

## 2017 National ABC Conference – Pre-Conference Workshops

### W-08: Today's Precast, Prestressed Concrete Bridge Design

Wednesday, December 6, 2017 – 1:00 p.m. to 5:00 p.m.

#### Introduction:

This series of talks by members and staff of the Precast/Prestressed Concrete Institute (PCI) will focus on key elements of bridge design. Some elements are covered in the AASHTO LRFD Bridge Design Specifications, while many concepts and practices for precast prestressed concrete are addressed through industry publications. PCI will discuss recent State-of-the-Art Reports. And finally, speakers will address two growing topics of interest: Spliced Girder Technology and Bridge Geometry. New developments in precast concrete will also be discussed. These topics are all covered in detail within the Third Edition of the PCI Bridge Design Manual.

#### Workshop Organizer:

William Nickas, P.E., Precast/Prestressed Concrete Institute

#### Program:

1:00 p.m.	Welcome and Introduction to Workshop	Moderator – William Nickas, P.E.
1:15 p.m.	Spliced Curved U Girders <sup>1</sup>	Bob Anderson, P.E.
2:45 p.m.	<i>Break</i>	
3:00 p.m.	Geometry <sup>2</sup>	John Corven, P.E.
4:15 p.m.	Precaster's Perspective on ABC	Lee Wegner
4:45 p.m.	Closing Remarks	William Nickas, P.E.
5:00 p.m.	Adjourn	

*Note 1:* This Prefabricated Bridge Elements and System for Horizontally Curved Alignments presentation will cover the comprehensive guidance manual that was developed and now fully explains design principles and decisions required to produce plans and specifications for projects using spliced, curved precast U-beam technology. This shortened version of the 7-hour-long technical seminar will be informative to all engineers working to fully deploy the technology. The session will be taught by Bob Anderson, the lead author.

*Note 2:* A state-of-the-art guidance document for Bridge Geometry is being developed by PCI under contract to FHWA and AASHTO. This document will describe proper steps for determining the geometry required to construct I girder bridges with plumb girders and rotated superstructures like precast segmental and spliced u girder bridges. The lead author, John Corven, will present an introduction to the manual.

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#### Speakers and Bios:

**William Nickas, P.E.**, [wnickas@pci.org](mailto:wnickas@pci.org) (**Organizer & Moderator**)

William is Managing Director of Transportation Services for the Precast/Prestressed Concrete Institute. He began his engineering career over 34 years ago with the Florida Department of Transportation and has worked in various roles from a design engineer to lead principal in both public and private sector engineering organizations. While at the Florida DOT, he was the State Structure Design Engineer. William currently serves as a member of a variety of professional engineering committees including those focused on advancing concrete applications for bridge elements and systems, Piles, and Pavements at PCI, TRB, NCHRP and SHRP2. He is an accredited instructor for the National Highway Institute on LRFD Prestressed Superstructure Bridge Design and is the Editor-in-Chief of *Aspire* Concrete Bridge Magazine.

**Robert B. “Bob” Anderson, P.E.**, [bob.anderson@aecom.com](mailto:bob.anderson@aecom.com)

Bob is a Vice President and Complex Bridge Leader with AECOM Corporation in Tampa, FL. His cutting edge structural concrete research at UT-Austin’s Ferguson Lab was in the behavior of strut-and-tie nodal regions. During a diverse 30-year career, Bob’s experience includes preliminary and final design of bridges and associated structures in both steel and concrete, including grade separations, multi-level, interchanges, viaducts, water crossings, and encompasses segmental concrete, long-span cable-stayed, and design-build projects. He has significant involvement in the construction phase of many projects and has experience in inspection, load rating, and rehabilitation of existing bridges. Bob is an active member on several national committees of the American Concrete Institute and a registered professional engineer in six states.

**John Corven, P.E.**, [JCorven@corveneng.com](mailto:JCorven@corveneng.com)

John Corven is President and Chief Bridge Engineer of Corven Engineering located in Tallahassee, FL. John has been designing complex precast concrete bridges for the last 38 years. His firm specializes in the design and construction engineering of concrete segmental and cable-stayed bridges. In addition to authoring the soon-to-be-released PCI Bridge Geometry Manual, John has also authored “Post-Tensioned Box Girder Design Manual” and “Post-Tensioning Tendon Installation and Grouting Manual,” published for downloading by the FHWA.

**Lee Wegner**, [Lee.Wegner@forterrabp.com](mailto:Lee.Wegner@forterrabp.com)

Lee Wegner is in Sales and Project Management with Forterra Structural Precast in Salt Lake City, UT. Lee is a nationally recognized expert in the use of precast concrete for accelerated bridge and pavement construction. A graduate of the University of Wyoming, Lee was employed 12 years for Kiewit Corporation. Working throughout the country, he managed hundreds of millions of dollars’ worth of bridge and heavy highway construction projects. He joined Forterra Structural Precast in 2004 and quickly went about creating business for accelerated bridge and pavement construction through precast methods.