

MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

(Approved: 2/13/13)

The DOT-AGC Joint Bridge Design Subcommittee met on December 12th, 2012. Those in attendance were:

Greg Perfetti	State Structures Engineer (Co-Chairman)
Mike Robinson	State Bridge Construction Engineer
Allen Raynor	Assistant State Structures Engineer
Randall Gattis	Sanford Contractors, Inc.
Chris Britton	Taylor & Murphy Construction Company
Adam Holcomb	Dane Construction, Inc.
Lee Bradley	Blythe Construction Company
Dan Nickel	Carolina Bridge Company
Bill Heston	Balfour Beatty Infrastructure
Dan Tutterow	D.H. Griffin Construction
Brian Hanks	Structures Management Project Engineer
Paul Lambert	Structures Management Project Engineer
Scott Hidden	Support Services Supervisor – Geotechnical Eng. Unit
Chris Kreider	Regional Operations Engineer – Geotechnical Eng. Unit
Paul Garrett	State Bridge Program Manager
Gichuru Muchane	Structures Management Engineer

The following items were discussed during the review of the August 15th, 2012 minutes:

1. *Online Reporting for DBE Commitments*

Mr. Robinson stated that the Department is still looking into the proposal to allow online reporting of Disadvantage Business Enterprise (DBE) commitments at the time of submitting bids. He anticipated providing an update at the next meeting.

2. *Express Design-Build Update*

Mr. Garrett provided a brief update on the second year of the Express Design-Build program, which will involve replacing approximately eighty (80) bridges and thirty-eight (38) culverts. He noted the Department has received over fifty proposals, which shows there is broad interest in the contracts, which will be let between March and May, 2013. He added that short-listing the teams will begin in mid-December. Mr. Garrett also provided a breakdown of the anticipated number of contracts and projects per Division.

The minutes of the August 15th, 2012 meeting were approved.

The following items of new business were discussed:

1. *Mass Concrete*

Mr. Gattis stated that he had noticed some variations in the special provision for *Mass Concrete*. He added that it was not clear what the Department was trying to accomplish since the requirements of the special provision varied. He explained that the variations in the special provision introduce uncertainty which may impact competitive bidding.

Mr. Hanks responded by confirming that two versions of the special provision for *Mass Concrete* have been used based on the design and specific project conditions. He noted that the intent of both provisions are similar in that their objective is to require the Contractor control the internal and surface temperature differential of the mass concrete element in order to mitigate cracking.

Mr. Perfetti added that the Department has initiated a research project with North Carolina State University to address methods for moderating the thermal differential. Mr. Perfetti noted that the research tasks include:

- Critiquing the Department's specifications and procedures for concrete mixes, concrete placement, and temperature monitoring on mass concrete structures.
- Examining mix designs, construction methods, and environmental conditions on several coastal bridges where mass concrete was employed. Evaluate each case and determine causes for success or failure of each placement.
- Making recommendations on new or revised measures to prevent cracking in mass concrete structures and structural elements, including guidelines on how to identify potential mass concrete elements.

He anticipated that the research will result in improved specifications and quality control guidelines for use on projects where mass concrete is employed.

Structures Management will discuss the research findings with the Contractors as the results become available.

3. *End Bent Drain Pipes*

Mr. Robinson stated that there has been some confusion on the type of pipe detailed for end bent drains. He noted that in the past 4" ϕ corrugated PVC pipe was detailed for end bent drains. However, to address frequent crushing of the pipe during placement of the approach fill, a 4" ϕ Schedule 40 perforated PVC pipe will be detailed in the approach fill and solid PVC pipe will be specified in the areas outside the wing walls.

There was some discussion on the availability of schedule 40 perforated PVC pipe and whether HiCAMS is setup to permit payment for this type of pipe. The discussion noted that there is an ASTM standard for Schedule 40 perforated pipe, and that there are suppliers for the pipe, albeit the pipe may not be stocked at local home improvement stores.

Mr. Robinson stated that he would coordinate with the Materials and Tests Unit to address the HiCAMS issue.

4. *Closure Pours*

Mr. Hanks presented construction details for a longitudinal joint at the centerline of AASHTO prestressed girders to be used for staged construction of a bridge without a closure pour. The details showed the formwork for the longitudinal joint. He noted that the stirrups projecting from an AASHTO girder typically form a closed hoop above the girder, which makes it difficult to install and remove the formwork at the centerline of girders. To facilitate installation and removal of the formwork, an alternate detail with stirrups similar to those on modified bulb-tee girders was presented.

Mr. Hanks inquired how Contractors anticipated forming the longitudinal joint. There was some discussion on various ways of forming the joint, such as relocating the joint to the edge of the top flange and using forms that would remain in place. After some discussion there was consensus to show the alternate detail presented in the plans, while noting Contractors are free to submit other proposals via the normal submittal process.

5. *Precast Substructures*

Mr. Hanks stated that one of the FHWA *Every Day Counts* (EDC) initiatives focuses on shortening the time needed to complete highway projects using accelerated bridge construction (ABC) through the use of prefabricated bridge elements and systems (PBES). To this end, the Department had recently let two precast bent cap projects, with no option for cast-in-place.

Mr. Hanks inquired if Contractors prefer the option for cast-in-place bridge elements on future PBES projects. The discussion noted that not all projects are suited for precast elements or systems. Contractors prefer the option for cast-in-place elements because it facilitates flexibility in competitive bidding and construction scheduling.

6. *Pile Re-Drives*

Contractors discussed concerns with pile restrikes/redrive quantities which, in the field, differ from the contract plans.

Mr. Kreider stated that the Departments pile redrive requirements are stated in the Standard Specifications. He explained that the Contractor may choose to or the Engineer may require the Contractor to stop driving and allow pile set-up. He noted that when the Engineer requires restrikes or redrives, the time to wait for set-up will range from 4 to 24 hours.

After a brief discussion it was noted that the Contractor who had suggested this agenda item was not present. Therefore, it was decided to postpone discussion until the next meeting.

7. *Railroad Requirements*

Mr. Gattis expressed concerns with the railroad requirements for submittal of girder erection and demolition plans. He explained that the submittal requirements include listings of construction equipment, such as pile drivers, which seemed unnecessary.

Mr. Raynor responded by explaining that each railroad company has specific requirements for work in and adjacent to their right-of-way. Due to lack of in-house review personnel, railroads rely on private engineering firms to review submittals and monitor construction site conditions.

Mr. Raynor stated he will discuss these concerns directly with the railroad companies.

8. *Next Meeting*

The next meeting is scheduled for Wednesday, February 13, 2013 in the Structures Management Conference Room.