CSiBridge® 2015 (Version 17.1.1)
Release Notes

Notice Date: 2014-10-01

This file lists all changes made to CSiBridge since the previous version. **Most changes do not affect most users.** Incidents marked with an asterisk (*****) in the first column of the tables below are more significant.

Changes from v17.1.0 (Released 2014-09-02)

Application Programming Interface
Enhancements Implemented

*	Incident	Description
	69003	An enhancement has been implemented for the Application Programming Interface (API) to allow retrieval of load combination results with correspondence. For this to work it is first necessary to call SapModel.Results.Setup.SetOptionMultiValuedCombo(3) to activate this option.
	70295	The Application Programming Interface (API) has been updated to provide support for 64-bit API clients. This was previously available in v16. API developers should refer to the updated API documentation for details on changes that are required to use a 64-bit API client with CSiBridge v17.

Miscellaneous
Enhancements Implemented

*	Incident	Description
	70082	The version number has been changed to v17.1.1 for a new minor release. CSiBridge v17 will be known as CSiBridge 2015.

User Interface
Incidents Resolved

*	Incident	Description
	69714	An incident was resolved in which the program would sometimes terminate when displaying the load case tree using the Show Tree command if there was a staged-construction load case that had no stages defined. This was a user interface issue only and did not affect results.
	70349 70635 70960	An incident was resolved in which the program would terminate abnormally when trying to add a general vehicle. This was a user interface issue only and did not affect results.
*	70551 70553 70555	An incident has been resolved that addressed several unreported "Abnormal Termination" errors that could occur when working with the graphical user interface. When these errors occurred the software would terminate and changes to the model since the last file save operation could be lost. In case such an abnormal error condition may still be detected, an option is now provided to save the model as a new file before the software closes. This will usually capture changes made to the model since the last save, with the possible exception of the changes that caused the error to occur.

*	Incident	Description
	70680	An incident was resolved in which the program would sometimes terminate when selecting a load combination and clicking the Modify/Show button on the ribbon interface. This was a user interface issue only and did not affect results.
	70801	An incident was resolved in which the File menu > Import > SAP2000 .sdb File command would incorrectly start an old SAP2000 model translator. This was only an issue when using the menu system, and did not affect results. The equivalent command in the ribbon was ok.

Modeling

Incidents Resolved

*	Incident	Description
	70370	An incident was resolved where section properties (areas A, A2, A3; moments of inertia I22, I33; torsional constant J) were not being recalculated for certain types of frame sections after editing their section dimensions in the interactive database. The affected section types were Steel Hybrid I, Steel Hybrid U, Built-up I, Precast concrete I, and Precast concrete U. Section properties were recalculated for any section where the definition was viewed using the command Components > Properties - Frame > Modify, and clicking OK on the form. The actual section properties used for analysis and design could be seen in the table "Frame Section Properties 01 - General".

