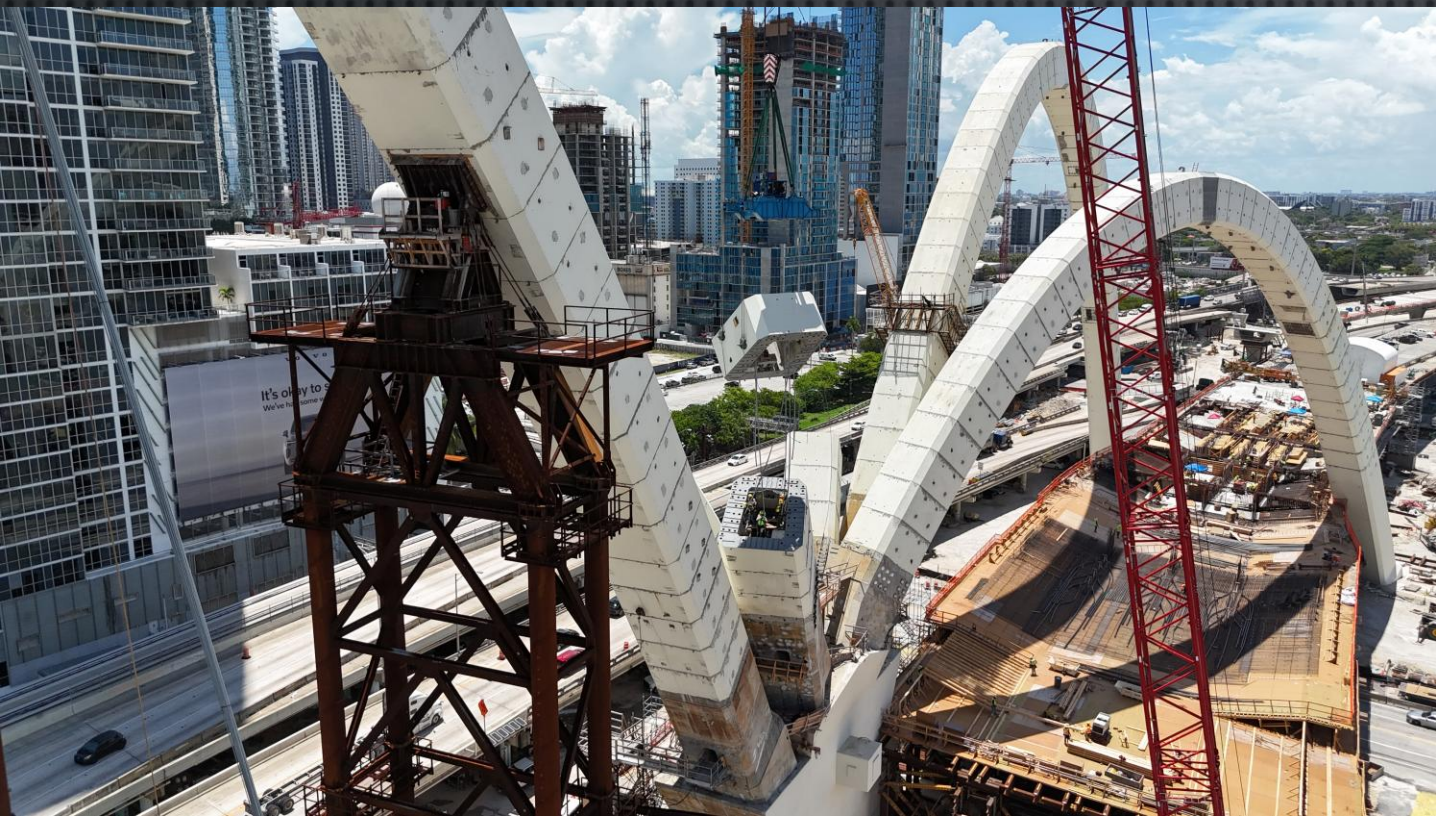




2026
CONSTRUCTION
ACADEMY
STRUCTURES
SESSION





PURPOSE

- Target Audience: FDOT staff & Consultant Project Administrators
- Educate about structures construction
- Review Specifications and CPAM
- Review and Incorporate lessons learned



