

November 17, 2016

# BrR Load Rating Tools and Tips



# BrR Load Rating Tools and Tips



## Overview

Per INDOT Bridge Inspection Memorandum No. 16-06

**DATE:** May 26, 2016

**SUBJECT:** Load Rating Requirement for New County Bridges

**EFFECTIVE:** Immediately

“...load ratings are to be performed using AASHTOWare BrR...”

Counties and Consultants are on the same expedited learning curve, with respect to BrR. There is a need to understand what BrR is doing compared to other programs and codes.

## How Can I Help?

Provide tips on the following topics to help speed up the learning process:

- **Creating the Model**
- **Generating Output**
- **Help and Technical Support**

## AASHTOWare Bridge Design and Rating Software

- **BrR = Bridge Rating** (*Formally known as Virtis*)
- **BrD = Bridge Design**
- **BrDR = Bridge Design and Rating**

### The Workspace “Tree” is Similar for All

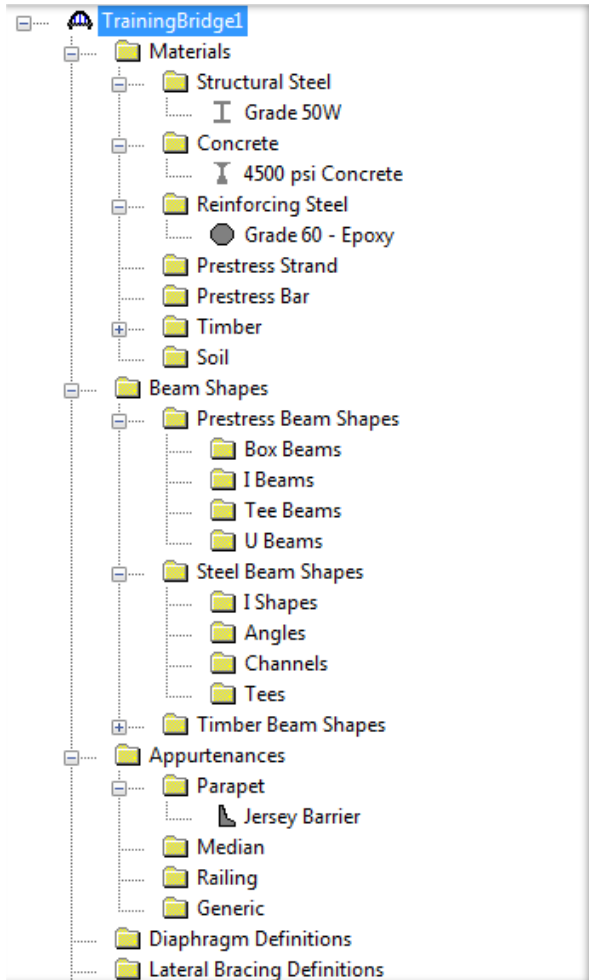
The input fields in BrR and BrD are similar by design. For this reason, there may be input fields in BrR that don't get used at all.

*Tip: Use the help command to determine whether or not a feature is used by BrR.*

## Creating the Model

# BrR Load Rating Tools and Tips

## BrR Bridge Workspace “Tree”



### Part 1: Define

- Project
- Materials
- Shapes

## Bridge Description

The BrR model should best represent the available plans and BIAS data.

- **Bridge ID = BIAS Asset Name**
- **NBI = BIAS Asset Code**
- **Name should include method for analysis (LFR or LRFR)**
- **Description should include:**
  - **Name of individual responsible for the load rating**
  - **Name of individual responsible for review**
  - **Dates for each of the above**

## Materials

The BrR model should best represent the available plans and BIAS data.

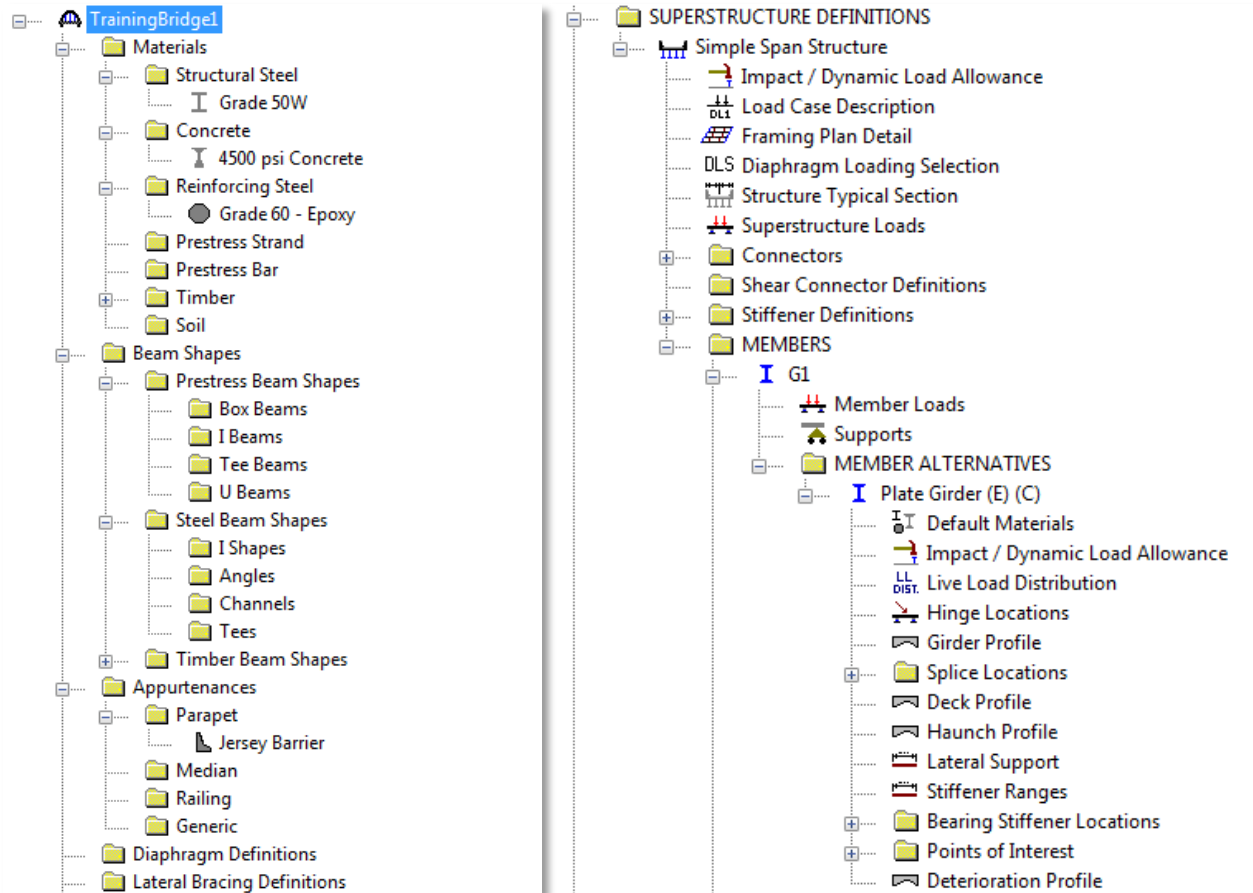
- **BrR Library includes material data for most**
  - **Structural Steel**
  - **Reinforcing Steel**
  - **Prestressing Strands**
  - **Reinforced Concrete**
  
- **If material data is not available in the plans, use Year Built Date in BIAS along with MBE guidelines**



# BrR Load Rating Tools and Tips



## BrR Bridge Workspace “Tree”



### Part 2: Define

- Geometry
- Assign Materials
- Structural Features

## Superstructure Definitions

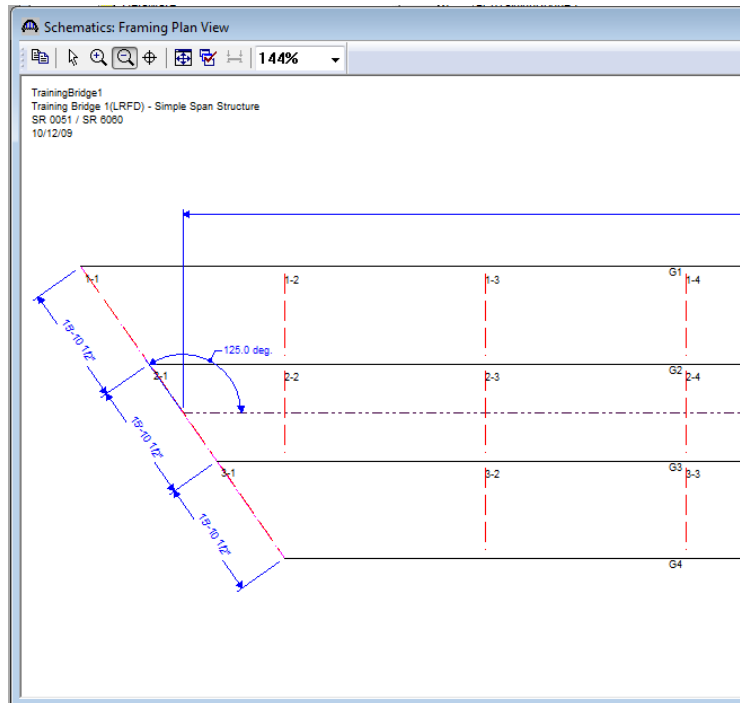
The most commonly used Superstructure Definitions

- **Girder System Superstructure**
- **Girder Line Superstructure**
- **Reinforced Concrete Slab System Superstructure**

The model should represent all members in the superstructure system. This allows for future modifications to specific members due to deterioration and or collision.

