

1A

146

BOOK 2418

INDEX DIAGRAM.

Township 24 North, Range 12 West

	HUALPAI	INDIAN	RES.			
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Chains.

Survey commenced Jan. 23, 1912, and executed jointly by Jesse B. Wright, and William H. Elliott, U.S. Surveyors, with a Young & Son's light mountain transit No. 8480, with Smith patent solar attachment on side. The horizontal limb of the instrument is provided with two double verniers placed opposite to each other and each reading to 1' of arc, which is also the least reading of the verniers of the latitude and declination arcs.

We examine, test, and adjust the levels, the line of collimation, the standards and lat. arc, of the instrument, and at noon, 1. m. t., at our camp which we estimate is near the cor. of secs. 1, 6, 7 & 12, on the East boundary of the Tp., we set off 19° 36' S. on the declination arc, and observe the sun on the meridian. The resulting lat. is 35° 29½' N.

At 3h 15m p.m., l.m.t., we set off 19° 33' S. on the decl. arc, and our observed lat. 35° 29½' N. on the lat. arc, and determine a meridian with the solar, and mark a point in the meridian thus determined by a nail in a stake driven firmly in the ground 5 chs. N. of our station.

At 1h 19m p.m., l.m.t., we observe Polaris at W. elong. in accordance with instructions in the Manual, and mark the line thus determined by a tack driven in a firmly set fence post 7 chs. N. of our station.

Jan. 23, 1912.

Jan. 24, 1912.

At 8h a.m., l.m.t. we set off the azimuth of Polaris, 1° 25' to the East, and mark the true meridian thus determined by a tack in the stake 5 chs. N. of our station, which point falls .35 ins. E. of the point in the meridian as determined by the solar on the preceding evening.

Then we set off 19° 22½' S. on the decl. arc, and 35° 29½' N. on the lat. arc, and determine a meridian with the solar, and mark a point in the meridian thus determined by a tack in the stake 5 chs. N. of our station; which point falls .27 ins. E. of the point in the true meridian as determined by observation of Polaris.

The solar apparatus, by p.m. & a.m. hours observations, defines positions for meridians about 20" W., and 15" E. of the true meridian as determined by Polaris observation; therefore; from these observations, we conclude that the instrument is in satisfactory adjustment.

We proceed as per instructions, to the cor. of Tps. 23 & 24 N., Rs. 12 & 13 W., which is a pinon tree in diam., marked and witnessed as described by the Surveyor-General of Arizona; lat. 35° 25' 15" N., long. 113° 36' 27" W.

At this cor. at 9h 15m a.m., l.m.t., we set off 19° 23' S. on the decl. arc, and 35° 25' N. on the lat. arc, and determine a meridian with the solar.

