

# RELEASE NOTES

for

## BRASS-GIRDER<sup>TM</sup>

Version 8.8

November 2021

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### General

The BRASS<sup>TM</sup> Incident Tracking System can be found at <https://www.wydot-brass.com>. Users without an account for the incident tracking system can request an account by clicking on the "Open a New 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<sup>TM</sup> 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

- Updated the span/support configuration figure in the Control: Structure (B) form help topic to list the leg support references (1L, 2L, etc.). The help topics with a Support input field were updated to reference the span/support configuration figures in the Control: Structure (B) form. (1947)
- Added a Troubleshooting topic to the help system. (1948)
- Revised the analysis engine to write the influence line summaries to a separate output file with a .inf extension. (1952)
- Updated the Point of Interest Summary report to list the analysis settings for the following: (1) Allow Plastic Analysis, (2) Use MBE for End Panel Shear Evaluation for Rating, (3) Use Appendix A6, and (4) Override Long. Stiffeners. (1954)
- Revised the Input Report to include a Library Sections section, render the library section details, and link to the library section when referenced on the Beam Profile section of the report. (1959)
- Revised the Slab Thickness help topic (second and third paragraphs) on the Deck Geometry: Deck form. (1971)
- Updated the Library Vehicle Selection form to set focus to the name filter when the form is loaded. (1979)

- Updated the Library Section Selection form to set focus to the name filter when the form is loaded. (1980)
- Updated the BRASS Download and Install Instructions document to provide silent install and uninstall syntax for PowerShell. (1981)
- Corrected formatting inconsistencies in the Help system. (1997)
- Revised the GUI to open the Live Loads form as read-only when the Standard Live Loads are different between the data file and the Preferences file. This way the user can determine which live loads are different between the two files. (2004)
- Revised the GUI to use "Apply to entire member" terminology instead of "Apply to entire structure" on the Beam Profile, Deck Profile, Schedules, Wheel Fractions, and Distribution Factors forms. There was some confusion over what "structure" meant when a girder system was input. (2010)
- Revised the GUI to attempt to connect to the preferences and/or library files that are located on a network drive multiple times in case network latency occurs. (2019)

## Bug Fixes

- Verified that the reinforced concrete flexural resistance for negative flexure is successfully calculated for an isolated data file. Reinforcement changes for Incident 1854 addressed this issue. (1807)
- Corrected the drawing of debonded strands at the right end of the span in the Strand Layout form. (1949)
- Corrected the GUI to open the Bracing Wizard form when the Bracing Wizard button on the Bracing Schedules form is selected. This issue only happened with the 64-bit GUI. (1950)
- Revised the export to obtain the compressive strength and modulus of elasticity of the non-composite deck concrete when the dead load distribution or live load distribution factors are selected to be calculated. The modular ratio is now calculated as expected for use in the LRF live load distribution factors formulas for a non-composite steel member. (1957)
- Updated the Sacrificial Topping help topic on the Deck Geometry: Deck form to explain that the sacrificial topping is considered integral with the slab and will only be applied to the structure if a material is assigned to the Deck element on the Deck Load: Materials/Stages tab. The Sacrificial Topping input fields are shown accordingly. (1961)
- Resized the Adjusted Design Values grids on the Member Control form so all the input can be seen without scrolling. The modulus of elasticity fields were shifted down on the form. (1963)
- Corrected the behavior of the Start Distance and append row in the Bottom Cover Plate grid of the Beam Profile form, which was being incorrectly adjusted based on the top cover plate settings. (1968)
- Revised the GUI to list a single 'g' cross section code for LRF live load distribution factors. Existing data files using the old 'g1' and 'g2' cross section codes are automatically converted to a single 'g' cross section code opened. Translated data files are adjusted in a similar manner. (1983)
- Corrected an error that caused the GUI to crash when deleting multiple grid rows in certain grids. This included the Points grid in the Points of Interest form and the Groups grid in the Strand Groups form. (1986)

- Corrected the Input Report to show slab and voided slab images for the Deck Geometry: Travelway and Deck Geometry: Appurtenance sections. (1987)
- Corrected the export process to identify when a reinforced concrete library shape is used and export that shape to the analysis engine as is done for the other materials. (2009)
- Corrected the export process and analysis engine to achieve consistent results when splice points are entered and the Point of Interest: Generation Control setting is set to user-defined, tenth points, or tenth points plus user-defined points. (2012)

## Enhancements

- Added the NEXT D, E, F Beams (North East P/S Beam Shapes) to the standard section library. (1942)
- Added the NEDBT (North East Deck Bulb Tee P/S Beam Shapes) to the standard section library. (1943)
- Added the NEBT (North East Bulb Tee P/S Beam Shapes) to the standard section library. (1944)
- Implemented a Live Load Factor Tool form to collect ADTT in order to compute the legal live load factor. This tool is accessed using a button on the Factors: Load Factors (LRFD) form. There is also a similar button on the Live Loads: Definitions (LRFD) form when editing the gamma LL Overrides cell for each live load definition. (1945)
- Implemented a Live Load Factor Tool form to collect ADTT, permit information, and vehicle information in order to compute the permit live load factor. This tool is accessed using a button on the Factors: Load Factors (LRFD) form. There is also a similar button on the Live Loads: Definitions (LRFD) form when editing the gamma LL Overrides cell for each live load definition. (1946)
- Implemented an offset location for the left and right curbs. See the Deck Geometry: Appurtenances form. (1956)
- Added the 28 Michigan legal vehicles to the standard vehicle library. The vehicle names are MI-Truck1 through MI-Truck28. (1962)
- Added three variations of the CalTrans P15 vehicle to the standard vehicle library: (1) CA-P15-MIN with 18 ft spacing, (2) CA-P15-MID with 39 ft spacing, and (3) CA-P15-MAX with 60 ft spacing. (1964)
- Added the CalTrans fatigue permit truck (CA-PMT-FAT) to the standard vehicle library. (1964)
- Implemented a new option for outputting the critical failure mode ratios when the "Expanded report" is turned on using the "Critical Design Ratios / Rating Factors" checkbox on the Output: Primary form. See the "Critical Failure Mode Ratios" checkbox on that form. For each live load combination, this report summarizes the applicable failure modes and lists the controlling point of interest, limit state, design ratio or rating factor, load rating (if rating), controlling action, and location details. (1974)
- Revised the live load actions/reactions report for a floorbeam analysis to show the critical number of lanes associated with the corresponding critical actions/reactions. Previously, the user would have to find the controlling live load position in the floorbeam intermediate output file to find the critical number of lanes. (2011)



## 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.