

BOOK 2711

INDEX DIAGRAM.

Township *22 South*, Range *23 East*

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1A

South boundary of Tp. 22 S. Rg. 23 E.

Chains.

Survey commenced January 1, 1913, and executed with a W. & L. E. Gurley transit, not numbered, with solar attachment. The horizontal limb is provided with one double vernier, reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

The instrument was approved by the supervising surveyor August 28, 1912.

I examine 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, I proceed as follows:

At my camp which is located near the center of Tp. 22 S. Rg. 23 E.; latitude $31^{\circ} 30\frac{1}{2}'$ N., longitude $110^{\circ} 00' 23''$ W. I set off $31^{\circ} 30\frac{1}{2}'$ N. on the lat. arc; $22^{\circ} 56\frac{1}{2}'$ S. on the decl. arc; and at 4h. 00m. p.m., l.m.t., determine with the solar a meridian and mark a point thereof, on a stone firmly set in the ground, 5 chs. N. of my station.

January 1, 1913.

January 2: At 0h. 41m. a.m., by my watch, which has correct l.m.t., I observe Polaris at western elongation, in accordance with Manual of Instructions, and mark a point in the line thus determined, on a peg driven in the ground, 5 chs. N. of my station.

At 7h. 30m. a.m., l.m.t., I lay off the azimuth of Polaris, $1^{\circ} 21'$ to the east, and mark the meridian thus determined, by cutting a small groove in the stone set January 1, on which the meridian falls 0.3 ins. east of the mark determined by the solar.

At 8h. 00m. a.m., l.m.t., I set off $31^{\circ} 30\frac{1}{2}'$ N. on the lat. arc; $22^{\circ} 52\frac{1}{2}'$ S. 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 0.4 ins. east of the meridian established by the Polaris observation.

The solar apparatus, by p.m. and a.m. observations, defines positions for meridians, respectively about $0^{\circ} 16''$ west and $0^{\circ} 24''$ east of the meridian established by the Polaris observations; therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, At 8h. 00m. a.m., is N. $13^{\circ} 45'$ W.; the angle thus determined gives the mag. decl. $13^{\circ} 45'$ E.

January 2, 1913.

January 3: At 8h. 00m. a.m., l.m.t., I set off $31^{\circ} 27\frac{1}{2}'$ N. on the lat. arc; $22^{\circ} 47\frac{1}{2}'$ S. on the decl. arc; and determine a meridian with the solar at the cor. of Tps. 22 and 23 S. Rg. 23 and 24 E. which is an iron post set firmly in the ground, marked and witnessed as described by me in book "P."

Thence I run

West on a random line, along the S. bdy. of Tp. 22 S. Rg. 23 E. setting temp. $\frac{1}{4}$ sec. and sec. cors. at intervals of 40.00 chs.; and at 479.46 chs., intersect the west bdy. of the Tp. 488 lks. S. of the cor. of Tps. 22 and 23 S. Rgs. 22 and 23 E. which is a stone firmly set, marked and witnessed as described by the surveyor general. I obliterate the grooves on the E. of stone and move the mound of stone W. of cor.. At point of intersection I set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for closing cor. of Tps. 22 and 23 S. Rg. 23 E.

South boundary of Tp. 22 S. Rg. 23 E.

Chains.

marked on brass cap,
 CC W. of center;
 R23E in E.
 1913 in S. and
 T22S S36 S1 T23S R22E in W. half;
 T22S S31 in N. E. and
 T23S S6 in S. E. quadrant; dig pits 30 x 24 x 12 ins.
 crosswise on each line, N. and S. 4 ft., and E. of post
 8 ft. dist., and raise a mound of earth 5 ft. base $2\frac{1}{2}$ ft.
 high, E. of cor.

January 3, 4, 9, 1913.

January 10: At 8h. 00m. a.m., l.m.t., I set off $31^{\circ} 27\frac{1}{2}'$
 N. on the lat. arc; $21^{\circ} 56\frac{1}{2}'$ S. on the decl. arc; and
 determine a meridian with the solar at the cor. of Tps.
 22 and 23 S. Rgs. 23 and 24 E., previously described, in
 book "P." Thence I run

West bet. secs. 1 and 36, marking and blazing true line.
 Descending along rough S. W. slope .

