



## Florida Department of Transportation

JEB BUSH  
GOVERNOR

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Tallahassee, FL 32399-0450

DENVER J. STUTLER, JR.  
SECRETARY

June 28, 2006

Mr. Greg Williams  
Program Operations Engineer  
Federal Highway Administration  
545 John Knox Road, Suite 200  
Tallahassee, Florida 32303

Re: Office of Design, Specifications  
Section 105  
Proposed Specification: 1050508 Contractor Quality Control General Requirements –  
Personnel Qualifications

Dear Mr. Williams:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Contractor Quality Control Control General Requirements – Personnel Qualifications.

This change was proposed by Steve Plotkin of the State Office of Construction to update and clarify the qualification requirements for bridge repair and rehabilitation supervisory personnel.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or [duane.brautigam@dot.state.fl.us](mailto:duane.brautigam@dot.state.fl.us).

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

Duane F. Brautigam, P.E.  
State Specifications Engineer

DFB/ft

Attachment

cc: General Counsel  
Florida Transportation Builders' Assoc.  
State Construction Engineer

**CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS-  
PERSONNEL QUALIFICATIONS.**

(REV ~~6-8-055-10-06~~) (~~FA 6-21-05~~) (~~1-06~~)

ARTICLE 105-5 (Pages 133-138) is deleted and the following substituted:

**105-5 Personnel Qualifications.****105-5.8 Supervisory Personnel - Bridge Structures:**

**105-5.8.1 General:** Provide supervisory personnel meeting the qualification requirements detailed in this Article. Submit qualifications to the Engineer at the pre-construction conference. Do not begin Construction until the qualifications of supervisory personnel have been approved by the Engineer.

**105-5.8.2 Proof of License or Certification:** Submit a copy of the Professional Engineer license current and in force issued by the state in which registration is held. The license must be for the field of engineering that the construction work involves such as Civil, Electrical or Mechanical. Under certain circumstances Florida registration may be required.

Submit a copy of the license issued by the State of Florida for tradesmen that require a license indicating that the license is in force and is current. Submit a copy of the certification issued by the Instrumentation, Systems and Automation Society of America for each Certified Control Systems Technician.

**105-5.8.3 Experience Record:** Submit the following information for supervisory personnel to substantiate their experience record. The supervisor (project engineer, superintendent/manager or foreman) seeking approval must provide a notarized certification statement attesting to the completeness and accuracy of the information submitted. Provide the following experience information for each individual seeking approval as a supervisor:

Project owner's name and telephone number of an owner's representative, project identification number, state, city, county, highway number and feature intersected.

Provide a detailed description of each bridge construction experience, and the level of supervisory authority during that experience. Report the duration in weeks, as well as begin and end dates, for each experience period.

Provide the name, address and telephone number of an individual that can verify that the experience being reported is accurate. This individual should have been an immediate supervisor unless the supervisor cannot be contacted in which case another individual with direct knowledge of the experience is acceptable.

**105-5.8.4 Concrete Post-Tensioned Segmental Box Girder**

**Construction:** Ensure the individuals filling the following positions meet the minimum requirements as follows:

**105-5.8.4.1 Project Engineer - *New Construction*:** Ensure the Project Engineer is a registered professional engineer with five years of bridge construction experience. Ensure a minimum of three years of experience is in Segmental Box Girder Construction Engineering and includes a minimum of one year in segmental casting yard operations and related surveying, one year in segment erection and related surveying, including post-tensioning and grouting of longitudinal tendons and a

minimum of one year as the Project Engineer in responsible charge of Segmental Box Girder Construction Engineering.

**105-5.8.4.2 Project Engineer - Repair and Rehabilitation:** *Ensure the Project Engineer is a registered Professional Engineer with five years of bridge construction experience. Ensure a minimum of three years of experience is in Segmental Box Girder Construction Engineering and includes one year of post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Engineer in responsible charge of Segmental Box Girder rehabilitation engineering or Segmental Box Girder new construction engineering.*

**105-5.8.4.32 Project Superintendent/Manager - New Construction:** Ensure the Project Superintendent/Manager has a minimum of ten years of bridge construction experience or is a registered professional engineer with five years of bridge construction experience. Ensure that a minimum of three years of experience is in Segmental Box Girder construction operations and includes a minimum of one year in the casting yard operations and related surveying, one year in segment erection and related surveying including post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Superintendent/Manager in responsible charge of Segmental Box Girder construction operations.

