

# MSE WALL SUPPORTS THE ROAD CONNECTION OF NORTH BALI AND SOUTH BALI

## BULELENG, BALI PROVINCE, INDONESIA

### Reinforced Soil Walls and Slope Reinforcement

#### Problem

The construction of the Mengwitani-Singaraja shortcut that connects the South and North of Bali regions aims to reduce the current road bends and inclines. With the shortcut, the incline will become more gentle, the travel time reduced, and accident-prone hazards mitigated.

Shortcuts will be built at 10 locations and a rest area will also be built along with the Ki Barak Panji Sakti Monument as an icon in the park and parking area. Despite the pandemic, the construction of shortcuts is still ongoing and following the health protocols.

Part of the road was planned to be built on top of an embankment that needed reinforcement against external loads, such as traffic loads and earthquakes. The 30 meters height of an embankment is a great challenge to reinforce. An innovative solution is needed to overcome this challenge to create a safe and stabilized embankment for the new shortcut road.

#### Solution

As a solution to stabilize the embankment slope, a Paramesh System was proposed. Paramesh system consists of Para Products (Geogrid) as a primary reinforcement and Terramesh® as a secondary reinforcement which also functions as the facing of the slope on which vegetation is free to grow. The geogrid that was used was a combination of Paralink® 300 with a tensile strength of 300 kN/m and MacGrid® WG 15 with a tensile strength of 150 kN/m. The height of the structure was 20 meters with additional wrapped-around geotextiles of 10 meters on top of the Paramesh System.

Maccaferri Indonesia provides comprehensive services starting from the design and planning stage with the technical recommendation, manufacture and supply materials, and construction stage with Product Assistance. Most of the materials from Maccaferri Indonesia are manufactured locally in Indonesia under International and National Standardization and verified by a TKDN certificate.

**Client:** MINISTRY OF PUBLIC WORKS

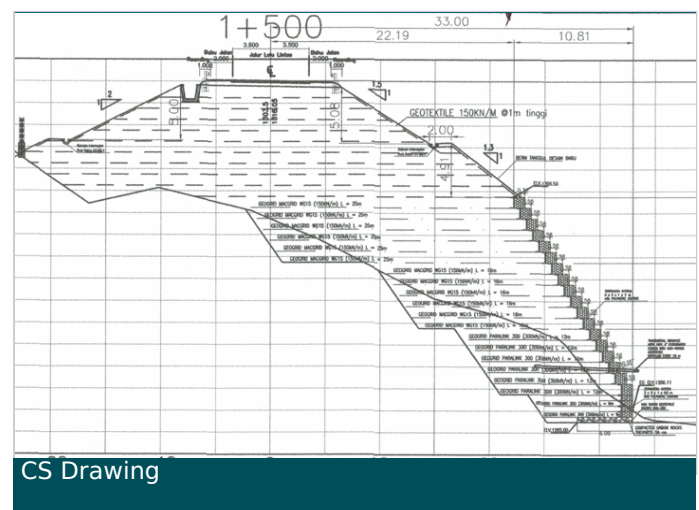
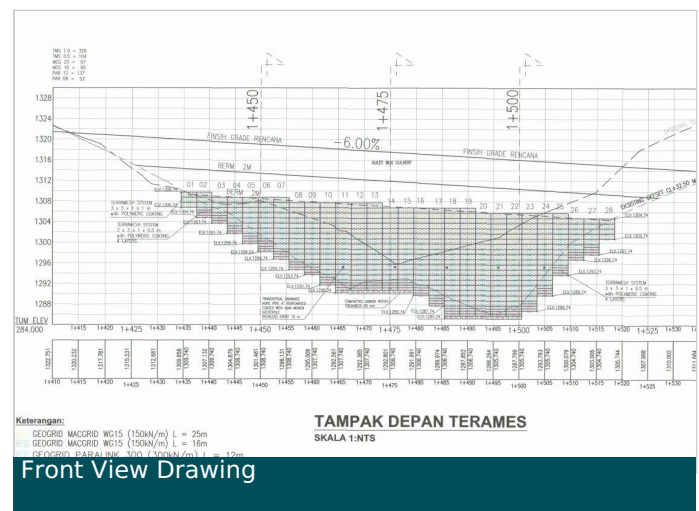
**Designer / Consultant:** ADHI - CIPTA KSO

**Contractor:** ADHI - CIPTA KSO

#### Products used (Qty.)

- Terramesh	455 unit
- Nonwoven Geotextiles	2.400 sqm
- MonoAxial GeoGrids	7.500 sqm
- MonoAxial GeoGrids	12.600 sqm
- PP/PE Woven Geotextiles	25.000 sqm

**Date of construction:** 08/2019 - 12/2019







Embankment Compaction



Stone Filling



Terramesh Assembly



After Construction

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