

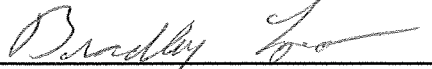
TOWN OF BERLIN, VERMONT

WATER SYSTEM ORDINANCE AND CONSTRUCTION STANDARDS

Original adoption Date: April 4, 2016

Original Effective Date: June 3, 2016

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WATER ORDINANCE AND CONSTRUCTION STANDARDS

TABLE OF CONTENTS

<u>Sections</u>		<u>Page</u>
<u>No.</u>		
1.	AUTHORITY	2
2.	DEFINITIONS	2
3.	APPLICATION	5
4.	OPERATOR AS SUPERINTENDENT OF WATER SYSTEM	5
5.	CONNECTION FEES	6
6.	WORK COMMENCING BEFORE PERMIT ISSUANCE	7
7.	PERMITS FOR CONSTRUCTION OF WATER SERVICE LINES, EXTENSIONS OR ADDITIONS TO THE WATER SYSTEM	7
8.	SERVICE LINES	9
9.	DISCONTINUED WATER SERVICE LINES	12
10.	INSPECTIONS	12
11.	WATER METERS	12
12.	WATER MAINS AND APPURTENANCES - OPERATION, REPAIRS AND REPLACEMENT	14
13.	LAWN SPRINKLERS	14
14.	USE OF WATER FOR UNAUTHORIZED PURPOSE	15
15.	TURN-OFFS FOR REPAIRS OR DROUGHT; NOTICE TO USERS	15
16.	FIRE HYDRANTS	15
17.	TAMPERING, ETC. WITH PROPERTY BELONGING TO TOWN	16
18.	WATER RATES / BILLING	17
19.	CONTROL OF CROSS CONNECTIONS AND BACKFLOW	18
20.	OTHER PENALTIES	35
21.	SEVERABILITY	35

CONSTRUCTION SPECIFICATIONS

02232 Protection and Repair of Property
02300 Earthwork
02301 Rock Removal
02510 Contaminated Earthwork
02511 Bituminous Concrete Pavement
02930 Lawns and Grasses
03301 Curb and Sidewalk
15123 Water Meters and Appurtenances

INDEX OF STANDARD DETAILS

Drawing No. 1 - Standard Water System Construction Details

WATER SYSTEM REGULATIONS

1. **AUTHORITY**

- A. This Ordinance has been duly adopted by the Town of Berlin Selectboard, effective June 3, 2016 pursuant to Title 24, Chapter 89.

2. **DEFINITIONS**

- A. **BASE FEE** shall mean a minimum water charge per business or residential unit, over a specified time period that is assessed to the owner of each unit regardless of metered water consumption.
- B. **COLD WEATHER CONSTRUCTION** shall mean non-emergency construction work during the period November 15 to April 15 on the water system, especially distribution mains or service lines.
- C. **COMMISSION** shall mean the Public Works Board or lieu of a Public Works Board, the Selectboard of the Town of Berlin will act as the Commission.
- D. **COMMISSIONERS** shall mean the Public Works Board or lieu of a Public Works Board, the Selectboard of the Town of Berlin will act as Commissioners.
- E. **CORPORATION** shall mean the water shut off valve attached to the water main, to which the Water Service Line is attached.
- F. **CROSS CONNECTION** shall mean any direct or indirect pipe connection between the Town of Berlin potable water supply and any other supply of liquid or gas.
- G. **CURB STOP** shall mean the valve on the water service line, typically at the edge of the highway right-of-way on the Customer's property, which provides a water service to the User.
- H. **CUSTOMER** shall mean any person, firm, corporation, or governmental subdivision who is granted water service or who is responsible for payment of such water service.
- I. **DESIGN PROFESSIONAL.** A professional Engineer registered or licensed by the State of Vermont.
- J. **DISCONTINUANCE OF WATER SERVICE** shall mean deliberate interruption of water service by the Town to the Customer (for reason of delinquent payment, prevention of excessive water loss, to protect against contamination of the system or for tampering with water system).
- K. **DISCONTINUED WATER SERVICE LINE.** A water service line shall be considered discontinued; when the building served by that line is

demolished and no building or zoning permits for a building requiring water service is filed for a period of one year; or, when a new water service line has been installed to serve a building and use of the old service line has been abandoned.

- L. DISTRIBUTION MAIN. (“Water Main” or “Main”) shall mean the primary water supply pipe from which service connections are made to supply water to the Customer through the service lines.
- M. EMERGENCY TERMINATION OF WATER SERVICE shall mean execution of an immediate water service shut-off due to:
 - a. Water leakage between the curb stop and building.
 - b. Discovery of a direct and unprotected cross connection.
 - c. Unauthorized excessive use of water.
 - d. Violation of special “restrictive use” orders issued by the governing body.
 - e. Any other situation that could contaminate the water system or significantly deplete available water in the system.
- N. EQUIVALENT RESIDENTIAL UNIT (ERU) shall mean any building or specific portion separately identifiable as:
 - a. Equivalent in average water consumption to a single family residential unit.
 - b. All ERU assignments shall be as determined by the Town.
- O. EXTENSION OF WATER MAIN shall mean any extension of distribution mains beyond the existing service area in accordance with the rules, regulations, standards and specifications of the Town.
- P. FEE. A fee set by the Municipality or Commission.
- Q. FIRE PROTECTION CAPACITY shall mean the ability of a public water system in mitigating the unwanted effects of potentially destructive fires.
- R. GOVERNING BODY means the Selectboard of the Town of Berlin.
- S. MAY is permissive, indicating a choice. “Shall” is mandatory.
- T. MUNICIPAL OFFICE shall mean the place designated by the governing body to receive applications for service, receive payments of water bills and where public notices of discontinuance of services are generated and posted, i.e., Berlin Town Office.
- U. MUNICIPAL REPRESENTATIVE means a member of the Selectboard or its representative, the Town Administrator, the Town Clerk, the Town Treasurer, the Water Commissioners or the Water System Operator.
- V. MUNICIPALITY means the Town of Berlin.

- W. OPERATOR. The State licensed person(s) appointed by the Town and who has primary responsibility for the routine operation, maintenance, record keeping and testing of the water system.
- X. PERMITTEE. A person applying for or holding any of the permits described in these regulations.
- Y. PERSON means an individual; owner, corporation; church; business; trust; estate; limited liability corporation; association; joint venture; government, government subdivision, agency, or instrumentality; public corporation; or any other legal or commercial entity.
- Z. PROPERTY OWNER means the person, firm, corporation, trusteeship, or governmental agency that has title to the property that is served and ultimately responsible for payment of all rates, fees and charges.
- AA. REASONABLE HOURS shall mean between 8:00 a.m. and 8:00 p.m.
- BB. RESIDENTIAL UNIT shall mean a livable abode intended for a single family, which includes at a minimum, a kitchen or kitchenette, bathroom, and bedroom or other room that serves as sleeping quarters. No minimum number of rooms is required to serve those functions.
- CC. SADDLE shall mean the mechanism for attaching a smaller service line to a larger service line, a circular device bolted or otherwise attached to the water main through which a hole is drilled in the water main to supply water to the service line.
- DD. SHALL is mandatory. MAY is permissive, indicating a choice.
- EE. SOURCE PROTECTION AREA. The drainage area contributing water to the Town sources as defined in the Town's Source Protection Plan.
- FF. SUBDIVISION shall mean the division of any land, parcel, or area of land into two or more lots or parcels for the purpose of conveyance, transfer, improvement or sale, which may include appurtenant roads, streets, lanes, alleys and ways, dedicated or intended to be dedicated to public use.
- GG. SUPERINTENDENT shall mean the Appointee of the Governing Body designated as responsible for management and operation of the public water system. Superintendent may be the same person as the Operator.
- HH. TAP shall mean any connection of a service line or distribution main to the water main.
- II. TOWN shall mean the Town of Berlin.

