

**KYTC Division of Structural Design and  
ACEC Bridges, Inspection & Design Sub-Committee  
Partnering Meeting**

**August 3, 2017, 1:30 PM – 3:00 PM  
Room 311**

**Minutes**

These minutes provide an outline of discussions at the Division of Structural Design and ACEC Bridge Sub-Committee partnering meeting held at the Transportation Cabinet Office Building. Those in attendance were:

Bart Asher	KYTC Division of Structural Design
Bill McKinney	KYTC Division of Structural Design
Ajay Shah	KYTC Division of Structural Design
Joseph Van Zee	KYTC Division of Structural Design
Michael Carpenter	KYTC Division of Structural Design Geotechnical Branch
Darrin Beckett	KYTC Division of Structural Design Geotechnical Branch
Carl Van Zee	KYTC Division of Structural Design
Craig Klusman	AECOM
Brain Reid	Lochner
Steve Goodpaster	American Engineers
Wendy Harper	WSP
Aaron Stover	Michael Baker
David Rust	Palmer Engineering

Discussion topics included:

- 1. Purpose** – This meeting was requested by the Sub-Committee to continue the dialog with the Division of Structural Design (DOSD). The goal is to exchange feedback on bridge design issues that could be addressed or avoided in future projects, resulting in more economical, easier to construct, and longer lasting bridges.
- 2. Division of Structural Design Update**
  - a. Bart Asher is the new Director of the Division of Structural Design.
  - b. The manager position for the Geotechnical Branch is still open.
  - c. The 2018 Standard Specifications are anticipated to become effective with the January, 2018 lettings.

- i. Pile specifications will have significant changes. The ENR formula has been removed.
    - ii. Steel chapter will also have significant changes.
  - d. Diaphragm sheets will become standard drawings. The DOSD is working on the 4" strip seal standard drawing with the Division of Maintenance.
  - e. The DOSD anticipates that advertisements for new projects will continue to have an option for the DOSD to keep the structure design in-house.

### **3. Division of Structural Design Topics**

- a. DOSD reminded consultants to follow the guidance in the Bridge Design Manual for submittals (SD-205-2 and SD-205-3). DOSD has found some common problems:
  - i. Roadway plans are not included in the Stage 1 Preliminary Plans.
  - ii. Calculations are not submitted with Stage I Final Plans.
  - iii. DGN's are not submitted with the Stage II Final Plans
  - iv. KYTC will post an Example Set of Stage 1 Preliminary Plans. *(This has been posted as of 8/4/2017).*
  - v. Steel Alternates should be discussed with the Division on Structural Design.
- b. Class AA concrete change orders are becoming more common due to the wide top flange Hybrid PCI Beams. Other States make the haunch concrete incidental to deck concrete or the beams. This is currently under consideration by KYTC.

### **4. Driven Pile Requirements**

- a. An 8' maximum pile spacing is required unless a waiver is requested from DOSD.
- b. Pipe piles are preferred for friction piles.
  - i. If you are close to bedrock weigh the cost of using fewer point bearing piles instead of shorter friction piles.

### **5. Advanced Situation Folders**

DOSD is considering hosting an Advance Situation Folder Webinar for Districts and Consultants sometime in the future. Topics would include:

- a. A unit price cost estimate is required using closeout forms from the KYTC website. Consultants should review the KYTC website for newest cost data to make sure they are close to those numbers.
- b. Limit breastwall heights to 10-15'. KYTC would prefer to increase the bridge length to stay within this range.
- c. DOSD prefers a layout sheet with Plan and Elevation Views for bridges and culverts
- d. The roadway grade and alignment should be final.

- e. Layout sheet should show a CLEAR OPENING if the structure is being designed in-house.
- f. Drift – heavy, medium, or light can influence whether webwalls will be required.
- g. DOSD recommends rounding skews to the nearest degree.
- h. Include pertinent design information in the preliminary plans (phased construction, and utility conduits).
- i. Think of the Advanced Situation Folder as the order form for the bridge.

#### **6. Drilled Shafts**

- a. DOSD has a “standard” Drilled Shaft Record Sheet they use. DOSD will make this available to consultants on their website.
- b. Special Note says “pay per plan”, but “As-Measured/Constructed” is preferred. The geotechnical branch will consider updating the Special Note.
- c. Technique shafts are rarely used. Special projects might require them. Assume they are not required unless specified in the Geotechnical Report.
- d. CSL are typically used for wet shaft installations but refer to the Geotechnical Report. TIP testing may also be specified in the Geotechnical Report.
- e. Mike Carpenter is the new section chief for structures foundations.

#### **7. AASHTO LRFD 8th Edition (Published Fall 2017) Topics**

- a. DOSD plans to develop steel reinforcement splice charts which meet the requirements of the new code.

#### **8. Load Rating Topics**

- a. Load Ratings for new designs will only be included in consultant contracts for unusual designs.
- b. Negative moment steel in the slab should be located within effective flange width as defined in AASHTO.
- c. Bridges designed as continuous for live load are preferred but in some instances, consultants could consider designing PCI beam bridges as Simple Span for DL and LL with a link slab or crack control rebar in the deck above the pier. This would preferably be done without increasing the beam size or number, however, adding additional strands would be acceptable. This option should be discussed and approved by the Division of Structural Design before proceeding.
- d. Short hybrid beams are preferred over box beams provided the overall cost does not increase.

#### **9. KYTC Bridge Design Manual Update**

- a. The ACEC subcommittee made an attempt to draft an update for the manual; however, very little progress was made and these efforts have ceased.
- b. The Cabinet is looking at alternate ways to do manuals (Wikipedia- type, but not open source)

- c. The updated Bridge Design Manual is on hold until the new format is decided.

**10. As-built plans**

- a. As-built plans are an emphasis for the DOSD.

**11. Other Topics**

- a. In-service cracking of concrete barriers was discussed. Previous efforts to control cracks in barriers were not effective so the DOSD has been designing barriers with no open joints for 15-20 years. Cracking has not been enough of a problem to change this policy.
- b. For bridges more complicated than typical Prestressed Concrete bridges, but not as complicated major projects (as these have provision written in the Scope), submit hours for Construction Services to KYTC Professional Services at negotiation. DOSD will work with Professional Services and determine if hours are justified.

**12. Future Meeting – Fall 2018**