain, course W.
72.00	Ridge, bears E. & W.
80.00	Small Flat Drain, course N.W.
	Set a limestone 24 x 12 x 8 ins.,
	18 ins. in the ground for cor. of
	secs. 1, 6, 7, & 12, marked with 5
	notches on S. and 1 notch on N. edges;
	and raise a mound of stone 2 ft.
	base 1½ ft. high W. of cor.
	Pits impracticable.
	Land, Mountainous.
	Soil, stony, 4th, Rate,
	Timber, scattering scrubby cedar,
	Mountainous land covered with
	dense buck & chico brush. 80 (?) chs.
	Aug. 25; at this cor. I set off
	10° 45' N. on the decl. arc; and at

West boundary of T. 29 N. R. 1 W.

0h 02m P.M. Local, observe the sun on the meridian; the resulting lat. 35° 53' 44.5" N is 35° 53' 44.5" N. which is correct.

North

bet. secs. 1 & 6.

Over mountainous land through dense chico undergrowth and scattering cedar timber.

16.00 Draw, course S.W. Bears scattering cedars and ascend.

40.00 Set a limestone 16 x 10 x 8 ins., 11 ins. in the ground for ¼ sec. cor., marked ¼ on W. & 6 on E. faces; and raise a mound of stone 2 ft. base, 1½ ft. high W. of cor. Pits impracticable.

59.00 Ridge 100 ft. high bears E. & W. to N.W.

70.00 Ravine, course S.W. ascend.

78.00 W. end of Spur extends E. to Ridge.

West boundary of T. 29 N. R. 1 W.

80.00 Set a limestone 20x12x6 ins., 15 ins. in the ground for cor. of Tps. 29 & 30 N. Rs 1 & 2 W. marked

T. 30 N. on N.E.

R. 1 W. on S.E.

T. 29 N. on S.W.

R. 2 W. on N.W. faces, and 6 notches on E., N., W. & S. edges; and raise a mound of stone 3½ ft. base 2½ ft. high S. of cor. Pits. impracticable

Land, Mountainous.

Soil stony, 4th, Rate.

Timber, scattering cedar,

Mountainous land covered with dense chico undergrowth. 80.00 chs.

August 25th, 1900.

North boundary of T. 29 N. R. 1 W.

Aug. 27, 1900. At the cor. of Tps. 29 & 30 N. Rs. 1 E. & 1 W. which is a limestone 8 x 8 x 18 ins. above ground, firmly set in a mound of stone marked and witnessed as described by the surveyor general I set off 10° 06½' N. on the decl. arc; 35° 54' 37" N. 35° 54 37" N. on the lat. arc; and at 8h 06m a. m., Lmt., determined a true meridian with the solar.

Thence Drum West

on a random line along the N. Bdy. of the Tps., setting temp. ¼ sec. and sec. cors, at intervals of 40.00 chs, and at 480.07 chs, intersect the range line 60 lks. N. of the cor. of Tps. 29 and 30 N. Rs. 1 & 2 W., which I established Aug. 25; the following answers to a

North boundary of T. 29 N. R. 1 W.

correction of 0°04' or 10 lks. S. per mile counting from the N.E. cor. of the Tp.

Therefore I run

N. 89°56' E.

bet. secs. 6 & 31.

Over mountainous land covered with dense chico brush

5.00 Dividing Ridge bears N. & S.

12.45 Road bears N.W. & S.E.

19.70 Drain course N.E.

33.00 Spur extends 20.00 chs. S. to Ridge.

40.00 Drain, course N.

40.07 Set a limestone 30 x 6 x 4 ins., 20 ins. in the ground for 1/4 sec. cor. marked 1/4 on N. & 6 on S. face; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pit impracticable.

North boundary of T. 29 N. R. 1 W.

47.00 Spur 25 lks. high, bears N. 45.

60.00 Brook, course N.E.

80.07 Set a limestone 30 x 18 x 4 ins., 20 ins. in the ground for cor of secs. 5, 6, 31, & 32, marked with 1 notch on W. Edge 5 notches on E. edge; dig pits 18 x 18 x 12 ins. in each sec. 5½ ft. dist; and raise a mound of earth 4 ft. base, 2 ft. high W. of cor

Land, Mountainous.

