



Villamaría Network Arch Bridge

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Summary

This paper focuses on the principal engineering aspects of the Network Arch Bridge over the river Tercero, which joins the cities Villa Maria and Villa Nueva in the province of Cordoba, Argentina. This new bridge replaces the old steel structure located nearby.

The structural concept of the network arch allows to cross the Tercero riverbed with a single span of 120 m maintaining at the same time a remarkable slenderness of the deck and the arches, which allows a significant economical solution. The idea was to provide a solution with many prefabricated elements (steel arches as well as longitudinal and transversal prestressed beams) resulting in a fast and effective construction process. The lateral stability of the arches has been ensured by the set of Vierendeel stiffeners.

Keywords: Arch, network, pre-cast, cables, prestressing

1. Description

1.1 General description

The Network Arch Bridge over the river Tercero joins the cities Villa Maria and Villa Nueva and replaces the old steel structure situated nearby.



Fig. 1: Night view of the bridge