

ANALISA DINDING PENAHAN TANAH TYPE KANTILEVER PERUMAHAN PAKINTELAN

Oleh :

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Abstrak

Perumahan Pakintelan berada didaerah pegunungan yang memiliki kontur tanah terjal dan tekanan geser tanah yang tinggi. Perumahan ini terdapat 32 rumah yang letaknya berbeda – beda dan terdapat tebing di belakang perumahan. Pada tugas akhir ini penulis menganalisa dinding penahan tanah tipe kantilever guna menanggulangi tanah longsor.

Dalam proses penelitian ini, memperhitungkan faktor keamanan terhadap stabilitas terhadap gaya guling, stabilitas terhadap gaya geser, dan stabilitas terhadap daya dukung tanahnya menggunakan data primer dan sekunder untuk perhitungan manual dan program *Plaxis v86*.

Berdasarkan hasil Analisa yang dilakukan dengan cara menaikkan elevasi muka air tanah secara bertahap hingga mencapai keruntuhan. Sebelum dilakukan perkuatan pada lereng SF yang dihasilkan pada kondisi tanpa rembesan air sebesar 0,94 dan dalam kondisi rembesan air SF mengalami penurunan 0,68 sehingga tidak aman. Setelah dilakukan Analisa dinding penahan tanah dengan dimensi Tinggi tembok (H) = 5m, Tebal plat (Tp) = 0,5 m, Tebal dinding (Td) = 0,5m, Lebar plat (Lb) = 0,5m, pada kondisi muka air dengan elevasi 4,5m didapatkan hasil stabilitas terhadap gaya geser $2,06 > 1,5$ (aman), stabilitas terhadap gaya penggulingan $1,66 > 1,5$ (aman), stabilitas terhadap daya dukung tanah $8,15 > 3$ (aman) dan nilai stabilitas dari program *Plaxis* didapatkan SF $2,02 > 1,5$ (aman).

Kata Kunci : Longsor; Dinding penahan tanah; Kantilever; Program *Paxlis v86*

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ANALYSIS OF RETAINING WALL TYPE CANTILEVER AT PAKINTELAN RESIDENCE

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Abstract

Pakintelan housing is located in a mountainous area which has steep ground contours and high shear stress. In this housing there are 32 houses which are located differently and there is a cliff behind the housing. In this final project, the writer analyzes the cantilever type retaining wall to cope with landslides.

In the process of this research, taking into account the safety factor of the stability against the rolling force, the stability of the shear force, and the stability of the bearing capacity of the soil using primary and secondary data for manual calculations and the Plaxis v86 program.

Based on the results of the analysis carried out by gradually increasing the groundwater level until it reaches collapse. Before strengthening the slope of the resulting SF in conditions without water infiltration of 0.94 and in conditions of water seepage SF decreased 0.68 so it is not safe. After analyzing the retaining wall with the dimensions of wall height (H) = 5m, plate thickness (Tp) = 0.5 m, wall thickness (Td) = 0.5m, plate width (Lb) = 0.5m, on face conditions water with an elevation of 4.5m gets the results of stability against shear forces $2.06 > 1.5$ (safe), stability against rolling forces $1.66 > 1.5$ (safe), stability to soil bearing capacity $8.15 > 3$ (safe)) and the stability value of the Plaxis program obtained SF $2.02 > 1.5$ (safe).

Keywords : Landslide; Retaining Wall; Cantilever; Program *Plaxis* v86;

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