

SUMMER 2020





Award-Winning Projects

For more than 100 years, Garver has been tackling your most complex projects — and that's not slowing down as we begin another century. The American Council of Engineering Companies in three states seem to agree, too. We thank them for honoring more than a dozen Garver projects that provide our communities with innovative bridge and roadway design, airport electrical upgrades, treatment plant upgrades and rehabilitations, studies, surveys, and much more.

Cantrell Field Access

City of Conway, Arkansas

Springdale WRF Peak Flow Study

Springdale Water Utilities

LIT ARFF/Vault Generator Upgrades

Bill and Hillary Clinton National Airport

Dave Ward Drive Pedestrian Bridge

City of Conway, Arkansas

Kaw Lake Water Supply Surveying

City of Enid, Oklahoma

CAW Pump Station 1A Rehabilitation

Central Arkansas Water

LIT Taxiways A&B Rehabilitation

Bill and Hillary Clinton National Airport

ARARNG Statewide ATPF Improvements

Arkansas Military Department

Bryant Parkway - Highway 5 to Hilldale Road

City of Bryant, Arkansas

US-77 Bridge over the Canadian River and BNSF Railroad

Oklahoma Department of Transportation

Hazardous Waste and Spill Response Training

Oklahoma Military Department

Miami Airfield Electrical Upgrades

City of Miami, Oklahoma

Claremore Runway and Taxiway Rehabilitation

Claremore Industrial and Economic Development Authority

Del City Wastewater Treatment Plant Improvements

City of Del City, Oklahoma

New Secure Computing Facility at the ERDC

USACE Mobile District

Traffic Flow Charrette at the ERDC

USACE Mobile District



Leading Experts

Garver works each day to impact communities across the country with the most innovative infrastructure designs. In this issue, IQ details Garver's comprehensive program management services and a growing Aviation Team through projects led in part by the accomplished experts below.



Zaid Chowdhury

Water Practice Leader

As Garver's Water Practice Leader, Zaid Chowdhury, PE, Ph.D., BCEE develops advanced methods and innovative solutions for water treatment. An industry expert in water quality process design and research, he led Garver's role in ensuring the proper integration of an augmented water supply for the Enid Kaw Lake Water Supply Program.

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Mark Schwartz

Program Controls Manager

Mark Schwartz, CPM, designs new technologies, develops project management tools and techniques, and manages financial infrastructures. His management skills have been utilized across several programs including the Connecting Arkansas Program, the Enid Kaw Lake Water Supply Program, the Oklahoma Turnpike Authority's Driving Forward Program, and others.

MWSchwartz@GarverUSA.com



Eric Fladie

Water Infrastructure Project Manager

Eric Fladie has almost three decades of experience in providing engineering and construction support and is currently a water infrastructure project manager for the Enid Kaw Lake Water Supply Program. A U.S. Army veteran, Eric regularly works with the U.S. Army Corps of Engineers because of his familiarity with USACE processes.

ELFladie@GarverUSA.com



Shane Smith

Enid KLWS Deputy Program Manager

Shane Smith, PE, has spent more than 20 years managing multi-discipline water and wastewater projects, including water supply and distribution, wastewater collection, and treatment. He is currently leading all pre-construction efforts for the Enid Kaw Lake Water Supply Program.

SSSmith@GarverUSA.com



Jerry Holder

Director of Transportation

Jerry Holder, PE, has over three decades of experience in transportation design and program management. He's Garver's Director of Transportation, while also serving as program manager for the Connecting Arkansas Program, a \$2 billion highway improvement program.

JDHolder@GarverUSA.com



Mark Williams

Midwest Aviation Leader

Mark Williams, PE, leads Garver's aviation efforts throughout Iowa, Kansas, Missouri, Nebraska, and Oklahoma. He works each day on the planning, design, and construction of major airfield improvements, including Garver's role in the new terminal project at Kansas City International Airport.

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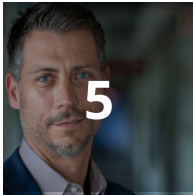
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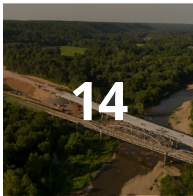
Enid KLWS
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Director's Insight

Michael Graves

Chief Operating Officer

For more than a decade, IQ has highlighted Garver's most impactful projects and client partners. And though you'll notice some differences in this issue, one thing remains the same: We're shining a light on how Garver delivers excellence and value to communities across the country. But from now on, IQ will illustrate exactly how and why we're aligning our most accomplished experts with the vision of our valued clients.

