

## Central Motorway. Chile

The Central Motorway of Santiago de Chile is composed of two large carriageways which run through the capital from North to South and cross the Mapocho River on two occasions. The North - South carriageway runs along 40km between the aforementioned river and the North Américo Vespucio Avenue whilst the General Velásquez carriageway is 20km long. Once this motorway is finished, it will be the third motorway worldwide and the first in South America (together with other license holders of the Metropolitan Region) to implant a Free Flow Toll which permits a non-stop traffic flow.

This project includes the construction of a large number of structures in densely populated urban and suburban areas with a high traffic volume, as well as an important number of operations in existing structures. Thus, it is essential to maintain vehicle traffic flow, although with some restrictions, throughout the construction process. The structures of the project comprise 5 bridges, 32 overpasses, 35 underpasses, 34 footbridges, 3.7km of false tunnels and 24km of walls.

The applied typologies for these bridges and over and underpasses are conditioned by factors of geometry and construction. That is the reason why pre-stressed slabs with post-tensioning steel, reinforced slabs, composite structures and structures with pre-cast reinforced and pre-tensioned beams were designed and employed.

The structure of the false tunnel is composed of reinforced or pre-tensioned concrete slabs of one or two spans set on piles. Over the entire 3.7km length, the adopted construction process consisted of excavation, pile construction and the subsequent concrete casting of the slab on grade. The last step was fulfilled by excavation below the slab.

The Project for the structures for the Central Motorway was conditioned by the seismic phenomena which takes place in Chile. The Current Standard for the design of bridges and structures in this country is the American AASHTO 1996 code, supplemented with the Spanish Road Manual of the Ministry of Public Works (MOP).



### Chile /2006 Project data

Structural type:  
Bridges, over and underpasses  
Location:  
Santiago de Chile. The Republic of Chile  
Opening Date:  
2006  
Proprietor:  
Ministry of Public Works  
The Republic of Chile  
Licensee:  
Central Motorway  
Main Consulting Engineers:  
Ingeniería Cuatro  
Construction:  
Dragados - Skansa - Belfi - Brotac  
Scope of Works:  
Construction Project for Structures