

1. INTRODUCTION

This example is part of a series of design examples sponsored by the Federal Highway Administration. The design specifications used in these examples is the AASHTO LRFD Bridge design Specifications. The intent of these examples is to assist bridge designers in interpreting the specifications, limit differences in interpretation between designers, and to guide the designers through the specifications to allow easier navigation through different provisions. For this example, the Second Edition of the AASHTO-LRFD Specifications with Interims up to and including the 2002 Interim is used.

This design example is intended to provide guidance on the application of the AASHTO-LRFD Bridge Design Specifications when applied to prestressed concrete superstructure bridges supported on intermediate multicolumn bents and integral end abutments. The example and commentary are intended for use by designers who have knowledge of the requirements of AASHTO Standard Specifications for Highway Bridges or the AASHTO-LRFD Bridge Design Specifications and have designed at least one prestressed concrete girder bridge, including the bridge substructure. Designers who have not designed prestressed concrete bridges, but have used either AASHTO Specification to design other types of bridges may be able to follow the design example, however, they will first need to familiarize themselves with the basic concepts of prestressed concrete design.

This design example was not intended to follow the design and detailing practices of any particular agency. Rather, it is intended to follow common practices widely used and to adhere to the requirements of the specifications. It is expected that some users may find differences between the procedures used in the design compared to the procedures followed in the jurisdiction they practice in due to Agency-specific requirements that may deviate from the requirements of the specifications. This difference should not create the assumption that one procedure is superior to the other.

Reference is made to AASHTO-LRFD specifications article numbers throughout the design example. To distinguish between references to articles of the AASHTO-LRFD specifications and references to sections of the design example, the references to specification articles are preceded by the letter “S”. For example, S5.2 refers to Article 5.2 of AASHTO-LRFD specifications while 5.2 refers to Section 5.2 of the design example.

Two different forms of fonts are used throughout the example. Regular font is used for calculations and for text directly related to the example. Italic font is used for text that represents commentary that is general in nature and is used to explain the intent of some specifications provisions, explain a different available method that is not used by the example, provide an overview of general acceptable practices and/or present difference in application between different jurisdictions.