Thence we run, as per instructions,

Chains.	
	East, on S. bdy. of Tp., bet. secs. 6 & 31. Over rough, broken, mountainous land, descending through scattering cedar. Var. 16° E.
34.00	Wire fence, brs. N.30°W. & S.30°E.
34.30	Set an iron post 3 ft. long, 1 in. in diam., on bed-rock, in mound of stone for witness cor. to $\frac{1}{4}$ sec. cor., marked on brass cap, W.C. on W. of centre, $\frac{1}{4}$ S. 31 in N., and S. 6 in S. half, raise a mound of stone 2 ft. base, 1 $\frac{1}{2}$ ft. high N. of cor.
38.50	Point for $\frac{1}{4}$ sec. cor. falls on perishable ground on face of bluff, brs. NW. & SE.
40.00	Top of large granite boulder, 50 ft. high, descend precipitously.
50.50	Bottom of canyon, Wrights Creek, course NW., running water 50 lks. wide, 3 ins. deep. Asc. prec. SW. slope. leave cedar.
74.50	Top of rim, brs. NW. & SE., asc. gradually, through cedar.
78.50	Allowing 150 lks. for convergency as per instructions, Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for cor. of secs. 5, 6, 31 & 32, marked on brass cap, T 24 N, in N., T 23 N, in S., and R 12 W, in W. half, S 31 in NW., S 32 in NE., S 5 in SE., and S 6 in SW. quadrants, from which, A cedar tree 6 ins. diam. brs. N.33°E. 175 lks. dist., marked T 24 N R 12 W S 32 B T. A cedar tree 10 ins. diam. brs. S.27°E. 132 lks. dist., marked T 23 N R 12 W S 5 B T. A cedar tree 8 ins. diam. brs. S.43°W. 225 lks. dist., marked T 23 N R 12 W S 6 B T. A cedar tree 8 ins. diam. brs. N.42°W. 146 lks. dist., marked T 24 N R 12 W S 31 B T.
	Land, broken, mts., very rough. Soil, 3rd & 4th rate, stony. No timber. Undergrowth, cedar, few pinon, scrub oak.
	East, bet. secs. 5 & 32. Over mts. land, asc. grad., through cedar.
5.00	Top of ridge, brs. N. & S., desc.
37.00	Spur, brs. NW. & SE., desc.
40.00	Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 32 in N., and S 5 in S. half, from which, A cedar tree 8 ins. diam. brs. N.28 $\frac{1}{4}$ °W. 97 lks. dist., marked $\frac{1}{4}$ S 32 B T. A cedar tree 8 ins. diam. brs. S.6° W. 81 lks. dist., marked $\frac{1}{4}$ S 5 B T.
58.35	Wash, 20 lks. wide, course N.30° W. middle of draw 18 chs. wide.
80.00	Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for cor. of secs. 4, 5, 32 & 33, marked on brass cap, T 24 N, in N., T 23 N, in S., and R 12 W, in W. half, S 32 in NW., S 33 in NE., S 4 in SE., and S 5 in SW. quadrants, and raise a mound of stone 2 ft. base, 1 $\frac{1}{2}$ ft. high W. of cor., from which,

Chains.

- A cedar tree 10 ins. diam. brs. N.57°E. 145 lks. dist., marked T 2⁺ N R 12 W S 33 B T.
- A cedar tree 10 ins. diam. brs. S.19°W. 71 lks. dist., marked T 23 N R 12 W S 5 B T.
- A cedar tree 16 ins. diam. brs. N.69¹/₂°W. 72 lks. dist., marked T 24 N R 12 W S 32 B T.

Land, mountainous, broken.
 Soil, 3rd rate, stony, gravelly.
 Cedar, few pinon, scrub oak.
 At this cor., at noon, we set off 19°22' S. on the decl. arc, and observe the sun on the meridian.
 The resulting lat. is 35°25' N.

East, bet. secs. 4 & 33.

- Over mountainous land, asc., through scattering cedar and pinon.
 - 20.00 Spur, brs. NW. & SE., desc.
 - 33.50 Wash, 20 lks. wide, course NW. asc.
 - 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for ¹/₄ sec. cor., marked on brass cap, ¹/₄ S 33 in N., and S 4 in S. half; from which
 - A cedar tree 10 ins. diam. brs. N.72°W. 23 lks. dist., marked ¹/₄ S 33 B T.
 - A cedar tree 8 ins. diam. brs. S.66°W. 35 lks. dist., marked ¹/₄ S 4 B T.
 - Desc. grad. from cor.
 - 47.60 Road, brs. N.30°W. & S.30°E.
 - 48.30 Wash, 20 lks. wide, course N.30°W.
 - 54.00 Wash, 30 lks. wide, course NW., asc.
 - 68.00 Ridge, brs. NW. & SE., desc.
 - 76.50 Wash, 20 lks. wide, course N 30°W. , asc. grad.
 - 80.00 Set an iron post 3 ft. long, 3 ins. in diam., on bed-rock, in mound of stone for cor. of secs. 3,4,33 & 34, marked on brass cap,
 - T 24 N, in N.,
 - T 23 N, in S., and
 - R 12 W, in W., half;
 - S 33 in NW.,
 - S 34 in NE.,
 - S 3 in SE., and
 - S 4 in SW. quadrants;
 raise a mound of stone 2 ft. base, 1¹/₂ ft. high W. of cor.
- Land, broken, mountainous.
 Soil, 3rd rate, stony, gravelly, dry.
 Scattering cedar, few pinon, scrub oak.

