DESIGN OF SPILLWAY MANDIRADA RESERVOIR
SUMENEP REGENCY

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ABSTRACT
Mandirada reservoir is located at Kebon Agung River, Kebon Agung Village, Sumenep Regency. The development of mandirada reservoir is expected to provide irrigation water for 782 Ha of field area and also to increase cropping intensity from irrigation area that already exist. Beside for agriculture sector, Embung Mandirada also expected as raw water to provider for household water in Kebon Agung dan Pandian Village.

The calculation conducted in planning this Mandirada Reservoir include hydrological analysis, including the predicted rainfall adn water discharge, reservoir capacity analysis, spillway analysis, and spillway stability against occuring forces.

From the calculation it is predicted that the water discharge for 100 year cycle period is 238,08 m3/dt and water level above spillway at flood condition is 2,34 m. Spillway peak elevation which is used is +28,60. The projected population in 2029 is 8.356 people with the need of 60 liters of water per person per day, the Spillway is designed using Ogee type, complemented with complementary buildings: direction channel, transition channel, bends channel, launcher channel, trumpet channel, and stilling basin USBR Type IV. The Stability of the spillway with its complementary buildings are analyzed, involving the overturning control, sliding control, soil bearing control capacity, and supporting capacity control of stilling basin. The building result of stability control which are designed still relatively safe.

Key word: Spillway, Mandirada Reservoir