

### GEODAQ DELIVERED:

- ▶ Two in-place inclinometers per key-block cell, installed inside standard 2.75-inch diameter casing, attached to the steel sections of secant pile walls.
- ▶ Up to 66 vibrating wire strain gauges per key-block cell, monitoring axial loads in struts and wales at each bracing level.
- ▶ Solar-powered monitoring station with GCM controller module and wireless internet modem in protective casing.
- ▶ Dedicated server, secure database, and redundant backup for data storage.
- ▶ Instant evaluation of readings, including complete displacement profiles, axial forces in struts and wales, and comparison to threshold levels established by Berti-Lindquist Consulting Engineers, the excavation support system design engineer.
- ▶ Password-protected web interface for data monitoring and analysis by the project team.

*"GEODAQ'S automated monitoring system and web tools saved us money. That was obvious after we'd used them for just a few weeks."*

Drew Weichert, Construction Manager  
Shimmick Construction

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GEODAQ

## Folsom, California

# KEY-BLOCK CELL EXCAVATION MONITORING AT MORMON ISLAND AUXILIARY DAM

### OVERVIEW

The Mormon Island Auxiliary Dam is an earthen dam at Folsom Lake, 4,820 feet long and 110 feet high. To improve seismic safety in the dam and its foundation, the U.S Bureau of Reclamation is adding seven adjacent key-block cells to the dam. Shimmick Construction needed comprehensive, reliable real-time monitoring of forces and displacements in the walls and bracing for the 80 foot deep cell excavations.

### SOLUTION

GEODAQ attached its proprietary in-place inclinometers to the secant pile walls for the excavations and installed vibrating wire strain gauges at each bracing level. Solar-powered wireless monitoring equipment collects and transmits their readings. The readings are evaluated instantly as they arrive at GEODAQ's server and compared to threshold levels established by Berti-Lindquist Consulting Engineers. Password-protected web-based data delivery allows all project members to check pile wall displacements and bracing forces in real time, 24 hours a day.

