PENNDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Application Division

pennsylvania
DEPARTMENT OF TRANSPORTATION

BXLRFD

No. 012
May 23, 2011

Release of Version 2.3.0.0

The Department's LRFD Box Culvert Design and Rating Program (BXLRFD) has been revised as described on the attached Summary of March 2011 Revisions.

The new program has been placed on PENNDOT servers for use by the Central Office and Districts. Consultants and others, who have a current license agreement for the BXLRFD Version 2.2.0.0 can obtain BXLRFD Version 2.3.0.0 by paying the license update fee of $500 for private organizations and $50 for governmental agencies. Updates for BXLRFD Version 2.1.0.0 or 2.1.0.1 will require an update fee of $1,000 for private organizations and $100 for governmental agencies. Updates for BXLRFD Version 2.0.0.0, 1.4.0.0, 1.3.0.5, 1.3, 1.2, 1.1, or 1.0 will require an update fee of $1,500 for private organizations and $100 (not $150) for governmental agencies. No update fee is required for Federal and State Transportation Agencies.

The forms for Software Update Request and Request for PennDOT's Engineering Software License can be downloaded at http://penndot.engrprograms.com.

Please direct any questions concerning the above to:

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Attachment

SUMMARY OF MARCH 2011 REVISIONS - VERSION 2.3.0.0

Since the release of BXLRFD Version 2.2.0.0 several revision requests and user requested enhancements have been received. This release of BXLRFD Version 2.3.0.0 corrects the following known problems and provides enhancements.

Input Revisions

1. The program has been enhanced to now design and analyze precast frame culverts which are placed on cast-in-place strip footings. Previously the program could only design and analyze cast-in-place frame culverts with strip footings. (Request 174)

Output Revisions

2. The headers for the Finite Element Model Output File (.FEM) have been revised to be more descriptive and provide units. (Request 197)

Strip Footing Revisions

3. The Strip Footing Shear Design table has been revised to include the TK527 live load code. Previously, if the TK527 load would control for the shear design in a strip footing, the program would stop with an error. (Request 198)

4. The Serviceability Spacing Check for Strip Footings has been revised to use the correct load cases when determining the tensile reinforcement stress in the footing under the right wall. Previously, the program was incorrectly accessing the positive load case instead of the negative load case. Also, the Serviceability Summary Table has been revised to prevent the program from erroneously indicating a fault with a component when no fault is present. (Revision 199)

5. The Development Length Table has been revised to correctly select the controlling face of the wall when the Required Area of Steel for each face at the bottom of the wall is equal. Previously, the program would only select the left face if the Area of Steel Required was equal for both faces. (Request 202)

Finite Element Revisions

6. The program was revised to provide better symmetry within the finite element model

results and more closely matches the results from the BOX5 program. This was accomplished, as a temporary workaround, by increasing the axial areas within the finite element model to a large value so the axial deformations will be negligible. (Request 193)

General Program Revisions

7. A program crash has been resolved related to the lack of shear steel in external walls during a design run. Previously, for certain input files, during an iterative design run the program would halt with an error when attempting to clear out memory for shear reinforcement in the external and internal walls. Due to a recent change, the program no longer designs shear reinforcement in the walls and therefore should not try to clear out memory for reinforcement in walls. (Request 200)

User Manual Revisions

8. The User Manual has been modified to describe efficient design of walls when the top slab thickness is incremented during a design run. (Request 171)

Engineering Assistant Revisions

9. The Fill Grade field on the DIM command in Engineering Assistant has been revised to allow negative numbers to be entered. Previously, only positive values could be entered using Engineering Assistant. (Revision 186)