

Title Optimum Span Length for a PC I Girder Expressway Bridge

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Abstract

One of the most important elements of the transportation system, bridges consists of three components: the foundation, the substructure (abutments and piers) and the superstructure (girders and decks). The design of a girder determines the live load capacity of a bridge hence making it an important element. The design of PC-I-girder bridge structure has potential for cost savings through the application of optimum design methodology. However, very little research has been conducted regarding the optimum design of the I-girder bridge structure considering the transverse configuration. The purpose of this study is to identify the optimum span for the PC I girder expressway bridge system by adopting different design variable. There is a need for further research as longitudinal and transverse member arrangement of a bridge is one of the important variable when the cross section of the girder is constant in case of PC girder. The objective of this study is also to perform various parametric studies for the design parameter of the bridge superstructure and substructure system to observe the effects of such parameters on the span of the bridge.

Keywords Optimum Span, PC-I girder bridge.