

**ASCE – INDOT
STRUCTURAL COMMITTEE
MEETING NO. 100 MINUTES**

**June 13th, 2023
9:00 am, MS Teams and INDOT I-465 Conference Room (7th floor)**

1. Review and approve Meeting 99 minutes.
 - a. Item #4 – Should say steel beam instead of plate girder.
 - b. Approved as noted.
2. Bridge Design Conference (Wagner)
 - a. Pass
3. Semi-integral bent details (Wagner, McCool, White, Schickel, Borcherding, Merida)
 - a. McCool – Suggested using slotted or oversized holes in top plates to allow for better constructability.
 - b. Task group to continue working on details for rehab projects. Bridge design aid in development. It will provide a hierarchy of desirable conversion details and considerations.
4. LRFD vs LFD on Rehabilitation Projects (White, McCool, Eichenauer, Wenning, Arnold)
 - a. White taken over for Hunter as lead for task group. He will schedule new recurring meetings for group.
 - b. McCool – goal is to finish in 2023.
5. Sand Bag Cofferdams (Wagner, Merida, Hailat, Porter)
 - a. Wagner – Task group to begin working on coordination between environmental and construction services. Example, there is inconsistency between inspectors requiring riprap installation needing to be dewatered before placing riprap to verify geotextile placement, etc. while environmental division will require riprap to be installed without dewatering.
 - b. McCool suggested task group solicit feedback from group on issues they're having to help steer direction of task group.

- c. Wagner suggested task group shift its focus to be bigger and relabel as "environmental for bridge projects".
- 6. PVC Deck Drains on RC Slab Bridges (Shergalis, Wagner, Schickel, Porter, Swiderski)
 - a. Shergalis – group split topic into replacement bridges and rehab bridges subgroups.
 - b. Replacement bridges – add SQ drains as an option and remove requirement for 6'-0" spacing of PVC drains
 - c. Rehab – Swiderski working on revisions to detail
 - d. Rehab – Lesh working on guidance for rehabs with 0.0% longitudinal grade
 - e. McCool – Suggested we also develop guidance for removal of existing OS drains. Impact is much more than removal or plug of 6" diameter PVC drain. That, or make the new PVC drain plug detail very clear that it is only for PVC drains and not for SQ or OS drain casting.
 - f. Goal will be to have figures, IDM language, etc. ready to present for next Structures Committee meeting.
- 7. Staged Deck Pours for Steel Bridges (McCool, White, Merida, Borcherding, Shaw)
 - a. McCool – Will set up new recurring meeting for task group to begin working on guidance for steel beam and plate girder bridges.
 - b. Will look into other criteria and guidance than solely evaluating pour rate.
- 8. NEXT Beams (McCool, Hunter, White, Wenning, Arnold, Wagner, Spaans)
 - a. Group needs to start working on developing Bridge Design Aid(s) and IDM language.
 - b. McCool – His firm is looking at NEXT beams currently for several SS&T reports. NEXT beams do not always win, but they are competitive, particularly if they can provide a single span option instead of a multi-span RC slab.
- 9. Steel / ABC (Arnold, Hailat, McCool, White, Eichenauer, Cowan)

- a. Arnold – Current ABC project is in construction with prefabricated members being assembled onsite. Will collect data and bring group together to go over results after superstructure units have been lifted and set into place.
- b. Wagner – JTRP study ongoing to collect data on all ABC projects to then be able to evaluate their viability for each project early on in the initial scoping stage.

10. ABC Worksheet (Schickel, Hunter, McCool, Arnold, White, Cowan)

- a. Schickel – Thinks it would be best to combine this group with Item 9 above. All agreed.
- b. Wagner – Effort can still be put towards developing guidance for design community even though current national economics and inflation make it difficult to gain support for additional project cost.
- c. McCool – Group will be combined with Item 9 above.
- d. McCool – ABC does not necessarily mean a bridge slide. It could be simpler and incorporate precast approach slabs for an overlay project.

11. Standard Beam Detail Sheets (Lesh, Wenning, Hart, Wagner, Cowan, Spaans)

- a. Lesh – Close to finishing details. Currently working on revisions. Task group will send new details to entire committee for review.

12. Sample Plans Steel Bridges (Wagner, McCool, Lesh, Schickel, Cowan)

- a. Wagner – In progress and reviewing all sheets.

13. Bearing Retrofits / Rehabilitation (Swiderski, Schickel, McCool, White)

- a. Swiderski – In progress.

14. Open Pile Bent Rehabs (McCool, Eichenauer, White, Schickel, Arnold, Merida)

- a. McCool – Would like to meet in July. Will solicit past project details from group prior to meeting.
- b. Wagner – Should provide guidance for pier and/or exterior pile stability for superstructure replacement projects. Once superstructure, integral pier cap on RC slab bridges, etc. is removed, pier and/or pile may become unbraced.

