

SECTION 331070  
WATER SERVICES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Furnishing all labor, materials, equipment, and incidentals necessary for the connection of water services as shown in the Construction Plans and as specified herein.

1.2 SUBMITTALS

- A. General: Submit all submittals to the City in accordance with Section 013000.

- B. Required Submittals:

- 1. Product Data: Product literature including detailed listing of materials and materials of construction for the following (as required):

- a. Service Saddles
    - b. Corporation and Curb Stops
    - c. Meter Boxes
    - d. Polyethylene Tubing
    - e. Polyethylene Pipe
    - f. Casings
    - g. Service Line Fittings
    - h. Tracer Wire and Connectors

PART 2 - PRODUCTS

2.1 GENERAL

- A. Water services lines shall be a minimum one inch (1") in diameter (nominal). Services lines shall be connected to mains by a tapping saddle and valves unless otherwise indicated in the Construction Plans.

## 2.2 SERVICE SADDLES

- A. Body shall be fusion-bonded epoxy coated ductile iron body with a rubber gasket cemented to the body.
- B. Saddle shall have two (2) 304 stainless steel straps.
- C. Hardware shall be stainless steel.
- D. Approved manufacturers, or approved equal (Epoxy Coated with Double Straps):
  - 1. Ford
  - 2. JCM
  - 3. Mueller
  - 4. Smith-Blair
  - 5. TPS

## 2.3 CORPORATION STOPS AND CURB STOPS

- A. Compression only and provide in accordance with Section 331040.

## 2.4 METER BOXES

- A. Meter boxes shall be constructed of polyethylene, polyolefin, fiberglass, or polymer concrete. Color shall be black. Cover shall have a cast iron hinged reading viewing lid, or other cover approved by the City. Traffic bearing meter boxes and covers shall be used in locations as required by the City.
- B. Meter boxes shall be of a size comparable with the meter. Box height shall extend from the bottom of the meter to the final grade at the meter location.
- C. For reclaimed water service, boxes and lids shall be purple in color. Lids shall be stamped with "NON-POTABLE" and "DO NOT DRINK" in both English and Spanish.
- D. Approved manufacturers, or approved equal:
  - 1. Brooks Products.

2. Carson Industries.
3. CDR (by Hubbell Power Systems, Inc.)
4. Glasmasters, Inc.
5. NDS Inc.
6. Polyplastics Co.
7. DFW Plastics

## 2.5 POLYETHYLENE (PE) TUBING FOR SERVICE LINES

- A. General: Polyethylene tubing shall be used for water and reclaimed water services lines in sizes two inches (2") and smaller.
- B. Polyethylene tubing shall be high density PE 3408 or better polyethylene resin per ASTM D2737 with a cell classification of PE345343C or better, Pressure Class 200, Copper Tube Size (CTS), SDR 9 per ASTM F714, and shall meet the requirements of AWWA C901. Each length shall be marked with the manufacturer's name or trademark, size, material code, and pressure class. Rework material is not acceptable.
- C. Color Coding: Tubing shall be blue for potable water services and purple for reclaimed water services. Shall have a minimum of 2% carbon black to withstand exposure to ultraviolet light without loss of properties.
- D. Approved products, or approved equal:
  1. ENDOT
  2. Charter Plastics

## 2.6 POLYETHYLENE PIPE FOR SERVICE LINES

- A. General: Polyethylene pipe shall be used for water and reclaimed water services lines in sizes three inches (3") and larger. See Section 331050.
- B. Polyethylene pipe shall be high density PE 4710 polyethylene per ASTM D3350 with a cell classification of PE445574C or better, Pressure Class 160, Iron Pipe Size (IPS), DR 11 per ASTM F714, and shall meet the requirements of ASTM D3035, AWWA C901, and AWWA C906.
- C. Color Coding: Pipe shall be provided with blue striping for potable water services and purple striping for reclaimed water services. Striping shall be applied by the manufacturer.

