

## MINUTES OF AGC-DOT JOINT BRIDGE SUBCOMMITTEE MEETING

(Approved: February 9, 2022)

The AGC-DOT Joint Bridge Subcommittee met in person with a virtual component on October 13<sup>th</sup>, 2021. Those in attendance were:

Brian Hanks	State Structures Engineer (Co-Chairman)
Victor Barbour	Carolinas AGC – Highway Division Director (Co-Chairman)
Boyd Tharrington	State Construction Engineer
Todd Whittington	State Materials Engineer
Wiley Jones	Assistant State Construction Engineer
Brian Skeens	Assistant State Construction Engineer
Brian Hunter	State Laboratory Operations Manager
Gichuru Muchane	Assistant State Structures Engineer
Lee Bradley	Blythe Construction, Inc.
Chris Britton	Buckeye Bridge, LLC
Patrick Buckley	Crowser Construction Company
Adam Holcomb	Dane Construction, Inc
Jake Linn	Dellinger, Inc.
David Yates	Fred Smith Company
Tom Meador	Lane Construction Company
Erick Frazier	S. T. Wooten Corporation
Brian Weathersby	Sloan Construction Company
Larry Cagle	Thompson-Arthur Div., APAC-Atlantic, Inc.
Damien Hollifield	Young & McQueen Grading Company
Aaron Earwood	Construction Unit – Regional Bridge Construction Engineer
Darrin Waller	Construction Unit – Regional Bridge Construction Engineer
Scott Hidden	Geotechnical Unit – Support Services Supervisor
Tom Santee	Geotechnical Unit – Eastern Regional Operations Engineer
Cabell Garbee	Materials & Tests Unit – Manufactured Products Engineer
James Bolden	Structures Management Unit – Project Engineer
Trey Carroll	Structures Management Unit – Project Engineer
Nicholas Pierce	Structures Management Unit – Team Leader
Beth Quinn	Structures Management Unit – Team Leader

During the review of the August 11<sup>th</sup>, 2021 meeting minutes, the following items were discussed:

### 1. Contract Times

Mr. Earwood stated that discussions have continued with the Divisions and the Contract Standards and Development Unit will continue to offer contract time training to the Divisions. Mr. Barbour stated that projects should consider material availability when developing contract times.

### 2. Asbestos Inspections

Mr. Earwood has collected data regarding the inspections and asbestos findings and plans to share this information with DHHS and discuss if there can be improvements to the asbestos inspection process. He added the Department is investigating taking over the program.

3. Proving Bearing on Piles

Mr. Earwood shared that the Construction Unit may include pile driving and drilled shaft topics in the winter inspector training and can cover this topic.

4. Rip Rap for Slope Protection with Integral End Bents – Safety Concern with Form Removal and Pointing/Patching

Mr. Earwood shared that this has been added to the Hydraulics, Geotechnical, Structures & Construction TAG meeting agenda.

5. Closed End Pipe Piles

Mr. Earwood stated that on a recent project the closed-end pipe pile plate was removed and the pile was driven open ended, and bearing was achieved without problems. Construction will continue to work with the Geotechnical Engineering Unit to monitor the use of open-end pipe piles to remove the plate requirement and add the plate as an option in the case of driving overruns.

6. Approach Fill Settlement

Mr. Hidden stated that a workgroup has been formed to discuss approach fill settlement. The workgroup is considering increasing density testing near the bridge, expanding the zone of stone to provide a large enough area for compaction equipment and revise how the slope is constructed at the interface of the approach fill and embankment.

The minutes of the August 11<sup>th</sup>, 2021, meeting were approved.

The following items of new business were discussed:

1. Steel Price Index

Mr. Tharrington stated that the Construction Unit has been looking at material escalation costs to assess impacts on current projects. For future projects, Mr. Tharrington stated that a workgroup was formed to consider a steel price index. Mr. Tharrington presented an overview of the draft NCDOT Steel Price Index Plan developed by the workgroup, which would apply to all NCDOT projects with no “opt out” option, and the formulas for qualifying and calculating the steel adjustments, when the proposed  $\pm 10\%$  threshold is exceeded.

Mr. Cagle asked about long duration projects and whether one date would be applied prompting the contractor to stockpile material. Mr. Jones replied that there could be different dates throughout the project as the date used is when the material is shipped from the mill to the fabricator.

During the discussion, Mr. Tharrington explained that the proposed adjustments would be applied to new line items based on steel material categories. Mr. Frazier stated that when adjustments are put in place when material costs are increasing, the concern is that when material costs decrease, contractors may owe the Department at the project closing. Mr. Barbour stated that project size and duration would determine when this index adjustment would be included. Mr. Bradley stated that the guardrail and overhead sign subcontractors are the last on the job and those that are currently suffering the most from high steel prices.

Mr. Barbour stated that this plan would be presented to other committees, and he asked for feedback from this subcommittee on how to address the impacts of escalating material costs.

