



**FRONTIER-KEMPER  
CONSTRUCTORS, INC.**  
*A Tutor Perini Company*



# **Excellence in Underground & Heavy Civil Construction**



# About Frontier-Kemper

**A TRADITION OF EXCELLENCE** Frontier-Kemper Constructors, Inc., is widely recognized as a leader in underground and heavy civil construction. With more than \$3.2 billion in projects successfully completed throughout the Americas, Frontier-Kemper (or FKCI) is known for its expertise in the engineering and construction of deep shafts and tunnels of all sizes and complexity.

Frontier-Kemper's history dates back to 1971, when Kemper Construction Company, a California-based general contractor, and Frontier Constructors, a Colorado-based mining contractor, joined to form Frontier-Kemper Constructors. In 2011, Frontier-Kemper became affiliated (through share ownership) with Tutor Perini Corporation, a respected US-based company with more than 115 years of significant accomplishments in the civil and building construction industries. FKCI expanded its engineered machinery and equipment capabilities in 2001 by forming the FKCI-Lake Shore Division.

Frontier-Kemper is now one of the best-equipped and most capable American general contractors specializing in heavy civil and underground construction. Frontier-Kemper has been listed numerous times by Engineering News Record as one of the Top 400 Contractors in North America.

Frontier-Kemper provides a wide range of construction services and related manufactured products. We build tunnels for highways, railroads, subways and rapid transit systems. We construct tunnels, shafts, and other facilities for water supply and wastewater transport. We develop and equip underground mines for coal, salt, copper, and other minerals. Our FKCI-Lake Shore Division designs and installs innovative hoisting, elevator, and vertical conveyance systems.

Simply put, we are builders, and our goal is to be the industry's best source – and best value – for complete turn-key construction services and products.

**A RECORD OF ACHIEVEMENT** FKCI has completed more than 450 construction contracts involving nearly 124 miles of tunnels and slopes and 37 miles of vertical shafts.

Our core workforce consists of 85 executive, managerial, and professional employees; including Professional Engineers, registered in more than 20 states, with another 100 Field Engineers, Superintendents, Project Managers, and specialized staff

for machinery installation work. Frontier-Kemper's clients can be confident in knowing that their projects are in the hands of capable people who are committed to the highest quality work, the highest safety standards, and full performance of contract commitments.

**ENGINEERING EXCELLENCE** To support its field projects, Frontier-Kemper maintains a large shop and fabrication facility at its location in Evansville, IN. Frontier-Kemper's engineering staff supports and assists the shop, and also supports field projects that require design and/or close quality control.

The capabilities offered by the FKCI-Lake Shore Division and FKCI Engineering Group include machinery and equipment rebuilds, new and rebuilt hoisting systems, vertical belts and conveyance equipment, headframe design and fabrication, mine slope brakeman cars, and an electrical shop fully equipped to design and install mine hoist controls and other underground electrical equipment.

Frontier-Kemper's clients, often repeat customers, include many of the largest mining and energy companies in the United States, several agencies of the United States Government, as well as state and municipal departments and agencies.

