
AASHTOWare BrD 6.8

Feature Tutorial

WIZ1 – Wizards in BrD

WIZ1 - Wizards

A wide variety of wizards and tools are available in BrR/BrD to provide shortcuts for entering data. This example describes the wizards and tools and describes how to access these tools in BrR/BrD.

- What Wizards are Available?
 - Superstructure Definition Wizard
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What Wizards are Available?

Superstructure Definition Wizard

Provides a shortcut for adding a girder system or girder line superstructure definition.

Diaphragm Wizard

Provides a shortcut for defining the diaphragms for a girder system superstructure definition.

Floorbeam Location Wizard

Provides a shortcut for creating floorbeam members in a floor system superstructure definition.

Stringer Unit Layout Wizard

Provides a shortcut for creating stringer member alternatives in a floor system superstructure definition.

Floorbeam Member Alternative Wizard

Provides a shortcut for creating floorbeam member alternatives in a floor system superstructure definition.

Reinforced Concrete Point of Interest Wizard

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Provides a shortcut for creating and deleting points of interest in a reinforced concrete member alternative.

Culvert Wizard

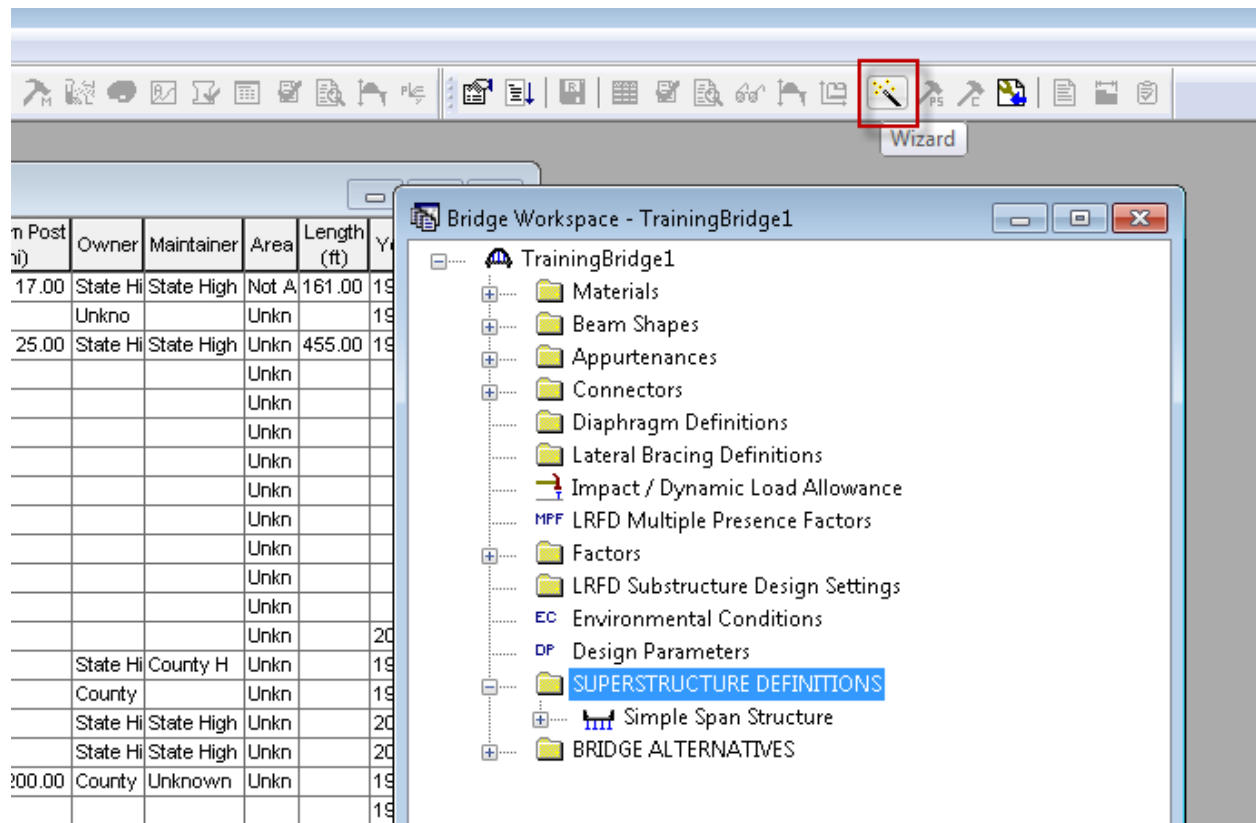
Provides a shortcut for creating Culvert, Culvert Structure Alternative and assign Culvert Definition to the new bridge alternatives.

Superstructure Definition Wizard

This wizard provides a shortcut for creating a girder system or girder line superstructure definition. The new superstructure definition can be composed of steel rolled beams or plate girders, or prestressed concrete I, Box, U or Tee beams.

This wizard creates members and member alternatives as well as populating applicable windows within the Superstructure Definition portion of the Bridge Workspace tree. The wizard is primarily intended for design based on LRFD.

The wizard can be accessed by clicking SUPERSTRUCTURE DEFINITION in the Bridge Workspace tree and clicking the “Wizard” button on the Bridge Workspace toolbar as shown below.



