

CE 890 Graduate Seminar

SPEAKER: Joey Holste (Advisor: Dr. Bob Peterman)

TOPIC: “Evaluating the Time-Dependent and Bond Characteristics of a Lightweight Concrete Mix for Kansas Prestressed Concrete Bridges”

DATE: January 27, 2010

TIME: 4:00 p.m. (refreshments at 3:45 p.m.)

PLACE: 2144 Fiedler Hall

ABSTRACT

Findings from an experimental program that was done jointly between Kansas State University (KSU) and Prestressed Inc. (PCI) in Newton, KS to determine time-dependent and bond characteristics of a lightweight self consolidating concrete mix. The program included two major parts, the first was verifying bond characteristics and determining the creep and shrinkage characteristics of the concrete mix. The second part involved casting specimens at PCI that will be loaded to failure at KSU. To determine the bond characteristics of the mix, prestressed Inverted T-beams (IT's) were instrumented to determine the transfer length. The IT's were monitored using vibrating wire strain gages and Whitemore points. The creep and shrinkage characteristics were determined by casting specimens that were then instrumented with Whitemore points. The specimens were loaded in accordance with ACI and readings were taken accordingly. The specimens that will be loaded to failure included single and multi-strand beams. These beams will be loaded at KSU to compare the transfer and development lengths to code equations.