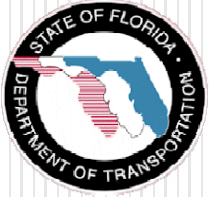


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# Structures Construction Updates

FLORIDA DEPARTMENT OF TRANSPORTATION  
STATE CONSTRUCTION OFFICE

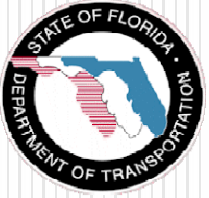


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# Critical Structures Construction Issues

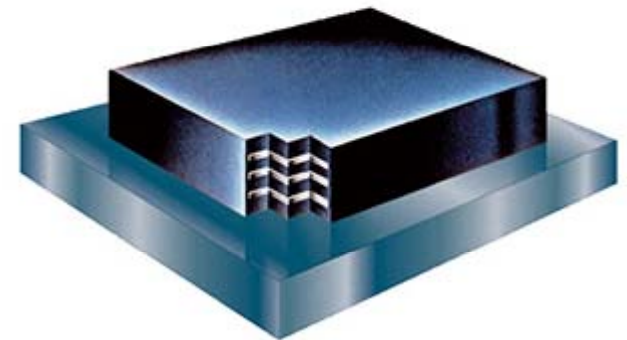
## Self Study Course

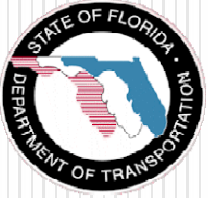
- This course is mandatory for all Structures CEI personnel (Consultant and Department) as of January 1, 2010 with completion by June 30, 2010
- The updated course must be retaken every three years
- After completing the course, a Certification of Course Completion form must be filled out and submitted to the District Construction Training Administrator
- Students will be notified of periodic course updates for mandatory review and these will be posted on a separate website during the interim period between official course updates every three years



# Specification 932-2.2: Bridge Structures - Elastomeric Bearing Pads

- 2010 Standard Specification has been modified to be more compatible with past practice as it pertains to AASHTO Standard Testing Specification M 251-06
- DCE Memo 20-09 implements the modification by mandating a version of AASHTO M 251-06 that has be revised for use on FDOT projects
- Specification 932-2.2.3 has also been revised by DCE Memo 20-09, to require an applied test load of 2,400 psi (laminated) and 1,700 psi (plain)



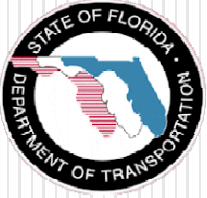


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## Specification 105-8.8.1: General - Supervisory Personnel - Bridge Structures

This provision applies only to Post-tensioned bridges and movable bridges

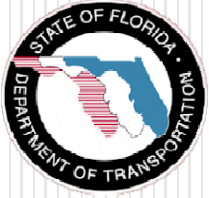




## Specification 105-8.8.7: Post-tensioning and Grouting Personnel Qualifications

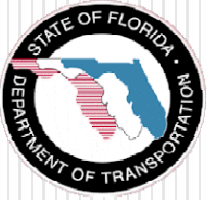


- Requirement to view the Grouting Video has been eliminated in the specification and in the CTQM
- Number of grouting crew members that must be CTQP Qualified Technicians is now two for PT'd superstructures and zero for all others
- The Crew Supervisor must be a Level II Technician and must be present at all times during operations and can count as one of the two crew members



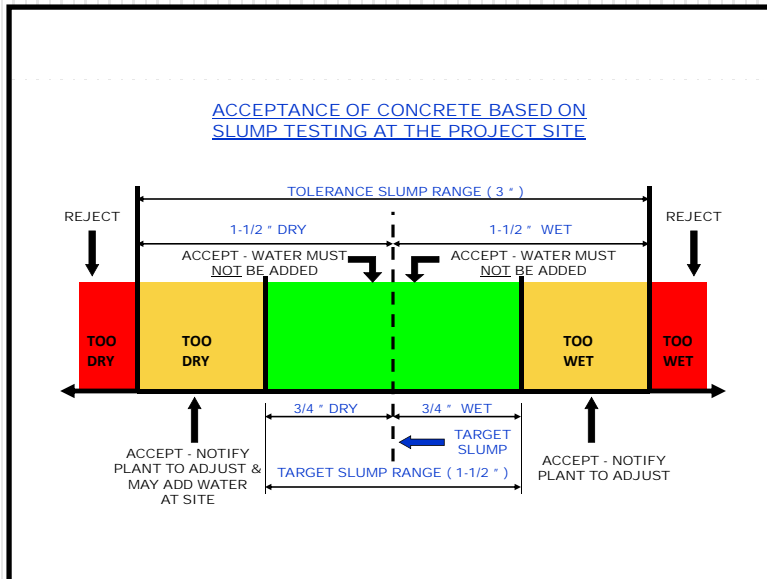
## Specification 346: Target Zone Removal