# BrR Load Rating Tools and Tips

## Framing Plan Details



Structure Framing Plan Details

Number of spans = 1 Number of girders = 4

Layout Diaphragms Lateral Bracing Ranges

Girder Spacing Orientation

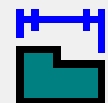
☒ Perpendicular to girder

☐ Along support

| Support | Skew (Degrees) |
|---------|----------------|
| 1       | -34.9994       |
| 2       | -34.9994       |

| Girder Bay | Girder Spacing (ft) |               |
|------------|---------------------|---------------|
|            | Start of Girder     | End of Girder |
| 1          | 13.00               | 13.00         |
| 2          | 13.00               | 13.00         |
| 3          | 13.00               | 13.00         |

OK Apply Cancel



# BrR Load Rating Tools and Tips

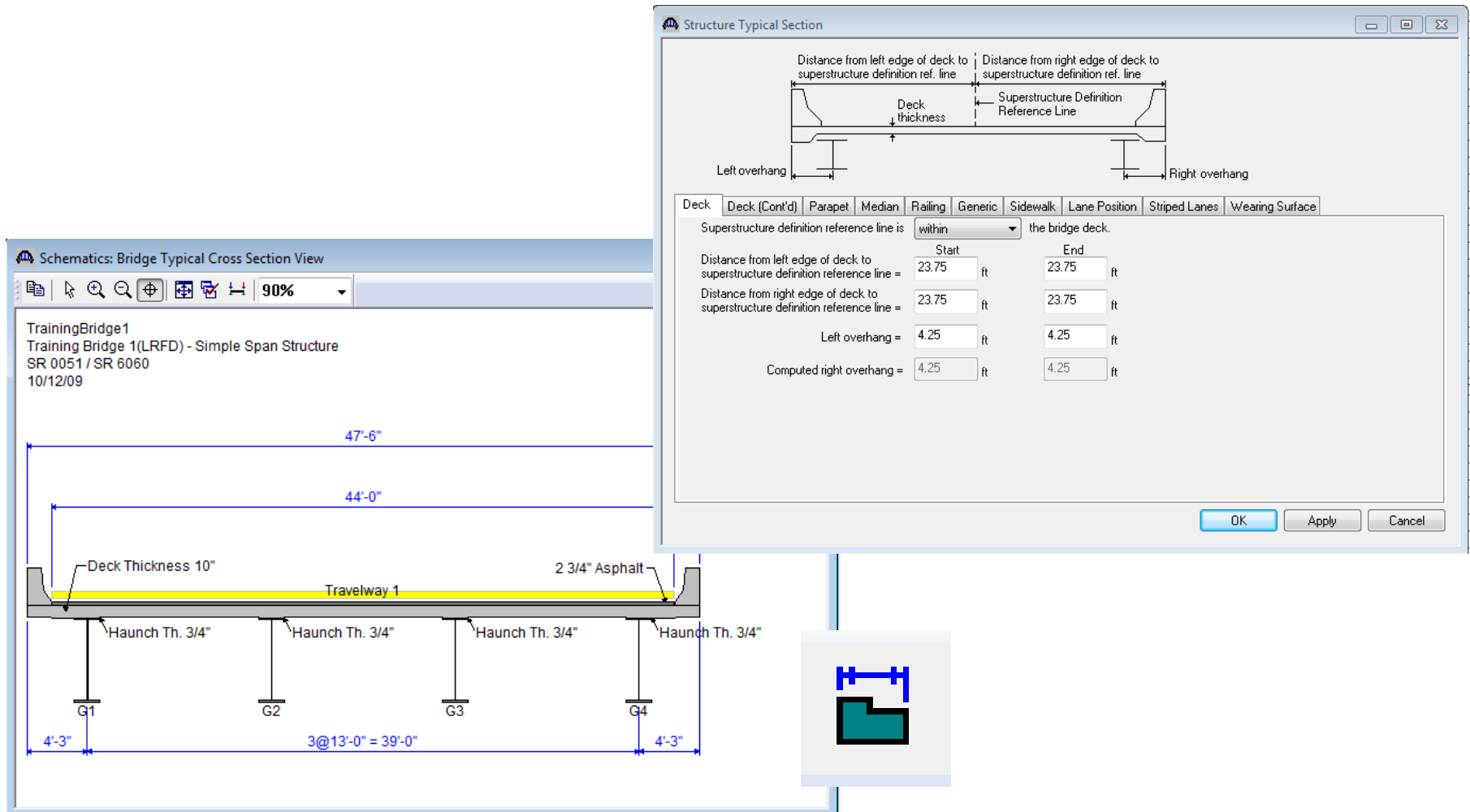


## Framing Plan Details

This section is used to define beam spacing, skew and diaphragm location and loads.

# BrR Load Rating Tools and Tips

## Structure Typical Section



## Structure Typical Section

This section is used to define cross section geometry and assign dead loads.

- **Deck: Geometry and Thickness - DC1**
- **Parapet (etc): Position Rail & Assign Load - DC1 or DC2**
- **Lane Position: Compute Travel Lanes**
- **Wearing Surface: Added concrete for overlay - WS**

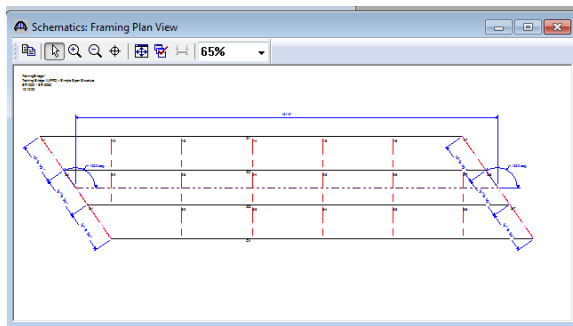
*Tip: Load rating model should include only what is on the bridge.  
Add values for wearing surface only if an overlay exists.*

# BrR Load Rating Tools and Tips

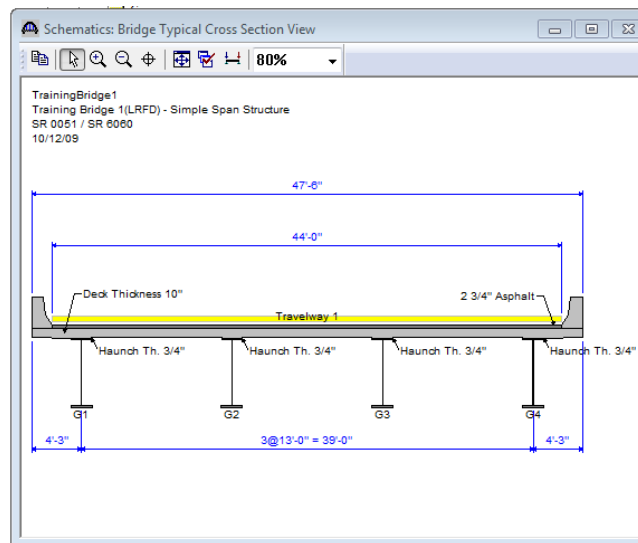
## View Schematic



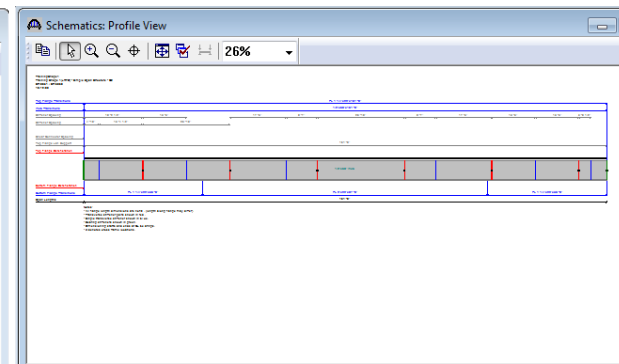
The BrR model should best represent the available plans and BIAS data. Use the View Schematic Icon as a quick check to confirm the model created matches the plans.



**Framing Plan**



**Structure Typical Section**



**Member Elevation**

## Member Loads

This section is used to apply member loads outside those defined in the typical section and the member self weight.

- **SIP Load:**

Add SIP member load if photos in BIAS show stay in place forms.

- **Parapet:**

At this time BrR distributes parapet loads evenly to all members. A member load could be used to evaluate 60/40 application.





# BrR Load Rating Tools and Tips



## Control Options

### ■ Steel:

**Allow plastic analysis for  
A36 and Grade 50**

The screenshot shows the 'Member Alternative Description' window with the 'Member Alternative' set to 'Plate Girder'. The 'Control Options' tab is active, displaying settings for four design methods: LRFD, LRFR, LFD, and ASD. Each method has a 'Points of Interest' section with checkboxes for generating points at tenths, section changes, user-defined points, and stiffeners. Other options include moment redistribution, Appendix A6 usage, plastic analysis, fatigue life evaluation, and reinforcement development length. The 'By POI' radio button is selected for LRFD, LRFR, and LFD, while 'By axle' is selected for ASD. In the ASD 'Points of Interest' section, the 'Generate at section change points' checkbox is highlighted with a blue selection box.

Member Alternative: Plate Girder

Description Specs Factors Engine Import Control Options

**LRFD**

- Points of Interest
  - ☒ Generate at tenth points
  - ☒ Generate at section change points
  - ☒ Generate at user-defined points
  - ☐ Generate at stiffeners
- ☐ Allow moment redistribution
- ☐ Use Appendix A6 for flexural resistance
- ☒ Allow plastic analysis
- ☐ Ignore long. reinf. in negative moment capacity
- ☐ Consider deck reinf. development length
- Distribution Factor Application Method
  - ☐ By axle
  - ☒ By POI

**LRFR**

- Points of Interest
  - ☒ Generate at tenth points
  - ☒ Generate at section change points
  - ☒ Generate at user-defined points
  - ☐ Generate at stiffeners
- ☐ Allow moment redistribution
- ☐ Use Appendix A6 for flexural resistance
- ☒ Allow plastic analysis
- ☐ Evaluate remaining fatigue life
- ☐ Ignore long. reinf. in negative moment capacity
- ☐ Include field splices in rating
- ☐ Consider deck reinf. development length
- Distribution Factor Application Method
  - ☐ By axle
  - ☒ By POI

**LFD**

- Points of Interest
  - ☒ Generate at tenth points
  - ☒ Generate at section change points
  - ☒ Generate at user-defined points
- ☐ Allow moment redistribution
- ☒ Allow plastic analysis of cover plates
- ☐ Include field splices in rating
- ☐ Include bearing stiffeners in rating
- ☒ Allow plastic analysis

**ASD**

- Points of Interest
  - ☒ Generate at tenth points
  - ☒ Generate at section change points
  - ☒ Generate at user-defined points
- ☐ Ignore long. reinf. in negative moment capacity
- ☐ Consider deck reinf. development length

# BrR Load Rating Tools and Tips



## Control Options

### ■ Prestress Concrete:

**LRFR use General Procedure**

**LFR Use current AASHTO for Shear Computation Method.**

The screenshot shows the 'Member Alternative Description' dialog box with the 'Control Options' tab selected. The 'Member Alternative' is 'PSC Beam #2'. The dialog is divided into three main sections: LRFD, LFR, and LRFR. Each section contains a list of options with checkboxes and radio buttons.

Member Alternative: PSC Beam #2

Description Specs Factors Engine Import Control Options

**LRFD**

- Points of Interest
  - ☒ Generate at tenth points except supports
  - ☒ Generate at support points
  - ☐ Generate at support face & critical shear po
  - ☒ Generate at section change points
  - ☒ Generate at user-defined points
- Shear Computation Method
  - ☐ Ignore
  - ☒ General Procedure
  - ☐ General Procedure - Appendix B5
  - ☐ Simplified Procedure
  - ☐ Simplified Procedure - Vci, Vcw
- Loss & Stress Calculations
  - ☒ Use gross section properties
  - ☐ Use transformed section properties

**LFR**

- Points of Interest
  - ☒ Generate at tenth points except supports
  - ☒ Generate at support points
  - ☐ Generate at support face & critical shear po
  - ☒ Generate at section change points
  - ☒ Generate at user-defined points
- Shear Computation Method
  - ☐ Ignore
  - ☒ General Procedure
  - ☐ General Procedure - Appendix B5
  - ☐ Simplified Procedure
  - ☐ Simplified Procedure - Vci, Vcw
- Loss & Stress Calculations
  - ☒ Use gross section properties
  - ☐ Use transformed section properties
- Multi-span analysis
  - ☒ Continuous
  - ☐ Continuous and Simple
- ☐ Ignore design & legal load shear
- ☐ Ignore permit load shear
- ☐ Consider legal load tensile concrete stress
- ☐ Consider splitting resistance article
- ☐ Ignore tensile rating in top of beam
- ☐ Consider deck reinf. development length
- ☐ Consider permit load tensile steel stress
- ☒ Ignore long. reinf. in rating
- Distribution Factor Application Method
  - ☐ By axle
  - ☒ By POI
- ☐ Allow negative epsilon in general shear method

# BrR Load Rating Tools and Tips



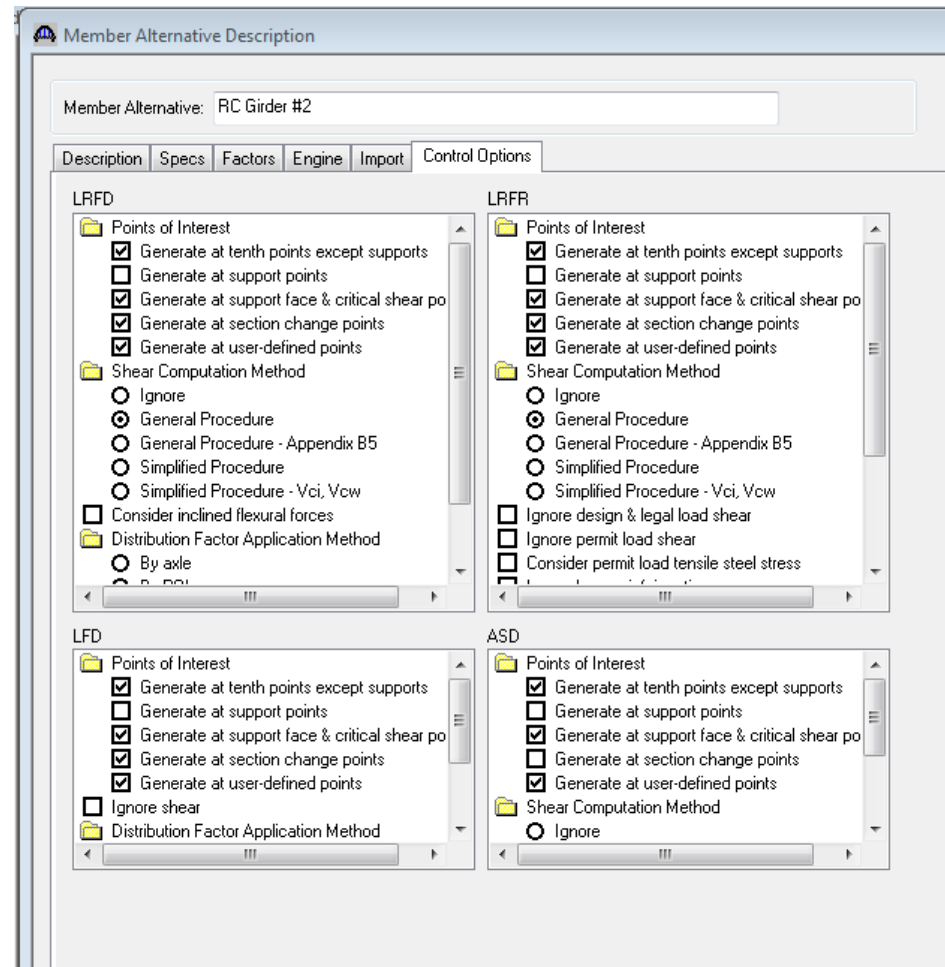
## Control Options

### ■ Single Span Concrete:

**Generate at 10<sup>th</sup> points  
except at supports**

**Generate at support face &  
critical shear points**

**Provide information for  
Effective Supports within  
model**



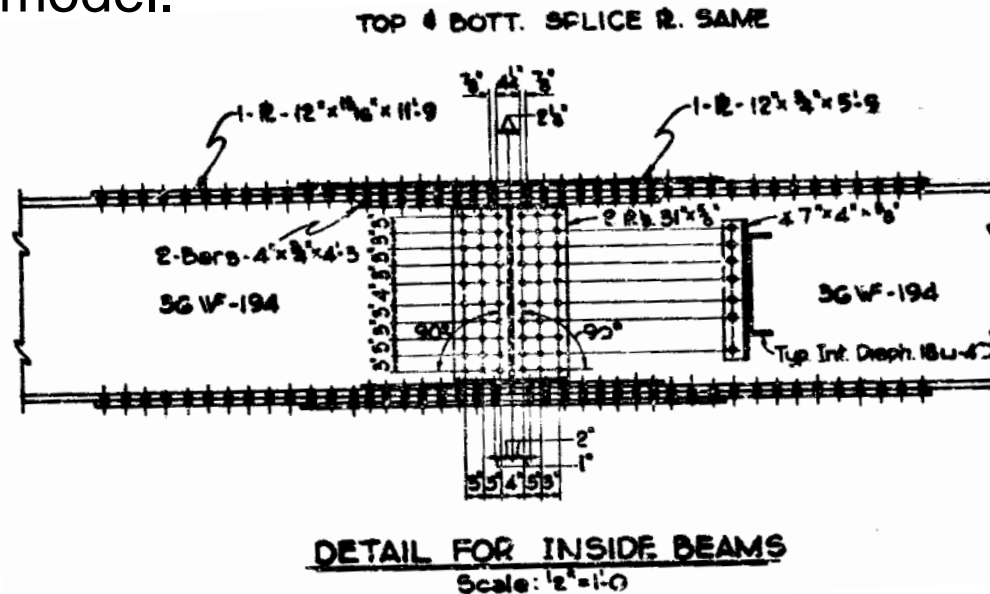
*Tip: Using this approach eliminates all checks over the support. This can be used for single span only when model produces low shear values over the supports.*

# BrR Load Rating Tools and Tips



# Steel Tips

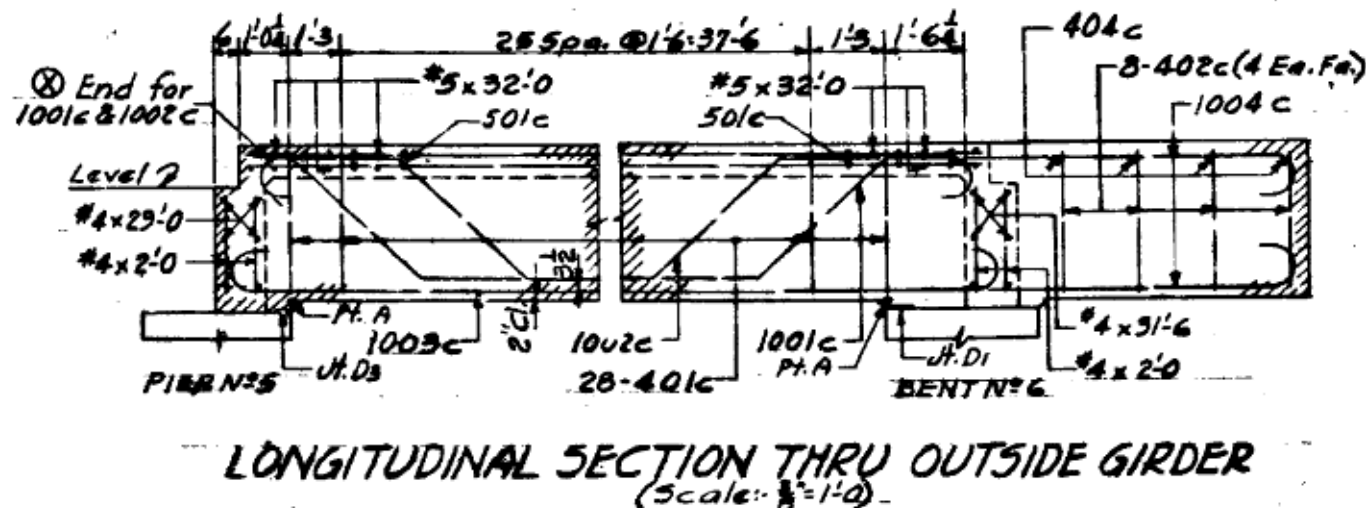
- **Equivalent Cover Plates:** Older structures may splice beams at the piers with cover plates extending beyond the splice limits. An equivalent cover plate, equal to the thickness in excess of the needed splice may be added to the model.



# BrR Load Rating Tools and Tips

## Concrete Tips

■ **Equivalent Stirrup Spacing:** Bent bars in reinforced concrete girders provide additional shear capacity as defined by AASHTO. BrR produces errors when modeling bent bars. An equivalent bar spacing can be computed for the typical shear reinforcement to provide added benefit of the bent bars.



# BrR Load Rating Tools and Tips

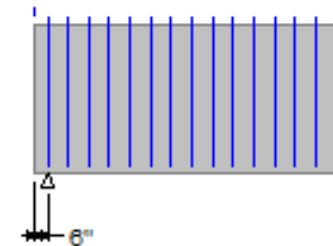
## Concrete Tips

- **Effective Supports:** Utilize effective supports when possible for single span analysis.
- **Shear Stirrup Ranges:** When defining stirrups, BrR does not place a stirrup at the start of a range.

Vertical **Horizontal**

Span: 1

| Name            | Extends into Deck                   | Start Distance (ft) | Number of Spaces | Spacing (in) | Length (ft) | End Distance (ft) |
|-----------------|-------------------------------------|---------------------|------------------|--------------|-------------|-------------------|
| #5 Shear Reinf. | <input checked="" type="checkbox"/> | 0.50                | 1                | 0.0000       | 0.00        | 0.50              |
| #5 Shear Reinf. | <input checked="" type="checkbox"/> | 0.50                | 131              | 10.0000      | 109.17      | 109.67            |



*The first line above locates the first stirrup, the second line places the rest of the stirrups in the series*

## Generating Output

## Generating Output

BrR has several options to generate output that can be used for comparison with other software and AASHTO

- **Review Input File**
- **View Analysis Results**
- **Report Tool**
- **Spec Check**
- **Analysis Charts**
- **Analysis Output**

*Tip: The model used to produce the HL-93 results in the following example is “TrainingBridge1”, which is included in the BrR installation.*

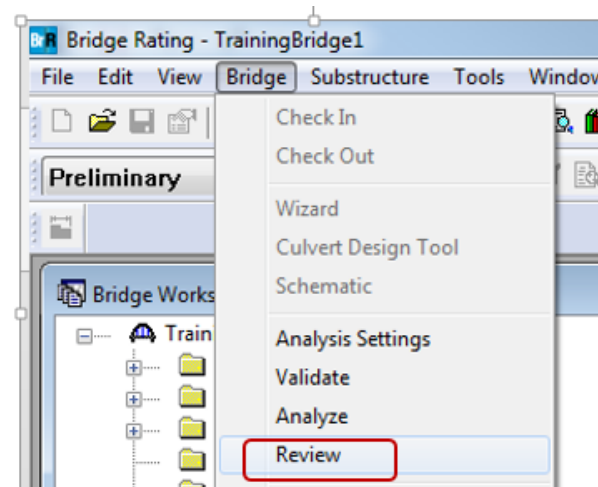
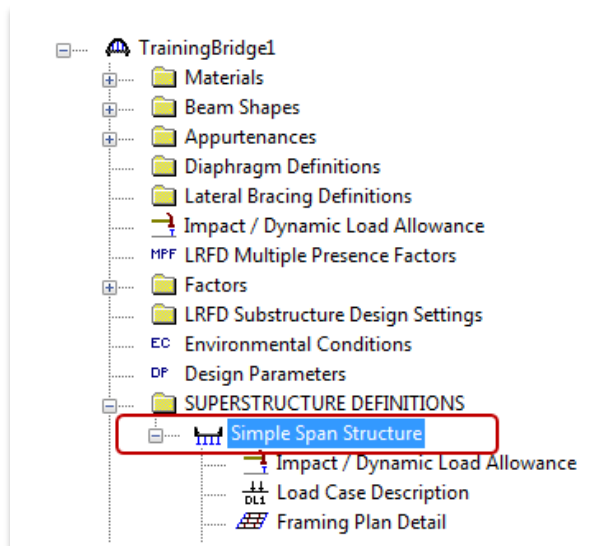


# BrR Load Rating Tools and Tips

## BrR Review Input File

To create a report of all input for review:

- **Select the Superstructure Definition to be reviewed**



- **Go to Bridge > Review**
- **Go to File > Print for pdf or hard copy of report**

# BrR Load Rating Tools and Tips



## BrR View Analysis Results



After performing a load rating analysis the View Analysis Results Icon produces an overview of the rating

- **Controlling Rating** (*HL-93 Inv = 0.477*)
- **Limiting Condition** (*Strength-I Steel Flexure Stress*)
- **Location** (*80.50 ft, or 50% of Span 1*)

Analysis Results - Plate Girder

Report Type  
Rating Results Summary

Lane/Impact Loading Type  
☒ As Requested ☐ Detailed

Display Format  
Multiple rating levels per row

| Live Load  | Live Load Type | Rating Method | Inventory Load Rating (Ton) | Operating Load Rating (Ton) | Legal Load Rating (Ton) | Permit Load Rating (Ton) | Inventory Rating Factor | Operating Rating Factor | Legal Rating Factor | Permit Rating Factor | Inventory Location (ft) | Inventory Location Span-(%) | Operating Location (ft) | Operating Location Span-(%) | Legal Location (ft) | Legal Location Span-(%) | Permit Location (ft) | Permit Location Span-(%) | Inventory Limit State           |
|------------|----------------|---------------|-----------------------------|-----------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------|----------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|---------------------|-------------------------|----------------------|--------------------------|---------------------------------|
| HL-93 (US) | Truck + Lane   | LRFR          | 17.17                       | 22.26                       |                         |                          | 0.477                   | 0.618                   |                     |                      | 80.50                   | 1 - ( 50.0)                 | 80.50                   | 1 - ( 50.0)                 |                     |                         |                      |                          | STRENGTH-I Steel Flexure Stress |
| HL-93 (US) | Tandem + Lane  | LRFR          | 20.37                       | 26.40                       |                         |                          | 0.566                   | 0.733                   |                     |                      | 80.50                   | 1 - ( 50.0)                 | 80.50                   | 1 - ( 50.0)                 |                     |                         |                      |                          | STRENGTH-I Steel Flexure Stress |

# BrR Load Rating Tools and Tips

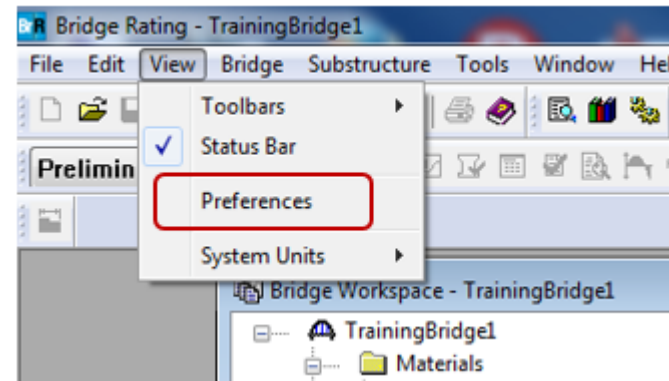
## BrR Report Tool



BrR Report Tools uses Internet Explorer to create reports.

Set up is required to use BrR's Report Tool icon.

### ■ Go to **VIEW > PREFERENCES**

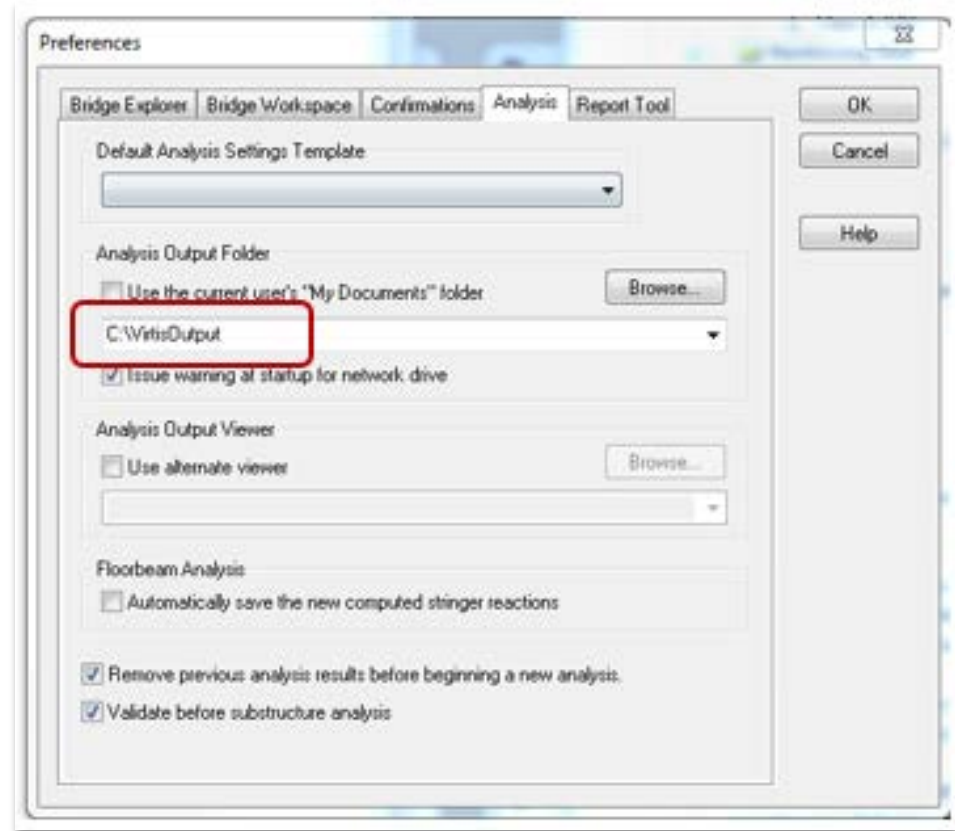


# BrR Load Rating Tools and Tips

## BrR Report Tool



- Go to ANALYSIS TAB
- Select BROWSE to pick a folder that has been created for storing output files.

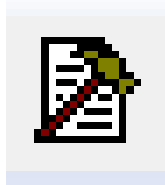


*Tip: Analysis is quicker if this folder resides on the local drive*

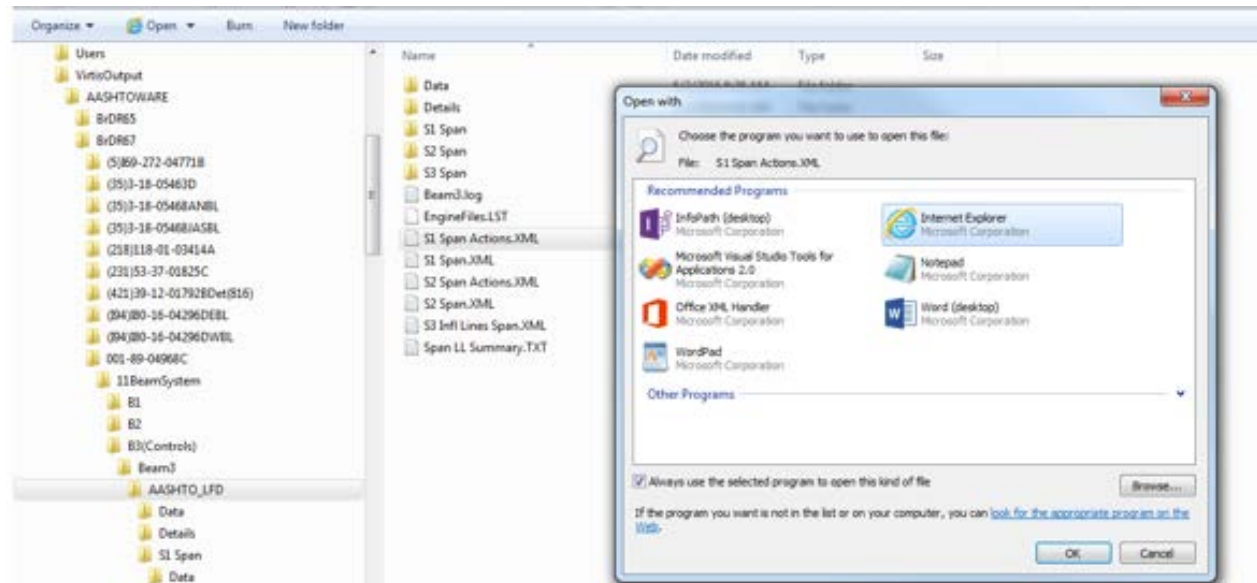
# BrR Load Rating Tools and Tips



## BrR Report Tool



- Go to Location of the Analysis Output Folder as defined
- Choose the “Default Program to Open With” to be Internet Explorer



