

Robert H. (Bob) Lyon, P.E.

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PROFILE

Structural engineer with over thirty (30) years of professional design and management experience, and ten (10) years of undergraduate and graduate teaching experience.

EDUCATION

1977 - 1979

M.S. in Structural Engineering
George Washington University

1972 - 1977

B.S. in Civil Engineering
University of Virginia

TEACHING EXPERIENCE

Professor of Practice

University of Kansas
CEAE Department
2004 – Present

Teach 12 – 15 hours per semester. Advise students.
Courses Taught: Structural Analysis, Steel Design, Senior Design Project, Prestressed Concrete, Statics, Dynamics, FEM, AEI Faculty Advisor, Engineers Without Borders Faculty Advisor

Adjunct Professor

University of Missouri, Kansas City
Civil Engineering Department
Kansas City, Missouri
1996 – 1998

Taught 3 hours per semester.
Courses Taught: Structural Analysis, Steel Design, Bridge Design...

PROFESSIONAL EXPERIENCE

Structural Engineer

HNTB Corporation
Kansas City, Missouri
1979 – Present

Associate Vice President
Bridge Department Head
Project Manager/Technical Advisor/
Sr. Designer/Designer for numerous long-span bridge projects

State Senator

State of Kansas
Topeka, Kansas
2000 - 2004

Represented 70,000 constituents of the 3rd District
Served on the Transportation, Utilities, Federal State Affairs and Educational Planning Committees

REPRESENTATIVE PROJECTS

I-70 Mississippi River Bridge, St. Louis, Missouri – Provided Quality Control Plan Reviews for the bridge approach structures.

Snake River Bridge, Wyoming – Served as Project Manager for bridge type studies and preliminary design for a 350-foot steel deck arch crossing of the Snake River.

Hell Canyon, South Dakota – Served as Project Manager for bridge type studies, preliminary and final design for a 760-foot steel deck arch span, 300 feet above the canyon floor.

Gateway Boulevard Bridge, Nashville, Tennessee – Provided preliminary and final design for a 500-foot steel arch bridge over the Cumberland River.

Missouri River Bridge, Atchison, Kansas – Provided bridge type studies for a replacement bridge over the Missouri River as part of the Route 59 Feasibility Study.

Lake of the Ozarks Community Bridge, Missouri – Provided bridge type studies for 250-foot, multiple span plate girder bridge with 200-foot-tall drilled-shaft foundations in the Lake of the Ozarks.

Route 5, Morgan, Camden and Laclede Counties, Missouri – Provided bridge type studies for multiple 250-foot span plate girder bridges.

Route 13 Near Lexington, Missouri – Provided location studies for a new Missouri River crossing with a 450-foot main span. He also served as Project Manager for preliminary and final bridge design and plans.

I-235 Des Moines River Bridge, Des Moines, Iowa – Served as Project Manager for the construction services phase of the project.

Daniel Boone Missouri River Bridges, U.S. 40 Missouri – Performed Location Studies and Bridge Type studies.

Great River Bridge over the Mississippi River, Desha County, Arkansas to Bolivar County, Mississippi – Senior Designer (for preliminary and final design) for this new \$360-million, 22,000-foot crossing of the Mississippi River just north of Greenville, Mississippi. The bridge included a cable-stayed navigation span of 1,520 feet and approach spans up to 420 feet in length over the Mississippi River levees.

Kansas City International Airport Metro Rail People Mover, Kansas City, Missouri – Provided concepts and preliminary design work on an automated people mover at Kansas City International Airport.

Missouri River Bridge, Rulo, Nebraska – Performed Location Studies and Bridge Type studies.

Triangle Interchange Reconstruction, Kansas City, Missouri – Performed preliminary bridge type studies and layout for the curved steel plate girder and prestressed girder interchange bridges.

U.S. 82 over the Mississippi River, Greenville, Mississippi – Provided superstructure final design for the 1,378-foot main span cable stayed bridge over the Mississippi River.

Bill E. Emerson Memorial Bridge, Cape Girardeau, Missouri – Provided superstructure final design for the 1,150-foot main span cable stayed bridge over the Mississippi River. He also performed bridge type studies for the approach spans.

I-435 Rehabilitation, Kansas City, Missouri – Served as the project manager for the fatigue retrofit and rehabilitation contract for the I-435 Missouri River Bridge.

Union Pacific Railroad (UPRR) Standard Plans – Design Engineer for the development of standard design and plans for an extended precast capbeam to be used as a quick changeover substructure alternative for the railroad's use in replacing existing timber superstructures.

Burlington Northern Railroad Bridge 7.3 over the Blue River, Kansas City, Missouri – Design Engineer for a three-span through plate girder bridge superstructure with an open deck and a 100-foot maximum span.

UPRR Bridges No. 130.3 and 136.1 on the Spokane Subdivision, Washington – Served as Design Engineer for a 150-foot through plate girder bridge replacement with a steel plate ballasted deck.

Fuller-Warren Bridge Replacement, Jacksonville, Florida – Provided preliminary studies and design of I-95 crossing of the St. John's River.

Gregory Chapel Road Bridge (SH 71), Crawford County, Arkansas – Provided preliminary studies and final design for a 2,287-foot-long concrete bridge spanning Frog Bayou, Highway 282 and the Arkansas and Missouri Railroad.

