Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

October 31, 2012

Monica Gourdine
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section **430**
Proposed Specification: **4300201 Pipe Culverts.**

Dear Ms. Gourdine:

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

These changes were proposed by Jennifer Green of the State Roadway Design Office to correct specification sections for Polypropylene and Fiberglass pipes, to include Polypropylene pipe as optional side drain material, and use end treatments on Polypropylene pipe.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to SP965TT or trey.tillander@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4140.

Sincerely,

V. Y. "Trey" Tillander, III, P.E.
State Specifications Engineer

TT/cah
Attachment
cc: Florida Transportation Builders' Assoc.
State Construction Engineer

PIPE CULVERTS.
(REV *10*~~9~~-*31*~~273~~-12)

SUBARTICLE 430-2.1 (Page 433) is deleted and the following substituted:

430-2.1 Pipe: Meet the following requirements:

Concrete Pipe .....Section 449
Round Rubber Gaskets .....Section 942
Corrugated Steel Pipe and Pipe Arch .....Section 943
Corrugated Aluminum Pipe and Pipe Arch .....Section 945
Corrugated Polyethylene Pipe .....Section 948
Polyvinyl Chloride (PVC) Pipe .....Section 948
Fiberglass Reinforced Polymer Pipe ……...Section 948
Polypropylene ~~(PP)~~ Pipe ……....Section 948

SUBARTICLE 430-3.2 (Page 433) is deleted and the following substituted:

430-3.2 Side Drain: If the plans do not designate a type (or types) of pipe, the Contractor may use either a minimum Class I concrete pipe, corrugated steel pipe, corrugated aluminum pipe, corrugated polyethylene pipe*, polypropylene pipe,* or PVC pipe. If one of the metal types is chosen, use the minimum gage specified in Section- 943 for steel pipe or Section- 945 for aluminum pipe. *When extending existing pipes, construct the pipe extensions of the same size and kind as the existing pipe. Extensions of existing pipes, whose materials are no longer produced, shall be extended with the most similar pipe material available.*

Non-reinforced concrete pipe may also be substituted for concrete pipe in side drains, subject to the provisions of 430-3.1.

SUBARTICLE 430-4.1 (Page 434) is deleted and the following substituted:

430-4.1 General: Lay all pipe, true to the lines and grades given, with hubs upgrade and tongue end fully entered into the hub. When pipe with quadrant reinforcement or circular pipe with elliptical reinforcement is used, install the pipe in a position such that the manufacturer's marks designating "top" and "bottom" of the pipe are not more than five degrees from the vertical plane through the longitudinal axis of the pipe. Do not allow departure from and return to plan alignment and grade to exceed 1/16- inch per foot of nominal pipe length, with a total of not more than 1- inch departure from theoretical line and grade. Take up and relay any pipe that is not in true alignment or which shows any settlement after laying at no additional expense to the Department.

Do not use concrete pipe with lift holes except *(1)* round pipe which has a*n* inside diameter in excess of 54- inches or *(2)* any elliptical pipe.

Repair lift holes, if present, by use of a hand-placed, stiff, non-shrink, 1-to-1 mortar of cement and fine sand, after first washing out the hole with water. Completely fill the void created by the lift hole with mortar. Cover the repaired area with a 24 by 24- inches piece of filter fabric secured to the pipe. Use a Type D-3 filter fabric meeting the requirements shown on Design Standards, Index *No.* 199.

Secure the filter fabric to the pipe using a method that holds the fabric in place until the backfill is placed and compacted. Use a grout mixtures, mastics, or strapping devices to secure the fabric to the pipe.

~~*When extending existing pipes, construct the pipe extensions of the same size and kind as the existing pipe, unless otherwise shown n the Plans.*~~ When installing pipes in structures, construct inlet and outlet pipes of the same size and kind as the connecting pipe shown in the ~~p~~*P*lans. *Use the same pipe material within each continuous run of pipe.* Extend the pipes through the walls for a distance beyond the outside surface sufficient for the intended connections, and construct the concrete around them neatly to prevent leakage along their outer surface as shown on the Design Standards, Index *No.* 201. Keep the inlet and outlet pipes flush with the inside of the wall. Resilient connectors as specified in 942-3 may be used in lieu of a masonry seal.

Furnish and install a filter fabric jacket around all pipe joints and the joint between the pipe and the structure in accordance with Design Standards, Index Nos. 201 and 280. Use fabric meeting the physical requirements of Type D-3 specified on the Design Standards, Index *No.* 199. The fabric shall extend a minimum of 12~~-~~ inches beyond each side of the joint or both edges of the coupling band, if a coupling band is used. The fabric shall have a minimum width of 24~~-~~ inches, and a length sufficient to provide a minimum overlap of 24~~-~~ inches. Secure the filter fabric jacket against the outside of the pipe by metal or plastic~~—~~ strapping or by other methods approved by the Engineer.

Meet the following minimum joint standards:

Pipe Application	Minimum Standard
Storm and Cross Drains	Water-tight
Gutter Drain	Water-tight
Side Drains	Soil-tight

When rubber gaskets are to be installed in the pipe joint, the gasket shall be the sole element relied on to maintain a tight joint. Soil tight joints must be watertight to 2~~-~~ psi. Water-tight joints must be water-tight to 5~~-~~ psi unless a higher pressure rating is required in the plans.

SUBARTICLE 430-4.6 (Page 435) is deleted and the following substituted:

430-4.6 End Treatment: Place an end treatment at each storm and cross drain, and side drain as shown in the plans. Refer to the Design Standards for types of end treatment details. As an exception to the above, when concrete mitered end sections are permitted, the Contractor may use reinforced concrete U-endwalls, if shop drawings are submitted to the Engineer for approval prior to use.

Provide end treatments for corrugated polyethylene pipe*, polypropylene pipe, and* PVC pipe as specified in Section~~-~~ 948, or as detailed in the plans.

ARTICLE 430-9 (Page 441) is deleted and the following substituted:

430-9 Specific Requirements for Corrugated Polyethylene Pipe*, Polypropylene* ~~***(PP)***~~ ***Pipe,*** **and Polyvinyl Chloride (PVC) Pipe.**

430-9.1 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 Installation Requirements Including Trenching, Foundation and Backfilling Operations: Check structure shape regularly during backfilling to verify acceptability of the construction method used.

Pipe deflected 5% or more of the certified actual mean diameter of the pipe at final inspection shall be replaced at no cost to the Department.

PIPE CULVERTS.
(REV 10-31-12)

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