

TEMPORARY DETOUR BRIDGE CRITERIA

1. DESIGN AND DETAILING REQUIREMENTS

Design all temporary detour bridges in accordance with the requirements of the AASHTO LRFD Bridge Design Specifications. In addition to HL-93 live loading, provide a load rating for all legal and permit vehicles in accordance with the SCDOT Load Rating Guidance Document and all associated Technical Notes, with the following exception. Future Wearing Surface dead load need not be included for temporary bridges. Minimum LRFR rating factors shall not be less than 1.0.

Seismic design of temporary bridges is required in accordance with Section 3.11 of the SCDOT Seismic Design Specifications for Highway Bridges. Sufficient design to prevent collapse during the FEE event is required.

Traffic barriers for temporary bridges shall be designed in accordance with AASHTO LRFD Bridge Design Specifications for TL-4 collision force, at a minimum.

Allowable superstructure types include all of the typical SCDOT superstructure types outlined in Section 12.3.2 of the BDM, as well as prefabricated modular galvanized steel temporary bridge systems, such as *Mabey* and *Acrow* bridges.

The riding surface of the bridge shall consist of hot mix asphalt overlay. The use of timber floors or timber mat floors for final riding surface is not permitted. Concrete riding surfaces shall meet the requirements of Subsections 702.4.14, 702.4.15, and 702.4.16 of the SCDOT Standard Specifications. Provide riding surface smoothness in conformance with Supplemental Technical Specification SC-M-701.

Perform subsurface investigations and design temporary bridge foundations in accordance with the requirements of the SCDOT Geotechnical Design Manual.

Shallow foundations are not permitted.

Hydraulically model the temporary bridge span arrangement and determine scour profiles in accordance with the SCDOT Requirements for Hydraulic Design Studies and applicable Hydraulic Design Bulletins. The total length of temporary bridge shall be set to retain the existing spill-thru abutment slopes and riprap. The number of piers/bents in the channel shall be less than or equal to the number of existing piers in the channel. The total number of interior bents shall be less than or equal to the number of existing interior bents.

Ensure temporary bridge substructure and foundations do not significantly alter the Wateree River flow characteristics around the existing river piers.

Runoff is allowed to sheet flow off the temporary bridge deck for this project. If curbs/barriers are provided resulting in gutter flow on the bridge deck, design and detail temporary bridge deck drainage using a rainfall intensity of 2 inches/hour and restrict spread to the shoulder width.

2. MATERIALS

Reuse of previously used components, materials, and hardware is not permitted with the following exception. Reuse of previously used prefabricated steel truss superstructure components will be permitted, provided the original manufacture of the truss provides a new inspection of materials and written certification for specific truss components that are in good condition and may be reused. Provide all new materials in accordance with current SCDOT specifications.

Allowable pile types are prestressed concrete piling, steel H-piles, and steel pipe piles. Timber piles are not allowed. Steel piles may be used at both interior bents and end bents.

Caps for pile bents must consist of cast-in-place reinforced concrete.

Field welding of structural steel superstructure components and bent cap components is not permitted. See Section 709.4.3.5 of the Standard Specifications for field welding requirements.

3. WORKING DRAWINGS AND CALCULATIONS

Provide detailed Working Drawings of the structure, including layout of elements, sizes, material specifications, design specifications, and manufacturer's installation instructions. Follow SCDOT BDM Chapter 6 for Plan Preparation requirements.

Provide detailed calculations for all structural components, including superstructure, substructure, bearings/connections, and foundations. Provide a Final Seismic Design Summary Report for the temporary bridge design in accordance with Exhibit 4z.

Submit load rating documentation in accordance with Chapter 20 of the LRGD and Technical Note 09 for QA review with the final temporary bridge plans. QA review must be completed with a signed QA checklist prior to commencing temporary bridge construction.

Ensure working drawings and calculations bear the seal and signature of a South Carolina registered Professional Engineer.

4. TEMPORARY BRIDGE INSPECTION REQUIREMENTS

Refer to Section 2.3.8 of the SCDOT Bridge Inspection Guidance Document for Temporary Bridge Inspection Requirements. An initial inspection is required prior to opening of the bridge to traffic. A temporary bridge that remains in place and carrying traffic for more than 24 months shall be inspected as a permanent bridge and must have its own Asset ID. Per Section 4.1.1 of the BIGD, the Contractor is required to notify the RCE at least four weeks prior to opening of the bridge to traffic, so that SCDOT can complete the initial inspection.

5. BRIDGE REMOVAL

Remove the temporary bridge in accordance with Subsection 202.4.2 of the Standard Specifications as applicable. After removal, the temporary bridge becomes the property of the Contractor.