ASCE – INDOT
STRUCTURAL COMMITTEE
MEETING NO. 84 AGENDA

July 11th, 2019
9:00 am, INDOT Room N642

1. **Review and approve Meeting 72, 73, 74, 75, 76, 78, 79, 80, 81, 82 and 83 minutes.**

    - Meeting #83 Minutes were approved.

2. **Bridge Design Conference Update and New Date January 21, 2020 (McCool)**

    - Date of Design Conference will be January 21, 2020
    - Location moved to INDOT Auditorium instead of S. Gov't Center conference rooms

3. **ABC Conference (Hunter)**

    - Stephanie Wagner and Pete White will attend from INDOT.

4. **Research Needs and Innovative Ideas (Rearick)**

    - Committee members encouraged to send all research ideas to Anne Rearick

5. **Pile Design for 3-sided structures (White, Schickel, Borcherding, Hunter)**

    - Current challenge with determining Live Load applied to each pile. CANDE software (2D) typically used for analysis but does not handle all LL cases, particularly in terms of different amounts of cover above structure. Subcommittee looking into how best to determine LL distribution factors for application of live load to footings.
    - With precast footer, ISS requires continuity closure pour. Contractor experience is that this is not always being performed.
        - Suggestion was made to call for in plans with a note.
        - This should be checked during shop drawing review(s).

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

    - Table for now.
    - INDOT staff to work on new details within next few weeks. Stephanie will present on this topic with Pete White at next CEPDS. Stephanie requests any particular questions or best practices from group for preparation of presentation.

    - Mike McCool suggests scheduling recurring monthly meetings on all task subcommittees to encourage development of each topic.

7. Thin Deck vs. Joint Replacement (White, Yeager, Rearick, Wagner)

- P. White - RSP for thin deck overlays to be issued soon. Current RSP lists approved vendors, future one will not. Design Aid will also be updated, after RSP. It will provide things to look out for including not putting overlay on top of new concrete, when it's not possible to fully install in one-night closure, etc.
- M. McCool – mentioned example of replacing SS joint which required replacement of ~ 3 ft of deck. This type of project would require additional time to cure Class C concrete for deck. P. White commented that if more extensive MOT was used to replace joint, should just go to LMC overlay.
- On thin overlay projects with joint replacement using precompressed joint seals, J. Yeager recommended sawcutting and using nosing material which overlay can be placed on quicker. P. White said nosing material cannot support a load and two-step process required – first with rapid set concrete and tapcon anchors, etc. and then place nosing material on top of concrete. J. Yeager would like a standard width to mill full width across deck to then replace with nosing material to clean up joint edges. J. Yeager will look into standard width that could be milled from a contractor and equipment perspective.

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

- Guidelines being developed to move every design to LRFD, particularly for rehab projects originally designed LFD. Guidance needed for designers, allowable tolerances, etc.
- Survey being developed to get industry feedback on difficulties going from LRFD new superstructure and then check of existing substructure with LFD.
- New process being developed for INDOT to evaluate and document if theoretical overstress of LFD-designed members is acceptable. M. Wenning not certain if we can get to point to have numerical tolerances for each different component and detail, but that is a goal. Stated some LRFD geometric checks don't necessarily apply to existing LFD bridges since they're already out there working. Guidance will be developed based on type of rehab and then by type of component.
- Meeting 1x / month to develop guidance.
- Jeremy suggested we present to Anne Rearick about possible NCHRP project.

9. Sand Bag Cofferdams (Hunter, Phillips)

- Pass. No action taken at this time. However, Stephanie found that calling sandbag cofferdam for something as simple as pile painting a "dewatering retaining wall"

makes permitting easier. Environmental agency reviewers treat applications differently if the word, “cofferdam”, is used in applications.

10. Elastomeric Bearing Pads (Wenning, White, Porter)

- Mike W. and committee went through specs to find out how bond between plates and pads is accomplished. Vulcanization or other method that meets minimum performance can be used.
- One such method being used is epoxy. Problem is that quality control is difficult.
- P. White - Suggestion is that we simply put in IDM that we call for vulcanizing pads to plates. This should then go in plans. Adjacent box beam bridges won’t do this as they don’t necessarily have embedded steel plates, but those that do should use this. Even on sliding bearings with PTFE layers on pad, the pad could be vulcanized to bottom steel plate attached to bent cap with anchor bolts.
- Design Aid should be developed and IDM Figure should be updated with callout.
- Mike W. – Prof. Frosch recommends we not allow the use of natural rubber in pads. Natural rubber is currently cheaper so manufacturers are using it.

11. Girder Stability (McCool, Arnold, Porter, Eichenauer, White)

- M. McCool part of PCI task group to develop guidance document on life of prestress beams from casting bed to placing on bridge seats. Excel calculations from PCI for each phase of beam life prior to sitting on bridge pads will soon be available (print form). Guidance document will also be available explaining calculations, and the Excel spreadsheet will also be made available. M. McCool suggests we wait until PCI releases these documents and then we (INDOT) evaluate them and develop Design Aids, determine which calculations will become bridge designer’s responsibilities, etc. All concurred. M. McCool expects documents to be released by end of 2019.

12. New Business

- P. White – INDOT Geotech is developing a checklist for MSE Wall shop drawing review. It will be sent to INDOT Structures Committee for review prior to releasing.
- B. Arnold – Lightweight concrete still allowed. M. Wenning said RSP is available from INDOT. Semi-lightweight no longer promoted by INDOT. Challenge is some designers don’t add extra 5 pcf for rebar, need consistency among designers.
- B. Arnold – Minimum deck steel size not specified, but max spacing is #8.
- Next meeting to be October 3, 2019

Recurring Business

Bridge Design Aids Updates (Hunter, Wagner)
Standards Committee Updates (Phillips)
Bridge Design Conference (McCool)
Overlay Types (Hunter, White)

Research Projects

Link Slab Design and Details (Spahr, McCool, Wenning, Schickel)
Fire Damage on Concrete Bridges
Seismic Assessment Design and Retrofit
ABC Guide
Strut-and-Tie Modeling

Parking Lot

Concrete mix designs
Long term deflections in prestressed beams
WWF 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)**
NEXT Beams (McCool)**(still looking for applications)**
Hydro-demolition (Wagner)
Fiber Wrap (Jessop)
High Early Strength Concrete (Nelson)
Expansion Joints Options (Wagner, White, Eichenauer) **(PP)**
Bridge Design Conference (McCool)
Load Rating Policy and Procedures (Hunter)
Approach Slabs (Hailat,)

Bridge Deck Overhang Design (Wagner, McCool, Hunter, Eichenauer)

Pile Driving Recommendations

SIP Forms (Hunter)