For instance, in this issue, you'll read about a couple of examples showcasing Garver's program management services, which allow clients to rest easy knowing that a qualified team is serving your best interests by keeping track of all the nuances involved with large-scale infrastructure improvement programs.

Those services won't be interrupted, even as so much about our world has changed over the last few months. COVID-19 has impacted all of us, but Garver's commitment to our clients and communities has not wavered. Starting in the spring, we placed a high priority on communication and developing resources to keep our employees safe, connected, and agile, while seamlessly delivering services to our clients. At the end of the day, there's nothing more important than Garver's people and how they're providing infrastructure solutions to our clients across the country.

Moving forward, we'll continue to detail all the ways Garver is working with municipalities, DOTs, airports, and others, and we'll introduce you to the Garver experts making it possible.

At Garver, we strive to be your most trusted advisors, and we want to show you how we're doing it.





Newsmakers

Continued expansion

Garver's quest to deliver the most innovative services to the communities that need them the most has continued throughout 2020. Garver has recently opened offices in Rogers, Arkansas; Lincoln, Nebraska; and Gulfport, Mississippi and now includes nearly 800 employees based in offices across the country.

Employees in the Rogers office, the fourth in the state, are working hand-in-hand with those in the growing Fayetteville office to primarily service clients to deliver aviation, construction, survey, transportation, and water projects. Garver's presence in Northwest Arkansas began in 1996 with the opening of a Fayetteville office and now includes nearly 100 employees.

The Lincoln office will primarily assist Garver's growing Aviation Team

throughout Nebraska and Iowa, teaming up with more than 90 aviation-specific engineers and planners to solve crucial problems at airports across the country.

The Gulfport office will primarily augment Garver's Transportation Team to provide innovative services for projects across the Gulf Coast.

Tops in the region

Garver's unique culture and increasing impact on the infrastructure throughout the region was recognized by Engineering News-Record Texas & Louisiana this spring when it was named the **2020 Design Firm of the Year**.

The magazine, which covers Arkansas, Louisiana, Mississippi, Oklahoma, and Texas, recognized Garver's growing presence in the region and a 2019 spent celebrating its centennial through the Garver Chain Reaction Challenge that

saw the firm donate STEM kits and funds to 100 schools across the country.

"Our employees are highly motivated and demonstrate a passion to build Garver into an even stronger company," President and CEO Brock Hoskins told the magazine. "I think clients see that in our work and appreciate who we are. I truly believe our employee-centered culture is what makes our firm successful."

Arkansas's best

Garver was named Business of the Year during the 32nd Annual Arkansas Business of the Year Awards event in Little Rock earlier this year. Arkansas Business Publishing Group presents the annual awards program to honor the top businesses, executives, and nonprofits in the state.

"Our roots run deep in the state, and



now we stand on the shoulders of all those who came before us, who made our 100-year-old firm what it is today," President and CEO Brock Hoskins said in accepting the award.

Some of Garver's signature contributions to the state's infrastructure include the design of the Broadway Bridge over the Arkansas River, I-540 and the Bobby Hopper Tunnel in Northwest Arkansas, and multiple projects at the Bill and Hillary Clinton National Airport.

Uplifting communities

As countless frontline workers across the nation responded to the COVID-19 pandemic, Garver employees stepped forward to contribute to the cause.

Garver employees across the country worked with GarverGives, the firm's corporate-giving arm, to aid their communities with additional PPE, funds for local charities and food banks, meals for health care workers and seniors in need, and more.



In all, Garver employees raised more than \$22,000 in company-matched funds that went directly to communities fighting against the pandemic.

Instrumentation and Control Leader Steven Nguyen in Garver's College Station, Texas office made and distributed so many masks for EMTs, firefighters, schools, and restaurant personnel that he was dubbed a "one-man PPE factory."

More than \$4,500 in company-matched funds were raised for the Norman Regional Health Foundation and the United Way of Norman in Oklahoma.

