

**BRIDGE DESIGN MEMORANDUM – DM0109**

**TO:** RPG Structural Engineers  
Design Consultants

**DATE:** January 27, 2009

**RE:** Exceptions to SCDOT Structural Design Criteria

This memorandum updates the Department's requirements for obtaining a design exception to structural design criteria. A Structural Design Exception Request must be completed when a designer proposes a design element that does not meet the criteria or policies of the *SCDOT Bridge Design Manual*, the *SCDOT Seismic Design Specifications for Highway Bridges*, the *SCDOT Geotechnical Design Manual*, or the *AASHTO LRFD Bridge Design Specifications*.

Section 11.2.3 of the *SCDOT Bridge Design Manual* shall be deleted and replaced with the following:

**11.2.3 Structural Design Exceptions**

This Section discusses the Department's procedures for identifying, justifying, and processing exceptions to the structural design criteria in the *SCDOT Bridge Design Manual*, the *SCDOT Seismic Design Specifications for Highway Bridges*, the *SCDOT Geotechnical Design Manual*, and the *AASHTO LRFD Bridge Design Specifications*.

**11.2.3.1 Department Intent**

The general intent of the South Carolina Department of Transportation is that all of its structural design criteria shall be met. However, recognizing that this may not always be practical, the Department has established a process to evaluate and approve exceptions to its structural design criteria.

**11.2.3.2 Procedures**

Structural Design Exception Requests are only required where criteria or policies in the *SCDOT Bridge Design Manual*, the *SCDOT Seismic Design Specifications for Highway Bridges*, the *SCDOT Geotechnical Design Manual*, or the *AASHTO LRFD Bridge Design Specifications* are presented in one of the following contexts (or the like):

- “shall,”
- “mandatory,” or
- “required.”



When a design exception is identified, the designer will first seek to eliminate the exception to design. If the design exception cannot be eliminated, the Regional Production Group Design Manager (for In-House Designed Projects) or the Engineer of Record (for Consultant Designed Projects) will prepare a Structural Design Exception Request and submit it to the Program/Project Manager. The request shall include the attached request form and any supporting data needed for justification. The justification may include items such as site constraints, construction costs, construction considerations, environmental impacts, and/or right-of-way impacts.

The Program/Project Manager will present the Structural Design Exception Request to the Regional Production Engineer. If the Regional Production Engineer recommends approval, the request will be forwarded to the Structural Design Support Engineer. The Structural Design Support Engineer will perform an objective review, from a statewide perspective, and may attach comments to the request. The request will then be returned to the Regional Production Engineer, who will submit the request to the Director of Preconstruction for consideration of approval. For projects where the Federal Highway Administration has full oversight, the Director of Preconstruction will submit approved requests to the Federal Highway Administration for concurrence.

At many locations in the *SCDOT Bridge Design Manual*, the text specifically states that approvals are required by the State Bridge Design Engineer. For these instances, a Structural Design Exception Request is not required. Because the position of State Bridge Design Engineer does not exist in the current organization of Preconstruction, this type of approval must be obtained, in writing, from the appropriate Regional Production Engineer. To ensure consistency is maintained statewide, the Regional Production Groups should coordinate with the Preconstruction Support Group when considering these approval requests and copies of approvals should be forwarded to the Preconstruction Support Engineer.

*Original Signed by E. S. Eargle on January 27, 2009*

E. S. Eargle  
Preconstruction Support Engineer

ESE:bwb

Attachment

cc: Bridge Construction Engineer  
Bridge Maintenance Engineer  
FHWA Structural Engineer

Preconstruction Support Managers  
Regional Production Engineers  
RPG Design Managers

File: PC/BWB



**STRUCTURAL DESIGN EXCEPTION REQUEST**

Submitted to: \_\_\_\_\_  
Program/Project Manager

Submitted by: \_\_\_\_\_  
RPG Design Manager or Engineer of Record

Date: \_\_\_\_\_

**PROJECT INFORMATION**

PCN: \_\_\_\_\_  
County: \_\_\_\_\_  
Route: \_\_\_\_\_  
Crossing: \_\_\_\_\_  
Project Type (Replacement, Rehabilitation, etc.): \_\_\_\_\_  
Traffic Data: \_\_\_\_\_  
Project Cost Estimate: \_\_\_\_\_

**BASIS OF DESIGN EXCEPTION**

- Request for Approval of Design Exception to *SCDOT Bridge Design Manual*
- Request for Approval of Design Exception to *SCDOT Seismic Design Specifications for Highway Bridges*
- Request for Approval of Design Exception to *SCDOT Geotechnical Design Manual*
- Request for Approval of Design Exception to *AASHTO LRFD Bridge Design Specifications*

**\*DESCRIPTION OF DESIGN EXCEPTION**

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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**\*JUSTIFICATION FOR DESIGN EXCEPTION**

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\_\_\_\_\_

**\*DESCRIPTION OF NECESSARY ACTIONS AND ASSOCIATED COSTS TO ELIMINATE DESIGN EXCEPTION**

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**\*DESCRIPTION OF HOW DESIGN EXCEPTION MAY IMPACT FUTURE CONSTRUCTION**

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\*Attach additional pages if needed.

**RECOMMENDED:**

\_\_\_\_\_ Date: \_\_\_\_\_  
Regional Production Engineer

**REVIEWED:**     No Comments     Comments Attached

\_\_\_\_\_ Date: \_\_\_\_\_  
Structural Design Support Engineer

**APPROVED:**

\_\_\_\_\_ Date: \_\_\_\_\_  
Director of Preconstruction

**FHWA CONCURRENCE:** (For Full Oversight Projects)

\_\_\_\_\_ Date: \_\_\_\_\_  
Federal Highway Administration