

5560000 INDUSTRY REVIEW COMMENTS

[George Trujillo](#)

George Trujillo, President

Trujillo Construction, Inc.

Sent: Thursday, July 20, 2006 8:23 AM

To: Bob Burlison

Subject: Re: Fw: Proposed Spec 5560000 - Jack and Bore

Bob, it is making head ways, but I would like to see some other ways to show as-builts to tie into the Water Level readings that we take as we bore. Also, the determination of spoil is really not answered. It is hard to calculate how much dirt is coming out because there is always dirt in the casing until it is completed and cleaned out. This issue must be taken into consideration.

A very good job of answering the problems that we have we the Construction Eng. on the projects.

[Missy Hollis](#)

File: 5560000-Jack and Bore
Username: Missy Hollis
UserEmail: melissa.hollis@dot.state.fl.us
UserTel: 414-4182
Date: Tuesday, August 08, 2006
Time: 07:58:04 AM

Comments:

Please correct the pay item unit of measurement from "per foot of bore diameter" to "per foot"

Dennis Lindsey

Dennis Lindsey
Ocala Operations
Utility / Permits Manager
(352) 620-7457 SC 667-7457
Fax: (352) 732-1458

Any material will be good , however the spec may read "a pipe industry plug made to fit without yielding for a snug fit ".

I have seen plugs made from everything imaginable, which have not worked.

Ed Peterson

File: 5560000-Jack and Bore
Username: Ed Peterson
UserEmail: jennifer.taylor@dot.state.fl.us
UserTel: 386-740-3471
UserFAX: 386-740-3481
Date: Monday, August 21, 2006
Time: 10:10:33 AM

Comments:

1. Casing plugs shall consist of any material that prevents soil leakage back into the casing. This language allows for a very open-ended acceptance of materials. I feel the language should be revised to read, Casing plugs shall consist of materials approved by the Departments QPL or other means approved by the Engineer of Record. By allowing any materials, this could allow a contractor to use a product such as expandable foam which over a period of time deteriorates when against earth and water. In the intercostal areas this could even be a bigger problem.

2. a manufactured steering head. Good idea and should be accepted.

3. When under the pavement conduct an air pressure test for leaks in the presence of the Engineer at a minimum test pressure of 20 5 PSI [134.477.90 kPa] by either of the following methods. I do not see an advantage to reducing this spec. Is there a specific reason we should reduce our standards? A test of only 5 psi would result in needing a very sensitive gauge which might also become problematic.

Allen Van Horn

File: 5560000-Jack and Bore
Username: Allen Van Horn
UserEmail: allen637@msn.com
UserTel: (813) 282-2470
Date: Tuesday, August 29, 2006
Time: 08:44:15 AM

Comments:

Minimum pipe thickness to accommodate service life shall be provided in the plans by the designer. Any additional wall thickness required to resist jacking forces shall be determined and furnished by the contractor.

Doug Holdener

File: 5560000-Jack and Bore
Username: Doug Holdener, P.E.
UserEmail: dholdener@rinker.com
UserTel: 561-352-8959
UserFAX: 305-557-3086
Contact_Requested: Contact_Requested
Date: Tuesday, September 05, 2006
Time: 04:18:30 PM

Comments:

Comment 1 - Table 556-2.2 - For non-pressure installations, the proper ASTM specification for reinforced concrete pipe should be ASTM "C76," instead of "C79."

Comment 2 - In our experience with jack and bore, it is not typical for the casing pipe to also function as the carrier pipe for small diameters (e.g., 30 inches or less). The specification language of Section 556-1.2 implies that the casing pipe may also function as a carrier pipe regardless of diameter: "J&B is a method for installing a product (often called a casing) that may serve as a direct conduit for liquids or gases, or as a duct for carrier..." Additionally, Table 556-2.1 column heading "Suitable pipe/casing" implies that the casing may function as the carrier regardless of diameter. The current specification language appears to create a situation in which there really is no need for a casing pipe at all.

Comment 3 - It is presumed that any carrier pipe, as well as any casing/carrier pipe would be subject to the FDOT standards for durability and service life.

Comment 4 - Table 556-2.1 indicates that plastic and steel are allowable materials for jack and bore installations, whereas numerous product types are allowable for microtunnelling. Reinforced concrete pipe is excluded from the allowable jack and bore products. Concrete pipe has been installed using jack and bore methods since the late 1800s, and there are numerous design and installation specifications (e.g., ASCE 27-00 Standard Practice for Direct Design of Precast Concrete Pipe for Jacking in Trenchless Construction, ACPA Design Data 13 Jacking Concrete Pipe). Concrete pipe can be jacked without necessarily requiring a casing pipe given proper soil and groundwater conditions. Given the history of jacking concrete pipe, RCP should be an allowable material for both MT and J&B installations.

Comment 5 - 556-2.2 Reinforced Concrete Pipe Casing - Requiring 5,000 psi, C-wall, minimum 1 inch cover may not be necessary. The concrete and steel characteristics should be per ASTM C76 and designed per the method and forces based on the contractor's method of jack and bore. All pipe products, regardless of material, should be designed per the proposed J&B method and forces.

Comment 6 - The Department appears to have established a generic strength and durability prescription for RCP (5,000 psi, C-wall, one inch cover), which seems to exceed or depart from the standard for storm sewers. However, it appears that the Department intends to allow steel pipe without any aluminum or bituminous coatings, and there is no mention of pipe stiffness requirements for either steel or plastic pipe in order to sustain the applied jacking loads.

Comment 7 - Table 556-2.1 It appears based on the footnote (1) that no hydrostatic test is required for steel pipe. Please confirm and address, if true, why the joint performance standards would not apply to steel pipe.

Comment 8 - 556-4.3.2 Testing Methods - It should be noted that ASTM C1103 (Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines) states "no correlation has been found between air loss and water leakage." Furthermore, air pressure testing has safety implications. The use of compressed air is dangerous if a sewer line is not prepared properly and proper procedures are not followed.

Comment 9 - Please also note that ASTM C1103 should be followed for any proposed air testing, and this procedure includes wetting the interior of the concrete pipe because air can pass through the walls of a dry pipe resulting in misleading results.

Comment 10 – ASTM joint air test and water test procedures call for holding pressure for a relatively short testing period (5 seconds). Please justify the position that a one-hour duration is necessary? My concern is that this a proposed requirement based on the theory of "more is better." If so, please explain the deviation from ASTM's requirement of 5 seconds in favor of a one hour test, of which test has inherent safety implications.

Comment 11 - We suggest modifying the project's testing requirements for all pipe joint performance to state "field testing of the installed elliptical pipe and round pipe (15" –

36”) per ASTM C969 with a 200 inch/gallon leakage requirement and field testing of the 42” and larger round pipe by individual joint tested per ASTM C1103 as the pipe is being installed.

Comment 12 - 556-2.3 Plastic pipe casing - The proposed test method for suitability of plastic pipe to be used for J&B has the appearance of being "non-scientific." The proposed requirement is to determine if a piece of PE pipe stays straight if supported at its midpoint. There is no mention of the test specimen length nor the means of detecting or defining “straight” alignment.