



Bridge Technical Committee – Minutes Wisconsin DOT, Industry, and Partners

Wednesday March 28th, 2018

1:00 – 3:30 PM

SW District office (Dane – Rock Rooms)

Subcommittee Reports:

1. Bureau of Technical Services – Ready Mix Concrete Subcommittee

• Discussion on Meeting and Pumping Concrete for Structures

Kevin McMullen shared a proposed resolution to this. When air is in question on project, contractor to make a request for additional cylinder cast that the QA/QV person would take possession of. DOT would tender to lab. Payment for testing would come from contractor. Need to work some details like type of curing and how to transport.

Discussion at BTC meeting indicates that both FHWA and WisDOT support this and we are waiting for updated CMM language to this effect.

- Chad Hayes mentioned changes were sent to FHWA for review. Bill Oliva asked Chad to forward any updates so he can assist with a resolution.
- Bill Oliva requested concurrence from Aaron Coenen of FHWA on April 16th, 2018

2. Subcommittee on Structure Design & Construction – (Aaron Bonk)

• Updates from the March 2018 Subcommittee Meeting.

• Items discussed*:

- Alternative deck forming systems
- Vertical parapet reinforcement
- Jacking loads on structure plans
- Uniform panel spacing in CIP concrete walls
- Railing post base plate/anchorage locations
- Bridge deck reinforcement steel clearances
- Contractor use of 3D models
- Structural approach slabs
- Parapet heights

Subcommittee on Structure Design & Construction – March 28th Minutes

<http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/strct/bridge-tech-committee.aspx>

3. Task Group to follow up on the FHWA's 2016 Bridge Deck Construction report (Joe Balice of FHWA). Not discussed – Joe Balice was not present

Standing Topics:

1. **IH 94 North South project** (Aaron Bonk) – Aaron provided a summary that included 18 proposed bridge, 15 retaining walls, and sign structures. Aaron also indicated that preliminary bridge plans were available for contractor review on HCCI website for the south central portion of the project. The Let will be 4 weeks after Infra-grant approval for this work (TBD).
2. **IH-39 (Illinois – Dane County)** (Laura Shadewald) – Laura indicated that there will be 3 Lets for 2018 (July, November, & December) with 17 bridges, box culverts, and MSE walls.
3. **Verona Road (Madison)** (Laura Shadewald) –
4. **Wisconsin Highway Research Program (WHRP) Bridge Items** – (Bill Oliva)
 - Implementation –
 - Self-Consolidating Concrete for Prestressed Girders – Update on the IH-94 over 390th Street Dunn County, B-17-223. Single Span (126 foot) 54W and moving

forward. Girders being produced at County Material in Janesville.

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- FY2019 Projects –
 - Internal Curing of Bridge Decks and Concrete Pavement to Reduce Cracking
 - Textured Epoxy Coated and Galvanized Reinforcement to Reduce Cracking in Concrete Bridge Decks
 - Bill Oliva introduced Dave Kiebusch as the new WHRP TOC chair. Bill Oliva will act as a co-chair. Dave asked that any research needs be sent to him.

WHRP: <http://wisconsindot.gov/Pages/about-wisdot/research/whrp.aspx>

Previous Meeting Carryover Topics:

1. **Structural Backfill for Box Culverts (Matt Grove, Bill Oliva, & James Luebke).** Matt raised a concern about excavation limits and structural backfill on box culverts in 2017 lettings. The department has developed guidance and policy considering input from the Bridge Technical Committee discussions. James Luebke will present the departments 2018 updated policy and details. – (see attachment)

Action Item: None (*remove from next agenda*)

2. **Shop Fabrication Initiative update (Kristin Revello)**

Kristin provided an update on the Shop Fabrication Initiative. A copy of the presentation will be sent out with the meeting minutes. Highlights include the

- The Fabrication Library migration to new SharePoint site
- Changes to the new Fabrication Library structure
- A reduction in the percentages of shop drawings Bureau of Structures perform QA reviews for, beginning in March 2018
- The future requirement of additional Contractor's Certificate of Shop Drawing Quality Control forms to ensure contractor QC, and fabricator progress reports
- The future creation of 2 new approved fabricator lists-
 - ✓ primary steel members
 - ✓ sign structures and overhead sign supports.
- Changes to the current field welding process for the 2018 construction season

Action Item: None

New topics:

1. **Epoxy Coated Bars concerns during construction (Krissy Van Hout & Joe Larson)**
Standard Spec 505.3.1(2) specifies epoxy-coated bars to be covered if exposed to sunlight for more than 2 months. It's been suggested to clarify that the total maximum exposure is 60 days and that it should be covered as soon as possible if concrete embedment is not expected within 60 days.

(Joe Larson Comments): Regarding the rebar being limited to a 60-day exposure to the sun guideline. Winter sun light in Wisconsin is of a shorter duration and lower in the sky vs. summer. Would WI DOT consider a longer exposure duration during winter months? Is there an epoxy paint product that has a longer sun exposure duration - WI DOT would consider?

