

**EASTHAM MUNICIPAL WATER SYSTEM**

**RULES AND REGULATIONS**

**Adopted September 6, 2016,**

**Revised January 2018**

**Revised July 15th 2019**

**Revised March 9<sup>th</sup>, 2020**

**TABLE OF CONTENTS**

<b>SUBJECT</b>		<b>PAGE</b>
	Preamble, Policy and Purpose	
SECTION 1	Responsibility and Ownership	2
SECTION 2	Definitions and Abbreviations	2
SECTION 3	Responsibilities and Liabilities of the Consumer	5
SECTION 4	General Responsibilities	7
SECTION 5	Town of Eastham Disclaimer of Liabilities	7
SECTION 6	Procedures for Service Installation & Use	8
SECTION 7	Billing for Services	12
SECTION 8	Violations & Penalties	15
SECTION 9	Private Roads	16
SECTION 10	Authentication	18
APPENDIX A	Water Use Rates & Fee Schedule	19
APPENDIX B	Regulations for Installation	22
APPENDIX C	Schematic Diagram of Typical Connection	29

As adopted by the Board of Water Commissioners, September 6, 2016,  
revised January 2018.

## **PREAMBLE**

By virtue of statutory and other authority, and powers as described by M.G.L., Chapter 40, Section 39(A) through Section 39(G) inclusive, and adopted by the May 4 , 2014 and 2015 Town Meeting(s) in Article 8; to establish a municipal water supply and water distributing system, the Board of Water Commissioners (hereinafter called BWC) of Eastham, Massachusetts (hereinafter called Town) establishes the following rules and regulations, fees and charges related to providing potable water from the Eastham Municipal Water System (hereinafter called Water System).

The Water System as defined in Paragraph 2.23 will be operated and maintained by the Town of Eastham, through the Water System Operator under the direction of the BWC.

The Water System's approval of an application for service binds the Consumer to present and future Rules and Regulations and to present and future payment of all applicable Fees, Rates and charges.

The BWC may enact changes to the Policy, Rules, Regulations and Fees contained herein only after a Public Hearing.

## **POLICY & PURPOSE**

The BWC will guide and direct the future and present development and operation of the Water System with the following goals and vision:

- 1) **NEED:** Provide potable drinking water to Eastham properties that do not have a potable water source, and to allow property owners a choice to connect to the Water System unless otherwise required under Massachusetts regulatory requirements or Eastham Board of Health regulations to connect to the municipal water system. The BWC reserves the right to extend water service into adjacent Towns for purposes of emergency interconnections or servicing customers that are not feasibly served by the adjacent Town's water system.
- 2) **SELF SUSTAINING:** Establish and maintain a financially sound and self-sustaining management structure for the Water System.
- 3) **RESOURCE PRESERVATION:** Encourage conservation. Maintain and improve water resource protections.
- 4) **INFRASTRUCTURE:** Provide a Water System infrastructure such that the character of the Town will be preserved as well as a means to encourage a vital local economy; of which current and future municipal, commercial, and residential uses of properties in Eastham will benefit.
- 5) **VISION:** Implement the Town's desire to provide water service to all developable properties in Eastham. Also to consider all possibilities that will improve service, reduce costs and increase revenue, even if it requires extension

into adjacent communities.

- 6) **REGULATION:** Comply with the requirements of the Massachusetts Water Management Act, Massachusetts Drinking Water Regulations (310 CMR 22.00, Town of Eastham Code and all other laws and regulations governing a municipal Public Water Supply (PWS).

## **SECTION 1 - RESPONSIBILITY AND OWNERSHIP**

- 1.1 The BWC shall be responsible for overseeing the repairs, maintenance, and reconstruction of the existing and the construction of new Town-owned capital facilities. For the purposes of this regulation, “capital facilities” shall mean water storage tanks, pump stations and appurtenances, water mains, gates, hydrants, office space and administrative requirements and appurtenances in public ways and private ways where system components are located.
- 1.2 The water service lines from the curb stop to the individual buildings are the responsibility of the property owners for new and existing water service installations including repairs (except water system meters), alterations and maintenance. (See **Appendix B**).
- 1.3 All Town-owned water mains and water service lines (water main to the curb stop) that are in public or private streets are the responsibility of the Town.
- 1.4 All fire hydrants connected to the Water System are owned and maintained by the Town.
- 1.5 All Consumers and users of the Water System will be charged for water consumption, according to one and the same fee schedule. (See **Appendix A**).
- 1.6 The BWC may declare a STATE OF WATER EMERGENCY if it finds there exists a water shortage or an impending water shortage; and/or a Declaration of Water Emergency has been made under Massachusetts General Laws, Chapter 21G as it is deemed essential to the protection of the public health, safety and welfare. In so doing, the BWC may establish priorities for the distribution of water or water use by a specified amount or to share water with other water systems, in accordance with M.G.L Chapter 40, Section 41A. The BWC may also choose to develop a drought management or contingency plan and institute a conservation program for public and private use.

## **SECTION 2 - DEFINITIONS AND ABBREVIATIONS**

- 2.1 **BACK FLOW PREVENTER:** The Back Flow Preventer prevents the flow of water from the building into the Water System. ( See **Appendix B**).
- 2.2 **BASE SERVICE FEE:** The fee is assessed on every Water Use bill regardless of amount of water used or the use of the property. Fees are used in part to offset costs of

Water System operation.

- 2.3 BOARD OF WATER COMMISSIONERS (BWC):** As defined in General Laws, Chapter 40, Section 39A through Section 39G inclusive, and adopted by the Town, the Board of Water Commissioners is charged with overseeing the repairs, maintenance, construction, and reconstruction of the Eastham Municipal Water System.
- 2.4 CONSUMER:** The word "Consumer" shall mean any person, partnership, firm, corporation, or organization of any type in which the owner(s) property is supplied with water by the System. The Consumer shall customarily be the owners(s) of record or the duly authorized representative of the property being supplied with water.
- 2.5 CORPORATION STOP:** A water service shutoff valve located at a street water main. This valve cannot be operated from the ground surface because it is buried and there is no valve box. ( See **Appendix B**).
- 2.6 CURB BOX:** See **CURB STOP**.
- 2.7 CURB STOP:** The curb stop is inside an in-ground structure called a CURB BOX located at (or near) the property line, which contains a service valve. The service valve is the connecting point between the service line (from the water main) and the service line into the building receiving the water. The curb stop and service valve are the property of and maintenance responsibility of the Town. ( See **Appendix B**).
- 2.8 FULL FLOW CONTROL VALVE:** The Full Flow Control Valve is a water flow control valve located inside the foundation of a building, between the end of the service pipe and the water meter. If a meter pit is specified, the full flow control valve and check valve are included in the meter pit assembly. (See **Appendix B and C**).
- 2.9 HOT BOX:** A hot box may be installed in lieu of an underground meter vault. The hot box is an aboveground structure designed to keep the meter safe, dry, and accessible but must be heated to prevent freezing of the water service line and meter.
- 2.10 LIEN:** The word lien shall mean the statutory claim a municipality may impose as defined in M.G.L., Chapter 40 Section 42(A).
- 2.11 METER PIT:** If Water System Meters are not inside a heated building, they must be protected from weather and freezing. In order to do this a meter pit, hot box, or vault must be installed to house the meter. The meter pit must be located at least 4.5 feet below ground to prevent freezing. For buildings without basements or that are located over 150 feet from curb stop, a meter pit will be required. For lots with multiple structures, the Operator will determine if a Water System Meter within a meter pit or vault is required.
- 2.12 OPERATOR:** See Water System Operator.
- 2.13 NON-WATER SYSTEM METER(S):** a device for measuring and recording the flow of water downstream of a Water System Meter, to be used for allocating flow among

multiple units on the same parcel. The Consumer owns the Non-Water System meter(s) and the Consumer is responsible for furnishing installing and maintaining the meter(s).

