PennDOT e-Notification

Bureau of Solutions Management
Highway Applications Division

pennsylvania
DEPARTMENT OF TRANSPORTATION

BAR7
No. 015
July 2, 2018

Release of Version 7.15.0.0

The Department's Bridge Analysis and Rating (BAR7) program has been revised as described in the attached "Summary of February 2018 Revisions – Version 7.15.0.0".

The new program has been placed on PennDOT servers for use by the Districts. Consultants and others, who have a current license agreement for **BAR7 Version 7.14.0.x**, can obtain the updated version by submitting an Update Request Form along with the **update fee of $100 for private organizations and $50 for governmental agencies**. Updates for **BAR7 Version 7.13.0.x or earlier** will require an **additional fee**. For BAR7 update fee details, refer to the BAR7 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

SUMMARY OF FEBRUARY 2018 REVISIONS - VERSION 7.15.0.0

Since the release of BAR7 Version 7.14.0.3, several error reports and user requested enhancements have been received. This release of BAR7 Version 7.15.0.0 contains the following revisions.

General Program Revisions

1. For bridge types of "FSS" & "GGF", the UNSYM PIER field at the column of 79 of the BRIDGE CROSS SECTION AND LOADING card was added to allow the user whether to implement one floorbeam analysis under unsymmetrical pier support configuration per BAR7 Run (BAR7REV193).
2. Increase the maximum number of FBs to be analyzed to 5 (from 3) and increase the maximum number of FB ranges to 9 (from 5) for symmetrical FB and to 18 (from 5) for unsymmetrical FB (BAR7REV209).
3. Increase user-input traffic lane locations from 6 to 7 in Traffic Lane Location data card and added an error message of "total lane width (xxxx.xx) in the Traffic Lane Locations card input shall be less than the roadway width (xxxx.xx) (BAR7REV211).
4. Added the warning message in subroutine XL_Brace.for 1. when PR10 is true (OUTPUT = A) and there is a governing positive moment and the top flange if not braced; 2. when PR10 is true and there is a governing negative moment and the bottom flange is not braced (BAR7REV213).
5. Corrected the mistake of the deck contribution areas for end exterior floorbeam when calculating the dead load reactions from the single-span stringer above acting to the floorbeams (BAR7REV218).
6. Added new rating factor codes to indicate whether the flange or web buckling controls in the final ratings in the Rating Summary (BAR7REV219).
7. This program has been converted to Microsoft Visual Studio Professional 2017 version 15.4.4 and Intel(R) Visual Fortran Compiler (2017 update 5) version 17.0.5.267 (IA-32) (BAR7REV221)

Input Revisions

8. Various new input items were added
   COMPACT field at the PROJECTION IDENTIFICATION card
   UNSYM PIER field at the BRIDGE CROSS SECTION AND LOADING card
   UPC card = UNSYMMETRICAL PIER SUPPORT CONFIGURATION card
   LANE 7 at the TRAFFIC LANE LOCATIONS card
   SECTION SHAPE field at the STEEL MEMBER PROPERTIES card

Load Factor

9. For load factor method, add an input item, COMPACT, at the column 79 of the PROJECT IDENTIFICATION card to allow the user whether to implement the all-or-none compact requirements in the calculation of rating summary for stringers, floorbeams, and girders (BAR7REV206).

Load Revisions

10. For bridge type of “GGF” which has multiple beams (or stringers) supported by the floorbeams below, user shall use DL1 for stringer analysis using the girder subroutine and DL1ST was not used. DL1ST shall be used in the floorbeam analysis (the computation of DL1 concentrated dead load reactions acting on the floorbeams from stringers above) using the floorbeam subroutine. Therefore, for floorbeam analysis, if DL1ST was not entered by the user, DL1ST will be restored by the value of DL1 entered by the user (BAR7REV207).
11. Provide options to place uniform and/or concentrated patch loading on floorbeams of a bridge (BRA7REV208).
12. For steel members composited with the reinforced or non-reinforced concrete deck, the CONC DECK in the PROJECT IDENTIFICATION card shall be entered with a “Y” and the CONCRETE MEMBER PROPERTIES card shall be entered. If not, a warning message will be issued instead of issuing the error message to stop the BAR7 program because the previous existing incorrect code in APRAS. The integral wearing surface (default is 0.5”) entered by the user shall be deducted from the SLAB THICK in the BRIDGE CROSS SECTION AND LOADING card for the calculation of the section properties (BAR7REV210).

Box-shape Floorbeam

13. For bridge type of “FSS” or “GGF”, rating of non-composite, non-compact box-shape cross girders workaround using BAR7 program with I-shape beams with minor modifications on input. (BAR7REV216)

Output

14. For Output Option = 6 (fatigue estimation only) and PDF = Y, the result shall produce the pdf output (BAR7REV205).
15. Instead of printing the special live output based on the sequence of input in the data file, program shall print the special live output based on their Special Live Load IDs (BAR7REV212).