

Survey of Bdrs. of Ts. 39 and 40 N., Rs. 35 and 36 E.

Chains

The survey of all boundaries and subdivisional lines in Group 259, Nevada were executed with a light mountain solar transit, made by Buff and Buff Manufacturing Company, Serial No. 9210, constructed in accordance with the standard specifications of the General Land Office. The horizontal circle has a diameter of $4\frac{1}{2}$ ins., with two double opposite verniers reading to single minutes; the vertical circle has a diameter of 4 ins., with one double vernier reading to single minutes. The stadia method of measurement was not used and a description of the stadia hairs is omitted. The instrument is equipped with the improved Smith solar attachment; radius of latitude arc is $2\frac{1}{2}$ ins., and declination arc $3\frac{1}{2}$ ins., each with verniers reading to single minutes. The instrument was in good condition and having been placed in satisfactory adjustment prior to the beginning of the survey and tested and found free from appreciable error, was approved by the district cadastral engineer on May 9, 1940. I examine all the instrumental adjustments before making the field tests hereinafter recorded.

The directions of all boundary lines was determined by the solar transit method. The measurements were made with a Lallie steel tape 5 chs. in length, graduated every link for the first 100 links, and the balance at intervals of 10 links. The tape was tested by comparison with a Lufkin standard and found correct. The measurements were made on the slope and the vertical angle of each intercept was ascertained by a clinometer in good adjustment; the horizontal equivalents are entered in the field note record.

At the NE cor. of T. 39 N., R. 36 E. the latitude is $41^{\circ}16'47''$ N. and longitude is $117^{\circ}52'$ W.

May 16, 1940, at camp near the cor. of secs. 3, 4, 33 and 34, on the N. bdy. of T. 39 N., R. 36 E., at 4h 9.6m a.m., l.m.t., or 4h 1.3m a.m., by my watch, which reads correct 120th meridian time, as determined by radio signals, I observe Polaris at eastern elongation, making two sights, each with the telescope in direct and reversed positions, and place a tack at the mean point on a peg driven firmly in the ground, 8 chs. N. After sunrise, I lay off the azimuth of Polaris, $1^{\circ}21'39''$, and find a point in the meridian thus determined marked by the E. edge of a rock ledge, approximately 4 miles to the south.

June 7, 1940: In order to verify the latitude of the station, and the reading of my watch, I make an observation of Polaris at lower culmination for latitude, making four observations, two each with the telescope in direct and reversed positions:

Watch fast of 120th meridian time	0m 24s
Mean watch time of observation	8h 29m 00s p.m.
Mean observed vertical angle	$40^{\circ}16'30''$
Reduced latitude	$41^{\circ}16'47''$

May 19, 1940: Every 30 min. from 6 to 10:30 a.m. and from 1:30 to 6 p.m., I make proper settings upon the arcs of the solar attachment and ascertain that the resulting orientation of the instrument, when compared with the meridian established by Polaris observation, has a maximum error of less than $1'30''$.

I repeat the tests of the arcs, daily by noon observation and verify the meridional indications at frequent intervals throughout the survey.

The observed magnetic declination is N. $20^{\circ}00'$ E.

Dependent Resurvey of a portion of the N. Bdy. of T38N., R36E.

Reestablishment of the survey executed by H. B. Maxson, U.S. Deputy Surveyor in 1888.

I commence this resurvey at the cor. of secs. 32 and 33; an iron post, 2 ins. diam., in a mound of stone and mkl. as described in the field notes of the Resurvey of the S. Bdy. of Frac. T. 39 N., R. 36 E. Gr. 17 and establishing additional $\frac{1}{4}$ sec. and sec. cors. at regular intervals of 40 and 80 chs. in departure for T. 39 N., R. 36 E.

S. $89^{\circ}50'$ W., along the S. bdy. of sec. 32.