- 2.14 PUBLIC OR PRIVATE WAY:** A public or private way is the Town-owned or privately-owned road or street improved and open to the public as a throughway.
- 2.15 SERVICE LINE:** The service line is a pipe that connects the water supply main through the curb stop to inside the building receiving the water. The service line between the water main and the curb stop is the property and responsibility of the Town. The service line into the building from the curb stop is the responsibility of the Consumer. ( See **Appendix B**).
- 2.16 SERVICE PIPE:** See SERVICE LINE.
- 2.17 SERVICE VALVE:** Water flow control valve located inside the Curb Stop.
- 2.18 SITE PLAN:** When applying for a new service connection or alteration, a drawing that is drawn to scale is required to show the a) location of the existing drinking water source (e.g., private well) b) building's location, c) location of the septic system d) location of all underground utility lines (electric, gas, etc.), e) proposed location of the water service pipes, water meter, valves, anti-backflow device and any other required components between the curb stop and into the building, and f) the current and future (if known) land use of the property. The **SITE PLAN** must be included with an application for a new connection and approved by the Water System Operator. In most instances, a Plot Plan or the Septic Plan (on file at the Board of Health) is acceptable if modified to show all the required site plan items.
- 2.19 TIE SHEET/ AS-BUILT DRAWING:** A drawing showing the locations of the pipes, meter, meter pit (if applicable), with respect to the septic system, buildings, underground utilities and any other aspect of the water service going into a building from the water main. The tie sheet is usually prepared by the contractor who installs the new water service between the curb stop and the building. Sometimes it is called an "**AS- BUILT**" drawing. This drawing or tie sheet is submitted after the service connection is completed by the Consumer or its representative.
- 2.20 VAULT:** A vault is large, underground structure designed to house (keep safe, dry, warm and accessible) a larger water meter. Residential homes will not need a vault; they are for commercial or large system applications.
- 2.21 WATER SYSTEM METER:** The Water System Meter is a device for measuring and recording the flow of water from the municipal water supply to the Consumer's building. In some cases the Meter is located within the Consumer's building or structure and in other cases, in a meter pit, vault or hot box elsewhere on the Consumer's property. Regardless of the location, the Meter is provided and owned by the Water System. It may be repaired, tested, calibrated, improved or replaced by the Water System Operator, for which purpose the Consumer must permit entry with reasonable advance notice. The Consumer is responsible for reasonable care and use of the meter. Reasonable care is defined in **Section 6.11** as "keeping the meter located in a clean, dry, warm, and accessible location"

- 2.22 WATER SUPPLY MAIN:** The water supply main is the municipal water pipe (usually located in the street), to which a service line or pipe is connected to supply water to buildings. ( See **Appendix B**).
- 2.23 WATER SYSTEM OPERATOR** (otherwise known as **OPERATOR**): The Operator is responsible for the day-to-day operation of the Water System and reports to the Eastham BWC.
- 2.24 EASTHAM MUNICIPAL WATER SYSTEM** (otherwise known as **Water System** or **EMWS**) consists of capital facilities and the water distribution system drawing water from Town-owned wells located in Eastham. The Water System also includes water tower(s) to facilitate distribution service pressures and peak demand periods and hydrants to provide fire protection for all properties in the service area.

**Additional definitions** as applicable are adopted as set forth in the Massachusetts Drinking Water Regulations 310 CMR 22.00, Massachusetts Plumbing Code, 248 CMR and in the Massachusetts Fire Prevention Regulations, 527 CMR.

**ABBREVIATIONS**

- CMR:** Code of Massachusetts Regulations  
**EPA:** Environmental Protection Agency  
**GPD:** Gallons per day  
**EMWS:** Eastham Municipal Water System (otherwise called Water System)  
**M.G.L.:** Massachusetts General Laws

**SECTION 3 - RESPONSIBILITIES AND LIABILITIES OF THE CONSUMER**

- 3.1 DAMAGE TO THE WATER SYSTEM METER:** Consumers will be held responsible for damage to the Water System Meter as a result of freezing, hot water, or other external causes. Other external causes are defined as any damage not related to the internal Meter malfunction. When damage occurs, the Operator will furnish and set another Meter or repair the damaged one. The cost of such replacement or repairs shall be charged to the Consumer on the basis of cost of materials, labor, and current sales tax law.
- 3.2 TAMPERING WITH THE WATER SYSTEM METER:** It is illegal to tamper with a Water System Meter. Written authorization must be obtained from the Operator to install, alter or remove a Meter. Violations are subject to a fine as set forth in the General Laws of the Commonwealth of Massachusetts (See Ch. 165, § 11 which specifies a maximum imprisonment of 1 year and a fine. See the Rate Schedule in **Appendix A** for the amount of the fine.)
- 3.3 OWNERSHIP OF PIPES, VALVES AND TAPS:** All pipes, valves, taps and other appurtenances between the Municipal Water Main and the outlet of the Curb Stop inclusive, are the property and responsibility of the Town. All piping, valves, equipment and any other appurtenances between the Curb Stop and the Consumer's building, are the property and responsibility of the Consumer; although such items are required to meet standards and specifications of the Water System. An EXCEPTION to the above is the Water System

Meter, which will always be the property of the Water System.

- 3.4 REQUIREMENT FOR CONTROL VALVES:** Requirements established by the BWC for Consumer owned portions of the system include (but are not limited to) one (1) Full Flow Control Valve located near the point of entry of the service pipe through the building or structure wall.
- 3.5 MASSACHUSETTS REGULATIONS:** Valves and other appurtenances shall conform to Massachusetts Plumbing Code Regulations and Water System specifications. All plumbing installations shall be performed by a licensed plumber in accordance with Massachusetts Plumbing Code and any other applicable regulations and to the satisfaction of the Operator. If any defects in workmanship or materials are found or if the Consumer's service has not been installed in accordance with the requirements defined in the Rule and Regulations and other Water System specifications, the water service will either not be turned on or will be discontinued if such defects are not remedied within a specific time set by the Operator and ratified by BWC. The Town will not be held liable for any defects in such workmanship or material. Consumer must apply to the BWC to alter in any way a previously installed and approved water service connection.
- 3.6 MAINTENANCE OF CONSUMER'S PLUMBING:** All Consumers shall maintain the plumbing and fixtures within their own building(s) in good repair and protected from freezing at their own expense. Consumers shall make any repairs that shall be necessary, other than to meters, to prevent damage or leaking. All plumbing must conform to Massachusetts Plumbing Code and any other applicable regulations.
- 3.7 ANTI-BACKFLOW PREVENTION DEVICES (CHECK VALVES):** As part of connecting the Consumer's property to the Water System and pursuant to Massachusetts Regulations 310 CMR 22.22, all water service Consumers are financially and legally responsible for the installation of an approved back-flow prevention device immediately downstream of the water meter or where specified by the Operator. See Appendix B. This device prevents water in the building from flowing back into the Water System.
- 3.8 LEAKS:** The Operator shall have the right to shut off water supplied to any property where a leak exists or is believed to exist. The Operator will make a reasonable attempt to contact the property owner or authorized representative as soon as a leak is discovered. Any such leaks must be repaired and pass inspection by the Operator before water service will be restored. Operator will report any leaks in Operator's monthly report to the BWC. Consumer shall be responsible for the cost of any repairs from the curb stop into the building. (see Section **7.8 Abatement & Adjustments** for details on abating water bill in regards to leaks).
- 3.9 SAFEGUARDING OF HOT WATER TANKS:** All Consumers having direct pressure hot water tanks are responsible for the installation of appropriate vacuum breakers, relief valves, and/or expansion tanks in the piping system. This is necessary to prevent any damage to such hot water tanks and to protect against damage from other sources, if it becomes necessary to shut off the water at the water main in the street. The Water System will not supply water to buildings where direct pressure hot water tanks or appliances are used without these protective devices in accordance with Massachusetts Drinking Water Regulations 310 CMR 22.22.

- 3.10 LIABILITY FOR INTERRUPTION OF WATER:** Neither the Town, BWC, nor the Operator, including contractors and employees, shall be held liable or responsible to Consumers for loss or damage from any excess or deficiency in water pressure and any circumstances beyond the control of the Water System. Prior to the interruption of service to allow repairs, modifications, maintenance or flushing of the water distribution system, the Operator will endeavor to notify affected water service Consumers, whenever practical, and with as much notice as is practical. However, nothing in this section shall be construed that such notice is required. In the case of routine flushing of the system, Consumers will be given at least 48 hours notice of flushing in their service area. No notice will be given in the event of an emergency shutdown (e.g., a water main break).
- 3.11 LIABILITY FOR WATER RUST:** Neither the Town, nor the BWC, including contractors and employees, shall be held liable or responsible for loss or damage from dirty water resulting from repairs, modifications, hydrant flushing or maintenance to the water distribution system, or any other reason.
- 3.12 LIABILITY FOR FROZEN WATER SERVICE COMPONENTS:** It is the responsibility of all water service Consumers to ensure that all plumbing, fixtures, water meters and appliances are protected from freezing. Neither the Town, BWC, nor the Operator, including contractors and employees, shall be held liable or responsible for loss or damage to any plumbing, fixtures, water meters or appliances due to freezing. The Consumer is financially responsible for any repairs that may be necessary to prevent freezing, leaks, and damage.