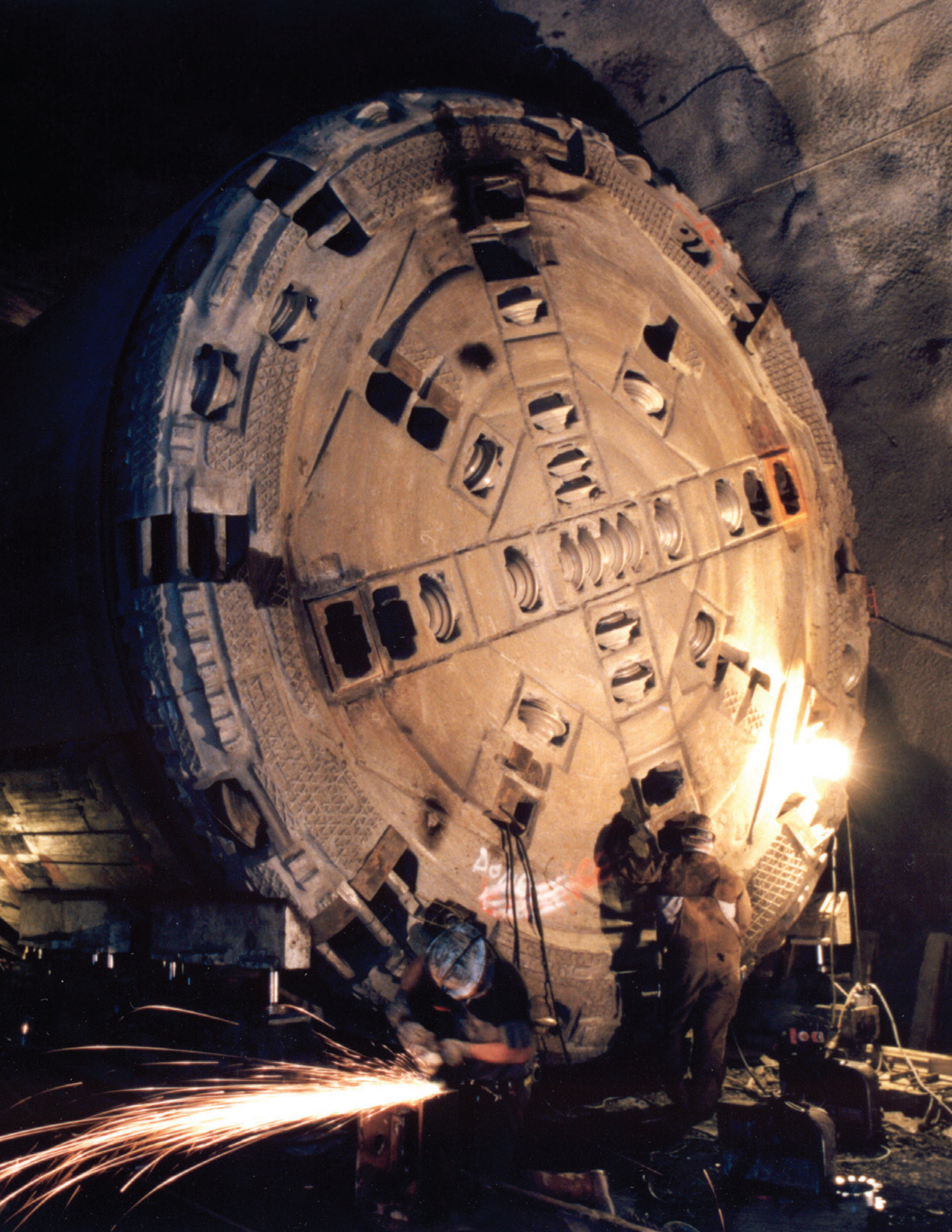
**FROM COAST TO COAST** The majority of our support services and associated staff operate out of our Headquarters in Evansville, IN. The Evansville site includes shop and fabrication facilities, engineering and electrical services groups, and the FKCI-Lake Shore Division. Mining operations are also based out of these offices.

Our Northeast Division is based in Pelham, NY, and performs tunneling and shaft sinking, as well as maintenance and upgrade work for various public agencies within the region.

Our Northwest Division is based in Seattle, WA, and performs tunneling, shaft sinking, and specialty projects for various public agencies and private owners throughout North America.

**Right:** Tunnel boring machine at a twin tunnels construction project in Portland, OR.







# Safety



At Frontier-Kemper, we understand that one resource makes us a great company – our people. That’s why we demand constant vigilance from everyone to ensure a safe, healthy workplace.

With safety a core value, we nurture a culture that will protect our employees, visitors to our projects, and everyone who calls the areas around our work sites “home.” We pride ourselves on protecting people, property, and the environment. That is the commitment all of us at Frontier-Kemper make, to each other and our clients. Our Safety Program focuses on accident prevention. It addresses the responsibilities, accountability, and discipline that we all share and accept as the key to maintaining a safe, healthy, and productive workplace. Everyone participates.

Frontier-Kemper employs MSHA-Certified trainers. Our mutual responsibility is to abide by all relevant state, federal, and local regulations, as well as the safety rules we establish for each project. We are each accountable to the company and each other, with a common goal of making sure that no accidents or injuries occur.

You can trust Frontier-Kemper to put safety first, last, and always.





# Civil Construction



**Top Left:** Tunnel, elevator shaft, and station construction for a New Jersey rapid transportation system.

**Top Right:** Tunnel constructed for light rail transit in Los Angeles, CA.

Frontier-Kemper offers many services through its broad range of expertise in Civil Construction. We specialize in the construction of tunnels and other underground spaces for any application, and we have special expertise associated with transit and sewer systems. We also have played a significant role in major highway, power plant, dam, and design/build projects.

