RESPONSE TO 4300000 COMMENTS FROM INDUSTRY REVIEW

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Paul Harkins

Taking this excerpt from your language, ensure that the pipe joints have been hydrostatically tested at the plant at the specified pressure, does reference need to be made to 430-4, which provides required pressure for each type of application, or could this be suggesting that the engineer specify the required joint performance for the specific site?

Response: Reference not necessary

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Tonii Brush

At the top of the table under 430-8.1.3, has Non-SI Units. This should be deleted since there no longer is any SI Units. Under spec "430-12.109 Payment Items" pay item "2430-610- U-Endwall with Grate - each" should be deleted since the metric items are no longer used. Under the spec "430-12.23 Removing Existing Pipe", would this also cover existing pipe found on the project that needed to be removed and replaced with new pipe that were not noted on the plans through an overrun in the contract pay item? There have been contractors that have requested and received extra compensation through work orders for the said pipe locations that were not noted on the plans stating that the original contract pipe price did not include the extra cost of removal and disposal for the additional pipe. Should verbiage be added to clarify if the contractor is not to receive the compensation and is to be covered by overrunning the existing pay item in the contract?

Response: 1) Agree, Non-SI Units should be deleted. 2) Agree, pay item 2430-610 should be deleted. 3) The section, “430-12.2 Removing existing Pipe”, does not apply to existing pipe not shown on the plans. In cases where existing pipe is not shown in the plans buts needs to be removed, we the Department will pay for this as extra work. The spec 430-12.2 has been changed to reflect that existing pipe being replaced with a new pipe in the approximate same location, will be paid under the pay item, Clearing and Grubbing.

Why would we pay this by CY and not by each? This needs to be reviewed closer. Section 430-12.6 and 430-12.10.

Response: The size of a box culvert and the amount of silt can vary significantly. This pay item should remain as CY.

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Lorie Wilson

In Spec. 430-4-8, Final Pipe Inspection, it states “prior to placement of asphalt friction course, dewater installed pipe and provide the Engineer with a video recording”.

In Spec. 430-8.2, Laying and Shape Requirements for Corrugated Metal Pipe, it states “Upon completion of the project, and just prior to acceptance by the Department, clean the inside of all corrugated metal pipe and inspect it for breaks, corrosion…etc.”

I know we are looking mainly for deflection in 8-2 here, but don’t we want to add (dewater, if necessary) after the word “clean” in the 8-2 spec.? It could be some time between final pipe placement and friction and if it is dry the contractor may want to go ahead and video the pipe to take advantage of the situation. In that case the Contractor will then have to revisit his pipe work prior to Friction, so we’d best make it clear that the video inspection was just the first part of a two part process he created by electing to video early and he’d better be prepared to dewater the pipe so we can observe/measure any possible deflection prior to Friction course. Maybe these two Specs can be tied together somehow to address this possibility.

Response: To eliminate the redundant inspection, the spec has been amended to delete the last paragraph of 430-8.2. The cleaning and inspection under 430-4.8 will accomplish the same purpose.

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John Morgan

I’m looking for clarification of Standard Specification Article, 430-4.8.1.
Some districts intrepid the last 2 sentences.
Stop the camera and pan when necessary to document defects. Film the entire circumference at each joint(before and after a noticed defect)
Others intrepid it as.
Film the entire circumference at each and every joint.

Response: Film the entire circumference at each and every joint. W e have reversed the order of the last two sentences in 430-4.8.1 to eliminate any misinterpretation.

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Doug Holdener - Rinker Materials

Per the above referenced proposed specification change, the State of Florida appears to be reducing the standard of hydrostatic joint performance for steel and aluminum pipe and arch governed by Sections 943 and 945 (hereby referred to as metal pipe). The proposed specification seemingly ignores the potential for point load distortion pipe and pipe profile variation and misalignment at the vicinity of the joint. Additionally, the proposed specification produces an advantageous opportunity for metal pipe with respect to polyvinyl chloride (PVC) pipe, steel-reinforced concrete pipe (RCP), fiber cementitious pipe (FCP), and high-density polyethylene pipe (HDPE).

