# Tunnel Design with Bentley InRoads
# Bentley Rail-Track

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# Why use Rail Track in Tunnel design?

**Bentley Rail Track provides specialized tools for rail geometry creation and data manipulation**

- Turnouts and turnout connections
- Rail regression tools
- Rail Cant Editor
- Tunnel Surface commands
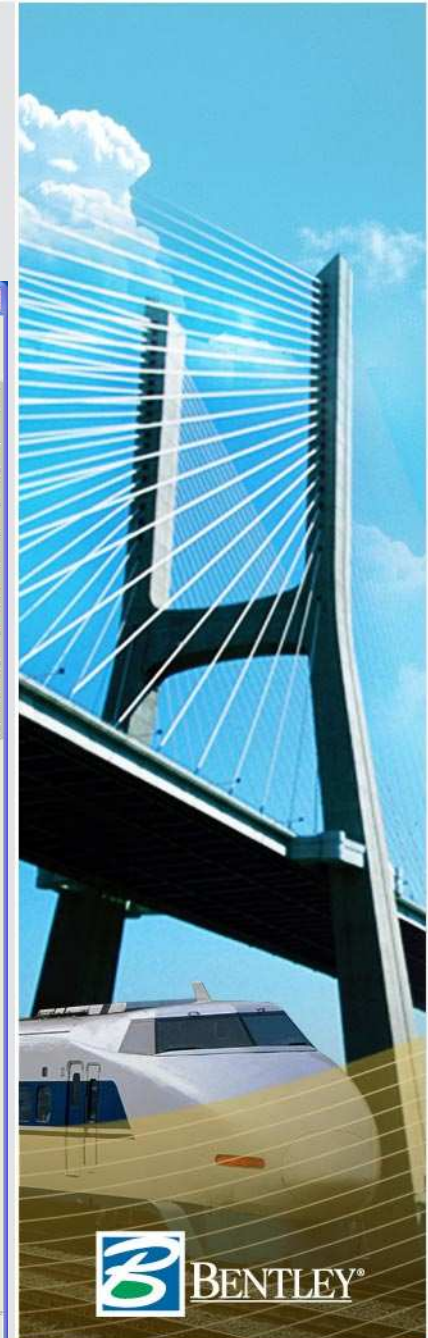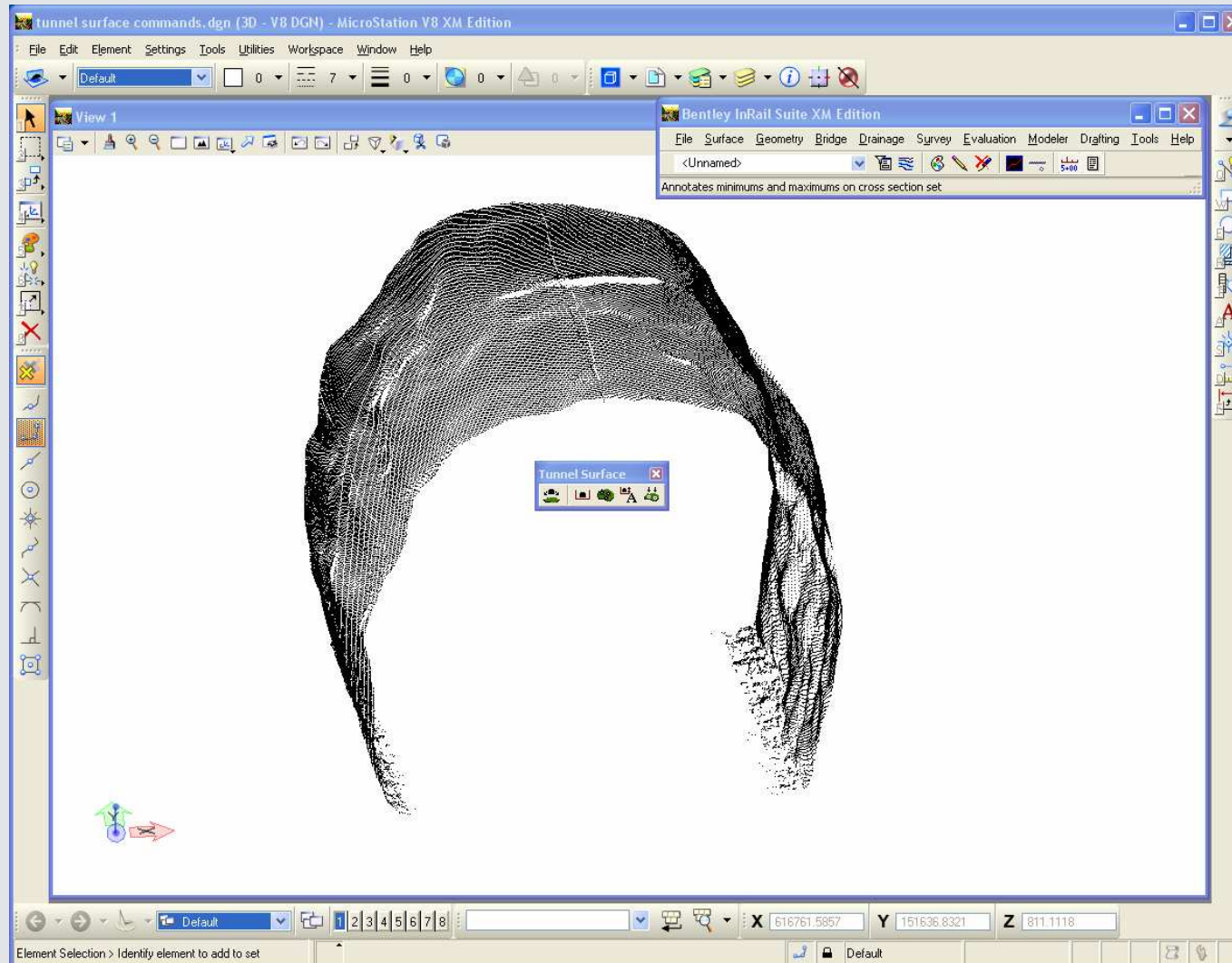- 3D Modeling using the Roadway Designer