Soil, gravelly & Stony, 4th Rate.

No timber.

Mountainous land covered with brush

80.00 Chs.

Aug. 27; At this cor. I set off 10° 02½' N. on the decl. arc; and at 0h 01.5m p.m., by obsn. the sun on the meridian, the resulting lat. is 35° 54' 37" N, which is about 0.1 less than the proper lat.

North boundary of T. 29 N. R. 1 W.

BOOK 1704

N. 89° 56' E.

bet. secs. 5 & 32.

Over Rolling land covered with dense Chico undergrowth.

10.00 Ridge bears N. & S.

40.00 Set a limestone 20 x 10 x 5 ins. 15 ins. in the ground for ¼ sec. cor. marked ¼ on N. & 5 on S. faces; dig pits 18 x 18 x 12 ins. E. & W. of stone 3 ft. dist.; and raise a mound of earth 3½ ft. base 1½ ft. high N. of cor.

41.50 Road, bears N. & S. Descend gradually over stony land.

57.00 Foot descent 30 ft. bears N. & S.

80.00 Set a limestone 20 x 10 x 5 ins. 15 ins. in the ground for cor. of sec. 4, 5, 32, & 33, marked with 2 notches on N. & 4 notches on E. edges; and

raise a mound of stone 2 ft.
base 1½ ft. high W. of cor. Pits
impracticable.
Land, Rolling and Mountainous
Soil stony and sandy 3rd & 4th Rate.
No Timber.
Mts. land or land covered with
dense undergrowth 80,00 chs.

August 27, 1900.

Aug. 29; at 7h 53m a.m. l.m.t., I
set off 9° 46′ N. on the decl. arc;
35° 54′ 57.0″
35° 54′ 10″ N. on the lat. arc; and
determine a true meridian with
the solar at the cor. of secs. 4, 5, 32, & 33.

Thence I run

N. 89° 56′ E.

bet. secs. 4 & 33.

Over Rolling land covered with dense

North boundary of T. 29 N. R. 1 W.

Chico undergrowth.

21.00 Drain, course N.W.

40.00 Set a limestone 18 X 12 X 4 ins. 12 ins. in the ground for ¼ sec. cor. marked ¼ on N. E. & 4 on S. faces, and raise a mound of stone 2 ft. base, 1½ ft. high N. of cor. Pits impracticable.

63.00 Road, bears N.W. & S.E.

80.00 Set a limestone 20 X 10 X 4 ins, 15 ins. in the ground for cor. of secs 3, 4, 33, and 34, marked with 3 notches on E. & W. edges; and raise a mound of stone 2 ft. base, 1½ ft. high W. of cor. Pits impracticable.

Land, Rolling.

Soil sandy & Stony. 3rd & 4th Rate.

No timber.

North boundary of T. 29 N. R. 14 W.

Land covered with dense thick undergrowth 80.00 chs.

N. 89° 56' E.

Set. secs. 3 & 34.

Over Rolling land covered with dense thick undergrowth.

2.00 Enter scattering scrubby cedar. Thence over rough broken ground.

15.00 Flat drain, course N.

35.00 Ridge, bears N. & S.

40.00 Set a limestone 8 x 10 x 5 ins., 12 in the ground for 1/4 sec. cor; marked 1/4 on N. face & 3 on S. face, and raise a mound of stone 2 ft. base, 1½ ft. high N. of cor. Pits impracticable.

45.00 Descend, bears N. & S.

54.00 Foot descent of 40 ft. bears N. & S. Level

North boundary of T. 29 N. R. 1 W.

scattering scrubby cedar and continue over nearly level valley, course N. W.

8000 Set a limestone 18 x 12 x 5 ins. 12 ins. in the ground for cor. of secs. 2, 3, 34, & 35, marked with 4 notches on W. end 2 notches on E. edges; dig pits 18 x 18 x 12 ins. in each sec. 5½ ft. dist.; and raise a mound of earth 4 ft. base 2 ft. high W. of cor.

Land, Mountainous and level.

Soil, stony & sandy 2nd & 4th Rate.

Scattering cedar timber.

Mountainous land covered with scattering cedar 52.00 chs.

Land covered with dense undergrowth 80.00 chs.

North boundary of T. 29 N. R. 1W.

N. 89° 56' E.

bet. secs. 2 & 35.

