

PENNDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Application Division



ABLRFD

No. 010

March 30, 2009

Release of Version 1.8.0.0

The Department's LRFD Abutment and Retaining Wall Analysis and Design (ABLRFD) program has been revised as described in the attached "Summary of December 2008 Revisions – Version 1.8.0.0".

The new version has been placed on PENNDOT servers for use by the Districts. Consultants and others, who have a current license agreement for **ABLRFD Version 1.7.0.0**, can obtain the updated version by submitting an Update Request form along with an **update fee of \$500 for private organizations and \$50 for governmental agencies**. Updates for **ABLRFD Version 1.6.0.0 or earlier** will require an **additional fee**. For ABLRFD update fee details, refer to the following link: <http://penndot.engrprograms.com/home/Ordering/ABLRFD.htm>.

The Software Update Request form can be obtained on the PENNDOT Engineering Software Support website at <http://penndot.engrprograms.com> by clicking on "Ordering/Updating" and, then on, "Update Form".

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 DECEMBER 2008 REVISIONS - VERSION 1.8.0.0

Since the release of ABLRFD Version 1.7.0.0 several revision requests and user requested enhancements have been received. This release of ABLRFD Version 1.8.0.0 contains the following revisions and enhancements.

Input Revisions

1. The program has been revised to calculate a minimum cover value for parallel reinforcement in the footing for design runs. The calculated value is compared to the user entered cover with the larger value being shown in the "Input Summary" Table and used in all design calculations. Previously, the program would permit the perpendicular and parallel bars to be in the same plane. The program was also incorrectly displaying the default cover values for parallel reinforcement during a design run on the "Input Summary" Table while continuing to use the user entered value for all design calculations. (Requests 252, 268)
2. The program has been revised so stem batter values can be left blank or set to zero without causing the program to halt processing. Previously, entering a zero for a batter component would cause the program to crash. (Request 230)
3. The program has been revised to allow for the design of a substructure without a toe projection. Previously the program would only allow a design with a 1 foot minimum toe projection. (Requests 100, 266)
4. The Y distance to Wind Load on External Structure parameter on the LRT command has been revised so the program upper limit now matches the value documented in the User's Manual. (Request 279)
5. The upper limit of the Downward Live Load parameter on the DLL command has been increased to 10 kip/ft (150 kN/m). (Request 280)

Output Revisions

6. The Footing Flexure table has been revised to indicate which minimum reinforcement condition controlled for a design run if minimum reinforcement controls. (Request 059)

7. The program has been revised to eliminate the soft classification for rock foundations and to now report the maximum bearing pressures for all rock foundations. Previously, the program would report uniform bearing pressures if the Modulus of Elasticity of the Concrete exceeded the Modulus of Elasticity of the rock. (Request 109)
8. The headings for the "Specification Check" table have been revised to correctly reflect with verbiage when errors or warnings have been found. Previously, the program had fixed headers which would cause confusion with verbiage not matching the presence or lack of errors/warnings. (Request 271)

Loading Revisions

9. A new load has been added to the program to account for the weight of an Architectural Treatment placed on the front face of an abutment or wall. (Request 253)

Serviceability Revisions

10. The program has been revised to properly indicate when a section is cracked on the "Crack Control" table for analysis runs. Previously, under certain circumstances, the program would indicate a section was not cracked even when an actual stress was being reported. (Request 247)
11. The program has been revised to prevent an erroneous status flag for allowable spacing from appearing in the "Crack Control" table for analysis runs when a stem section has cracked. Previously, under certain conditions, the program would report a spacing failure even when the actual spacing was less than the allowable. (Request 273)

General Changes

12. The program has been modified so the effective footing width cannot be less than zero. Previously, for certain input files, the effective footing width could become less than zero leading to a program crash. (Request 248)
13. The program has been modified to print to the screen the range of B' values for a footing width which causes an $L' \text{ over } B' < 1$ warning during a design run. This change greatly reduced the amount of warning messages printed to the screen. Previously, the program would print one line to the screen for each iteration of a footing width design (Request 263)

14. The program has been modified to allow a zero length toe/heel projection in the water force calculation routine. Previously, if a zero projection was encountered, the program would output a cryptic warning message. (Request 264)

User Manual Changes

15. Chapter 3 of the User Manual has been modified so all effective consolidation stresses are annotated with a prime character. (Request 123)
16. The contact information in Chapter 9 has been updated to reflect the new organizational name changes at PennDOT. (Request 270)