

ABSTRAK

Ruas jalan Panti-Simpang Empat tepatnya pada Nagari Kajai terletak di wilayah perbukitan yang memiliki kondisi geografis terdiri dari tebing dan jurang yang cukup curam, sehingga rawan mengalami kelongsoran. Untuk mencegah kelongsoran tersebut maka dibangunlah dinding penahan tanah. Tujuan penelitian ini untuk menganalisis stabilitas lereng pada jalan Raya Nagari Kajai yang nantinya dilanjutkan dengan perencanaan dinding penahan tanah sebagai perkuatan lereng. Dalam menganalisis stabilitas lereng digunakan metode konvensional dan metode elemen hingga. Berdasarkan hasil analisis stabilitas lereng didapatkan angka keamanan terhadap longsoran lebih kecil dari 1,5 sehingga diperlukan perkuatan. Berdasarkan hasil setelah dilakukan perkuatan pada lereng didapat angka keamanan memenuhi persyaratan kestabilan terhadap guling, geser, dan daya dukung.

Kata kunci : *Stabilitas lereng, Metode konvensional, Metode elemen hingga, Dinding penahan tanah, angka keamanan*

ABSTRACT

The Panti-Simpang Empat road section, precisely in Nagari Kajai, is located in a hilly area which has geographical conditions consisting of quite steep cliffs and ravines, making it prone to landslides. To prevent landslides, retaining walls were built. The aim of this research is to analyze the stability of the slopes on Jalan Raya Nagari Kajai, which is then followed by planning a retaining wall as slope reinforcement. In analyzing slope stability, conventional methods and finite element methods are used. Based on the results of the slope stability analysis, it was found that the safety figure against landslides was smaller than 1.5, so reinforcement was needed. Based on the results after strengthening the slope, a safety figure is obtained that meets the requirements for stability against overturning, sliding and bearing capacity.

Keywords : *Slope stability, Safety factor, Conventional methods, Finite element methods, Soil retaining wall*