



March 3, 2023

Mr. Michael Fonseca, President
NCD Developers Inc.
370 Metacom Avenue
Bristol, RI 02809

RE: Water Main Extension, Massasoit Avenue, Bristol – PLAN APPROVAL

Dear Mr. Fonseca:

Bristol County Water Authority has reviewed your Application for a Water Main Extension and the related plans prepared and stamped by Principe Company, Inc., titled Preliminary Minor Subdivision AP 158, Lots 20 & 25 and Massasoit Avenue Extension, dated 8/17/17 with latest revision date 7/17/18. The Plans show a proposed four lot residential subdivision in Bristol, RI, which includes connecting the existing 8" water mains in Massasoit Avenue and Abilio Drive with approximately 550 feet of new 8" diameter cement lined ductile iron water main. BCWA approves the proposed water main extension with the following conditions:

1. The average static water pressure in this area of the BCWA distribution system is less than 35 psi; the developer of the subdivision must design, purchase and install individual pressure booster systems, including backflow prevention devices, in each home - at no cost to BCWA. This requirement must be recorded in the land evidence records for each lot. The new water mains will not be put into service until the recorded deeds are submitted to BCWA.
2. The contractor must contact BCWA prior to starting construction to complete all required paperwork and submit required proof of insurance, bond and fees. A current Contractor Certification Form must be signed and submitted with these documents. A Warranty Bond valued at \$25,000 shall be provided to BCWA (Bond template to be provided by BCWA). Shop drawings for all proposed materials and a construction schedule must be submitted for review and approval. BCWA personnel must be onsite for inspection during the installation of all water main and appurtenances. Reimbursement for inspection done by BCWA personnel shall be determined and paid prior to start of construction.
3. BCWA standard construction details, specifications and installation requirements shall be used for all water main work. Ductile iron pipe shall be zinc coated and V-Bio wrapped. Pipe bedding shall be gravel borrow in conformance with RIDOT "Standard Specifications for Road and Bridge Construction" Class B Bedding,

Article M.01.04. Backfill material shall be inspected and approved by BCWA prior to backfilling the trench.

4. Pressure/leakage tests and disinfection shall be performed in accordance with BCWA requirements. Contact BCWA to confirm procedures prior to completion of construction. BCWA will obtain water quality samples and have bacteriological analyses performed to confirm that the new mains have been adequately disinfected. The new water main shall not be connected to the BCWA distribution system or put into service until BCWA approval is received.
5. Corporations and service pipe shall be installed, up to and including the curb stop at the property line, by the Owner in accordance with BCWA Specifications. Please complete an application for each lot. Service piping to each home shall a continuous length of 1" diameter type K copper tubing. Water meters for lots 1, 2 and 4 shall be installed inside the home per BCWA detail and shall be easily accessible by BCWA personnel for inspections, repairs, etc. The water meter for Lot 3 shall be installed in a meter pit located near the property line. The water service pipe from the meter pit to the home may be PE plastic tubing, if installed in a continuous length (no joints), from the meter pit to the home.

If you require additional information, please contact me at 245-2022 ext 38.

Very truly yours,



Susan H. Rabideau, PE
Engineering Project Manager

Attachments: Contractor Certification, BCWA Material and Installation Specifications, Meter details, New Service Connection Application Form

Cc: Diane Williamson, Town of Bristol

Contractor Obligations



Applicant Information

Date: _____

Property Owner: _____

Address: _____

Developer: _____

Address: _____

Contractor Information

Contractor: _____

DBA: _____

Address: _____

City/State/Zip: _____

Phone: _____ Email: _____

Contractor Certification to BCWA

Plan titled _____ dated _____

Stamped by _____ BCWA Approval Letter dated: _____

The undersigned, _____, authorized

representative of _____, do hereby agree to the following

☐

to install the water main described in the Plans referenced above and approved by BCWA, including any and all conditions included in the BCWA approval letter.

