

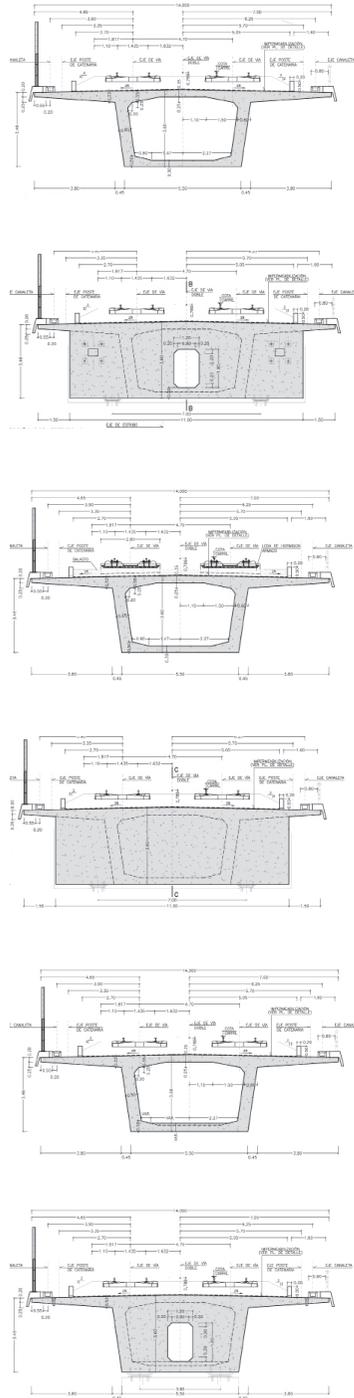
High-speed railway viaduct Legorreta

CLIENT	ADIF
PROJECT DATE	2008
LOCATION	Legorreta, Spian
FIELD OF ACTION	Construction Project and technical assistance during construction

The structure is part of the “Construction Project of the Railway Line in the Basque Country. Section: Legorreta”. The viaduct allows the rail traffic of the high-speed line over Zubina River and over the GI-447 road; and it is located between the KP 206+890 and 207+034.

It is a prestressed concrete structure, with a box girder deck of 144 m length divided into three spans of 44.0-56.0-44.0 m respectively, and it is located on a straight alignment. The total width of the deck is 14.0 m. and it supports a double track. In the construction project two possible options to support the track are considered slab track solution and track on sleepers and ballast. The maintenance walks are located at both sides. Handrails rely on the prefabricated concrete cornices.

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The cross section consists of box girder, which is shaped by a central core of 5.50 m inferior width and 6.40 m of upper width and the corresponding cantilevers of 3.80 m length in each side, with 0.53 m depth in the edge beginning and 0.2 m at the end. The constant depth of the section throughout the length of the structure is of 3.60 m. The cross slope is 2%, from the center of the section to the sideways, and allows the water drainage.

The deck structure is supported by sliding bearings, on piers and abutments. The piers are made of reinforced concrete with rectangular hollow section and angled corners. The foundation is solved by shallow footings. The abutments are closed and made of reinforced concrete with shallow foundation. Both abutments have concrete wing-walls to hold the soil behind its extrados.

In order to resist horizontal forces, especially due to the braking-starting of the train, the deck has been anchored to the abutment 1, taking this point as a fixed one to study the distortions due to the rheological deformations and temperature. Furthermore, next to the abutment 2 there is a slab of 10.00 m length, to arrange the required devices.

