

adjustment report and this report shall be include in the documentation provided to VDOT. Any questions regarding field procedures may be directed to VDOT's Geodetic Surveys Engineer.*

Data File of dual-frequency GPS (L1/L2) full-wavelength carrier observables:

- Static data only; the antenna must remain unmoved throughout the observing session.
- 15-minutes of data or more, up to 48-hours, but not crossing UTC midnight more than once.
- Files under 2 hours, processed as rapid-static, must include the P2 and either P1 or C1 observables.
- GLONASS or Galileo observables may be included; though only the GPS are used.
- Any elevation cut-off or mask angle; though only satellites more than 10° above the horizon are used.
- Recording (epoch) rates of 1, 2, 3, 5, 10, 15, or 30 seconds; though all are decimated to 30 seconds.
- RINEX 2.x data format, or many raw data formats
- Compressed UNIX, gzip, pkzip, or [Hatanaka](#) formats are allowed, including multiple file archives (all must share the same antenna type & height).

Antenna

Selecting your antenna will engage the appropriate antenna calibration model, to counter the unique measurement biases inherent in each antenna's design. Take care! Choosing an incorrect antenna may result in a height error as large as 80 cm vertical, 1 cm horizontal. Tip: [Use antenna calibration](#) to find an exact match.

Antenna Height

Enter the vertical height in meters of your Antenna Reference Point (ARP) above the mark you are positioning, as shown in the image at right. The ARP for your antenna, usually the center of the base or tripod mount, is illustrated in [antenna calibration](#) images. If you enter a 0.0 antenna height, your ARP position will be returned.*

Sec. 10.05 Quality Control Procedures

This section of the Survey Manual will assist the surveyor with the minimum field practices to ensure quality GNSS survey data for VDOT. As with any high-tech measuring device, certain standards of care should be followed in the use and maintenance of the equipment. The following are a few of the procedures that are followed by VDOT surveyors to help minimize positioning and field errors and ensure a good quality with the field collected data.

- a. The tribrach, for each unit, should periodically be checked so that the antenna is being centered accurately over the point. This can usually involve adjustment of the optical plummet and, in the worst case, the spirit level.

* Rev. 7/15