Geopak Store Graphics

Using Geopak Store Graphics for final alignments does not always present problems as it used to, but here are a few thoughts.

Based on our current working units,the accuracy of the graphic elements is not precise enough to give the same level of accuracy as COGO. Of course, this is not always necessary; based on changes made over the years concerning baseline surveys.

Before baseline surveys, our revised alignments, Y lines, new location alignments, etc., tied into "staked" or "surveyed" alignments. These alignments existed on the ground (PK nails, etc.). In order to tie to these lines accurately, COGO had to be used. Our working units simply weren't precise enough (even metric) to match coordinates and bearings reliably.

Now that we have baseline surveys, our alignments don't always need to match "staked" alignment coordinates or bearings. For these projects, you may tie to an -E- line, but those lines are not "surveyed" alignments.

They are generated by Location & Surveys in the office based on centerline pavement shots collected for DTM's. If this is the case for your project, Geopak Store Graphics for final alignments should work adequately. Even if your proposed alignment doesn't match the bearing or coordinates of the -E- line exactly, it wouldn't really matter. This is only recommended for metric projects using our current working units. For english unit projects, stick to COGO for final alignments. The working units of our english files are only about half as accurate as metric.

Another word of caution - Remember that the graphic alignments that we receive from Location & Surveys are in graphic files that have working units that provide far less accuracy than Roadway's metric seed files.

If you decide to use Store Graphics for final alignments, CHECK YOUR ALIGNMENTS CAREFULLY. There will likely be some slight differences in what you would get from an alignment stored in COGO. It is the designers responsibility to determine if this difference is acceptable.

If you are really curious to see the difference, try this:

-**U**sing D&C Manager, place a previously stored alignment in a blank file.

-**S**tore the alignment drawn using Geopak Store Graphics. Be sure to use a new alignment name and unused point numbers, or a copy of your gpk file.

-**C**ompare the alignment text descriptions. They will be pretty close, but not exactly the same. For metric alignments, some coordinates could be off by 0.001 m, and bearings off by 0.1 seconds. This would affect alignment data shown on the plans. (That's a bad thing if you're trying to tie to an existing "staked" alignment)

The information listed in the DATUM description should always be computed in COGO, not using graphics. This is a precise measurement that cannot be made reliably using graphic elements.