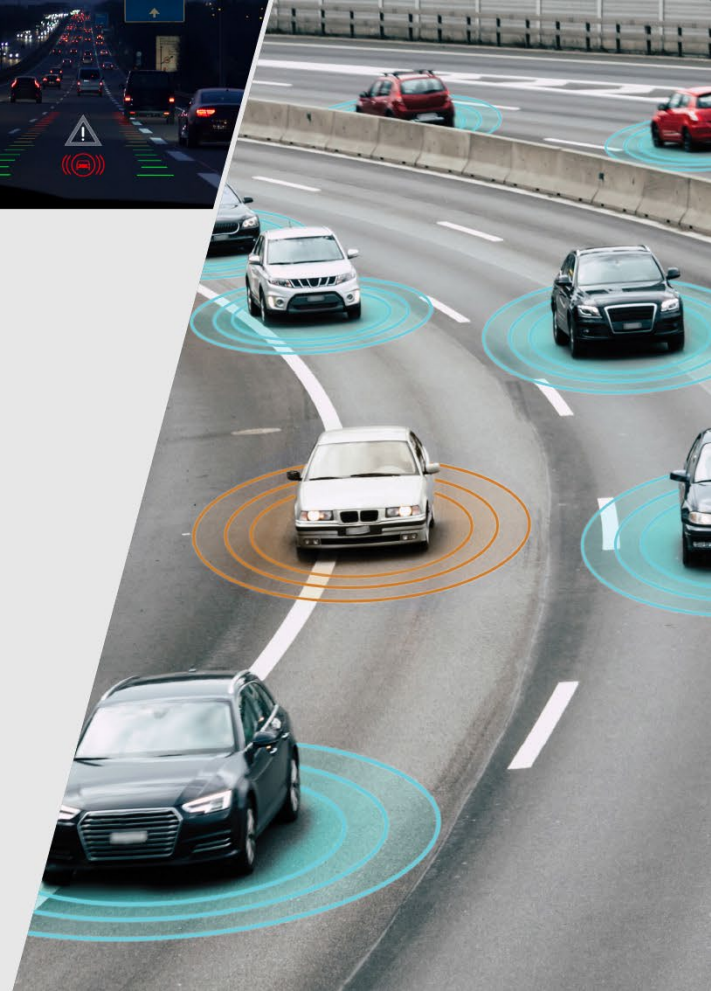




# 3D Bridge Modeling Update

Courtney Holle, Bridge Division





## 3D Program Update Newsletter- October 2022



Jacob Tambunga

To [#TPD DIRECTORS](#); [#Design Engineers](#); [3D-District-Champions](#);  
[#Survey Coordinators](#); [#Hydraulic Engineers](#); [#AE-AAE](#); [+4 others](#)

Cc [#DES-ALL](#); [#BRG-ALL](#); Rayleen Lee-C; Frank Henderson; Steve Phipps-C; Taylor Watson-C;  
Gabriele Hallock-C; Benjamin Rhoads; Kris Hartley; John Paxton; Ricardo Barbosa; [+2 others](#)



10/10/2022

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Texas Department of Transportation

OCTOBER 2022

## 3D Program Update

### In This Newsletter

The 3D Program Update Newsletter is a Quarterly publication providing updates on initiatives and activities pertaining to TxDOT's 3D Program. The Newsletter conveys high-level information such as current status of software, training, and Standard Operating Procedures, plus provides reference and contact information.



County: \_\_\_\_\_ Hwy: \_\_\_\_\_ Design: \_\_\_\_\_ Date: \_\_\_\_\_  
C-S-J: \_\_\_\_\_ ID#: \_\_\_\_\_ Check: \_\_\_\_\_ Date: \_\_\_\_\_

## 3D Model Completeness Checklist

The intent of this checklist is to ensure that all TxDOT 3D models are accurate, complete, and consistent on a statewide level. Statewide accuracy, completeness, and consistency are particularly important to contractors who partner with TxDOT on constructing projects, especially since contractors work in multiple districts. It is understood that not all projects will be the same size, but the checklist will help ensure proper accounting of applicable items within the scope of the current project at hand. To realize 3D modeling's full value potential, it is intended that the functions needed to complete this checklist will be performed by someone with a commensurate knowledge of the design software.

1.  N/A  OK Ensure all files (dgn) have the correct Geographic Coordinate System applied.  
(This is required when reviewing 3D models using a Web App.)
  
