

**SECTION 02310
JACK AND BORE**

PART 1 -- GENERAL

1.1 SECTION DESCRIPTION

- A. This section includes materials, performance and installation standards, and Contractor responsibilities associated with the furnishing of all labor, materials, equipment and incidentals required to install, complete required boring and jacking installations, or other trenchless methods for pipelines, as shown on the Drawings and as specified herein.

- B. The provision of this section shall be the minimum standards for the installation of casing pipe by the boring and jacking method. Other types of trenchless methods may be acceptable and encouraged if the specific method is at least equal to the performance of typical jack and bores and is comparable in cost.

PART 2 -- PRODUCTS

2.1 CASING PIPE MATERIALS AND INSTALLATION

- A. Casings shall be steel pipe conforming to the requirements of ASTM Designation A-139. The minimum casing pipe size and wall thickness shall be as shown on the drawings. For sizes not included therein, or for special design considerations, approval shall be obtained from the Engineer of Record.

- B. For crossing of state roads, casing materials and installation shall conform to FDOT Standards.

2.2 CARRIER PIPES

- A. Wastewater and water carrier pipes to be installed within the specified casings shall be equipped with restrained joint connections. Pipe and fittings shall comply with the applicable provisions of these Standards, with minimum Ductile Iron Pipe Class 51.

2.3 CASING INSULATORS

- A. Non-corrosive casing insulators shall be used. The casing runner height shall be large enough so that it does not interfere with the pipe restrained joints. Stainless steel nuts and bolts shall be used. Installation and spacing of casing insulators shall be as required by the manufacturer, and as shown on the standard construction details.

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. Casing pipes crossing under roadways/railroads shall be located at suitable approved alignments in order to eliminate possible conflict with existing or future utilities and structures, with a minimum 36-inch depth of cover between the top of the casing pipe and the surface of the roadway. For casing pipe crossings under roadways/railroads, the Contractor shall comply with the regulations of said authority in regard to design, specifications, and construction. Casing installations shall be as specified in the Florida Department of Transportation, "Utility Accommodation Guide", and the American Railway Engineering Association, for railroads.
- B. The boring and jacking operations shall be done simultaneously, with continuous installation, until the casing pipe is in final position. Correct line and grade shall be carefully maintained. Add on sections of casing pipe shall be full-ring welded to the preceding length, developing watertight, total pipe strength joints. The casing installation shall produce no upheaval, settlement, cracking, movement, or distortion of the existing roadbed or other facilities. Following placement of the carrier pipe within the steel casing, end link seals are to be installed at each open end. Said end link seals shall be suitable for restraining the external earth load, while allowing internal drainage. Casing vents shall be required as indicated on the standard construction details.
- C. Casing pipe holes shall be mechanically bored through the soil by a cutting head on a continuous auger mounted inside the pipe. The distance between the leading end of the first auger section and the leading end of the casing shall be as necessary to maintain a solid plug of spoil material inside the forward portion of the casing.
- D. The casing pipe shall be adequately protected to prevent crushing or other damage under jacking pressures. Backstops shall be provided for adequately distributing the jack thrust without causing deformation of the soil or other damage. Should the casing pipe be damaged, such damaged portion not in the hole, shall be replaced; however, if installed, the encasement pipe shall be abandoned in place, grouted full, and suitably plugged, and an alternate installation made. An alternate installation will also be required if the casing alignment or elevation substantially deviates from the plan locations, and results in the installation being unusable, as determined by SLCU and Engineer of Record.
- E. Required boring and jacking pits or shafts shall be excavated and maintained to the minimum dimensions necessary to perform the operation. Said excavations shall be adequately barricaded, sheeted, braced and dewatered, as required, in accordance with the applicable portions of Section 02220, "Utility Excavation, Backfilling and Compacting" and the above-stated regulations/specifications. Boring and jacking pits will normally be no closer than ten (10) feet from the edge of pavement, with the permitting agency having final determination of the required setback distance.

**** END OF SECTION ****