*Tip: Every time a bridge is analyzed several reports are created. This folder can get to be quite large and take up a lot of space. Periodic file removal is recommended.*

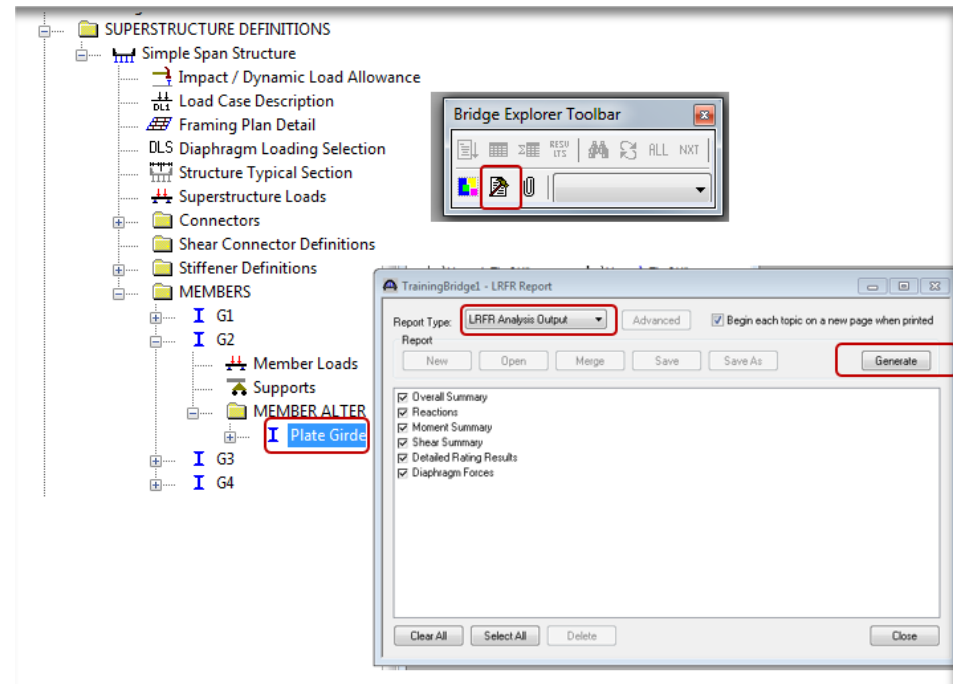
# BrR Load Rating Tools and Tips

## BrR Report Tool



After setup is complete, perform HL-93 LRFR analysis and use Report Tool Icon to generate report.

- Select Member in BrR Tree
- Select BrR Report Tool Icon
- Select Report Type
- Click “Generate” Button



# BrR Load Rating Tools and Tips



## BrR Report Tool



BrR will launch Internet Explorer and create a new tab for a report displaying load rating summary, reactions, moments, shears and detailed rating results at requested locations.

Report by Action: ☒ Flexure ☐ Shear ☐ Overload ☐ Critical

Detailed Rating Results  
Plate Girder  
HL-93 (US)  
Truck + Lane  
Impact: As Requested  
Lane: As Requested

Span 1

| Location (ft) | Percent | Limit State | Units | Capacity | DL + Adj-LL* | LL    | Inventory Rating Factor | Inventory Load Rating (Ton) | Operating Rating Factor | Operating Load Rating (Ton) |
|---------------|---------|-------------|-------|----------|--------------|-------|-------------------------|-----------------------------|-------------------------|-----------------------------|
| 0.00          | 0.0     | Flexure     | KSI   | -50.00   | -0.00        | -0.00 | 99.000                  | 3564.00                     | 99.000                  | 3564.00                     |
| 16.10         | 10.0    | Flexure     | KSI   | 50.00    | 15.58        | 6.76  | 2.548                   | 91.74                       | 3.304                   | 118.93                      |
| 32.20         | 20.0    | Flexure     | KSI   | 50.00    | 27.74        | 11.96 | 0.702                   | 25.26                       | 0.910                   | 32.75                       |
| 48.30         | 30.0    | Flexure     | KSI   | 50.00    | 25.78        | 11.08 | 0.887                   | 31.92                       | 1.149                   | 41.37                       |
| 64.40         | 40.0    | Flexure     | KSI   | 50.00    | 29.48        | 12.61 | 0.565                   | 20.35                       | 0.733                   | 26.38                       |
| 80.50         | 50.0    | Flexure     | KSI   | 50.00    | 30.71        | 13.06 | 0.477                   | 17.17                       | 0.618                   | 22.26                       |
| 96.60         | 60.0    | Flexure     | KSI   | 50.00    | 29.48        | 12.61 | 0.565                   | 20.35                       | 0.733                   | 26.38                       |
| 112.70        | 70.0    | Flexure     | KSI   | 50.00    | 25.78        | 11.08 | 0.887                   | 31.92                       | 1.149                   | 41.37                       |
| 128.80        | 80.0    | Flexure     | KSI   | 50.00    | 27.74        | 11.96 | 0.702                   | 25.26                       | 0.910                   | 32.75                       |
| 144.90        | 90.0    | Flexure     | KSI   | 50.00    | 15.58        | 6.76  | 2.548                   | 91.74                       | 3.304                   | 118.93                      |
| 161.00        | 100.0   | Flexure     | KSI   | -50.00   | -0.00        | -0.00 | 99.000                  | 3564.00                     | 99.000                  | 3564.00                     |

*Tip: Check boxes in the report are helpful to isolate controlling condition.*

# BrR Load Rating Tools and Tips



## BrR View Spec Check



After the controlling location and condition is identified, use the View Spec Check icon to identify the limiting AASHTO Code reference.

| Specification Reference   | Limit State | Flex. Sense | Pass/Fail      |
|---|-------------|-------------|----------------|
| 5.4.2.6 Modulus of Rupture  |             | N/A         | General Comp.  |
| 6.10.1.1.1b Stresses for Sections in Positive Flexure                       |             | N/A         | General Comp.  |
| 6.10.1.10.1 Hybrid Factor, Rh   |             | N/A         | General Comp.  |
| 6.10.1.10.2 Web Load-Shedding Factor, Rb                                    |             | N/A         | General Comp.  |
| 6.10.1.6 Flange Stress and Member Bending Moments                           |             | N/A         | Passed         |
| 6.10.1.7 Minimum Negative Flexure Concrete Deck Reinforcement               |             | N/A         | Passed         |
| 6.10.1.9.1 Webs without Longitudinal Stiffeners                             |             | N/A         | General Comp.  |
| 6.10.11.1.2 Transverse Stiffeners - Projecting Width                        |             | N/A         | Passed         |
| 6.10.11.1.3 Transverse Stiffeners - Moment of Inertia                       |             | N/A         | Passed         |
| 6.10.2 Cross-Section Proportion Limits                                      |             | N/A         | Passed         |
| 6.10.4.2.2 Flexure  |             | N/A         | Failed         |
| 6.10.6.2.2 Composite Sections in Positive Flexure                           |             | N/A         | General Comp.  |
| 6.10.6.2.3 Composite Sections in Negative Flexure and Noncomposite Sections |             | N/A         | General Comp.  |
| NA 6.10.7.1.1 General   |             | N/A         | Not Applicable |
| NA 6.10.7.1.2 Nominal Flexural Resistance                                   |             | N/A         | Not Applicable |
| 6.10.7.2.1 General  |             | N/A         | Failed         |
| 6.10.7.2.2 Nominal Flexural Resistance                                      |             | N/A         | General Comp.  |
| 6.10.7.3 Flexural Resistance - Ductility Requirement                        |             | N/A         | Passed         |

*Tip: Select individual Specification References and dial in to additional detailed computations.*



# BrR Load Rating Tools and Tips

## BrR View Spec Check



Spec Check 6A.4.2.1: Steel Flexure Stress General, shows that the HL-93 Inventory rating is controlled by stress in the bottom flange.

