ABSTRACT

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Bridges that are designated historic present a special challenge to bridge engineers whenever rehabilitation work or improvements are made to the bridges. Federal and state laws protect historically significant bridges, and railings on these bridges can be subject to protection because of the role they play in aesthetics. Unfortunately, original railings on historic bridges do not typically meet current crash-test requirements and typically do not meet current standards for railing height and size of permitted openings. The objective of this study is to develop strategies that can be used to address existing railings on historic bridges and to develop solutions that meet current design requirements. To achieve this objective, three phases of research were conducted. First, an overview of current practice for addressing historic bridge railings was performed. Second, an investigation was conducted to document historic bridge railings in Indiana. Finally, rehabilitation solutions were developed to address the specific bridge railings found in Indiana. Based on this research, a range of solutions was developed that can be used to address historic bridge railings not only in Indiana, but across the country.