



Rialbo River bridge repair project

Campo, Huesca, Spain / 2002-2003

Structural type
Characteristics
Owner
Client
Scope

Limestone vaults and pillars
92m total length with 2 x 16m spans and retaining walls.
Ministerio de Obras Públicas
Ministerio de Fomento
repair / strengthening project



The Rialbo Bridge in the N-260 road spans over the Rialbo River, between the villages of Campo and Foradada del Toscar, in the province of Huesca. The bridge is included in the Ministry of Works General Bridge Inventory, labeled with the numerical code N-240146.

The General Management of the Ministry of Public Works decided to widen the existing bridge, choosing a solution that combines functional requirements, economical constraints, and respect towards a remarkable masonry structure.

The existing bridge dates from the second half of the XIXth Century. The bridge is straight, with an overall length of 92.00 m, divided in a pair of side walls, each 30.00 m long, and two limestone ashlar semi-circular vaults spanning 16.00 m. Road elevation over the river bed is roughly 14.00 m. Vaults are 6.00 m wide.

Functional shortcomings

Veral Bridge functional shortcomings are mainly associated with the short 6.00 m road width, the inefficiency of vehicles retaining system and the inexistent road shallow drainage system.

Project comprises two different types of intervention, considering location, effect on traffic conditions, and intervention nature, namely: cross-section widening and masonry arch bridge amends.

Intervention Professional Services in the existing bridge was defined trying to join several objectives that could even be opposed if considered isolated. Thus, bridge widening, security conditions included in actual construction codes, and respect towards the existing bridge, led to the 11.00 m wide cross section finally adopted.

This 10.00 m wide new cross-section is divided in two 3.50 m wide lanes, plus two 1.50 m wide verges and two 0.50 m wide barriers. Hollow drainage conditions are guaranteed by road transverse slope and new lateral drainpipes. The new widened platform consists on a series of reinforced concrete slabs that rest on top of the vaults backing. Cantilever lengths reach thus 3.00 m. Slabs were built following two main stages, each one covering one half of the final width, respecting the necessary traffic conditions during construction period. Stability of concrete slabs covering one half of the final with is achieved following some pouring and usage prescriptions. Disregarding these new slabs, the bridge still works as a masonry arch bridge, with masonry piers and shallow foundations.



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