CI10424-R Civil Engineering and Surveying Processes: Autodesk® Tools to Help You Accomplish More

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Class summary

Attendees of this discussion will learn how others perform similar tasks during the day-to-day operations of consulting engineering and surveying companies. There is always another way, and perhaps the way someone else is doing it is better or more efficient than your way. The outline of this discussion will range from using Infrastructure Design Suite applications for conceptual planning efforts to organizing your layers and detailed design efforts. Topics will include how we create our basemaps from scratch, how we separate our manual linework from AutoCAD Civil 3D software-generated linework, how we handle grading efforts, and how we bring it all together for plan production.

Key learning objectives

At the end of this class, you will be able to:

Learn how others…

- …start their base maps from scratch.
- …handle AutoCAD Civil 3D layering versus custom layers.
- …handle grading efforts.
- …bring together data from various sources to generate improvement plans.

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Examples…

Base mapping: The beginning of everything.

a) DGN tax maps via the MAPIMPORT command.
b) Record topo from LIDAR using the point cloud objects.
c) Aerial imagery from Autodesk's Cloud services or GIS sources.
d) Importing SHP contour files and assigning elevations upon import.
e) Discuss Infraworks

Layering. National CAD Standards and you.

a) Underscore naming convention.
b) Layer filters

Grading.

a) Create faux surfaces and then use feature lines to extract elevations.
b) Floating islands for large parking lots.
    a) Label expressions to add 0.5' to the surface elevation.
c) Feature line site plan design.
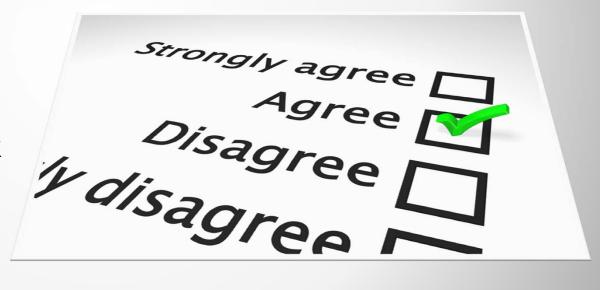d) Slope arrow style to help swap tin faces.

Bringing your data together in order to generate Improvement Plans.

a) Xref
b) Dref
c) Logically separated data in your drawings
    a) Grading
    b) Plan & Profiles
    c) Title Sheet and Details

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