MILFORD MUNICIPAL UTILITIES

WATER SERVICE GUIDELINES

FOR PROPERTY CONSTRUCTION AND WATER SERVICE REPAIR

MILFORD, IOWA

Effective August 16, 2021

This guideline for contractors and property owners does not include all standards, resolutions, and ordinances. You may obtain a complete copy from the Milford Municipal Utilities office.

Water Main

Water main shall be Ductile Iron Pipe conforming with AWWA C151. Pipe shall have cement mortar lining and outside asphaltic coating meeting requirements of AWWA C104. Water main shall be installed with a minimum seven feet of cover over the top of the pipe. Pipe thickness is to be Class 52. Pipe joints shall be push on type with conductive gaskets.

A No. 12 copper tracer wire shall be installed along the water main and brought to ground surface at each hydrant location. All tracer wires are to be connected to a tamper proof Mini Test Station, as manufactured by C.P. Test Services & Valve Products, Inc. The access box is to be manufactured of cast iron and ABS components produced in the USA. Cast iron collar and cover is to be manufactured in accordance with ASTM A 48 Class 30. The ABS is to be manufactured in accordance with ASTM D 1788. The cover shall be lettered WATER and shall have a standard AWWA size cast-in pentagonal bolt.

The contractor shall install polystyrene insulation in those areas where the watermain or services may be susceptible to frost or freezing and/or between the watermain and storm or sanitary sewer where adequate vertical clearance cannot be maintained, as determined by the Utility. Insulation shall be extruded rigid board material with a thermal conductivity of 0.23 BTU/Hour/Square Foot/Degree Fahrenheit/Inch Thickness, maximum at 40°F mean, minimum compressive strength of 35 psi, and water absorption of 0.25% by volume median. Board dimensions shall be 8’ long, 2’ or 4’ wide, and either 1.5”, 2”, or 3” thick. Minimum insulation thickness shall be 2-inches; the ultimate thickness of insulation required shall be achieved by using 2 layers of insulation, the second layer shall be placed perpendicular to first layer and the joints shall be offset. The insulation shall be placed on a bed of sand and sand shall be placed above the insulation to isolate it from rocks and other sharp objects.

The Developer shall be responsible for all initial construction costs and permits (DNR and City of Milford). All construction shall be in accordance with the requirements of the Iowa DNR Water Supply permit. Following satisfactory installation and a two-year warranty period, Milford Municipal Utilities shall be responsible for all costs related to future maintenance and repairs to the water main facilities.

Fittings

Fittings shall be mechanical joint Class 350 Ductile Iron, compact, conforming to requirements of AWWA C153. Fittings shall have cement mortar lining and outside asphaltic coating meeting requirements of AWWA C104.

All fittings shall be restrained with Smith-Blair Cam-Lock Restraints. Restrained joint fittings, such as Alpha Restrained Joint by Romac Industries, Inc., or Hymax Grip by Mueller Company are also allowed. All nuts, bolts, and washers on end connections shall be stainless steel rolled thread with anti-galling coating.

All fittings, valves and hydrants shall be protected by using sacrificial zinc anode caps meeting the requirements of ASTM B418. Caps shall be Large Zinc Anode Caps (6 oz.) as manufactured by Trumbull Industries or approved equal. Contractor shall supply two anode caps per mechanical joint gland installed.

Contractor shall install polyethylene encasement for all joint fittings and valves. Polyethylene shall have 8 mil nominal film thickness.

Hydrants

Hydrants shall be Mueller Super Centurion with Aquagrip system. Nuts, bolts, and washers on end connection must be stainless steel rolled thread with anti-galling coating. Hydrants shall be red, dry barrel type, manufactured in accordance with AWWA C502. Hydrants shall have one 5-inch integral Storz pumper connection and two, 2 ½ inch, hose connections; threads shall be National Standard Type. Hydrant barrel diameter and main valve opening shall be 5-inch; hub shall be 6-inch diameter. Hydrants shall have 18-inch, breakaway type traffic flange. Hydrant bury depth to be 7 feet. Provide permanent markings on hydrant indicating manufacturer's name, year of manufacture, and bury depth. All hydrants shall have been manufactured in the year of construction or prior two calendar years.

Fire hydrants shall be placed so that no lot in a residential subdivision is more than three hundred (300) feet from two (2) fire hydrants, the distance to be measured along street lines. The Council may require special spacing in commercial and industrial districts.

