

May 2016

SIDE SHOTS

Professional Land Surveyors of Colorado

Volume 47, Issue 2



Prst std
 U.S. Postage
 PAID
 Denver, CO
 Permit No. 1222

Becky Roland
 Executive Director
 PLSC, Inc
 PO Box 441069
 Aurora, CO 80044

Rule of the Month: Pincushions, Binaries, New Board Rule 6.5.4.1 and C.R.S. 38-51-104

By Earl Henderson, PLS

If you're not familiar with the concept of binaries in astronomy, it's a term used to describe two stars that we see that are very close to each other. There are two types of binary stars. There are Actual Binaries where the two stars are in actuality very close to each other. And there are Visual Binaries where the two stars are actually very far apart from each other but from our perspective only appear to be close to each other, one being much closer to us than the other.

I'm reminded of these two types of binaries when I think of pincushion monumentation. An actual pincushion is where two monuments are found very close to each other, both of which claim to be representing the same corner. Most often these actual pincushions are a result of PLS's that don't understand proper retracement as it relates to the laws that govern land surveying, nor do they likely understand the errors involved in their work and the work of others in this and bygone eras. From a measurement point of view, the actual pincushion doesn't usually make sense, especially if you take into account the combined errors of the PLS setting the existing monument (either last year or 100 years ago) and the PLS setting the subsequent monument. From a legal point of view an actual pincushion doesn't make sense either as the decision to set a new monument very close to an existing one must be made as a result of some substantial evidence that clearly indicates that the existing monument is 0.15' off. And how often have we found evidence that specific?

Thankfully, we now have a new Board Rule that will, hopefully, cause pause among the PLS community prior to setting a second monument where one already exists that claims to be the at the location of the corner in question. If you haven't already heard about it, Board Rule 6.5.4.1 went into effect in September of 2015 and reads: "6.5.4.1 Documenting New and Existing Monuments. If a monument is set, as a result of a land survey, that represents the same corner or control corner of an existing monument, the professional land surveyor setting the new monument shall, on the resulting land survey plat, make note of the reason the professional

land surveyor did not accept the existing monument."

It's important to note that BR 6.5.4.1 does not prevent any PLS from setting a second monument. It only requires that if you do so you must explain yourself. That's a terrific thing because if you can't verbalize why you're setting a second monument then maybe you should re-think the idea. And if you can verbalize why you're setting a second monument you hopefully have good reason and substantial evidence to do so. And there are situations where good reasons exist and the evidence points to another location. Another benefit of explaining yourself on the plat is that all future PLS's that use either of these monuments will have an explanation, in writing on the face of the plat, so they won't have to bother you by calling you up and asking what the hell you were thinking? :)

But there's another kind of pincushion binary which I've defined as a Visual Pincushion Binary, better known as a paper pincushion. These are the visual pincushions which show up only on paper where a monument is indicated as being found, for example "0.15' North and 0.06' West of actual corner". In other words, the PLS has determined, again likely through what is only perceived to be very precise measurements, that the property corner does not fall at the found monument, but then the PLS, instead of setting their own monument and creating an Actual Pincushion, references the found monument without setting a second monument of their own. I'm only going to point out 2 of the many aspects of this situation that, IMHO, are descriptive of a total misunderstanding of our responsibilities as PLS's.

First, the paper pincushion seems to me to indicate that the PLS understands the legal implications of setting an actual pincushion because he/she doesn't want to follow through and set a pincushion monument. But they are also conflicted, or misguided, by their calculations. I wonder if the paper pincushion represents a subconscious understanding of retracement principles clouded by a desire to make the measurements and calculations work out to within 0.01'. Second, and

here's the rub, C.R.S. 38-51-104 requires that the PLS set monumentation at all corners once those corner locations are determined for each and every land survey. So since there's no choice but to set monuments at the corners you have determined, there should never be a paper pincushion ever. They simply should never exist. Any paper pincushion is a direct violation of C.R.S. 38-51-104. And of course if we ever set a monument, such as a reference monument to a corner location, our PLS# must appear on that monument cap (C.R.S. 38-51-104(b)), so the use of another PLS's monument as a reference monument is not acceptable either. And you can't just stamp "RM" on the existing monument. That PLS set it as an actual corner, not a reference monument and only his PLS# can appear on it. You have to set your own.

This is just an introduction to the many misunderstandings that lead to both kinds of pincushions. Long books have been written about this subject. If you take nothing else from this discussion, take this; if you find yourself about to create an actual pincushion, be able to verbalize your reasoning to a colleague. If you can't stand up in front of a group of

your peers, and with absolute confidence describe why you're creating the pincushion, you should likely re-think what you're about to do. If you can do this, then do it on paper as that is now the requirement. If you're about to create a paper pincushion, stop. The law forbids this. So don't.

Now...have I ever told you about star clusters? ■

Proudly Supporting PLSC Since 1999



**Building
relationships,
one monument
at a time.**

Berntsen®
Marking the Infrastructure of the World.™
877.686.8561 • www.berntsen.com