**105-5.8.4.4 Project Superintendent/Manager - Repair and Rehabilitation:** *Ensure the Project Superintendent/Manager has a minimum of five years of bridge construction experience or is a registered professional engineer with three years of bridge construction experience. Ensure that a minimum of two years of experience is in Segmental Box Girder construction operations and includes a minimum of one year experience performing post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Superintendent/Manager in responsible charge of Segmental Box Girder rehabilitation operations or Segmental Box Girder new construction operations.*

**105-5.8.4.53 Foreman - New Construction:** Ensure that the Foreman has a minimum of five years of bridge construction experience with two years of experience in Segmental Box Girder Operations and a minimum of one year as the foreman in responsible charge of a Segmental Box Girder *new construction* Operations.

**105-5.8.4.6 Foreman - Repair and Rehabilitation:** *Ensure the Foremen has a minimum of five years of bridge construction experience with two years of experience in Segmental Box Girder Operations and a minimum of one year as the foreman in responsible charge of Segmental Box Girder rehabilitation operations or Segmental Box Girder new construction operations.*

**105-5.8.4.74 Geometry Control Engineer/Manager:** Ensure that the Geometry Control Engineer/Manager for construction of cast-in-place box segments is a Registered Professional Engineer with one year of experience, a non-registered Engineer with three years of experience or a Registered Professional Land Surveyor with three years of experience in geometry control for casting and erection of cast-in-place box segments. Credit for experience in cast-in-place box girder geometry control will be given for experience in precast box girder geometry control but not vice versa.

Ensure that the Geometry Control Engineer/Manager for precast box segments is a Registered Professional Engineer with one year of experience

or non-registered with three years of experience in casting yard geometry control of concrete box segments.

The Geometry Control Engineer/Manager must be responsible for and experienced at implementing the method for establishing and maintaining geometry control for segment casting yard operations and segment erection operations and must be experienced with the use of computer programs for monitoring and adjusting theoretical segment casting curves and geometry. This individual must be experienced at establishing procedures for assuring accurate segment form setup, post-tensioning duct and rebar alignment and effective concrete placement and curing operations as well as for verifying that casting and erection field survey data has been properly gathered and recorded.

**105-5.8.4.85 Surveyor:** Ensure that the Surveyor in charge of geometry control surveying for box segment casting and/or box segment erection has a minimum of one year of bridge construction surveying experience.

**105-5.8.5 Movable Bridge Construction:** Ensure the individual filling the following positions meet the minimum requirements as follows:

**105-5.8.5.1 Electrical Journeyman:** Ensure the Electrical Journeyman holds, an active journeyman electrician's license and has at least five years experience in industrial electrical work, or is a Certified Control Systems Technician. A Certified Control Systems Technician will not be permitted to perform electrical power work including, but not limited to, conduit and wire-way installation or power conductor connection. Ensure the electrical journeyman has successfully completed the installation of one similar movable bridge electrical system during the last three years.

**105-5.8.5.2 Control Systems Engineer and Mechanical Systems Engineer:** Ensure the Control Systems Engineer and Mechanical Systems Engineer are both registered Professional Engineers with a minimum of 10 years supervisory experience each in movable bridge construction. Ensure the Engineers have working knowledge of the movable bridge leaf motion control techniques, mechanical equipment and arrangements specified for this project. Ensure that each Engineer has been in responsible control of the design and implementation of at least three movable bridge electrical control and machinery systems within the past 10 years of which, at least one of the three bridges was within the last three years. Ensure that a minimum of one of the three bridge designs incorporated the same type of leaf motion control and machinery systems specified for this project.

**105-5.8.6 Concrete Post-Tensioned Other Than Segmental Box Girder Construction:** Ensure the individual filling the following positions meet the minimum requirements as follows:

**105-5.8.6.1 Project Engineer:** Ensure the Project Engineer is a registered Professional Engineer with five years of bridge construction experience. Ensure that a minimum of three years of experience is in concrete post-tensioned construction. Ensure that the three years of experience includes experience in girder erection, safe use of cranes, stabilization of girders; design of false work for temporary girder support, post-tensioning and grouting operations, and a minimum of one year as the Project Engineer in responsible charge of post-tensioning related engineering responsibilities.

