



Bridge Technical Committee – Minutes
Wisconsin DOT, Industry, and Partners
Thursday November 29th,
2018
1:00 – 3:30 PM
SW District office (Dane – Rock Rooms)

Subcommittee Reports:

1. Bureau of Technical Services – Ready Mix Concrete Subcommittee

CMM 8-70.4.3.1.1 (Dispute Resolution) to provide guidance on resolving disputes over air content for pumped concrete has been published in May 2018 CMM. – Closed

There are three items still open for discussion by this sub-committee that may move forward soon based on availability of subcommittee:

- Concrete overlays and equipment per the specification (2017 discussion/survey/specification)
- Pumping of Concrete an air loss (2018 request by Industry for research)
- Concrete Masonry Overlay Decks (CMOD) – Overruns and Measurement (December 2018)

Standing Topics:

1. **IH-39 (Illinois – Dane County)** (Laura Shadewald) – There are 4 lettings and 4 tied projects coming in 2019. Also, there will be Lettings for Polymer Overlays for placement in 2020 for all bridges.
2. **Wisconsin Highway Research Program Bridge Items** – (Bill Oliva / Dave Kiekbusch)
Implementation – **WHRP 0092-16-04 – Staged Construction Joints (Adjacent to Traffic)**
 - There was a presentation that outlined the long-term performance issues (leaking) with longitudinal construction joints. Some of the identified issues and best practices for improving joints include:
 - The defect that was frequently noted in deck-on-girder bridges was areas of under consolidation in the longitudinal joint region. Extra attention should be given to consolidating the concrete in this region to ensure that the concrete does not have any large voids under the reinforcement or in the shear key
 - Providing a smooth transition (approach to bridge) surface is one of the most effective ways to reduce bridge differential deflections and vibrations during staged construction.
 - Closing traffic lanes closest to the staged construction joint is an effective way to reduce the magnitudes of differential deflections. Moving heavy traffic loads away from joint during casting of stage 2 would be preferable.
 - Flat & hunched Slabs appear to be most vulnerable to compromised joint quality.
 - We may pilot a staged deck on girders with form retarder on stage 1 to produce an aggregate exposed surface (TBD).

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

Previous Meeting Carryover Topics:

1. **Epoxy Coated Bars concerns during construction (Krissy Van Hout & Joe Larson)**
Standard Spec 505.3.1(2) has been updated to specify epoxy-coated bars to be covered if exposed to sunlight for more than 2 months.
(2) *Cover epoxy-coated bars in storage, or placed in a bridge deck mat, with an opaque engineer approved material to prevent cumulative exposure to sunlight for more than 2 months before being embedded in concrete. Include portions of partially embedded bars left exposed between construction stages.*
2. **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 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. *Joe Larson was not at the November 2018 meeting for additional discussion. This item is considered closed unless Joe or others want to bring it forward at future meetings.*
3. **TEMPORARY BRIDGES (Dan Kowalski):** 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. 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 (James Luebke) has provided the updated the FDM guidance for temporary bridges (FDM 11-35-5). Previously used span to depth guidelines have been removed and new guidance emphasizes that BOS and BPD are to be involved early in the design process to ensure structures meet current design requirements and can be reasonably constructed. This update is expected to be included in the next FDM release (expected Nov. 2018). This Item is closed.

New topics:

1. **Prestressed girder blocking on semi-expansion abutments. (Dave Kiekbusch)** The girders need to be blocked to avoid sliding, but can't lock the diaphragm to the abutment body. Dave described the issue with the use of attachments to the abutment to block the girders that become permanent features when cast into the end diaphragm on semi expansion (SE) abutments. *This practice is not allowed and would interfere with the intended movement (restrain) of the SE abutment.*
2. **Concrete Approach Pavement (April Rieger)** - It involves detail 13B2, concrete approach pavement. The expansion joint is shown only traversing the mainline pavement and not the shoulders, which are tied to the concrete mainline. There's no relief in the concrete shoulders to provide for deck expansion. Expansion joints are not shown in the standard detail for concrete pavement shoulders, just dowel bars at the joints.
James Luebke briefly explained the situation and stated that the department (BOS/BPD/BTS) is

aware of this issue, which was brought forward by SE maintenance. BOS has previously recommended to BPD/BTS that roadway approaches and other approach elements (beam guards, flumes, etc.) be fully detailed in the contract plans to supplement the standard detail drawings (SDDs) to avoid conflicts.