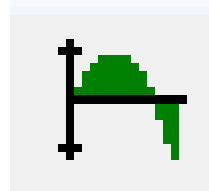
Spec Check Detail for 6A.4.2.1 General Load Rating Equation - Steel Flexure Stress

Component: Bot Flange

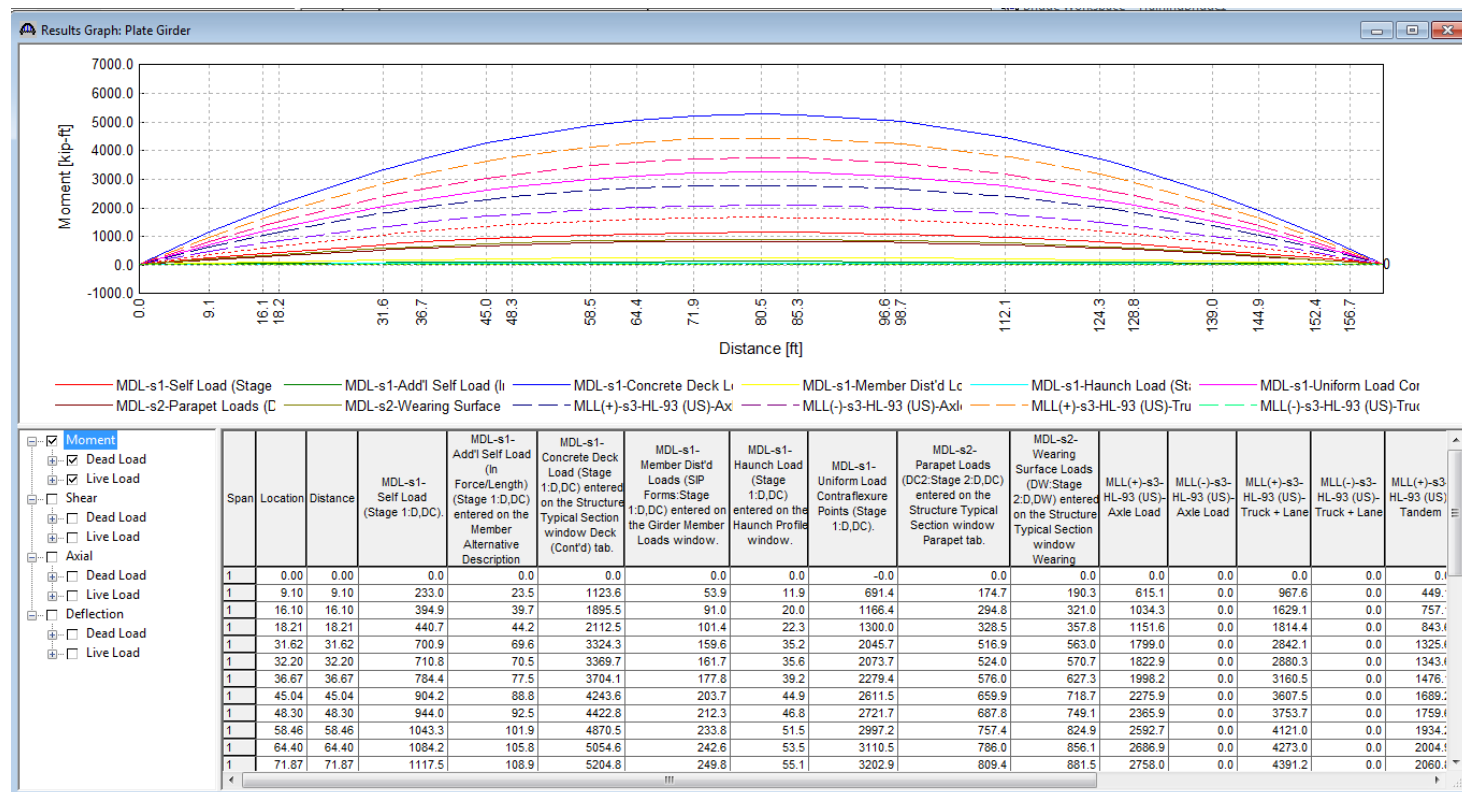
| Load      | Load Combo | Limit State | Flexure Type | LL (kip-ft) | Adj. LL (kip-ft) | DC   | DW   | DW-MS | LL   | FDL (ksi) | FDW (ksi) | FDW-MS (ksi) | FL (ksi) | Phi  | FR (ksi) | Phi   | FR  | RF     | Capacity (Ton) |
|-----------|------------|-------------|--------------|-------------|------------------|------|------|-------|------|-----------|-----------|--------------|----------|------|----------|-------|-----|--------|----------------|
| DesignInv | 1          | STR-I       | Pos          | 4426.3      | ---              | 1.25 | 1.50 | 1.50  | 1.75 | 27.90     | 2.81      | 0.00         | 13.06    | 0.00 | 1.00     | 50.00 | --- | 0.477  | 17.17          |
| DesignInv | 1          | STR-2       | Pos          | 0.0         | ---              | 1.25 | 1.50 | 1.50  | 1.75 | 27.90     | 2.81      | 0.00         | 0.00     | 0.00 | 1.00     | 50.00 | --- | 0.618  | 22.26          |
| DesignOp  | 1          | STR-I       | Pos          | 0.0         | ---              | 1.25 | 1.50 | 1.50  | 1.35 | 27.90     | 2.81      | 0.00         | 0.00     | 0.00 | 1.00     | 50.00 | --- | 99.000 | 3564.00        |
| DesignInv | 2          | STR-I       | Pos          | 3731.7      | ---              | 1.25 | 1.50 | 1.50  | 1.75 | 27.90     | 2.81      | 0.00         | 11.01    | 0.00 | 1.00     | 50.00 | --- | 0.566  | 20.37          |
| DesignInv | 2          | STR-I       | Pos          | 0.0         | ---              | 1.25 | 1.50 | 1.50  | 1.75 | 27.90     | 2.81      | 0.00         | 0.00     | 0.00 | 1.00     | 50.00 | --- | 99.000 | 3564.00        |
| DesignOp  | 2          | STR-I       | Pos          | 3731.7      | ---              | 1.25 | 1.50 | 1.50  | 1.35 | 27.90     | 2.81      | 0.00         | 11.01    | 0.00 | 1.00     | 50.00 | --- | 0.733  | 26.40          |
| DesignOp  | 2          | STR-I       | Pos          | 0.0         | ---              | 1.25 | 1.50 | 1.50  | 1.35 | 27.90     | 2.81      | 0.00         | 0.00     | 0.00 | 1.00     | 50.00 | --- | 99.000 | 3564.00        |

# BrR Load Rating Tools and Tips

## BrR View Analysis Charts



Data from analysis charts can be cut and pasted into MS Excel.