#### **SECTION 4 - GENERAL RESPONSIBILITIES**

- 4.1 CURB BOX:** The curb box shall contain a service valve which must be readily available to the Operator should it be necessary to turn off the water supply.
- 4.2 SALE OR USE OF WATER TO OTHERS:** The Consumer will not be permitted to supply or directly offer the water for sale or use to the property or parcel of another person, except in special emergencies and then only with the approval of the BWC; which approval, if given, will be for a specified and limited time.
- 4.3 WATER SYSTEM METERS:** The Water System Meter is provided and owned by the Water System. These meters, both residential and commercial, will be initially provided to property owners at no charge up to one year from the date that water was available at the property. In some cases the Water System Meter is located within the Consumer's building or structure and, in other cases, in a meter pit, hot box, or vault elsewhere on the Consumer's property. A hot box is an option in lieu of a vault. If a meter pit or vault is required by the Operator, it will be the responsibility of the Consumer to pay for the meter pit or vault and for all fees associated with the installation of these components. Water System Meters may be repaired, tested, calibrated, improved or replaced by the Water System Operator, for which purpose the Consumer must permit entry with reasonable advance notice. Regardless of the location, the Consumer is responsible for the reasonable care and use of the meter. No Water System Meter shall be moved or disturbed without prior permission of the Operator.

- 4.4 METER PITS, VAULTS OR HOT BOXES:** Generally, service connections greater than 150 feet from the curb stop will be required to house the meter in a pit, hot box or vault adjacent to the curb box or larger commercial water main capped at the approximate property line. The BWC and/or the Water System Operator will determine whether a pit, hot box or vault is required. A meter pit will be utilized for meter sizes less than two inches and vaults or hot boxes for any meter larger than two inches. The cost of meter pits and vaults/hot boxes will be the responsibility of the Consumer. The Consumer may voluntarily install a meter pit or vault/hot box at their property line (adjacent to the curb stop), in which case the property owner will be allowed to connect to and utilize their existing water service pipe from their water supply well provided that the pressure rating of their existing water service pipe meets that of the Water System. In this instance, the existing well would be removed from service. Meter pits are provided by the Town and paid for by the Consumer. Hot boxes/meter vaults are provided and paid for by the Consumer. The costs of repairs, maintenance and/or replacement of meter pits, hot boxes and meter vaults are paid for by the Consumer.
- 4.5 METER REPAIR:** The Water System Operator will have the right to remove, repair or replace any Water System Meter. The cost of Water System Meter repairs or replacements due to defects will be paid by the Town. The costs of repairs, maintenance and/or replacement of the meter caused by freezing, hot water, or unknown causes, whether internal or external, will be charged to the Consumer. Non-Water System Meters, e.g., private meters, are the exclusive responsibility of the property owner.
- 4.6 SHUT-OFF OR TURN ON SERVICE:** Except in the case of emergencies, all water shut-offs and start-ups require two weeks advance notice and billed according to fee schedule in Appendix A.

## **SECTION 5 - WATER SYSTEM DISCLAIMER OF LIABILITIES**

- 5.1 GUARANTEES:** Constant water pressure and uninterrupted service are not guaranteed. Further, the Consumer is not assured a full volume of water or the required pressure per square inch necessary to effectively operate any appliances and/or fixture. The same rule holds true of all variable conditions that may take place in the use of water from the water supply mains. The Operator will use all reasonable care and diligence to avoid interruptions and fluctuations in the service, but neither the Town, BWC, nor the Operator, including contractors and employees, shall be held liable or responsible to Consumers for any loss or damage from any excess or deficiency in the pressure or volume or supply of water.
- 5.2 REPAIRS:** The Town, BWC, Operator, as well as water system contractors and employees, will not assume any liability for conditions in the Consumer's plumbing or appliances associated with or following installation, repairs or flushing to any part of the system and shall not be responsible for damages caused by dirty water resulting from the opening or closing of any gates for repairs or any other reasons, or the breaking of any supply lines.
- 5.3 DUE NOTICE:** The Operator will endeavor to give due notice to as many of the

Consumers affected whenever it may become necessary to shut off the water supply to any section of the system, to make repairs or changes or because of a broken main or service, and will, as far as practical, use every effort to prevent damage or inconvenience. Failure to give such notice will not involve the Town, the BWC, nor Operator, including contractors and employees, in any responsibility or liability for damage arising from the shutting off the water supply.

- 5.4 SHUT OFFS:** The Operator reserves the right at any time, without notice, to shut off the water supply for the purpose of making repairs, extensions or other reasons. Consumers having boilers or other appliances on their premises are hereby warned against the danger of collapse or damage from the shutoff, and are urged to provide safety devices as described in the Massachusetts Plumbing code, for their protection. The Town, the BWC, water system contractors and employees shall not be liable for damages resulting from the shutoff.

## **SECTION 6 - PROCEDURES FOR SERVICE INSTALLATION AND USE**

- 6.1 CONTRACTUAL AGREEMENT:** Acceptance of service shall bind the Consumer to the laws, rules, regulations and policies of the Commonwealth of Massachusetts, the Town of Eastham, and the Rules and Regulations as written by the BWC. Acceptance of service shall form a part of the contract with every Water System Consumer and shall govern their relations.
- 6.2 APPLICATIONS FOR WATER SERVICE:** All applications for any new installations, alterations, or replacement of a water service shall be submitted to the BWC through its Water Clerk by the owner of the property or their duly authorized representative. When applying for a new service connection or alteration a Site Plan is required as defined in Section 2 of these Regulations. The application and Site Plan must be approved by the Water System Operator or the Town's engineer of record for the water system. A plumbing permit will also be required, and will be a part of the initial application. Upon approval of the application, a Water Service Permit will be issued, allowing work to proceed. Water Service Permits expire one year from the date of issuance. All fees are non-refundable after the Permit has been issued. The Water System connection will not be turned on until the connection has been inspected and approved by the Operator. A plumbing inspection will be completed shortly after water has been turned on and a tie-card of the service connection must also be submitted to the Town by the contractor/plumber after installation.
- 6.3 MATERIALS AND INSTALLATIONS:** All materials to be used in conjunction with any and all water mains and installations of the same shall be in strict accordance with the "Specifications for Water Mains and Service Installation" of these Regulations found in Appendix B. All water mains and all water mains and appurtenances shall be installed by a Contractor who has been approved by the Town of Eastham.

- 6.4 Water System Meters:** Water System Meters are the property of the Town of Eastham. The Meter size for each property will be determined by the Operator and the Town’s consulting engineer. Meters, both residential and commercial, will be initially provided to property owners at no charge up to one year from the date that water from the Water System became available to the property.

In general, one water service will be provided at each developable parcel and the Water System will allow one Water System Meter per parcel. Upon request with the Application for Water Service, the BWC may allow for additional Water System Meters if there are multiple individually assessed and taxed properties within the same parcel (see Section 7.7 “Main” Water System Meter). Non-Water System meter(s), e.g., private meter(s), can be installed at the property owner’s expense as Massachusetts Plumbing Code Regulations allow. The Water System will only read and bill Water System Meters.

- 6.5 RESPONSIBILITY FOR CHARGES:** Consumers of water shall be charged with and held responsible for all water passing through their water Meter. Exceptions may be granted only by the BWC. (see Section 7.8 Abatements & Adjustments for details).

- 6.6 EXTENDING MAINS:** Applications for new service will be accepted for review subject to the existence of a municipal water main along a street or right-of-way abutting the property to be served AND the existence of sufficient water capacity. Approval of an application shall in no way obligate the BWC or the Town to extend water mains or water service.

- 6.7 CONSTRUCTION:** Owner of a property that is already connected with the Water System and desiring construction, alterations or attachments shall submit plans and specifications for the proposed work to the office of the BWC for inspection, approval and for a determination as to whether the same is permissible. The BWC or its designated representatives shall determine the terms, charges and conditions under which the proposed water use shall be permitted.

- 6.8 WATER SERVICE INSPECTIONS:** The Consumer or Consumer’s authorized representative shall notify the Operator prior to commencing work once plans and specifications have been approved. Upon said notification, the Operator will designate the requirements for inspections during construction as approval is required at different stages of work. No work shall be covered or enclosed until inspected and approved. Water System inspections will be scheduled during normal working hours. If by mutual agreement inspections are scheduled for other than normal working hours, the Consumer will be responsible for paying any and all extra costs. (Usually, the Contractor, hired by the Consumer, will handle scheduling of all inspections as well as provide a “TIE SHEET” or “AS BUILT” diagram to the office of the BWC). The property owner is responsible for hiring approved, licensed and insured plumbers and contractors from the approved lists by the Town. The Operator requires a minimum 48-hour notice to perform any inspection.

