2026 STRUCTURES WORKSHOP MINUTES

The 2026 Structures Workshop was held on April 22nd in the Structures Management Unit Conference Room C in Raleigh, NC. Those in attendance included:

David Snoke	State Structures Engineer
Emily McGraw	Chief Engineers Office – Director of Highway Operations
Dan Muller	FHWA - Division Bridge Engineer
Aaron Earwood	State Bridge Construction Engineer
Todd Whittington	State Materials Engineer
Matt Lauffer	State Hydraulics Engineer
Andy Jordan	Assistant State Hydraulics Engineer – Design
Jonathan Moore	Assistant Hydraulics Engineer - Operations
Matt Alexander	State Geotechnical Engineer
Gichuru Muchane	Assistant State Structures Engineer
Trey Carroll	Assistant State Structures Engineer
Steve Smallwood	State Roadway Design Engineer
Mike Lindgren	Assistant State Roadway Engineer
Sherri Calhoun*	Roadway Design – Project Engineer
Liam Shannon	Assistant State Construction Engineer
Brian Skeens	Assistant State Construction Engineer
Tom Santee*	Assistant State Geotechnical Engineer – Eastern Region
Eric Williams*	Assistant State Geotechnical Engineer – Western Region
Scott Hidden	Geotechnical – Support Services Supervisor
Nick Tuttle*	Geotechnical – Geotechnical Operations Engineer
Jinyoung Park*	Geotechnical – Eastern Region Design Supervisor
Tim McFadden	Alternative Delivery Manager
David Stark*	Alternative Delivery Unit – Assistant Manager
Curtis Bradley	Research and development Manager
Catherine Bryant*	Research and Development – Research Implementation Manager
Mustan Kadibhai	Research and Development – Research Engineer
Matt Hilderbran	Materials and Tests – State Field Operations Manager
Brian Hunter	Material and Tests – State Laboratory Operations Manager
Nicole Fletcher	Materials and Tests – Manufactured Products - Staff Engineer
Aaron Griffith	Regional Bridge Construction Engineer
Patrick Cheeves	Regional Bridge Construction Engineer
Tyler Rogers	Regional Bridge Construction Engineer
Randy Hall	Regional Bridge Construction Engineer
Daniel Waugh	Central Construction Unit – Area Construction Engineer
Marcus Kiser	Central Construction Unit - Area Construction Engineer
John Partin	Central Construction Unit - Area Construction Engineer
Aaron Powell	Central Construction Unit - Area Construction Engineer
Christopher Fine	Central Construction Unit - Area Construction Engineer
Meredith Hayes	Central Construction Unit – Area Construction Engineer
Scott Jones	Central Construction Unit – Area Construction Engineer
Adam Cole	Structures Management - Project Manager
Kristy Alford	Structures Management – Project Engineer
Nick Pierce	Structures Management – Project Engineer
David Stutts	Structures Management – Project Engineer

Doug Cantrell	Structures Management – Engineering Supervisor
Asa Godfrey	Structures Management – Engineering Supervisor
Tyler Stogner*	Structures management - Engineer
James Hawk	Structures Management - Engineer

*Joined Via Microsoft Teams

The following topics were discussed:

WELCOME

David Snoke kicked off the meeting with self-introductions, opening remarks and a statement on the purpose of the workshop. Aaron Earwood shared that the Hydraulics, Geotechnical, Structures, Construction, Roadway Technical Advisory Group (HGSCR-TAG) is being reconstituted with the purpose of addressing items brought up in the Structures Workshop by smaller groups. Beth Quinn will be administrating TAG.

