Bridge Technical Committee – Minutes
Wisconsin DOT, Industry, and Partners
Thursday August 13th, 2020
10:00 am – Noon

Skype Meeting
Phone: (608) 316-9000
Conference ID: 91131372#

Subcommittee Reports:

1. **Design Subcommittee update – Aaron Bonk**

The planned spring Subcommittee Meeting was canceled. Aaron asked industry if they supported a fall Subcommittee meeting. Matt Groove was supportive of a meeting but wanted to make sure there was enough topics.

Action Item: Aaron will follow-up by re-sending the spring agenda items and will determine if a Fall meeting is necessary. It was pointed out that the Subcommittee doesn't need to be tied to the Bridge Tech Meeting, if virtual.

Standing Topics:

1. **Project and Letting update from BOS Design (Aaron Bonk & Laura Shadewald)**

Laura provided an update on the last Zoo Letting. Information is presented on the HCCI website.

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

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

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

- Concrete Bridge Deck Protections and Treatments
- Internal Curing of Bridge Decks
- Textured Epoxy Coated Rebar
- Rating Longitudinal Laminated Timber Slab Bridges
- Adhesive Anchors
- Bridge Abutment Slope Protection

Previous Meeting Carryover Topics:

1. **Prestress deck removal/replacement: (Darrin Stanke):** Is there merit to have the DOT define a specific means and method for removal of prestress decks? There is no consistency between districts as to what is acceptable damage to girder tops during demolition. Some allow repair, some want no damage to the girder top and some want girder replacement if top flange damage is perceived as excessive. As contractors, we have no consistent way to bid this as it varies so much by district. Bill Dreher shared that BOS has a team of engineers that review damaged girder incidents and make recommendations to region construction staff on acceptable levels of damage and repair

alternatives. The concept is to promote effective deck removal, minimize damage, consistency in repairs and department response.

It was also discussed that this would be a good area to form a sub-committee with industry on better criteria of minimizing damage and acceptability of damage and repair methods. This could provide insight into better specification language and consider lesson learned from other states.

Aaron had no updates since it was to be discussed during the spring Subcommittee meeting. Darrin also had no additional comments.

Action Items: Item for next the Subcommittee meeting.

2. **STP -107-070 - Erosion Control Structures (Krissy Van Hout)** Request that contractors install the rip rap in front of the abutment along the river up to the break point after the grading is complete prior to pounding piling. The streams that are flashy are the most critical. Turbidity barrier has limited effectiveness in many instances. As example a bridge on the Manitowoc river currently building, the river rises 7 feet in a 2-year event. Krissy led the discussion on this item. Comments included:
   A. Placement of riprap prior to abutment construction makes sense if site conditions make it practical. Though, in some instances, riprap may be in the way of abutment formwork.
   B. This may be an issue with sub-contractors doing different operations
   C. Other erosion control features may be under-designed.

   There were two options for re-wording the STP 107-70 Erosion Control Structures that Krissy went over (attached below). It sounded like the shorter version was generally favored. This will go into some projects for the February 1, 2020 PSE's. It was noted that mobilization multiple times is an issue for contractors. BOS will look at Bridge Manual guidance.

   Krissy stated that the STSP was updated in November and reminded folks to review the contract documents in this area.

   Action Items: None – Item closed

New topics:

1. **Wind Loaded Structures (Sign Bridges & Overhead Sign Support) Changes to the Specifications and process (Steve Doocy) -** This will be a presentation and discussion on what contractors need to know about the changes and implementation of the Wind Loaded (sign structures like full span truss and cantilever) process.

   Steve gave a presentation on Wind Loaded Structure updates. It was noted that ASTM A575 should be ASTM A572 and ASTM A595 should be designated as Grade A rather than Grade 55. Material availability was discussed. Bill Oliva mentioned steps were taken to ensure availability and there was industry outreach.

   An additional meeting with the fabricators will need to be set up (Steve Doocy will coordinate) to discuss the following topics and any others after review of the presentation. Some additional topics that were brought up during the presentation are as follows:

   1. Possible typo for ASTM A575 Grade 55 – should this be ASTM 572 Grade 55 – Steve Doocy to verify and correct if necessary

   2. ASTM A595 Grade 55 should be referenced as ASTM A5995 Grade

   3. Multi-sided poles, poles with diameters >26", thickness >1/2" should use ASTM A572 Grade 65
      a. This included large diameter tapered poles, HML, Camera Poles – bottom and middle sections should be included here – Steve Doocy to update spec

   4. 5"x0.25" chord pipe for the Type I 4-chord full span may need to change, fabricators were not aware that this was a commonly rolled section – Steve Doocy to discuss and update if necessary.

