ORIGINATION FORM
Proposed Revisions to the Specifications
(Please provide all information - incomplete forms will be returned)

Date: 6/22/23
Office: Construction
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Article/Subarticle: 4.8, 9.2
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Associated Section(s) Revisions: 948

Will the proposed revision require changes to the following Publications:

Publication	Yes	No	Office Staff Contacted	Date
Standard Plans Index	○	◉	Rick Jenkins/Joshua Turley	6/22/23
Traffic Engineering Manual	○	◉	Mariano Amicarelli	6/22/23
FDOT Design Manual	○	◉	DeWayne Carver	6/22/23
Construction Project Administration Manual	○	◉	Patrick Overton	6/22/23
Basis of Estimate/Pay Items	○	◉	Ryan Gray	6/22/23
Structures Design Guidelines	○	◉	Ben Goldsberry	6/22/23
Approved Product List	○	◉	Karen Byram	6/22/23
Materials Manual	○	◉	Susan Musselman/Brad Pearson	6/22/23
Maintenance Specs	○	◉	Deanna Hutchison	6/22/23

Will this revision necessitate any of the following:

Design Bulletin ☐ **Construction (DCE Memo)** ☐ **Estimates Bulletin** ☐ **Materials Bulletin** ☐

Have all references to internal and external publications in this Section been verified for accuracy? YES

Synopsis: Summarize the changes:

Increasing the size of culvert pipe to be inspected via remote CCTV. Including language to require reports for the required visual inspections of culvert pipe over 60". Language added to tie 430 to 948 for the requirements on the use of gasketed pipe sleeve adapters for thermoplastic pipes used in structures with resilient connectors.

Justification: Why does the existing language need to be changed?

Inspection equipment is now capable of inspecting the larger pipe sizes and it is safer to inspect these pipes remotely. The requirement to inspect larger pipe has not changed; however, the requirement to provide a report is new and necessary for the both construction and maintenance. Language added for the thermoplastic pipe sleeves is necessary to clearly identify and define this component of thermoplastic pipe used in conjunction with resilient connectors.

Do the changes affect either of the following types of specifications (Hover over type to go to site.):

Special Provisions ☐ **Developmental Specifications** ☐

List Specifications Affected: (ex. SP3270301, Dev330TL, Dev334TL etc.)

Contact the State Specifications Office for assistance completing this form.

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1. Are changes in line with promoting and making meaningful progress on improving safety, enhancing mobility, inspiring innovation, and fostering talent; explain how?

Revisions to this specification is critical to ensure that accurate information and instructions are communicated to the Contractor and industry partners and its representatives, to therefore, improve safety, enhance mobility, inspire innovation, and foster talent.

2. What financial impact does the change have; project cost, pay item structure, or consultant fees?

The revisions have no financial impact.

3. What impacts does the change have on production or construction schedules?

The revisions have no impact on production or construction schedules.

4. How does this change improve efficiency or quality?

The revisions improve efficiency and quality by providing clear and specific instructions to the Districts/Contractors .

5. Which FDOT offices does the change impact?

Construction.

6. What is the impact to districts with this change?

The revisions provide clarification and detail.

7. Does the change shift risk and to who?

There is no shift in risk.

8. Provide summary and resolution of any outstanding comments from the districts or industry.

Comments and Responses are available on the Track the Status of Revisions hyperlink located on the Specifications landing page: https://www.fdot.gov/programmanagement/Specs.shtm

9. What is the communication plan?

Through the established specification revision process (e.g., Internal and Industry Review).

10. What is the schedule for implementation?

The Standard Specifications e-Book and Workbook are effective July 1st every year.

PIPE CULVERTS
(REV 6-22-23)

SUBARTICLE 430-2.1 is expanded by the following:

430-2 Materials.

430-2.1 Pipe: Meet the following requirements:

Concrete Pipe	Section 449
Steel Pipe	556-2.1
Round Rubber Gaskets	Section 942
Resilient Connectors*	Section 942
Corrugated Steel Pipe and Pipe Arch	Section 943
Corrugated Aluminum Pipe and Pipe Arch	Section 945
Corrugated Polyethylene Pipe	Section 948
Steel Reinforced Polyethylene Ribbed Pipe	Section 948
Steel Reinforced Polyethylene Corrugated Pipe	Section 948
Corrugated Polypropylene Pipe	Section 948
Corrugated Polyvinyl Chloride (PVC) Pipe	Section 948
Fiberglass Reinforced Polymer Pipe	Section 948
Metal Grates	Section 962
Pipe Sleeve Adapters	Section 948

*Use resilient connector products listed on the Department's Approved Product List (APL).

