PENNDOT e-Notification

Bureau of Information Systems
Application Development Division

PAPIER No. 016 October 6, 2008	**Release of Version 1.5.0.0**

The Department's Pennsylvania Pier Analysis (PAPIER) program has been revised as described on the attached "Summary of August 2008 Revisions – Version 1.5.0.0".

The new program has been placed on PENNDOT servers for use by the Districts. Consultants and others, who have a current license agreement for PAPIER **Version 1.4.0.0**, can obtain the updated version by submitting an Update Request form along with an **update fee of $500 for private organizations and $50 for governmental agencies**. Updates for PAPIER **Version 1.3.x.x or earlier** will require an **update fee of $1,000 for private organizations and $100 for governmental agencies**.

The Software Update Request form can be obtained on the PENNDOT Engineering Software Support website at http://penndot.engrprograms.com by clicking on "Ordering/Updating" and, then on, "Update Form".

Please direct any questions concerning the above to:

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Attachment

SUMMARY OF AUGUST 2008 REVISIONS — VERSION 1.5.0.0

Below is the list of corrections made to the PAPIER computer program and incorporated into Version 1.5.0.0.

1) A special live load (SLL command) may now be used in conjunction with user specified braking or centrifugal forces entered using the UBR command. [IR #230]

2) Very narrow decks sometimes produced a divide by zero error and resulting crash. This has been corrected. [IR #231]

3) Several output conversion errors were produced when a negative crack control maximum allowable spacing was computed. A negative limit is applied to the outputs in question. [IR #232]

4) An infinite loop was entered when computing the column volume for input files with a solid shaft. The infinite loop only manifested itself for certain footing/water geometries, and only when the Intel compiler was used. The loop was corrected. [IR #233]

5) A number of minor changes were made as a result of the port to the Intel compiler. These changes are transparent to the user. [IR #234, IR #235]

6) For combined footings, a check is made to make sure the columns are on the footing. For the case where the first column is not part of the combined footing, this check erroneously added in the first column distance and resulted in requiring a much longer footing to be described. This check has been corrected. [IR #237]

7) When the axial force used in moment magnification calculations is overridden by the user, the axial force is now included in the dump file factored force tables. [IR #177]

8) Minimum EV load factors are now applied to the footing analysis using the same methodology that is applied to the DC load factors. [IR #196]

9) The EV load factor for stability was never implemented and has been removed from the program. [IR #202]

10) An invalid index in the live load computations caused the program to sporadically stop. This has been corrected.

11) A number of minor changes were made to the settlement calculations. A note was added to the official output reminding the user to check angular distortion and net settlement outside the scope of PAPIER. When computing elastic settlement for multi-layered soils (case 5), the length dimension used to compute the influence factor was inconsistent with the other settlement cases. The actual length is now used in all cases to compute the influence factor. There is a 3D reduction

factor used when computing primary consolidation settlement. This reduction factor was previously only applied to the first layer of soil. It is now applied to both layers of soil. The form of the equation for secondary consolidation did not include the void ratio in previous versions of the specification. The latest version of the DM4 now includes the void ratio in these equations and this has been implemented in PAPIER. The parameters used for computing the secondary consolidation are now optional. If entered and the soil is cohesive, secondary consolidation will be computed. If not entered, secondary consolidation will be ignored. [IR #87, #55, #33, #42, and #86]

12) A storage indexing problem was corrected to address a program error during the footing crack control analysis that could occur for combined footings. [IR #239]

13) The compression steel stress used for the cap crack control calculations was corrected for analysis points near or the bearing locations. Previously, the program could erroneously report a failure at these locations. [IR #240]