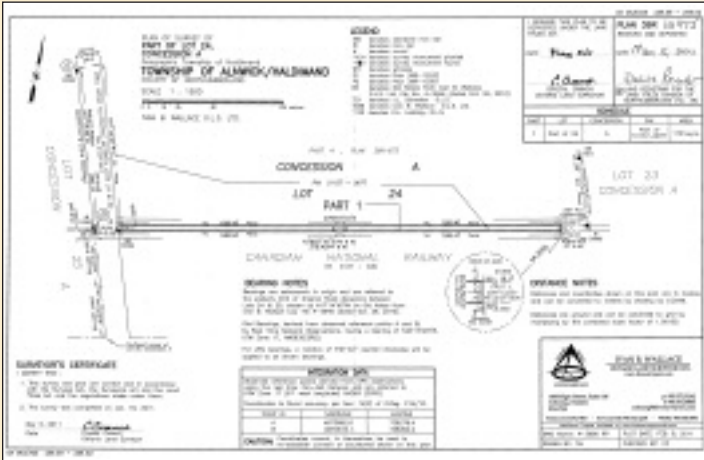


When Did Surveyors Stop Surveying?

By Crystal Cranch, O.L.S., O.L.I.P.

THIS IS NOT A SURVEY



This is a survey plan. And a mighty fine survey plan it is. Mighty fine.

So then, what is a survey? What does it mean to survey?

Surveyors survey.

Or at least they should! Read on.

Technology is a great thing. Who is going to argue with that? Technology has changed the way we survey. Who can argue with that? Technology has made us better surveyors. Hmm. I am not convinced. Back before the days of robotic total stations, data collectors and GPS receivers, the completion of field work was very different. Before technology allowed us to make use of the rewards of the digital age, we used parallel offsets and cumbersome calculators. We instinctively used the SIN, COS and TAN buttons on these calculators, and we understood that angles were merely another form of measuring distances. (Think about the x and y-axis). Before we had access to instant global positioning, we used a much lower form of math to a much better outcome. Let me explain.

Today's trained staff understands the basic theory of the high level mathematical analysis that allows us to use satellites to determine precisely where we are on a global scale. We send our field crews out to sites with the latest and greatest in surveying equipment. They can punch buttons and save digital data at a rate that is mind-boggling. But does all this fancy and expensive equipment create better surveys? I am going to argue that the opposite is true.

Today's highly trained staff can use coordinate geometry to assess almost any mathematical solution in boundary retracement. I use math every day. I remember when I first learned how to use COGO, and how I played with the numbers until

I could re-create the same mathematical solution that was created in the original survey. I remember the excitement I felt when I could show that if this one bar was 5cm west and 8cm north, then everything was plan and measure. I had great confidence in my solutions and was excited to be such a friggin' genius. Bring it on! I am the man! I mean, I am the woman! I quickly recognized the benefits of these amazing software packages that would enable us to blow our own minds out with mathematical analysis that would leave our Grade 12 math teachers in a state of awe. Eat your heart out Mr. Brown. This is an A++ solution.

For years I walked around with a mathematical claim of greatness that elevated my status as a surveyor. I was young(er) and more naive. Time and grace has led me to a position in life where I am more apt to admit my earlier flaws. I believed that this combination of technology in the field and software in the office made me a much better surveyor. I felt sorry for those surveyors who had to actually pull out their plumb bobs and run parallel offsets. I was so glad to see those dark ages fall behind us. I believed that technology allowed me the pleasure of living in an enlightened and advanced state. Now I have to admit that time has altered my perception - cleared my vision.

You see, in the dark ages when we ran parallel offsets, we actually did surveys when we were in the field. Today, we collect data. The problem with the blind collection of data is that it takes away the need to think. We are no longer completing surveys when we are in the field, we are just collecting data.


To make matters worse, as time went on, and data collection became more and more the norm; we gave up doing any assessment while in the field. Soon, we were gathering data that was not always the data we needed. Sometimes we gathered too much data. Often we gathered the wrong data. As time went on, there was less and less thought on the part of the field staff about what they were doing - which should have been to "survey". Questions like, "Since that bar looks to be disturbed, what other evidence do I need to pick up to ensure the corner can be properly retraced?" became obsolete. The new question is, "Do I have enough battery power to get through the day?" Heaven forbid if we run out of batteries.

In the dark ages, we could not easily assess high level mathematical solutions. Calculations were a part of the job description, but it meant lengthy and cumbersome formulas and analysis. Back in the dark ages we did not take the time to "play" with the numbers to see if there was a better math-

emational fit. **Rather than spending time assessing mathematical solutions, we spent our time assessing evidence.** I vividly recall when this epiphany hit me. I had spent a lot of time and effort with my COGO friend to find a perfect solution. It resulted in me calling three survey bars out by 3 or 4cm. I was proud of the fact that I had achieved mathematical perfection. But then it hit me. I had seen these bars in the field, and every one of them looked to be in their original position. The survey mantra “original bars in their original locations” came crashing into my world. For months I had nightmares that involved me sitting on a wooden stool while the “good” surveyors pranced around me chanting “Original bars - original location.....”. There were the voices of Lambden, de Rijcke and Stewart chanting an endless and off key chorus. Please, I begged, make it stop. I vowed to better myself. I would not become the laughing-stock of the profession. There are already enough people vying for this honour. (Here is where I am supposed to add ‘lol’ for those reading this without a sense of humour.)

And so I completed an internal audit of my own surveying practices. Not only was I “math’ing” these projects to death, I was looking at field notes that were not “surveys”. The notes showed “stuff” and point numbers, but they did not show any evidence of evidence assessment. They did not indicate a survey was being done. They were just a page of numbers corresponding to a whack of data. Did I have the

right data? Was I missing data? Did the field staff know that their role was to locate enough evidence to retrace the original boundary? Did I know that it was my role to retrace the original boundary?

I now recognize that math can be one of the many tools that I can use to help me survey, but math must take its rightful place behind the assessment of evidence. Math can be used to help re-establish a boundary corner when no other evidence exists. But what happens when we calculate where the old fence corner was - then we tell our field staff to go set a bar there - then they set the bar two feet away from where the old fence post still stands without telling us about it - THAT IS NOT SURVEYING. Technology can be a cool tool used to allow us to survey in the digital age, but using technology without understanding what you are using it for is not helpful. What happens when we use a RTK receiver to locate that bar on the block corner, but not even think to locate that really old fence next door to the property we are surveying - THAT IS NOT SURVEYING. When did surveyors stop surveying? 

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