

# NC DOT / PCI Joint Technical Committee Meeting

Structures Design Conference Room  
April 11, 2006 1:30 PM

Submitted by  
Reid Castrodale, Chair

## Attendees:

**NCDOT:** David Greene, Trudy Mullins, Tom Koch, Dave Stark, Emily Murray, Madonna Rorie, Peggy Adkins, Rick Nelson

**G/C PCI:** Reid Castrodale, Mike Means, J. R. Parimuha, Jeff White

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

Tom Koch introduced the project, which is located in northeastern NC, just north of Greenville. A letting date in July is anticipated. The concept of using precast decks to accelerate bridge construction is of very high interest to the Department.

Tom explained that the project had been submitted to the FHWA for consideration as an IBRC project. The project was moving ahead even though the IBRC funding had not yet been approved. He indicated that the Department would have liked to include precast substructure elements, too, but that they those features would not be used in this project.

Tom and Emily had reviewed the available research and other information. It was decided that the beams would be plate girders.

The following details of the precast deck panels were discussed:

- The use of precast concrete barriers was suggested, but slip-formed barriers will be required.
- The minimum effective longitudinal prestress target was 200 psi.
- It was also suggested that the 6 leveling bolts per panel as shown in the plans may be more than needed. It was anticipated that 4 bolts would be adequate.
- It was suggested that the post-tensioning ducts be round, not flat, since use of flat ducts had caused problems in some other projects..
- Skewing the shear stud blockouts with respect to the panels would not be difficult.

The Department has concerns about the longevity of the precast deck system, thinking this system may have cracking and deterioration problems similar to box beams and cored slabs.

This bridge is close to the area of the state requiring corrosion protection, so it was noted that use of Calcium Nitrite corrosion inhibitor is a possibility.

## 2. Web Cracking

The Department has developed a project special provision that addresses web splitting in the ends of pretensioned concrete girders. The PSP requires that all cracks  $\geq 0.010$ " wide shall be repaired by epoxy injection. Cracks smaller than 0.010" are not required to be sealed, unless Calcium Nitrate corrosion inhibitor is used in the beams, in which case cracks with widths between 0.007 and 0.010" are sealed with epoxy paint.

It was reported that the use of debonding of strands is helping to reduce web cracking.

## INFORMATIONAL / DISCUSSION ITEMS

## 3. Adjourn

The meeting was adjourned at approximately 3:00 PM. It was noted that the next Joint meeting is scheduled for June 21, 2006.