

BRIDGE SERVICES



YOUR VISION MATTERS.

Manhattan
785.537.7448

Lawrence
785.749.4474


Emporia
620.343.7842

Left:

Big Blue River Bridge
Riley County, KS

Front Cover:

Wakarusa River Bridge
West of Eudora, KS



"We simply have a very strong bridge design team. We address each unique situation and deliver the most economical solution possible. If a client chooses to work with us, they understand that they're going to save money."

- Brady Hedstrom, P.E.

*Project Manager
Bridge & Structural Department*



Connecting Kansas communities one bridge at a time

Bridges are essential to any transportation system, but they are more than simple means of passage. They connect communities and people, enable commercial and agricultural growth, impact the environment, and, in some cases, reflect the scenic, historic, and cultural resources of a community.

BG Consultants is dedicated to keeping our rural and urban communities connected and promoting local economies. Our bridge design team has delivered solutions for hundreds of bridges across Kansas. We know effective design requires proficient structural knowledge and an understanding of the surrounding environment. Our structural recommendations are responsive to span length, waterway opening, hydraulics, and all other site-specific concerns. We are accustomed to working with KDOT and other agencies to secure public, government, and environmental satisfaction with all aspects of the project.

One of our value-added areas of expertise is assisting our County and City Clients to secure grant funding for their projects. Many engineering projects that deal with public safety and infrastructure, depend upon grants for funding. We have extensive experience with exemplary success in the acquisition of funds for these projects across the state. We have constantly secured several million dollars in funding annually from multiple sources such as KDOT, Wildlife Parks and Tourism, Heritage Trust Fund and CDBG.

While our solutions are grounded in years of experience, we have consistently been at the forefront of innovative bridge design in Kansas. We developed the first crash-worthy bridge rail for Fiber Reinforced Polymer (FRP) bridge decks. Our team also developed an economical structural system for an Automated Small Vehicle Transit System (ASVT) that can be used on a university campus or congested city plaza. In the state, we were the first to utilize polymer overlays for repairing and resurfacing concrete decks, and first to incorporate inverted T pre-stressed beams in the construction of a continuous bridge.

Innovation, experience, and commitment—we have what it takes to deliver quality and cost-effective bridge designs.

