

**ASCE – INDOT
STRUCTURAL COMMITTEE
MEETING NO. 89 AGENDA**

**October 7th, 2020
9:30 am, Webex**

1. Review and approve Meeting 88 minutes.

- a. One minor comment to revise. Otherwise, approved. BMA will distribute revised Meeting No. 88 minutes simultaneously with Meeting No. 89 minutes.

2. Bridge Design Conference Planning (McCool)

- a. Summary of Planning to-date:

- 50-minute sessions
- BMA will be a speaker
- Virtual conference
- Possible Topics
 - Load rating research project – RC Slab distribution factors
 - Plan review
 - Policy / Design Memo / INDOT Updates
 - Historic Bridge – Do's & Don'ts
 - Geotechnical – existing foundations – research project
 - Shop Dwg Reviews – Tips for plans
 - Design Aids – elastomeric bearing pads, galvanic anodes, WWF in prestressed beams
 - Semi-Integral End Bents (maybe)
 - LRFD vs LFD – updates at a minimum, but hopefully able to provide guidance by then
 - Open to additional topics
- Date: Sometime in February 2021? 16th, 17th, & 18th

- Possibly divide into two half-day conferences? Example: Tuesday 4 hours (8:00 am – 12:00 pm). Wednesday & Thursday (2) 1-hour lunch & learn sessions (11:00 am – 1:00 pm).

3. Clear Deck Forms (Schickel)

- a. Seth Schickel & Erica Haas (HNTB) presented on their US 20 over I-80/90 (Toll Rd) project. Scope: deck replacement & semi-integral conversion. Pete White, Mark Pittman, and Amber Thomas from INDOT involved. TruTech was supplier of clear deck forms.
- b. Advantage is ability to view bottom of deck in future inspections.
- c. Suggestion to take pictures with polarizing lens when taking pictures to avoid sunlight effects.
- d. P. White helped write USP. Use of forms approved by FHWA.
- e. There were small gaps between panels, but were able to be filled with silicone or expandable foam. No leakage during pour.
- f. General Plan included notes that Contractor shall use permanent transparent forms.
- g. Estimate of \$12 / sft. Included as separate pay item since they're more expensive than traditional steel SIP forms. Costs are competitive with wood formwork that has to be removed.
- h. Recommended protecting underside if any painting is to be done to steel beams so that visibility through forms is maintained. Similarly, tops of forms should be protected if sand blasting to be done to tops of steel beams.
- i. Still able to use 15 psf for design. Heavier than steel SIP, but still within the 15 psf. Should be able to switch out for SIP when requested by contractors. Not certain if actual final deflections are more or less than theoretical, or by how much they differ from what was predicted with steel SIP forms.
- j. M. McCool recommended that we bring this topic back up as routine item for Structures Committee. S. Wagner recommended that INDOT first have conversations with contractors and internally looking at additional costs before

bringing this back as a committee item. M. McCool thought we should keep it as certain LPAs are already using policies that prohibit SIP forms. Added to “Parking Lot”.

4. Research Needs and Innovative Ideas Update (Rearick)

- a. Pass.

5. Concrete mix designs (White, Nelson, Wenning, McCool, Merida)

- a. Self-consolidating concrete for prestressed concrete box beams – M. Nelson and Prestress Services are working on it. Test projects will be cast.
- b. Rapid-set concrete for approach slabs, semi-lightweight concrete, internally cured concrete, etc. should be part of a list of items we want status updates on per M. McCool. Per P. White, M. Nelson is actively working on the internal curing concrete and rapid-set concrete mixes currently.
- c. P. White said this committee should identify the needs, and then M. Nelson will work on identifying solutions.

6. Pile Design for 3-sided structures (White, Schickel, Borcharding, Hunter)

- a. Pass

7. Semi-integral bent details (Wagner, McCool, White, Schickel, Borcharding, Merida)

- a. S. Wagner – details for new construction are nearly finished. Currently working through details for rehab / semi-integral conversion projects. Draft details will be shared with the committee for review soon.