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After a superstructure definition has been created using the wizard, the following windows may need visited to revise or enter additional data for both LFD and LRFD analysis:

Steel Bridge

Framing Plan Detail: Enter the diaphragm locations.

Structure Typical Section: Enter wearing surface data.

Bearing Stiffener Definition: Enter a bearing stiffener definition.

Deck Profile and Haunch Profile windows (for exterior girders): Enter the appropriate data for exterior girders.

Lateral Support: Enter the lateral support for the top flange.

Stiffener Ranges: Revise or enter the transverse stiffener ranges.

Bearing Stiffener Ranges: Assign bearing stiffener definitions to locations of bearing stiffeners.

Prestressed Concrete Bridge

Framing Plan Detail: Enter the diaphragm locations.

Structure Typical Section: Enter wearing surface data.

Shear Reinforcement Definitions: Enter a shear reinforcement definition.

Stress Limit Sets: Enter the final allowable slab compression.

Deck Profile and Haunch Profile windows (for exterior girders): Enter the appropriate data for exterior girders.

Strand Layout: Enter the strand layouts for the prestressed beams.

Interior Diaphragms: Enter the interior diaphragms for prestressed box beams.

Shear Reinforcement Ranges: Enter the shear reinforcement ranges.

The following windows may need visited to enter additional data for an LFD analysis:

Stress Limit Sets: Enter the LFD allowable stresses for a prestressed concrete bridge.

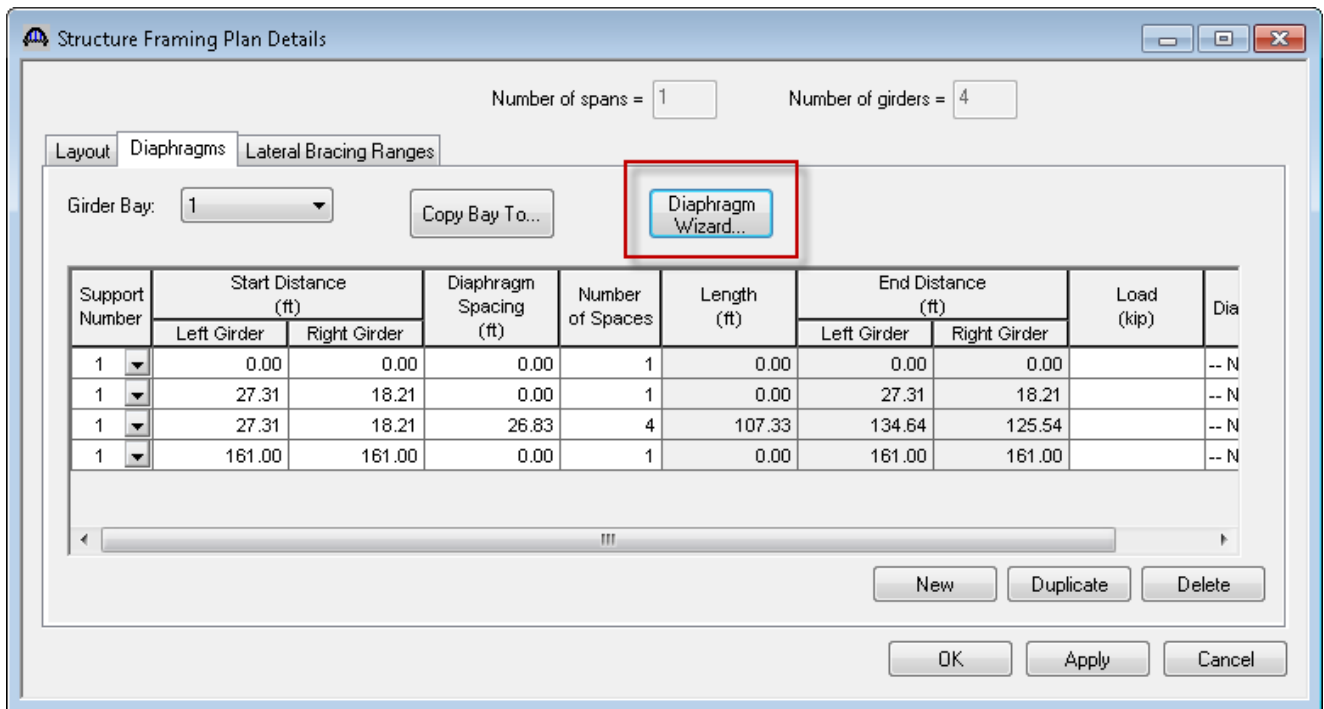
Live Load Distribution: Enter the standard (LFD) distribution factors.

Deck Profile: Enter the standard (LFD) effective slab width.

