Bridges and Structures April 18, 2001

All Employees 521.1

Bridges and Structures

Gary Novey

MM No. 19 (Guidelines for Fully Encased Pile Bents for Reinforced Concrete Slab Bridges)

When designing and detailing fully encased pile bents the following guidelines should be used.

1. The encasement shall have a minimum width of 20" for HP10x42 piles and 24" for HP12x53 piles. These minimum encasement widths will provide enough tolerance between the edge of the pile and the edge of the encasement should the driven piles be out of alignment.
2. The minimum distance from the centerline of the battered outside piles to the end of the encasement shall be 18". This will ensure enough room for placement of the reinforcement in the end of the encasement and provide additional protection for the piling.
3. Fully encased pile bents for continuous concrete slab bridges shall use a pier cap keyed to the bottom of the slab when the movements due to temperature and shrinkage and skew conditions warrant. See memo to Office from Gary Novey (March 29, 1999, "Use of Non-Monolithic Caps on Reinforced Concrete Slab Bridges") for additional information.
4. When non-monolithic caps are used, the ends of the beveled keyway(s) are to be lined with 1" thick strips of preformed joint filler to allow for the movement of the superstructure along the skew.

GAN/DGB/ls