AASHTOWare Bridge Design and Rating Training
3D Modeling Improvements in BrDR 6.7

Topics Covered

- Master-slave joint connections
- Consider non-composite regions as non-composite in the 3D model
- 3D support windows for straight girder systems

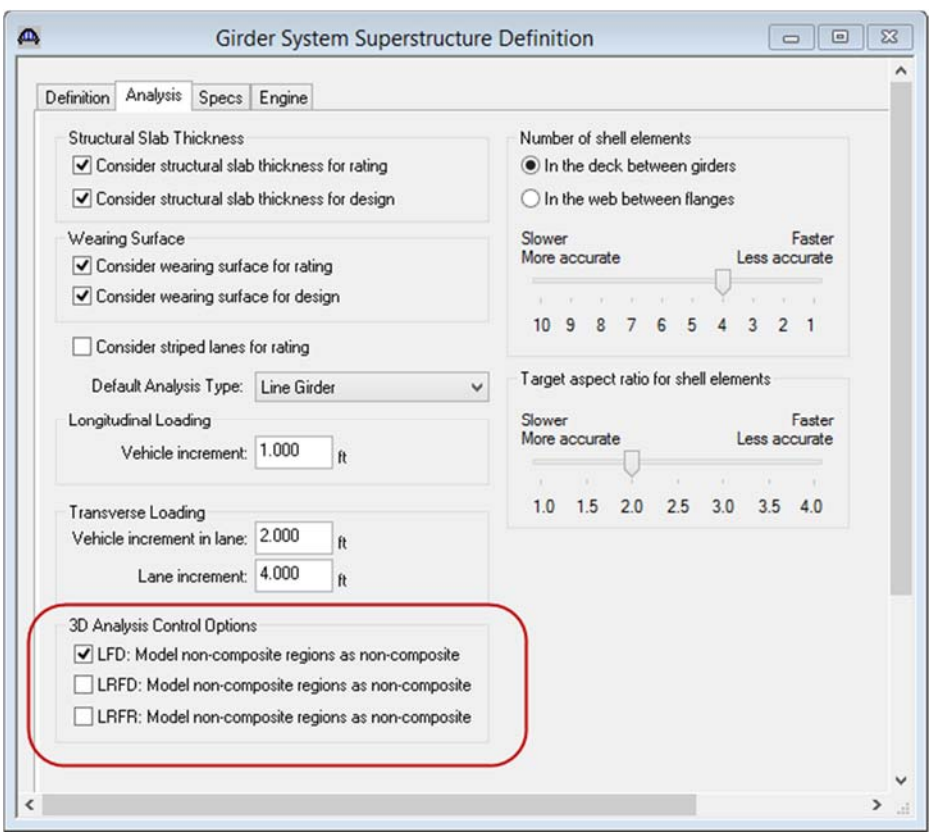
This example describes some of the new features in 3D modeling in BrDR 6.7.

Master-Slave Joint Connections

In both straight and curved 3D analyses in BrDR 6.7, master-slave joint relationships are used to model the connection between the deck slab and the girder. In this relationship, the girder joints (slave) are assigned the same displacements and rotations as the deck slab joint (master). In previous versions, only the curved 3D analysis used master-slave joints. The straight 3D analysis used rigid links.

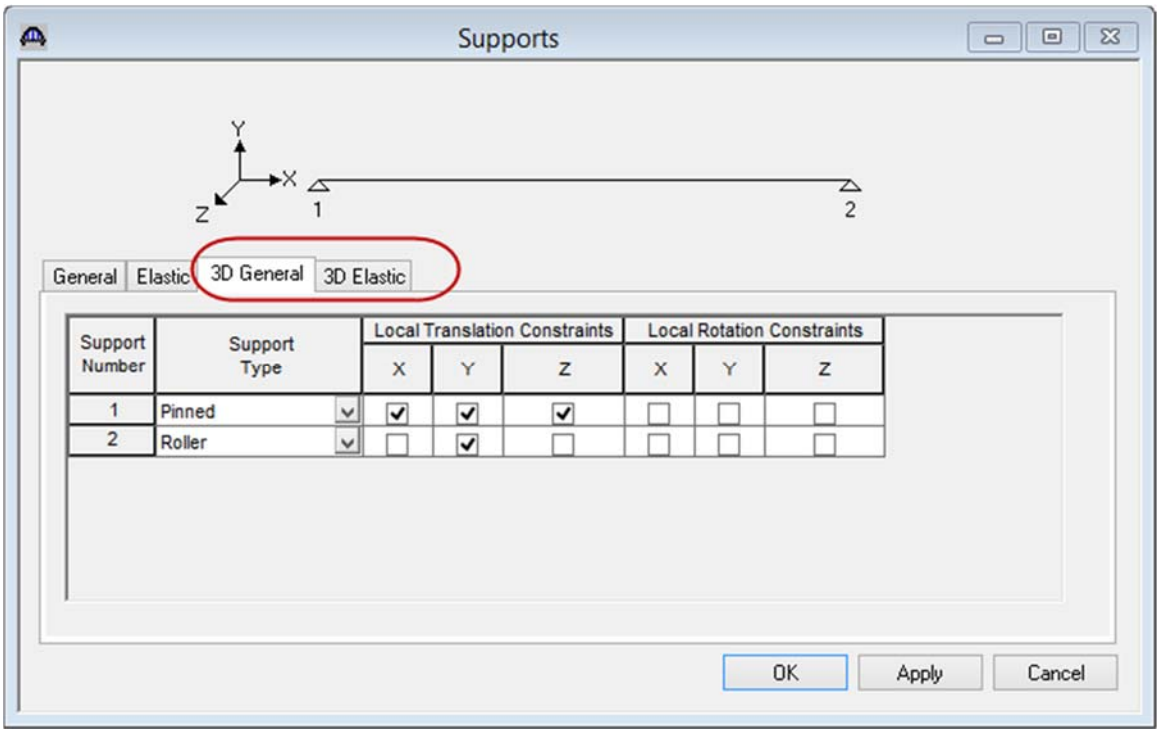
Composite/Non-Composite Regions

The Analysis tab on the Superstructure Definition window contains new control options to model the deck in 3D FE models.



In composite regions where shear connectors are defined, master-slave joints constrain all degrees of freedom (all translation and all rotation).

The user can specify if the deck should be modeled differently in regions where no shear connectors are defined. If this box is checked, only the vertical translation degree of freedom will be constrained in the master-slave joints in non-composite regions. If this box is not checked, all degrees of freedom will be constrained in non-composite regions.

3D Support Windows

The Supports window in straight girder system superstructures has been modified to include new tabs to describe the support conditions in 3D models. As engineering judgement should be considered in setting the 3D support constraints, data is not migrated to these tabs for the user. The user will need to enter data in these windows to perform a 3D analysis on a straight girder system.