



Key achievements

- Installed a 6-level subterranean parking structure in 6 months—a feat never before accomplished.
- Mobilized 4 hydromills—3 operational, and one standby to ensure successful project completion.

The project

The severe geologic conditions (Caliche rock of strengths up to 20,000 psi) encountered in the Las Vegas Valley lend themselves perfectly to the installation of deep reinforced concrete diaphragm walls by the use of trench cutter technology. In order to achieve the installation of over 300,000 square feet of slurry wall in 6 months, Bencor mobilized 4 hydromills, 3 operational, and one standby. This equipment proved effective for excavation through the difficult Caliche rock layers. Never in the history of North American deep foundation installation has a 6-level subterranean parking structure been successfully installed using the diaphragm wall technique in such a short time period.

The solution

Bencor installed approximately 330,000 square feet of reinforced concrete slurry walls with a thickness of 30 inches and to a depth of 105 feet using 3 reverse-circulation trench cutters (hydromills). Bencor fabricated the reinforcing steel cages on the 8 acre jobsite, then installed the cages and the approximately 12,000 cubic yards of 4,500 psi concrete via tremie. The jobsite logistics of coordinating three trench cutters, three separate desanding/slurry plants, the reinforcing steel fabrication, and concrete placement all under a very tight schedule was quite challenging. The entire slurry wall project was installed in 6 months.

Application

Support of Excavation /
Deep Foundations

Technique

Slurry/Diaphragm Walls /
Anchors

Market

Commercial

Client

Cosmopolitan Resort & Casino

Main contractor

Perini Building Company

Engineer

N/A

Keller business unit (s)

Bencor