

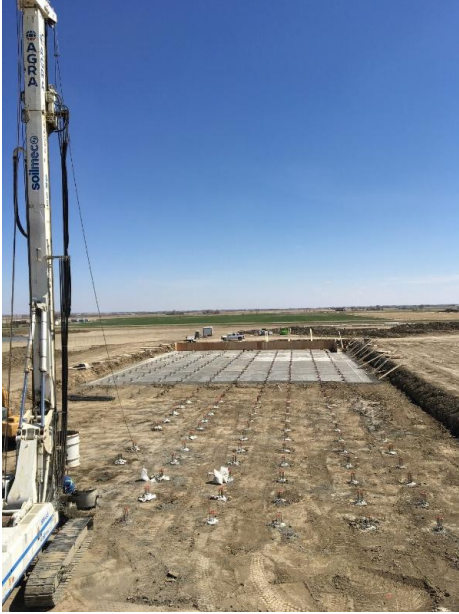


BUILDINGS

CAVENDISH FARMS

CIP Belled and CFA Piles

CANADA



Owner

J.D. Irving Limited

Engineer

AGRA Foundations Limited

General contractor

EllisDon

Period of works

December 2017-September 2018

Main figures

Piling

Construction of 1031 foundation piles for a new state of the art potato factory.

CFA

350 deep CFA piles.



Project description

Of the 1031 piles installed, 681 were cast in place piles with an enlarged base or straight shaft. SB Canada took advantage of the stiff clays at a relatively shallow depth to form belled piles. Also, 350 deep CFA piles, 400mm diameter, were installed under a massive 35,000 sqft freezer building. A fully instrumented CFA test pile was installed in this area to optimise the pile design. SB Canada worked with the slab designer to optimise the pile centres to reduce the structural slab's thickness.

Ground conditions

Soil stratigraphy was mainly stiff clay till deposits with occasional wet sand and silt lenses.

Solution

During tender, SB Canada recognized potential savings to take over the project design responsibility. Using load test data, the piles sizes were optimized to provide an economical design suited for the multiple rig types on site.

The 35,000sqft freezer next to the processing plant had particularly concerning soils underneath it. SB Canada suggested pursuing CFA piles, rather than belled piles for this area, to avoid cost and schedule over runs. An instrumented load test was completed which proved the required soil performance and reduced the pile sizes by 50%. Changing piling techniques also allowed for closely spaced piles to be installed which substantially decreased the thickness of the foundation slab.

The piles were installed on schedule and within the original budget, even though the piling scope grew to be much larger than originally expected.



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