State of Florida Department of Transportation
Office of Construction

CRITICAL STRUCTURES CONSTRUCTION ISSUES

SELF STUDY COURSE



IMPORTANT TERMS & DOCS

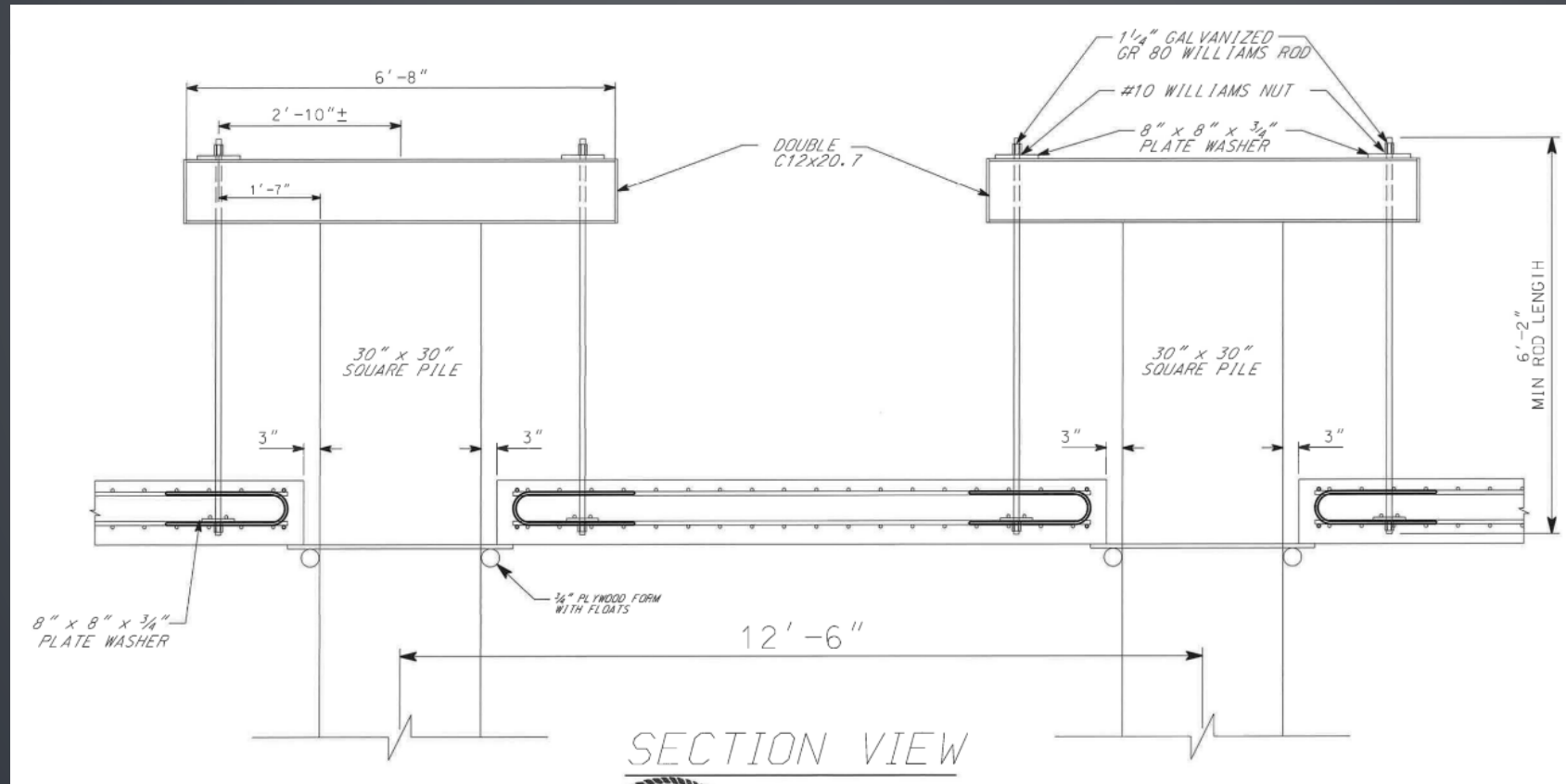
- Construction Project Administration Manual (CPAM)
- Standard Specifications for Road and Bridge Construction (Division I and II)
- FDOT Self Study Courses (Structures Inspection and Critical Construction Issues)
- EOR, CEOR, Department Approved Specialty Engineer, Engineer

CPAM SECTIONS



- 8.4 – SHOP AND ERECTION DRAWING PROCESS
- 8.11 – CONTRACTOR INITIATED SUBMITTALS
- 10.2 – PRESTRESSED/PRECAST CONCRETE COMPONENTS
- 10.3– CONCRETE CONSTRUCTION
- 10.4 – COATINGS & ASBESTOS REMOVAL, HANDLING AND DISPOSAL AND STRUCTURAL STEEL COATING ISSUES
- 10.6 – UNDERWATER BRIDGE CONSTRUCTION INSPECTION
- 10.7 – POST-TENSIONED BRIDGES
- 10.9 – STRUCTURAL STEEL & MISCELLANEOUS METAL COMPONENTS
- 10.10 – BRIDGE CONSTRUCTION ISSUES THAT MUST INVOLVE STATE CONSTRUCTION OFFICE STAFF
- 10.11 – GENERAL STRUCTURES CONSTRUCTION ISSUES

CPAM 8.4 SHOP AND ERECTION DRAWINGS PROCESS



CPAM 8.4 SHOP AND ERECTION DRAWINGS PROCESS

- NINE (9) ITEM SHOP DRAWING TRACKING LOG (NUMBER, STATUS, STATUS OF EOR REVIEW, ETC.)
- SCHEDULE OF SUBMITTALS REQUIRED WITHIN 60 DAYS OF THE START OF CONTRACT
- AT WEEKLY PROGRESS MEETINGS CONTRACTOR REPORTS LATEST SHOP DRAWING PRIORITIES, UPDATES
- EOR QC CHECKPRINTS REQUIRED (5-1.4.1.9)



Table 5-1 Submittal and Review Requirements						
Shop Drawing for:	Originated by Specialty Engineer Not Signed and Sealed	Originated by Detailer Not Signed and Sealed	Originated by Specialty Engineer Signed and Sealed	Originated by Contractor's EOR Signed and Sealed	Requires Review, QA/QC Check prints and disposition stamp by Design EOR	Requires Construction IPR and signed and sealed Certification Letter
Steel Fabrication Drawings		Originator			Reviewer	
Steel Erection Plan			Originator		Reviewer	
Geometry Control Manual				Originator	Reviewer	
Segmental Erection Manual				Originator	Reviewer	Reviewers

SPECS 5-1.4.2 SHOP DRAWINGS SUBMITTAL AND REVIEW REQUIREMENTS











CPAM 8.11 CONTRACTOR INITIATED SUBMITTALS

- CATEGORIES OF SUBMITTAL:
 - REQUEST FOR INFORMATION (RFI)
 - REQUEST FOR CORRECTION (RFC)
 - REQUEST FOR MODIFICATION (RFM)
 - NONCONFORMANCE REPORT (NCR; AKA RFC)
 - ENGINEERING ANALYSIS REPORT (EAR)
- PROCESS/PROCEDURE COVERED IN CPAM
- 17-ITEM TRACKING LOG FOR EACH SUBMITTAL

CPAM 8.11.8 has timelines for response time, can range from 2 to 15 days depending on priority level and escalation matrix in CPAM



The expected response time for RFMs and RFCs will be the same as specified for shop drawings in Section 5-1 of the Standard Specifications (45 days), or as specified in the Request for Proposal for Design-Build projects. (Copy paste from CPAM)

The expected response time for RFMs and RFCs will be the same as specified for shop drawings in Section 5-1 of the Standard Specifications, or as specified in the Request for Proposal for Design-Build projects.

POP QUIZ

Which is an RFI/RFM/RFC/NCR?

I accidentally placed reinforcement incorrectly for my column and the footing is poured. Here is what I propose to fix it.

The PT anchorage pourback is too large. I propose to make it concrete instead of epoxy grout.

Plans show one type of rebar cover in one sheet and another type of cover in another. Which one am I supposed to use?

