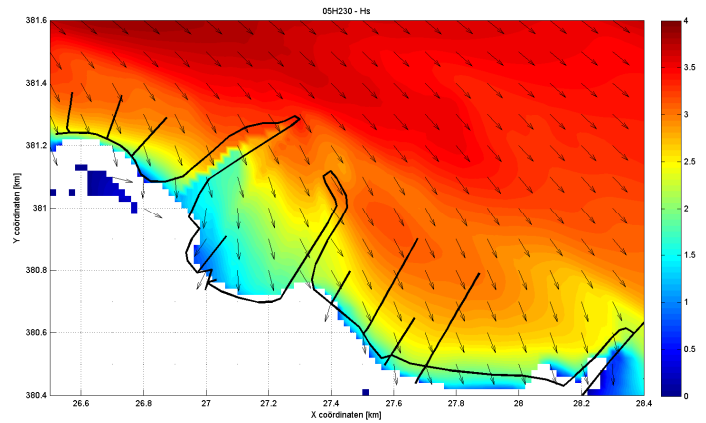
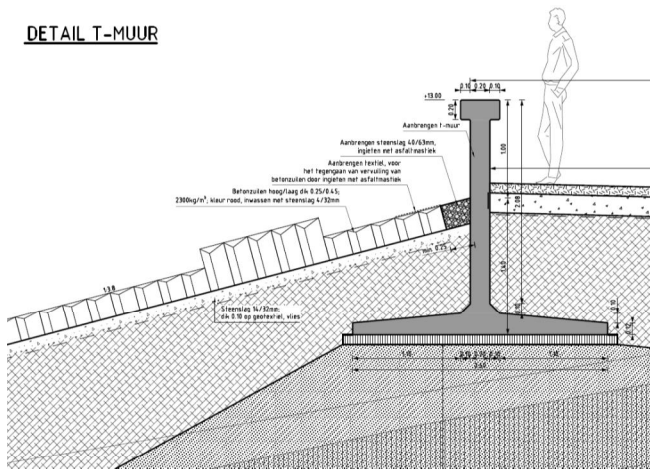


## DETAIL T-MUUR



## Design sea defence – Weak Link Breskens

The village of Breskens is located in the south-western part of the Netherlands at the entrance of the Western Scheldt. The sea defence of Breskens, in the vicinity of the former fortress Frederik Hendrik and the ferry harbour, is one of the weak links (Zwakke Schakels) of Zeeuws-Vlaanderen.

The numerical wave model SWAN is used for the derivation of the Hydraulic Boundary Conditions, the hydraulic conditions with an exceedance frequency of 1/4000 year. In the design a sea level rise of 60 cm is applied and in the SWAN-model the expected bathymetry in the design period is used. Moreover, detailed design conditions have been derived, which include the new knowledge on the design of stone revetments (Steenstoets).

Svašek Hydraulics has written the design report of the sea defence. First, after consultation of all parties involved, a list of demands, wishes and boundary conditions has been formulated. With this list several alternatives have been developed and the selected design was engineered in detail (Steenstoets, PC-overslag etc.). To restore the recreation park and houses, the present sea defence will be relocated in a more seaward direction. In the vicinity of the former fort Frederik Hendrik, the wave overtopping and the crest height is reduced by a vertical wall and concrete elements of different heights (roughness elements). At the eastern side of the mooring location the new dike profile is optimized. Increasing the crest height and/or replacement of the toe of the dike is not necessary anymore.

The dike will be under construction in 2012. The biggest part of the work takes place in summer, between 1st April and 1st October. The winter period is considered storm season during which dikes must not be broken up.

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SV1607

**Client**  
Water board Scheldestromen/  
projectbureau Zwakke Schakels

**Location**  
Breskens, the Netherlands

**Date**  
2010-2011

**Services**  
SWAN wave modelling and detailed  
design sea defence

**SVASEK**  
**HYDRAULICS**  
COASTAL, HARBOUR AND RIVER CONSULTANTS