East, bet. secs. 3 & 34.

- Over mountainous, broken land, asc. W. slope of ridge.
- 7.00 Top of ridge, brs. N. & S., desc. Old road, on same.
- 22.30 Wash, 10 lks. wide, course NW., asc.
- 30.00 Ridge, brs. N. & S., desc.
- 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for ¹/₄ sec. cor., marked on brass cap, ¹/₄ S 34 in N., and S 3 in S. half;
 - raise a mound of stone 2 ft. base, 1¹/₂ ft. high N. of cor.
 - No bearings available. Pits impracticable.
 - Ranch of Joe Carrow brs. South, about 1¹/₂ miles.
- 43.00 Wash, 20 lks. wide, course N., asc.
- 46.00 Ridge, brs. N. & S., desc.
- 52.00 Enter scattering cedar and scrub oak.
- 58.50 Wash, 10 lks. wide, course N.
- 63.00 Wash, 10 lks. wide, course NW., asc.
- 74.00 Top of spur, brs. NW. & SE., desc. along N. slope.

Chains.

80.00 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for cor. of secs. 2, 3, 34 & 35, marked on brass cap,

T 24 N, in N.,
T 23 N, in S., and
R 12 W, in W. half;
S 34 in NW.,
S 35 in NE.,
S 2 in SE., and
S 3 in SW. quadrants; from which,

A cedar tree 8 ins. diam. brs. N. $5\frac{3}{4}^{\circ}$ E. 145 lks. dist., marked T 24 N R 12 W S 35 B T.

A cedar tree 6 ins. diam. brs. S. $60\frac{1}{2}^{\circ}$ E. 151 lks. dist., marked T 23 N R 12 W S 2 B T.

A cedar tree 6 ins. diam. brs. S. 89° W. 44 lks. dist., marked T 23 N R 12 W S 3 B T.

A cedar tree 7 ins. diam. brs. N. $15\frac{1}{2}^{\circ}$ W. 180 lks. dist., marked T 24 N R 12 W S 34 B T.

Land, mountainous, broken.

Soil, 3rd rate, stony, gravelly, dry.

Cedar, scrub oak, few pinon. Grass fair.

East, bet. secs. 2 & 35.

Along N. slope, through cedar, over, mountainous land.

8.75 Wash, 20 lks. wide, course NW. asc.

25.00 Ridge, brs. N. & S., desc.

34.00 Wash, 15 lks. wide, course N. 30° W., asc.

40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap,

$\frac{1}{4}$ S 35 in N., and
S 2 in S. half;

raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

52.00 Ridge, brs. N. & S., desc.

68.48 Wash, 50 lks. wide, course N. 30° W.

78.15 Wash, 30 lks. wide, course N.,

80.00 Set an iron post 3 ft. long, 3 ins. in diam. 10 ins. in the ground, on bed-rock, in mound of stone for cor. of secs. 1, 2, 35 & 36; marked on brass cap,

T 24 N, in N.,
T 23 N, in S., and
R 12 W, in W. half;
S 35 in NW.,
S 36 in NE.,
S 1 in SE., and
S 2 in SW. quadrants, and

raise a mound of stone 3 ft. base, 2 ft. high W. of cor. from which,

A cedar tree 10 ins. diam. brs. N. 19° E. 111 lks. dist., marked T 24 N R 12 W S 36 B T.

A cedar tree 8 ins. diam. brs. S. 74° W. 145 lks. dist., marked T 23 N R 12 W S 2 B T.

No other trees available.

Land, mountainous, broken.

Soil, 3rd rate, gravelly, stony, dry.

Cedar, scrub oak, few pinon. Fair grass.

Chains

East, bet. secs. 1 & 36.
 Over rough, hilly or mountainou land, through scattering cedar.

.20 Dim road, brs. NNE. & SSW.

14.60 Wash, 50 lks. wide, course N.30°W., asc.

30.00 Top of stony hill, brs. N. & S., desc.

40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap,
 $\frac{1}{4}$ S 36 in N., and
 S 1 in S. half;
 raise a moind of stone 2 ft.base, 1 $\frac{1}{2}$ ft.high N. of cor.

