

ATTACHMENT

A

SPECIFICATIONS FOR WATER MAIN EXTENSION

1. The developer shall obtain all required permits and approvals. It shall be the responsibility of the developer to contact all public utilities to verify the location of all underground facilities. All costs arising from applicable permits and any damages to public shall be borne by the developer.
2. The developer shall be responsible for all materials, workmanship, and backfill for a period of one (1) year from the date of final acceptance by the District.
3. If PVC piping is used, it must be NSF approved and manufactured in accordance with ASTM standards. PVC plastic pipe shall have rubber ring couplings, and conform with the latest ASTM Standards and shall be SDR-26 160 PSI minimum. Six (6) inch minimum pipe size will be required. All turns, bends, plugs, caps and changes of direction shall be blocked with concrete against undisturbed soil. All fixtures such as elbows, tees, plugs, etc. shall be mechanical joint type.
4. All dead end lines must be provided with a properly sized blow-off assembly, flush hydrant or fire hydrant (minimum 2 ½ inch diameter outlet) for flushing purposes. Flush hydrants shall comply with the latest AWWA specs and shall be similar to Mueller A-24058, 3-inch inlet size. The minimum size of water main for providing fire protection and serving fire hydrants shall be six-inch diameter. Larger size mains will be required, if necessary, to allow the withdrawal of the required fire flow while maintaining the minimum residual pressure. Hydrants on lines less than six inches in diameter or served by other lines less than six inches in diameter shall be for flushing purposes only.
5. Drainage shall be provided at the base of the flush hydrants by placing coarse gravel or crushed stone mixed with coarse sand from the bottom of the trench to at least six inches above the waste openings of the hydrant to a distance of one foot around the elbow. A concrete kicker block shall be poured at the hydrant.
6. Continuous tracer wire of #12 AWG stranded copper shall be laid with the main at the same depth.
7. A minimum pressure of 30 psi must be available on the discharge side of all meters.
8. Trenches shall be open cut and pipe must be buried to a minimum depth of 42 inches to the top of the installed pipe.

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SECTION 9 (1)
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SECRETARY OF THE COMMISSION

Water mains shall be laid at least 10 feet horizontally from any existing or proposed sewer. A sewer is defined as any conduit conveying fluids other than potable water. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10-foot separation, the Division of Water may allow deviation on a case-by-case basis, if supported by data from the design engineer. Such deviation may allow installation of the water main closer to a sewer, provided that the water main is laid in a separate trench or on an undisturbed shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer. This deviation will not be allowed for force mains.

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Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. At crossings, one full length of the water pipe shall be located so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required.

10. Hydrants shall be set plumb and connected to the main with a cast iron tee of the same size as the main to which it is being connected. Drainage shall be provided at the base of the hydrant by gravel or crushed stone from the bottom of the trench to at least six inches above the waste openings of the hydrants and to a distance of one foot around the elbow. A concrete kicker shall be poured at each hydrant.
11. Excavations shall be completely backfilled with the excavated material and seeded.
12. After water has been placed in the lines, any breaks or leaks which occur shall be repaired with new joints of pipe only at no cost to the District. No repair clamps shall be used on this project.
13. After the pipe has been laid it shall be subjected to a full pressure and leak test by the water district representative.
14. Upon completion of construction, disinfection shall be strictly in accordance with the procedure designated in the State Regulations, which read as follows:

“A water distribution system, including storage distribution tanks, repaired portions of existing systems, or all extensions to existing systems, shall be thoroughly disinfected before being placed into service. A water distribution system shall disinfect with chlorine or chlorine compounds, in amounts as to produce a concentration of at least fifty (50) ppm and a residual of at least twenty-five (25) ppm at the end of twenty-four (24) hours and the disinfection shall be followed by a thorough flushing.”

New or repaired water distribution lines shall not be placed into service until bacteriological samples taken in points specified in 401 KAR 8:150 Section 4 (2) are examined and are shown to be negative following disinfection.

15. An alternate acceptable method for storage tank disinfection is as follows:
Fill tank with enough water (containing a free chlorine concentration of at least 250 mg/l) to spray all inside tank surfaces with the chlorinated water. Repeat the spraying again at no less than 1.0 hour from the end of the first spraying. Drain the tank at no less than 30 minutes from end of second spraying before filling for use.
16. The interior coating system for the proposed storage tank must be of a type approved by the Division of Water for use in contact with potable water.
17. The overflow and the main drain for the proposed tank must extend 10 feet from the base of the tank and discharge into a 2 ft. x 2 ft. x 2 ft. crushed stone pit or onto a splash pad. The outlet must be equipped with a non-corrodible screen installed within the pipe at a location least susceptible to damage by vandalism.

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SECRETARY OF THE COMMISSION

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18. A minimum free chlorine residual of 0.2 ppm must be maintained throughout the distribution system. If this residual cannot be maintained, booster chlorination facilities must be provided. If chloramination is used, a minimum combined residual of 0.5 ppm must be maintained throughout the distribution system.
19. At high points in water mains where air can accumulate, provisions shall be made to remove the air by means of hydrants or air relief valves. Automatic air relief valves shall not be used in situations where flooding of the manhole or chamber may occur.
20. The ground level storage tanks and standpipes shall be equipped with separate inlet-outlet pipes installed on opposite sides of the tank. A check valve shall be installed in the outlet pipe to insure the water turnover. The inlet pipe shall be installed near the overflow elevation without interference with the overflow discharge.
21. The storage tank vent shall be screened to prevent the ingress of birds, animals and insects and shall be of a design to prevent freezing that may restrict the flow of air.
22. Water lines within a 200-foot radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations shall be constructed of ductile iron pipe. Pipe joint materials which are resistant to permeation of the petroleum products shall be used within the 200-foot radius.
23. During the process of tapping the asbestos concrete main, the contractor shall conform to OSHA regulations governing the handling of hazardous waste.
24. Pieces of asbestos concrete resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill.
25. The chlorine storage room shall be provided with separate switches for the fan and lights located outside. The ventilating fan is to be installed near flow level, with a capacity of one complete air change per minute. Panic hardware shall also be provided on chlorine room doors.
26. For underwater crossing greater than 15 feet in width the following shall be provided:
 - a. The pipe shall be of special construction, having flexible water tight joints, except if concrete encased;
 - b. Valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair; the valves shall be easily accessible, and not subject to flooding; and the valve closest to the supply source shall be in a manhole; and,
 - c. Permanent taps shall be made on each side of the valve within the manhole to allow insertion of a small meter to determine leakage and for sampling purposes.
 - d. Upon completion of this project, the developer shall submit "as built plans" and a written certification to the District and the water supply facilities have been constructed and

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SECRETARY OF THE COMMISSION

tested in accordance with the approved plans and specifications and the above stipulations. Such certification shall be signed by a registered professional engineer.

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BY: Stephan O Bell
SECRETARY OF THE COMMISSION