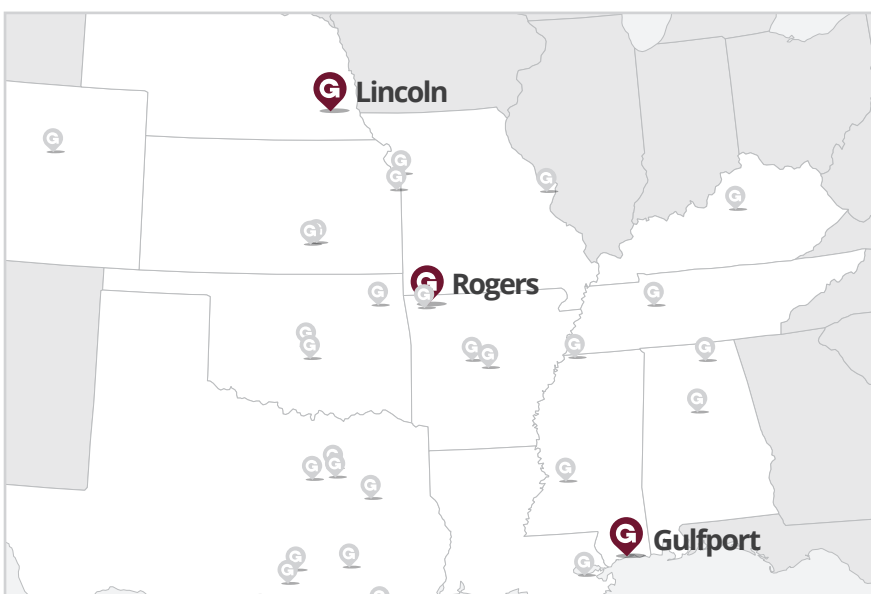
Employees in Garver's Phoenix office partnered with Navajo Nation Medical and 1st Responder Assistance to make a donation that led to the delivery of



550 face shields and 240 gallons of hand sanitizer to frontline workers.

Garver's Ridgeland, Mississippi office hired a locally-owned restaurant to cater more than 100 box lunches to the staff in eight departments at the University of Mississippi Medical Center.

Top left: Garver employees have had plenty of reasons to celebrate in 2020, like in 2019 when Garver was named a Best Firm to Work For. Top middle: President and CEO Brock Hoskins accepted the Business of the Year award presented by Arkansas Business Publishing Group. Top right: Employees in Oklahoma helped to raise more than \$4,500 for the Norman Regional Health Foundation and the United Way of Norman. Below: Garver now boasts nearly 800 employees in offices across the country.





Enhancing a Statewide Highway System

Garver's program management services for the Connecting Arkansas Program are helping the DOT improve its highways in every corner of the state.

Garver has been helping departments of transportation upgrade their highway systems for decades, but its program management services through the Connecting Arkansas Program (CAP) might lead to its most comprehensive impact.

Financed by a voter-approved half-cent sales tax in 2012, the Arkansas Department of Transportation's largest highway improvement program in history is entering its final stages to improve approximately 200 miles of highways and interstates through 36 projects.

As program manager, Garver touches every aspect of the 10-year program, acting as an extension of the ARDOT staff to manage and oversee environmental and design, schedules, budgets, utility relocation, and construction progress. For a program that includes three dozen projects, each with fluid schedules and a need to hit critical milestones at varying

points, it requires expertise, coordination, and creativity.

"This was the first time that ARDOT had ever done program management, so we had to go into it with the attitude of a partnership and learn from each other and adapt," said Garver Director of Transportation Jerry Holder, PE. "We didn't come in with a heavy hand and say 'you have to do it this way.' We've figured it out together."

While management is led by Garver's Transportation Team, it is the Project Controls Team, created earlier this decade to manage programs of such magnitude, that is keeping track of all the moving parts as the program nears its scheduled end when the sales tax sunsets in 2023.

"One of the things our Project Controls Team does well is make sense of competing — and sometimes conflicting — schedules from a big-picture perspective," Holder said.



Photo by the Arkansas Department of Transportation

How is CAP connecting Arkansas?



30 Crossing Pulaski County

The landmark project of the Connecting Arkansas Program includes replacing the Arkansas River Bridge connecting Little Rock and North Little Rock, which at 125,000 cars per day is the busiest stretch of the state's highway system. New ramp structures will improve safety as cars easily merge from I-30 to I-40, and an interchange redesigned as a split diamond will help traffic access the downtown Little Rock grid.