Diaphragm Wizard

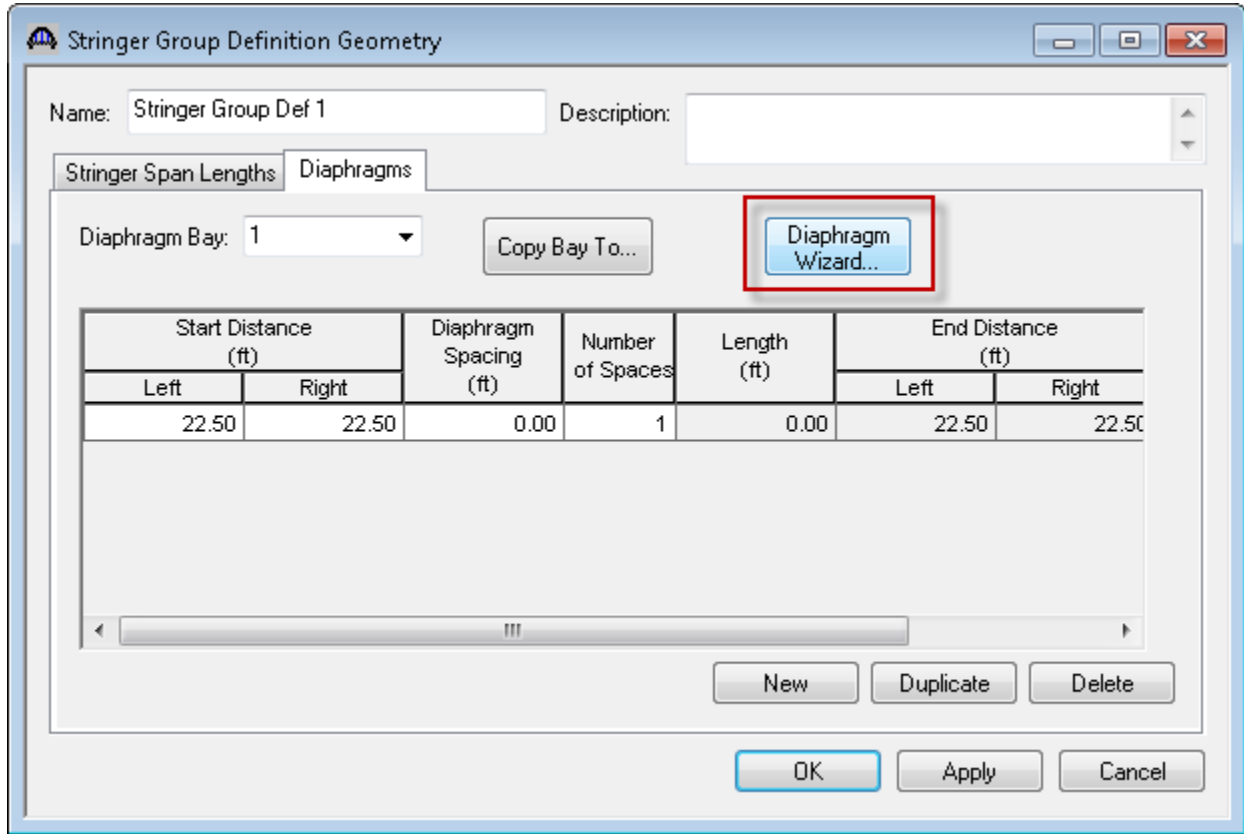
This wizard provides a shortcut for defining the diaphragms for a girder system superstructure definition. This wizard will create diaphragms for all of the girder bays in the structure based on the diaphragm layout and spacing you input. Using the wizard causes previously entered diaphragm locations to be deleted and replaced by newly computed locations.

This wizard can be accessed by clicking the Diaphragm Wizard button on the Structure Framing Plan Details: Diaphragms tab as shown below.



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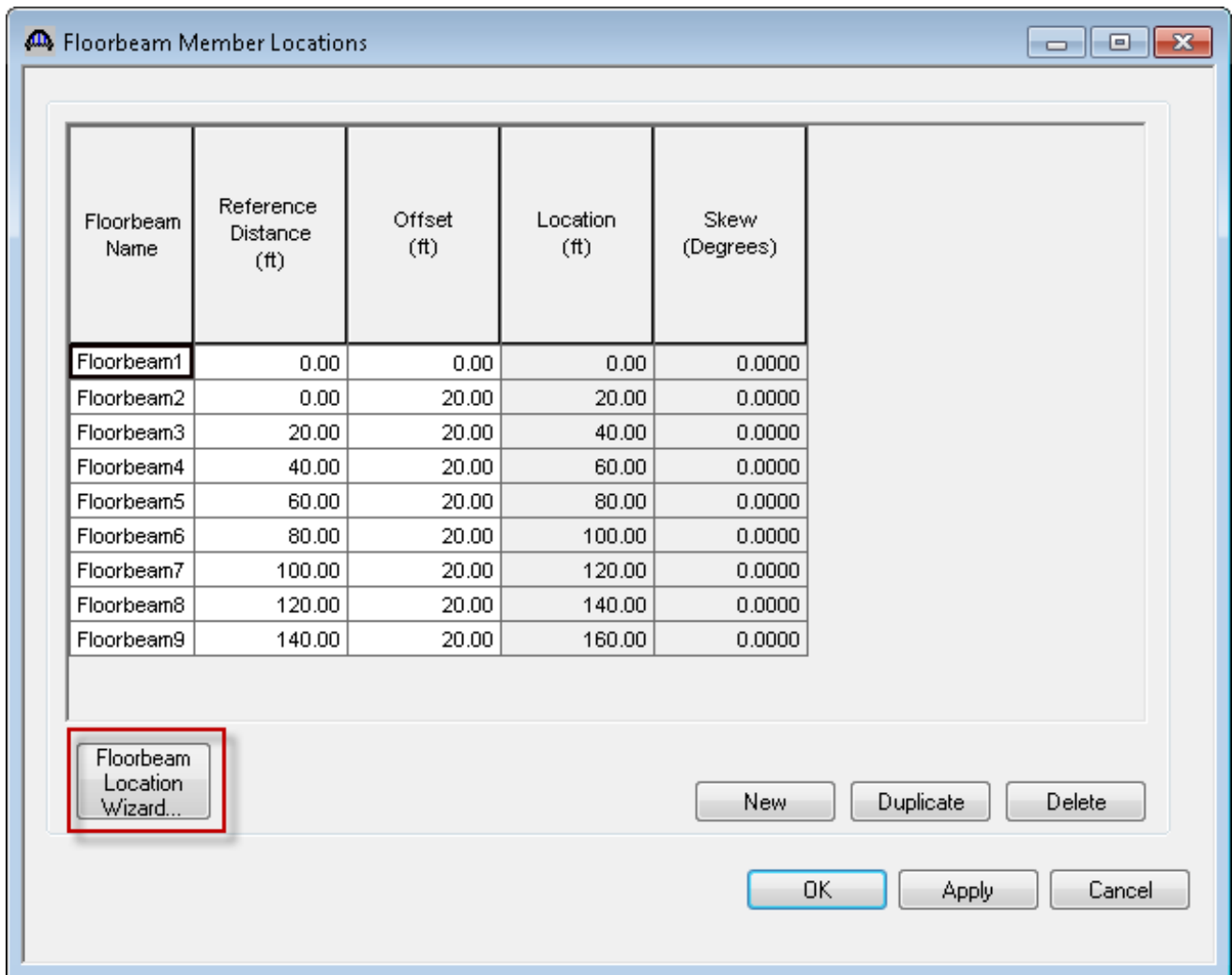
A diaphragm wizard is also available for creating diaphragms for a Stringer Group Definition Geometry in a floor system superstructure definition. It is accessed by clicking the Diaphragm Wizard button on the Stringer Group Definition Geometry window as shown below.