- 6.9 PRIVATE WELL:** The Operator has the responsibility to control all cross connections for the safety of the Water System. Except where denied by the Eastham Board of Health regulations, a property that is connected to the Water System may retain a private well, under the following conditions:
- 6.9.1 Private well must meet all the requirements of the Eastham Board of Health regulations.
  - 6.9.2 Cross connections between a public water system (PWS) and a private well or individual water source serving residential properties and dwellings used for potable or non-potable purposes are prohibited.
  - 6.9.3 The BWC has the authority to terminate any water service connection to any facility or structure in which cross connections are found to be in non-compliance with 310 CMR 22.22. If necessary, the water service shall be disconnected for failure to test or maintain backflow prevention devices, as determined by the Operator.
  - 6.9.4 If a backflow prevention device has been removed, by-passed or otherwise rendered ineffective, water service shall be discontinued unless approved corrections are made immediately. All expenses are the responsibility of the Consumer.
  - 6.9.5 All backflow prevention devices must be installed and repaired by a Massachusetts licensed plumber.
  - 6.9.6 Identification of Potable and Non-potable water. In all buildings where dual water distribution systems are installed, one potable water and the other non-potable water each system shall be identified by color bands, metal tags or signs.
  - 6.9.7 Across connection inspection must be made by the Operator (at no additional cost to Consumer) to prevent any possible cross contamination between the private well and the Water System.
  - 6.9.8 The Operator, Board of Health or Office of BWC will keep a record of all properties connected to the Water System and utilizing a private well on file.
- 6.10 RIGHT OF ENTRY:** Owner or occupants of any premises served by the Water System shall, upon presentation by Water System personnel of their credentials, authorize entry to their building (s) without a warrant for the purpose of inspecting and surveying their water system for new installation, cross connection, leak detection, backflow prevention or to remove, repair, read or replace any water Water System Meter at any time the Operator deems necessary. When such access is refused, the water may be shut off and may not be turned on until such access has been allowed and fees have been paid for shutting off and turning on the water.
- 6.11 FULL FLOW CONTROL VALVE AND BACKFLOW PREVENTION DEVICES:** Full Flow Control Valve at the water service inlet shall be the first fitting inside of a serviced building and shall be inspected and approved by the Operator. There must also be a backflow prevention device (double-check valve with drain) installed to permit removal of the meter without backflow from the internal water systems. (SEE APPENDIX B) The Water System Meter shall be located in a clean, dry, warm and accessible location. Upon completion of the installation of a Water

System Meter, the Operator shall be notified to inspect the installation and install a remote reader before the service is activated. The Operator, in cooperation with a licensed plumber, must inspect and approve the Meter installation. In some instances, an expansion or “bladder” tank shall be required by plumbing code for the hot water heating system. (see Section **3.9 SAFEGUARDING OF HOT WATER TANKS**)

**6.12 METER PITS AND VAULTS OR “HOT BOX”:** When it is necessary or expedient to locate the meter in an underground pit or vault or aboveground in a hot box, it must be approved by the Operator and the Consumer shall bear the expense of same and shall bear the responsibility of reasonable care and maintenance of said pit, box or vault. In those instances where the service line from the curb stop to the dwelling or structure is more than 150 feet, a meter pit, vault or hot box is required. A meter pit will be utilized for meter sizes less than two inches and vaults or hot boxes for any meter larger than two inches. The Consumer may voluntarily install a meter pit, vault or hot box at their property line adjacent to and downstream of the curb stop or valve, in which case the Consumer will be allowed to connect to and utilize their existing water service pipe from their water supply well, provided that the pressure rating of their existing water service pipe meets that of the Water System and the domestic plumbing connection to the well is abandoned. The Consumer shall not cover the pit or hinder access to the water meter in any way. Covers must remain accessible at all times. Pits shall be furnished with inlet and outlet connections.

**6.13 RIGHT TO CHANGE METERS:** If, in the opinion of the Operator, a Meter does not fit the conditions of the service installation, the Operator has the right to change such meter. Such a change shall be made in accordance with current regulations and Meter costs may be the responsibility of the Consumer. There is no charge to the Consumer if the Water System Operator replaces a Water System Meter (with no change in size) as part of maintenance to the Water System.

**6.14 REPAIRING OR REPLACING OR REMOVING WATER SYSTEM METERS:** The Water System Operator shall have the right to remove, repair or replace any Meter at any time it so determines. No Meters shall be removed by the Consumer or their plumber without prior written permission from the Operator.

## **SECTION 7 - BILLING FOR SERVICES**

**7.1 METER READING & BASE SERVICE FEE:** Water System Meter will be read a minimum of every three months (quarterly). Water use charges will be billed in accordance with the current fee schedule (see **Appendix A**). In addition to any water use charges, a Base Service Fee (BSF) will be added to each bill after the initial application for connection to the Water System is received. The BSF ceases only when a house or building is demolished, removed from its site, declared uninhabitable by a legal authority, or the Consumer elects to “disconnect” from the Water System according to Section 7.9.

**7.2 BILLS PAYABLE:** Bills are payable to the “**Town of Eastham**” and will be sent to

the Consumer of Record (or duly appointed representative), to the address provided on the Application for Service or provided by the Consumer. Tenants will not be billed. Consumer shall notify the office of the BWC promptly of any change of mailing address.

**7.3 FAILURE TO RECEIVE A BILL:** Failure of the Consumer (or duly appointed representative) to receive a bill does not relieve the Consumer of the obligation of payment, nor from the consequences of non- payment.

**7.4 DELINQUENCY NOTICE:** When bills are not paid in full on or before the due date specified on the consumer's invoice, the Consumer is considered delinquent. Unpaid water bills will accrue interest at the rate of 14% per annum compounded daily beginning the day after payment is due. If the bill is not paid in full within 60 days from the date of the bill or a payment plan set up, a shut off notice shall be sent to the consumer. Failure to pay the delinquent amount or set up a payment plan within 14 days from the date of notice will result in the water being shut off to the property. If water cannot be shut off because it is between November 15<sup>th</sup> and March 15<sup>th</sup>, then it will be shut off on March 16<sup>th</sup>. Failure to pay after one year of being delinquent will subject the property to municipal water lien processing. The delinquent amount shall be certified by the BWC and delivered to the Assessors for commitment to the Collector to be added to the property tax to which it relates, as provided under M.G.L. Chapter 40, Sections 42(A)–42(F).

**7.5 Disconnection Process Summary**

A customer's service may be disconnected after proper notification if the arrearage is more than **60 days** outstanding and the arrearage is more than **\$100**.

**Proper Notification:** The proper notification of disconnection must be postmarked 14 days prior to the proposed date of disconnection and include the following information:

1. The name and mailing address of the customer
2. The service address, if different than the mailing address
3. The account # and cid #
4. The proposed date of disconnection of service
5. The reason for the disconnection of service
6. Notification of any reconnection charges
7. The company address and telephone #
8. The method by which the customer may question or contest the disconnection notice

### Shut-off Procedure and Charges

On the day of shut off the service technician will review all shut off orders to for the following: has a call come in with customer notifying of payment or making payment arrangement, was a payment made online or put in the drop box in at local office that has not been updated in the billing system yet. If any of the above the account will be removed from the days shut off list. The service technician will then proceed to the first property. If the customer is not home service technician will place pink tag on door and shut water off at the curb box. If for some reason the water cannot be shut of a door tag will be left indicating that the water “will be” shut off. If the customer has any dispute or says they cannot pay the said amount the service technician will inform the customer to call Customer Service to see if arrangements can be made. The service technician will not make any arrangements with customer in the field. Depending on workload the service technician will either wait for customer to speak with Customer Service or ask customer to call and inform them that he will back later. Customer Service will call the service technician to follow up on all calls received from shut off customers. If an acceptable arrangement cannot be made the water will be shut off.

The collection fees are as follows:

Turn off Fee - \$40.00 (charged if water turned off)

Turn on Fee - \$40.00 (charged when water turned on)

Customers who have been shut off will be turned back on as soon as possible with payment in full expected plus collection fee unless otherwise stated by a customer service representative, duty supervisor, or Town Approved during the hours of 8:00am to 8:00pm. Any calls after 8:00pm will be turned back on after 8:00am the next day.

Shut off orders must be acted on within 8 business days of the disconnect day otherwise no action can be taken until the notification process begins again.

**7.6 CHANGE OF OWNERSHIP:** The BWC must be notified prior to any transfer or any change in ownership of property currently serviced by the Water System. A final meter reading and a water service turn off must be scheduled with the Operator, coincident with the transfer. The Office of BWC will provide to the previous Consumer (or legal representative) the resulting water usage in gallons within the current billing cycle. Any outstanding water use or any other charges, and the pro-rating of the Base Service Fee,

must be adjusted between the buyer and the seller at the time of property transfer. Changes in owner address & billing will become effective at the next regular billing date following the date of notice. Failure of the seller to notify the Office of the BWC of a change of ownership does not alleviate the buyer of any charges due. All charges for any billing period are against the property and whoever the new owner is at the end of the billing period is liable.

