

Blackfalds Lift Station

Blackfalds, Alberta, Canada

Keller provided a design-build solution of a circular secant pile wall to retain earth and aid excavation.



The project

The North Red Deer Regional Wastewater Services Commission announced the construction of a wastewater pipeline to connect the City of Lacombe, the Town of Blackfalds, and Lacombe County to the regional water treatment facility. Keller provided the design-build circular secant pile wall for the Blackfalds Lift Station.

The challenge

The verticality of the secant piles was critical to avoid any gaps in the wall that could have compromised the structural integrity and allowed water infiltration. Keller proposed segmental casing as the optimal installation method and was awarded the project based on previous successful work with the main contractor, construction methodology, and meeting budget requirements.

The solution

Keller design-built a circular secant pile wall with an excavated diameter of 26 m and retained height of 7 m. The system formed a compression ring wall to retain earth and aid excavation for the utility lift station. A scalloped cast-in-place guide wall was constructed to lock the piles together at the top of the wall. All piles were checked for verticality. Sequence planning was critical, as crews worked in a Monday to Thursday rotation cycle. Keller's construction methodology eliminated pile kick-off risk associated with three days between pile construction.

Project facts

Owner(s)

Town of Blackfalds

Keller business unit(s)

Keller

Main contractor(s)

Alpha Construction Inc.

Engineer(s)

Stantec Inc.

Solutions

Support of excavation

Markets

Infrastructure

Water, sewage and waste disposal

Techniques

Secant or tangent (contiguous) piles

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