Floorbeam Location Wizard

The Floorbeam Location Wizard provides a shortcut for creating floorbeam members in a floor system superstructure definition. The Floorbeam Location Wizard will create floorbeam members based on the naming convention and spacing you input. The floorbeam member locations can then be modified on the Floorbeam Member Locations window.

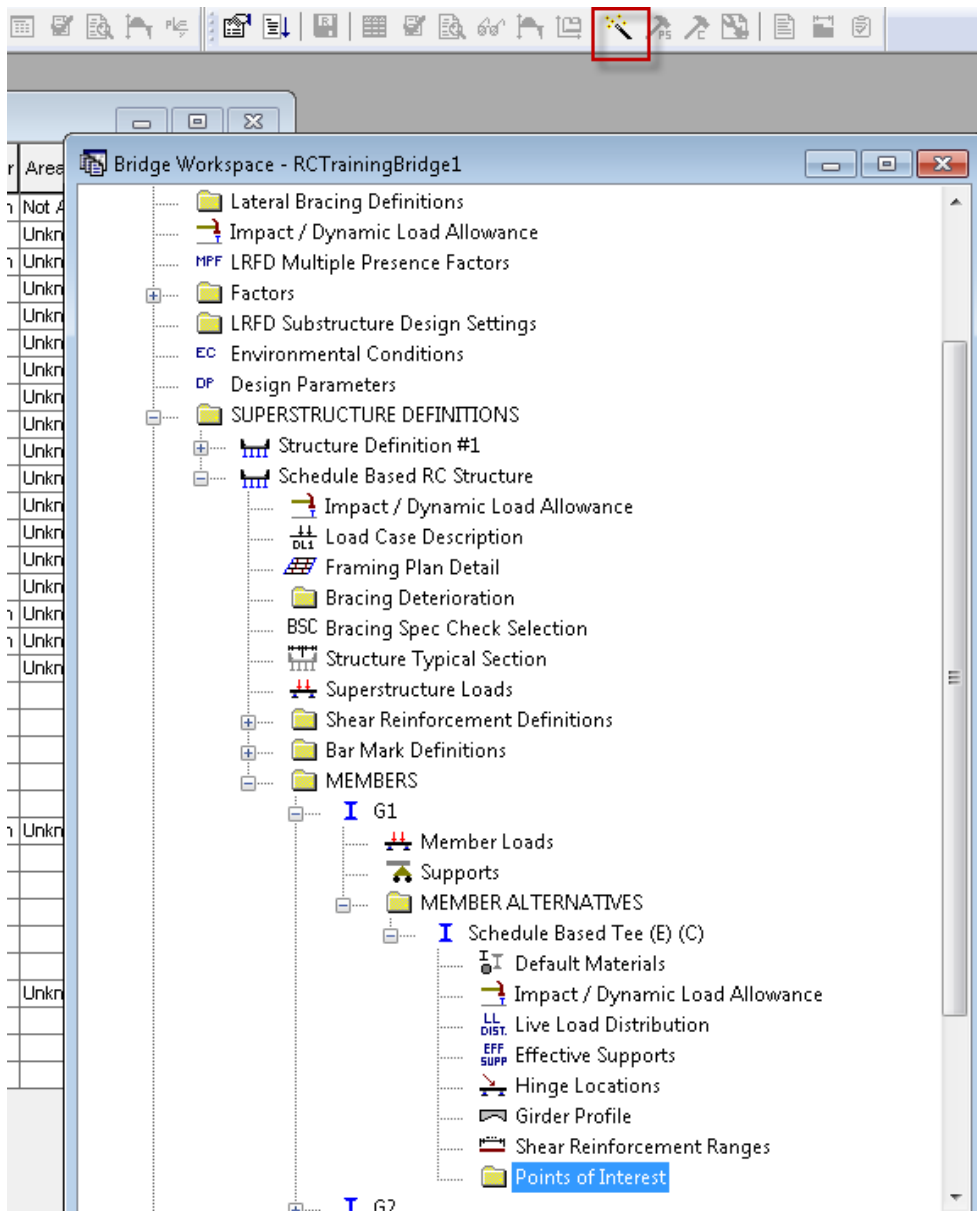
The Floorbeam Location Wizard can be accessed by clicking the Floorbeam Location Wizard button on the Floorbeam Member Locations window as shown below.