   5. Design requirements for contractor designed sign structures – Steve Doocy to discuss changes with the fabricators.
      a. What are the new requirements for design?
      b. For Fatigue?
      c. Which code?

   Action Items: An updated presentation will be sent out to attendees (attached to minutes). BOS to review ASTM references. Steve will discuss fatigue changes with industry later TBD.

2. **CIP yield strength (Bob Arndorfer) WisDOT** is looking to get some input on CIP piling. (This discussion does not apply to HP-piling.) Section 550 (Driven Piles) of the Department's Std Specs call for use the use of "A252, Grade 2 steel or an engineer-approved alternate" for CIP piles. This Grade 2 has a yield strength of 35ksi. It is our understanding that all the CIPs contractors are currently purchasing/using are typically Grade 3 (or better), with the higher yield strength of 45 ksi. Can you check with your material purchase staff/suppliers to determine if you are consistently getting CIP steel with a minimum 45 ksi yield?

   Our current spec language was a hold-over from when suppliers typically provided 35 ksi material for CIPs but were switching to 45 ksi material. We kept this lower-yield material in the specs to allow contractors to use up all the current CIP material that they may have had in their yards. That was several years ago, and we expect all of this Grade 2 material has now been used. The spec

should now be updated to reflect the CIP steel this is typically available/used. This will provide some benefits/savings in design, when investigating piling drivability.

Jeff Horsfall discussed WisDOT's interest in updating Section 550 for the removal of 35 ksi material for CIPs and asked if there were any concerns with this direction. No comments or concerns were brought up.

Action Item: The department will move forward with updating Section 550 by removing the allowance of Grade 2 material (35 ksi) for CIPs. Appropriate changes will be made to the Wisconsin Bridge Manual. Draft Spec change attached to minutes below.

3. **Setting grades on slab span bridges (Aaron Bonk) -** The question that has been raised by a few contractors is who is responsible for setting the final slab profile prior to pouring in the field.

   Aaron presented background information for setting grades on slab span bridges, which were brought up by Dan Kowalski. Matt Groove stated that the department needs to be involved with setting grades. Aaron mentioned the Bridge Manual guidance is expected to be updated, possibly in the next release, to provide consistency between BOS and consultant designs. Krissy stated that she felt the department should be involved, noted that a pantry spreadsheet is not available, and that setting grades on slabs are like a girder project. Tadd Owens mentioned field staff should always shot grades and the data may be available to the contractor. Bill's preference was for the department to be involved. For past understandings, Rick Marz and Jim Lucht recalled that the department was responsible for setting deck grades.

   Action Item: Aaron will coordinate potential updates for setting grades on slab bridges. This may include updates to the CMM, Specifications, Bridge Manual, and possibly adding pantry spreadsheets. CMM guidance should note that camber values should not be reduced as it is better to have short-term ride compromises versus long-term ride compromises associated with reducing camber values.

4. **Payment for Temporary Bridges (Luke Haun)** We are seeing a difference in when during the projects temporary bridges are being paid for. Some PM's are paying when the project is completed, and some are paying 50% when completed and 50% when removed. It would be beneficial to have a system in place, so it is uniform and agreeable to both parties.

   Luke mentioned delayed payments for Temp Structures can be significant and burdensome. Aaron pointed out that payment for Temp Structures includes maintenance and removal, which may be the reasoning behind delayed payments. Industry recommended a payment schedule be considered, like Mobilization. It was mentioned that CMM guidance may be needed.

   Action Item: Bill Oliva will investigate this topic and provide a response at the next meeting.

5. **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.

   Riley provided background information on concrete placement for sign structure and noise wall post bases. Riley stated there are inconsistencies (project-to-project) with the free-fall specification enforcement for dry excavations. For wet excavations, it was agreed that a tremie was needed. On some dry-excavation projects, a centering chute (hopper attached to the

ready-mix chute with a flexible elephant trunk) has been allowed provided that the concrete free-fall was less than 4-ft and on other projects a full tremie has been required. A full tremie would require a crane, a concrete hopper, and rigid pipes. Riley mentioned literature, associated with FHWA, supported the use of free-fall concrete for this application and mentioned other agencies limited free-fall to 20-ft. The department stated concerns with hitting the sides of uncased shafts and using a centering chute with anchor rods, templates, and shaft reinforcement. Riley was interested in allowing only use a 5-ft elephant chute with concrete free fall greater than 4-ft. Bill Oliva mentioned the specification looks to be clear for free-fall requirements but will review sign structure and noise wall post base applications.

