

5550000 DIRECTIONAL BORE
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comment: (12-3-10)

Conduit by definition implies a wire inside the conduit. That wire can be located. There is no need for locate wire for conduit, unless the conduit is empty and someone wants to prevent its damage, and that is worth paying to have someone locate it. My experience with FDOT lighting and signalization is that it is generally not located when locates are called. The request for locates is simply not acknowledged. Locate wire is helpful in locating water mains and services, force mains and services, reclaimed mains and services, and other underground pipes that do not have continuous wire in them. Direct bury locate wire is generally detectable to about 12-15' depth. Under high water table, the depth it can be read is less than 12-15'. Most locate wires cannot be detected deeper than 15' with any degree of accuracy.

Response:

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Comments: (12-7-10)

Directional Bore: Section 555-6 Documentation Requirement: Geotechnical Report is recommended to be added in this section. In case of very loose soil condition there will always be a potential for subsidence.

Response:

Bob Kosoy (Mark Kuhn 904-360-5342)
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Comments: (12-13-10)

Below are some very worthwhile comments for your consideration when revising 5550000.
1. Any changes to this Spec should also be harmonized with the Utility Accommodation Manual.

Response:

2. Section 555-1.2 General.

- a. It should be noted that many oversized directional bores require more than one back reaming prior to pulling product through the pilot bore hole. It should be specified that if more than one back reaming pass is needed to up-size the bore hole prior to pulling product that the

driller/operator shall trail drill stems in order to assure bore integrity and alignment through the installation process.

Response:

- b. It should also be noted that soils investigations are currently not required (in the UAM provided 10X depth requirements are met) so typically water table and soils information are not available in order to properly select drilling fluids and additives to the slurry mixture.

Response:

- c. Specifications should clearly require soils and water table information on all oversized bores (larger than 6")...this will allow for proper design of the drilling fluid and selection of the correct drill bit and reamer for the installation.

Response:

- 3. Section 555-4.1.1 Product Testing. Additional verbiage should be included that requires a pressure test both before and after product is pulled through the bore hole.

Response:

- 4. 555-4.1.3 Failed Bore Path. Flowable fill is not always the best product to fill voids or failed product line, direct inject expansive epoxy should also be allowed to fill failed bore paths and pipes.

Response:

- 5. 555-5 Drilling Operations.
 - a. Spec should include development of bore geometry plans (engineering) prior to initiating drilling activities. At a minimum, a scale bore profile that includes existing topography, entry/exit drill angles, set back distances, existing utilities (including FDOT drainage features) within installation area, water table/soils information, proposed installation path, depth under pavement, proposed bending radius of installed product and any other relevant installation details (design reamer size).

Response:

- b. Additional verbiage should also be added to clarify that the drilling operation and product pull back shall be a continuous operation.

Response:

- 6. Section 555-5.2 Boring Failure: Flowable fill is not always the best product to fill voids or failed product line, direct inject expansive epoxy should also be allowed to fill failed bore paths and pipes.

Response:

7. Section should be added that specifies minimum clearance distances from existing utilities and FDOT Stormwater Conveyance Features. It should also be noted that if a HDD product installation is proposed within 18” of FDOT drainage features that a pre and post video inspection of the line shall be provided to the Department. Pre video to be provided before drilling commences and post to be provided with the bore log/as-built certification.

Response:

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Comments: (12-21-10)

When the bore pipe is used as a carrier for storm water the materials/thickness must meet hydraulic and service life requirements as well as cover depth. It usually is not a problem with steel casing since the mechanical stiffness requirements for the jack and bore drive the pipe wall thickness up high enough that it has a long service life. The casing as carrier also needs to be completely welded around the pipe circumference. If it’s just a casing with a carrier inside, it generally is not welded to be watertight. The optional pipe handbook Section 3.2 (<http://www.dot.state.fl.us/rddesign/dr/files/Opt-Pipe-HB.pdf>) provides the method for determining service life. Maybe just the statement that using the casing as the carrier must also satisfy the requirements of the proposed installation and purpose. These are specific to the location just as the selection of optional pipe material is. This is covered well in the optional pipe handbook section I mentioned above for jack and bore.

Response:
