

ORIGINATION FORM

Date: October 28, 2011

Originator: Tom Andres

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Specification Title: Control of Work

Specification Section, Article, or Subarticle Number: 5-1.4.5

Why does the existing language need to be changed? The current specification does not address specific Specialty Engineering shop drawing requirements for temporary falsework that may affect stresses of the permanent structure.

Summary of the changes:

SDG 6.8 has been expanded to require “maximum vertical displacements” of temporary supports be included in the Plans where excessive settlements would affect stresses of the permanent structure.

Specification 5-1.4.5.5 has been inserted that requires shop drawings and calculations for all temporary falsework founded on shallow foundations when a “maximum vertical displacement” is indicated in the Plans.

Are these changes applicable to all Department jobs? If not, what are the restrictions?

Yes.

Will these changes result in an increase or decrease in project costs? If yes, what is the estimated change in costs? This change will likely impact less than 5 percent of the total bridge projects. There is an anticipated increase in engineering costs and possible strengthening falsework costs, however this cost will be more than offset by potential costs of repairing and/or replacing bridge components damaged by excessive settlements. This total net effect of the change would be a decrease in costs.

With who have you discussed these changes? Steve Plotkin, State Construction Office; Charles Boyd, State Structure Design Office; Rudy Powell, State Specifications Office

What other offices will be impacted by these changes? None.

Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual? Yes, see discussion above.

Is a Design Bulletin, Construction Memo, or Estimates Bulletin needed? No. Changes to the SDG will be published in the January 2012 Structures Manual.

Contact the State Specifications Office for assistance in completing this form.



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
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ANANTH PRASAD, P.E.
SECRETARY

MEMORANDUM

DATE: November 16, 2011

TO: Specification Review Distribution List

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

SUBJECT: Proposed Specification: **0050104 Control of the Work.**

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

This change was proposed by Tom Andres of the State Structures Design Office to require shop drawings and calculations for all temporary falsework founded on shallow foundations when a maximum vertical displacement is indicated in the Plans. The Structures Design Guidelines (SDG) have been expanded to require maximum vertical displacements of temporary supports be included in the Plans where excessive settlements would affect the permanent structure.

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 SP965RP or rudy.powell@dot.state.fl.us. Comments received after **December 15, 2011**, may not be considered. Your input is encouraged.

RP/dt
Attachment

CONTROL OF THE WORK.

(REV 10-2728-11)

SUBSECTION 5-1.4.5 (Pages 34 and 35) is deleted and the following substituted:

5-1.4.5 Submittal Paths and Copies:

5-1.4.5.1 General: Shop drawings are not required for prequalified items. For non-prequalified items, determine the submittal path to be followed based upon the identity of the Engineer of Record as shown adjacent to the title block on the structural plan sheets, and on the key sheets of roadway plans, signing, and pavement marking plans, and/or lighting plans. At the preconstruction conference, the Department will notify the Contractor of any changes in the submittal path and whether the Department's or the Consultant's red-ink review stamp will signify an officially reviewed shop drawing.

(a) When the Florida Department of Transportation is the Engineer of Record, submit shop drawings to the appropriate Department Shop Drawing Review Office with a copy of the letter of transmittal sent to the Resident Engineer. For work requiring other information (e.g., catalog data, procedure manuals, fabrication/welding procedures, and maintenance and operating procedures), submit the required number of copies to the appropriate Department Shop Drawing Review Office. If not shown on the plans, the Department will furnish the mailing address of the appropriate Department Shop Drawing Review Office. Provide copies of material certifications and material tests to the Resident Engineer.

(b) When the Engineer of Record is a consultant hired by the Department, submit shop drawings to the consultant with a copy of the letter of transmittal sent to the Resident Engineer and, when requested, to the appropriate Department Shop Drawing Review Office. For work requiring other documentation (e.g., catalog data, procedure manuals, fabrication/welding procedures, and maintenance and operating manuals), submit the required number of copies with the prints. If not shown on the plans, the Department will furnish the mailing address of the Consulting Engineer of Record. Provide copies of material certifications and material tests to the Resident Engineer.

5-1.4.5.2 Building Structures: Submit working, shop and erection drawings, and all correspondence related to building structures, such as Rest Area Pavilions, Office Buildings, and Maintenance Warehouses, to the Architect of Record for review and approval. Send a copy of the transmittal to the Resident Engineer.

5-1.4.5.3 Contractor-Originated Design: Submit shop drawings and applicable calculations to the Engineer of Record for review. Ensure that each sheet of the shop drawings and the cover sheet of the calculations are signed and sealed by the Specialty Engineer or the Contractor's Engineer of Record. Transmit the submittal and copies of the transmittal letters in accordance with the requirements of 5-1.4.5.1 through 5-1.4.5.3, as appropriate.

5-1.4.5.4 Temporary Works: For Construction Affecting Public Safety, submit to the Engineer of Record shop drawings and the applicable calculations for the design of special erection equipment, bracing, falsework, scaffolding, etc. Ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer. Transmit the submittal and copies of the transmittal letters in accordance with the requirements of 5-1.4.5.1 through 5-1.4.5.3, as appropriate.

5-1.4.5.5 Falsework Founded on Shallow Foundations: When vertical displacements are provided in the Plans for falsework founded on shallow foundations such as

spread footings and mats, submit to the Engineer of Record shop drawings and applicable calculations of the falsework system including subsurface conditions and settlement estimates. Ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer. Transmit the submittal and copies of the transmitted letters in accordance with the requirements of 5-1.4.5.1 through 5-1.4.5.3, as appropriate.

5-1.4.5.5-6 Formwork and Scaffolding: The Contractor is solely responsible for the safe installation and use of all formwork and scaffolding. The Department does not require any formwork or scaffolding submittals unless such work would be classified as Construction Affecting Public Safety.

5-1.4.5.6-7 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 beam or girder. Develop the required bracing designs in accordance with the AASHTO LRFD Bridge Design Specifications (LRFD) using wind loads specified in 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.

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

5-1.4.5.7-8 Erection Plan: Submit, for the Engineer's review, an Erection Plan that meets the specific requirements of Sections 450, 452 and 460 and this section. Refer to Index 600 for construction activities not permitted over traffic.

5-1.4.5.8-9 Other Miscellaneous Design and Structural Details Furnished by the Contractor in Compliance with the Contract: Submit to the Engineer of Record shop drawings and the applicable calculations. Ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer. Transmit the submittal and copies of the transmittal letters in accordance with the requirements of 5-1.4.5.1 through 5-1.4.5.3, as appropriate.

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