

County Surveyor's Record, Douglas County, Oregon

17610

Township 31 South, Range 1 East.

CHAINS

These retracements, resurveys, and surveys were executed with a solar compass made by W. and L. E. Gurley, Serial No. "MEMO D", constructed in accordance with the standard specifications of the General Land Office. The horizontal circle has a diameter of 5 1/2 ins., with two double opposite verniers reading to single minutes; the sight vanes are 8 ins. long, and are spaced 14 ins. apart. The instrument is equipped with a Burt solar attachment: radius of latitude arc 5 1/2 ins., and of declination arc 4 1/2 ins., each with single verniers reading to single minutes.

Observations in camp, for determination of reference meridians, latitude, and time were made with a light mountain solar transit made by Buff and Buff, Serial No. 14190, constructed in accordance with the standard specifications of the General Land Office. The horizontal circle has a diameter of 4 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 telescope has fixed stadia wires, ratio 1:132, with a focal constant of 1.2 lks. The instrument is equipped with the improved Smith solar attachment; radius of latitude arc 2 1/2 ins., and of declination arc 3 1/2 ins., each with verniers reading to single minutes.

The 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 on September 21, 1936. I examined all the instrumental adjustments before making the field tests hereinafter recorded.

The directions of the lines of the retracements, resurveys, and surveys were determined by solar compass method. The measurements were made with a Lufkin steel tape, 2 chs. in length, graduated every link. 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 interval was ascertained with a clinometer in good adjustment; the horizontal equivalents are entered in the field note record.

The data furnished with the special instructions gives the geographic position of the cor. of secs. 3, 4, 33, and 34, on the north boundary of township 31 south, range 1 east, as follows: Latitude 42° 54' 30" N., and longitude 122° 41' 45" W.

September 29, 1936, in camp about 5 chs. N. and 10 chs. E. of the 1/4 sec. cor. of secs. 9 and 10, T. 31 S., R. 1 E., in latitude 42° 53' 15" N., and longitude 122° 41' 36" W., as computed from the data furnished with the special instructions, at 7^h 11^m 0^s p.m., l.m.t., or 11^h 21^m 46^s p.m., by my watch which reads correct 120th meridian time as determined by radio time 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 10 chs. N.

On September 30, 1936, at 7 a.m., I lay off the azimuth of Polaris 1° 24' 57", and make a meridian mark on a second peg 24.71 lks. (16.31 ft.) to the west of the mean point in the line determined by the observation; I verify the angle by a vernier reading of the instrument.

In order to verify the latitude of this station and the reading of my watch, I made a meridian observation of the sun, first setting on the lower limb and noting the transit of the west limb, then after reversal of the instrument, setting on the upper limb and noting the transit of the east limb, as follows:

Mean observed altitude -----	44° 10' 00"
Reduced latitude -----	42° 53' 09"
Mean watch time of observation -----	12 ^h 00 ^m 40 ^s
Watch fast of l.m.t. -----	10m 46s
Same, by reference to radio time signals and	