

Water Use By-Law Merrimac Water Department

January 2007

Prepared for:

Board of Selectmen
2 School Street
Merrimac, Massachusetts

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SECTION III)

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ARTICLE/ **DEFINITIONS**

SECTION 1 - SPECIFIC DEFINITIONS

- 1.1 *"Agent"* shall mean a person who has the actual authority to act for, or in the place of another.
- 1.2 *"Applicant"* shall mean a person, partnership or corporation applying to the Board for a connection to the existing water facilities in the Town of Merrimac.
- 1.3 *"Board"* shall mean the Merrimac Board of Selectmen of the Town of Merrimac Water Department.
- 1.4 *"Commonwealth"* shall mean the Commonwealth of Massachusetts.
- 1.5 *"Contractor"* shall mean a person, partnership or corporation which has been approved by the Water Department and engaged in work or a similar nature, and which has sufficient equipment, labor and resources to construct proposed work, and which has obtained a valid and proper license. A contractor shall be employed by the Applicant and shall be responsible to him for the construction in accordance with the approved plans.
- 1.6 *"Customer"* shall mean an owner who is connected to and uses water from the Public Water System.
- 1.7 *"DEP"* shall mean the Department of Environmental Protection of the Commonwealth of Massachusetts.
- 1.8 *"Easement"* shall mean an acquired legal right for the specific use of land owned by others.
- 1.9 *"Engineer"* shall mean the Registered Professional Engineer employed by the Manager and acting entirely within the scope of authority granted by the Manager, directly or through properly authorized agents.
- 1.10 *"M.G.L."* shall mean the Massachusetts General Laws.
- 1.11 *"Manager"* shall mean the DPW Director of the Town of Merrimac.
- 1.12 *"May"* is permissible, *"shall"* is mandatory.
- 1.13 *"Owner"* applied to a building or land, means and includes any part owner, joint owner, tenant in common, tenant in partnership, joint tenant, or tenant by the entirety, of the whole or of a part of such building or land which is connected or to be connected to the water system.

- 1.14 *"Person"* shall mean any individual, firm, company, association, society, partnership, corporation, municipality or other similar organization, agency or group.
- 1.15 *"Premises"* shall mean the location, structure, or property where a water service has been provided and water is used.
- 1.16 *"Town"* shall mean the Town of Merrimac, County of Essex, Commonwealth of Massachusetts.
- 1.17 *"Water Department"* shall mean the Merrimac Water Department that is in control of the water system.
- 1.18 *"Public Water System"* shall mean the water mains, water storage tanks, supply wells, water treatment facilities, and all associated appurtenances used to provide potable water to the customers of the Merrimac Water Department.
- 1.19 *"Water Treatment Facility"* shall mean the structures, processes, equipment and arrangements necessary to treat the water supply.

ARTICLE II

BOARD OF SELECTMEN

SECTION 1- ESTABLISHED

The Merrimac Water Department shall be governed by a Board to be known as the Board of Selectmen. Wherever the word "Board" is used in this by-law, it shall be deemed as intended to mean The Town of Merrimac Board of Selectmen.

SECTION 2 - ORGANIZATION

The Board shall consist of three selectmen elected by the Town of Merrimac. The terms shall be three years and staggered so that only one selectmen position is required to be filled each year.

SECTION 3 - QUALIFICATIONS

All members of the Board shall be of voting age, and a resident of the Town.

SECTION 4 - GENERAL POWERS

The Manager shall have charge, control, and management of the waterworks and water supply of the Town, whether within or without the geographical limits of the Town, and shall have the powers and perform the duties conferred or imposed upon the Board by the Town's by-laws, and in addition thereto, and by any other provision of the M.G.L.

SECTION 5 - SUPERVISION AND CONTROL

The Board shall have exclusive and entire charge, management and oversight of all lands, structures, works, apparatus, pipes and fixtures designed and provided for obtaining and supplying water to the Town or to consumers, and of the use, repairs, extensions and improvements of the waterworks, structures, apparatus, pipes and :fixtures. The Board shall have control and jurisdiction over all sources of water possessed by the Town and all lands appurtenant thereto, owned or controlled by the Town, and may exercise all rights the Town has or may have as to entry upon and passage over premises of the Town connected with or appurtenant to such waterworks or supply.

SECTION 6 - RULE - MAKING

6.1 GENERALLY

The Board may make rules and regulations for the waterworks and for the management and supervision of the employees of the Merrimac Water Department.

6.2 WATER USE

The Board shall have the power to establish rules and regulations for the introduction, supply and use of water.

6.3 WATER RATES

The Board shall have the power to determine or assess water rates.

6.4 SHUTTING OFF WATER SUPPLY

The Board shall have the power to shut off the water supply of any customer who fails to comply with the requirements of this by-law, other Town by-laws and applicable rules and regulations.

ARTICLE III
MANAGER OF WATER DEPARTMENT

SECTION 1 - POSITION CREATED

The position of Manager of the Merrimac Water Department is hereby created. The Manager shall be responsible to the Board. The Manager shall have such subordinates, agents and assistants as may be determined necessary. The Manager shall perform such duties as the Board shall assign.

SECTION 2 - EMPLOYMENT

The Board shall employ a Manager of the Merrimac Water Department.

SECTION 3 - TERMS

The Manager of the Merrimac Water Department shall be employed at will and at terms mutually agreed to and contained in the employment agreement.

SECTION 4 - GENERAL DUTIES

The Manager, under the direction and control of the Board, shall have charge of the works and property connected with the waterworks, and shall perform all services in relation thereto required of him/her by the Board.

SECTION 5 - MEETINGS

The Manager shall meet with the Board monthly and report to the Board upon such matters as the Board may require. The Manager shall prepare and submit an annual report to the Board summarizing the operation and general condition of the water system.

SECTION 6 - COORDINATION WITH OTHER DEPARTMENTS

The Manager shall immediately inform the Chief of the Fire Department of any stoppages or breaks in the water mains.

ARTICLE IV

EXTENSIONS AND CONNECTIONS

SECTION 1 - BOND REQUIRED

When an extension of a water main is requested upon any street or way, a bond shall be given to the Town in such amount and form and with such sureties as the Board shall require before any extension is made. Conditioned obligors shall pay to the Town, for such time as the Board determines, at the times appointed for payment of water rates, such sums as shall amount in the aggregate, annually, to ten percent, upon the cost of such extensions, subject to diminution by the amounts that the Town shall receive, annually, from rates paid for water by consumers connected with such extensions.

SECTION 2 - PERMIT FOR CONSTRUCTION

No alterations in any water pipe or water fixture, that is part of the Merrimac Water Department, shall be made without giving notice to and obtaining a permit from the Board. No plumber or other person shall make alterations in or addition to any water pipe or fixture as aforesaid, unless the owner or agent shows a permit for the change signed by the Board or its duly authorized agent, and then only to the extent stated therein, and such permits shall be returned to the Board within 10 days after the completion of the work.

SECTION 3 - APPLICATION

An application for the construction permit referred to in **Article IV Section 2** shall be made in writing by the Applicant, the owner of the building or property in question or his/her authorized agent, to the Water Department, in such form and including such things as the Board may prescribe. Such application shall include an agreement on the part of the Applicant to observe, comply with, and be bound by such by-laws and orders as the Water Department may establish from time to time, and such rules and regulations as the Water Department may establish from time to time.

