

OpenRoads & 3D Construction Handoff

2022 ODOT Traffic – Roadway – Access Management (TRAM)
Conference

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3D Design Handoff Packages

Why?

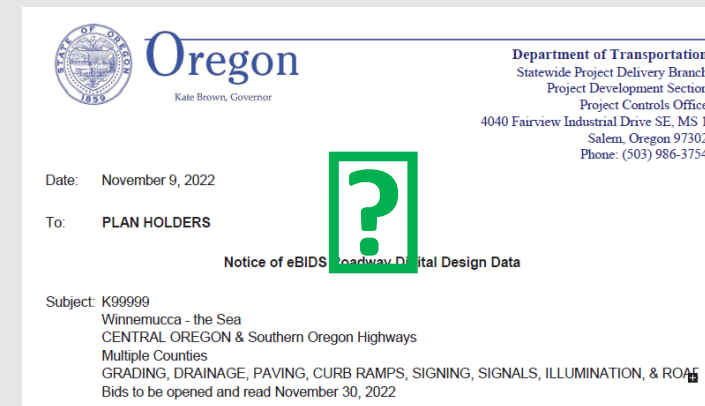
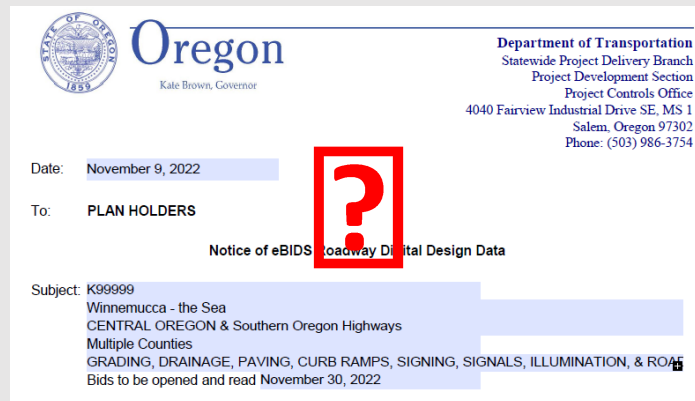
- Bid Reference (aka eBIDS) Package
 - Reduced risk
 - Take-offs
 - Construction planning
 - Indicate level of support for automated construction methods
- Construction/Survey
 - Stakeout
 - AMG
 - Fewer delays

What's In the Bid Reference Package?

- Notification
- Alignments
- Surfaces
- Cross Sections
- NO design files

What's In the Bid Reference Package?

- Notification
 - Informs bidders that the project has been modeled in 3D
 - Attach checklist and file index
 - Print letter to pdf. Don't save it.



What's In the Bid Reference Package?

- Alignments
 - ASCII reports
 - LandXML
 - Alignment names and file names match plan sheets
 - One major alignment per file

What's In the Bid Reference Package?

- Surfaces
 - Include features
 - Most AMG operations for roadway work from linestrings
 - Allow measurement of linear items
 - Names allow for meaningful cross-sections
 - Include triangles
 - Triangles useful for site work
 - Depending on software, triangle definitions ignored

What's In the Bid Reference Package?

- Cross Sections
 - Include:
 - Project ID
 - Alignment ID
 - Disclaimer
 - Point annotation for top layer
 - Legend or other method of identifying all surfaces
 - All surfaces within cross section range
 - DO NOT Include V-number

What's In the Bid Reference Package?

- Cross Sections (cont'd)
 - Use light line weight
 - Print as vector

What's In the Bid Reference Package?

