

PROJECT PROFILE



November 6, 2019

Bolt-A-Plate and Steel Sheet Piling create an efficient solution on Yukon Highway 4 culvert project

Solution well-suited to this remote site, installed with a local assembly crew using conventional equipment

Yukon Highway 4, also known as the Robert Campbell Highway, is a two-lane, partially gravelled road connecting Watson Lake to Carmacks — a distance of 583 km. As part of planned capital improvements, three existing round culverts at Lucky Creek required replacement. Two were 1.5 m in diameter and one was 1.8 m.

During the planning process, AIL provided technical support to the Yukon Government Department of Highways and Public Works staff in selecting a suitable design and shape. Given the soft foundation soils and the desire for a more open-flow solution, a 7.45 m wide Bolt-A-Plate Horizontal Ellipse was chosen.

Project at a glance:

Name: Lucky Creek Culvert

Location: Watson Lake, Yukon

Owner/Engineer: Yukon Government (Highways and Public Works)

Contractor: P.S. Sidhu Trucking Ltd.

Sector: Transportation, Northern

Application: Culvert

Products: Bolt–A–Plate Horizontal Ellipse, Steel Sheet Piling

Dimensions: Span 7.45 m, Rise 4.45 m, Length 25.7 m

Installation Time: One week for plate assembly, two weeks for headwall assembly and backfilling



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The tender also required the design and supply of 8.5 m tall Steel Sheet Piling Headwalls and Wingwalls at both the upstream and downstream ends.

These walls acted as embedded cut-off walls and reduced the overall footprint of the crossing, saving gravel quantities and structure length. AIL completed various design runs to optimize the structure with respect to the fascia steel, tie-backs and deadman anchors.

The nested culvert and wall components were shipped on two flatbeds and arrived at the remote site on time. AIL representatives were onsite to participate in a pre-construction meeting and, again, to offer support during the plate assembly.

The AIL Bolt-A-Plate and Steel Sheet Piling solution was wellsuited to this remote site as it could be installed with a local assembly crew using conventional equipment.

"AIL supported the project from concept to completion, offering pre-design support in helping select a suitable structure cross-section shape, reviewing the end wall design during the shop-drawing preparation, then traveling to the job-site to provide on-site support." — Brian Crist, Yukon Government (Highways and Public Works)

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