**Technical Note**
**e-Notification**
No. 13
August 25, 2021

# Technical Note 13

## 1. Coding NBI Items 64 & 66 Maximum Limit

Due to limitations within the Roadway Information Management System (RIMS), please limit the governing Inventory and Operating rating input to 9.99 when updating BIO.

## 2. Revision to Section 20.3 of the LRGD

Section 20.3 of the Load Rating Guidance Document (LRGD) shall be revised to read:

### 20.3 LOAD RATING NAMING CONVENTION

The BrR input file (.XML file) should be capable of having multiple alternatives for modification to the load rating over the life of the structure while still preserving the original as-built load rating.

For bridges with one *active BrR file, the name of the bridge definition shall be the ~~5-digit~~ Asset ID, which does not include leading zeroes. For bridges with two or more active BrR files, alphabetical character(s) shall be added to the end of the Asset ID in accordance with the table below:

| Character | Description |
|---|---|
| A | Spans 1 to X |
| B | Spans X + 1 to Y |
| C | Spans Y + 1 to Z |
| O | Original portion of a widened structure |
| SUP | Superstructure (where a substructure rating file exists) |
| SUB | Substructure (where a superstructure rating file exists) |
| W | Widened portion of structure (where a rating file of the original structure exists) |

For situations not covered above, logical alphabetical numbering shall be used.

In the bridge definition window, the 'Bridge ID', 'NBI Structure ID', and 'Name' shall all be the ~~Asset ID~~ numeric or alphanumeric designation as defined above. For example, the 'Bridge ID,' NBI Structure ID,' and 'Name' shall be *8302SUB* for the substructure rating of Asset ID 08302.

Additionally, the following fields within the bridge definition should be populated using the most recent NBI Data available:

| BrR Field | Corresponding NBI Item | BrR Bridge Definition Tab |
|---|---|---|
| Year built | 27 | Description |
| Location | 9 | Description |
| Facility carried (7) | 7 | Description |
| Feat. Intersected (6) | 6 | Description |
| Length | 49 | Description |
| Route number | 5D | Description |
| Mi. post | 11 | Description |
| District (2) | 2 | Description (cont'd) |
| County | 3 | Description (cont'd) |
| Owner (22) | 22 | Description (cont'd) |
| Maintainer | 21 | Description (cont'd) |
| NHS Indicator | 104 | Description (cont'd) |
| Functional class | 26 | Description (cont'd) |
| Longitude | 17 | Global reference point |
| Latitude | 16 | Global reference point |
| Truck PCT | 109 | Traffic |
| ADT | 29 | Traffic |

**An active BrR file is defined as the file that represents the structure in its current condition. Due to the limitations within BrR, some configurations may require multiple BrR files to rate the entire structure. In this case, multiple files would be considered active.*

**Technical Note**
**e-Notification**
No. 13
August 25, 2021

**Technical Note 13**

## 3. Wide Leg Channel Beam Bridges

In July 2021, load testing of multiple Wide Leg Channel Beam Bridges across the state was completed by WSP and their recommendations have now been approved by the FHWA and adopted by SCDOT. It was determined to be appropriate to apply the *Skinny Leg Channel Visual Guide* for live load distribution factors to all Wide Leg Channel Beam Bridges. Therefore, re-evaluate all of these bridge types, apply the appropriate distribution factors, and resubmit the updated ratings.

Furthermore, for any wide-leg channel bridges with plans dated prior to 1976, modify the calculated load rating factors using a K-Factor of 1.43. For all other wide leg channel bridges (plans dated 1976 and after), modify the calculated load rating factors using a K-Factor of 1.30. For any bridge where the plan date is unknown, utilize a K-Factor consistent with plans dated 1976 and after. The K-Factors shall only be applicable to bridges that have been in service for an appreciable period and show no signs of distress.

The K-Factor is a direct multiplication of the rating factor, so for instance, if a wide leg channel beam bridge with plans dated 1960 has a controlling rating of 0.770, it should be multiplied by 1.43, making the reported rating 1.101, and thereby rescinding the posting recommendation.

