ITEM 806 CASING PIPE

806.01 Description. The Contractor shall furnish and install casing pipe, corrosion protection, and test stations where shown on the plans and as herein specified.

806.02 Requirements. Furnish and install casing pipe in conformance with the requirements and regulations of the appropriate agency, utility and the City of Columbus. Prepare necessary shop drawings, working schedule, description of type of materials and methods of construction in conformance with Standard Drawing L-6324. For ductile iron carrier pipe, wrap the carrier pipe with polyethylene tubing in accordance with 801.03.

Before commencing work on the casing pipe, present evidence to the satisfaction of the Engineer to prove previous experience in tunneling similar to that found on the project, or employ a superintendent able to furnish such evidence. Keep the superintendent continuously on site while performing the work until the tunnel work is completed. Provide qualifications for all personnel installing the casing pipe.

Notify the appropriate agency or utility at least two working days in advance of commencing any construction work on the casing pipe.

Include all costs (i.e. the furnishing of watchmen, inspectors and supervision by their forces) which may result from agency or utility requirements.

Provide casing pipe of a diameter in accordance with Standard Detail Drawing L-6324.

806.03 Reinforced Concrete Casing Pipe. Provide culvert pipe meeting the requirements of ASTMC-76 of the class shown on the plan for reinforced concrete casing pipe.

806.04 Steel Casing Pipe. Provide steel casing pipe meeting ASTM Specifications 35,000 PSI yield strength and 60,000 PSI tensile strength, or approved equal, to serve as a casing for the water main. Install casing pipe within the limits and at the location shown on the plans. Coat the casing pipe per the manufacturer's recommendations for Coal Tar Epoxy coating as included in the current Approved Materials List. Repair damage to the coating per the manufacturer's recommendations. Provide steel casing pipe with a minimum wall thickness of 0.375 inches unless otherwise approved by the Engineer.

806.05 Corrosion Protection of Steel Casing Pipe. The City will require corrosion protection on all critical crossings (i.e. Railroads, State highways, etc.). The

City will include the requirements for the design of the corrosion protection system in the supplemental specification of the contract or on the approved plan.

806.06 Shop Drawings. Prepare the shop drawings referred to above and send three copies to the Engineer for review, checking and approval. If the shop drawings, methods of construction and work schedule meet with the approval of the Engineer, the Engineer will forward all three copies to the appropriate agency or utility for its approval. Upon receipt of approval, the Engineer will return one set of prints to the Contractor. The Engineer and the appropriate agency or utility will retain the other sets.

806.07 Placing of Casing Pipe. Place the casing pipe using industry standards for driving or tunneling methods. Properly size and locate boring pits based on existing field conditions, including all utilities. Repair any damages that result from the installation of the casing pipe at no additional cost to the City of Columbus. Prior to installing the casing pipe, submit a plan of means and methods for the installation of the casing pipe.

806.08 Casing Spacers. Install casing spacers on the carrier pipe. Position the spacers on the carrier pipe in the center of the casing pipe and provide restraint against movement. The City will not allow use of wooden skids with steel bands for casing spacers.

Construct casing spacers of a two piece shell. Construct the shells and risers of 14 Gauge steel hot rolled and pickled carbon steel and construct the risers of 10 Gauge steel. Provide the carbon steel shells and risers with a thermoplastic polymer coating. Provide runners with beveled edges and constructed of glass reinforced polymer. Provide liners with a minimum thickness of 0.90" and constructed of EPDM or flexible PVC. Provide 5/16" zinc electroplated steel bolts, nuts and washers for fasteners. Position and dimension casing spacers in accordance with Standard Drawing L-6324. Provide casing spacers as listed in the current Approved Materials List.

806.09 Casing Pipe End Seals. Seal the ends of the casing pipe with casing pipe end seals consisting of flexible molded synthetic rubber with ends sized appropriately to fit the casing and carrier pipes. Use end seals that provide a watertight seal between the carrier pipe and the casing pipe opening. Use stainless steel hose clamps for fastening hardware. Coat end seal fastening hardware with an approved bitumastic paint or wrap with an approved wax-tape, or petrolatum-based tape coating system as included in the current Approved Materials List. Provide end seals as listed in the current Approved Materials List.

806.10 Basis of Payment. The City will pay the unit price bid per linear foot and will consider payment to include the furnishing and placing of the casing pipe, together with all excavating, casing spacers, end seals, corrosion protection system, all types of pumping, concrete supports, pits and openings, removal and disposal of water in accordance with Item 901.16, furnishing of all signalers and inspectors, together with all labor, tools, material, equipment and appurtenances required to complete the encasement in good and acceptable condition. The City will make this payment in addition to the price bid for the laying of the water line (carrier pipe) in ordinary excavation.

The City will make payment at the contract price for:

Item	Unit	Description
806	Linear Foot	_____ Inch Casing Pipe