

CE 890 Graduate Seminar

DATE: March 11, 2009
TIME: 4:00 p.m. (refreshments served at 3:45 p.m.)
PLACE: Fiedler 2144
SPEAKER: Bradford Rognlie, P.E., MSCE,
Senior Bridge Squad Leader, KDOT
TOPIC: “Drainage and Bridge issues for the proposed
KDOT project: K-18 Ogden to Manhattan”

ABSTRACT

Kansas Highway 18 travels from Interstate-70, northerly passing by the town of Ogden, the Manhattan Airport before it reaches Manhattan. This corridor has seen an increase in traffic of 24% and is expected to see a marked increase in traffic with the return of soldiers to Ft Riley and the addition of the Bioscience center at K-Sate. The Kansas Department of Transportation (KDOT) is preparing to construct a project to make K-18 a 4-lane from I-70 to Manhattan.

There are many drainage and bridge design issues that were identified during preliminary design. These issues expanded as final design advanced. Flooding at Ogden and the Airport involved flood control measures and improvements which allowed re-mapping of the FEMA regulatory boundaries. Relocation of the Union Pacific Railroad(UPRR) was required, along with several UPRR bridges. Highway bridges required vertical and horizontal clearances for railroad access and several waterway crossings required hydraulic capacity.

Unstable tributaries required grade control structures and systems of levees to capture and convey flows. Diversion points were designated to direct flows as required. Environmental permitting regulations required wetland mitigations, channel re-alignments and minimum desirable flows be maintained.

The sequencing of construction required offset alignments of the proposed 4-lane freeway, with limited access at designated interchanges.

BIOGRAPHY

- ABET Degrees In Civil Engineering:
 1. Bachelor of Science in Civil Engineering (BSCE), 1980, South Dakota School of Mines & Technology(Structures)
 2. Masters of Science in Civil Engineering (MSCE), 1996, Kansas State University (Structures and Water Resources)
- Registered Professional Engineer in Kansas since 1985.
(License # 10237)

Worked for KDOT Bridge Design from 1980-present, as a Designer and presently a Bridge Senior Squad Leader.

- 28 years experience in over 100+ bridge designs-Bridge Project Management
- Retaining walls, Bridge scour analysis and countermeasures, erosion control methods
- Stream stabilization repair methods
- Design of light towers and overhead sign structures, Falsework systems
- Experience evaluating emergency post-flood erosion repair methods, Project at Levees
- Managing agreement with the USGS for streamgage funding.
- Experience with monitoring KDOT funded research related to bridge scour and hydraulic modeling.
- Serve as panel member for NCHRP 24-27 research project on bridge scour.
- Developed KDOT bridge scour procedures for implementation.
- Past-President, Kansas Section, American Society of Civil Engineers
Past-Chairman KsASCE structural Group