Over level valley land, covered with dense chico undergrowth.

4.00 Leave valley and ascend spur bears N.W. & S.E. Enter scattering cedar timber and dense buck brush.

16.00 Spur 20 ft. high bears N. & S.

20.00 Flat Ravine 2 chs. wide runs S.W.

29.00 Ascend. bears N.E. & S.W.

39.00 Top ascent of 40 ft. bears N. & S.

40.00 Set a limestone 24 x 10 x 5 ins., 5 ins. in the ground (cannot set deeper) and mound of stone 12 ins. high, for ¼ sec. cor. marked ¼ on N. & 2 on S. faces; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits impracticable.

58.60 Descend bears N.E. & S.W.

North boundary of T. 29 N. R. 14 W.

63.15 Ravine 30 ft. deep course S.W.

66.40 At Top a cent of 35 ft. Limestone ledge 4 ft. high bears N.E. & S.W. Thence gradually ascends over rough stony land.

80.00 Set a limestone 24 x 16 x 5 ins., 7 ins. in the ground (cannot set deeper) and in mound of stone 12 ins. high, for cor. of secs. 1, 2, 35, & 36, marked with 5 notches on W. & 1 notch on E. edges; and raise a mound of stone 2 ft. base 1½ ft. high W. of cor. Pits impracticable.

Land, level and mountainous.
Soil sandy & stony, 2nd & 4th Rates.
Timber, scattering scrubby cedar.
Mountainous land or land covered with dead underg rowth 8320 ch.

North boundary of T. 29 N. R. 1 W.

Aug 28; at this cor. I set off 3° 41½' N. on the decl. arc; and at 0h 01.1m p.m., h.m.t., observed the sun on the meridian; the resulting lat. is 35° 54' 37.7" which is the proper lat. 35° 54' 10" N.

N. 89° 56' E.

bet. secs. 1 & 36.

Over mountainous land covered with scattering cedar timber and dense buck brush undergrowth.

5.00 Descend over rough stony land.

13.50 Descend Limestone ledge 25 ft. high bears N.E. & S.W.

17.00 Ravine 40 ft. deep, course S.W.

21.50 Limestone ledge and top of ascent of 50 ft. bears N.E. & S.W. Thence descend gradually over rough stony land.

North boundary of T. 29 N. R. 1 W.

33.00 Ridge 60 ft. above Ravine, bears N. & S.

40.00 Set a limestone 20 x 15 x 5 ins., 15 ins. in the ground for ¼ sec. cor., marked ¼ on N. E. & I on S. faces; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits impracticable.

46.00 Foot descent of 70 ft. bears N. E. & S. W. Leave scattering timber.

48.00 Ravine, course S. W.

54.00 Begin steep ascent through heavy pinon & cedar timber. bears N. E. & S. W.

75.00 Ridge 200 ft. high, bears N. E. & S. W.

76.50 Small Ravine course S. W. ascends

80.00 The cor. of Tps. 29 & 30 N. Rs. 1 E. & 1 W. previously described. Land, Mountainous. Soil stony. 4th Rate.

North boundary of T. 29 N. R. 1 W.

Timber, piñon & cedar
Mountainous land covered with
dense undergrowth or heavy
timber. 8000 chs.

Aug. 28, 1900.

Boundaries of T. 29 N. R. 1 W.
Latitudes, Departures & Closing Errors.

Line designated	True Bearing	Distance	Latitude N.	Latitude S.	Departure E.	Departure W.
4th " Standard Parallel N.	West	480.00				480.00
W. Bdy. T. 29 N. R. 1 W.	North	480.00	480.00			
W. Bdy. T. 29 N. R. 1 W.	N. 89° 56' E.	480.07	.56		480.07	
Principal Meridian	South	480.00		480.00		
Convergency					.52	
Totals			480.56	480.00	480.59	480.00
			480.00		480.00	
Error in lat.			0.56	Error in Dep. 0.59		

North boundary of T. 24 N. R. 14 W.

This township is rough and mountainous in the western part where numerous side canyons break through to cataract canyon; and rolling and hilly in the central part and mountainous in the eastern and northeastern where there is a scattering growth of scrubby cedar. The whole township is covered with a dense growth of chico brush, which is a typical arid shrub. There is no water in the township, and the soil is generally worthless.

