ASCE – INDOT STRUCTURAL COMMITTEE MEETING NO. 88 AGENDA

August 13th, 2020 9:30 am, Webex

1. Review and approve Meeting 87 minutes.

- a. Approved
- b. Also M. McCool will continue as Chair. S. Schickel will be Vice Chair.
- c. Attendees list attached to end of minutes

2. Bridge Design Conference Planning (McCool)

- a. S. Wagner we need to plan for both in-person and virtual options
- b. M. McCool We should expect more than normal attendance if we go virtual.
 How do we handle this from an IT standpoint?
- c. 1 presentation scheduled for semi-integral end bents.
- d. 1 presentation for LRFD vs LFD
- e. 1 presentation on new Bridge Design Aids
- f. Task Group M. Wenning, M. McCool, K. Shergalis, S. Wagner, S. Schickel, S.
 Porter, J. Hunter, E. Mouser (Philips), P. White
- g. Purdue asking for topics for "County" / "Professional" conference

3. Research Needs and Innovative Ideas Update (Rearick)

a. None

4. Concrete mix designs (<u>White</u>, Wenning, McCool, Merida)

- a. M. Nelson looking into self-consolidating concrete
- M. McCool suggested we look into internal curing, lightweight, semi-lightweight, VE concrete, etc.
- c. S. Wagner asked that we consolidate all the current USP, RSP, etc. and give guidance on when to use each. M. McCool agreed and asked that this be added to Design Aids / Practice Pointers.

- d. P. White wants to know the need for lightweight. Wants past projects that would have benefited from its use.
- e. B. Arnold requested development of specs for UHPC.

5. Pile Design for 3-sided structures (<u>White</u>, Schickel, Borcherding, Hunter)

a. None

6. Semi-integral bent details (Wagner, McCool, White, Schickel, Borcherding, Merida)

- a. S. Schickel presented concepts for new semi-integral details
 - i. Goal is to provide access for future jacking to replace bearing assemblies
 - ii. Prestressed beam Bottom (tapered) load plate & vulcanized elastomeric bearing pads welded to embedded anchor plate in end bent
 - iii. Steel beam similar to prestress, except includes top plate bolted to bottom beam flange that would rest on elastomeric pad but would not be vulcanized
 - iv. Polystyrene of uniform thickness, 5" minimum, to bottom of beams across entire cap except directly under beams
 - v. Wingwalls designed to handle transverse restraint
 - vi. No more shear keys
- b. S. Wagner stated next steps will be to develop details for rehabilitation projects
- c. B. Arnold stated Virginia DOT has good guidance on determining anticipated movements for semi-integral bridges with heavy skews. M. McCool asked that B. Arnold share VDOT information.
- d. D. Merida asked that we use standard bearing pads and minimize the number of possibilities to avoid construction schedule delays due to testing of pads. Group discussed possible updates to bearing pad standards. P. White stated this should be revisited. M. McCool added this item to "New Business". P. White suggested using standard pads, even if oversized compared to load demands. M. Wenning cautioned against overlooking liftoff checks.

7. LRFD vs LFD on Rehabilitation Projects (Hunter, McCool, Eichenauer, Wenning,

Arnold)

- a. Task group met earlier this week
- b. Will present at Bridge Design Conference

8. Sand Bag Cofferdams (<u>Hunter</u>, Phillips, Merida)

- a. J. Hunter requested example USPs
- b. J. Hunter will further pursue with task group

9. MSE Wall Shop Drawing Revision Checklist (White, Wenning, Hunter)

- a. Proposed changes to IDM Chapter 14 for design review checklist is being worked on currently
- b. Shop drawing review checklist still in development

10. WWF in prestressed beams (<u>Hailat</u>, McCool, White, Schickel)

- a. Design complete by M. Hailat
- b. Details sent to committee for review. Minor comments received and addressed.
- c. M. Hailat will send final version to group for last review.
- d. P. White ISS 737 already allows contractors to propose use of WWF reinforcing. This substitution has been performed on a beam design in Indiana post-Letting. P. White anticipates the use of which could increase.

11. Expansion Joint Material (<u>White</u>, McCool, Porter, Schickel, Wenning, Merida)

- a. "Expanded polystyrene" should be changed to "extruded polystyrene" or a more generic term. However, compressive properties of each are similar. Both can achieve approximately 75% strain without providing much load resistance.
- b. P. White would like to provide guidance in IDM & ISS for both materials, allowing for both. ISS would state that new generic term would permit the use of both materials.
- c. "Elasticized polystyrene" will more closely return to original shape after load removal. Use of which may be appropriate for joints between wingwalls and

superstructures. M. McCool suggested adding a design aid for scenarios where this material would be appropriate.

d. M. Wenning asked about alternate materials like (greased) roofing felt, etc. to create bond break. P. White stated those materials are just to separate two surfaces but are not accounted on for thermal movements. M. Wenning concerned with possible use of a stiffer EPS, which may be more suitable to roadway work and is designed not to compress, in locations where we want to allow for compression of the material. P. White agreed.

12. Self-Consolidating Concrete for Box Beams (White, Nelson, McCool)

- P. White asked for this item to be moved into the Concrete Mix Design agenda item
- b. M. Nelson will be attending beam pour with self-consolidating concrete (SCC) at Prestress Services in Lexington, KY. The mock up is being done to validate a SCC mix design for the West Virginia DOT. The pour was originally scheduled for September 29, 2020 but did not happen and is being rescheduled.