Precast segments has major spalls found after handling on site. Here is what I propose to fix it.



Despite its apparent simplicity, RFIs frequently pose challenges, often leading to delays, conflicts, and legal implications



Some common abuses of construction RFIs include submitting excessive RFIs for minor issues, using RFIs to shift blame or responsibility, and generating RFIs without proper research or documentation. These abuses can lead to project delays, confusion, and unnecessary disputes.

The expected response time for RFMs and RFCs will be the same as specified for shop drawings in Section 5-1 of the Standard Specifications, or as specified in the Request for Proposal for Design-Build projects.

~~Submittal does not deviate from the Plans, clearly state so in the submittal.~~

Schedule the submission of shop drawings to allow for a 45 calendar day review period for all submittals associated with a category 2 bridge; tolling components identified in the current FDOT General Tolling Requirements (GTR) Part 3; and the tolling-related signing, DMS and ITS infrastructure. Schedule the submission of shop drawings to allow for a 25 calendar day review period for all other items. The review period commences upon the Engineer's receipt of the valid submittal or valid re-submittal and terminates upon the transmittal of the submittal back to the Contractor. A valid submittal includes all the minimum requirements outlined in 5-1.4.4.

EAR

A Specialty Engineer, who is an independent consultant, or the Contractor's Engineer of Record as stated within each individual Section shall perform any such analysis within 45 calendar days of the Engineer's approval of the Engineering Analysis Scope, complete and submit the EAR. The EAR must be signed and sealed by the Specialty Engineer or the Contractor's Engineer of Record that performed the engineering analysis. Allow for a 45 calendar day review period for all EARs associated with a category 2 bridge; tolling components identified in the current FDOT General Tolling Requirements (GTR) Part 3; and the tolling-related signing, DMS and ITS infrastructure. Allow for a 25 calendar day review period for all other items. The Engineer will determine the final disposition of the material after review of the EAR. No additional monetary compensation or time extension will be granted for the impact of any such analysis or review.

400-21 Disposition of Cracked Concrete.

400-21.3 Classification of Cracks: The Engineer will classify cracks as either nonstructural or structural. In general, nonstructural cracks are cracks 1/2 inch or less deep from the surface of the concrete; however, the Engineer may determine that a crack greater than 1/2 inch deep is nonstructural. In general, structural cracks are cracks that extend deeper than 1/2 inch. As an exception, all cracks in concrete bridge decks that are supported by beams or girders will be classified as nonstructural and repair will be in accordance with 400-21.5.1. However, if the Engineer determines that repair under 400-21.5.1 is unacceptable, repair in accordance with 400-21.5.2.

400-21.5.2 Structural Cracks: Submit an Engineering Analysis Scope in accordance with 6-4, signed and sealed by the Contractor's Engineer of Record, to determine the strength and durability of the proposed repair. Upon approval of the EAR and final determination of the Engineer, repair or remove and replace the cracked concrete in accordance with the approved EAR.

CPAM 10.3 CONCRETE CONSTRUCTION

- SPEC. 400-21, DISPOSITION OF CRACKED CONCRETE: THE NUMBER OF CRACKS, AVERAGE CRACK WIDTH, LENGTH OF CRACKS TAKEN INTO ACCOUNT
- CPAM SECTION 10.3.5, MASS CONCRETE CONTROL PLAN (MCCP)
- CPAM SECTION 10.7, CRACK AND JOINT INSPECTION OF POST-TENSIONED BRIDGES

Table 400-3
DISPOSITION OF CRACKED CONCRETE OTHER THAN BRIDGE DECKS
 [see separate Key of Abbreviations and Footnotes for Tables 400-3 and 400-4]

Elev. Range	Crack Width Range (inch) (2) x = crack width	Cracking Significance Range per LOT (1)											
		Isolated Less than 0.005%			Occasional 0.005% to<0.017%			Moderate 0.017% to<0.029%			Severe 0.029% or gtr.		
		Environment Category											
		SA	MA	EA	SA	MA	EA	SA	MA	EA	SA	MA	EA
Elevation: 0 to 6 ft AMHW	$x \leq 0.004$	NT	NT	PS (6)	NT	PS (6)	PS (6)	PS (6)	PS (6)				
	$0.004 < x \leq 0.008$	NT	PS (6)	EI (3)	PS (6)	EI (3)	EI (3)	PS (6)					
	$0.008 < x \leq 0.012$	NT	PS (6)	EI									
	$0.012 < x \leq 0.016$	PS (6)	Investigate to Determine Appropriate Repair (4, 5) or Rejection										
	$0.016 < x \leq 0.020$												
	$0.020 < x \leq 0.024$									Reject and Replace			
	$0.024 < x \leq 0.028$												
	$x > 0.028$												
	Crack Width	SA	MA	EA	SA	MA	EA	SA	MA	EA	SA	MA	EA



CPAM 10.3 CONCRETE CONSTRUCTION

CPAM 10.3 CONCRETE CONSTRUCTION

- 10.3.6: CRACK INSPECTION 3X: 1) AFTER CASTING, 2) ALL DEAD LOADS, 3) ALL LIVE LOADS
- EARLY DISCOVERY ALLOWS CRACK MONITORING AND CORRECTION OF OTHER COMPONENTS TO PREVENT MORE CRACKS
- CRACK MAPS DENOTING LENGTH, WIDTH, DEPTH, LOCATION
- DISPOSITION OF CRACKS:
 - STRUCTURAL OR
 - NON-STRUCTURAL—ENGINEER MAKES THE DETERMINATION!