SECTION 4- SEPARATE CONNECTIONS

The intention of the Merrimac Water Department is to provide a separate connection to the water system for each individual and separate structure requiring water service. No two buildings shall be supplied with water through the same service pipe, and, so far as possible, each dwelling within a multi-family structure shall be supplied through a separate service pipe. Converted single or multi-unit homes to condominiums are required to have separate water services.

SECTION 5 - WATER SERVICE INSTALLATION

All water service pipes shall be installed according to the Merrimac Standard Specification for Water Service Installation included in Appendix A.

SECTION 6 - WATER MAIN INSTALLATION

All water main installations shall be performed in accordance with the Merrimac Standard Specification for Water Main Construction included in Appendix B.

SECTION 7 - SHUT-OFF VALVE

All service connections must be equipped with a shut-off valve, properly located, inside the building and with other appurtenances or measures as may be deemed necessary by the Board and Manager to protect the Public Water System.

SECTION 8 - SERVICE PIPE MAINTENANCE

The service pipe, shut-off valve and all fixtures connected therewith on the premises must be kept in good repair and protected from frost. The owner of the premises will be held liable for all damage which may result from a failure to do so.

SECTION 9 - PROTECTION FROM FREEZING

Water service pipes within any premises shall be protected from freezing at the expense of the owner of the premises served. Water shall not be allowed to run to prevent freezing of pipes. If any water pipes in any premises are damaged by freezing, the owner or tenant of such premises shall be liable for the costs and damages caused by such damage. Repairs shall be made in a timely manner to avoid waste of water and damage to the Public Water System.

SECTION 10 - PROVISION OF WATER SERVICE AS BETTERMENT

Whenever a petition for the construction and installation of a domestic water supply line in any street or way, by the owners of more than one-half of the frontage of all lands fronting upon any such street or way, or any portion thereof, is presented to the Water Department, the Water Department may order the construction and installation of such domestic water supply lines, provided that in such petition it is agreed that the land of each abutter is enhanced in value an amount equal to its proportionate share of the costs

of improvements and that the abutters receive benefit other than the general advantages to the community.

When the order for the construction and installation of such domestic water supply line, and when an appropriation being made by the Water Department of an amount sufficient, in the opinion of the Board, to construct and install such a domestic water supply line, in a manner to comply with all the requirements of this by-law, the Board shall cause such construction and installation to be made; and the Water Department upon being informed of the total expenditures for the purpose stated, shall thereupon cause an order to be passed, providing for a betterment assessment equal to the total amount expended.

ARTICLE V
SERVICE, SERVICE CHARGES, RATES, AND BILLING

SECTION 1 - APPLICATION FOR WATER SERVICE

To have the water service to any premises turned on, an application shall be filed with the Water Department.

The application shall be made in writing by the Applicant for water service and shall include an agreement to be bound by all Town of Merrimac By-Laws and rules and regulations pertaining to water use.

SECTION 2 - CONFORMANCE

No water shall be supplied to any building unless the pipes and fixtures in such building conform to the rules and regulations of the Board and the terms of this by-law.

SECTION 3 - BOOKS AND RECORDS

The Manager shall have charge of the keeping of the books, accounts and records of the waterworks, except collections.

SECTION 4 - RECORDS OF CUSTOMERS SERVED

The Manager shall direct staff to keep, in suitable books, the names of all customers who are connected to the Public Water System, the address of the premises, the nature of the use, the number of users, the amount charged and the amounts of abatements.

SECTION 5 - AUTHORIZATION TO INSTALL METER

No person except the proper designee of the Water Department will be allowed to set, take off or repair meters.

Customers will be required to furnish a water meter approved by the Water Department. All water meters will be placed and maintained by the Water Department. Any damage to any meter done or caused by the carelessness or neglect of the customer, owner or occupant will be charged to his/her next bill, and, if not paid as provided for in **Article V Section 13**, the water will be shut off and not again turned on until such charge and all others are paid.

SECTION 6 - INSPECTION AND CONNECTION FEES

The owner of any lot or structure that is allowed to connect to the Public Water System shall pay an inspection and a separate connection fee as determined by the Board.

SECTION 7 - RATES WITH METER

Where the Water Department has installed a water meter, the water charge may be established by the quantity of water used, rather than by schedule rates.

SECTION 8 - CONNECTED FIXTURES

In all occupied premises, every fountain, water closet, set basin, sink or other fixture, whether used or not, will be deemed and held to be used, and shall be charged for, so long as the same shall be connected to the Public Water System.

SECTION 9 -MULTIPLE USERS

When water is supplied to more than one user through a single service pipe, the bill for the water rates will be submitted to the owner of the premises. In case of nonpayment, the water may be shut off, notwithstanding the fact that one or more users may have paid their proportion to such owner or to the Water Department. The owner shall be responsible for water supplied to his premises although a charge for water rates may have been made against a tenant.

SECTION 10-PREPARATION OF BILLS

Bills for the use of water and for other charges in connection therewith shall be prepared by the office staff of the Merrimac Water Departments. Such bills shall be sent by the Merrimac Water Departments to the Public Water System customers containing statements of amounts due for water, on or before the first day of January, April, July, and October in each year, and at such other times as the Board may determine.

SECTION 11-WATERRATES PAYABLE IN ADVANCE

Where the amount of water used is not recorded by a meter, charges for water use based on water rates shall be payable in advance.

SECTION 12 - NOTICE OF DELINQUENT ACCOUNT

Water bills shall be paid within 30 days of the date of the bill. Nonpayment of a water bill after thirty (30) days will result in an interest charge of ten (10) percent added to the

next quarterly billing. In any case of nonpayment of a water bill for sixty (60) days after the same is due, the Water Department Collector shall send a notice to the delinquent, and shall inform the Board in writing that such notice has been sent.

SECTION 13 - DUTIES OF COLLECTOR

Water bills shall be committed to the Water Department collector for collection. The collector shall notify the Board monthly of the amounts of water bills collected, and shall keep records of all paid and unpaid water bills.

SECTION 14 - SUSPENSION OF SERVICE FOR DELINQUENCY

Unless any delinquent water bill is paid within three days of sending the notice of delinquency, together with the stipulated late fee for such notice, the Water Department Collector shall notify the Board, who may cause the supply to such premises to be shut off. The water shall not be turned on again until the amount due, together with any fee for such notice and the charge for shutting off and turning on, is paid.

In cases of specific supply, or where the water service has been on for fractional parts of the term and the water bill is delinquent, the delinquency notice may be served and the water shut off immediately, and the water service shall not be turned on again except upon the conditions set forth in this article.

SECTION 15 - LIEN UPON REAL ESTATE

With reference to the statutory lien upon real estate for water rates, the Board shall be the Board or Officer in charge of the Water Department for the purpose of carrying out the requirements of M.G.L.A. c. 40, & 42A, and the Board shall file in the registry of deeds a statement as provided by such section in each case when the Board shall receive a notice from the collector that the rates and charges for water supplied to any estate have remained unpaid for thirty (30) days after the due date. In addition to the ten (10) percent interest charge described in **Article V Section 12**, there shall be a service charge on water liens in the amount of \$50.00.

SECTION 16 - EFFICIENT USE OF WATER IS ENCOURAGED

The water supplied, treated, stored, and conveyed by the Public Water System is provided for the health, safety, and enjoyment of the customers of the Merrimac Water Department. The customers are reminded that the supply is not unlimited and are encouraged to avoid practices that result in the unnecessary use of water.

