## Railway bridge over Biobio river

Concepción, Chile / 2016

Owner Client Scope FESUR-EFE FESUR-EFE preliminary project

A preliminary structural design has been carried out for alternatives using the typical solution adopted for bridges over the Biobío River (precast concrete girders), along with an additional solution based on the use of steel girders:

- Precast concrete girder bridge. A deck with two lanes and a total width of 9.30 m has been considered. A solution composed of six double-T precast girders with a depth of 2.25 m has been preliminarily dimensioned. The piers would consist of a cap beam supporting the concrete girders, two columns located under the lane axes, a rectangular pile cap, and two rows of piles. The longest possible span will be proposed, taking into account the pier spacing of the existing bridge.

- Steel girder bridge. A continuous deck with a 60.00 m span and 9.30 m width has been proposed, composed of three full-web steel girders with a depth of 3.75 m and a 0.25 m thick top slab. The spans will be hyperstatic, with the deck operating in double composite action. The pier will consist of a cap beam supporting the deck, two columns located under the lane axes, a rectangular pile cap, and two rows of three piles.





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