ABUTMENT PLANNING AND APPROACH
ALTERNATIVE OF BRAWIJAYA BRIDGE KEDIRI

Name : Wilman Firmansyah
NRP : 3111105007
Department : Civil Engineering FTSP – ITS
Supervisor I : Ir.Dr. Djoko Untung
Supervisor II : TrihanyndioRendy S, S.T., M.T.

ABSTRACT

Brantas Bridge was built in 1907 and renovated in 1950. It has been had its age, main of the bridge girder was being corrosion with the result that ability of the structure is very decreasing. Therefrom the district of Kediri had planed to build a new bridge deputizing for an old bridge. The new bridge which had been planed has abutment and pillar also have approch (Oprit) which has 9,45 m congeries height, in that condition wi ll disturbed erosive so it needed a good oprit planning and abutment for restraining load and traffic line.

This final investigated how to plan of abutment and oprit stiffening. The oprit used three kinds of alternative, those are sheetpile, geotextile and combination of sheetpile-geotextile. In this case is established the best of plan approach alternative for Brawijaya Bridge.

Analyze by virtue of study founded abutment dimension 9,45 m height, 6,7 m width and 16.7 m length. Abutment foundation used 60 m diameter of pile which has 18 m depth.

On the bridge of oprit stiffening was used sheetpile alternative got W-600 B 1000 WIKA Beton in 15 m depth.
On the second alternative used geotextile stiffening which got double layer. First layer consist of 10 layers with 0.25 m spacing and second layer comprise of 14 layers with 0.5 m spacing. Where as the third alternative is sheetpile-geotextile combination which got 18 m depth used W-600 B 1000. It is divided in two layers. In case the first layer comprise with 15 layers with 0.35 m spacing and the second is 6 layers which have 0.7 m spacing.

The cost of oprit stiffening used sheetpile needed Rp.992,866,956.48, geotextile is Rp 881,806,285.65, and sheetpile-geotextile combination is Rp 850,476,052.93. From that description therefore the chosen alternative is sheetpile-geotextile combination, because it has the best safety factor and also the cheaper price of construction.

**Keyword:** Oprit, Abutment, Piling Foundation, sheetpile, geotextile.