SECTION 17 - UNAUTHORIZED USE OF HYDRANTS

Hydrants shall not be used for any purpose other than to extinguish fires or for such purposes as may be authorized by the Manager. In no case shall hydrants be operated by

anyone other than Water Department personnel. A \$300.00 fine plus estimated water usage will be assessed for unauthorized hydrant use.

SECTION 18 - WATER CONSERVATION AND RESTRICTIONS ON USE BY HOSE OR FOUNTAIN

The Board shall restrict the use of water by hoses, fountains and otherwise, as it may deem necessary. For violation of such restrictions, the water may be shut off to the premises, and the owner shall be liable for the penalties imposed. All rules and regulations pertaining to water conservation are contained in the Merrimac Water Supply Conservation By-law included in Appendix C.

SECTION 19 - ABATEMENT RATES

19.1 GENERALLY

The Board may make abatements in water rates in cases that the Board determines to be appropriate.

19.2 VACANCY

When an abatement of any water rate is desired on account of vacancy of the premises or nonuse of water, is projected for an extended period of time, notice thereof must be given to the Board with a request for an abatement. If the request is granted, the water shall be then shut off by a Water Department employee, and an abatement made. No abatement or rebate shall be made for a period of time less than three months of any particular six-month period for which bills are rendered.

SECTION 20 - USE OF SEAL LOCKS

When water service is shut off, seal locks as may be prescribed by the Board may be placed upon faucets in the affected premises in those circumstances where the service cannot be shut off to the entire structure. Such seal locks shall not be used where water use can be controlled by a curb stop at the street. The charge for putting on such seal locks shall be established by the Board. Such seal locks shall not be taken off by anyone except an employee of the Water Department, on penalty of forfeiture of all claims for abatements, and of having the water shut off from the premises.

SECTION 21 - RIGHT OF ENTRY

The Board or authorized water department personnel may at all reasonable times, and with the owner's express permission, enter the premises of any customer to examine the internal plumbing system and external connections and associated appurtenances thereon,

the quantity of water used, ascertain compliance with this By-law, and the manner of use, or for the purpose of shutting off the flow of water to customers with delinquent bills or for any purpose whatever pertaining to the care and management of the waterworks. Meter location shall be kept clear of strategic items and remain accessible to the Water Department. In the absence of express permission from the owner the Board will conduct investigations of the premises after receiving an administrative search warrant or by other lawful means.

SECTION 22 - LIABILITY OF THE TOWN

While performing the necessary work on the premises of any customer, the Board or duly authorized employees or agents of the Town shall observe all safety rules applicable to the premises established by the owner. The owner shall be held harmless for injury or death to the Town employees or agents and the Town shall indemnify the owner against loss or damage to its property by the Town employees or agents and against liability claims and demands for personal injury or property damage asserted against the owner, except as such may be caused by negligence or failure of the owner to maintain safe conditions.

SECTION 23 - CLAIMS NOT ALLOWED

In cases of abnormal or illegal use of water or for other circumstances or when the Board determines it necessary to suspend water service, consumers will ordinarily be given notice. Failure to give such notice, however, shall not constitute a basis for a claim for any damage that may be occasioned.

SECTION 24 - CONCEALING PURPOSE

There shall be no concealment of the purpose for which water is used.

SECTION 25 - TAMPERING WITH SEAL ON METERS

No seals on meters shall be broken. Unauthorized removal and/or tampering with the meter shall result in a fine or termination of water service.

SECTION 26- CROSS-CONNECTION CONTROL PROGRAM

Merrimac's Water Department Cross-Connection Program is included as Appendix D.

ARTICLE VI
WATER SOURCE PROTECTION

SECTION 1- WATER RESOURCES PROTECTION OVERLAY DISTRICT

The Water Resource Protection Overlay District is an overlay district established by the Merrimac Zoning Ordinance. This overlay district requirements apply to the areas that may impact the public water supply wells at the Bear Hill well field and at the East Main Street well field.

As noted in the *Revised Draft Zoning Bylaw dated 12-28-03, Article 14 Water Resources Protection Overlay District* specific limits are imposed on development in watershed boundaries and recharge areas in order to protect public health by preventing degradation or contamination of surface and groundwater used for public water supply.

The Board of Water Commissioners shall review and approve proposed development and activities that may potentially impact the groundwater quality of the aquifers for the Town's two well fields.

ARTICLE VII **VALIDITY**

SECTION 1- REPEAL OF CONFLICTING BY-LAWS

All by-laws or parts of by-laws or regulations or parts of regulations of the Town in conflict with *this* by-law are hereby repealed.

SECTION 2 - INVALIDATION CLAUSE

Invalidity of any section, clause, sentence or provision in this by-law shall not affect the validity of any other section, clause, sentence or provision of this by-law, which can be given effect without such invalid part or parts.

ARTICLE VIII
IMPORT OF REGULATIONS

SECTION 1- REGULATIONS

No provision of this by-law shall be deemed to contravene or render ineffective any valid regulation.

SECTION 2 - PRIOR REGULATIONS

All prior rules and regulations in conflict herewith are hereby repealed.

SECTION 3 - AMENDMENT

The Town of Merrimac reserves the right to amend this by-law in *part* or in whole whenever it may deem necessary, but such right will be exercised only after due notice to all persons concerned and after *proper* hearing on the proposed amendment.

Amendments to this by-law shall be accomplished at Town Meeting. Town Meeting shall be called in pursuance of a warrant, under the hands of the Selectmen, notice of which shall be given at least seven days before the annual meeting or an annual or special election and at least fourteen days before any special town meeting.

ARTICLE IX
EFFECTIVE DATE

This by-law shall be in full force and effect from and after its passage, approval, recording and publication as provided by law.

This by-law is hereby approved and adopted by the vote of the Board of Water Commissioners of the Merrimac Water Department,
This 23rd day of January, 2007.

Merrimac Board of Water Commissioners

NIERRIMAC WATER DEPARTMENT

STANDARD SPECIFICATIONS

For

WATER SERVICE INSTALLATION

July2005

BOARD OF SELECTMEN

MERRIMAC, MASSACHUSETTS

WATER SERVICE SPECIFICATIONS MERRIMAC WATER DEPARTMENT

Section 1. RESPONSIBILITY OF THE PROPERTY OWNER: The Property Owner shall be responsible for insuring that the following procedures and specifications are met. Unless otherwise approved in writing by the Water Department, these procedures and specifications be complied with as a condition for attachment to the Town's water distribution system. All charges resulting from the installation of a water service will be the responsibility of the Property Owner and shall be paid prior to the water being turned on.

Section 2. PERMIT FOR SERVICE CONNECTION: Prior to beginning any service work a permit shall be obtained from the Water Department. Permit forms can be picked up at the Water Department office. A permit is required for each building service. All fees shall be paid prior to issuance of a Service Connection permit.

Section 3. PERMIT TO EXCAVATE IN A PUBLIC WAY: A permit shall be obtained from the Board of Selectmen to excavate in any public way in the Town for purposes of constructing a water service line. The location for such service line shall be specified by the Water Department.

Section 4. EXCAVATION AND BACK FILLING IN PUBLIC WAYS: Cutting existing street surfaces in public ways shall be done as directed by the Highway Superintendent. In addition to the use of approved material for backfilling around service lines, all fill shall be thoroughly tamped in layers not to exceed 8" in depth to insure maximum compaction. The replacement of street surfaces shall be as directed by the Highway Superintendent. No backfilling shall be started until the piping installation has been inspected and approved by the Water Department.