Aug. 28, 1900

West boundary of T. 23 N. R. 2 W.

Aug. 28, 1900: At the standard cor. of Tps. 29 N. Rs 2 E & 3 W. which is a limestone 12 x 10 x 16 ins above ground, marked and witnessed as described by the surveyor general, at 8h 59m P. m., I ran, & observed Polaris at eastern Elongation and mark a point in the line thus determined by a tack or a plug set firmly in ground 5.00 chs. N. of the corner.

Aug 28, 1900.

Aug. 29: At 7h A.M. I lay off the azimuth of Polaris 1° 30.8 to the west and mark the true meridian thus determined by a tack or

West boundary of T. 29 N. R. 2 W.

a plug set firmly in the ground 5.00 chs. N. of the cor. The magnetic bearing of the true meridian is N. 14° 15' W. which reduced by the table page 100 of the Manual gives the mean mag. decl. 14° 11' E.

From the standard corner already described I run by double fore and back sights, without the use of the solar

North

bet. secs. 31 & 36.

Over Rolling land covered with dense chico undergrowth.

0.50 Road, bears E. & W.

40.00 Set a limestone 18 x 7 x 6 ins., 12 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. & 31 on E. faces

West boundary of T. 29 N. R. 2 W.

dig pits 18 x 18 x 12 ins., N. & S. of stone 2 ft. dist, and raise a mound of earth 3½ ft. base, 1½ ft. high W. of cor.

52.00 Ridge bears E. & W.

80.00 Set a limestone 16 x 10 x 6 ins, 11 ins. in the ground for cor. of secs. 25, 30, 31, & 36, marked with 1 notch on S. and 5 notches on N. edges; dig pits 18 x 18 x 12 ins. in each sec. 5½ ft. dist, and raise a mound of earth 4 ft. base 2 ft. high W. of cor.

Land, Rolling.

Soil, sandy & gravelly 4th Rate.

No timber.

Land covered with dense under-growth 80.00 chs.

West boundary of T. 29 N. R. 2 W.

North

bet. secs. 25 & 30.

Over Rolling land covered with dense chico undergrowth.

40.00 Set a limestone 15 x 10 x 4 ins., 10 ins. in the ground for 1/4 sec. cor., ~~marked 1/4 on W.~~ & 30 on E. faces; dig pits 18 x 18 x 12 ins. N. & S. of stone 3 ft. dist.; and raise a mound of earth 3½ ft. base 1½ ft. high W. of cor.

66.00 Flat Swale 4.00 chs. wide course N. E.

80.00 Set a limestone 24 x 12 x 10 ins. 4 ins. in the ground (cannot set deeper) and in mound of stone 15 ins. high, for cor. of secs. 19, 24, 25 and 30, marked with 2 notches on S. and 4 notches on W. edges; and raise a mound of stone 2 ft. base 1½ ft.

West boundary of T. 29 N. R. 24 W.

high W. of cor. Pits impracticable.
Land, Rolling.
Soil sandy & stony, 4th Rate.
No timber.
Land covered with dense under-growth 80.00 chs.

North

bet. secs. 19 & 24

Over Rolling land, covered with dense chico undergrowth.

0.50 Ascend N. slope of ridge
1.75 Foot descent of 30 ft. bears E. 2 rds
Thence across Flat Drain 1000 chs. wide course E.
13.00 Ascend gradual slope bears E. & W.
40.00 Set a limestone 18 x 12 x 4 ins., 12 ins. in the ground for 1/4 sec. cor., marked 1/4 on W. & 19 on E. faces; dig pits

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West boundary of T. 29 N. R. 2 W.

18×18×12 ins. N. & S. of stone 3 ft. dist.; and raise a mound of earth 3½ ft. base 1½ ft. high W. & cor.

47.00 Top a cent of 2 ft. bears E. & W.

80.00 Set a limestone 16×8×5 ins., 11 ins. in the ground for cor. of secs. 13, 18, 19, 24, marked with 3 notches on N. & S. edges; dig pits 18×18×12 ins. in each sec. 5½ ft. dist.; and raise a mound of earth 2 ft. base 2 ft. high W. of cor.

Land, Rolling.

Soil, sandy & stony.

No timber.

