Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

DENVER J. STUTLER, JR.
SECRETARY

November 17, 2005

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

Re: Office of Design, Specifications
Section 452
Proposed Specification: 4520004 – Precast Segmental Bridge Construction.

Dear Mr. Davis:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Precast Segmental Bridge Construction.

This change is one of a group of changes proposed by Robert Robertson of the State Structures Office to split existing Specifications references to Specialty Engineer into a redefined Specialty Engineer and a newly defined term, Contractor's Engineer of Record.

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.

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

Sincerely,

Signature on file

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

DFB/jo
Attachment
cc: General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

PRECAST SEGMENTAL BRIDGE CONSTRUCTION.
(REV 9-21-05)

ARTICLE 452-4 (of the Supplemental Specifications) is deleted and the following substituted:

452-4 Shop Drawings, Calculations And Manuals.

452-4.1 General: Use methods and procedures providing adequate safety to the general public from construction/erection activities and/or falsework placed over or adjacent to traveled roadways, navigational or recreational waterways or any existing commercial, industrial or other facility.

452-4.2 Information Required: Submit detailed shop drawings, calculations and manuals which include, but are not necessarily limited to, the following:

(1) A schedule of the timing and sequence of segment casting and erection including the sequence of making cast-in-place closures and continuity between spans.

(2) Details of the disposition and use of special erection equipment, falsework, temporary supports and the like, including all loads or reactions from such equipment applied to the structure during erection and the sequences and timings of these effects in accordance with the erection schedule.

(3) Details of the forms and casting cells for the manufacture of the segments.

(4) Layout of the casting yard showing operational features, casting cells, rebar fabrication and material storage areas, movable rain and sun sheds, geometry control stations, segment handling and storage facilities and the like.

(5) Calculations and details for lifting, storage or stacking of the segments. (Note: any additional strengthening of the segments to accommodate stacking will be at no expense to the Department.)

(6) Details of inserts or lifting holes including any necessary localized strengthening and the materials and methods to fill and finish such holes.

(7) Details and calculations for any localized strengthening for concentrated supports, loads or reactions from any special erection equipment placed in locations not already allowed for in the plans.

(8) Details and complete description of post-tensioning hardware components and any other embedments to be cast into the segments.

(9) In order to accommodate variations from the views and dimensions shown on the plans, fully and accurately dimensioned views showing the revised geometry of the segment including projections, recesses, notches, opening, blockouts, and the like with clear and concise cross-reference to the appropriate Contract plans to which the variations apply.

(10) Where variations are made to segment geometry and dimensions, appropriate details of changes to reinforcing clearly showing the size, spacing and location, including any special reinforcing required but not shown on the Contract plans, with clear and concise cross-reference to the appropriate Contract plans to which the variations apply.

(11) The size, type, and components of the post-tensioning system to be used. The duct type, size and support spacing. Locate all relevant details and grout

inlets/outlets. The method of maintaining the position and alignment of duct couplers at the segment joints. Ensure all post-tensioning alignments are in accordance with the plans, unless the Contractor's proposed variations require changes in which case horizontal and vertical profiles will be fully detailed.

(12) Details of and supporting calculations for any modifications to reinforcement at anchorages, deviation saddles, diaphragms and the like, made necessary for accommodating the elected post-tensioning system hardware.

(13) Casting curves and erection elevations, prepared in accordance with chosen construction methods, sequence and schedule.

In this respect, the construction methods, sequence and schedule include, but are not limited to, Contractor adopted general construction techniques, the erection equipment, its deployment and effect upon the structure, the introduction or removal of temporary supports, falsework, closure devices and the like, their deployment and effect upon the structure, the order (sequence) in which all casting, construction methods and step-by-step erection operations are executed, including post-tensioning, and the timing (schedule) of all such operations, with respect to the maturity of the concrete and affect thereon.

(14) A manual for the casting and geometry control of the segments in accordance with the information provided in the Contract Documents or as required by this Specification. (This is referred to as the "Casting Manual" - see also 452-5.3 below.)

(15) A manual for the detailed step by step erection of the segments including all intermediate procedures relating to any erection equipment, falsework, movement of equipment, support jacking, stressing of temporary post-tensioning bars, closure operations including any partial stressing across the closure during concrete curing, main post-tensioning tendon sequences, stressing loads and elongations, erection elevations, a method for the field survey and alignment control for setting initial and subsequent segments and any other relevant operations. (This is referred to as the "Erection Manual".)

(16) Method of mixing and placing grout; equipment capacity; mix design.

(17) The volume of concrete, the weight of reinforcement and weight of post-tensioning in each precast segment and the totals of these for both the superstructure and substructure summarized and tabulated on the shop drawings.

In general, any revision to materials, components, erection methods or erection sequencing indicated on the plans and/or to previously approved shop drawings requires submittals prepared and sealed by the ~~Specialty Engineer~~ *Contractor's Engineer of Record* for the Engineer's approval.

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(2) Details of the disposition and use of special erection equipment, falsework, temporary supports and the like, including all loads or reactions from such equipment applied to the structure during erection and the sequences and timings of these effects in accordance with the erection schedule.

(3) Details of the forms and casting cells for the manufacture of the segments.

(4) Layout of the casting yard showing operational features, casting cells, rebar fabrication and material storage areas, movable rain and sun sheds, geometry control stations, segment handling and storage facilities and the like.

(5) Calculations and details for lifting, storage or stacking of the segments. (Note: any additional strengthening of the segments to accommodate stacking will be at no expense to the Department.)

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