- Krissy discussed current practices and asked for BOS's thoughts on how the current 2 month limits for sunlight exposure should be interpreted.
- It was mentioned that CRSI recommends a 30-day maximum exposure.
- Bill Dreher stated the intent is not wait 2-months and then provide cover.
- James Luebke mentioned the intent would be to limit total exposure (storage and in-place) time to not exceed 60 days, as described in ASTM 3963.

Action Item: BOS will update Standard Spec 505.3.1(2) for clarity.

2. **Epoxy Resin for Field Repair (Krissy Van Hout)** Section 505.2.4.2(2) specifies a two-part epoxy resin for field repairs and patching. This spec was effective with the December 2015 letting yet common field practice is still a one-part spray.

- Krissy mentioned contractors had not been using the two-part epoxy resin for field repairs, but rather were using epoxy coating spray cans. It was noted that the two-part epoxy system was recently added to the specification (2016 std spec).
- Contractors not aware of the revised spec requirement and haven't been using a two-part system. Use of the can is easier to apply in the field and has little waste. The two-part system requires mixing and will have some amount of waste.
- Bill Dreher had concerns with over-spray on the concrete.
- It was mentioned that CRSI recommends using a two-part epoxy repair material.

Action Item: Use of the two-part repair system will be discussed during the next (April 5th, 2018) monthly BPD phone teleconference and at the next regional construction meetings.

3. **Temporary modifications to existing structures (Joe Larson):** On occasion, there have been projects requiring the contractor to evaluate and confirm adequacy of a structure after partial removal (deck/beams) that are detailed in the plans to accommodate the plan construction staging and traffic control. With the designer dictating the construction sequencing and traffic staging, calling for the contractor to review the designer's methods does not seem appropriate. If the designer determines the existing structure needs temporary supports, a feasible option should be provided that could be susceptible to changes by the contractor. However, the designer should be responsible to determine the adequacy and feasibility of what's presented in the plans.

- Dan Kowalski stated some past plans required the contractor to verify the adequacy of the structure after certain removals. Dave Kiekbusch said there may be times when the contractor is responsible for temporarily supporting the deck, but not aware of cases where the contractor would be responsible for checking the adequacy of other elements.

Action Items: BOS requested examples be provided by contractors and BOS will investigate this item further.

4. **TEMPORARY BRIDGES:** The guidelines for temporary bridge thicknesses specified in the current FDM manual can result in extremely thin superstructures. While superstructure thicknesses and clearances are typically not an issue in most instances, occasionally they become problematic. FDM 11-35-5 Temporary Bridges has not been updated since February 28, 2001. Since that time there has been a notable change in the design requirements as well as a significant shift to have the contractor design more of the temporary structures. One of the intents of calling for a contractor designed temporary bridge is to provide flexibility to economize the temporary structure and draw on resources readily at hand. The temporary bridge thicknesses presented in the FDM do not correlate well with the Economical Span Lengths illustrated in Section 5.2 of the Bridge Manual. On occasion, a very thin temporary structure type may be assumed by a designer. This can result in an extremely expensive temporary bridge or an unrealistic superstructure thickness. With the short amount of time to review plans and specs and in some occasions insufficient information being provided, the current FDM guidelines 11-35-5 seem inadequate and/or additional design parameters should be provided within the bidding documents.

- Dan Kowalski (Lunda) stated some projects had very restrictive superstructure depth limits for temporary bridges. He also mentioned 30-inch and 36-inch deep girders are typically available.
- Dave Kiekbusch stated the FDM guidance is based on current AASHTO minimum depth guidelines, but also agreed it may be restrictive for certain cases. Bill Oliva also mentioned the need for better coordination between roadway and structure designers in that roadway designer may be setting profile grade line for temporary road too low and limiting the available depth for temporary structures.

Action Items: BOS will review the FDM and BM guidance for temporary bridges. This would also be good to share in regional construction meetings.

5. Curing blankets (Brent Freeman): We know deck curing methods and deck cracking issues are a very sensitive subject but we thought we would see if this is something BOS would entertain researching and possibly trying on a project this season. Brent indicated that some of the advantages could include: Save on labor – both install and removal, Material cost, Water cost (eliminate trucking and/or drilling a well - Designed to stay wet for 7 days without re-watering, More uniform application of moisture (little-to-no dry areas like you may see using burlap/sheeting/soaker hoses)

- Brent Freeman shared project photos and discussed the use of Ultracure deck curing system. He was wondering if the department would be open to alternative deck curing methods such as Ultracure. The department had several concerns with this system.
- Krissy mentioned this product was discussed with FHWA's 2016 Bridge Deck Construction group.
- Jim Parry stated this product may trap heat and may lead to shrinkage cracks.
- Chad Hayes had concerns with ensuring the material is properly wetted and noted that dry spots can be seen when using the burlap system.
- Brent mentioned that they have not reused them, which allows for faster cleanup.

Action Items: BOS will consider the information and offer to WHP as possible research project as interest dictate.

Standing Item - Specification Changes / Updates – Discussion (Mike Hall)

- No Items Discussed

Addition to the Agenda: None

Attachments:

- Bridge Manual Standard 9.02 – Structures Backfill Limits and Notes
- Kristin Revello presentation on Shop Fabrication Initiative - Update