



By Joel Leininger, LS

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On Chronological Retracement

We continue with the practice of retracement. In the last two issues we explored the theory governing the creation and interpretation of title lines, paying particular attention to the sequential nature of the subject matter. Reflecting on the actual methods and chronology of the parcel fabric, one reaches the inescapable conclusion that earlier grants trump later grants. The most effective way to incorporate this doctrine into day-to-day retracement is to treat the task as three-dimensional, instead of two-dimensional, with *time* being the third dimension. This entails attacking and dispensing with the oldest lines earliest in the analysis and moving forward in time until the retracement is complete.

Let's agree on something up front: in retracement, when law and mathematics disagree, the law prevails. The proof should be elementary, but we'll restate it to remove any doubt. In any conflict involving property, the remedy of the offended party lies in the judicial system. That system has adopted rules governing its conduct, one of which is the rule of thumb we surveyors refer to as the Rule of Construction governing Conflicting Title Elements. There are others, such as that older deeds control later deeds, etc. And there are rules governing rules! Although generally grounded in common sense, these dictates are not merely good ideas, they *constrain* the courts in how they must approach a similar problem and thus should constrain us in a similar task. As surveyors, we do our clients (and others relying on our work) a great disservice

when we produce results that would not withstand court review. So, for instance, if an appropriate court were to find that a call to a certain monument was trumped by a still earlier call to a different monument, the earlier monument should have been what the surveyor held during the boundary survey. In essence, since our work is always subject to court review, our approach to the problem should mimic a court's approach.

The Rotation Gambit

Unfortunately, that is not always the case. Consider the following widespread technique: Find any two monuments on the ground having a relationship to each other closely matching that specified in

points. Finding an inverse that closely correlates with the deed inverse, he rotates the deed geometry onto the field "pull" and is finished. (He's finished, all right!)

The kindest thing that can be said about this approach is that it is simple to understand and implement. Clearly it was invented by someone unfamiliar with the Rule of Construction mentioned above, because at most points along the boundary the Rule will be broken.

A related technique (and, frankly, one more mathematically rigorous, but no more legally defensible) attempts to use a least squares "best fit" rotation, translation and scaling of the deed geometry onto the field evidence, but using *all* the found evidence so as to honor every

monument. There is only one situation where this would be appropriate: when every title line was created by the same survey, and all the field evidence can be identified as belonging to that survey and as undisturbed. Even then there are special surveys (the Public Land System comes to mind) where that situation

might be encountered but which have had promulgated specific rules for retracement (the *Manual of Instructions*, for example). Thus, the least squares gambit loses traction even in those cases.

Fidelity

The essence of true retracement is fidelity to the original work ("original" in this instance referring to the original creation of each line being retraced). The context of that original work plays an important role in understanding (and re-creating) it.

One can go further and say that *erroneous* placement of still-earlier title lines, if used in the creation of later title lines,

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the deed geometry, hold that "line" as fixed, and rotate the deed geometry onto it. *Finis*. This, of course, has the effect of ignoring in the final determination any other on-the-ground evidence, and places a pre-eminent value on the deed geometry, in direct contravention of what the courts have said about the hierarchy of title calls. But it does have one redeeming quality: it's quick. For example, a property has eight sides, with six monuments called, and five found by the retracement surveyor. He begins his analysis by inverting between every combination of two monuments, and compares the results with the inverses between the corresponding deed angle

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is an appropriate technique to position those later lines. In other words, the *context* of the original creation of the lines being retraced, however flawed, is the most conducive environment for accu-

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rate retracement of those lines. For example, a certain survey erroneously determined two pre-existing title lines intersected at location “A,” and from that location four new lines were created. Obviously the survey would not have the effect of moving the intersection of the two pre-existing lines to location “A,” but the most accurate retracement of the four new lines would begin at location “A.” In that case, the retracement surveyor has (at least) two former surveys to retrace independent of one another: the one creating the two original lines and the later one creating the four new lines.

Those Elusive Footsteps

I’ve never quite understood the adage that we must “follow in the original footsteps, but not correct them, even if they’re wrong.” Presumably the author of that maxim did not mean for us to perpetuate mathematical errors, so it is likely he intended for us to “walk in the right place (wherever that is),” and then describe it correctly. That makes more sense, and is, in fact, the foundation of retracement theory.

However, there are situations where the available evidence does not enable strict conformance with the procedure outlined above. What to do in those situations? Stay tuned. *A*

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