2025 MINUTES REVIEW

1. **B-77 Guardrail Anchor Unit (GRAU) and Approach Slab Gutter Curb** – There are still concerns of stormwater overtopping the triangular curb beneath the GRAU on the approach slab with this current detail. Construction to investigate alternative types of curbs that can be used.
2. **MSE Wall Envelope Requirements** – There was a general discussion of allowing the use of MSE walls with integral end bents for typical design bid build projects. It was noted that we have only accepted the use of MSE walls with integral end bents on design-build projects. David Snoke suggested selecting a few pilot projects where MSE walls have been constructed with integral end bents to investigate if there are any post construction issues.
3. **Future Use of GFRP** – Construction noted that costs for GFRP are dropping and approaching the costs of black steel.
4. **Phased Construction** – Construction reiterated that having only a 2'-0" wide closure pours restricts the use of a screed which requires hand finishing – often resulting in an uneven deck.
5. **Hurricane Helene Response** – Construction noted that shipping rail cars is costly and that it may be more economical to only ship railcars when/where they are needed instead of evenly distributing across the State. RFID tags have been fabricated and placed on railcars.

All other action items from the 2025 Minutes will be discussed below or have no updates

FHWA TOPICS

1) FHWA Updates

Workplace conditions at FHWA are beginning to return to normal operations. The FHWA resource center has been restructured but is beginning to see a return of personnel and services. FHWA has been tasked to reach out to the various State DOTs to inquire what resources FHWA is missing respective to services previously provided.

Matthew Lauffer mentioned that it took 3 months after Hurricane Helene to access the HEC-3 analysis system. He noted that the Hydraulics section of FHWA lost knowledge on HEC RAS 2D and HEC-3 systems with recent migration of FHWA staff to private engineering firms. He

mentioned there is a need to distribute training on how to use these resources to avoid project delays and that FHWA has been slow to distribute training information. Dan Muller noted that getting approval to publish new guidance takes longer because all documents must be reviewed by lawyers prior to publication.

Action Item:
None.

RESEARCH AND DEVELOPMENT

1) Research Presentation

Curtis Bradley presented an overview of the research and development program. His presentation provided insight to who does the research, definition of what research is useful to NCDOT which focuses on "applied research" and "technology transfer". He also described what makes a good proposal, the different kinds of research projects, research subcommittees, technology transfer program, library services, cooperative/pooled fund programs, and points of contact within the R&D group.

Action Item:
None.

ROADWAY TOPICS

1) Unit Updates

Steve Smallwood is now the State Roadway Design Engineer.

Bruce Payne is the new Western Design Development & Support Group Lead, previously held by David Clodgo.

The CADD Support Group has been transitioned from the Roadway Design group to the Program Support Unit – CADD Support Services, under Jennifer Evans' leadership.

Action Item:
None.

2) Changes to the Guide for Paving shoulders under Bridges Roadway Standard Drawing

Mike Lindgren discussed that false cuts are not being implemented in many suitable projects. A false (or natural) cut is an earthwork grading practice where an earth berm is retained in a cut section along a roadway approach leading to a grade separation that provides protection for vehicles in the case of roadway departure. This can be an economical safety feature which eliminates the need for roadside guardrail. This issue is due to lack of coordination between the roadway and structure engineer. He reminded the group that once the structures engineer has laid out the bridge, the layout needs to be sent back to the roadway engineer to determine if false cuts are appropriate for the structure.

Mike Lindgren expressed concerns with the apparent routine use of MSE (Mechanically Stabilized Earth) walls to reduce the bridge length, which doesn't allow for future widening of the roadway under the bridge. He asked the group if the roadway engineer should provide extra roadway below the bridge for the purpose of future widening. David Stutts mentioned that during project scoping Structures Management is requesting for extra roadway width beneath the bridge when determining the bridge length. This is a conversation to have with the Division and others to determine if the road under the bridge will need future widening. It was mentioned that traffic studies typically project future demand out to 25 years.

Mike Lindgren shared proposed updates to the Roadway Design Manual Figure 5-21 and the Roadway Standard Drawings 610.02 and 610.03, for Method II: the dimension between the face of the guardrail to the toe of the slope protection was increased to 3 feet to allow for deflection of the guardrail. For method III, the dimension between the toe of the slope protection and the break point center was increased to 3 feet to allow for a smoother transition to the vertical curve on the slope protection.

Action Item:
Structures Management to coordinate with Roadway to ensure this oversight between slope protection and shoulder is addressed in future projects.