- Cross Sections (cont'd)

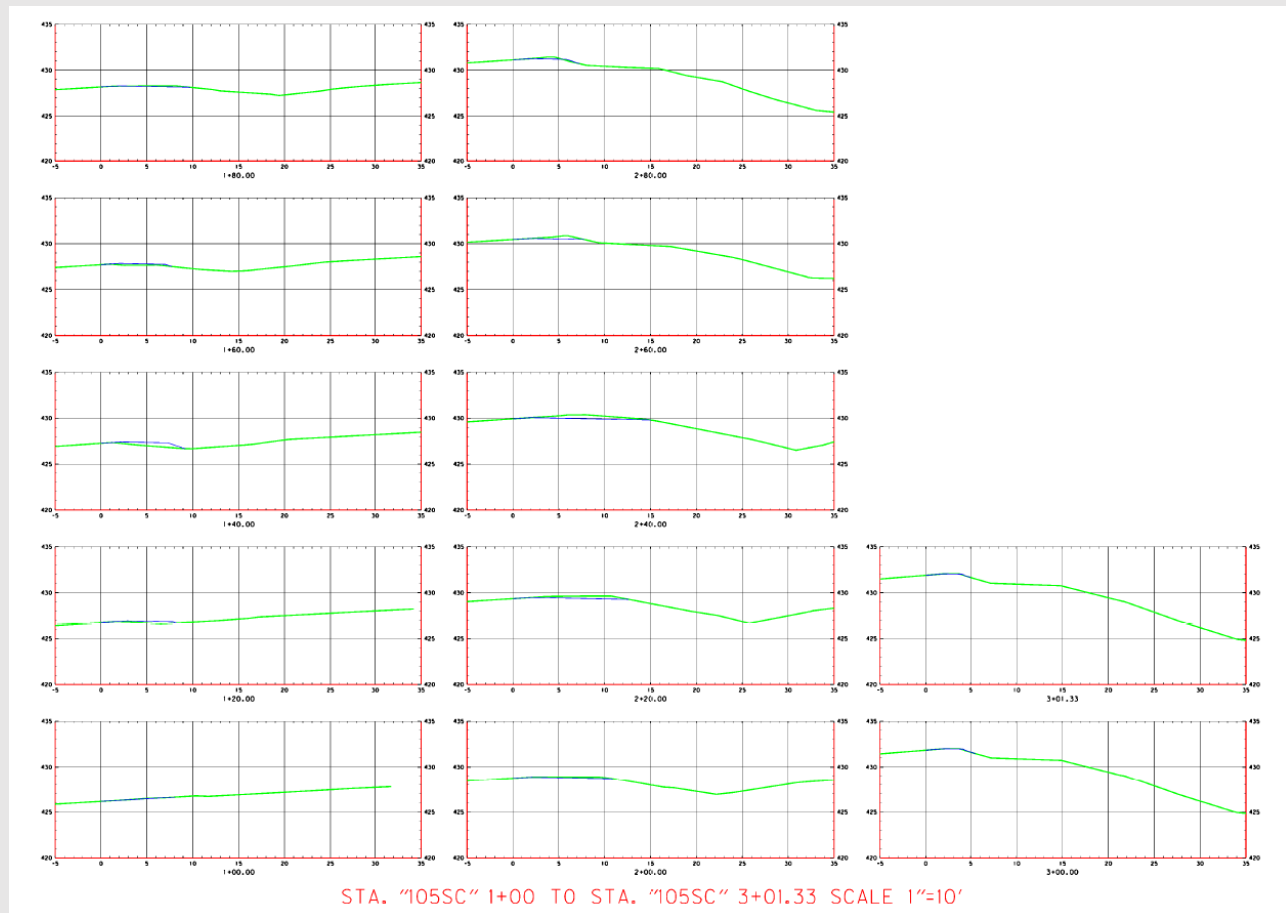
- ✓ Alignment ID
- ✓ No V-number

Project?

Surfaces?

Points?

