ASCE – INDOT
STRUCTURAL COMMITTEE
MEETING NO. 106 MINUTES

January 21st, 2025

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

1. Review and approve Meeting 104 and 105 minutes.
    a. No objections. Approved
    b. Website is caught up on posted past approved minutes.

2. Bridge Design 2024 Conference Update (Wagner)
    a. Registration will be sent out in the next week.
    b. Test runs for presenters are optional.

3. LRFD vs LFD on Rehabilitation Projects (White, Hart, McCool, Wright, Wenning, Arnold)
    a. Pete gave an update that he and Jennifer had been working on it, but we probably need a flow chart for clarifying guidance.
    b. Steel beam models have all been checked and are currently doing code comparisons.
    c. Steel plate girder models being developed.
    d. Currently designs are using 9th edition but will check against 10th.
    e. Additional load rating models are being developed for comparisons.

4. Environmental Bridge Permits (Wagner, Merida, Hailat, Muellner, Lesh)
    a. Stephanie indicated they've made progress on standard drawing development for causeways.
    b. They'll soon bring the drawings to the regulatory agencies and ICI to make sure they're alright with the drawings before they come to the standards committee.
    c. Pump-arounds are currently developed as standards.
    d. McCool indicated that WV requires a Q10 analysis to be used for permitting. Borcherding indicated that he thinks Virginia also requires Q10.
    e. Muellner suggested we bring Derek M. into conversation to see what contractors are expected to do.

5. Staged Deck Pours for Steel Bridges (McCool, White, Merida, Borcherding, Shaw)
    a. Task group has gone through examples and found no significant difference in deflections or steel stresses when pour sequences are changed.
    b. Looking to update pour sequence figure in the IDM and developing a plan note for the pour sequence sheets.

c. INDOT will likely have designers use the "worst case" pour sequence to determine the termination of the 1% deck reinforcement but will encourage a continuous pour.

6. NEXT Beams (McCool, White, Wenning, Arnold, Wagner, Spaans)
   a. Possibly mention at the INDOT Bridge Design Conference that these are an acceptable beam type.
   b. Stephanie mentioned that we might make a quick IDM update to make designers aware of this option.
   c. Pete mentioned that new IDM figures are being developed.

7. Bearing Retrofits / Rehabilitation (Swiderski, Schickel, McCool, White)
   a. Next meeting for updates

8. Open Pile Bent Rehabs (McCool, White, Schickel, Arnold, Merida)
   a. Details are complete.
   b. Bridge Design Aid in development
   c. Will be presented at INDOT Bridge Design Conference

9. Post-Installed Anchors (Arnold, McCool, Wagner, White, Muellner, Swiderski)
   a. Stephanie created an outline for a Bridge Design Aid
   b. Elizabeth will be touching on this with retrofitting railings at the Bridge Design Conference

10. IDM Steel Chapter Update (McCool, Schickel, Hailat, Wagner, Shaw, Cowan)
    a. Design manual markups are being developed.
    b. Cowan indicated NSBA design standards were recently released, and the task group has added them to their document review list.

11. RC Slab IDM Figures (Wenning, Wagner, Merida, Borcherding, Wright)
    a. Increase distance between bottom of slab and top of berm to 36”.
    b. McCool brought up that currently flowable fill is used behind slabs, but now that we're proposing to increase the depth do we need drainable backfill with a pipe?
    c. McCool suggested that the bottom of the cap is at or below the bottom of riprap.
    d. Wenning will send out current sketches to group for comment within the next couple weeks.

12. Prestress Beam Camber and Box Beam Bearings on high skew (White, McCool, Hart, Wagner, Hailat, Muellner, Spaans, Wenning)
    a. Pete provided an update. It appears that hybrid bulb tees are often cambering less than anticipated.
    b. McCool asked if we're still seeing beams that cambered more than anticipated. Pete indicated that we're still seeing that sometimes, but not nearly as often as under cambered. However, Pete indicated we might want to include shims at all bearing locations so we can correct for over camber.
    c. McCool indicated that in the past designers were concerned that under cambered beams are an indication that the prestressing force was less. Celeste indicated that PCI is still working on a publication to dead with camber.

13. Approach slab and Rail Details (White, Borcherding, Wenning, Schickel)
    a. Pete provided an update.
    b. Ben did a great job of soliciting feedback from Contractors. They indicated they've seen fewer issues with joints perpendicular to the CL roadway.
    c. Pete indicated we might want to make perpendicular joints standard practice (IDM), but we also need to review the standard drawings and potentially update the railing joint treatments.

14. New Business
    a. Steel bridge coatings
        i. McCool presented this topic. There are new coatings available, are we using them the best?
        ii. Cowan suggested that it's worth reviewing the current ISS coating system and exploring new options. Should there be more options for INDOT?
        iii. Wenning indicated he thinks INDOT has test projects in each District for hot dipped galvanized beams. Muellner indicated they've also done an alternative coating system due to future access concerns.
        iv. Stephanie indicated I-69 over I-465 has metalized and galvanized and will be going to Purdue for research to see how they performed and to estimate the remaining service life. Mahmoud indicated around 2015 someone did some touch-up work.
        v. New task group will be formed with Wagner, Cowan, McCool, Lesh, Shaw, Reilman, Muellner, Schickel)
    b. Standard elastomeric bearings

i. DJ and Muellner brought up the fact of larger bearings requiring a wider cap to satisfy edge distance. Muellner brought up the "old" issue of rotations.
ii. Pete White will lead task group Wenning, Muellner, Hailat will help.

Recurring Business

- Bridge Design Aids Update (Wagner)
- Standards Committee Updates (White)
- Research Needs and Innovative Ideas Update (Wagner)
- Wall Committee Update

Bridge Design Conference Topics

- Pannel Discussion “Start to Finish of a Project”
- Stage Deck Pours for Steel Bridges
- Link Slab Design
- Prestress Beam Camber

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 us 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)

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

- Reinforcing Cover on Slab Bridges (Schickel, Shergalis, Porter, White)

- Concrete mix designs (White, Nelson, Wenning, McCool, Merida)
    - E5 / internally cured concrete, semi-lightweight, lightweight, rapid curing concrete in RCBA (currently an RSP), UHPC (nonproprietary)
- ABC Working Group (Schickel, Arnold, Wagner, Hailat, McCool, White, Wright, Cowan)