We have built our reputation for success by delivering successful projects to meet our clients' challenges with innovative and cost-effective solutions. Our team undertakes every project with the highest level of professionalism, integrity, and safety.

Frontier-Kemper's Civil Construction experience encompasses the spectrum of transportation infrastructure. We are experienced in tunneling and constructing heavy structures in many environments, from the densely populated urban areas of New York City, Portland, and Los Angeles to the mountainous terrains of Colorado and British Columbia. We have completed more than 200 miles of tunnel work and are still going strong. We have participated in almost every facet of Rapid Transit System development, including the construction of new systems and the rehabilitation and repair of existing systems.

Our strength in tunnel construction, combined with our expertise in heavy civil projects, has made Frontier-Kemper a reliable builder of Rapid Transit Systems, Combined Sewer Overflow (CSO) Systems, and Water Supply Systems in North America.

Highway Tunnels are often large in cross-section and require conventional drill-and-blast excavation methods. Frontier-Kemper led the joint venture project on the Hanging Lake Tunnels on



I-70 in Glenwood Canyon in Colorado, the Haiku Approach & Tunnels on Hawaii's H3, and the Silver Cliff Tunnels on the shore of Lake Superior in Wisconsin. This demanding work requires maintaining traffic flow on alternate routes while construction is taking place.

As our urban population expands, water supply systems need to be expanded, reconstructed, and better maintained. Added restraints for the maintenance of these systems make the challenges even greater. Plus, time is critical when shutdowns are required – a lot of work must be done in a short time, so shift and weekend work is common.

Frontier-Kemper is experienced in performing both new and rehabilitation work as well as maintenance projects. Notable projects include the rehabilitation of the Delaware and New Croton Aqueducts in New York. Frontier-Kemper has received the Concrete Industry Board's Special Recognition for construction of the NYC Water Tunnel No. 3 Shaft 26B.

Frontier-Kemper has constructed more than 70 tunnels, using mechanical excavation with hard-rock and soft-ground tunnel-boring machines, road headers, shields, and other methods. We are skilled at conventional drill-and-blast excavation as well as the Shotcrete Method (also known as the Sequential Excavation Method or New Austrian Tunneling Method). We have extensive experience with cast-in-place concrete linings, pre-cast concrete segmental linings, steel linings, shotcrete linings, and the installation of steel supports and rock dowels.



# Mining Construction

Frontier-Kemper is committed to providing comprehensive mine development services to its owners and partners. A leader in the underground mining construction industry for more than 30 years, we have developed underground mines for coal, salt, copper and other minerals throughout North America under a variety of contract arrangements, including fixed-price, turn-key, and fee-based.

Frontier-Kemper has conventionally sunk more than 140 production, ventilation, and service shafts for mining projects in all types of geological conditions. Our processes allow safe and productive excavation without restrictions of shaft diameter or depth. Frontier-Kemper has driven slopes and other mine-specific excavations for mining applications in all types of ground conditions, at various lengths, sizes, and incline/decline angles.

In order to meet mine-development requirements, Frontier-Kemper utilizes a variety of methods and equipment for permissible or non-permissible applications. Frontier-Kemper is fully equipped to handle even the most demanding slope projects, utilizing either conventional drill-and-blast or roadheader techniques.



**Top Right:** Typical shaft sinking setup at a Kentucky coal mine.

**Bottom Left:** Finalized slope construction at a West Virginia coal mine.

Frontier-Kemper and its FKC-Lake Shore Division also provide clients mine-related development services, including the design, manufacture, and installation of permanent equipment such as headframes and underground bulk-materials handling systems, hoisting and ventilation systems, and mechanical and electrical systems.

In addition to our primary role as a heavy construction contractor, we provide mine owners and partners complete services in underground excavation engineering, evaluation, and design. Our in-house design group includes skilled professional engineers and draftsmen with experience in virtually every aspect of mine development, from headframe and shaft design to station layout and sump design. Frontier-Kemper has successfully designed hundreds of underground excavation projects of all sizes and complexity.

Frontier-Kemper's fabrication facility works closely with the engineering group and utilizes the latest welding technology for fabrication to manufacturing standards. The shop employs highly skilled welders and fabricators to produce products of unsurpassed quality. At our shop facility, we repair and rebuild all tools and equipment used by the Mine Development Group, and are considered OEM for Wagner Scooptram LHDs due to numerous MSHA-approved modifications we have made to equipment in order to meet permissibility requirements.

