

## SECTION 02665

## WATER TAP AND SERVICE LINE INSTALLATION

## PART 1 GENERAL

## 1.01 SECTION INCLUDES

- A. Tapping new or existing water mains and installing new water service lines 2-inches and under.
- B. Relocation of existing small water meters.

## 1.02 MEASUREMENT AND PAYMENT

## A. Unit Price Contracts:

- 1. Measurement for 1-inch water taps and service lines is on a lump sum basis for each installation.
- 2. Measurement for 2-inch water taps and service lines is on a lump sum basis for each installation.
- 3. Measurement for relocation of existing water meters 2-inch and smaller is on a lump sum basis for each size water meter relocated.
- 4. Payment for water tap and service line installation includes locating water main, tap installation, corporation stop, service tubing, meter box, curb stop, customer side gate valve with valve box, piping, service fittings, and all appurtenances necessary for complete installation of water service.
- 5. Payment for relocating existing water meters 2-inch and smaller includes meter couplings, fittings, and relocation of the meter and meter box as necessary for complete restoration of water service.
- 6. No separate payment shall be made for bedding and backfill or compaction.

- B. Stipulated Price (Lump Sum) Contract: If Contract is a Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

## 1.03 REFERENCES

- A. Section 01025 – Measurement and Payment
- B. Section 01300 – Submittals
- C. Section 02604 – Valve Boxes, Meter Boxes, and Meter Vaults

- D. Section 02627 – Water Meters
- E. Section 02640 – Gate Valves
- F. AWWA C800 –Underground Service Line Valves and Fittings
- G. AWWA C901 – Polyethylene (PE) Pressure Pipe and Tubing, 3/4-Inch Through 3-Inch, for Water Service

PART 2 PRODUCTS

2.01 MATERIALS

- A. Tapping Saddle: Tapping saddle type and size shall be in accordance with Table 2.01 below:

Pipe Tapping Schedule		
Water Main Type and Size	Service Tap Size/Saddle Type <sup>1</sup>	
	1"	2"
Cast/Ductile Iron (4" - 12")	DSS, WBSS	DSS, WBSS
Cast/Ductile Iron (≥16")	DWBSS	DWBSS
PVC (4" - 12")	DSS, WBSS	DSS, WBSS
PVC (≥16")	DWBSS	DWBSS
Asbestos Concrete (4")	WBSS	WBSS
Asbestos Concrete (6" - 12")	WBSS, DWBSS	WBSS, DWBSS
Asbestos Concrete (≥16")	DWBSS	DWBSS

Table 2.01

<sup>1</sup>DSS – Dual Strap Saddles

WBSS – Wide Band Strap Saddles

DWBSS – Dual Wide Band Strap Saddles

1. Dual Strap Saddles – Red brass, bronze, epoxy coated, or vinyl coated ductile iron body; stainless steel u-bolt straps, washers, and nuts.
2. Wide Band Strap Saddles - Red brass, bronze, epoxy coated, or vinyl coated ductile iron body; stainless steel wide band strap, bolts, washers, and nuts.
3. Dual Wide Band Strap Saddles - Red brass, bronze, epoxy coated, or vinyl coated ductile iron body; two (2) stainless steel wide band straps, bolts, washers, and nuts.
4. Taps for steel pipe are not allowed unless specifically approved by the City.
5. Tapping saddle outlet shall be AWWA/CC standard thread.

- B. Corporation Stops: NL Brass in compliance with AWWA C800 (latest revision).