- JJ. UNCONNECTED PROPERTIES shall mean those properties which do not currently receive water service.
- KK. USER shall mean any person who is a customer and who receives water from the municipality through a service line.
- LL. WATER DEPARTMENT. The words “water department” shall mean the commissioners and operators.
- MM. WATER DISTRIBUTION SYSTEM. All pipes, fittings, valves, meters, pumps, hydrants, tanks and all appurtenances thereto which are physically connected to the Town water system.
- NN. WATER MAIN. Water mains shall be those water pipes, serving multiple properties and located within the public right-of-way, easements acquired by the Town, or otherwise owned by the Town.
- OO. WATER SERVICE LINE. The water pipe from the water main to the building foundation, including the corporation stop and the curb stop. Where there is no foundation, the water service line shall run from the water to the point where it goes into or under the building.
- PP. WATER SUPPLY. The water sources of the Town water system.
- QQ. WATER SYSTEM. The water system and its supporting facilities, including, but not limited to the water supplies, well pump station, water storage tank, valve vaults, water mains, water services and all Town owned lands and Right-of-Ways associated with the water system facilities.

3. **APPLICATION**

This ordinance applies to all parts of the Town water system, whether owned by the Town or any other person.

4. **OPERATOR AS SUPERINTENDENT OF WATER SYSTEM**

The Water Commission (Commission), acting through the water system Operator, shall have the exclusive general management and supervision of the Town’s water works. They may prepare and keep on file as public record, such maps, plans and records as may be necessary to fully and properly show the location of all water system facilities, mains, water services lines, valves, corporation stops and other fixtures and shall turn the over these documents to their successors in office. The Commission and Operator shall have any and all powers conferred by State or Federal Law or Regulation such as powers relate to the operation of a water system.

5. **CONNECTION FEES**

A connection fee shall be due and payable to the municipality before a new service connection is constructed and only after the Water Commission has approved the connection. Water service will not be provided until a water meter, meeting the Town's specifications has been installed in the building to be served.

The amount of the fees shall be established by the Commission, which is authorized to establish or amend water connection fees from time to time by resolution. In addition to installation of a water meter, backflow prevention, as requested by the Town, shall be the responsibility of the property owner.

The property owner shall provide:

- a. The water meter.
- b. A backflow prevention device.
- c. Pressure reducing valve required (generally if incoming pressure exceeds 80 psi).
- d. Excavation of the distribution main and tapping location. All work done on or around the water line must be done by qualified personnel approved by the Operator and meeting all AWWA standards.
- e. Saddle, corporation, water service piping to curb stop, and curb stop.
- f. Labor and materials to install water service line from water main into the building.
- g. Labor and materials for all backfill including sand or stone fill around piping as required. Inspection and approval of waterline by Operator is required prior to backfill.
- h. Interior shut-off ball valve on the building's water service line.

In order to determine the correctness of the work, inspections must be made by the Operator. The first inspection shall be made upon completion of the installation, but prior to covering the work. The second inspection shall be made upon restoration of the disturbed area. Inspection of the water meter shall be made before water service is initiated. It is the responsibility for the permittee to coordinate these inspections.

A schedule of fees shall be attached to the application form, said fees to be set by the Commission.

6. WORK COMMENCING BEFORE PERMIT ISSUANCE

- A. Any person who commences any work on a connection or other work on the water system before obtaining the necessary permit as described herein shall be subject to a fee equal to (2) times the usual permit fee, in addition to the required permit fee.
- B. If, in the opinion of the Commission, such unpermitted work constitutes, or may constitute, a hazard to the water supply, additional action may be

taken against that person, including but not limited to disconnection of the water service (or water main extension) and legal action.

7. **PERMITS FOR CONSTRUCTION OF WATER SERVICE LINES,
EXTENSIONS OR ADDITIONS TO THE WATER SYSTEM**

A. Application for service shall be made in writing to the Commission, on forms furnished by the Municipality. The property owner, who shall be responsible for payment of the connection fee and subsequent charges, shall make such application.

B. Permit Required

Unless otherwise authorized by the Commission, no person shall attach any pipe or other appurtenance to the Town water system, or make any alterations or extensions of, or additions to, the water system or water service line, on or off of his/her property, without first applying to the Commission for a permit to do so. No work shall be started until the application has been approved by the Commission and a permit issued.

C. Application for Permit

1. Each application for a permit, with the required fee, shall be filed with the Town on a form furnished for that purpose.
2. The application for a permit to install, alter, or extend a water service line, not used for a sprinkler system, shall be accompanied by a plan of sufficient clarity and detail to show the intended work. Reference must be made to materials in the Town's Construction Standards. All proposed work shall be in accordance with the Vermont Water Supply Rule.
3. The application for a permit to extend a water main, or to provide water service for a sprinkler system, shall be accompanied by no fewer than two copies of design construction documents prepared by a Design Professional. These documents shall be drawn to scale with sufficient clarity and detail to demonstrate compliance with the requirements of these regulations and shall be sealed and certified by the Design Professional.
4. The Commission may waive or vary the requirements for filing Design Construction Documents where the work involved is minor, in the sole opinion of the Commission.

D. Permit Issuance

1. The application, design construction documents and other data submitted shall be reviewed by the Commission. The Commission

may authorize an independent review by a professional engineer retained by the Town. The cost of such professional review shall be in addition to the Permit fee and paid to the Town prior to issuance of the Permit. If the Commission finds that the proposed work conforms to the requirements of these regulations, and that the required fee has been paid, a permit may be issued.

2. In cases where a State Construction Permit is required under the Vermont Water Supply Rule, a copy of the duly issued permit together with copies of the supporting documentation presented to the State in support of that permit application shall be submitted to the Commission for review prior to the Commission's issuance of the permit.
3. When the Commission issues the permit, the approved design construction documents shall be marked "APPROVED" and a copy retained by the Town. Any other copies shall be returned to the permittee.

E. Design Standards

Design standards for construction of an extension or addition to the Town water system shall comply with the State of Vermont Water Supply Rule, the Construction Standards attached to these regulation and any special conditions as required by the Commission.

F. Coordination with Other Authorities

The Permit issued by the Town shall only indicate compliance with this Ordinance. It does not indicate compliance with the permitting requirements or other approval processes of any other authority having jurisdiction over the work, such as zoning or subdivision regulations or other State or Federal agencies. It shall be the responsibility of the permittee to insure that all required permits and other approvals are obtained.

G. Inspections

A Design Professional or their designated representative, retained by the permittee, shall periodically observe the construction of the water system components to determine if the construction of the water system components is in conformance with the approved design construction documents. All discrepancies shall be brought to the attention of the contractor for correction. Records shall be kept of all inspections and testing, and made available to the Town, if requested.

