



Atlantic Industries Limited

# PROJECT PROFILE



## Traffic keeps rolling as BC GRS Bridge installs in just eight days

As part of a major realignment on a forestry service road about 30 km west of Mackenzie, BC, the Ministry of Forests, Lands and Natural Resource Operations needed to find a quick, economical and environmentally friendly solution to replace two smaller failing culverts. An AIL Geotextile Reinforced Soil (GRS) Bridge proved to be the perfect solution.

### GRS technology “puts the dirt to work”

GRS technology connects the arch structure to the backfill/geotextile composite with a series of steel anchor rods to effectively transfer the loads into the surrounding GRS composite mass. This innovation brings a wide array of benefits and resource road operators are taking notice.

- Light weight and ships economically to site
- Ideal for remote locations
- No need for concrete or pile footings
- Allows for wide range of backfills
- High settlement tolerance
- Open-bottom, fish-friendly design

### Project at a glance:

**Name:** Finlay FSR KM 28.8 Structure

**Location:** Approximately 30 km west of Mackenzie, BC

**Owner:** BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development

**Consultant:** Terratech Consulting Ltd.

**Contractor:** Platinum Stone Contracting Ltd.

**Product:** Geotextile Reinforced Soil Bridge with Headwalls

**Sector:** Forestry

**Application:** Stream Crossing (Replacement)

**Dimensions:** Span 4.3 m, Rise 1.8 m, Length 30.5 m

**Installation Time:** 8 days, July 20-27, 2015





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- Less encroachment on streams
- Low maintenance costs

## Poor foundation soils, deep cover – perfect for GRS Bridges

The foundation conditions were saturated loose sand and the desired cover height was quite high. The GRS structure was the perfect solution considering these conditions. A conventional arch with concrete footings would have required significant work to prepare the foundation for the footing – greatly increasing the project's risk and cost.

## GRS means a better, open-flow fish passage

This stream has an S3 classification with an important habitat rating. Replacing the two smaller culverts with one larger, fish-friendly GRS arch provided an improved fish passage with minimal impact on habitat. It also allowed for a significant increase in flow capacity and less potential for future flooding or embankment failure.

## GRS means minimal road closure

Finlay FSR serves both the forestry industry and two local First Nations communities, so it needed to stay open during construction. Our GRS Bridge solution was able to be built in and around a temporary detour bridge that actually used our GRS wing wall structures for abutments. This saved significant time and cost for both structures. Traffic disruptions were kept to a minimum and the safety of the site was well maintained.

## GRS means a safer crossing

In keeping with the Ministry's current initiatives to improve resource road safety, our GRS structure, with headwalls and wingwalls, facilitated widening and raising the road to improve sight lines and travel speeds.

AIL provided site guidance for the assembly of the arch components and we visited the site numerous times to see how things were going. Our project partners were pleased with the outcome:



*"The project was tendered with several possible concept designs allowed and contractors were required to select concept design and complete the final design subject to meeting minimum criteria and meeting with our expectation. The AIL Geotextile Reinforced Soil Bridge proposed by Platinum Stone proved to be the most cost-effective option proposed. Terratech, AIL and Platinum Stone formed a very good team and were a pleasure to work with."*

— Joe Kenny, P.Eng., Engineering Group Leader – North BC Ministry of Forests, Lands and Natural Resource Operations

*"From design to construction, we were very satisfied with AIL, particularly the continual updates and overall communication with Scott Chipman during the planning process. The entire order arrived ahead of time and was installed for a timely completion."*

— Scott Schols, President, Platinum Stone Contracting Ltd.

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