



BrDR 7.7 & 7.8 New Features Training

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About



Bridge Design & Rating

Version 7.7.1.3001

Build date Jan 30 2026

BrDR 7.7 Features

Released in October 2025. Patched in February 2026

7.7 Enhancements

- Section 508 Compliance
- Turn Off Notification Beep

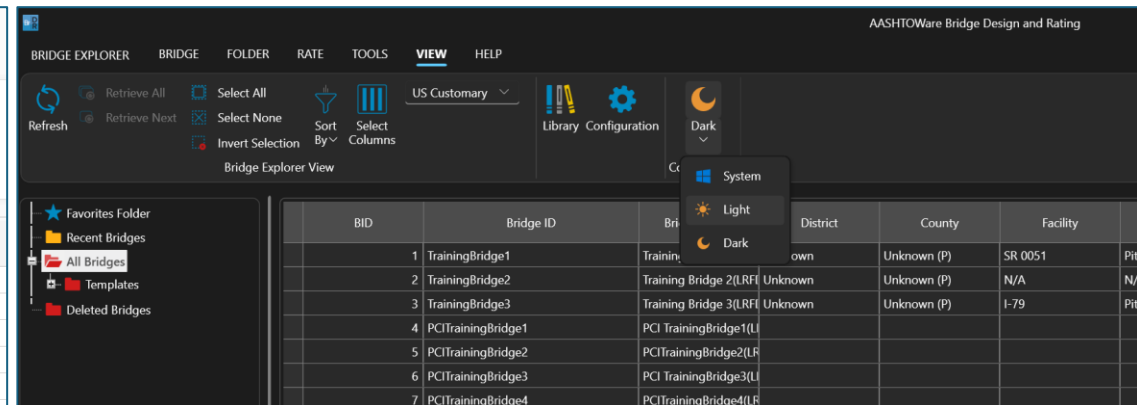
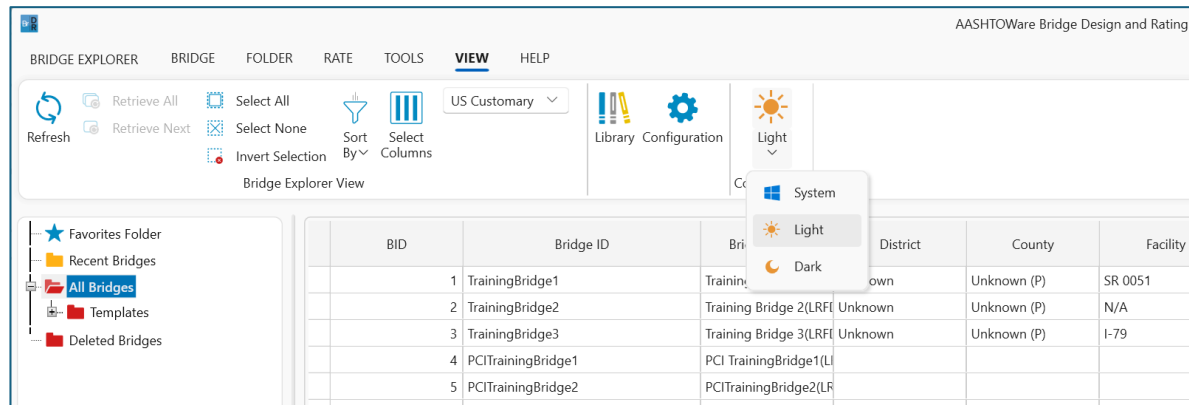
Section 508 Compliance: Tools Impacted

- BrDR
- Prestressed Design Tool
- Steel Design Tool
- Migration Wizard



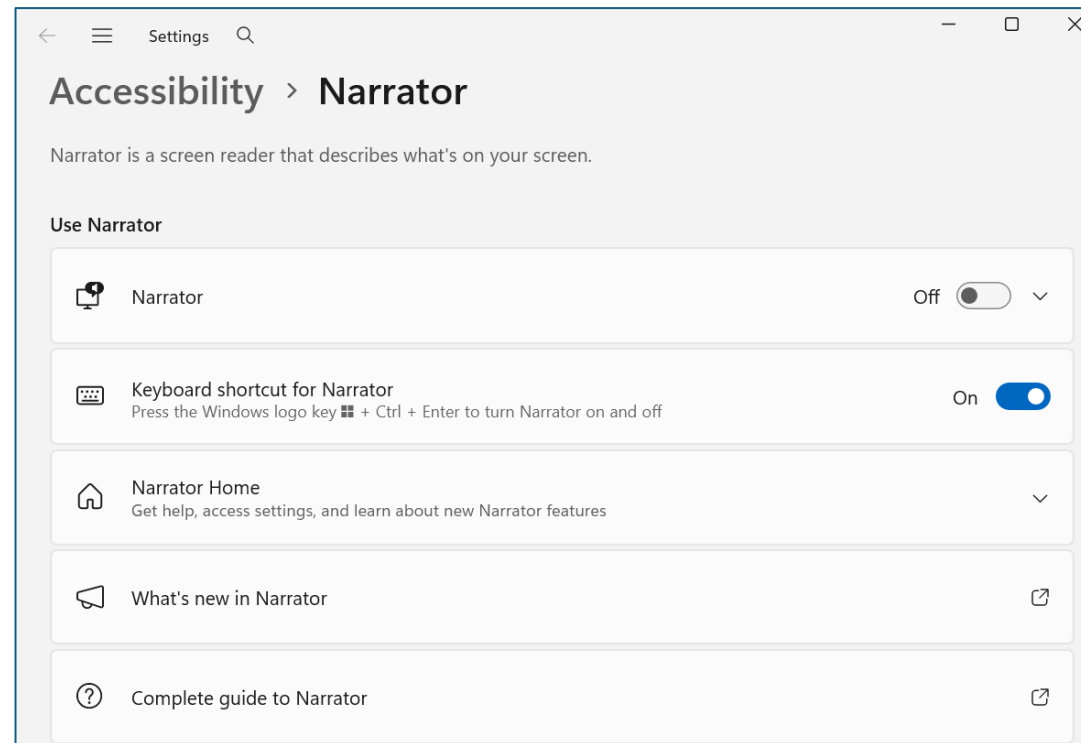
Section 508 Compliance: High Contrast Mode

