

Preparing a Survey Report—The Focus

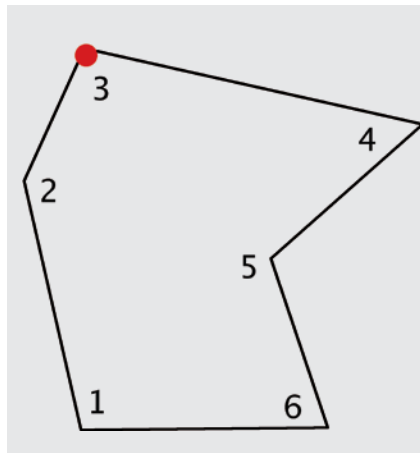
Some states require survey reports. All surveyors should consider preparing survey reports at the culmination of a retracement survey. Unfortunately, the preparation of a survey report is not covered in most academic programs and is seldom adequately explained in the apprenticeship period prior to professional licensure. Accordingly, many surveyors seek guidance when preparing a survey report.

There is no mandatory format for survey reports. Contents often vary depending on the whim of the surveyor. Most surveyors agree that the survey report should provide an explanation or rationale for the surveyor's opinion. (The surveyor's opinion is summarized on the plat and narrated in the description.) Accordingly the survey report should, at the very least, provide a clear, complete, and concise basis for the surveyor's opinion on the location of the corners and boundaries that are shown on the plat.

The following example format incorporates five parts. First, it summarizes historical boundary information from the client's and adjoiner's chain of records. Second, it provides a summary of information discovered in the field. Third, it provides both rational and reasonable arguments leading to a logical basis for an opinion. Fourth, it states the rules of construction that control. Finally, it states the present monumentation of the corner.

Consider the following example, where monumentation that appears to be the original monumentation was found:

CORNER 3



Corner three is the northwesterly corner of the client's parcel. The corner was created during a division of property by Owen King in 1903 and first described in deed book 343, page 19 (operative conveyance). The corner was marked and described by a "blazed sugar maple" in the aforesaid deed and subsequent deeds in the chain of records. In 1968, the description of the corner monument was changed to be a "maple stump" described in deed book 1832, page 129. Later deeds also call for a "maple stump," including the present conveyance.

Adjoining records starting in 1912, as first cited in deed book 384, page 321, call for a "sugar" to mark the corner.

A diligent search in the area revealed a badly decomposed 38 inch diameter Sugar Maple stump. A 12 inch hemlock tree with three 45 year old blazes face the sugar maple stump. (The age of the blazes was determined by a boring into the tree.) The hemlock is 9.8 feet from the stump.

The maple stump marks the corner location. The maple stump is the original maple based on the appearance, size, species, and the apparent age of the stump. The presence of blazes, age of blazes, and orientation of the blazes on the hemlock tree strongly suggest the hemlock is a witness to the maple's location. Finally, there is reasonable correlation between record and retracement measurements from other corners measured to the stump. A reasonable and rational analysis of the information lead to the logical conclusion that the stump is more likely than not the remains of the "blazed sugar maple" cited in the operative deed.

The rules of construction fix the location of the corner at the position of the original monument cited in the operative conveyance (*i.e.*, the maple stump).

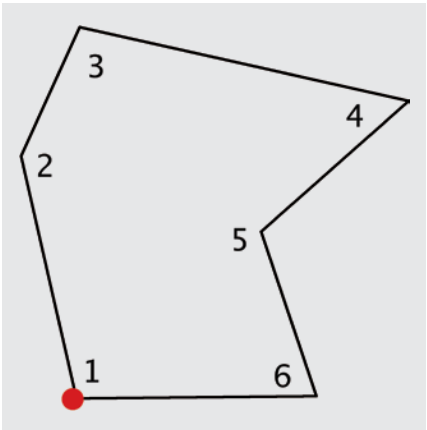
A 5/8 inch diameter rod, 3.5 feet long was placed in the middle of the stump.

>> By Knud E. Hermansen, PhD, LS, JD

The rod is topped with a yellow, plastic cap containing the surveyor's name and license number.

■ The following is an example narrative in the survey report where monumentation is found that is not the original monumentation but accepted as marking the corner:

CORNER 1



Corner one is the southwesterly corner of the client's parcel. The corner was created during a division of property by Owen King in 1903 as first described in deed book 343, page 19 (operative conveyance). According to the operative conveyance, the corner was marked by a "post." Subsequent deeds in the chain of records continue to cite a "post" to mark the corner.