Land covered with dense chico undergrowth 80.00 chs

North

bet. secs. 13 & 18.

West boundary of T. 29 N. R. 2 W.

Over Rolling land covered with
dense chico undergrowth.

40.00 Set a limestone 18×8×6 ins., 12
ins. in the ground for ¼ sec. cor.,
marked ¼ on W. & 18 on E. face;
dig pits 18×18×12 ins., N. & S. of
stone 3 ft. dist.; and raise a
mound of ~~Earth~~ earth 3½ ft. base
1½ ft. high W. of cor.

49.00 Ascend steep S. slope.

80.00 Ridge 25 ft. high bears E. & W.
Descend gradually.

71.25 Wide drain, course E.

80.00 Set a limestone 15×8×5 ins., 10 ins.
in the ground for cor. of secs. 7, 12, 13
& 18, marked with 4 notches on S.
and 2 notches on W. edges; dig pits
18×18×12 ins. in each sec., 5½ ft.
dist.; and raise a mound of earth

West boundary of T. 29 N. R. 2 W.

4 ft. base 2 ft. high W. of cor.
This cor. stands at top of gradual ascent of 30 ft.
Land. Rolling.
Soil, sandy & stony 4th Rate.
No timber.
Land covered with dense chics undergrowth, 80.00 chs.

North

bet. secs. 7 & 12.

Over Rolling land through dense chics undergrowth

14.25 Drain, course E.

39.75 Drain, course E. Ascend gradually.

40.00 Set a limestone 18 x 6 x 6 ins., 12 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. & 7 on E. faces; dig pits 18 x 18 x 12 ins., N. & S. of

West boundary of T. 29 N. R. 24 W.

stone 3 ft. dist.; and raise a mound of earth 3½ ft. base, 1½ ft. high W. of cor.

41.25 Rocky hill 20 ft. high bears E. & W.

62.00 Descend gradually over N. slope.

72.50 Drain course E.

80.00 Set a limestone 18 x 6 x 6 ins., 12 ins. in the ground for cor. of secs. 1, 6, 7, & 12, marked with 5 notches on S. & 1 notch on W. edges; dig pits 18 x 18 x 12 ins., in each sec., 5½ ft. dist.; and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

Land, Mountainous and Rolling.

Soil, sandy & stony, 4th Rate.

No Timber.

Mountainous land or land covered with dense chico undergrowth 80.00 chs.

West boundary of T. 29 N. R. 2 W.

North

bet. secs. 1 & 6.

Over Rolling land through dead chico undergrowth.

8.00 Ravine 10 ft. deep, runs E. across

17.00 Top ascent of 40 ft. bears E. & N.

40.00 Set a limestone 14 x 14 x 6 ins. 10 ins. in the ground for ¼ sec. cor. marked ¼ on W. & 6 on S. faces dig pits 18 x 18 x 12 ins., N. & S. of stone 3 ft. dist.; and raise a mound of earth 2½ ft. base 1½ ft. high W. of cor.

58.00 Descend rocky slope bears N.E. & S.W.

75.00 Enter scattering scrubby cedar, and continue over rough bare limestone.

80.00 Set a limestone 24 x 10 x 6 ins., in a mound of stone 20 ins. high (Bed rock not suitable to mark for stone

West boundary of T. 29 N. R. 2 W.

in place) for cor. of Tps. 29 & 30 N. Rs. 2 & 3 W., marked

T. 30 N. on N.E.

R. 2 W. on S.E.

T. 29 N. on S.W.

R. 3 W. on N.W. faces; with 6 notches on each edge; and raise a mound of stone 3½ ft. base 3 ft. high S. of cor.

Pits impracticable.

Land, Rolling & Mountainous.

Soil, sandy & stony. 4th Rate.

No timber except a few cedars.

Mountainous land or land covered with dense chico undergrowth 8.00 chs.

Note.— The temp. Tp. cor. used by Deputy J. C. Dobbins bears S.E. 2 chs. dist., and is therefore practically identical with the cor. as now established.

Aug. 29, 1900.

North boundary of T. 29 N. R. 2 W.

Aug 30, 1900: At the cor. of Tps. 29 & 30 N. Rs 1 & 2 W., which I reestablished Aug. 25, 1900, I set off 9° 03' N. on the decl. arc; 35° 54' 37½" on the lat. arc; and at 7h 45m a.m., by determine a true meridian with the solar.