- Themes
 - System (Left Alt + Left Shift + Print Screen)
 - Light
 - Dark



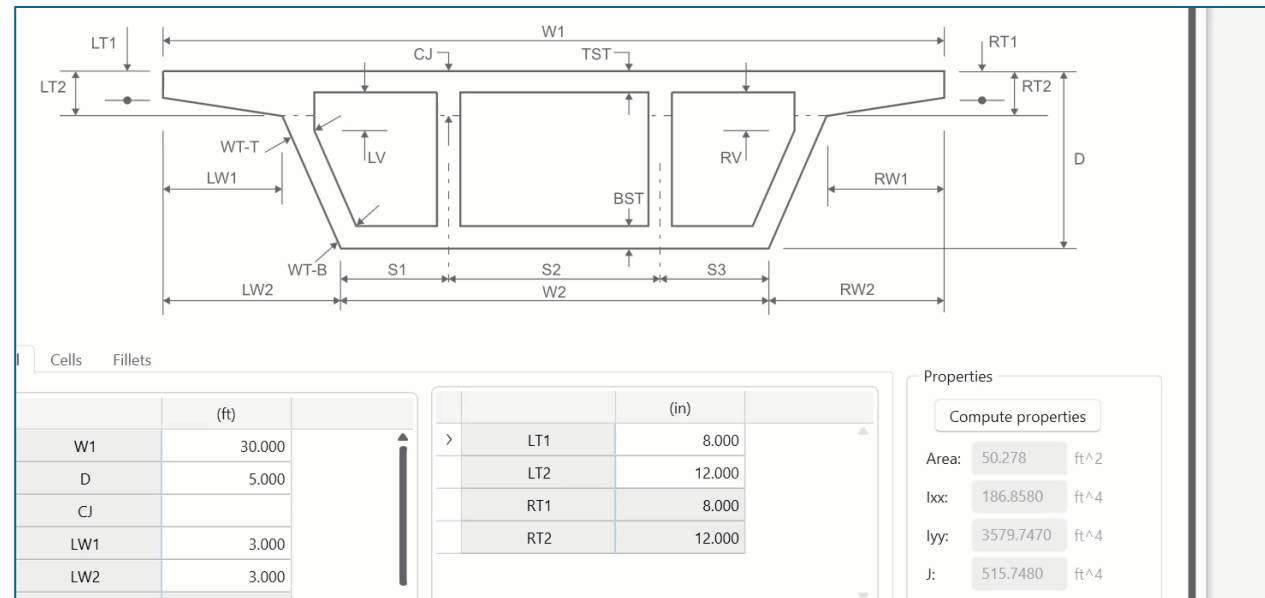
Section 508 Compliance: Screen Narrator

- Support for Windows or third-party narrator



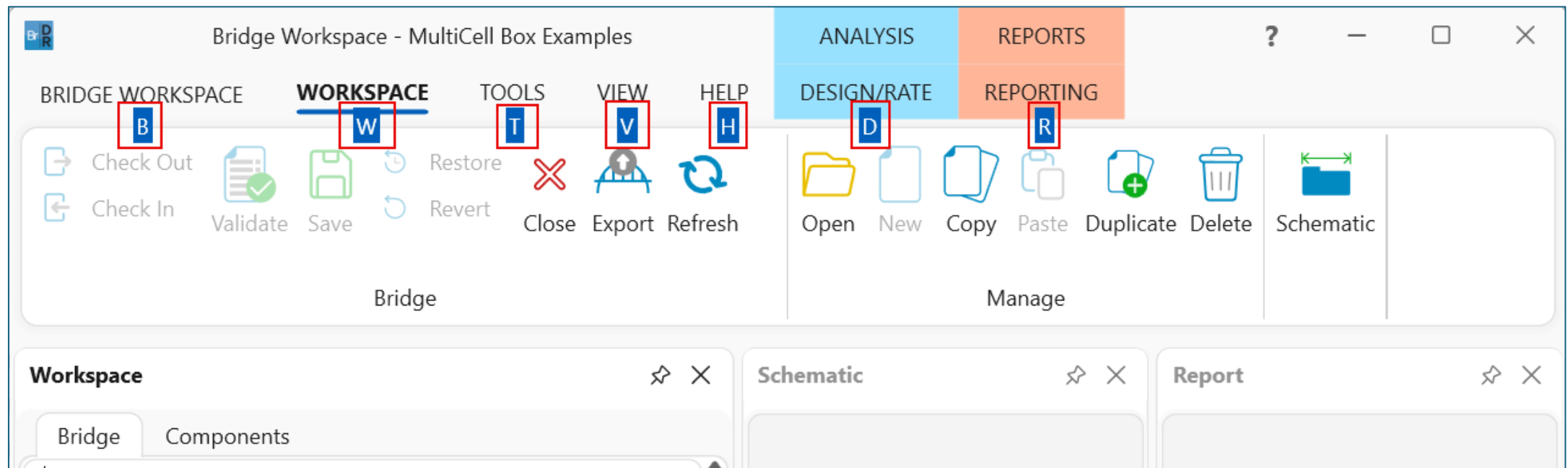
Section 508 Compliance: SVG Integration

- Windows bitmap converted to SVG (Scalable Vector Graphics)
- Images scale with windows scaling
- Not for schematics (Framing Plan etc.)



Section 508 Compliance: Keyboard Shortcuts

- Enhanced keyboard accessibility
- Press Alt to activate



Turn Off Notification Beep

- Bridge Explorer->Preference->Analysis tab
 - Disable analysis notification sound
 - Enabled by default

- ☐ Remove previous analysis results before beginning a new analysis
- ☒ Validate before substructure analysis
- ☐ Enable analysis option for line girder analysis
- ☒ Enable analysis notification sound

About



Bridge Design & Rating

Version 7.8.0.3001

Build date Jul 17 2026

122439

BrDR 7.8 Features

Released in July 2026

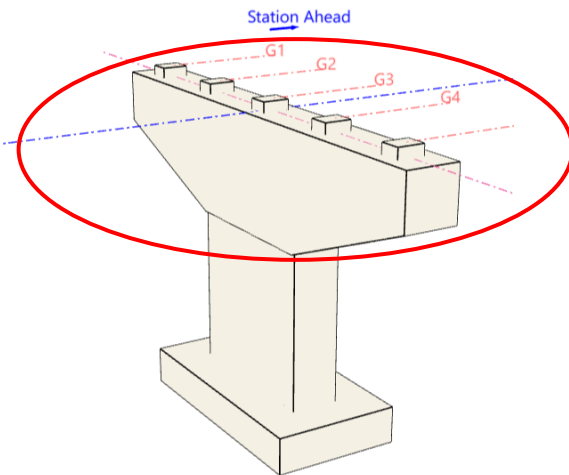
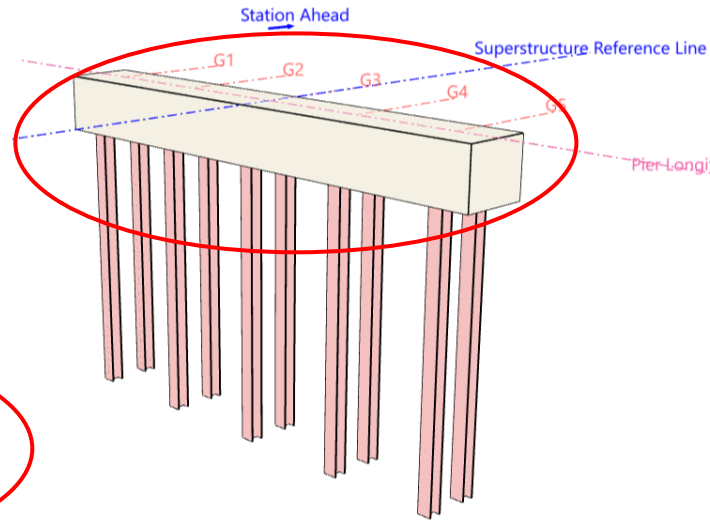
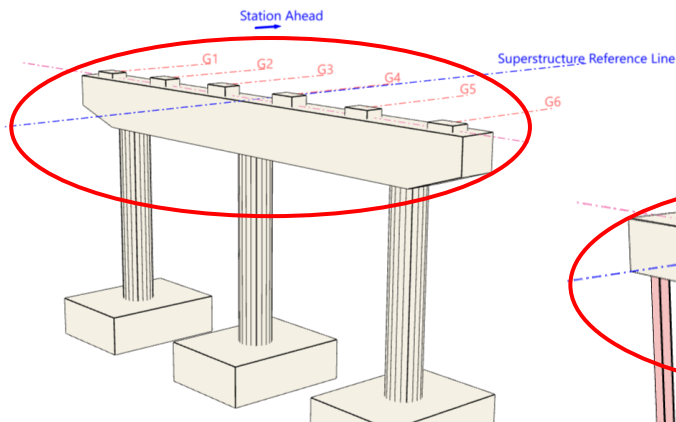
7.8 Enhancements

- Reinforced Concrete Pier Cap LRFR Rating
- Next Generation Report Tool Phase 2
- Data Exchange With BrM 7.1
- Memory Usage and Data Management Improvements
- Rating Summary Improvements

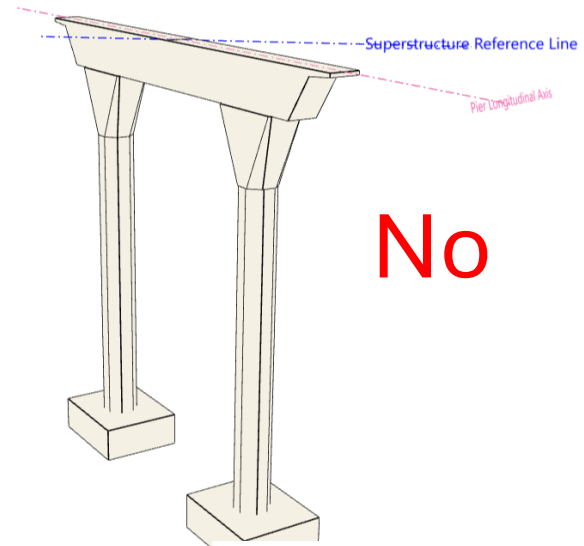
Reinforced Concrete Pier Cap LRFR Rating

- Included Structures
- Analysis
- Loads
- Control Options
- Reinforcement Definitions
- Pier Association
- Model Generation Settings
- User Defined POIs
- Hexagonal Pier Columns
- Deterioration

