

# Subsurface Constructors

Deep Foundation, Earth Retention

## Lumiere Casino Construction



### Drilled shafts and earth retention for a downtown casino

Subsurface Constructors was selected to install the [drilled shafts](#) for Pinnacle Entertainment's \$430 million downtown St. Louis casino, luxury hotel and parking garage.

As part of our value-engineering proposal, we performed an Osterberg Load Cell Test in an attempt to decrease the design diameters and rock socket lengths of the drilled shafts. As a result of the test, we significantly shortened the rock sockets and decreased shaft diameters from six feet to five feet, saving the project roughly \$200,000. Subsurface used six drill rigs to install 340 drilled shafts in a three-to-four month period. Final rock sockets for the drilled shafts ranged from five to twelve feet.

In addition to the foundation work, we designed and constructed 24,000 square feet of temporary shoring to allow for a 20-foot excavation in the structure footprint.

### Project details:

**Owner:** Pinnacle Casino

**Geotechnical Engineer:** Geotechnology, Inc.

**General Contractor:** McCarthy Building Company

**Services Provided:** Drilled Shafts, Earth Retention, Value Engineering

**Year:** 2007

**Location:** St. Louis, Missouri