4.80 Cross drain 10 lks. wide course S.
 18.70 Cross drain 8 lks. wide course S. W.
 32.00 Cross drain 12 lks. wide course S.
 40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the
 ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S36 in N.
 and S1 1913 in S. half; and raise a mound of stone 2 ft.
 base $1\frac{1}{2}$ ft. high, N. of cor. Pits impracticable.
 42.60 Cross under telephone line bears N. W. and S. E.
 43.30 Cross road bears N. W. and S. E.
 46.30 Cross wash 40 lks. wide course N. W. and ascend general
 N. E. slope, through heavy timber.
 51.40 Cross drain 12 lks. wide course N.
 59.00 Ridge bears N. and S.
 65.50 Cross wash 25 lks. wide course N.
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the
 ground for cor. of secs. 1, 2, 35 and 36, marked on brass
 cap
 T22S in N.
 T23S 1913 in S. and
 R23E in W. half;
 S35 in N. W.
 S36 in N. E.
 S1 in S. E. and
 S2 in S. W. quadrant; and raise a mound of stone 2 ft.
 base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
 Land, mountainous.
 Soil, rocky; 4th. rate.
 Timber, oak, pinon and juniper.

West bet. secs. 2 and 35.
 Ascending rough general N. E. slope, through scattering
 timber and dense brush.

14.90 Ridge bears N. and S.
 21.00 Cross drain 5 lks. wide course N.
 24.50 Ridge bears N. E. and S. W.
 28.80 cross drain 5 lks. wide course N.
 39.64 Ridge bears N. and S.
 40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the
 ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S35 in N. and
 S2 1913 in S. half; and raise a mound of stone 2 ft. base
 $1\frac{1}{2}$ ft. high, N. of cor. Pits impracticable.
 January 10: At this cor. I set off $21^{\circ} 56\frac{1}{2}'$ S. on the
 decl. arc; and observe the sun on the meridian at noon;
 the resulting lat. is $31^{\circ} 27\frac{1}{2}'$ N.
 51.20 Cross drain 12 lks. wide course N. E.
 73.10 Ridge bears N. E. and S. W.
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the

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South boundary of Tp. 22 S., Rg. 23 E.

Chains ground for cor. of secs. 2, 3, 34, and 35, marked on brass cap
 T22S in N.
 T23S 1913 in S. and
 R23E in W. half;
 S34 in NW.
 S35 in NE.
 S2 in SE. and
 S3 in SW. quadrant; and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.
 Land, mountainous.
 Soil, rocky; 4th rate.
 Timber, pinon and juniper.
 Undergrowth, oak.

 West, bet. secs. 3 and 34.
 Ascending rough general NE. slope, through scattering brush.
 2.50 Cross drain, 10 lks. wide, course NW.
 4.50 Ridge, bears N. and S.
 8.00 Wash, course N.; ascend.
 29.60 Top of main high ridge of mountain; descend rough general SW. slope.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., marked on brass cap ¼S34 in W. and S3 1913 in S. half; and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Pits impracticable.
 55.20 Cross drain, 8 lks. wide,; course SW.
 69.70 Ridge, bears NE. and SW.
 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 3, 4, 33, and 34, marked on brass cap
 T22S in N.
 T23S 1913 in S. and
 R23E in W. half;
 S33 in NW.
 S34 in NE.
 S3 in SE. and
 S4 in SW. quadrant; and raise a mound of stone, 2 ft. base, 1½ ft. high W. of cor. Pits impracticable.
 Land, mountainous.
 Soil, rocky; 4th rate.
 No timber.
 Undergrowth, oak.

January 10, 1913.