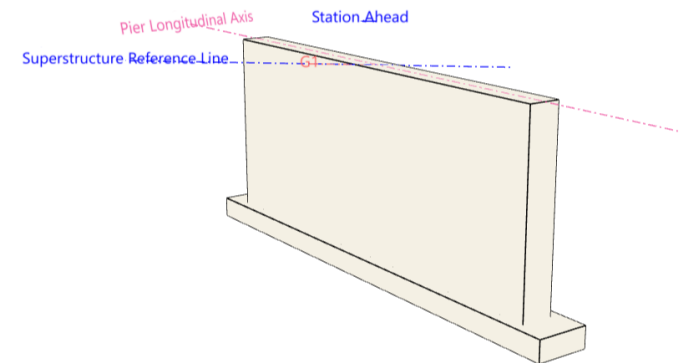
Pier Cap Rating - Included Structures



Yes

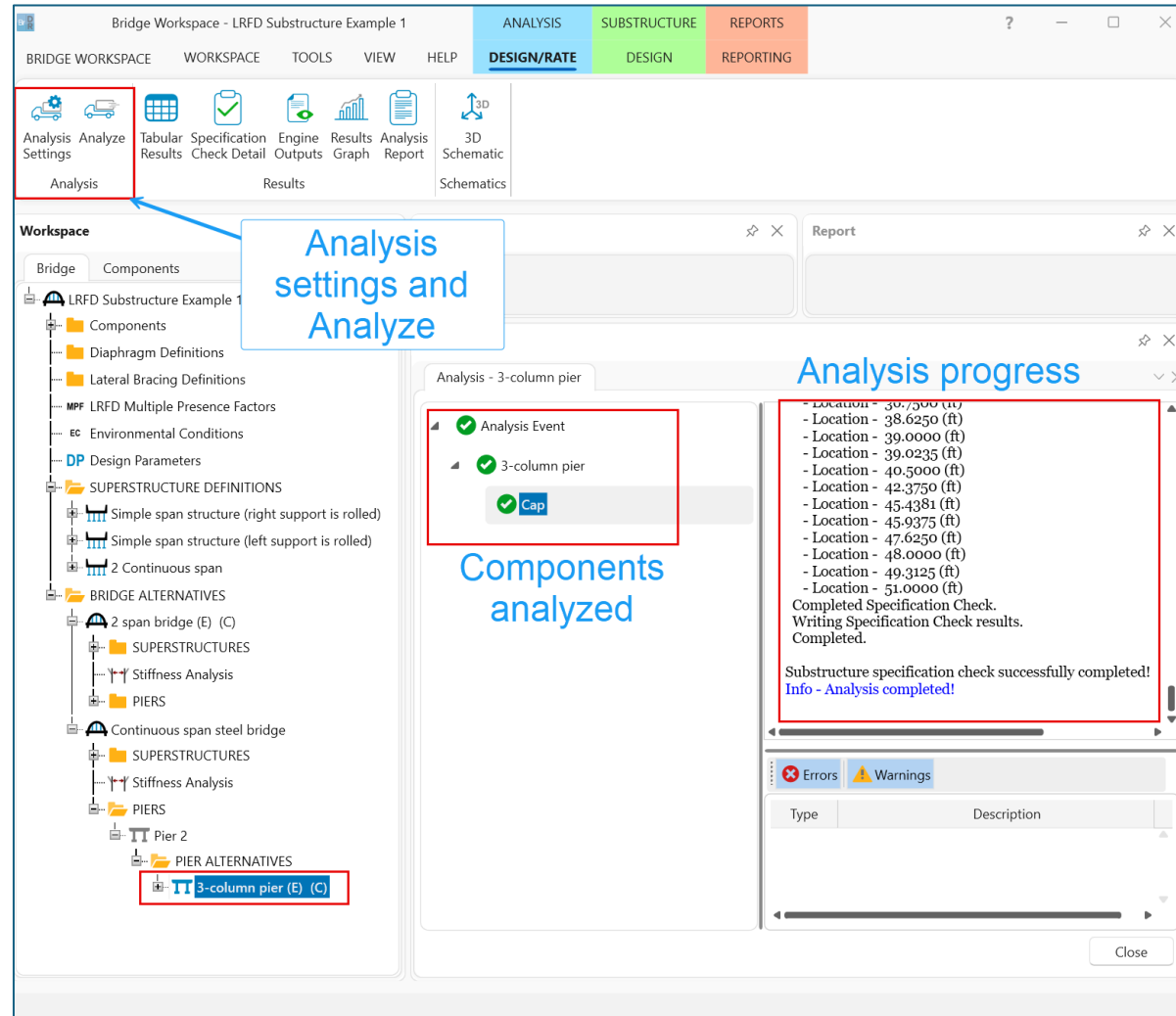


No



Pier Cap Rating - Analysis

- Vehicles set in Analysis Settings window



Pier Cap Rating - Loads

- AASHTO MBE: “...load rating of substructure elements ... should be done using all permanent loads and loads due to braking and centrifugal forces but neglecting other transient loads such as wind or temperature.”

Load factors

Legal loads

Permit loads

Concrete

Steel

Wood

Aluminum

Buried structures

Specifications

Bridge type:

Reinforced-Concrete Substructure

Limit state	Dead load				Design load				CE	BR	WA	SH	CR	EH active		EH at-rest		Vehicle			
					Inventory	Operating	Legal load	Permit load										Consider			
	DC Max	DC Min	DW Max	DW Min	LL	LL	LL	LL						Max	Min	Max	Min	Inv	Op	Legal	Permit
STRENGTH I	1.250	0.900	1.500	0.650	1.750	1.350	Table 6A.4....		*	*	1.000	0.500	0.500	1.500	0.900	1.350	0.900	☒	☒	☒	☐
STRENGTH II	1.250	0.900	1.500	0.650	1.750		Table 6A.4....	**	**	1.000	0.500	0.500	1.500	0.900	1.350	0.900	☐	☐	☐	☒	
SERVICE I	1.000	1.000	1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	☐	☐	☐	☒

Pier Cap Rating – Control Options

- Control options added to Pier Alternative window
- LRFD and LRFR

The screenshot displays the 'Control options' tab within the 'Pier Alternative' window. It compares settings for two design methods: LRFD (Left) and LRFR (Right).

LRFD Control Options:

- Points of interest:**
 - ☒ Generate at tenth points except supports
 - ☐ Generate at support points
 - ☒ Generate at support face & critical shear points
 - ☐ Generate at section change points
 - ☒ Generate at user-defined points
 - ☒ Generate at beam reaction points
- Shear computation method:**
 - ☐ Ignore
 - ☒ General procedure
 - ☐ General procedure - Appendix B5
 - ☐ Simplified procedure
- ☐ Consider inclined flexural forces
- ☐ Allow negative epsilon in general shear method

LRFR Control Options:

- Points of interest:**
 - ☒ Generate at tenth points except supports
 - ☐ Generate at support points
 - ☒ Generate at support face & critical shear points
 - ☐ Generate at section change points
 - ☒ Generate at user-defined points
 - ☒ Generate at beam reaction points
- Shear computation method:**
 - ☐ Ignore
 - ☒ General procedure
 - ☐ General procedure - Appendix B5
 - ☐ Simplified procedure
- ☐ Ignore design & legal load shear
- ☐ Ignore permit load shear
- ☐ Ignore tension in long. reinf. due to shear
- ☐ Consider permit load tensile steel stress
- ☐ Consider inclined flexural forces
- ☐ Allow negative epsilon in general shear method

Pier Cap Rating – Reinforcement Definitions

- Updated input definitions
- Define flexural reinforcement relative to
 - Left/right edge of cap
 - Column centerlines
 - Along the entire length
- Define shear reinforcement
 - Within a given cap span
 - End cantilever

Pier Cap Rating – Pier Association

The screenshot displays the ProMiles software interface for configuring pier associations. On the left, the 'Workspace' tree shows a hierarchy: Bridge > Components > BRIDGE ALTERNATIVES > Test (E) (C) > SUPERSTRUCTURES > Stiffness Analysis > PIERS. Under PIERS, there are three pier entries: p1, p2, and p3. Each pier has a 'PIER ALTERNATIVES' folder. Under p1's folder, 'Pier 1 hammerhead (E) (C)' is highlighted with a red box. Under p2's folder, 'Pier 1 hammerhead (assoc Pier 1 hammerhead) (E) (C)' is highlighted with a red box. On the right, a configuration panel for 'Pier Alternative - p2 - Pier 1 hammerhead (assoc Pier 1 hammerhead)' is shown. The 'Name' field is 'Pier 1 hammerhead'. The 'Associate with:' dropdown menu is set to 'p1 - Pier 1 hammerhead' and is highlighted with a red box. A blue arrow points from this dropdown to the 'Pier 1 hammerhead (E) (C)' entry in the workspace. Another blue arrow points from the 'Associated pier' label to the 'Pier 1 hammerhead (assoc Pier 1 hammerhead) (E) (C)' entry. A third blue arrow points from the 'Control pier' label to the 'Pier 1 hammerhead (E) (C)' entry.

Workspace

Bridge Components

- Impact/Dynamic Load Allowance
- Load Case Description
- Framing Plan Detail
- Bracing Deterioration
- BSC Bracing Spec Check Selection
- Structure Typical Section
- Superstructure Loads
- Concrete Stress Limits
- Prestress Properties
- Shear Reinforcement Definitions
- MEMBERS
- BRIDGE ALTERNATIVES
- Test (E) (C)
- SUPERSTRUCTURES
- Stiffness Analysis
- PIERS
 - p1
 - PIER ALTERNATIVES
 - Pier 1 hammerhead (E) (C)
 - p2
 - PIER ALTERNATIVES
 - Pier 1 hammerhead (assoc Pier 1 hammerhead) (E) (C)
 - p3
 - PIER ALTERNATIVES

Pier Alternative - p2 - Pier 1 hammerhead (assoc Pier 1 hammerhead)

Name: Pier 1 hammerhead

Associate with: p1 - Pier 1 hammerhead

Description Specs Factors Control options

Description:

Control pier

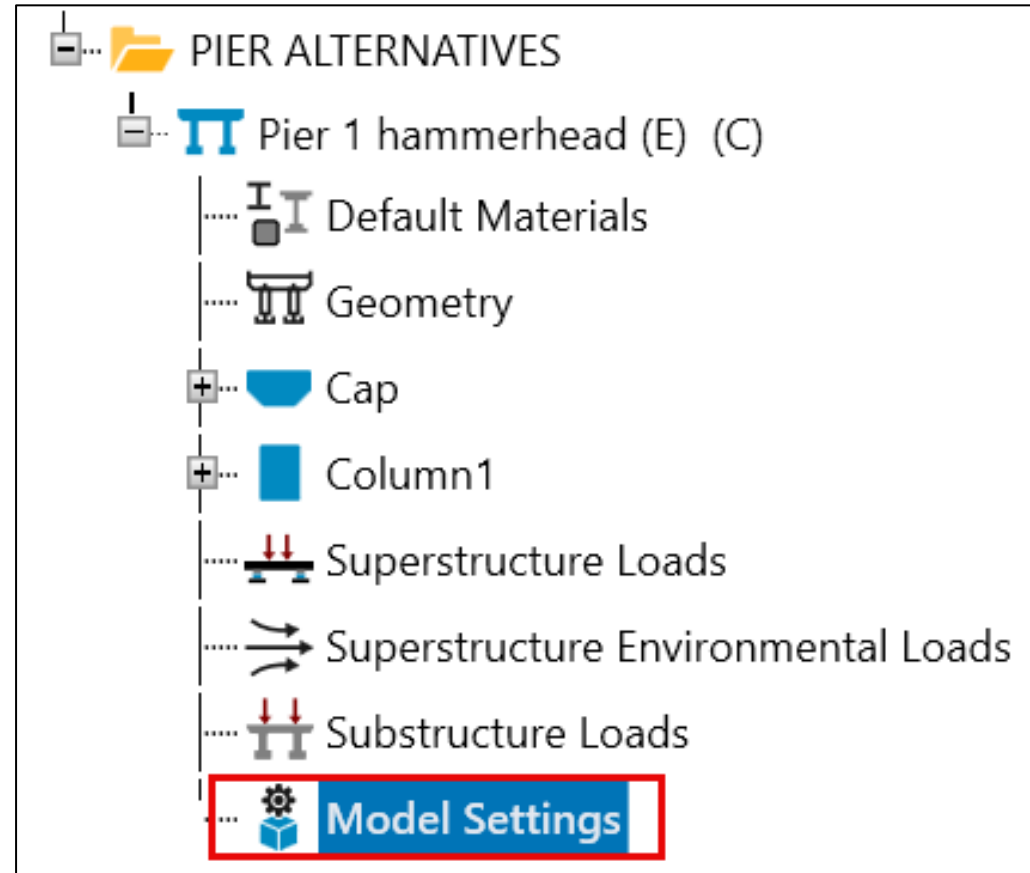
Associated pier

Pier Cap Rating – Pier Association

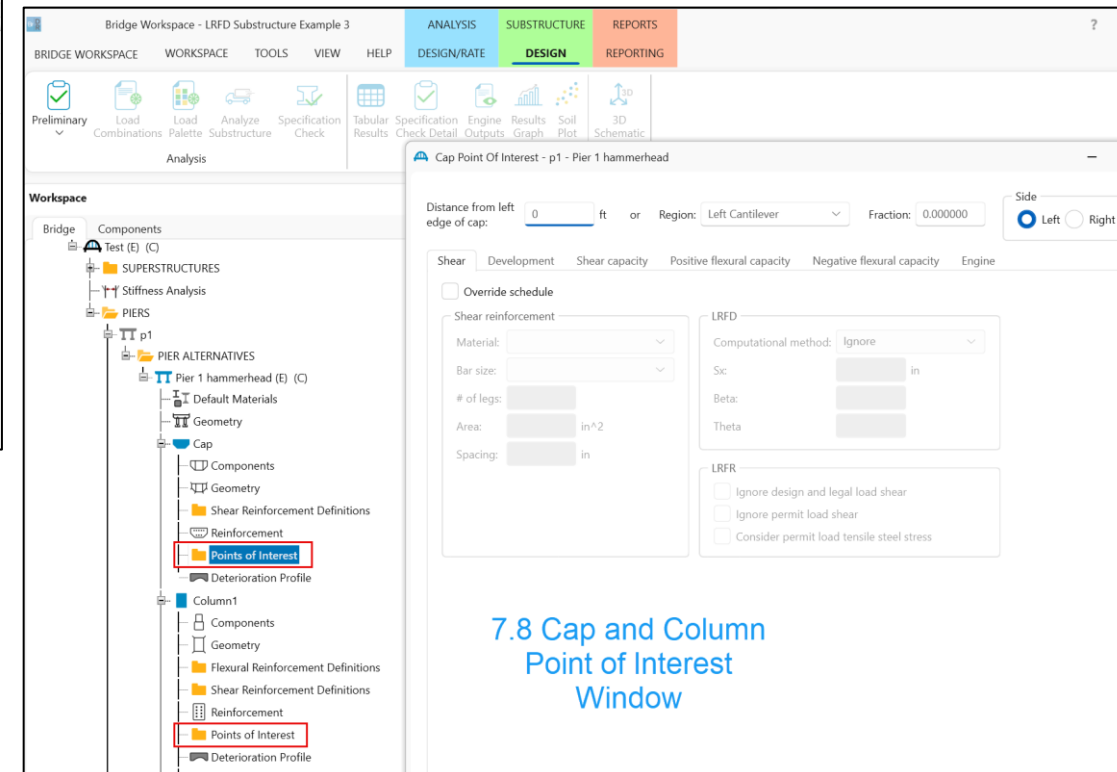
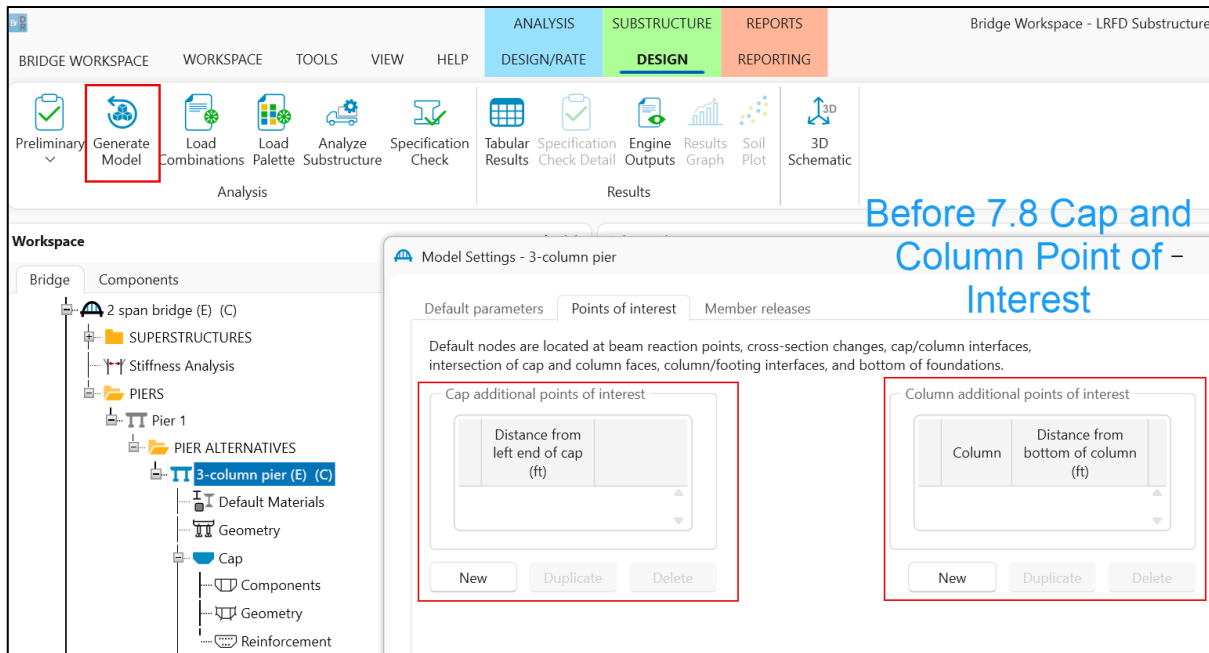
- Control and Associated Pier
- Geometry and reinforcement associated
- Reinforcement data editable
- Elevation data editable
- Footing data editable
- Gross geometry not editable
- Loads not associated

Pier Cap Rating – Model Settings

- Moved to BWS tree
- Column fixity
 - Top
 - Bottom
- Fixed or spring
 - Transverse
 - Longitudinal

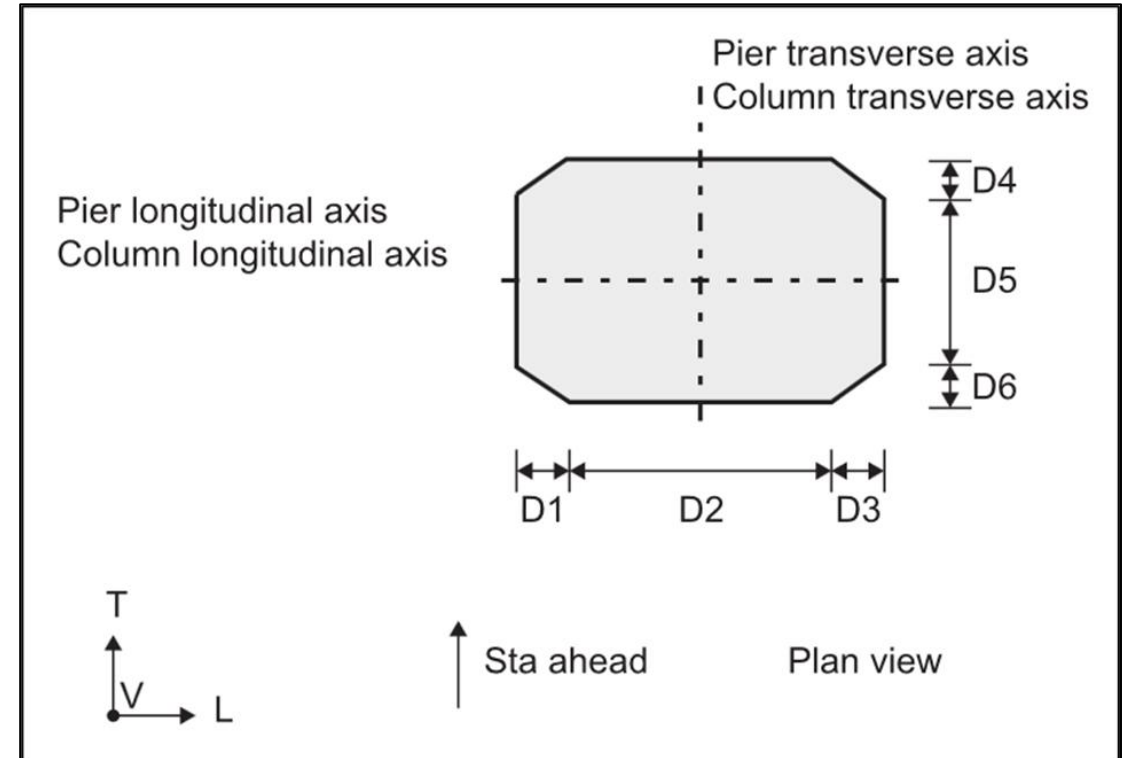


Pier Cap Rating – User Defined POIs



Pier Cap Rating – Hexagonal Columns

- Wedge nose column with D5 as zero
- LRFD and LRFR



Pier Cap Rating – Deterioration

- Concrete
- Reinforcement
 - Flexural
 - Shear
- Load rating only

Cap Deterioration Profile - Pier 1 - 3-column pier

Concrete Flexural Left cantilever shear Column bays shear Right cantilever shear

	Set	Measure from cap	Clear cover (in)	Bar size	Number	Material	Control point	Start distance (ft)	Straight length (ft)	End distance (ft)	Loss start distance (ft)	Loss straight length (ft)	Loss end distance (ft)	Percent loss (%)
>	1	Top	2.625	10	6.000	Grade 60	Left edge of cap	0.500	50.000	50.500			0.00	
	2	Top	5.395	10	6.000	Grade 60	Left edge of cap	0.500	50.000	50.500			0.00	
	3	Bottom	2.625	9	5.000	Grade 60	Left edge of cap	0.500	50.000	50.500			0.00	
	4	Bottom	5.253	9	5.000	Grade 60	Left edge of cap	5.167	40.667	45.833			0.00	