42.50 Gulch, 50 lks. wide, course NW., asc. over rough volcanic boulders.

61.00 Top of high rough, rocky hill, brs. N. & S., leave cedar.

68.00 Desc. steep SE. slope.

80.00 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in the ground for cor. of Tps. 23 & 24 N., Rs. 11 & 12 W., marked on brass cap,
 T.24 N, in N.,
 R 11 W, in E.,
 T 23 N, in S., and
 R 12 W, in W. half;
 S 36 in NW.,
 S 31 in NE.,
 S 6 in SE., and
 S 1 in SW. quadrants; and
 raise a mound of stone 4 ft.base, 2 ft.high S. of cor.
 No bearings available. Pits impracticable.
 Land, mountainous, broken.
 Soil, 3rd & 4th rate, stony, gravelly, dry.
 Cedar, scrub oak, cacti. Fair grass.

General Description.

The South Boundary of T. 24 N., R. 12 W., runs over a rough, broken country, sloping, and draining in general to the north and north-west.
 To the south the land is more mountainous, rising to an altitude of 6000 ft. about 5 miles to the south.
 There is some cedar and pinon timber in places, but none of value.
 A considerable stream of water is flowing in Wrights Creek, but it sinks below the surface a short distance below the crossing of our line.
 No other water noted along or near the line.
 The land is covered in places with a fair growth of native grass, but has been overstocked.
 The formation is mostly granite, and schist, covered in places with volcanic or igneous rock, showing but little evidence of mineral values.

Jan. 24, 1912.

Jesse B. Wright

William H. Elliott

U. S. Surveyors.

Chains.

U.S. Surveyor

Jan. 25, 1912.

At 8h a.m., l.m.t., at the cor. of Tps. 23 & 24 N.,
Rs. 11 & 12 W., as established by Jesse B. Wright and
myself, and correct fore described and described yesterday
I set off 19° 8' S. on the decl. arc, and 35° 25' N. on
the lat. arc, and determine a meridian with the solar.

Thence I run, as per instructions,

North, on East Bdy. of Tp., bet. secs. 31 & 36.

Var. 16° E.

Over mountainous land, asc.

4.00 Top of rocky spur, brs. NW. & SW., thence along E. slope
of high rocky hill.

15.00 Enter scattering cedar, brs. E. & W.

20.00 Desc. NE. slope.

40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in
the ground for $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 36 in W., and

S 31 in E. half, from which,

A cedar tree 20 ins. diam. brs. S. 42° E. 165 lks. dist.,
marked $\frac{1}{4}$ S 31 B T.A cedar tree 10 ins. diam. brs. S. 65° W. 42 lks. dist.,
marked $\frac{1}{4}$ S 36 B T.80.00 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in
the ground for cor. of secs. 25, 30, 31 & 36, marked on
brass cap,

T. 24 N, in N. half;

R 12 W, S 25 in NW.,

R 11 W, S 30 in NE.,

S 31 in SE., and

S 36 in SW. quadrants, and

raise a mound of stone 3 ft. base, 2 ft. high W. of cor.

No bearings available. Pits impracticable.

Land, mountainous.

Soil, 3rd & 4th rate, stony, dry,

No timber.

Few cedar, scrub oak, cacti, sparse grass.

North, bet. secs. 25 & 30.

Over mts. land, desc. NE. slope, through scattering
cedar.39.60 Gulch, 50 lks. wide, course NNW. Leave stony, mts. land,
and cedar, thence over heavily rolling land.40.00 Set an iron post 3 ft. long 1 in. in diam. 26 ins. in
the ground for $\frac{1}{4}$ sec. cor., marked on brass cap, $\frac{1}{4}$ S 25 in W., and

S 30 in E. half,

dig pits 18x18x12 ins. N. & S. of cor. 3 ft. dist., and
raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

60.00 Knoll, brs. E. & W., desc. grad.

80.00 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in
the ground for cor. of secs. 19, 24, 25 & 30, marked on
brass cap, T 24 N, in N. half,

R 12 W, S 24, in NW.,

R 11 W, S 19, in NE.,

S 30 in SE., and

S 25 in SW. quadrants, from which,

A cedar tree 12 ins. diam. brs. S. 13° W. 139 lks. dist.,

marked T 24 N R 12 W S 25 B T.

