



WATER AND SEWER NOTES

September 2018

1. All water and sewer construction shall be in accordance with the latest General Specifications and Standard Details of the Washington Suburban Sanitary Commission (WSSC), latest General specifications and Standard Details of the Maryland State Highway Administration, and/or the City of Rockville Department of Public Works (DPW), unless otherwise noted.
2. The Applicant must maintain all sediment control devices and ensure that all points of construction ingress and egress are protected as directed by DPW to prevent tracking of mud and dirt onto public rights-of-way (sidewalks, roads, etc.) or affecting adjacent areas.
3. The Applicant shall not operate any valves located on the existing public system. Requests to operate valves must be submitted to Chief of Construction Management 48 hours in advance.
4. Abandonment of water service connections and sewer service connections shall be made at the main line as directed by DPW. To abandon water service connections (two-inches or less), the tap hole is to be plugged with a brass plug and the valve and corporation must be removed at the main. All other house connections must be abandoned by cutting out the section of the water main and sleeving in a new pipe. To abandon sewer service connections, tees or saddles must be removed at the main and new pipe will be sleeved in.
5. All public water and sewer mains to be placed out of service (existing and proposed) must be completely removed and disposed. Abandonment of utilities in place may be allowed as an exception, only if adequate justification is provided to the DPW - Engineering Division. If permitted, utilities abandoned in place must be completely filled with lean mix concrete or flowable fill, disconnected at the main, and capped on both ends.

Shutdowns to Existing Water System: Any shutdown shall be made at hours determined by DPW in order to cause the least disturbance to existing customers. The Applicant shall notify the Chief of Construction Management in writing at least 18 calendar days prior to making the shutdown and submit for approval a schedule and method to complete the proposed shutdown and associated work. The Construction Management Division will notify the City Utilities Section at 240-314-8567 to arrange for valve operation. DPW must provide a minimum of two weeks of notice to affected properties. The shutdown will then be made at the designated time in accordance with the directions of the Chief of Construction Management. Test pit information on existing crossings must be provided a minimum of 48 hours prior to construction.

Water Mains: Materials for all water mains are to be ductile iron Pipe with Zinc Coating Pressure Class 350. All pipes are to be cement lined, minimum of 1/8-inch thick. All pipes and fittings are to be restrained, including all house connections four-inch and greater. All pipes are to be U.S. Pipe "TYTON

JOINT” or an approved equal. Water pipe shall be installed in accordance with WSSC Standard Details and Standard Specifications, Section 02510.

Valves: Valves shall conform to the latest AWWA Specifications and shall be a clockwise turn to close, mechanical joint. All valves shall be resilient seat gate valves. Valve box shall be two-piece sliding type adjustable and heavy duty domestic (Bingham & Taylor or approved equal). The covers shall say ‘WATER’ only. Any valve cover/lid with the text ‘WSSC’ will be rejected. Valves boxes for up to 36-inches in height shall weigh at least 75 pounds and valve lids shall weigh at least 14.5 pounds. Skirt size shall be two and a half inches

Fire Hydrants and Fire Hydrant Connections: The Applicant must test pit all fire hydrant leads and valves before removing or replacing a hydrant to confirm existence or condition of strapping.

Fire hydrants shall be set two-feet behind the face of curb unless otherwise indicated on the drawing. Each hydrant shall be set exactly plumb, at the grade provided, and shall be jointed to the fire hydrant connection at the foot of the barrel. Care shall be taken to place the steamer outlet normal to the street line and any hydrants placed askew shall be reset as required by the City.

Fire hydrants shall be firmly set in a bed of screened gravel, which shall extend one-foot below the bottom of the hydrant and be filled in and around it. The hydrant shall be firmly braced at the back, opposite the inlet pipe. The total amount of gravel used shall be at least 1/3 of a cubic yard. Fire hydrants shall not be blocked.

Fire hydrant connections of six-inch cement lined ductile iron pipe shall be laid at the points shown on the drawings and shall be extended either to fire hydrants to which they shall be connected or to such points as shall be designated. Fire hydrant connections shall be laid in all particulars in a similar manner to the water mains themselves.

Fire hydrants shall be Mueller or approved equal Traffic Model Types, which consists of break-away bolts, standpipe, and couplings. All fire hydrants shall be restrained to the water main using Mega-lugs or approved equal. Hydrants shall be factory painted with two coats of rust-preventive paint. All hydrants barrels shall be painted Safety Yellow. The bonnet and three nozzles shall be color coded as per the National Fire Protection Association (NFPA) standards. The colors are based upon the hydrant’s available fire flow and as determined by the Public Works Engineering Division:

<u>FLOW</u>	<u>RUSTOLEUM ITEM #</u>	<u>COLOR</u>
< 500 gpm	K7764402	Safety Red
500 – 1,000 gpm	3455402	Safety Orange
1,000-1,500 gpm	3433402	Safety Green
>1,500 gpm	K7725402	Safety Blue
All barrels	245479	Safety Yellow

Fire hydrants shall be as listed in WSSC General Conditions/Standard Specifications, Section 02510.

Fire hydrants shall have 5-1/4-inch, three-way (two hose nozzles and one pumper nozzle), six-inch diameter mechanical joint inlet connection clockwise turn close, National Standard operating nut.

