

Pedestrian bridge in Viloria

The structure of this pedestrian bridge consists of a deck with four spans of 20.0m + 25.0m + 48.50m + 21.50m between axes giving a total length of 115.0m. The deck width is a constant 3.0m.

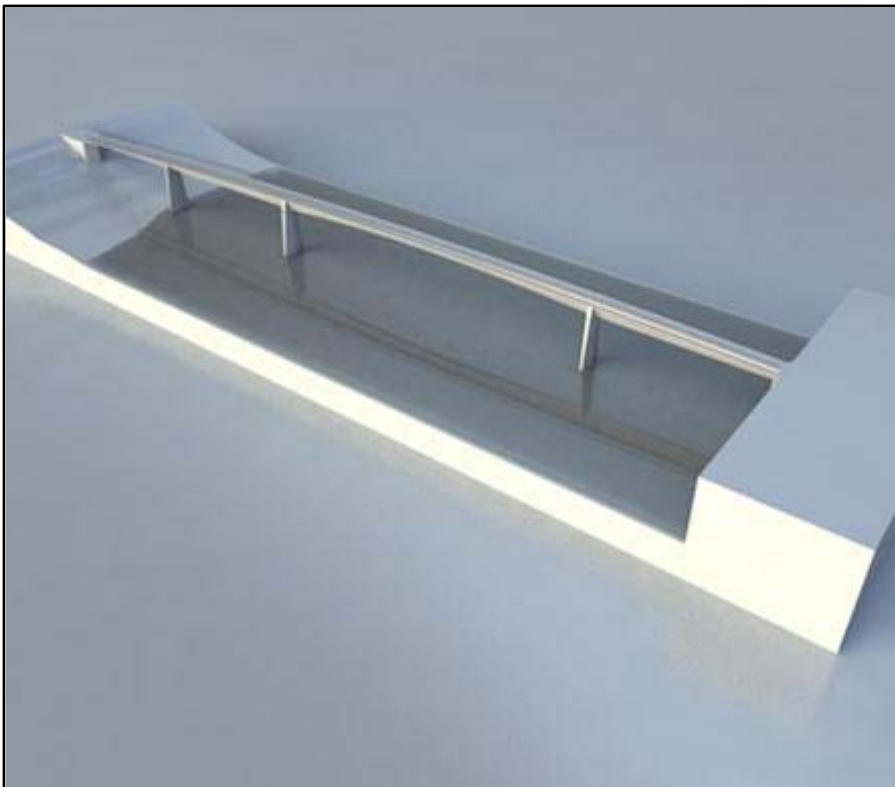
The transversal section of the deck is composed of a post-tensioned concrete slab tapering from 0.59m to 2.05m in depth. The taper is achieved by maintaining the slope of the lateral walls of the section centre constant and by the variable depth of the base of the latter ranging from 1.26 m in the area of lesser depth to 0.00m in the area of greater depth over piers P2 and P3. The upper wall has a 2% slope on each symmetrical side of the axis section. Each cantilever is 0.70m wide.

The transversal section of the deck is made lighter at spans 2 and 3 by two light triangular beams with a 0.38m base width and 0.86m in height. Spans 1 and 4 are not lightened in order to compensate with their own weight the imbalance in span differences between piers imposed by the placement of their foundations into the River Sil.

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

The deep foundation for each pier consists of 3.8m x 3.3m pile-caps 0.90m in depth at pier P1 and 1.10m in piers P2 and P3. Each pile-cap is composed of four pairs of Ø150mm micropiles.

Abutments 1 and 2 differ from each other: the first is closed and approximately 4.6m in height with lateral walls, whilst the second one is a stub-abutment. In both cases, the foundations are deep employing micropiles.



Spain /2006
Project data

Structural Type:
prestressed concrete Pedestrian Bridge
with a triangular-shaped, variable
depth cross-section
Location:
O Barco de Valedorras
The Province of Ourense
Proprietor:
Local government of Galicia
Scope of Works:
Construction Project