



Atlantic Industries Limited

PROJECT PROFILE



November 17, 2018

Large GRS Bridge perfect solution for Northern Alberta access road

A large AIL Geotextile Reinforced Soil (GRS) Bridge was the perfect solution to replace an aging two-lane bridge on an oil and gas access road near Conklin, Alberta. The project's challenges included poor foundation soils, a high water table, a wide-span-low-rise geometry and the inclusion of an existing fibre-optic utility line.

The largest Geotextile Reinforced Soil (GRS) Bridge ever built

Project partners looking for fast solutions in remote locations frequently specify AIL GRS Bridges and we have many projects in our portfolio. However, with a 16.5 m span, this was the largest and one of the more complex projects to date.

Working with our partners, Terratech Consulting (Design Engineer) and Landmark Solutions (Installation Contractor), AIL supplied a GRS Super-Cor Arch to handle the tight geometry. Terratech and Landmark did the heavy lifting to pull the project together.

Project at a glance:

Name: Sunday Creek Crossing

Location: About 20 km southeast of Conklin, Alberta

Owner: Cenovus Energy Inc.

Engineer: Terratech Consulting Ltd.

Contractor: Landmark Solutions

Product: AIL Geotextile Reinforced Soil (GRS) Bridge and Walls

Application: Stream Crossing

Sector: Northern, Mining & Energy

Dimensions: Span 16.5 m, Rise 5.5 m, Length 25.1 m

Installation Time: Once foundations were prepared and footings installed, the arch was erected in four days, allowing GRS backfill to commence immediately after.



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Here's how the project rolled out:

- Working with Terratech's design, AIL supplied shop drawings, the Super-Cor Arch, and the GRS anchor rods.
- A temporary detour road and timber-pile-supported bridge was built to maintain 24/7 access.
- Sheet pile was driven and soils excavated to the design depth with accommodation of the existing fibre-optic line.
- Well points were used to manage the site water and prevent saturation of foundation soils during construction.
- A rock layer provided a capillary break to prevent vertical movement of ground water.
- Due to poor foundation soils, a timber-pile-supported load transfer platform was installed before the concrete footings.
- Precast concrete footings were placed on a compacted GRS foundation.
- On-site-pre-assembled arch rings were attached to the embedded steel channels on the precast footings.
- The GRS backfill for the structure and the headwalls, complete with anchor rods, ensured the arch shape and wall shapes were maintained during and after construction.
- Once final grade was achieved, guardrails were attached and disturbed areas protected with coco-mat and grass seed.



The old bridge had a poor vertical alignment with the surrounding grades. This was significantly improved by our low-rise solution and the road was returned to full service with a long-term, low-maintenance structure that is well-suited to Northern conditions.

AIL GRS Bridges put the dirt to work

AIL GRS Bridges are patented buried bridge systems that put the dirt to work as dead and live loads are supported by the surrounding GRS compacted soil mass – multiple layers of geotextile and steel anchor rods. They are usually constructed using local materials and equipment. These fish and wildlife-friendly solutions are scour and piping resistant and they are very quick to install.

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