



VNZ

Footbridge over the river Cervol | Vinaroz, Spain

2020-2024

SBP + BGA

VNZ

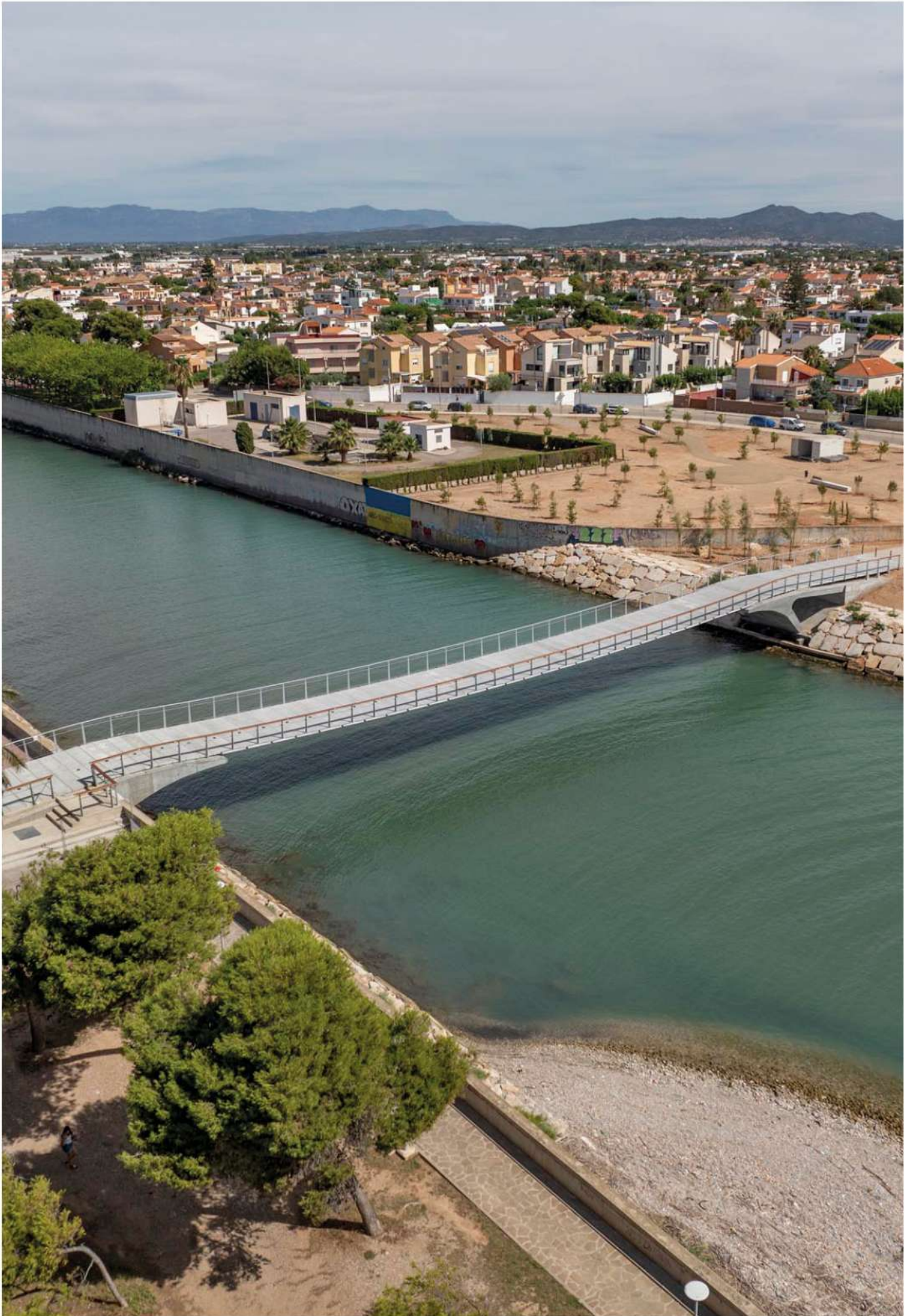
FOOTBRIDGE OVER THE RIVER CERVOL VINAROS, SPAIN

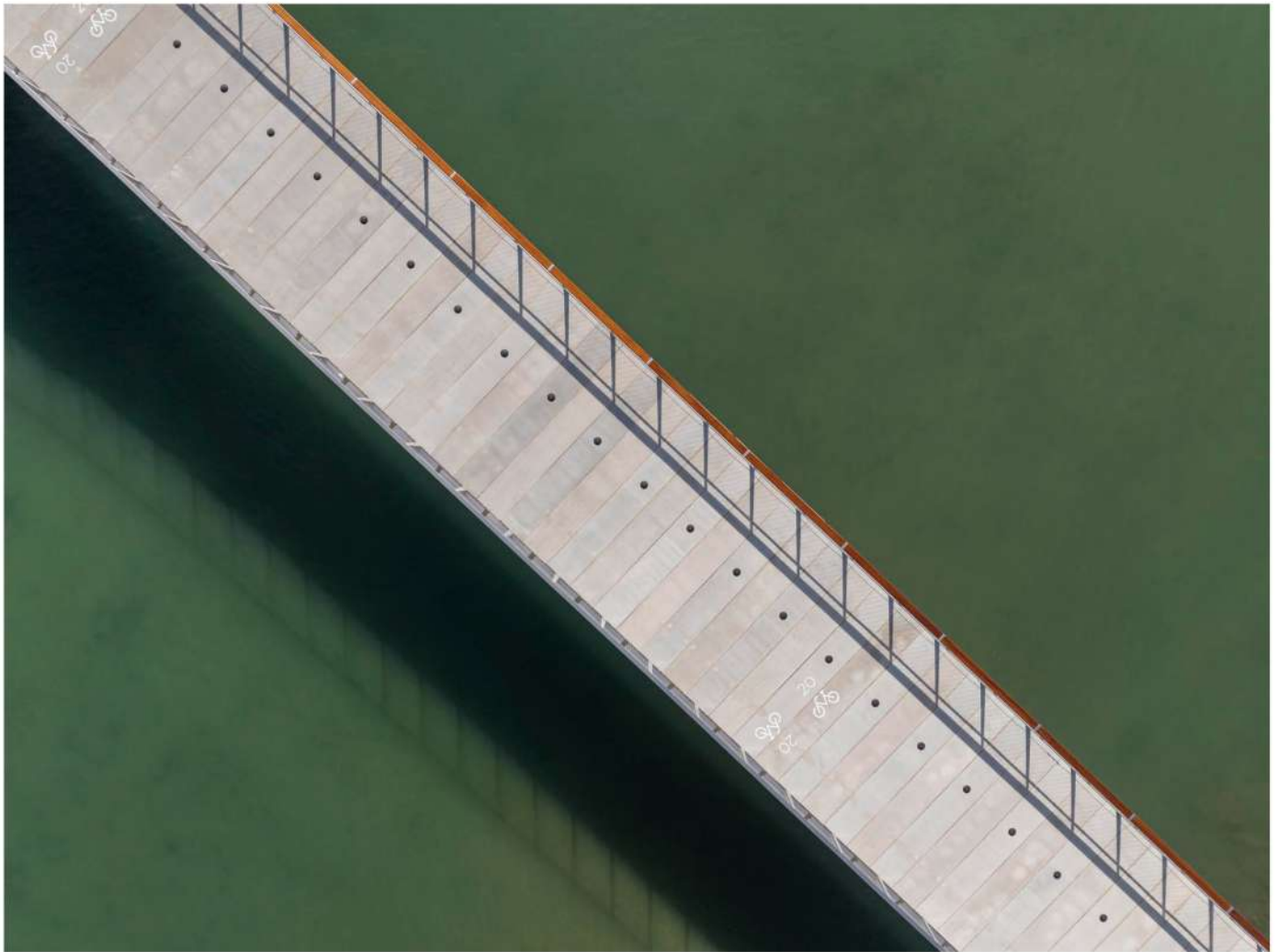
**SBP Engineers +
Burgos & Garrido Arquitectos**

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Situation	Vinaroz, Spain
Client	Municipality of Vinaroz
Tipology	Bridge
Size	77 linear meters
Engineering	SBP, Schlaich Bergermann Partner
Architects	Francisco Burgos Ruiz (23/05/1959). Colegiado COAM 7816 Ginés Garrido Colmenero (31/07/1962). Colegiado COAM 9103
Landscape Architecture team	Burgos & Garrido Arquitectos Jimena Alonso, Silvia Martínez, Raquel Marugán, Jorge Oettel
Environmental technology	Maria Ángeles Ceñal
Hidraulic engineering	Pedro Arévalo Rey
Main constructor	LIC, Levantina Ingeniería y Construcción + Pantallax SL
Date	2020-2024
Photography	Roland Halbe





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Descriptive text

The mouth of the river Cérvol in the Mediterranean is today a marginal place without character. It is an abandoned wasteland pending incorporation into the urban fabric of Vinaroz. The canalisation of the mouth and the construction of the sewage treatment plant within its natural course have further degraded the plain of gravel and sand where the river and the beach merged on the seashore. The river interrupted the continuity of the promenade, which allows you to walk or cycle along the seafront for several dozen kilometres, but its low flow allowed you to ford it. Now, however, the canalisation and purification infrastructures and the urbanisation of its banks make this impossible. To cross it, it is necessary to go four hundred metres upstream, where the Sant Nicolau bridge, basically built for road traffic, has a narrow pavement that is dangerous for cyclists.

