

## **SECTION 5200 - WATER SERVICE CONNECTIONS**

**5201 GENERAL.** The contractor shall supply all materials, labor and equipment necessary for water service reconnection as indicated on the plans. This shall include tapping of the main, boring of road crossings, compaction and resodding of the established lawns.

The Contractor shall notify the City of the intent to perform this work a minimum of forty-eight (48) hours in advance of water service outages and shall notify any customers that will be affected twenty-four (24) hours in advance of water service disruption. City crews shall operate all necessary valves to assist in the main tap, when necessary. For further information on water taps please see the Water Taps Policies and Procedures.

Water services will not be allowed for any parcels outside the City Limits without prior approval from the City Engineer.

**5202 APPROVED MATERIALS FOR RECONNECTION TO DUCTILE IRON PIPE.**

Contractor shall be required to use the materials shown on the City of Gardner Approved Materials List unless otherwise specified or approved by the City Engineer. The approved Materials List is available on the City of Gardner public website at [www.gardnerkansas.gov](http://www.gardnerkansas.gov).

**5203 APPROVED MATERIALS FOR RECONNECTION TO PVC PIPE.** Contractor shall be required to use the materials shown on the City of Gardner Approved Materials List unless otherwise specified or approved by the City Engineer. The approved Material List is available on the City of Gardner public website at [www.gardnerkansas.gov](http://www.gardnerkansas.gov).

**5204 METER INSTALLATION.** All meter setters shall be located at the direction of the Engineering Division.

Water meter pits shall be placed at the property/right-of-way line of the service address. Alternate locations must have prior approval by the city engineer.

All meter setters shall be set in the meter tile so that the face of the meter is at least 16 inches, but not more than 22 inches, below the finished grade.

Meter pits shall not be located in driveways, walkways or cast-in concrete without prior approval from the city engineer. Traffic model rings and lids shall be installed when required for these instances.

All meter tiles shall be set plumb, backfilled and compacted with earth.

Each meter tile shall be centered directly over the meter that it serves.

The top of the tile cover shall be flush with the finished grade.

**5205 HDPE SERVICE LINES.** HDPE for service Lines shall be pigmented blue throughout. For Sizing requirement see table 5205-1.

Table 5205-01: Service Connections

Size Standard	Size Range	Material Specification
CTS	1" – 3"	AWWA C901 4710 DR9 PC250
IPS	2" – 3"	AWWA C901 4710 DR11 PC200
IPS	4" and larger	AWWA C906 3408/4710 DR13.5 PC160

Stiffeners must be used in the ends of HDPE. Approved Tracer Wire must be used: #12 AWG Copperhead Reinforced Trace Wire (Blue in color).

All taps 1 ½" and larger to the water main are to be five (5) feet minimum from any pipe joint in the water main or other taps on the water main.

All 1" taps to the water main are to be 18" from any pipe joint in the water main or other taps on the water main.

The applicant shall furnish and install HDPE from the corporation stop to property line with exact forty-two (42) inch depth at the meter pit. All other points shall have a minimum cover of forty-two (42) inches except for gooseneck.

Piping shall be one continuous line with no intermediate couplings unless approved by the City Engineer.

Only compression type couplings shall be used underground.

The piping between the water main and the water pit shall be in line with the corporation stop and perpendicular to the main. Horizontal bends or offsets are not allowed. The minimum separation between the water service line and any other utility or sewer line shall be three (3) feet, and a minimum of ten (10) feet of separation from any parallel sanitary sewer.

No fitting shall be installed under pavement unless approved by the City Engineer.

Water service lines shall not be placed within a casing under street crossings.

Backfill shall be compacted immediately after placement of the service line. Uncompacted meter pits shall not exceed eight (8) locations. Backfill shall be in accordance with the Technical Specifications.

**5206 RESIDENTIAL (5/8" through 1") INSTALLATIONS.** The water meter and corporation stop for 5/8" and 1" services shall be provided by the City. Contractor shall supply appurtenant materials required to install the meter. If the water main is HDPE, the contractor shall have a certified fuser to fuse the saddle onto the water main. The City Engineer shall be present for the fusion of the saddle.

