

Chains

Survey commenced Oct. 21, 1913, and executed with a Young and Sons Light Mountain Transit No. 7147, with 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 for this assignment by the Asst. Supervisor of Surveys for Nevada.

All distances were measured with an 8 chain steel tape and the slope distances reduced to the horizontal by observing the vertical angle with a clinometer, reading to $1/4^\circ$, and the correction taken from a traverse table.

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 in the N.W. $1/4$ Sec. 15, T. 35 N., R. 45 E.; latitude $40^\circ 54' 1/2''$ N., longitude, $116^\circ 53' 1/2''$ W.; I set off $40^\circ 54' 1/2''$ N. on the lat. arc; $10^\circ 43'$ S. on the decl. arc; and at 4 h 0 m 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.

Oct. 21, 1913.

Oct. 22: At 5 h 24 m A.M., by my watch, which is correct with l.m.t., I observe Polaris at western elongation, in accordance with the Manual of Instructions, and mark a point in the line determined, on a peg driven in the ground 5 chs. N. of my station.

At 6 h 0 m A.M., l.m.t., I lay off the azimuth of Polaris $1^\circ 31' 1/2''$ to the east, and mark the meridian thus determined by cutting a small groove in the stone set Oct. 21, on which the meridian falls 0.3 ins. east of the mark determined by the solar.

At 8 h 0 m A.M., l.m.t., I set off $40^\circ 54' 1/2''$ N. on the lat. arc, $10^\circ 57'$ 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 0.2 ins. east of the meridian established by the Polaris observation.

The solar apparatus by P.M. and A.M. observation, defines positions for meridians, respectively, about $16''$ west and $10''$ 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 8 h 30 m A.M., is N. $18^\circ 48'$ W., the angle thus determined gives the mag. decl. $18^\circ 48'$ E.

Oct. 22, 1913.

Nov. 8: At the Std. cor. to T. 36 N., Rgs. 45 and 46 E., previously described; lat. $40^\circ 56'$ N.; long. $116^\circ 50'$ W., I set off $40^\circ 56'$ N. on the lat. arc, $16^\circ 28' 1/2''$ S. on the decl. arc; and at 8 h 15 m A.M., l.m.t., determine with the solar a meridian. Thence I retrace

N. on blank line between secs. 31 and 36.

39.63

Fall 39 lks. W. of the $1/4$ cor. between secs. 31 and 36, which is a broken willow stake, showing 6 ins. above ground with a 24 in. piece lying on ground, marked but undecipherable. I re-establish the cor. at this point as follows:

Set an iron post 3 ft. long, 1 in. diam., 24 ins. in the ground for $1/4$ cor. to secs. 31 and 36, with brass cap marked:

$1/4$
 S36 | S31