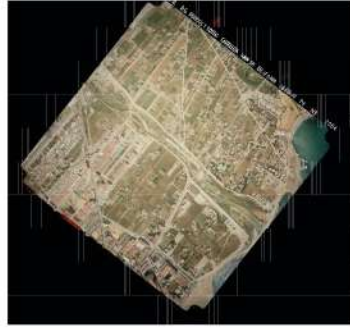
The Fora Forat bridge is located in the closest place to the sea where it is possible to do so. It resolves the discontinuity established by the Cervol and the hydraulic infrastructures associated with its mouth and links up with the paths, trails and walks that run along the Mediterranean coast to the north and south of the river. And on a more local scale, the bridge is associated with two small pine groves,

one to the south - the Fora Forat pine grove, already mature - and the one proposed by this project to the north, in the vacant area where the bridge disembarks. These two pine groves and the bridge itself reveal a formidable spot on the coast that had remained hidden and deteriorated, making it recognisable, accessible and giving it a distinguishable identity from a distance.

The bridge yields its visual prominence to the sea, the mouth of the river and the pine forests that accompany it. It does so by acquiring a 'horizontal' profile as if it were an invisible line on the horizon of the Mediterranean. Its structural type, a stress-ribbon - band-ribbon - with a single 50-metre span, allows the deck to be built with segments only 12 cm wide. This extraordinary slenderness - just over 1/400 - and its position parallel to the coast make for an exceptional balcony that floats weightless above the sea. The strip-tesa also makes it possible to erect the shortest bridge, the one with the least visual impact, the one that is the easiest and quickest to build and the one that requires the least maintenance. It is the lightest possible way to cross the River Cérvol.