# Rail Track Tunnel Surface commands

- Laser scan random point cloud data input
- Flatten Surface Transformation
- Tunnel Cross Sections
- Surface Depression Check
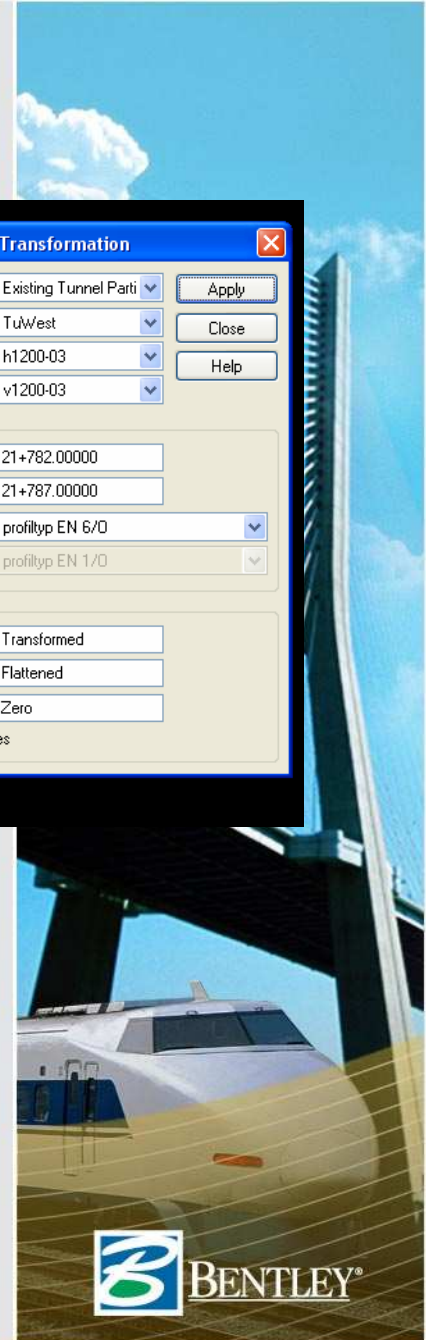