

# PennDOT e-Notification

Bureau of Business Solutions and Services  
Highway/Engineering Applications Division



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## PSLRFD

No. 017  
August 14, 2017

## Release of Version 2.11.0.0

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The Department's LRFD Prestressed Concrete Girder Design and Rating (PSLRFD) program has been revised as described in the attached "Summary of February 2017 Revisions – Version 2.11.0.0".

The new program has been placed on PennDOT servers for use by the Districts. Consultants and others, who have a current license agreement for **PSLRFD Version 2.10.0.0**, can obtain the updated version by submitting an [Update Request Form](#) along with the **update fee of \$500 for private organizations and \$50 for governmental agencies**. Updates for **PSLRFD Version 2.9.0.0 or earlier** will require an **additional fee**. For PSLRFD update fee details, refer to the following link: <http://penndot.engrprograms.com/home/Ordering/PSLRFD.htm>. 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 Form in order 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 FEBRUARY 2017 REVISIONS - VERSION 2.11.0.0**

Since the release of PSLRFD Version 2.10.0.0 several revision requests and user requested enhancements have been received. This release of PSLRFD Version 2.11.0.0 contains the following revisions and enhancements.

### **Input Revisions**

1. The default values for the Distributed Load command (DLD) are now applied as documented in the User Manual. Previously, an issue could cause distribution loads to only be applied to a single span rather than to the entire bridge. (Request 600)
2. The upper limit on the Number of Draped Strands of the SCE command is now computed based on the specified beam designation. Previously, the upper limit was hard coded to three. (Request 591)
3. A new load type is now available to specify Utility Loads. This allows Future Wearing Surface loads to be separated from Utility loads, but have the same load factors. This in turn, allows ratings "with FWS" and "without FWS" to be correct when utility loads are present. (Request 552)
4. The check for an odd number of strands in a row with an even number of available strands is now skipped for the second half of a symmetrical bridge. Previously, incorrect warning messages could be given for the second half of a symmetrical bridge. (Request 549)

### **Rating Revisions**

5. The Bridge Load Rating Table now reports the resistance that corresponds to the controlling rating factor. When a shear rating controls, the rating the resistance is in units of kips. When a moment rating controls, the resistance can be in units of either kip-ft or ksi. The resistance will be in units of kip-ft when either flexural resistance or serviceability controls the rating. The resistance will be in units of ksi when the allowable concrete stress controls the rating. (Request 606)
6. The rating tonnage and distribution factor is no longer reported for the P-82C combination vehicle in the Bridge Load Rating Table or the Load Rating Summary Table due to the P-82C being a combination of multiple vehicles. (Request 599)

### **Output Revisions**

7. An informational message has been added to the output file to indicate when the number of available strand locations has been reduced due to the presence of the transverse tendon in adjacent box beams or plank beams. (Request 596)
8. The Flexural Resistance Factors output table title is now displayed in all capital letters to be consistent with other program output table titles. (Request 595)

9. The “Effective C.G.S. and Number of Strands” output table now includes the simple bearing location for each span. The effect of crack control debonding is now considered in the output table when the “Effective C.G.S.” and “Effective Number of Strands” are computed for straight or draped strands. (Request 562)
10. A new output table named “Shear Reinforcement for Drawings” has been added to the program to assist in detailing the stirrups reinforcement on the drawings. This output table provides required stirrup areas and spacings for various stirrup reinforcement bars at key locations along each span of the bridge. The output is based on the stirrup data computed by the program and/or entered by the user and the corresponding BD Standards (BD-661M and BD-662M). The new input command Beam Details (BDT Command) must be entered for the new output table to be produced. (Request 554)

### **Shear Revisions**

11. The Horizontal Shear output table now correctly compares the provided horizontal shear resistance to the required horizontal shear resistance. Previously, a tolerance issue could result in two resistance values that appear the same when printed being identified as a code failure. (Request 587/615)
12. The shear analysis and design calculations now incorporate AASHTO 5.8.2.4 (Regions Requiring Transverse Reinforcement) when considering AASHTO 5.8.2.5 (Minimum Transverse Reinforcement). When the factored shear force is less than or equal to one-half of the sum of the factored shear resistance from the concrete and the prestressing force, the minimum transverse reinforcement is no longer considered. The Maximum Spacing of Transverse Reinforcement (AASHTO 5.8.2.7) is considered at all locations along the beam regardless of the magnitude of the factored shear force. (Request 510)

### **Debonding Revisions**

13. A tolerance is now considered when determining if a debonding location is at a crack control debonding location. Previously, warning messages for regular debonding were sometimes being applied to a crack control debonding location. (Request 590)
14. A check has been added to the program to not allow the debonding of draped strands. The program assumes only straight strands will be debonded. (Request 561)

### **Box Beam Revisions**

15. The program now sets variables used to compute the negative moment capacity correctly for box beams with circular voids. Previously, a 2-span box beam with three circular voids analysis run would result in multiple pages of abort messages. (Request 535)

## **NEXT Beam Revisions**

16. For Type F NEXT beams, the GEO command Deck Overhang parameter can now be entered as a dimension up to 8 inches larger than half of the beam width, allowing the deck to extend up to 8" past the Type F NEXT beam flange. Previously, the deck overhang was computed by the program to be one-half of the Type F NEXT beam width. (Request 515)