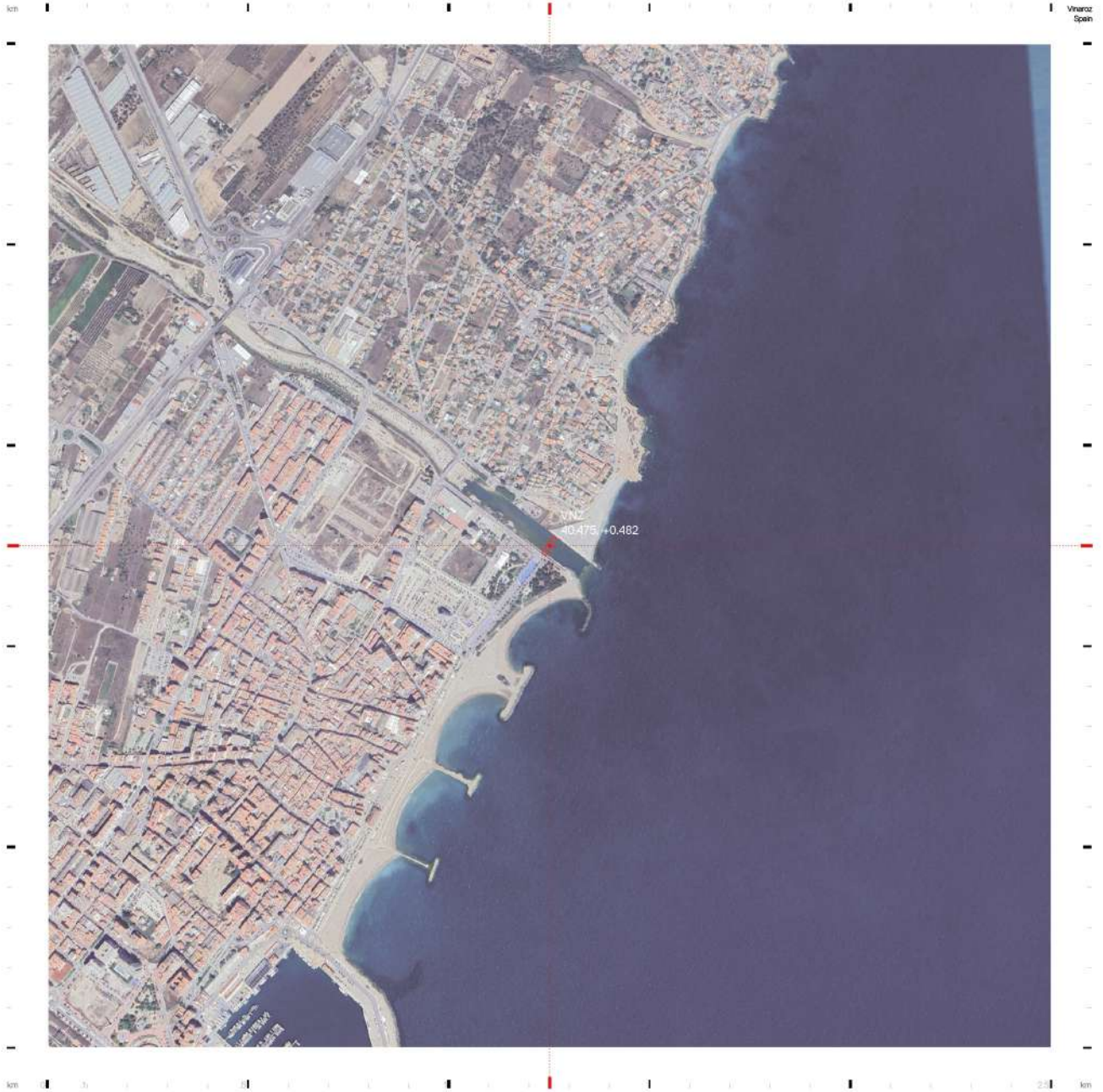


1980

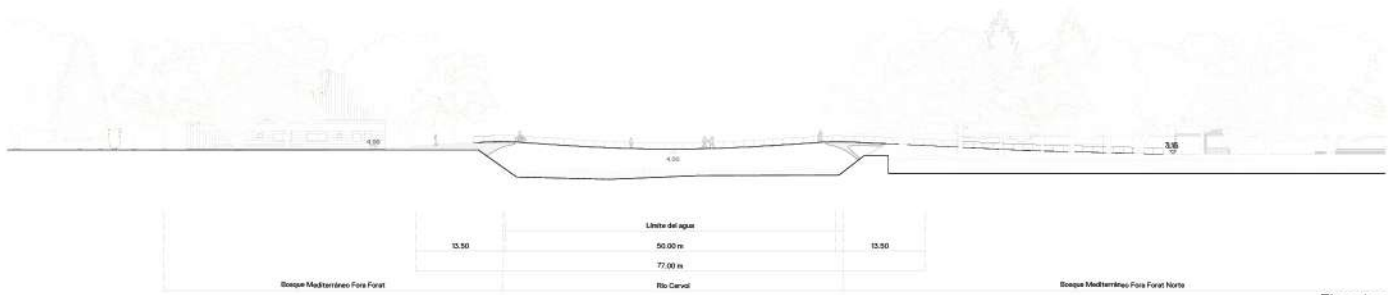


1990

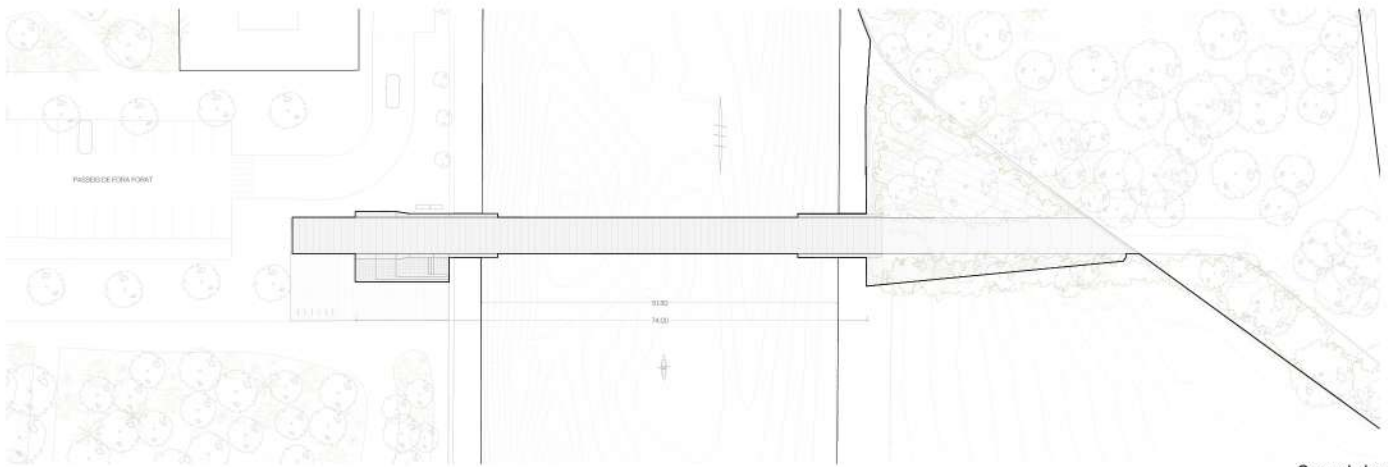




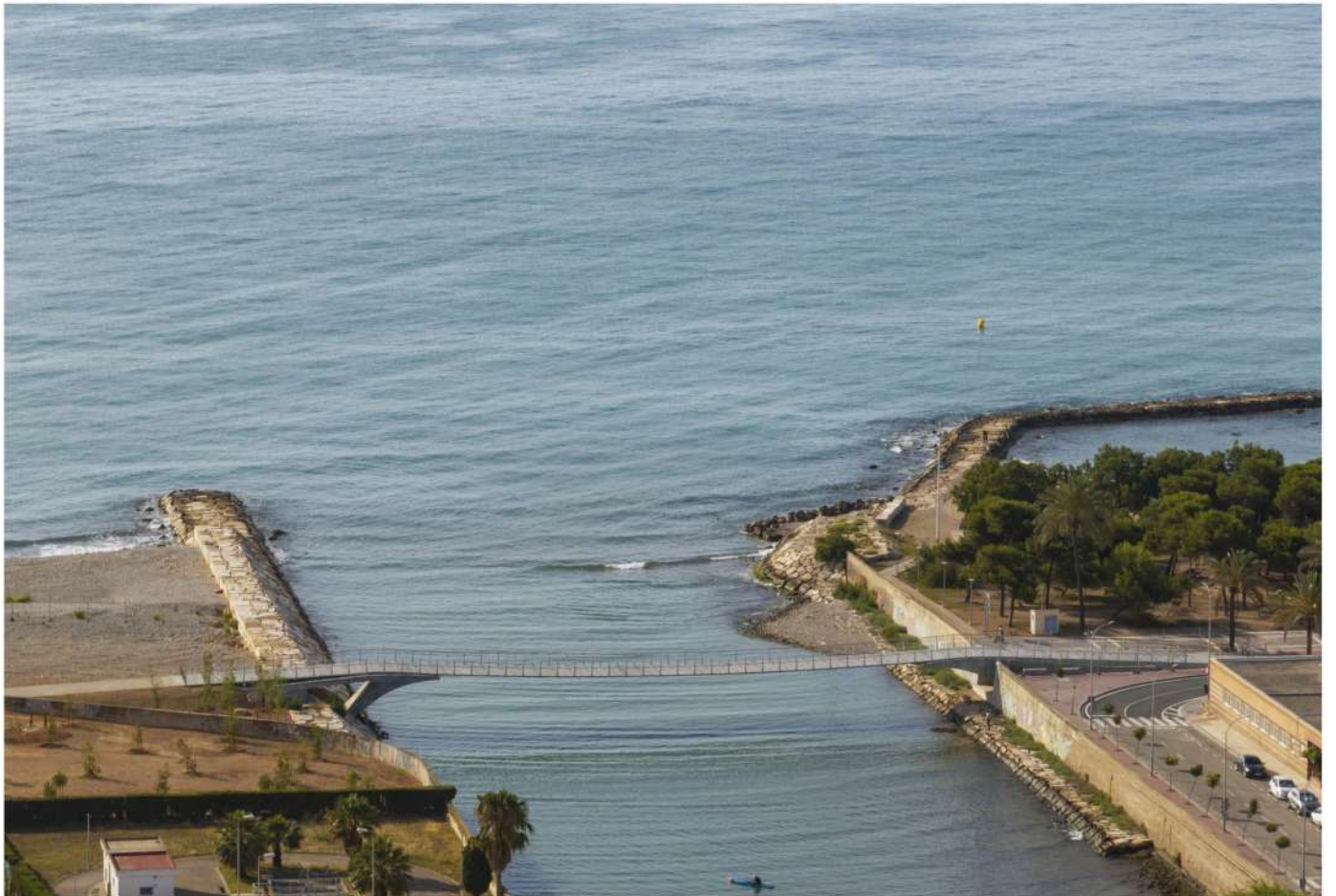




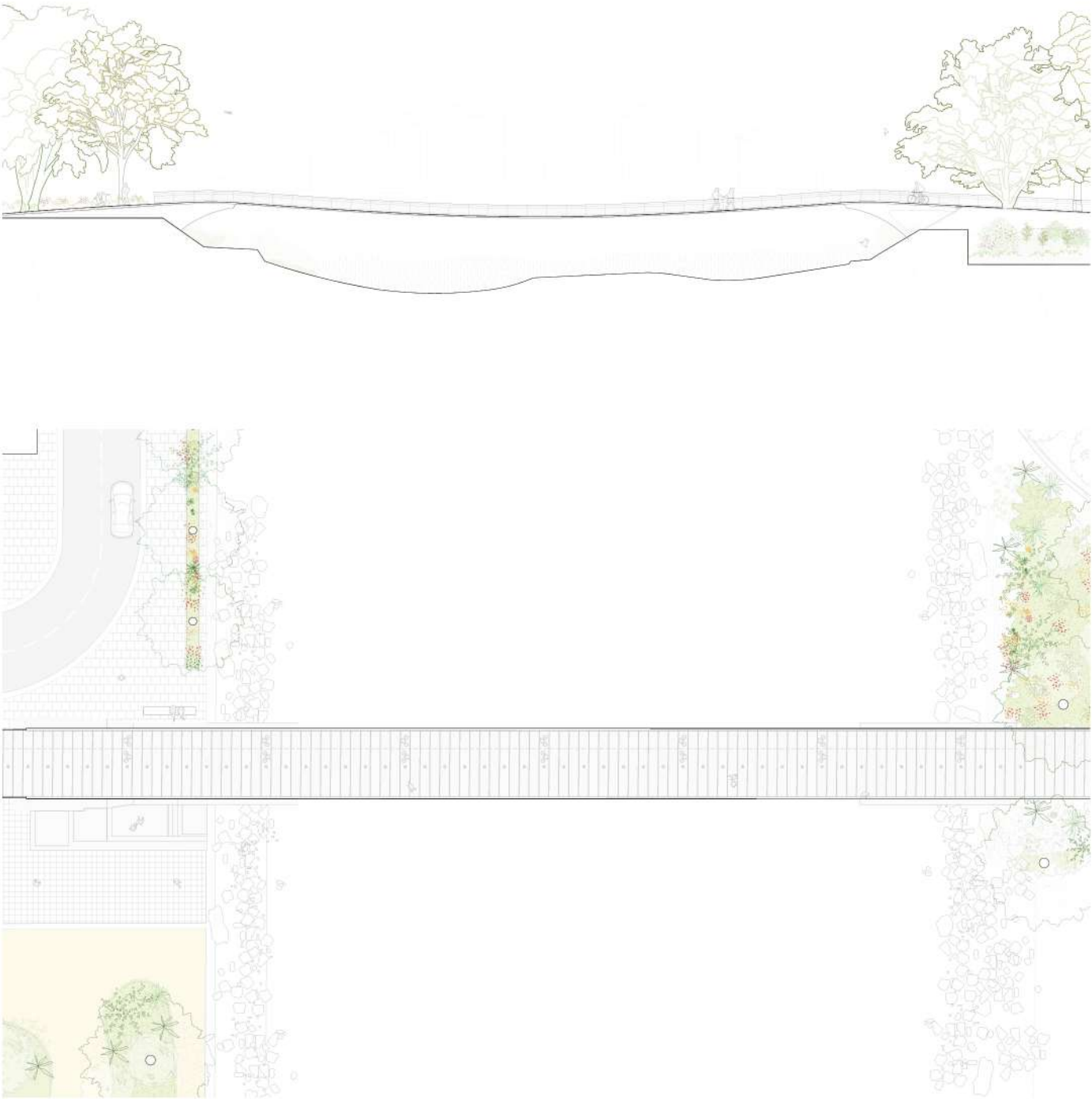
Elevation
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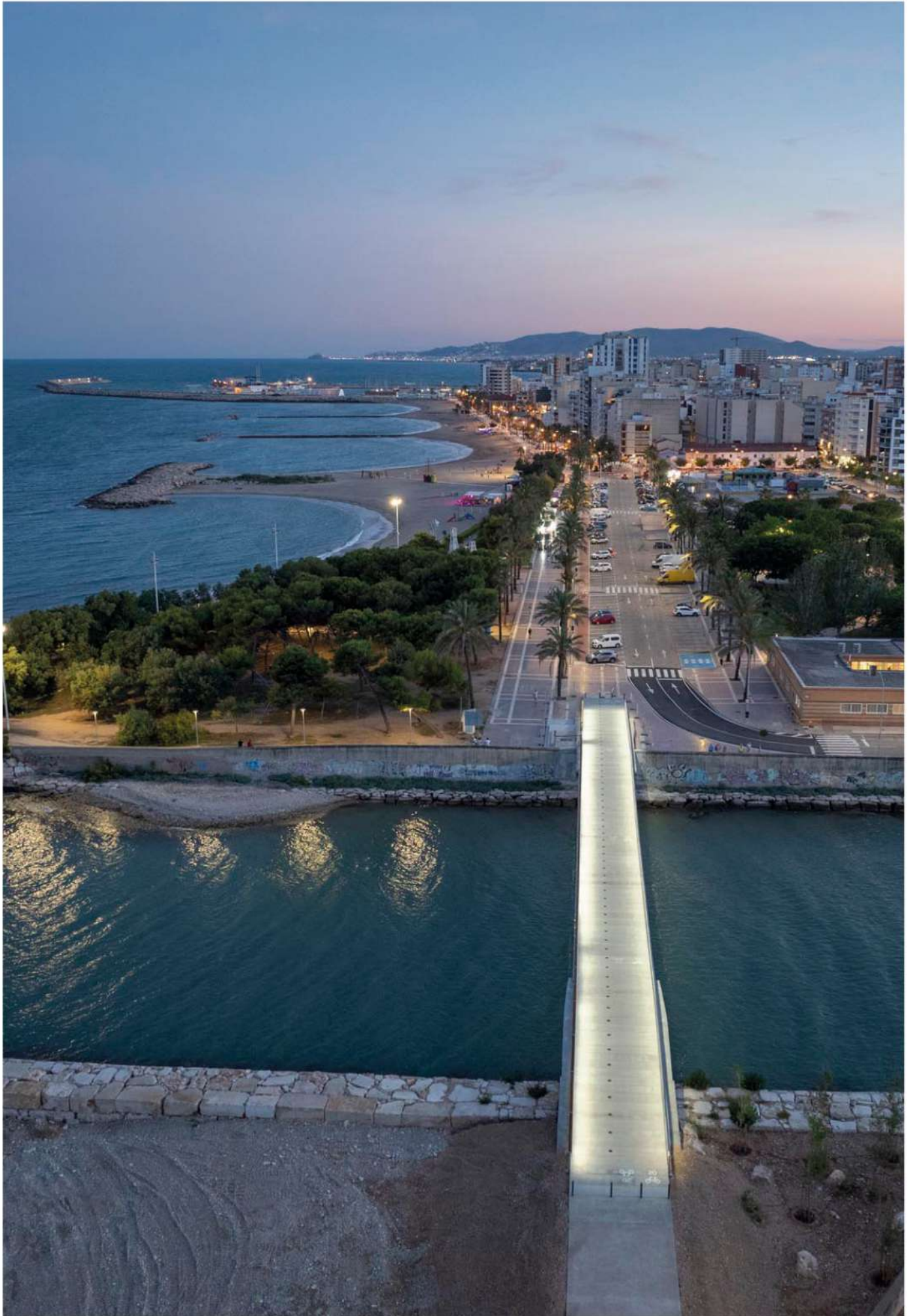
General plan
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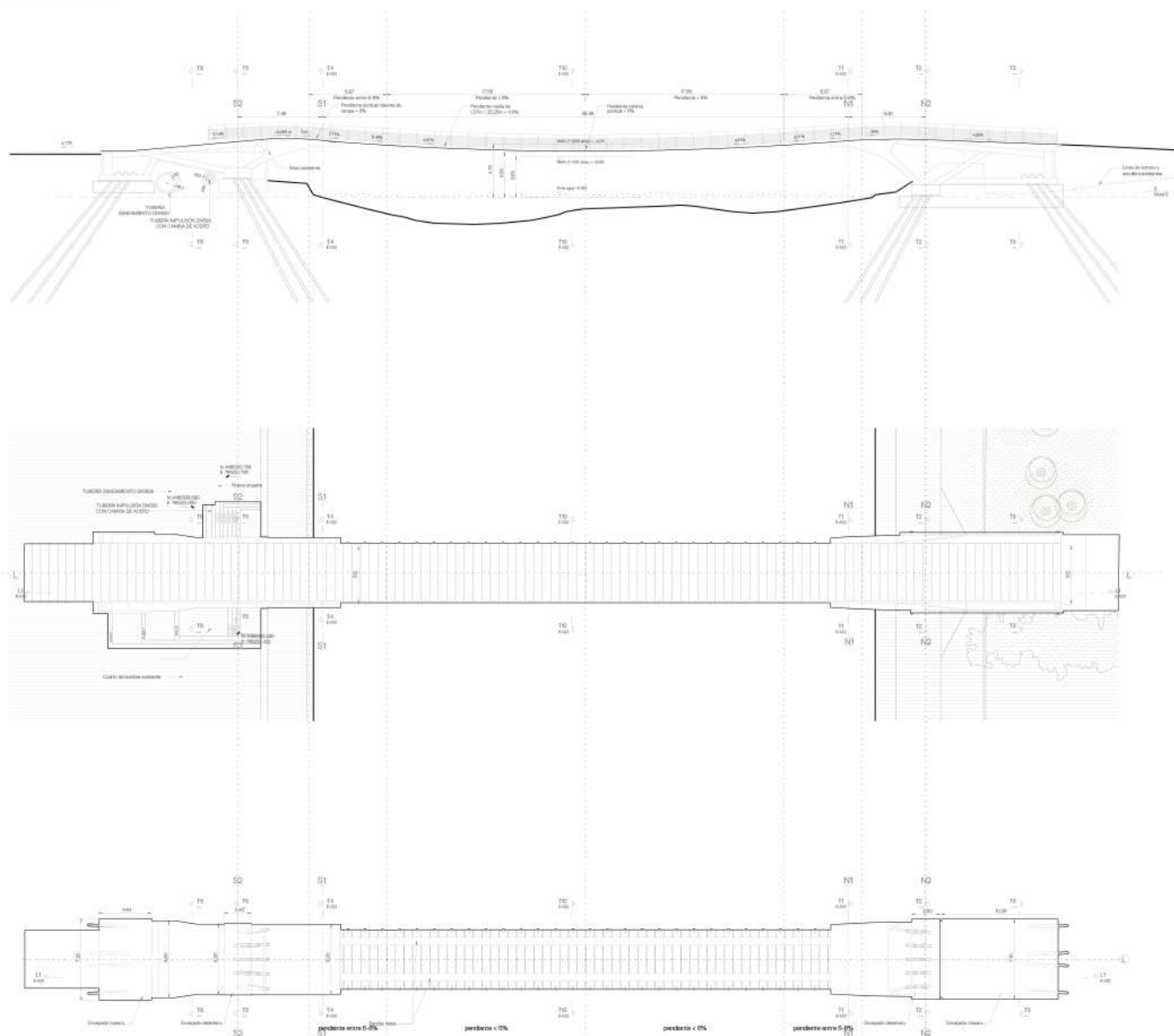
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Elevation and ground floor plans



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Construction plans
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The bridge is made up of a small number of elements that make it light and robust at the same time. The foundations are made of reinforced concrete on deep micro-piles, the segments of prefabricated concrete, and the two deck plates that support the deck are made of 700 mm by 14 mm steel. These few elements facilitate simple and economical maintenance in a particularly aggressive location due to the presence of the sea. The surface finish of the reinforced concrete segments serves as a pavement with no further additions, and the railing is made of flat bars and a light mesh, both stainless steel. On the east side of the bridge, where pedestrians walk, a thick-section lpe wood handrail tops the railing, which is lower on this side to make it friendlier to the pedestrians it protects. This finish gives the bridge a certain 'marine' character and allows pedestrians to lean against it and enjoy the sea views. To the west, to protect cyclists, the railing is higher - 130 cm - and equally light, closed with the same mesh as to the east, and finished with steel plates.

The layout of the catenary that configures the strip-tesa requires that the lower point of the deck, in the centre of the span, be above the 100-year flood line, and that the southern abutment be 90 cm above the level of the pavement of the Fora del Forat avenue from which it starts. This small elevation is resolved with a ramp that makes it accessible and with a grandstand where it is possible to sit and contemplate the sea and give access to the bridge from diffe-

rent positions. To the north, where the river embankment is furthest from the sea, there is another grandstand that ends at the embankment and facilitates access to its shore.