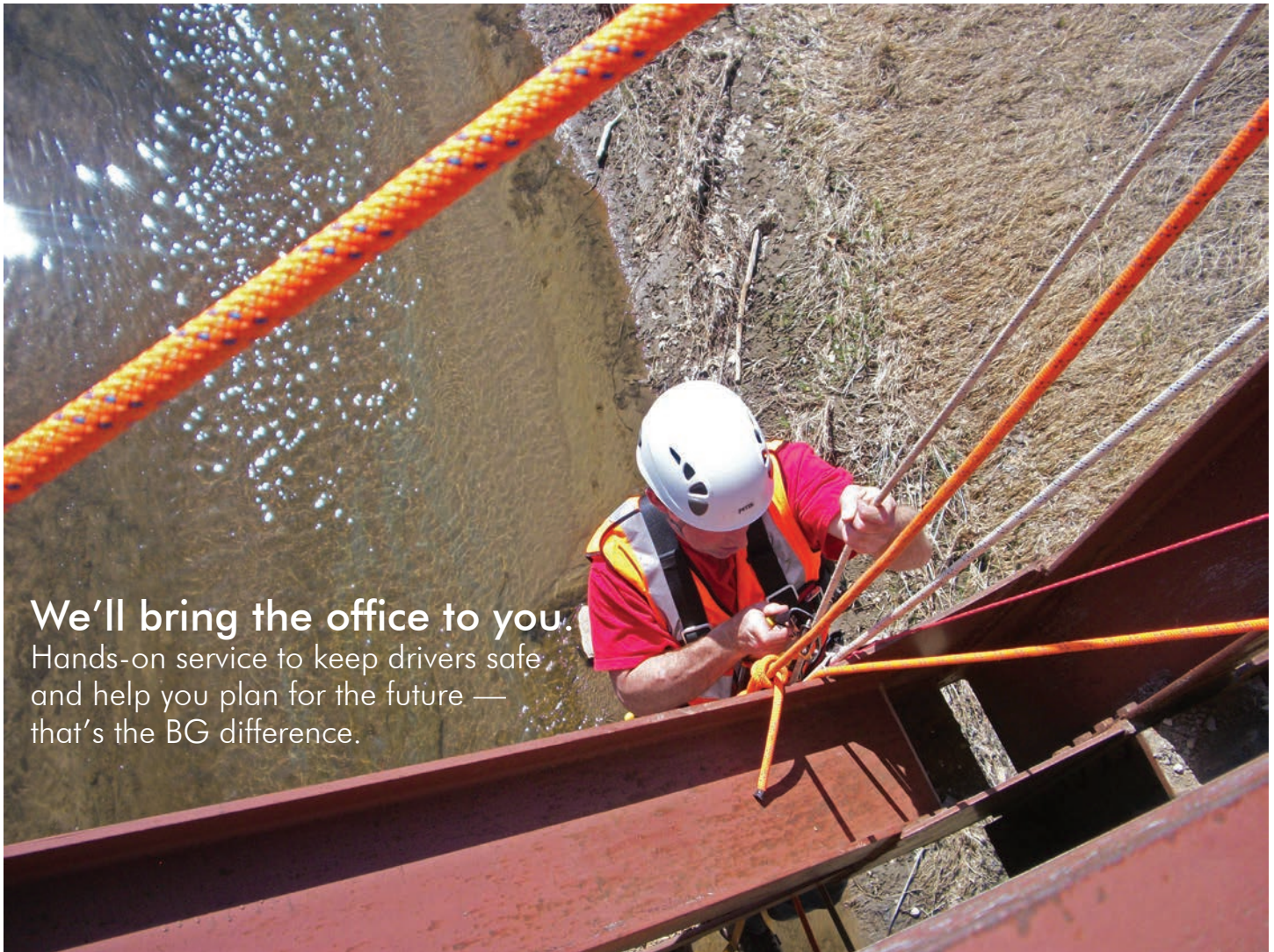
Wakarusa River Bridge
West of Eudora, KS

Comprehensive Bridge Engineering Services

- Bridge/Culvert Replacement
- Bridge Rehabilitation
- Bridge Hydraulic Analysis
- Deck Replacement
- Polymer Concrete Overlays
- Innovative Bridge Repair Solutions
- Routine Bridge Repair Solutions
- Routine Bridge Inspection
- Annual Bridge Inspection
- Fracture Critical Inspection
- Construction Administration







We'll bring the office to you.
Hands-on service to keep drivers safe
and help you plan for the future —
that's the BG difference.

Bridge Inspection Services

In addition to high quality bridge designs, BG Consultants provides routine bridge inspections for cities and counties across Kansas. Unlike other consultants, we have never used technicians to perform our inspection work—our inspection staff consists entirely of structural and civil engineers.

BG Consultants is listed on the Kansas Department of Transportation's select list of prequalified consultants to perform bridge inspections. We are also one of the largest and most experienced Local Public Authority Consultants qualified for KDOT projects.

Providing bridge inspections is just one of the many ways BG enacts our mission to provide comprehensive consulting services and build. In the past two years alone, we have inspected over 2,000 city and county structures across the state.

Rope Access Inspection

The inspection of a fracture critical bridge requires the inspector to be within an arm's length of the member being inspected. This often requires the use of either a "snooper" truck to drive over the bridge or the construction of a platform under the bridge for inspectors to perform their work. But these options are often expensive and, if the bridge cannot support a snooper truck or the channel is too deep, not feasible at all.

