

LERBJERG BRIDGE, FAVRSKOV, AARHUS-LANGÅ BROER I FAVRSKOV KOMMUNE, JUTLAND, DENMARK

Piled Embankments

Problem

The danish railway authority planned a new road bridge crossing the railway in the municipality of Favrskov (Jutland region). This project included also the regulation of crossing roads and the adjustment of the road connections in the area. The main goal was to eliminate all planar road crossings on this major railway.

The foundation soil parameters in the area were not satisfying the design requirements and, therefore, a solution of basal reinforcement over piles was chosen to sustain the road embankments.

Solution

Maccaferri technical department was involved in the design of the geogrid reinforcement and collaborated with Aarsleff A/S to find the proper solution for this project. To manage the differential settlements, Maccaferri offered Paralink™ geogrids as a basal reinforcement solution. Paralink™ geogrids are unique planar structures consisting of a monoaxial array of composite geosynthetics strips.

Maccaferri created a customized solution using Maccaferri's software "MacBars" to evaluate geotechnical parameters and meet design life requirements whilst being economically acceptable. For this case, the software was implemented with the safety factor coefficients according to the Danish guidelines. Indeed the approved solution foresaw Paralink™ 350 installed in the longitudinal direction and Paralink™ 350/500/750 in the perpendicular direction. The short-term reinforcement strains were designed at a value lower than 6% according to the design requirements.

A total of 35,600 m2 of Paralink™ 350/500/750 was supplied and installed in approximately 3 months.

Client: Banedanmark

Designer / Consultant: Sweco

Contractor: Aarsleff A/S

Products used (Qty.)

- MonoAxial GeoGrids

35.000 sqm of
Paralink 350-750

Date of construction: 10/2021 - 12/2021

[Google Maps](#)

[Google Earth](#)



Drone aerial view of the pile caps



Start of the installation phase under Maccaferri's technical support



Detail of ParaLink geogrid



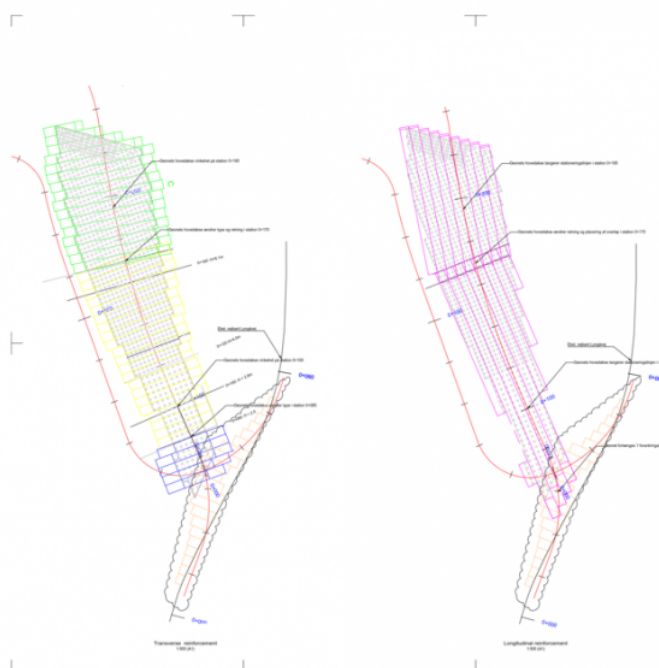
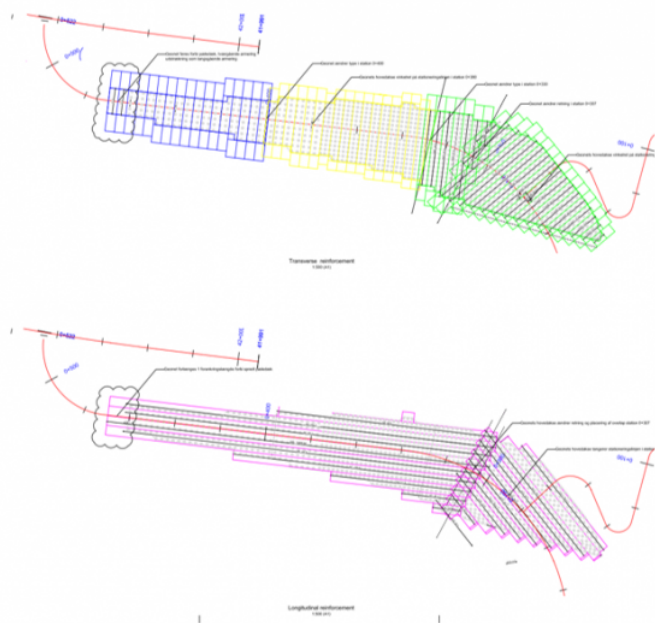
Unrolling of the ParaLink



Detail of the overlapped grids in perpendicular direction



Drone aerial view after the covering of the pile caps



Schematic top view

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