ABSTRACT

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Bridges are constructions that are built to pass the mass (traffic or water) from an obstacle. The arch structure of bridge is efficient can be compressive reduce of the moment so the dimensions and reinforcement are more economical than straight girders and can be safe 15% of concrete volume than prestressed concrete girders. The design of a pure reinforced concrete are bridge structure aims to obtain structural dimensions that meet safety standards and the budget value based on the Budget Plan. The planned bridge has a total span of 80,00 m and side span of 18,70 m using reinforced concrete. The bridge has 2 lanes with 2 lanes each and sidewalks on the right and left. Based on calculations and analysis using SAP2000 program obtained the diaphragm beam uses rectangular type with dimensions of 500 × 700 mm using reinforced concrete and girder uses reinforced concrete type T with main girder dimensions of 600 × 800 mm and small girders with dimensions of 400 × 600 mm. The arch structure uses a rectangular type of reinforced concrete girder with dimensions of 800 × 1000 mm and columns with dimensions of 800 × 1500 mm. The abutment used an inverted T type and the foundation used was a deep foundation, namely a bored pile with a diameter of 700 mm. The calculation of the Budget Plan follows the Decree of the Minister of Manpower and Transmigration of the Republic of Indonesia 28 / PRT / M / 2016 with the calculation results obtained of IDR Rp45.690.948.998,17.

Keyword : arch bridge, reinforced concrete, foundation, budget plan