☐

to read, understand and to perform all work in accordance with the BCWA Standard Specifications For Main Installation, latest revision (currently "Spec 100") except as modified herein.

☐

to perform all work in strict accordance with all federal, state and local permits and requirements.

Copies of all permits must be submitted to BCWA.

☐

to maintain a valid RI Underground Utility Contractor's license, # _____ expires _____

Bonding Company _____ Contact: _____

☐

to warranty all materials and workmanship, including pavement restoration, for 12 months after the water main is put in service.

☐

to provide proof of insurance, in the amounts required by BCWA and listing BCWA an additional insured.

☐

to provide a Maintenance Bond to the BCWA in the amount of \$ 25,000.

☐

to provide shop drawing to BCWA for all materials to be installed and will not proceed until approval is received and to provide an as-built drawing to BCWA once the installation is complete.

☐

to provide estimated fees to BCWA in the amount of \$ _____. Any additional fees to be apaid at completion.

☐

to the fullest extent permitted by law, to indemnify and hold harmless the BCWA, its officers, directors and employees, against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, related to any claims arising from the performance of any work related to the attached Plan and for any failure to fully perform the work identified on the attached Plan.

BCWA
Initials

The undersigned acknowledges that the BCWA is a separate entity from the undersigned, and that nothing contained herein is intended, or is to be construed, to constitute any form of partnership or joint venture. The undersigned has no right or authority, express or implied, to assume, create, or incur any expense, liability or obligation on behalf of, or in the name of, the BCWA. In addition, nothing herein shall be construed to create any agency or employment relationship with the BCWA."

Signature: _____ Date _____

Authorized Agent

Name of Job Superintendent: _____ Contact #: _____



Bristol County Water Authority
Approved Material Specification
For Water Main, Services and Appurtenances
2019

Pipe:	<p>Size: 4'' thru 30''</p> <p>Type: Ductile Iron, AWWA C151, American Manufacture</p> <p>Thickness Class: 52, AWWA C150</p> <p>Joint Type: Push on Joints, AWWA C111</p> <p>Gasket: Rubber, AWWA C111</p> <p>Interior Surface: Cement Mortar lining, double thickness, with bituminous material seal coat, AWWA C104</p> <p>Exterior Surface: Active inner layer of 200 g/m² of pure metallic zinc under asphaltic coating, AWWA C151, ISO 8179-1, Ductile Iron Pipes-External Zinc-based Coating-Part 1: Metallic Zinc with Finishing Layer (ISO 2004)</p> <p>Model Accepted: US Pipe, TYTON® Joint Pipe or approved equal</p>
Polyethylene Encasement:	<p>Size: 4'' thru 30''</p> <p>Type: V-BIO polyethylene encasement</p> <p>Spec: Consists of three layers of co-extruded linear low-density polyethylene film fused into one 8 mil thick. The inside surface must be infused with a proprietary blend of an anti-microbial compound to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion. Installation must be in accordance with AWWA C600 and M41</p> <p>Model Accepted: V-BIO Polyethylene Encasement ANSI/AWWA C105/A21.5 or approved equal, Trumbull PolyWrap Tape Model #364-9975 or approved equal</p>
Service Pipe:	<p>Size: 1''</p> <p>Material Accepted: Type "K" Copper ASTM-B88, AWWA C800</p> <p>Size: 2''</p> <p>Material Accepted: Type "K" Copper ASTM-B88, AWWA C800 or PE 4710 CTS, AWWA C901</p> <p>Model Accepted: Cambridge-Lee Industries LLC, smooth wall copper, Endot Endopure PE 4710 or approved equal</p>

