Florida Department of Transportation

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605 Suwannee Street
Tallahassee, FL 32399-0450

JIM BOXOLD
SECRETARY

July 20, 2015

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

Re: State Specifications Office
Section **556**
Proposed Specification: **5560200 Jack and Bore.**

Dear Mr. Nguyen:

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

The changes are proposed by Rick Jenkins of the State Roadway Design Office to prevent improper installation of casing when used as a carrier in culvert applications. The changes also include administrative changes to list numbering.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to 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

JACK AND BORE.
(REV ~~5-2126~~*7-20*-15)

ARTICLE 556-2 is deleted and the following substituted:

556-2 Materials.

Select materials approved for installation within the right-of-way based on their suitability for the construction method as defined in Table 556-2.1. After determining product suitability, individual material standards as contained in Table 556-2.2 apply.

Table 556-2.1
Product Suitability by Construction Method

Type	Pipe/Casing Installation Mode	Suitable Pipe/Casing
Jack and Bore	Jacking	Steel, Plastic
Micro tunneling	Jacking	DI, FRPM, PC, PCCP, RCCP, RCP, Steel

Table 556-2.2
Material Standards Acceptable for J&B and MT Installations

Material Type	Non-Pressure	Pressure
Ductile Iron (DI)	AWWA C150/C151 ASTM A716	AWWA C150/C151
Fiberglass Reinforced Polymer Mortar (FRPM)	ASTM D3262	ASTM D3517 AWWA C950
Polymer Concrete (PC)	DIN 54815-1 & 2	N/A
Prestressed Concrete Cylinder Pipe (PCCP)	N/A	AWWA C301
Reinforced Concrete Cylinder Pipe (RCCP)	N/A	ASTM C361
Reinforced Concrete Pipe (RCP)	ASTM C 76	ASTM C361 AWWA C300/C302
Steel	ASTM A139 Grade B[(1)] API 2B[(2)]	AWWA C200 API 2B[(2)]
Polyvinyl Chloride (PVC)	ASTM D1785	ASTM D1785
Acrylonitrile Butadiene Styrene (ABS)	ASTM D1527	ASTM D1527
Reinforced Thermosetting Resin Pipe (RTRP)	ASTM D2996 or ASTM D2997	ASTM D2996 or ASTM D2997

[(1)] No hydrostatic test required
[(2)] Dimensional tolerances only

Unless otherwise tested and approved by the Department, only use encasement pipe or uncased carrier pipe material that is new and has smooth interior and exterior walls.

~~*If*~~*When the Plans show that the casing is to be used as a drainage carrier pipe* ~~*per the contract documents*~~*, extend the casing the entire length from drainage structure to drainage*

structure.- Maintain a uniform diameter, wall thickness and material type for the entire length of the casing ~~from drainage structure to drainage structure~~.

556-2.1 Steel Pipe Casing and Welds: In addition to meeting or exceeding the conditions contained in Table 556-2.1 and Table 556-2.2, meet the following requirements:

~~(a)~~*1.* The size of the steel casing must be at least 6 inches larger than the largest outside diameter of the carrier. Casing size must accommodate pressure pipe or carrier pipe joint restraints.

~~(b)~~*2.* The casing pipe must be straight seam pipe, spiral seam pipe, or seamless pipe.

~~(c)~~*3.* All steel pipe may be bare inside and out, with the manufacturer's recommended minimum nominal wall thicknesses to meet the greater of either installation, loading or carrier requirements.

~~(d)~~*4.* All steel casing pipe must be square cut and have dead-even lengths which are compatible with the J&B equipment.

Use steel pipe casings and welds meeting or exceeding the thickness requirements to achieve the service life requirements noted in the Department Drainage Manual Chapter 6. For purposes of determining service life, ensure that casings installed under roadways meet or exceed cross drain requirements and casings under driveways meet or exceed side drain pipe requirements. For purposes of material classification, consider steel pipe casing structural plate steel pipe. Ensure that steel pipe casing of insufficient length achieves the required length through fully welded joints. Ensure that joints are air-tight and continuous over the entire circumference of the pipe with a bead equal to or exceeding the minimum of either that required to meet the thickness criteria of the pipe wall for jacking and loading or service life. All welding shall be done in accordance with the American Welding Society Structural Welding Code-Steel D1.1.

556-2.2 Reinforced Concrete Pipe Casing: In addition to meeting or exceeding the conditions contained in Tables 556-2.1 and Table 556-2.2, meet the following requirements:

Ensure that concrete pipe complies with the following minimum requirements:

~~(a)~~*1.* 5,000 psi concrete compressive strength

~~(b)~~*2.* Class III, IV, or V as required by load calculations, with a C-wall

~~(c)~~*3.* Full circular inner and/or outer reinforcing cage

~~(d)~~*4.* Multiple layers of steel reinforcing cages, wire splices, laps and spacers are permanently secured together by welding in place

~~(e)~~*5.* Straight outside pipe wall with no bell modification

~~(f)~~*6.* No elliptical reinforcing steel is allowed

~~(g)~~*7.* Single cage reinforcement with a 1 inch minimum cover from the inside wall

~~(h)~~*8.* Double cage reinforcement with a 1 inch minimum cover from each wall

~~(i)~~*9.* Joints are gasket type

~~(j)~~*10.* Additional joint reinforcement

Upon installation, the Engineer may, at his discretion, require the Contractor to perform concrete wiping or injection of the joints if it is believed the joints have not maintained their water tightness during the jacking operation. No additional payment will be made for this operation.

556-2.3 Plastic Pipe Casing: Plastic pipe may be jacked and bored if its physical properties are sufficient, and it is rigid such that when supported or suspended at mid point it maintains a straight alignment. If plastic pipe is Jacked and Bored it may not be used as a pressurized carrier. Plastic pipe casing installed by the jack and bore method requires the use of an auger. Open end jacking without the use of an auger for continuous cleanout of the bore as the pipe is advanced is not permitted. Closed end jacking is not permitted.

556-2.4 Pipe Couplings and Joints: In addition to meeting or exceeding the conditions contained in Tables 556-2.1 and 556-2.2, to minimize potential for bore failure, couplings must not project at right angles from the casing diameter by more than 3/4 inch.

~~(a)~~*1.* Steel Pipe Coupling and Joints:

~~1~~*a*. Welds must comply with 556-2.1(~~d~~*4*) when couplings are not used or when the coupling thickness is less than the casing thickness.

~~2~~*b*. When couplings are used the casing joint needs only to be tack welded. Couplings must have a full bead weld such that the thickness, when measured at an angle of 45 degrees to the casing and coupling interface, must be no less than the casing thickness.

~~(b)~~*2.* Plastic Pipe Couplings and Joints:

~~1~~*a*. Must meet or exceed all ASTM strength and composition standards established for the casing material to which they are being attached.

~~2~~*b*. Joints must be made sufficiently strong to withstand the pressures of jacking. All chemical welds must be completely set and cured before any jacking is attempted.

JACK AND BORE.
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2. The casing pipe must be straight seam pipe, spiral seam pipe, or seamless pipe.
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2. Class III, IV, or V as required by load calculations, with a C-wall
3. Full circular inner and/or outer reinforcing cage
4. Multiple layers of steel reinforcing cages, wire splices, laps and spacers are permanently secured together by welding in place
5. Straight outside pipe wall with no bell modification
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