

NC DOT / PCI Joint Technical Committee Meeting

Structures Design Conference Room
May 8, 2007 12:30 PM

Submitted by
Reid Castrodale, Chair

Attendees:

NCDOT: David Greene, Trudy Mullins, Tom Koch, Gichuru Muchane, Gary Johnson

G/C PCI: Reid Castrodale, Mike Means, J. R. Parimuha, Jeff White, Chip Harris, Richard Potts (by telephone)

1. Precast Concrete Deck Demonstration Project – Martin County (B-4188)

Tom Koch showed some brief videos of deck panel placement at the bridge site. The video had been taken a few days earlier. Post-tensioning of the deck was planned for a few days after the meeting.

2. Web Cracking

Trudy Mullins reported that web cracking had been observed recently on Type II and Type III girders, even with only straight strands.

Since August 2006, the Department has been using the special provision that addresses web cracking. However, the debonding provisions used for bulb tee girders do not apply for straight strand patterns and smaller girder types.

There was a lengthy discussion regarding what sealing treatment should be applied to cracks wider than 0.007", but less than 0.01". Cracks 0.01" and wider would require epoxy injection according to the current special provision.

The consensus seemed to be that a silane sealer would prevent moisture from entering the crack until the deck is placed. A water based material would be preferred, especially because it would be less hazardous. It was recognized that the silane would be much better than epoxy paint which tends to crack.

There was some question regarding whether epoxy injection would be successful with a crack as small as 0.01".

Mike Means suggested that existing girders with web cracking do not seem to have problems with corrosion. It was also questioned that minor cracks in reinforced concrete elements are not typically repaired while minor web cracks in prestressed concrete girders must be repaired.

Tom Koch and Trudy Mullins will work on revising the special provision before the next Technical Committee meeting to address the material to be used to seal web cracks when required.

3. Spliced Girders

The standardization of the haunch and other details for spliced girder bridges was discussed. It was suggested that standardization would simplify design. However, it was noted that standardization of the haunches is difficult because design conditions are different for each bridge. Furthermore, there are not many haunched spliced girder bridges left to be constructed, so there will not be many reuses of any haunched form.

Standardization of spliced girders may be better suited to uniform depth girders which are spliced to achieve longer spans than can be fabricated, hauled or erected. One example of such an application would be girders for single point urban interchanges (SPUIs), where up to 300 ft spans may be possible with spliced girders. An example of this type of bridge project was distributed, the Green Street Bridge, which was an award winner shown in the Winter 2005 edition of the ASCENT Magazine.

The members of the GCPCI will discuss whether developing standards for this type of spliced girder is reasonable.

4. Precast Barrier Rails

Tom Koch distributed a description of the IBRD project and some details taken from the Texas DOT website. They plan to use the precast barriers on a cored slab project in Carteret County. The innovative portion of the project is the precast barrier and approach slabs. The design is still in the conceptual phase.

There was discussion of whether the existing Bridge Maintenance precast rail could be used. The connection between the rail and cored slab seems to be the most significant issue. It was agreed that the rebar connection used by Bridge Maintenance appeared to be more robust than the bolted connections shown on the Texas DOT standard plans. The NCDOT Bridge Maintenance barrier has not been crash tested so cannot be used on projects with federal funding. Chip Harris mentioned that he had been involved with NCDOT in the crash testing of a barrier rail several years ago, and that the expense was not as large as some expected.

It was also noted that PCI certification does not include precast barriers.

INFORMATIONAL / DISCUSSION ITEMS

5. Adjourn

The meeting was adjourned at approximately 2:25 PM. The next Joint meeting is scheduled for July 18, 2007.