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IOWA DEPARTMENT OF TRANSPORTATION

To Office Bridges and Structures Date March 1, 2008

Attention All Employees Ref No. 521.1

From Gary Novey

Office Bridges and Structures

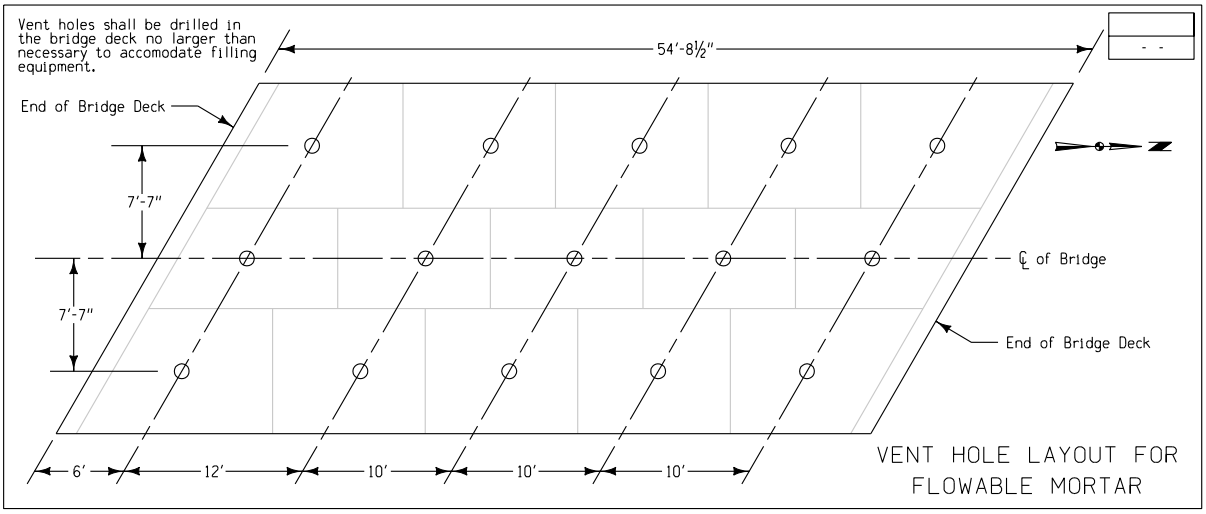
Subject Vent Hole Layout for Flowable Mortar Placement
(MM No. 191)

When a new culvert is placed under an existing bridge and the existing bridge is to remain in place, flowable mortar will be used to backfill the culvert to ensure that all the voids under the existing bridge are filled. Vent holes will be drilled in the existing bridge deck to facilitate the placement of the flowable mortar. To assist the contractor with these types of projects, a vent hole layout will now be provided in the culvert plans.

When developing the vent hole layout, the following guidelines shall be used:

1. Layout the existing bridge, showing the existing abutment, and pier locations and dimensions. In addition provide the location of the existing beam lines and concrete diaphragms that would restrict the flowable mortar placement.
2. Locate any additional existing obstructions that may prevent the flow of mortar near the bottom of the bridge deck.
3. Place vent holes along the width of the bridge deck at the same skew angle as the bridge. Holes shall be placed a minimum of 2 feet and a maximum of 8 feet away from the abutment. The number of holes along the width depends on beam placement and width of bridge. Holes shall be placed, a minimum of 2 feet and a maximum of 8 feet on both sides of all beams. Adjacent hole spacing where there is no obstruction between holes, shall be a maximum of 16 feet.
4. When beams are not present such as a continuous concrete slab bridge, the distance from the side of the bridge to the nearest hole shall be a maximum of 8 feet. Adjacent hole spacing where there is no obstruction between holes, shall be a maximum of 16 feet.
5. Placement of holes along the length of the bridge should depend on existing diaphragm and pier locations, and the overall length of the bridge. Holes shall be located a minimum of 2 feet and a maximum of 8 feet away from either side of diaphragms and piers. Each possible enclosed or restricted area shall have at least two vent holes. A typical spacing between holes should be used when possible. Adjacent hole spacing where there is no obstruction between holes, shall be a maximum of 16 feet.

6. When diaphragms are not present, adjacent hole spacing where there is no obstruction between holes, shall be a maximum of 16 feet and a minimum of 10 feet.
7. See detail below for example layout.



If you have any questions on the updated sheets, please check with Thayne Sorenson or Dean Bierwagen.

GAN/dgb/bj