

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

DESIGN ENGINEERS

**USKH INC./STRATA GEOTECH**  
Spokane, WA/Pullman, WA

GENERAL CONTRACTOR

**CHERVENELL CONSTRUCTION CO.**  
Kennewick, WA

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.

# Deep Foundation Water Tank Support

“ Speed of installation was definitely a selling point. In this case, we were in and out in two days, compared to a week or more for other solutions. ”

-IAN ROMAIN, PE, CHIEF MARKETING ENGINEER, ROCKY MOUNTAIN STEEL FOUNDATIONS (RMSF)



**PROJECT:**

120,000 gallon water tank installation with a deep foundation system on alluvial soil for a middle school in Touchet(Too-she), Washington.

**PROBLEM:**

Foundation system design and installation to hold a new water tank in poor soil conditions while the school is in session.

**THE SOLUTION:**

USKH Inc. prepared the design plans using 12-inch steel driven pipe. The general contractor, Chervenell Construction Co, contracted Montana Helical Piers in Kalispell, MT for the installation.

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Montana Helical proposed an alternative solution utilizing CHANCE® Helical Piles. From a material standpoint and given the anticipated depth, helical piles are less expensive, utilize smaller equipment, provide faster installation and the material is readily available.

Ian Romain, P.E., of RMSF explains, “Speed of Installation was definitely a selling point. In this case, Montana Helical completed the job in two days, compared to a week or more for other solutions. A shorter installation time gives a general contractor more flexibility with the overall construction schedule.”

Montana Helical installed 37, SS150 CHANCE® Helical Piles. Lead sections had two helices each, 8 and 10 inches in diameter. The crew installed the piles using a ASV100 skid steer with a hydraulic drive-head to an average depth of 28 feet.

Of the 37 piles, 12 were battered at 40 degrees. “We had to batter the outer ring of piles to address lateral loading needs. There were seismic considerations in the design. With a water tank of that size, if the ground shakes, there is potential for differential settlement without a deep foundation,” continues Romain.

The helical pile system was finished by cutting each pile and topped with a New Construction Cap. Each cap sits above grade to be casted inside the poured concrete slab the water tank will rest on. Full scale load test per ASTM D3689 was performed to verify capacity.

**KEY BENEFITS:**

CHANCE helical piles outperformed the original plans for driven pipe. The piles were less expensive, had low to no vibration/noise and installed faster than driven piles allowing time for the general contractor to keep the project on schedule. Classes remained in-session nearby during the installation.

