

MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on August 15th, 2007. Those in attendance were:

Greg Perfetti	State Bridge Design Engineer (Co-Chairman)
Mike Robinson	State Bridge Construction Engineer
Randall Gattis	Sanford Contractors
George White	Blythe Construction
Bryan Long	Dane Construction, Inc.
Erick Frazier	S.T. Wooten Corporation
Chris Britton	Taylor & Murphy Construction Co.
Mark Johnnie	Balfour Beatty
Paul Newman	Flatiron Constructors, Inc.
Greg Canniff	Rea Contracting, LLC
Tom Koch	Structure Design Project Engineer
Paul Lambert	Structure Design Project Engineer
Chris Kreider	Regional Operations Engineer – Geotech. Eng. Unit
Scott Hidden	Support Services Supervisor – Geotech. Eng. Unit
Gichuru Muchane	Structure Design Engineer

During the review of the April 11th, 2007 meeting minutes, the following items were discussed:

1. *Micropile Projects*

Mr. Hidden reported that the special provision for micropiles has been finalized. He noted that in general micropiles would be used on bridges which are founded on sound shallow rock and have a low ADT. Mr. Perfetti noted that these criteria are consistent with the tiered approach to bridge design, which is currently under development by the Bridge Team. The tiered approach will have criteria specific to the sub-regional highway system (low volume SR roads).

2. *MSE Walls*

Mr. Hidden reported that the policy and special provision for mechanically stabilized earth (MSE) walls have been completed and are available on the Geotechnical Engineering Unit's web site. He noted that these documents will be effective with the December 2007 letting, and that a list of approved wall systems would be added to the web site soon.

The minutes of the April 11th, 2007 meeting were approved.

The following items of new business were discussed:

1. *Fastener Inspection / Bolting Class*

Mr. Walton showed a video on common mistakes that lead to incorrect bolts installation. He discussed the Department's efforts to minimize bolting problems by providing training to the actual bolt installers through a bolting class. He noted that the class was not practical for a classroom environment, so it would be offered on the job-site as joint training for NCDOT and Contractor personnel.

Mr. Walton added that the Department preferred to provide the training class in lieu of requiring certification for contractors' staff. He stated that he needed Contractors to commit to sending their staff.

Contractors welcomed the idea of providing the training, and were in favor of the bolting class in lieu of certification.

2. *Anchor Bolt Tightening*

Mr. Greene discussed common problems with anchor bolt installation and insufficient anchor bolt tightening on sign structures and signals. He wanted to bring this problem to the Contractors' attention since the work is typically performed by a sub-contractor. He noted that in many instances the sub-contractors do not follow the provisions outlined in the Standard Specifications.

Contractors suggested the Department send an inspector during installation. However, it was noted that it would be impractical to provide an inspection for every step of the installation process. Other suggestions included requiring an affidavit to guarantee proper installation.

Mr. Greene stated that the Department was developing something similar to an affidavit, and will be improving the provisions, inspection, and enforcement procedures.

3. *Tracking Submittals*

Mr. Lambert distributed a handout of submittal tracking information that has recently been added to the Structure Design Unit's web site. Mr. Lambert demonstrated how to navigate to the Contractor Submittal page on the web site, and he discussed the type of information that would be visible. He added that the web page would be updated weekly.

Contractors welcomed making the submittal tracking information available, noting that it would be very helpful for their planning and scheduling operations. It was also suggested that the Resident Engineers and Division Engineers be notified of the submittal tracking information. The Construction Unit stated that they would notify the Resident Engineers and Division Engineers.

4. *CRMA Representation*

Mr. Perfetti, speaking on behalf of Mr. Jenkins, inquired if contractors should consider adding a member of the DOT-Concrete Ready Mix Association (CRMA) committee to this committee. He noted that DOT-CRMA committee meets regularly with the Materials and Test Unit.

Contractors stated that they preferred to invite a CRMA representative to the meeting when there was an item of interest on the agenda.

5. *Protection of Traffic Submittals (Girder Stability)*

Mr. Canniff shared an article from the *Engineering News Record* about concrete girders that collapsed during erection. Mr. Canniff noted that a temporary bracing system had not been installed at the time of the collapse. He added that steel diaphragms are helpful in bracing girders to each other during erection because they are easier and quicker to install. He also noted that some states require temporary diaphragms during erection.

There was some discussion on the AASHTO construction specifications. The committee noted that Mr. Perfetti was an active member of AASHTO committees and could propose revisions to the specifications.

6. *Other*

i. Concrete Cylinder Tests:

Mr. Robinson, speaking on behalf of Mr. Jenkins, noted that contractors are not being notified when there are failures on concrete cylinder tests. He stated that Mr. Jenkins had requested that the prime contractor be notified at the same time as the concrete producer.

ii. Welding Certification Test:

Mr. Greene stated that the Department was increasing the price of the welding certification tests, noting that this was necessary to cover the cost of the consumables that the Department provides for the tests. He added that the Materials and Tests Unit has also initiated an in-house welding inspection course.

iii. 30" Pipe Piles:

Mr. Britton stated that he recently noticed that the Department has a standard for a 30" pipe pile. He added that in some cases the cost of a drilled shaft may be comparable to a 30" pipe pile. He suggested utilizing 24" pipe piles even if it meant installing additional piles in lieu of using fewer 30" piles. Mr. Perfetti noted that the Department always tries to use the smallest possible pile size.

iv. Approach Slab Sub-base :

Mr. Britton inquired if the Department still needed to require a sub-base under the approach slab, given that a reinforced approach fill is also required. The Structure Design Unit stated that they will re-evaluate the need for a sub-base.

v. Pile Driving Analyzers (PDAs):

Mr. Britton stated that it was his understanding that the Department will be requiring more PDAs for research purposes. The Geotechnical Engineering Unit clarified that the LRFD specifications, which will be adopted in October 2007, encourage the use of PDAs to reduce the uncertainty in pile capacity.

Mr. Britton also inquired if contractors would have the option of paying for a PDA on pile restrikes. The Geotechnical Engineering Unit stated that they do not normally require PDAs on pile restrikes, but they would evaluate whether it would be beneficial.

vi. Temporary Shoring with Tie-back walls :

Mr. Britton inquired if the Department would be developing special provisions and standard details for anchored temporary shoring. The Geotechnical Engineering Unit stated that there were no immediate plans to develop such details, but would consider doing so in the future.

7. *Next Meeting*

The next meeting is scheduled for Tuesday, October 9th, 2007 in Structure Design Conference Room C.