Restrained Joint Pipe:	<p>Size: 4'' thru 30''</p> <p>Type: Ductile Iron, AWWA C151, American Manufacture</p> <p>Thickness Class: 54, AWWA C150</p> <p>Joint Type: Restrained Push-On Joints, AWWA C111 (TR-Flex, as manufactured by U.S. Pipe & Foundry Co.)</p> <p>Gasket: Rubber, AWWA C111</p> <p>Interior Surface: Cement-mortar lining, double thickness, with bituminous material seal coat, AWWA C104</p> <p>Exterior Surface: Asphaltic coating approx. 1-mil thick, AWWA C151</p> <p>Model Accepted: US Pipe, TR FLEX® Restrained Joint Pipe or approved equal</p>
Restrained Couplings:	<p>Size: 4'' thru 30'' Ductile iron, 4'' thru 12'' HDPE in conjunction with wall stiffening insert</p> <p>Model Accepted: MEGA-COUPLING Series 3800, as manufactured by EBAA Iron, Inc. of Eastland, TX, AWWA C219 or approved equal.</p>
Restraint Devices:	<p>Size: 4'' thru 30''</p> <p>Material: ASTM A536 Ductile Iron, with M.J (DEC accessory kit)</p> <p>Model Accepted: EBAA MEGALUG Series 1100DEC thrust restraint wedge kit, or approved equal</p>
Pipe Fittings:	<p>Size: 4'' thru 24''</p> <p>Type: Ductile Iron, AWWA C153 (compact)</p> <p>Pressure Rating: 350 psi</p> <p>Joint Type: Mechanical Joints, AWWA C111 Gasket: Rubber, AWWA C111</p> <p>Interior Surface: Cement-mortar lining, double thickness, with bituminous material seal coat, AWWA C104</p> <p>Exterior Surface: Asphaltic coating approx. 1-mil thick, AWWA C151</p> <p>Model Accepted: US Pipe model C153 (Compact) Mechanical Joint or approved equal</p>

Pipe Couplings:	<p>Size: 2'' thru 16''</p> <p>Type: Cast, bolted straight and transition, epoxy coated and 304 Stainless Steel hardware with fluoropolymer coated nuts to prevent galling</p> <p>Model Accepted: Smith-Blair No. 441, AWWA C219 or approved equal</p>
Wide Range Coupling	<p>Size: 2'' thru 12''</p> <p>Type: Body will be made of steel, AISI 304 stainless steel nuts and bolts with rolled thread and anti-galling coating, 100% fusion bonded epoxy for enhanced corrosion protection (nominal thickness 14 mil), EPDM gaskets, capable of 4 degree dynamic deflection per end</p> <p>Pressure rating: 260 psi working pressure</p> <p>Model Accepted: Krausz Hymax AWWA C-219, NSF 61, NSF 372, Smith Blair 421 or approved equal</p>
Air Release:	<p>Size: 1'' thru 2''</p> <p>Body Style: Curb Valve F.I.P. thread - both ends Quarter turn check and drain, with a copper riser tube (to include TWO: 1" IPT to 1" type "K" copper fittings).</p> <p>Model Accepted: Mueller H-10284 or approved equal</p>
Blow-off:	<p>Size: 2"</p> <p>Type: 2" stop & drain valve, top of riser pipe shall be female thread, 2" riser pipe to the length required, must be capable to be installed within a 5 1/4" telescope type valve box with cover marked "WATER".</p> <p>Installation Material: Must be used in conjunction with 2'' red brass schedule 80 nipple, then attached to a 2'' IPT tapped cap with a mechanical joint end, 2'' IPT plug with a mechanical joint end or 2'' approved corporation stop.</p> <p>Model Accepted: "6HS Slimline model" Gil Industries Aquarius Blow-Off System of Pensacola Florida, or approved equal.</p>
Mainline Repair Clamps:	<p>Size: 2'' thru 12''</p> <p>Body Style: All Stainless Steel full circle repair clamp, 7.5'' or 10'' length</p> <p>Model Accepted: Ford Style F1 (Single Section) or approved equal.</p>

