

Structures on the North Ring Road in Valencia

Structure E2-3

The structure E2-3 is the overpass on the CV-35 road over the CV-30 road, the polytechnic branch road and a service road on the Valencian North Ring Road. This bridge is straight and has a total length of 117.0m and is to be found located between Km0+281.784 and 0+398.784.

A structural layout employing three composite beams has been adopted which have a variable depth according to a second degree parabola which varies between 1.40m at the abutments and the centre of the intermediate span and 2.20m over the piers. Therefore, the piers 1.1, 1.2 and 1.3 are situated between the left-hand side of the polytechnic branch road and the CV-30, whilst piers 2.1, 2.2 and 2.3 are situated between the CV-30 and the left-hand side of the service road. The resulting spans measured according to the centre of the structure are 35.00 + 47.00 + 35.00m.

The steel boxes have a variable cross-section, being 1.10m at the span centre and 1.90m over the piers. Once covered by the upper slab the cross-section has a trapezoidal shape. The length of the lower web of the box is 3.25m whilst the length between the webs at the height of the upper platbands is 5.75m. The inclination of the webs to the horizontal is 56.659°.

Structure E1

Structure E.1 belongs to the Polytechnic branch road on the Valencian Ring Road. It is an overpass which crosses the CV-30, it is curved in shape with a radius of 112.0m and is 109.33m long and is located between the Km0+660.282 y 0+772.541 on the branch road.

The structure is composed of composite continuous beams, five spans and constant depth. Pier 1 is located before the right-hand side of the service road and the CV-30, Pier 2 is located between between the service road and CV-30, Pier 3 is situated between the central reservation and the CV-30 and Pier 4 is situated after the right-hand lane of the CV-30. The resulting spans are 15.0m + 20.05m + 20.05m + 30.60m + 23.63m. The width of the bridge is a constant 12.0m. This allows the structure to accommodate two 3.50m lanes and an internal 1.50m wide hard shoulder, an external 2.50m hard shoulder as well as the pertinent 0.50m wide crash barriers.

The steel box has a constant 0.90m depth, and once closed by the upper slab has a trapezoidal shape. The length of the boxes' lower web is 4.0m whilst the length between webs at the height of the upper platbands is 6.0m.



Spain /2005

Project data

Structural Type:
Straight bridge with a haunched composite multi-box transversal cross-section
Straight bridge with constant depth composite-box transversal cross-section
Location:
Municipality of Valencia
Proprietor:
Valencian Town Hall
Scope of Works:
Construction Project and Technical Assistance to the Constructor
Structural Consultant:
FHECOR Ingenieros Consultores
Constructor:
DRAGADOS