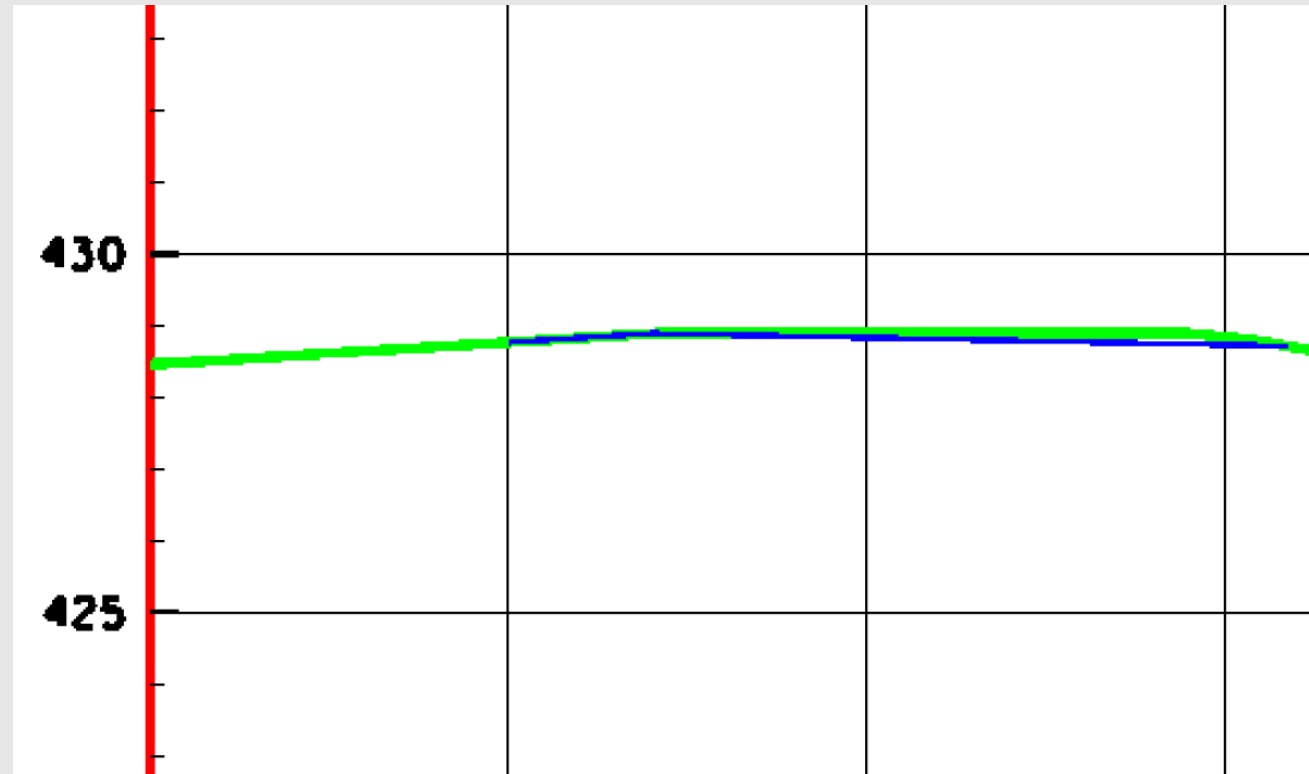
Purpose?



What's In the Bid Reference Package?

