



Placement view.



Railing on bridge 2.

Extension of bridges and pedestrian route improvement in the BV-5121 road in T. M. Tordera. Catalonia.

CLIENT	Diputació de Barcelona
DATE	2015 - 2016
LOCATION	Catalonia, Spain
FIELD OF ACTION	Project Construction

INES Ingenieros has developed the management of the works of Extension of bridges and pedestrian route improvement in the BV-5121 road in T. M. Tordera.

The works took place between July 2014 and April 2015.

The structure on which the intervention was made is in the urban crossing of the C-BV-5121 road passing through the town of Tordera, focusing on saving the river Tordera.

The final cross-section of the structure after enlargement comprises two lanes of 3.30 m and 2.00 m sidewalk.

On both sides of the road containment system DELTABLOCK 80as DB-A has been placed. This type has been approved for the following performance parameters are available:

Standard:	CE EN-1317
Restraint safety:	H2
Working width:	W1
ASI	B

In addition, the following types of containment systems for vehicles and pedestrian protection have been installed:

- Tubular guardrail on structure 3 (Adif Bridge) on the right side (pedestrian route), after cleaning and painting.
- Steel barrier: this contention has been placed on the left side (opposite side to the pedestrian route) on several sections
- Timber-Steel double guardrail in section opposite the park Prudenci Bertrana between the access road to the park and trunk.
- Timber-Steel single guardrail, left side, between road and pavement.



Tubular guardrail on Adif Bridge.



Steel fence

- Low Tordera fence. Simple mesh Tordera type has been placed outside sidewalks in areas of clearing. On the right side of the end section the existing fence has been recovered
- High Tordera fence type has been placed both next to Prudenci Bertrana Tordera Park. And in front of the houses on the left side, in the area of the intersection of Loop 1.

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Low Tordera fence.



Single timber-steel guardrail.

- Steel fence has been placed to keep pedestrian traffic on sidewalks, in sensitive areas of indicated by the council.
- Steel railing has been placed on bridges to prevent pedestrians from falling.