- The target range requirement will be eliminated in the next 346 Specification revision (Implementation July 2010)
- Water can be added as long as slump is inside the tolerance range and the W/C is not exceeded
- If the slump is outside the tolerance range but the concrete is placed instead of being sent back to the plant then a price adjustment will be made of twice the invoice price of that load
- No price adjustment will be made if the Engineer authorizes concrete placement even if the slump is outside of tolerance

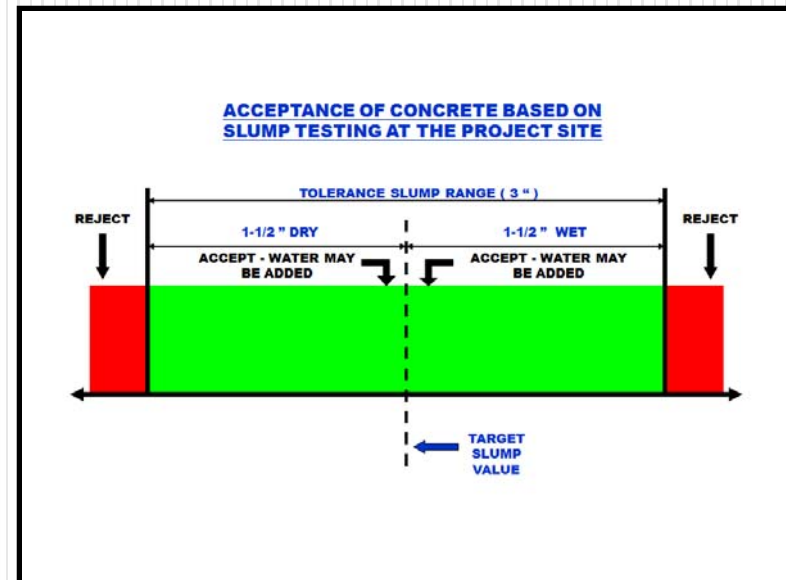


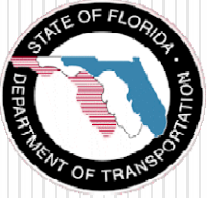
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## CURRENT SPECIFICATION



## REVISED SPECIFICATION





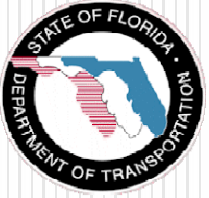
## Specification 400-7.13.2: Screed Demonstration

- Current specification is as follows:

*During the demonstration, load the screed support rails that are cantilevered beyond the fascia girders to simulate the concrete loading that will be placed on the rail support system during actual placement and screeding operations.*

- This provision has been deleted in the latest revision since it is rarely if ever performed and does not add enough benefit to justify the effort if performed routinely

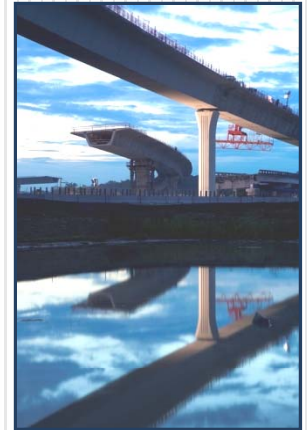
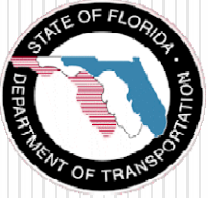




## Specification 400-15.2.5.1: General – Class 4 Deck Finish

- Long bridge now defined as greater than 100' and the approach slab is not included
- Short bridge is 100' or less not including approach slab
- For bridge deck widenings, see the plans for the finish and smoothness requirements which are project specific





## Specification 400-15.2.5.5: Smoothness Evaluation

- The latest revision makes it clear that the deck surfaces to be evaluated include all but the 2 feet in front of the face of barrier wall or gutter line
- The smoothness evaluation shall be performed on not less than 100' of bridge deck as opposed to the previous 300'
- The planing operation shall include all deck surfaces except for the 2 feet in front of the face of barrier wall or gutter line and the planing should feather out in the transition from fully planed to unplaned



