

DIVISION 15**CASINGS****Section 15.01 GENERAL:**

This division defines the materials and construction requirements for steel casings under canals, railroad tracks, highways and Interstates. All construction operations shall be subject to the approval of the canal, Railroad Company or UDOT whose facility is being crossed. The Developer/Contractor shall make application to and secure permission from the canal, Railroad Company or UDOT before commencing work within the right-of-way. The Developer/Contractor shall provide all insurance and the services of all watchmen and flagmen required by the Railroad Company or UDOT. The Developer/Contractor will pay the Railroad Company and UDOT for their inspection services.

Section 15.02 MATERIALS:

The pipe shall be welded steel pipe conforming to ASTM Designation A-139, Grade A. Pipe wall thickness shall be a minimum of point three seven five inches (0.375") or as shown on the Drawings.

Section 15.03 CONSTRUCTION METHODS:

The steel pipe casing shall be jacked under the railroad tracks, highway or Interstate using methods submitted to the Public Works Representative/Engineer for review by the Public Works Representative/Engineer. Circular pipe joints shall be field welded as the jacking process progresses. The pipe interior shall be completely excavated and cleaned prior to installation of the carrier pipe.

Steel pipe casing shall be installed by open cut under canals. These installations shall be as per details approved by the canal company.

All required approach trenches or working pits shall be excavated and shored as defined in Division 2, Trench Excavation and Backfill. Provisions shall be made for a drain sump in one corner of the working pit to allow for the accumulation and pumping of seepage water, if ground water is expected to be encountered.

Section 15.04 LINE AND GRADE:

Casings shall be installed accurately to the line and grade shown on the Drawings. Casings shall be installed to grade with sufficient accuracy to permit installation of the carrier pipe to the design grade shown on the Drawings or to the cover depth required. The Developer's Public Works Representative/Engineer will provide base lines and bench marks at each casing location. Instrument checks of the line and grade shall be made by the Developer/Contractor at intervals sufficient to maintain the casing on line and grade.

Section 15.05 CARRIER PIPE INSTALLATION THROUGH CASINGS:

The carrier pipe shall be installed to the grade shown on the Drawings. Casing insulators or chocks shall be fastened to the carrier pipe as per the manufacturer's recommendations. For ductile iron pipe or PVC pipe, insulators shall be installed within one foot on each side of the bell and one in the center of the joint when 18' or 20' long joints are used. Metal components of the insulators or chocks shall be manufactured from 14 Ga. Steel, hot rolled and pickled and plastic coated or Type 304(18-8) stainless steel. The liner shall be polyvinyl chloride or Neoprene Rubber with antioxidant and antiozonant properties for extended service life. Runners shall be glass-reinforced plastic or UHMW polyethylene. Runners shall have high abrasion resistance and a low friction coefficient. Following installation of the carrier pipe the annular space between the inside of the casing and the outside of the carrier pipe shall be blown full of sand. The sanding operation shall be carried out such that sand is placed in the center of the casing first and the annular space filled as the placing pipe is withdrawn. The Developer/Contractor shall not be allowed to wash sand in from the end of the casing.