If you recall the March 15 meeting of the Florida Transportation Builders Association (FTBA) contractors at District 7, the Concrete Pipe Division of Rinker Materials requested justification from the Department for this apparent relaxation in metal pipe joint performance in plant testing. At that meeting, both you and the State Structures Design Engineer, William Nickas, requested

that we submit a written request for justification from the Department on this issue. We appreciate this opportunity to submit comments to the Department.

Straight Alignment of Pipe Joint Hydrostatic Plant Test
Per both the current and proposed specifications Sections 430, 449, and 948, all pipe types are to be hydrostatically tested with joints in straight alignment at the respective manufacturing facility. For RCP and FCP, the test requirements are per ASTM C443. For PVC, HDPE, and metal pipe, the test requirements are per ASTM D 3212.

Deflected Joint Hydrostatic Plant Test (Current FDOT Specification)
Per the current Sections 430, 449, and 948, all pipe types are to be hydrostatically tests with joints in a deflected position. RCP and FCP pipes are tested per ASTM C443 with the joint deflected. PVC, HDPE, and metal pipe are to be tested per ASTM D3212, which requires that the pipe be deflected to 5 percent of its diameter at a prescribed distance from the end of the pipe (per Figure 2. Shear Deflection Test of ASTM D 3212).

Proposed Hydrostatic Test for Metal Pipe
The proposed deflected joint hydrostatic test procedures for PVC, HDPE, RCP, and FCP pipe will remain unchanged from the current specifications. However, the proposed hydrostatic joint test procedure for metal pipe no longer requires that the pipe joint be tested in a deflected position, as is the case for all other pipe types. In the proposed metal pipe specification, sections 7.3 and 7.4 of ASTM D3212 are excluded and an alternate test methodology to that of section 7.4 (depicted in Figure 2 of ASTM D3212) is proposed.

The proposed hydrostatic test for metal pipe does not deflect the pipe joint, but instead applies a parallel plate load longitudinally along the pipe and spanning the pipe joint. The Department is proposing to follow testing methods of ASTM D 2412 (Determination of External Loading Characteristics for of Plastic Pipe by Parallel-Plate Loading) in the application of the longitudinal load.

The Department is mis-applying ASTM D 2412 for the purpose of hydrostatic joint testing of metal pipe. ASTM D 2412 clearly states in sections 1 (Scope) and 5 (Significance and Use) that "the test method covers the determination of load-deflection characteristics of plastic pipe…" and that "properties of plastic pipe obtained by this test method are used for … stiffness of the pipe … load-deflection characteristics … compare the characteristics of various plastics … study the interrelations of dimensions and deflection properties of plastic pipe … and … measure the deflection and load-resistance at…significant events…during the test." There is no mention of joint hydrostatic performance in ASTM D 2412.

By applying the proposed parallel-plate load across the metal pipe joint, instead of behind the joint per ASTM D 3212, the Department is lowering the standard of joint performance requirements for metal pipe. Flexible pipe, including metal pipe, can be subjected to point load distortions, and it is conceivable that such point loads occur at the vicinity of a metal pipe joint. It is possible that bedding behavior during or after construction impact the alignment of pipe either along its barrel or at its joint. It is also inherent behavior of metal pipe to deflect, and such

deflection could occur at various degrees adjacent to the joint (as opposed to uniformly along the barrel and spanning the
joint).

The proposed joint test procedure for metal pipe seemingly ignores the potential of point loads or alignment shift at the joint because it applies only a continuous longitudinal load that spans the joint. If the proposed amendment to section 943 is approved, the joint performance standards for RCP, FCP, PVC, and HDPE pipe will be more stringent because of their continued requirement to hydrostatically test the pipe joint in a misaligned, deflected position per ASTM C 443 or D 3212 as appropriate.

Furthermore, if approved, the Department will be mis-representing, and potentially over-stating, the capabilities of the metal pipe joint without placing limitations on where metal pipe can be installed.

FDOT Justification Requested
Based on these comments and supporting information above, the Concrete Pipe Division of Rinker Materials respectfully requests the Department to justify the relaxation of the deflected joint testing requirement of ASTM D 3212 for metal pipe and the intended use of ASTM D 2412 for the metal pipe test procedure.

It is our position that the current application and enforcement of joint hydrostatic tests in the plant (straight and deflected alignments) based on ASTM C 443 and D 3212, as appropriate, provides the Department with a more equitable and scientifically justifiable protocol.

Response: These comments are responded to under sections 9430100 and 9450000.