 January 12: At 8h. 00m., a. m., 1. m. t., I set off 31° 27½' N. on the lat. arc; 21° 38' S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 3, 4, 33, and 34.
 Thence I run
 West, bet. secs. 4 and 33.
 Descending rough general SW. slope.
 22.60 Cross wash, 20 lks. wide, course SW.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground for ¼ sec. cor., marked on brass cap ¼S33 in N. and S4 1913 in S. half; and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Pits impracticable.
 45.20 Ascend.
 80.00 Ridge, bears NW. and SE.
 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 4, 5, 32, and 33, marked on brass cap
 T22S in N.
 T23S 1913 in S. and
 R23E in W. half;
 S32 in NW.
 S33 in NE.
 S4 in SE. and
 S5 in SW. quadrant; and raise a mound of stone, 2 ft.

South boundary of Tp. 22 S., Rg. 23 E.

Chains base, 1½ ft. high, W. of cor. Pits impracticable.
 Land, mountainous.
 Soil, rocky; 4th rate.
 No timber.

West, bet. secs. 5 and 32.
 Descend rough SW. slope.

12.20 Cross drain, 12 lks. wide, course S; ascend.
 23.40 Ridge, bears N. and S.; descend.
 28.20 Cross drain, 5 lks. wide; course S.; ascend.
 31.80 Ridge, bears N. and S.; descend.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., marked on brass cap ¼S32 in N. and S5 1913 in S. half; and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Pits impracticable.
 January 12: At this cor. I set off 21° 37½' S. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is 31° 27½' N.

55.80 Cross drain, 8 lks. wide, course NW.
 63.10 Ridge, bears NW. and SE.; descend.
 73.40 Cross wash, 8 lks. wide; course NW.; and over rolling land through dense brush.
 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 5, 6, 31, and 32, marked on brass cap
 T22S in N.
 T23S 1913 in S. and
 R23E in W. half;
 S31 in NW.
 S32 in NE.
 S5 in SE. and
 S6 in SW. quadrant; and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Pits impracticable.
 Land, mountainous and rolling.
 Soil, rocky; 4th rate.
 No timber.
 Undergrowth, blackbrush.

West, bet. secs. 6 and 31.
 Over rolling land, through dense brush.

13.40 Cross wash, 17 lks. wide; course SW.
 27.25 Cross road, bears NE. and SW.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., marked on brass cap, ¼S31 in N. and S6 1913 in S. half; dig pits, 18x18x12 ins., E. and W. of post, 3 ft. dist., and raise a mound of earth, 3½ ft. base, 1½ ft. high, N. of cor.

79.46 The closing cor. of Tps. 22 and 23 S., Rgs. 23 E., previously described.
 Land, rolling.
 Soil, sandy, mixed with rocks and gravel; 3d rate.
 No timber.
 Undergrowth, blackbrush.

January 12, 1913.