Duplicate Delete

OK Apply Cancel

Next Generation Report Tool Phase 2

- Phase 1 recap
 - Reporting framework
 - Report and style editor
 - Template generator
 - Summary viewer
 - PS superstructure
- Phase 2 (7.8)
 - All superstructure types
- Phase 3 (7.9)
 - Engine reports

The screenshot displays the 'Bridge Workspace - TrainingBridge1' application. The top menu bar includes 'BRIDGE WORKSPACE', 'WORKSPACE', 'TOOLS', 'VIEW', 'HELP', 'ANALYSIS', 'REPORTS', 'DESIGN/RATE', and 'REPORTING'. The 'REPORTING' tab is active, showing options for 'Editor', 'View Summary Report', 'View Detailed Report', and 'View BWS Report'. The 'View Detailed Report' option is selected, leading to the 'Schematic' view. The 'Workspace' pane on the left shows a tree structure with 'TrainingBridge1' expanded, revealing 'Components', 'Diaphragm Definitions', 'Lateral Bracing Definitions', 'SUPERSTRUCTURE DEFINITIONS', and 'Simple Span Structure'. The 'Simple Span Structure' is selected, showing sub-items like 'Impact/Dynamic Load Allowance', 'Load Case Description', 'Framing Plan Detail', 'Bracing Deterioration', 'BSC Bracing Spec Check Selection', 'Structure Typical Section', 'Superstructure Loads', 'Shear Connector Definitions', 'Stiffener Definitions', and 'MEMBERS'. The 'Report' pane on the right shows the 'Detailed Report - Simple Span Structure' with a 'BWS Detailed Report' section. This section includes a 'Girder System Superstructure Definition' and a 'Summary' table. The 'Summary' table lists: Name: Simple Span Structure, Description: (blank), Default units: US Customary, Number of spans: 1, and Number of girders: 4. Below this is a 'Span' table with columns 'Span' and 'Length (ft)', showing a single span of 161 feet. The 'Horizontal curvature along reference line' section lists: Horizontal curvature: False, Superstructure alignment type: Curved, Distance from PC to first support line: (blank), and Start tangent length: (blank).

Bridge Workspace - TrainingBridge1

ANALYSIS REPORTS
DESIGN/RATE REPORTING

BRIDGE WORKSPACE WORKSPACE TOOLS VIEW HELP

Editor View Summary Report View Detailed Report View BWS Report

Edit View

Schematic

Workspace

Bridge Components

TrainingBridge1

- Components
- Diaphragm Definitions
- Lateral Bracing Definitions
- SUPERSTRUCTURE DEFINITIONS
 - Simple Span Structure
 - Impact/Dynamic Load Allowance
 - Load Case Description
 - Framing Plan Detail
 - Bracing Deterioration
 - BSC Bracing Spec Check Selection
 - Structure Typical Section
 - Superstructure Loads
 - Shear Connector Definitions
 - Stiffener Definitions
 - MEMBERS

Report

Detailed Report - Simple Span Structure

BWS Detailed Report

Girder System Superstructure Definition

Definition

Summary

Name: Simple Span Structure
Description:
Default units: US Customary
Number of spans: 1
Number of girders: 4

Span

Span	Length (ft)
1	161

Horizontal curvature along reference line

Horizontal curvature: False
Superstructure alignment type: Curved
Distance from PC to first support line:
Start tangent length:

Data Exchange With BrM 7.1

- Using AASHTOWare OpenAPI
- Updated for SNBI items and terms
- Initial phase – items previously synced

Transition of “Over” Records

SNBI ID	Data Tag	SNBI Item Name	SNBI Format	1995 Coding Guide ID	1995 Coding Guide Item Name/ Description	1995 Coding Guide Format (as shown in Appendix E)	Clean Transition?	Transition Notes for Developer
B.ID.01	BID01	Bridge Number	AN (15)	8	Structure Number	15/AN	Yes	Trim leading and trailing spaces. For Transition Tool, provide option to trim or not trim leading zeroes, or to trim all but one leading zero; do not provide a default selection. Ask user whether to apply this selection to transitioned legacy (historical) data for that State/Agency. (Add a note stating that all legacy data will also be preserved in its original form.) For those who do not use the Transition Tool, we will need to survey.
B.ID.02	BID02	Bridge Name	AN (300)	N/A	N/A	N/A	No	
B.ID.03	BID03	Previous Bridge Number	AN (15)	N/A	N/A	N/A	Yes	Populate this field using the history of structure number changes that resides in the NBI from Structure Number Change submittals. Trim

Memory Usage and Data Management Improvements

- New Analysis and Results API
- Lower virtual memory consumption
- Retain results
 - Results available when closing and reopening BrDR
 - Bridge Explorer and Bridge Workspace

Rating Summary Improvements

- Only for tabular results
 - New filter: Live load type/live load/rating level
 - New filter: Limit state and action type
 - Display limit state at Bridge Explorer level
- Display Safe Posting Load (MBE 6A.8.3)
 - Both for Bridge Explorer and Bridge Workspace

Rating Summary Improvements

- New filter: Live load type (default)

Analysis Results - Plate Girder

Print

Default display

Report type: Rating Summary

Lane/Impact loading type: ☒ As requested ☐ Detailed

Display format: Single rating level per row

Rating display type: Live load type

Action: Critical

Live load	Live load type	Rating method	Rating level	Load rating (Ton)	Safe posting load (Ton)	Rating factor	Location (ft)	Location span-(%)	Limit state	Impact	Lane
HL-93 (US)	Truck + Lane	LRFR	Inventory	19.45		0.540	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
HL-93 (US)	Truck + Lane	LRFR	Operating	25.22		0.700	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
HL-93 (US)	Tandem + Lane	LRFR	Inventory	23.07		0.641	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
HL-93 (US)	Tandem + Lane	LRFR	Operating	29.91		0.831	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested

Critical rating factors for Inventory and Operating

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Rating Summary Improvements

- New filter: Live load

Analysis Results - Plate Girder

Print

Report type: Rating Summary

Lane/Impact loading type: ☒ As requested ☐ Detailed

Display format: Single rating level per row

Rating display type: Live load

Action: Critical

Live load	Live load type	Rating method	Rating level	Load rating (Ton)	Safe posting load (Ton)	Rating factor	Location (ft)	Location span-(%)	Limit state	Impact	Lane
HL-93 (US)	Truck + Lane	LRFR	Inventory	19.45		0.540	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
> HL-93 (US)	Truck + Lane	LRFR	Operating	25.22		0.700	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested

AASHTO LRFR Engine Version 7.8.0.3001

Switched to Live load

Critical live load for HL-93

Non-critical rating factors for HL-93 not shown

Rating Summary Improvements

- New filter: Rating level

Analysis Results - Plate Girder

Print

Default view

Report type: Rating Summary

Lane/Impact loading type: ☒ As requested ☐ Detailed

Display format: Single rating level per row

Rating display type: Live load type

Action: Critical

Live load	Live load type	Rating method	Rating level	Load rating (Ton)	Safe posting load (Ton)	Rating factor	Location (ft)	Location span-(%)	Limit state	Impact	Lane
SU4	Axle Load	LRFR	Legal	36.06		1.336	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
SU5	Axle Load	LRFR	Legal	36.63		1.182	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
SU6	Axle Load	LRFR	Legal	36.69		1.056	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
Type 3	Axle Load	LRFR	Legal	36.64		1.466	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
Type 3-3	Axle Load	LRFR	Legal	42.56		1.064	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
Type 3S2	Axle Load	LRFR	Legal	40.52		1.126	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested

Critical legal truck rating factor

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Rating Summary Improvements

- New filter: Rating level

Analysis Results - Plate Girder

Print

Report type: Rating Summary

Lane/Impact loading type: ☒ As requested ☐ Detailed

Display format: Single rating level per row

Rating display type: Rating level

Action: Critical

Live load	Live load type	Rating method	Rating level	Load rating (Ton)	Safe posting load (Ton)	Rating factor	Location (ft)	Location span-(%)	Limit state	Impact	Lane
SU6	Axle Load	LRFR	Legal	36.69		1.056	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested

AASHTO LRFR Engine Version 7.8.0.3001

Switched to
Rating level

Displays only
critical legal rating
factor

Rating Summary Improvements

- New filter: Limit state and action type combo
- Also available for Bridge Explorer