- c. McCool – Group should also provide recommended pile repair methods for various scopes.

15. Post-Installed Anchors (Arnold, McCool, Wagner, White, Porter)

- a. Arnold – Purdue research project ongoing. Recent Design Memo requires evaluation via ACI. Group needs to meet to discuss aluminum bridge railing replacement project designs. Otherwise, group put on hold until Purdue research completed.
- b. Arnold – Will set up meeting for group in July or August to go over aluminum bridge railing replacement projects.

16. Reinforcing Cover on Slab Bridges (Schickel, Shergalis, Porter)

- a. Schickel – Group created due to contractor feedback that more bottom cover is desired, particularly for RC slab bridges. Schickel will set up task group meeting for this summer. Should be quick to determine outcome.
- b. Schickel – White added to task group

17. Deck Panels (McCool, White, Arnold, Borcherding, Schickel)

- a. McCool - Pass

18. IDM Steel Chapter Update (McCool, Schickel, Hailat, Wagner)

- a. McCool – Adding Cowan to group. Will set up meeting in July.
- b. White – We need to focus on updating our guidance on camber diagrams. There are ways we can improve what we show on plans to match what is needed by fabricators for shop drawings.
- c. McCool – Out of state fabricators are used to seeing plans detailed differently.

19. Bridge Joint Retrofits (White, Hailat, Schickel, Porter)

- a. White – Group met recently. Discussed replacing SS and Alternate SS joints, or at a minimum the joint seals, with precompressed foam joint. INDOT may eliminate use of Alternate SS joints, but still evaluating district feedback. Group will incorporate bridge nosing material guidance into discussions.
- b. White – More guidance should be provided in both the IDM and the ISS.

20. New Business

- a. Wenning – Standard drawings for RC slab at end bents showing berms, do we need to extend cap and/or distance from low chord to berm to allow for slab formwork? Group formed: Wenning, Merida, Wagner
- b. Merida – Bearing testing. Recommends using same bearing design for entire bridge due to testing requirements. Current IDM guidance should show tapers occurring in the shim plates, not the top load plate, to simplify the amount of testing.
- c. Next meeting scheduled for September 19, 2023 at 9:00 am (EST).
- d. _

Recurring Business

- Bridge Design Aids Update (Wagner)
- Standards Committee Updates
- Overlay Types (Hunter, White)
- Link Slab Design and Details (Wagner, Wenning, Schickel)
- Research Needs and Innovative Ideas Update (Wagner)
- Concrete mix designs (White, Nelson, Wenning, McCool, Merida)

Bridge Design Conference Topics

- Panel Discussion “Start to Finish of a Project”

Concrete Mix Designs

- E5 / internally cured concrete
- semi-lightweight
- lightweight
- rapid curing concrete in RCBA (currently a RSP)
- UHPC (nonproprietary)

Research Projects

- Fire Damage on Concrete Bridges
- Seismic Assessment Design and Retrofit
- ABC Guide
- Strut-and-Tie Modeling
- Pack Rust - Mitigation Strategy Effectiveness
- Repair and Strengthening of Bridge using FRP
- A New Approach to Accelerated Fabrication of Steel Bridges: Design, Optimization, and Demonstration
- Evaluating Reserve Strength of Girder Bridges due to Bridge Rail Load Shedding
- Pedestrian Bridges -- Development of New Criteria for Design & Construction

- Seismic Evaluation of Indiana Bridge Network and Current Bridge Database for Asset Management
- Self-Healing Concrete
- BIM for Bridge and Structures
- Development of Protocols for Reuse Assessment of Existing Foundations in Bridge Rehabilitation and Replacement Projects
- Pile Stability Analysis in Soft Soils
- Legal and Permit Loads Evaluation for Indiana Bridges
- Use of LRFR Methodology for Load Rating of INDOT Steel Bridges
- Improved Live Load Lateral Distribution Factors for use in Load Rating of Older Continuous and T-Beam Reinforced Concrete Bridges
- Shear and Bearing Capacity of Corroded Steel Beam Bridges and Effects on Load Rating
- Civil Infrastructure Systems Open Knowledge Network (CIS-OKN)
- Implementation Study: Continuous, Wireless Data Collection and Monitoring of the Sagamore Parkway Bridge

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)
- Clear Deck Forms (Schickel)
- Epoxy Anchors ([Arnold](#), Hailat, White, Shaw)
- RC Slab Edge Beam Replacement Details ([McCool](#), White, Shergalis)
- Pile Design for 3-sided structures – Update on potential research project? ([White](#), Schickel, Borcherding, Hunter, Merida)
- STM for End Bents ([Arnold](#), Hailat, Hunter, Schickel, White)
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