



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

November 17, 2014

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: State Specifications and Estimates Office
Section **430**
Proposed Specification: **4300408 Pipe Culverts.**

Dear Mr. Nguyen:

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

This change was proposed by Larry Ritchie of the State Construction Office to simplify the reporting requirements for pipe inspections and tailor requirements to specific pipe types. The proposed changes also delete redundant, equipment specific language as well as reports that the Department does not use.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to SP965DS or daniel.scheer@dot.state.fl.us.

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

Sincerely,

signature on file

Daniel Scheer, P.E.
State Specifications Engineer

DS/ot

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

PIPE CULVERTS.(REV ~~9-18-14~~*11-14-14*)

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, provide the Engineer with a video recording schedule for videoing, dewater installed pipe, and remove all silt, debris and obstructions. Submit pipe videoing and reports to the Department for review prior to the continuation of paving.

For pipe 48 inches or less in diameter, provide the Engineer a video DVD and report using low barrel distortion video equipment with laser profile technology, non-contact video micrometer and associated software. *For all pipe types, ~~that provides~~ provide a Pipe Observation Summary Report for each pipe run that includes:*

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, provide 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.

~~3. Pipe ovality report.~~

~~4. Deflection measurements and graphical diameter analysis report in terms of x and y axis.~~

~~5. Flat analysis report.~~

~~6. Representative diameter of pipe.~~

~~7. Pipe deformation measurements, leaks, debris, or other damage or defects.~~

~~8. Deviation in pipe line and grade, joint gaps, and joint misalignment.~~

~~9. A video record of the actual speed at which the camera is traveling through the pipe, ensuring that the rate of travel does not exceed the limit defined in 430-4.8.1 below.~~

Laser profiling and measurement technology must be certified by the company performing the work to be in compliance with the calibration criteria posted at:

<http://www.dot.state.fl.us/construction/contractorissues/laser.shtm> .

Reports submitted in electronic media are preferred. *Examples of the Pipe Inspection Summary Report and the Pipe Ovality report can be found on the Office of Construction website:*

(insert link to examples here)

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 a high quality DVD in a MPEG2 format video with a 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 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 on the set of 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. Provide the Engineer with copies of these notes along with the video.

Move the camera through the pipe at a speed not greater than 30 feet per minute ~~and provide a video record of the actual speed at which the camera is traveling~~. 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.

PIPE CULVERTS.
(REV 11-14-14)

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, provide the Engineer with a video recording schedule for videoing, dewater installed pipe, and remove all silt, debris and obstructions. Submit pipe videoing and reports to the Department for review prior to the continuation of paving.

For pipe 48 inches or less in diameter, provide the Engineer a video DVD and report 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 includes:

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, provide 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: <http://www.dot.state.fl.us/construction/contractorissues/laser.shtm> . Reports submitted in electronic media are preferred.

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 a high quality DVD in a MPEG2 format video with a 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 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 on the set of 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. Provide the Engineer with copies of 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.