Thence I run West

on a random line along the N. Bdy. of the Tp., setting temp. ¼ cor. and sec. cors. at intervals of 40.00 chs. and at

192.50 To Rim of Cataract Canyon.

To determine the dist. across I set a flag on the W. Rim of canyon on line, and another at a point due south of my station, and as the surface of the ground on this

North boundary of T. 29 N. R. 2 W.

Side of the canyon renders it impossible to obtain a base of sufficient length, I set a flag at this station and go to the flag set on Rim of canyon due south of this point from which the flag on hill on W. Rim of canyon bears N. 57°03' W. 80.65 chs. dist.; therefore the dist. across is

Sine 57°03' × 80.65 or

.83915 × 80.65 = 67.68 chs.

I also measure a base South 68.00 chs. to a point from which the flag on E. Rim of canyon bears N. 44°52' E. therefore the dist. to flag is

Tang. 44°52' × 68.00 or

.99536 × 68.00 = 67.68 chs.

Therefore the whole dist. to flag is

192.50 + 67.68 = 260.18 chs.

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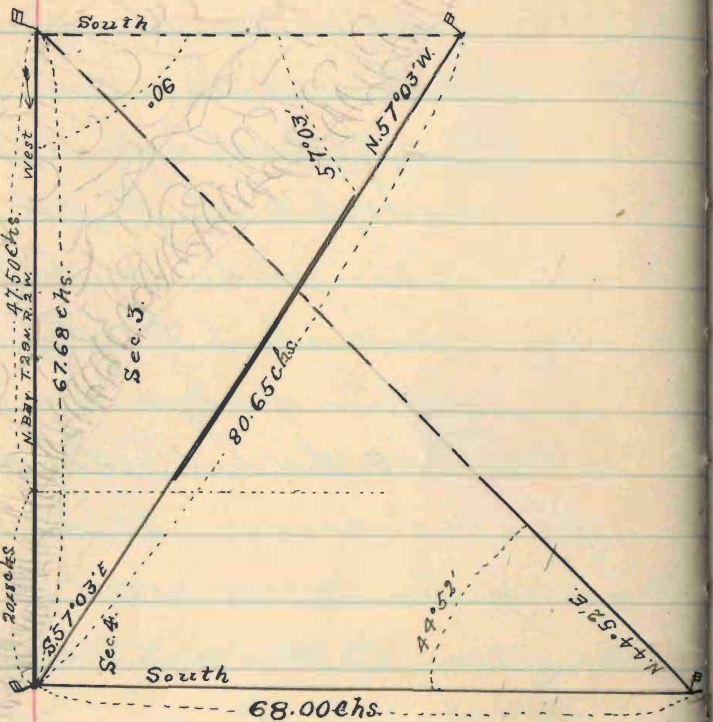
North boundary of T. 29 N. R. 2 W.



Traverse Line.

Sin. 57° 03' x length of course, or

.83915 x 80.65 = 67.68 chs.

Triangulation

Tang. 44° 52' x Base. or

.99536 x 68.00 = 67.68 chs.

260.18 Flag on N. Rim of Cataract Canyon.

BOOK 1704

North boundary of T. 29 N. R 2 W.

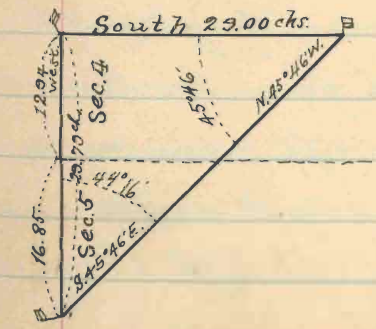
307.06 Point for triangulation across side Canyon. To determine the dist. across I set a flag on W. Rim of canyon; then measured a base South 29.00 chs. to a point from which the flag bears N. 45°46' W.; and from the flag the S. end of base bears S. 45°46' E.; therefore the dist. is

Tang. 45°46' x base or

1.02713 x 29.00 = 29.79 chs.

making whole dist. to flag

307.06 + 29.79 = 336.85 chs.



