

Retracement of S. bdy. T. 30 N., R. 48 E.

1.

Chains

Survey commenced Oct. 29, 1914, and executed with a Young and Sons, transit No. 8518, 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.

The instrument was approved by Assistant Supervisor of Surveys G.D.D. Kirkpatrick.

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 the cor. of Tps. 29 and 30 N., Rgs. 47 and 48 E.; previously described, latitude $40^{\circ} 24' N.$, longitude $116^{\circ} 37' W.$, at 3h., p.m., l.m.t., I set off $40^{\circ} 24' N.$ on the lat. arc; $13^{\circ} 23' S.$ on the decl. arc and determine a meridian with the solar, and mark a point thereof, on a stone firmly set in the ground 5 chs., N. of the cor.

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At 4h. 54m., a.m., 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 8h. 30m., a.m., l.m.t., I lay off the azimuth of Polaris $1^{\circ} 30'$ to the east, and mark the meridian thus determined by cutting a small groove in the stone set Oct. 29, 1914; on which the meridian falls 1.3 ins. west of the mark determined by the solar.

At 9h., a.m., l.m.t., I set off $40^{\circ} 24' N.$ on the lat. arc, $13^{\circ} 37' S.$ 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 1.0 in. west of the meridian established by the Polaris observation.

The solar apparatus by p.m. and a.m. observations, defines positions for meridians, respectively about $1' 8''$ east and $53''$ west of the meridian established by the Polaris observation: therefore I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian at 9h. 15m., a.m., is $N. 18^{\circ} 20' W.$; and the angle thus determined gives the magnetic declination $18^{\circ} 20' E.$

The lines of this survey were measured with 5ch. steel tape and clinometer.

- 40.24 From the tp. cor. already described, I retrace, E. bet. secs. 6 and 31; on the S. bdy. of the tp. I find the $\frac{1}{4}$ sec. cor. falling 68 lks. N. of my line. It is a granite stone $11 \times 8 \times 5$ ins., set in the ground in a mound of earth and stone and mkd. $\frac{1}{4}$ on the N. face.
- 80.24 I search diligently but find no cor. for secs. 5, 6, 31 and 32.

- 40.00 From this point, I retrace, E. bet. secs. 5 and 32; on the S. bdy. of the tp. I search diligently, but find no $\frac{1}{4}$ sec. cor.
- 80.00 I find the cor. of secs. 4, 5, 32 and 33; falling 2.71