Bridge Modeler

Incidents Resolved

*	Incident	Description
	69481	An incident has been resolved for the Bridge Modeler where, for a steel I- or U-girder bridge with girder web modeled as area objects, when a cross diaphragm is assigned to the girder at a location that is very close to a bridge section-cut location or nonprismatic girder-section transition, and if the merge tolerance is set to be very small such that the diaphragm location is not able to merge to the section-cut location or girder-section transition location, then the Modeler would try to sub-mesh the web area object with an extremely short length. This would generate a very slender area object that would be rejected by the analysis model as too distorted. When this happened, this slender area object and its "parent" area object would be deleted from the model, resulting in a hole in the web. To resolve this issue, a new internal merge tolerance has been introduced for area object sub-meshing to determine whether or not the area object should be sub-meshed at nonprismatic girder-section transition locations and staggered diaphragm locations. This particular tolerance is the larger of 1.5 times the user-defined merge tolerance and 1% of the maximum girder depth. When geometry changes occur within this small tolerance, the locations will be merged together in priority order with Bridge Section Cuts governing, followed by Non-prismatic Girder Section Transitions, and then Staggered diaphragms.
	69957	An incident was resolved for the bridge modeler in the Bridge Layout Line Definition form. If the bearing angle was input with the format Nddmmss.sE, (dd represents degrees, mm represents minutes, and ss.s represents seconds) and the seconds value contained a zero followed by a single digit with decimal point, (for example N123406.7E) the program would incorrectly read it as N12346.7E resulting in an incorrect layout line orientation.
	70289	An incident was resolved for the Bridge Modeler where a newly added bridge object could not be displayed or updated if there existed any previously defined parametric variations in the model and the default bridge section was either the advanced concrete box bridge section or any of the composite bridge sections (steel I-girder, steel U-girder, precast I-girder, or precast U-girder). When this occurred, saving and reopening the model would enable the bridge object to be displayed and updated.
	70513	An incident was resolved in which the program would terminate on the Girder-by-Girder Bridge Bent Overwrites (Bearing) form when clicking the Modify/Show Overwrite button if the model had more restrainers than bearings. This was a user interface issue and did not affect results.
	70558	An incident was resolved for the bridge modeler in which inputting a value of zero (0) for the number of girders for the Steel U-Girder deck section would cause the program to terminate.

*	Incident	Description
	70599	An incident was resolved for the Bridge Modeler where the girder length within a span was calculated incorrectly by an amount equal to the difference in the lengths of the last two segments of the span. These segments are the distances between section-cut locations at the end of the span. The most pronounced effect usually occurred at double-bearing bents where the last segment (between the bearing and the end of the span) was much shorter than the previous segment that ended at the bearing. In this case the girder length would be overestimated. This could affect: (1) Non-prismatic girder geometry - the section-transition locations would be slightly off. (2) The girder lengths displayed in the Bridge Girder Reinforcement Layout form were incorrect, which could slightly affect the rebar assignment. (3) The girder length displayed in the bridge superstructure design optimization form was incorrect. For all three items, the effect was generally small. Only versions 17.0.0 and 17.1.0 were affected..
*	70723	An incident was resolved for the Bridge Modeler where a bridge object updated as a spine model could be significantly incorrect if parametric variations were assigned to the bridge section or if the section contained girders (steel-I, steel-U, or precast-I) that were non-prismatic. The generated frame sections representing the superstructure as a spine model did not contain the full variation of the bridge section along the span, but rather used first segment of the span to represent the full span. This could significantly affect the weight, stiffness, and strength of the span, and thus affect analysis and design results. All bridge objects updated as spine models in v17.0.0 or v17.1.0 should be updated again in v17.1.1 (or later) and re-run. Models updated in previous versions (v16.1.0 and earlier) and opened in v17.0.0 or v17.1.0 without updating the bridge object were not affected. Models updated as areas or solids were not affected.
	70931	An incident was resolved for the Bridge Modeler where the generated diaphragms (cross-frames) could be generated with an incorrect depth for composite bridge sections with steel-I or precast concrete-I girders when the girders were assigned non-prismatic frame sections and were modeled as frame objects. In this case, the depth of the assigned diaphragms were incorrectly scaled by the ratio of the girder depths at the diaphragm location and at the beginning of the span. For steel-I girder bridge sections, this error did not occur when the girder web was modeled as area objects (girder modeled as area or mixed area/frame). When this error occurred, results agreed with the model as generated. The generated diaphragms were able to be adjusted manually.
	71070	An incident has been resolved in the Bridge Construction Group Definition form in which an abnormal termination would occur when trying to add tendons to a bridge group. Also, the grid of data on the form was not fully visible after adding items. No results were affected.

