ABSTRACT

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Numerous bridge construction accidents have occurred across the country because of construction loadings, which are an under-emphasized topic in many specifications and design manuals. Bridge girders are least stable when they are subjected to construction loads, so it is important for design engineers and contractors to understand and design for these loads. The Indiana Department of Transportation's current Standard Specifications do not contain many construction load provisions, so this study was performed to identify and implement new requirements to proactively prevent accidents from occurring in Indiana.

Various documents were examined in this study, including AASHTO and ASCE specifications in addition to several other states' Standard Specifications and Design Manuals. Based on these documents, new falsework and formwork design loads, including a horizontal load, impact load, and wind load, were developed and proposed to INDOT, which currently only defines a dead load and live load. A set of drawings showing proposed minimum lateral bracing requirements was also created to help ensure the stability of prestressed concrete and steel girders during construction.