



PIPE REHABILITATION AND  
TUNNEL CONTRACTOR

## SAK is Well-Equipped to Tackle Your Tunneling Needs

Aging infrastructure is a major concern for water, wastewater and stormwater systems across the nation. Whether existing systems require relief or expansion, tunneling of varying sizes and in wide-ranging ground conditions is often necessary. SAK Construction has the expertise and equipment to handle large diameter tunneling needs for installing water, wastewater and stormwater pipelines, from 4-foot diameter to 32-foot arch-shaped SEM tunnels. The company's key management staff brings more than 160 years combined experience working on and managing hundreds of projects in the tunnel and pipeline rehabilitation industry. That experience encompasses projects ranging in scope from \$25,000 to \$80 million.

SAK management and personnel are well-versed in the construction of soft-ground hand-mined tunneling, drill-and-blast tunneling, and tunnel construction with both soft-ground and hard-rock tunnel-boring machines of all types.

“As a general contractor responsible for a multi-disciplinary project of this magnitude, it is very important for us to have the right partner as our subcontractor; one that we can depend on to deliver quality work on schedule. The people at SAK are veterans in the tunneling industry and Bates Utility has worked successfully with them many times.”

**--KRIS BATES**  
*Bates Utility Co.*  
*Weldon Spring, Mo.*



## SAK CAN HANDLE TUNNELS UP TO 32-FOOT ARCH, WHATEVER THE SOIL CONDITIONS

Large diameter tunneling, which is suitable for any soil condition, accommodates a wide size and scope of projects, and is often required for sewer line, water line or storm drain installation; it is also utilized for other types of projects that exceed the capabilities of auger-boring equipment and conventional open-trench construction.

- **Soft-Ground Tunneling.** Soft ground consists of various mixtures of clay, silt or sand, and may be found in different consistencies from “firm” to “running.” In soft-ground conditions, SAK has the capability to hand-mine, use slurry pressure balance tunnel-boring machines, and use earth pressure balance machines. Applications for soft-ground tunneling include sanitary and storm sewers, and water; highway, mass transit, utility and pedestrian tunnels.
- **Soft-Rock, Hard-Rock Tunneling.** Soft rock comes in many forms, including different types of mudstone, siltstone, sandstone and shale. Common types of hard rock include granite and limestone. SAK has the capability to tunnel into the varying types of rock with drill-and-blast and open main beam, single shield and double shield tunnel-boring machines. Applications for hard- or soft-rock tunneling include sanitary and storm sewers, and water; highway, mass transit, utility and pedestrian tunnels.
- **Hand-Mined Tunneling.** SAK has completed various shapes and sizes of hand-mined tunnels in many different soil types, using liner plate, rib-and-board and timber sets to support the soil or rock. Applications for hand-mined tunneling includes starter tunnels, tail tunnels, utility tunnels, road crossing tunnels, and connecting tunnels for structures.



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