Section Designer

Incidents Resolved

*	Incident	Description
*	70000	An incident has been resolved for Section Designer where a Caltrans square section, if defined with the chamfer dimension set to zero, could not be further modified after the OK button was clicked on the Caltrans Section Property form. Subsequent attempts to modify the section by right-clicking on the Caltrans shape would do nothing. The section properties and moment-curvature relationship for such a section were all zero. In addition, tendon stress-strain curves for materials with strengths other than the defaults for the built-in "250 ksi" and "270 ksi" material models were being generated using these models without correction for the actual strength and stiffness of the materials. Now the stress-strain curves are generated by appropriate scaling of the selected tendon material model. This could significantly affect the moment-curvature relationship used to generate Caltrans hinges.
	70110	An incident was resolved for Section Designer where the software would terminate with an error message when using the command Components > Properties - Frame > Copy (or Add Copy of Property) for any Section Designer property and then canceling the operation. No error occurred if the OK button was clicked after adding a copy of the property.

*	Incident	Description
*	70113 70303	An incident was resolved for Section Designer (SD) that addressed several issues: (1) Modifying an existing SD frame property containing two or more shapes and then adding additional shapes would cause all but the first of the original shapes to be deleted. (2) Modifying an existing SD frame property containing two or more shapes and then deleting some shapes could cause the frame property to become corrupted; this could result in the calculated properties becoming incorrect after the property was saved. (3) For the very special case where an SD property contained a rectangular shape with rebar and a Mander-confined concrete model for the core, the software would terminate with an error message if the rebar for all edges and corners was then set to "None". These issues could be present in v17.0.0 or v17.1.0 models and will be corrected when opening the model in newer versions.

Loading

Incidents Resolved

*	Incident	Description
	69951	An incident was resolved where lane loading points could unnecessarily connect to frame objects that were far from the location of the load. This was not common, but could occur when a frame object in the group assigned to the lane was oriented such that a line from the load point could be drawn perpendicular to that frame object without crossing any other frame objects in the group. This was most likely to occur in curved bridges for loading points near the edge of the bridge. Now frame objects are excluded if the line from the load point perpendicular to the frame object crosses the extension of any other frame object in the group that is loaded by the lane. It is still required that the user provide adequate frame, area or solid objects in the group that can be properly connected to the load point. Load points will connect first to any area or solid object whose horizontal projection contains the load point. Load points will otherwise connect to any frame object to which a perpendicular can be drawn from the load point, provided that the perpendicular does not cross any other frame (or now its extension) if it is loaded by the same load point.

Bridge Design

Incidents Resolved

*	Incident	Description
	70033	An incident was resolved for AASHTO superstructure design in which results were not available for the concrete box shear check design requests.
	70322	An incident was resolved for Eurocode superstructure design in which the multi-cell flexure check did not present any results.
*	70512	An incident was resolved for Bridge Design of Steel I-girder bridge sections per the Eurocode where the results of design requests of type Service Stresses, Construction Staged, and Construction NonStaged could not be accessed after they were run, and/or the design-request definitions could not be viewed or changed after they were run. Results were generally not available. Any results that were available should be re-run with the new version, although no change is expected. No other code or type of design request was affected.

Frame Design

Incidents Resolved

*	Incident	Description
	68744	An incident was resolved in which an error could occur when displaying the right-click design details for AASHTO 2007 concrete frame design if the frame section property had been overwritten for design.

*	Incident	Description
*	70705	An incident was resolved where concrete frame design could fail or produce incorrect results for column members when run a second time, or when displaying design details by performing a right-button click on a member after design. This did not affect the values displayed after first running design or the values produced in database tables. For models with no Section Designer sections, the right-button click or second design could fail by generating an error message "Unable to calculate interaction diagram for section", and the design results produced were all zeroes. For models with Section Designer sections, the results produced by the right-button click or second design could be incorrect for any non-Section Designer sections in the model; results for the Section Designer sections themselves were not affected. This error was introduced in v17.1.0 and did not affect previous versions.

Results Display and Output

Incidents Resolved

*	Incident	Description
	70640	An incident was resolved in which the output from the File > Print Graphics command did not include a contour legend on the printed output, where applicable. This was available in v16, but was not available in v17.0.0 and v17.1.0.

Application Programming Interface

Incidents Resolved

*	Incident	Description
	70745	An incident was resolved in the API in which certain functions that pass an enumeration parameter by reference were not working for COM clients.