S.R. 76 over the Tennessee River, Paris Landing, Tennessee – Served as Project Manager, plus preliminary and final design for the 3,600-foot-long segmental concrete alternate, designed for cast-in-place balanced cantilever construction.

S.R. 82 over the Cuyahoga River, Ohio – Provided preliminary studies, cost estimates and final design of precast floor beams and fascia beams for a concrete arch rehabilitation.

Roosevelt Lake Bridge, Gila County, Arizona – Provided preliminary design of the steel cable-stayed alternate with an overall length of 2,000 feet and a main span of 1,100 feet.

Salt River Viaduct, Phoenix, Arizona – Provided preliminary studies and final design for the 5,400-foot-long segmental concrete alternate, designed for precast span-by-span construction with external tendons.

Kellogg Avenue Viaduct, Wichita, Kansas – Served as Project Engineer for design of cast-in-place prestressed concrete and girder superstructure on delta piers.

State Street Bridge over the Wabash River, Lafayette, Indiana – Provided review of the contractor's redesign and erection procedure for a segmental concrete bridge superstructure.

Bartle Hall Convention Center Expansion, Kansas City, Missouri – Provided final design of the exhibition hall floor system consisting of welded steel box girders.

Notre Dame Bridge over the Merrimack River, Manchester, New Hampshire – Provided final design of the segmental concrete alternate to replace an existing 1,500-foot-long eastbound bridge.

Heart of America Missouri River Bridge, Kansas City, Missouri – Final design of a long span steel plate girder bridge.

Colfax Avenue Viaduct, Denver, Colorado – Performed final design of an award-winning 4,383-foot steel plate girder structure.

I-70, Glenwood Canyon, Colorado – Preliminary and final design of I-70 through an environmentally-sensitive area. Bridge superstructures were designed of curved steel box girders.

F.A. 408 over the Illinois River, Valley City, Illinois – Provided review of erection procedure for twin, two-lane segmental concrete box girder bridges, each 3,300 feet long.

I-95/I-595 Interchange, Fort Lauderdale, Florida – Provided design review.

I-85/I-285 Interchange, Atlanta, Georgia – Served as Design Engineer for multilevel segmentally constructed precast concrete box structure consisting of six major bridges.

I-70 Widening, Wyandotte County, Kansas – Served as Design Engineer for several three-span bridges.

Third Street Bridge over the Saginaw River, Zilwaukee, Michigan – Provided a report on the cause of failure during construction of a 1.5-mile, four-lane, precast segmental concrete bridge.

Algiers Cut-Off Canal Bridge, New Orleans, Louisiana – Served as Design engineer for a 752-foot concrete box girder bridge with a maximum span of 375 feet. Project involved transverse design, shear design, substructure and pier segment design (SAP six finite element analysis used for pier segment design).

Larimer Viaduct, Denver, Colorado – Provided final design of a steel box girder and cast-in-place, post-tensioned concrete box girder alternates.

Lake Street/Marshall Avenue Bridge over the Mississippi River, Minneapolis, Minnesota – Provided final design review of a 535-foot concrete arch bridge.

I-40 Bridge over the Mississippi River (Seismic Retrofit), Memphis, Tennessee – Provided a response spectra analysis and design of seismic retrofit.

I-229 Seismic Retrofit, St. Joseph, Missouri – Assisted in seismic retrofit analysis for a 6,000-foot-long, double-deck viaduct composed of steel I-girder and concrete I-girder approach spans.

Todd Creek Bridge, Kansas City, Missouri – Served as Design engineer for curved girder structure; STRUDL finite element analysis used to evaluate torsional effects.

Fifth Street Overpass, Kansas City, Missouri – Served as Design engineer for final design of a three-span concrete bridge.

Intercity Viaduct, Kansas City, Kansas – Conducted thorough field inspections and wrote an 11-volume preliminary inspection report.

Florida Turnpike Bridges, various locations in the state of Florida – Assisted in the inspection of 400-500 local bridges.

Responsibility for the preparation of the 1982 Standard Specifications for Highway Bridges published by the American Association of State Highway and Transportation Officials.

ECCLESIASTICAL INVOLVEMENT

RPCNA

Ruling Elder
Winchester, Kansas
1995 – Present

Chairman, Church Extension and Evangelism
Moderator, Manhattan Commission
Geneva College Board of Trustees (2005 -2008)
Missionary, St. Petersburg, Russia (1994-1995)
College/High School S.S. Teacher (1995-2010)

SELECTED PUBLICATIONS/PRESENTATIONS

“For the Love of the Profession”, STRUCTURE magazine, January, 2011.

“Concrete Shear Design”, University of Kansas Professional Development Series, Kansas City, MO, March 2009.

“Kellogg Avenue CBD Viaduct”, Keynote Address for International Association of Bridge and Structural Engineers Congress, Lucerne, Switzerland, September 2000.

“Bridge Type Selection for US16 over Hell Canyon”, International Bridge Conference, Pittsburgh, PA, June 2000.

PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers

International Association of Bridge and Structural Engineers

Tau Beta Pi

Chi Epsilon

LICENSURE

Professional Engineer Registered Currently in:

Kansas, Missouri, Wyoming