North boundary of T. 29 N. R. 2 W.

and at 79.33 Chs. intersect the range line 42 lks. N. of the cor. of Tps. 29 & 30 N. Rs. 2 & 3 W. which I established Aug. 29, 1900; the following answers to a correction of 0°03' or 7 lks. S. per mile counting from the N.E. cor. of the Tp. thence I run N. 89°37' E.

bet. secs. 6 & 31.

Over mountainous land through scattering scrubby cedar and deer brush and chico undergrowth.

ascend from cor. bears N. & S.

8.00 Ridge 25 ft. above cor. bears N. & S.

21.00 Ravine 30 ft. deep course N.

27.00 Ridge 40 ft. high bears N. & S.

35.00 Ravine course N.

North boundary of T. 29 N. R. 2 W.

39.33 Set a limestone 20×9×5 ins., 15 ins. in the ground for ¼ sec. cor. marked ¼ on N. and 6 on S. faces; dig pits 18×18×12 ins. E. & W. of stone 3 ft. dist.; and raise a mound of earth 5½ ft. base ½ ft. high N. of cor.

49.00 Ridge 60 ft. high bears N. & S.

60.00 Foot of Ridge, thence descends gradually.

79.33 Set a limestone 16×14×6 ins., 10 ins. in the ground for cor. of secs. 5, 6, 31 & 32, marked with 1 notch on W. & 5 notches on E. edge; dig pits 18×18×12 ins. in each sec. 5½ ft. dist.; and raise a mound of earth 4 ft. base 2 ft. high, W. of cor.

Land mountainous.

North boundary of T. 29 N. R. 2 W.

Soil, stony, 4th Rate.
Timber, scattering scrubby cedar.
Mountainous land covered with
dense brush 80.00 chs.
(+77°33') Note:– Clouds at noon prevents
taking obs. for lat.

N. 89°57' E.

bet. secs. 5 & 32.

Over mountainous land covered
with dense buck & chico brush.

20.00 Ravine, course N.
35.00 Rocky Ridge bears N. & S.
40.00 Set a limestone 18×6×6 ins.,
12 ins. in the ground for ¼ sec.
cor. marked ¼ on N. & 5 on S. faces;
dig pits 18×18×12 ins., E. & W. of
stone 3 ft. dist.; and raise a
mound of earth 3½ ft. base, 1½ ft.

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BOOK 1704

North boundary of T. 29 N. R. 2 W.

high N. of cor.

42.00 Ridge, bears N. & S. Descends.

63.15 W. Rim of side canyon, 1200 ft. deep, perpendicular walls of limestone. Course N. 20.00 chs. to Cataract Canyon.

80.00 Point for cor. of secs. 4, 5, 32 & 33, falls in Canyon. Witness cor. 4.50 chs. E.

Land, Mountainous,

Soil, stony 4th Rate.

Timber, scattering scrubby cedars.

Mountainous land covered with dense buck brush & chico undergrowth 80.00 chs.

August 30, 1900.

Aug. 31; at 7h 48m a.m., l. mt. S set off 8° 41½' N. on the decl. arc; 35° 54' 37" 71
35° 54' 37" on the lat. arc; and

North boundary of T. 29 N. R. 2 W.

determine a true meridian with the solar.

Thence I run

N. 89° 57' E.

bet. secs. 4 & 33.

Over Mountainous Sand. covered with buck & sage brush.

4.45 Top of E. Rim of Canyon, 1200 ft. above the bottom, Course N.

10,00 chs. to Cataract Canyon

4.50 Point for Witness cor. falls on Flat top of Limestone ledge Cut a cross (+) at exact point for Witness Cor. of secs. 4, 5, 32, & 33. marked W.C. N.E. and 4 grooves E. and 2 grooves W. of cross, and raised a mound of stone 2 ft. base 1½ ft. high W. of cor. Pits impracticable. Descend gradually over rough stony sand

North boundary of T. 29 N. R. 2 W.

13.00 Ridge 40 ft. above witness cor. bears N. & S. Descend gradually.

32.90 Descend abruptly over rough limestone ledges into canyon.

36.40 Descend Ledge 50 ft. high.

38.00 Bottom of Canyon 400 ft. deep. Course N. 30° W. 12.00 ch. to Cataract Canyon. Ascend.

40.00 Set a limestone 14 x 12 x 4 ins., 10 ins. in the ground for 1/4 sec. cor. marked 1/4 on N. & S. faces; and raise a mound of stone 2 ft. base 1½ ft. high N. of cor. Pits impracticable.

