

ORIGINATION FORM

THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR (The person who receives or originates the issue and needs to forward the issue for action.)

Specification: 5-1.4.5.6

Subject: Beam and Girder Temporary Bracing

Origination date: December 22, 2009

Originator: Christina Freeman

Office/Phone: Structures Design, 850-414-4190

Problem statement: A Structures Design Bulletin for prestressed concrete beam bracing was developed to address the inconsistencies in methods of designing bracing for and constructing bracing of prestressed concrete beams. With implementation of this bulletin, Designers are to specify bracing locations and loads in the Contract Documents, and Contractors are to design the bracing members and connections. This is a departure from past practice in that previously, Bridge Designers did not specify any bracing requirements in the plans. The 2010 Specifications reflect this in that all bracing responsibility is placed on the Contractor. In addition, the wind load criteria for which bridges are designed for was revised to be based on more accurate wind speeds per ASCE 7-05. The revised wind load criteria is included in the Structures Design Guidelines, and overrides the wind load information in AASHTO references. The 2010 Specifications reference only AASHTO for design loads.

Proposed solution: The proposed solution includes a reference to the SDG Section 2.4.3 for determination of wind loads, and a reference to AASHTO for all other loads. In addition, the submittal requirements are clarified for construction affecting safety, both for the case in which temporary bracing requirements are shown in the plans, and the case in which temporary bracing requirements are not shown in the plans.

Information source: Any contacts through industry, or Department staff who may have information, or who provided information on the issue.

Recommended Usage Note:

Estimated fiscal impact, if implemented: The fiscal impact is that charges for evaluation of beam stability will be made by the Design Engineer instead of the Contractor. Charges for bracing design will still be made by the Contractor.

Implementation of these changes, if and when approved, will begin with the January 2011 letting.



Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

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STEPHANIE KOPELOUSOS
SECRETARY

MEMORANDUM

DATE: April 7, 2010

TO: Specification Review Distribution List

FROM: Rudy Powell, Jr., P.E., State Specifications Engineer

SUBJECT: Proposed Specification: **0050104a Control of the Work – Beam and Girder Temporary Bracing.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

This change was proposed by Christina Freeman to make the language consistent with Structures Design Bulletin C10-01 New Temporary Bracing Requirements for Beams on New Bridge Projects.

<http://www.dot.state.fl.us/structures/Memos/TemporaryDesignBulletinC10-01.pdf>

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at ST986RP or rudy.powell@dot.state.fl.us. Comments received after **May 5, 2010**, may not be considered. Your input is encouraged.

RP/dt
Attachment

CONTROL OF THE WORK – BEAM AND GIRDER TEMPORARY BRACING.
REV ~~43112-7241421-1009~~)

SUBARTICLE 5-1.4.5.6 (Page 35) is deleted and the following substituted:

5-1.4.5.6 Beam and Girder Temporary Bracing: The Contractor is solely responsible for ensuring stability of beams and girders during all handling, storage, shipping and erection. Adequately brace beams and girders to resist wind, weight of forms and other temporary loads, especially those eccentric to the vertical axis of the products, considering actual beam geometry and support conditions during all stages of erection and deck construction. *At a minimum, provide temporary bracing at each end of each span beam or girder.* Develop the required bracing designs in accordance with following the *AASHTO Load and Resistance Factor Design Bridge Design Specifications (LRFD) using wind loads found specified in Section 2.4.3 of the Structures Design Guidelines (SDG).* For information not included in the *SDG or LRFD, refer to the AASHTO Guide Design Specifications for Bridge Temporary Works and Construction Handbook for Bridge Temporary Works and the Contract Documents.*

For Construction Affecting Public Safety, ~~submit signed and sealed calculations for stability for all beams and girders.~~ *and when temporary bracing requirements are shown in the plans, submit plans and calculations signed and sealed by a Specialty Engineer for the design of temporary bracing members and connections based on the loads forces shown in the plans. In addition, submit a written certification that construction loads do not exceed the assumed loads shown in the plans.*

For Construction Affecting Public Safety, and when temporary bracing requirements are not shown in the plans or a different alternate temporary bracing system is proposed, submit plans and calculations signed and sealed by a Specialty Engineer for including the stability analysis of stability and the design of temporary bracing members and connections.