Atlantic Industries Limited

PROJECT PROFILE

September 3, 2019

Value engineered composite backfill makes big difference on Super•Cor grade separation in PEI

Material was sourced right at the construction site — greatly reducing the overall cost of the installation

VALUE ENGINEERING CASE STUDY

Prince Edward Island — famous for its iron-rich red soil — does not have good quality aggregate typically used for backfill around buried structures. Consequently, aggregate is very expensive as it needs to be imported from other provinces, and buried arch bridges need a lot of engineered backfill. This was a major factor in the cost of this Trans Canada Highway grade separation at Baltic Road near Clyde River.

Project at a glance:

Name: Baltic Road Arch at Trans Canada Highway

Location: Clyde River, PEI

Owner: PEI Transportation, Infrastructure and Energy

Engineer / Geotechnical Consultant: Fundy Engineering Ltd.

Contractor: Highfield Construction Ltd.

Sector: Value Engineering, Transportation

Application: Grade Separation

Product: Super•Cor Arch with MSE Precast Panel Walls

Arch Dimensions: Span 12 m, Rise 6.35 m, Length 23.7 m

Installation Time: Five days for arch, three weeks for walls and backfill

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To counter this, AIL partnered with Fundy Engineering Ltd., a regional firm with proven geotechnical expertise, to develop a locally sourced, composite backfill zone around the Super•Cor Arch and behind the MSE Precast Panel Walls. The material was sourced right at the construction site — greatly reducing the overall cost of the installation.

Similar composite backfill solution used on another PEI project
Fundy's geotechnical consultant had previously worked with AIL on a similar Super•Cor Arch crossing at Linwood Road, using the same technologies to validate its foundation capacity and qualify its backfill parameters.

The completion date on this project was very important, as sub-grade backfill needed to cross over the arch by a critical date in order to open the larger highway section to the public.

AIL worked closely with the PEI Department of Transportation, Infrastructure and Energy and the contractor to develop the layout of the arch and walls, using 3D Civil drawing software. Timely delivery of the structures was critical to meet the tight construction schedule and we collaborated with the contractor to confirm the scope of work met contract requirements.

The project was completed on or before the deadline and under budget. The Department was pleased with this outcome.

Take a drone-video tour of this Super-Cor Buried Bridge with MSE Precast Panel Headwalls and Wingwalls in Ashlar Stone texture

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