

# PENNDOT e-Notification

Bureau of Design  
Bridge Quality Assurance Division



## ABLRFD

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### Potential Problem with Spread Footing Supported on Two-Layered Soil Subjected to Consolidation Settlement

A problem has been identified with the ABLRFD program for a spread footing supported a two-layered soil system subjected to consolidation settlement with one of the layers being a sand type soil.

Specifically, the problem occurs when the user enters a value of '0' for Parameters 6, 7, 8 and 9 (initial effective stress, maximum past effective stress, primary consolidation time and service life) for the **sand** layer in the **CNS** command. Even though the user's manual directs the user to enter '0' for Parameters 8 & 9 and is silent as to the required input for Parameters 6 & 7 for a sand layer, the program does not specifically recognize the layer as a sand and still tries to compute a consolidation settlement value. In doing so, the program tries to takes the LOG of '0', and, since the result is mathematically undefined, the program aborts with a run-time error message.

#### WORKAROUND

The workaround solution until this problem is permanently corrected is for the user to simply enter positive, non-negative values (e.g., '1') for Parameters 6, 7, 8 & 9 for the sand layer. As long as the compression and re-compression indices are specified as '0', no consolidation settlement will be computed for the sand layer.

Direct any questions concerning the above issue to:

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