ABSTRACT

Substructure of bridge is a part of the bridge structure was determined the composition of the structure of the bridge itself both in terms of whether it's ability to accept the burden of horizontal loads, vertical loads, wind loads and seismic loads, and others, the structure has a role very important, because without something good planning on bridge substructure which includes "abutments, bridge opit, tread plate and retaining wall, accordingly of bridge superstructure will not function properly if the building is not able to accept the load underneath the load is distributed from building up bridge to the bridge structure.

Both abutments are planned to have a height of 6 m, with no central pillar because the river is 60 m wide with a stretch.

Planning is done is to calculate the loads acting on the abutment
and use of soil improvement methods to stabilize slopes resulting landslides in the area around the base of bridge. Damage to the structure of the heap due to degradation soil under the structure often cause harm to all parties, so that the planning of the building bridge substructure that including the abutment, oprit bridge, tread plate and retaining wall is a solution to complete the construction of failure due to deposition on the slope with soil-forming material is a soft soil improvement (Prefabricated Vertical Drain) or retrofitting slope / structure (sheet pile or deck on piles). The basic principle of alternative solutions that increase the shear strength of the soil, reducing the permeability of the soil, and reduce soil compressibility. Another solution used is to build a bridge substructure earthquake resistant, safe, comfortable, efficient, effective, and low cost.

**Keywords:** abutments, oprit bridge, retaining wall, tread plate, Prefabricated Vertical Drain

**NB:** if there is written in the English language is not correct, then read the article in Indonesian