3) ***Vertical barrier Rail on Structures with Multi-Use Pathways (MUP)***
Mike Lindgren mentioned that we are beginning to see more MUPs being required on bridges that don't always warrant the inclusion of a MUP when there are no walking trails or sidewalks in the vicinity of the bridge. He suggested including this topic into TAG.

Action Item:
Set up a TAG group to investigate the inclusion of MUPs on bridge replacement projects.

MATERIALS AND TESTS TOPICS

1) ***Unit Updates***
Todd Whittington provided updates on the Materials and Test (M&T) Unit's personnel.

Jason Civils has returned from retirement to fill Cabel Garbee's old position as the Manufactured Products Engineer.

Natalie Bravo has been promoted to Concrete Products Engineer.

Nichole Fletcher has assumed Natalie Bravo's old position as the Manufactured Products Staff Engineer.

Todd Whittington reminded the group that if there are any questions about using a specific product or material to call M&T prior to installation this goes for both designers and construction inspectors.

Action Item:
None.

2) ***Standardization of Epoxy Bars for Bridge Barrier Rails***

Jason Civils noted that there is significant lead time in producing the cored slab type 1 epoxy coated bars and requested if we could standardize bar lengths so the fabricator could stockpile these bars and have them available on the yard. Trey Carroll suggested that we standardize the bars on 2 or 3 separate asphalt wearing surface thicknesses and adjust the standards accordingly.

Action Item:
Structures Management to investigate standardization of these bars for various asphalt wearing surface thicknesses.

3) ***Cost Reduction of Bridge Inserts***

Jason Civils mentioned that bulk ordering of ferrule inserts will decrease costs and requested if we can standardize ferrules to allow for bulk ordering. SMU agreed to investigate opportunities to standardize ferrules.

Action Item:
Structures Management to investigate standardizing the ferrules used for staged bridge inserts. Jason Civils to share subject projects with SMU.

4) ***Transverse Post Tensioning Hole Alignment on Staged Cored Slab Bridges***

Jason Civils noted that cored slab bridges with 2 stage construction are having issues with the cored post tensioning holes not lining up. It was noted that a bridge on a skew will make this alignment more difficult. M&T and Construction will continue to monitor this issue to determine if this is a widespread or localized issue.

Action Item:
None

5) ***Alaska Barrier Rail***

Jason Civils noted that he is seeing variations of anchor details for the Alaska Barrier Rails. Some fabricators are using an embedded plate welded to each anchor bolt head, while some fabricators are using anchor bolts alone without the anchor plate. Jason suggested updating the detail to show only a threaded rod to simplify fabrication. Aaron Earwood mentioned that on the Calabash project the contractor ran out of threads on the rod which caused a big delay in the project. If the rod had been fully threaded in that circumstance, then it would've significantly helped on that project.

Action Item:
Structures Management to investigate standardizing fully threaded rods to be used for anchorage on the Alaska Barrier Rail Standard.

6) ***PCG Top Flange Raking Detail***

Jason Civils mentioned that fabricators are starting to apply the new raking pattern to the top flange of the prestressed girders and inquired when the standard drawings would be updated to show the modification to the raking note. Asa Godfrey noted that the delay is due to staffing, but he has recently filled his vacant positions and is working to publish these updates very soon.

Action Item:
Structures Management to publish the updated PCG standards implementing the revised top flange raking note.

HYDRAULICS TOPICS

1) ***Stream Gauges***

Brian Radakovic gave a presentation on the different types of flood gauges and explained their use in providing warning during flood events. He noted that these flood gauges are supported by multiple owners and that the owners are responsible for maintenance. He reported common issues with the flood gauges such as vandalism, log jams, vegetation, construction, and exposure to the elements. Brian requested that if other units and staff see damaged gauges to please contact the Hydraulics Unit at Hydraulics_notify@ncdot.gov.