The currently vacant area to the north is proposed as a horizontal and continuous surface on which a plantation of two species of pine trees [*Pinus halepensis* and *Pinus pinaster*] naturally reconstructs the landscape of the Mediterranean coast, trying to conserve some of its character as an 'available field' in which any use is possible. This small pine grove is crossed by a paved path for cyclists that links the northern landing of the bridge with carrer Boverals and is equipped with very robust urban furniture using large limestone blocks that also build the jetty at the mouth. The slopes necessary to align the bridge with the nearby streets and the pine forest to the north are covered with vegetation, tamarinds and junipers, and a thick breakwater to the east protects the abutment from the onslaught of the sea.

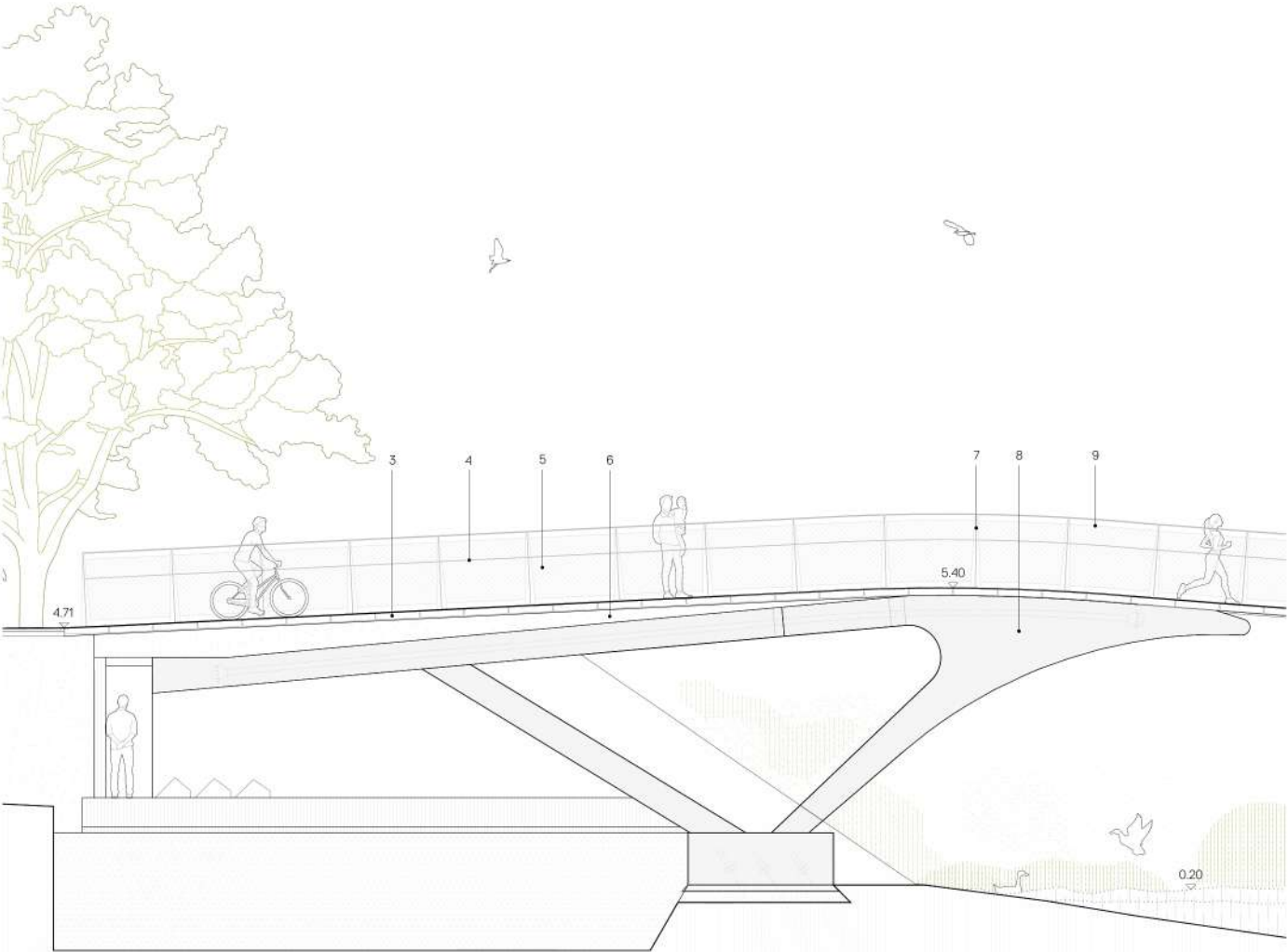
The project integrates the civil construction of the bridge with the urbanisation of its surroundings to make it friendlier and more versatile, but trying to preserve the naturalness and a certain 'scruffiness' that we consider to be a value of this place on the coast. Thus the green, the civic and the infrastructural form a unitary whole in which each of these elements adds value to the others.



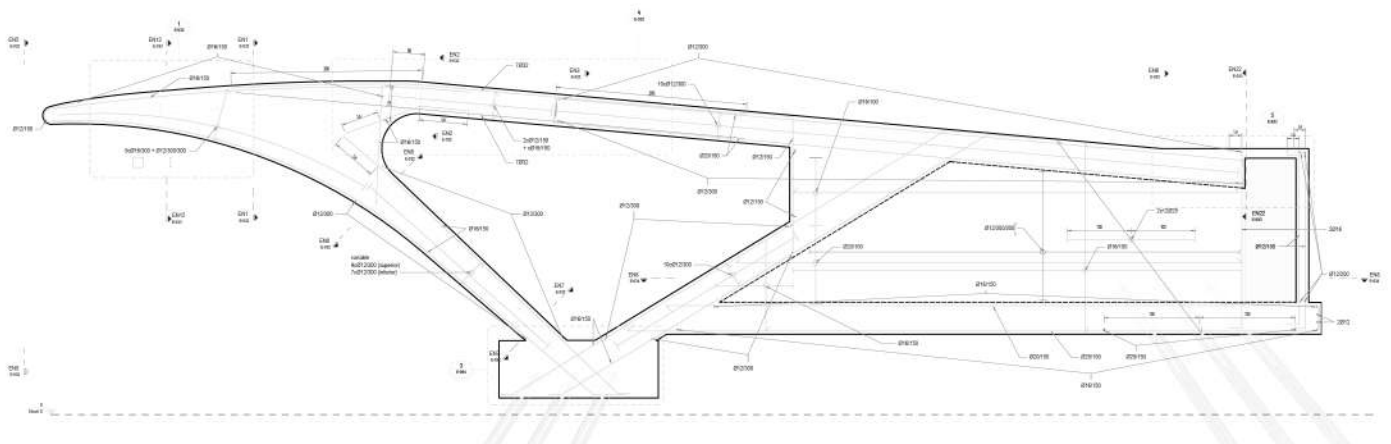
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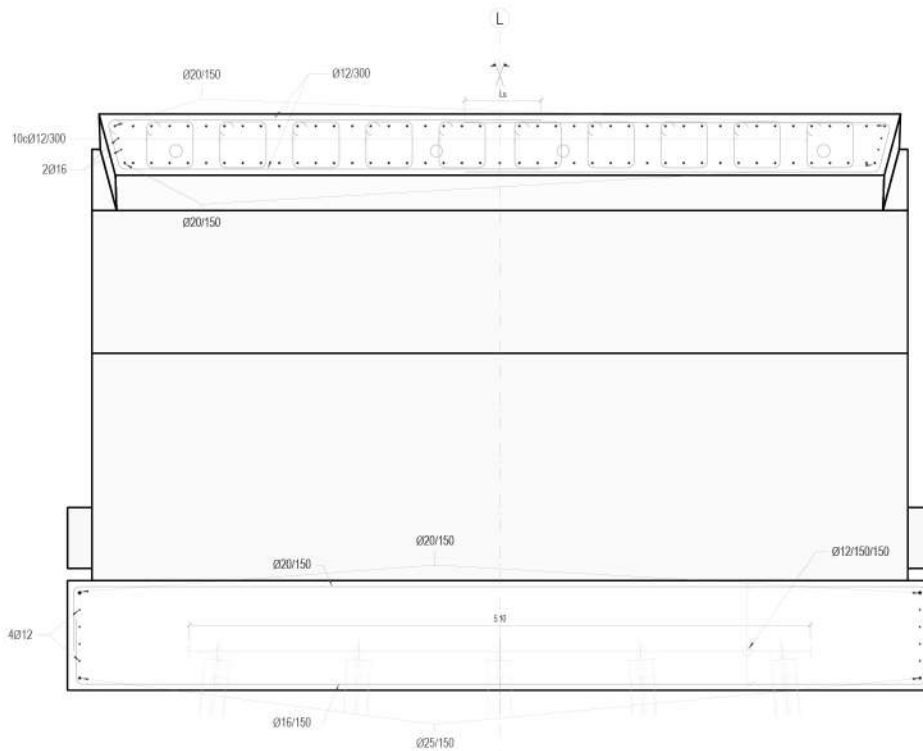
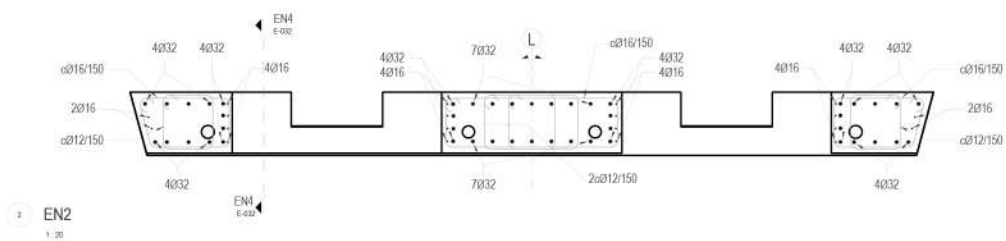
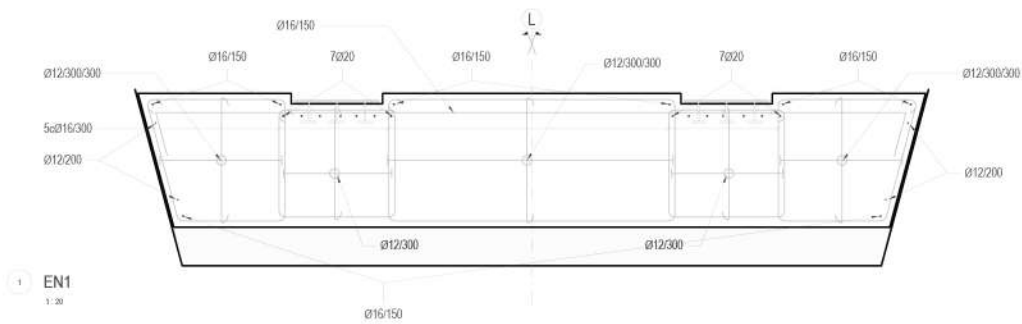
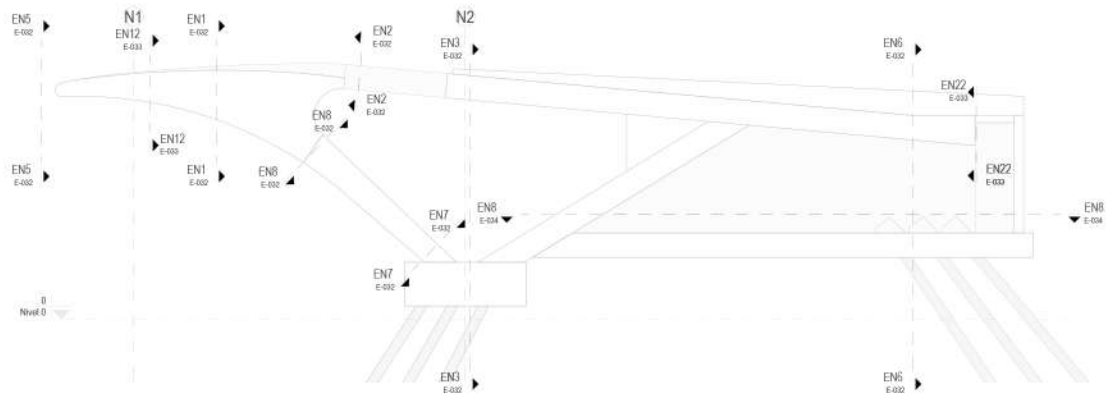


