

Bridges and Structures

April 9, 2001

All Employees

521.1

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Gary Novey

Substructure Design-MM No. 9 (Battered Pile Capacity and Lateral Load Capacity for Pier Design)

Questions have been raised about whether the capacity of battered piles should be reduced because of the 4:1 batter typically used in pier footings. Based on discussions that I have had with the section leaders, it was decided not to reduce pile capacity for battered piles. The same capacity should be used for the battered piles that are used for the vertical piles.

Another related question that was recently brought up was whether a check of the shear capacity of the piles should be made based on the lateral loads that are applied to the pier. In the past the lateral capacity of the piles has not been a problem for pier design. but the capacity should still be checked. With the longer spans and larger lateral wind and temperature forces that are being applied to the piers, the pile design may be controlled by the lateral loads. If lateral loads are controlling your pile design, inform your section leader. When checking the lateral capacity, use the same allowable lateral capacity for piles that we use in the stub abutment design of 4 kips/pile for wood piles and 6 kips/pile for steel piles.

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