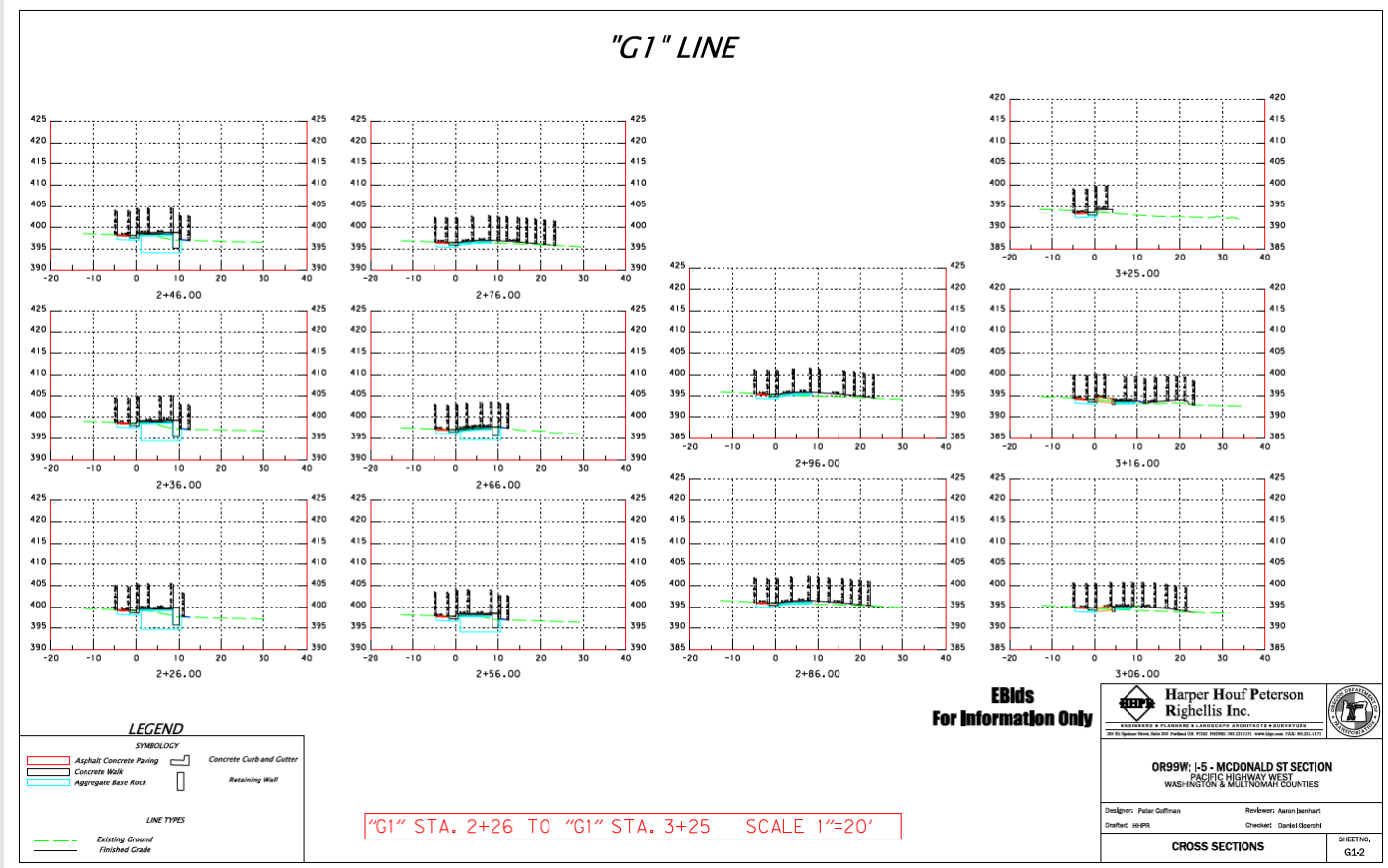
Cross Sections (cont'd)

