

SECTION 15200

SERVICE LINES **(Contractor Furnished)**

PART 1: GENERAL

1.01 SCOPE

Furnish and install service lines originating at the water main and terminating at a curb stop connection in accordance with the Drawings and Section 01000 Summary of Work and Section 01011 Specifications Special Conditions. This Specification Section does not include service lines or meter installations beyond the curb stop. Refer to Standard Detail 0201-0601-SD47 for a typical service line installation.

1.02 RELATED WORK

Specification Section 15000 - Piping - General Provisions.

1.03 REFERENCES

Refer to current AWWA Standards:
AWWA Standard for Underground service Valves and Fittings C800

PART 2: PRODUCTS

All products described below shall meet the requirements of NSF 61. The materials for potable water facilities including solder joints, copper, brass and all other types of material shall meet current Federal, State, and Municipal regulations.

Research has documented that certain pipe materials (such as polyethylene) and certain elastomers (such as those used in gasket material and packing glands) may be subject to permeation by lower-molecular weight organic solvents or petroleum products. Products supplied under this Specification Section assume that petroleum products or organic solvents will not be encountered. If during the course of pipeline installation the Contractor identifies, or suspects the presence of petroleum products or any unknown chemical substance, notify the Engineer immediately. Stop installing piping in the area of suspected contamination until direction is provided by the Engineer.

2.01 COPPER SERVICE LINE MATERIAL

Copper pipe shall be Type L or Type K, as specified, meeting the requirements of ASTM Standard B88. The pipe size (3/4", 1", 1-1/2", or 2") and type are to be determined by the Engineer. Type K is normally required in corrosive environments where polyethylene is not allowed.

2.02 POLYETHYLENE SERVICE LINE MATERIAL

Polyethylene service line material shall be Class 200 (minimum), ultra high molecular weight, conforming to AWWA Standard C901. Pipe sizes (3/4", 1", 1-1/2" and 2", copper tube size (CTS) or iron pipe size (IPS)) to be determined by the Engineer.

Acceptable manufacturers:

- Endot Industries (EndoPure PE-3408 only)
- J-M Manufacturing
- KWH Pipe
- Uponor Aquapex

2.03 CORPORATION STOPS

Corporation stops shall be of the brass, ball valve type manufactured in accordance with AWWA Standard C800 or as specified in Section 01011 Specifications Special Conditions. The inlet connection shall have standard AWWA tapered threads unless otherwise required by the Engineer. The outlet connection shall be copper or brass compression connection end or pack joint for polyethylene pipe, as required. Dielectric unions are required when metallic service lines are connected to metallic water mains. Dielectric unions are not required for non-metallic service lines. The sizes shall range from 1/2" to 2" and shall match the size of specified service line material.

Acceptable manufacturers and model numbers are:

- Ford Meter Box Company - FB400 thru FB1600
- Mueller - B-25000
- A.Y. McDonald – 4701B Series

2.04 CURB STOPS

Curb stops shall be bronze body construction, ball valves, with Double O-ring stem seals. Curb stops shall conform to AWWA Standard C800. End connections shall be suitable for copper or brass compression connection or pack joint for polyethylene pipe, as required. Sizes shall be from 3/4" to 2" and shall match the service line size.

Acceptable manufacturers and model numbers:

- Ford Meter Box Company – B22 Series
- Mueller - B-25204
- A.Y. McDonald - 6100 Series

2.05 CURB BOXES

Curb boxes shall be standard cast iron or A.B.S. Plastic, sliding or screw type, 2-1/2" as required, complete with " Water" imprint lid and head bolt. Boxes shall be adjustable from 32-inches to 48-inches. The box size will be determined by the Engineer.

Acceptable manufacturers:

- Bingham & Taylor
- Mueller
- Handley Industries
- Clay & Bailey
- A.Y. McDonald Quality Water Products

2.06 MISCELLANEOUS SERVICE LINE FITTINGS

Miscellaneous service line fittings such as couplings, adapters, saddles, bends, plugs, service line electrical insulators, etc. shall conform to AWWA Standard C800 or as specified in Section 01011 Specifications Special Conditions.