Action Item:
None

2) ***Sealed Drainage Systems for Walled Roadway Sections***

Andy Jordan presented on new design guidance for drainage behind wall zones between the bottom of the retaining wall up to the roadway. He noted that drainage should be going under the wall in a sealed extension into a drainage box. The Hydraulics unit is to perform a field review of the systems that have been installed to measure performance and how different details perform versus others, as well as follow up with the Construction Unit on installation. It was noted, there are no settlement reviews completed after the construction of these sealed drainage systems. Andy Jordan notified the group that this new design guidance will be available in late 2026.

Action Item:
The Hydraulics Unit to share the link for the new design guidance once it is available.

3) ***Bridge Deck Collection Systems***

Brian Lipscombe provided a national pollutant discharge elimination system (NPDES) permit update and provided Municipal Separate Storm Sewer System (MS4) locations of bridges with deck drains discharging directly into streams. The only current request is to map the locations of these bridges. NCDOT policy is to avoid discharging directly into steams if possible and instead discharge runoff via the bridge deck at the ends of the bridge. It was noted to avoid closed drainage systems if possible. Dispersed Discharge is an approved best management practice to address bridge deck runoff.

Aaron Earwood mentioned that during field scoping conversations are often had about widening the bridge to mitigate runoff spread into the travel lanes. During the discussion there was agreement that we should not widen bridges to avoid direct discharge or install closed drainage systems unless the bridge is over a railroad. It was asked what action to take if we do find that a bridge is being widened to avoid direct discharge. The Hydraulics Unit confirmed that if this issue is encountered, the designer can send those plans to Matt Lauffer, Jonathan Moore, or Brian Lipscombe for review.

Action Item:
None

4) ***Partially Grouted Rip Rap***

Matt Lauffer discussed how partially grouting of rip rap (~50% of filled voids) is being used on roadway embankments adjacent to rivers and streams to provide slope armor. This method of stream bank stabilization can be used for scour repair, but it is most effective when used above the water line. The current special provision being used was written for use in the western part of the state to address Hurricane Helene related scour repairs. The Hydraulics unit is developing a standardized special provision to include guidance for the use of partially grouting of rip rap across the state (including the piedmont and coastal regions). Partially grouted rip rap can be used on sites with flow at or above 12 ft/s, using a Class 3 rip rap, or Class VIII select material. The Hydraulics unit has some standard details for rip rap placement.

Action Item:
None

5) ***TAG Items***

The Hydraulics unit suggested the following topics to be added to TAG:

- Partially Grouted Rip Rap – special provision variants and updates
- Sealed wall systems – special provision and guidance
- Scour updates and coordination, abutment, contraction, and local countermeasures

Action Item:
Add these topics listed above to TAG for further investigation.

GEOTECHNICAL TOPICS

1) ***Unit Updates***

Tyler Bottoms is the current Eastern Regional Investigations Supervisor in the Greenville Office.

Tom Santee has announced his retirement in June.

2) ***Retaining Walls***

It was discussed that sheet pile walls are being completed for roadway plans separately from structure design and often get missed. Efforts need to be made to ensure sheet pile walls aren't being excluded from the design process. The Geotechnical unit is working on what and how models are going to be completed in CADD. Geotech thinks there is a need for walls around structures to be modeled to identify any geometric issues as well as to calculate quantities. Matt Alexander also noted that they are developing guidance on allowing contractors to use semi-gravity walls substituted for other wall types.

Action Item:
None

3) ***GEU Characterization and Design Manual***

The Geotechnical unit has hired an engineering firm to help update their manual for site characterization guidance. Geotech has also published updates to the load request letter. Matt Alexander mentioned that there is a current AASHTO ballot item to completely rewrite Section 10 – Foundations of *AASHTO LRFD Bridge Design Specifications.* These updates direct the designer to be more intentional on how/where soil testing is to be performed. Improved testing protocols will provide more reliable soil strength and capacity. Geotech mentioned updates to

Chapter 33 of *AASHTO LRFD Bridge Construction Specifications* and noted that this will require updates to the NCDOT Construction Manual. SMU has shared standard micropile concepts.

Action Item:
The Construction Unit to update the NCDOT Construction Manual for updates to micropile guidance.

