

Resurvey of South Bdy. of T. 15 N., R. 24 E.

1

Survey commenced June 25, 1915, and executed with a Young and Sons mountain transit No. 8572, with solar attachment. The horizontal limb is provided with two double verniers, placed opposite to each other and reading to single minutes of arc, which is also the least count of the verniers of the lat. and decl. arcs.

The instrument was approved for use in this survey by the Assistant Supervisor of Surveys, for this district. I examine the adjustments of the transit, and find them correct.

July 3: 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 made on Polaris, I proceed as follows: At my camp situated near the $\frac{1}{4}$ cor. of secs. 21 and 22, in approximate latitude $39^{\circ} 08' N.$; longitude $119^{\circ} 17\frac{1}{2}' W.$ I set off $39^{\circ} 8'$ on the lat. arc; $23^{\circ} 01' N.$ on the decl. arc; and at 4h 32m p.m., l.m.t., determine with the solar a meridian and mark the direction of the line thus determined by a nail driven in a box, set firmly in the ground about 5 chs. N. of my station.

July 3, 1915.

July 4: At 0h 49m a.m., l.m.t., by my watch which carries correct l.m.t., I observe Polaris at approximate eastern elongation in accordance with Manual of Instructions and mark a point in the line thus determined, on a peg driven in the ground about 5 chs. N. of my station.

At 7h 30m a.m., I lay off the azimuth of Polaris, $1^{\circ} 29'$ to the west, and mark the meridian thus determined by a nail in the box set July 3, on which the meridian falls $0' 45''$ to the right of the mark determined by solar.

At 9h 2m a.m., l.m.t., I set off $39^{\circ} 8'$ on the lat. arc; $22^{\circ} 57' N.$ on the decl. arc; and mark a point in the meridian determined with the solar, by a nail in the box already set about 5 chs. N. of my station; this mark falls $0' 30''$ to the left of the meridian established by the Polaris observation.

The solar apparatus by p.m. and a.m. observations, defines positions for the meridian, respectively $45''$ and $30''$ to the left of the meridian established by the Polaris observation; therefore as the error is less than $1'$ of arc; I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 10 a.m. is N. $17^{\circ} 0' W.$; the angle thus determined gives the mag. decl. $17^{\circ} 00' E.$

A steel tape, 5 chains long, was used in the field work together with a clinometer for determining slope angles and the reduced horizontal distances only appear in the field notes. The tape was tested, comparison being made with a standard tape, 1 chain long, kept and used for that purpose.

RESURVEY OF SOUTH BDY. OF T. 15 N., R. 24 EAST

June 26: At 8h 2m a.m., l.m.t., I set off $39^{\circ} 6'$ on the lat. arc; $23^{\circ} 24' N.$ on the decl. arc; and determine a meridian at the cor. of secs. 1, 2, 35 and 36, on the S. bdy. of Tp., hereinafter described.

Thence,

West, retracing bet. secs. 2 and 35

At 40.00 chs. N. of my line 9 lks. dist. is the $\frac{1}{4}$ sec. cor.

As there are no subdivisions depending upon this Tp. line, west of this $\frac{1}{4}$ sec. cor., I continue West from point 9