Service Saddle:	Size: 2'' thru 30'' Body Style: Stainless steel band saddle Model Accepted: Ford FS202 or approved equal
Tapping Sleeve:	Size: 4'' thru 30'' Style: Full Circle Material: 18-8 type 304 Stainless steel Hardware: Shall be 18-8 type 304 Stainless steel, Nut shall be heavy hex and coated to prevent galling Model Accepted: Ford FTSS or approved equal
Tapping Valve:	Size: 2'' thru 12'', OPEN RIGHT, Flanged x Mechanical Joint Hardware: Type 304 Stainless steel Interior and Exterior Coating: Epoxy coated with a minimum thickness of 8 mils Model Accepted: Mueller T-2360-16, AWWA C509, or approved equal
Gate Valves:	Size: 4'' thru 12'', OPEN RIGHT, Mechanical Joint Hardware: Type 304 Stainless steel Interior and Exterior Coating: Epoxy coated with a minimum thickness of 8 mils Model Accepted: Mueller A-2362-23, AWWA C509 or approved equal.
Insertion Valves:	Size: 4'' thru 16'', OPEN RIGHT Model Accepted: EZ Valve as manufactured by Advanced Valve Technologies, LLC, TEAM InsertValve, AWWA C509 for material specifications, or approved equal.
Butterfly Valves:	Size: 4'' thru 24'', OPEN RIGHT, Mechanical Joint Model Accepted: M&H Style 4500, AWWA Class 150B Butterfly valves or approved equal
Valve Boxes:	Size: 5-1/4" shaft, 2-Piece Type: Sliding Type, with cover marked "WATER". Model Accepted: Bingham and Taylor model 4908, size number 5564-S or approved equal.

Curb Boxes:	<p>Size: 2-½” shaft, 2 piece</p> <p>Top Section: 29” long</p> <p>Bottom Section: 37.5” long</p> <p>Type: Buffalo style, sliding type with 33inch long stationary rod, ring and pin with cover marked “WATER”</p> <p>Model Accepted: Bingham and Taylor model 4901, size number 94-F or approved equal.</p>
Corporation Stops:	<p>Size: 1" or 2"</p> <p>Body Style: AWWA/CC taper thread inlet by pack joint outlet for copper.</p> <p>Model Accepted: Ford FB1000 Ball Corp, AWWA C800, or approved equal. Product must meet or exceed NSF 61 and NSF 372.</p>
Curb Stop:	<p>Size: 1” or 2”</p> <p>Body Style: pack joint for copper by pack joint for copper</p> <p>Model Accepted: (1”) Ford B-44-444-NL, (2”) Ford B44-777-NL or approved equal. Product must meet or exceed NSF 61 and NSF 372.</p>
Meter Coupling:	<p>Size: 5/8” thru 2”</p> <p>Body Style: (NO LEAD) Straight meter coupling by male iron pipe thread</p> <p>Model Accepted: Ford model C38-23-2-5-NL thru C38-77-NL or approved equal. Product must meet or exceed NSF 61 and NSF 372.</p>
Meter Flange:	<p>Size: 1-½” thru 2”</p> <p>Body style: (NO LEAD) meter flange, 2 steel bolts and nuts (5/8”x 2-1/2”, zinc plated) and drop in rubber gasket</p> <p>Model Accepted: Ford model CF31-66-NL thru CF38-77-2-125-NL or approved equal. Product must meet or exceed NSF 61 and NSF 372.</p>
Meter Pit:	<p>Size: 5/8” meter to 2” meter</p> <p>Body Style: Standard Plastic Pit Setter for moderate to cold climates, double lid with top lid labeled “WATER”</p> <p>Model Accepted: 5/8”x ¾” Ford model PDVHH-244-18-48-NL, 1” Ford model PDVHH-488-20-48-NL, 1-½-2” Ford model PDVHH-788-36HB-48-NL or approved equal.</p>

Above ground

Meter vault:

The vault shall be an insulated heated enclosure of aluminum construction and shall comply with ASSE 1060, Class I. The vault interior dimensions shall be appropriately sized by the manufacturer based on interior piping items. The enclosure must be capable of maintaining a minimum temperature of 40F (4C) and shall be supported by a concrete pad in accordance with the manufacturer's recommendations. It shall be manufactured by Hot Box or an approved equal. Vaults located in open areas such as public parks, playgrounds or ballfields shall be enclosed by a 6-foot high chain link fence and locking gate in accordance with RIDOT Standard 31.2.

