

LNGC Heavy Haul Bridges

Kitimat, British Columbia, Canada

A joint venture between Keller, Haisla, and Ledcor Foundations provides a deep foundation solution for bridge replacement.



The project

Three replacement bridges were constructed along the LNG Canada Heavy Haul Road: Anderson Creek, Moore Creek, and Alcan Way Bridge. Both Anderson and Moore Creek bridges are located on the Southern Haul Road and built to support very large modules (up to 12,842 tons/11,650 metric tons) transported from the coastline material offloading facility to the project site. The Alcan Way Bridge is located on the North Haul Road to support the haul truck fleets.

The challenge

- Traffic flow could not be disrupted during construction without prior approval.
- Site proximity to environmentally sensitive fish-bearing creeks.
- Working in extreme winter weather conditions, including heavy snow and subzero temperatures.

The solution

As a joint venture, Keller, Ledcor Foundations, and Haisla (LKH) were subcontracted to install a deep foundations solution for the bridge construction. The project's scope included the installation of 136 open-ended 30 in. (762 mm) ID vertical and battered driven piles up to 174 ft (53 m) below grade along with 128 pile plugs and 8 pile caps.

Using their joint expertise in piling work, the team chose a Junttan PM 25 hydraulic piling rig to install piles. The rig has a small footprint and runs a hydraulic hammer, allowing the existing bridges to continue throughout construction, with no impact on the adjacent creeks. The turbidity threshold was monitored closely. And a “heat and hoard” technique was successfully used to infill the piles during extreme winter weather.

Static axial compression and high strain dynamic load tests were conducted to confirm that the performance criteria were met.

Project facts

Owner(s)

JGC Corporation and Fluor Corporation JV (JFJV) and LNG Canada

Keller business unit(s)

Keller

Main contractor(s)

Ledcor Haisla Limited Partnership

Engineer(s)

Thurber Engineering (BC & AB)

Solutions

Deep foundations

Markets

Infrastructure
Transportation

Techniques

Driven piles

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