CPAM 10.4 PAINT & ASBESTOS REMOVAL, HANDLING & DISPOSAL AND STRUCTURAL STEEL COATING ISSUES

- HAZARDOUS BUT ALSO POTENTIALLY HAZARDOUS WASTE:
 - ASBESTOS CONTAINING MATERIAL (ACM)
 - LEAD
- COATING CONCERNS:
 - SURFACE PREPARATION
 - BOLTS, CAULKING GAPS AND SEAMS—STRIPE COATING
 - FAYING SURFACES
 - TESTING FOR CHLORIDE, SULFATE AND NITRATE CONCENTRATIONS
 - CONTAINMENT
- DISCUSS CONCERNS AT PRE-OPERATIONS MEETINGS



CPAM 10.4 PAINT & ASBESTOS REMOVAL, HANDLING & DISPOSAL AND STRUCTURAL STEEL COATING ISSUES

- Blast media for paint removal/surface prep
- Ferrous (top)
- Steel grit (below)



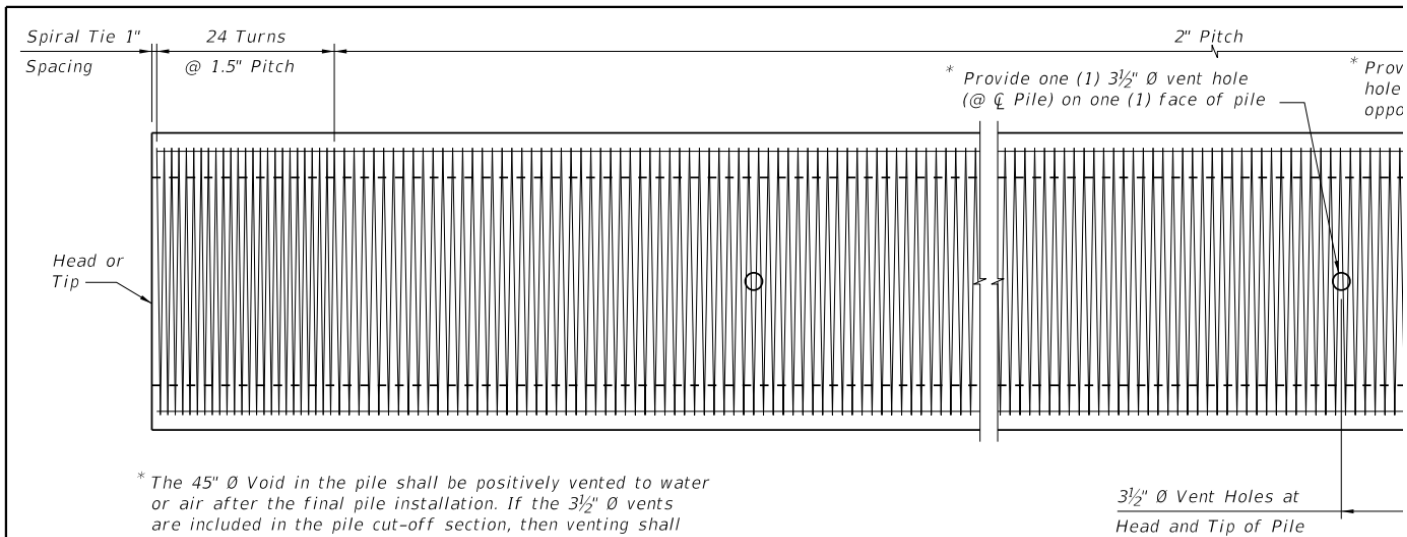


CPAM 10.4 PAINT & ASBESTOS REMOVAL, HANDLING & DISPOSAL AND STRUCTURAL STEEL
COATING ISSUES
CONTAINMENT

CPAM 10.6 UNDERWATER BRIDGE CONSTRUCTION INSPECTION

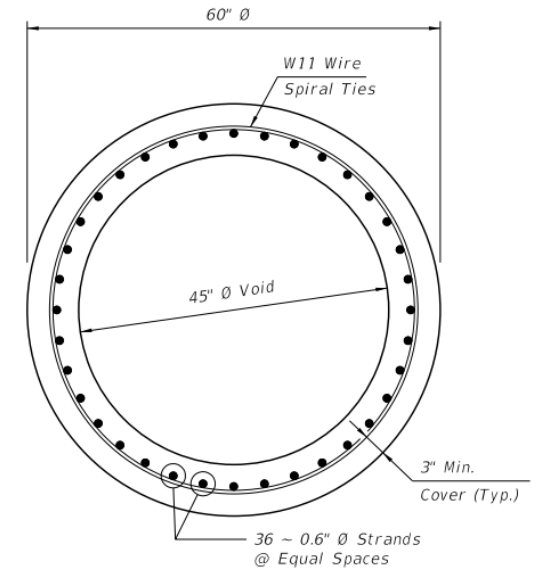
- INITIAL INSPECTION OF VOIDED CONCRETE/CYLINDER PILES
- OTHER PILE TYPES, ENGINEER MAKES DECISION
- FINAL UNDERWATER INSPECTIONS FOR ALL PROJECTS BY:
 - FDOT PREQUALIFIED CONSULTING FIRM (MAINTENANCE)
 - FDOT STRUCTURES MAINTENANCE





* The 45" $\emptyset$ Void in the pile shall be positively vented to water or air after the final pile installation. If the $3\frac{1}{2}$ " $\emptyset$ vents are included in the pile cut-off section, then venting shall be provided by the use of a 1" $\emptyset$ PVC conduit through the substructure cap or column. Adjust spiral reinforcing as necessary to accommodate the $3\frac{1}{2}$ " $\emptyset$ vent.

ELEVATION



SECTION A-A

POST-TENSIONING ISSUES

- USED TO GROUT ALL TENDONS. NOW ONLY SOME ARE REQUIRED TO GROUT.
- MAIN CONTINUITY TENDONS MUST BE FLEXIBLE FILLER (WAX)
- WE HAVE UPDATED TO PTI PL2 LEVEL OF PROTECTION TO ALL OUR TENDONS EARLY 2000's
- PROTECTION OF UNBONDED WAXED TENDONS MUST BE EMPHASIZED. CORROSION ON HIGHLY STRESSED STRANDS CAN LEAD TO SUDDEN BRITTLE STRAND FAILURE.
- THREE LEVELS OF PROTECTION ARE REQUIRED. SOMETIMES 4 AT THE ANCHORAGES. NOTE REPAIRS OF LEAKING DUCTS PER SPEC REQUIRES APPROVAL OF THE ENGINEER (CEI/FDOT)
- GROUTED TENDONS ALSO HAVE THREE LEVELS OF PROTECTION.