Action Items: Riley to provide Bill with concrete free-fall literature. Bill will provide a follow-up at the next meeting.

6. **Proposed Changes to Section 506 of the 2021 Wisconsin DOT Standard Specifications (Kristin Revello)**

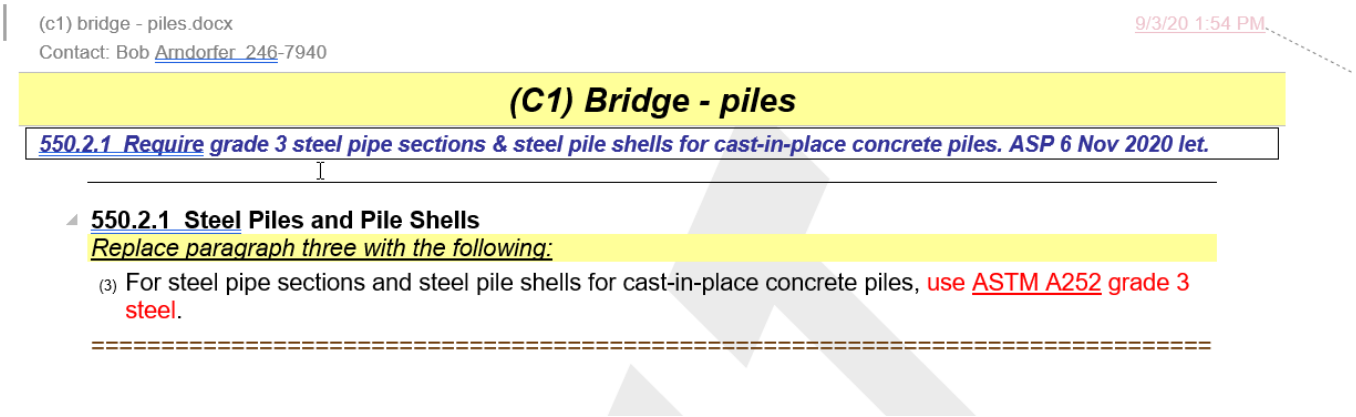
Kristin provided on update on Section 506.

Action Item: None

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

- (C1) Bridge - ancillary inspection – Steve Doocy - (LAST CALL deadline Sep 15 for Nov ASP 6)
- (C1) Bridge – reseal – Aaron Bonk - (deadline Mar 15 for 22 spec)
- Slab Bridges – Aaron Bonk

Updated Section 550.2.1 Steel Piles and Pile Shells (New Topic Item 2 above):



(c1) bridge - piles.docx 9/3/20 1:54 PM

Contact: Bob Arndorfer 246-7940

(C1) Bridge - piles

550.2.1 Require grade 3 steel pipe sections & steel pile shells for cast-in-place concrete piles. ASP 6 Nov 2020 let.

550.2.1 Steel Piles and Pile Shells

Replace paragraph three with the following:

(3) For steel pipe sections and steel pile shells for cast-in-place concrete piles, use ASTM A252 grade 3 steel.

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1.

Attachments:

(c1) bridge - ancillary inspection.docx 8/5/20 9:46 AM
Contact: Rick Marz 266-8195

(C1) Bridge - ancillary inspection

Copy & Paste your questions/comments....

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532.3.8 Add contractor inspection for structures with "S" or "L" numbers. ASP 6 November 2020 let.

532.3.8 Acceptance and Inspection

(1) Demonstrate to the engineer that electrical and mechanical systems for each high mast tower installation are fully operational. The department will not accept an installation until the engineer is satisfied that it functions properly.

Highlighted text inadvertently omitted from 2021 spec.

(2) Inspect completed "S" or "L" designated structures before opening to traffic as follows:

- Conform to BOS, Structure Inspection Manual Part 4 for sign, signal, and high mast towers available at: https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/strct/inspection-manual.aspx
- Ensure that a department-certified active team leader for sign/signal inspections, listed online in the department's Highway Structures Information System (HSIS), performs inspections.
- Notify the engineer at least 1 week before inspection. Ensure that the team leader performing inspections submits inspection reports through HSIS and provides punch list items to the engineer immediately upon completion of each inspection. After punch list completion, have the team leader inform the engineer and submit verification of punch list completion through HSIS at: https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/strct/hsi.aspx

(c1) bridge - reseal.docx 8/5/20 9:47 AM
Contact: Aaron Bonk 261-0261

(C1) Bridge - reseal

502.3.13.2 Add surface prep for resealing existing structures with protective surface treatment. STSP 502-055

502.3.13.2 Protective Surface Treatment

(1) Apply protective surface treatment conforming to 502.2.11 to concrete decks, deck overlays, curb, medians, and sidewalks After deck crack sealing is completed, apply surface treatment to the top of new bridge decks. Do not apply to surfaces where the contract requires staining or other treatment.

