

**MINUTES OF 2003 STRUCTURE WORKSHOP/  
SPRING FIELD REVIEW PROGRESS MEETING**

The 2003 Structure Workshop/Spring Field Review progress meeting was held on November 4<sup>th</sup> in the Structure Design Unit Conference Room in Raleigh. Those in attendance included:

Greg Perfetti	State Bridge Design Engineer
Paul Simon	FHWA Division Bridge Engineer
Ernesto Villalba	FHWA Assistant Division Bridge Engineer
Allen Raynor	Assistant State Bridge Design Engineer
Ron Hancock	State Bridge Construction Engineer
Njoroge Wainaina	State Geotechnical Engineer
Ricky Keith	Assistant State Bridge Design Engineer
Jerry Beard	Hydraulic Design Engineer
Tom Koch	Structure Design Project Engineer
John Erwin	Structure Design Project Design Engineer
Scott Hidden	Geotechnical Engineer

The following items of business were discussed:

**1. STRUCTURE WORKSHOP/SPRING FIELD REVIEW MINUTES:**

The minutes of the 2003 Structure Workshop and Spring Field Review were reviewed and discussed with no action items noted.

**2. TOP-DOWN CONSTRUCTION OPTIONS**

Mr. Koch explained that the Structure Design Unit was investigating the use of precast box beams to increase the possible span length for top-down construction. The box beams under investigation are standard PCI shapes with dimensions of 3 feet wide by either 27" or 33" deep. Mr. Koch stated that the analysis results prove that the 33" deep box beam will be able to span 70' using top down construction which is a 20' increase compared to what is currently available. The pile driving operation for the subsequent bent is the controlling load case so standardization of box beam designs is a possibility. Mr. Hidden stated that the piles in the bent would be required to be vertical because battering from that distance would be very difficult.

Mr. Koch stated that the box beams would be set, post-tensioned together transversely and overlaid with concrete for the final wearing surface.

Mr. Koch stated that a trial project was under consideration and a meeting would be set up in the future.

**3. SCOUR COMMITTEE UPDATE**

Mr. Beard stated that 6000 bridges on the state's inventory had unknown foundations. Out of the 6000 bridges identified, the committee had eliminated those bridge projects that were scheduled on the Transportation Improvement Program and prioritized the remaining bridges based on traffic counts and risk. Mr. Beard stated that 80 bridges that were on the National Highway System with high ADT's would be assessed first. Contracts for four of these projects will be on the December Board of Transportation's meeting agenda for approval. After these contracts are let, 80-90 coastal bridges will be the next priority. Once the foundation type is known, an assessment of the bridge will be made, and repair/replacement will follow.

**4. PRESTRESS PLANT REVIEW TOUR**

Mr. Villalba passed out an agenda for the prestress plant tour to those attending. Mr. Villalba stated that the agenda would be placed on the FTP Server and asked for comments and concerns in the next week.

**5. PERMIT/PLANS AGREEMENT**

Mr. Hancock stated that recently the Construction Unit had encountered problems in which the permit documents called for one foundation type or construction sequence and the project plans did not agree with the documents. Mr. Raynor stated that often times the Structure Design Unit allows PDEA to use very specific language in the planning documents without knowing all the specifics of the design. Mr. Perfetti suggested that a meeting be set up including PDEA, Roadway Design, Structure Design, Construction and Geotechnical Units to resolve the issue. Mr. Hancock stated that the Bridge Replacement Section of PDEA prepares the initial documents and then ONE actually releases the final permits so both Units need to be involved in the meeting.

**6. HIGH MAST LIGHT FOUNDATIONS**

Mr. Hancock stated that since the final grade of the project must be established prior to the borings and foundation design, the Structure Design Unit should require the Contractor to take borings and design the foundations for the high mast lights. Then, the designs could be submitted to the Department for review. Currently the Department takes borings and designs the foundations after the project is let. Mr. Hidden agreed that this was a good idea and suggested the same process be used for overhead signs. The Structure Design Unit committed to look for a project to try this process.

**7. GEOTECHNICAL ENGINEERING UNIT ORGANIZATION**

Mr. Wainaina stated that in the past year the Geotechnical Unit and Soils and Foundations Unit underwent a review by a team consisting of representatives from

FHWA, Consultants, and the DOT. The review team had the responsibility of making recommendations to improve productivity and project delivery of geotechnical data and designs throughout the state. Based on the review team's conclusions, the Geotechnical Unit and the Soils and Foundations Unit were combined and regional offices were established. The eastern regional office will be located in Raleigh and the western regional office will be located in Charlotte. Mr. Wainaina distributed an organization chart to all the attendees depicting the changes.

**8. *RETAINING WALL PLANS***

Mr. Hancock stated that it would be very helpful to the Construction Unit if all walls, with the exception of gravity walls, were located in the structure plans. Mr. Hidden stated that often times a project will have a wall but not a structure so the wall design must be included in the roadway plans. Mr. Hidden stated that the current design and plan coordination of walls was a big issue that could be improved greatly. Mr. Hidden stated that he planned on addressing this issue and proposing changes in the near future.

**9. *2004 SPRING FIELD REVIEW***

Mr. Perfetti stated that the 2004 Spring Field Review would return to the western part of the state and the dates will be established soon. In addition, suggested projects to visit during the Spring Field Review should be submitted to Mr. Koch.