Abstract

Beran district is a district in the province of East Kalimantan, Indonesia. The district has an area of 34,127.47 km² and a population of approximately 179,079 inhabitants (the results of Indonesian Population Census 2010).

Currently ongoing construction of widening the access road to the airport. Which in practice was experiencing problems that occurred landslide on the road to be widened.

This thesis aims to analyze the stability of the slope, and find out the cause of the landslide, then an alternative plan for strengthening slopes.

The method used was to analyze the safety factor against sliding slope using Bishop's method of slices with the help of DX-STABLE 5:22 ©1997, and then will be retrofitting planning to anticipate that no avalanche slopes.

Obained from the analysis of the safety factor is less than the requirement. Of these problems are given three alternatives slope reinforcement. In the first alternative to the use of alternative Micropile Micropile concrete where concrete is used in the form of small-diameter concrete piles.
to withstand the avalanche field. The second alternative, namely Steel Pipe Diameter 50 cm at which these alternative materials used in the form of steel pipe. The third alternative is to Sheetpile Sheetpile which is also similar to the plumbing san Micropile Sheetpile well as cerucuk assumed.

Based on the analysis, based on the volume of materials used and the materials used of each alternative with the ease of the selected alternative by using reinforcement Sheetpile combined with steel pipe. Due to the unstable soil conditions used to use material from the steel reinforcement.

**Keywords:** Berau, slope, sliding, Micropile, Sheetpile, steel pipe.