With more than 200 completed mine-development projects, Frontier-Kemper is one of the best-equipped, most experienced mining contractors operating in North America, and because of our long history of working in the mining industry, we are well-versed in all regulations of the Mine Safety and Health Administration.



# Drilling



**RAISE BORING** In 1976, Frontier-Kemper had the foresight to recognize that some coal-mining methods that were new at the time, such as longwall mining, would have a great impact on the need for ventilation shafts. That's when FKCI began working with the Ingersoll-Rand Company to jointly develop equipment that would be suitable for raise boring to the large diameters (15-to-18 feet) and depths (1,000 feet) necessary to construct these shafts. Up to that point, use of the raise boring method had been limited to the 10-foot-diameter range and applied mainly in hardrock metal mines.

Enter the RBM 211, with over 200,000-foot-pounds of torque. The system was developed complete with foundation frame, working platforms, rod storage, and a means for installing concrete lining. That system was later adapted for the slightly smaller RBM 7 SP and the giant Robbins 81R – which, in 1988, was used to bore a raise 2,145 feet deep with a diameter of 20 feet, 3 inches.

In recent years, FKCI has expanded its expertise to bore raises in highly populated urban areas. These drills are run by highly experienced teams, with many of the members having more than 20 years of raise boring experience. As a result, FKCI, which has bored more than 80,000 feet of raises in traditional mining-type environments, recently completed nearly 5,000 feet of raised shafts in New York City.



Left: 7 SP Raise Bore Machine setup in Manhattan, NY.

Right: FKCI's FK350MT Blind Drill; setup at an Indiana coal mine.

**BLIND DRILLING** To provide solutions for mechanically excavated deep and large-diameter blind drilled shafts, Frontier-Kemper, Wirth GmbH, and ACI entered a joint cooperation agreement to build a 350 metric ton blind shaft drilling system. The result is the FK350MT, one of the largest, safest, and most efficient A-Frame type drilling rigs in North America.

The FK350MT is equipped with many automatic features to enhance productivity and safety. These features, combined with the versatility of the A-Frame type mast, create a “one of a kind” rig never used before in the United States. As currently configured, the FK350MT has a working capacity of 350 metric tons, capable of drilling shafts up to 20 feet in diameter to depths of more than 1,000 feet.

The FK350MT's specialty drilling equipment – such as the rotary table, elevators, traveling block, swivel, kelly, drill pipe and all the bottom hole tools – are Wirth GmbH components specifically designed for large-diameter shaft drilling. FKCI designed and built all the other components, including the hoist, mast, substructure, hydraulic drive, and control station.

Frontier-Kemper employs some of the most experienced professionals in the shaft-drilling industry. The majority of our drilling crew is cross-trained in both raise boring and blind drilling, which means one efficient crew can construct multiple shafts utilizing either technique.

Frontier-Kemper has always been committed to providing cost-effective, technologically advanced solutions to owners in the mining and heavy civil industries. The addition of blind shaft drilling to our growing list of capabilities provides even more options to owners when their schedule or geological conditions warrant an alternative to conventional shaft sinking or raise boring.



# FKC-Lake Shore



**MINE EQUIPMENT** FKC-Lake Shore designs, builds, and furnishes turnkey hoisting systems and related equipment, vertical conveyance systems, elevators and related equipment, and Sanford Day Brakeman Cars. FKC-Lake Shore also provides Field Services to provide routine maintenance and support for those products.

**VERTICAL CONVEYANCE SYSTEMS** FKC-Lake Shore supplies innovative high-capacity FLEXOWELL® and POCKETLIFT® vertical conveyors to the mining and underground construction industries worldwide. In cooperation with Metso Minerals (Moers) GmbH on an exclusive basis in North America, and on selected projects in other areas, we supply and install state-of-the-art systems to convey ore and muck to the surface at rates up to 6,000 TPH and/or lift heights exceeding 1,500 feet.

