

Retracement of N. Bdy. T.29 N., R. 53 E.

1.

Survey commenced June 21, 1915, and executed with a Young and Sons transit No. 6517 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 G. D. D. Kirkpatrick, Asst. Supervisor of Surveys for Utah and Nevada.

The lines of this survey were measured with a 5-chain steel tape, and clinometer.

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 from observations on Polaris.

I proceed as follows:

At the cor. of Tps. 28 and 29 N., Rgs. 52 and 53 E., at 4 h 0 m, p.m., l.m.t., I set off $40^{\circ}19'N.$ on the lat. arc, $23^{\circ}28'N.$ 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.

June 21, 1915.

June 22, 1915.

At 1 h 35 m, a.m., l.m.t., I observe Polaris at eastern 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 7 h 0 m a.m., l.m.t., I lay off the azimuth of Polaris $1^{\circ}30'$ to the W., and mark the meridian thus determined on the stone set June 21, the meridian falls 1.2 ins. E. of the mark determined by the solar. At 7 h 30 m, a.m., l.m.t., I set off $40^{\circ}19'N.$ on the lat. arc, $23^{\circ}28'N.$ on the decl. arc, and mark a point in the meridian determined with the solar, on the stone already set 5 chs. N. of the corner. This point falls 0.4 ins. W. of the meridian established by the Polaris observation. The solar apparatus by p.m. and a.m. observation defines positions for meridians respectively about $1'3''$ west and $0'21''$ west 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 8 h 0 m, a.m., l.m.t., is $N.18^{\circ}15'W.$; the angle thus determined gives the magnetic declination $18^{\circ}15'E.$

June 22, 1915.

July 1, 1915.

At the S.E. Cor. of T.30 N., R. 52 E., at 8 h 0 m a.m., l.m.t., I set off $40^{\circ}25'N.$ on the lat. arc, $23^{\circ}11'N.$ on the decl. arc and determine a meridian with the solar. Thence North on the east Bdy. of sec. 36.

8.80 Intersect the cor. of Tps. 29 and 30 N., R. 53 E.

A volcanic stone of the size, set, marked and witnessed as described by the Surveyor General.

Thence I retrace

East on the south bdy. of sec. 31.

24.66

The cor. of secs. 5, 6, 31 and 32 falls 13 lks. S. of line. A sandstone $12 \times 8 \times 5$ ins., marked with 5 and 1 grooves on opposite edges and lying on the ground on an old mound of earth.

The course of this line is $S.89^{\circ}42'E.$

From the cor. of secs. 5, 6, 31 and 32,

I retrace

East between secs. 5 and 32.