Reinforced Concrete Point of Interest Wizard

The Reinforced Concrete Point of Interest Wizard provides a shortcut for creating and deleting points of interest in a reinforced concrete member alternative. The Reinforced Concrete Point of Interest Wizard is available for schedule-based reinforced concrete member alternative. The wizard will create or delete points of interest based on the source types you select. The available source types are Locations of interest, Location of change of girder properties, Schedule based reinforcement development – Std Specs, and Schedule based reinforcement development – LRFD Specs. Detail information on the point of interest can then be entered on the Point of Interest window.

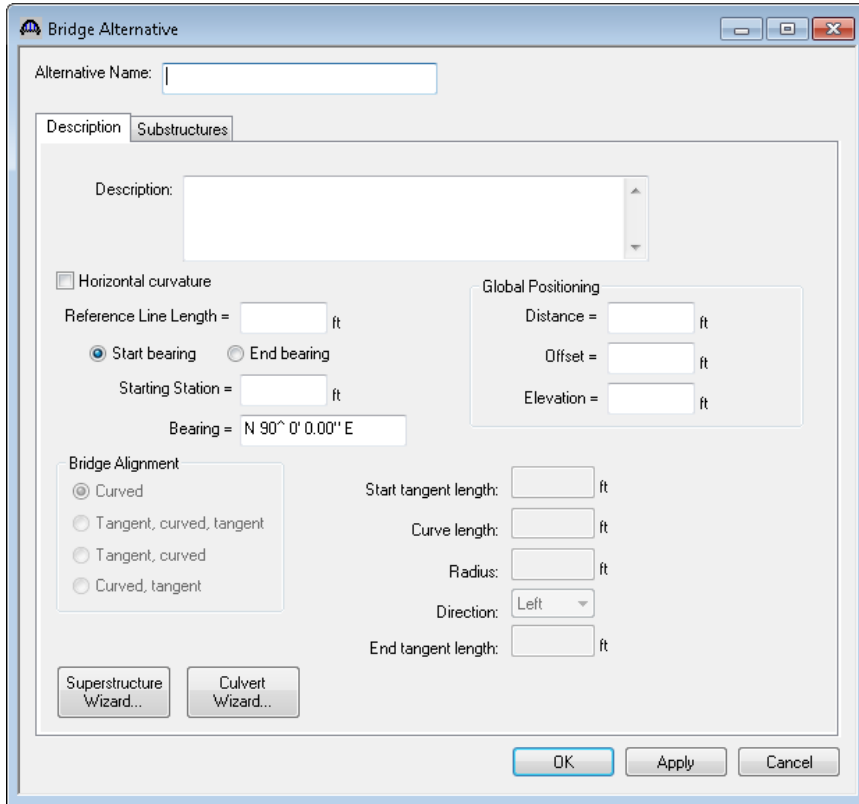
The Reinforced Concrete Point of Interest Wizard can be accessed by clicking “Points of Interest” in the Bridge Workspace and then clicking the Wizard button on the toolbar of the Bridge Workspace as shown below.



Culvert Wizard

This wizard allows you to create initial culvert based on the properties entered including the number of culverts and distance of the location of the culvert.

The button for the culvert wizard can be found in the Bridge Alternative view.



Compute Lane Position Button

This button will compute the locations of your travelways based on the appurtenances you have entered. This button is available on the Structure Typical Section: Lane Position tab.

