



Engineering Structures for Life



ENVIRONMENT - WATER

Canal Colima

ABOUT

The modernization of "Manzanillo-Minatitlan Carretera" foreseen the increase of carriageways, for the access of heavy-duty vehicles to the port of Colima in Mexico.

With this purpose and in order to allow the three carriageways in each direction, the solution was to close the rainwater channel.

The rainwater channel, known as the "Rancho Viejo Canal", has a non-permanent flow regime, and is essentially requested during the rainy season. The channel was linked to another existing in the port area on the Pacific coast.

In this context we developed two solutions of reinforced concrete box culverts with dimensions of 12.50×2.50 (m) along 1,500 m and 5.00×3.00 (m) along 400 m.

Due to the presence of heavy traffic in the adjacent roadway, all constructions works were executed at night, including the earthworks, placement of the various box culverts and the prestressed slab on top.

In this project a technical note was also presented regarding the lifting system of the precast section of the concrete box culvert with 12,5 m of width. The concrete section was checked to guarantee its resistance to the loads generated by the lifting process, and the lifting support structure was verified for the loads coming from the concrete structure during the process.

The defined lifting system consisted of two "HEA 450" metallic profiles, connected to the concrete section in three points each (two lateral and one central) according to the following image. The two "HEA 450" profiles are connected in their central point and ends by "IPE200" profiles. The three connections were guaranteed by Dayton-type systems and steel cables with the capability to resist to the calculated loads.

FACTS

Year: 2014-2015

Client: Mota-Engil Mexico

Services: Detailed design, Structural Engineering, Foundations design, Infrastructures design, Hydraulic engineering

TEAM

LOCATION

Manzanillo, Mexico