H. Record "As-Built" Construction Documents

1. A Design Professional shall submit two copies of a final report in writing to the Commission upon completion of the work, certifying as to whether or not the installation complies with the approved design construction documents. If the installation does not fully comply, the report shall clearly indicate the areas of non-compliance. Failure to comply with the approved design construction documents may result in disapproval of the work by the Town.
2. The above mentioned report shall be accompanied by two copies of Record "As-Built" construction documents, drawn to scale and certified by a Design Professional as to their accuracy. These documents shall clearly show the materials and locations of all portions of the work together with measurements from permanent objects (e.g. building corners) to the major components of the installation and the depth or elevations of those components. Where depths are shown, they shall be referenced to a permanent, conveniently located benchmark which shall be clearly shown on the documents.

I. Approval

Upon receipt of two sets of "As-Builts" construction documents satisfactory to the Commission and subject to any review and field inspections deemed necessary by the Commission, a Notice of Approval shall be provided to the Permittee. No extension, modification, or addition to the water system shall be used before such approval is granted by the Commission.

8. **SERVICE LINES**

A. Service Line Requirements

1. Following adoption of this Ordinance, no more than one building shall be served by any water service line.
2. Where specific portions of a single building are owned by different persons, (e.g. a condominium building) each portion shall be served by a separate water service connection. This requirement may be waived by the Commission in cases where, in the board's judgment, the installation of separate services is physically unfeasible, subject to the conditions cited in Section 8.A.3.
3. The requirements specified in Section 8.A.2. may be waived only when, in addition to meeting the physical unfeasibility requirement, a financially responsible organization exists (e.g. a Condominium Association) which will accept the responsibility for the maintenance of the water service and for the payment of all water and sewer charges which are based upon water use. In such cases,

the bills will be sent directly to the responsible organization. Notwithstanding, all real estate furnished with water shall be subject to lien proceedings for nonpayment of bills as provided in Section 18.B. of this Ordinance.

B. Maintenance Responsibility

1. That portion of the service line from the main to and including the curb stop shall be the maintenance responsibility of the Town. In the absence of a curb stop, or in the case the curb stop is on private property, the Town's responsibility shall extend to the property line. All repairs and required replacements of the service line from the water main to the curb stop or property line are to be performed by the Town or its designee as authorized by the Commission, except that replacements of a water service line with a service pipe of a larger diameter shall be entirely at the expense of the property owner.
2. Repairs and replacements of the remainder of the water service line, from the curb stop or property line to the building, are the responsibility of the property owner. The Town will neither perform the work nor pay for same.
3. A permit as described in Section 7 above is required before any repair and/or replacement of the water service line, whether on public or private property, is started. Where all of the work is to be done by the permittee on private property, the construction fee will not be required. Except in cases of emergency, the permittee shall notify the Operator at least 7 days before the start of the work in order to allow ample time for the Town to mark out its buried utilities, if any, in the area of the work. It shall be the responsibility of the permittee to coordinate with all other utilities or persons affected by the work and to provide the notification to "Dig-Safe" and/or any other utility locating services as required by law, rule or other regulation(s). The Town marks out only the utilities belonging to the Town, typically sewer, water and storm sewer. The Town does not mark out telephone, electric, cable TV or any other pipes, cables or conduits.

C. Turn-ons and Turn-offs

1. The curb stop to any building shall be operated only by the Town. Should a property owner request a turn-on or turn-off, a permit issued by the Commission, or its designee(s), is required before such operation will be performed. Application for a permit to turn off the water to a building must be made by the property owner or their authorized representative.

2. Notwithstanding the above, in the event of an emergency, the Operator may turn off, or on, a water service prior to the issuance of a permit. It shall be the property owner's responsibility to obtain a permit for that turn-off or turn-on within one business day.
3. A permit fee shall be charged for each turn-on or turn-off which occurs during regular workday hours except that when a turn-off and turn-on occur for the same service within forty-eight hours and both are during regular business hours only one fee shall be charged.
4. A turn-off or turn-on which occurs outside of the regular workday hours shall be billed to the property owner as overtime work, if applicable.

D. Frozen Water Service Lines

1. Each person served by the water system shall take precautions to prevent his or her water service from freezing.
2. The Town shall not be liable for any property damage due to the freezing or thawing of service lines.

E. Protection From Freezing

1. When, in the opinion of the Town, extended cold weather increases the risk of water main or service line freezing, the Commission may authorize or request certain water users to let water run in order to minimize such risk. The Commission shall keep a list of such users. When so authorized, the water and sewer bill for that usage period, if based on metered service, will be adjusted to reflect the historic usage for that period for the accounts on the aforementioned list.
2. Water users who have reason to believe that their service is in danger of freezing may apply to the Commission for authorization to let the water run as noted above.
3. No adjustments of billing will be made for water left running to prevent freezing of any pipes other than the water service line. (e.g., interior plumbing.)

9. **DISCONTINUED WATER SERVICE LINES**

A. Disconnection Required

All discontinued water service connections shall be disconnected from the water main and capped, or, with the approval of the Commission, the Corporation on the main turned off and the service line "tail" capped. The work shall be done only by the Town, or its designee, as authorized by the Commission. The cost of said work to be borne by the permittee.

B. Permit Required

Disconnection of water service requires a permit from the Town.

10. **INSPECTIONS**

A. Right to Inspect

Any duly authorized employee or agent of the Town may, at reasonable hours and with proper notification, enter any premises supplied with water to inspect pipes, meters, fixtures, and other appurtenances which are used in connection with the water meter. It shall be the duty of every person supplied water by the system to provide Town access, as previously described, and answer inquiries made by the Operator in regard to the quality, quantity, purposes and manner in which the water is used on the premises. Failure of the Owner to provide such access or information to the Town shall be subject to discontinuation of water service, or other penalties, as permitted by law.

B. Emergency Disconnection

If the Town has reason to believe that a situation exists on a property that could cause an imminent hazard to the water system, the water service for that property may be turned off, without notice, until such time the hazard is confirmed not to exist.

11. **WATER METERS**

A. Mandatory Water Meters

1. Water for all purposes, other than fire protection systems, is provided, from the Town to water users, only through metered connections. No buildings will be provided water service without installation of sufficient water meter(s) to accurately measure water consumption, unless approved by the Commission.
2. Should an existing building be served water without a water meter, a water meter shall be installed upon order of the Town or as a condition of transfer of title of the property.

B. Installation of Meter

1. Subject to the exception listed below, each new water service, which is not devoted exclusively to fire protection, shall be metered. The property owner shall provide an accessible, secure, frost-free location for the water meter. In cases where such a location cannot be provided, water for that property will be metered in an underground meter vault, constructed to the Town's standards.
2. In accordance with Section 5, water meter assemblies shall be supplied and installed meeting the Town's standards.
3. It shall be the responsibility of the property owner to provide and install valves necessary to isolate the water meter before the water meter is installed. Either one or two interior valves will be required, depending upon the size of pipe and the complexity of the plumbing system.
4. Each water meter shall be sealed by the Town and inspected by the Town prior to use.

C. Location of Water Meters

1. Water meters shall generally be located inside the customer's building unless a location is not physically available for adequate installation and maintenance, in the Town's opinion. If no location is available, the meter shall be located in a meter vault, as approved by the Town.
2. If the water service line is greater than 200 feet in length, the water meter shall be located in a meter pit at the curb stop in order to account for potential water service leakage.

D. Protection of Water Meter

1. It shall be the property owner's responsibility to protect the water meter from damage, including damage from freezing. This provision also applies to meters in meter vaults.

E. Tampering with or Obstructing Water Meter

1. No person shall tamper with, bypass, remove the meter seal or any part of the meter itself or in any way injure any water meter or any of its appurtenances.
2. No person shall construct or place anything in any manner to obstruct or hinder free access to any water meter or water meter register.