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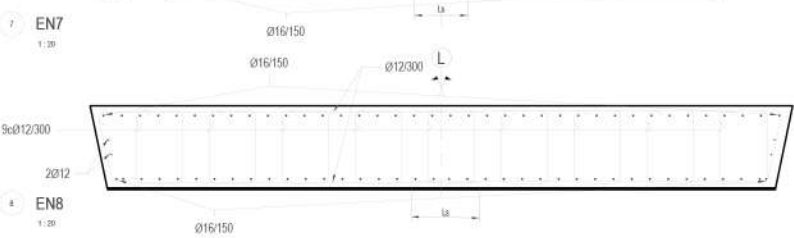
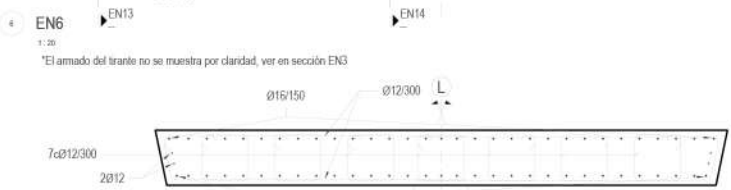
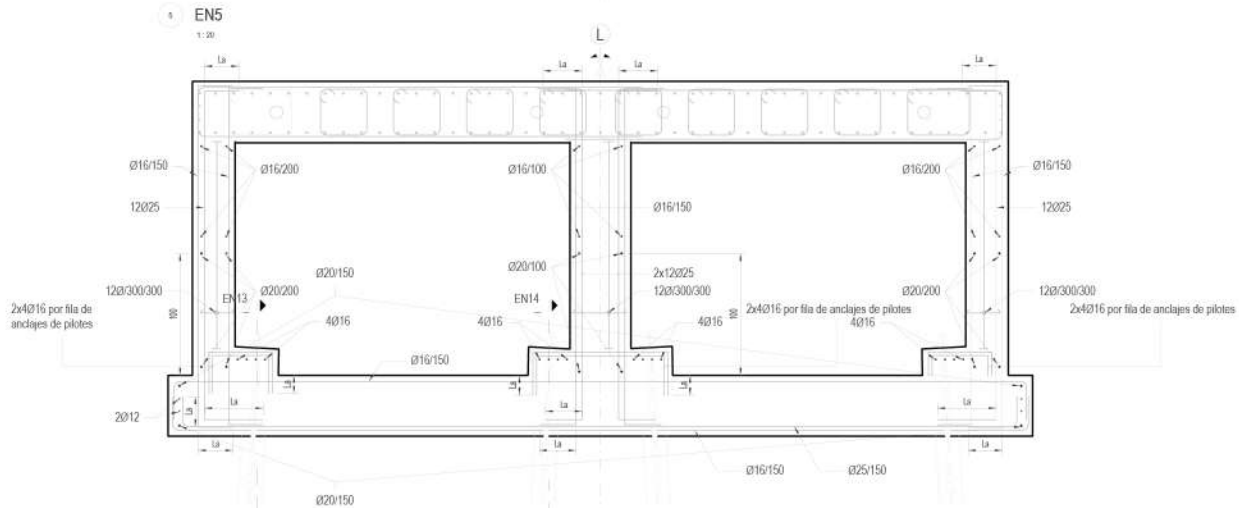
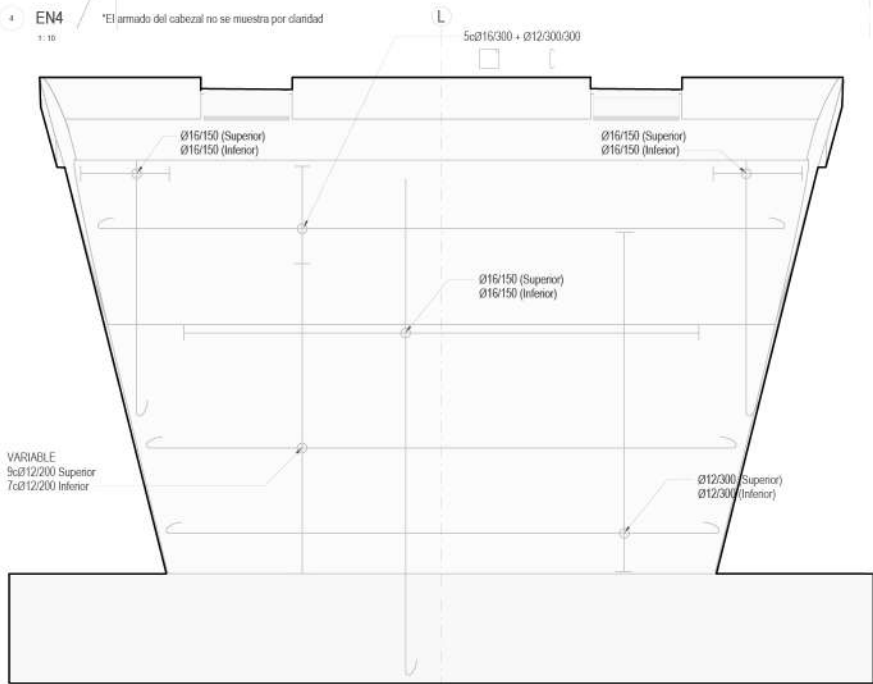
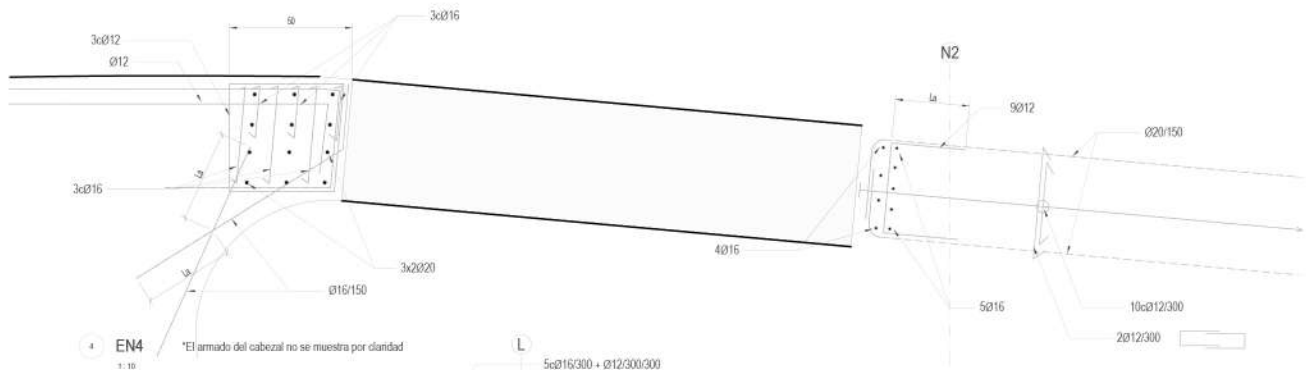


