



**CITY OF EAST PROVIDENCE, RI
WATER UTILITIES DIVISION
REQUEST FOR PROPOSALS RFP# EP21/22-04
WATER WORK MATERIALS
SPECIFICATIONS
BID OPENING THURSDAY, FEBRUARY 03, 2022 AT 11AM**

The technical specifications outlined within this section call attention to the specific requirements of the materials to be submitted within a perspective bid.

1. Submittals

- a. The following submittals shall be forwarded to the City of East Providence Water Utilities Division located at 60 Commercial Way East Providence, RI 02914 for approval. All submittals shall be approved prior to delivery of products described in this section.
 - i. Shop Drawings: Submit description of the proposed material
 - ii. Shop Tests: Indicate results of manufacturer furnished tests and/or inspections.
 - iii. Manufacturer's Certificate: Certify that products meet or exceed requirements specified in Section

2. Cement Lined Ductile Iron Water Utility Pipe & Fittings

- a. Cement lined ductile iron water utility pipe and fittings shall be manufactured by the following:
 - i. U.S. Pipe and Foundry.
 - ii. Griffin Pipe Products.
 - iii. McWane Company; all pipe divisions.
 - iv. An approved equivalent member of the Ductile Iron Pipe Research Association (DIPRA)

- b. Cement lined ductile Iron Pipe: Per AWWA C151. Provide in standard lengths as much as possible.
 - c. Pipe Class: Class 52
 - d. Unrestrained Pipe and Fitting Joints: Push-on rubber gasket type or rubber-gasket mechanical joint per AWWA C111.
 - e. Interior Lining:
 - i. Ductile iron pipe and fittings shall have the same type of lining.
 - ii. Cement Mortar Lining: Per AWWA C104 double thickness. Cement type shall meet the requirement of ASTM C150.
 - f. Exterior Coating:
 - i. Buried pipe installed with bituminous coating per AWWA C151 and C110 respectively.
 - g. Pipe Fittings: Ductile iron per AWWA C110 or AWWA C153 as applicable. Fittings to have the same pressure rating, as a minimum, of the connecting pipe.
 - i. Piping 24 inch and smaller: minimum pressure rating of 350 psi.
 - ii. Closures: Made with mechanical joint ductile iron solid sleeves.
3. Mechanical Restraints
- a. Megalug mechanical joint retainer glands as manufactured by EBAA Iron Sales, Inc., Field Lok, or equal.
4. Couplings
- a. Couplings shall be Hymax or approved equivalent by:
 - i. Smith Blair
 - ii. Romac Industries
 - iii. Ford Meter Box Co.
5. System Valves and Road Boxes
- a. Resilient Wedge Gate Valves
 - i. Valves shall be Series 2360 resilient wedge gate valve (available in 2-inch through 12-inch) by Mueller Company of Decatur, Illinois; The Model A-USP0 resilient wedge gate valve (available in 2-inch through 12-inch) by

the US Pipe, Valve & Hydrant Division of Mueller Company of Decatur, Illinois; or approved equal;

ii. Comply with AWWA C509.

iii. Materials:

1. Body: Ductile iron.
2. Bonnet and gland bolts and nuts shall be either Type 304 or 316 stainless steel. The hot-dip process in accordance with ASTM A153 is not acceptable. Allen-wrench type bonnet and gland fastening shall not be acceptable and will be rejected.
3. Cast the word "OPEN" and an arrow indicating direction to open on each valve body or operator.
4. Seats: Resilient.
5. Wedges shall be totally encapsulated.
6. Stem:
 - a. Type: Non-rising.
 - b. Material: Bronze.
7. Operation:
 - a. 2-in square operating nut.
 - b. Open clockwise unless otherwise indicated.
8. End Connections: mechanical joint.
9. Coatings:
 - a. Comply with AWWA C550.
 - b. Interior and exterior.
10. Pressure Rating:
 - a. 12-inch Diameter and Smaller: 200 psig.
11. 16-inch Diameter and Larger: 150 psig.
12. Valves shall have mechanical joint ends compliant with AWWA C111 unless otherwise noted.

