Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT
SECRETARY

June 6, 2019

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: **450**
Proposed Specification: **4500500 Precast Prestressed Concrete Construction.**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Thomas Frank of the State Materials Office (SMO) to modify the language.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to stefanie.maxwell@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4140.

Sincerely,

Signature on file

Stefanie Maxwell, P.E.
Manager, Program Management Office

SM/dt
Attachment
cc: Florida Transportation Builders' Assoc.
State Construction Engineer

PRECAST PRESTRESSED CONCRETE CONSTRUCTION.
(REV ~~4-15-19~~6-3-19)

ARTICLE 450-5 is deleted and the following substituted:

450-5 Shop Drawings.

Submit shop drawings for all pretensioned prestressed concrete products containing FRP bars, FRP strands, or stainless-steel strands. Submit shop drawings for all other pretensioned prestressed concrete products when the Contract Documents do not contain all the detailed information necessary to fabricate and erect the pretensioned prestressed concrete product. Ensure the submitted shop drawings meet the requirements of 5-1 and any additional Contract Document requirements.

Shop drawings are not required to depict supplemental reinforcement used to facilitate fabrication of products.

In lieu of shop drawings, submit the following to the Engineer:

1. The Framing Plan with product designations for all superstructure components.
2. Strand detensioning schedule.
3. Tensioning and elongation calculations.
4. Details of supplemental reinforcement that remains as part of the finished product.
5. Drawings, details and spacing for embedded items associated with fall protection systems used on beams.
6. When proposing to use materials and/or methods that differ from the requirements of the Contract Documents, submit full plan details and Specifications for the alternate materials and methods. Ensure the alternate materials and methods meet the following requirements:
    a. The provisions of the Contract Documents.
    b. The AASHTO LRFD Bridge Design Specifications, edition with interims as referenced in Plans.
    c. The recommendations of the material manufacturer.
    d. Any materials change proposed by the Contractor and approved by the Engineer.
    e. Net compressive stress in the concrete due to prestressing acting alone, after all losses, is not less than that provided by the stranding shown in the Plans.
    f. Ultimate strength of the structure with the proposed changes is not less than the ultimate strength of the original design.
    g. The provisions of the Departments Structures Design Guidelines.

ARTICLE 450-8.2.1 is deleted and the following substituted:

450-8.2.1 General: The tensioning operations consist of the application of the final force or load required by the Plans and with adjustments for abutment rotation, bed shortening, anchorage header movement, live end seating, dead end seating, splice chuck seating, friction in the jacking system and any other elements as applicable for the type of bed and anchorage used. Also, adjust the force when the temperature differential between the ambient

temperature at time of stressing and the expected concrete temperature at time of placement is greater than 25ºF. Increase the force at the rate of 1% for each 10ºF increment that the ambient temperature at time of stressing is below the expected concrete temperature at time of placing. Decrease the force at the rate of 1% for each 10ºF that the ambient temperature at time of stressing is above the expected concrete temperature at the time of placing. Do not allow the stress in the steel prestressing strand to exceed 80% of the specified tensile strength of the strand, after seating. Do not allow the stress in the CFRP prestressing strand to exceed 65% of the specified tensile strength of the strand, after seating. During each tensioning operation, for the verification of the live and dead end seating, check the seating of at least 4 strands or a minimum of 10% of the total number of strands, whichever is greater. Maintain a record of the tensioning operation.

Compensation for temperature differential and abutment rotation are not required for self-stressing beds. However, adjust the final load for the effects of bed shortening due to the load from all the strands.

If the placement of concrete is delayed for more than seven calendar days after the completion of the stressing operation, check and adjust the final strand load as necessary before placement of concrete and maintain a record of the stressing operation.

Accomplish tensioning by either single strand tensioning or multiple strand tensioning, and ensure that it is symmetrical about the vertical axis of the product. Tensioning methods, in general, consist of tensioning to the required loads indicated by the jacking system, or tensioning to the required load while monitoring the elongation of the prestressing strand.

Production personnel will perform tensioning operations under supervision of personnel possessing a certificate of completion of PCI Quality Control Personnel Certification Level II, and Section 450 Specification examination, or certified personnel may perform tensioning operations directly.

PRECAST PRESTRESSED CONCRETE CONSTRUCTION.
(REV 6-3-19)

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