Central Motorway

Santiago, Chile / 2006

Structural type	bridges, over and underpasses
Owner	Ministerio de Obras Públicas. República de Chile
Client	Ingenieria Cuatro
Constructor	Dragados – Skanska - Belfi – Brotec.
Scope	detailed design

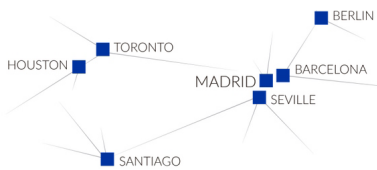
Santiago de Chile's Central highway is made up of two major axes that cross the capital from north to south and cross the Mapocho River on two occasions. The north-south axis runs between the aforementioned river and Av. Américo Vespucio Norte at a length of 40 km. The General Velásquez axis has a length of 20 km. Once this highway is completed, it will be the third in the world and the first in South America (along with other concessions in the Metropolitan Region) to implement the Free Flow Toll, which allows the transit of vehicles without stopping.

The project includes the implementation of numerous structures in urban and peri-urban areas, densely populated and with a significant traffic load, as well as a large number of interventions on existing structures, so it is essential to maintain the passage of vehicles - although restricted - during the construction process. The project structures comprise 5 bridges, 32 overpasses, 35 underpasses, 34 walkways, 3.7 km of cut-and-cover tunnel and 24 km of walls.

The typologies used in the bridges, overpasses and underpasses respond to different conditions, both geometric and constructive. For this reason, prestressed slabs with post-tensioning reinforcement, reinforced slabs, mixed structures and structures with prefabricated reinforced and prestressed beams have been designed.

The structure of the false tunnel is made up of reinforced concrete slabs or poststressed with 1 and 2 spans on piles. For the 3.7 km, the construction process adopted consisted of the excavation, the execution of the piles and the subsequent concreting of the slab on the ground. Finally, the excavation was carried out under the slab.

The design of the structures of the Central Highway has been conditioned by the seismic activity that occurs in Chile. The design standard for bridges and structures in force in this country is the American code AASHTO 1996, complemented by the Manual of Roads of the MOP.



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