13. Thrust collars and stems shall be integrally cast (not pinned on) and shall feature copper alloy valve stems.
14. Units shall be, in addition, UL and FM approved.
15. Cast the word "OPEN" and an arrow indicating direction to open on each valve body or operator.
16. Extension shafts shall be Type 304 stainless steel and the operating nut shall be 2-in square. Shafts shall be designed to provide a factor of safety of not less than four. Operating nuts shall be pinned to the shafts.
17. Top of the operating nut shall be located 18-inches below the rim of the valve box.
18. A 10-year warranty shall be provided for all resilient seated gate valves furnished on the Project.

iv. Surface Preparation and Shop Coatings:

1. The interior ferrous metal surfaces, except finished or bearing surfaces, shall be blast cleaned in accordance with SSPC SP-10 and painted with two coats of an approved two-component epoxy coating specifically formulated for potable water use. The coating shall be NSF certified to Standard 61.
2. Exterior ferrous metal surfaces of all buried valve shall be blast cleaned in accordance with SSPC SP-6 and given two shop coats of an approved two-component coal tar epoxy paint.

b. Road Boxes

- i. Valve boxes shall be a heavy-pattern cast iron, three-piece, telescoping type box with dome base suitable for installation on the buried valves. Inside diameter shall be at least 4-1/2-in. Barrel length shall be adapted to the depth of cover, with a lap of at least 6-in when in the most extended position. Covers shall be cast iron with integrally-cast the word "WATER". Aluminum or plastic are not acceptable. A means of lateral support for the valve extension shafts shall be provided in the top portion of the valve box.
- ii. The upper section of each box shall have a top flange of sufficient bearing area to prevent settling. The bottom of the lower section shall enclose the stuffing box and operating nut of the valve and shall be oval.
- iii. All fasteners shall be Type 304 stainless steel.

6. Tapping Sleeves

- a. All tapping sleeves shall comply with AWWA Standard C-110
- b. Stainless Steel Sleeves for water mains less than 10":
 - i. Shall be JCM Industries Model 432, Smith-Blair Model 665, or approved equal from one of the following:
 1. Romac Industries (SST III)
 2. Ford Meter Box Co. (FTSS)
 3. Mueller Co. (H304SS)
 - ii. Outlets and hardware shall be stainless in all cases (no carbon steel or iron outlets).
- c. Solid Sleeves for mains greater than 12":
 - i. Shall be manufactured by the following:
 1. American Flow Control, Series 2800-C;
 2. Mueller, H-615;
 3. Romac Industries, FTS425; or
 4. Approved equal.
 - ii. Shall have total confined end gaskets and be designed to with a minimum working pressure of 200 psi. Nuts and bolts shall be Type 304 stainless steel. Nuts shall be coated per manufacturer's recommendations to prevent galling.
 - iii. The test plug shall be ¾-inch NPT, type 304 stainless steel
- d. Tapping valves shall comply with section of 5a of this specification.

7. Hydrants

- a. Hydrants shall be manufactured by the following:
 - i. Mueller, Super Centurian No. A-423;
 - ii. Darling B84-B-5;
 - iii. AVK Series 2780 Nostalgic Style Dry Barrel; or

iv. Kennedy K81-D

b. Dry-Barrel Breakaway Type:

- i. Comply with AWWA C502.
- ii. Body: Cast iron.
- iii. Valve: Compression type.
- iv. Burial Depth: See Bid Sheet.
- v. Inlet Connection Size: 6 inches.
- vi. Valve Opening: 5-1/4 inches in diameter.
- vii. Inlet Connections: Mechanical joint.
- viii. Bolts and Nuts: Bronze or rust proof steel
- ix. Hydrant operating nut shall be AWWA Standard pentagonal type measuring 1-1/2-in point to flat.
- x. Hydrants shall be equipped with O-ring packing
- xi. Hydrants shall be furnished with a repairable traffic breakaway flange.
- xii. Hydrants shall have an automatic drain that is operated by the main valve rod. The drain valve is to open as the main valve is closed and the drain valve is to close as the main valve is opened. The port and seat of the main valve shall be bronze.
- xiii. Interior Coating: Comply with AWWA C550.
- xiv. Direction of Opening: Counter-Clockwise (left) unless otherwise indicated and shall have a direction-to-open arrow with the word "OPEN" imprinted on the hydrant.

c. Hose Connections:

- i. One 4-1/2-in pumper, two 2-1/2-in hose nozzles
- ii. Threads shall be in accordance with National Standard
- iii. Attach nozzle caps by separate chains.
- iv. Each nozzle cap shall be provided with a Buna-N rubber washer

- v. Each hydrant shall be able to deliver 500 gallons minimum through its two 2-1/2 in hose nozzles when opened together with a loss of not more than 2 psi in the hydrant.
- vi. Hydrants shall be furnished with caps, double galvanized steel hose cap chain, galvanized steel pumper hose cap chain, a galvanized steel chain holder and any other hooks and/or appurtenances required for proper use.

d. Finishes:

