

# PennDOT e-Notification

Bureau of Solutions Management  
Highway Applications Division



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## STLRFD

No. 017  
November 8, 2021

## Release of Version 2.7.0.0

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The Department's LRFD Steel Girder Design and Rating (STLRFD) program has been revised as described in the attached "Summary of July 2021 Revisions – Version 2.7.0.0".

The new version has been placed on PennDOT servers for use by the Districts. Consultants and others, who have a current license agreement for **STLRFD Version 2.6.0.0**, can obtain the updated version by submitting an [Update Request Form](#) along with the **update fee of \$300 for private organizations or \$50 for governmental agencies**. Updates for **STLRFD Version 2.5.0.0 or earlier** will require an **additional fee**. For update fee details, refer to the [STLRFD Fee Schedule](#). The update fee is waived for federal and state transportation agencies.

Once payment is received, an e-mail will be sent with download instructions. A valid e-mail address must be provided on the Update Request Form to receive the download instructions.

Please direct any questions concerning the above to:

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Attachment

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Archived copies of all previously distributed e-Notifications can be obtained from the PennDOT LRFD and Engineering Programs website at <http://penndot.engrprograms.com/home> and clicking on "e-Notification" and then "Mailing List Archives."

## **SUMMARY OF JULY 2021 REVISIONS - VERSION 2.7.0.0**

Since the release of STLRFD Version 2.6.0.0 several revision requests and user requested enhancements have been received. This release of STLRFD Version 2.7.0.0 contains the following revisions and enhancements.

### **Specification Related Revisions**

1. The shear skew correction factor (LRFD Specifications and DM-4 Section 4.6.2.2.3c) is no longer applied to shear distribution factors calculated with the rigid cross-frame equation from LRFD Specifications Section C4.6.2.2.2d. It will continue to be applied to distribution factors calculated with the expressions of LRFD Specifications Table 4.6.2.2.3b-1 at locations specified by the user on the SKW command (Request 644).
2. The Global Displacement Amplification check of the LRFD Specifications Section 6.10.3.4.2 will now be performed by default for all cross sections with two, three, or four girders (previously only two and three girder cross sections were checked). Additionally, an input has been added to the GEO command (NUMBER OF BEAMS FOR 6.10.3.4.2 CHECK) that allows the user to specify the number of beams to use for the check. This can be left blank to skip the check for cross sections with five or more girders, or the user can enter a number of beams of four or fewer to aid in phased construction calculations (Request 847).
3. The program was previously incorrectly calculating the deflection of beams that are noncomposite in the final state during the design process, leading to designed beams that occasionally failed the live load deflection criteria. The program is now calculating the deflections during the design process using appropriate section properties, leading to beam designs that satisfy the live load deflection criteria (Request 871).

### **Program Input Revisions**

4. The program will no longer crash when user defined distribution factors (UDF command ) equal to 0.0 are used for the design vehicle for girders with sidewalks. Input checks for defined hinge locations (HNG command) have also been added to prevent invalid hinge locations (Request 699).
5. If the user accidentally enters zero for SUPPORT NUMBER on the SKW command, the program will no longer crash. It will stop with an error message in the program output (Request 856).
6. Hinges cannot be defined at interior support locations. The program was revised to make sure hinges are located at least 0.01 feet away from interior support locations. Previously, the program would crash if a hinge was defined at an interior support (Request 876).
7. The program will no longer internally change the SYMMETRY parameter of the CTL command to Y for design runs of the program when the user has entered N for SYMMETRY. The user will either need to enter Y as the SYMMETRY parameter for design runs, or leave it blank and allow the program to default to Y (Request 879).

8. The OIN, OSC, ODG, OAN, OSC, and ORF commands can now be entered as blank commands (i.e. just the command name and nothing else on the line) and the program will take all defaults for the command. This will only work with the specified output commands (Request 884).

### **Program Documentation Revisions**

9. The description of the LIVE LOAD parameter of the CTL command has been revised to clarify that only operating ratings are calculated for the P2016-13 load. The previous wording implied that inventory ratings may also be calculated for the P2016-13 load (Request 872).

### **Programming Revisions**

10. A program crash during self-weight calculations has been resolved by internally combining adjacent ranges of self weights with identical load magnitudes (Request 867).
11. An issue with calculating the noncomposite utility (UT1) moment for the uncured slab specification checks has been resolved. Previously, the moments calculated would be cumulative over the length of the girder, making the total moments and stresses much larger than they should have been (Request 873).