3. The property owner shall be responsible for the protection of the water meter and its seal from tampering, removal or injury.

F. Penalty for Water Meter Tampering

1. First Offense: The account holder shall be billed a penalty in the amount of twice the historic water bill, over the period of tampering, at the current water rates. In no case shall the period of tampering be considered as being less than one billing period.
2. Additional Offense: The billing procedure will be changed from a metered account to a flat rate account with the number of occupants to be considered as being two times the number of bedrooms, in the case of a residence; and/or the usage considered to be the estimated usage as shown in the Vermont State Environmental Protection Rules for non-residential users, to be billed at the current metered rates for water service.

12. **WATER MAINS AND APPURTENANCES - OPERATION, REPAIRS AND REPLACEMENT**

The operation, repair, replacement and maintenance of all water mains, valves, and other appurtenances of the water system shall be done only by the Town or it's designee as authorized by the Commission. The costs of such work on portions of the water system owned by the Town shall be paid by the Town. The costs of such work on portions of the water system owned by any other person shall be the responsibility of that person. Nothing herein shall prohibit the Town from recovering the costs of repairs or replacement and/or other damages resulting from the actions of any other person from that person.

13. **LAWN SPRINKLERS**

Lawn sprinklers shall not be converted into fountains or jets, or be allowed to run to waste, but must be kept closed except when in use for sprinkling as intended.

14. **USE OF WATER FOR UNAUTHORIZED PURPOSE**

No person shall give away, resell or use any water from the Town water works, for any other purpose than that for which payment has been made; nor allow the water to be wasted from fixtures out of repair or otherwise. The Commission or Operator may turn off the water to the premises of any person who shall violate any of the provisions of this section, and such offender shall be deprived of the use of the water until he/she shall have paid to the Town a fee for turning off and another fee for turning on the water and shall have made all necessary repairs.

15. **TURN-OFFS FOR REPAIRS OR DROUGHT; NOTICE TO USERS**

The Town or Operator shall have the right to turn off water for the purpose of making extensions, alterations or repairs, or on account of any accident to the water system, or in case of violation of these regulation or neglect to pay the service rates when due, and in case of drought or threatened quality or scarcity of water, to diminish or stop the supply without any claim for abatement or damage for loss of water. When the Town or Operator shall have cause to turn off the supply of water on any line for repairs, they shall make a reasonable attempt to notify the water consumers on the line of pipe to be turned off, stating as nearly as possible the length of time such supply will be turned off; provided, however, in the case of sudden breaks or other emergency, the water may be turned off without notice.

16. **FIRE HYDRANTS**

A. Inspection and Maintenance

The Town shall periodically examine fire hydrants belonging to the Town and keep them in working order at all times, except when turned off for repairs; and shall cause all defects therein to be repaired without delay.

B. Notice to Fire Department of Hydrant Turn-Offs

Notice, in advance if possible, shall be given to the Town Fire Department in the event the supply of water to a fire hydrant is disconnected. Notice shall also be given to the Fire Department when the hydrant is again in working order.

C. Permission to Draw Water from Hydrants

No person shall operate any fire hydrant or draw water therefrom, except under the direction of the Water Commission or Operator. This shall not apply to use of hydrants in an emergency by the Fire Department or other duly authorized municipal fire department.

D. Privately Owned Fire Hydrants

Persons owning private fire hydrants served by the Town water system will be governed in all cases by these regulations, including Section 16.C. above, "Permission to Draw Water from Hydrants". Reasonable requests for testing private hydrants or pipes will be granted on application by the Commission. All such hydrants and other appurtenances shall be open to inspection by agents of the Town at all times, and may be opened by an insurance inspector to ascertain if the water is on and the hydrants or pipes are in working order. Notice of such opening shall be given to the Commission within 24 hours in advance by any such insurance inspector.

E. Testing of Fire Hydrants

1. Permit Required: No person shall test a fire hydrant, whether public or private for fire flow determination or any other purpose, without first applying to the Commission for permission to do so. No testing shall be conducted until authorized by the Commission or Operator.
2. Conduct of Test/Report
 - a. Permittee is to coordinate the time and date of flow test with the Operator at least one week prior to test.
 - b. While every effort will be made to honor commitments, permittee is advised that any scheduled flow test may be postponed or cancelled by the Operator or Water Department without notice in the event of an emergency affecting the water system.
 - c. Permittee is to perform the flow test and provide all necessary equipment.
 - d. Operation of public hydrants is to be by Town personnel only.
 - e. Hydrant flow tests shall be allowed only when the air temperature is above 40°F unless otherwise specifically approved by Town.
 - f. A copy of the flow test results shall be provided to the office of the Town upon completion of the test.

17. **TAMPERING, ETC. WITH PROPERTY BELONGING TO TOWN**

No person shall damage, disturb, remove, or in any way injure any hydrant, valve, valve box or cover, meter, valve, curb stop or cover, pipe, apparatus, fixture, building, machinery or fence belonging to the Town Water Department, nor place anything in such a manner as to obstruct or hinder free access to any valve, hydrant or meter.

18. **WATER RATES/BILLING**

A. Establishment of Water Rates

The Commission shall establish rates to be paid for the use of water supplied by the Town water works including connection and disconnection as applicable.

B. Water Bills

1. All delinquent water bills become a lien upon real property, pursuant to 24 VSA, Section 3306. Fees shall be determined pursuant to the Uniform Water and Sewer Disconnect, Chapter 129 of Title 24, Section 5151 of the Vermont Statutes Annotated.
2. All water services shall be billed to the owner of the property served, and all bills shall be due and payable upon presentation. The bills must be paid within thirty (30) days, and shall be rendered on a regular basis as authorized by the Selectmen.
3. All service is subject to disconnection under the terms of Chapter 129 of Title 24 of the Vermont Statutes Annotated (Uniform Water Sewer Disconnect) as amended from time to time. Charges for disconnection and reconnection shall be in accordance with the limits allowed by law.
4. Bills for water service are due and payable to the Town Treasurer when received as indicated on the statement and shall be considered delinquent when unpaid 30 days following the postmark on the envelope.

Water service may be discontinued: 1) by reason of nonpayment of water bills; 2) to eliminate a health hazard; 3) for violation of any special order restricting water use, 4) as specified elsewhere in this Ordinance, and/or; 5) for fraudulent use of water.

If the customer requests a hearing, one shall be held within five 15 business days of the request to determine if water service will continue to be denied, or if to be restored, then under what conditions. Service, once discontinued, shall not be restored until the reason for discontinuance of service has been eliminated.

Before service is discontinued for delinquency of payment, the Town shall follow the procedure set forth in 24 V.S.A. Chapter 129.

Notice for payment request and shut-off will be mailed at least 14 days in advance of shut-off date. Shut-off on account of delinquency of water rate payment will not be made on a day immediately preceding a Saturday, a Sunday, or a state or federal holiday.

C. Estimated Bills

In a case where, for whatever reason, a reliable water meter reading has not been obtained and an effort has been made by the meter reader to obtain such reading, an estimated billing for the period will be sent to the account holder. The estimated bill will be based upon the historical usage

at the property in question and shall have the effect of an actual billing insofar as collection procedures are concerned.

D. Responsibility of Owners for Tenants

Property owners shall be responsible for the water use of tenants such that new tenants will not be entitled to a supply until all arrearages are paid. When water is supplied to more than one party through a single tap, the water may be shut off in case of nonpayment to the Town.

