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ELEVAR BRIDGE DESIGN FOR TRAFFIC MANAGEMENT

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ABSTRACT

This research paper focuses on the design and the implementation of an Elevar bridge using AutoCAD software for effective traffic management. The Elevar Bridge Design, also known as drawbridges, is renowned for its intricate mechanical design that allows for efficient railway navigation. This type of bridge operates through a hydraulic lifting mechanism, through which the bridge is lifted so that the trains can cross smoothly. The design considerations for Elevar bridges involve factors such as span length, lifting systems, and operational mechanisms to ensure smooth and reliable functionality. It also highlights the benefits of using AutoCAD for designing and simulating the bridge, including its ability to optimize traffic flow, improve safety, and minimize maintenance costs.

This Elevar bridge design can accommodate up to 18 cars with an average weight of 15,000N each. The bridge is made of structural steel with a yield strength of 240 MPa and tensile strength of 360 MPa. During simulation, a uniform force of 270 kN and force due to gravity were applied, resulting in a maximum stress of 8.6 MPa, which is below the yield strength. Therefore,

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the design is considered safe. The findings of the study demonstrate that Elevar bridge can be an effective innovation for both railways and waterways traffic. It shows that the Elevar bridge will reduce the railway traffic and will enhance the transportation process. Overall, the paper aims to provide insights into the use of AutoCAD in the design and management of Elevar bridges to enhance traffic flow and efficiency.