Section 5. PUBLIC LIABILITY AND SAFETY: Insurance certificates shall be furnished by the Property Owner as may be required by the Water Department in order to hold the Town harmless from all claims, demands, suits and actions for or on account of any injuries or damages occasioned by the water service work. Barricades, signs, warning lights and other safety devices shall be furnished and maintained to protect the public from accidents or injuries on account of operations. Wherever in the opinion of the Chief of Police it is deemed necessary to direct traffic around excavations, the Property Owner shall, at his own expense, obtain the services of a policeman at such times as may be designated.

Section 6. NOTIFICATION OF BEGINNING OF WORK: The manager of the Water Department shall be notified at least two days before work is to commence.

Section 7. APPROVAL OF SERVICE INSTALLATION: The water shall not be turned on until the service installation has been inspected and approved by the Water Department.

Section 8. SPECIAL CONDITIONS: Special conditions relating to the construction site or the water required shall be referred to the Water Department which will approve all variations in the methods and materials to be used. In general water service lines will not be approved if installation on private property under paved areas such as sidewalks and driveways, or in exposed locations subject to freezing or possible disturbance. Water services will not be permitted through easements over adjacent property. Multiple Services from a single tap in the main will not be permitted.

Section 9. APPROVED WATER SERVICE MATERIAL: All material used in water service installation shall meet appropriate A.W.W.A. and Water Department specifications. When an item can be shown to be of equivalent quality to the suggested material, the Water Department can approve a substitution. Compression fittings will be required on all stops, couplings and valves. The size of all pipe stops and valves will be required by the Water Department.

- A. Corporation Stop shall be Ford type F1000. A saddle clamp is required on all taps.
- B. Curb Stop shall be Ford type Z44-333.
- C. Curb Box shall be a 5 foot extension type with a stationary rod and arch pattern base Mueller type H-10334.
- D. Cellar Stop shall be a copper service ball valve with a handle and shall be supplied by the Water Department and shall be paid for by the contractor.
- E. Water Meters shall be furnished by the customer and installed by the Water Department. No meter shall be installed in a location subject to freezing or damage.
- F. Pipe for Water Service shall be Type "K" soft temper copper tubing, C-130. All copper tubing must be stamped to show type. Water service size to be determined by Water Department. Minimum service size is 1", but larger service size may be required based on anticipated water demand, elevation of building or length of service. The use of a coupling must be approved by the Water Department.

Section 10. CONSTRUCTION DETAILS

- A. Depth of cover for all water service lines and connections shall be a minimum of 5 feet in all directions. Water service lines must be run in a separate trench at least 5 feet away from drain lines, electric lines, telephone lines, gas lines, and 10 feet away from sewer lines. Sewer shall be encased in concrete where a water line crosses within 1-1/2 feet.
- B. Backfilling of trenches around water lines shall be by hand for a depth of one foot using material free of stones, frozen earth, tree limbs, etc. Water lines shall be

bedded in material approved by the Water Department. Backfilling from 1 foot above the water service to finish grade shall be done in layers and thoroughly compacted. No large stones, frozen material or large diameter material may be used in backfilling trenches.

- C. Setting Curb Boxes. All curb boxes shall be set to the finished ground grade and shall be backfilled by hand with fine material and compacted thoroughly. It is the responsibility of the Property Owner to preserve the top of the curb box at the surface of the ground. Contractor shall confirm curb box is set to finished grade prior to requesting water service be turned on.
- D. Location of Service Pipe. The service pipe shall come off the main at a 90 degree angle and run directly to the front of the building unless otherwise approved in advance by the Water Department. Water services shall not be installed under concrete slabs.
- E. Meter Pits. If the distance from the water main to the meter is over 200 feet, the Water Department may require the Property Owner to install a meter pit near the property line. This pit must be of a type easily entered with room to read, remove and replace the meter. Provision must be made to prevent meter freeze-up and the pit must be dry at all times.
- F. As-builts. As-builts shall be submitted prior to turning on water service.

Section 11. ELECTRICAL GROUND: The Water Service may be used for an electrical ground if the water piping is metallic, otherwise an alternate grounding means must be used.

MERRIMAC WATER DEPARTMENT

STANDARD SPECIFICATIONS

FOR

WATER MAIN CONSTRUCTION

July 2005

BOARD OF SELECTMEN

MERRIMAC, MASSACHUSETTS

WATER MAIN CONSTRUCTION

SPECIFICATIONS

Section 1. APPROVAL: All work done shall be inspected and approved by the engineer-inspector authorized by the Board of Selectmen, herein called the Engineer, acting within the authority and with the approval of the Board of Selectmen and the DPW director of the Town of Merrimac. The Engineer shall determine the quality and acceptability of the work and materials. Study and consultant fees are the responsibility of the developer.

Section 2. CONFORMITY TO PLANS: The work shall conform to plans approved by the Water Department for the work involved, and to the requirements of these specifications.

Section 3. RESPONSIBILITY OF CONTRACTOR FOR PLANT AND METHOD: The Contractor shall take all responsibility of the work and shall take all precautions for preventing injuries to persons and property in or about the work. He shall keep himself fully informed of all laws, ordinances and regulations in any manner affecting those engaged or employed in the work, or the materials used in the work or in any way affecting the conduct of the work and shall comply with all such existing and future laws, ordinances, regulations, orders and decrees. The Contractor shall take full responsibility for the safety and quality of the work and for the sufficiency of the methods employed in its prosecution. He shall provide and install such equipment and plant and shall use such methods and appliances for the performance of all the operations connected with the work to be done as will secure a satisfactory quality of work.

Section 4. MATERIALS AND WORKMANSHIP: All materials, fixtures, fittings and supplies shall be of standard first grade quality and of the best workmanship and design. Where the characteristics of any materials are not particularly specified, such approved materials shall be used as is customary in first-class work of the nature for which the material is employed. No inferior or low-grade articles will be either approved or accepted and all work of assembly and construction must be done in a neat, first-class and workmanlike manner.

Section 5. DEFECTIVE WORK: Inspection of the work shall not relieve the Contractor from any of his obligations to perform the work as specified, and notwithstanding that such work or materials may have been previously overlooked by the Engineer. If the work or any part thereof shall be found defective at any time before the final acceptance of the whole work, the Contractor shall make good such defect in a manner satisfactory to the Engineer, and if any material brought upon the ground for use in the work, or selected therefore, shall be condemned by the Engineer as unsuitable or not in conformity with the specifications, the Contractor shall immediately move such material from the vicinity of

the work. The Contractor shall employ only competent and skillful persons to do the work.

,Section 6. LINES AND GRADE: All lines and grades shall be subject to check by the Engineer, and the Contractor shall provide such material and give such assistance as may be required, and the marks so given shall be carefully preserved.

Section 7. SANITARY REGULATIONS: Sanitary conveniences, properly screened from public observation, for the use of all persons employed on the work shall be provided and maintained by the Contractor.

Section 8. EXCAVATION: Trenches shall be excavated to sufficient depth to provide 4-1/2 foot cover and to such widths as will give ample room for laying and inspection of the work. At pipe joints additional width and depth shall be excavated to properly make the joints.

All the excavation shall be done by open cut from the surface, except as may be otherwise expressly permitted or ordered by the Engineer, or as otherwise stipulated in this contract. Bottom of trenches in earth shall be excavated reasonably flat and the trench shall be excavated at the pipe bells to allow the pipe barrel to rest on the prepared trench bottom. Pipe shall not be placed on blocking to allow clearance for pipe bells without specific approval of the Water Department of the methods to be used in compaction of the backfill under and around the water main. Excavation in excess of this amount shall be refilled by suitable material properly place to the satisfaction of the Engineer.