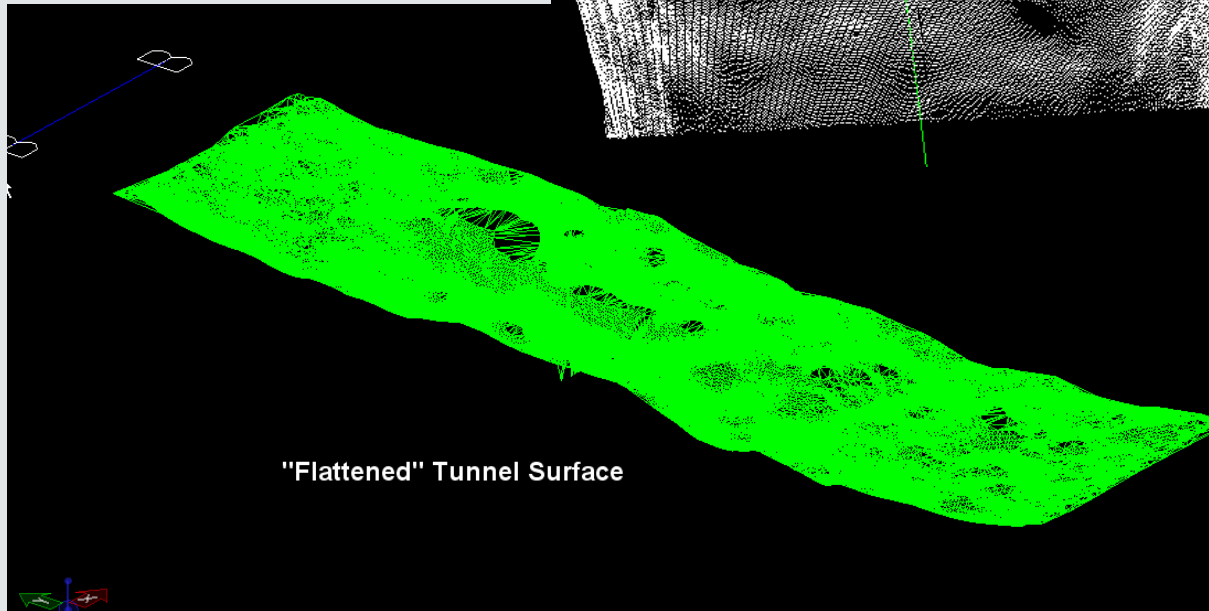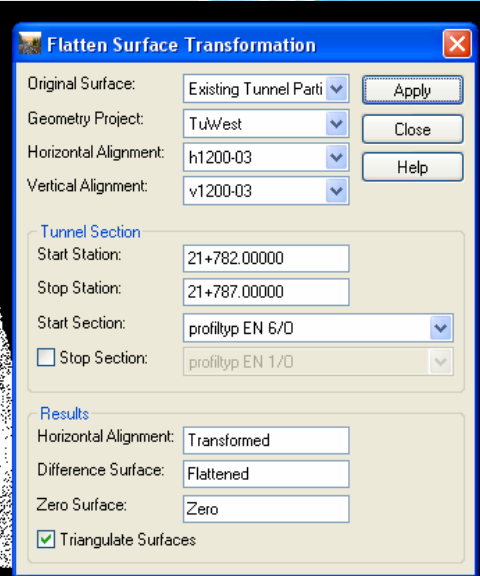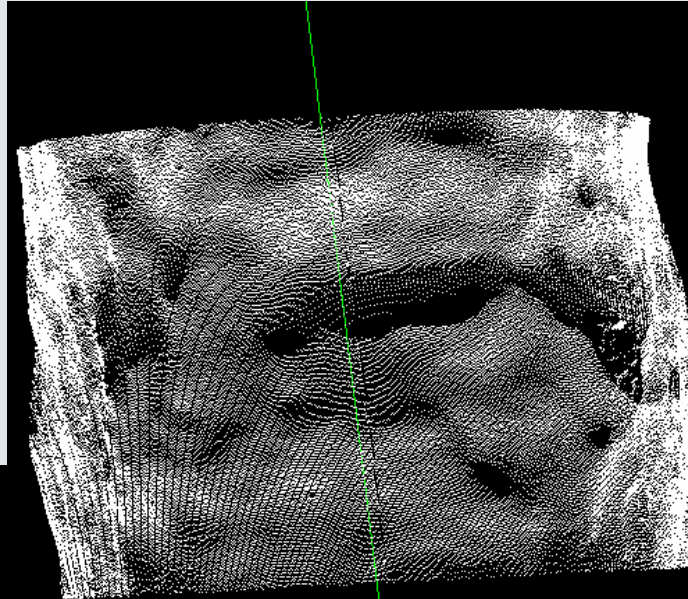- Cross Section Minimums and Maximums
- Locate Critical Points

