5 Tools and Tricks I Learned from Teaching AutoCAD Civil 3D to Caltrans Employees

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Key learning objectives

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

- Learn the hidden tips and tricks embedded in surface DTM routines
- Discover tips and tricks to implement data shortcuts for your organization
- Learn profile creation commands that you might not know
- Learn hidden alignment commands
Class summary

- Caltrans implementation
- Two tiered Data Shortcuts
- DSSYSVAR
- Resolve Crossing Breaklines
- Floating Curve (From entity, through point, direction at point)
- Solve Tangent Intersection
- Intersection Frequency
Who is Gaurav Bagga
Gaurav Bagga

- Senior Application Specialist Infrastructure
- Works at Ideate, Inc in San Francisco
- Autodesk Certified Implementation Expert and Autodesk Certified Instructor
- Consult/Implement Civil Infrastructure solutions for ENR 500 firms – for the last 15 years.
- Caltrans implementation & training
- @BeGeez
Caltrans Implementation
Caltrans Implementation

Unique:

- Custom Civil 3D Launcher
- Civil 3D with Microstation
- Caltrans standards
- Caltrans training
Custom Civil 3D Launcher

- Caltrans started Civil 3D 2012
- Civil 3D Launcher
Civil 3D with Microstation

- Design in Civil 3D – replaces CAiCE
- Drafting in Microstation
Caltrans Standards

- Analysis & Production
Caltrans Subassemblies

- Caltrans created new subassemblies
- Resource File packet does not contain custom subassemblies
- You will get errors when you rebuild a Caltrans created corridor object
Caltrans Standards

Data shortcuts – Tips & tricks
Data Shortcut Workflow Recap

In the Source drawing
1. Set Working Folder – Tell Civil 3D where are Projects
2. Set Data Shortcuts Shortcut Project folder – Tell Civil 3D which Project
3. Create Data Shortcuts

In the Target drawing
4. Create Reference
Two Tiered

- Lower Tier for intra departmental collaboration
- Upper tier for final deliverable

```
Project
20161006
  _Shortcuts
  Design
  Hydraulics
  Structures
  Surveys
  C3D_20161006
    _Shortcuts
    _Survey_Database
    Deliverables
    Field_Surveys
    RW
    Structures_PI
```
DSSysVar

Very Important:

- Makes Path relative
Surfaces – Tips & tricks
Resolve Crossing Breaklines

- Data from **Database** is displayed in **Drawing**
- Fix database via drawing
- Survey Points make Survey figures
- Survey figures live in Survey database
- Civil 3D Surface is created from **feature lines** in the **drawing**
- This tool updates the **drawing not database**
Alignments – Tips and tricks
Floating Curve (From entity, through point, direction at point)
Profiles – Tips & tricks
Solve Tangent Intersection
Intersection – Tips & tricks
Frequency
Miscellaneous – Tips & tricks
Bonus Tips

- For material QTO divide the corridor at some logical point – Match line
- Merging – pasting 2 surfaces
- Export to DGN command – Output > Export – Civil 3D Drawing
- Coordinate Geometry Editor – Analyze > Ground Data > Survey
Review

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