Projected completion: 2025

of a single-point urban interchange in Bentonville will open in 2021.

Projected completion: 2021



Highway 70 Widening Garland County

Eighteen miles of U.S. Highway 70 were widened to five lanes, creating a more comfortable and much safer connection between I-30 and Hot Springs, one of the state's top tourist destinations.

Completed: 2018



I-49 Widening Benton County

Four CAP projects contributed to the widening of Interstate 49 in Northwest Arkansas. More than 16 miles of interstate was widened to six lanes and included improvements to ramps, bridges, overpasses, and detention ponds. These projects make the local commute easier and improve travel conditions through the corridor.

Completed: 2017



I-40 Widening and I-430 Interchange Pulaski County

About five miles of Interstate 40 were widened to six lanes and single-lane ramps at the I-40/I-430 interchange were widened to two lanes to complete ARDOT's five-year process to widen approximately 23 miles between Conway and Little Rock.

Completed: 2016



Bella Vista Bypass Benton County

Ongoing construction will soon connect sections of the Garver-designed Highway 549 (Bella Vista Bypass) with the Arkansas-Missouri border, providing further connectivity for those traveling through the state's fastest growing area. Three CAP projects are helping build the bypass. A 6-mile stretch from U.S. Highway 71 to State Highway 72 was completed in May 2017, the final 2 1/2 miles to the state line is scheduled to complete this year, and construction

As of this summer, Garver's program management services have guided 28 of the 36 projects into construction or completion.

Collectively, these projects to widen highways, construct new river crossings, and update interchange facilities will transform the way residents and visitors travel from one end of the Natural State to the other.

Jerry Holder, PE | Dir. of Transportation
JDHolder@GarverUSA.com



Photo by the Arkansas Department of Transportation





Augmenting a Critical Supply

When one Oklahoma community recognized a diminishing groundwater supply, Kaw Lake served as the solution — and Garver is partnering with them to make it possible.

In 2009, officials from the City of Enid, Oklahoma looked to the northeast of their city some 70 miles and saw its future in Kaw Lake.

For decades, the City had relied on wells far to its west for drinking water, but as that groundwater supply became less reliable, officials knew they were headed toward tough decisions. Kaw Lake served as the solution.

To realize that vision, the City decided to augment the groundwater supply it had relied on for so long with a surface water supply provided by the lake. And Garver's program management services, which include conceptual development of the overall infrastructure program, design, cost estimating, schedule development, cash flow analysis, treatability analysis, land acquisition, environmental services, and more, is making that a reality.

When the Enid Kaw Lake Water Supply Program is complete, residents will enjoy a new, sustainable supply that is planned to address needs for up to 50 years.

Garver Chief Operating Officer Michael Graves has seen the program advance from its infancy — first as program manager while formerly serving as Garver's Central Region Water

Director — and calls it a “legacy project” for the City and Garver.

“This is one of the most substantial water supply projects in northwest Oklahoma’s history,” said Graves, a lifelong Oklahoman. “This has the opportunity to not only help the citizens of Enid but also the agricultural community and the oil and gas operations — both huge economic drivers in Oklahoma.”

Because of the program’s scope — at \$315 million, it’s the largest capital project in the City’s history — officials didn’t just need designers but also a firm to manage every intricate detail of the expansive program. They hired Garver to do both — design each element and serve as program manager.

“We evaluated [consultants] on internal corporate processes and procedures that are essential for project control, project management, scheduling. Do they understand systems engineering? Do they understand the interfaces of a system and how to treat them?” said Enid Director of Engineering Chris Gdanski. “Those were the things that I needed to help me execute this program.”

Planning and Scheduling

A key to delivering a program with so many moving parts — 11



different projects are being developed simultaneously — is planning before the ball gets rolling. Garver Deputy Program Manager Shane Smith, PE, began by developing detailed strategy manuals for each phase of the program, along with risk registries aimed at mitigating any possible issues that might crop up along the way.

“This gives us a playbook of how we’re going to proceed,” Smith said. “We’ve already gone through the scenarios of how we’ll respond if unexpected situations or circumstances come to fruition. It gives us the guidelines so that we can make well-educated decisions on how to quickly proceed.”