- IMPORTANT TO KEEP DUCTS CLEAN AND FREE OF DEBRIS/WATER, MUST BE CAPPED TO HELP PREVENT THIS. COULD AFFECT STRANDS/WAX
- BE MINDFUL OF STORAGE OF WAX AND PLASTIC DUCTS, SMALL PLASTIC DUCTS USED FOR GROUDED TRANSVERSE POST TENSIONING GET BRITTLE OVER TIME WITH UV, CAN EASILY CRUSH WITH HANDS/DURING CONCRETE POUR.
- IMPORTANT TO KEEP DUCTS FREE OF WATER, MUST BE PUMPED OUT/DRAINED PRIOR TO WAXING AND INSTALLING STRANDS.
- DEHUMIDIFICATION PURPOSE, TO LENGTHEN TIME STRANDS ARE PLACED PRIOR TO WAXING, NOT TO REMOVE WATER (ALTHOUGH IT COULD REMOVE SOME).



Spec 462 & 960 – Post-Tensioning

- OLD SPECIFICATIONS UTILIZED PREAPPROVED PT SYSTEMS WHICH CAN STILL BE FOUND ON FDOT'S WEBSITE: [STRUCTURES DESIGN OFFICE POST-TENSIONING JAN 2016 LATER SPECIFICATIONS](#)
- NEW APPROACH RELIES ON CEI/EOR TO REVIEW PT SHOP DRAWINGS AND TEST REPORTS FOR EACH PROJECT.
- COMPONENTS AND SYSTEMS DETAILED IN THE APPROVED PT DRAWINGS **MUST** BE ADHERED TO WITH NO SUBSTITUTIONS (EXCLUDING LOCAL ZONE REINFORCEMENT)
- THE SENSITIVITY OF PT SYSTEM PERFORMANCE TO THE COMPONENTS AND WORKMANSHIP OF INSTALLATION REQUIRE STRICT ADHERENCE TO THE APPROVED PT SHOP DRAWINGS THAT **MUST** BE ENFORCED BY THE CEI

Spec 462 & 960 – Post-Tensioning

- CURRENT SPECIFICATIONS 462 HAVE ADOPTED A NEW DEHUMIDIFICATION PROCEDURE TO ENSURE STANDING WATER AND MOISTURE IS REMOVED FROM TENDONS UTILIZING FLEXIBLE FILLER PRIOR TO TENDON INSTALLATION AND FLEXIBLE FILLER INJECTION
- MORE KEY POINTS TO BE AWARE OF:
 - ENSURING THE DUCT STAYS DRY BEFORE AND AFTER TENDON INSTALLATION
 - STORAGE REQUIREMENTS FOR COMPONENTS
 - ENSURE PROPER CONCRETE CONSOLIDATION AROUND CONGESTED ANCHOR REGIONS WITH LOCAL ZONE REINFORCING
 - ACCURATELY INSTALL AND POSITION/SUPPORT PT SYSTEMS PRIOR TO CONCRETE PLACEMENT (DUCT SUPPORTS, SPIRAL POSITIONING, ETC.)
 - ENSURE ALL CONTRACTOR FIELD TESTING CONDUCTED PRIOR TO CONCRETING; CONTRACTOR INSPECTIONS
 - ADHERE TO THE TIME LIMITATIONS OUTLINED IN 462 FOR TIME BETWEEN TENDON INSTALLATION AND FILLER INJECTION AS WELL AS TIME BETWEEN FILLER INJECTION AND POUR-BACK CONSTRUCTION
 - MOCK-UP REQUIREMENTS
 - GROUT PROBLEMS
 - FLEXIBLE FILLER PROBLEMS

CPAM 10.10 Bridge Construction Issues that Must Involve State Construction Structures Engineer

- COMPLEX OR CATEGORY II BRIDGE ISSUES:
 - STEEL
 - SEGMENTAL
 - MOVABLE
 - POST-TENSIONED
- CHANGES TO AS-BUILT CONDITION
- MODIFICATION OF PLANS/ COST SAVINGS INITIATIVES
- NON-COMPLIANCES OF STEEL/PRESTRESSED ITEMS

Topic #625-000-002
FDOT Design Manual

January 1, 2026

121.3.2 Category 2 Structures

All structure types not listed above are classified as Category 2 Structures unless exempted by the SDO. In addition to, or in lieu of, the criteria listed above, a structure is classified as a Category 2 Structure when any of the following are present:

- (1) Bridge substructures containing any of the following:
 - (a) Post-tensioned components
 - (b) Straddle piers
 - (c) Integral caps
 - (d) Mildly reinforced pier column with net sustained tension on the extreme fiber under permanent service loads in the final condition
- (2) Bridges designed for vessel collision or bridges with superstructures subject to the application of wave loads per [Drainage Manual Section 4.9.5](#).
- (3) Bridges with non-redundant foundations, micropiles, or auger cast piles
- (4) Any component designed using Fiber Reinforced Polymer (FRP) composite materials except components in the **Standard Plans** that include FRP composite materials
- (5) Braided underpass structures where the beams or flat slab superstructure element is not oriented parallel to traffic of the overlying roadway and a portion of the superstructure and substructure extends beyond the limits of the overlying traffic barriers

CPAM 10.10 General Structures Construction Issues

- NOT MEANT TO EXCLUDE ANY IDR REQUIREMENTS

10.10.6.1 Contractor Initiated Changes for Complex Superstructure Members and Complex Issues

When a Contractor proposes a change to the plans, shop drawings, specifications or means and approved methods plans (segment erection plans, post-tensioning plan, grouting plans, etc.) that are related to complex superstructure members or complex

CPAM 10.11 General Structures Construction Issues

- NOTIFYING DISTRICT STRUCTURES MAINTENANCE ENGINEER OF IN-SERVICE DATES AND ACCEPTANCE INSPECTIONS
- AS-BID VS. AS-BUILT LOAD RATINGS—CHANGES?
- DEPARTMENT-OWNED TEMPORARY BRIDGING



SPECIFICATION SECTIONS

- 5 – CONTROL OF THE WORK
- 346 – PORTLAND CEMENT CONCRETE
- 400 – CONCRETE STRUCTURES
- 450 – PRECAST PRESTRESSED CONCRETE CONSTRUCTION
- 460 – STRUCTURAL STEEL AND MISCELLANEOUS METALS
- **NOT ALL STRUCTURES SPECS SPECIFICALLY ADDRESSED HERE**