**7.7 WATER SYSTEM METER MALFUNCTION:** All water passing through a Water System Meter must be paid for. If a Water System Meter malfunctions or fails to register, the Consumer will be charged at the average daily consumption as shown by the Water System Meter when it was in working order, for the corresponding period of two years preceding (or for whatever the preceding service time is, if less). In the case of a malfunction following transfer of ownership as outlined above, a shorter (post-transfer) period may be used to calculate average daily consumption.

**7.8 WATER SYSTEM METER:** For each parcel connected to the Water System, there is a single water service and generally one Water System Meter. This Water System Meter is the property of the Town. It provides the water use in gallons for billing the Consumer (or duly appointed representative).

If there are multiple individually taxed and assessed properties within the same parcel, the Owner(s) may request multiple Water System Meters. The Operator and BWC will determine if the parcel warrants multiple Water System Meters when reviewing the Application for Water Service. If multiple Water System Meters are approved, each Meter will be the property of the Town and read, billed and maintained by the Operator.

If a Consumer has multiple units on the same parcel and these units are NOT individually taxed and assessed but wants to meter water usage at each individual unit, the Consumer may install additional Non-Water System, e.g, private meters, for this purpose. These Non-Water System meters are the sole responsibility of the Consumer and must be installed downstream of the Water System Meter by a licensed plumber, and inspected by the Plumbing Inspector. Disclaimer: the Non-Water System Meter(s) will not be read or maintained by the Water System Operator.

**7.9 ABATEMENT & ADJUSTMENTS:** In accordance with M.G.L. Chapter 40, Section 42(E), abatements and adjustments will be made for clerical errors, misreads or failure of Water System equipment. Abatements will not be issued for water leaks, unless otherwise allowed by the BWC. The Abatement Procedure for Water Bills is:

- 7.8.1 All claims for adjustments of water bills shall be made within thirty (30) days of the billing date.
- 7.8.2 The BWC or designee shall, upon written request, consider an abatement of a water bill that has not been paid
- 7.8.3 The BWC or designee will investigate with the Consumer within forty five (45) days of receipt of a request for abatement and shall render a decision within forty five (45) days of the hearing, during this time shut off will not

happen. If the consumer disagrees with the decision of the designee than they can appeal to the BWC within 45 day.

**7.10 DISCONNECT FROM WATER SYSTEM:** Any Consumer connected to the Water System that wishes to disconnect must do so at their own expense. A written request must be submitted to the BWC. Upon review & approval of this request by BWC and the Eastham Board of Health, the Consumer must hire an approved contractor to disconnect their water service at the water main, as witnessed by the Operator. This work is subject to approval and inspection of the Operator. Once inspected and approved, the Water System Meter must be returned to the Office of the BWC or Operator. A final bill for water use must be paid before the account will be closed. The Consumer is not entitled to a refund of any fees related to their initial hookup. If the property owner (present or future) wishes to connect again at a later time, the costs, terms and procedures described in these Rules and Regulations in effect at that future time will apply.

**7.11 VARIANCE AND GRIEVANCE PROCEDURE:** Any person seeking a variance to these Rules and Regulations or has a grievance in the content, interpretation, or execution of these Rules and Regulations shall provide written notice to the BWC, documenting the circumstances and reasons for the variance or grievance. If the variance or grievance can be, as determined by the BWC, corrected without a policy, regulation, or procedural change requiring a public hearing, the BWC may do so. Otherwise, BWC within thirty (30) days of receiving the written notice will provide a written response to the person and address the issue at a hearing. The BWC shall use their best effort to hold a hearing within thirty (30) days of receipt of a variance or grievance. The BWC shall use their best effort to render a decision within thirty (30) days from the date of the hearing. If the variance or grievance cannot not be resolved by the BWC, or if the person has not received a response within thirty (30) days after the BWC closes the hearing on a person's variance or grievance, the person may take the variance or grievance to the Board of Selectmen. The person shall provide a written submission documenting the circumstances and reasons for the variance or grievance and a sequential narrative of the variance or grievance process to-date. The Board of Selectmen shall use their best effort to hold a hearing within thirty (30) days of receipt of a variance or grievance and shall render a decision within thirty (30) days from date of the hearing.

**7.12 DAMAGES:** Any person seeking damages against the Water System, BWC, or Operator shall do so in accordance with M.G.L. Chapter 79.

## **SECTION 8 – VIOLATIONS & PENALTIES**

**8.1 VIOLATIONS OF REGULATIONS:** Any violations of these regulations may result in the BWC or Operator ordering the shutting off of water to the violator's premises. When water has been shut off due to violations, it shall not be turned on again until the BWC or Operator is satisfied that the violations have been corrected and there is no further cause for complaint, and charges have been paid to cover the costs associated with the violation and the discontinuing and reconnecting to service.

**8.2 DISCONTINUANCE OF SERVICE:** A water service may be discontinued for reasons such as non-payment of water bills, charges, and liens for violations of the Rules and

Regulations contained herein, and in accordance with M.G.L. Chapter 40 Section 42. A water service may be terminated without notice for fraudulent use. Reconnection of terminated service will be done only during normal working hours of the Operator, and a reconnection fee will be applied. Water service will not be reconnected until all charges are paid in full. If a request is made by the Eastham Health Department, water may be shut off if there is a health or safety reason at the property.

- 8.3 INACTIVE SERVICE:** If an account does not have a Water System Meter and has been inactive for more than 24 months, the Operator may disconnect and cap the service from the distribution system. Costs, terms, and procedures to reconnect water service at a later date shall be subject to these Rules and Regulations in effect at the future time.
- 8.4 CROSS CONNECTIONS:** Any consumer found to be in noncompliance with the drinking water regulation of Massachusetts, 310 CMR 22.22 shall be subject to a fine by the Commonwealth of Massachusetts Department of Environmental Protection for each day that the violation occurs or continues. Water will be turned off immediately until violation has been corrected. There will be a *Turn on* and *Turn off* fee assessed per violation. There is also a Testing Fee per device, see non water related fees.
- 8.5 TREATMENT:** No treatment by any unauthorized personnel shall be permitted. If anyone is found adding any treatment to Town's water they will be subject to fines established by the Board of Commissioners for each individual offense.
- 8.6 MANDATORY RESTRICTIONS ON WATER USE:** Any consumer found in violation of a water ban subject to fines by the Town, at a rate set by the Water Commissioners.
- 8.7 UNAUTHORIZED WATER USE:** Whoever unlawfully and intentionally injures a Water System Meter or prevents such meter from registering the quantity of water supplied through it or use or causes to be used water without consent of the BWC shall be fined at a rate set by the Water Commissioners and will be responsible for its repair or replacement.
- 8.8 DEFACING AND LITTERING ON TOWN PROPERTY:** Any person or persons willfully defacing and or littering upon Town owned property located within its watershed shall be fined.
- 8.9 NO TAMPERING WITH TOWN PROPERTY:** All gates, valves, hydrants, shutoffs, water meters and standpipes and any other portion of the municipal system are the sole property of the Eastham Municipal Water System. They are not to be opened, closed, removed or in any way tampered with. Only personnel authorized by the Operator may use this equipment. Violators will be subject to charges or penalties as stated herein or by Massachusetts General Law Chapter 165.
- 8.10 MARK OUTS:** No excavator shall, except in an emergency, make an excavation where town water exists unless notice is given to the Operator at least **72 hours, excluding**

**weekends and holidays**, before excavation. If an excavation is made without the request of a water mark out, the excavator shall be held solely responsible for any and all damages and injuries caused, and any penalties or legal action that may be brought against excavator,

## **SECTION 9 - PRIVATE ROADS**

- 9.1** Pursuant to the “POLICY & PURPOSE” of the Water System and based upon reasonable engineering, economic, and water need considerations the BWC in its reasonable discretion may cause water supply mains to be installed on private roads as defined in Section 2.12.

Sections 1 through 8 of the Eastham Municipal Water System Rules and Regulations and all Amendments thereto are specifically applicable to water supply mains installed on such private roads and service lines, valves and meters connected thereto.

- 9.1.2** Appropriate water easements, granting the right to install, inspect, operate, maintain, repair and replace water supply mains and appurtenances, must be granted to the Town, acting by and through the BWC, or waivers of appraisal and damages obtained for the taking of such easements by the BWC, from all property owners who abut the portion of the private way on which the work is to be done or who otherwise have an ownership interest in each such portion.

- 9.1.3** The installation of a water supply main on a private road shall not cause or render the Town of Eastham or the BWC to be responsible for or liable for the maintenance, repair, or plowing of any such private road on which a water main is installed. The private road after water supply main construction will be returned to a condition equivalent to its pre- construction state.

