

PennDOT e-Notification

Bureau of Solutions Management
Highway Applications Division



STLRFD

No. 021
August 3, 2026

Release of Version 2.10.0.0

The Department's LRFD Steel Girder Design and Rating (STLRFD) program has been revised as described in the attached "Summary of March 2026 Revisions – Version 2.10.0.0".

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 2.9.0.1**, 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 **STLRFD Version 2.9.0.0 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 Form to receive the download instructions.

Please direct any questions concerning the above to:

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Attachment

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 MARCH 2026 REVISIONS - VERSION 2.10.0.0

Since the release of STLRFD Version 2.9.0.0 several revision requests and user requested enhancements have been received. This release of STLRFD Version 2.10.0.0 contains the following revisions and enhancements.

Specification Related Revisions

1. The compactness criteria legend has been revised to include a reference to the AASHTO 10th Edition for holes in the tension flange making the section noncompact. (Request 744)
2. The FGV command computes the gamma factor from the gross vehicle weight survey data based on the procedure detailed in DM-4 PART A: Policies and Procedures 5.1.1.1.2b Effective Stress Range. The computed gamma factor is used as the Fatigue II load factor. The Fatigue I load factor is set equal to the gamma factor times 1.75 / 0.80. Calculations to compute the gamma factor include computing the ratio of the average gross vehicle weight to the gross vehicle weight of the LRFD Fatigue Truck. Previously, inconsistent units were being used for the average gross vehicle weight and the LRFD Fatigue Truck gross weight. This issue has been corrected. The Fatigue load factors computed from the FGV data are reported in the Load Factors and Combinations output report in the Analysis section of the output. (Request 766)

Fatigue Revisions

3. The 100-year single lane Average Daily Truck Traffic (ADTT)_{SL} is now used to select the fatigue limit state used to check the fatigue Category C' detail during the design. When the (ADTT)_{SL} is greater than the Equivalent Infinite Life trucks per day, Fatigue-I limit state is used, otherwise Fatigue-II state is used. Previously, Fatigue-I limit state was always used. (Request 933)

Program Input Revisions

4. The Distance k used to check web local yielding at concentrated loads applied to webs without bearing stiffeners has been added as an input parameter on the Analysis Plate command (APL) and the Analysis Built-Up command (ABU). Previously, Distance k was conservatively assumed by the program for plate girder analysis/design and built-up section analysis. For plate girder designs Distance k is now taken as the bottom flange thickness plus the fillet weld size between the bottom flange and the web. (Request 897)
5. The upper and lower limits for all parameters of the SST command are now being consistently checked. Previously, the Support Number, Bar Number, and Left and Right Cutoff Points were not being consistently checked. Additionally, the Area of Steel parameter in output files was renamed to Area of Reinforcement to match the User's Manual. (Request 910)

6. On the MAT, DRB, or DP1 commands, if the tensile strength is left blank, the program will set a default value of tensile strength based on the input yield strength. If the input yield strength is shown on Table 6.4.1-1 in the LRFD Specifications or on Table 6A.6.2.1-1 in the Manual for Bridge Evaluation, the program will set the tensile strength equal to the value shown on the table, otherwise the tensile strength will be set based on the values in Table 5.15-1 (MAT Command), Table 5.16-1 (DRB Command), or Table 5.17-1 (DP1 Command) of the User's Manual. If the input yield strength is greater than the input tensile strength, the tensile strength will be set to be equal to the yield strength. (Request 913)
7. The Wind Program Defined (WPD) and Wind User Defined (WUD) commands no longer used the Additional Wind Cross Section parameter. This parameter had been used to calculate the total wind load acting on the entire cross section, but this value is no longer used by the program. The Wind Depth and Wind Force are now reported in the Computed Wind Force and Pressure (WPD) output table or in the User-Defined Wind Force and Pressure (WUD) output table. (Request 914)

Program Output Revisions

8. The thickness of web and stiffener plates is now reported to four decimal places in the following output tables: Plate Girder Properties, Bearing Stiffeners, Built-Up Properties, Transverse Stiffeners, and Longitudinal Stiffeners. (Request 902)
9. The program now prints specification check messages with explicit "with FWS" and "without FWS" labels, depending on the presence of an FWS load and the value of the "rating without FWS" parameter in the ORF command. When the parameter is set to 0, only the ratings with FWS are printed. When set to 1, both the ratings with and without FWS are printed. When no FWS load is defined, only the ratings without FWS are printed. (Request 903)
10. Input file specifications that included a long directory path now report the file name and the beginning of the drive and directory path for the Input File Echo output. Previously, for very long directory paths the file name could be cutoff. (Request 905)
11. The output report, Summary – Overall Reactions, has been revised to correctly report support reactions for symmetrical structures. Previously, for symmetrical structures the Abutment report could include output at supports other than the first support. Also, for symmetrical structures the Pier report could omit other interior supports besides support two. Additionally, the Abutment report has been revised to report the same live load vehicles as the Pier report and the Pier report now includes all supports as appropriate based on symmetry. (Request 907)
12. If the input yield strength is greater than the input tensile strength, the tensile strength will be set to be equal to the yield strength. In addition, a warning will be displayed stating the yield strength is greater than the input tensile strength. (Request 912)

13. The Input Check summary was updated to include CBE and DBE warnings in the total warning count. This ensures that all warnings issued during input processing are accurately reported to the user. (Request 919)

Program Documentation Revisions

14. The User Manual has been revised to note the input file echo is limited to 87 characters on an output line. (Request 904)

Engineering Assistant Revisions

15. The figure names used in Engineering Assistant's tabs and descriptions have been updated to be consistent with the figure names used in the User Manual. Engineering Assistant files have been updated to include figures previously only referenced in the User Manual. The User Manual has also been updated to include additional figures in Chapter 6 that previously only appeared in Engineering Assistant's extended field help. Engineering Assistant users will now see the descriptions of input parameters that are no longer used by the programs with strike-through text. (Request 915)

Programming Revisions

16. The Section Loss Command parameters for Distance, Width, and Thickness are now validated against the specified section loss element. The cross-sectional location and area defined by the distance, width, and thickness must be within the cross section of the loss element. Previously, no validation was made for these parameters. (Request 785)
17. The warning message for rolled beams with a yield strength less than 36 ksi has been removed. Previously, the minimum yield strength of 36.0 ksi for webs of hybrid sections was being applied to rolled beams. (Request 901)
18. The CONCENTRATED LOADS output table now reports the Utilities Loads, type UT1 and UT2. Previously, these loads were reported as 0.0 in the output table. Additionally, the Utilities loads, type UT1 and UT1, and the Miscellaneous loads, type MC1 and MC2, have been included in the weld demand calculations. (Request 906)
19. The program has been revised to use Visual Studio 2022 and Intel Fortran Compiler Classic 2021.12.0. (Request 923)
20. The program has been made compatible with the forthcoming release of Engineering Assistant v3.0.0.0. Changes include:
- 1) switching image formats from Enhanced Metafile (.emf file) to Portable Network Graphic (.png file) required by the new Engineer Assistant,
 - 2) associating a Tab Name with the current 3 letter tab abbreviation,
 - 3) resolving issues when setting floating-point precision on 64-bit systems. (Request 929)