4) gINT Replacement

gINT is a legacy Geotech software that has been replaced with Bentley OpenGround. Matt Alexander noted that OpenGround is not working as intended and not capable of performing all the analyses. as the previous software, gINT. Geotech is currently looking into using the software BoreDM which is an online application that provides the Geotechnical unit the ability to provide all boring data in one location for each boring site as well as the capability to share with others in a model. Matt Alexander noted that other states are using this software as well.

Action Item:
None

5) Corrosion

Matt Alexander suggested that the Department begin collection of stream water and soil samples on the banks of bridge projects to test for corrosive environmental factors. This data could be used to specify corrosion protection for substructure elements. There is a current research project with NC State University to monitor various bridge sites across the state for corrosive environmental factors. A deliverable of this research project is to provide updated corrosion protection specifications if necessary.

Action Item:
Structures Management to reconvene with the Geotechnical and Hydraulic Unit on this topic after the Environmental Monitoring to Support Revised Steel Pile Corrosion Protection Specifications research project has been completed to investigate new policy on environmental sampling of project sites.

6) Timber Bridge Foundations

Matt Alexander notified the group that we are still working through timber bridge foundation issues regarding low bearing resistance. There was a previous meeting with SMU, Geotech, and Construction to begin working on this issue to provide guidance for evaluating soil bearing resistance for timber bridge replacements.

Action Item:
The Geotechnical Unit to continue developing guidance for Timber Bridge Foundations

STRUCTURES MANAGEMENT TOPICS

1) Updates to Structures Design Manual Chapter 7

Structures Management shared recent updates to the Structures Design Manual Chapter 7. These updates include:

- Updates to section 7.2.4 to remove the guidance to taper the bottom of wingwalls and require that wingwalls be level for the ease of construction.
- Update to section 7.3.1 stating the preference to not design for MSE walls in conjunction with integral End Bents.
- Update section 7.3.2 to clarify the ability to use Type III or larger elastomeric bearing pads with prestressed concrete girders.
- Update section 7.3.4 to permit the use of brace piles oriented about the weak axis, if necessary, in wing walls.
- Update section 7.5 to provide guidance for the use of mass concrete elements in construction.

Action Item:
None

2) Camber Discrepancies

There have been inconsistencies in the predicted and measured cambers for prestressed concrete girders. More information is required to determine what is causing these discrepancies. It was noted that designers are referencing the 2011 NC State Camber Research Project to predict cambers. This research doesn't include recently adopted prestress concrete girder shapes such as Florida I-beams (FIBs). It was suggested to reach out for additional camber research to incorporate the new FIB shapes. There are also reported over-camber for prestressed concrete shapes that were included in the 2011 research such as cored slabs and box beams. It was suggested to begin collecting camber data at the fabricators' yard as well as camber measurements when the contractors receive the prestressed concrete girders. Jason Civils suggested adding the camber measurements into HICAMS.

Action Item:
M&T to begin collecting camber data at the fabricator for prestressed concrete girders. Structures Management to reach out about additional research for camber prediction of prestressed concrete girders.

3) Transportation of Precast Concrete Girders

There is a current moratorium on the use precast concrete girders larger than 63" in Western North Carolina due to transportation challenges. This restriction on larger precast concrete members restricts span lengths for bridge projects in Western North Carolina. Aaron Earwood suggested providing a checklist for designers to follow if they want an exception to the moratorium for use of these larger precast members in Western North Carolina. Nick Pierce mentioned that if we choose a pilot project for this process, then PCI has offered to work with fabricators to develop transportation routes for each fabricator. It was noted that we may need to get the Working Drawing Review project group in Structures Management to help evaluate bridges along the proposed routes for these permit loads.

Action Item:
Structures Management to discuss this process at the next PCI meeting.