Valves

Water system valves shall be Mueller A-2361 resilient wedge gate valves with integral AcuaGrip system. Nuts, bolts, and washers on end connection must be stainless streel rolled thread with anti-galling coating conforming with AWWA C509 and designed for a working pressure of 350 psi. The operating stem shall be non-rising with "O" ring seals; operation nut to be 2-inch square. Valve shall open in counterclockwise direction. Valves shall be marked on the bonnet or

body showing manufacturer's name, pressure rating, year of manufacture, size, and open indicating arrow.

Valve boxes shall be Tyler Union 6850 Series with 666-S components. Valve boxes shall be cast iron three-piece screw type with 5 ¼ inch inside diameter on the box shaft to include rubber seal on base of box. Box length shall be able to provide for 7 feet of cover. Valve box shall be adjustable to 6-inches up or down from surface grade. Drop lids shall have raised letter indicating "water". All valve box assemblies shall be furnished with a valve umbrella anchorage assembly manufactured by Adaptor, Inc.

Water Service Lines

Minimum water service line size shall be 1-inch diameter.

Pipe: Seamless copper, type K, soft annealed, meeting requirements of ASTM B88.

Fittings: All fittings for copper tubing shall be cast brass compression type, having uniformity in wall thickness and strength, and shall be free of defects. All threads shall conform with AWWA C800.

Corporation Stop: AY McDonald ball style, AWWA x FNPT connection, item 73148B; and AY McDonald Ranger fitting, Ranger x MNPT connection, item 74753-11.

Curb Stop: AY McDonald straight ball valve, Ranger x Ranger connection, item 76104-11 with Minneapolis pattern body.

Curb Box: Minneapolis pattern curb box with 7.5-foot length and adjustable 6 inches up or down from finished grade.

Tap Saddle: Smith-Blair 372 service saddle, all stainless steel with double bolt.

Water services 4-inch or larger will be Class 52 Ductile Iron.

Casing Pipe

Casing pipes, where necessary, shall be welded steel pipe, with a minimum yield strength of 35,000 psig and with minimum wall thickness of 0.25-inches (up to 24-inch diameter). Casing diameter shall be twice the size of the proposed carrier pipe. The carrier pipe will be installed using supports or cradles constructed of permanent materials to uniformly support the pipe. Contractor shall use at least three supports for each section of pipe with a maximum spacing of 8-feet between supports.

Testing and Disinfection

Unless directed otherwise by the Utility, all newly laid pipe will be subject to a hydrostatic pressure of 150 psi and the duration of the test will be one hour. Each section of pipe to be

tested will be filled with water and all air expelled at the highest point. The required taps to expel air or to fill the pipe will be supplied and installed by the Contractor, will be ¾ inch and will include an approved service saddle when required. The test apparatus will be applied at the lowest elevation on the section to be tested. Contractor will use a standard pressure gauge. The dial will register from 0-200 psi and have a dial size of 4 ½-inches with 1 psi increments. The hydrostatic test pressure requirement will be a maximum pressure drop of three (3) psi for the duration of the test. If this test requirement cannot be met, the Contractor will investigate the cause, make corrections, and retest until the pressure drop requirement can be achieved. Only if several consecutive tests indicate a consistent pressure drop and only after the Contractor has made numerous attempts to resolve the problem (acceptable to the Utility), may the Contractor request in writing and the Utility consider the use of the leakage test. The leakage test may be performed by the Contractor to determine the magnitude of the leak. However, meeting the leakage allowance will not automatically be considered acceptance (in lieu of the pressure test) for the section being tested. Final acceptance will be at the discretion of the Utility.

Disinfection and bacteriological testing on all temporary and permanent water distribution systems shall be performed in accordance with the provisions of AWWA C651. Testing options A and B as described in AWWA C651 and below will be required for the bacteriological testing for total coliform analysis.

Option A: Before approving a main for release, an initial set of samples after flushing shall be secured and then resampled again after a minimum of 16 hours using the sampling site procedures outlined. Both sets of samples must pass for the main to be approved for release.

Option B: Before approving a main for release, flush the main and let it sit for a minimum of 16 hours without any water use. Then collect, using the sampling site procedures outlined and without flushing the main, two sets of samples a minimum of 15 minutes apart while the sampling taps are left running. Both sets of samples must pass for the main to be approved for release.

If the initial disinfection fails to produce satisfactory bacteriological results, or if other results indicate unacceptable water quality, the main may be re-flushed and will be resampled. If check samples fail to produce acceptable results, the main will be re-chlorinated by the continuous-feed or slug method until satisfactory results are obtained. No lines will be placed in service until a satisfactory result is obtained.