

ACEC/NCDOT BRIDGE SUBCOMMITTEE



Minutes of May 11, 2009 Meeting
Structure Design Conference Room C, 10:30 am

Attendees

Greg Perfetti – NCDOT Structure Design Unit
Allen Raynor – NCDOT Structure Design Unit
Lonnie Brooks – NCDOT Structure Design Unit
Gichuru Muchane – NCDOT Structure Design Unit
Dan Holderman – NCDOT Bridge Management Unit
Njoroge Wainaina – NCDOT Geotechnical Engineering Unit
Scott Hiddon – NCDOT Geotechnical Engineering Unit
Peter Graf - LPA
David Simpson – Simpson Engineers
Mickey Wing – RK&K
Jim Barcomb – URS
Hardy Willis – Vaughn and Melton

- 1) **Review of Previous Meeting Minutes** – Minutes were previously approved by email and have been posted by Allen Raynor to the Structure Design Web Site.
- 2) **Bridge Design Workshop Series** – David Simpson provided a summary of the Post Workshop Questionnaire for the March 10, 2009 Load Rating Workshop. Response to the survey was overwhelmingly positive, so it was decided to continue the series. Future topics were discussed based on the results of the questionnaire. Two workshop topics were discussed: Lessons learned on the Hyde County rapid bridge replacement project and LRFD pile design and installation lessons learned. David will check with Wake Commons for available dates in June and Dan Holderman will check with Pablo Hernandez to see if he is willing to present. The LRFD pile topic will be reserved for the 3rd Quarter of 2009 once more field data has been obtained for actual pile installations.
- 3) **Transformation Update** – No update.
- 4) **Training Opportunities** – Peter Graf asked about the status of proposed Seismic Training to be provided by FHWA. Allen Raynor will follow up with Brian Hanks to check on availability of FHWA to teach the class.
- 5) **Structure Policy Memos** – One new policy memo has been issued dated April 17, 2009 addressing the LRFD Driven Pile Foundation Design Policy. Njoroge Wainaina and Scott Hiddon were present at the meeting to discuss the content of the new policy. In general, this policy incorporates new LRFD design procedures, but also contains a process to coordinate the flow of information between the Structures Designer and the Geotechnical Designer to develop the foundation type, size and length. Several resistance factors have been modified from the AASHTO resistance factors to better reflect NCDOT experience. The policy also clarifies seismic design procedures as well as NCDOT terms and responsibilities for foundation design. It was noted that the procedures for coordination between structural and geotechnical design assume

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that the structural engineer is designing the substructure using RCPier, which does not incorporate soil-structure interaction in the analysis. The complete policy is available on the Geotechnical Engineering Unit website.

- 6) **Anticipated PEF Advertisements** – Dan Holderman stated that the Bridge Management Unit will most likely use the PEF's selected for the Division On-call project for their design requirements. Greg Perfetti stated that the Structure Design Unit is working on development of standard cored slab bridge plans to be used for the Division Projects. The superstructure plans have been completed for bridge widths from 27' to 36' and the substructure plans will be started next.

Lonnie Brooks stated that there would be no new advertisements from the Structure Design Unit until further notice.

7) **Technical Discussion**

- a. **Steel Plate Girder Stability Guidelines** – Lonnie Brooks emailed a copy of guidelines for addressing plate girder stability issues during construction and the requirements of LRFD. For in-house bid-build plans, NCDOT intends to provide an Erection Sequence plan sheet in the bridge plans under the conditions listed in Item 4 of the Guidelines. Greg Perfetti stated that NCDOT is going to add a top chord on the standard K or X crossframes for spans over 140'. Also, for spans over 200', additional lateral wind bracing will be provided near the top flange.
- b. **LRFD Foundation Design Implementation** – Additional policies for drilled shafts, similar to those for the driven piles, will be developed by NCDOT. Wall standard specifications and details are already available based on the Standard Specifications on the Geotechnical Engineering Unit website and in the cell library. The wall standards will be updated to LRFD prior to required full implementation in 2010. Scott Hidden stated that the Geotech Unit is also working with the Roadway Design Unit to improve the retaining wall section in the Roadway Design Manual. One of the changes involves guidance for the use of moment slabs for barrier rails placed in close proximity to retaining walls.
- c. **LRFR Truck Update** – Gichuru Muchane stated that the LRFR standard drawings have been updated for the latest ~~AASHTO trucks~~. Gichuru will confirm that these drawings are available on the NCDOT website and Lonnie will send out a notification to the PEF list.
- 8) **ACEC PEF Membership** – Peter Graf and David Simpson will be rolling off of the Subcommittee. These two positions will be filled prior to the next meeting in August.

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Peter will request interest from the ACEC firms at the May 18th Transportation Committee Meeting. The list of those who have already expressed interest is:

- a. Eddie Wetherill, Wetherill Engineering
- b. Paul Barber, HNTB
- c. Elizabeth Phipps, KCI
- d. Joe Kelvington, Stantec
- e. Ricky Keith, Mulkey
- f. Morris Israelnaim, MI Engineering
- g. Dominec Coletti, HDR
- h. Tom Harris, Wilbur Smith

The new co-chair and Bridge Workshop Lunch Series coordinator will be elected at the August meeting.

9) Next Meeting – 10:30am Monday, August 3, 2009.