Abstract

This final project comprises the calculation analysis from arch bridge construction planning alternative by using pull bar to the position under the vehicle floor. Planning begins with an explanation of bridge type selection background, formulation of planning purposes until the scope of discussion, and followed with a base – the basic plan in which the analysis is based on RSNI and AISC – LRFD rules. From the preliminary existing data, the bridge was designed directly by taking to 200 m span and 7 m vehicle lane width. Afterwards, the preliminary design was done by determining bridge dimension – the dimension of steel bridge materials. The initial phase of planning is the calculation of the vehicle floor and the sidewalk. Vehicle floor is planned as a composite beam, whereas for a layer of asphalt pavement is used with 5 cm thick. And then the planning of longitudinal and transverse beam profile is conducted, as well as the calculation of shear connector. Entering the main bearers construction phase, the burden calculation – the burden of work, and the analyzed by using the SAP 2000 program. After that, the style is reached – style in the carried out work calculation and the voltage control connection calculation. Along with it, the main construction bearers’ calculation is also done which include the construction of secondary bond wind up, down and the final portal. Then to enter the final stage of structural design, calculation of placement dimension is conducted.
Having completed the analysis of the bridge structure, structural design analysis is conducted under the bridge (abutment). From the existing soil data, the bridge substructure uses pile foundation to support its construction.

**Keyword:** Arch Bridge Frame, Steel, Abutment.