

**SECTION UC-075**  
**WATER SERVICE INSTALLATIONS**

**PART 1 - GENERAL**

1.01 SCOPE

This Contractor shall furnish all labor, material and equipment required to construct water service installations, as specified herein.

1.02 RELATED SECTION

Section UC-080 - Meter Boxes, Sectional Plates and Vaults for Water Service  
Section UC-085 - Water Meter Valves

1.03 LEAD FREE REQUIREMENT

- A. It is a requirement that all components of water service installations be certified lead free. All brass components for water service installations shall comply with the S3874 amendment (Reduction of Lead in Drinking Water Act) to Section 1417 of the Federal Safe Drinking Water Act.
- B. All meters, meter accessories, copper pipe, brass pipe, fittings, corporation stops, saddles, washers, tailpieces, couplings and other appurtenant items used for water services shall be "NL" no lead Type for installation in the WASD system. Solders and flux shall contain no more than 0.2% lead.
- C. All brass components shall be marked "NL" to indicate no lead.
- D. All valves 2-inch and smaller shall conform to the No Lead, NL, requirement. Valves larger than 2-inches are exempt.

**PART 2 - PRODUCTS**

2.01 HDPE Pipe for Services

- A. All 2-inch high density polyethylene pipe used for services shall be IPS-O.D. Controlled with Standard Outside Dimension Ratio (SODR) of 9, pressure rating of 250 psi, nominal outside diameter of 2.375-inches, minimum wall thickness of 0.264-inches, in conformance with Materials Standard PE 4710 "Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter". Pipe shall conform with ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service" as modified herein. Pipe shall have a (natural) inner core with a blue colored outer shell. Pipe shall have footage marks at a maximum interval of every two feet. Polyethylene material shall have a minimum cell classification in accordance with ASTM D3350 "Polyethylene Plastics Pipe and Fitting Materials" of 445576D for

the core, which shall be 100% virgin material, and 445576E for the outer shell. Note that both of these materials are UV stabilized as signified by the "D" for natural colored and "E" for the colored shell. Pipe shall conform with NSF 61 or 14. Manufacturer shall supply certification of compliance with all of the above requirements. Certification shall ship with the pipe on material sold to the Department and shall always be submitted with shop drawings and catalogue cuts. When required by the Chief, Engineering Division, Miami-Dade Water and Sewer Department or his designee, certification shall be signed and sealed by a professional engineer licensed to practice in the state in which the manufacturer is located or in the State of Florida.

- B. All 1-inch high density polyethylene tubing used for services shall be CTS-O.D. Controlled with Standard Outside Dimension Ratio (SODR) of 9, pressure rating of 250 psi, nominal outside diameter of 1.315-inches, minimum wall thickness of 0.125-inches, PE 3408, all in conformance with Materials Standard PE 4710 "Polyethylene (PE) Plastic Tubing". Tubing shall conform with ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service" as modified herein. Tubing shall have a (natural) inner core with a blue colored outer shell. Tubing shall have footage marks at a maximum interval of every two feet. Polyethylene material shall have a minimum cell classification in accordance with ASTM D3350 "Polyethylene Plastics Pipe and Fitting Materials" of 445576D for the core, which shall be 100% virgin material, and 445576E for the outer shell. Note that both of these materials are UV stabilized as signified by the "D" for natural colored and "E" for the colored shell. Tubing shall conform with NSF 61 or 14. Manufacturer shall supply certification of compliance with all of the above requirements. Certification shall ship with the tubing on material sold to the Department and shall always be submitted with shop drawings and catalogue cuts. When required by the Chief, Engineering Division, Miami-Dade Water and Sewer Department or his designee, certification shall be signed and sealed by a professional engineer licensed to practice in the state in which the manufacturer is located or in the State of Florida.
- C. All HDPE services require the use of a 10 gauge direct bury stranded copper blue tracer wire tapped every four feet with poly or duct tape for location purposes. The tracer wire shall be accessible at the meter box and connected to the corporation stop for continuity of the signal. The 10 AWG standard tracer wire shall have 0.030" HDPE insulation and measure 0.162" min O.D.

## 2.02 COPPER

- A. Copper tubing shall conform to the requirements of NSF 61 and ASTM Standard B88. "Seamless Copper Water Tube", Type "K". All tubing shall be furnished in straight lengths. Fittings and valves shall be of the solder-joint type except where specified otherwise. Type L copper shall only be used on the customer side of the property and is not allowed on public right-of-ways.
- B. Fittings for use with copper tubing shall be one of the following:
  - 1. Cast bronze solder-joint fitting shall be in accordance with ANSI Standard B-16.18, "Cast Brass Solder-Joint Fittings", and ASTM Standard B62-90, "Composition Bronze or Ounce Metal Castings". Cast bronze solder-joint fittings shall be as manufactured by Chase Brass and Copper Co., Stanley G. Flagg & Co., Inc. Or approved equal.
  - 2. Wrought copper solder-joint fittings shall be in accordance with ANSI Standard B16.22, "Wrought Copper and Bronze Solder-Joint Pressure Fittings".

Connection of copper pipe or fittings with galvanized pipe or fittings shall be made with dielectric fittings. Solder shall be lead free type.