Spec 5—Construction Affecting Public Safety

- CONSTRUCTION AFFECTING PUBLIC SAFETY
 - SIGNED AND SEALED ERECTION PLAN PRIOR TO ERECTION
 - DAILY INSPECTIONS OF STRUCTURE
 - SPECIALTY ENGINEER CERTIFICATION PRIOR TO OPENING FACILITY BELOW
- SIGNED AND SEALED STABILITY CALCULATIONS
- TABLE OF TEMPORARY BRACING DETAILS



ing loads to be determined by the Contractor.

of Stage 2 bracing, including end bracing, are required to be installed within 24 hours after initial beam placement.

brace bracing along the length of the beams allowing for variations due connection conflicts and skew.

length III loads applied to beam at brace point (see SDG 11.6).

of Stage 3 bracing, including end bracing, are required to be installed prior to deck placement.

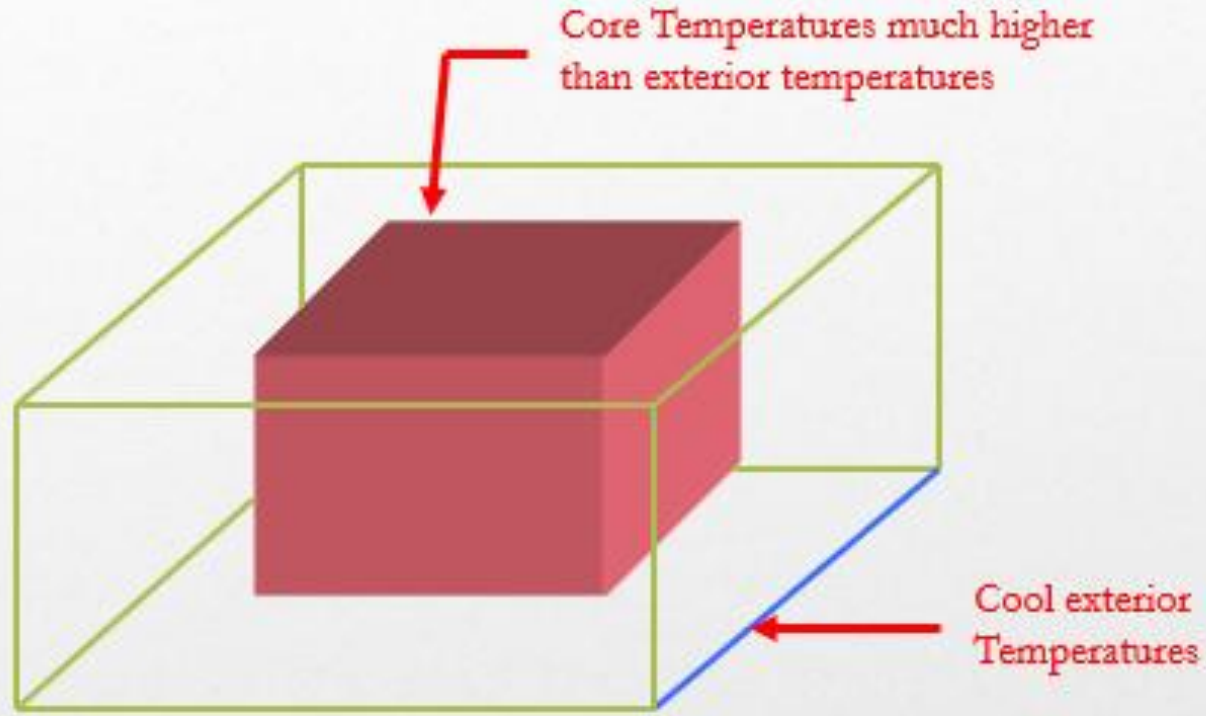
length I overturning moment applied to beam at brace point (see SDG 11.6).

op drawings for temporary bracing plan including locations of preformed beam holes/inserts.

SPEC 5—TEMPORARY BRACING

Spec 346—Mass Concrete

- MASS CONCRETE CONTROL PLAN
- TEMPERATURE READINGS EVERY 6 HOURS UNTIL:
 - MAX TEMPERATURE DIFFERENTIAL (35°F MAX) AND
 - MAX TEMPERATURE (180°F MAX) AND DIMINISHES
- CONTROLS REMAIN UNTIL CORE TEMPERATURE WITHIN 50°F OF AMBIENT
- SPECIALTY ENGINEER MUST BE ENGAGED TO ADVISE IF ISSUES ARISE