- x Light line weights
- x Rasterized



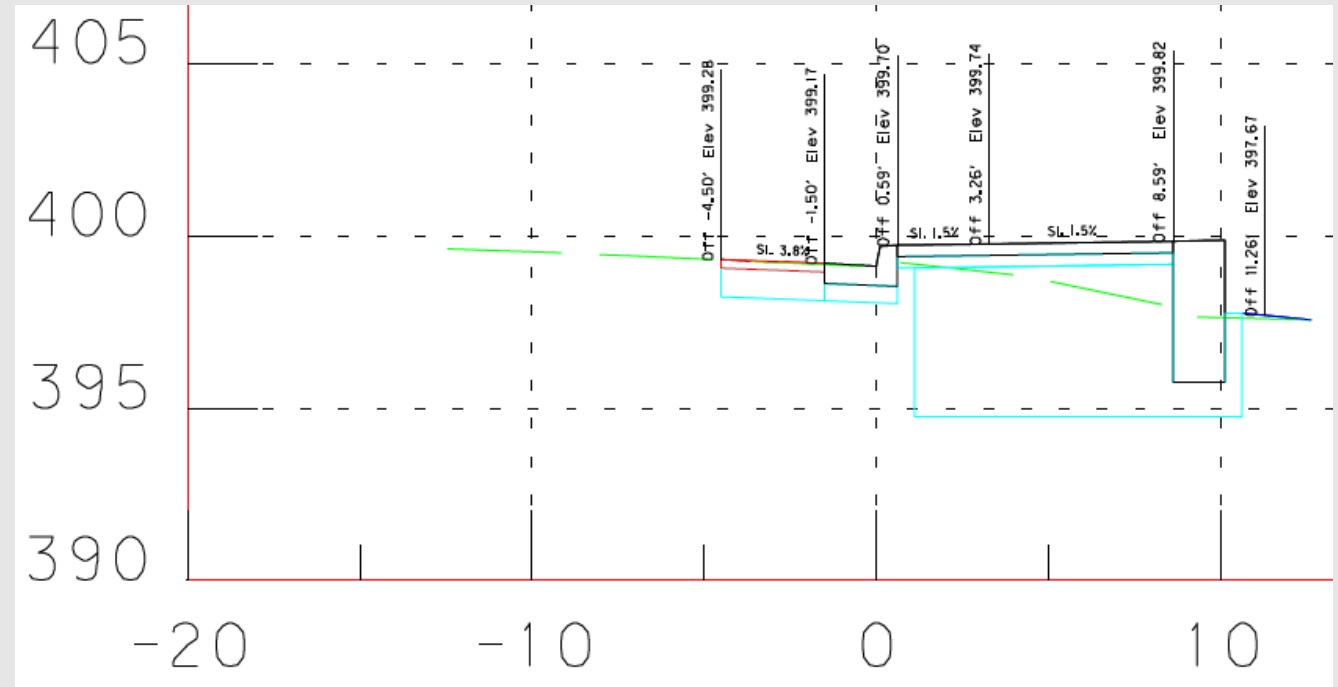
What's In the Bid Reference Package?

- Cross Sections (cont'd)
 - ✓ Alignment ID
 - ✓ Project
 - ✓ Legend – surfaces & components
 - ✓ Points annotated
 - ✓ Purpose
 - ✓ No V-number
 - ✓ Disclaimer



What's In the Bid Reference Package?

- Cross Sections (cont'd)
 - ✓ Light line weights
 - ✓ Vectorized
 - ✗ Point names missing



What's In the Construction/Survey Package?

- What the RE and contractor need to build the project
 - Might be graphics – DGN or DWG
 - Might be alignment or surface LandXML
 - Might be more cross sections
 - Might be more, or different, reports
 - Might be something else
- It's your responsibility to ensure they have what they need to build your design

Creating a Package in ORD

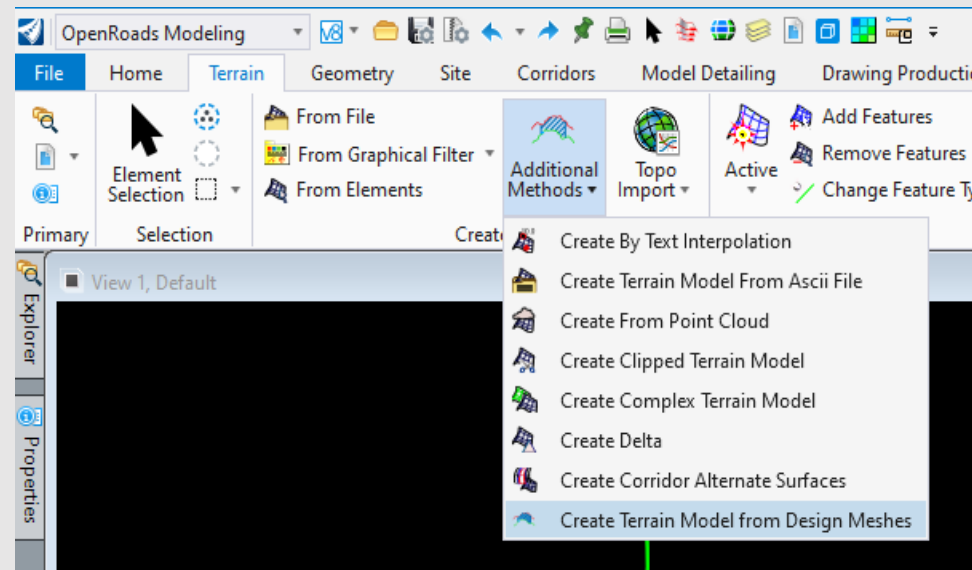
- Alignments
 - Reports
 - Alignments can be selected before or during command
 - Include or exclude, as desired, profiles
 - Invoke command from ribbon, context-sensitive menu, right-click menu or Explorer
 - LandXML
 - Alignments can be selected before or during command
 - Will include all profiles or active profile. None is not an option.
 - Invoke command from ribbon

