



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

Friday November 11th, 2016

9:30 AM – 12:00 Noon

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**

The new Hardened Air language was to be published in the May 2016 CMM update to 870. Barry Paye indicated that no updates have been made as the group has run into issues getting FHWA buy in. Rewrite is likely needed. – **No updates**
2. **Subcommittee on Structure Design & Construction – (Aaron Bonk) –**
 - **Discussion on this new subcommittee**

Aaron Bonk suggested topics be reviewed and discussed among subcommittee members prior to spring meeting – **Next meeting March 21st, 2017**

Standing Topics:

1. **Wis 441 – Aaron Bonk.** Not many Lets remaining. Some thin polymer overlays, a couple of prestressed girder bridges and a few walls.
2. **Zoo Interchange** (Laura Shadewald) - The north leg Lets are in flux due to budget unknowns.
3. **IH-39 (Illinois – Dane County)** (Laura Shadewald & Jim Lucht) – Multiple Lets coming up 11 bridges/widenings/Boxes over next 6 months
4. **Verona Road (Madison)** (Laura Shadewald) – Next lets for Verona Rd will be July '17 for walls and overlays.
5. **Every Day Counts – EDC-4 (Initiatives)** (Bill Oliva)
 - (EDC 2&3) 2016 Dodge County GRS & Precast Box Girders Bridges and showcase. Close to 100 attendees.
6. **Wisconsin Highway Research Program (WHRP) Bridge Items –** (Bill Oliva)

FY2018 Projects –

- *Protocols for Concrete Bridge Deck Protections and Treatments*
- *Performance and Policy Related to Aluminum Box Culverts and Pipe Culverts in Wisconsin*
- *Concrete placed underwater – Literature Search/Synthesis*

Chris Kirchner noted that there was an underwater admixture used on McCleary. It was suggested by Bob Arndorfer that Dan Reid be included on the POC for the aluminum box study.

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

Previous Meeting Carryover Topics:

- 1. Updates - Concrete Slope Paving Constructability and joint design and layout. (Kevin McMullen)** BOS received comments from Kevin McMullen and will update and coordinate as need with Kevin for the upcoming release. Additionally, BOS has made abutment drainage a priority for the next release and this update fits with those efforts.
- 2. Stabilizing girders prior to deck pour (Aaron Bonk)**

Projects have had some issues with structure placements on bearings during the construction phases of a project. It is important that structure's elements are located and maintained in place during construction operations prior to finalization of the structure.

 - Aaron Bonk stated that he would take this issue back to BOS for further investigation and consideration. No updates
- 3. Discussion on deck forming with tight prestressed girder spacing (Dave Kiekbusch & Aaron Bonk)** Aaron Bonk inquired with the committee about the use of the alternate deck forming system where contractors drill in anchors into the side of the top flanges and span shorter flange-to-flange gaps with plywood in lieu of using conventional borg hangers. Aaron also indicated that feedback from the North Central States group as well as Region Bridge Maintenance engineers is that they don't feel comfortable with this system.
 - This item has been moved to the spring 2017 Design Sub-Committee Meeting (March 2017).
- 4. 32" Concrete Parapet on Bridge Decks (David Stanke)** David Stanke of Zenith Tech inquired with WisDOT as to why 32" parapets are specified on plans when they don't meet the OSHA 42" railing height criteria. There are concerns that on brand new railings, the contractors need to drill in "railings" to meet the minimum height criteria. Additionally, industry noted that when performing inspections or maintaining existing bridges; more often than not railings aren't present and thus safety criteria aren't being followed.
 - Dave K gave update on MASH 2016 requirements. For TL-4, single-slope parapet will need to be 36" (perhaps after overlay, too). OSHA requires 42" +/- 3" for workers on bridge. BOS is 95% sure we'll be going to 42"SS parapets in January release of Bridge Manual. David Stanke noted that having a 32" and 42" with minimal variations to the back face of form is ideal to keep costs down.
- 5. Concrete Overlays (Krissy VanHout) & Overlay Construction Timing (Joe Larson/Dan Kowalski)** We're often getting asked to allow (contractors to pour the second half on the following day. Subsection 509.3.9.4 does not allow traffic on the completed overlay for a minimum of 3 days after placement, without regard to compressive strength. Whereas 502.3.10 is based on strength or equivalent curing days and also lists exceptions for timing of specific subsequent operations. Jim Parry has mentioned he's had similar requests from another contractor.
 - Dan Kowalski discussed that historical practice on multi-pour overlays was that the contractors could finish one pour and immediately move to the adjacent pour which induces some construction loading onto the newly placed overlay. However, it has



now come up that field engineers are making the contractors wait 72 hours to perform the second pour.