19. **CONTROL OF CROSS CONNECTIONS AND BACKFLOW**

A. Responsibility

The Town shall be responsible for the protection of the public potable water distribution system from the 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 property owner's water service connection; or, within the property owner's private water system for the safety of the water system, the Town or its designated agent shall give notice in writing to said property owner to install such an approved backflow prevention assembly(s) at a specific location(s) on his premises. The property owner shall install such an approved backflow prevention assembly(s) at the property owner's own expense within the time schedule required by the notice; and, failure, refusal or inability on the property owner to install, have tested and maintained said assembly(s) shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

B. Water System

The water system shall be considered as made up of two parts: The Town's owned system and the property owner's system.

The Town's system shall consist of the supply facilities and distributions system; and shall include all those facilities of the water system under the complete control of the Town, up to the point where the property owner's system begins. While the Town is ultimately responsible for water quality to the "last tap" on the municipal system, the last tap shall be considered the last point on the system where water enters into a building and is registered at a water meter.

The supply shall include all components of the facilities utilized in the production, treatment, storage, and delivery to the property owner's system.

The distribution system shall include the network of conduits used for the delivery of water from the source to the property owner's system.

The property owner's system shall include those parts of the facilities beyond the termination of the Town's distribution system, which are utilized in conveying potable water to points of use. For the purpose of this Ordinance, the property owner's system shall begin at the downstream side of the curb stop or gate valve (generally located at/near the property line) and proceed to, and into, the building.

C. Policy

The property owner's system shall be open for inspection at all reasonable times to authorize representatives of the Town for the purposes of inspection, observation, measurement, sampling, testing and maintenance, and to determine whether unprotected cross-connections or other structural or sanitary hazards, including violations of these regulations exist. If a property owner, resident or occupant denies the Town or other duly authorized employees of the Town access after reasonable notice has been provided to the property owner, resident or occupant, the Town may direct disconnection on forty-eight (48) hours written notice to the owner, resident or occupant. Once water service has been disconnected it will not be restored until access has been provided and the Town has been paid all applicable charges. When a backflow condition becomes known, the Town shall deny or immediately discontinue service to the premise by providing for a physical break in the service line until the property owner has corrected the condition(s) in conformance with the Rules and Regulations of the Town relating to water supplies and the regulations adopted pursuant thereto. Subject to these Rules and Regulations, the Town shall have the authority to terminate any water service connection to any facility where cross connections are found to be in non-compliance. If necessary, water service shall be disconnected for failure to test or maintain backflow prevention devices in a manner acceptable to the Town. If it is found that the backflow prevention device has been removed or bypassed or otherwise rendered ineffective, water service shall be discontinued unless corrections are made immediately.

An approved backflow prevention assembly shall also be installed on each service line to a property owner's water system at or near the property line or immediately inside the building being served; but, in all cases, before the first branch line leading off the service line wherever the following conditions exist:

1. In the case of premises having an auxiliary water supply not being placed in service until the auxiliary water supply is physically and permanently disconnected from the plumbing system in a manner approved by the Town.
2. In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by

installing an approved backflow prevention assembly in the service line commensurate with the degree of hazard.

3. In the case of premises having (1) internal cross-connections that cannot be permanently corrected or protected against, or (2) intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross-connections exist, the public water system shall be protected against backflow from the premises by installing a backflow prevention assembly(s) in the service line, at the Owner's expense.

The type of protective assembly required under subsections C1, C2 and C3 above shall depend upon the degree of hazard, which exists as follows:

1. In the case of any premises where there is auxiliary water supply as started in subsection (a) above of this section and is not subject to any of the following rules, the public water system shall be protected by an approved air gap or an approved reduced pressure principle backflow prevention assembly.
2. In the case of any premises where there is water or substance that would be objectionable but not hazardous to health, if introduced into the public water system, the public water system shall be protected by an approved double check valve backflow prevention assembly.
3. In the case of any premises where there is any material dangerous to health, which is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by an approved air gap or an approved reduced pressure principle backflow prevention assembly. Examples of premises where these conditions will exist include sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries and plating plants.
4. In the case of any premises where there are unprotected cross-connections, either actual or potential, the public water system shall be protected by an approved air gap or an approved reduced pressure principle backflow prevention assembly at the service connection.
5. In the case of any premises where, because of security requirements or other prohibitions or restrictions, it impossible or impractical to make a complete in-plant cross-connection survey, the public water system shall be protected by an approved air gap or an approved reduced pressured principle backflow prevention assembly on each service to the premise.

Any backflow prevention assembly required herein shall be a make, model and size approved by the Town. The term "Approved Backflow Prevention Assembly" shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association entitled:

AWWA/ANSI C510-92¹ Standard for Double Check Valve Backflow Prevention Assemblies;

AWWA/ANSI C511-92¹ Standard for Reduced Pressure Principle Backflow Prevention Assemblies;

And, have met completely the laboratory and field performance specification of the foundation for Cross-Connection Control and Hydraulic Research for the University of Southern California (USC FCCCHR) established in:

Specifications of Backflow Prevention Assemblies- Section 10 of the most current edition of the *Manual of Cross-Connection Control*.

All domestic backflow prevention devices, with the exception of residential dual check valves, shall be installed and repaired in accordance with local, state, and federal regulations, which may require persons performing repairs to hold a professional license and certification, except for backflow prevention devices installed on fire protection systems. A licensed fire sprinkler contractor is responsible for all work conducted on a fire protection system, including the installation, maintenance and repair of backflow prevention devices.

It shall be the duty of the property owner at any premise where reduced pressure backflow prevention assemblies are installed to have a field test performed by a certified backflow prevention assembly tester upon installation and at least twice per year. It shall be the duty of the property owner at any premise where testable double check valve assemblies are installed to have a field test performed by a certified backflow prevention assembly tester upon installation and at least once per year. It shall be the duty of the property owner at any premise where pressure vacuum breakers are installed to have a field test performed by a certified backflow prevention assembly tester upon installation and at least once per year. In those instances where the Town deems the hazard to be great enough the Town may require field tests at more frequent intervals. These tests shall be at the expense of the water user. These assemblies shall be repaired, overhauled or replaced, and retested at the expense of the property owner whenever said assemblies are found to be defective. Records of such tests, repairs and overhaul shall be made available to the Town within fourteen (14) days of completion of the test.

All presently installed backflow prevention assemblies which do not meet the requirements of this section but were approved devices for the purposes described herein at the time of installation and which have been properly maintained, shall, except for the testing and maintenance requirements stated within these rules be excluded from the requirements of these rules so long as the Town is assured that they will satisfactorily protect the Town's water system. Whenever the existing device is moved from the present location or requires

more than the minimum maintenance or when the Town finds that the maintenance constitutes a hazard to health, the unit shall be replaced with an approved backflow prevention assembly meeting the requirements of this section.

D. Approved Backflow Prevention Devices

Approved backflow prevention devices shall be located so as to provide containment protection, and may be supplemented with the installation of in-plant protection backflow protection devices.

Only backflow devices approved by the Town shall be used.

All approved devices shall allow for accurate testing so as to allow verification of their performance.

In general, protection shall be provided by an air gap or a Town approved RPZ, or DCV with the manufacturer approved inlet and outlet control valves and four test cocks as a complete unit, installed in a horizontal alignment, unless otherwise approved by the Commission.

The Town reserves the right to prohibit the use of any cross connection protection devices if the Town determines that such device is found, after subsequent review, to be defective or to have performed inadequately in the field.