## 2.03 SERVICE TERMINAL FITTINGS

### A. Single Meter Box Installation

- a. One inch or 2-in copper or High Density Polyethylene (HDPE) tubing and terminal fittings.
- b. 1" lock wing style valve, drilled for wire sealing, Cat. No. KV23-444W Ford Meter Box Co. or Cat. No. 14255, Mueller Co.
- c. C.I. cover and lid as per MDWASD Standard Details

### B. Duel Meter Box Installation

- a. One inch or 2-in copper or High Density Polyethylene (HDPE) tubing and terminal fittings.
- b. 1" branch valve assembly, with Standard 7 ½ -in spacing between outlet centers, drilled for wire sealing, Cat. No. UV23-42W Ford Meter Box Co. or 1-in branch connection with Standard 7 ½ in spacing between outlet centers Cat. No. H-15362, fitted with angle stops for 5/8 inch meters, drilled for wire sealing, Cat. No. H-14265, (3/4' Inlet) Mueller Co.
- c. C.I. cover and lid as per MDWASD Standard Details

## 2.04 CASINGS FOR TORPEDO INSTALLATIONS

- A. Provide a PVC Schedule 40 casing or black steel pipe casing one inch in diameter larger than the service pipe when the service is installed with the use of a torpedo. When the service is installed by the direct bury method, no casing is required.

## 2.05 BRASS FITTINGS AND VALVES

- A. All brass components shall be marked "NL" to indicate no lead.
- B. Angle Key Meter Valves – Ford Meter Box Company KV-444W, Mueller or approved equal.
- C. Brass Fittings – Merrit Brass or approved equal
- D. Pack Joint, Swivel Nut – A.Y. McDonald Model 4761-22
- E. Ball Corporation Stop – Ford Meter Box Company FB800, Mueller H-10003 or approved equal.

## **PART 3 - EXECUTION**

### 3.01 INSTALLATION OF SERVICES

- A. Services from the new water mains shall consist of corporation stops, HDPE or copper tubing and terminal fittings as shown in the Standard Details. All service installations from the new

main shall be installed by the Contractor. Service installations from existing mains, if required, will be installed by Department forces, and the cost for materials and labor furnished by the Department shall be borne by the Contractor.

- B. Where possible, all meter boxes shall be installed in non-traffic and non-parking areas.
- C. Where meter boxes are located in existing sidewalks, the whole flag of sidewalk shall be removed and replaced with new concrete. The concrete walk shall be 4 inches thick and finished with the proper tools and techniques to resemble the existing walk. The concrete support for meter boxes shall be eliminated when the box is installed in an existing sidewalk. Where meter boxes are located out of sidewalk areas, a concrete support is required. Concrete supports shall be to the established line and grade.
- D. Meter boxes shall be set flush with the finished grade if in sidewalks, or flush with the top of the ground if out of sidewalk areas.
- E. All bends in copper tubing shall be made with an approved type tube bender to the satisfaction of the Department. Flattened, out of round or kinked tubing will not be permitted.
- E. One inch service connections shall be one of the following:
  - 1. Short Single - Consisting of a short run of HDPE or copper tubing from the main on the same side of the street as the proposed meter, to the meter installation approximately 2 ½ feet from property line. Single meter box installation included.
  - 2. Long Single - Same as above but from a main on the opposite side of the street from the proposed meter.
  - 3. Short Dual - Consisting of a short run of HDPE or copper tubing from the main on the same side of the street as the proposed meter to the meter installation, approximately 2 ½ feet from the property line and branched off to serve an additional customer. Dual meter box installation included.
  - 4. Long Dual - Same as above but from a main on the opposite side of the street from the proposed.
- F. If PVC or black steel casing pipe for services crossing existing pavement is required, the pipe may be driven from the side of the street which affords the most room for the driving trench, thus resulting in the least number of couplings in the casing. Extra care shall be used in leveling and heading the first length of casing in the proper direction. One method of driving casing, known to work in this area and offered here as a suggestion, is to use an ordinary coupling screwed on the leading end of the casing as a cutting edge, and driving against a coupling screwed on the trailing end with a special tool in a pneumatic hammer, while maintaining a steady pull forward on the hammer with a small winch. Each length of casing as driven shall be cleaned out with compressed air introduced through a one-half-inch pipe at least as long as the casing. The purpose of driving casing pipe is to make it unnecessary to repair paving over one-inch service cuts. Should the Contractor elect to open-trench any one-inch service line across pavement, he will be required to repair the paving.

- G. The Contractor shall install the meter box, 1-inch branch assembly, 30 inch tailpieces and perforated spacers.
- H. When installing services the Contractor shall temporarily plug the ends of the tail pieces for protection against dirt.
- I. Pipe bedding and the backfill material to at least 6 inches above the crown of the copper tubing shall be clean white masonry sand. Backfilling and compaction of material lying above a point 6 inches above the crown of the tubing and below the surface of the ground shall be as specified in Section 02315, "Trenching and Backfilling for Piping Systems".
- J. Department forces will install the meters into the boxes installed by the Contractor.

END OF SECTION