



Bridge Technical Committee – Minutes Wisconsin DOT, Industry, and Partners Wednesday April 21st, 2021 9:00 – 11:30 AM

Microsoft Teams meeting

Subcommittee Reports:

1. Design Subcommittee update – Aaron Bonk

- Aaron will give an update for the spring Design Subcommittee 2020 meeting and agenda.
 - The Design Subcommittee will be meeting at 2:00 PM on Wednesday April 21st. Aaron will provide highlights of the discussion at the summer 2021 BTC meeting.
- Bridge Technical Committee - Overlay Equipment Subgroup – Update (Bill Oliva)

Here is a brief summary of our action items going forward:

1. BOS will reach out to MnDOT to discuss their experiences with low slump concrete overlay equipment. We will move forward with this right away. **Bill Oliva** has already reached out to MnDOT for contact information.
2. We will consider doing a LIMITED Pilot of 2 to 4 bridges in 2022 or 2023 that combine the Type E overlay with contemporary finishing machines. There may be some adjustments to the mix or equipment that we will still need to identify, but the general plan is to start planning for a limited pilot study. – **Aaron Bonk** will look at what is coming in the next couple of years for bridge overlay work to help this group choose suitable candidates (2 – 4 total).
3. We will ask for contractor participation when this group in the near future (2 to 4 weeks post MnDOT discussions), we will invite industry to discuss this issue, provide perspective, and support to the development of the solutions. The Department determine what may or may not change and what projects may be piloted.
4. We will let industry know at the April 21st BTC meeting that this initiative is in play and reaching out to industry for their participation.

Standing Topics:

1. Wisconsin Highway Research Program Bridge Items – (Dave Kiekbusch)

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

Dave gave an update on the following in-progress WHRP projects:

- Internal Curing of Bridge Decks
- Textured Epoxy Coated Rebar
- Rating Longitudinal Laminated Timber Slab Bridges
- Adhesive Anchors
- Bridge Abutment Slope Protection
- New: Deck Overlays
- Any suggestions for additional projects?

Action Item: Contact Dave Kiebusch with future WHRP suggestions

Previous Meeting Carryover Topics:

1. SE region initiative to reduce overruns in Concrete Masonry Overlays (Julie Brooks)

Julie would like to discuss an effort that has started in the SE region to reduce overruns in Concrete Masonry Overlays. This has been an ongoing problem and a small committee has formed to consider options on both the design and construction side to get better estimated quantities and limit cost overruns.

Action Items: The follow up action for this will be BOS (Bill Oliva will reach out) will ask to meet with Julie and the SE Region Group to discuss this issue to help better understand the driving issues in variation and discuss options to address the issue whether it be design or contractual as required. In addition, Matt Grove indicated that he will discuss this with the contractors and get additional information for consideration.

On Friday March 5th, 2021, an internal (WisDOT) state-wide conference call was held to discuss issues related to overruns and payment of the CMOD. Representation from all the regions, BPD, and BTS met to get a better understanding of how often there are significant over-runs of the overlay quantity and what we may do to address these concerns. The group discussed the issue and a number of related concerns, contributing factors, and potential mitigation tactics. From the discussion, the group generally agreed with the following action items:

Action Items:

- A. Improved design effort to better capture the volume of CMOD in CY. **This will be addressed in Bridge Manual and Standards updates by BOS.** Additionally, on a project by project basis. The tools listed below may be utilized to improve the design accuracy for this item:
- Consideration of pre-existing overlays and impact to removal depths. This may in some instances include coring existing overlays to verify thickness for removal quantities.
 - Accounting for additional quantities related to above joint replacements (when contract leaves that area low above joint replacement to match the overlay in.
 - Making sure all anticipated deck prep (Type1, Type 2, and Type 3) volumes are included in plan quantities.
 - These bid items will be a focus area for the BOS Consultant Review Unit until it is no longer deemed a design issue that poses a significant risk to plan overruns.
 - Accommodation of growth in delamination areas between design phase and actual construction phase. Delamination will increase over time.
 - Design phase verification of the existing cross slope.