No other trees available.

Dig pits 18x18x12 ins. in each sec. $5\frac{1}{2}$ ft. dist., and

raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

Land, mts., rolling, hilly.

Soil, 3rd rate, stony, gravelly, dry, loose.

Few scattering cedars, scrub oak, cacti. Grass fair.

Chains.

North, bet. secs. 19 & 24.
 Over heavily rolling land, through scattering cedar.
 3.00 Gulch, 50 lks. wide, course W., asc.
 Small dam and tank in same 6 chs. to E. dry now.
 25.00 Ridge, brs. E. & W. desc. grad.
 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in
 the ground for $\frac{1}{4}$ sec. cor., marked on brass cap,
 $\frac{1}{4}$ S 24 in W., and
 S 19 in E. half,
 dig pits 18x18x12 ins. N. & S. of cor. 3 ft. dist., and
 raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.
 80.00 Set an iron post 3 ft. long 3 ins. in diam. 24 ins. in
 the ground for cor. of secs. 13, 18, 19 & 24, marked on
 brass cap,
 T 24 N, in N. half,
 R 12 W S 13 in NW.,
 R 11 W S 18, in NE.,
 S 19 in SE., and
 S 24 in SW. quadrants;
 dig pits 18x18x12 ins., in each sec. $5\frac{1}{2}$ ft. dist., and
 raise a mound of earth 4 ft. base, 2 ft. high W. of cor.
 Land, heavily rolling.
 Soil, 3rd rate, gravelly, dry.
 Few cedars, scrub oak, cacti. Fair grass.
 At this cor., at noon, 1. . . ., I set off $19^{\circ} 7\frac{1}{2}'$ S. on the
 decl. arc, and observe the sun on the meridian.
 The resulting lat. is $35^{\circ} 28'$ N.

North, bet. secs. 13 & 18.
 Over heavily rolling, broken land, desc. grad.
 40.00 Set an iron post 3 ft. long, 1 in. in diam. 26 ins. in
 the ground for $\frac{1}{4}$ sec. cor., marked on brass cap,
 $\frac{1}{4}$ S 13 in W., and
 S 18 in E. half,
 dig pits 18x18x12 ins. N. & S. of cor. 3 ft. dist., and
 raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.
 55.60 Small dam and tank, brs. E. 4 chs. dist., dry now.
 57.00 Wash, 50 lks. wide, course NW. asc. grad.
 80.00 Top of knoll, brs. E. & W.
 Set an iron post 3 ft. long, 3 ins. in diam. 24 ins. in
 the ground for cor. of secs. 7, 12, 13 & 18, marked on
 brass cap,
 T 24 N, in N. half,
 R 12 W, S 12, in NW.,
 R 11 W S 7, in NE.,
 S 18 in SE., and
 S 13 in SW. quadrants;
 dig pits 18x18x12 ins. in each sec. $5\frac{1}{2}$ ft. dist., and
 raise a mound of earth 4 ft. base, 2 ft. high W. of cor.
 Land, heavily rolling, broken.
 Soil, 3rd rate, stony, dry, gravelly.
 Few cedars. Fair grass.

North, bet. secs. 7 & 12.
 Over rolling, broken land.
 7.00 Wash, 50 lkd. wide, course NW.
 18.00 Knoll, brs. NE. & SW.
 29.30 Wash, 50 lks. wide, course NW.
 38.00 Spur, brs. NW. & SE.
 40.00 Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in
 the ground for $\frac{1}{4}$ sec. cor., marked on brass cap,
 $\frac{1}{4}$ S 12 in W., and
 S 7 in E. half,
 dig pits 18x18x12 ins. N. & S. of cor. 3 ft. dist. and
 raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.
 No bearings available.

Chains.