All pipes and structures are to be laid on good foundation of sufficient stability to prevent settlement. If the material forming the bottom at the grade of pipe is not suitable for foundation, a further depth or width shall be excavated and the space filled with other material, as hereinafter specified.

Where rock is encountered, it shall be removed to a depth of six (6) inches below the bottom of the pipe or fitting and to such widths as will give clearance of at least nine (9) inches on each side of the pipe or fitting.

Precautions against accident from the handling, storage and use of explosives shall in all cases be entirely in accordance with the requirements of Chapter 148 of the General Laws of the Commonwealth, Sections 10 to 27 inclusive and revisions thereof, additions thereto, with all local ordinances and By-Laws.

The Contractor shall provide pumps and equipment of adequate capacity and type, to exclude or remove from the excavation the water which may be encountered and in such manner as not to interfere with the progress of the work or to cause damage to adjacent property.

All existing gas pipes, conduits, water pipes, sewers, drains or other structures which are uncovered by the excavation and which do not in the opinion of the Engineer require to be changed in location, shall be carefully supported and protected from injury by the Contractor; and if injured or removed, they shall be restored by him.

Section 9. BACKFILLING: The trenches and other excavations shall be backfilled unless otherwise directed by the Engineer as soon as the laying of the pipe or the completion of other structures will permit. In all backfilling selected materials shall be placed adjacent to the pipe or other structure and if necessary, excavated material shall be moved from one trench to another in order to provide suitable material for backfilling. The space between the pipe and the bottom and sides of trench shall be filled with selected earth thoroughly tamped by light tampers as placed and brought up evenly on both sides of the trench to a point not less than eighteen (18) inches above the top of the pipe, in layers not exceeding six (6) inches in thickness, thoroughly consolidated in such a manner as will bring no unbalanced pressure on the work. No mud or similar material, and no rock shall be placed within eighteen (18) inches of the top of the pipe. The remainder of the trench above an elevation of eighteen (18) inches higher than the top of the pipes shall be backfilled with approved material, thoroughly tamped with mechanical rammers, in layers not exceeding one (1) foot in depth. No rock will be permitted in backfilling until there is at least two (2) feet of suitable earth fill over the main, and no rock fragment weighing more than 100 pounds will be used for refilling trenches.

When in the opinion of the Engineer, the backfilling of elevations higher than one (1) foot above top of pipe can be compacted in a suitable manner by flooding, jetting or puddling with water, the Contractor will be permitted to do so.

In existing public ways, the top eighteen (18) inches of backfill shall be bank gravel suitable for road base placed and compacted during the backfilling operation and treated with calcium chloride to maintain the surface until resurfacing is placed.

Section 10. PIPE AND FITTINGS: All pipe for water mains shall be Ductile Iron. Ductile Iron Pipe shall meet the requirements of ANSI/AWWA C151/A21.51-81 or latest revisions thereto. Pipe joint shall be push-on type, meeting ANSI/AWWA C111/A21.11-80 or latest revision thereto.

Thickness class for ductile iron pipe shall be Class 52 (0.33 inches) for 8 inch pipe and (0.31 inches) for 6 inch pipe.

Thickness class for other pipe sizes shall be as determined by the Board of Selectmen.

Compact fittings shall be, mechanical joint, all bell, Ductile Iron, minimum pressure rating of 350 psi, meeting the requirements, of ANSI/AWWA C153/A21.53-84 or latest revision thereto, including gland, rubber lining, bolts and nuts.

All pipe and fittings are tar coated and cement lined, 1/8 minimum thickness and meeting the requirements of ANSI/AWWA C104/A21.4-85 or latest revision thereto.

The Contractor shall be responsible for the handling and storage of all pipe and accessories. Material shall be handled so as to avoid damage. The interior of pipe and fittings shall be kept free from dirt and other foreign matter and protected from possible damage by freezing of trapped water.

Retainer glands for hydrant branches shall be cast of high strength ductile iron filled with cup point, square head, double heat-treated steel set screws, six of each for 6-inch gland and tightened to 75 ft. lbs. torque.

Tapping sleeves and valves shall be designed for installation under pressure without interrupting service, manufactured in two sections for easy installation and with closely spaced bolts located close to the side gaskets to ensure a water-tight joint and provide reinforcement of the main. Sleeve joints shall be mechanical and branch flange shall be female faced to accommodate the raised male face of the tapping gate.

Gate valves for tapping sleeve shall be flange-mechanical joint, resilient seal, iron body, bronze mounted, double disk, open left, designed for 200 pounds working pressure and shall meet AWWA Specifications.

Valves shall be Mueller Co., A2360-20 Series, resilient wedge gate valves, with sealed and enclosed AWWA operators with 2" square nut, open left. Valves shall be mechanical joint type. Valve shaft shall be solid steel extending in one piece through the entire valve body and operator, hexagonal in cross section. Valve disc shall be machined to fit the hexagonal shaft without the use of locking pins or keys to maintain alignment. Valve body shall be provided with a machined stainless-steel seat, valve disc shall have vulcanized rubber seat. Valves shall be bubble-tight under all pressure conditions up to 150 psi.

Valve boxes shall be cast iron, 5-1/4-inch diameter, two piece sliding type, with lid marked "Water".

Hydrants shall be mechanical joint type, with two (2) 2-1/2-inch nozzle and one (1) pumper connection, with a 5-1/4-inch valve opening. Hydrant shall conform to ANSI/AWWA C502-85, or latest revision, designed for 150 psi., working pressure, dry bonnet type, with breakable flange and compression type main valve. Hydrant shall be Mueller Co., Centurion 250, A423.

Section 11. LAYING OF PIPE AND FITTINGS: All pipe and fittings shall be laid in accordance with best waterworks practice and the applicable requirements of ANSI/AWWA C600-82, or latest revision thereto. Pipe shall be laid true to line and grade as given by the Engineer, and properly supported and braced and backfill thoroughly tamped around and under the pipe and fittings to provide proper support.

All pipe fitting, valves, hydrants and accessories shall be carefully lowered into the trench by means of derrick, ropes, or other suitable equipment in such manner as to

prevent damage to pipe and fittings. Under no circumstances shall pipe or accessories be dropped or dumped into the trench. The pipe and accessories shall be inspected for defects prior to lowering into trench. Any defective, damaged or unsound pipe shall be replaced. All foreign matter or dirt shall be removed from the interior of pipe before lowering into position in the trench. Pipe shall be kept clean by means approved by the Engineer during and after laying.

Fittings shall be carefully aligned and supported and shall be braced as required by the Engineer. Mechanical joints shall be assembled in accordance with manufacturer's recommendations and shall be thoroughly wire brushed before assembly to remove loose rust or foreign matter and end of pipe, bell socket, and gasket brushed with soapy water just prior to assembly. Glands shall be brought up evenly and bolts tightened with torque measuring or indicating wrenches for 75 ft. pound torque or otherwise recommended by the manufacturer. Pipe shall not be deflected either vertically or horizontally in excess of that recommended by the manufacturer, and only with the approval of the Engineer. When pipe laying is not in progress the open end of pipes shall be closed by approved means to prevent the entry of dirt or trench water into the line. No pipe shall be laid in water or on frozen trench bottom or when, in the opinion of the Engineer, the trench conditions or the weather are unsuitable for such work.

