

**Bureau of Design  
Engineering Computing Management Division**

**BRADD**

No. 024  
December 22, 2009

**Adjacent Box Beam with DAP Errors Incorrectly Shows Successful Design and Produces Drawings**

**Problem Statement:**

Adjacent Box Beam bridge designs can sometimes produce a DAP design error in the Geometry Output file, but incorrectly report a Design Success status which will permit the user to produce a full set of drawings when they should not be able to.

When this occurs, a "Design Success" message is displayed in the "Status" field on the BRADD "Design/Quantities" menu tab, but an error message similar to the following occurs in the Geometry Output file. This error message should cause the design to abort and return a "Design Failure" for the "Status" field.

```
***** ERROR FOR INCREASED BOTTOM FLANGE THICKNESS FOR DAP *****
* The increase in bottom flange thickness of 0.5000 inches is *
* less than the required increased flange thickness based on *
* the required final dap depth of 1.0000 inches. *
* To continue with the design, the user must revise the input *
* by selecting the User Defined Bearing Menu option and then *
* specifying the required design dap depth. *
*****
```

Because of this error message, the design is actually aborted and therefore the haunch calculations per beam are not performed and the Geometry Output file will be missing the Haunch calculation table. Since the "Status" flag is incorrectly set to 'Design Success', BRADD allows the user to generate the design drawings. If the user proceeds to generate the design drawings, the bearing pad layout shown on the drawings will be drawn incorrectly.

Archived copies of all previously distributed e-Notifications can be obtained from the PENNDOT BRADD website at <http://bradd.engrprograms.com/home> and clicking on "e-Notification" and then "Mailing List Archives."

## Bureau of Design Engineering Computing Management Division

### BRADD

No. 024  
December 22, 2009

**Adjacent Box Beam with DAP Errors Incorrectly Shows Successful Design and Produces Drawings**

#### Workaround:

The user should carefully review the Geometry Output file looking for the DAP design error. If the DAP error message is found, the user should revise the input to select the User Defined Bearing option, calculate the dap design depth by hand, enter it into BRADD, and redesign the structure.

#### Problem Resolution:

This issue will be fixed in the next release of BRADD.

Please direct any questions to:

**Jay M. Fitzgerald, P.E., SECB** | BRADD Manager  
PA Department of Transportation  
Bureau of Design | Engineering Computing Management Division  
400 North Street – 7<sup>th</sup> Floor | Harrisburg, PA 17120-0094  
Phone: 717.787.7057 | Fax: 717.783.8217  
E-mail: [jafitzgera@state.pa.us](mailto:jafitzgera@state.pa.us)

Archived copies of all previously distributed e-Notifications can be obtained from the PENNDOT BRADD website at <http://bradd.engrprograms.com/home> and clicking on "e-Notification" and then "Mailing List Archives."