

**ACEC-KY Bridge Sub-Committee /  
KYTC Division of Structural Design**

**Meeting Minutes  
April 13, 2011**

A meeting of the ACEC-KY Bridge Sub-Committee and the KYTC Division of Structural Design was held on April 13, 2011 at the Transportation Cabinet Office Building, Frankfort, KY.

Present at the meeting were:

Mark Hite	Director, Division of Structural Design
Bill McKinney	Division of Structural Design
Kevin Sandefur	Division of Structural Design
Tony Hunley	ENTRAN, PLC
Chris Reid	J.M. Crawford & Associates
Aaron Stover	Michael Baker
Pete Szak	Florence & Hutcheson, Inc.
Roger Wade	QK4
Jon Tasman <sup>(1)</sup>	American Engineers, Inc.

<sup>(1)</sup>*Representing Kenneth Ott*

The following items were discussed:

- 1) **Accelerated Bridge Construction for Bridges** – The Division of Structural Design indicated that they have agreed with FHWA to complete 1-2 bridge projects each year utilizing Accelerated Bridge Construction (ABC) techniques. The DOSD is currently designing one such structure utilizing precast end bent caps and precast PPCDU's. Mark stated that when a project appears to be a good fit for an all-precast design (for example) the consultant should make the recommendation to KYTC and the DOSD would review and, in the right situations, support an ABC structure design.

There are currently extensive resources available on the Utah DOT's website, as well as NHI webinars and an FHWA Manual on Accelerated Bridge Construction. The DOSD is not interested in attempting to use SPMT's (self propelled modular transporters) at this time, but will consider all-precast designs utilized in the right situation.

- 2) **LRFD Cantilever Slab Design** – LRFD requirements that the slab overhang be designed for the barrier capacity were discussed. DOSD guidance is that they do not consider vehicular impact loading to be critical for overhang design and are not aware of any problems with vehicular impacts causing slab failures. In general, the design load can be limited to the extreme event vehicular impact design loading for the barrier and not the barrier capacity.

- 3) **HL-93 Live Load Increased by 25%** – Application of this provision to local agency or county bridges was questioned. The DOSD prefers that all bridges in Kentucky be designed with the HL-93 live load increased by 25% (both truck and lane). The DOSD reiterated concerns over coal haul route legal loads and the lower live load factor in LRFD, among other factors. There have been cases in the past where counties were not able to be reimbursed for bridge replacement projects because the bridge was not designed to KYTC DOSD standards.
- 4) **Future Wearing Surface (60 psf)** – Consultants have requested clarification on which bridges should be designed for the increased future wearing surface load. Current direction is that 60 psf should be used “for bridges where it is not practical to remove and replace the deck in phased construction.” An example that was discussed is mainline interstate bridges (widening to six lanes). The DOSD indicated that their preference is that these bridges be designed for the 60 psf future wearing surface in accordance with DOSD TM07-01 and TM08-01.

In general, DOSD preference is to design all bridges for the 60 psf FWS. For design purposes, this load can be applied to a composite section which takes into account the additional slab structural thickness. Utilizing 15psf will be allowable for those bridges that meet TM08-01 and the higher FWS loading will cause clearance problems.

- 5) **Prestress Services Hybrid Beams** – DOSD indicated that all new designs should consider the use of the Hybrid Beam sections. Details of the sections (Hybrid 8 Web 49 and Hybrid 8 Web 61) are located at the following web address: [http://www.prestressservices.com/products\\_bridge.asp](http://www.prestressservices.com/products_bridge.asp). These sections may not be economical where AASHTO Type 3 and Type 4 beams are practical, unless clearance is an issue. In general, these beams should be used in considering reducing the number of beam lines or lengthening spans to eliminate substructure units.
- 6) **Overhang Bracket Impacts to Exterior Beams** – A question was raised regarding DOSD experience with problems arising from torsional loads applied to exterior beams from overhang brackets due to the screed machine and wet concrete loading. DOSD indicated that they have not seen this as a significant problem and that it is a construction issue. If a designer wishes to investigate this further, the University of Kansas has developed a program (TAEG 2.1) to analyze the exterior girder (<http://kart.ksdot.org/>).
- 7) Interest was expressed in having a joint meeting with the Division of Construction, Division of Structural Design, and the ACEC-KY Bridge Sub-Committee to solicit feedback from construction on current bridge design and plan production practices. The committee will work to set up this meeting for late summer.
- 8) The next joint meeting of the KYTC Division of Structural Design and the ACEC-KY Bridge Sub-Committee will be in the Fall of 2011.

The meeting concluded around 11:45 a.m.