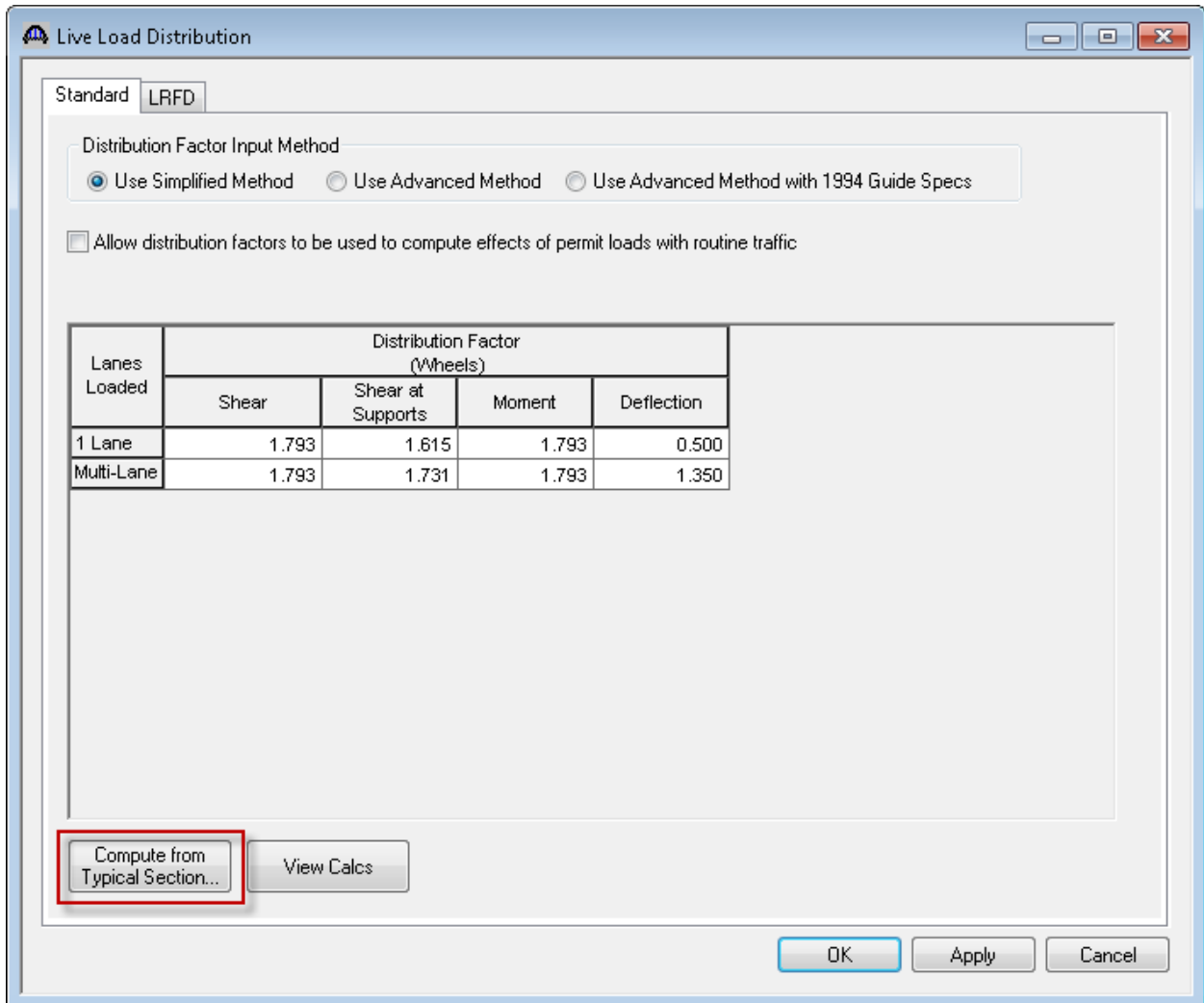
The screenshot shows the 'Structure Typical Section' dialog box with the 'Lane Position' tab selected. At the top, a diagram illustrates a bridge cross-section with two travelways, 'Travelway 1' and 'Travelway 2', and a central 'Superstructure Definition Reference Line'. Dimensions (A) and (B) are indicated for the travelway widths. Below the diagram is a table with the following data:

Travelway Number	Distance From Left Edge of Travelway to Superstructure Definition Reference Line At Start (A) (ft)	Distance From Right Edge of Travelway to Superstructure Definition Reference Line At Start (B) (ft)	Distance From Left Edge of Travelway to Superstructure Definition Reference Line At End (A) (ft)	Distance From Right Edge of Travelway to Superstructure Definition Reference Line At End (B) (ft)
1	-22.00	22.00	-22.00	22.00

At the bottom of the dialog, there are several controls: 'LRFD Fatigue' section with 'Lanes available to trucks' and 'Override Truck fraction' checkboxes; a 'Compute...' button (highlighted with a red box); and 'New', 'Duplicate', and 'Delete' buttons. At the very bottom are 'OK', 'Apply', and 'Cancel' buttons.