Analysis Results - Plate Girder

Print

Report type: Rating Summary

Lane/Impact loading type: ☒ As requested ☐ Detailed

Display format: Single rating level per row

Rating display type: Live load type

Action: Critical

	Live load	Live load type	Rating method	Rating level	Load rating (Ton)	Safe posting load (Ton)	Rating factor	Location (ft)	Location span-(%)	Limit state		
	SU4	Axle Load	LRFR	Legal	36.06		1.336	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As R	
	SU5	Axle Load	LRFR	Legal	36.63		1.182	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
	SU6	Axle Load	LRFR	Legal	36.69		1.056	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
	Type 3	Axle Load	LRFR	Legal	36.64		1.466	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
>	Type 3-3	Axle Load	LRFR	Legal	42.56		1.064	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested
	Type 3S2	Axle Load	LRFR	Legal	40.52		1.126	80.500	1 - (50.000)	STRENGTH-I - Steel Flexure Stress	As Requested	As Requested

AASHTO LRFR Engine Version 7.8.0.3001

Rating Summary Improvements

- Safe posting load
- Limit state available at Bridge Explorer

Bridge Rating Results									
System of units		Lane/impact loading type		Display format:		Action:			
☒ US customary ☐ SI / metric		☒ As requested ☐ Detailed		Single rating level per row		Critical			
	Bridge ID	Vehicle	Rating level	Rating factor	Rating method	Safe Posting Load (Ton)	Capacity (Ton)	Limit state	Time stamp
>	TrainingBridge1	SU4	Legal	1.179	LRFR		31.841	STRENGTH-I Steel Flexure Stress	Thursday, August 13, 2026 2:40:16 PM
	TrainingBridge1	SU5	Legal	1.043	LRFR		32.340	STRENGTH-I Steel Flexure Stress	Thursday, August 13, 2026 2:40:16 PM
	TrainingBridge1	SU6	Legal	0.932	LRFR	31.388	32.396	STRENGTH-I Steel Flexure Stress	Thursday, August 13, 2026 2:40:16 PM
	TrainingBridge1	Type 3	Legal	1.294	LRFR		32.353	STRENGTH-I Steel Flexure Stress	Thursday, August 13, 2026 2:40:16 PM
	TrainingBridge1	Type 3-3	Legal	0.940	LRFR	36.543	37.580	STRENGTH-I Steel Flexure Stress	Thursday, August 13, 2026 2:40:16 PM
	TrainingBridge1	Type 3S2	Legal	0.994	LRFR	35.684	35.779	STRENGTH-I Steel Flexure Stress	Thursday, August 13, 2026 2:40:16 PM

View structure rating results

Save Critical Results

7.8 Maintenance

- Revise Effective Flange Width Calculation
- Use Average Kg For LLDF
- Superstructure Definition Wizard Updates
- Bearing Reaction For Simple DL Continuous LL
- Analyze PT ACM Without PT Defined
- Tolerances Per Bridge Model
- Effective Radius Of Gyration for LTB
- LRT Lane Rating

7.8 Maintenance (contd.)

- Concentrated Load In 3D Steel FE model
- Web Nominal Bend-Buckling (eq. 6.10.4.2.2-4) Load Rating
- Flange Lateral Bending Stress For MBE 6A.6.4.2.2 Rating
- “Ignore longitudinal reinforcement in rating” Control Option Renaming
- Display Square Rebar Schematic
- ASR Allowable Stress Factor By Material

Revise Effective Flange Width Calculation

- BSSD-1560
- AASHTO engine computes this already
- Compute LRFD E and n in the window

Deck Profile

Type: PS Precast I

Before 7.8

Deck concrete Reinforcement

	Material	Support number	Start distance (ft)	Length (ft)	End distance (ft)	Structural thickness (in)	Start effective flange width (Std) (in)	End effective flange width (Std) (in)	Start effective flange width (LRFD) (in)	End effective flange width (LRFD) (in)	n
>	Beam Concr	1	0.00	120.00	120.00	7.5000	90.0000	90.0000	90.0000	90.0000	

Bridge Design & Rating

Compute from Typical Section messages:

The deck concrete modulus of elasticity is null.
A modular ratio cannot be calculated for you.

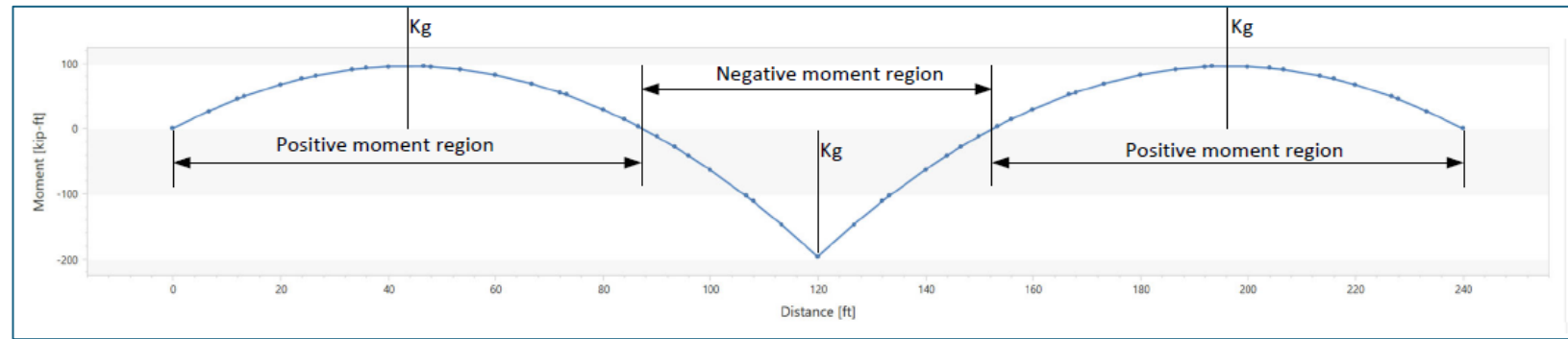
OK

Compute from typical section...

New

Use Average Kg For LLDF

- BSSD-1572
- Previously only right side was used
- Modified to use average of right and left side



Superstructure Definition Wizard Updates

- BSSD-1594 & BSSD-1595

Superstructure Definition Wizard - Superstructure Definition

Superstructure definition name:

Material type:

Girder type:

Number of spans:

Skew:

Number of girders:

Girder spacing:

Left overhang:

Right overhang:

LRFD analysis mod

LRFR analysis module:

LFR analysis module:

ASR analysis module:

Girder system member generation

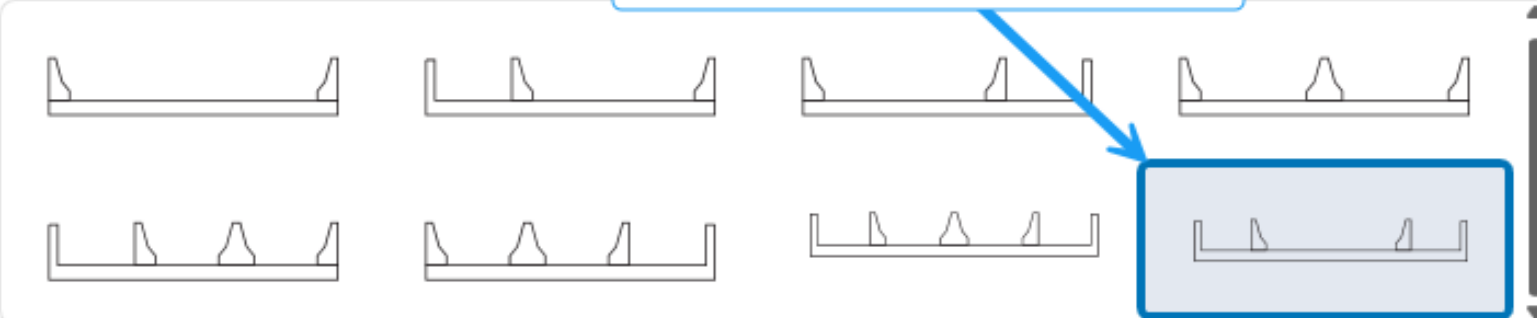
Create each member

Analysis
modules
added for
7.8

Superstructure Definition Wizard - Deck Template

Select the deck template:

New deck template



Bearing Reaction For Simple DL Continuous LL

- BSSD-1748
- Engine already considers it
- Analysis output report will show reaction at bearing

Reactions (Simple span model)						
Live Load: Type 3						
Impact = %						
Support	DC (kip)	DW (kip)	+(LL+I) (kip)	Controlling Live Load	-(LL+I) (kip)	Controlling Live Load
1	17.97	N/A	**		**	
2, Left	18.44	N/A	**		**	
2, Right	23.48	N/A	**		**	
3, Left	23.48	N/A	**		**	
3, Right	28.02	N/A	**		**	
4	27.55	N/A	**		**	

Reactions (Continuous span model)						
Live Load: Type 3						
Impact = 33.000 %						
Support	DC (kip)	DW (kip)	+(LL+I) (kip)	Controlling Live Load	-(LL+I) (kip)	Controlling Live Load
1	0.75	N/A	51.04	Axle Load	-5.96	Axle Load
2, Left	1.12	N/A	31.39	Axle Load	-5.56	Axle Load
2, Right	1.12	N/A	31.39	Axle Load	-5.56	Axle Load
3, Left	1.53	N/A	32.39	Axle Load	-3.19	Axle Load
3, Right	1.53	N/A	32.39	Axle Load	-3.19	Axle Load
4	1.16	N/A	55.85	Axle Load	-3.97	Axle Load

Analyze PT ACM Without PT Defined

- BSSD-3386
- LFR and LRFR

Tolerances Per Bridge Model

- BSSD-3916
- Tolerance copied from system tolerance
- Tolerances modified for a bridge model does not modify system tolerances

The screenshot displays the 'TrainingBridge1' software interface. At the top, there are input fields for 'Bridge ID' and 'SNBI Bridge Number (B.ID.01)', both containing 'TrainingBridge1'. To the right, there are checkboxes for 'Template' (unchecked) and 'Bridge completely defined' (checked). Further right, a 'Bridge Workspace View' panel shows checkboxes for 'Superstructures' (checked), 'Culverts' (unchecked), and 'Substructures' (unchecked). Below these, a horizontal tab bar includes 'Description', 'Description (cont'd)', 'Alternatives', 'Global reference point', 'Traffic', 'Custom agency fields', and 'Tolerance'. The 'Tolerance' tab is selected and highlighted with a red box. Inside this tab, a table lists units and their corresponding tolerance values:

Unit	Tolerance
ft	0.001
in	0.0000100
m	0.0001000
mm	0.0100000
mi	0.0100000
km	0.0100000

Below the table is a button labeled 'Reset to system defaults'.

