

## Double Arch over the Cañuelo River Valley

The Bridge over the Cañuelo River Valley comprises a double steel arch with an intermediate deck, composed of two longitudinal steel beams, transversal composite ones and two accompanying spans of reinforced concrete slabs. The central isostatic circular-shaped double arch is 60.35m in span with a maximum rise of 8.60m, which provides a rise/span relation of 1/7. The deck is 25.00m wide divided into four 3.50m lanes plus two hard shoulders.

The transversal section of the arches is trapezoidal with a lineal variation of the width and depth. In order to prevent the instability phenomena of the arch, it was necessary to provide a greater inertia around the vertical axis at the crown which resulted in its greater horizontal to vertical dimensioning.

On the contrary, due to bending at the springs, it was necessary to provide greater inertia around the horizontal axis which led to greater vertical dimensioning.

The arch and the deck are connected by means of two vertical hanger systems which link it to two lateral steel beams. Each hanger system consists of eleven hangers made of closed triple Z cables of nominal 50mm diameter.

The two accompanying lateral approach spans comprise two reinforced concrete slabs 11.15m in span and variable depth with the minimum depth reaching 0.50m at the abutments.



### Spain /2007 Project data

Structural type:  
Double arch 60.35m in span and  
intermediate composite deck  
Location:  
Over the Cañuelo River Valley in  
Roquetas de Mar. The Province of Almería  
Opening Date:  
2007  
Construction:  
JARQUIL  
Proprietor:  
The Town Hall of Almería  
Scope of Works:  
Construction Project