4) Cored Slabs

Nick Pierce discussed how relatively new cored slab bridges have been leaking water through the joints and shear keys onto the substructure. He proposed new waterproofing details may be necessary, such as the installation of water proofing membrane at initial construction. Aaron

Earwood noted that they have updated the post tensioning details in a recent PSP to reduce rotation about the independent slabs. The asphalt wearing surface placed on the cored slabs is permeable, if there are any cracks in the grout then water will leak through the shear keys onto the substructure below. It was agreed to find a trial project to use the water proofing membrane to develop an idea of how much the water proofing membrane costs and see how it performs in the field. It was noted that if a water proofing membrane is installed, the asphalt and membrane will need to be milled all the way down to the top of the cored slab prior to resurfacing or the future layer of asphalt wearing surface will not bond properly and rapidly deteriorate.

Action Item:
Construction and Structures Management to work together to find a pilot project to use a waterproofing membrane.

5) Timber Bridge Program Updates

Timber Bridge replacement costs have been increasing to the point of approaching the cost of a cored slab bridge replacement. Nick Pierce suggested Division Bridge Program Managers start asking consultants to reconsider some timber bridge replacements and design them as cored slab replacements. Tyler Rogers noted that it's typically more economical to replace a 20–30-foot span structure with cored slabs in comparison to a timber bridge replacement. It was noted that the original criteria for the timber bridge replacement program was for bridges on a no outlet roads with low ADT.

Action Item:
Structures Management to continue to monitor costs for timber bridge replacements.

6) Calculation of Quantities

Nick Pierce discussed the effects of digital delivery for the calculation of project quantities. The use of 3D models will allow designers to pull quantities directly from the digital model without separate calculations. Liam Shannon noted that currently contractors are using the model for visual purposes only and do not rely on the model for quantities. The contractors can retrieve all the quantity information they need from the 2D plan sets. Steve Smallwood mentioned that there may be changes in how roadway quantities are provided using models but the quantity information provided will essentially be the same as they are currently.

Action Item:
None

CONSTRUCTION TOPICS

1) Unit Updates

Aaron Earwood provided unit updates for the Construction Unit.

Scott Jones has assumed the position as Area Construction Engineer for Divisions 11 & 12

Leila Boulos has left the Construction Unit.

Action Item:
None

2) Vehicular Culvert

Tyler Rogers presented various projects utilizing vehicular culverts. He noted that they are currently only providing a sealant at the joints of the precast culverts and these are beginning to show water leaks. He recommends wrapping a full waterproofing membrane around the culvert. He showed photos of how the precast units sit on a footing and must be shimmed to fit up correctly to the units next to them. He mentioned concerns with the base of the culvert support wall possibly catching and trapping water. He noted that the current special provision doesn't have a requirement for any kind of finish.

Action Item:

Structures Management and Construction to work together to update the Structures Design Manual/Vehicular Culvert special provision to specify a better performing finish on the interior surfaces of the culvert.

3) Culvert Cracking

There continues to be issues with significant cracking in newly constructed concrete culvert walls due to differential settlement below the culvert. The Construction Unit is requiring camber on culverts that have the potential for settling. Construction is also using polyurethane foam injection under the culvert to fill void spaces to prevent future settlement.

Action Item:

Structures Management to investigate how the bottom slab and steel reinforcement designs would change for concrete culverts if designed for future settlement. Construction and Geotechnical to continue working on how to camber base materials.

4) Approach Slabs/Approach Fills

Approach fill settlement has continued to be an issue affecting bridge approach slabs. Tyler Rogers shared the details of an approach slab that was constructed on I-40 last year utilizing a pavement notch to pave over the approach slab. He noted this detail is performing well so far. He suggested the use of weep drains on approach fills utilizing the pavement notch since water tends to collect on these notches prior to paving. Aaron Earwood recommended providing a minimum asphalt wearing surface thickness of 7" through various lifts above the pavement notch on the approach slab.

Aaron Earwood shared the Roadway Standard Drawing 423.01 and noted the current approach fill detail only allows one chance to jack the approach slab by means of pumping grout below the approach. Once this pumping action is completed, the layered stone and geofabric will solidify into one monolithic grouted unit creating a much heavier approach fill to lift in future jacking attempts. Scott Hidden suggested changing the detail to using geotextile wrapped stone layers, which have no issues being jacked multiple times.

Todd Whittington and Scott Hidden mentioned that training is currently ongoing to provide guidance to Resident Engineer Offices and staff to improve monitoring of approach fill during construction.