Effective Radius Of Gyration For LTB

- BSSD-3998
- Varying widths of flanges and cover plates
 - Previous versions used average width
 - Improved to use actual dimension of plates

$$r_t := \frac{b_{fcAvg}}{\sqrt{12 \cdot \left(1 + \frac{1}{3} \cdot \frac{D_c \cdot t_w}{b_{fcAvg} \cdot (t_{fc} + t_{cpc})} \right)}}$$

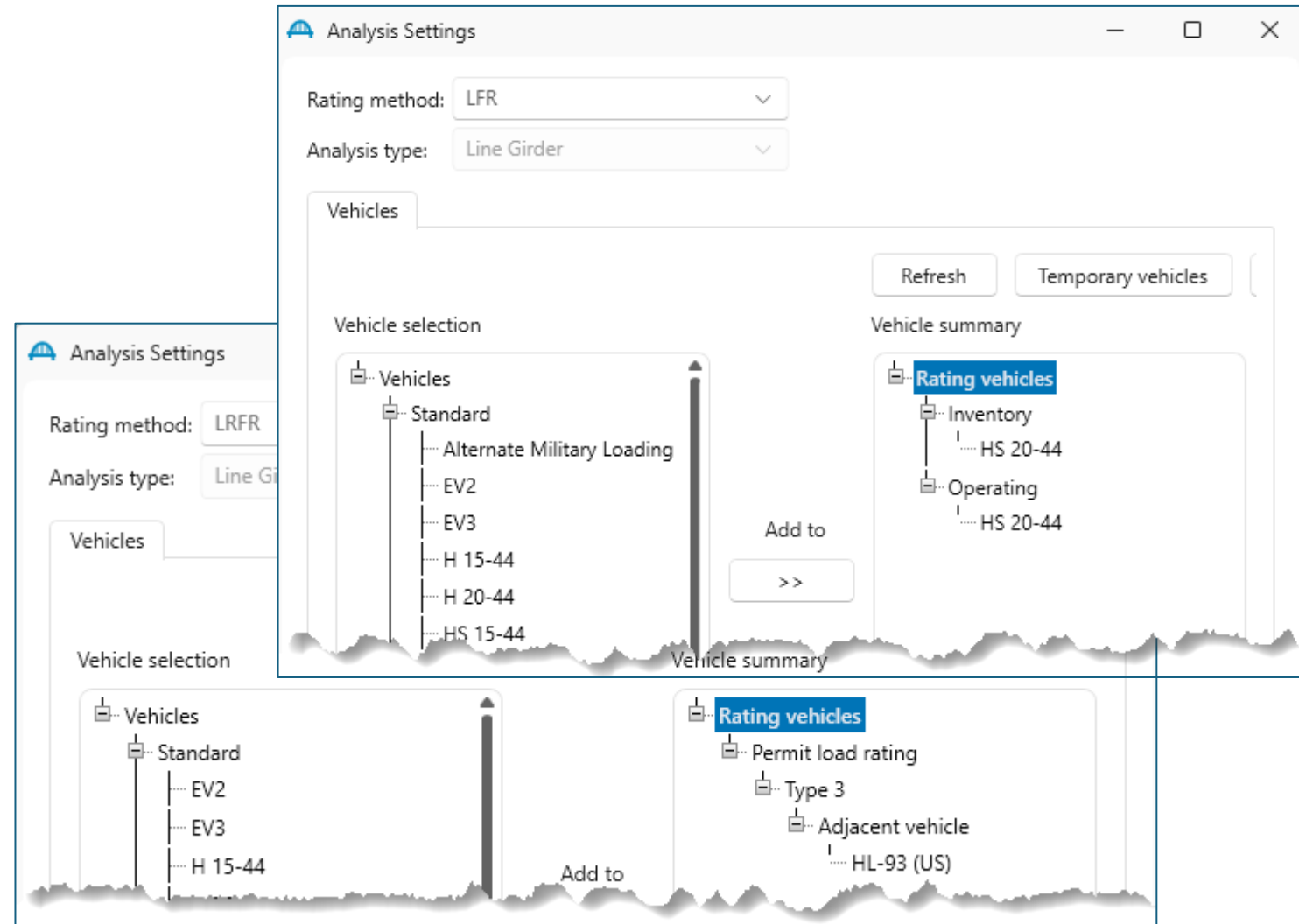
Before 7.8

$$r_t := \sqrt{\frac{I_{yflange} + I_{ycp}}{A_{flange} + A_{cp} + \frac{1}{3} \cdot D_c \cdot t_w}}$$

7.8

Load Rating Tool Lane Rating

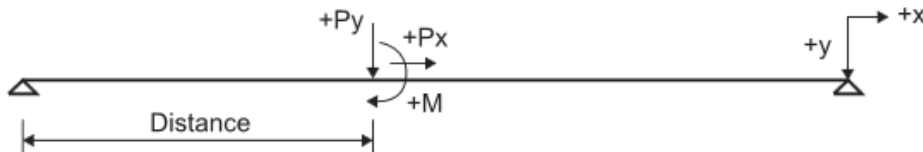
- BSSD-4008
- LFR lane rating
- LRFR lane consideration for adjacent truck
- LRFR permit lane supported from 7.2



Concentrated Load In 3D Steel FE Model

- BSSD-4043

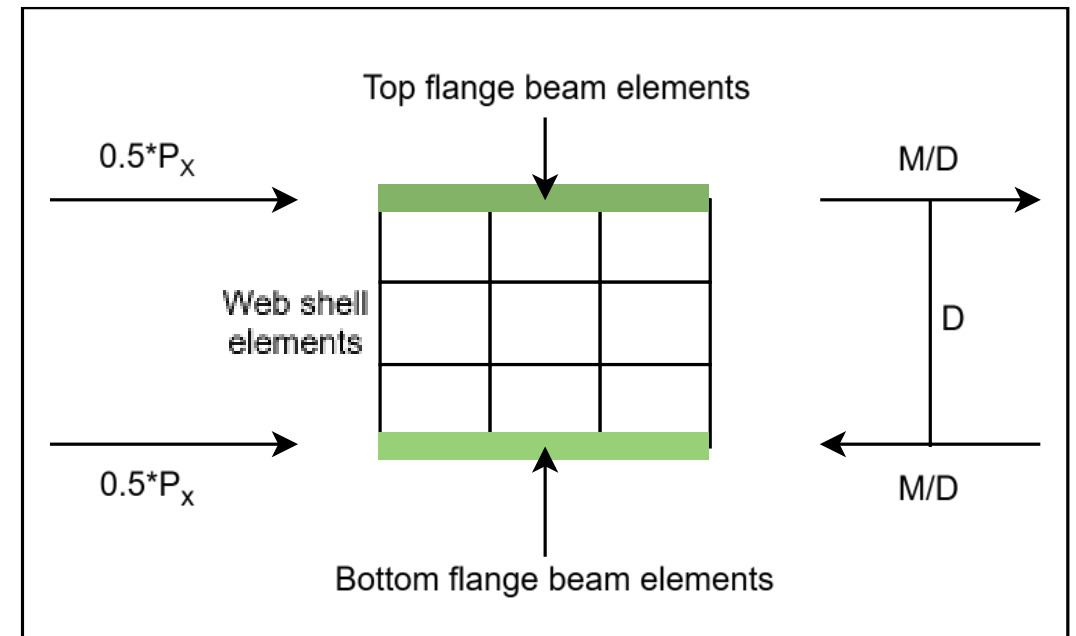
Girder Member Loads



Pedestrian load: lb/ft

Uniform Distributed Concentrated Settlement

	Load case name	Support number	Distance (ft)	Px (kip)	Py (kip)	M (kip-ft)	Description
>	DC1	1	0.00	10.00		50.00	



Web Nominal Bend-Buckling Rating

- BSSD-4096
- Consider Eq. 6.10.4.2.2-4 for rating
- Consider in 6A.6.4.2-2 Service Limit State
- Not applicable in pos. flexure when web meets 6.10.2.1.1

Except for composite sections in positive flexure in which the web satisfies the requirement of Article 6.10.2.1.1, all sections shall also satisfy the following requirement:

$$f_c \leq F_{crw} \quad (6.10.4.2.2-4)$$

where:

f_c = compression flange stress at the section under consideration due to the Service II loads calculated without consideration of flange lateral bending (ksi)

