

# **Project Profile**



June 13, 2019

## Triple-span bridge joins Nova Scotia rail-bed trail over busy highway

Algonquin Bridge recently completed a large trail bridge project for the Nova Scotia Department of Transportation and Infrastructure Renewal (NSTIR) near the town of Digby in the western end of the province. The new crossing connects a popular multi-use trail system and will greatly improve safety issues with ATVers, cyclists and pedestrians crossing busy Highway 101.

Design-Build project to accommodate future highway twinning

Built in three sections of 35 m each, this expansive Bowstring Truss design is ready for the possible future development of a twinned



### Project at a glance:

Project Name: Digby Trail Bridge

Location: Digby, Nova Scotia

**Owner:** Nova Scotia Department of Transportation and Infrastructure Renewal

Engineer: Harbourside Engineering Consultants

Contractor: Mid Valley Construction 1997 Ltd.

Sector: Transportation

Product: Prefabricated Pedestrian/Trail Bridge

Application: Highway Crossing

Dimensions: Length 105 m, Width 4 m

Installation Time: Three days



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highway in the area, while still maintaining the local Trunk 1. This bridge is our second Bowstring Truss trail crossing for NSTIR — our previous project opened in 2017 over the new Ingramport connector road at Exit 5A on Highway 103.

#### Larger Design-Build project had a few challenges

The Algonquin team is no stranger to addressing project challenges, but the multi-span aspect of this one brought some unique ones, including: poor foundation soils for the piers, essentially delivering three bridges at once and ensuring smooth transitions where the slope changed between the spans.

We worked closely with the consultant to strategically place the fixed and free (sliding) bearings to limit the reactions on the piers and abutments. One of the piers has fixed bearings while the other has a fixed bearing and a laminated elastometric bearing that allows for rotation due to deflection and longitudinal thermal expansion of the steel.

Accounting for expansion, we supplied threshold plates to cover the slight gaps at the abutments and piers. We also custom-fabricated railing infill pieces based on site measurements to close the small gaps between spans and ensure a perfect fit.

The project was delivered on time and each span was lifted onto the bearings, precisely fitting into the tight tolerances, for which the contractor was very happy!

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#### Algonquin Bridge

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