45.00 Top of E. side of Canyon 400 ft. high, bears N. & S. Thence over rough stony land covered with dead buck brush.

60.37 Point for witness cor. to sec. 3, 4,

North boundary of T. 29 N. R. 2 W.

33 & 34, falls on flat ledge of limestone
Cut a cross (+) at exact Cor. point
for witness cor. of secs. 3, 4, 33 &
34, marked with W. C. N. E. &
3 grooves E. & W. of cross, and
raise a mound of stone 2 ft
base 1½ ft. high W. of cor.
Pits impracticable
60.45 Rim of Cataract Canyon bears
N. 78° W. & S. 78° E, 500 ft. descent
over perpendicular walls 500 to 800
ft. high, and rock slides, to
bottom of canyon
80.00 Point for Cor. of secs. falls on
rock slide about 700 ft. below
the top. Witness Cor. 19.63 ch. W.
Land, Mountainous.
Soil, stony, 4th Rate.
Timber, scattering scrubby cedars.

North boundary of T. 29 N. R. 2 W.

Mountainous land covered with dense undergrowth, 8.00 chs

Aug 31, I set off 8° 37' N. on the decl. arc; and at 0h 00.2m p.m. Lmt. observed the sun on the meridian: the resulting lat. 35° 54' 37" 71 is 35° 54' 37" N, which is correct.

N. 89° 57' E.

bet. Secs. 34 & 35.

Over Mountainous land

Descending to Cataract Canyon

35.00 Bottom of Cataract Canyon

2.00 chs. Wide, 1500 ft. deep. Course N. 70° W. ascend.

40.00 Point for the sec. cor. falls on side of canyon about 600 ft. above the bottom. W.C. 8.00 chs. E.

47.50 Top of E. Rim of canyon 1500 ft.

North boundary of T. 29 N. R. 2 W.

above the bottom, bears N. 70° W. and S. 50° E. Thence over rough slope to S.

48.00 Set a limestone 18 x 12 x 6 ins. 12 ins. in the ground for witness cor. to 1/4 sec. cor., marked W. C. on 1/4 N. and 3 on S. faces; and raise a mound of stone 2 ft. base, 1½ ft. high N. of cor. Pits impracticable.

56.70 Descend steep rocky slope bears N. 45.

62.00 Canyon 150 ft. deep, course S. 18.00 ch. to Cataract Canyon. Ascend.

69.00 Top of E. side of canyon bears N. & S. Thence over rough stony land through dense undergrowth & scattering cedar timber

80.00 Set a limestone 18 x 10 x 6 ins. 6 ins. in the ground (cannot set

North boundary of T. 29 N. R. 2 W.

deeper) and six mound of stone 10 ins. high, for cor. of secs. 2, 3, 34, and 35, marked with 4 notches on W. & 2 notches on E. sides and raise a mound of stone 2 ft base, 1½ ft. high W. of cor.

Pits impracticable.

Land, mountainous.

Soil, stony, 4th Rate.

Timber, scattering cedar.

Mountainous land covered with dense undergrowth, 80.00 chs.

Aug. 31st, 1900.

Sept. 1st, At 8h a.m., Smt. A set off 8° 19½' N. on the decl. arc; 35° 54' 37" N. on the lat. arc; and determine a true meridian with the solar, at the cor. of secs.

North boundary of T. 29 [illegible] 2 W.

2, 3, 3 4, E/ 35.

Thence N.

N. 89° 57' E.

bet. secs. 2 & 35.

Over Mountainous land covered with dense buck brush.

2.00 Descend into Canyon bears NE & SW

8.00 Canyon 150 ft. deep, runs SW.

12.20 Top of E. side of canyon 150 ft. high bears NE & SW. Thence over broken stony land sloping S.

40.00 Set a limestone 18 x 8 x 4 ins., 12 ins in the ground for 1/4 sec cor., marked 1/4 on N. E/ 2 on S. face; dig pits 18 x 18 x 12 ins., E. & W. of stone 3 ft. dist.; and raise a mound of earth 2½ ft. base 1½ ft. high N. of cor.

60.00 Descend. bears NE & SW.