STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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SECRETARY

Memorandum To: Project Engineers
Project Design Engineers

From: G. R. Perfetti, P. E.
State Bridge Design Engineer

D. D. Holderman, P. E.
State Bridge Management Engineer

Date: August 21, 2009 (Rev. December 15, 2009)

Subject: LRFR LOAD FACTORS

The Bridge Management and Structure Design Units have developed the following guidelines for Load and Resistance Factor Rating (LRFR). The LRFR process for new bridges is summarized in the attached Design Manual Figure 6-133.

The LRFR limit states and load factors shall be as shown in the attached Design Manual Figure 6-134. LRFR legal load factors that reflect a variance from the AASHTO *Manual for Bridge Evaluation* are noted as follows:

- Strength I limit state legal load factors for steel and prestressed concrete bridges shall be 1.40 in lieu of the average daily truck traffic (ADTT) based load factor.
- Service III limit state legal load rating for prestressed concrete bridges will now be required, and the live load factor shall be 0.80, which is consistent with the design load factor.

Figure 6-134 also shows allowable concrete stresses to be used for LRFR.

This policy is effective immediately. The Standard Drawings have been updated and are available via Structure Design's web site. The Design Manual will be updated at a later date.

GRP/GM/kmb

Attachments:
Figure 6-133 – LRFR Flow Chart
Figure 6-134 – LRFR Load Factors & Prestressed Concrete Stress Limits

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