East boundary of Tp. 22 S. Rg. 23 E,

| Chains. | |
|---------|---|
| | <p>January 13: At 8h. 00m. a.m., l.m.t., I set off $31^{\circ} 27\frac{1}{2}'$ N. on the lat. arc; $21^{\circ} 29'$ S. on the decl. arc; and determine a meridian with the solar at the cor. of Tps. 22 and 23 S. Rgs. 23 and 24 E., previously described, in book "P." Thence I run</p> <p>North bet. secs. 31 and 36. Ascend rough S. W. slope.</p> |
| 31.00 | Top of main high ridge bears N. W. and S. E. descend. |
| 40.00 | Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S36 in W. S31 in E. and 1913 in S. half; from which |
| | An oak 4 ins. diam., bears S. 28 E. 82 lks. dist., marked $\frac{1}{4}$ S31 BT. |
| | An oak 5 ins. diam., bears S. 82 W. 80 lks. dist., marked $\frac{1}{4}$ S36BT. |
| 66.80 | Cross wash 8 lks. wide course E. |
| 73.25 | Cross wash 10 lks. wide course E. |
| 80.00 | Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 25, 30, 31 and 36, marked on brass cap |
| | T22S in N. and |
| | I913 in S. half; |
| | R23E S25 in N. W. |
| | R24E S30 in N. E. |
| | S31 in S. E. and |
| | S36 in S. W. quadrant; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable. |
| | Land, mountainous. |
| | Soil, rocky; 4th. rate. |
| | Timber, scattering oak. |
| | Undergrowth, oak and manzanita. |
| | January 13: At this cor. I set off $21^{\circ} 28'$ S. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is $31^{\circ} 28\frac{1}{2}'$ N. |
| | |
| | North bet. secs. 25 and 30. Descend through dense brush. |
| 6.50 | Cross wash 20 lks. wide course N. E. ascend. |
| 21.70 | Ridge bears N. E. and S. W. descend. |
| 29.30 | Cross wash 8 lks. wide course N. E. ascend. |
| 37.10 | Ridge bears N. E. and S. W. and enter timber, descend. |
| 40.00 | Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S25 in W. S30 in E. and 1913 in S. half; from which |
| | An oak 6 ins. diam., bears S. 48 E. 69 lks. dist., marked $\frac{1}{4}$ S30BT. |
| | An oak 9 ins. diam., bears N. 85 W. 24 lks. dist., marked $\frac{1}{4}$ S25BT. |
| 60.00 | Ascend. |
| 68.90 | Ridge bears E. and W. descend. |
| 80.00 | Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 19, 24, 25 and 30, marked on brass cap |
| | T22S in N. and 1913 in S. half; |
| | R23E S24 in N. W. |
| | R24E S19 in N. E. |
| | S30 in S. E. and |
| | S25 in S. W. quadrant; from which |
| | An oak 4 ins. diam., bears N. 22 W. 18 lks. dist. marked T22SR23ES24BT |
| | An oak 4 ins. diam., bears N. $28\frac{1}{2}$ E. 44 lks. dist., marked T22SR24ES19BT. |
| | An oak 6 ins. diam., bears S. $5\frac{1}{2}$ E. 136 lks. dist., marked T22SR24ES30BT |
| | An oak 6 ins. diam., bears S. 86 W. 104 lks. dist., marked T22SR23ES25BT. |
| | Land, mountainous. |
| | Soil, rocky; 4th. rate. |
| | Timber, oak and juniper. |
| | Undergrowth, oak and manzanita. |

January 13, 1913.

East boundary of Tp. 22 S. Rg. 23 E.

Chains.

- January 19: At 8h. 00m. a.m., l.m.t., I set off 31' 29 $\frac{1}{2}$ ' N. on the lat. arc; 20' 19 $\frac{1}{2}$ ' S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 19, 24, 25 and 30...
- Thence I run
- North bet. secs. 19 and 24.
Ascend through dense brush and scattering timber.
- 10.00 Ridge bears N. W. and S. E.
23.50 Cross wash 5 lks. wide course W. ascend.
37.30 Ridge bears E. and W. descend.
40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S24 in W. S19 in E. and 1913 in S. half; from which
- An oak 6 ins. diam., bears S. 62 $\frac{1}{2}$ E. 10 lks. dist., marked $\frac{1}{4}$ S19BT.
An oak 6 ins. diam., bears N. 45 W. 75 lks. dist., marked $\frac{1}{4}$ S24BT.
- 47.90 Cross drain 6 lks. wide course N. E.
70.20 Cross wash 18 lks. wide course N. E. ascend.
80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 13, 18, 19 and 24, marked on brass cap
- T22S in N. and 1913 in S. half;
R23E S13 in N. W.
R24E S18 in N. E.
S19 in S. E. and S24 in S. W. quadrant; from which
- An oak 8 ins. diam., bears N. 42 $\frac{3}{4}$ W. 105 lks. dist., marked T22SR23ES13BT.
An oak 6 ins. diam., bears N. 67 $\frac{1}{4}$ E. 64 lks. dist., marked T22SR24ES18BT.
An oak 7 ins. diam., bears S. 18 $\frac{1}{2}$ E. 68 lks. dist., marked T22SR24ES19BT.
An oak 5 ins. diam., bears S. 40 W. 37 lks. dist., marked T22SR23ES24BT.
- Land, mountainous.
Soil, rocky; 4th. rate.
Timber, oak and juniper.
Undergrowth, oak.
- January 19: At this cor. I set off 20' 19' S. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is 31' 30 $\frac{1}{2}$ ' N.
-
- North bet. secs. 13 and 18.
Ascend through dense brush and scattering timber.
- 15.00 Ridge bears N. W. and S. E. descend along N. W. slope.
19.80 Cross wash 6 lks. wide course W.
35.40 Cross wash 12 lks. wide course N. W. ascend.
40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S13 in W. S18 in E. and 1913 in S. half; from which
- An oak 4 ins. diam., bears S. 62 $\frac{3}{4}$ W. 55 lks. dist., marked $\frac{1}{4}$ S13BT.
An oak 6 ins. diam., bears S. 58 $\frac{1}{2}$ E. 41 lks. dist., marked $\frac{1}{4}$ S18BT.
- 45.00 Ridge bears N. W. and S. E. descend.
64.50 Cross wash 6 lks. wide course N. W. ascend.
68.00 Ridge bears N. W. and S. E. descend.
74.80 Cross wash 6 lks. wide course N. W.
77.50 Ridge bears N. W. and S. E.
80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 7, 12, 13 and 18, marked on brass cap
- T22S in N. and 1913 in S. half;
R23E S12 in N. W.
R24E S7 in N. E.
S18 in S. E. and S13 in S. W. quadrant; from which

