

SITE PREPARATION

NEW CONSTRUCTION

REMEDIAL REPAIR

HELICAL PULLDOWN® MICROPILE

ATLAS RESISTANCE® PIERS

» HELICAL UNDERPINNING

EARTH RETENTION

RETAINING WALLS

HELICAL TIEBACK

SOIL SCREW®

PIPELINE STABILIZATION

TELECOM/SUBSTATION

UTILITY/SOLAR

CHANCE® DISTRIBUTOR

**ROCKY MOUNTAIN STEEL FOUNDATIONS**  
Kalispell, MT

CERTIFIED CHANCE®  
INSTALLER

**MONTANA HELICAL PIERS**  
Kalispell, MT

PROJECT ENGINEER

**KLJ ENGINEERS**  
Great Falls, MT & Bozeman, MT

GENERAL CONTRACTOR

**CUCANCIC CONSTRUCTION, INC.**  
Billings, MT

Hubbell Power Systems, Inc. is the world's leading helical pile/anchor manufacturer. The CHANCE® brand offers a technically advanced, cost effective solution for the Civil Construction and Electric Utility and Telecommunications markets.

# Helena Town Pump Convenience Store Addition



“ The unique part about this challenge was supporting the existing frost wall for the excavation to take place. This was a total vertical cut of 7 ft., you more typically see a 1 to 1 slope of the soils. ”

-IAN ROMAIN, P.E. OF ROCKY MOUNTAIN STEEL FOUNDATIONS

**PROJECT:**

Store expansion in Helena, MT required support of the existing frost wall during excavation and pouring of the new concrete basement expansion.

**PROBLEM:**

Local town pump needed to expand the convenience store, which involved a basement addition and a need for a vertical cut through clay. The basement addition required the support of the existing frost wall during excavation and concrete pour.

*continued*



### THE SOLUTION:

KLJ Engineers (Great Falls & Bozeman, MT) having previously worked with Rocky Mountain Steel Foundations (RMSF) on other projects, reached out to discuss options for the new basement required next to an existing slab on grade /frost wall foundation. Ian Romain, P.E. of RMSF explains, "The unique part about this challenge was supporting the existing frost wall for the excavation to take place. This was a total vertical cut of 7 ft., you more typically see a 1 to 1 slope of the soils." After fully assessing the structural needs of the building, it was determined that CHANCE SS5 Helical Piles and Underpinning Brackets would be utilized to support the wall, and allow for a vertical cut of the soils.

The installation crew from Montana Helical Piers of Kalispell, MT, worked quickly to first prep the footing and then install each pile with a skid steer to meet the height restrictions. The helical piles installed smoothly through the clay and into gravel mix deep below. Each of the 7 helical piles were installed at a minimum of 15 ft. After the installation, the excavation began. The first 3'-6" cut of soil was made, re-bar placed and overlaid with a shotcrete facing. The remaining depth was then excavated, reinforced and overlaid to meet the total depth required for the construction of the basement foundation.

Through a collaborative effort of KLJ Engineers and Rocky Mountain Steel Foundations, the design of the foundation support provided an economical solution and allowed for immediate loading. This solution also allowed the convenience store to maintain occupancy during the construction since there was no vibration or noise issues for the business to compete with.

### KEY BENEFITS:

- LIMITED ACCESS
- TIME TO INSTALL FASTER THAN CONCRETE
- STANDARD EQUIPMENT FOR INSTALLATION
- LABOR SAVINGS - SMALLER CREWS
- IMMEDIATE LOADING
- LOW TO NO VIBRATION/NOISE