Hydrants (Barrington):

Hose Nozzle Size: 2 1/2" hose nozzle (G.A.N.S thread)

Pumper Nozzle Size: 4-1/2" pumper nozzle (G.A.N.S thread)

Base: 6" Mechanical Joint Base

Valve Opening: 5 1/4" main valve opening

Operating Nut and Caps: 1-3/8" point to flat pentagon (OPEN LEFT)

Color: Shall be two coats of factory applied paint. Barrel shall be Safety Yellow gloss exterior alkyd enamel; the bonnet and caps shall be Silver Aluminum gloss exterior alkyd enamel, **NO SUBSTITUTION.**

Model Accepted: Mueller Super Centurion 250 with 5-1/4" valve or American Darling B-84-B with 5-1/4 valve, **NO SUBSTITUTION.**

Hydrants (Bristol/Warren):

Hose Nozzle Size: 2-1/2" hose nozzle (G.A.N.S thread)

Pumper Nozzle Size: 4" pumper nozzle (G.A 7-465 thread)

Base: 6" Mechanical Joint Base

Valve Opening: 5-1/4" main valve opening

Operating Nut and Caps: 1-3/8" point to flat pentagon (OPEN LEFT)

Color: Shall be two coats of factory applied paint. Barrel shall be Safety Yellow gloss exterior alkyd enamel; the bonnet and caps shall be Silver Aluminum gloss exterior alkyd enamel, **NO SUBSTITUTION.**

Model Accepted: Mueller Super Centurion 250 with 5-1/4" valve or American Darling B-84-B with 5-1/4" valve, **NO SUBSTITUTION.**

Hydrant Repair Kit

American Darling B-84-B: **Model Accepted:** American Darling product number 42714 or approved equal

Hydrant Extension for

American Darling B-84-B: **Model Accepted:** B-84-B-5 top extension product number 42720-42720 3 or approved equal.

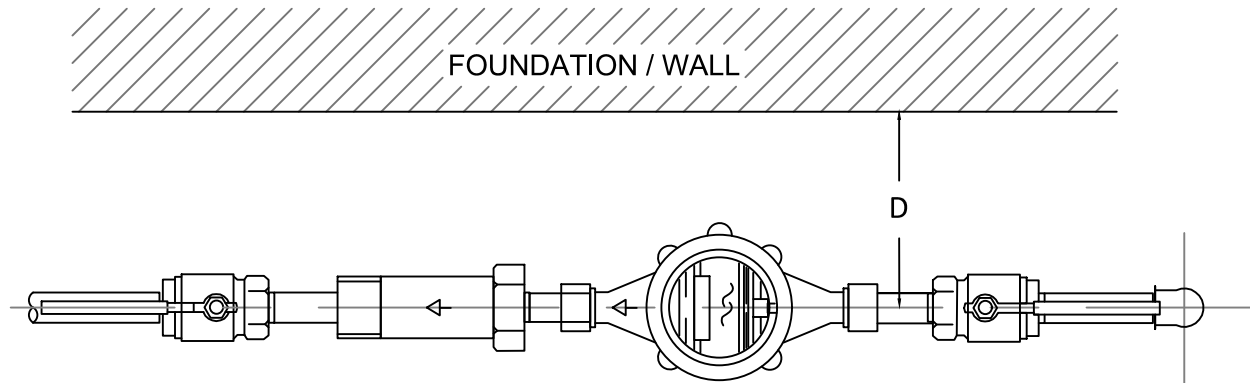
Hydrant Repair Kit Mueller

Super Centurion 200/250: **Model Accepted:** Mueller product number A-300 (4 ½" valve), A-301 (5 ¼" valve) or approved equal

