

## ROCKFALL PROTECTION OF BTS. BANDUNG/CIANJUR- NARINGGUL-CIDAUN ROAD NARINGGUL, WEST JAVA, INDONESIA

### Dynamic Barriers

#### Problem

The Ministry of Public Works and Public Housing through PJN 2 PPK 2.5 West Java carried out the construction of a national road that connects Bandung and South Cianjur. The purpose of road construction is to establish better traffic and to improve the economy in the southern part of West Java.

A rockfall hazard was discovered along Bts. Bandung/Cianjur - Naringgul - Cidaun Road due to weathered conditions of the rock slope that endangers the lives of the road users. Thus, a solution to prevent the hazard was needed and should be obtained by considering the impact of the rockfall potential.

The key points to be considered in choosing the suitable solution and/or material for this project include:

- The forces of falling rock
- The capacity of the material to dissipate the forces
- Impacted zones

The designated material had to withstand an estimated rockfall of 10 tons mass from 30m height and 4m<sup>2</sup> of volume.

#### Solution

To comply with the requirements of enduring the estimated falling rocks, Maccaferri Indonesia provided a rockfall barrier (RB 3000) to dissipate the energy of falling rocks of up to 3,000 kJ with 6 meters height and 25 meters total length.

The barrier is made of strong ring nets that provide the bulk of the strength combined with double-twisted steel wires with smaller openings that enables it to catch smaller rocks as well. The ring nets and steel wires are coated with Galfan (ZnAl5% - Class A) for corrosion protection.

To withstand the large energy impact, the system is held in place with an array of steel posts, T-FAST (Rope Anchor), and concrete foundations. A special brake system is also put in place to absorb most of the energy from the rockfall.

Maccaferri Indonesia also provided comprehensive services starting from technical recommendation, manufacture and supply materials, and Product Assistance during the construction stage.

**Client:** MINISTRY OF PUBLIC WORKS

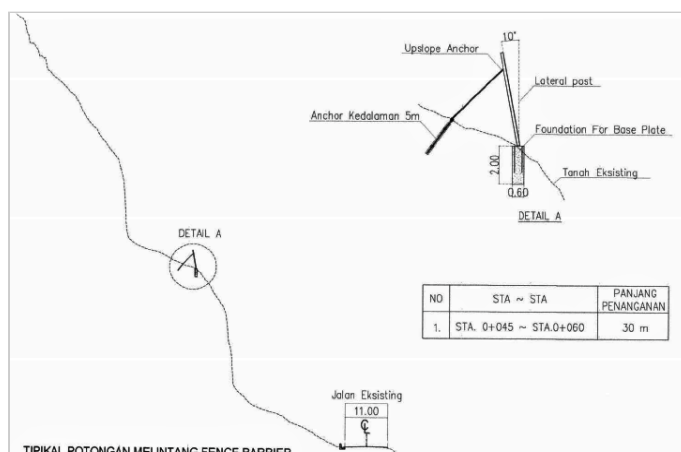
**Designer / Consultant:** PT MARATAMA CIPTA MANDIRI

**Contractor:** PT LIE JASIN ENGINEERING

**Products used (Qty.)**

- Rockfall Barriers 150 m<sup>2</sup>

**Date of construction:** 12/2020 - 03/2021



Typical Drawing of solution



Before construction

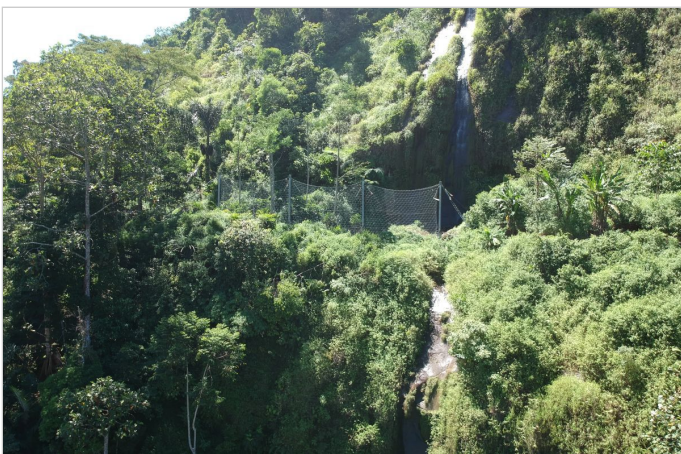




Installation process



Close up view of the barrier



After construction



Finished construction



Overview of Rockfall Barrier

PT. Maccaferri Indonesia  
Aminta Plaza 2nd Floor, Suite 204  
Jln. TB Simatupang Kav.10 Jakarta 12310  
Ph: +62-21 750 6555  
Fax: +62-21 750 6553  
E-mail: [info.id@maccaferri.com](mailto:info.id@maccaferri.com)