

Subsurface Constructors

Earth Retention

MetroLink extension



1.4-mile-long tunnel shoring for the MetroLink

Subsurface Constructors built an [earth retention system](#) for a 1.4-mile-long stretch of the MetroLink Cross-County Extension Project in St. Louis, Missouri.

The project required excavation depths of up to 40 feet through varying soil conditions and sometimes tight easement restrictions. Given its length and the depths of the tunnels and stations, this project called for the largest amount of shoring systems ever built in a single St. Louis construction project.

On this project, Subsurface Constructors served as the shoring contractor for more than 440,000 square feet of earth retention on the cut and cover section. We designed and constructed several types of systems, including: cantilevered and tied-back soldier beam walls, a 40,000-square-foot soil nail wall, secant walls and a double row strut and waler system.

The soldier beam walls consisted of both face-mounted wood lagging and welded, wire-reinforced gunnite. The walls of the shoring systems were also used as a one-sided form for tunnel walls in some sections.

Project details:

Owner: Metro St. Louis

Geotechnical Engineer: URS Corporation

General Contractor: McCarthy Corporation

Services Provided: Earth Retention

Year: 2004

Location: St. Louis, Missouri