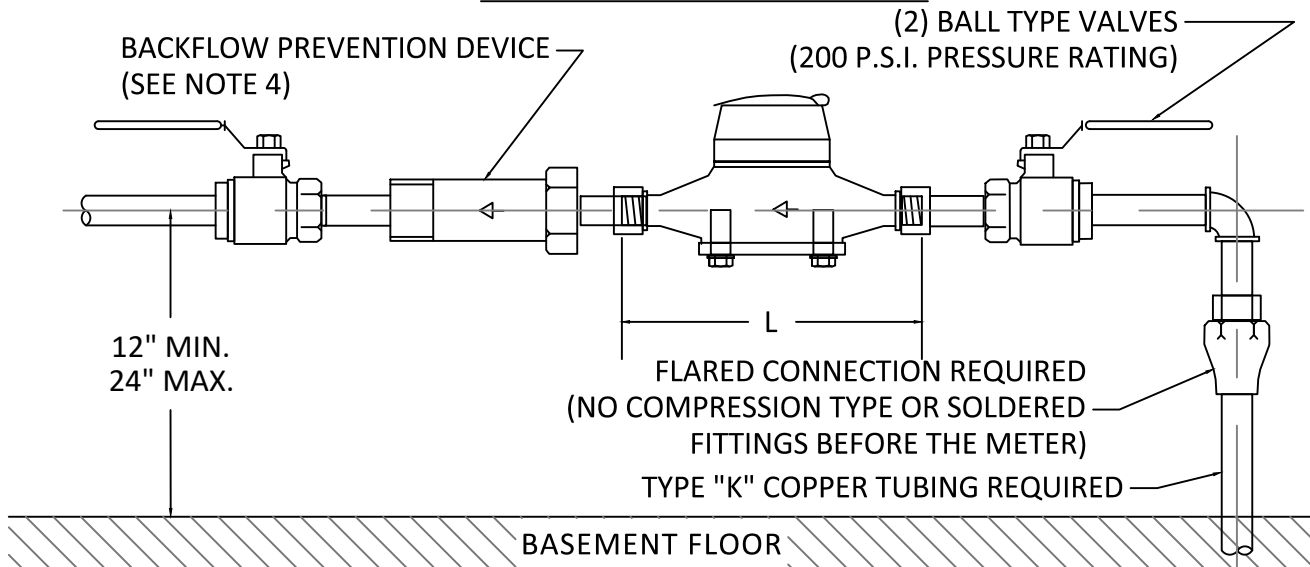
Hydrant Extension Kit for

Mueller Super Centurion 250: **Model Accepted:** Mueller product number A-319 (4 ½" valve), A-320 (5 ¼" valve) or approved equal

2" HDPE main <https://www.endot.com/products/endopure>



METER INSTALLATION - TOP VIEW



METER INSTALLATION - SIDE VIEW

NOTES:

1. THE METER SHALL BE INSTALLED AT THE POINT WHERE THE SERVICE LINE ENTERS THE FOUNDATION. OPEN ACCESS SHALL BE PROVIDED AROUND METER SETTING TO ALLOW FOR MAINTENANCE. METER SETTINGS IN CRAWL SPACES OR UNDER STAIRWELLS IS UNACCEPTABLE.
2. THE METER SHALL BE INSTALLED HORIZONTALLY.
3. METERS INSTALLED INSIDE BUILDINGS SHALL NOT BE INSTALLED IN PITS.
4. INDIVIDUAL RESIDENCES (RESTRICTED TO 3-UNIT RESIDENCES OR LESS) REQUIRE A RESIDENTIAL DUAL CHECK VALVE; ALL OTHER WATER SERVICES REQUIRE A BCWA APPROVED TESTABLE BACKFLOW PREVENTION DEVICE IN ACCORDANCE WITH BCWA RULES & REGULATIONS. ALL MODELS OF BACKFLOW PREVENTION DEVICES SHALL MEET NSF 61 LEAD FREE REQUIREMENTS.
5. UL APPROVED ELECTRICAL JUMPER REQUIRED IF GROUNDING.

