

T. 46 N., R. 58 E.

Chains

Survey of T. 46 N., R. 58 E., commenced August 14, 1936, and executed with light mountain solar transits made by Buff and Buff, serial No. 9797, and Young and Sons', serial No. 8539. For description and tests of these instruments, see the field notes of the survey of T. 45 N., R. 58 E., surveyed under this group.

Survey continued June 25, 1938 and executed with light mountain transits made by W. & L. E. Gurley, serial No. 262669 and Young and Sons', serial No. 8394, constructed in accordance with the specifications of the General Land Office. The horizontal circles have diameters of $4\frac{1}{2}$ ins., and $4\frac{3}{4}$ ins., respectively, each with two double verniers reading to single minutes; the vertical circles have diameters of 5 ins. and 4 ins. respectively, each 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 instruments are equipped with the improved Smith solar attachment; radii of latitude arcs are $2\frac{1}{2}$ ins., and of declination arcs $3\frac{1}{2}$ ins., each with verniers reading to single minutes. These instruments were in good condition, and, having been placed in satisfactory adjustment prior to beginning the survey and tested and found free from appreciable error were approved by the District Cadastral Engineer, June 21, 1938. I examined all the adjustments before making the field tests hereinafter recorded.

The direction of the subdivisional lines were determined by the solar transit method. The measurements were made with 2 Lallie steel tapes, each 5 chs. in length, graduated every link for the first 100 links and the balance at intervals of 10 links. The tapes were tested by comparison with a Lufkin standard and found correct. The measurements were made on the slope, and the vertical angle of each interval was ascertained by clinometers in good adjustment; the horizontal equivalents were entered in the field notes.

I compute the geographic position of the SE. cor. of the township, from an observation for latitude made in sec. 24, and described in the accepted field notes of the survey of T. 46 N., R. 59 E. as latitude $41^{\circ} 50' N.$, longitude, $115^{\circ} 22' W.$

June 26, 1938, in camp, in the $NW\frac{1}{4}NE\frac{1}{4}NW\frac{1}{4}$ sec. 28, T. 46 N., R. 58 E., at 1h 30.1m a.m., l.m.t. or 1h 11.7m 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 $1^{\circ} 23' 14''$ to the west and find a point in the true meridian thus determined; marked by a tree, approximately 80.00 chs. dist.

Every 30 minutes from 6 to 10:30 a.m., app.t. and from 1:30 to 6 p.m., app.t., I make proper settings on the arcs of the solar attachments and ascertain that the resulting orientation of the instruments, when compared with the meridian established by the Polaris observation have maximum errors 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 $N. 20^{\circ} 00' E.$

WEST BOUNDARY OF T. 46 N., R. 58 E.

Beginning at the standard cor. of Tp. 46 N., Rs. 57 and 58 E., on the 9th Standard Parallel N., an iron post, 3 ins. diam., 12 ins. above the ground, firmly set, mkd. and witnessed, as described in field notes of T. 45 N., R. 58 E.