1. Inlet: AWWA/CC standard thread.

2. Body: Tapered plug type, O-ring seat ball type, or rubber seated ball type.
  3. Outlet End: CTS pack joint. Insert stiffeners required per manufacturer recommendations.
- C. Service Tubing: High-Density Polyethylene (PE4710) SDR 9 tubing meeting Copper Tube Size (CTS) standards.
- D. Curb Stops:
1. Inlet End: CTS pack joint. Insert stiffeners required per manufacturer recommendations.
  2. Body: Straight-through, meter stop design equipped with the following:
    - a. O-ring seal straight plug type.
    - b. Rubber seat ball type.
  3. Outlet End: Female, Iron Pipe threads of the same size as the service tubing diameter. Built in meter couplings/swivel-nut outlet ends are prohibited.
- E. Fittings: NL brass in accordance with AWWA C800 and the following:
1. Castings: Smooth, free from burrs, scales, blisters, sand holes, and defects which would make them unfit for intended use.
  2. Nuts: Smooth cast and have symmetrical hexagonal wrench flats.
  3. Threaded Fittings: NPT or AWWA threads. Male threaded ends shall be protected in shipment by plastic coating or other equally satisfactory means.
  4. Use same size open end wrenches and tapping machines as used with respective brand fittings.
  5. Flange Fittings: Elliptical with female NPT threads for connection to 1-1/2" and 2" meters. Pack joint outlets shall be used for customer side service tubing connections.
  6. Stamp of manufacturer's name or trademark and fitting size on body.
  7. Fittings to be by A.Y. McDonald, Ford, Cambridge Brass, or approved equal.

### PART 3 EXECUTION

#### 3.01 GENERAL

- A. For service lines and lateral connections larger than those allowed in Pipe Tapping Schedule, branch connections and multiple taps may be used. Taps shall be spaced a minimum of 2-feet apart.

- B. Use tapping machine manufactured for pressure tapping purposes for 2-inch and smaller service taps on pressurized water lines.
- C. Locate water meter, meter box, and valve box as indicated on City Details 02665-01, 02665-02, and 02665-03. Deviation from City Details due to existing conflicts shall be approved by the City in writing prior to installation.
- D. Successfully perform hydrostatic and disinfection testing prior to installation of service taps and lines.

### 3.02 TAPPING AND SERVICE LINE INSTALLATION

- A. Set service taps at right angles to proposed meter location and locate taps in upper pipe segment within 45 degrees of pipe springline.
- B. Separate taps and service leads are required for each domestic meter. Irrigation meters shall be branched off the domestic service line.
  - 1. Tap size shall be a minimum of 2-inches for domestic services with irrigation meters.
- C. Install service lines in accordance with Section 02227 – Excavation and Backfill for Utilities.
- D. Lay service lines with a minimum of 6-inches of cover measured from the bottom of curb or 2-feet from top of curb, whichever is greater. For streets with roadside ditches, lay services lines with a minimum of 18-inches of cover measured from the ditch flowline.
- E. Maintain service lines free of dirt and foreign matter during construction.
- F. Install service lines above existing sanitary sewers. Anticipate existing sanitary sewer trenches to have cement stabilized backfill to the bottom of pavement. No additional payment for sanitary sewer crossings.

### 3.03 CURB STOP INSTALLATION

- A. Set curb stops at the end of service lines inside the meter box as indicated on City Detail 02665-01 Typical Water Service for Meters 1-Inch and Under or 02665-02 Typical Water Service for 2-Inch Meters. Secure opening in curb stop to prevent dirt and debris from entering service line.
- B. In close quarters, make S-curve in the field. Do not flatten or kink service tubing.

### 3.04 METER FITTING HOOKUP

- A. Meter fitting hookup shall be as indicated on City Detail 02665-01 Typical Water Service for Meters 1-Inch and Under or 02665-02 Typical Water Service for 2-Inch Meters.
- B. Support meter piping and meter, level and plumb, during installation.

- C. Meters less than 1-inch: Install 1-inch x 3/4-inch reducing bushing and 3/4-inch straight meter coupling for connections to 5/8" or 3/4" meters.
- D. 1-Inch Meters: Straight meter couplings shall be used for connections to 1-inch meters.
- E. 1-1/2 and 2-Inch Meters: Elliptical flange fittings shall be used for connections to 1-1/2-inch and 2-inch meters.

### 3.05 METER BOX INSTALLATION

- A. Install meter box over meter and fittings as indicated on City Detail 02665-01 Typical Water Service Meters 1-Inch and Under or 02665-02 Typical Water Service for 2-Inch Meters.
- B. Install meter box lid flush with finished grade. Refer to Section 02604-01 Valve Boxes, Meter Boxes, and Meter Vaults for additional requirements.

END OF SECTION