- B. Use Standard Specification 104.2.2.4.1 Altered work as the mechanism to address overruns in the quantity. This was the preferred approach from the group. This will focus additional payment at the additional material cost and additional time for workers to place the additional materials. **This will need to be documented in the CMM** (528 Concrete Deck Overlays and Structure Repairs) and annual construction training. **BOS will follow up on this.**
- C. Provide **better guidance in the CMM** that includes:
- Construction administration staff to focus more on the material cost of CMOD overruns rather than the Bid Item CMOD when adjusting the contract. This should result in contract administration staff avoiding just overrunning the item CMOD at contract unit price.
 - Construction contract administration staff include pre-construction conversations and examples on how to pay for additional concrete (use of Spec 104.2.2.4.1 Altered Work).
- D. CMOD should be added to the critical inspection list for contract administration in the field. **Craig Pringle of BPD will follow up on this item.**

Bill Oliva mentioned that the design approach for estimating quantities may be updated, which may include obtaining deck cores on select bridges. Dan Kowalski pointed out that there would also be equipment cost to consider in payment adjustment (equipment time on site). From the discussion, it was confirmed that additional mobilization costs would not be required. Matt Grove pointed out there would be threshold of 125% that would have to be considered as part of Change in Quantity under Spec 104.2.2.4.3. Bill confirmed that the CY bid items is the current direction.

Action Items: Matt Grove requested a follow up meeting with the department. This has been scheduled for Tuesday April 27th with Bill Oliva, Aaron Bonk, and Wayne Chase. Results will be shared at the next BTC meeting. – **There is additional internal/external discussion needed before this is finalized – Stay Tuned!**

2. **Free-fall placement of structural concrete in drilled shafts and the current requirement for handling and placing concrete (Section 502.3.5 (8)) (Riley Padron/ Gene Sheedy)** – “If placing concrete in structures, the distance from the discharge ends to the point of deposit for chutes, troughs, pipes, belts, and buckets shall not exceed 4 feet”. We have found some inspectors enforcing this on sign structure foundations and noise wall post bases and feel some clarification or revised direction from the DOT is warranted. When a special provision for drilled shafts is not provided on a project, most inspectors will default to this line when we try to free-fall concrete in a dry hole.

Action Items: Riley to provide Bill with concrete free-fall literature. Bill will provide a follow-up at the next meeting. – Bill has not received any literature to date – **No Action on this at December 2020 BTC – This Item will be dropped from the agenda without further interest or action from Riley or Gene.**

New topics:

1. **Pay quantities for Concrete Masonry Bridges, (Tim MacLaughlin-Barckand – Larson Construction Company, Inc.)**
We have been experiencing numerous pay deducts off of plan quantities for Concrete masonry, bridges, because the field engineer’s calculations vary from the designer, inevitably in a negative direction. This is especially troublesome for the small contracts we work on, because those deducts are nearly 100% job profit. For example, it requires no more effort to form 100 CY of

bridge deck than 97CY of bridge deck, but if the field engineer changes his rounding methodology from the designer, we can experience variances of 1%-3% for concrete pay.

In this era of CAD, there is no justifiable reason why we can't have exact numbers at time of bid, and have the item pay out at those numbers. It makes it more fair for the contractor and less admin for the Department. These rounding variances unduly punish the contractor.

Tim provided background on the difference seen between quantities shown on the plans and quantities determined by field staff. He also discussed how rounding of individual structure units can have a cumulative issue on what is placed and payed for in the field compared to what was detailed on the let plans. The department is having discussions on how best to address this and promote consistency thought the state in how this is detailed and measured. The Bridge Manual guidance directs designers to detail to the whole cubic yard while the CMM Manual provides guidance on payment to the tenth of a yard.

Action Items: Aaron, Bill, and Wayne are in discussion in how to address this. We should have resolution by next Bridge Tech meeting.

2. **Frequency of testing for fracture critical and non-fracture critical tension components (Kristin Revello)**

I wanted to make the bridge contractor community aware of an upcoming edit to 506.2.2.1 (2) of the 2022 Standard Specification. The last 2 sentences of the paragraph were removed as you can see below (attached). Specifying the "H" frequency in this paragraph was causing confusion because ASTM A709 specifies the required frequency of testing for fracture critical and non-fracture critical tension components ("H" or "P"). The sentence "Sample and test according to ASTM A673" was also not needed since ASTM A709 engages ASTM A673 for the sampling and testing requirements. If contractors have any questions or concerns about these changes, please let Kristin know.

Action Items: Information was shared, and follow-up questions should be directed to Kristin – **This Item is Closed.**

3. **ACI adhesive anchor certification program (Aaron Bonk)**

I'd like to inquire with all the contractors about the ACI adhesive anchor certification program that is part of our standard spec. I have heard, through Tom Buchholz, that Lunda is having problems getting people certified. There is only one teacher in the state that offers the courses on weekends only, and that has become a problem for their company. There is an alternative NDT pull-test as a suitable alternative, so we are able to get the work done but I know that there are a few locations where this can be difficult to perform (anchors installed on top of parapets, etc.).

Anyways, I'd like to get a feel from the contractors on how they are approaching this issue. Are they all having issues getting staff certified? Are they simply using the NDT alternative? Other?