# BrR Load Rating Tools and Tips

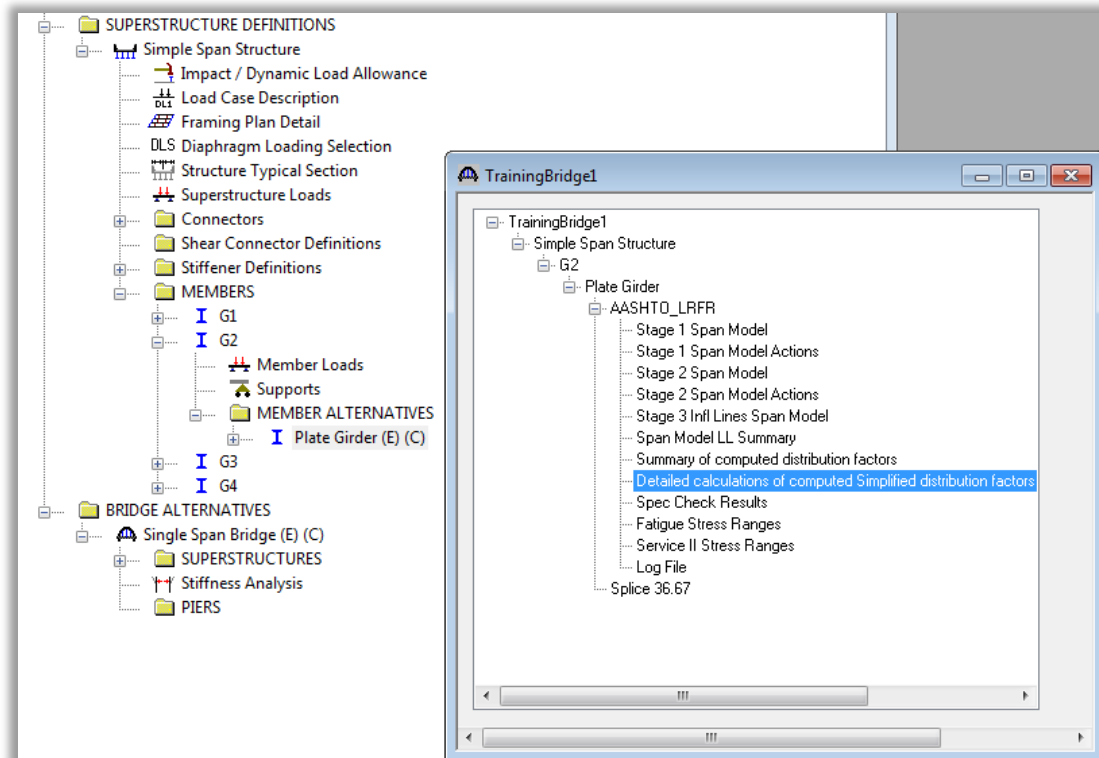


## BrR View Analysis Output



Several of the reports using this icon are generated using Internet Explorer. Options will vary based on structure type.

*Tip: The Log File created contains the same information produced during analysis. This can be helpful when trying to identify run-time errors.*



## Help and Technical Support

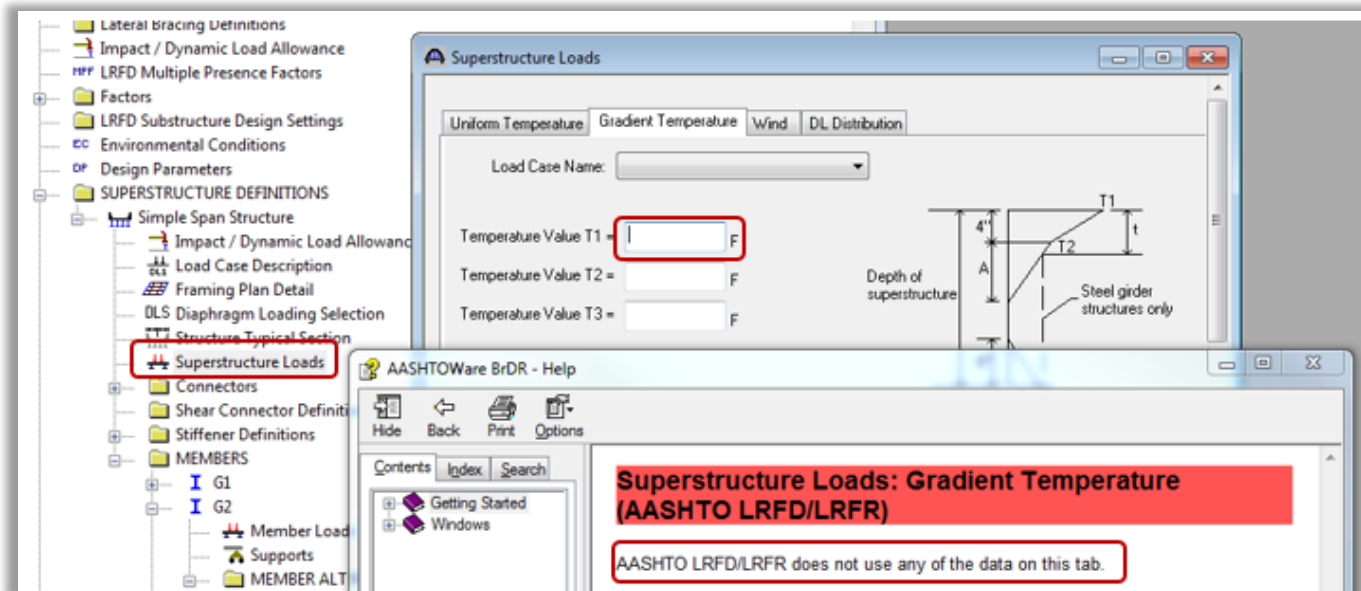
# BrR Load Rating Tools and Tips



## BrR Help



Set Engine Help Configuration to the appropriate AASHTO Code. When questions arise, place cursor in the field in question and click the Help Icon. BrR will provide information on the specific field in question. To determine if the field is used in BrR, select “Engine Related Help”.



# BrR Load Rating Tools and Tips



## Help and Technical Support

The website for AASHTOWare Support contains a lot of helpful information

<https://aashto.mbakercorp.com/Pages/Support.aspx>

- **Technical Notes**
- **Downloads for Service Pack Releases**
- **Tutorials**
- **JIRA Support**
- **email Support**

*Tip: Subscribe to the End-user Mailing List-eNotifications to receive Technical Notes and Service Pack Releases.*








# BrR Load Rating Tools and Tips

## Tutorials

Training tutorials on the AASHTOWare Support site include xmls that can be imported into BrR and pdfs for guidance.

### Training

### Tutorials

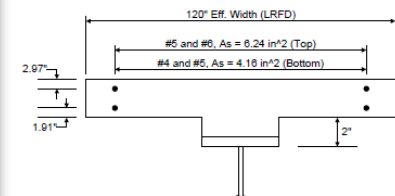
| <input type="checkbox"/>  | Type | Name  | File Size | File Date |
|---|------|---|-----------|-----------|
| Category : Steel (23)   |      |   |           |           |
|   |      | <a href="#">STL11 - Steel Plate Girder</a>                | 694 KB    | 8/26/2016 |
|  |      | <a href="#">STL11 - Steel Plate Girder</a>                | 443 KB    | 8/9/2016  |
|  |      | <a href="#">STL2 - Two Span Plate Girder</a>              | 994 KB    | 7/28/2016 |
|  |      | <a href="#">STL2 - Two Span Plate Girder</a>              | 500 KB    | 7/28/2016 |
|  |      | <a href="#">STL3 - Splice</a>                             | 652 KB    | 8/26/2016 |
|  |      | <a href="#">STL4 - Simple Span Plate Girder with Loss</a> | 278 KB    | 7/28/2016 |
|  |      | <a href="#">STL4 - Simple Span Plate Girder with Loss</a> | 552 KB    | 7/28/2016 |

AASHTOWare BrR 6.8

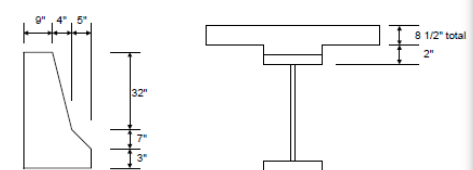
### Steel Tutorial

Steel Plate Girder Using LRFR Engine

STL11 - Steel Plate Girder



Composite Section at Pier



Weight = 536 pif

Parapet Detail

Haunch Detail

## JIRA Support

All licensed users have read only access to open and resolved issues with BrR and BrD.

- **Keyword searchable**
- **Priority for resolution**
- **Potential work around**
- **Issues to be resolved in upcoming releases**

*Tip: Select JIRA Support Center link on website to access JIRA Support. Use username: brd and password: brr*



# BrR Load Rating Tools and Tips



## email Support

If the technical notes, tutorials and JIRA Support don't provide a solution, support questions may be emailed to:

[BrDR@mbakerintl.com](mailto:BrDR@mbakerintl.com)

Special Consultant/Agency License and Agency Sponsored Consultant License includes limited support for installation issues only. Primary technical support must go through the sponsoring agency.

***Tip: AASHTOWare will only respond to email support requests if INDOT is cc'd.***

# BrR Load Rating Tools and Tips



## RADBUG Meeting

*(Rating And Design Bridge User Group)*

Annual Meeting first week in August

<http://aashtobr.org/>

A link to all presentations since the 2010 Annual RADBUG meeting can be found on the website. Including Fundamentals Workshop tutorial, Library Training and guidance from other DOTs facing the same Federal mandates.

# Thank You!

For additional questions, please contact:

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