13. Embedded Galvanic Anodes (White, Wenning)

 P. White anticipating publishing of a Design Aid and a USP before the next Structures Committee meeting

14. PVC Deck Drains on RC Slab Bridges (<u>Wagner</u>, Schickel, Porter, Swiderski, Shergalis)

- a. INDOT Bridge Asset Group does not like the old standard of PVC drains
- Task group will explore use of more standard deck drains in cases where longitudinal slopes would allow for them

15. Staged Deck Pours and Reinf. Details (<u>McCool</u>, White, Merida, Borcherding, Reilman)

a. None

16. NEXT Beams (McCool, Hunter, White, Wenning, Arnold, Wagner)

a. Item brought back due to ABC initiative

- b. M. McCool looking for projects to use them
- c. SS&T difficult to analyze as little to no cost data available. Will be expensive at first. S. Wagner acknowledged this and stated INDOT would have to be willing to pay premium.
- d. M. McCool stated possible uses could be local county projects that would otherwise use adjacent box beam bridges. But counties won't pay the premium.

17. Steel / ABC (Arnold, Hailat, Hunter)

- a. B. Arnold stated meetings held with INDOT Central Office, J. Hunter and M.
 Hailat, and with his internal design team to work through details of design for his
 US 33 project. Ultimately, guidance and suggested details for Structures
 Committee review will be created based on experience with this project.
- M. McCool asked if item should be kept on agenda or wait until B. Arnold's project was farther along. S. Wagner requested that it stay on agenda and B. Arnold share development of design as it progresses to the remainder of the committee.

18. New Business

- a. Standard elastomeric bearing pads. Mark Swiderski to lead task group.
- b. Purdue Professional Conference ("County") needs bridge topics see Item 2
- c. Next Meeting scheduled for October 7 at 9:30 am (est)

Recurring Business

Bridge Practice Pointers Update (Hunter, Wagner) Standards Committee Updates (Phillips) Overlay Types (<u>Hunter</u>, White) Link Slab Design and Details (<u>Wagner</u>, McCool, Wenning, Schickel)

Research Projects

Fire Damage on Concrete Bridges Seismic Assessment Design and Retrofit ABC Guide Strut-and-Tie Modeling

Parking Lot

Long term deflections in prestressed beams Special provision for high strength concrete

Mild reinforcement in prestressed beams (particularly 401 bars) Post Tensioning Specs Terminal Joint Details Alternate Structure Types Continuity of Prestress Concrete Beams (Heidenreich) (TRB Research) Hydro-demolition (Wagner) Fiber Wrap (Jessop) High Early Strength Concrete (Nelson) Expansion Joints Options (Wagner, White, Eichenauer) (PP) Load Rating Policy and Procedures (Hunter) Approach Slabs (Hailat,) Bridge Deck Overhang Design (Wagner, McCool, Hunter, Eichenauer) Pile Driving Recommendations SIP Forms (Hunter) Girder Stability (<u>McCool</u>, Arnold, Porter, Eichenauer, White) TS-1 Railing (White, McCool)

ASCE - INDOT Structures Committee

Attendance List

Last Name	First Name	Organization	Email	Present
Arnold	Brandon	USI Consultants, Inc.	barnold@usiconsultants.com	х
Black	Michael	INDOT	miblack@indot.in.gov	
Borcherding	Ben	American Structurepoint, Inc.	bborcherding@structurepoint.com	х
Eichenauer	Mike	BF&S, Inc.	Meichenauer@bfsengr.com	х
Hailat	Mahmoud	INDOT	Mhailat@indot.IN.gov	х
Hart	Jennifer	INDOT	JenHart@indot.IN.gov	х
Hauser	Derrick	INDOT	Dhauser@indot.IN.gov	х
Hunter	Jeremy	INDOT	Jhunter@indot.IN.gov	х
McCool	Mike	BLN, Inc.	MMcCool@b-l-n.com	х
Merida	Derek	Milestone Contractors, L.P.	Derek.Merida@milestonelp.com	х
Nelson	Mike	INDOT	Mnelson@indot.IN.gov	
Ortiz	Jose	FHWA	jose.j.ortiz@dot.gov	х
Pelz	Kurt	INDOT	Kpelz@indot.IN.gov	
Phillips	Elizabeth	INDOT	Ephillips@indot.IN.gov	
Porter	Sean	Parsons, Inc.	Sean.Porter@parsons.com	х
Rearick	Anne	INDOT	<u>Arearick@indot.IN.gov</u>	
Reilman	Jim	INDOT	Jreilman@indot.IN.gov	
Schickel	Seth	нитв	sschickel@hntb.com	х
Shergalis	Katlyn	Locmueller Group, Inc.	Kshergalis@lochgroup.com	х
Swiderski	Mark	INDOT	Mswiderski@indot.IN.gov	х
Wagner	Stephanie	INDOT	SWagner2@indot.IN.gov	Х
Wenning	Mike	GAI Consultants, Inc.	M.Wenning@gaiconsultants.com	x
White	Peter	INDOT	PeWhite@indot.IN.gov	x