- Within the Standard Spec there is language pertaining to waiting 72 hours prior to opening new overlays to traffic. The group believes that the intent of that spec relates to vehicular traffic and not construction process loading.
- Krissy VanHout indicated that she had discussed this with Jim Parry on a NE Region project, and Jim felt that a 1 day waiting period was sufficient.
- The group discussed the possibility of asking for a strength test (i.e., break cylinders and check that they meet a specified strength) prior to moving onto a second pour for an overlay.
- Darrin Stanke: We've done it with placing rails on first pour away for many years without issues. Are we looking for a solution to a problem that doesn't exist? Yes, the spec language does need to be cleaned up. Contractors were looking for a required break strength and mentioned railings systems could be designed with a safety factor. Jim Parry had concerns with field staff reviewing railing/bearings loads. Jim Parry recommends industry should work with BOS. It was recommend that Krissy VanHout be involved. **The follow up will be a meeting to work through this issues with the goal of Spec improvements. BOS/Krissy/BTS/Industry will meet to discuss before March 2017 BTC Meeting.**

New topics:

- 1. Bridge deck and overlay tining specifications. (Aaron Bonk)** This topic is intended to begin discussions related to how the spec currently indicates tining should be performed vs what is actually occurring in the field, and what clarifications could be made in the spec moving forward. Can't longitudinal tine overlays as the spec says. Only longitudinal grooving would work. **Krissy VanHout will work with Mike Hall on spec changes. Jim Parry stated noise concerns should be considered when discussing spec changes.**
- 2. Building box culvert floors on skewed culverts (Aaron Bonk).** There's a question that Ruth brought up from construction this morning about how contractors typically build the floor of a skewed culvert. The apron is detailed to be poured level, but on the end panels of a skewed culvert, how are they accommodating this? Are they pouring the floor of the culvert level along the skew, or are they pouring the culvert perpendicular to the centerline of culvert, and just adjusting the slope on the end panels to make sure the apron is level? Should we be detailing it differently (i.e. giving them elevations at the corners of all panels? at the corners of the box? ok the way it is?)
 - **This item has been moved to the spring 2017 Design Sub-Committee Meeting (March 2017).**
- 3. New Prestress Concrete Box Beams (Chris Kirchner).** Concrete decks and Concrete overlays need to have the top of the new prestress concrete box beams sand blasted prior to placement of the decking materials to assure proper adhesion. Chris Kirchner noted that the tops of all box beams need to be sand blast cleaned prior to

overlay placement, even if a thicker, reinforced slab are used. **There needs to be a bid item for cleaning decks on these types of projects.**

4. **Heat Index on Working Day Contract (Chris Kirchner).** Under OSHA's directive, would this fall under "Weather Conditions". During these types of days, it will require employees to receive more rest periods in the day. Project production is not at full or normal efficiency, which is how the assessment of working days is based on. Production on highly labor intensive projects, could be the difference of being penalized on these types of contracts. There needs to be an understanding in Section 108 that we allow for heat index to be accounted for on Assessing Time or this would be defined in Weather Conditions. Heat Index above 110 requires more breaks. **This has been shared with BPD for consideration.**
5. **PDA Pile driving difficulties when testing piles near their structural Capacities. (David Stanke)** PDA pile driving issues when near capacity. Smaller hammers can't quite get capacity. Larger hammers won't be allowed since pile damage would be anticipated. HP 10X42 & HP 12X53 may not be heavy enough for PDA in that there may be localized section damage occurring during driving. PDA said that the pile was not damaged, however a pulled pile had the bottom 15 ft. damaged. Sheet pile is an issue as well. Sounds like not much issue with CIP piles. **Jeff Horsfall will follow-up.**
6. **Removing Old Structure over Waterway with Minimal Debris (Leah Rhodes)** Recently we have been asked by the DNR on a few different smaller bridge projects to use the "Removing Old Structure over Waterway with Minimal Debris" specification for the removal of a slab span or a cast-in-place girder bridge. Per the STSP guidance, these structure types cannot be removed without dropping the structure, or a portion of it, into the waterway. Therefore, the appropriate bid item would be either "Removing Old Structure over Waterway" or "Removing Old Structure over Waterway with Debris Capture System". The DNR doesn't like the idea of dropping the structure into the sensitive waterway, but they also don't want to require a costly debris capture system. **Covered under additional Item #2 Debris Containment.**

Are there any current removal techniques that would allow the contractor to meet the "minimal debris" specification for a slab bridge or a cast-in-place girder bridge? Could it be done with saw cuts? These are smaller (25' to 35') span bridges.

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

- **Mike was not able to make the Friday November 11th meeting.**

Addition to the Agenda:

1. **Damage/deficiencies to Paving Blocks/Headers on Deck Rehab Projects (Mostly Overlays). (Julie Brooks)** Julie Brooks provided pictures of failing paving blocks. Paving blocks look bad a year or two later after overlay. How the paving blocks were poured was a point of discussion with the subcommittee (being done differently than what plan showed). Pouring overlays long into approaches and saw cutting an issue. **Darrin will talk to his group about this and asked that photos be forwarded to him. BOS Development will review current standard details for possible revisions.**



2. Debris Containment Items (Darrin Stanke)

Darrin Stanke noted that the debris containment item is a bit odd. Didn't get paid for dropping safely, but not catching. Put a couple of pieces of plywood down and got paid. It sounded like more communication between construction staff and the contractor may help resolve confusion on the expectations cost and payment of this item.

3. Approach Slab Pay Items (Matt Grove)

Matt Grove feels the structural approach slabs result in bid prices that are too blended and would like to see another item, more so when all in one pour. Tadd Owens won't allow the one pour as quality has been inconsistent. David Stanke says he has not seen it done well. BOS is still evaluating. BOS said the issue with a slab getting pulled from the job (easier work) was a NE Region problem and likely a very isolated case. There was also some concerns raised that the diaphragm may be getting poured too high to make the detail work better. BOS is not looking to make additional bid items for the structural approach slabs.