

IOWA DEPARTMENT OF TRANSPORTATION

To Office Bridges and Structures Date November 8, 2005
Attention All Employees Ref No. 521.1
From Gary Novey
Office Bridges and Structures
Subject Method's Memo No. 108 (Longitudinal Construction Joint Placement in Decks)

In a discussion with the Office of Construction the question of general deck placement and constructability was reviewed. Below is a list of guidelines that designers should keep in mind when they define the deck placement sequencing in a set of plans. These guidelines were developed to open the bidding process for bridge projects to as many bridge contractors as possible and not limit this number because of overly restrictive policies.

The following are guidelines for defining deck placement sequences in general:

1. Deck widths up to and including 60 feet (gutter to gutter)

For deck widths up to and including 60 feet gutter to gutter exclusive of any sidewalk, no longitudinal construction joints are required.

2. Deck widths greater than 60 feet (gutter to gutter)

Limit the width of deck placement details on the plans to no more than 60 feet. Most bridge contractors have the deck finishing equipment capable of placing this width. Bridge plans should allow the contractor the opportunity to propose wider deck placements for approval. Permissible longitudinal construction joints should be shown on the plans and should be placed a minimum of 5 ft from the centerline of the roadway to miss the parabolic crown area.

3. Decks with variable widths

If possible, variable width bridge decks should be detailed with at least two longitudinal sections one with uniform width and a separate tapered section. The option for alternate placement sequence should be allowed for those contractors who have deck finishing equipment that is capable of placing non-uniform width decks. Construction joints shown for separate placements should be shown as permissible construction joints.

4. Closure pours

Anytime longitudinal construction joints are required, the designer needs to consider whether a closure pour is needed. Based on the Bridge Design Manual article 5.2.4.1.2, closure pours are required if the dead load deflection of the beams is greater

than 2 inches or if there is a high volume of truck traffic (> 500 per day). The extra pour is required because of difficulties in connecting deck formwork and transverse reinforcing steel because of the elevation differential between a loaded beam and an adjacent unloaded beam.

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