GEOMETRIC, STRUCTURE DESIGN, AND THE BUDGET PLANS OF RAILWAY AS AN ALTERNATIVE SAND MINE TRANSPORT OF LUMAJANG

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Abstract
Lumajang is a small district with the potential of sand which has good quality and many costumers from domestic and international. This is evident by number of rhythm almost reached until ± 480 mining trucks that crossing Lumajang-Probolinggo road every day. This condition makes Lumajang to get many demands of consumers to distribute sand into several regions. Beside to increase Lumajang’s capita income but also negatively affect at the function of transport infrastructure, especially road pavement Lumajang-Probolinggo that inconsistent with the design.

In this final project the aouthor tries to solve that problem by using railway as a freight transport mine in Lumajang. The Planning includes geometry design, structure and the approximate cost of the budget plan is needed. In process, the methodology used is by collecting secondary data, indentify problems, study of literature and analysis of speed plan data, analysis of rail, sleepers type, and thick of ballast that is use.

The results of this final project is had railway alignment as an alternative transport sand mining in Lumajang. This railway is designed with wide-gauge rail R54 1067, maximum speed plan until 120 km/hour, type of fastening used which is Pandrol double elastic fastening. Designed along the track length 36.4 km with a thickness of top ballast is 55 cm and subbase 21 cm thick, using concrete pads with a distance of 50cm. Costs for rebuilding this rail road is Rp. 362,153,010,000.00.
Form this final project the author hope to use this final project as a reference and or comparison for Lumajang government as a solution to overcome the impact of the amount of freight passing sand mining along the highway Lumajang-Probolinggo in the future.

Keywords: Lumajang Railway, Railway Geometric Design, Railway Structure, Budget Plan of Railway.