- 54.75 Wire fence, brs. NW. & SE., cor. of fence is 10 lks. NW.
 55.05 Telegraph line, brs. NE. & SW., parallel to R.R.
 57.79 Middle of track, main line of Atchison, Topeka & Santa Fe Railroad, brs. N. $33^{\circ}55'30''$ E., & S. $33^{\circ}55'30''$ W.
 58.30 Side track, parallel to R.R., main line. head block of same is 3 chs. to SW. Cherokee Sta. is 15 chs. NE.
 58.92 Telegraph line, brs. NE. & SW., parallel to R.R.
 59.60 Wire fence, parallel to R.R.
 80.00 Set an iron post 3 ft. long 3 ins. in diam. 24 ins. in the ground for cor. of secs. 1, 6, 7 & 12, marked on brass cap,

T 24 N, in N. half,
 R 12 W S 1, in NW.,
 R 11 W S 6, in NE.,
 S 7 in SE, and
 S 12 in SW. quadrants;

dig pits 18x18x12 ins. in each sec. $5\frac{1}{2}$ ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

Land, rolling, broken.

Soil, 3rd rate, sandy, gravelly, loose.

Sparse grass, sage brush, cacti.

North, bet. secs. 1 & 6.

Over rolling, broken land.

- 2.94 Road, brs. NE. & SW.
 19.00 Spur, brs. NE. & SW., top of broken mesa, brs. NE. & SW.
 24.60 Wash, 50 lks. wide, course ESE., asc. grad.
 36.80 Intersect South Boundary of Hualpai Indian Reservation at a point 4.92 chs. West of the $5\frac{1}{2}$ mile cor., which is a limestone 10x8x5 ins. above ground, marked and witnessed as described by the Surveyor-General.
 At the point of intersection, I
 Set an iron post 3 ft. long, 3 ins. in diam., 24 ins. in the ground for closing cor. of Tps. 24 N., Rs. 11 & 12 W., marked on brass cap,
 C.C. on S. of centre,
 H.I.R., in N half, and
 T 24 N, in S. half,
 S 6, R 11 W, in SE., and
 S 1 R 12 W, in SW. quadrants;
 dig pits 30x24x12 ins., crosswise on each line, E. & W., 4 ft., and S. of cor. 8 ft. dist., and raise a mound of earth 5 ft. base, $2\frac{1}{2}$ ft. high S. of cor.
 No bearings available.
 Land, rolling.
 Soil, 2nd & 3rd rate, sandy, gravelly.
 Sparse sage brush, cacti. Fair grass.

General Description.

The East Boundary of T. 24 N., R. 12 W., runs over a rough, broken country in the southern 2 miles, and over a rolling smoother country in the north 4 miles. The land is covered with a scattering growth of scrub oak and cedar, a few cacti, and fair grass. The land to the East is rolling, smooth and grassy, T. 24 N., R. 11 W., and all of T. 23 N., R. 11 W., except the SE. portion, should be surveyed. There is no water on or near the line. The formation is mostly a conglomerate granite gravel, covered in the south part with igneous or volcanic stones.

Jan. 25, 1912.

 U. S. Surveyor.

Boundaries of T. 24 N., R. 12 W.

- Latitudes, Departures, and closing errors.-

Line Designated.	True Bearing.	Distance	Latitudes.		Departures.	
			N.	S.	E.	W.
		.. Chs.	Chs.	Chs.	Chs.	Chs.
South Boundary,--	West,----	478.50	-----	-----	-----	478.50
West Boundary,--	North,---	437.60	437.60	-----	-----	-----
S.Bdy.of Hualpai Indian Reservation)East,---	478.58	-----	-----	478.58	-----
East Boundary,--	South,---	436.80	-----	436.80	-----	-----
Convergency,--	-----	-----	-----	-----	0.46	-----
Totals, -----			437.60	436.80	479.04	478.50
			436.80	-----	478.50	-----
Error in latitude,-----			0.80			
Error in Departure,-----			0.54			

Jan. 25, 1912.

William H. Elliott

 U. S. Surveyor.

CERTIFICATE OF ASSISTANTS.