Where pipe cutting is required, it shall be carefully and accurately accomplished, leaving a smooth, clean cut. Particular care must be exercised to prevent damage to the cement lining.

Hydrants shall be placed at the beginning of every project and spaced at intervals of 500 feet.

Hydrant branches shall be securely anchored to the water main using anchor type mechanical joint glands, retainer glands, or tie rods.

Hydrants and valves shall be set plumb and secure with gate stems vertical and boxes centered to provide for ready application of gate wrench. Hydrants and valves shall be provided with concrete blocking, stone bed, supports and retainer glands as shown on Contract Drawings or as directed by Engineer. Care shall be taken when placing concrete thrust block behind hydrant to keep drip clear and free to drain.

Bends, tees, valves and hydrants and other fittings, shall be provided with reaction or thrust blocking by concrete placed between solid ground and the fittings to be anchored and a retainer gland. Concrete shall be 1:2-1/2:5 mix.

After the pipe has been laid, all pipe shall be subjected to hydrostatic pressure 50 percent above normal operating pressure but not exceeding 50 lbs. more than the rated working pressure of the pipe. The normal operating pressure shall be defined by the Engineer. Test shall be made only after completion of partial or complete backfill as specified, and not until at least 36 hours after the 1st concrete thrust or reaction backing

has been cast with high early strength, or at least 7 days after the last concrete thrust or reaction backing has been cast with standard cement.

The duration of each pressure test shall be 30 minutes unless otherwise directed by the Engineer.

Each section of pipe line shall be slowly filled with water, and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer.

The pump, pipe connection, and all necessary apparatus except gauges, shall be furnished by the Contractor.

During the filling of the pipe and before applying the specified test pressure, all air shall be expelled from the pipe line. To accomplish this, taps shall be made, if necessary, at point of highest elevation, and after completion of the test the taps shall be tightly plugged unless otherwise specified.

During the test, all exposed fittings, valves, and hydrants will be carefully examined. If found to be cracked or defective, they shall be removed and replaced by the Contractor with sound material in the manner prescribed. The test shall then be repeated until satisfactory to the Engineer.

No pipe installation will be accepted until the leakage for the section of line tested is less than twelve (12) gallons per twenty-four hours per mile per inch diameter of pipe, at a pressure of 150 psi.

See ANSI/AWWA C600-82 Section 4 - Hydrostatic Testing for allowable leakage at different test pressures.

Should any test of a section of pipe line disclose joint leakage greater than permitted, the Contractor shall at his own expense locate and repair the defective joints until the leakage is within the permitted allowance.

After completion of tests the pipe lines shall be disinfected by application of chlorine either as calcium hypochlorite or liquid sodium hypochlorite in an amount to produce a solution of 50 p.p.m for a contact period of 24 hrs. and afterward flushed until the chlorine residual is reduced to less than 1.5 p.p.m. Chlorine dosage shall be applied by pumping into the line to be treated a sufficient amount of chlorine in solution, which, when mixed with the water in the pipe line, will meet the required concentration.

The mixture shall be pumped through the section being treated and shall be discharged and monitored at a point farthest from the point of introduction of the chlorine. When the solution reaches the required concentration of 50 p.p.m. the pump and discharge valve shall be closed and the liquid left in the section being chlorinated for 24 hours.

The Contractor shall furnish all materials and equipment for the sterilization of the mains, but the Water Department will furnish necessary assistance in flushing, operation of gate valves and the water for flushing and testing.

Section 12. RESURFACING: In public ways, Contractor shall resurface all trenches and other excavation as herein specified. In general, the work shall be done in cooperation with and according to directions of the Highway Department acting through the Engineer. In general, the following specifications shall apply, however, the Board of Selectmen may modify these requirements to meet special conditions of State Highway Permits or to suit particular locations.

After consolidation and settlement of the trench, temporary resurfacing shall be placed in one course to a compacted thickness of 1-1/2 inches using Type I bituminous concrete rolled to a smooth surface even with the existing road grade with a slight crown across the trench. This surface shall be maintained by the Contractor until the placing of permanent resurfacing.

After final settlement and a winter season have passed, the trenches shall be permanently resurfaced, as specified. Any temporary resurfacing shall be removed and the gravel base trimmed to provide for the permanent resurfacing and the edges cut to straight lines and sharp edges and traffic kept off until resurfacing is placed. Cut edge of existing pavement shall be coated with an oil emulsion primer.

Type I bituminous concrete shall be placed to a total compacted thickness of 2-1/2 inches, consisting of a base course of 1-1/2 inches and a surface course of one (1) inch. The base course shall be binder material with coarse aggregate and placed to a depth of 1-1/2 inches after compaction and carefully rolled to grade. The surface course shall have pea stone aggregate carefully placed and raked and rolled to conform to existing road surface with a slight crown across the trench to avoid pockets or depressions and with a thickness after compaction of one (1) inch. Roller weight for finish course shall approximate 1.5 tons per foot width of roller. After placing and rolling bituminous concrete, the joint between the new and old pavement shall be sealed with a primer coat of bitumen and fine sand applied three inches each side of joint.

Existing grass lawn areas cut by trenches or in other location as directed by the Engineer shall be replaced by a six (6) inch layer of suitable loam rake and rolled to grade, fertilized with Scott's Turf Builder or equal, applied at the rate of one-tenth (1/10) pound per square yard and seeded with Scott's Lawn Seed, Special Purpose Blend, or approved equal, applied at the rate of one-tenth (1/10) pound per square yard, sods may be cut and replaced.

WATER SUPPLY CONSERVATION BY-LAW

1. PURPOSE

The purpose of this bylaw is to protect, preserve and maintain the public health, safety and welfare whenever there is in force a State of Water Supply Conservation or State of Water Supply Emergency by providing for enforcement of any duly imposed restrictions, requirements, provisions or conditions imposed by the Town or by the Department of Environmental Protection.

2. AUTHORITY

This bylaw is adopted by the Town under its police power to protect public health and welfare and its power under M.G.L. c.40, s.21 et seq. and implements the Town's authority to regulate water use pursuant to M.G.L. c. 41, s.69B. This bylaw also implements the Town's authority under M.G.L. c. 40, s.41A, conditioned upon a declaration of water supply emergency issued by the Department of Environmental Protection.

3. DEFINITIONS

Person shall mean any individual, corporation trust, partnership or association, or other entity.

State of Water Supply Emergency shall mean a State of Water Supply Emergency declared by the Department of Environmental Protection under M.G.L. c.21G, s15-1 7.

State of Water Supply Conservation shall mean a State of Water Supply Conservation declared by the Town pursuant to section 4 of this bylaw.

Water Users or Water Consumers shall mean all public and private users of the Town's public water system, irrespective of any person's responsibility for billing purposes for water used at any particular facility.

4. DECLARATION OF A STATE OF WATER SUPPLY CONSERVATION

The Town, through its Board of Selectmen, may declare a State of Water Supply Conservation upon a determination by a majority vote of the Board that a shortage of water exists and conservation measures are appropriate to ensure an adequate supply of water to all water consumers. Public notice of a State of Water Conservation shall be given under section 6 of this bylaw before it may be enforced.