Adjoining records starting in 1912, as found in deed book 384, page 321, call for a "cedar post" to mark the corner.

A diligent search in the area using a metal detector revealed a 1-inch iron pipe buried 0.2 feet under the ground surface. The pipe is surrounded by stones ranging in size from 5 to 10 inches. Rusted remains of a barbed wire fence were discovered on or near the pipe extending toward corner 2 and corner 6. Remains of the fence found in living trees indicate the fence was erected more than 70 years previously.

The westerly neighbor, Julia Smith, who has lived on the neighboring property for 52 years, states the stones were known to mark the common corner all the time she owned the property. She states that her father, who owned the property previous to her ownership, believed the stones marked the corner.

Long standing and uncontested acceptance that an object marks a

corner suggests that the object does in fact mark the original location of the corner. Furthermore, given the close proximity of the dates when the post was placed and when the fence was erected, it is a logical and reasonable assumption that the builder(s) of the fence saw the post and built the fence to conform to the location of the post. Therefore the fence serves as evidence of where the post formerly stood. There is reasonable correlation between the record measurements and retracement measurements from other corners to the stones.

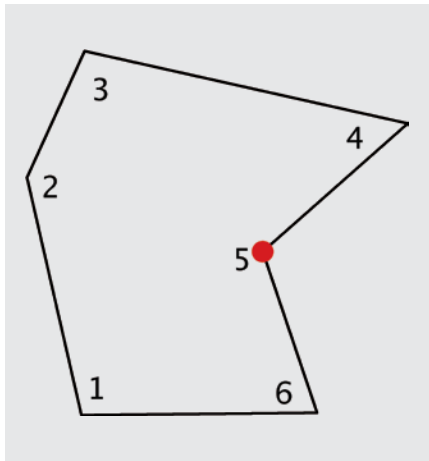
Based on the long standing acceptance of the stones as the corner, close conformity to long standing possession lines, and reasonable correlation between record and retracement measurements from other corners make it more likely than not that the pipe and stones are in the former position of the "post" or "cedar post."

The rules of construction fix the location of the corner to be the position of the original monument ("post") cited in the operative conveyance.

A 5/8 inch diameter rod, 3.5 feet long was placed in the middle of the pipe and stones. The rod is topped with a cap containing the surveyor's name and license number.

■ Finally, consider the following example where no reliable monumentation is found and the corner location is fixed by other methods:

CORNER 5



Corner five is along the easterly side of the client's parcel. It was created during a division of property by Ebenezer Liam in 1878 as described in deed book 103, page 78 (operative conveyance). The description calls for a "post" in the

aforesaid deed. Subsequent deeds in the chain of records continue to call for a post to mark the corner.

Adjoining records starting in 1881, as found in deed book 103, page 102, also call for a "post" to mark the corner.

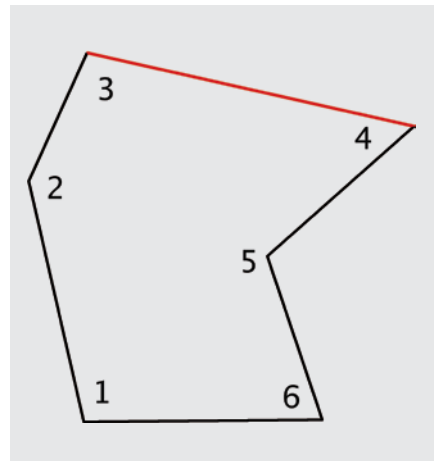
A diligent search in the area failed to reveal the remains of a post or any indicia of possession that would reasonably conform to the record boundary. A 7/8 inch diameter reinforcing rod protruding 1.4 feet above ground level was found in the area. The reinforcing rod appears to be recently set. The person who set the rod is unknown.

The location of the post was reestablished using record measurements measured from undisputed corners after correction for magnetic change. The former position of the post is established S17° 20' 30"E 12.32 feet from the rod found.

A 5/8 inch diameter rod, 3.5 feet long was used to mark the corner. The rod is topped with a yellow, plastic cap containing the surveyor's name and license number.

■ Boundaries can be similarly dealt with in the survey report. Consider the example where a blazed line is the best evidence of the record boundary as the following example shows:

BOUNDARY 3-4



Boundary 3-4 is along the northerly side of the client's parcel. It was created during a division of property by William Long in 1912 as first described in deed book 408, page 523 (operative conveyance). The description calls for the boundary to be "South 77 & 1/2 degrees East a distance of 16 and 1/2 rods along a wall and blazed line." Adjoining records continue to cite the aforesaid course.

