Florida Department of Transportation

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MIKE DEW
SECRETARY

July 6, 2017

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

Re: State Specifications Office
Section: **462**
Proposed Specification: **4620802 Post-Tensioning.**

Dear Mr. Nguyen:

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

The changes are proposed by Charles Boyd of the State Structures Design Office to require all ducts (except for long ducts in segmental box girders) to be pressure tested prior to concrete placement, rather than just a few ducts selected by the inspector.

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

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Dan Hurtado, P.E.
State Specifications Engineer

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

POST-TENSIONING.
(REV 5-26-17)

SUBARTICLE 462-8.2 is deleted and the following substituted:

462-8.2 Contractor Field Tests:

462-8.2.1 Prior to Concrete Placement:

462-8.2.1.1 All Tendons Except as Noted:

1. Test all PT system components utilized on the project, except those used for internal longitudinal tendons in box-girder segments.

2. In the formwork, pressure test each ~~different type and size of~~ duct ~~assemblies~~ with all assemblies used in a single structural component (e.g. segment, beam, etc.) ~~constructed for first time on project~~.

~~3. One system per group, but not less than a total of two per project, will be randomly chosen by the Engineer for testing.~~

~~4~~3. ~~When required by the Engineer, t~~Test assemblies in their final position just prior to concrete placement by sealing them at their anchorages or construction joint termini and then applying compressed air in accordance with this Section to determine if assembly connections are pressure tight.

4. In presence of the Engineer, pressurize duct to 7.5 psi and lock-off outside air source. Record pressure loss for one minute. If pressure loss exceeds 0.75 psi, or 10%, find and repair leaks in duct assembly using repair methods approved by the Engineer and retest.

462-8.2.1.2 Tendons For Which Vacuum Assisted Filler Injection Will Be Used:

1. Test all PT system components utilized on the project except those used for internal longitudinal tendons in box-girder segments.

2. In the formwork, perform a vacuum test for each ~~different type and size of~~ duct ~~assemblies~~ with all assemblies used in a single structural component (e.g. segment, beam, etc.) ~~constructed for first time on the project~~.

~~3. One system per group, but not less than a total of two per project, will be randomly chosen by the Engineer for testing.~~

~~4~~3. ~~When required by the Engineer, t~~Test assemblies in their final position just prior to concrete placement by sealing them at their anchorages or construction joint termini and then applying a vacuum in accordance with this Section to determine if assembly connections are pressure tight.

4. In presence of the Engineer, apply a 90% vacuum and lock-off outside air source. Record vacuum loss for five minutes. If vacuum loss exceeds 10%, find and repair leaks in duct assembly using repair methods approved by the Engineer and retest.

462-8.2.2 Post Concrete Placement:

1. After stressing and before injecting filler into duct, install all anchorage caps, inlets and outlets and test the duct with compressed air in accordance with this Section to determine if duct connections require repair.

2. In the presence of the Engineer, pressurize duct to 50 psi and lock-off outside air source. Record pressure loss for one minute. A pressure loss less than 25 psi, or 50%,

is acceptable for ducts with a length of equal to or less than 150 feet and a pressure loss less than 15 psi is acceptable for ducts longer than 150 feet.

3. If the pressure loss exceeds allowable, repair leaking connections using methods approved by the Engineer and retest.

POST-TENSIONING.
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462-8.2 Contractor Field Tests:

462-8.2.1 Prior to Concrete Placement:

462-8.2.1.1 All Tendons Except as Noted:

1. Test all PT system components utilized on the project, except those used for internal longitudinal tendons in box-girder segments.

2. In the formwork, pressure test each duct with all assemblies used in a single structural component (e.g. segment, beam, etc.).

3. Test assemblies in their final position just prior to concrete placement by sealing them at their anchorages or construction joint termini and then applying compressed air in accordance with this Section to determine if assembly connections are pressure tight.

4. In presence of the Engineer, pressurize duct to 7.5 psi and lock-off outside air source. Record pressure loss for one minute. If pressure loss exceeds 0.75 psi, or 10%, find and repair leaks in duct assembly using repair methods approved by the Engineer and retest.

462-8.2.1.2 Tendons For Which Vacuum Assisted Filler Injection Will Be Used:

1. Test all PT system components utilized on the project except those used for internal longitudinal tendons in box-girder segments.

2. In the formwork, perform a vacuum test for each duct with all assemblies used in a single structural component (e.g. segment, beam, etc.).

3. Test assemblies in their final position just prior to concrete placement by sealing them at their anchorages or construction joint termini and then applying a vacuum in accordance with this Section to determine if assembly connections are pressure tight.

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462-8.2.2 Post Concrete Placement:

1. After stressing and before injecting filler into duct, install all anchorage caps, inlets and outlets and test the duct with compressed air in accordance with this Section to determine if duct connections require repair.

2. In the presence of the Engineer, pressurize duct to 50 psi and lock-off outside air source. Record pressure loss for one minute. A pressure loss less than 25 psi, or 50%, is acceptable for ducts with a length of equal to or less than 150 feet and a pressure loss less than 15 psi is acceptable for ducts longer than 150 feet.

3. If the pressure loss exceeds allowable, repair leaking connections using methods approved by the Engineer and retest.