The meter face must be between 18" and 22" from the finish grade to reduce the chance of freezing and allow easy access for maintenance.

All service lines must have a 6" to 8" gooseneck from the tap and must remain in contact with the ground. PB-2 backfill must be placed around the looped section.

**5207 RESIDENTIAL AND INDUSTRIAL (3” and larger meter) INSTALLATION.**

**Plan Submittal:** Plans, shop drawings and material specifications for all work shall be submitted to the City Engineer for approval prior to construction. Plans shall include the

location of proposed work, location of property lines and the location of other existing or proposed utilities.

**Materials:** The following chart indicates the minimum lay length based on meter size. The lay length is summing of the meter, flanged adapter, and plain end by flanged end pipe lengths. AWWA Manual M6 provides more installation guideline for large meter.

*Table 5207-01: Meter Lay Lengths*

Water Meter	
Meter size	Minimum lay length
3 in	48 in
4 in	50 in
6 in	62 in
8 in	67 in

All piping shall be DIP (Ductile Iron Pipe) sized. All valves and fittings within the meter pit shall have flanged ends. A flanged adapter shall be used on the outlet end of the water meter. All valves and fittings outside the meter pit shall be connected using mechanical joints.

Pipe supports shall be installed to support the pipe as needed. Under no condition shall there be more than three (3) fittings between supports. The supports shall be galvanized, or stainless-steel construction fastened to a concrete footing with a locking nut.

Tapping sleeves shall be designed for a minimum working pressure of 200 psi and shall be flanged outlet type and provided with mechanical joints and end gaskets at each end. All connections shall have polyethylene encasement in accordance with the Technical Specifications. Anchoring pipe shall be factory fabricated from Class 54 Ductile Iron pipe.

**Meter Vault Design:** Meter vaults are not to be covered or placed in a driveway/traffic area. The vault lid must be removable and have 4 recessed lifting eyes placed approximately two feet from each corner to ensure the lid can be removed for maintenance. The lid shall be sealed with a butyl sealant to prevent water seepage. The meter lid should be placed directly over the meter and an additional 36” access lid for vault entry in accordance with the Standard Details.

*Table 5207-02: Water Meter Vaults*

Water Meter		Meter Vault General Dimensions			
Meter Size	Minimum Lay Length	Minimum Length of Vault	Inside of Meter	Minimum Width of Vault	Inside of Meter
3 in	48 in	8.2 ft		4.4 ft	
4 in	50 in	8.8 ft		4.4 ft	
6 in	62 in	10.6 ft		4.7 ft	
8 in	67 in	11.5 ft		5.2 ft	

**5208** **INSPECTION.** All materials and workmanship shall be subject to inspection and testing by the City. Defective material and workmanship shall be repaired or replaced as directed by the City Engineer. The Contractor shall furnish all materials necessary for all testing.

A hydrostatic test shall be performed prior to making a connection. A hydrostatic test shall be conducted and must hold 150 psi or 1.5 times the operating pressure, whichever is greater, for a minimum of two (2) hours prior to connection. The City will have a representative available for the test.

**5209** **TAPPING.** The Contractor shall make all taps on the new water main and shall be inspected by the City. Dry tapping of water mains will not be allowed. Contractor shall not schedule tapping of water service until pressure and bacteriological testing have met City and State requirements.

The contractor shall expose the water main immediately prior to tapping.

Excavation and backfilling of the main must be done in the same eight-hour day between 8 A.M. and 5 P.M. It must be filled immediately after the tap is made and inspected.

Taps shall not be performed when the temperature is at or below 32° F or during inclement weather. All taps and water meters shall be protected from freezing. If damage caused by freezing, replacement is required at the expense of the Contractor.

Any irrigation or other taps made on the customers service line should be a minimum of three (3) feet outside the water meter pit on the customers service line. Any connections made less than three (3) feet of the water meter pit will be disconnected and replumbed at the contractor's expense.

All barricades and warning devices shall be provided and maintained by the contractor.

**5210** **SALVAGE MATERIALS.** All usable items salvaged from the existing distribution system, including fittings, valves, meters, etc., shall be field-cleaned and transported by the Contractor to the City's designated storage yard and shall remain the property of the City.