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  Preconstruction Support Managers
    Bridge Maintenance Engineer  Regional Production Engineers
    FHWA Structural Engineer  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

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

*JUSTIFICATION FOR DESIGN EXCEPTION

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

SC File Number __________________
*DESCRIPTION OF NECESSARY ACTIONS AND ASSOCIATED COSTS TO ELIMINATE DESIGN EXCEPTION


*DESCRIPTION OF HOW DESIGN EXCEPTION MAY IMPACT FUTURE CONSTRUCTION


*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

SC File Number ________________