Bridge over the Guadalfeo river for the "Mediterranean Highway" A7

Lobres, Granada, Spain / 2011

Structural type	concrete box girder with composite arch above the deck
Characteristics	main span: 140m / total length: 280m
Owner	Ministerio de Fomento
Client	FCC Construcción
Scope	detailed design and construction support

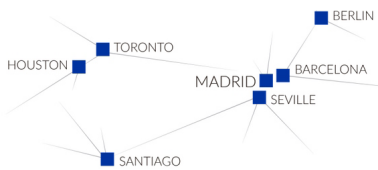
The new bridge over the River Guadalfeo project belongs to the A-7 Mediterranean Motorway, between Nerja and Motril (Granada, Spain), it is located near the town of Lobres, in an area where basic seismic acceleration equal to 0.15g.

It is a 918' length structure, with five spans of 111.5' - 118' - 459' - 118' - 111.5'. The cross section has a width of 82'. The deck is a concrete box 32.8' wide and 8.2' depth with prefabricated concrete ribs each 13.1'.

The main span has the arch, located in the middle of the cross section. There are 15 hangers separated 26.2', the hangers consist of a single steel tube 11.8" in diameter and are tensed from the lower anchorage located on the upper side of the deck.
The arch is made from steel, filled with self-compacting concrete, it has a length of 459' and a rise of 70.5'. Its cross section is rectangular. In order to improve the behavior of the arc against buckling out of its plane, its width is variable between 5.9' at the deck to 9.8' in the middle of the arch, the depth varies between 6.6' to 3.9' from the start to the center.

The bearings disposed were LRB to minimize seismic forces transmitted to the piers and, therefore, to the foundation. LRB bearings, in addition to isolating the structure, allow energy dissipation during an earthquake.

In the construction were used 3 temporary piers for the deck and 6 steel towers for the arch



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