East boundary of Tp. 22 S. Rg. 23 E.

Chains.

- An oak 4 ins. diam., bears N. 82 W. 87 lks.
dist., marked T22SR23ES12BT.
An oak 6 ins. diam., bears N. 34 $\frac{1}{2}$ E. 138 lks.
dist., marked T22SR24ES7BT.
An oak 4 ins. diam., bears S. 22 $\frac{3}{4}$ E. 74 lks.
dist., marked T22SR24ES18BT.
An oak 5 ins. diam., bears S. 54 W. 49 lks.
dist., marked T22SR23ES13BT.

Land, mountainous.
Soil, rocky; 4th. rate.
Timber, oak and juniper.
Undergrowth, oak.

January 19, 1913.

January 27: At 9h. 00m. a.m., l.m.t., I set off 31 31' N. on the lat. arc; 18 28' S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 7, 12, 13 and 18.

Thence I run

North bet. secs. 7 and 12

Descend through dense brush and scattering timber.

- 3.90 Cross wash 12 lks. wide course N. W. ascend.
29.50 Ridge bears N. W. and S. E. descend.
40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S12 in W. S7 in E. and 1913 in S. half; from which
An oak 6 ins. diam., bears S. 64 E. 128 lks.
dist., marked $\frac{1}{4}$ S7BT
An oak 5 ins. diam., bears N. 85 $\frac{1}{2}$ W. 153 lks.
dist., marked $\frac{1}{4}$ S12BT.
43.00 Cross wash 8 lks. wide course W. ascend.
59.25 Ridge bears N. W. and S. E. descend.
71.20 Cross wash 30 lks. wide course N. W. and along W. slope.
80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 1, 6, 7 and 12, marked on brass cap
T22S in N. and
1913 in S. half;
R23E S1 in N. W.
R24E S6 in N. E.
 $\frac{1}{4}$ S7 in S. E. and
S12 in S. W. quadrant; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
Land, mountainous.
Soil, rocky; 4th. rate.
Timber, oak.
Undergrowth, oak.

January 27, 1913.

February 10: At 8h. 00m. a.m., l.m.t., I set off 31 32' N. on the lat. arc; 14 22' S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 1, 6, 7 and 12

Thence I run

North bet. secs. 1 and 6

Descend along N. W. slope through dense brush and scattering timber.

- 11.00 Cross wash 8 lks. wide course N. W. ascend.
14.60 Ridge bears N. W. and S. E. descend.
18.60 Cross wash 10 lks. wide course N. W. ascend.
25.00 Ridge bears N. W. and S. E. descend.
32.00 Cross wash 6 lks. wide course N. W. ascend.
40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S1 in W. S6 in E. and 1913 in S. half; and raise a mound of stone

East boundary of Tp. 22 S. Rg. 23 E.

