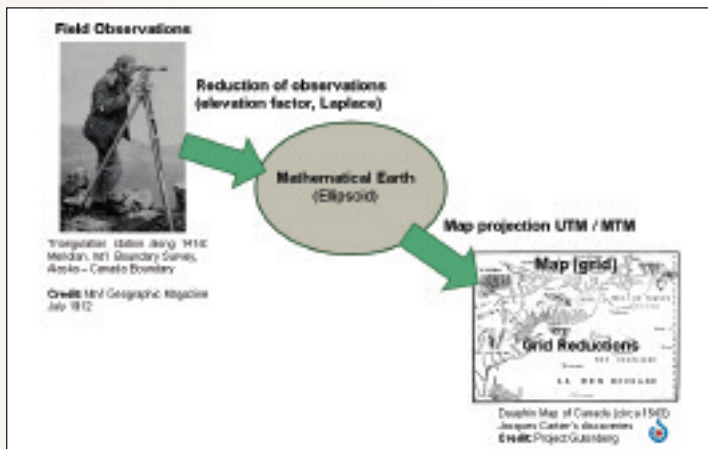


may also be required depending on the GPS ephemerides used (WGS84 or NAD83(CSRs)).

d) A combination of the above methods is also possible.

As per O.Reg. 216/10, the coordinates of all points in the survey shall be expressed as grid coordinates in a Universal Transverse Mercator (UTM) map projection or a Modified Transverse Mercator (MTM) map projection. The observations obtained in the field, regardless of how they were obtained, must always be projected (or reduced) onto the reference ellipsoid (horizontal datum – see figure) before



any map projection is attempted. The reduction of the observations onto the reference ellipsoid is dependent, first and foremost, on the choice of the ellipsoid. It is critical to choose the ellipsoid that has officially been adopted in the country, in our case the GRS80 reference ellipsoid. The geodetic coordinates (ϕ, λ, h) or their grid equivalents (Northing, Easting) of all reference stations used are therefore dependent upon the adopted reference ellipsoid. The reductions to the ellipsoid include primarily the elevation factor for distances. Azimuths measured on the ground may not be reduced by the Laplace correction since in Ontario it may only reach a few seconds or arc. In a second step, all geodetic quantities (distances, azimuths, angles) on the ellipsoid must be projected onto the mapping plane (grid) using appropriate reduction formulas that were extensively

discussed in the seminar. Of these reductions, the most important are the projection scale factor (UTM factor) for the distances and the meridian convergence for the azimuths. Other reductions for the angles also exist (e.g., T-t) but they are negligibly small for the usual extent of the cadastral surveys and thus can be neglected. Finally, least squares adjustments must always be performed to obtain the best solution as well as be able to provide confidence intervals at the 95% level, as required.

It was very pleasing to see the elevated interest of the participants and their substantial interventions through very well posed questions, comments and statements. This made the seminars more interesting, comprehensive and most importantly, useful. I have always regarded continuing education activities as important and necessary exercises for maintaining relevancy, leadership, professional advancement, and competency, all of which are, and must be, the characteristic elements of a professional who serves the public. The initiative of the Association to organise these seminars was timely and necessary and I'm hopeful that it will continue in the future to provide the required education to the membership.

I thoroughly enjoyed teaching as well as learning from a wonderful group of eager professionals! I sincerely hope that they got as much enjoyment from the seminars as I did. Tim Hartley, who delivered a significant portion of the seminars, has been a magnificent partner and a great communicator. Many members from the AOLS Integrated Surveys Committee contributed to the success of the seminars with ideas and suggestions on the format of the presentation. I have also had a great time working with Phillip Swift on the "Interpretive Guide" and other aspects of the integrated surveys. As always, it is marvellous to work with the AOLS staff who flawlessly organised all the seminars across Ontario.



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Insurance Advisory Committee Tips for Members Practical Construction Tips

- Remind your field staff to always step back and have a good look at what they have staked. Does the layout make sense? If the top of the shoring is higher than the road, it is probably designed incorrectly or not staked out properly.
- When supplying temporary bench marks, always set

- two bench marks, preferably independent of each other and remind the contractor to use both.
- Report to your insurance advisor first. Do not admit liability.
- Always document your client's changes, especially with regard to onsite construction requests.