**Top Left:** Installation of turn-key service hoisting system for a West Virginia mine.

**Top Right:** Material hoisting system designed to aid in the construction of the NYC Freedom Tower.

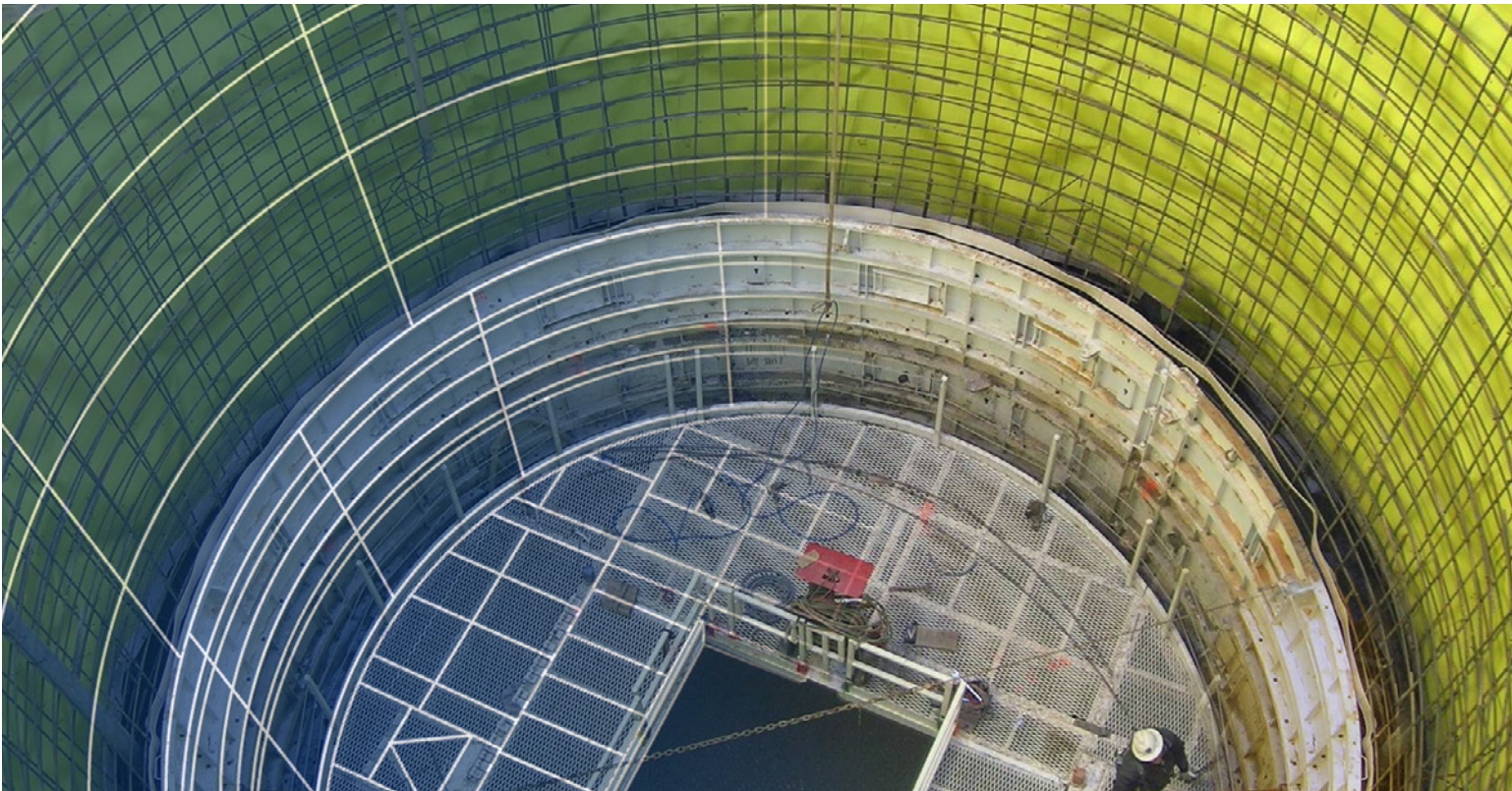
**Bottom Right:** Service hoist installation at a Kentucky mine.



**FIELD SERVICES** The FKC-Lake Shore Field Services Group offers a team of skilled, proven technicians who can perform many special tasks, including installing, upgrading, repairing, and maintaining FKC-Lake Shore products such as hoists, skips, skip loaders, cages, and elevators. We also specialize in these products' routine inspections and maintenance, such as rope changes. Even when we inspect hoisting equipment made by others, we can often make suggestions for improved service life.



# Technical Services



**DESIGN** In support of its primary role as a heavy construction contractor, Frontier-Kemper also provides owners and partners with complete engineering and design services for underground excavation. Frontier-Kemper's in-house design group includes skilled professional engineers and draftsmen with experience in virtually every aspect of mine shaft and slope development, from headframe and shaft design to station layout and sump design. Frontier-Kemper has successfully designed hundreds of underground excavation projects of all sizes and complexity.