Chains.

2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
 49.20 Cross drain 8 lks. wide course W.
 60.10 Ridge bears N. W. and S. E.
 67.00 Cross wash 6 lks. wide course N. W. ascend.
 80:00 Set an iron post 3 ft. long; 3 ins. diam., 24 ins. in the
 ground for cor. of Tps. 21 and 22 S. Rgs. 23 E., marked
 on brass cap
 R23E in W.
 1913 in S. and
 R24E T21S S31 S6 T22S in E. half;
 T21S S36 In N. W. and
 S1 T22S in S. W. quadrant; and raise a mound of stone
 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
 Land, mountainous.
 Soil, rocky; 4th. rate.
 Timber, oak.
 Undergrowth, oak.

February 10, 1913.

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North boundary of Tp. 22 S. Rg. 23 E.

Chains.

February 10:
 West bet. secs. 1 and 36.
 Descend along S. W. slope.
 23.50 Cross wash 20 lks. wide course N. W. ascend.
 35.50 Ridge bears N. W. and S. E. descend.
 40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the
 ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S36 in N.
 and S1 1913 in S. half; and raise a mound of stone 2 ft.
 base $1\frac{1}{2}$ ft. high, N. of cor. Pits impracticable.
 44.30 Cross road bears N. E. and S. W.
 46.30 Cross wash 25 lks. wide course N. E. ascend.
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the
 ground for cor. of secs. 1, 2, 35 and 36, marked on brass
 cap
 T21S in N.
 T22S 1913 in S. and
 R23E in W. half;
 S35 in N. W.
 S36 in N. E.
 S1 in S. E. and
 S2 in S. W. quadrant; and raise a mound of stone 2 ft.
 base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
 Land mountainous.
 Soil, rocky; 4th. rate.
 No timber.
 February 10: At this cor. I set off $14^{\circ} 19\frac{1}{2}'$ S. on the
 decl. arc; and observe the sun on the meridian at noon;
 the resulting lat. is $31^{\circ} 33'$ N.

February 10, 1913.

February 11: At 8h. 00m. a.m., l.m.t., I set off $31^{\circ} 33'$
 N. on the lat. arc; $14^{\circ} 02\frac{1}{2}'$ S. on the decl. arc; and
 determine a meridian with the solar at the cor. of secs.
 1, 2, 35 and 36
 Thence I run.
 West bet. secs. 2 and 35
 Ascend.
 22.10 Ridge bears N. E. and S. W. descend.
 40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the
 ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S35 in N.
 and S2 1913 in S. half; and raise a mound of stone 2 ft.
 base $1\frac{1}{2}$ ft. high, N. of cor. Pits impracticable.
 51.75 Cross wash 8 lks. wide course S. W. ascend.
 74.00 Ridge bears N. E. and S. W. descend.
 80.00 Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the
 ground for cor. of secs. 2, 3, 34 and 35, marked on brass
 cap
 T21S in N.
 T22S 1913 in S. and
 R23E in W. half;
 S34 in N. W.
 S35 in N. E.
 S2 in S. E. and
 S3 in S. W. quadrant; and raise a mound of stone 2 ft.
 base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable.
 Land, mountainous.
 Soil, rocky; 4th. rate.
 No timber.

West bet. secs. 3 and 34.
 Ascend.
 4.70 Ridge bears N. E. and S. W. descend.
 14.50 Over level land, through dense brush.
 40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the
 ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S34 in N.
 S3 1913 in S. half; and dig pits 18 x 18 x 12 ins. E.