- 9.1.4** Any decision to introduce water supply mains in private roads is limited to private roads in existence as of 2014. Anyone creating a new private way must bear the burden of introducing all necessary utilities pursuant to the current or future requirements of the Eastham Planning Board’s subdivision rules and regulations and the rules and regulations of the Eastham Board of Health where applicable.

**SECTION 10 - AUTHENTICATION**

**Upon due notice and hearing, we the undersigned, Water Commissioners of the Town of Eastham, Massachusetts, do this \_\_\_ day of \_\_\_\_\_ 2018, adopt the foregoing "Rules and Regulations, Revised January 2018" of the Eastham Municipal Water System.**

TOWN OF EASTHAM  
BOARD OF WATER COMMISSIONERS:

\_\_\_\_\_  
Aimee J Eckman Chair Date

\_\_\_\_\_  
Alexander G Cestaro Vice Chair Date

\_\_\_\_\_  
Martin F McDonald Date

\_\_\_\_\_  
Jamie M Rivers Clerk Date

\_\_\_\_\_  
Jared K Collins Date

**APPENDIX A**  
**WATER USE RATES AND FEE SCHEDULE**

See current rate sheet for 2016-2017

**FIRST TIME CONNECTION TO WATER SYSTEM**

Note: Most connections will have service sizes less than or equal to 2". Water System Meters, both residential and commercial, will be initially provided to property owners at no charge up to one year from the date that water from the Water System becomes available to the property. There is no system connection fee. The BWC may adopt fees for meters and system connections at a later date, but not without holding a public hearing.

**CONSUMER COST COMPONENTS:**

The total cost to a consumer to connect to the Water System is the SUM of the following:

	What	Make Payment to	Financial Terms
1.	SYSTEM CONNECTION FEE	N/A	No FEE
2.	METER PRICE	Town of Eastham	No FEE
3	METER PIT, VAULT OR HOT BOX	Town of Eastham	Meter Pits must be purchased from the Town of Eastham. If a vault or hot box is required, it must be purchased separately and approved by the Water System Operator.
4.	PIPE INSTALLATION FROM curb stop (shut off close to property line) TO YOUR BUILDING.	Contractor who is “approved” by the System for service installations. (Meets competency & licensing requirements as established by System). (List available)	Contractor is hired by and works directly for Consumer. Cost includes all associated expense items such as parts & permits and inspection fees.
5.	INTERNAL PLUMBING WORK to connect to the Water System and disconnect your building’s old water source, if applicable.	MA Licensed Plumber	Plumber is hired by and works directly for Consumer. This cost includes all associated parts such as expansion tanks, connection to water meter, permit & inspection fees.

### **OTHER TERMS:**

1. Meter size and Service Size determination: Final decision rests with the Water System Operator and the Town's engineer of record for the water system, who will consider the Consumer's current use of the property and any expectations of the property owner.
2. Water System Meter is the property of Town.
3. Service installation from Curb Stop to within Consumer's building: Must use a Contractor approved by the BWC (List available from Office of BWC).
4. Plumber for internal plumbing work: Must be Massachusetts licensed plumber.
5. These rates & charges apply to all parcels within the service area.
6. Fire Service Connections (Residential & Commercial) require approval of the Eastham Fire Department. **Fire service without domestic is subject to a fee.**
7. All service connections must be inspected by Operator prior to the first-time water turn-on.
8. Connection Application can be withdrawn and all monies refunded if the Water Service Permit has not been issued.
9. "First billing period" starts upon approval of Consumer's application and ends when the current billing period ends. This means that the first billing period is at the very least, 1 month in duration and at the greatest, it is 6 months in duration.

## **APPENDIX B**

### **Specifications for Water Mains and Service Installation**

All materials to be used in conjunction with any and all water mains and installations of the same shall be in strict accordance with the "Specifications for Water Mains and Service Installation" of these regulations. All water mains and appurtenances shall be installed by the Town or a Contractor who has been approved by the Town.

#### **B1 Pipe Size**

All water mains shall be sized by the Town in conjunction with the Master Plan of the distribution system, or as calculated by the BWC or its consulting engineers. Piping for hydrant services shall have the minimum diameter of six (6) inches.

#### **B2 Fire Hydrant Spacing**

Fire hydrants shall be spaced at a minimum distance of 500 feet in residential zoned areas; 250 feet in commercial, business, and industrial zoned areas. The Fire Chief can request a different spacing standard depending on the situation. The applicant must show proof that the Fire Chief has approved all proposed fire hydrant locations. Measurements shall be taken along traveled way, whether public or private. Spacing of additional fire hydrants shall begin at the closest existing hydrant. An additional fire hydrant shall be placed at the dead end of all water mains.

#### **B3 Fire Hydrant Access**

No person shall obstruct access to a fire hydrant. Fire hydrants shall have a three foot clear radius measured from the center of the stem of the top of the hydrant. No foliage, fencing, parking space, or other object shall obstruct the clear area. No person may landscape to change the grade around the base of the hydrant so as to prevent the use of a four inch cap. Location where existing objects such as, but not limited to, buildings, walls, fences, trees, on sloping grades that does not permit a three (3) foot clearance radius, may be granted a waiver by the Town. Before any waiver of this Regulation is granted, all other possible locations must be considered.

#### **B4 Cost of Water Mains**

In private division of lands, commercial, business or industrial complexes, and all other areas not presently serviced by Town water, the developer or owner shall be responsible for all costs with regard to water main installation(s) and connection(s) to existing system and or maintenance of already installed water mains. All water mains shall be installed to the furthest property line.

#### **B5 Need for Water Mains**

The developer or owner of a division of land where water is available within 500 feet will be required to serve and supply the development with water in accordance with these regulations. Any property that has existing public water service and is a division of land, the developer or owner will be required to upgrade the water mains and services to comply with these rules and regulations before the transfer of any parcel. Industrial, commercial, condominiums or multi-family residential, and like buildings that are not a division of land shall be reviewed by the Water Superintendent and the Fire Chief on an individual basis. They shall still be governed by these Rules and Regulations and be required to install and maintain water mains and fire hydrants.

#### **B6 Application for Water Main Installations**

An application for water main installation shall be completed by the developer or owner and submitted to the Town for review and approval before any work can proceed. All applications must contain the complete information requested and an engineer construction plan prepared by

Massachusetts Registered Professional Engineer with a scale of 1 inch equal 40 feet (1"=40'). Payment of all required tapping fees, and installation fees including the service availability charge and any other fees established by the Board of Water Commissioners shall be made at the time of application.

### **B7 Ductile Iron Pipe and Fittings**

- B7.1 All water main pipes shall conform in design and manufactured to the latest issue of ANSI/AWWA standard C150 "Thickness Design of Ductile Iron Pipe" and standard C151-91 Class 50 "Ductile-Iron Pipe, Centrifugal Cast in Metal Molds or Sand-Lined Molds for Water or Other Liquids". The pipes shall be supplied in lengths not to exceed 20 feet. Acceptable manufactures include American, McWane, US Pipe, or equal.
- B7.2 Fittings shall be compact ductile iron Class 350 Mechanical Joint, conforming to ANSI Specification A21.53 (AWWA C153 "Ductile-Iron Compact Fittings, 3-in through 16-in for Water and Other Liquids"), latest edition. Fittings shall be suitable for use with restraints as specified hereinafter. Fittings shall be manufactured in the United States. Fittings shall be made of the same material and have the same lining and coating as the pipe specified above. All fittings shall be marked with the weight and shall have distinctly cast upon them the pressure rating, the manufacturer's identification, nominal diameter of openings and the number of degrees or fraction of the circle on all bends. Fittings shall be Tyler Union Awwa C153 Compact Fittings, or approved equal.
- a. Hydrant tees shall have a rotatable mechanical joint gland on the 6-inch plain end branch to provide positive valve restraint, unless otherwise allowed by the Engineer.
  - b. Caps and plugs, installed in all new work as indicated on the drawings, shall be provided with a threaded corporation or bleeder valve so that air and water pressure can be relieved prior to a future connection.
- B7.3 All pipe and fittings shall have a bituminous outside coating in accordance with AWWA C151 and C110, respectively, latest edition. All pipe and fittings shall be cement-mortar lined and seal coated in accordance with AWWA C104 "Cement-Mortar lining for Ductile-Iron pipe and fittings for water", latest edition. Cement mortar lining shall be double thickness.
- B7.4 Joints for pipe and fittings shall be push-on or mechanical joints conforming to AWWA C111, latest edition.
- B7.5 Restraint joints shall be furnished for thrust restraint for installation on all fittings and valves, where indicated on the drawings, or where required by the Engineer. Restraints for mechanical joints shall be Series 1100 Megalug as manufactured by EBAA Iron, ONE-LOK Series D-Slide Restraints as manufactured by SIGMA Corp., or approved equal.
- B7.6 Restraints for push-on joints shall be Field Lok gaskets by U.S. Pipe or Sure Stop 350 by McWane Ductile. Push-on joint restraints shall not affect the warranty by the pipe manufacturer.
- B7.7 Sleeve type couplings shall be of steel and shall be Style 38 by Dresser Mfg. Div.; Smith-Blair Style 441 or approved equal. Couplings shall be furnished with black steel bolts and nuts and with pipe stop removed. Gaskets shall be of a material suitable for exposure to liquid within the pipe.
- B7.8 Polyethylene pipe encasement shall conform to requirements of AWWA C105, latest edition. Virgin polyethylene shall conform to ANSI/ASTM D1248. Minimum nominal thickness shall be 8 mils. Polyethylene pipe encasement shall be V-BIO Poly.
- B7.9 Insulation shall be 2-inch thick polyisocyanurate foam with a density of 2.0 lbs/cf3. A 30-mils thick bitumen adhesive shall be used as a vapor and moisture barrier for direct burial applications.

