ANALISIS STABILITAS DINDING PENAHAN TANAH TIPE A' PADA BENDUNG DI. KAMIJORO

Oleh:
Ratri Nur Ulfah
NIM. 16510134037

ABSTRAK

Dinding penahan tanah digunakan untuk menahan tekanan lateral yang timbul akibat tanah urug dan air. Stabilitas dinding penahan tanah merupakan hal yang penting dalam perencanaan, maka perencanaan dinding penahan tanah harus memenuhi *safety factor*. Proyek akhir ini bertujuan untuk menentukan stabilitas geser, guling, kuat dukung tanah, dan bahaya piping pada Bendung DI. Kamijoro, Sendangsari, Pajangan, Bantul, Yogyakarta.

Metode yang digunakan dalam proyek akhir ini adalah metode observasi. Data yang digunakan berupa data sekunder dari BBWS Serayu-Opak. A nalisis tekanan tanah aktif dan pasif dihitung dengan menggunakan Teori Rankine serta analisis stabilitas terhadap keruntuhan kapasitas dukung tanah dihitung mengunakan cara Terzaghi.

Hasil yang diperoleh berdasarkan analisis yang telah dilakukan pada kondisi normal didapatkan hasil *safety factor* stabilitas geser sebesar 9,93, *safety factor* stabilitas guling sebesar 9,07, dan *safety factor* daya dukung tanah sebesar 5,81. Pada kondisi gaya gempa didapatkan *safety factor* stabilitas geser sebesar 12,99, *safety factor* stabilitas guling sebesar 7,40, dan *safety factor* daya dukung tanah sebesar 5,81. Pada kondisi ekstrem didapatkan hasil *safety factor* stabilitas geser sebesar 8,09, *safety factor* stabilitas guling sebesar 14,92, dan *safety factor* daya dukung tanah sebesar 5,57. Disimpulkan bahwa dinding penahan tanah tipe A' aman terhadap stabilitas geser, guling dan daya dukung tanah.

Kata kunci: Dinding penahan tanah, *safety factor*, stabilitas.

ANALYSIS STABILITY OF THE TYPE A' RETAINING WALL IN KAMIJORO DAM

By:
Ratri Nur Ulfah
NIM. 16510134037

ABSTRACT

The retaining wall is used to withstand the lateral pressure that caused by backfill soil and water. The stability of a retaining wall is the most important thing of the planning, so planning a retaining wall must fulfil the safety factor. The aim of this final project is to determine the stability of shear, stability of overturning, the soil bearing capacity and the danger of piping of the type A 'retaining wall in Kamijoro Dam, Sendangsari, Pajangan, Bantul, Yogyakarta.

The method of this final project is observation. The data is using secondary data from BBWS Serayu-Opak. The analysis of active and passive soil pressure is using Rankine Theory and the analysis of the soil bearing capacity is using the Terzaghi method.

The results from analysis for normal conditions for the safety factor of shear stability is 9,93, safety factor of overturning stability is 9,07 and safety factor of soil bearing capacity is 5,81. For earthquake conditions result for the safety factor of shear stability is 12,99, safety factor of overturning stability is 7,40 and safety factor of soil bearing capacity is 5,81. For extreme conditions result for the safety factor of shear stability is 8,09, safety factor of overturning stability is 14,91 and safety factor of soil bearing capacity is 5,57. From the analysis can be concluded that type A' of retaining wall is safe against shear stability, overturning and soil bearing capacity.

Keywords: Retaining wall, safety factor, stability.