

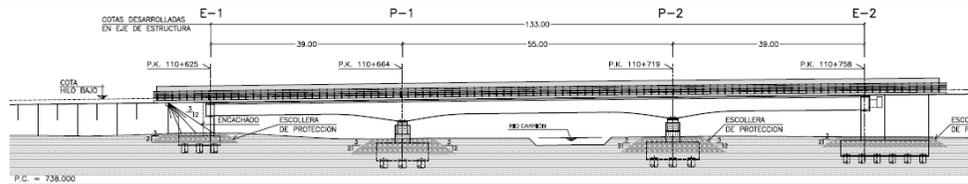
Two viaducts over Carrion river Palencia

CLIENT	ADIF (KV Consulting)
PROJECT DATE	2006
LOCATION	Palencia, Spain
FIELD OF ACTION	Construction project

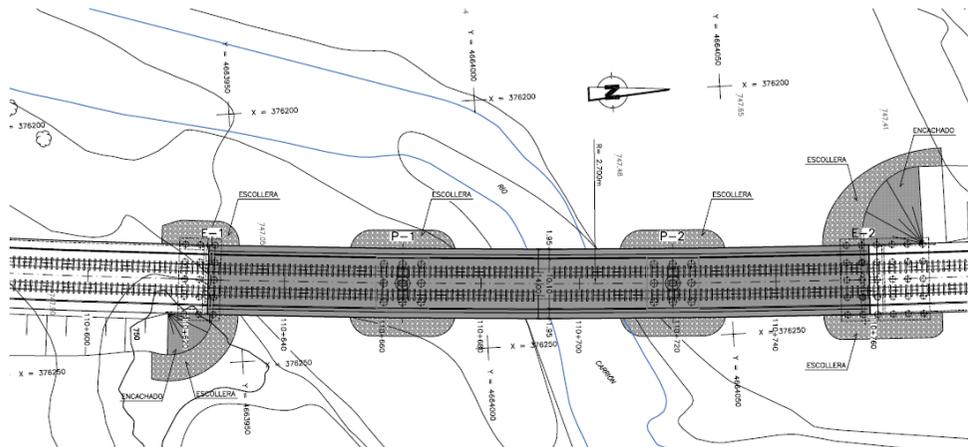
Both viaducts allow the passage of the High Speed railway line Palencia-Santander over the Carrión River. The first viaduct is located between the Post Marks 110/625 and 110/758 and the second viaduct is located between the Post Marks 112/327 and 112/460.

These two structures are built with pre-stressed concrete section. With 133m total length it is divided into three spans of 39.0m, 55.0m and 39.0, all included on curves of 2.700m radius in the case of the first viaduct and on a 7.000m radius for the second viaduct.

The board's total width is 14.0m, including a ballast double track. At both edges there are communication gutters and 0.8m wide sidewalks to allow the maintenance works performance. The handrails rest on the pre-cast concrete imposts.



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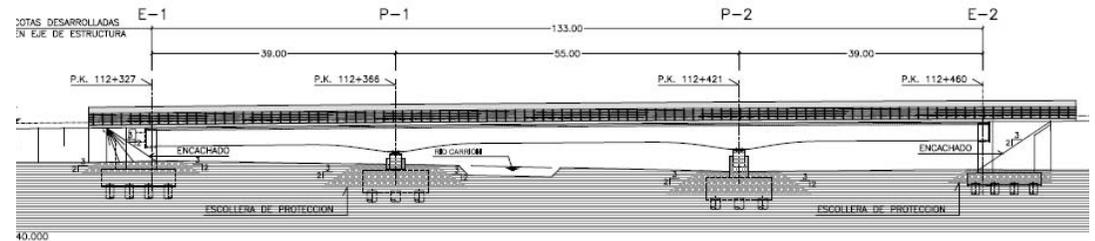


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The cross section presents a box girder typology with 3.25m length cantilevers on both sides and with a 0.465m edge height at the starts and a 0.2m edge height at the endings. The section has a 2% slope going from the section center to each side. The box girder bottom flange has a width of 6.15m where the edge width is 3.00m and 5.50m where the edge width is 4.25m.

Both viaducts have reinforced concrete abutments with a deep foundation type using 1.25m piles. On both abutments back fins have been arranged to contain the possible land fall over the adjacent roadways. The board of Viaduct number 1 is anchored to the abutment 2 in order to withstand the horizontal forces. The abutment 1 makes the same function for Viaduct number 1.

The piers are circular and built with reinforced concrete. Their top part adapts to receive the board support. The piers have a deep foundation with 1.50m diameter piles.



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