## 2.7 CASINGS

- A. Casings for polyethylene tubing for reclaimed water service lines shall be Schedule 40 PVC. Nominal size shall be as indicated on the Plans or as directed by the City.

## 2.8 SERVICE LINE FITTINGS

- A. Fittings Two Inches (2") in Diameter and Smaller: Copper tube size (CTS) brass compression fittings connections shall be used. All surfaces that come into contact with water shall be no-lead brass manufactured from UNS/CDA No. 898633 alloy containing no more than 0.25% total lead content by weight. Shall be embossed "NL" or similar for "no lead." All fittings shall conform to the requirements of AWWA C800.

- B. U-Branch Fittings: Provide for dual services. Size per Construction Plans. Inlet and outlets shall be pack joints for plastic tubing.

- 1. Acceptable manufacturers, or approved equal:

- a. Ford
- b. Mueller

- C. Y-Branch Fittings: Provide for dual services where field conditions prohibit the use of a U-branch fittings. Size per Construction Plans. Inlet and outlets shall be pack joints for plastic tubing.

- 1. Acceptable products, or approved equal:

- a. Y44-xxx-NL Style by Ford Meter Box
- b. H-15343 by Mueller Co.

- D. The City does not accept the pack joint fittings with the set screw on corporation stops, curb stops, angle valves and U branches. The pack joint with the gripper ring is preferred.

## 2.9 LOCATOR WIRE AND CONNECTORS

- A. Locator Wire: Provide 12 AWG tracer wire.

- B. Connectors: Main line splices to services lines shall be made using a product manufactured by the locator wire manufacturer and specifically designed for the application.

## PART 3 – EXECUTION

### 3.1 PREPARATION

- A. Establish the location for the installation of each meter. General locations for each meter are indicated on the Plans. The Contractor shall coordinate with the City to determine the exact installation location for each meter.

### 3.2 WATER SERVICES

- A. General: Water services shall comply with applicable details included in the Plans and as specified herein.

- B. Each service shall consist of the following:

1. A service saddle and corporation stop on the associated water main.
2. A polyethylene service line terminating with a curb stop. Curb stop shall be a lockable type. The length of service line constructed shall be sufficient to properly connect with the constructed location of the meter box. A copper tracer wire shall be attached to the top of the service line. The tracer wire shall be spliced at the main line tracer wire and shall terminate in the meter box.
  - a. When installed below a roadway, the service line shall be installed within a PVC casing.
  - b. For double service connections, a U-branch or a Y-branch fitting shall be provided.

- C. Service Connection to Potable or Reclaimed Water Mains:

1. The Contractor shall install service saddle and corporation stop for each service that is to be connected to the main.
2. Taps shall not be closer than two feet (2') apart or within two feet (2') of any joint. Taps in multiple groups shall not be made in the same longitudinal line of the pipe but must be staggered vertically. Location information shall be recorded for each service saddle.
3. Service lines shall not be located below driveways.
4. The Contractor shall use proper seals or other devices to ensure that no leaks are left in the water mains at the points of tapping. Do not backfill or cover the service connection until observed by the City.

- D. Service line may be installed by open cut or trenchless methods. Pneumatic bullet and horizontal directional drill (HDD) are acceptable trenchless methods. Other trenchless methods may be considered and require approval by the City.

### 3.3 METER BOXES

- A. Excavate and place a minimum of four inches (4") of  $\frac{3}{4}$  inch washed gravel or crushed shell on compacted subgrade as a base for the meter box.
- B. Meter boxes shall completely enclose the meter and curb stop. Boxes shall be positioned to allow access to the meter connections for installation and removal of the meter and to the curb stop for opening and closing the valve.
- C. The top of meter box shall be flush with surrounding grade in paved areas; in unpaved areas, the top of the meter box shall extend  $\frac{1}{4}$ " to  $\frac{1}{2}$ " above surrounding grade.

END OF SECTION