Replace paragraphs two through four with the following:

(2) Under the Protective Surface Treatment Reseal bid item, prepare existing surfaces before cleaning by sand or water blasting as required to remove material that might prevent bonding; confine, collect, and dispose of the resulting waste materials.

(3) Clean and dry surfaces before applying surface treatment. Immediately before application, direct an air blast over the surface to remove dust and any loose particles. Ensure that application equipment is clean inside before filling and that the equipment is functioning properly.

(4) Apply surface treatment no less than 7 days, but preferably a minimum of 21 days, after the curing period has expired. Apply according to manufacturer recommendations, except ensure the concrete is surface dry for a minimum of 2 consecutive days before applying. Ensure that the crack sealer is dry to the touch before applying surface treatment. Apply at the manufacturer's recommended rate. If application in a single coat causes ponding, use two lighter coats allowed to dry between coats. Protect from rain for at least 12 hours after application.

(5) Complete surface treatment before opening to traffic and before suspending work for the winter. Do not open the bridge deck to traffic until the surface treatment is dry enough to sustain traffic without causing damage to the surface treatment or creating a hazard to traffic.

502.3.13.3 Add surface prep for resealing existing structures with pigmented surface sealer.

502.3.13.3 Pigmented Surface Sealer

(1) Apply pigmented surface sealer conforming to 502.2.11 to the inside and top faces of parapets, including parapets on abutment wings. Use gray sealer unless the contract specifies a different color. Do not seal surfaces where the contract requires staining or other treatment.

Replace paragraphs two through four with the following:

(2) Under the Pigmented Surface Sealer Reseal bid item, prepare existing surfaces before cleaning by sand or water blasting as required to remove material that might prevent bonding; confine, collect, and dispose of the resulting waste materials.

(3) Clean and dry surfaces before sealing. Immediately before sealing, direct an air blast over the surface to remove dust and any loose particles. Ensure that application equipment is clean inside before filling and that the equipment is functioning properly.

(4) Seal after providing the required surface finish under 502.3.7. Conform to sealer manufacturer recommended application procedures and coverage rate. If application in a single coat causes running, use two lighter coats allowed to dry between coats.

(5) Complete sealing before opening to traffic and before suspending work for the winter.

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(c1) bridge - reseal.docx 8/5/20 9:47 AM

Contact: Aaron Bonk 261-0261

502.5.1 Add Protective Surface Treatment Reseal, STSP 502-055, and Pigmented Surface Sealer Reseal bid items.

502.5.1 General

Replace paragraph one with the following:

(1) The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
502.0100	Concrete Masonry Bridges	CY
502.0200	Concrete Masonry Bridges HES	CY
502.1100	Concrete Masonry Seal	CY
502.2000	Compression Joint Sealer Preformed Elastomeric (width)	LF
502.3101	Expansion Device	LF
502.3200	Protective Surface Treatment	SY
502.3205	Protective Surface Treatment Reseal	SY
502.3210	Pigmented Surface Sealer	SY
502.3215	Pigmented Surface Sealer Reseal	SY
502.4100 - 4199	Adhesive Anchors (inch)	EACH
502.4200 - 4299	Adhesive Anchors (bar)	EACH
502.6500	Protective Coating Clear	GAL

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502.5.6 Define additional payment for surface prep and waste material handling under the Reseal bid items.

502.5.6 Surface Sealing

Replace paragraph one with the following:

(1) Payment for the Protective Surface Treatment and Pigmented Surface Sealer bid items is full compensation for treating and sealing surfaces including surface preparation and color-matching as required. Resealing after pavement marking is incidental to the applicable pavement marking bid item under 646.5. Payment for the Reseal bid items also includes initial surface preparation and waste material confinement, collection, and disposal.

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BID ITEMS ADDED

Add these bid items effective with the November 2021 letting:

ITEM NUMBER	DESCRIPTION	UNIT
502.3205	Protective Surface Treatment Reseal	SY
502.3215	Pigmented Surface Sealer Reseal	SY

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