BG Consultants offers the unique ability to perform fracture critical inspection by rope access, the most economical and efficient method of inspecting fracture critical bridge members. Trained by Don Bechtel of Bechtel Consulting, a trusted name in global engineering, our team possesses the skills and equipment necessary to safely inspect all of your most difficult structures.

Brown County Bridge OS-72
Fairview, KS



Local commitment meets professional expertise.

Reinforced Concrete Haunched Slab



**Osawatomie Road over Jordan Branch
Miami County, KS**

This 3-span bridge was made complicated by a railroad crossing that limited the ability to grade the road. The steep slope and deep channel placed this bridge at the limits of RCHS bridge constructibility, but proved most viable for the County's funding availability. During construction, BG Consultants provided construction inspection to assure careful adherence to the plans and specifications.

Pre-stressed Concrete Beams



**S. Manhattan Avenue over Wildcat Creek
Manhattan, KS**

Spanning 90'-106'-62', this bridge over S. Manhattan Ave. was designed to be built one lane at a time and remain open throughout construction. Redesign of the structure allowed removal of one pier, resulting in less channel obstruction. We also incorporated a six-foot pedestrian walkway and removed the existing pedestrian bridge, thus eliminating another source of debris-collection from the waterway.

Steel Beam



**Wakarusa River Bridge
Douglas County, KS**

BG Consultants designed a 3-span, 120'-170'-120' composite welded steel plate girder structure to replace the existing bridge over the Wakarusa River. The girders were made of weathered steel, which naturally develops protective coating and never needs to be painted. The replacement provides improved safety, increased the load carrying capacity, and extended life expectancy in excess of 75 years.

Reinforced Concrete Box

Pleasant Street over Tonganoxie Creek Tonganoxie, KS

A double 12' x 12' pre-stressed concrete box structure, this bridge serves as the primary crossing over Tonganoxie Creek for emergency vehicles within the city. BG Consultants phased the construction to allow one-lane of emergency traffic on the roadway at all times. To further enhance safety, a sidewalk was built on each side of the bridge, and a corral rail was designed to separate pedestrian and vehicular traffic.



Inverted T Pre-Stressed Beam

K-23 Bridge over Hackberry Creek Gove County, KS

This three-span inverted-T pre-stressed bridge was the first of its kind to be built in the state of Kansas. The existing bridge was a five-span reinforced concrete deck girder bridge. By designing a three-span bridge, BG Consultants effectively removed two piers from the creek and greatly improved the waterway's hydraulics. This project also included designing almost a half mile of new roadway on K-23.



Post-Tensioned Reinforced Concrete Haunched

Junction City 1-70 Interchange Junction City, KS

The interchange at I-70 and East Street in Junction City had become obsolete due to increased traffic. KDOT hired BG Consultants to design a new interchange, which included two bridges that would span a widened roadway. The new bridges have longer span lengths and were post-tensioned both longitudinally and laterally to tightly compress the concrete and increase the carrying capacity and life of the structure.



A photograph of the Chieftain Trail Bridge, a modern pedestrian bridge with a reddish-brown metal frame and concrete deck. The bridge features a prominent arch design and is surrounded by lush green trees and grass. The sky is filled with white, fluffy clouds.

Chieftain Trail Bridge
Tonganoxie, KS

"I would personally recommend BG Consultants, Inc. to any City or County interested in acquiring professional engineering services. You will not be sorry you brought them on board. Their infrastructure renewal recommendations and professionalism have enabled the City of Horton to prosper in ways not possible otherwise."

—Tim Lentz
Former Mayor, City of Horton

Our mission is to

provide client-focused service through integrated design solutions.

About BG Consultants

BG Consultants, Inc is a full-service E/A design firm providing services in planning; architecture; civil engineering; structural engineering; mechanical, electrical and plumbing engineering; and surveying. Our people are experts in their field, but above all, they're focused on our clients and helping them to realize their project vision.

For more information about BG Consultants and the services we provide, visit www.bgcons.com.

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