

**IOWA DEPARTMENT OF TRANSPORTATION**

To Office Bridges and Structures

Date October 1, 2008

Attention All Employees

Ref No. 521.1

From Gary Novey

Office Bridges and Structures

Subject MM No. 195 (Stub abutment design behind MSE walls)  
Revision to Article 6.5.1.1.2 LRFD Bridge Design Manual

When designing bridges with stub abutments behind mechanically stabilized earth retaining walls (MSE walls), the following guidelines shall be used:

1. The front row of piles shall be battered unless the batter increases the bridge length by more than five feet due to the interference with the MSE wall.
2. The centerline of the piling shall be a minimum of three feet from the face of the MSE wall at the bottom of the MSE wall.
3. Corrugated metal pipes (CMP) will not be required around the individual piles unless downdrag forces are a problem. CMP may be provided to reduce downdrag forces in these situations. Check with your section leader for approval.
4. The following CADD general note shall be provided in the plans requiring the contractor to tie the abutment piling group together and provide anchorage for the pile group to prevent shifting of the piles during backfilling.

**E55/M55: Stub abutment piling behind MSE wall**

THE BRIDGE CONTRACTOR SHALL DRIVE ABUTMENT PILING BEFORE THE MECHANICALLY STABILIZED EARCH (MSE) WALL IS CONSTRUCTED AND MAINTAIN PROPER POSITION OF PILING WHILE THE MSE WALL IS BEING CONSTRUCTED. THE PILING SHALL BE TIED TOGETHER BY MECHANICAL MEANS AND ANCHORED TO PREVENT DISPLACEMENT DURING BACKFILLING OPERATIONS AND MSE WALL CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A PLAN TO THE ENGINEER FOR APPROVAL OF THE CONNECTIONS AND ANCHORAGE.

5. This note may be modified for special cases, such as partial driving, addition of tie backs or if additional rows of piles are required for the abutments.
6. If possible, the front and back row of piles should be in alignment to provide more room for MSE straps.

If you have any question please check with me.

GAN/dgb/bj