5. RESTRICTED WATER USES

A declaration of a State of Water Supply Conservation shall include one or more of the following restrictions, conditions, or requirements limiting the use of water as necessary to protect the water supply. The applicable restrictions, conditions or requirements shall be included in the public notice required under section 6.

a) Odd/Even Day Outdoor Watering Outdoor watering by water users with odd numbered addresses is restricted to odd numbered days. Outdoor watering by users with even numbered addresses is restricted to even numbered days. Any watering during odd/even day outdoor watering is restricted to 7:00-9:00AM and 7:00-9:30PM.

b) Outdoor Watering Ban Outdoor watering is prohibited, unless in conformance with above restrictions.

c) Outdoor Watering Hours Outdoor water is permitted only during daily periods of low demand, to be specified in the declaration of a State of Water Supply Conservation and public notice thereof.

d) Filling Swimming Pools Filling of swimming pools is prohibited.

e) Automatic Sprinkler Use The use of automatic sprinkler systems is prohibited.

6. PUBLIC NOTIFICATION OF A STATE OF WATER SUPPLY CONSERVATION; NOTIFICATION OF DEP

Notification of any provision, restriction, requirement or condition imposed by the Town as part of a State of Water Supply Conservation shall be published in a newspaper of general circulation within the Town, or by such other means reasonably calculated to reach and inform all users of water of the State of Water Supply Conservation. Any restriction imposed under section 5 shall not be effective until such notification is provided. Notification of the State of Water Supply Conservation shall also be simultaneously provided to the Massachusetts Department of Environmental Protection.

7. TERMINATION OF A STATE OF WATER SUPPLY CONSERVATION; NOTICE

A State of Water Supply Conservation may be terminated by a majority vote of the Board of Selectmen, upon a determination that the water supply shortage no longer exists. Public notification of the termination of a State of Water Supply Conservation shall be given in the same manner required in section 6.

8. **STATE OF WATER SUPPLY EMERGENCY; COMPLIANCE WITH DEP ORDERS**

Upon notification to the public that a declaration of a State of Water Supply Emergency has been issued by the Department of Environmental Protection, no person shall violate any provision, restriction, requirement, condition of any order approved or issued by the Department intended to bring about an end to the State of Emergency.

9. **PENALTIES**

Any person violating this bylaw shall be liable to the Town in the amount of \$50.00 for the first violation and \$100.00 for each subsequent violation which shall inure to the Town. Any fines collected shall be deposited in the General Fund of the Town.

Fines shall be recovered by indictment, or on complaint before the District Court, or by non-criminal disposition in accordance with section 21D of chapter 40 of the general laws. Each day of violation shall constitute a separate offense.

10. **SEVERABILITY**

The invalidity of any portion or provision of this bylaw shall not invalidate any other portion or provision thereof.

**WATER USE BY-LAW
APPENDIX D**

CROSS CONNECTION CONTROL AND BACK FLOW PREVENTION

SECTION I - CROSS CONNECTION CONTROL - GENERAL POLICY

A. Purpose

The purpose of this regulation is:

1. To protect the public potable water supply of the Town of Merrimac from the possibility of contamination or pollution by isolating within the Owner's internal distribution system(s) or the Owner's private water system(s) such contaminants or pollutants which could flow into the public potable water supply; and,
2. To promote the elimination or control of existing cross connection between the Owner's in-plant potable water systems(s) and non-potable water system(s), plumbing fixtures and industrial piping systems; and,
3. To provide for the maintenance of a continuing Cross Connection Control Program which will systematically and effectively prevent contamination or pollution of all potable water systems. This Program is further defined in Attachment A.

B. Responsibility

The Town of Merrimac (TOWN) working through its Department of Public Works (DPW) shall be responsible for the protection of the public water system (PWS) from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If, in the judgment of the TOWN an approved backflow prevention assembly is required, at the Owner's water service connection, or within the Owner's private water system, for the safety of the PWS, the DPW, or its designated Agent, or the Town of Merrimac's Plumbing Inspector, shall give notice in writing to said Owner to install an approved backflow prevention device(s) at specific location(s) on the Owner's premises. The Owner shall immediately install such approved devices, at the Owner's expense; and, failure, refusal or inability on the part of the Owner to install, have tested and maintain said devices shall constitute a ground for disconnecting water service to the premise until such requirements have been satisfactorily met.

SECTION II - DEFINITIONS

Definitions, as used in this portion of the Water Use By-Laws, unless the context indicates otherwise, the following words shall have the following meanings.

Agent- same as designee, meaning the company retained by the Town to perform the necessary inspections and testing of back flow preventer.

Air Gap Separation - shall mean the method of preventing backflow through the use of an unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level of the receptacle.

Approved Backflow Prevention Device - shall mean a method to prevent backflow approved by the Department for use in Massachusetts.

Atmospheric Vacuum Breaker - shall mean an approved backflow device used to prevent back siphonage which is not designed for use under static pressure.

Auxiliary Water System - shall mean any water supply on, or available to, the premises other than the TOWN approved public potable water supply.

Back Pressure - shall mean pressure created by mechanical means or other means which cause water or other liquids or substances to flow or move in a direction opposite to that which is intended.

Back Siphonage - shall mean a form of backflow due to reduced or sub-atmospheric pressure within a water system.

Backflow - shall mean the flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply from any source other than the intended source.

Backflow Preventer with Intermediate Atmospheric Vent - shall mean a device having two independently operating check valves separated by an intermediate chamber with a means for automatically venting it to the atmosphere in which the check valves are force loaded to a normally closed position and the venting means is force loaded to a normally open position.

Barometric Loop - shall mean a loop of pipe rising at least thirty-five (35) feet, at it's topmost point, above the highest fixture it supplies.

Certified Backflow Prevention Surveyor and/or Tester - shall mean an individual who holds a valid Massachusetts Backflow Prevention device Tester's Certificate, or a Surveyor's certificate or a combination Surveyor/Tester certificate, issued by the Department.

Contaminant - shall mean any physical, chemical or biological or radiological substance or matter in water.

Cross Connection shall mean any connection between a distribution pipe of potable water from a public water system and any waste pipe, soil pipe, sewer, drain, or other unapproved source. Without limiting the generality of the foregoing, the term "cross connection" shall also include any by-pass arrangements, jumper connections, removal section swivel or changeover connection and other temporary or permanent connection through which backflow can or may occur.

Cross Connection Violation Form - shall mean a form sent to the Owner by the TOWN delineating cross connection violations found on the Owner's premises and a procedure for corrective action.

Department - shall mean the Massachusetts Department of Environmental Protection.

Design Data Sheet - shall mean a report form, designated by the TOWN or Department, which is to be submitted to the TOWN or its Designee along with plans for each installation of a reduced pressure backflow preventer or double check valve assembly, or for each change to any such device already installed, describing and showing the details of the specific installation.

Designee - shall mean an agent or representative of the TOWN, engaged by the TOWN for the purpose of implementation of this ordinance and meets the criteria of the Department with regard to certification as a surveyor/tester in cross connection control.

Double Check Valve Assembly - shall mean a backflow prevention device which incorporates an assembly of check valves, with shut-off valves at each end and appurtenances for testing.

Health Hazard - shall mean an actual or potential threat of contamination to the potable water in a public water system which, in the opinion of the Department, the TOWN, or its Agent would endanger health.

In-Plant Protection - shall mean the location of an approved backflow prevention devices in a manner which provides simultaneous protection of the public water supply system and the potable water system within the premises.

Inspection - shall mean the physical examination and testing of an installed backflow prevention device to verify that the backflow prevention device is functioning properly.

Inspection and Maintenance Report Form - shall mean a report form designated by the Department, which is to be used by Certified Testers to record all pertinent testing information.