# Point Cloud Data

- Import as DTM random Do Not Triangulate

# Data Transformation

- "Flattens" and transforms point data relative to H&V alignment and a tunnel typical section
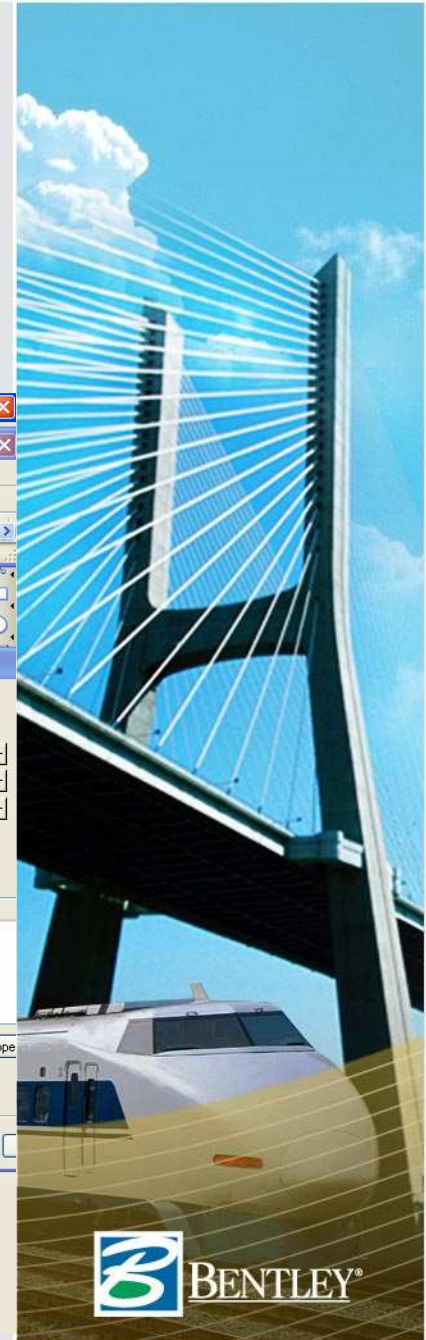


"Flattened" Tunnel Surface

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# Tunnel Cross Sections

- Specialized Cross Sections for computing overcut and undercut volumes.