We, the undersigned, hereby certify upon honor that we assisted, to the best of our skill and ability,

William H. Elliott

, U. S. Surveyor, during the periods and in the capacities

under Group 13

stated opposite our several signatures, in surveying all those parts or portions of the

South and East Boundaries of

T. 24 N. - R. 12 W.

Under

Section 15,

Arizona.

of the Gila & Salt River Base & Meridian, in the State of Arizona,

which are represented in the foregoing field notes as having been executed 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 executed.

NAME.	PERIOD OF SERVICE.		CAPACITY.
	BEGUN.	ENDED.	
<i>Bob E. Lyon</i>	Jan. 22, 1912.	March 5, 1912.	Chainman.
<i>Carl Snaquer</i>	Jan. 22, 1912.	March 5, 1912.	Chainman.
<i>Bob L. Bates</i>	Jan. 22, 1912.	Feb. 8, 1912.	Axeman.
<i>Harry Marshall</i>	Jan. 22, 1912.	March 5, 1912.	Flagman.
<i>A. W. Duffie</i>	Feb. 1, 1912.	Feb. 9, 1912.	Moundman.
<i>W. G. Carlson</i>	Feb. 11, 1912.	Mch. 5, 1912.	Axeman.
<i>Tom Owens</i>	Feb. 11, 1912.	Mch. 5, 1912.	Moundman.

Subscribed and certified to before me on the dates of the final service as shown above.

William H. Elliott

U. S. Surveyor.

FINAL OATH OF UNITED STATES SURVEYOR.

I, William H. Elliott, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for Arizona Group 13 bearing date of the 28th day of August, 1911, I have well, faithfully, and truly, in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the

Group 13
South and East bdrs. of Township 24 North, Range 12 West

of the Gila and Salt River Base Meridian, in the State of Arizona, which are represented in the foregoing field notes as having been executed 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 U. S. 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.

William H. Elliott
U. S. Surveyor.

Subscribed by said William H. Elliott, and sworn to before me }
this 15th day of October, 1912



Frank S. Ingalls
SURVEYOR-GENERAL OF ARIZONA

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, April 21, 1913

The foregoing field notes of the survey of the

South and East Boundaries of Township 24 North, Range 12 West
of the Gila and Salt River Base and Meridian, Arizona.

executed by William H. Elliott, * Jesse B. Wright, U.S. Surveyors
under ~~the~~ their special instructions, for Group 13 dated August 28, 1911, 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
U. S. Surveyor General.

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

2418 $\frac{1}{2}$

157
12

4-679

JUN 27 1915

BOOK 2418 $\frac{1}{2}$

Book "9"

FIELD NOTES

OF THE ~~SURVEY OF THE~~

Retracement of a portion of the SE. bdy. of the Hualpai Indian
Reservation.

NORTH and WEST

Of the Gila and Salt River, Base and Meridian,

In the State of Arizona.

EXECUTED BY

A. C. Horton Jr.,

In the capacity of U. S. Surveyor, under instructions dated February 11, 1914,
issued by the United States Surveyor General to govern surveys included in
Group No. 16, which were approved by the Commissioner of the General Land
Office, February 19, 1914.

Retracement
~~Survey~~ commenced August 11, 1914.

Retracement
~~Survey~~ completed August 13, 1914.

INDEX DIAGRAM.

Township _____, Range _____

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Retracement of SE. bdy. of Hualpai Indian Reservation.

Chains.

Retracement commenced August 11, 1914, and executed with Young and Sons No. 10 mountain transit No. 8478, equipped with Smith solar attachment. The horizontal limb is provided with two double verniers placed opposite to each other reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

Measurements with a 5 chain, steel tape are made on the slope, the vertical angles determined with transit or clinometer, and the slope measurements properly reduced to true horizontal distances.

In order to test the solar apparatus, by comparing the results of observations on the sun, made during a.m. and p.m. hours, with a meridian determined by observations on Polaris, I proceed as follows:

At 4h 30m p.m., l.m.t., at my camp near the 81 $\frac{1}{2}$ mile cor. of Hualpai Indian Reservation, I set off 35°42' on the lat. arc; 15°20' N., on the decl. arc; and mark the meridian thus determined with the solar, on a stake set in the ground, about ten chs. N. of the instrument.