Polyethylene Encasement: All ductile iron pipe, fittings, and appurtenances shall be V-Bio enhanced polyethylene encased in accordance with AWWA C 105 method 'A' and WSSC specifications; section 02510. After the pipe has been assembled in trench, Applicant shall carefully inspect polyethylene encasement for damage and repair in accordance with AWWA C 105 and manufacturer's recommendations.

Storage: The Applicant shall store pipe and materials on site, so as not to damage the materials, and shall maintain such storage areas in a hazard free and safe condition at all times.

Lubricants: Lubricants shall be potable hydrogenated vegetable oil that is insoluble in cold water and does not impart taste or odor. The lubricant shall not contain detergents, soaps or organic solvent either aliphatic or aromatic and shall be certified as nontoxic to humans or animals. The lubricant shall be of a semi-paste consistency, which will readily stick to the inside of the bell of the pipe when applied by hand. It shall remain in a usable state through the temperature in which water pipe is normally installed.

Water Service Connections: Water service connections shall be 1-inch or two-inch Copper, Type "K," or four-inch, six-inch, or eight-inch ductile iron pipe Pressure Class 350 as determined by the Inspection Services Division for service flow demand and fire protection requirements. Any Copper connection between main and meter shall be one continuous length. All connections must be tapped, saddles are not allowed. No taps shall be allowed in the last five-feet of a dead-end main.

- Applicants must have a WSSC tapping license.
- Compression fittings are not allowed in the City of Rockville.

Corporation stops: Corporation stops shall be as per ASI/AWWA C800 with working and test pressures as per WSSC Specifications. The corporations shall be bronze (ASTM B62).

Tap, sleeve and valve (T, S & V) assemblies: All T, S, and V assemblies are to be hydro-tested and witnessed by DPW at the time of installation.

Cover: All water mains shall be installed with minimum three and a half feet of cover below finished grade or three-feet of cover below finished subgrade.

Blocking for Existing Mains: Block all existing fittings with concrete per plans and Standard WSSC Specifications and Standard Details. Mechanical joint fittings, bolts, etc. must be protected from concrete.

Water Main Tests: The Applicant shall accomplish low (six hour) and high pressure (two hour) tests in accordance with WSSC Standards and Specifications. Prior to connection connecting new water mains or on-site water systems to the existing public system, the Applicant will conduct a 24-hour bacterial test. Passing test results must be provided from a lab certified by the Maryland Department of the Environment and shall be in accordance with the Standard Methods for Examination of Water and Wastewater.

- The Applicant must not use existing or new water mains or appurtenances for temporary restraint or support during pressure tests.
- Back flow prevention is required when testing a new main as per WSSC specifications.

Water Meters: Water meters shall be located one-foot behind the property line in a grass area. Water meters shall not be located in private driveways or aprons. Yoke angle valves should be compatible with Ford 500 series meter yokes.

Material Requirements for Sewer: DPW shall accept the following materials for the construction of the main line sewer, except as otherwise specified on the plans:

1. Pipes four-inches through 15-inches in diameter:
 - a. Polyvinyl chloride pipe (PVC) meeting ASTM D3034-78, wall thickness SDR 35, joints shall be watertight.
2. Pipes 18-inches and greater:
 - a. Ductile Iron, Pressure Class 350, cement lined minimum 1/8-inch thick with US Pipe TYTON JOINT or approved equal;
 - b. Polyvinyl chloride pipe (PVC) meeting ASTM F679, thickness T-1, joints shall be watertight.

Ductile Iron Pipe may be used under special conditions such as steep slopes or stream crossings.

Pipe for sewer house connections shall be four-inch polyvinyl chloride pipe and fittings as specified above, and shall be connected to the main line by the use of tees.

Flexible gaskets shall be used for connections to precast and existing manholes, and shall be A lock as manufactured by Atlantic Precast Concrete, Inc. or equal.

Mortar used in the installation of A Locks or the filling of any void in manholes walls, inside and out, shall be quick setting, non-shrink such as Octocrete, Speedcrete, Permacrete, or equal.

Installation of Sanitary Sewer: Sewer pipe shall be installed in accordance with WSSC Standard Details and Specifications, Section 02530. Hydro-hammers may not be used within three-feet of the top of pipe. Exercise care to ensure adequate compaction around structures and prevent damage to pipe at connections to manholes.

Horizontal deflection of pipe shall be accomplished in accordance with manufacturer's specifications.

Connection to Existing Sewers and Manholes: Connections must be as per WSSC Standard Details and Specifications, Section 02530.

Sewer Main Pressure Tests: The Applicant shall accomplish pressure tests in accordance with WSSC Standards and Specifications. DPW reserves the right to video the sewer main for quality control purposes.

Cleanouts: Cleanouts are to be installed on each sewer service connection and be located at the property line, in a grass area. Cleanout caps shall be cast iron with a brass plug. Provide concrete cleanout blocks on all sewer service connections at bottom of cleanout per WSSC Standard Details.

When drop connections from the building are to be used at the property line cleanout, the "Y" of the cleanout shall be encased per WSSC Standard Details and Standard Specifications.