2.  N/A  OK Horizontal and Vertical Geometry files
  - 2.1.  N/A  OK Apply the appropriate Geometry Feature Definition respectfully e.g.:
    - 2.1.1.  N/A  OK Baseline
    - 2.1.2.  N/A  OK Frontage Rd
    - 2.1.3.  N/A  OK Intersecting Rd
    - 2.1.4.  N/A  OK Railroad Tracks
    - 2.1.5.  N/A  OK Retaining Walls

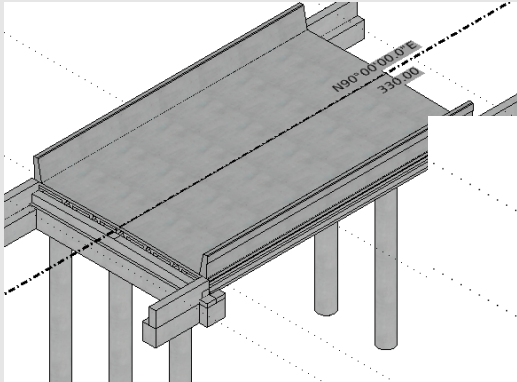
<https://ftp.txdot.gov/pub/txdot/des/ord/3d-model-completion-checklist.pdf>



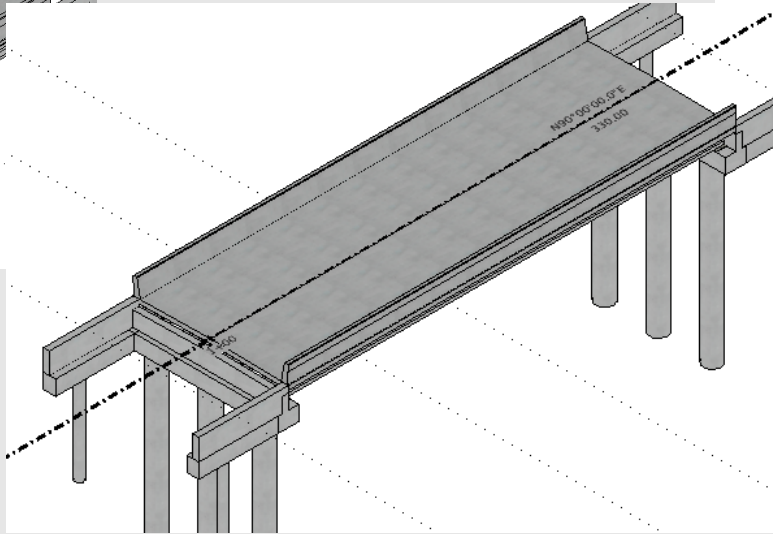
If applicable, a final 3D bridge model utilizing Bentley's OpenBridge Modeler (OBM). When the 3D bridge model is referenced into the 3D corridor, the bridge shall align, both vertically and horizontally, in the bridge location of the 3D corridor. The **3D bridge model** shall consist of 3D elements for **slab, beams, abutments, wingwalls, caps, columns, and foundations**. The level of detail of the bridge elements shall be at the direction of the State.

The Engineer shall **prepare a letter report** which includes the findings of the **comparison of OBM 3D bridge model geometry and quantities** verified by traditional design methods. The report shall include a detailed discussion of the differences between methods and **recommended enhancements** to address issues in **OBM software**.

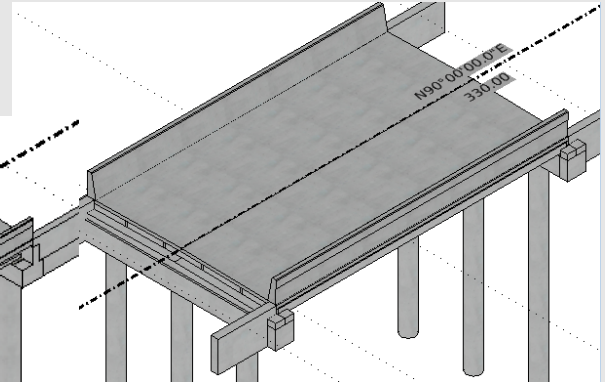
# Standard Bridge Templates



Box Beams



TxGirders



Slab Beams



## ■ More Questions?

- Crossroads – Bridge – Bridge Design
  - <https://tntoday.dot.state.tx.us/BRG/Pages/Bridge%20Design.aspx>
- TxDOT.gov
  - <https://www.txdot.gov/business/resources/highway/bridge/3d-bridge-modeling.html>
- Email
  - BRG\_ Bridge3DDesign  
<[bridge3ddesign@txdot.gov](mailto:bridge3ddesign@txdot.gov)>
  - 3DDesign <[3DDesign@txdot.gov](mailto:3DDesign@txdot.gov)>

### 3D Bridge Modeling

- Expectation of Use of OpenBridge Designer
- OpenBridge Designer Workspace Files
- OpenBridge Designer FAQs
- OpenBridge Designer Workspace Readme

Internal and External

### OBD/OBM Training

- Setup Local Workspace for Trainings
  - BRG303 - LEAP Bridge CONNECT Edition
  - BRG304 - RM Bridge Advanced CONNECT Edition
- BRG301 - OpenBridge Designer - Steel Bridges
- BRG300 - OpenBridge Designer - Prestressed Concrete

Internal Only

# Questions and/or Feedback



Rails

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3D Bridge Modeling

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