**105-5.8.6.2 Project Superintendent/Manager:** Ensure the Project Superintendent/Manager has a minimum of ten years of bridge construction experience or is a registered Professional Engineer with five years of bridge construction experience and has a minimum of three years of supervisory experience in girder erection, safe use of cranes, stabilization of girders; design of falsework for temporary girder support post-tensioning, grouting operations and a minimum of one year as the Project Superintendent/Manager in responsible charge of post-tensioning related operations.

**105-5.8.6.3 Foreman:** Ensure the Foreman has a minimum of five years of bridge construction experience with two years of experience in post-tensioning related operations and a minimum of one year as the foreman in responsible charge of post-tensioning related operations.

**105-5.8.7 Post Tensioning:** Perform all post-tensioning field operations under the direct supervision of a Level II Qualified Post-Tensioning and Grouting Technician qualified through the Department's Construction Training Qualification Program (CTQP). In addition, provide a minimum of two crewmembers that are CTQP Level I Qualified Post-Tensioning and Grouting Technicians. All personnel involved in grouting must attend a grouting training session provided by the Department not less than seven days prior to the start of the first stressing or grouting operation of the project.

Perform all vacuum grouting operations under the direct supervision of a crew foreman who has been trained and has experience in the use of vacuum grouting equipment and procedures. Submit the crew foreman's credentials to the Engineer prior to performing any vacuum grouting operations.

Conduct all stressing and grouting operations in the presence of the Engineer. Coordinate and schedule all post-tensioning activities to facilitate inspection by the Engineer.

**105-5.8.8 Failure to Comply with Bridge Qualification Requirements:** Make an immediate effort to reestablish compliance. If an immediate effort is not put forth as determined by the Engineer, payment for the bridge construction operations requiring supervisors to be qualified under this Specification will be withheld up to 60 days. Cease all bridge construction and related activities (casting yard, etc.) if compliance is not met within 60 days, regardless of how much effort is put forth. Resume bridge construction operations only after written approval from the Engineer stating that compliance is reestablished.

**CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS-  
PERSONNEL QUALIFICATIONS.****(REV 5-10-06)**

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**Construction:** Ensure the individuals filling the following positions meet the minimum requirements as follows:

**105-5.8.4.1 Project Engineer - New Construction:** Ensure the Project Engineer is a registered professional engineer with five years of bridge construction experience. Ensure a minimum of three years of experience is in Segmental Box Girder Construction Engineering and includes a minimum of one year in segmental casting yard operations and related surveying, one year in segment erection and related surveying, including post-tensioning and grouting of longitudinal tendons and a

minimum of one year as the Project Engineer in responsible charge of Segmental Box Girder Construction Engineering.

**105-5.8.4.2 Project Engineer - Repair and Rehabilitation:**

Ensure the Project Engineer is a registered Professional Engineer with five years of bridge construction experience. Ensure a minimum of three years of experience is in Segmental Box Girder Construction Engineering and includes one year of post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Engineer in responsible charge of Segmental Box Girder rehabilitation engineering or Segmental Box Girder new construction engineering.

**105-5.8.4.3 Project Superintendent/Manager - New**

**Construction:** Ensure the Project Superintendent/Manager has a minimum of ten years of bridge construction experience or is a registered professional engineer with five years of bridge construction experience. Ensure that a minimum of three years of experience is in Segmental Box Girder construction operations and includes a minimum of one year in the casting yard operations and related surveying, one year in segment erection and related surveying including post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Superintendent/Manager in responsible charge of Segmental Box Girder construction operations.

**105-5.8.4.4 Project Superintendent/Manager - Repair and**

**Rehabilitation:** Ensure the Project Superintendent/Manager has a minimum of five years of bridge construction experience or is a registered professional engineer with three years of bridge construction experience. Ensure that a minimum of two years of experience is in Segmental Box Girder construction operations and includes a minimum of one year experience performing post-tensioning and grouting of longitudinal tendons and a minimum of one year as the Project Superintendent/Manager in responsible charge of Segmental Box Girder rehabilitation operations or Segmental Box Girder new construction operations.

**105-5.8.4.5 Foreman - New Construction:**

Ensure that the Foreman has a minimum of five years of bridge construction experience with two years of experience in Segmental Box Girder Operations and a minimum of one year as the foreman in responsible charge of Segmental Box Girder new construction Operations.

**105-5.8.4.6 Foreman - Repair and Rehabilitation:**

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**105-5.8.4.7 Geometry Control Engineer/Manager:**

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