LOCATE WITH ONE HAND TIED BEHIND YOUR BACK.

NOT THAT YOU'D WANT TO, BUT THE POINT IS YOU CAN.

Magna-Trak®

- Membrane Switch Pad
- Large LCD Display
- Erase Function
- Magnetic Speaker
- Engineered Body
- Carrying Case
- Battery Pack

3 Year Warranty



©2007 CST/berger, a division of The Stanley Works

MagnaMAX™ Masonry Nails



- Cadmium Plated to resist rust and increase visibility
- Superior Magnetism

CST/berger
No One Measures Up... Worldwide

www.cstsurvey.com

The client's records starting in 1915, as found in deed book 410, page 92 cite the boundary to be "North 76° West, 16 rods..."

A diligent search in the area revealed the remains of a stone wall beginning and extending 120 feet from corner 3 toward corner 4. Two maple trees (30 inch diameter and 25 inch diameter) with blazes were found between corner 3 and corner 4.

As a result of the call for "along a wall and blazed line," the boundary follows the wall and those trees with blazes. The adjoining boundary calls for a straight line and causes minor gaps and overlaps where the wall and blazes depart from a straight line.

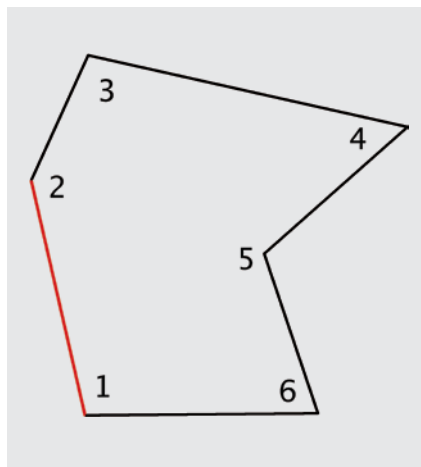
The departure of the wall and blazes from a straight line between corners 3 and 4 are less than two feet.

The straight-line retracement measurement for boundary 3-4 is S65° 12' 32"E, 266.57 feet. The retracement direction is based on true north. The record directions are based on magnetic north. The declination is approximately 11°E.

Given the lack of skill and formal training in many early surveyors, unsophisticated equipment employed by the surveyor, lack of precision, and change in magnetic north over time, there is reasonable correlation between record and retracement measurements.

■ The next example explains a boundary that is not governed by other calls or lines of occupation:

BOUNDARY 1-2



Boundary 1-2 is along the westerly side of the client's parcel. It was created during a division of property by Owen

King in 1903 as first described in deed book 343, page 19 (operative conveyance). The description calls for the boundary to be "North 17 & 3/4 degrees West a distance of 12 and 1/2 rods." In 1968, the boundary was cited to be "North 17 degrees 15 minutes West, 204.6 feet" as described in deed book 1832, page 129. Subsequent deeds cite the last mentioned course.

Adjoining records starting in 1912, as first cited in deed book 384, page 321, call for "North 18° West, 12 rods."

The boundary was fixed to be a straight line between the corner monuments.

The remains of a fence begin at each corner and meander on or near the record boundary. The fence departs from the boundary by as much as 2.6 feet as measured perpendicular from a straight line between corners 1 and 2. (See discussion on occupation lines in this report.)

The retracement measurement between corner 1 and corner 2 is North 6° 56' 33" West, 204.83 feet. The retracement direction is based on true north. The record directions are based on magnetic north. The declination is approximately 11°E.

Given the lack of skill and formal training in many early surveyors, unsophisticated equipment employed during the original survey, lack of precision in the measurements, local magnetic attractions, and change in magnetic north over time, there is reasonable correlation between record and retracement measurements.

As the previous examples are meant to illustrate, the report attempts to combine relevant background information, along with field and record information, coupled with reasonable assumptions that can be used to form a logical and rational opinion based on the rules of construction.

Starting with the above examples, a practitioner can modify the language to fit their own style of writing and conform to the facts and information found in the records and at the site.

Knud Hermansen is a professional land surveyor, professional engineer, and attorney at law. He is a professor in the Surveying Engineering Technology program and the Construction Management Technology program at the University of Maine.