No person shall remove or contract with another person for the removal of any required backflow protection device without obtaining the approval of the Town for the removal of said device first.

If an RPZ, DCV, or PVB cannot be removed from service for maintenance and testing, then a second device of the same type shall be installed in parallel so as to permit inspection and repair of either unit.

The assembly should be sized hydraulically, taking into account both the volume requirements of the service and the head loss of the assembly. Refer to manufacturers head loss curves.

Every backflow prevention device up to two inches (2") shall be installed with full port ball type shutoff valves approved by the manufacturer. All RPZ, DCV, and PVB assemblies shall meet the standards established by at least one of the following organizations:

ASSE
AWWA
USC Specifications

E. Acceptable Devices for Types of Hazards

Only the following types of backflow prevention devices shown below shall be used for the containment of on-premise hazards for low and high hazard situations respectively:

	<u>Low Hazard</u>	<u>High Hazard</u>
device	1. Air gap 2. Atmospheric vacuum breaker	1. Air gap 2. Reduced pressure/backflow
above	(Where bacteria hazards aren't present) 3. Pressure vacuum breaker 4. Double check valve assembly 5. Reduced pressure backflow device 6. Or combination of the above	3. Or combination of the

Any domestic, commercial, institutional, and fire protection service line, including each line of a multiple service line, and a multi family building serving more than two units shall be equipped with an approved backflow device or an approved air gap separation on each line. All other connections to the water main, including standpipes leading to elevated tanks, temporary ferules, hose connections, and irrigation systems shall be equipped with approved backflow prevention devices.

Approved backflow prevention devices shall be located so that protection of all cross connections is achieved with a minimum number of devices.

An approved backflow assembly shall be installed to any premise where multistoried (more than two stories) buildings such as a hotel, apartment house, offices, etc. are operated or maintained. An approved air gap or RPZ shall be installed where there is a potential health, contamination, or system hazard. A DCV shall be installed where there is only a polluttional hazard.

A backflow prevention device shall not be installed in locations where the device is subject to corrosive fumes, grit, sticky, or abrasive liquids. The device shall be protected against mechanical abuse. All devices shall be installed so they are easily accessible for testing and repair, and inspection.

Each backflow preventer installed in a building shall be located in a room or structure that is well lighted, properly drained, and not subject to flooding. All assemblies shall be adequately supported and/or restrained to prevent lateral movement. Pipe hangers, braces, saddles, stanchions, piers, etc., shall be used to support the device and should be placed in a manner that will not obstruct the function or access to the relief valve.

F. Backflow Prevention Assembly Installations

1. Reduced Pressure Principal Backflow Preventers (RPZ)

All RPZ assemblies shall be installed in accordance with the manufacturer's specifications and the following Department requirements:

- a. All RPZ assemblies must be purchased and installed with the manufacturer's approved full port inlet and outlet control valves and four (4) test cocks as a complete package unit.
- b. This assembly shall be installed a minimum of twelve inches (12") from the floor to the lowest part of the device, and a maximum of sixty inches (60") above the surrounding ground or floor to the top of the device. A minimum of twelve inches (12") of clear space shall be maintained above the assembly to allow for servicing check valves and for operation of shut-off valves.
- c. The assembly shall be installed a minimum of twelve inches (12") away from the nearest wall. Also, the manufacturer must state if the device has been approved for use in either the horizontal or vertical flow up or down configuration.
- d. Brass 1/4" adapters shall be installed on each test cock of the device.
- e. The water service line must be thoroughly flushed before installing the assembly.
- f. If continuous, uninterrupted water service is desired, two smaller RPZ assemblies may be installed in parallel. When the RPZ's are used in parallel, the total rated capacity of the assemblies must equal or exceed the capacity of the main feed line. A bypass around the RPZ is not permitted.
- g. The assembly must be sized hydraulically to avoid excessive pressure loss.
- h. Where possible, an approved RPZ assembly shall be installed within a building on the service connection after but close to the meter. In certain cases, a backflow prevention assembly may be installed at an alternative location such as outdoors or at the discharge side of a booster pump. The device shall be protected from freezing, flooding, and vandalism. Access for routine testing and maintenance shall be provided. RPZ's shall not be installed in pit locations.

- i. Drinking and domestic water lines, lines for safety showers, and lines for eye wash units must be taken off the upstream side of RPZ assemblies for those devices installed as in-plant protection.
- j. There shall be no outlet, tee, tap, or connection of any kind to or from the supply line between the meter and the backflow prevention device.
- k. If the device is to be used on a hot water line, a device approved for use at the elevated temperature must be used.
- l. The drain to the relief port must have an approved air gap separation between the port and drain line, at least twice the internal diameter of the discharge line. A drain, capable of handling the maximum flow from the relief port shall be provided. RPZ's should be located in a location where water spillage is not objectionable.
- m. While not effective in all cases, the installation of a soft seated check valve assembly immediately ahead of the RPZ will often hold the pressure constant to the assembly in times of fluctuating pressure supply. This fluctuating pressure supply could cause nuisance dripping and potential fouling of the assembly if left without a soft-seated check valve.
- n. Provisions may have to be made by the owner to provide for thermal expansion within his closed loop system, i.e. the installation of thermal expansion devices and/or pressure relief valves.

In any of the above installation criteria, the owner must be made aware of the potential for water damage in the event of a discharge.

G. Approved Air Gap (AG)

An air gap is an unobstructed separation through free atmosphere between the lowest opening from any pipe or outlet supplying water to a tank, plumbing fixture, or other device from the flood-level rim of the receptacle. The air gap is the most reliable means of backflow protection.

1. The air gap must be installed with a minimum separating distance of at least two times the diameter of the water supply pipe (measured vertically above the flood level rim of the receptacle). In no case however, shall the separation be less than one inch.
2. The separation distance must be measured from the lowest point on the pipe or outlet supplying water to a receptacle.

H. Double Check Valve Assembly (DCV)

All DCV assemblies shall be installed in accordance with the manufacturer's specifications and the following Department requirements:

1. All DCV assemblies must be purchased and installed with the manufacturer's approved full port inlet and outlet control valves and four (4) test cocks as a complete package unit.
 - a. This assembly shall be installed a minimum of twelve inches (12") from the floor to the lowest part of the device, and a maximum of sixty inches (60") above the surrounding ground or floor to the top of the device. A minimum of twelve inches (12") of clear space shall be maintained above the assembly to allow for servicing check valves and for operation of shut-off valves.
 - b. The assembly shall be installed a minimum of twelve inches (12") away from the nearest wall. Also, the manufacturer must state if the device has been approved for use in either the horizontal or vertical flow up or down configuration.
 - c. Brass 1/4" adapters shall be installed on each test cock of the device.
 - d. The water service line must be thoroughly flushed before installing the assembly.
 - e. All domestic service lines tapped from sprinkler services for commercial and/or industrial buildings shall have a DCV installed as a minimum backflow preventer device.
 - f. If continuous, uninterrupted water service is desired, two smaller DCV assemblies may be installed in parallel. When the DCV's are used in parallel, the total rated capacity of the assemblies must equal or exceed the capacity of the main feed line. A bypass around the DCV is not permitted.
 - g. The assembly must be sized hydraulically to avoid excessive pressure loss.
 - h. Preferably all DCV assemblies should be installed above ground, but may be installed below ground level in a pit or chamber designed to prevent flooding. If the DCV is installed in a pit the following guidelines shall be followed:
 - a. There shall be no outlet, tee, tap, or connection of any kind to or from the supply line between the meter and the backflow prevention device.

