



Highway 407 Extension Phase II

Piling

Durham, ON

+ Project Snapshot

- \$1.2 Billion Project
- 32Km of new tolled-highway
- 8 new interchanges
- 35 new structures requiring deep foundations
- 42,000m of piles driven

+ Project Background

At the eastern end of the Greater Toronto Area, the communities of Pickering, Ajax, Oshawa, Whitby and Clarington have been experiencing substantial growth. To address this growth and congestion, the extension of Highway 407 was proposed under Infrastructure Ontario's Design, Build, Finance and Maintain model. Phase 1 (Hwy 407 extension from Brock Rd. in Pickering to Harmony Rd. in Oshawa, as well as Hwy 412) was officially opened in June of 2016. Phase 2 (Hwy 407 extension from Harmony Rd. in Oshawa to Hwy 35/115 in Clarington, as well as Hwy 418) was awarded Blackbird Infrastructure, which is a partnership between CRH Canada Group Inc. and Cintra Infraestructuras. This phase is expected to be open to the public by December 2019

+ Project Description

The challenge of this project is weaving a highway through existing communities, roads, infrastructure and existing watercourses while aiming for seamless incorporation. It requires careful design to minimize disruption, and substantial planning of operations. Often work was done adjacent to live roads where staging of operations was important, as well as traffic management. In other areas, work was completed through wetlands, where new access roads and substantial site preparation was required. Across the 32km of highway, ground conditions would vary substantially. Even though, borehole information was available, it was uncommon for the piles to obtain capacity



Owner
Blackbird Infrastructure/MTO
General Contractor
Blackbird Constructors

SB Canada Personnel
Mark Reinders
Period of Work
March 2016 - August 2018



at the anticipated depths. This would require SB Canada to react quickly to either verify if the revised capacity is sufficient, or source additional material for splicing

+ Innovative Solutions

SB Canada was capable of ramping up substantially to meet the client's schedule demands. At the peak of their work, 5 cranes were on site rigged up with a Vertical Travel Lead (VTL) system, as well as a Diesel Impact Hammer. Coordination



between the structures was key, to ensure there was continuous flow of work for the piling rigs, welding crews, and material handling crews. SB Canada also acted as a key partner when working to problem solve difficult ground conditions. Through evolving operations, one crane was able to pre-drill through dense ground, install sheet piles with a vibratory hammer, impact drive pipe piles, drill through pipe piles, set up splicing, and facilitate concrete placement. All work was done through close communication with the client to ensure