In addition, Garver employs a team of professionals based in offices across the country that utilize tools, software, and reporting to keep large infrastructure programs on track, on budget, and on time. Garver’s Project Controls Team allows the project engineers to be more productive and efficient, which is a huge cost and schedule benefit to the client.

“It allows us, as engineers, to be more proactive in our duties,” said Garver Water Infrastructure Project Manager Eric Fladie. “When experts can focus on their expertise within the program and not have to deal with anything else, everyone is better off.”

Setting the Path

A pipeline stretching 70 miles from Kaw Lake to a new water treatment plant requires substantial land acquisition efforts — 230 parcels, to be exact — which Garver’s program management services provided. They worked alongside City officials and land agents to help standardize compensation terms, while also being good stewards of the environment and the landowners’ properties throughout the life of the program.

This monumental task might be daunting for a municipal staff, but it’s just as important to the City’s water future as an innovative design or consistent scheduling and reporting.

“It’s not engineering, it’s not construction, but it’s something that has to get accomplished for us to finish the design,” Fladie said. “There aren’t a lot of municipalities that have the capacity to handle that type of service, and we’re here as an extension of their staff.”

Careful Integration

The City has relied on groundwater supply for decades, but the augmented surface water will need to be blended with the remaining groundwater supply — a task with which the City has no previous experience.

Garver Water Practice Leader Zaid Chowdhury, PE, Ph.D., BCEE,

led the effort to ensure proper integration of the new supply with the existing groundwater supply into the City’s distribution system. That way, when construction is complete, the look, taste, and feel of the new drinking water won’t disrupt the existing distribution system.

“When they turn the pumps on, that water will flow from Kaw Lake some 70 miles to a new water treatment facility and directly into their faucets,” Graves said. “And it’ll be the result of a team effort from a lot of different parties — Garver, the City, and plenty more dedicated to making sure Enid has a safe and sustainable water supply for generations to come.”

Shane Smith, PE | Deputy Program Manager
SSSmith@GarverUSA.com

Comprehensive services



Design

Design of each element of the program, such as intake structure, 70-mile long pipeline, booster stations, water treatment plant, terminal storage reservoir, and optimized delivery system for proper blending.



Surveying

Performed topographic, aerial, hydrographic, boundary, GPS, utility locate surveys, and other services to provide necessary data for successful program initiation.



Environmental

Leading a comprehensive NEPA environmental evaluation of all program components to identify and mitigate any associated impacts.



Scheduling and Reporting

Garver’s Project Controls Team is providing independent and timely data necessary to make informed and strategic decisions regarding potential impacts to overall schedule, scope, and cost.



Funding Assistance

Garver prepared a Water Infrastructure Finance and Innovation Act Letter of Interest for supplemental funding, the first ever approved by the state.



Agency Coordination

Coordination with various agencies, such as the U.S. Army Corps of Engineers, Oklahoma Department of Environmental Quality, Oklahoma Water Resources Board, various tribal nations, and others.

Monitoring the Progress

Garver's Project Controls Team makes sure infrastructure programs stay on track, on time, and on budget.



“It’s not just having the data and collecting the data; it’s understanding what it’s telling you. Are we trending a certain way? Does it need to be corrected? Where does it need to be adjusted?”



Mark Schwartz, CPM
Program Controls Manager

If program management teams exist to help state and federal agencies take complex infrastructure improvement projects to the finish line, then project controls teams serve as the conductor. A team of qualified, certified project managers, schedulers, and engineers help steer these projects for departments of transportation, city officials, and agency directors tasked with big budgets and big expectations.

Garver's Project Controls Team, comprised of experts spread across the country, keeps tabs on the critical details of the most complex infrastructure programs. Their focus: ensure programs stay on track and on budget while identifying any potential obstacles that might require adjustments.

“At Garver, we talk a lot about being ahead of schedule and under budget,” said Garver Program Controls Manager Mark Schwartz, CPM. “Well, it’s one thing to say it, but it’s another to provide the tools to accomplish it. That kind of foresight means we can help our clients make proactive decisions ahead of time rather than getting two-thirds of the way through a project and suddenly discovering schedule delays and budget overruns.”

Garver's Project Controls Team provides a valuable benefit

to clients faced with tough tasks. Originally built from scratch to assist the Connecting Arkansas Program, the Arkansas Department of Transportation's \$2 billion improvement program that includes 36 highway projects, the team of experts utilizes custom-built and turnkey software to benefit each individual program and its unique needs.