- B7.10 Detectable aluminum foil plastic backed tape or detectable magnetic plastic tape manufactured specifically for warning and identification of buried piping shall be used. Tape shall be detectable by an electronic detection instrument. Tape shall be provided in rolls, 3 inches minimum width, color coded for the utility involved with warning and identification imprinted in bold black letters continuously and repeatedly over entire tape length. Warning and identification shall be CAUTION BURIED WATER PIPING BELOW or similar. Permanent code and letter coloring unaffected by moisture and other substances contained in trench backfill material shall be used. Tape shall be buried tape with the printed side up at a depth of 12 inches below the top surface of earth or the top surface of the subgrade under pavements.

### **B8 Polyethylene Pipe and Fittings for Directional Drilling**

- B8.1 Black polyethylene (PE) materials used for the manufacture of polyethylene pipe, tube and fittings shall be PE 4710 high density polyethylene meeting ASTM D3350 cell classification 445574C (formerly PE 3408 meeting 345464C per ASTM D3350-02) and shall be listed in the name of the pipe and fitting Manufacturer in PPI (Plastics Pipe Institute) TR-4 with a standard grade HDB rating of 1600 psi at 73°F. The material shall be listed and approved for potable water in accordance with NSF/ANSI 61. Gray PE material, when used, shall be the same except for meeting ASTM D 3350 cell classification 445574E. When requested on the order, the Manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements.
- B8.2 Polyethylene pipe shall be manufactured in accordance with AWWA C901-96 for sizes 1-1/4" thru 3" IPS diameters and to the requirements of ASTM D3035. Pipe 4"IPS and DIPS sizes 4" and above shall be manufactured to the requirements of ASTM F714 and AWWA C906-99. 2" and smaller water service pipe and tubing shall be manufactured in accordance with ASTM D2239 for inside diameter control IPS size or ASTM D2737 for outside diameter control CTS size.
- B8.3 The polyethylene pipe and fittings shall be certified as suitable for use in a potable water system, impart no taste, odor or other objectionable compounds to the water, and shall comply with AWWA C906 and applicable National Sanitation Foundation (NSF) requirements. Pipe delivered to the site shall have all required AWWA/NSF potable water markings.
- B8.4 Welded sections of pipe shall be pressure tested at 150 psi for 15-minutes prior to being pulled/installed in the ground. The pressure test shall result in zero leakage.
- B8.5 Polyethylene pipe shall be furnished with restrained mechanical joint adapters to allow mechanical joining with ductile iron pipe. The adapters shall have the same pressure rating as the polyethylene pipe and shall be butt fused to the pipe as specified herein. The adapters shall be complete with pipe stiffener, gaskets and all required bolts and nuts.
- B8.6 All high-density polyethylene piping to be installed as a water main or water line shall be DR11 DIPS. All high-density polyethylene to be installed as a casing pipe shall be SDR17 IPS. For 1" services, install 1" PE tubing within a 2" IPS SDR17 HDPE casing pipe with tracer wire. For services larger than 1", install PE tubing within a 4" IPS SDR17 HDPE casing pipe with tracer wire. Only long-side services (2" and smaller) shall have a casing pipe.
- B8.7 All polyethylene pipes shall be installed with tracer wire to facilitate the detection of the water line or casing pipe after installation. Tracer wire shall be attached to the center of the pipe at a minimum of 6 foot intervals and at all bends with duct tape. Tracer wire shall be 12 gauge copper with a 30 mil polyethylene coated jacket.

## **B9 Water Services: Pipe, Corporations, Curb Stops, Saddles and Fittings**

- B9.1 Each unit shall have its own separate service, consisting of a corporation stop, curb stop, curb box, ball valve as soon as service enters building, meter and remote reader. From curb stop into building shall be the owner's responsibility to maintain.
- B9.2 Unless otherwise specified, all pipe for services and 2-inch mains shall be polyethylene PE 4710, Class 250 tubing and shall conform to the provisions of AWWA specification C901 (latest version). The tubing shall be copper O.D. size and suitable for use with standard industry brass compression fittings without special adapters. Insert stiffeners shall be provided for use with all compression joint connections. Polyethylene tubing to be Drisco Pipe, Endot Industries, Inc., or approved equal. Tracer wire shall be 12 AWG copper with a blue in color, 30 mil polyethylene coated jacket.
- B9.3 The corporation stops shall meet the most recent revision of the AWWA standard "Threads for Underground Service Line Fittings" (AWWA C800). Corporation stops shall be Mueller 300 Ball Corporation Valve, Model B-25008N, as manufactured by Mueller Company or The Ford Meter Box Company for standardization purposes, no exceptions. Corporations larger than one inch shall be installed with saddles.
- B9.4 The curb stops shall meet the most recent revision of the AWWA standard "Threads for Underground Service Line Fittings" (AWWA C800). Curb stops shall be Mueller 300 Ball Curb Valve, Model B-25209N as manufactured by Mueller Company or The Ford Meter Box Company for standardization purposes, no exceptions. Curb Stops shall open Left.
- B9.5 The curb box shall be of the "Erie" type, cast-iron construction. The curb box shall be tar base enamel coated inside and out and shall be equipped with an operating extension rod. The lid shall be of extra heavy cast-iron construction with a brass pentagon plug. Curb stop boxes shall be manufactured in United States only.
- B9.6 Service saddles (for services larger than one inch) shall be Smith-Blair 313 Double Strap. Bodies shall be ductile iron (with fusion-bonded flexi-coat epoxy) and bales, nuts and washers shall be Type 304 stainless steel. Units shall be complete with Buna-N gaskets.
- B9.7 Unless otherwise approved, only compression type fittings manufactured by Mueller Inc. or Ford Meter Box shall be used. Mueller brass tees shall be used to provide 1-inch services off of 2-inch polyethylene tubing. Adapters required to allow connection to existing services shall be provided.

## **B10 Gate Valves and Boxes**

- B10.1 Resilient wedge gate valves shall be iron body, resilient seated type meeting the latest edition of AWWA C509 or AWWA C515 with mechanical joint ends. The valves shall be designed for 200 psi working pressure and 400 psi test pressure. Valves shall have corrosion resistant fusion - bonded interior and exterior coatings. Valves shall be made in the United States. For standardization, valves shall be as manufactured by Mueller Company or American Flow Control, no exceptions.
- B10.2 Valves are to have O-ring seals and a non-rising stem. Valves shall have a 2-inch square operating nut, and be Open Left (counter-clockwise to open).
- B10.3 Valve boxes shall be cast iron, asphalt coated, sliding type, adjustable, together with cast iron covers with the word "WATER" plainly cast in relief on the top surface. A minimum 6-inch overlap is required between sliding sections. The inside diameter of the bottom section shall be at least 5-1/4-inches and shall have a belled base. The top section shall be at least 6-1/8-inches and have top flanges. The bottom section shall be at least 36-inches in length. The top section shall be at least 26-inches in length and have a plain bottom. No three piece combinations shall be acceptable. Valve boxes shall be manufactured in the United States.

## **B11 Hydrants**

- B11.1 Fire hydrants shall have mechanical joint inlet connections to the main, two 2-1/2-inch hose connections, and one 4-1/2-inch steamer connection with a valve opening 5-1/4-inches in diameter minimum and a standpipe with an 8-1/2-inch minimum diameter. Hydrants shall be traffic model with dual drain ports.
- B11.2 The hydrants shall have an oil reservoir to provide lubrication to all stem threads, bearing surfaces and O-rings each time the hydrant is operated. The hydrants shall be made in the United States.
- B11.3 The hydrants shall have mechanical joint shoes, 5'6" bury (street level shoulder areas) or 6'-0" bury (raised sidewalk), 5-1/4-inch valve, and conform to AWWA Specification C-502. Hydrant shall be marked with an arrow and the word "open" to indicate the direction to turn the stem to open the hydrant. Hydrants shall open left.
- B11.4 The hydrants are to receive two coats of prime paint before shipment and once installed are to be cleaned and painted by the Contractor. Hydrants shall be painted in accordance with the Town of Eastham requirements.
- B11.5 For standardization, hydrants shall be Mueller Co. Centurion Model A-423, American Darling Model B84-B-5, no exceptions.
- B11.6 Hydrants shall have hydrant markers with reinforced fiberglass shaft heavy duty spring mounted 4' long x 3/8" diameter. One bolt mounting.