8. LRFD vs LFD on Rehabilitation Projects (Hunter, McCool, Eichenauer, Wenning, Arnold)

- a. Meeting again later this week. Different categories being investigated – deck, prestressed concrete beams, steel beams & plate girders, & substructure. Working on developing guidance & design tips.

9. Sand Bag Cofferdams (Hunter, Phillips, Merida) Example USP's?

- a. Pass

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

- a. Close to having final version of checklist. Finishing up going through review comments. Next step is implementation.
- b. Need long lead time from time it's released to the time it's mandatory so that design fees on projects can be adjusted as necessary. A six-month lead time should be considered as the minimum.
- c. Remove as future agenda item.

11. WWF in prestressed beams (Hailat, McCool, White, Schickel)

- a. INDOT project with this design is currently in construction.
- b. Remove from future agendas.

12. Expansion Joint Material (White, McCool, Porter, Schickel, Wenning, Merida)

- a. Remove from future agendas.
- b. P. White will incorporate either expanded or extruded polystyrene expansion joint details in IDM and INDOT Specs.

13. Embedded Galvanic Anodes (White, Wenning)

- a. Remove from future agendas.
- b. Design aid for this item is now released.

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

- a. No progress since last meeting. S. Wagner asked if anyone would like to lead this item. Katlyn selected.
- b. INDOT is interested in using SQ or OS drains in lieu of PVC drains.

15. Staged Deck Pours and Reinf. Details (McCool, White, Merida, Borcharding, Reilman)

- a. M. McCool will organize meeting for this task group.
- b. No progress since last meeting.

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

- a. No progress since last meeting.
- b. INDOT has a couple projects with these currently in design.
- c. Could be a large need from LPAs to replace box beam bridges.
- d. P. White would appreciate receiving lists of projects where this superstructure type could be a viable alternative, even if it won't be selected due to cost. Goal would be to identify the need to justify the expense of developing these (already developed and used in other states), and for the additional expenses to the fabricators.

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

- a. B. Arnold to keep a running list of detailing pros/cons as his team progresses with design of their project. List to be shared with Structures Committee.

18. Bearing Pad Standards (Swiderski, White, Wenning, McCool, Schickel, Merida)

- a. No progress since last meeting. Ongoing.

19. New Business

- a. **Strut-and-Tie Design for End Bents** (Arnold, Eichenauer, Hailat, McCool, White)
 - i. Task group will compile research and documentation to provide uniform guidance on use, or non-use, of STM for end bent design
 - ii. Item to become part of future agendas
- b. **Steel girder fabrication inspection costs** (Arnold, Wagner, White)
 - i. Recent LPA project required LPA to pay for inspection of fabrication of girders, which was not part of original bid.
 - ii. Second-place contractor would have won job if fabrication inspection costs were included
 - iii. Previous guidance from INDOT after bid was that on future projects a USP should be included to force contractor to include inspection costs in their bid
 - iv. S. Wagner will investigate

- v. P. White cautioned that these inspection costs should be an INDOT cost, not necessarily the Contractor's responsibility. Provisions for this issue may have to be included in the INDOT Standard Specifications.
- vi. Item to be added to next agenda.
- c. S. Schickel has two projects in design, a single span and a two-span, that will utilize **cold-bent steel tub girders, assembled on site.**
- d. **Next meeting** on December 3, 2020 at 9:30 am (est)

Recurring Business

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

Research Projects

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

Exterior Beam Capacity After Impact to Bridge Railings (S. Wagner)
 Capacity of Beam Ends under Joints and Deterioration Factor for Load Ratings (S. Schickel)

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 (McCool, Arnold, Porter, Eichenauer, White)
 TS-1 Railing (White, McCool)

ASCE - INDOT Structures Committee

Attendance List - Meeting No. 89

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