Collect Information
BrR County Rating Example

Existing Plans

Beam Size
Span Length
Out-to-Out Coping
BrR County Rating Example

Inspection Notes

• Confirm Plans
  Beam Size
  Span Length
  Out-to-Out Coping

• Note Deterioration
# BIAS Data

## AGE OF SERVICE

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>27.</td>
<td>Year Built:</td>
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## GEOMETRIC DATA

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<table>
<thead>
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<tr>
<td>48.</td>
<td>Maximum Span Length:</td>
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<tr>
<td>50A.</td>
<td>Sidewalk/Curb Left:</td>
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<tr>
<td>34.</td>
<td>Skew:</td>
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BrR County Rating Example

Box Beam Standard Drawings

- **Material Properties from Bridge Standard PB6**
  - **Prestressed Concrete**
    - $f'_{ci} = 4000$ psi
    - $f'_{c} = 5000$ psi
  - **Prestressing Strands**
    - 7 Wire Stress Relieved
    - 250,000 psi or 270,000 psi
  - **Interior Diaphragm Locations**
BrR County Rating Example

Interior Beams 33”x45”x73’ Non-Composite
Assume B-33 3-9
Prestressed Non-Composite Box Beam 3’-9” Wide
Bridge Standard PB 7A
Exterior Beams 33”x48”x 73’ Composite
Assume CB-33
Prestressed Non-Composite Box Beam 4’-0” Wide
Bridge Standard PB 9A
Build BrR Model
Bridge Description

- Bridge ID = BIAS Asset Name
- NBI = BIAS Asset Code
- Description should include:
  - Name of individual responsible for the load rating
  - Name of individual responsible for review
  - Dates for each of the above
BrR County Rating Example

Define Materials

Start by copying materials from Library and make adjustments as needed.
Define Beam Shapes

Build beams with dimensions that match the standard drawings
Rehab plans call out 2’-9” bridge rail each side.
Create Superstructure Definition

- Girder System Superstructure
- Girder Line Superstructure
- Floor System Superstructure
- Floor Line Superstructure
- Truss System Superstructure
- Truss Line Superstructure
- Reinforced Concrete Slab System Superstructure
- Concrete Multi-Cell Box Superstructure
Create Load Cases

Start by adding Default Load Case Descriptions delete the ones not used.
BrR County Rating Example

Create Framing Plan

View Schematic icon provides a graphic of the structure to compare with plans/sketches
Create Structure Typical Section

BrR uses information in this dialog box to calculate dead loads.
Define Concrete Stress Limits & Strand Properties
Build Individual Members
BrR County Rating Example

Select Control Options

Generate at 10\textsuperscript{th} points except at supports

Generate at support face & critical shear points

Provide information for Effective Supports within model
Calculate Live Load Distribution Factor

BrR uses beam information and bridge geometry to compute LLD factors. This does not automatically update when revisions are made to the model.
Assign Beam Details

Assign previously defined materials to individual beams
BrR County Rating Example

Layout Strands
Deck profile is used to calculate effective flange width and not dead loads
Define Shear Reinforcement Ranges
Perform Load Rating
Define Analysis Settings and Perform Rating

Highlight Beam (or System) and select Analyze Icon to perform load rating.

Select Analysis Settings icon to select rating method and vehicles to rate.
BrR County Rating Example

BrR View Analysis Results

- **Controlling Rating** \((HS20\ Inv = 1.210)\)
- **Limiting Condition** \((Design\ Flexure - Concrete)\)
- **Location** \((36.17\ ft, \ or\ 50\%\ of\ Span\ 1)\)
After the controlling location and condition is identified, use the View Spec Check icon to identify the limiting AASHTO Code reference.

Tip: Select individual Specification References and dial in to additional detailed computations.
Thank You!

For additional questions, please contact:

Jennifer Hart
O: 317-895-2585
E: Jennifer.hart@ucindy.com

1625 N Post Rd
Indianapolis, IN 46219
www.ucindy.com