Wyoming Department of Transportation

RELEASE NOTES

for

BRASS-GIRDER™

Version 7.6

May 2016

General

The BRASS™ incident tracking system can be found at www.wydot-brass.com. Users without an account on the incident tracking system can request an account by clicking on the "Open a Technical Support Account" link/button and e-mailing the address or calling the phone number listed. A username and password will be created and sent to the user. All BRASS™ technical support questions should be logged in this system.

Program Maintenance

The following issues were addressed for this release. The incident number is listed in parentheses after each issue if applicable.

Maintenance

- Revised the Reinforcement help topics for the Beam Profile and Deck Profile forms to clarify the distances, row references, and when the reinforcement development length input is available. (617, 940)
- Updated the Control form validation to determine the maximum number of stages allowed for a particular structure type and then validate against that maximum. (909)
- Updated the installations for AASHTOWare Bridge Integration to provide a second database script to handle the BRASS-GIRDER(STD) import. It is named UpdateBrassGirderStdImport.sql and the contents are identical to those in the UpdateBrassGirderStd.sql provided for BRASS-GIRDER(STD) 6.4. (911)
- Revised the GUI and input report to not show the Dead Load Distribution Methods group box for R/C slab bridges. (921)
- Revised the input report to show the shear connector table even when composite regions are input. (924)
- Added an option to the Tools menu to delete obsolete output files. Additionally, a popup menu was added to the Output tree to allow individual output files to be deleted. (926)

- Added an option to the Preferences for controlling if a backup copy of the data file is generated when the data file is opened with the GUI. (927)
- Removed the tapered element from the program. This was previously on the Analysis tab of the Control form. Tapered members can still be modeled effectively using the stepped element. (938)
- Updated the truck train module to store and report the critical positions of both trucks. The headway spacing is then calculated and also reported. (944)
- Updated the GUI to expose the train headway limits for the design truck, design tandem, and legal truck. These limits are found on the Specification Control form for multiple-span structures. (947)
- Revised the figures for several forms to clarify the dimensions. Forms included Component Groups (Longitudinal Stiffeners), Schedules (Bracing and Bearing Stiffeners), Points of Interest (Bearing Stiffeners and Longitudinal Stiffeners). Figures were also added to the Schedules (Bearing Stiffeners) and Points of Interest (Bearing Stiffeners) forms. (956)
- Revised the data validation for all strand profiles to check the vertical distances relative to each other. (959)
- Added data validation to detect when a schedule contains ranges that do not reference supports on the left half of the structure when symmetry is selected. (974)
- Added a help topic for the New File Defaults form. (977)
- Added a multiple-span graphic to the Settlement tab of the Dead Loads form to clarify the rotational movement. (983)
- Implemented a smaller tolerance for validating the thermal expansion coefficient for timber, concrete, and steel materials. (984)
- Revised the data validation to check for the existence of certain beam profile schedules, depending on the material and beam type. Beam profile schedules for the bare beam are required for the analysis to begin. (985)
- Revised error messages for invalid unbraced lengths to better clarify the location. (986)
- Revised the GUI to first group schedules by support and then sequentially order the schedules in each group by start distance. (987)
- Revised the Strand Profile form to permit setting the strand group after making a row identical to another. (988)
- Revised the error messages for distribution factors and wheel fractions so they are consistent for moment, shear, deflection, and reaction. (989)
- Revised the debonding grid on the Strand Profile form to only enable this input when there are strands defined for the row. (991)
- Added an upper bound for the development length validation for straight and harped strands. (992)

- Revised the data validation for strand debonding that accounts for span length, overhangs, and overlapping of left and right debond lengths. (993)
- Added validation for the strand profile vertical distance plus row spacing to ensure the strand is within the beam depth. (994)
- Updated the Combined Product defaults for the LRFD load modifiers on the Factors form to be blank. Now, these values will be automatically calculated instead of being set to 1.0. (1006)
- Revised the input report for steel built-up sections. (1016)
- Revised the Strand Profile form grids to display a "+" in those rows that are the source row of an identical row, which prevents the source row from being deleted. (1027)
- Revised forms utilizing split containers so the controls contained thereon are hidden or disabled per the setting in the Preferences. This included the Component Groups (P/S), Points of Interest (Concrete), Points of Interest (Steel), and Live Loads forms. (1039)
- Updated the Output form help topic to clarify the condensed and expanded output options for Critical Design Ratios / Rating Factors. (1043)
- Updated the Deck Geometry help topic to clarify the input of cantilever lengths and member spacings. (1044)
- Updated the validation for the right inflection point of prestressed strands reversed for continuity so this input is optional for interior spans. (1051)

Bug Fixes

- Added additional prestressed concrete validation for ensuring that the concrete material assigned to a prestressed beam was actually flagged as "prestressed." (909)
- Revised the GUI to correctly export the voided slab to the analysis engine. This user shape is the only one tied directly to the section depth and not input as a schedule. (917)
- Corrected the Beam Profile validation for a reinforced concrete girder. (920)
- Corrected the travelway export for a slab bridge, which had affected the number of lanes loaded calculation. (931)
- Corrected the transfer of the number of channel shear connectors to the analysis engine. (939)
- Corrected errors with running floorbeam lines from AASHTOWare Bridge. (942)
- Corrected the calculation of the torsional inertia when left blank in the GUI. (957)
- Corrected the module that reads the XML node for the Fatigue Stress Range input on the Prestress Fatigue Stress (LRFD) tab of the Schedule form. The units were being saved incorrectly when a stress was input. (960)
- Corrected issues opening the Strand Profile form when spans were linked. (962)

- Corrected parabolic reversed strand profiles from being deleted when the Control form is opened and OK is selected. (963)
- Revised the translator for a steel data file composed of both built-up and plate girders to be imported as an equivalent plate girder because the GUI only supports one beam type for the structure. (964)
- Corrected errors that occurred when double-clicking beam profile (web thickness) validation messages in the Validation Messages form. (973)
- Corrected grid pasting errors throughout the GUI. (980, 990, 1037)
- Corrected an error that occurred when deleting a straight strand row from the Strand Profile form. (995)
- Corrected the module that reads the XML node for the Theta angle input on the Shear tab of the Points of Interest form. The units were being saved incorrectly when an angle was input. (998)
- Corrected the LRFR export from AASHTOWare Bridge to apply the 0.9 factors to the truck train plus lane combination. (1003)
- Revised the export from AASHTOWare Bridge to ignore essentially duplicate points of interest, which prevents trying to open the same output file twice. (1007)
- Corrected the GUI to not change the support restraint to a roller when that support is found to be free. (1011)
- Corrected the shear analysis for slab bridges to ignore the minimum shear requirement. Previously, half of the concrete contribution to the shear (V_c) was used if this requirement was not met. (1028)
- Addressed behavioral issues with grids on the Special Vehicles and Definitions tabs on the Live Loads form. (1030, 1032)
- Corrected an array subscript used in determining the moments at the ends of the unbraced lengths for LFD only. This error was sometimes causing the C_b factor to be calculated incorrectly, which affected the flexural capacity from Article 10.48.4.1. (1047)
- Corrected prestressed concrete export of one-point harped strands, which was previously creating a second symmetrical harp point. (1054)

Program Verification

The NCHRP 12-50 process was used to perform regression testing on this version of BRASS-GIRDER™. This process compares key results from this version of BRASS-GIRDER™ with the previous version.