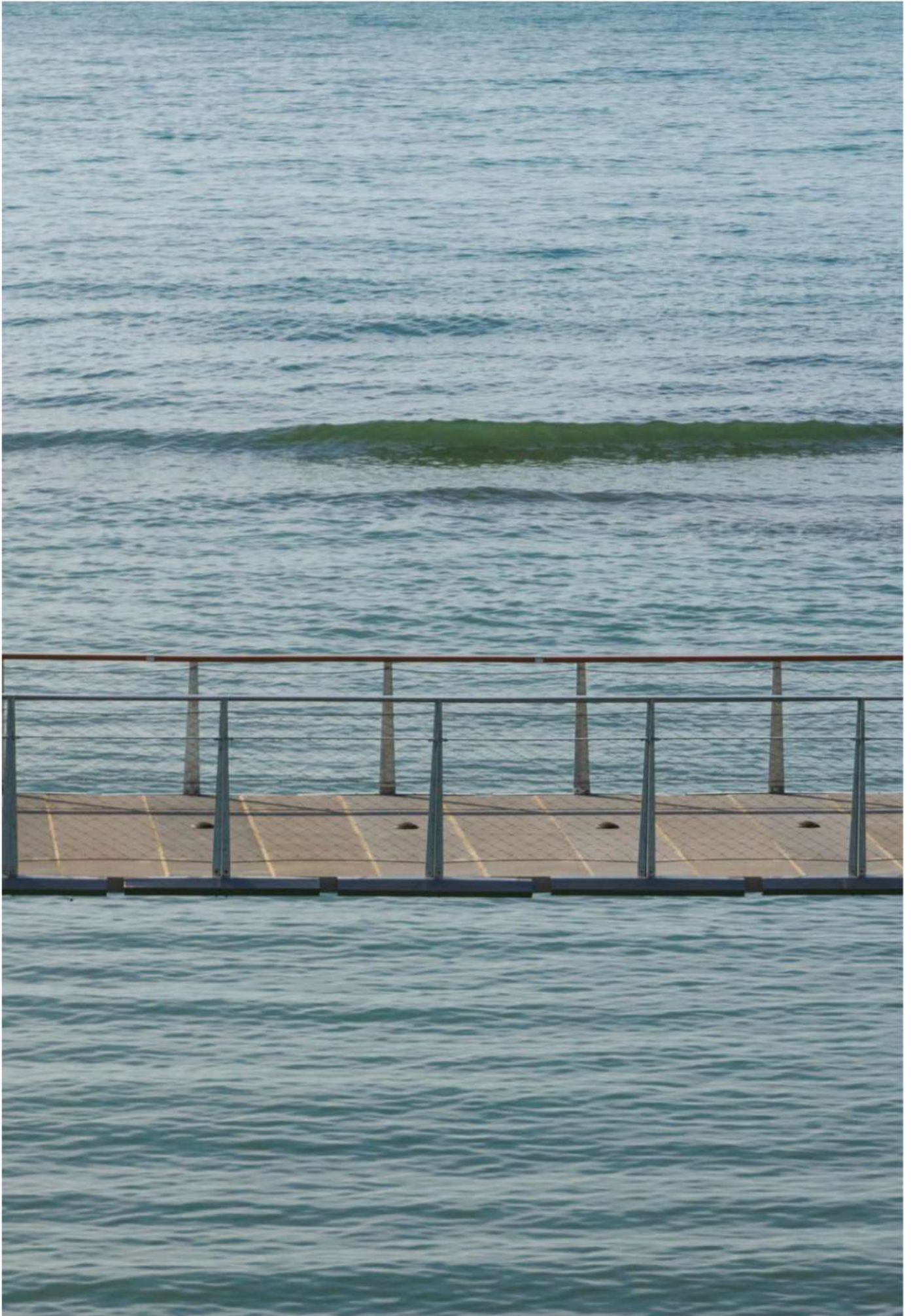
Support section
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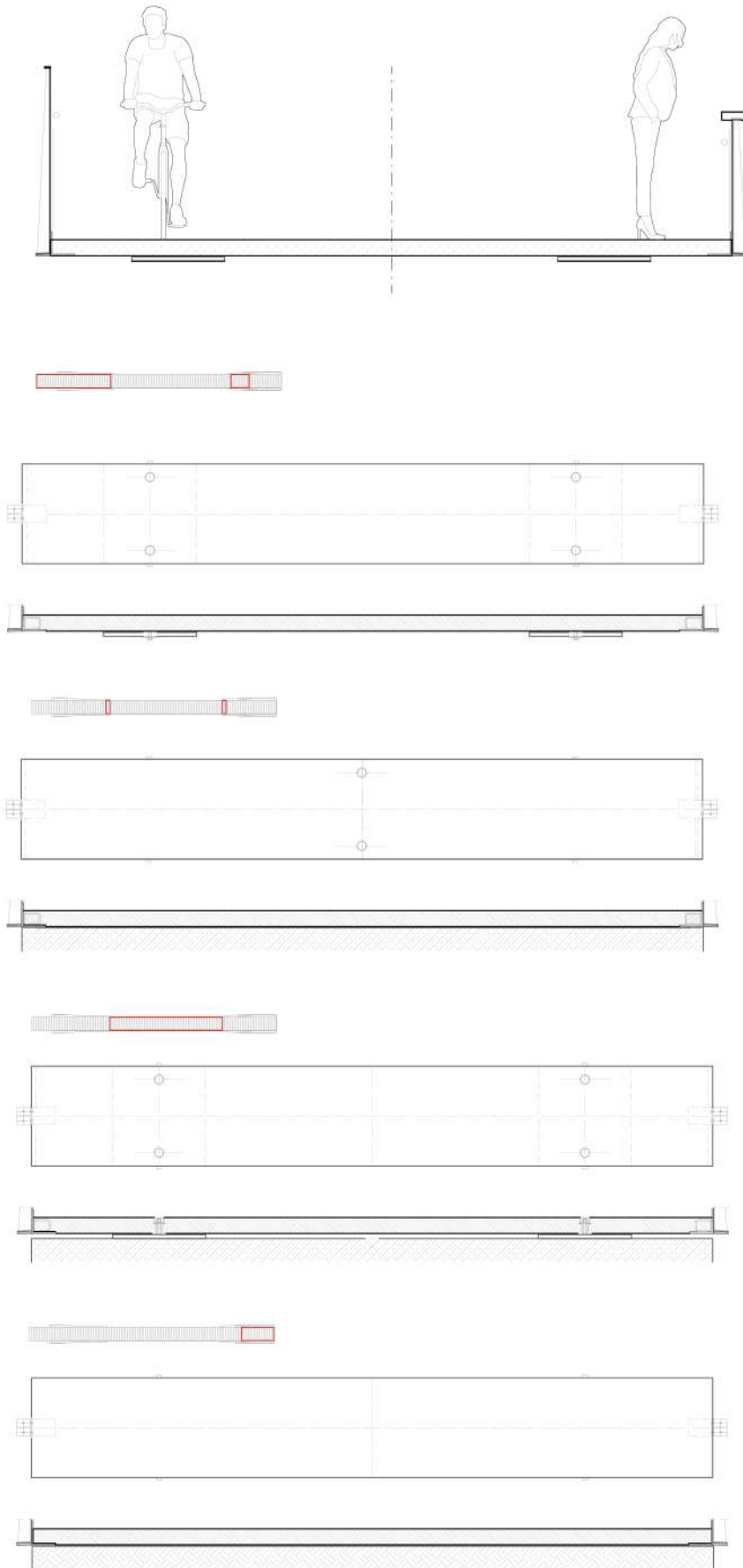