To date, Garver's behind-the-scenes direction has led 28 of 36 CAP projects to completion or construction, with six more scheduled for completion in 2020.

The Project Controls Team is also helping the City of Enid, Oklahoma augment its groundwater supply with a surface water supply, a project featuring a 70-mile pipeline stretching from Kaw Lake to a new treatment plant.

“It’s not just having the data and collecting the data; it’s understanding what it’s telling you,” Schwartz said. “Are we trending a certain way? Does it need to be corrected? Where does it need to be adjusted? It comes down to building trust with our clients. They have to trust what we report. And we take that very seriously.”

Mark Schwartz, CPM | Program Controls Manager
MWSchwartz@GarverUSA.com



Industry Insider

Mark Williams, PE | *Midwest Aviation Leader*



In each issue, IQ introduces one of Garver's leading experts charged with delivering infrastructure development and improvement projects to communities across the country. Below, Midwest Aviation Leader Mark Williams, PE, touches on Garver's role in providing civil airside design for the new terminal project at the Kansas City International Airport and what's new for Garver Aviation in the Midwest region that includes Iowa, Kansas, Missouri, Nebraska, and Oklahoma.

How is the Kansas City International Airport project coming along?

It's exciting to see a big dream come to reality for Kansas City and to know that our team was instrumental in developing it. I can already see progress when I fly out of there. You can see the shape of the old terminal with the removed concrete when you're looking out of Terminal B, and the structural steel installed helps to envision the future terminal.

The civil airside design, our role in the project, was completed in March, and construction should begin in September. Though it has taken some time to be realized, the vision our city's leadership showed for the new KCI terminal is coming to fruition, and those utilizing KCI are able to witness the design team's efforts in helping to transform the airport into a modern single terminal facility.

How has the KCI project tested Garver, and how has it been rewarding?

It has many complex parts, which you would expect for a project of this magnitude. A lot of coordination has been required, and I think the biggest challenge is the fast-track design-build

schedule. A lot of communication on design intent was needed. Every time a design change was made, we had to think about the impact on other disciplines and communicate quickly because of the schedule that we were under to get the design done.

We completed the design of the civil airside components in 12 months, when it would normally take at least 24.

How has your team delivered it in such a timeframe?

It's been the team effort that's existed throughout Garver. We've had more than 50 employees from our Aviation Team work on this project. But we've also collaborated with Garver's Construction, Transportation, and Water teams. The greatest benefit is to the client. We were able to bring national expertise within Garver to solve challenges on one of the most complex aviation projects in the country — whether it's the Water Team determining the best method to treat the higher concentration of glycol runoff that will result from this terminal configuration or utilizing our Bridge Team to design retaining walls that will support the apron for the new terminal; those walls are going to approach 30 feet tall.

In addition to the work from our aviation personnel, we've had more than 30 personnel from our other business lines help deliver this design. It's incredible working with one of the largest civil airside design teams in the country with the ability to utilize as many of those resources as possible to solve complex problems in an accelerated timeframe.

What's next for Garver Aviation in the Midwest?

It's an exciting frontier for Garver Aviation, especially in the Midwest. We've added Sean McGraw in Oklahoma City. Sean is an Oklahoma native and Oklahoma State graduate who has a passion for working with the airports in that area. And we've also recently hired Roger Knobeloch to lead our new office in Lincoln, Nebraska.

Both Sean and Roger have familiarity within their respective geographic regions. That's really important because we like our employees to know their areas better than anyone so that clients can trust them both personally and professionally. Sean and Roger allow Garver to provide responsive service in Oklahoma and Nebraska.

Mark Williams, PE | Midwest Aviation Leader
MEWilliams@GarverUSA.com

An aerial photograph showing a multi-lane highway bridge under construction. The bridge spans a creek and is surrounded by dense green forest. A large pile of gravel is visible on the right side of the bridge. A dirt road runs parallel to the bridge on the left. The sky is clear and blue.

PARTING SHOT

State Highway 51 over Baron Fork Creek

Oklahoma Department of Transportation

Garver's design replaces the aging Baron Fork Creek and Eldon Creek bridges, provides a safer connection to U.S. Highway 62, and improves the Oklahoma 51 corridor east of Tahlequah, Oklahoma in Cherokee County.





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