Action item: James will follow-up with BPD and BTS and report back with any updates

- 3. Wet Cure vs Structure loading (Matt Grove).** The intent of the specification is not clear, leading to inconsistent interpretation and potential project delays. In that past, it was common to use structures for construction traffic prior to the end of the wet cure period, as long as there was 3500psi and the deck remained wet. This interpretation has changed and is potentially going to delay operations.

This topic was discussed at length. Field staff stated that the current specifications are clear as to not allow loads that are not necessary to perform subsequent pours on that structure. It was noted that some projects have allowed exceptions on a project-by-project basis. It was also noted that the project exceptions (weight of load and frequency of loads) varied throughout the state. BOS expressed concerns of about allowing heavy loads (potentially over legal limits) on still curing concrete. Jim Lucht provided a summary of the project specifics for IH-39. Contractors stated that they should be allowed use the structure, as they see fit, provided concrete strengths were sufficient and the wet cure was not disrupted.

Action item: BOS will discuss internally and determine if any actions are needed. In the meantime, construction traffic shall be restricted as currently described in the Standard Spec.

- 4. Review of Field Welding Process & Requirements (Kristin Revello)**

Kristin's presentation has been sent to Matt Grove and is attached to the minutes.

- 5. Overview of Fabricator/ Contractor Requirement Changes beginning with December 2018 Let (Fabrication Initiative Tier 2 Outcomes) (Kristin Revello)**

Kristin's presentation has been sent to Matt Grove and is attached to the minutes.

- 6. Initial Sign, Signal and HML inspections for 2019 (Matt Grove & Steve Doocy).** Discussion on shift in sign, signal and HML inspections for the coming year. We are in the process of putting the initial inspections in the standard spec to be a requirement placed with the contractors. This will require the contractor to choose and coordinate with and inspector from the list of active qualified Team Leads/Members (listed in HSIS as required by the Structures Inspection Manual) to perform the inspection. The goal is to increase efficiency in getting the inspections scheduled and performed by allowing the contractor/inspector to have more control over the schedule. The inspections will still be governed by the requirements in the structures inspection manual and will follow the same documentation process, but by directly placing the initial inspections in the construction contract, we can free up resources to begin Q/A reviews of our consultant inspectors.

This topic was discussed at length and the department (Steve and Rick) were looking for initial feedback from contractors. Contractors had concerns with the potential of conflicts of interest and quality issues using a low bid delivery. There may also be some union issues/challenges for the contractor. The department stated that this shouldn't be any different than current material (e.g. aggregates) QC testing requirements.

Action item: BOS will consider industry comments and discuss internally.

- 7. Initial underwater dive inspections (on bridge piers) and the initial ancillary inspection (on sign structures) with construction contracts. (Rick Marz)**

Rick opened the conversation with similar concerns as with the initial sign structure inspections. This would provide the opportunity for the first in-service baseline inspection to be coincidental

with construction timeline. It would be QC for contactors and Q/A for the department as well. James stated BOS has seen several cases of where the initial substructure was poured poorly and that BOS is currently looking for means to ensure piers are built per the plan. This may include using more concrete seals to pour in the dry, use of an underwater inspection bid item, or selecting a different substructure type.

Action item: BOS will consider industry comments and discuss internally.

8. Bureau of Technical Services is considering implementing a shadow specification for use of the Super Air Meter, SAM, for structures (Chad Hayes)

BTS is considering implementing a shadow specification for use of the Super Air Meter, SAM, for structures.

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

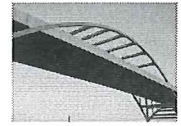
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Addition to the Agenda:

- 1.

Attachments:

- Kristin Revello presentation for the "Review of Field Welding Process & Requirements" and "Overview of Fabricator/ Contractor Requirement"



Wisconsin Bridge Technical Committee

Date: Thursday November 29th, 2018

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