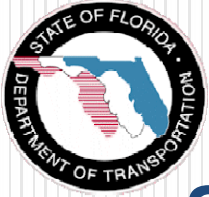
## Specification 400-21.2: Investigation, Documentation and Monitoring – Disposition of Cracked Concrete

- The specification revision is as follows in green italics:

**The Engineer will inspect concrete surfaces as soon as surfaces are fully visible after casting, *with the exception of surfaces of precast concrete products produced in offsite plants, between 7 and 31 days* after the component has been burdened with full dead load, and a minimum of 7 days after the bridge has been opened to full unrestricted traffic.**



- Precast concrete products are the exception because the Producer has the responsibility to inspect for cracks as part of the approved QC plan at the plant, though the Department does spot check

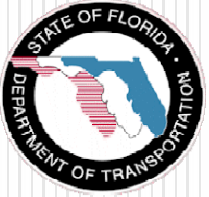


## Specification 400-21.3: Classification of Cracks – Disposition of Cracked Concrete

- The specification revision is as follows in green italics:

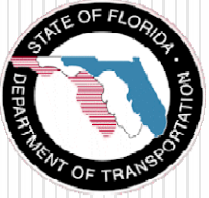
**A crack that is fully or partially underwater at any time during its service life will be classified as a structural crack** *unless the Environment note on the General Notes sheet in the plans categorizes the substructure as slightly aggressive, in which case, the nonstructural crack criteria may apply as determined by the Engineer.*

- The revision acknowledges that cracks submerged in fresh water that are narrow and shallow are rarely a durability concern and so may be categorized by the Engineer as nonstructural for repair purposes



## **CPAM 3.2: Quality Assurance and Quality Control of Field Construction Operations**

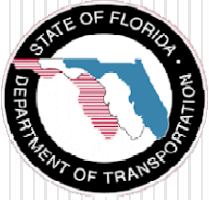
- **CPAM 3.2, previously called Quality Control, has been revised to include Quality Assurance (QA) of field construction operations**
- **The new section makes it clear that CEI inspectors have the primary function of performing QA which requires monitoring the Contractor's level of compliance with the Quality Control Plan (QCP) as well as evaluating the effectiveness of the Plan**
- **The new provisions explain the QA responsibilities of inspectors and includes preparation, planning and performance requirements**



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## **More PS Plant Certifying Agencies Have Received FDOT Acceptance**

- **Materials Manual Section 8.5 was revised as of January 2009 to allow any agency that can comply with the acceptance criteria of the FDOT to be approved as a certifying agency**
- **Previously there was only one accepted agency: Precast/Prestressed Concrete Institute (PCI)**
- **Two new agencies have been accepted: Construction Certification Institute (CCI) and the National Precast Concrete Association (NPCA)**



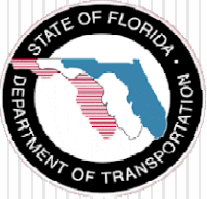
## New Florida I Beam (FIB) Implemented July 2009

- FIB replaces most AASHTO and Bulb-T shapes
- Advantages of the FIB:
  - Higher load carrying capacity than same length AASHTO or Bulb-T which can reduce the number of beam lines resulting in a lower cost superstructure
  - Much wider and thicker bottom flange which reduces susceptibility to overturning during storage, handling and erection
  - Thicker flanges and web increases lateral stiffness which reduces susceptibility to buckling



