

ABSTRACT

The bridge project is one of the national strategic projects. The bridge can support economic activities by connecting and providing access to the connected places. Teluk Lamong Ports Flyover project implements the accelerated bridge construction. Flyover will be built as steel bridge with modular system which intermodules are connected with a pinned-connection called unibridge system. Teluk Lamong Ports Flyover project is the first project that use unibridge system in Indonesia. This final assignment tries to provide analysis and calculation of unibridge system.

The bridge which analyzed has span of 61 m. The bridge analyzed refer to SNI 1725:2016 and AASHTO LRFD Bridge Design Specification 2014. The bridge modeled with CSiBridge. Internal forces analyzed and used to analyze the superstructure components. The study tries to discuss about comparison between unibridge system and usual systems.

From the analysis results, maximum deflection at service limit state was obtained equal to 56,3 mm and it is less than deflection limit of $1/800$ of the bridges span length. All superstructure components satisfied the safety requirements of the design codes. From the comparison results, it was found that unibridge system has heavier weight than usual systems. It is caused by additional components such as ear and pin as an important element of unibridge system which represent about 14,75% of the total weight of the bridge. Moreover, unibridge system have advantages in terms of storage efficiency, easier shipping, minimize the traffic impact, faster to assembled and erected.

Keywords: modular, unibridge, pinned connection, superstructure