Action Item:

Structures Management to investigate if it is possible to decrease the thickness of the approach slab when detailed with a pavement notch to allow for a thicker layer of asphalt wearing surface above the approach slab.

5) Bridge Joints

Tyler Rogers discussed alternative joint armor options to the currently used strip seal expansion joint. He shared a project where the R-shape steel retainer rail was used for strip seal expansion joints as opposed to the typical P-shape steel retainer rail used in the strip seal expansion joint standard drawing. He noted this new shape has been performing well to date. He also suggested using a new joint detail (armored foam joint) on projects where geometric constraints limit the use of strip seals. The armored foam joint utilizes foam glands adhered to vertical plates that can be easily maintained by NCDOT forces. This type of joint is commonly used in Texas.

Action Item:
None

6) Mass Concrete/Drilled Shafts

Aaron Earwood discussed that large, drilled shafts require a unique special provision in lieu of the special provision used for other mass concrete elements. He shared SCDOT specifications used to address mass concrete for drilled shafts. David Stutts suggested putting language in design-build contracts because larger drilled piers are used on those projects.

Action Item:
Structures Management to update chapter 7 of the Structures Design Manual and the Mass Concrete Special Provision to provide mass concrete guidance for members larger than the referenced 6-8 ft.

7) Multiuse Paths on Bridges

Aaron Earwood mentioned an issue with finishing the deck on bridges that with multiuse paths (MUPs). Contractors are requesting to insert ("wet-stick") the median barrier rail anchor bars into uncured concrete to allow for use of the screed to finish the deck opposed to hand finishing around the bars tied in place with the deck steel. Wet sticking has its own issues with improper alignment of the rebar. Another solution to drill and epoxy set the anchor bars into the deck and using epoxy was suggested.

Action Item:
Structures Management to investigate options for bar connections from deck to rail (threaded inserts, wet-sticking bars, epoxy anchoring etc.)

8) Temporary Bridges

Tyler Rogers shared details on temporary bridge submittals and discussed how the transition from the approach onto bridge details are being missed, which leads to Contractors to determine how they are going to handle these details in the field. Lack of approach details is generating issues for modular temporary bridges, such as the Acrow-type bridges. He is requesting that approach fill details be reviewed as part of the temporary bridge plans.

Action Item:
Structures Management to modify the temporary structure special provision to provide a smooth, structurally sound bridge approach and requirements of plans, including railcars.

9) Railroad Details and Provisions

Patrick Cheeves shared drainage system issues on a railroad bridge project. The drainage system wouldn't fit between the top and bottom flanges of the girder without projecting below the beam. Construction was delayed 4 months to get approval from the railroad to adjust the design of the drainage system to fit into the deck and eliminate projection below the bottom flange.

Action Items:
None

Quick Hits

1) Helene Updates

Aaron Earwood gave an update on the Hurricane Helene response. There are some express design build projects under construction after a slow start. Right of way and permitting issues have been slowing down the process. Dan Muller reminded the group that to obligate federal aid funds to a Hurricane Helene project, the project must be started within 2 years of the storm.

Action Item:
None

2) ADA Document Compliance

Asa Godfrey asked the group how they are handling the recent push to update all public facing documents online to comply with the Americans with Disabilities Act (ADA) requirements. There was a general discussion about work completed to update the existing publications as well as mention of the general accessibility disclaimer being placed on many of the NCDOT webpages. Mike Lindgren suggested Structures Management to reach out to Sherri Calhoun for more details on how roadway has been updating their design manual for ADA compliance.

Action Item:
Structures Management to reach out to Roadway Design to inquire more details of how they have been handling the alternate text for their design manual and figures.

SPRING FIELD REVIEW ITINERARY

Following the Structures Workshop, Structures Management and Construction discussed candidate bridge sites and itinerary for the Spring Field Review which will occur in the eastern half of the state. Structures Management and Construction will continue to coordinate bridge sites and routes to finalize the Spring Field Review details which is scheduled for May 12th-14th.