F_{crw} = nominal bend-buckling resistance for webs with or without longitudinal stiffeners, as applicable, determined as specified in Article 6.10.1.9 (ksi)

Flange Lateral Bending Stress For Rating

- BSSD-4098
- Considered for 6A.6.4.2.2 Service Limit State
- Optional for straight girder bridges

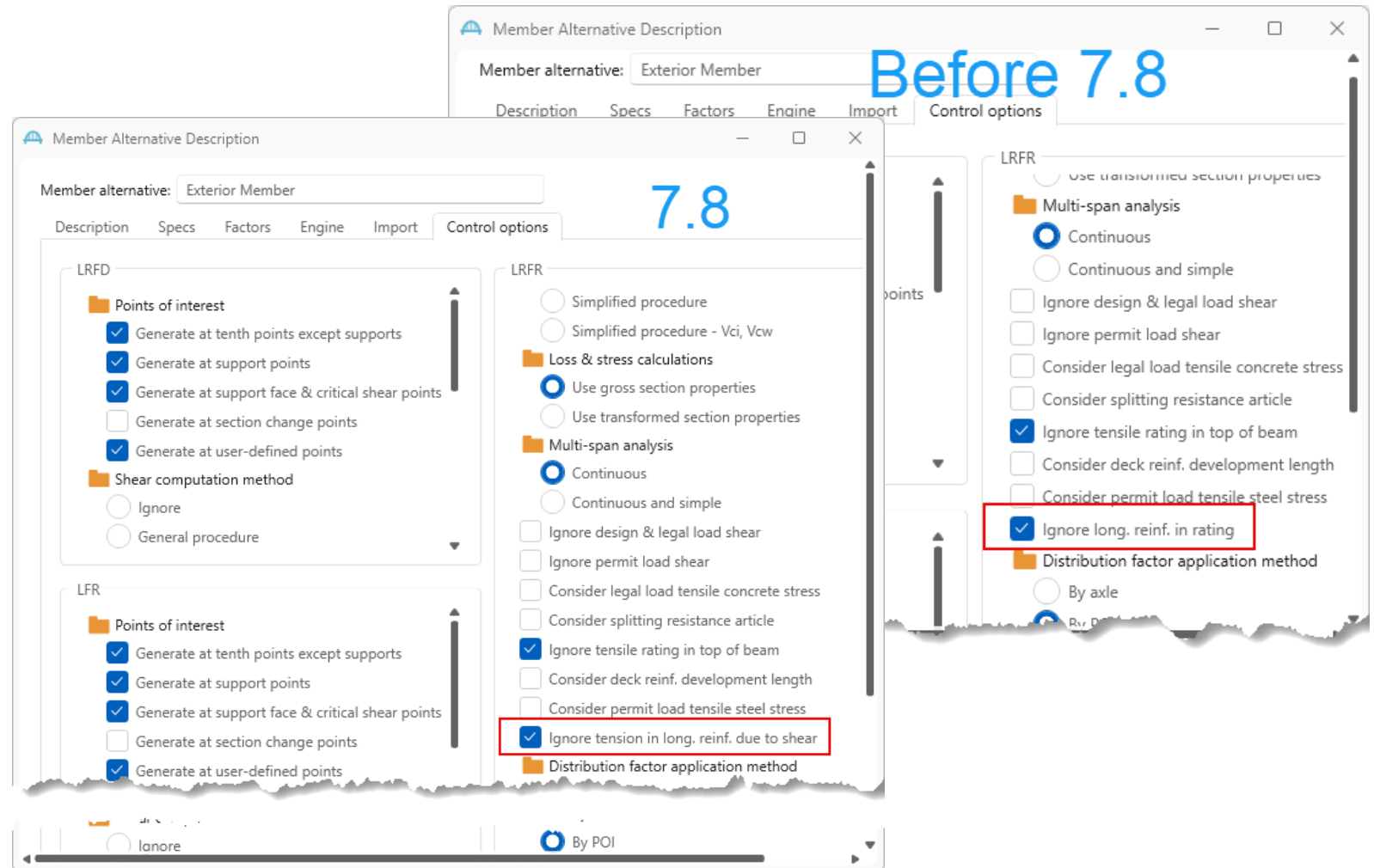
The screenshot shows the 'Member Alternative Description' window with 'Plate Girder' selected. The 'Control options' tab is active, displaying two columns of settings. The LRFD column has 'LTB Gamma E Method' selected with 'Method A' chosen. The LRFR column has 'LTB Gamma E Method' selected with 'Method A' chosen, and the checkbox 'Consider lateral stress in Service rating' is highlighted with a red rectangle. Other options include 'Consider deck reinf. development length', 'Must consider user input lateral bending stress', 'Consider concurrent moments in Cb calculation', 'Use compact web alternate Cb calculation', 'Distribution factor application method', and 'By axle'.

The inclusion of the f_e term in LRFD Design Eqs. 6.10.4.2.2-2 and 6.10.4.2.2-3 may be considered optional for straight girder bridges, at the discretion of the Owner.

The f_e term, determined as specified in LRFD Design Article 6.10.1.6, shall be considered when load rating horizontally curved bridges.

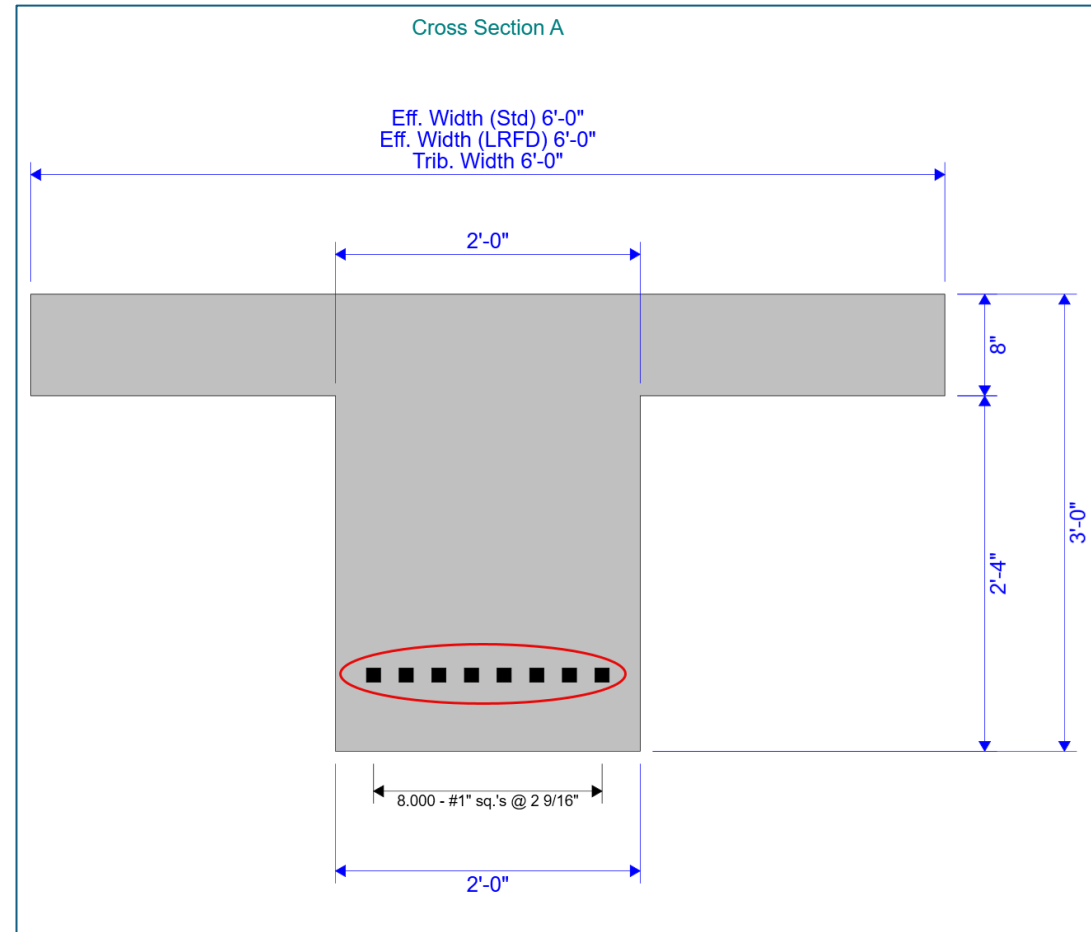
“Ignore longitudinal reinforcement in rating”

- BSSD-4340
- Rename



Display Square Rebar Schematic

- BSSD-4371



ASR Allowable Stress Factor By Material

- BSSD-4458
- Allow input by material name

Member Alternative Description

Member alternative: Plate Girder

Before 7.8

Description Specs Factors Engine Import Control options

LRFR

Condition factor: Good or Satisfactory

☐ Field measured section properties

System factor: All Other Girder/Slab Bridges

☐ System factor override:

ASR factors

	INV	OPER
Structural steel:		
Concrete:		
P/S concrete comp.:		
P/S concrete tens.:		
P/S moment cap.:		
Reinforcement:		
Bearing stiffener:		
Stirrup:		
Timber:		

Member Alternative Description

Member alternative: Plate Girder

7.8

Description Specs Factors Engine Import Control options

LRFR

Condition factor: Good or Satisfactory

☐ Field measured section properties

System factor: All Other Girder/Slab Bridges

☐ System factor override:

ASR factors

	Category	Material name	INV	OPER
>	Structural steel	Grade 50W		
	Concrete	4500 psi Conc...		
	Concrete	Class B (US)		
	Reinforcement	Grade 60 - Ep...		
	Bearing stiffener	Grade 50W		



Thank you!