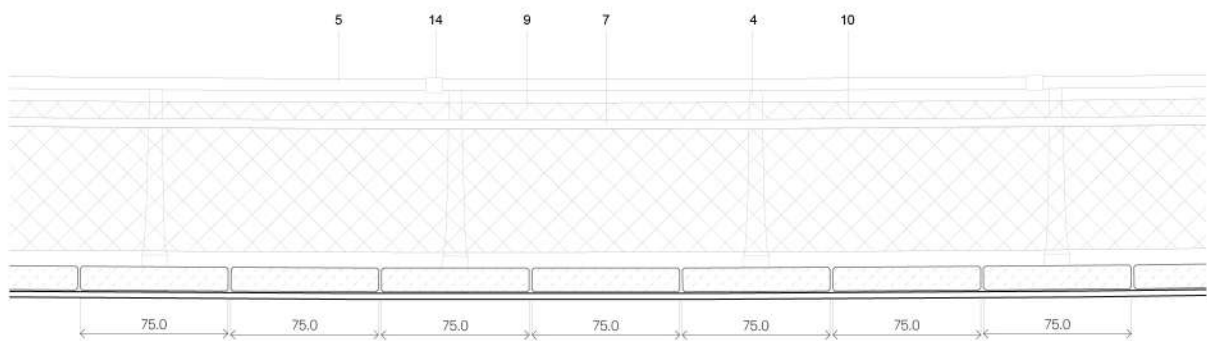
North abutment
Passive reinforcement
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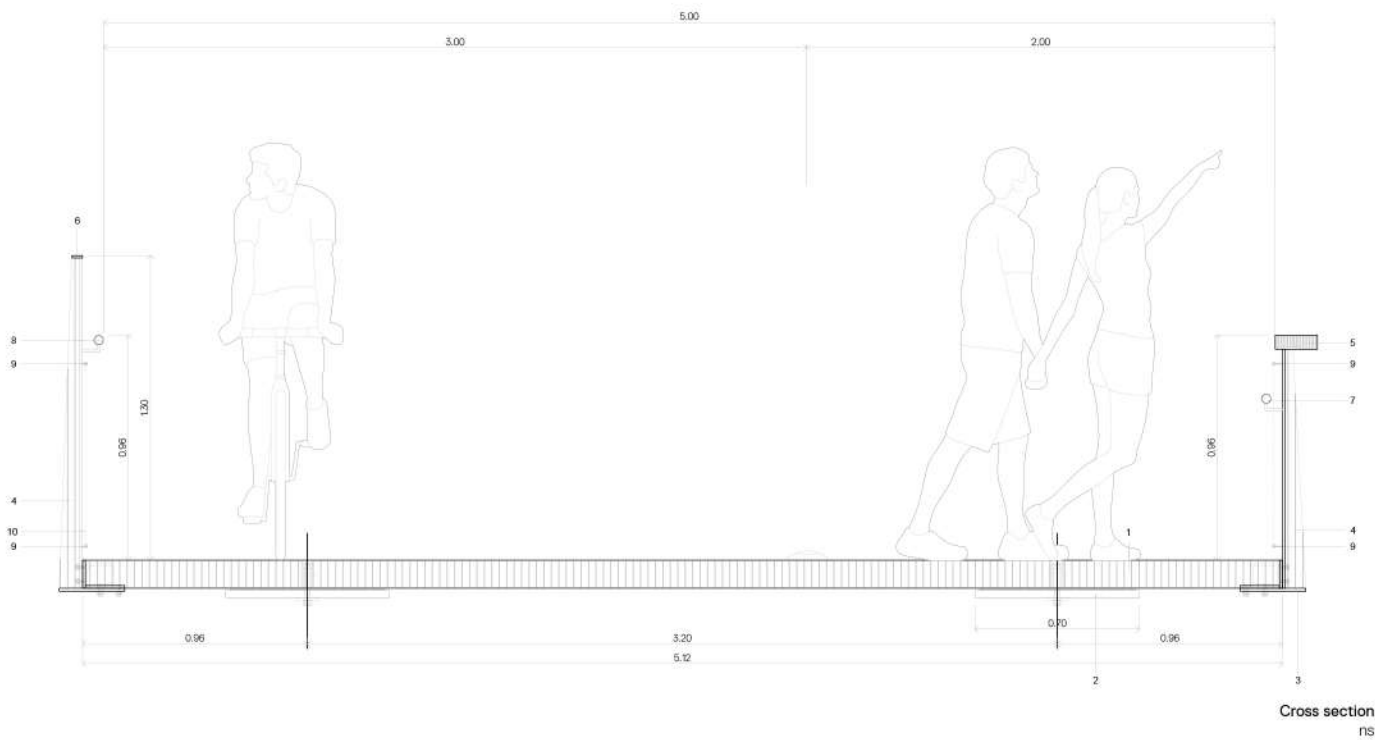




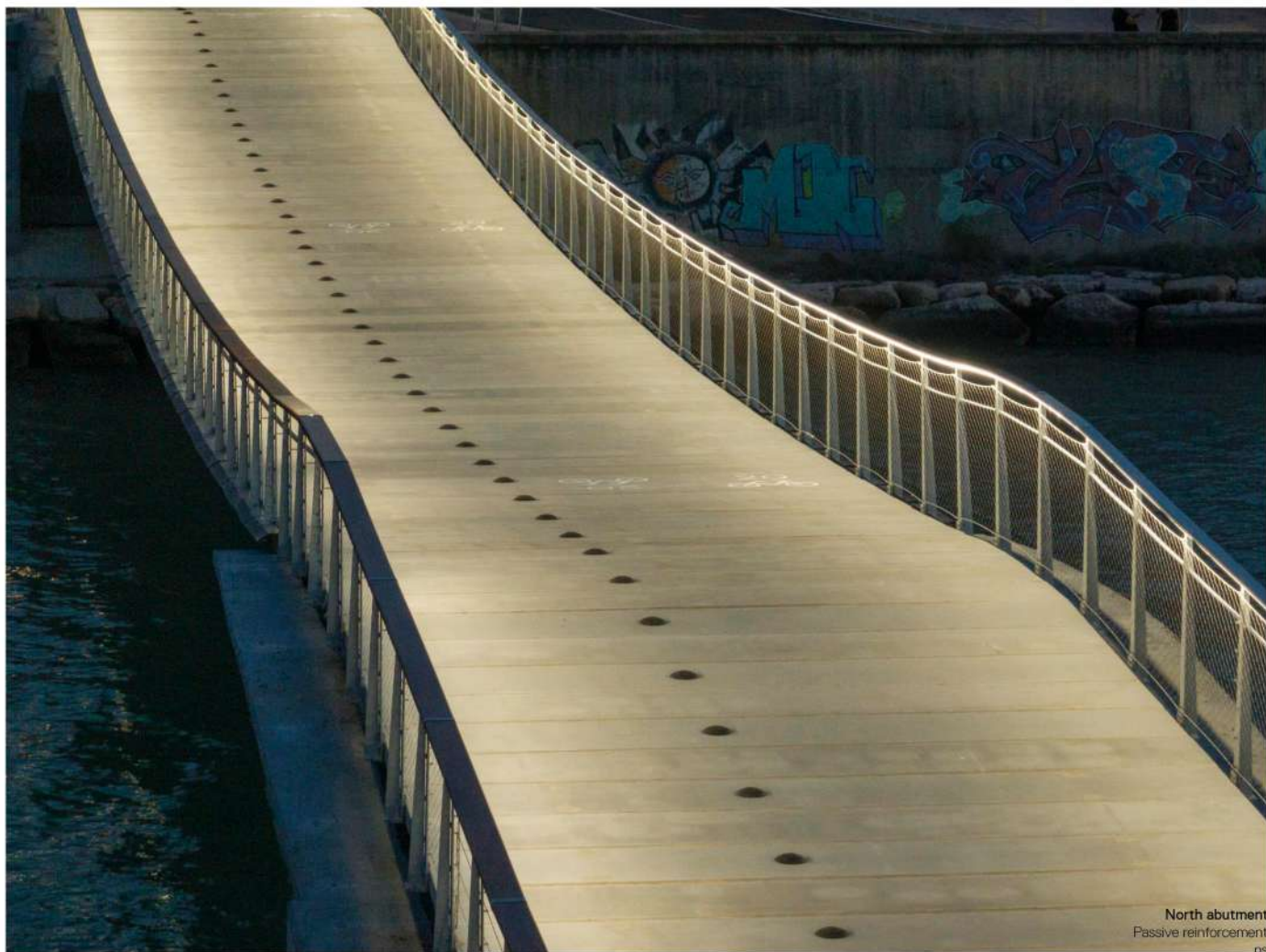


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To obtain high definition photographs
and technical documents,
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917 489 327



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