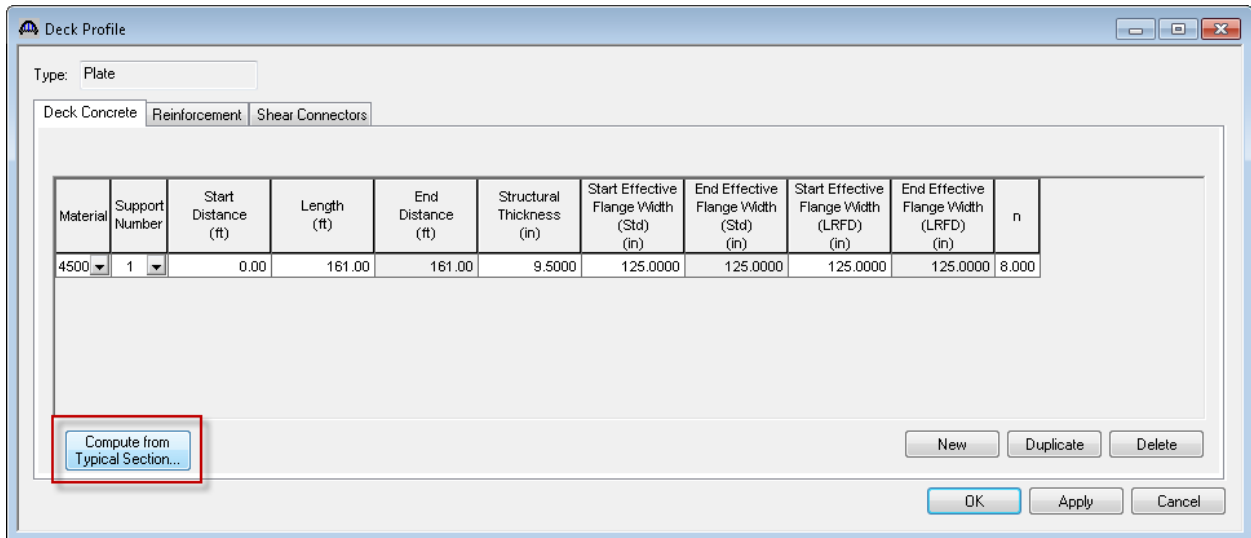
Compute LFD and LRFD Live Load Distribution Factors from Typical Section Button

This button will compute the LFD live load distribution factors for your member alternative in a girder system superstructure definition. You must enter your travelway locations on the Structure Typical Section: Lane Position tab prior to using this button. This button is available on the Live Load Distribution Factor: Standard tab and LRFD tab.



Compute Deck Profile from Typical Section button

This button will generate the deck profile ranges for your member alternative including computing the Standard and LRFD effective deck widths for you. This button is available only for girder system superstructure definitions with concrete decks. This button is available on the Deck Profile: Deck Concrete tab.

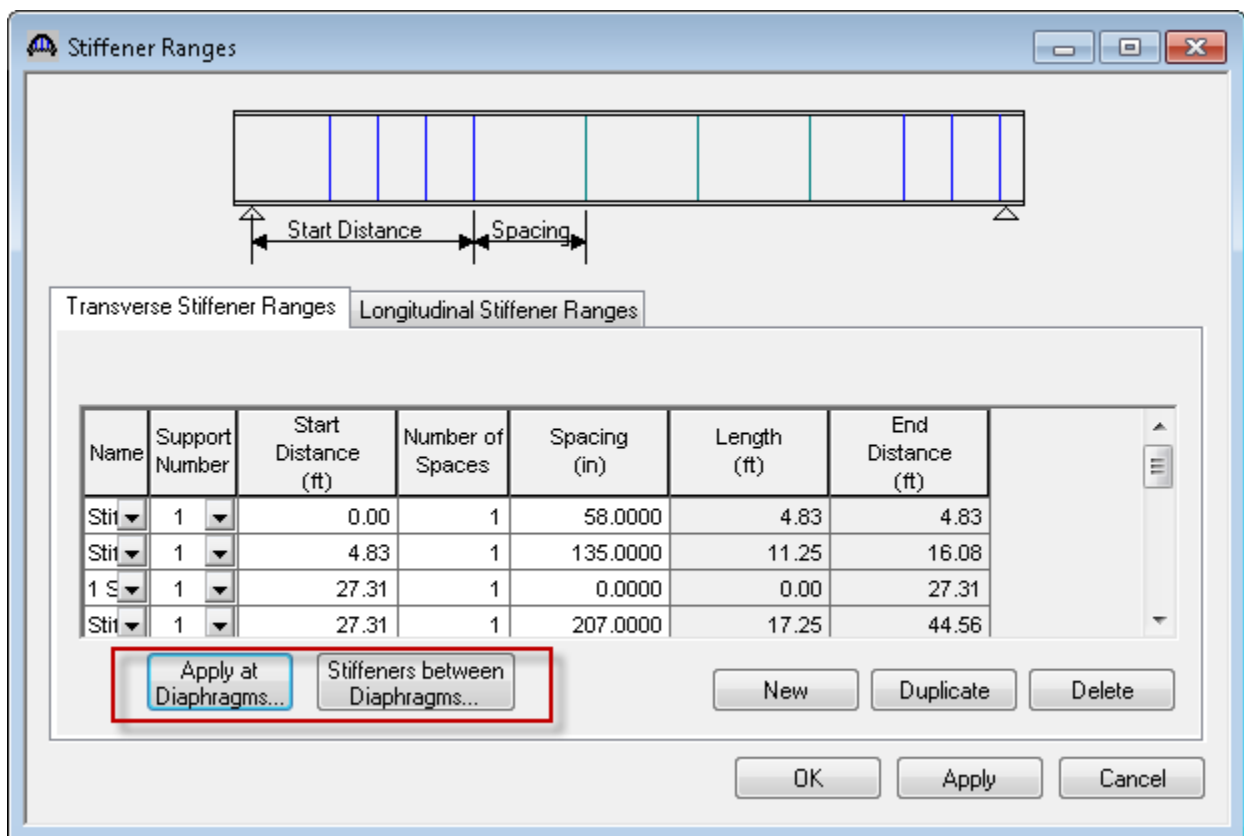


Stiffener Ranges – Apply at Diaphragms and Stiffeners between Diaphragms buttons

These buttons are available on the Stiffener Ranges: Transverse tab for steel girder member alternatives in a girder system or girder line superstructure definition. You should create transverse and bearing stiffener definitions prior to using these buttons.

