

# **Longburn Rail Overbridge - Structural Strengthening**

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**Client:** NZTA

**Date:** May, 2018

**Type:** Construct

**Location:** Palmerston North

New Zealand

**Consultant:** WSP Opus

The purpose of strengthening the Longburn Rail Overbridge on State Highway 56 was to increase the load carrying capacity of the bridge for high productivity motor vehicles (HPMVs). This was achieved using Freyssinet's 1R15 anchorages. The 1R15 anchorage is an additional external prestressing anchorage designed for reinforced structures, particularly for thin elements. This system consists of post tensioning strands installed along the concrete girders. The strands are then deviated at contraflexure points by steel deviators and anchored at concrete girder supports by mono strand anchors. The pre stressing effort is transmitted to the structure through the deviator and by the friction created between the 1R15 anchorage and the surface of the concrete.

Freyssinet were responsible for the supply and installation of:

- 12no. Freyssinet 1R15 external prestressing anchorage
- 74m of greased and sheathed 15.7mm prestressing strands with 279kN minimum breaking load (including inside specific deviators and spacers)
- 6no. 0.6m long 26.5mm Freyssibars together with nuts and washers

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3no. deviators at midspan

- finishing works consisting of greasing the anchorages, heat shrink and touch up paint