# Cross Section Minimum and Maximum

- Uses standard Cross Sections relative to the transformed alignment and surfaces for annotation
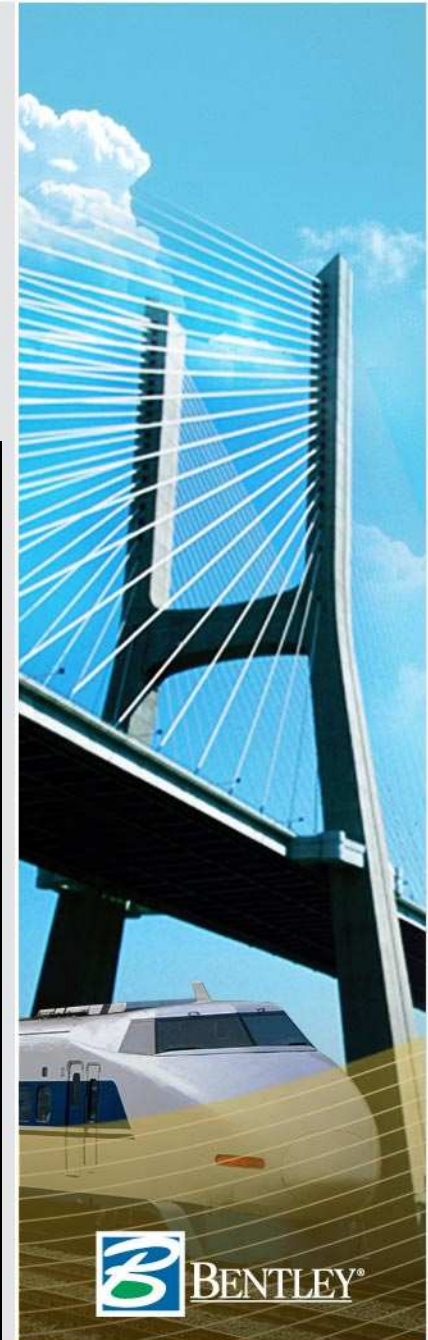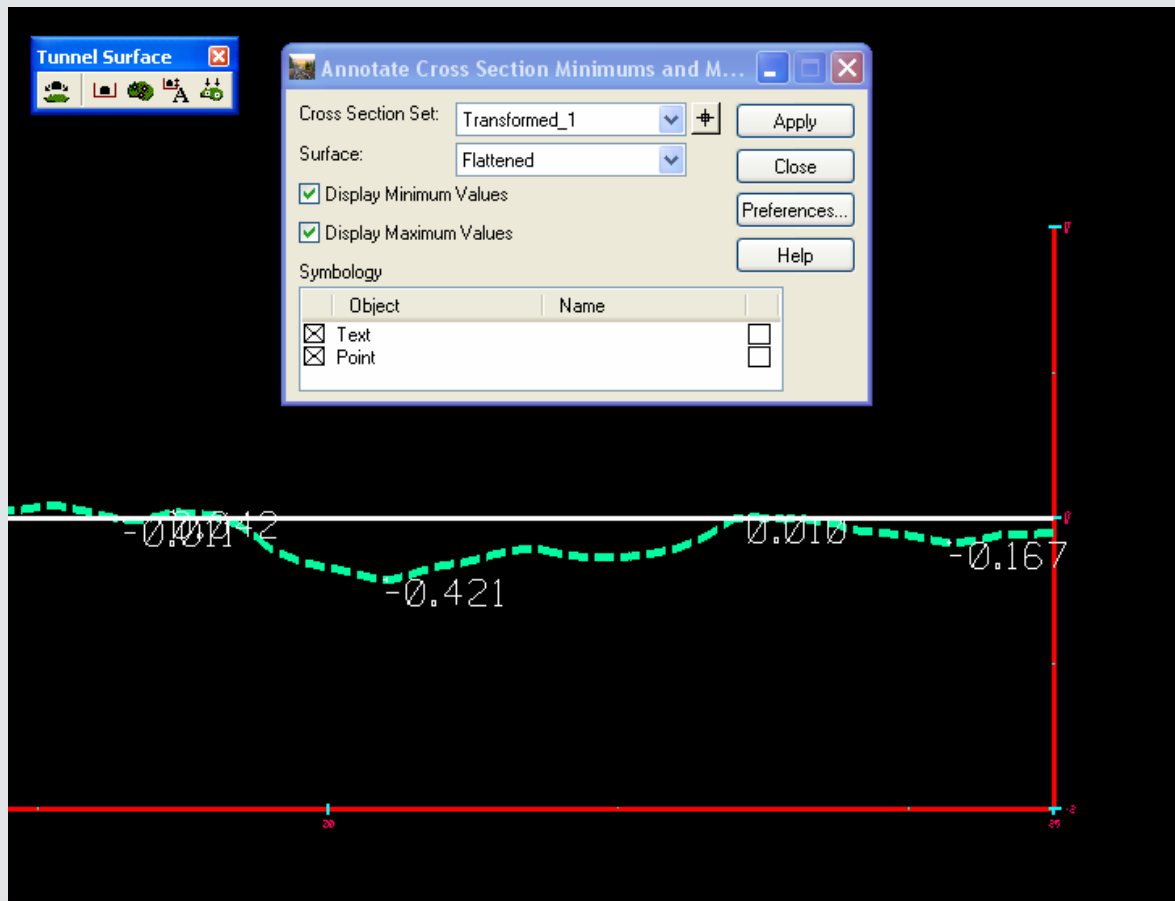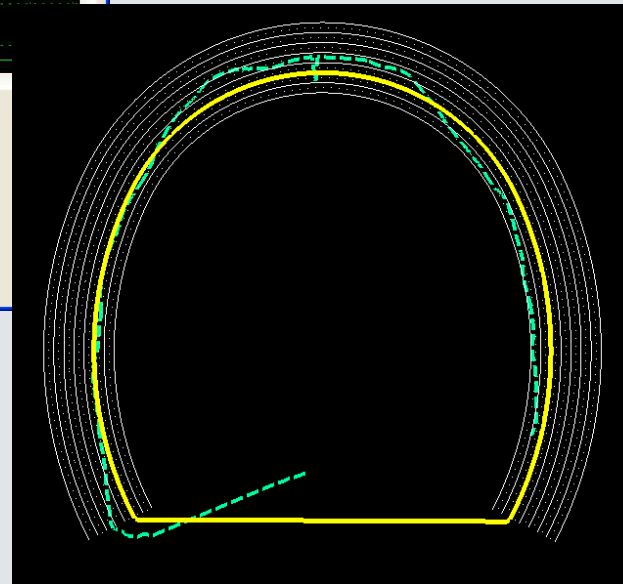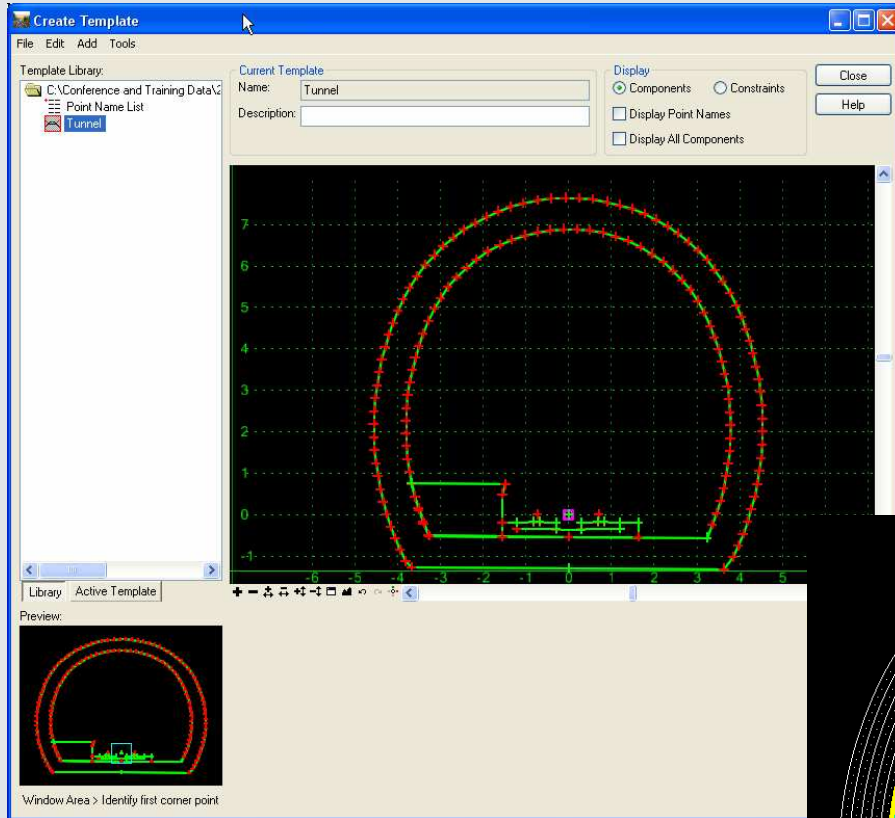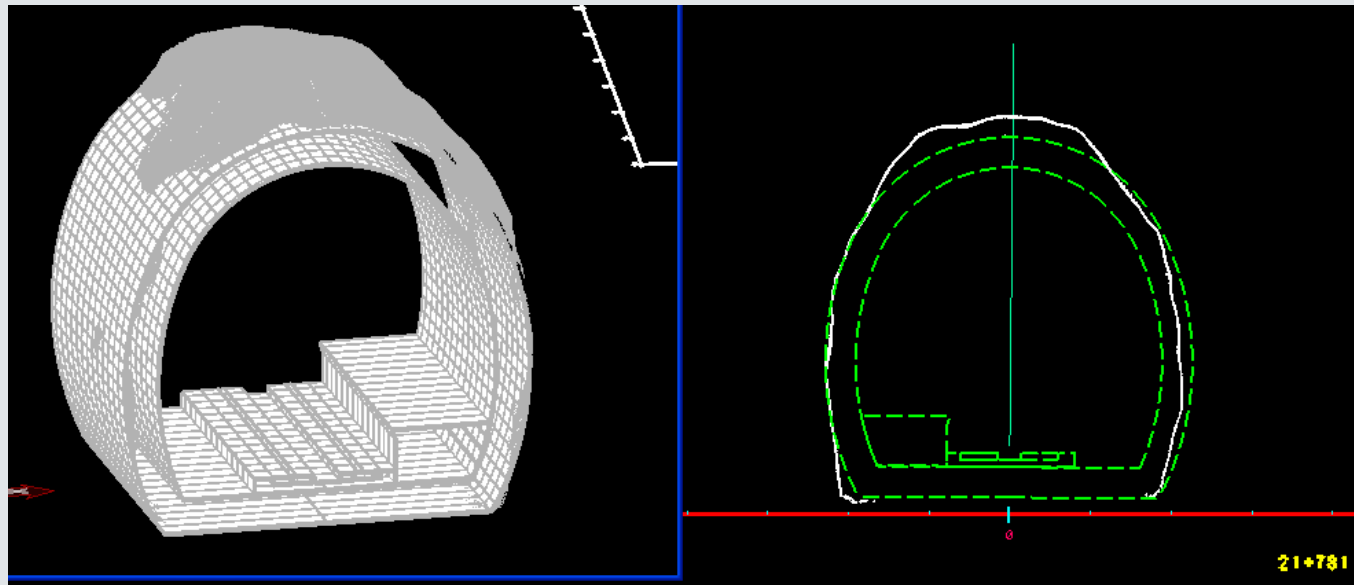
# Roadway Designer for Tunnel Modeling

- Uses standard Typical Section and Components for modeling.

- Specialized Template Point Constraints for "rigid body rotation"

- Cant is applied via point controls

# Roadway Designer for Tunnel Modeling

# Demonstration

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# Conclusion

- Bentley Rail Track is used to create and analyze accurate 3D model content.

- Roadway Designer is used to create the proposed tunnel and displayed in cross section.

# Questions?

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