THE JERSEY CITY MUNICIPAL UTILITIES AUTHORITY

WATER DISTRIBUTION SYSTEM STANDARDS

1. Water Mains shall be Class 53, cement lined, ductile iron pipe with mechanical joints and shall be in conformance with A.N.S.I. Standard A21.5-1976 (A.W.W.A. C151-76). All water mains will be at least 8" in diameter. Ten (10") and 14" diameter mains shall not be used.

2. Gate valves shall be in conformance with A.N.S.I./A.W.W.A. Standard C500-80 and shall be Jersey City Standard Valves, M&H Metropolitan Mechanical joint valves as manufactured by Dresser Company or approved equal. Valves shall be non-rising stem, mechanical joint shall be furnished with a (2") square operating nut shall open by turning to the right. Gate valves (16") and over shall be furnished with by-pass. Valve shall be 100% solid heat cured epoxy coated holiday-free in the waterway.

3. Butterfly valves shall be in conformance with A.N.S.I./A.W.W.A. Standard C504-80. Butterfly valves shall be Class 1508, mechanical joint, with rubber seat mounted on the disc, shall be furnished with a (2") inch square operating nut and shall open by turning to the right. The valve shall be 100% solid heat cured epoxy coated holiday-free in the waterway. The use of butterfly valves will not be permitted in mains (16") and under.

4. Valves boxes shall be Jersey City “Standard” as manufactured by Bingham and Taylor, or approved equal. Boxes shall have a minimum of 8-1/4 inch diameter and shall be an adjustable screw type with the box extending from the surface to (3") inches above the valve bonnet base. Valve box shall be cast iron with a standard coal tar foundry dip with cast iron water drop cover and the work “water” cast in cover. Valve box cover shall be installed flush with the existing grade elevation.

5. Concrete for valve seats and thrust blocks shall have a minimum 28 day strength of 3000 psi.

6. Select granular backfill material shall be soil aggregate type I-6 (porous fill, clean sand, gravel or stone) obtained from dry sources and shall be free from stumps, brush, weeds, roots, rubbish, wood and other material that may decay. Graduation shall conform to table 901-2, for type I-6 in article 901.09 of the (N.J.D.O.T.) New Jersey Department of Transportation Standard Specifications. Backfill material shall be placed and compacted in twelve (12) inch lifts.

7. Tie rods shall be three quarter (3/4) inch diameter threaded steel bars. Rods shall have a minimum yield stress of 36,000 psi. Thrust blocks and tie rods shall be installed at all bends and fittings.

8. Couplings shall be Dresser Style Number 153 for pipe sizes through (30") inch diameter. For larger diameter pipe, Dresser Style Number 38 steel couplings shall be used.

9. Sheeting, shoring and bracing shall be closed vertical sheeting, Tongue and Groove that is braced to prevent the cave-in of trenches. All labor equipment, materials and methods of construction shall conform to the requirements of the United States Occupational Safety and Health Administration.

   Materials for sheeting shall be Tongue and Groove wooden planks and timber or steel conforming to the requirements of the United States Occupational Safety and Health Administration timber shall be a minimum of 3" thick.

   Sheeting shall be left in place. Shoring and bracing shall be removed.

10. Broken stone foundation cushion shall be placed in those areas where the Director, Department of Engineering has deemed the soil conditions inferior. Broken stone shall conform to Article 901.03 of the Standard Specifications as currently amended. The size of broken stone shall be as shown on the Plans or as directed by the Engineer for Size Number 2, 4, 5, or 6 as shown in Table 901-1. Standard Sizes of Coarse Aggregates of the New Jersey Department of Transportation Standard Specifications.

11. Filter cloth shall be placed in those areas where the Director, Department of Engineering has deemed the soil conditions inferior.

12. After the Engineer has inspected the completed installation of valves, and water main, and <u>before backfilling</u> the excavations, the contractor shall furnish all labor, materials and equipment required to pressure test the pipe. The pipe shall be pressurized to 1.5 x the working pressure for a period of two (2) hours. Pressure shall not vary more than five (5) psi. The valved section of pipe shall be filled with water slowly, and the test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. Before applying the test pressure, air shall be expelled completely from the pipe by installing corporation cocks at such points so that the air can be expelled as the line is filled with water. If the joints leak, repairs or replacements shall be made. Testing shall be in conformance with A.W.W.A. Standard C600-77.

13. The Contractor shall disinfect all water mains in accordance with A.W.W.A. Standard for “Disinfecting Water Mains” designation C-601. Commercial products such as “HTH”, “Perchlaron”, and “Maxoxhlor” may be used in flake or crystal form, but in no instance will tablets be permitted to be used in the disinfection of water mains.

    The chlorine dosage shall initially produce 50 ppm residual to the water and maintain a minimum residual of 25 ppm after 24 hours. After satisfactory disinfection of the test section, the line shall be continuously flushed until the resultant chlorine residual equals one ppm or the residual of the system, whichever is greater. After final flushing and before the water main is placed in service samples shall be collected from each end of the main and tested for bacteriologic quality. If the initial disinfection fails to produce satisfactory samples, disinfection shall be repeated until satisfactory samples have been obtained.

14. Air release valves shall be installed at the high points of the water mains.

15. All water mains will be at least 8” in diameter. Ten (10”) and 14” diameter mains shall not be used.

16. Thrust blocks and tie rods shall be installed at all bends and fittings.

17. Hydrants shall be two (2) piece “Jersey City Standard” hydrants as manufactured by A.P. Smith or approved equal. Hydrant spacing shall be a maximum 300 feet measured center to center.

18. For either new construction or relocation of the following shall be required:
    a. Hydrants shall be located no closer than 20 feet from the point of tangency or curvature at intersections.

    b. All one piece or hydrants not manufactured by A.P. Smith that are to be relocated shall be removed and delivered to Jersey City Division of Water Distribution. A new hydrant will be supplied by the City for installation.

    c. Hydrants shall be no closer than ten (10") feet from the edge of a residential driveway or (20") feet from the edge of commercial driveway. In the case where driveways are expanded or newly constructed, the owner shall be responsible for the relocation of an existing hydrant if above requirements are violated.

    d. All single gated hydrants on (16") inch or larger mains shall require a new valve at the base of the relocated hydrant.

e. New gate valves and boxes are required at the base of relocated hydrants when more than (10") feet of pipe is required.

19. Existing water service lines shall be shut-off and capped at the main prior to the installation of new water services. Prior to new service tap the Jersey City Water Department shall inspect and certify the abandoned services.

20. Water mains to abandon shall be cut and plugged with required fittings, rods and concrete as close to the existing main in service as possible.

21. All valves shall be operated by Jersey City Water Department personnel. The contractor shall not be permitted to operate any valves. The contractor shall notify the Engineer, in writing, five (5) days in advance of valve operating requirements.

22. Failure to comply with the above requirements will result in the immediate shut-down of the project.

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