ABSTRACT

Trusses have played a key role in the expansion of highway and railroad system during the past two centuries. From a mechanics, perspective they are ideal structures for introducing the concept of equilibrium and displacement. Trusses are constructed using triangles and are also classified by the basic design used. There are different types of truss bridges like Pratt, Howe and warren. Among various truss bridges, we are selecting warren deck truss bridge for analysis. The warren truss is perhaps the most common truss for both simple and continuous trusses. For smaller spans, no vertical members are used lending the structure a simple look. For longer spans vertical members are added providing extra strength. Warren trusses are typically used in spans of between 50-100m. Analysis of truss deals with issues of stability and static determinacy and then move on to describe computer-based techniques for determining the internal forces generated by the loads.

Given a structure, one needs information concerning how the internal forces vary as the external live load is repositioned on the structure for the design phase. A computational scheme for determining the displacement of stress structures is presented study. Trusses are analyzing using FEA software with 1-D elements. We decided to focus on both the trusses and loading member, since are most importance elements balance and maintain the structure united based on the our force distribution diagrams. Report includes the reaction forces at each member joint.

Keywords: Warren deck bridge, FEA,1-D elements, Static.