- i. The interior ferrous metal surfaces, except finished or bearing surfaces, shall be blast cleaned in accordance with SSPC SP-10 and painted with two coats of an approved two component epoxy coating specifically formulated for potable water use. The coating shall be NSF certified to Standard 61.
- ii. Exterior ferrous metal surfaces of all buried valves and hydrants shall be blast cleaned in accordance with SSPC SP-6 and given two shop coats of an approved two-component coal tar epoxy paint.
- iii. All iron work to be set below ground, after being thoroughly cleaned, shall be painted with two coats of asphalt varnish specified in AWWA Standard C502 (latest revision).
- iv. Iron work to be left above ground shall be shop painted with two coats of 0.8 mil quality paint. Colors as specified below.
 - 1. Bonnet and port caps to be red
 - 2. Body to be "caution" yellow

e. Testing:

- i. Hydrants must be mechanically and hydrostatically tested as required by AWWA Standard C502 (latest revision). An affidavit of compliance is to be submitted upon request.

f. Warranty:

- i. Hydrants must remain under the manufacturer's warranty for 10 years from date of purchase

8. Flushing Hydrants (Blow offs)

- a. Shall be 2-inch Gil Industries Slimline hydrant or approved equal.
- b. MPT outlet

c. Operating nut shall open left.

9. Service Connections and Appurtenances

a. Service Pipe

i. Comply with ASTM B88.

ii. Shall be Type K Copper, annealed, seamless, and name and trademark of the manufacturer shall be stamped along the pipe.

iii. Fittings: Brass

1. Compression Fitting: Materials shall meet AWWA C-800 for brass fittings.

2. With a minimum pressure of 200 psi.

3. Lead Free

b. Service Saddles

i. Bodies: Double strap ductile-iron ASTM-A536, CC outlets.

ii. Straps: Carbon Steel ASTM-A108 (61018) electro-galvanized with di-chromate seal ASTM- B633.

iii. Studs: Type 304 – 5/8-inch stainless steel.

iv. Nuts: Cold formed semi-finished heavy hex steel A563 electro-galvanized with di-chromate seal ASTM-B633 or Type 304 stainless steel Teflon coated for stainless steel.

v. Washers: Carbon steel ASTM-A108 electro-galvanized with di-chromate seal ASTM-B633 or Type 304 stainless steel for stainless steel.

vi. Gaskets: Grade 60 compounded to resist oil, natural gas, acids, alkalies, hydrocarbon fluids, water and other chemicals.

vii. Finish: Fusion bonded nylon to a minimum thickness of 12 mils or optional topcoat enamel.

viii. Designed to hold pressures in excess of pipe working pressure.

ix. Shall be compatible with corporation stops detailed in Section 10.C below.

c. Corporation Stops

- i. Shall be Ford Style No. FB1000, for ¾-inch and 1-inch sizes, and Mueller Style H-15013 for 1-1/2-inch and 2-inch sizes unless otherwise approved or specified by the Water Utilities Division.
 - ii. Comply with ASTM B62.
 - iii. Body: Brass or red brass alloy.
 - iv. Inlet End: Threaded for tapping according to AWWA C800, CC Threads.
 - v. Outlet End: Pack Joint
 - vi. Withstand a minimum pressure of 200 psi.
 - vii. Lead free
- d. Curb Stops
 - i. Shall be Ford Style Nos. B44-333/B44-444 for ¾-inch and 1-inch sizes, and Mueller Style P-15209 for 1- 1/2-inch and 2-inch sizes unless otherwise approved or specified by the Water Utilities Division.
 - ii. Comply with AWWA C800 and ASTM B62, CC Threads.
 - iii. Body: Bronze
 - iv. Inlet End: Pack Joint Nut
 - v. Outlet End: Pack Joint Nut
 - vi. Withstand a minimum pressure of 200 psi.
 - vii. Lead free
- e. Service Boxes
 - i. Body: Cast iron.
 - ii. Type: 2 1/2-inch “Buffalo”
 - 1. Including Centering Ring
 - iii. Extension: Range between 40” to 60”
 - iv. Base: stationary rod and arch pattern.
 - v. Lid:
 - 1. Inscription: WATER.

2. Plug: Pentagonal

10. Delivery

- a. All materials shall be delivered to the City of East Providence Department of Public Works Yard at 60 Commercial Way East Providence, RI 02914

11. Due Date

- a. Proposals are due on February 03, 2022 no later than 11:00am and must be addressed to:
East Providence City Hall
Controller's Office, Room 103
Attn: Ryan McCauley, Procurement Specialist
145 Taunton Avenue
East Providence, Rhode Island 02914

12. City Contacts

- a. Any questions regarding this RFP must be directed to Jim Marvel, Superintendent of the Water Utilities Division at jmarvel@eastprovidenceri.gov by Thursday, January 27, 2022 at 4pm.