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TO: District Directors of Production, District Design Engineers, District Structures Design Engineers, District Geotechnical Engineers

FROM: Robert Robertson, P. E., State Structures Design Engineer

COPIES: Brian Blanchard, Lora Hollingsworth, Larry Jones, Sam Fallaha, Marcus Ansley, Andre Pavlov, Charles Boyd, Tom Andres, Tom Waits, Jonathan Van Hook, Garry Roufa, Jeffrey Ger (FHWA)

SUBJECT: Temporary Design Bulletin C09-02
FDOT procedure for LRFD design of sheet pile walls

REQUIREMENTS:
Volume 1, Section 3.13.3 of the Structures Manual is revised to include the following:

1. Determine the required depth of sheet pile embedment (D) using the procedure outlined in AASHTO LRFD Bridge Design Specification Section 11.8.4 and described in detail in C11.8.4.1 with load factors of 1.0 and the appropriate resistance factor from Section 11.6.2.3.
2. Determine the required sheet pile section in accordance with Section 11.8.5, using the normal load factors for the appropriate load case.

COMMENTARY:
A performance review of FDOT's past LFD practice did not reveal any sheet pile wall failures due to embedment depth, and the above procedure should result in slightly deeper embedment depths. Therefore, the reduced conservatism of this method as compared to the AASHTO LRFD Bridge Design Specification should still result in a slightly more conservative embedment depth than FDOT's historical practice without resulting in excessive construction costs.

BACKGROUND:
Article 11.8 of the LRFD Bridge Design Specification contains provisions for the design of Nongravity Cantilevered Walls (also known as Cantilevered Sheet Pile Walls). However, the detailed method results in substantially deeper embedment requirements for approximately the same wall sections when compared to FDOT's past practice.

IMPLEMENTATION:
Requirements are effective on projects with a start date of April 1, 2009 and recommended for incorporation on all projects which are currently in the design phase.

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