

MARIKINA-INFANTA ROAD

ANTIPOLO CITY, RIZAL, REGION IV-A, PHILIPPINES

Reinforced Soil Walls and Slope Reinforcement

Problem

The Department of Public Works & Highways (DPWH) Region IV-A Office has implemented various road widening programs along the Marikina-Infanta Highway, also known as Marcos Highway or MARILAUQUE (Marikina-Rizal-Laguna-Quezon) Highway), a 110 km mountain road that connects Metro Manila with Infanta, Quezon, due to an increasing volume of traffic. A portion of the highway in San Jose, Antipolo City, Rizal required an earth retaining structure system to achieve the desired width of the widened road adjacent to a cliff.

In this, an earth retaining structure system that maximizes in situ materials, economical, and easy to build was required by the DPWH engineers.

Solution

Based on the data provided by the project proponent, a 12-meter high mechanically-stabilized earth (MSE) wall by about 60 meters long was designed by Maccaferri engineers. Terramesh System in combination with Maccaferri's high-tenacity woven polyester geogrids for soil reinforcement were recommended.

The reinforced backfill of the structure was compacted to minimum 95% of MDD by Standard Proctor.

Moreover, the downslope portion of the MSE wall has been found to be composed of loose fill materials that were dumped prior to the construction of MSE wall to stabilize its toe. It has been recommended that the said portion must be re-graded and properly compacted to ensure its stability. Also, it has been advised to expedite vegetation on the exposed slope surface at the toe of the wall to ensure protection against erosion, and planting of bamboos locally abundant in the area can also be incorporated for additional erosion prevention.

Client: DPWH Region IV-A

Designer / Consultant: DPWH Region IV-A

Contractor: I&E Construction

Products used (Qty.)

- Terramesh	N/A
- MacTex Non-woven Geotextile	N/A
- MacDrain W	N/A
- HDPE Pipes	N/A
- MacGrid WG	N/A

Date of construction: 01/2016 - 09/2016



January 2016- Before Construction



February 2016 - During Construction



February 2016 - During Construction



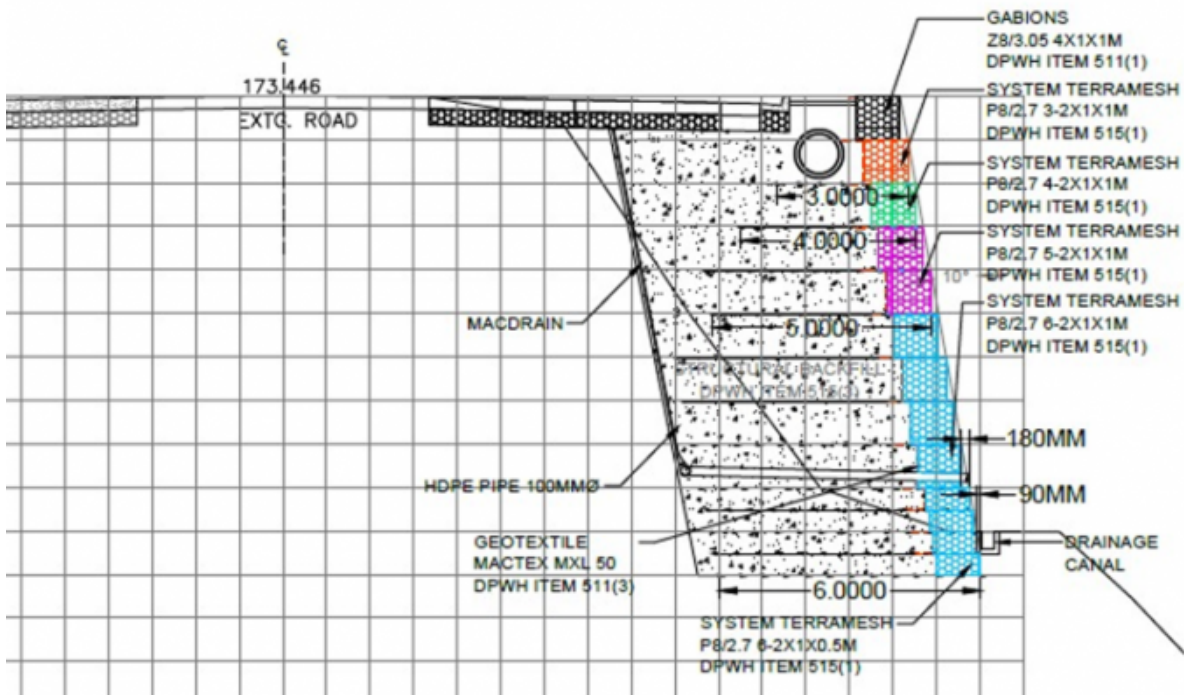
June 2016 - During Construction



July 2016- During Construction



August 2016- During Construction



Typical Cross Section Detail

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