

**CIAWI DAM DROP STRUCTURE**  
**BOGOR, JAWA BARAT, INDONESIA****Weirs, Culverts and Transverse Structures****Problem**

Ciawi Dam is a dry dam located in West Java, Indonesia. The infrastructure is planned to have a capacity of 6,45 m<sup>3</sup> and expected to reduce the flood discharge of 160 m<sup>3</sup>/sec. The purpose of this dam is to reduce the amount of rainwater from the upstream so that the city in the lowland area doesn't flood.

As a part of the dam construction, there is an existing river flow that needs to be diverted. The original design was using the heavy galvanize as the coating of the wire mesh or concrete structure as the alternative. The total length of the drop structure is 54,2 meters and 18 meters of total height.

**Solution**

The river diversion structure is mainly using gabions and reno mattresses with stone filling as the core. Steel anchors were installed to keep the gabions and reno mattresses in place. Maccaferri Indonesia proposed to use the PVC coated wire as the protection against river flow, abrasion and UV exposure. The usage of this material proved to be more effective and efficient in terms of construction time and cost. All the stability checks of the structures were performed using the internally developed software of Maccaferri (MacStars W and Macra). Furthermore, Maccaferri provided the client with job site supervision and the contractor with installation assistance in order to ensure the standards were followed.

**Client:** WATER RESOURCES DEPARTMENT OF PUBLIC WORKS

**Designer / Consultant:** Yodya Karya - Indra Karya - Indah Karya J.O.

**Contractor:** PT. Abipraya - Sacna J.O.

**Products used (Qty.)**

- Reno Mattress	180 units
- Gabion	500 units
- MacTex Non-woven Geotextile	1,600 sqm

**Date of construction:** 09/2019 - 12/2019



Installation process of Gabion and Reno Mattress



Installation process of Gabion and Reno Mattress

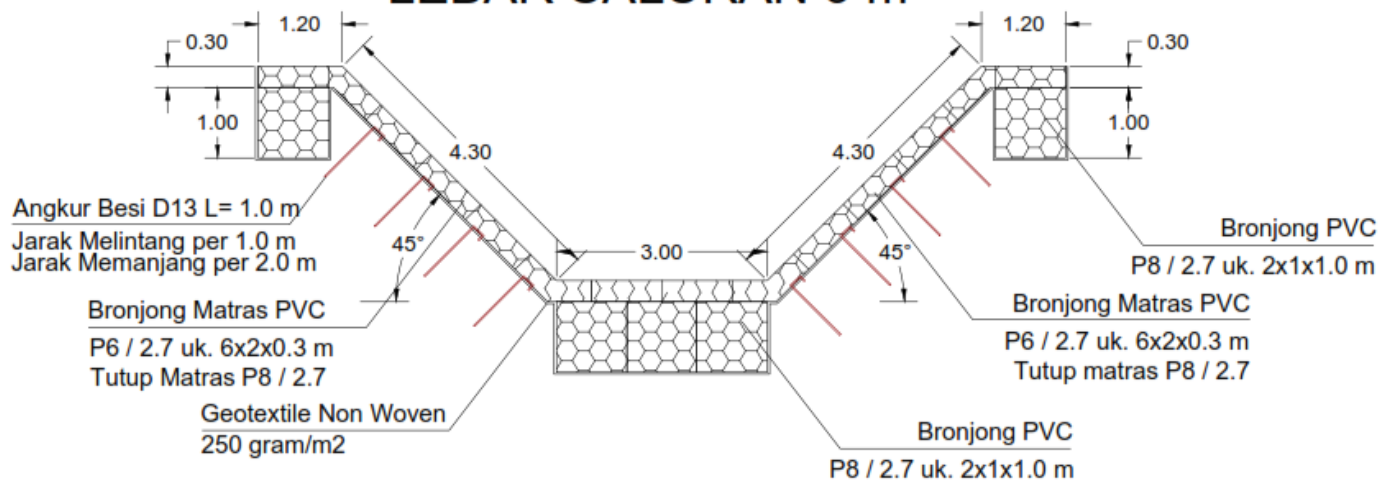


After Construction



After Construction

## DETAIL AWAL STA - P LEBAR SALURAN 3 m



Typical drawing of solution