

NC DOT / PCI Joint Technical Committee Meeting

Structures Design Conference Room
February 12, 2008 1:30 PM

Submitted by
Reid Castrodale, Chair

Attendees:

NCDOT: David Greene, Tom Koch, Tim Sherrill

G/C PCI: Mike Means, Richard Potts, Peter Finsen, Reid Castrodale

Tom Koch was congratulated on his recent promotion to Assistant State Bridge Engineer. He hopes to remain active in the Technical Committee.

Trudy Mullins was unable to attend because of illness.

1. Web Cracking

The comments submitted by GCPCI on the 09/27/07 version of the project special provision (PSP) were discussed. A number of issues were discussed. Tim Sherrill volunteered to take the lead on reviewing the comments and preparing a version for review at the next joint meeting.

Some specific comments were discussed. Tom Koch indicated that the Department would like to keep the requirement related to calcium nitrite in place for now. It might be reevaluated in several years.

The smaller crack with (0.005" instead of 0.007" in the previous version of the PSP) was also discussed. Since the application of silane sealer is less problematic than the epoxy sealer, the Department felt that using it at a smaller crack width would be more conservative.

2. Cored Slab Bridges with Precast Barriers and Approach Slabs

The Carteret County project was scheduled to be let this month.

The exterior void in the exterior cored slabs has been eliminated to allow anchorage of the precast barriers. The Department has allowed the contractor the option of using drill-in adhesive anchors for anchoring the barriers. Tom Koch indicated that the details used on the Ocracoke Island project may also be a good solution for precast barriers.

The precast approach slabs will be precast then post-tensioned in the field. No pretensioning is required. Tom Koch indicated that FHWA resources had been consulted for the precast approach slab details.

3. Box Beam Shear Keys

Tom Koch indicated that there had been discussions in the Department about the issues raised at the last Technical Committee meeting (3" dia. holes and 0.6" dia. strands), but that no action had been taken.

GCPCI members suggested that the use of standard designs for cored slab bridges may make them more economical. Tom Koch indicated that there is currently some movement in this direction, as the divisions are being allowed to let some of their own cored slab projects.

4. New Girder Sections

Reid Castrodale reported that the SCDOT IBRD project that was to use deck girders has been delayed, so no progress has been made on developing new sections. The 1000 ft bridge is long enough for producers to purchase forms, if a standard section can be developed. A page from the VDOT website was distributed showing the VA BT sections, which are based on the PCEF girder shape. Sketches were also distributed showing the concept of the deck girder using the VDOT girder section, and comparing the girder shape to the current PCI BT section.

Richard Potts indicated that because of the wide top flange (deck) on the deck girder shapes, the forms must generally be installed on rollers so they can be rolled in and out rather than being handled by cranes.

INFORMATIONAL / DISCUSSION ITEMS

5. Contractor Alternate Designs

There was a brief discussion of contractor alternate design approaches that can lead to improved cost savings for the DOT compared to the conventional VE approach. This item will be placed on the agenda for the Joint Committee meeting.

Richard Potts distributed copies of an approach used successfully for many years by GDOT. He agreed to email a copy of this document for distribution.

6. Criteria for Selecting Superstructure Material

Following up on the last Joint Committee meeting, there was some discussion about the current policies of the Department regarding the selection of bridge girder materials. GCPCI has reviewed the tentative letting list from October 2007 and had found a relatively large number of steel bridges being used for spans which could be readily achieved with prestressed concrete. Tom Koch indicated that many of these decisions are driven by superstructure depth limitations. It was suggested that box beams or deck girders or even reducing the girder spacing may be appropriate solutions for many of these structures.

It was suggested that this topic be discussed again at the next Joint Committee meeting.

7. Changes in Operations at NCDOT

Tom Koch indicated that the Department was being challenged in many ways. They are trying to streamline their processes for the bridge program, in an effort to shorten project delivery. They are also continuing to work on making bridge designs more appropriate for the conditions, or "right sizing". This may lead to fewer long span bridges in rural low-volume applications where multiple spans may be more economical and appropriate.

8. Increased Use of Drilled Shaft Foundations

Mike Means raised the question regarding the recent widespread use of drilled shafts rather than driven prestressed concrete piling. Tom Koch indicated that this was largely a result of scour concerns. However, as part of the "right sizing" efforts, an attempt was being made to reevaluate some of the reasons for using drilled shafts, so there could possibly be a return to more driven piling. Tom Koch also mentioned that steel piles are often used for end bents with prestressed concrete piling for interior bents, which didn't seem to make sense. Mike Means indicated that there are few prestressed concrete piling projects these days, so they may not be as economical since producers are not in constant production of these products. Several other

issues regarding prestressed concrete piling were discussed, including practical pile lengths and the use of pile splices (FDOT detail).

It was suggested that someone from the geotechnical and hydrology units be invited to the next Joint Committee meeting to discuss these issues.

9. Ocracoke Island Project Update

Tom Koch indicated that he had heard that the project was going well.

10. Regional Standardization Committee

Peter Finsen indicated that an effort is still anticipated to have the states of NC, SC and GA meet to discuss standardization issues for prestressed concrete bridge products. He asked if NCDOT had any preferences regarding dates for such a meeting. He also asked for any suggestions for topics to be considered.

11. Adjourn

The meeting was adjourned at approximately 3:20 PM.