

North Vespucio Motorway. Chile

The North Vespucio Motorway is part of the amplification and reform of the Santiago bypass ring road motorway, which is being built over the present Américo Vespucio Avenue. This motorway consists of two three lane carriageways and runs a total length of 29km between Route 78 and El Salto Avenue. Once 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 allows a non-stop traffic flow.

This project includes the construction of a large quantity of structures in urban and suburban areas with intensive traffic levels. It is therefore essential to maintain vehicle traffic, albeit with some restrictions, throughout the construction process. The structures included in the project comprise 2 bridges, 12 over and 10 underpasses, 25 footbridges and 12km 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 lighter reinforced slabs and structures with pre-cast pre-tensioned beams were employed.

For the underpasses, reinforced concrete slabs of 1 or 2 spans set on piles were projected. Including all structures, the adopted construction process consisted of excavation, pile construction and the subsequent concrete casting of slabs on grade and finally the consequent excavation below slab.

The Structural Project for the North Vespucio Motorway has been 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, complemented by the Spanish Road Manual from the Ministry of Public Works (MOP). Therefore, the usual requirements established for projects in seismic areas were applied to all structures, including; confined reinforcement in zones of possible hinge formation, etc. Furthermore, original and innovative solutions have been contributed such as anti-lift anchors used for pre-cast beam structures.



Chile /2006 Project data

Structural type:
Bridges, over and underpasses
Location:
Santiago de Chile
Opening Date:
2006
Proprietor:
Ministry of Public Works
The Republic of Chile
Licensee:
Vespucio Norte Express S.A.
Main Consulting Engineers:
LEN y Asociados
Construction:
Dragados - Hochtief - Belfi - Brotect
Scope of Works:
Construction Project for Structures