With licensed engineers in the Electrical, Mechanical, and Civil Engineering disciplines, FKCI's design capabilities include:

- Large hoist control and power systems
- Emergency man hoists
- Surface and underground power distribution systems
- Specialized equipment
- Mine shaft and slope ground support
- Grouting
- Construction dewatering
- Water-tight linings

Above: Typical shaft sinking operations as designed by FKCI's Technical Services Group.

Right: Open cut slope excavation at a Southern Illinois coal mine.





# Electrical Services



The experts in Frontier-Kemper's Electrical Services Group can design, install, maintain and repair both surface and underground electrical controls and power systems for a wide range of applications. In 1985, our Electrical Services Group designed and installed Frontier-Kemper's first semi-automatic PLC-controlled hoist-control system. Since then, FKCI has designed and installed more than 50 slope, service, production, and emergency-escape hoist-control systems. Additionally, our Electrical Services Group has designed and installed more than a dozen personnel elevator systems since 1992.

**MINE HOISTS** FKCI's Electrical Services Group works with shaft, slope, production, or man and material hoists. Controls are designed utilizing AC and DC programmable controllers, digital drives, digital position systems, and operator interface terminals for reliability and low maintenance.

**MINE ELEVATORS** FKCI's Electrical Services Group provides mine elevator controls for elevator traction machines. These systems are designed with a digital DC drive, programmable controller, and digital position system for maximum safety and reliability. Operator Interface Terminals are incorporated to facilitate daily checkout of the elevator system and enhance troubleshooting. All systems are designed to meet ANSI A17.1 and MSHA requirements.

**EMERGENCY ESCAPE HOISTS** AC or DC, automatic or manual operation controls can be supplied for emergency-escape hoists. Small programmable controllers are utilized for reliability and easy field setup.

**WINCH CONTROLS** Control systems for work-deck winches include overspeed, overwind, and jammed-conveyance protection. Winch-control systems for form or utility winches are designed to meet customer requirements.

**VERTICAL LIFT CONVEYORS** FKCI's Electrical Services Group supplies low and medium-voltage control systems for vertical lift conveyors, associated feeder systems, storage bins, and take-off conveyors.

Frontier-Kemper also designs, installs, and maintains electrical control systems for tunnel boring machine controls and backup gear. Other services include raise bore machine conversion to DC and system upgrades, batch plant controls, pump control systems, fan starters, pneumatic materials conveying, and automation of existing hoist control systems.

**Top Left:** 600 HP slope hoist controls installed in a hoist house control room.

**Top Right:** Interior view of a typical elevator/hoist control MCC.



# Organization & Management

## Officers



From Left to Right, Top to Bottom: Dave Rogstad, President & CEO; Steve Redmond, VP of Civil Construction; Dana Markee, Chief Financial Officer; Don Ackerman, VP & Chief Estimator;

**CORPORATE OWNERSHIP** Tutor Perini Corporation is a leading civil and building construction company headquartered in Sylmar, California, offering diversified general contracting and design/build services to private clients and public agencies throughout the world. Tutor Perini has provided construction services since 1894 and had \$4.6 billion in revenue in 2021. Frontier-Kemper is a wholly-owned subsidiary of Tutor Perini Corporation.

### FRONTIER-KEMPER UNIT MANAGERS

Christine Linden – *Engineering Manager*

Dana Markee – *Chief Financial Officer*

Jim McMahon – *General Manager, FK-Lake Shore*

Kevin Smyth – *General Manager, Equipment & Shop Services*

Kyle Wooton – *Mine Division General Manager*

Justin West – *Human Resources Manager*

Stephen Horning – *Controller of Job Costs*

Steve Redmond – *VP of Civil Construction*





# Contact Information

## **HEADQUARTERS OFFICE**

15900 Olden Street  
Sylmar, CA 91342  
Phone: (818) 362-2062  
Fax: (818) 833-4289  
E-mail: [information@frontierkemper.com](mailto:information@frontierkemper.com)

## **MIDWEST DIVISION OFFICE**

1695 Allen Road  
Evansville, IN 47710  
PO Box 6690  
Evansville, IN 47719  
Phone: (812) 426-2741  
Fax: (812) 428-0337  
E-mail: [information@frontierkemper.com](mailto:information@frontierkemper.com)

## **NORTHEAST DIVISION OFFICE**

1000 Main Street  
New Rochelle, NY 10801  
Phone: (914) 738-0280  
Fax: (914) 738-0026  
E-mail: [information.nedo@frontierkemper.com](mailto:information.nedo@frontierkemper.com)