TYPICAL MASS CONCRETE FOOTING

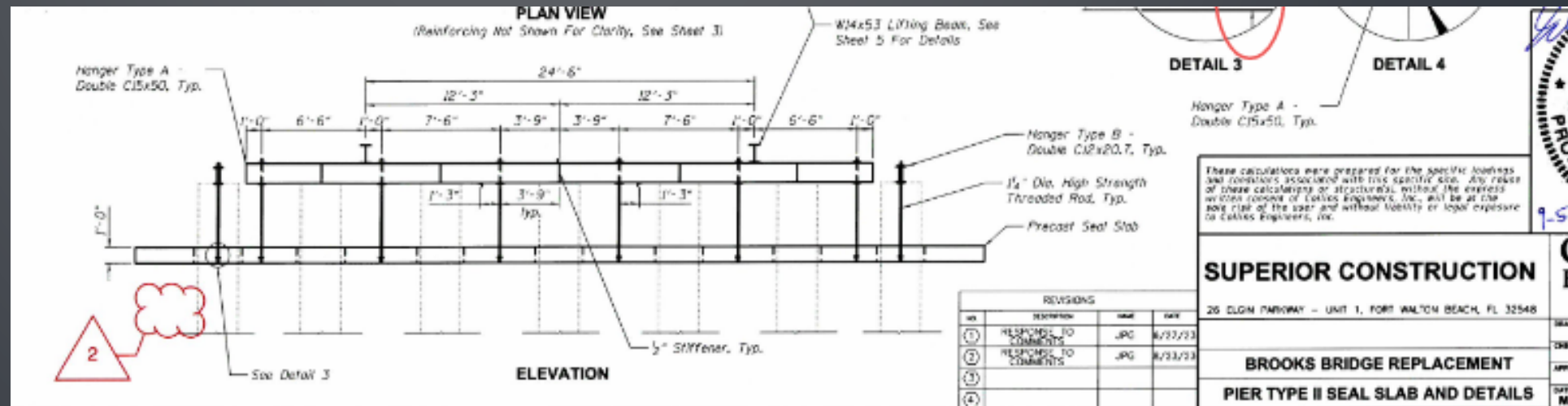
SPEC 346—MASS CONCRETE



SPEC 346—MASS CONCRETE

SPEC 400—FOOTING PLACEMENT

- Cofferdam preparation—seal concrete or precast “bathtub”
 - Water seepage
 - Standing water prior to concrete placement
 - Primary pump capacity plus backup pump
- 20 inch or less lift thickness when placing concrete
- Mass concrete monitoring devices protected during concrete placement





SPEC 400—DECK PLACEMENT

- Placement sequence/
direction
- Screed demonstration
- Curing compound applied
within 120 minutes of initial
placement
- Compound spread
rate/quantity reported to the
Engineer
- Placement and maintenance
of curing blankets (over barrier)





SPECS 400/450— CAMBER

- Monthly camber estimates in the precast yard
- Camber tolerance of 1 inch from design camber in Plans
- Contractor takes appropriate actions (400-7.13.1) to get girder stirrups to “fit” with the deck
- EOR to check shop drawings even if modified for stability



SPECS 400/415/460/502— REBAR, SIP FORMS, SHEAR CONNECTORS

- Field welding per Spec 460 only if Engineer approval or if on the Plans
- No welding of SIP forms to flanges
- Bending of reinforcement with Engineer's permission
- Store rebar above ground on dunnage
- Shear stud installation in the field with bend testing



SPECS 400/460/461— BEARINGS, ANCHOR BOLTS

- Inspection of bearings for deformation and general condition
- Anchor bolt hole misalignment
- Expansion and contraction from temperature

Spec 460—Material

- THE DEPARTMENT DEFAULT MATERIAL REQUIREMENT FOR STRUCTURAL STEEL SUPERSTRUCTURES IS WEATHERING STEEL IF 4 MILES FROM THE COAST OR GREATER
- IF SITE CONDITIONS ARE ACCEPTABLE, PAINTING NOT REQUIRED, REDUCTION IN MAINTENANCE COSTS OVER THE LIFE OF THE BRIDGE
- EXCEPTIONS PERMITTED BUT MUST BE APPROVED BY THE CHIEF ENGINEER, REQUIRING JUSTIFICATION BY THE DISTRICT