Creating a Package in ORD

- Design Terrain Models
 - Terrain creation is a separate process from modeling
 - ORD corridors and linear templates create features and meshes
 - ORD corridors and linear templates Do Not create terrains

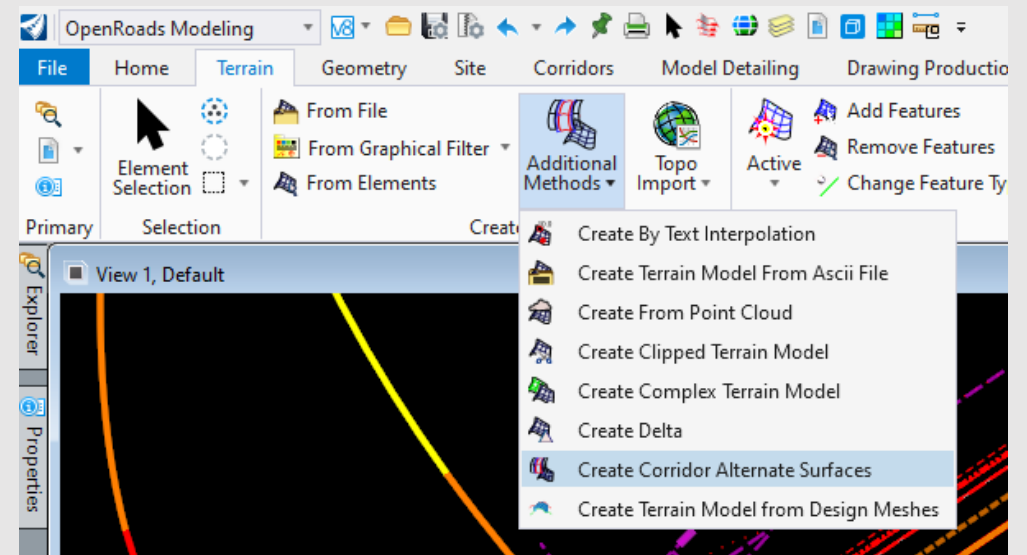
Creating a Package in ORD

- Design Terrain Models (cont'd)
 - Source and terrain creation method are important
 - Terrains from meshes are triangles only