At 10h 13.5m p.m., l.m.t., latitude 35°42' N., longitude 113° 04'30" W., I observe Polaris at eastern elongation, in accordance with instructions in the Manual, and mark the line thus determined by a stake set in the ground about 10 chs. N. of my station.

August 11, 1914.

August 12, 1914: At 7 a.m., I lay off the azimuth of Polaris 1° 25' to the west which falls 1' 30" to the east of the meridian determined by the solar.

At 7h 30m a.m., l.m.t., I set off 35°42' on the lat. arc; 15°8'30" on the decl. arc; and determine a meridian with the solar which falls 1' to the east of the meridian determined by p.m. solar observation; therefore, I conclude that the adjustments of the instrument are satisfactory.

Beginning at the 79 $\frac{1}{2}$ -mile cor. of Hualpai Indian Reservation, which is a limestone, 12x8x4 ins. above ground, marked and witnessed as described by the surveyor general.

Thence I run

N. 50° E. on SE. bdy.

40.06 Fall 12 lks. NW. of 80-mile cor., which is a sandstone, 12x8x3 ins. above ground, marked and witnessed as described by the surveyor general.

Therefore true course is N. 50° 10' E.

N. 50° 10' E. on SE. bdy.

29.78 Intersect closing cor. of Tps. 27 N., Rs. 7 and 8 W., which is an iron post, marked and witnessed as described by the surveyor general.

40.10 Intersect 80 $\frac{1}{2}$ -mile cor., which is a limestone, 12x7x3 ins. above ground, marked and witnessed as described by the surveyor general.

77.17 Intersect closing cor. of secs. 30 and 31, T. 27 N., R. 7 W., which is an iron post, marked and witnessed as described by the surveyor general.

80.23 Intersect 81-mile cor., which is a limestone in place, 36x12x5 ins. above ground, marked and witnessed as described by the surveyor general.

August 12, 1914.

Retraoement of SE. bdy. of Hualpai Indian Reservation.

Chains.

August 13, 1914: Beginning at the 84 1/2-mile cor., which is a limestone, 9x6x5 ins. above ground, firmly set, and marked and witnessed as described by the surveyor general. At this cor. at 7h 30m a.m., l.m.t., I set off 35°44' on the lat. arc; 14°50'30" on the decl. arc; and determine with the solar a meridian.

Thence I run
N. 50° E. on SE. bdy.

41.30

Fall 1 lk. SE. of 85-mile cor., which is a limestone, 12x 8x7 ins. above ground, firmly set, and marked and witnessed as described by the surveyor general. Therefore the true course is N.49'59' E.

August 13, 1914.

acfortney

U. S. Surveyor.

16 162

BOOK 2418 1/2

FINAL OATH OF UNITED STATES SURVEYOR.

I, Asforton, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for Arizona bearing date of the 11th day of February, 1914, I have well, faithfully, and truly, in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, ~~surveyed~~ ^{retraced} all those parts or portions of SE. bdy. of Hualpai Indian Reservation.

North and West of the Gila and Salt River, Base and Meridian, in the State of Arizona, which are represented in the foregoing field notes as having been executed 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 U. S. 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~~ ^{retracement}.

Asforton
U. S. Surveyor.

Subscribed by said A.C. Horton Jr., and sworn to before me }
this 3rd day of June, 1915



Frank Ingalls
SURVEYOR-GENERAL OF ARIZONA

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,
Phoenix Arizona June 5, 1915

The foregoing field notes of the ~~survey~~ ^{retracement} of part of the SE. bdy. of the Hualpai Indian Reservation North & West of the Gila & Salt River Base & Meridian in the State of Arizona

executed by A.C. Horton, Jr. U.S. Surveyor under his special instructions dated February 11, 1914, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the ~~surveys~~ ^{retracement} they describe, are hereby approved.

Frank Ingalls
U. S. Surveyor General.
of Arizona.

~~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.