Acceptable manufacturers:

- Ford Meter Box
- Mueller-Service Saddles $\frac{3}{4}$ "-2" model BR2W- For use on DI and C-900 PVC
- A.Y. McDonald- Service Saddles $\frac{3}{4}$ "-2"-model 3845J- For use on DI and C-900 PVC

*See Section 01011 Specifications Special Conditions for additional approved material to be used per district requirements.

PART 3: EXECUTION

3.01 INSTALLATION OF CORPORATION STOPS

Use experienced craftsmen familiar with installation of water service lines when tapping water mains. Make all taps with a suitable tapping machine (Mueller, Ford, Hays or Dresser type) using the proper combined drill and tap. Hand held drilling equipment is not acceptable.

Before making the tap, inspect corporation stops for cleanliness, damaged threads, and proper operation of the ball valve prior to installation. Do not install corporation stops that fail this inspection.

The main may be tapped along the top half of the pipe as directed by the Engineer or as shown on Standard Detail 0201-0601-SD47. Use a tapping saddle when the water main wall thickness or material (plastic, concrete or A-C pipeline material) make it unsuitable for direct tapping. All taps shall utilize a tapping saddle unless otherwise approved by the engineer. Verify saddle use with Engineer.

In the case of multiple services of small diameter (less than 2" diameter), corporation stops shall be at least 12 inches apart and at least 22-1/2 degrees above or below the location of any adjacent tap(s) and curb stops and boxes shall be at least one foot apart. In the case of large diameter multiple services, tap at least 24 inches apart and at least 22-1/2 degrees above or below the location of any adjacent tap(s).

Install all corporation stops so that between 2 and 3 threads extend beyond the inside wall of the main. If necessary, make a test tap with the boring bar marked to the proper depth. The corporation stop, when properly installed, will not be shouldered with the main. Do not use lubricants of any type when installing the corporation stop.

Use the procedures outlined in AWWA Standard C600-5 Section 4.8 for installing taps on grey iron or ductile iron mains encased in polyethylene.

3.02 INSTALLATION OF SERVICE LINE AND FITTINGS

Excavate the service line trench in accordance with Division 2 of these Specifications. Where augering or moling is permitted follow guidelines provided by the equipment manufacturer including making a proper size hole to launch and receive the unit. If moling or augering is employed, take appropriate precautions to avoid damaging other utilities and disturbing the unexcavated surface.

Install service line between the tap connection and the curb stop (if applicable) location making only gradual changes in grade or alignment as required. Sharp bends (greater than 15 degrees) in any direction are not allowed unless approved by the Engineer. 1-1/2" and 2" service lines may be installed using three (3) 1-inch corporation stops and a 3-branch connection, only with approval of the engineer. This is in lieu of installing a 1-1/2" or 2" corporation stop and saddle. Installation shall be in accordance with Specification Section 15000 and Standard Details and in accordance with current Federal, State, and Municipal regulations.

Install all services straight and at right angles to the main. If this cannot be accomplished, provide the Owner with accurate as-built dimensions to the tee or corporation stop. The Contractor may be required to install tracer wire in accordance with Section 02558 from the water main to the curb box/meter box.

All Polyethylene service line connections shall use insert stiffeners of the appropriate length and size. All Polyethylene service lines shall be buried with tracer wire in accordance with Section 02558.

3.03 INSTALLATION OF CURB STOPS

Install curb stops with the operating nut in the vertical position and the curb box centered over the nut. Install curb boxes plum and adjusted to be flush with finished grade. Install and lock curb boxes immediately after installation.

After completion of service line installation, but prior to backfilling, open the corporation stop slowly to fill the line. When the line is full and all air has been removed, completely open the corporation and close the curb stop. Visually inspect that all piping, fittings, and taps for leaks. Backfill and restore the surface the service line trench in accordance with Division 2 of these Specifications.

3.04 POLYETHYLENE ENCASEMENT

Provide polyethylene encasement, or other protective wrap approved by the Engineer, on all new metallic service lines and fittings (pipe, valves, stops, etc.) when a

metallic service line is connected to a metallic water main. Polyethylene encasement shall extend for a minimum clear distance of three (3) feet away from the water main and join the polyethylene encasement that is installed on the water main as shown in the DIPRA Polyethylene Encasement Installation Guide. Encasement material and installation shall be per Specification Section 15131 and AWWA Standard C105.

END OF SECTION