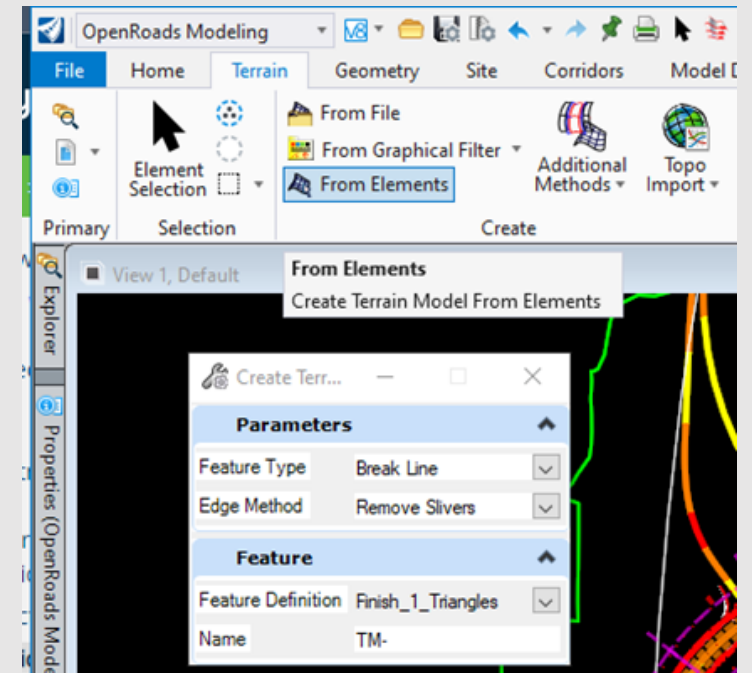
Creating a Package in ORD

- Design Terrain Models (cont'd)
 - Source and terrain creation method are important (cont'd)
 - Terrains created from corridor alternate surfaces will include features
 - Terrain ruled to features in corridor, not to graphics
 - Additional features may be required
 - Alternate surface assignments may not work with some points (e.g., SGSh)



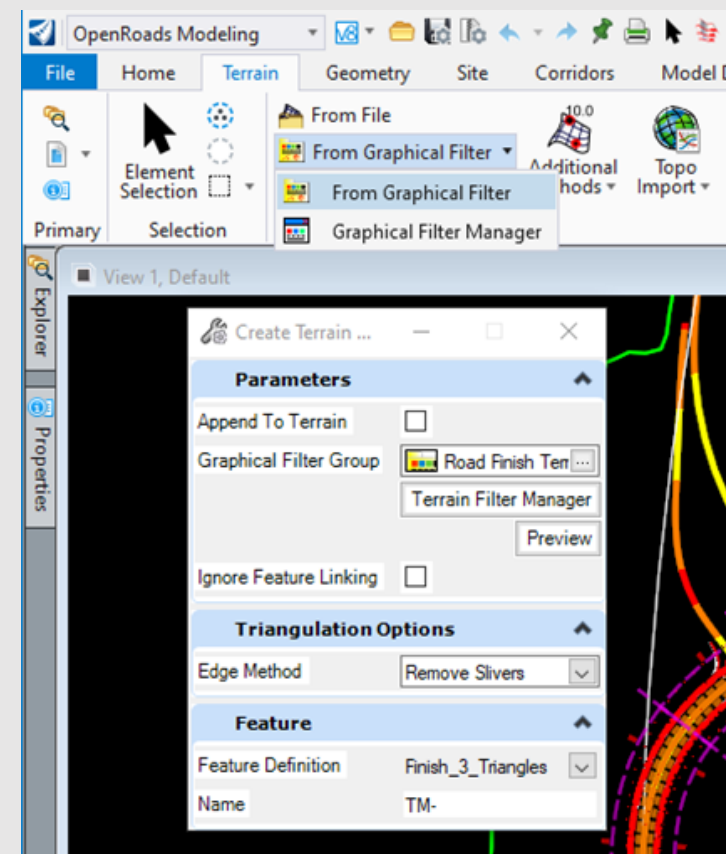
Creating a Package in ORD

- Design Terrain Models (cont'd)
 - Source and terrain creation method are important (cont'd)
 - Terrains created from elements will include features
 - Terrain ruled to graphics
 - Select elements before or during command
 - If elements are featurized, that information will be preserved



Creating a Package in ORD

- Design Terrain Models (cont'd)
 - Source and terrain creation method are important (cont'd)
 - Terrains created from graphical filter will include features
 - Terrain ruled to graphics
 - Can be updated easily
 - Graphical filter criteria do not include name
 - Does not respect level visibility or reference clipping/masking



Creating a Package in ORD

- Design Terrain Models (cont'd)
 - LandXML
 - Single terrain per file
 - Allows entry of project name and description
 - Invoke command from ribbon, context-sensitive menu, right-press menu or Explorer
 - Exports features only, triangles only or both

