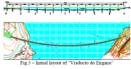


Initial design of the bridge



The “Viaducto do Engano” is located near by the village of Nóa, in Galiza coast, 30 km from Santiago de Compostela.

The previous design of this viaduct considered 13 spans of 55m and two extreme spans of 37.5 m, with the particularity that most of the spans were built over the water, having 14 piers over submerged foundations. After checking that our model AP-2005 could build this bridge with a distance of 63 meters between the MSS supports in concreting our client suggested the final client to use 70 m spans what would reduce the number of piers and submerged foundations from 14 to 10, reducing as well the construction time since it takes about the same time to do 70m spans or 55m spans with this type of MSS.

Final design of the bridge

The final layout is now 9 spans of 70 m, one end span of 41 m and the other end span of 50 m.

The final solution did not penalize much the weight of the slab although the height of the box girder was raised from 2.65 m to 3.20 m, since the full design was optimized to the new geometry, being the final concrete slab heavier only 5% than the initial design what was highly compensated by the reduction in the number of piers.

The heaviest section has now 8.05 m², which corresponds to a slab weight of 201.3 KN/m.

The layout of the viaduct is curved, with a permanent radius of 1200 m, being the transversal slope 3.1 %, also constant. The pre-stressing was designed considering the execution of the viaduct from abutment E-2 (right side on fig.6) to E-1, an initial span of 50 m followed by 9 spans of 70 m and a last span of 41 m.