

RIVER REVETMENT IN WAY LIRANG SERAM ISLAND, MALUKU, INDONESIA

Longitudinal Protection

Problem

Way Lirang is located in the South-West of Seram Island, Maluku Province of Indonesia. An unconfined river body was threatening the surrounding areas, populated by the local community, with frequent floods coming during the rainy season.

The objective was to build a dike in order to confine the high water flow level avoiding thus the flooding of the areas in its vicinity. The dike was planned to be build with locally available loose soil (mainly sandy clay).

Solution

The Public Works Department decided therefore to build the dike and to cover it with a durable and flexible revetment system to prevent the erosion of the fine soil particles. It has been decided to protect the dike using Reno Mattresses (thickness 30 cm). Reno Mattresses allow tangential river flow velocities up to 6m/s without any substantial damage (according to the test results gathered during the Colorado State University hydraulic test campaign). Mattresses are also very flexible modular elements which allow high levels of deformation and settlements without compromising the lining integrity. Reno Mattresses have shown to be a valid alternative to the traditional lining systems used in Indonesia (rip-rap or masonry walls) both in terms of flexibility, durability and cost effectiveness.

Client: MINISTRY OF PUBLIC WORKS

Designer / Consultant: N/A

Contractor: N/A

Products used (Qty.)

- Reno Mattress N/A

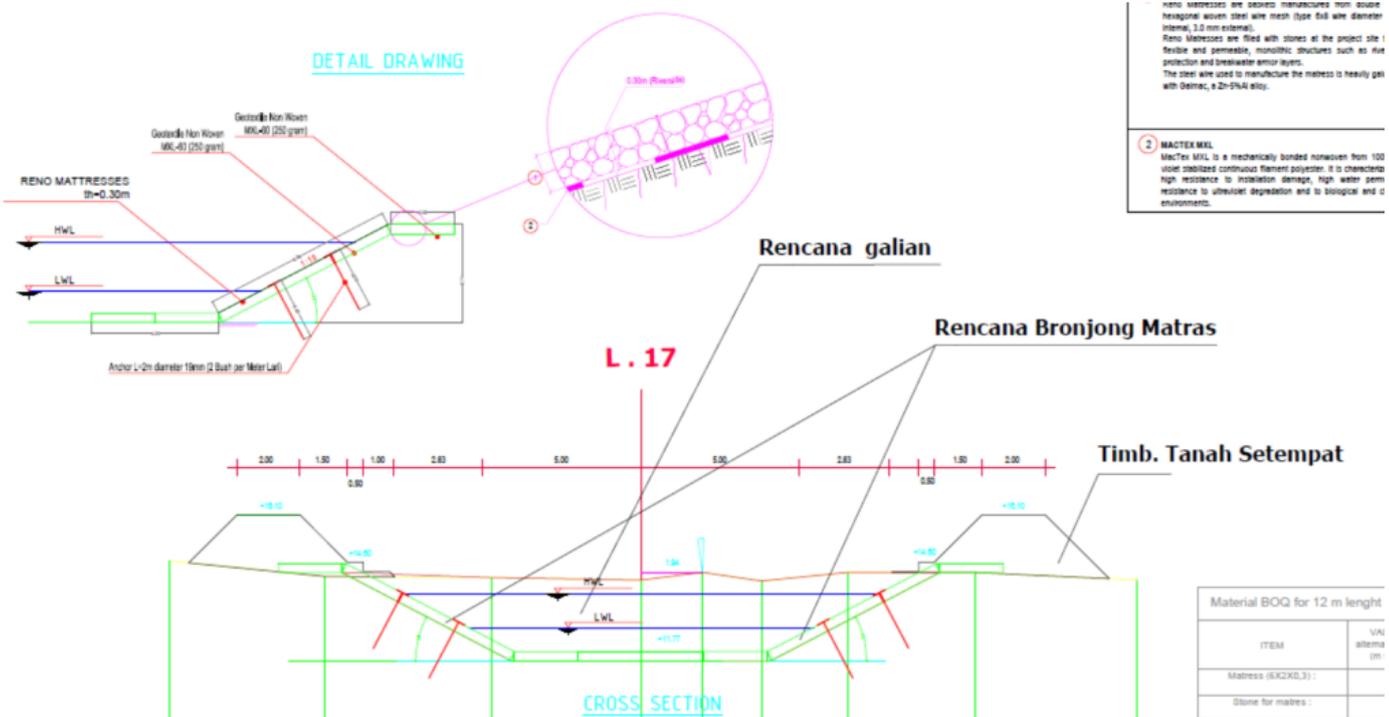
Date of construction: 07/2015 - 12/2015



Existing Riverbank Condition

Reno mattresses are precast manufactured from double hexagonal woven steel wire mesh (type E68 wire diameter 10mm, 3.0mm external).
 Reno Mattresses are filled with stones at the project site. Flexible and permeable, monolithic structures such as river protection and breakwater armor layers.
 The steel wire used to manufacture the mattress is heavily galvanized with Galvalume, a Zn-5%Al alloy.

2 MACTEX MIL
 Mactex MIL is a mechanically bonded nonwoven from 100 violet stabilized continuous filament polyester. It is characterised by high resistance to oxidation damage, high water permeability, resistance to ultraviolet degradation and to biological and chemical environments.



Typical Cross Section Drawing