

STRUCTURE REDESIGN OF DATUK LAKSAMANA BRIDGE WITH COMPOSITE STRUCTURE USING SNI 1725-2016

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ABSTRACT

A bridge is a construction structure that allows connecting a transportation route separated by obstacles such as rivers, valleys, irrigation channels and even connecting islands that are quite far apart. On the bridge in Bukit Batu Village to Sukajadi Village, Kec. Bukit Batu. Where there is an old bridge that has a span of 20 m and a width of 5 m. The existing condition of the bridge in that location is very worrying where the bridge in that location has been damaged, including the wooden bridge floor that has experienced weathering, as well as the beam structure that has experienced cracks and porosity. So that it could endanger the safety of those who cross the bridge.

In this planning, load analysis refers to the loading standards for bridges SNI 1725: 2016, SNI T-02-2005, SNI T-03-2005 and SNI T-12-2014 for the design of bridge steel structures. In this thesis, the superstructure includes girder and diaphragm, sidewalks, slabs, support posts, tread plates. This research will also calculate the Bar Bending Schedule (BBS) and also Calculate the Detailed Budget Cost. To be able to find out how much the total cost is required when building the superstructure on the bridge.

After analysis the structure of bridge, it is obtained that the dimensions of the girder profile are safe to use the WF profile 900 x 300 x 16 x 28 (mm), the diaphragm dimensions use the WF profile 400 x 400 x 13 x 21 (mm), the total bridge width is 7.5 m, the width of the sidewalk is 0.75 m, for joints using type A325 bolts, the total weight of threaded U-32 reinforcement is 4080.70 kg, the total weight of U-24 reinforcement is plain is 266.82 kg. And the implementation requires a fee of Rp. 777.430.000,00.

Keywords: Composite Girder, SNI 1725-2016, Bridge Upper Structure Design, Bar Bending Schedule (BBS).