North boundary of Tp. 22 S. Rg. 23 E.

| Chains. | |
|---------|---|
| | and W. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high, N. of cor. |
| 50.50 | Cross road bears N. W. and S. E. |
| 66.60 | Cross road bears N. E. and S. W. |
| 80.00 | Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 3, 4, 33 and 34, marked on brass cap |
| | T21S in N. |
| | T22S 1913 in S. and |
| | R23E in W. half; |
| | S33 in N. W. |
| | S34 in N. E. |
| | S3 in S. E. and |
| | S4 in S. W. quadrant; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable. |
| | Land, level and mountainous. |
| | Soil, E. 14.50 chs. rocky; 4th. rate. W. 65.50 chs. sandy, mixed with rocks and gravel; 2nd. rate. |
| | No timber. |
| | Undergrowth, mesquite and blackbrush. |
| | February 11: At this cor. I set off 14.00' S. on the decl. arc; and observe the sun on the meridian at noon; the resulting lat. is $31^{\circ}33'$ N. |
| | West bet. secs. 4 and 33 |
| | over level land, through dense brush. |
| 40.00 | Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S33 in N. |
| | and S4 1913 in S. half; dig pits 18 x 18 x 12 ins. E. |
| | and W. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high, N. of cor. |
| | From this cor. I take bearings to Bisbee Extension Mine as follows: |
| | Shaft house bears S. 34 45' W. |
| | Manager's house bears S. 31 00' W. |
| | Cook house bears S. 26 30' W. |
| | Bunk house bears S. 25. 00' W. |
| | Bunk house bears S. 23 15' W. |
| 80.00 | Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 4, 5, 32 and 33, marked on brass cap |
| | T21S in N. |
| | T22S 1913 in S. and |
| | R23E in W. half; |
| | S32 in N. W. |
| | S33 in N. E. |
| | S4 in S. E. and |
| | S5 in S. W. quadrant; and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable. |
| | Land, level. |
| | Soil, sandy loam, dry, medium texture; 1st. rate. |
| | No timber. |
| | Undergrowth, mesquite and blackbrush. |
| | West bet. secs. 5 and 32 |
| | Over level land, through dense brush. |
| 0.45 | From this point I take bearings to the Bisbee Extension Mine as follows: |
| | Shaft house bears S. 6 30' E. |
| | Manager's house bears S. 4 00' E. |
| | Cook house and two bunk houses bear in line S. 7 00' E. |
| 14.90 | Cross wash 20.lks. wide course N. W. |
| 30.15 | Cross road bears N. W. and S. E. |
| 40.00 | Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S32 in N. |

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North boundary of Tp. 22 S. Rg. 23 E.

Chains.
80.00 and S5 1913 in S. half; and raise a mound of stone 2 ft. base 1½ ft. high, N. of cor. Pits impracticable. Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for cor. of secs. 5, 6, 31 and 32 marked on brass cap
T21S in N.
T22S 1913 in S. and
R23E in W. half;
S31 in N. W.
S32 in N. E.
S5 in S. E. and
S6 in S. W. quadrant; and raise a mound of stone 2 ft. base 1½ ft. high, W. of cor. Pits impracticable.
Land, level.
Soil, sandy loam, dry medium texture; 1st. rate.
No timber.
Undergrowth, mesquite and blackbrush.

25.35 West bet. secs. 6 and 31
Over level land, through dense brush.
Cross under telephone line bears N. and S.

40.00 Set an iron post 3 ft. long, 1 in. diam., 26 ins. in the ground for ¼ sec. cor., marked on brass cap ¼ S31 in N. and S6 1913 in S. half; and raise a mound of stone 2 ft. base 1½ ft. high, N. of cor. Pits impracticable.

78.44 Intersect W. bdy. of Tp. 5.31 chs. S. of the cor. of Tps. 21 and 22 S. Rgs. 22 and 23 E. which is a stone firmly set, marked and witnessed as described by the surveyor general. I obliterate the notches on E. edge of stone and move the mound of stone W. of cor. At the point of intersection I
Set an iron post 3 ft. long, 3 ins. diam., 24 ins. in the ground for closing cor. of Tps. 21 and 22 S. Rg. 23 E. marked on brass cap
CC W. of center;
R23E in E.
1913 in S. and
T21S S36 S1 T22S R22E in W. half;
T21S S31 in N. E. and
T22S S6 in S. E. quadrant; dig pits, 30 x 24 x 12 ins. crosswise on each line, N. and S. 4 ft. and E. of post 8 ft. dist.; and raise a mound of earth 5 ft. base 2½ ft. high E. of cor.
Land, level.
Soil, sandy loam, dry, medium texture; 1st. rate.
No timber.
Undergrowth, mesquite and blackbrush.