METER SIZE	L	D
5/8"	7 1/2"	12"
3/4"	9"	12"
1"	10 3/4"	12"
1 1/2" (FLANGED END)	13"	18"
2" (FLANGED END)	17"	18"

BRISTOL COUNTY WATER AUTHORITY

450 CHILD STREET, WARREN, RHODE ISLAND

METER INSTALLATION DETAIL

NOT TO SCALE



SECTION
WATER MAIN
INSTALLATION

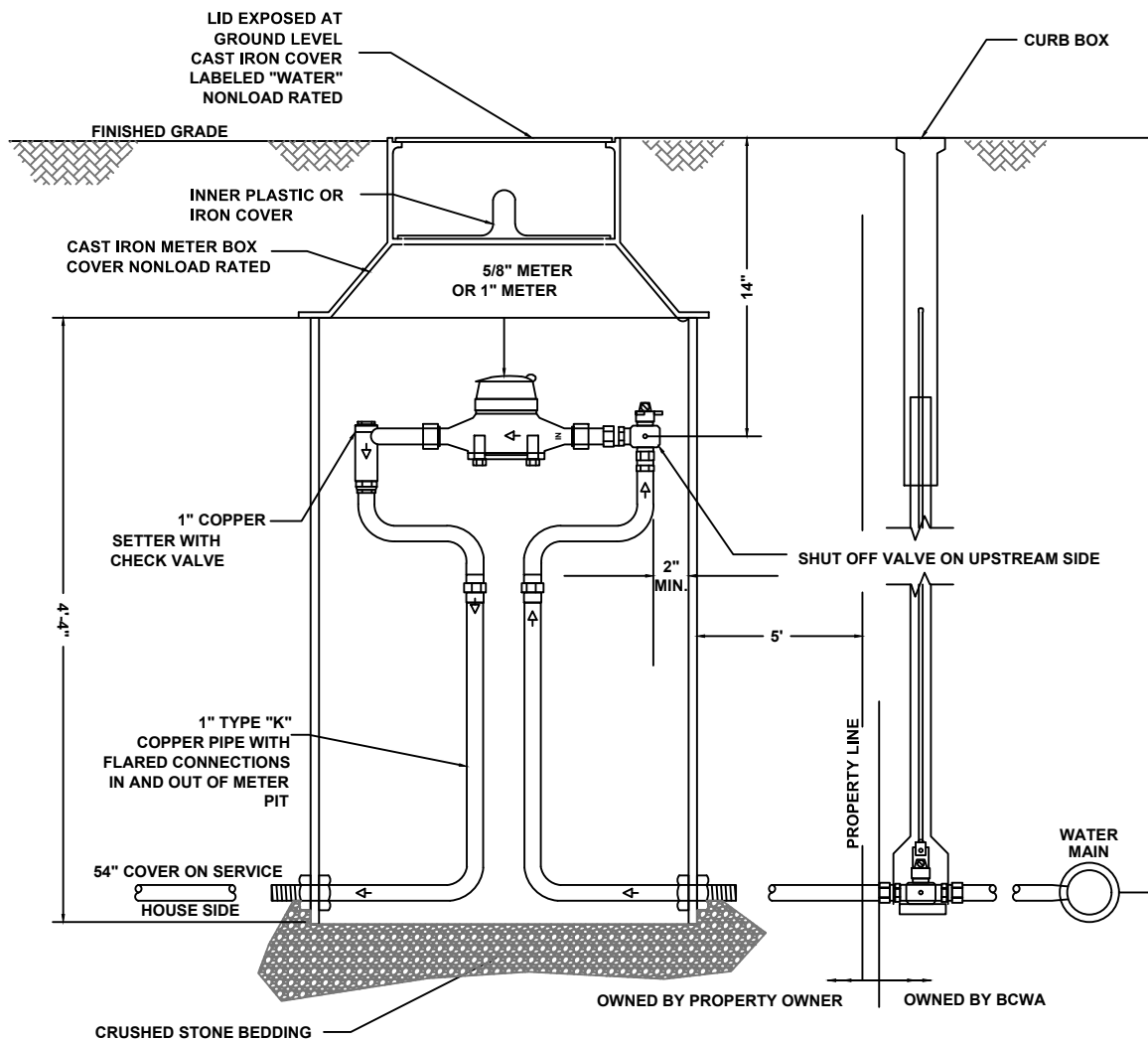
DECEMBER 2018

DETAIL No.

WM-1

REVISIONS:

11/2018 - CONVERTED TO AUTOCAD



NOTES:

- 1.) METER PIT SHALL BE FORD MODEL W-32 OR EQUAL. COVER TO BE FORD WABASH W32, DOUBLE LID AND MUST BE APPROVED BY BCWA.
- 2.) METER TO BE SUPPLIED BY BCWA.
- 3.) ALL MATERIALS, BEDDING AND BACKFILL PER BCWA SPECIFICATIONS.
- 4.) ALL WORK AND MATERIALS SHALL BE INSPECTED AND APPROVED BY THE BCWA PRIOR TO BEING BACKFILLED AND/OR ACTIVATED.
- 5.) WHENEVER THERE IS A DISCREPANCY BETWEEN THIS DETAIL AND THE WRITTEN SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.

BRISTOL COUNTY WATER AUTHORITY

450 CHILD STREET, WARREN, RHODE ISLAND

1-INCH SINGLE SERVICE PIT

NOT TO SCALE



SECTION
WATER MAIN
INSTALLATION

DECEMBER 2018

DETAIL No.

WM-2

REVISIONS:

11/2018 - CONVERTED TO AUTOCAD

Application for New Water Service or Meter Installation



Applicant Information

Date: _____

Property Owner (please print): _____

Owner's Signature: _____

Corporate Title (if not an individual): _____

Address: _____

Phone: _____ Email: _____

Contractor: _____

Phone: _____ Email: _____

Location

Preliminary request is hereby made for a ____ connection ____ reconnection to BCWA public water system to serve this property (site plan attached):

