

Water Main Information

Address:

Project Name:

This information is intended to provide assistance to the developer, project engineer and contractor in the design and installation of public water main systems in the City of Portage. The following information consists of requirements and recommendations for construction practices used for water main installation. The applicant will also need to review the City of Portage Contract Conditions and Specifications. Construction of a public water main system requires a permit from the Michigan Department of Natural Resources and Environment (MDNR-E) before construction may begin. The City of Portage will submit the approved drawings to the MDNR-E for the necessary State permit.

Filing Information

Yes No N/A

- 1. Six copies of a drawing sealed by a professional engineer for submittal to the Michigan Department of Natural Resources and Environment (MDNR-E) for a construction permit. These drawings shall be in accordance with the City of Portage construction standards.
- 2. Transmittal letter describing the sizes, quantities and locations of the facilities to be constructed.
- 3. Agreement indicating that the developer has contracted with an engineering firm to provide all inspection according to the City of Portage "Policy of Inspection."

Positioning

Yes No N/A

- 1. All water mains are to be installed on the north and/or east side of the street right of way between the sidewalk and the curb line.
- 2. A minimum of ten feet of horizontal separation shall be maintained between the water main and sanitary storm sewer mains.
- 3. The maximum distance between valves shall be 1000 feet.
- 4. Valves are to be located at tees and crosses in a manner to permit isolation of any water main segment by the uses of no more than four valves.
- 5. When segments of a water main are isolated, a maximum of 20 services should be affected.
- 6. Maximum fire hydrant spacing shall be 500 feet in single family residential areas and 350 feet in commercial and industrial areas. Hydrants in areas of "critical location" may also be required to maintain fire suppression capabilities.
- 7. Easements are required when water main is not installed in a street right of way.
- 8. Positioning of fittings, valves, hydrants and other appurtenances must be shown on drawings.
- 9. Looping of water main shall be made whenever possible to improve water quality and fire protection and to limit possible service disruptions.
- 10. All water mains must be ductile iron pipe with a minimum size of eight inches.
- 11. All new water mains shall have slip joints or mechanical joint connections and shall not have over 60% of the maximum permissible deflection at the joints as permitted by the manufacturer.
- 12. All water main extensions designed to service fire hydrants must be public.

Materials

Yes No N/A

- 1. Portage standard fire hydrants shall be installed as necessary to provide the required fire flow. Hydrants will be located as approved. A hydrant locator sign will be placed three feet to the rear of each hydrant.
- 2. 8 inch through 12 inch pipe shall be mortar lined Class 52 ductile iron.
- 3. Pipe larger than 12 inch shall be mortar lined Class 53 ductile pipe.
- 4. All pipe shall be push joint (bell and spigot); all fittings shall be mechanical joint.
- 5. All valves 6 through 10 inch shall be resilient wedge with mechanical joint connection, epoxy coated, with a 2 inch operation nut and open counterclockwise (See Standard Construction Specifications).

(over)

6. All hydrants shall have 5 foot 6 inch bury, mechanical joint shoe, one 4 inch port and two 2-1/2 inch ports and open counterclockwise (See Standard Construction Specifications).

Construction

Yes No N/A

1. All water mains shall have a minimum of 5 feet of cover and a maximum of 6 feet of cover.
2. All valve boxes shall be centered on the operating nut of the valve and adjusted to grade.
3. All hydrants shall be installed with the center of the 4 inch pumper connection a minimum of 21 inches above the final grade. The 4 inch pumper connection should be a maximum of 36 inches above final grade.
4. The 4 inch pumper connection shall face the paved portion of the street right of way.
5. Hydrant signs shall be installed for each hydrant.
6. Electrical conductivity shall be maintained through all water mains, fittings and appurtenances.
7. Joint restraint is required in lieu of thrust blocks.
8. Pressure testing and chlorination of all mains is required by the City of Portage and the Michigan Department of Natural Resources and Environment.
9. Service taps shall be installed after pressure testing has been completed.
10. All mains shall be constructed according to AWWA standards.

Testing and Completion

Yes No N/A

1. The contractor will perform a pressure test of the system by subjecting it to a pressure of 150 psi over a period of two hours in accordance with City of Portage Contract Conditions and Specifications. The City of Portage Department of Transportation and Utilities shall witness this test, unless other arrangements are pre-approved
2. After satisfactory pressure testing, the system shall be chlorinated, flushed and samples taken on two separate days to be sent by the City of Portage Department of Transportation and Utilities to the Kalamazoo County Health Department for testing. These procedures shall be performed in accordance with the City of Portage Contract Conditions and Specifications.
3. Upon safe test results, the City of Portage will conduct an activation inspection. It is the responsibility of the developer or contractor to schedule the inspection with the Community Development Department.
4. Upon completion, the related water main information listed in the Acceptance of Public Infrastructure checklist must be submitted.