

SURVEY DISCREPANCIES BETWEEN SURVEYORS & FIRMS

By J. Richard Noland, Jr., PSM



I wish I had a nickel for every time I heard someone say “you can’t get two surveyors to agree.” Usually the person making the statement had a bad experience with overlapping boundaries, or possibly elevation differences on a project site, and never received a reasonable explanation. There are reasons why this happens, and I will explain only two common ones.

“The Survey” is what happens in the field, and the end product is generally the “Map of Survey.” The client usually only sees the “Map of Survey,” and not the effort it takes to produce the “Map of Survey.” Prior to sending a field crew to the project site to perform “The Survey,” there is research that must be done. This is one area that causes a lot of discrepancies.

Research, for some surveyors, is obtaining a copy of the tax map if performing a Boundary Survey. The more research a surveyor does in the geographical area he is working in, the better historical understanding he will have of that area. If your property description begins with a phrase similar to “Commence at the Northeast corner of the Southwest ¼ of Section 11, Township 28 South, Range 25 East,” the surveyor who only has a copy of a tax map sends his crew in the field to survey your description, and the crew may return with a location of a railroad spike they found at the centerline of a paved road. The spike happens to be in the vicinity of the Northeast corner of the Southwest ¼, and the surveyor uses this spike in his calculations for your boundary, not knowing that the spike was set 10 years earlier by the County survey crews, and was never intended to mark the Northeast corner of the Southwest ¼. The spike was set to monument the centerline of the road right-of-way only, not the Northeast corner of the Southwest ¼. However, the surveyor who performs proper research prior to sending his crews to the field may know there is a railroad spike set approximately 6’ west of where the true land corner should be. Thus, he can instruct his crews of this and, when they look 6’ east of the spike, they find a 4”x4” concrete monument that was set prior to the road being paved. This example could lead to a 6’ discrepancy in where the boundary would be marked by the two surveyors.

Another common discrepancy is vertical (or elevation) differences. Elevation basis as shown on “Maps of Survey” should reference the benchmarks used to perform the survey and the corresponding vertical datum to which it is referenced. There are two basic vertical datums: National Geodetic Vertical Datum of 1929 (NGVD29), and North American Vertical Datum of 1988 (NAVD88). The most common in Polk County is NGVD29, due to the frequency of benchmarks with this datum. Benchmarks are permanent markers set in the ground which have a fixed elevation set on it by a level network and adjusted to the referenced vertical datum. Benchmarks are generally set by government agencies, and the data is available to the public. The government agencies vary greatly in accuracy standards and level of care when setting their benchmarks, so it is fairly common to have a benchmark from one agency that does not work with a benchmark from another agency. Compounding these issues are surveyors who find one benchmark and begin working. Two benchmarks are needed to verify that one has not been disturbed. We had an instance where an agency called to ask why our elevations differed from the adjoining parcel elevations surveyed by another firm. Both sites were being reviewed by this agency at or near the same time. We reviewed our quality control measures taken on our project and found nothing lacking. We had run a level loop between two well-established benchmarks that were established by the Florida Department of Transportation. We then investigated the adjoining surveyor’s one benchmark reference and found that it had been established in 1980 on a fire hydrant. When we visited that benchmark, we found that the fire hydrant had a dated stamp of 1997 on the side. Thus, the other surveyor had used an elevation on a fire hydrant that was not there anymore; it had been replaced. Had that surveyor checked into a second benchmark, he would have caught this discrepancy prior to producing a “Map of Survey.”

There are many different instances where discrepancies can arise. Proactive quality control measures are important in preventing such discrepancies.

Richard Noland serves as Senior Project Manager in Chastain-Skillman’s Lakeland office and has over 21 years experience in the survey profession. He can be reached at (863) 646-1402 or Rnoland@chastainskillman.com.