Tips and Tricks to Create a Construction Level 3D Model

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Agenda

- Difference between Design Model and Construction Model
- Template Library Tips and Tricks
- Roadway Designer Tips and Tricks for OpenRoads
- QC Process and Deliverables
Design Software

- SS4 (OpenRoads) vs. SS2/SS3 (Geopak/InRoads)
- Template Library (.itl)
- Roadway Designer (.ird)
Design Model vs. Construction Model

- Used to reduce errors in design
  - Utilities conflicts
  - Intersection Sight Distance
  - MOT Crossover Alignments
  - Vertical Clearance Calculations
  - Interdisciplinary coordination

- Used for machine controlled grading/milling
  - Pavement transitions
  - Slope grading

- More precise quantities
- Can create 4D/5D (schedule/cost) models derived from 3D model
Design Model Example
Design Model Example
Construction Model Example
Construction Model Example
Template Tips and Tricks

- Vertical face offset 0.01 – True vertical lines will not create triangles between points
Template/Roadway Designer Tips and Tricks (cont.)

- Alternate Surfaces – used to separate features into different surfaces
  - Quantities
  - Cross Section display
- Review surfaces in designer

AlternateSurface.wmv
Template Tips and Tricks (cont.)

- Feature name overrides
  - Allows for different points to be connected as if the same point in the model

Feature Name Override.wmv
Template Tips and Tricks (cont.)

- Complicated Template vs. Simple Template

Complicated.wmv

Simple.wmv
Template Tips and Tricks (cont.)

- Point Constraints – Project to Surface – Active
- End Condition – Surface – Active
Roadway Designer Tips and Tricks

- Template drops
  - delete template – enable transition does not appear
  - Template interval – at XS interval

Template Deletion.wmv
Roadway Designer Tips and Tricks

- Point Controls – Corridor Point vs. Feature
Roadway Designer Tips and Tricks

- Tools – Target Aliasing – renamed surfaces will not work
Roadway Designer Tips and Tricks

- Ctrl+click to track in Microstation instead of Roadway Designer

Ctrl+Click-Updated.wmv
OpenRoads
OpenRoads
3D Model QC and Deliverables

- **QC**
  - Display features vs. basemap
  - Generate reports to confirm alignment data
  - Superelevation Report – can be formatted to display data in superelevation table
  - Trimble Business Center – checks for errors in surface
  - ICM – Microstation export to TBC

- **Deliverables**
  - XML format – alignments and surfaces
  - GEN files – multiline text file
ICM and TBC
Questions?

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