BUILDINGS

RED DEER COLLEGE SPORTS COMPLEX

CIP Belled Concrete Piles

CANADA

Owner
Red Deer College
Engineer
Stantec Consulting
General contractor
Clark Builders/Scott Builders
Period of works
January 2019-December 2019

Main figures

Geotechnical specialities
Design and construction of 287 bored CIP belled concrete piles

Project description

Three Watson 2100 Rubber tire drill rigs were used to construct the bored cast-in-pace belled concrete piles.
Piles founded at 10.5m below top of slab where the bells were constructed to various diameters from 900mm to 2,230mm.

Ground conditions

Topsoil/Fill to 2.0m
Clay, Silty, firm to stiff, high plastic, brown, moist to 8.0m
Till, Clay some silt, grey, firm to very stiff. Low to medium plastic to 15.0m

Solution

SB Canada provided a value engineered design alternate {utilizing a static load test prior to construction of production piles to prove the Geotechnical design parameters} and were awarded the project on this basis. {The static load test piles were constructed two weeks in advance of the main piling works to allow for the load test to take place when concrete reached a 7 day strength of 25 MPa or greater. SB Canada self-performed the static load test, using our load test set up, to perform a successful test achieving a final load of 225% of the design load and moving the pile 50.38mm. Structural and Geotechnical consultants approved the results provided by SB Canada to proceed with our alternate pile design. }
Three Watson 2100 Rubber tire drill rig used to construct the bored cast-in-place belled concrete piles.
Piles with shaft diameters from 400mm to 750mm were founded at 10.5m below top of slab where the bells were constructed to various diameters from 900mm to 2,230mm.
SB Canada successfully completed the project on time and within budget. The client was very impressed with SB Canada's performance, quality, and expertise both on site and in the office.