These increases must be updated and preserved in the BrR model to assist future load ratings and permitting. BrR live load distribution factors may be modified directly by dividing the computed live load distribution factor by the appropriate K-Factor.

$$Improved\ LLDF = \frac{Computed\ LLDF}{K\ Factor}$$

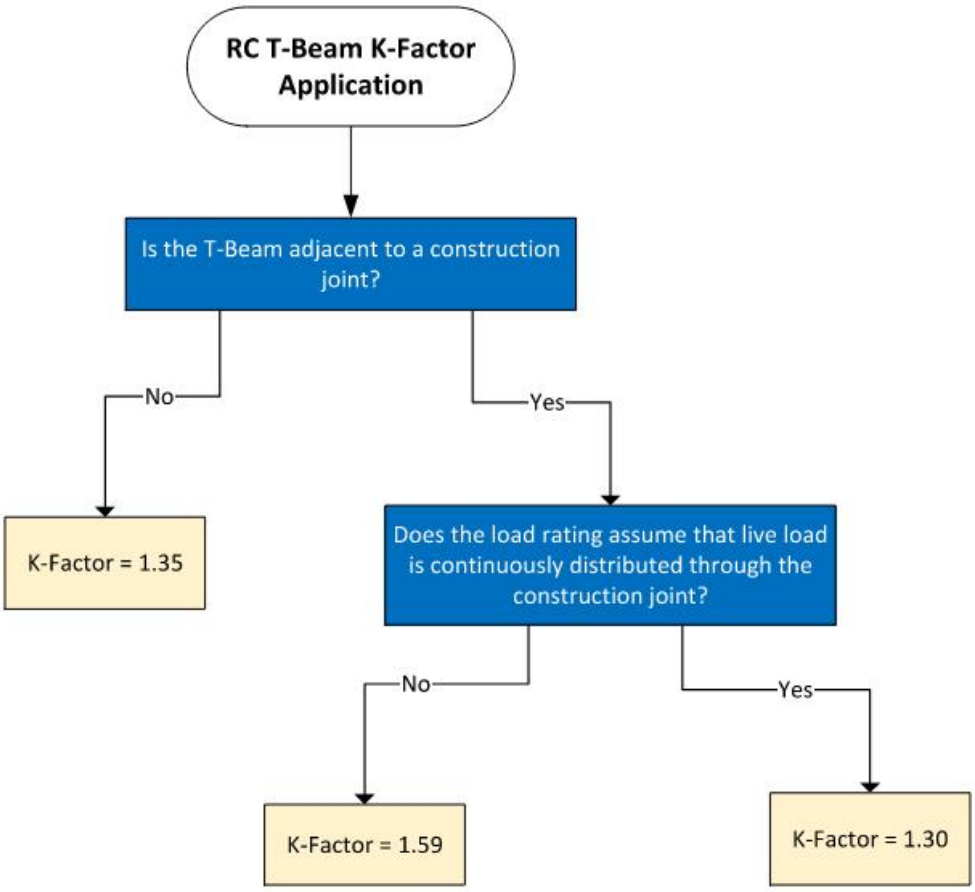
The testing documentation for each bridge that was tested as part of the testing program shall be uploaded to the Bridge File in the *[County]* → *[Asset ID]* → *6 – Testing* folder.

**Technical Note**
**e-Notification**
No. 13
August 25, 2021

**Technical Note 13**

## 4. Reinforced Concrete Tee (RCT) Beam Bridges

In July 2021, load testing of multiple RCT Beam Bridges across the state was completed by WSP and their recommendations have now been approved by the FHWA and adopted by SCDOT. For RCT Beam bridges that have or have not been widened (regardless of the widening type), the K-Factors in the flowchart below may be applied to both interior and exterior beams:




Re-evaluate all of these bridge types, apply the appropriate distribution factors, and resubmit the updated ratings. Engineering judgement and AASHTO guidance should be used when assuming the level of load sharing through any construction joint. Only use K-factors based on the proximity of a construction joint and the assumed live load distribution. These are not to be used for negative flexure or shear load ratings, as **they are only applicable to positive flexure load ratings**.

These increases must be updated and preserved in the BrR model to assist future load ratings and permitting. BrR live load distribution factors may be modified directly by dividing the computed live load distribution factor by the appropriate K-Factor.

$$Improved\ LLDF = \frac{Computed\ LLDF}{K\ Factor}$$

The testing documentation for each bridge that was tested as part of the testing program shall be uploaded to the Bridge File in the *[County]* → *[Asset ID]* → *6 – Testing* folder.

Please direct any questions concerning the above to:

*Michael Baker International*
*e-mail:* *SCDOT_LR_Help_Desk@listserv.bakerprojects.com*