SUBARTICLE 430-4.8 is deleted and the following substituted:

430-4.8 Pipe Inspection: For pipes installed under the roadway, inspection is to be conducted when backfill reaches 3 feet above the pipe crown or upon completion ~~of placement~~ of the stabilized subgrade. For pipe installed within fills, including embankments confined by walls, inspection is to be conducted when compacted embankment reaches 3 feet above the pipe crown or the finished earthwork grade as specified in the Plans. Prior to conducting the inspection, submit to the Engineer an ~~video recording~~inspection schedule for videoing, dewatering the installed pipe, and ~~remove~~ the removal of all silt, debris, and obstructions. Submit pipe ~~videoing~~ inspection videos and reports to the Department for review prior to the continuation of paving.

For pipe ~~48~~ 60 inches or less in diameter, submit to the Engineer the video files and reports using low barrel distortion video equipment with laser profile technology, non-contact video micrometer and associated software. For all pipe types, provide a Pipe Observation Summary Report for each pipe run that shall include~~s~~:

1. Actual recorded length and width measurements of all cracks within the pipe.
2. Actual recorded separation measurement of all rigid pipe joints.
3. Detailed written observations of leaks, debris, or other damage or defects.

For flexible pipe types, submit a Pipe Ovality Report for each pipe run that includes:

1. Representative diameter of the pipe.
2. Pipe deformation/deflections measurements with the 5% deflection limit clearly delineated.

Laser profiling and measurement technology must be certified by the company performing the work to be in compliance with the calibration criteria posted at: https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/construction/engineers/environmental/laser-profiling-calibration-criteria.pdf. Reports submitted in electronic media are preferred.

For pipe larger than 60 inches, submit to the Engineer the schedule for dewatering the installed pipe and the removal of all silt, debris, and obstructions. Submit the pipe visual inspection reports to the Department for review prior to the continuation of paving. Provide a visual inspection summary report for each pipe run that shall include:

1. Actual measured length and width measurements of all cracks within the pipe.
2. Actual measured separation of rigid pipe joints.
3. Detailed written observations with corresponding photographs or videos of leaks, debris, or other damage or defects.

The Engineer may waive this requirement for side drains and cross drains which are short enough to inspect from each end of the pipe.

430-4.8.1 Video Report: Provide video files via digital media (DVD, flash drive, or other) or by online digital distribution with a minimum standard resolution of 720 x 480. Use a camera with lighting suitable to allow a clear picture of the entire periphery of the pipe. Center the camera in the pipe both vertically and horizontally and be able to pan and tilt to a ~~90 degree~~90-degree angle with the axis of the pipe and rotating 360 degrees. Use equipment to move the camera through the pipe that will not obstruct the camera's view or interfere with proper documentation of the pipe's condition.

The video image shall be clear, focused, and relatively free from roll, static, or other image distortion qualities that would prevent the reviewer from evaluating the condition of the pipe. The video will include identification before each section of pipe filmed. The identification will include the project number, the structure number corresponding to the structure number in the Plans for the project, size of pipe, the date and time, and indicate which pipe is being filmed if multiple pipes are connected to the structure. Notes should be taken during the video recording process. Submit these notes along with the video.

Move the camera through the pipe at a speed not greater than 30 feet per minute. Mark the video with the distance down the pipe. The distance shall have an accuracy of one foot per 100 feet. Film the entire circumference at each joint. Stop the camera and pan when necessary to document and measure defects. Position the camera head perpendicular to all defects requiring measurement by the video micrometer.

430-4.8.2 Reinspection: At any time after reviewing the submitted pipe inspection reports, the Engineer may direct additional inspections. If no defects are observed during the reinspection, the Department will pay for the cost of ~~the~~ reinspections in accordance with 4-3. If defects are observed, the reinspection and all work performed to correct the defects will be done at no cost to the Department. Acceptance of all replacements or repairs will be based on video documentation of the completed work prior to Final Acceptance.

SUBARTICLE 430-9.2 is expanded by the following:

430-9.2 Field Joints: Use gasketed joints to seal side drain, and storm and cross drain. Use gaskets meeting the requirements of Section 449. Ensure that the pipe manufacturer provides a joint design approved by the Engineer before use.

430-9.2.1 Requirements for Use in Structures with Resilient Connectors: Use pipe sleeve adapters in accordance with Section 948-2 and 948-7.