- b. The device shall be protected against freezing. Access for routine testing and maintenance shall be provided.
- c. If a drain in the pit is absolutely necessary there shall be no connection between the drain and sewer or appurtenance, which permits the passage of polluted water into the pit.
- i. Where possible, an approved DCV assembly shall be installed within a building on the service connection after but close to the meter. In certain cases, a backflow prevention assembly may be installed at an alternative location such as outdoors or at the suction side of a booster pump. The device shall be protected from freezing, flooding, and vandalism. Access for routine testing and maintenance shall be provided.
- j. Drinking and domestic water lines, lines for safety showers, and lines for eye wash units must be taken off the upstream side of DCV assemblies for those devices installed as in-plant protection.
- k. There shall be no outlet, tee, tap, or connection of any kind to or from the supply line between the meter and the backflow prevention device.
- l. Provisions may have to be made by the owner to provide for thermal expansion within his closed loop system, i.e. the installation of thermal expansion devices and/or pressure relief valves.

I. Pressure Vacuum Breaker Assembly (PVB)

All PVB assemblies shall be installed in accordance with the manufacturer's specifications and the following Department requirements:

- 1. The critical installation level shall be no less than twelve inches (12") above the highest point use or downstream piping for pipe applied applications and one inch (1") for equipment mounted/deck mounted applications. They shall be used only where drainage is provided.
- 2. PVB assemblies must not be installed where the device is subject to corrosive fumes or dust.
- 3. Brass 1/4" adapters shall be installed on each test cocks of the device.
- 4. PVB's shall be tested annually.

J. Residential Dual Check (DC)

All Residential Dual Check assemblies shall be installed in accordance with the manufacturer's specifications and the following Town requirements:

1. All residential buildings will be required to install a residential dual check device immediately downstream of the water meter.
2. The owner shall be made aware that the installation of a residential dual check valve results in a potential closed plumbing system within his residence. As such, provisions may have to be made by the owner to provide for thermal expansion within his closed loop system, i.e. the installation of thermal expansion devices and/or pressure relief valves.
3. Typically, residential dual check valves are not testable, therefore not subject to annual or semiannual testing requirements.

K. Irrigations Systems

An approved backflow assembly shall be installed on each service to premises on which there is an irrigation system.

1. An approved air gap or RPZ shall be installed where there is an actual or potential health hazard caused by the installation of facilities for injecting under pressure fertilizers, fungicides, pesticides, soil conditioners and other noxious or objectionable substances through the irrigation system.
2. An approved air gap or DCV shall be installed where there is an actual or potential cross connection, which may adversely or unreasonably affect the aesthetic qualities of the domestic water supply.
3. A dual check assembly shall be installed on the irrigation line at the location of the separate water meter for the irrigation line at residential settings if there are none of the actual or potential hazards listed in #1 above.
4. Alternatively, a pressure vacuum breaker may be installed on the irrigation system according to the above requirements and manufactures specifications if there are none of the actual or potential hazards listed in #1 above, and if the device is not subject to backpressure from pumps or elevated piping. The owner must protect the device from freezing and maintain the device as required.

M. Strainers

The Town requires that all new and retrofit installations of reduced pressure principle devices and double check valve backflow preventers include the installation of strainers located immediately upstream of the backflow device. Installations of backflow preventers after water meters with existing strainers may not require the installation of another strainer. The installation of strainers will preclude the fouling of backflow devices due to both foreseen and unforeseen circumstances occurring to the water supply system such as water main repairs, water main breaks, fires, periodic cleaning and flushing of mains, etc. These occurrences may “stir up” debris within the water main that will cause fouling of backflow devices installed without the benefit of strainers.

N. Fire Protection Systems

Devices and valves installed on fire protection systems including dual check backflow preventers for residential fire sprinkler systems shall be listed by Underwriters Laboratory (UL), unless otherwise approved by the head of the local fire department.

All new or modified fire systems with or without a Siamese connection, shall have installed as a minimum, an approved DCV. Based upon the degree of hazard, an RPZ may be required. The DCV or RPZ shall be installed on the line leading into the fire system.

An RPZ is required on all new or modified fire sprinkler system with or without a Siamese connection if chemicals are added to the fire sprinkler system. The RPZ shall be installed on the line leading into the fire system.

O. Pit Installations

Primarily due to considerations for access, safety, and gravity drainage, no devices shall be installed in pits except as specifically approved by the Town in cases of unique circumstances.

Where pit installations are proposed, however, they shall be designed with the following standards:

1. Pits or vaults shall be watertight, flood free, and maintained free from standing water by means of either a sump and pump or suitable drain. Such a pump or drain shall not connect to a sanitary sewer, nor permit flooding of the pit or vault by reverse flow from its point of discharge.
2. Drainage capacity shall be sized to accommodate both intermittent and catastrophic failure of the relief valve. All drainage from RPZ's must be gravity drains.

3. Sump pumps are not allowed unless they are sized to accommodate the maximum discharge rate and connected to emergency power supplies.
4. The pit opening and manhole cover must be at least 36" in diameter.
5. The foothold inserts must be a maximum 12" apart, and must be installed so that the top foothold is within 12" of the manhole cover and the bottom foothold is within 12" of the bottom of the pit floor.
6. The pit floor shall be pitched to the drain.
7. If built in a roadway, the top of the pit must be adequately enforced.
8. Pits must have crane access for installing and removing large assemblies, if required.
9. Pits must have adequate ground cover to prevent freezing.
10. Surface grading must divert runoff away from the entranceway.

P. Protective Enclosures

1. Floor elevation must be at least six inches (6") above finish grade.
2. Must provide adequate clearances around the device to access test cocks, shut off valves, check valves and relief valve.
3. Require electric heaters or heat trace wire for any water service used year round.
4. Require provisions for natural or artificial light.
5. Require full gravity drains according to the drainage requirements.
6. Require security measures such as locking doors and panels, flow alarms or flow indicator lights, power indicator lights, etc.

Q. Facilities and Equipment Requiring Backflow Prevention Assemblies

The following is a list of the types of facilities, which are considered as possible cross connection hazards, and the required backflow device assembly for each:

- AG = Approved Air Gap
RPZ = Reduced Pressure Principal Backflow Preventers
DCV = Double Check Valve Assembly
PVB = Pressure Vacuum Breaker Assembly

<u>Type of Device to be Used</u>	<u>AG</u>	<u>RPZ</u>	<u>DCV</u>	<u>PVB</u>
A. Medical Facilities				
1. Hospitals		X	X	
2. Clinics		X	X	
3. Laboratories		X	X	
4. Veterinary Hospitals/Clinics			X	X
5. Nursing and Convalescent Homes			X	X
6. Physical Therapy Clinics			X	X
7. Morgues			X	X
8. Mortuaries		X	X	
9. Autopsy Facilities			X	X
10. Embalmers		X	X	
11. Dental Offices			X	X
12. Medical offices with radiographic, physical therapy, and/or lab facilities			X	X
B. Treatment Plants				
1. Sewerage		X	X	
2. Waste Water		X	X	
3. Industrial Waste			X	X
4. Pumping Stations			X	X
C. Commercial Manufacturing/Storage				
1. Automotive Plants		X	X	
2. Aircraft/Missile Plants				X
X				
3. Beverage Bottling Plants		X	X	
4. Breweries/Distilleries		X	X	
5. Chemical Plants		X	X	
6. Car Wash Facilities	X	X		
7. Dairies and Cold Storage Plants		X	X	X
8. Dye Works	X	X		
9. Irrigation Systems	X	X	X	X
10. Laundries	X	X	X	
11. Meat Packing Plants		X	X	
12. Metals manufacturing Plants		X	X	
13. Paper/Paper Product Plants		X	X	
14. Petroleum or Gas Processing Plants			X	X
15. Photographic Film Processing Plants		X	X	
16. Plating Plants		X	X	
17. Power Plants	X	X		
18. Radioactive Handling Plants		X	X	
19. Rubber Plants		X	X	
20. Sand, Gravel, Concrete, or Asphalt Plants			X	X
21. Swimming Pools		X	X	X
22. Technical Schools, Colleges, Universities		X	X	X
23. Solar Energy/Heating Systems			X	X
	<u>AG</u>	<u>RPZ</u>	<u>DCV</u>	<u>PVB</u>

