ABSTRAK

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PERENCANAAN KONSTRUKSI DINDING PENAHAN UNTUK PENCEGAHAN DAMPAK

KELONGSORAN LERENG JALAN PADA RUAS PAYAHE – WEDA

Kata Kunci : Tanah, Lereng, Stabilitas, Tembok penahan tipe gravity.

Longsoran banyak dipengaruhi oleh kondisi geologi serta kondisi jalan yang berbukit seperti pada kasus jalan pada ruas Payahe – Weda, maka perlu dikembangkan suatu pedoman tentang metode penanganan longsoran. Beberapa teknik penanganan dan pengendalian tanah diantaranya perencanaan dinding penahan tanah sehingga dapat meminimalisir terhadap dampak yang timbul terutama pada daerah pemukiman dengan kondisi tanah yang berbeda ketinggian antara titik satu dengan yang lain.

Studi ini bertujuan untuk merencanakan dimensi dinding penahan tanah yang stabil terhadap stabilitas penggeseran, penggulingan serta daya dukung dengan menggunakan Tipe Gravity di ruas jalan yang menghubungkan Kota Tidore Kepulauan dengan Kabupaten Halmahera Tengah, kususnya jalan pada ruas Payahe Weda STA/KM 01-200.

Hasil perhitungan tekanan tanah dihitung dengan menggunakan Teori Coulomb serta perhitungan stabilitas terhadap keruntuhan kapasitas dukung tanah dihitung berdasarkan persamaan Hansen berdasarkan data-data karakteristik keteknikan. Hasil perhitungan stabilitas tembok penahan dengan dimensi tipe gravity diperoleh Lebar atas (B0) = 0.6 m, lebar dasar fondasi (B1) = 5 m, tinggi tembok (H) = 5 m, tinggi tembok dari permukaan tanah ke dasar pondai (D0) 1 m, tebal dasar fondasi (d) = 0,5 m, yang aman terhadap stabilitas penggulingan (Fgl) = 4 > 2, stabilitas penggeseran (Fgs) = 4,5 > 2 , dan stabilitas terhadap daya dukung (F) = 7,2 ≥ 3.

ABSTRACT

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CONSTRUCTION PLANNING OF RETAINING WALLS TO PREVENT THE IMPACT OF

ROAD SLIPPING ON THE PAYAHE – WEDA SEGMENT

Keywords : Soil, Slope, Stability, Gravity retaining wall.

Landslides are heavily influenced by geological conditions and hilly road conditions, such as in the case of the Payahe – Weda section, it is necessary to develop a guideline on the method of handling landslides. Several soil handling and control techniques include planning retaining walls so as to minimize the impacts that arise, especially in residential areas with different soil conditions in height from one point to another.

This study aims to plan the dimensions of a retaining wall that is stable against shear stability, overturning and carrying capacity using the Gravity Type on the road linking Tidore Kepulauan City and Central Halmahera Regency, especially the Payahe Weda section STA/KM 01-200.

The results of the calculation of soil pressure are calculated using Coulomb's theory and the calculation of stability to the failure of the bearing capacity of the soil is calculated based on the Hansen equation based on engineering characteristics data. The results of the calculation of the stability of the retaining wall with the dimensions of the type of gravity obtained that the top width (B0) = 0.6 m, the base width of the foundation (B1) = 5 m, the wall height (H) = 5 m, the wall height from the ground surface to the base of the foundation (D0) 1 m, foundation base thickness (d) = 0.5 m, which is safe against overturning stability (Fgl) = 4 > 2, shear stability (Fgs) = 4.5 > 2 , and stability to bearing capacity (F) = 7, 2 3.