Surveying: A Brief Tutorial

Story & Photos by Jack Rosenthal

I first became interested in surveying when I was in the 11th grade in high school, which at times seems like a lifetime ago. The surveying profession had two appeals, working outside and a challenging career.

A Brief History of Surveying

Have you ever looked out of the window while flying over Minnesota and noticed a grid pattern? The grid pattern is formed from fence, tree and rock lines, roads and other improvements made on the land. The improvements you see are a representation of a 150-year-old survey called the Public Land Survey System (PLSS).

The PLSS was a surveying project spanning from Florida, the central United States and out west to the coast. Eventually the survey reached Minnesota, and the PLSS instructions for surveying had been refined to dictate that monuments were to be set every half mile on the exterior of each section (a section is a square one mile by one mile).

Once the survey was completed on the ground, and the survey notes and plat were approved, the government would sell the piece of land. The government then provided the landowner with a document called a Patent. This Patent had a legal description of ownership to a certain parcel of land based on the PLSS. Common acreages were 40 acres (1/4 mile square), 80 acres (two 40-acre parcels) and 160 acres (1/2 mile square). After the purchase, the landowner would find the survey monuments and begin making improvements such as fences, tree and rock lines and roads.

I went to my County's GIS website and my boundaries don't look correct. What is going on?

The County GIS (Geographic Information Systems) website is a valuable tool for landowners and real estate professionals for a variety of reasons. For real estate professionals, the GIS website is a helpful tool to understand the development of property in a locality, current ownership, and accessing data, such as the Parcel Identification Number, owner name and address.

To the landowner, the GIS website gives you the ability to see your approximate property boundaries overlaid on an aerial photograph. If there is a difference between your understanding of your boundary lines and the graphical GIS website display of your boundaries, it may be in your best interest to get your property surveyed. A properly executed survey is a good way to understand issues that may exist pertaining to your boundary.

How Much Does a Boundary Survey Cost?

First, contact a surveyor to discuss the reason for wanting a boundary survey. Specific information that will help the surveyor prepare an accurate proposal includes:

- Any knowledge you have of your property's distinct features;
- Parcel identification number;
- Address of the property; and
- Township section, range, county, etc.

Each property has a distinct history, terrain, neighbors, improvements and paper title (abstract). Remember, each property is unique and requires specific analysis; therefore, the surveyor will quote the cost of the survey based upon the type of survey requested, information available, etc.

Can I use the GPS on My Phone to Figure Out My Boundaries?

Using a GPS device is a form of measurement, and measurement is only one consideration in the retracement or establishment of boundaries. A professional land surveyor will use precise measuring instruments, such as survey grade GPS and total station. These instruments have the ability to measure to centimeter accuracy. A hand-held GPS measures 5 to 10 meter accuracy.

But remember measurement is only one consideration of the surveyor. The surveyor's responsibility is to research a project by gathering records, measurements of physical evidence from a thorough field investigation, and testimony (depending on the situation). The Surveyor then begins evaluating in depth all the available evidence, both of the written record and field work. Then, based on the Surveyor's analysis of all the available evidence, and controlling factors specific to the property, the surveyor supervises the placement of boundary markers. If a Surveyor places markers and you want to know more information, call or write the surveyor - a lot of good usually comes out of conversations between the surveyor and property owners.

I hope this brief tutorial has been informative. When I'm not busy surveying, I enjoy spending time with my family (wife, three-year-old daughter and three-month-old son) and with friends. I enjoy fishing, swimming, and paddle boarding in the Otter Tail area lakes. I also enjoy visiting state and national parks - I have hiked the Grand Canyon, and have climbed to the summit of eight of Colorado's "14'ers" (14,000-foot mountains). And I find the study of biblical Hebrew fascinating.

Compass Consultants office in Perham

Compass Surveyors (l-r): Ty Haverland and Luke Pollard

Compass Consultants

Compass Consultants was established in 1951 by the USDA's Rural Electrification Agency (REA). Many rural, low population areas of the United States were either not served or severely under-served and Compass was formed to help bridge that gap. Compass assisted with the establishment of the rural telephone system, and has been in the forefront of bringing Internet service to the many rural areas throughout northern Minnesota.

Compass specializes in local boundaries for farms, hunting land and lake lots. We also assist landowners in the development of real estate, while keeping in mind the protection of natural resources. In addition, we offer representation for clients at Planning Commissions, Board of Commissioners, City Planning Commissions, Councils and Township meetings.

Compass has two locations in Otter Tail County:
Perham, 155 2nd St SW, 218.347.3620
Pelican Rapids, 20 W Mill Ave, 218.863.3504

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