

## ACEC/NCDOT BRIDGE SUBCOMMITTEE



### Minutes of March 15, 2010 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  
Brian Hanks – NCDOT Structure Design Unit  
Paul Garrett – NCDOT Structure Design Unit  
Tom Payne – NCDOT Structure Design Unit  
Dan Holderman – NCDOT Bridge Management Unit  
Robert Stroup – NCDOT Professional Services Management  
David Peterson – RK&K  
Satrajit Das – URS  
Hardy Willis – Vaughn and Melton  
Jason Doughty – PB  
Morris Israelnaim – MI Engineering  
Liz Phipps – KCI  
Eddie Wetherill – EWI  
David Simpson – SEA  
Jim Mondolfi – Florence & Hutcheson  
Kevin Austin – Mulkey  
David Ruggles – Stewart

- 1) **Review of Previous Meeting Minutes** – Minutes were reviewed, accepted and subsequently posted to the Structure Design Web Site.
- 2) **Bridge Design Workshop Series** – Future topics were discussed based on the results of the questionnaire. The top two workshop topics below were discussed as possible Spring 2010 lunch workshops:
  - a. GEU PDA Test Results
  - b. LRFR Load Ratings

The 2<sup>nd</sup> Quarter of 2010 is the time frame for the next workshop. Perfetti will contact the Geotechnical Units to solicit speakers for item a. Peterson will request questions about the LRFR sheet from PEFs.

- 3) **Training Opportunities** – None identified at the present time.
- 4) **Structure Policy Memos** –

January 29, 2010 – Intermediate Steel Diaphragms for MBTs  
January 20, 2010 - Unclassified Structure Excavation  
January 8, 2010 – LRFR Policy Figure Revised

Revised Chapter 6 of Structure Design Manual will be available in July 2010

- 5) **Anticipated PEF Advertisements** – Division Design/Build projects later this spring

Minutes of March 15, 2010 Meeting  
Structure Design Conference Room C, 10:30 am

**6) Technical Discussion**

Brian Hanks presented NCDOT's Standard Cored Slab Bridge Plans that were developed at the request of the Transformation Management Team, with Terry Gibson championing. This effort was intended to assist in achieving the Department's goal of 300 bridges per year. Originally superstructure plans were envisioned; subsequently, substructure plans began to be developed. Some of the factors cited by the TMT that led to the development of the standards include: Hydraulics Unit desire for standard geometries, precast producer desire for the ability to cast units of different lengths in the same bed- utilizing full length debonded strands and the minimization of repetitive engineering costs.

Superstructure Design & Plans Include:

- LRFD
- HL-93 Live Load
- Span Lengths of 25 ft to 70 ft
- 21 inch units from 25 ft to 55 ft
- 24 inch units from 60 ft to 70 ft
- Skews 60, 75, 90, 105 & 120 degrees
- Widths 27 ft to 39 ft in 3 ft increments
- Flat face barrier is 3 ft tall & 1 ft wide (TL-4 design) with 1 inch behind
- Three strand patterns (9, 13 & 19) with optional full length debonding
- Bearing pads are all 30 inch x 8 inch x 1 inch
- 50 Durometer for 21" units and 60 Durometer for 24" units
- LRFR sheet completed

Substructure Design & Plans Include:

- End Bents will use 5 or 7 piles
- 75 ton maximum load per pile
- No battered piles
- Allowable horizontal pile load is 15 kips
- All wing walls will be the same length
- Interior Bents – still under development

Discussion ensued with regard to how the standards would be used by the PEF's for design-build projects. A suggestion was made that firms be allowed to analyze the standard designs and seal the plans- and that considerable design savings would still be realized. Perfetti asked that the PEF's submit any other concerns to the Department for consideration.

**7) Next Meetings – 10:30am Monday, May 3, 2010  
10:30am Monday, August 2, 2010**