Some of the comments from the discussion included:

- lack of availability of the training in Wisconsin as well as the cost for the course (\$10,000 per offering).
- The course has been offered on weekends in past years where contractors were faces with paying their staff to travel long distances and attend weekend sessions that were not desirable from the contractors and worker standpoint.
- It was noted that the Minnesota trainer has come to Wisconsin to provide this training in past years.
- Some contractors believe that the pullout testing is an impractical alternative. It was also mentioned that project anchor quantities were typically small, which made the pullout option impractical.
- The question was raised that anchors that will serve in compression applications could be

waived from the certified installer requirement.

- This has been more of a challenge over the past year since there has not been any offering of this course since around the fall of 2019.
- Prior to the April 21st meeting, one contractor reached out to BOS and asked if the 4-year certification window could be extended for acceptability to the department until such time that there are new offerings of this certification course. David Stanke mentioned that the contractors are making do with the 4-year certification window but stated the last 12 months has been cumbersome due to the pandemic and lack of certification training availability.

Action Items: Aaron indicated that he will be reaching out to ACI to determine what can be done to increase the offering of this certification – **This Item is Closed.**

4. **Edge of Deck Flashing (Standard 17.03) - (Tim MacLaughlin-Barckand)**

Tim shared a concern about the sequence related to placement of the Edge of Deck Flashing (STD 17.03). Specifically, the requirement of placing the flashing after the protective surface treatment is applied. The challenge some contractor may face is that access to the side of the bridge may be removed after falsework or other related construction supports are removed. This can be driven by the waiting time for deck cure prior to placement of surface treatment. Tim asked for additional guidance or ideas on what could be done differently. These may include application surface treatment and flashing to the sides of the deck prior to removal of falsework.

Action Items: BOS will consider this concern and comment. We will look for potential clarifications that can be made prior to the next BTC meeting.

5. **Material Shortages - (Matt Grove)**

Matt provide an update related to industries concerns about material shortages (Epoxy Resin) for Overlays and pavement markings. Matt indicated that there are ongoing discussions with the Administrators Office and that people should be aware that this is a concern to industry

Action Items: Stay Tuned. This Item is Closed (for now).

Standing Item - Specification Changes / Updates – Discussion (Mike Hall or technical sponsor) (These items weren't discussed due to time restraints, attached for reference)

- Mike provided the Bridge Related Spec Changes for 2022 (attached)



Mike Hall Spec
Changes Bridge Tech

Attachments:

1. **Carry Over Item – Spec 506.2.2.1 Charpy.**

(c1) bridge - charpy.docx
Contact: Kristen Reuello_266-5090

3/8/21 8:21 AM 3/4/21 8:27 AM

(C1) Bridge - charpy

506.2.2.1 Adopt the Charpy test frequencies required under ASTM A709.

506.2.2.1 General
Replace paragraph two with the following:

(2) Ensure that girder flange plates, girder web plates, flange splice plates, floor beams, stringers, pier diaphragm members for tub girders, in-span external diaphragm members for tub girders, hanger bars, links, rolled beams, flange cover plates, and plates and angles connecting floor beams to girders conform to zone 2 toughness requirements for longitudinal Charpy V-Notch tests specified in ASTM A709. Sample and test according to ASTM A673. Use the (H) frequency of testing.

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CY2021 Goals Bridge Technical Committee

Team Purpose: The Bridge Technical Committee's (BTC) purpose is to bring together the Wisconsin structures community to identify and resolve statewide bridge construction issues, identify and create improvements to the structures construction program, and to share new structures initiatives with industry and stakeholders. This purpose does not involve intervening on individual project issues in that this is the role of the construction administrative staff. The focus of the BTC is broader statewide policy and programs.

2021 Goals and Priorities

1. Identification of emerging issues and share guidance, detail, and specification updates related to construction of bridges – on going.

- Provide opportunity for regular meetings with industry to identify emerging issues related to construction of bridges
- Share draft and final specification updates with industry and provide insight to expectations related to construction projects.
- Share emerging technology with industry and stakeholders (ABC, Internal Curing of Bridge Decks, and other).

2. Address the overlay specification and equipment requirements.

The current specification limits the finishing equipment for our Type "E" overlay to obsolete finishing machines owned by a limited number of contractors. We need to work with industry on what options are available for finishing machines and what adjustments may need to be made to our specification for overlays to ensure we get the product that we want and that there are multiple contractors able to completely bid on overlay projects.

3. Examine the issue and concerns with air loss related to pumping concrete

4. Convene the Bridge Design Subcommittee and address the specific sub-committee agenda items