## **B12 Tapping Sleeves**

Tapping Sleeves shall be manufactured by Mueller Co., Clow Corporation, or approved equal. Tapping sleeves shall match the requirements of the detail on the construction drawings. Tapping valves shall be manufactured by Mueller Company, Kennedy Valve Manufacturing Company or equal and shall be furnished with one flange end and one mechanical joint end. Valves shall open left. The Contractor shall verify the outside diameter of the pipe to be tapped.

## **B13 Cover Over Pipe**

- B13.1 Pipe shall have four and one-half (4.5) feet of cover measured to finish grade of the street. Pipe to be hand covered one (1) foot with sand or stone free gravel and compacted and tamped around pipe to give good support and protection.
- B13.2 In case of any excavation, ground water swamps or when any unsuitable materials are encountered, the Contractor shall replace it with good material to provide proper support and alignment of the pipeline. In some cases, the Contractor shall use crushed stone for bedding covered with sand. Trench backfill shall be suitable material taken from excavation, approved common borrow or gravel hauled in. No mud, frozen earth, stones larger than 3/4" or other objectionable materials is to be used for refilling.

## **B14 Ledge**

All ledges shall be removed to width of two (2) feet or greater than the diameter of the pipe and one (1) foot below the underside of the pipe. A bed of sand shall be placed in the trench prior to laying pipe.

## **B15 Blasting Precautions**

All blasting shall be discussed with the Operator and or the Engineer's and the decision shall be made on individual bases.

### **B16 Survey Markers**

Survey markers (line and grade) shall be required on all newly proposed streets. Pipes shall be laid within the roadway layout (easement in certain cases) as shown on plans approved by the Eastham Planning / Zoning Board.

### **B17 Excavation within the Limits of Public Ways**

Permission shall be obtained from the Department of Highway's before any excavation can begin within any Town accepted street. The work shall be performed in accordance with EHD requirements. A street opening permit shall be obtained from Massachusetts Department of Public Works before any excavation can begin on any State Highway. This work shall be performed in accordance with permit.

### **B18 Testing of Water Mains: Pressure Test and Chlorination**

- B18.1 Before acceptance by the Town, the pipe shall be pressure tested and chlorinated in accordance with "Installation of Ductile-Iron Water Mains and Appurtenances" AWWA Designation C600 latest edition. No one shall pressure test or chlorinate an installation without notifying the Town at least 48 hours prior. An Operator must be present for the duration of the pressure test and chlorination to witness and sign the chain of custody forms. All pressure test reports shall consist of actual distance of pipe and size, and the number of valves and hydrants. The Town shall furnish a water meter to measure water usage for disinfection and flushing. Before final approval is given, the contractor must submit an as-built drawing to the Town. It is at this time the Board of Water Commissioners shall then determine whether the pipes (project) may be accepted into the Town's water system.
- B18.2 Prior to pressure and leakage tests, the piping shall be thoroughly flushed clean of all dirt, dust, oil, grease and other foreign materials. This work shall be done with care to avoid damage to lining and coatings.
- B18.3 The Contractor shall submit a plan on the method of testing and chlorinating the mains for review to the Engineer. The plan shall include all equipment proposed for use during the work, or the name of the qualified testing company, which will perform the work. Testing of the water main shall not begin until the Engineer has approved the Contractor's plan. All testing shall be done in the presence of the Engineer.
- B18.4 Testing of Water Main:
- a. The Contractor, in accordance with ANSI/AWWA C600 specifications or latest revision thereof, will make all pressure and leakage tests to determine that the ductile iron pipe is structurally safe and free of excess leakage. The Contractor shall furnish all the equipment, materials and labor required for testing. The Contractor shall furnish, at his own expense, all the water needed for all water main testing.
  - b. Testing shall be done in sections of the main not to exceed a 3,000-foot maximum length. Valves shall be placed in the off position at the ends of the sections to be tested. The Contractor shall provide means to prevent water from entering other parts of the pipeline not subject to testing at all times. Contractor will ensure that air release valves and other venting devices are properly installed and placed in open position when filling pipe with water. Taps shall be installed at high points to release air in the water system.
  - c. After all entrapped air has been removed from the section; fill the main to the normal static pressure. The Contractor is allowed to let the main rest for up to 48 hours with static pressure. Using a special pressure pump, the Contractor shall raise the pressure to 150 pounds per square inch. The pump will then be shut off and separated from the test section by a globe valve. A fluid filled pressure gage, with a

maximum reading of 250 psi, shall have been placed beyond the globe valve. The test section will then be monitored for a 2-hour period.

- d. This pressure shall be maintained, within 5 psi, for a minimum of 2 hours during which time the line checked for leaks by the Engineer. Based on an average test pressure of 150 psi, the measured rate of water leakage shall not exceed the following rates in the section under test:

$$L = \frac{12.25SD}{133,200}$$

Where: L = Allowable leakage, gallons per hour  
S = Length of pipe section tested, feet  
D = Nominal pipe diameter, inches

- e. Should leakage exceed this rate, the Contractor shall immediately locate the leak or leaks and repair same at his expense. Pipe shall be flushed and chlorinated when leakage does not exceed above standard. Approval does not absolve the Contractor from his responsibility if leaks develop within the new main or water services (to curb box) later within the warranty period.

#### B18.5 Chlorinating and Flushing:

- a. The Contractor, in accordance with the latest edition of ANSI/AWWA 651 Standard for Disinfecting Water Mains, shall chlorinate and flush the new water main. Chlorinated water to be flushed from the pipeline shall be de-chlorinated as shown on detail drawings or as approved by the Engineer. It shall then be discharged to the nearest storm drain. Chlorinated water shall not be discharged to any natural water body.
- b. Prior to chlorination, the Contractor shall properly flush the water mains. In general, flushing shall be performed at a flow rate required to achieve a minimum velocity of 3 feet per second, which is approximately 400 GPM in an 8-inch diameter main, 600 GPM in a 10-inch main, 900 GPM in a 12-inch main and 1,600 GPM in a 16-inch main. Flushing of the water main, at the above rates, for approximately 20-minutes per 1,000-foot section, will allow for three volume changes. This is a sufficient period of time for successfully cleaning the water main.
- c. The Contractor shall chlorinate the water main until the main contains a solution containing 25 mg/L available chlorine. The valves shall then be closed and the chlorinated water allowed to sit in the mains for 24 hours. The main will then be checked to assure the chlorine residual shall be at least 10 mg/L. If less than 10 mg/L is measured, the Contractor shall flush and re-chlorinate the mains at no cost to the Owner. All valves and hydrants shall be operated to insure their proper disinfection. Valves shall be operated to prevent super chlorinated water from entering the existing distribution system. The Contractor shall then flush the mains until clear, clean water is being discharged.
- d. Sixteen hours after the main has been flushed of chlorinated water, bacteriological samples (total coliforms and heterotrophic plate count) shall be taken. Two sample events shall occur. The first sample event from the designated locations shall be taken and the second sample event shall be taken from the same designated locations a minimum of 15 minutes apart. Both sets of samples shall pass. Water samples shall be taken from corporation stops along the length of the water main as designated by the Engineer. A minimum of two (2) samples shall be taken on each street, or two per 3,000 feet of pipe, whichever is greater. Each sample shall be

taken in duplicate, in sterile bottles and sent to a State approved private laboratory for analysis. The Contractor shall perform all necessary work including delivery of samples to a certified laboratory, and shall include the cost for sampling and analysis in his bid price. The results of the tests on these samples will determine the acceptance of the work and allow these new mains to be connected to the Town's system. The failure of any sample to pass the laboratory tests shall require the Contractor to reflush and re-chlorinate the mains and resample and test the water until acceptable results are obtained, all at no additional cost to the Owner.

- e. If, during construction, trench water has entered the main, or if in the opinion of the Owner's Engineer, excessive quantities of dirt or debris have entered the main, bacteriological samples shall be taken at 200-foot intervals and shall be identified as to location. Additional sample taps shall be installed and removed at the Contractor's expense.

### **B19 Road Layout**

Any privately owned pipes and or wires in the Town's road layout are not the responsibility of the town. Any items in the road layout that are damaged will not be paid for by the Town of Eastham