Owner - shall mean any person maintaining a cross connection installation or owning or occupying premises on which cross connections can or do exist.

Owner's Agent - shall mean any person or body designated by the Owner to act as his or her representative.

Potable Water - shall mean water from any source which has been approved the by Department for human consumption.

Pressure Vacuum Breaker - shall mean an approved backflow prevention device designed to prevent only back siphonage and which is designed for use under static line pressure.

Public Water Supply System (PWS) - shall mean a system for the provision to the public of piped water for human consumption as defined in 310 CMR 22.02 (8).

Reduced Pressure Backflow Preventer (RPBFP) - shall mean an approved backflow prevention device incorporating: (1) or two or more check valves, (2) automatically operating differential relief valve located between the two checks, (3) two shut off valves, and (4) necessary appurtenances for testing;

Reviewing Authority - shall mean the Department, the TOWN, or its Designee, authorized by 310 CMR 22.22, whichever is responsible for the review and approval of the installation of an approved backflow prevention device.

Supplier of Public Water - shall mean any person who owns or operates a public water system.

Unapproved Source - shall mean the source or distribution system for any water or other liquid or substance which has not been approved by the Department as being of safe and sanitary quality for human consumption, including but not limited to any waste pipe, soil pipe, sewer or drain.

SECTION III - REQUIREMENTS

A. Water System

1. The water system shall be considered as made up of two parts: the PWS and the Owner's System.
2. The PWS shall consist of source facilities and the distribution system; and shall include all those facilities of the water system under the complete control of the utility, up to the point where the Owner's system begins.
3. The source shall include all components of the facilities utilized in the production, treatment, storage and delivery of water to the distribution system.
4. The distribution system shall include the network of conduits used for the delivery of water from the source to the Owner's system.
5. The Owner's system shall include those parts of the facilities beyond the termination of the PWS which are utilized in conveying PWS delivered domestic water to points of use.

B. POLICY

1. No water service connection to any premises shall be installed or maintained by the TOWN unless the water supply is protected as required by Massachusetts State Law and Regulations and this Regulation. Service of water to any premises shall be discontinued by the TOWN if a backflow prevention assembly required by this regulation and State Law is not installed, tested and maintained, or if it found that a backflow prevention assembly has been removed, by-passed or if an unprotected cross connection exists on the premises. Service will not be restored until such conditions or defects are connected.
2. The Owner's system shall be open for inspection at all reasonable times to authorized representatives of the TOWN to determine whether cross connections or other structural or sanitary hazards, including violations of these regulations exist. When such a condition becomes known, the TOWN shall deny or immediately discontinue service to the premise by providing a physical break in the service line until the Owner has corrected the condition(s) in conformance with the Department of Environmental Protection Regulations and this Regulation relating to cross connections.
 - a. It is acknowledged that unless the Owner's consent is provided, or some recognized exception to the warrant requirement applies, a warrant is required to conduct an administrative inspection.
 - b. The TOWN shall inform the Owner by letter, of any failure to comply, by the time of the first re-inspection. The TOWN will allow an additional fifteen (15) days for the correction. In the event the Owner fails to comply with the necessary correction by the time of the second re-inspection, the TOWN will inform the Owner by letter,

that the water service to the Owner's premises will be terminated within a period not to

exceed five (5) days. In the event that the Owner informs the TOWN of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the TOWN but in no case will exceed an additional thirty (30) days.

3. No person shall construct or install or contract with another person for the construction or installation of any air gap separation with tank and pump arrangement, reduce pressure back: flow preventer, or double check valve assembly required by the Department of Environmental Protection or this Regulation unless a Design Data Sheet with plans showing the method of protection of the TOWN Public Water Supply has been approved by the TOWN or its Designee for the installation of such device.
4. Prior to the installation of any pressure or atmospheric vacuum breaker, backflow preventer with intermediate atmospheric vent, or barometric loop, the plans and specifications for the plumbing work must receive a permit issued pursuant to 248 CMR 2.04 (3) by the local Plumbing Inspector. For these devices, a plumbing permit issued under 248 CMR 2.04 (3) shall constitute installation approval pursuant to these regulations.
5. Any person owning or occupying any premises where a cross connection is present shall apply annually to the TOWN for a permit for each reduced pressure backflow preventer and double check valve assembly installed on the premises.
6. The reduced pressure backflow preventer shall be designed to operate so that:
 - a. The pressure in the zone between the two check valves is maintained at a value less than the pressure on the public water system side of the device; and,
 - b. At cessation of normal flow, the pressure in the zone between the two check valves is maintained at a value less than the pressure on the public water system side of the device; and,
 - c. In the case of leakage of either check valve, the differential relief valve shall operate to maintain reduced pressure in the zone by discharging to the atmosphere.

7. It shall be the duty of the Owner-user at any premises where backflow prevention devices are installed to have certified inspections performed on reduced pressure backflow devices twice each year by the TOWN, and double check valve assemblies shall have certified inspections performed once each year by the TOWN. In those instances where the TOWN deems the hazards to be great enough the TOWN may require certified inspections at more frequent intervals. These inspections and tests shall be at the expense of the Owner and shall be performed by the TOWN or its agent. These assemblies shall be repaired, overhauled or replaced by the Owner, at the Owner's expense whenever such assemblies are found to be defective. Records of such tests, repairs or overhaul shall be kept and made available to the TOWN.

8. Water for domestic consumption will not be provided from the Public Water Supply to any structure on a private property where water is also pumped from a well, pond or spring for domestic consumption or other uses. This restriction does not apply to lands in excess of five (5) acres actively devoted to agriculture, horticulture, floriculture or viticulture, as defined in G.L. c.128.

9. Irrigation systems for lawn, garden and similar horticulture that are connected to the Public Water Supply shall include a backflow prevention device as required by 248 CMR 10.00 Uniform State Plumbing Code and 310 CMR 22.00 the Massachusetts Drinking Water Regulations.

SECTION IV - RECORDS AND REPORTS

A. TOWN - shall maintain the following records and reports:

1. All survey and inspection reports.
2. Copies of backflow device tests and re-tests.
3. Copies of lists, summaries and Annual Reports submitted to the Department of Environmental Protection.
4. Design Data Sheets and plumbing plans.
5. Copies of Violation Report Forms.

B. AGENT - shall maintain the following records and reports:

1. Copies of Violation Report Forms.
2. Copies of all backflow device tests and re-tests.
3. Copies of Design Data Sheets and plumbing plans.

SECTION V - ENFORCEMENT

- A. Whoever maintains a cross connection without a permit, or after revocation of the permit to maintain such connection, and whoever maintains a cross connection without installing the appropriate backflow prevention device required by the Department or these regulations, shall be subject to a fine and/or imprisonment in accordance with the laws of the Commonwealth of Massachusetts.
- B. In order to ensure the delivery of a fit and pure water supply, the TOWN may issue a written order, pursuant to M.G.L. c 111 s 160 requiring the supplier of water to cease supplying water to any premises if one or more cross connections are maintained in violation of the requirements of these regulations, or requiring any person to take such actions as are reasonable and necessary to prevent or to eliminate cross connections.

ATTACHMENTS

Note: These attachments are provided for reference and information only and are not to be construed to be a part of the approved water use by-law document.

- A. Cross Connection Control Program
- B. Sample Public Notification F01m
- C. Application for Approval for Back Flow Device Design Data and Plumbing Plan
- D. Sample Approval Letter with Conditions