



November 27, 2000

MEMORANDUM TO GROUP LEADERS AND CONSULTANTS

SUBJECT: Revisions to Prestressed Concrete Pile-Pile Cap Connections

Based upon research conducted for the Department by the University of South Carolina, the Bridge Design Office is revising the details currently used for the prestressed concrete pile-pile cap connection. The current procedure is to embed the pile 12 inches minimum, roughen the pile, insert C25 bars in the pile tops and enclose the pile with WP13 square spirals.

The piles may now be connected to the caps by simply being embedded into the caps an equivalent of one pile width. No roughening of the pile is required. However, the pile surface to be embedded shall be clean and free of any laitance prior to pouring of the cap concrete.

In order to allow for constructability, the pile embedment shall have a tolerance of ± 6 inches. Under no circumstances, shall the pile embedment be less than 12 inches.

For pile bents supporting flat slab superstructures, the depth of the pile caps may be maintained at 30 inches for 18-inch square piles. For pile bents with piles larger than 18 inch square, maximum pile embedment may dictate that deeper pile caps be used for constructability reasons, as well as, due to the effects of punching shear. For pile bents supporting beams, regardless of pile size, the effects of punching shear shall be investigated. The designer shall determine the appropriate depth of pile cap required based on punching shear and other applicable design requirements. If conditions warrant, the designer may reduce the 6-inch tolerance above the one pile width embedment in order to keep the pile cap depth at a minimum.



Please ensure that this policy is used for all current projects designed by the LRFD and Standard Specifications. Plans already designed and detailed need not be revised.

A handwritten signature in black ink, appearing to read "Randy R. Cannon". The signature is fluid and cursive, with the first name "Randy" being the most prominent.

Randy R. Cannon, P. E.
Bridge Design Engineer

cc: Assistant Bridge Design Engineers
Bridge Construction Engineer
File: PC/Seismic