

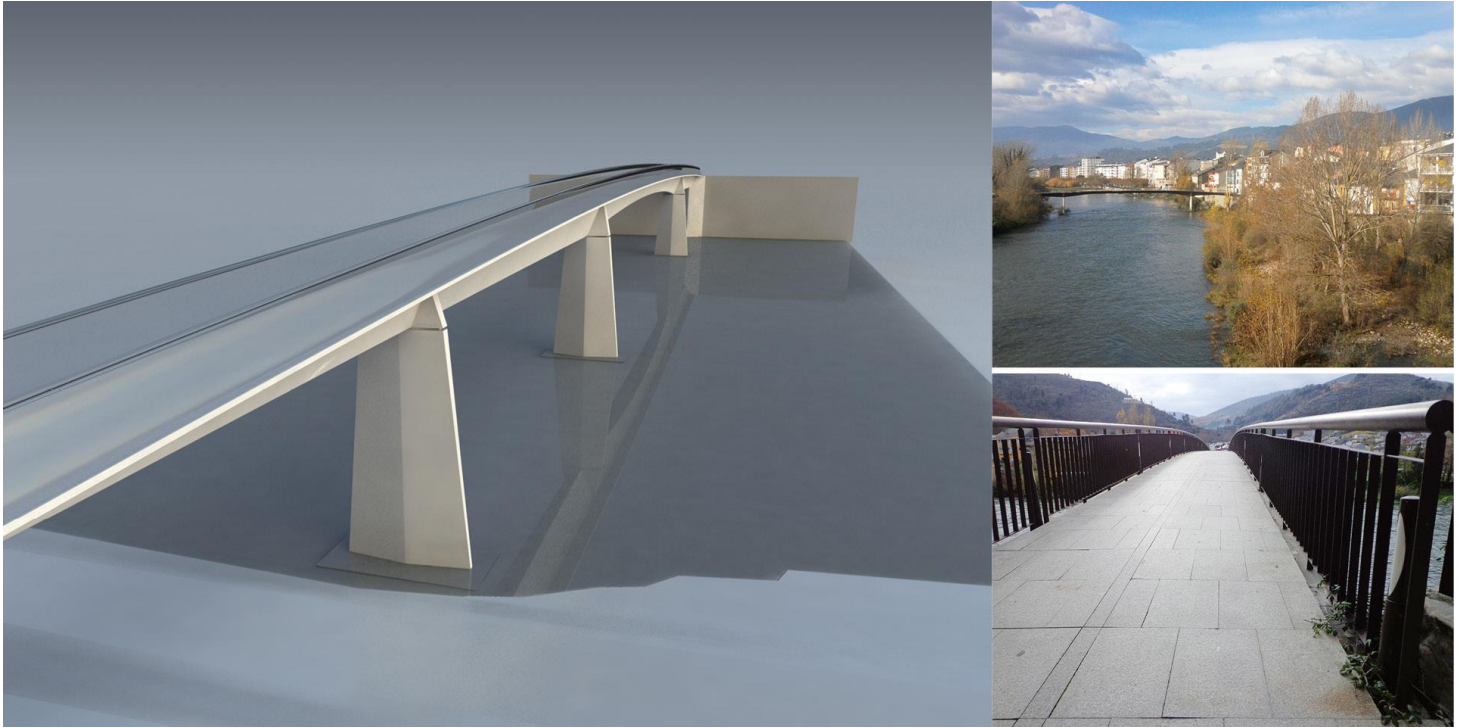


Footbridge between O Barco and Viloira

El Barco de Valdeorras, Orense, Spain / 2006

Constructor
Scope

CRC Obras y Servicios
detailed design



The structure of this pedestrian bridge consists of a deck with four spans of 20.00 + 25.00 + 48.50 + 21.50 m between axes with a total length of 115.00 m. The deck width is a constant 3.00 m.

The transversal section of the deck is made up of a post-tensioned concrete slab of 0.59 to 2.05 m variable depth. The variable depth is achieved by maintaining the inclination of the lateral walls of the section centre constant and by the variable depth of the base of the latter ranging from 1.26 m in the area of smaller depth to 0.00 m in the area of greater depth at pylons P2 and P3. The upper wall has a bulge of 2 % at each symmetrical side of the axis of the section. Each cantilever is of 0.70 m.

The transversal section of the deck is made lighter at spans 2 and 3 through two triangular slimmers of 0.38 m at base and 0.86 m height. Spans 1 and 4 are not slimmed in order to compensate with their proper weight the span differences between pylons imposed by the placement of their foundations into the River Sil.

The walled piles are 4.5 m high. The transversal section is composed of a slanting rhombus at the extremes of the longer diagonal which varies its length along one shaft: from 2.72 m at the spring of pylon P1 to 1.82 m at its top and from 2.90 m at the springs of pylons P2 and P3 to 2.00 m at the top. The minor diagonal remains at a constant 0.68 m in pylon P1 and 1.00 m in pylons P2 and P3. The top shaft section is the same as the base of the corresponding deck brace.

The deep foundation of each pylon consists of pile-caps of 3.80 x 3.30 m with depths of 0.90 m in pylon P1 and 1.10 m in pylons P2 and P3. Each pile-cap is composed of four pairs of micropiles of 150 mm diameter.

Abutments 1 and 2 differ from each other: the first one is closed and of 4.6 m approximate height and lateral walls. The second one is a stub-abutment. In both cases, the deep foundation is achieved by means of micropiles.



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