The “Apply at Diaphragms” button places transverse stiffener and bearing stiffener definitions at the locations of previously defined diaphragms. This button will not delete any existing transverse stiffener locations. It will create new, additional transverse stiffener locations.

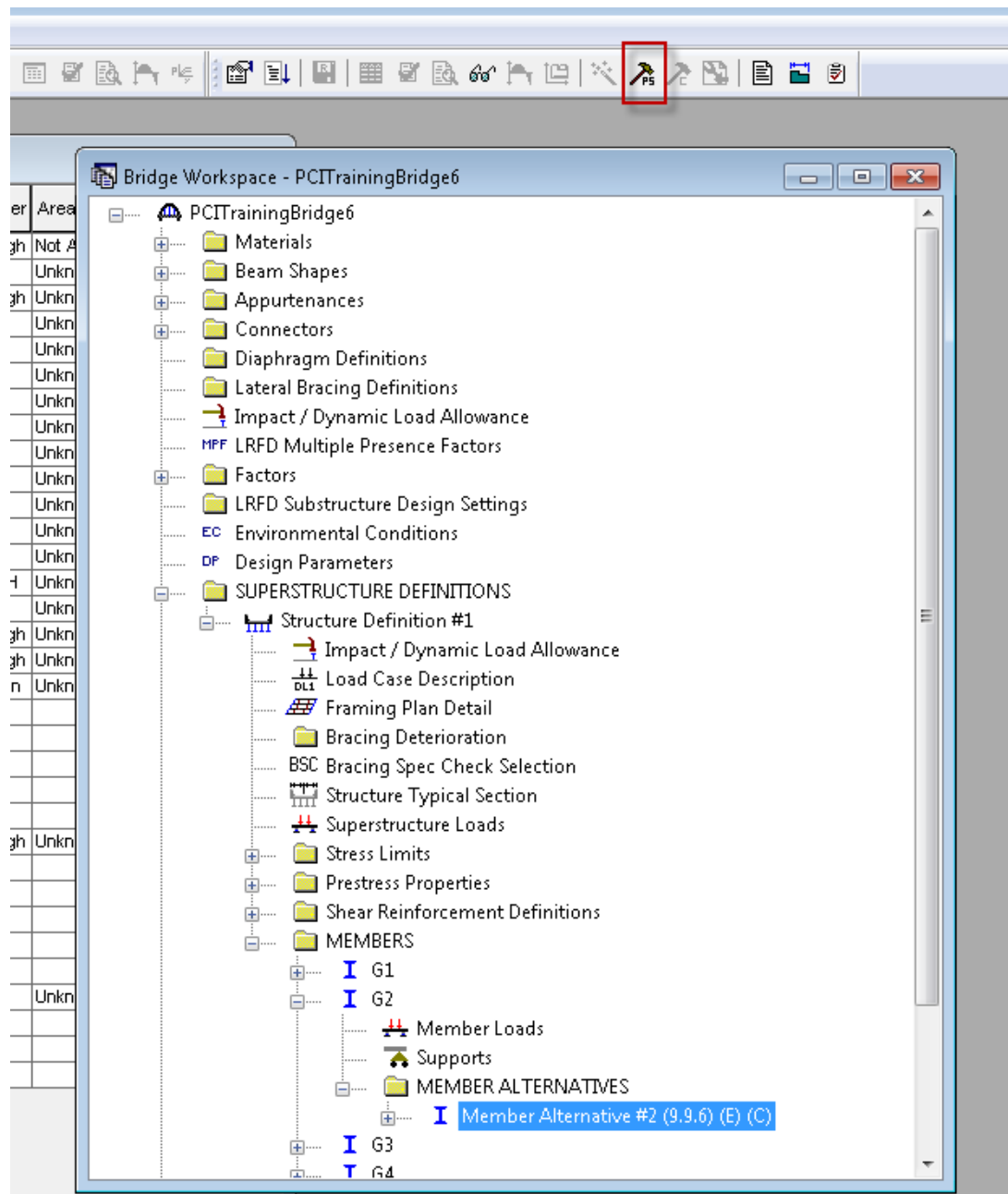
The “Stiffeners between Diaphragms” button places transverse stiffener definitions at equal spaces between the locations of previously defined diaphragms. This button will not delete any existing transverse stiffener locations. It will create new, additional transverse stiffener locations.



BrD – Prestress Design Tool

BrD contains a prestress design tool that can be used to compute a preliminary strand pattern for a prestressed concrete I beam or box beam member alternative. Harped and straight strand layouts are determined according to AASHTO LRFD specifications.

The Prestress Design Tool can be accessed by clicking the name of the prestressed I beam or box beam member alternative in the Bridge Workspace and then clicking the PS Design Tool button on the toolbar of the Bridge Workspace as shown below.



RC Box Culvert Design Tool

BrD contains a culvert design tool that can be used to design a preliminary culvert box member alternative.

The button for the culvert wizard can be found on the toolbar while sitting on the CULVERT ALTERNATIVES in a culvert bridge.