February 11, 1913.

John P. Hesse
U. S. Surveyor.

BOUNDARIES OF TOWNSHIP 22 SOUTH, RANGE 23 EAST
Latitudes Departures and Closing Errors.

| Line designated | True bearing | Distance chs. | Latitudes | | Departures | |
|--------------------|--------------|------------------|------------|------------|------------|------------|
| | | | N. chs. | S. chs. | E. chs. | W. chs. |
| SOUTH BOUNDARY | WEST | 479.46 | | | | 479.46 |
| WEST " | NORTH | 479.57 | 479.57 | | | |
| NORTH " | EAST | 478.44 | | | 478.44 | |
| EAST " | SOUTH | 480.00 | | 480.00 | | |
| CONVERGENCY | | | | | .45 | |
| TOTALS | | | 479.57 | 480.00 | 478.89 | 479.46 |
| | | | | 479.57 | | 478.89 |
| ERROR IN LATITUDE | | | 0.43 | | | |
| ERROR IN DEPARTURE | | | | | 0.57 | |

John P. Hesse
U. S. Surveyor

CERTIFICATE OF ASSISTANTS.

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

John F. Hesse, U. S. Surveyor, during the periods and in the capacities stated opposite our several signatures, in surveying all those parts or portions of the south, east, and north boundaries of Tp. 22 S., Rg. 23 E.

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 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. | |
| <u>P. L. Macomb</u> | <u>Dec. 20, 1912</u> | <u>Jan. 7, 1913</u> | <u>Plagman</u> |
| <u>A. F. Ridge</u> | <u>Dec. 23, 1912</u> | <u>Feb. 9, 1913</u> | <u>Asman Plagman</u> |
| <u>B. Cronk</u> | <u>Jan. 8, 1913</u> | <u>Feb. 9, 1913</u> | <u>Coverman</u> |
| <u>W. H. Levens</u> | <u>Jan. 8, 1913</u> | <u>Feb. 9, 1913</u> | <u>Asman</u> |
| <u>G. E. Lang</u> | <u>Sept. 6, 1912</u> | <u>Feb. 14, 1913</u> | <u>Chairman</u> |
| <u>F. E. Ayers</u> | <u>Dec. 20, 1912</u> | <u>Feb. 14, 1913</u> | <u>Chairman</u> |
| <u>J. S. Hughes</u> | <u>Feb. 9, 1913</u> | <u>Feb. 14, 1913</u> | <u>Plagman</u> |
| <u>B. S. Jackson</u> | <u>Feb. 9, 1913</u> | <u>Feb. 14, 1913</u> | <u>Asman</u> |
| <u>E. Y. Hamlett</u> | <u>Dec. 9, 1912</u> | <u>Jan. 7, 1913</u> | <u>Coverman</u> |
| <u>E. D. Thomas</u> | <u>Feb. 9, 1913</u> | <u>Feb. 15, 1913</u> | <u>Coverman</u> |
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Subscribed and certified to before me on the dates of the final service as shown above.

John F. Hesse
U. S. Surveyor.

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BOOK 2711

FINAL OATH OF UNITED STATES SURVEYOR.

I, John F. Hesse, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for Arizona for Group 5 bearing date of the 24th 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 south, east and north boundaries of Tp. 22 S., Rg. 23 E.

..... 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 for Group 5 and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

John F. Hesse
U. S. Surveyor.

Subscribed by said John F. Hesse and sworn to before me }
this 14th day of August, 1914 }



Frank A. Ingalls
Surveyor General of Arizona.

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,
Phoenix Ariz. Nov 14, 1914

The foregoing field notes of the survey of the South, East and North boundaries of Township N° 22 South, Range N° 23 East of the Gila and Salt River Base and Meridian in the State of Arizona

executed by John F. Hesse - U.S. Surveyor under his special instructions dated August 24, 1911 for Group 5, ~~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 A. 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.~~