**Action Item:**

**Construction Unit to provide spreadsheet with example calculations to AGC for review. AGC to provide comments on Steel Price Index Plan and spreadsheet.**

2. *Safety Concern with Rebar Opening in Top Mat of Steel – Primarily for Culverts and Footings*

Mr. Holcomb stated that they have experienced safety concerns with large rebar openings in the top mat of steel, primarily for culverts and footings where a worker's foot may fall through when placing concrete. Mr. Holcomb asked if smaller rebar could be used to tighten the rebar spacing or to add wire mesh and he recommended a spacing of 6" in one direction. Mr. Hanks asked if including wire mesh would cause concern for consolidation of concrete.

**Action Item:**

**Construction and Structures Management Units to discuss allowing an option to use wire mesh to address safety concerns.**

3. *Continuous Flight Auger (CFA) Piles for Sound Barrier Walls*

Mr. Hidden shared that a group has been working to update the sound barrier wall standards to incorporate new wind loads and taller wall heights. He noted these factors may result in deeper foundations, which raises constructability concerns for the eastern part of the state due to soil conditions.

The group researched how Florida DOT constructs foundations for sound barrier wall piles and found that Florida uses Continuous Flight Auger (CFA) cast pile foundations. Mr. Earwood noted a recent NCDOT project used this method. The group is working to incorporate a CFA pile foundation option into the standards and to update the special provision. Mr. Earwood stated that separating payment for various pile foundation types is an issue. The options are to keep the pay item as is or to have two separate pay items based on pile foundation type. The proposal is to maintain the same pile foundation type per wall, but there may be locations within a wall that require a different type of foundations that could be separated by station.

Mr. Frazier stated this could be an issue with Design Build but that having the option is nice. Mr. Barbour asked what the price difference between pile types was. Mr. Meador responded that the cost can be significant as the templates used for CFA pile foundations are expensive. Mr. Earwood explained that since these piles are top heavy, the templates are important for installation. The consensus was to include two separate pay items based on pile foundation type.

**Action Item:**

**Geotechnical Engineering Unit and Structures Management Unit continue to develop standards and special provisions for CFA piles and share with the subcommittee.**

4. Pipe Pile Patching

Mr. Earwood stated that contractors often need to provide lifting holes in steel piles. He noted that current policy allows sections of pipe piles with drilled or punched holes may be left in place, but sections with torched holes must be cut off. He added that, contractors have been drilling holes in pipe piles to support falsework, which is not allowed. Mr. Earwood stated that the patching of these holes was also poor. Mr. Earwood recommended that all torched holes are cut off and drilled or punched holes with coating in good condition may remain if the hole is going to be below grade or encased in concrete. Mr. Hanks noted that during a NBI bridge inspection, the inspector could classify any patches as defects and lower the bridge condition rating. Contractors stated that cutting off piles was easier than patching holes. Mr. Holcomb stated that he agreed with cutting off a section with an exposed hole but in rare occasions if a hole is still exposed after driving to allow it to be patched. Mr. Frazier recommended a standard repair procedure be developed for patching, but that cutting off sections with holes would be preferred.

**Action Item:**

**Mr. Earwood will update the Construction Manual Guidance and include the final recommendations in an upcoming structure bulletin after further internal discussion.**

5. Repair Material During Disasters – Inventory

Mr. Earwood stated that Mr. Cochran recommended this topic because of the storm that impacted the western region of the State earlier this year and the effort required to locate cored slabs and other materials needed for emergency repairs. Mr. Earwood suggested the Department develop a process to determine what materials are available for use during disaster recovery prior to the storm. Mr. Garbee suggested sending a survey or standardized form to contractors that opt-in prior to the storm, to determine the available inventory of materials. Mr. Barbour stated that he could distribute the forms or survey to the contractors.

**Action Item:**

**Construction Unit to develop standardized forms to determine available inventory for use during disaster recovery prior to storm arrival.**

6. Other

- i. Mr. Hanks noted that there was a previous Structures Management Unit policy that limited the use of certain girders (AASHTO Type V and VI) to coastal structures where the girders could be barged in due to their weight. Mr. Hanks asked if contractors have had issues with shipping the larger FIB girders, which are close to or exceed the unit weight of the AASHTO girders, to interior areas of the State. Mr. Holcomb stated that the issue they have more often is with the length of the girder and the overhang creating cantilever action on the trailers. The previous overhang limit was 12-15 ft.

**Action Item:**

**Structures Management to discuss transportation of larger girders with PCI for development of policy using FIBs.**

- ii. Mr. Cagle stated that materials are difficult to procure and asked that the Department consider these challenges in terms of project extensions. Mr. Barbour asked if it was worth issuing a blanket policy to address this issue. Mr. Tharrington stated that a blanket

policy is difficult since each project is unique. Mr. Holcomb stated that the Department discusses material shortages and delays during close out conferences; however, for larger projects it is difficult to wait until the closeout conference.

*The next meeting is scheduled for December 8<sup>th</sup>, 2021.*

*Post Meeting Note*

Due to a limited agenda, the December 8<sup>th</sup>, 2021 meeting was cancelled. The next meeting is scheduled for February 9<sup>th</sup>, 2022.