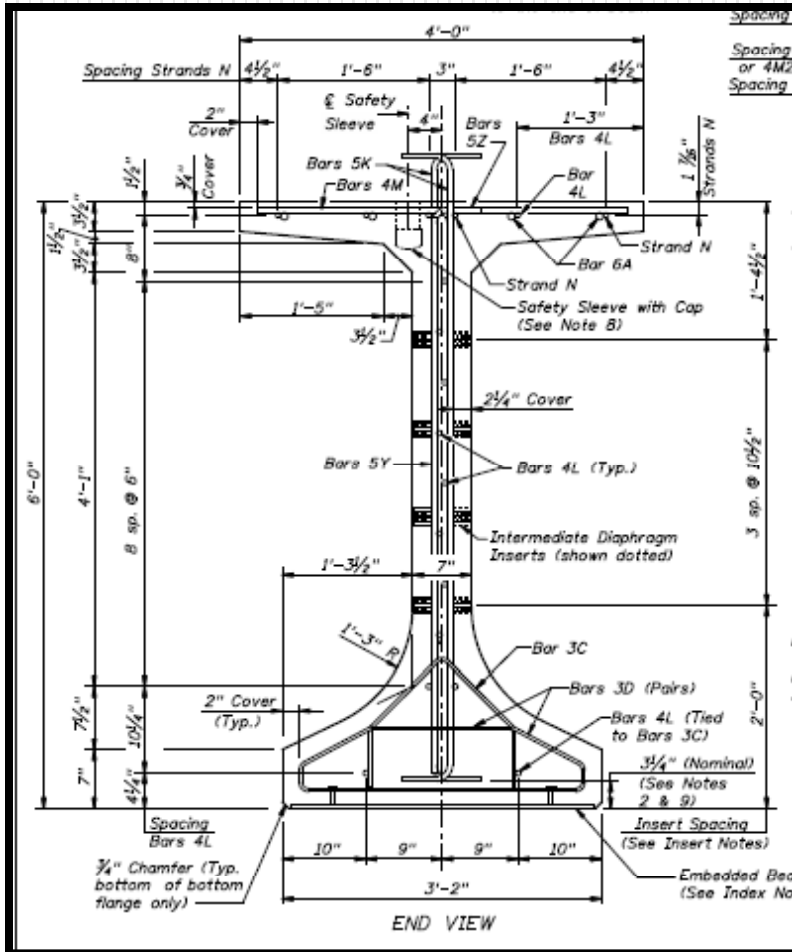
**First FIBs cast in December  
Standard Concrete Products, Tampa, Florida**

**Depth: 78"  
Length: 159'  
Weigh: 91.4 tons**

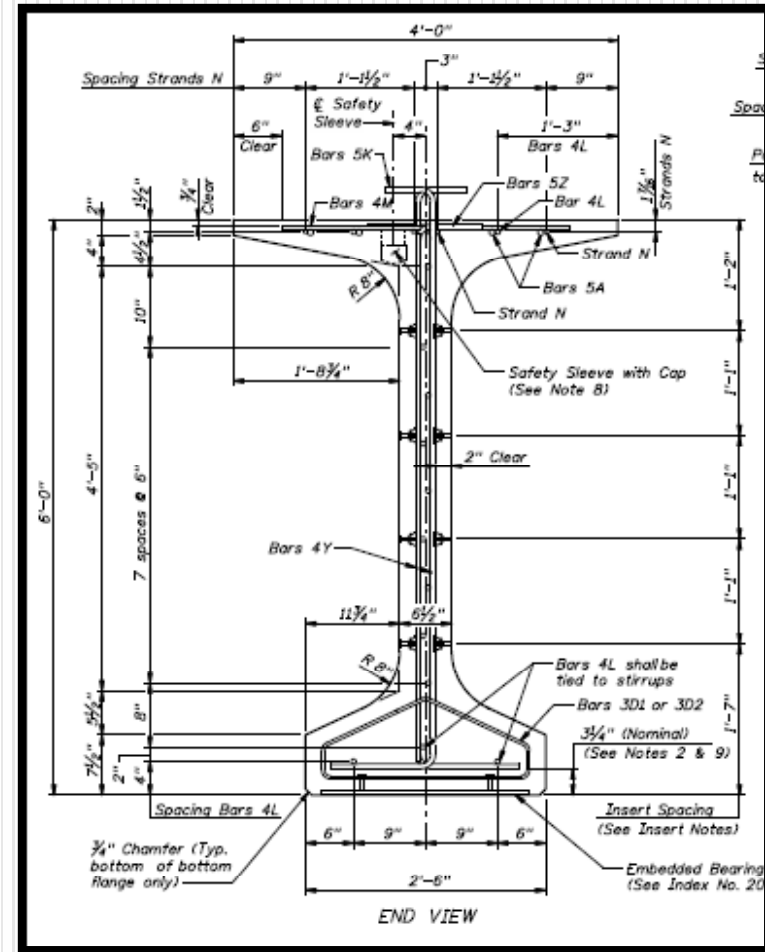


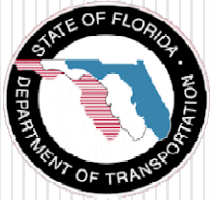
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**FIB  
72" Depth**



**BULB-T  
72" Depth**





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