

PENNDOT e-Notification

Bureau of Design
Bridge Quality Assurance Division



BXLRFD

No. 004
May 17, 2004

Release of Version 1.3.0.5

The Department's LRFD Box Culvert Design and Rating Program (BXLRFD) has been revised as described on the attached Summary of May 2004 Revisions – Version 1.3.0.5.

Users should incorporate this version into all designs and analyses as soon as possible. The use of this version will eliminate the need to perform supplemental calculations as described in previous PENNDOT e-Notifications BXLRFD Nos. 002 and 003.

The new program has been placed on PENNDOT servers for use by the Districts. Consultants and others, who have a current license for BXLRFD Version 1.3, can download version 1.3.0.5 free of charge from the website <http://penndot.engrprograms.com>. Installation instructions are provided at the website.

Those who have BXLRFD version 1.2 or earlier can update to version 1.3.0.5 by paying an appropriate update fee. Update fee information is provided at the website.

If you have any questions, contact Hasmukh M. Lathia, P.E. at (717) 783-8822 or hlathia@state.pa.us.

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Attachment

SUMMARY OF MAY 2004 REVISIONS - VERSION 1.3.0.5

Since the release of BXLRFD Version 1.3 several revision requests and user requested enhancements have been received. This release of BXLRFD Version 1.3.0.5 corrects the following known problems and provides enhancements.

BXLRFD Version 1.3.0.5 contains the following revisions:

1. The following changes have been made to the serviceability tables in the program.
 - a. The crack control stress and tensile reinforcement stress is now converted correctly for US Customary Units. (Request 080)
 - b. The output shows the corresponding allowable crack control stress for the tensile side of a section. (Request 080)
 - c. The program now always assumes that the concrete section is cracked. (Request 091, Request 082)
2. The user entered vehicle loads on the SAL Command have been revised to convert the US Customary Units loads into tons for correct rating tonnage output. (Request 084)
3. A Live Load Distribution and Dynamic Load Allowance Table has been added to the program output. (Request 090)
4. The User Manual has been updated to inform the user that reinforcement commands should not be entered for design runs (Request 092)
5. The program does not report crack control stress values for the P-82 truck since Service-I limit state is not computed for the P-82 truck. (Request 093)
6. The array used to store the influence line points for truck load distribution has been increased to accommodate long vehicles on short span culverts. (Request 096)
7. The live load distribution calculations for case 2 (less than 2 ft [600mm] of fill and span greater than 15 ft [4600 mm]) have been modified to include the multiple lane case. (Request 095, Request 097)
8. The live load distribution width calculation for the Fatigue limit state is now calculated correctly without the multiple presence factor or the multiple presence reduction factor. (Request 099)

There are still several outstanding enhancements and problems that will be addressed in the future releases of BXLRFD. For a list of revisions that have yet to be included in the BXLRFD program refer to the summary of revisions for version 1.3.