Address/Plat and Lot: _____ Town _____

☐ Domestic Service (Residential or Commercial)

Residential Units: _____

Bathrooms: _____

Pool/HotTub? _____

Irrigation? _____

Meter size requested _____

Commercial

Bldg Footprint: _____

Occupancy: _____

Est. Water Use: _____

Meter size requested _____

☐ Fire Service*

Dry System: _____

Wet System: _____

*Demand calculations req'd

* Attach Fire Flow Test Results

For BCWA Office Use Only

Action by the Bristol County Water Authority

Water Main in Front of Lot? YES NO Existing Service Available? YES NO

Additional Paving Required: YES NO Add'l Rock Excavation Required: YES NO

High Service? YES NO Approximate Static Pressure: _____ psi

Recommended Meter Size: _____ Meter Pit? (service > 75 feet) YES NO

Backflow Device Required: YES NO Type _____

☐ Application Reviewed

BCWA Operations Dept: _____

☐ Application Approved

BCWA Engineering Dept: _____ Date _____

☐ Added to GIS Map

BCWA Engineering Dept: _____ Date _____

Conditions: 1. Service pipe on property to be a continuous run of 1" diameter type K copper tubing.

2. Contact BCWA for inspection prior to backfill. 401-245-2022 ext 38

3. _____

Meter and Connection Fee: CASH OR CHECK MADE OUT TO BCWA ONLY

BCWA Service Number: _____ Property Street Address _____

☐ TAP (1" tap est. \$ 4000)

☐

METER(s) (5/8 " = \$185)

Total Due _____

\$ _____

\$ _____

Payment Received

Date: _____ Amount: _____

Deposited to Acct 90510