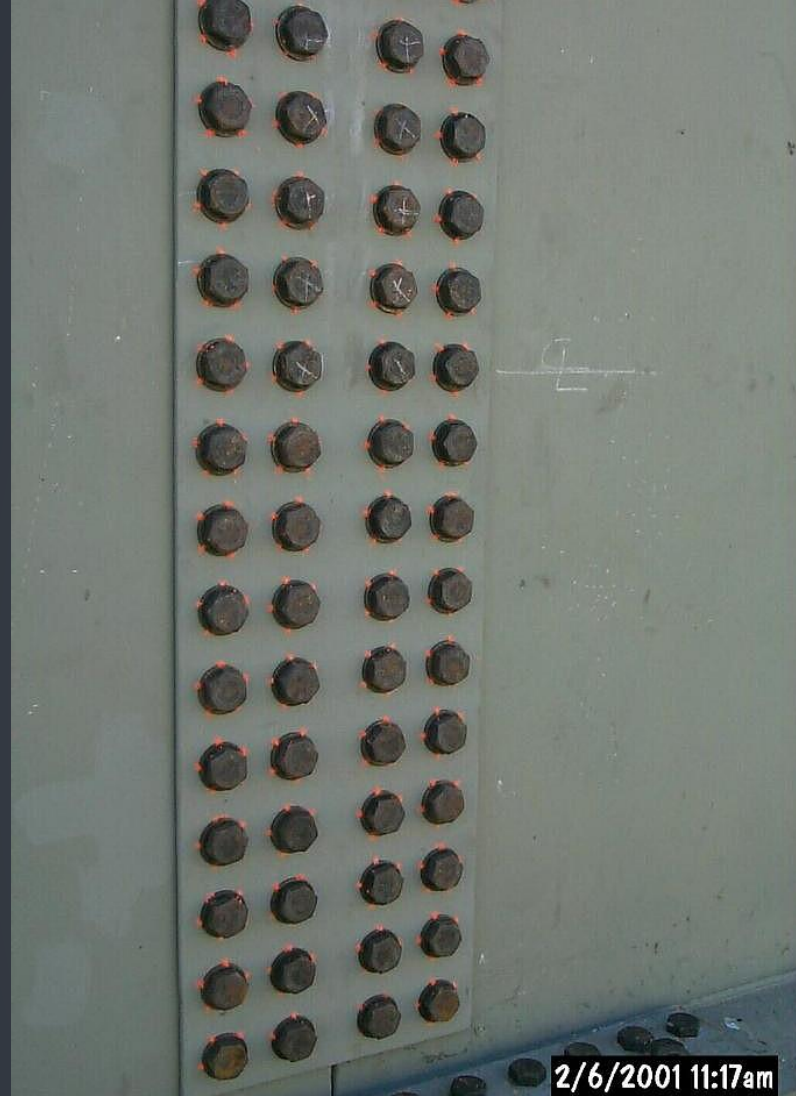


SPEC 460—STRUCTURAL STEEL AND MISCELLANEOUS METALS

WEATHERING STEEL GIRDERS

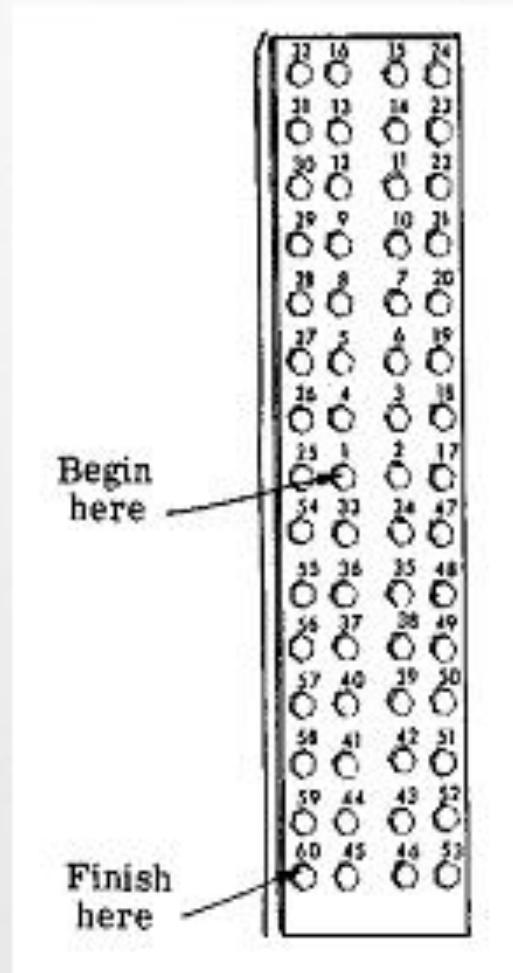
SPEC 460—BOLTING

- Turn-Of-Nut method
- ROCAP/Job-Inspection Snug Tight Torque performed in the field
- Bolt tightening sequence
- Erection Plan
- DTI's – Direct Tension Indicators



SPEC 460— BOLTING

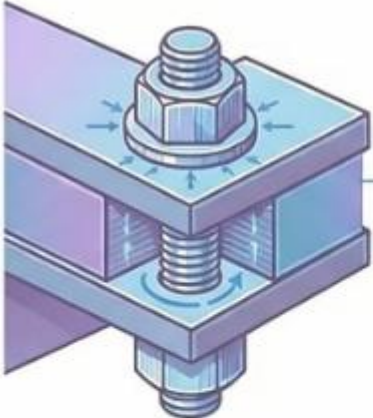
Bolt Tightening Sequence



The Sequence of Tightening is
CRITICAL
→ Most rigid, to least rigid

SPEC 460 SKIDMORE- WILHELM TENSION CALIBRATOR

SPEC 460—TURN OF NUT
BOLTING



Load is transferred by Pure Friction
Highly pretensioned bolts create a massive clamping force, preventing any slip.



Complex & Costly Pretensioning
Requires special installation methods, surface prep, and rigorous third-party inspection.

Type	Slip-Critical
Friction	Friction between plates
ht	Fully Pretensioned

SPEC 460— BOLTING

- CHECKING SNUG TIGHT TENSION WITH A CALIBRATED TORQUE WRENCH



• CONTRACTOR'S ENGINEER OF RECORD

Contractor's Engineer

This table provides brief clarifications to the works that are allowed to be performed by Contractor's Engineer of Record, Department Approved Specialty Engineer and Specialty Engineer as defined in Specification Section 1. For definitions, additional information and further clarifications refer to Specification Section 1.

Work Type	Contractor's Engineer of Record	Department Approved Specialty Engineer	Specialty Engineer
Re-design	Yes	No	No
Cost Savings Initiative Proposal	Yes	No	No
Details of the permanent work not fully detailed in the plans	Yes	Yes	Yes
Design and details of the permanent work declared to be minor or non-structural including minor repairs	Yes	Yes	Yes
Design and details of the permanent work declared to be major or structural including major repairs	Yes	Yes*	No
Design and drawings of temporary works, such as falsework, formwork, etc.	Yes	Yes	Yes

*The work must also be checked by another Department Approved Specialty Engineer

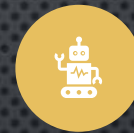
Qualifications and Certifications



CTQP Concrete Field
Technician - Level I



CTQP Concrete Field
Inspector - Level II



CTQP Grouting
Technician - Level I
& 2



CTQP Post-
Tensioning
Technician - Level I
& 2



ACI, PTI, and ASBI
issue certifications
for successful
completion



ASBI Certification in
Flexible Filler
Injection



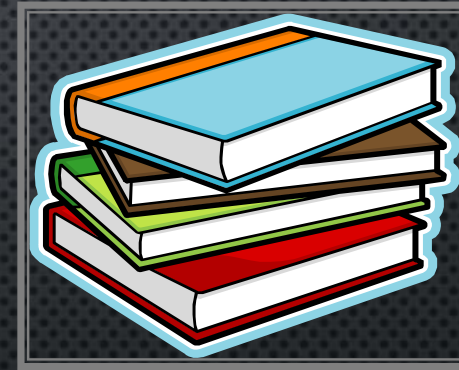
Technicians certified
by these agencies



Not considered
qualified for FDOT
work until
qualification by
CTQP

Training and Reference Tools

- OFFICE OF CONSTRUCTION AND CTQP WEBSITES CONTAIN MOST STRUCTURES CONSTRUCTION TRAINING MATERIALS INCLUDING PILES AND DRILLED SHAFTS AS DOWNLOADS
 - [HTTPS://WWW.CTQPFLORIDA.COM/](https://www.ctqpflorida.com/)
- STRUCTURES RELATED WEBSITES:
- [STATE CONSTRUCTION OFFICE TRAINING: SELF STUDY](#)
- [STATE CONSTRUCTION OFFICE, STRUCTURES WEBPAGE](#)
 - [HTTP://WWW.FDOT.GOV/CONSTRUCTION/](http://www.fdot.gov/construction/)
- [STATE STRUCTURES DESIGN OFFICE WEBSITE](#)
 - [HTTP://WWW.FDOT.GOV/STRUCTURES/](http://www.fdot.gov/structures/)



Contact

- STATE CONSTRUCTION STRUCTURES ENGINEER

- KRICKSTEIN.TORRES@DOT.STATE.FL.US

- (850) 414-4190

CONSTRUCTION STRUCTURES WEBSITE:

- [HTTPS://WWW.FDOT.GOV/CONSTRUCTION/STRUCTURES/STRUCTURES.SHTM](https://www.fdot.gov/construction/structures/structures.shtm)