

REINFORCED EMBANKMENT WITH TERRAMESH SYSTEM AT NAGREG RING ROAD WEST JAVA, INDONESIA

Problem

Nagreg Ring Road lies largely in the topography of valley and hills with slopes reaching 40° and has high rainfall. Furthermore, this area is located in the quake zone 3 and has high potential to occur landslides and slope instability. Considering the conditions of the limited area, the construction of the road had to be constructed by cutting the hill and filling the valley in order to reach the planned elevation and slope of the road according to the standard from Ministry of Public Works. The elevation level of road surface is varies between 9 to 36 m above foundation level.

Solution

Maccaferri Terramesh System and Macgrid as a flexible structure can provide solution for the problems. Reinforced embankment structure is able to have more straighten comparing to convensional embankment, thereby reducing the use of embankment material. Terramesh system with permeable facing in the form of gabion and with the using of Mactex as filter is capable to provide solutions for drainage problems which commonly occur and to prevent the accumulation of saturation without losing soil grain. Characteristic of a flexible structure is capable of delivering more tolerance for differential settlement comparing with rigid structure. The availability of materials, easy installation and the possibility of using local manpower will increase the effectiveness and productivity of the construction work. Terramesh system is a permanent structure and able to achieve a design life of 60 years.



Foundation Preparation (STA 2+800)

August 2009



Construction Progress 40 % (STA 2+800)

December 2009



Construction Progress 80 % (STA 2+800)

June 2010



1st Trial Phases (STA 2+800)

September 2010



1st Trial Phases (STA 3+200)

September 2010



1st Trial Phases (STA 4+000)

September 2010



1st Trial Phases

September 2010

Project : Construction of Nagreg Ring Road , West Java

Owner	Ministry of Public Work
Contractor	PT. Hutama Karya
Consultant	PT. Yodya Karya and PT. Wiraguna Tani
Product used	Terramesh, Geogrid and Mactex
Construction date	April 2009 (Stage II), April 2010 (Stage IV)