24. Temporary Services using Hydrants			X	X
X				
25. Waterfront Facilities		X	X	
26. Where a Cross Connection is Maintained		X	X	
27. Food Processing		X	X	
D. Buildings				
1. With Sewerage Ejectors		X	X	
2. With Water Booster pump and/or Storage Tank	X	X		
3. Supermarkets		X	X	X
4. Restaurants	X	X	X	
5. Schools, Research Facilities, Any Building With Laboratories		X	X	
6. Buildings with Fire Service		X	X	X
7. Warehouses used for Hazardous Material Storage		X	X	
8. Factories	X	X	X	
9. Shopping Malls		X	X	X
10. Multi Family	X	X	X	
11. Multi Story	X	X	X	
E. Miscellaneous Equipment and Facilities				
1. Domestic Water Booster Pumps		X	X	
2. Food and Drug Processing		X	X	X
3. Hydraulic Equipment		X	X	
4. Sinks with Hose Threads	X	X		X
5. Submerged Inlets		X	X	
6. Valved Outlets or Fixtures With Hose Attachments	X	X	X	X
7. High and Low Pressure Boilers		X	X	
8. Reservoirs- Cooling Tower Recirculating Systems		X	X	X
9. Premises Where inspection Is Prohibited			X	X
10. Commercial Dishwashers		X	X	X
11. Soap Injector			X	X
13. Steam Generating Plant		X	X	
14. Tank Truck- Lawn Care, Sweeper			X	X
X				
15. Water Cooled Equipment		X	X	
16. Boilers			X	
17. Heat Exchangers with added chemicals			X	
18. Solar heating systems with added chemicals				
X				

Fire Protection Systems

1. **Class 1**

Direct connection from public water system mains only; no pumps, tanks, or reservoirs, no physical connection from any other water supplies, no antifreeze or other additives of any kind; all sprinkler drains discharge to atmosphere, dry wells, or other safe outlets. The system may or may not have fire department connections.

A backflow prevention assembly does not have to be installed on existing systems installed prior to April 1, 2003, provided that the fire protection system is registered with the Department, equipped with a UL listed alarm check valve that is maintained in accordance with NFPA 25 and has not undergone substantial modification. Alarm check maintenance records must be available for inspection by the Department. All new or modified fire systems shall have installed as a minimum, an approved DCV. Based upon the degree of hazard, an RPZ may be required. The DCV or RPZ shall be installed in the line leading into the fire system.

2. **Class 2**

Same as Class 1 except the booster pumps may be installed in the connections from the street mains. These systems may or may not have fire department connections.

A backflow prevention assembly does not have to be installed on existing systems installed prior to April 1, 2003, provided that the fire protection system is registered with the Department, equipped with a UL listed alarm check valve that is maintained in accordance with NFPA 25 and has not undergone substantial modification. Alarm check maintenance records must be available for inspection by the Department. All new or modified fire systems shall have installed as a minimum, an approved DCV. Based upon the degree of hazard, an RPZ may be required. The DCV or RPZ shall be installed in the line leading into the fire system.

3. **Class 3**

Direct connection from public water mains plus one or more of the following: elevated storage tanks, fire pumps taking suction from above ground covered reservoirs or tanks, and pressure tanks.

RPZ or DCV contingent on evaluation of auxiliary supply and on-site system.

4. **Class 4**

Directly supplied from public water system mains, similar to Class 1 and 2 with an auxiliary water supply dedicated to fire department use and available to the premises, such as a non-potable water source located within 1,700 feet of the fire department connection.

RPZ on evaluation of auxiliary supply and on-site system.

5. **Class 5**

Directly supplied from public water system mains, and interconnected with auxiliary supplies, such as pumps taking suction from reservoirs exposed to contamination, or rivers or ponds; driven wells; mills or other industrial water systems; or where antifreeze or other additives are used.

RPZ or air gap contingent on evaluation of auxiliary supply and on site system.

6. **Class 6**

Combined industrial and fire protection systems supplied from the public water mains only, with or without gravity storage or pump suction tanks.

RPZ contingent upon evaluation of site water system.

7. **Class 7**

Residential fire protection systems for one and two family detached dwellings and manufactured homes only.

Non-testable and flow through systems should be used whenever possible. Dual check valves are authorized when only food grade antifreeze is used with no additional additives. If non-grade antifreeze is utilized, the system may be classified as a Class 5.

20. **FIRE PROTECTION**

- a. All new houses, commercial, industrial, or other buildings or properties used for human occupancy, business, employment, recreation, or other purposes, and any Major Site Plan or Change of Use zoning permits issued on the same located within the Town of Berlin, abutting on any street, alley, or right of way, benefited, improved, served, or accommodated by any public water system or to which Town public water is available, is required, at the owner's expense, to install suitable potable water facilities therein and to connect such facilities directly with the proper public water system in accordance with the provisions of this Ordinance, provided that said public water system is located within 200 feet of the buildings on said properties.
- b. All new commercial, industrial, or other buildings or structures not used for human occupancy, not used for business, not used for employment, not used for recreation, not used for residential accessory, not used for agriculture or not used for other purposes and any Major Site Plan or Change of Use zoning permits

issued on the same, located within the Town of Berlin, abutting on any street, alley, or right of way, benefited, improved, served, or accommodated by Town public water system or to which Town public water is available, is required to obtain fire protection capacity directly with the Town public water system in accordance with the provisions of this Ordinance, provided that said public water system is located within 1000 feet of the buildings or structures on said properties

21. **OTHER PENALTIES**

In addition to any enhanced billing authorized herein, the Selectboard may, by ordinance, provide additional penalties for violation of any of the provisions of these Regulations.

22. **SEVERABILITY**

The declaration of invalidity of any section, term or provision of these regulations shall not affect any other section, term or provision.

CONSTRUCTION SPECIFICATIONS AND STANDARD DETAILS

The attached standards shall generally be applied to work associated with the Town water works unless otherwise waived by the Commission. Variations or deviation from these standards may be allowed following review by a qualified engineer, selected and retained by the Town, for the specific application. However, it is the Town's intention, to the extent practical, to establish the standard of materials and workmanship provided in these Standards.

INDEX OF SPECIFICATIONS

NUMBER TITLE

02232 Protection and Repair of Property
02300 Earthwork
02301 Rock Removal
02510 Contaminated Earthwork
02511 Bituminous Concrete Pavement
02930 Lawns and Grasses
03301 Curb and Sidewalk
15123 Water Meters and Appurtenances

INDEX OF STANDARD DETAILS

Drawing No. 1 - Standard Water System Construction Details