ORDINANCE NO. ORD-2025-03

AN ORDINANCE TO ADOPT THE WASHINGTON COUNTY CROSS CONNECTION CONTROL PLAN

The Cross Connection Control Ordinance is a Maryland Department of the Environment ("MDE") mandated requirement that regulates cross connections with the public water system, i.e., connections or arrangements of piping or appurtenances through which water of questionable quality, wastes, or other contaminants can enter the public water system.

NOW, THEREFORE, BE IT ORDAINED by the Board of County Commissioners of Washington County, Maryland, as follows:

1. Washington County adopts by reference the "Washington County Cross Connection Control Plan", in conformance with the MDE Cross Connection Regulations under Code of Maryland Regulations Section 26.04.01.32, as may be updated and amended from time to time and which is incorporated herein by reference. Compliance with the manual and the cross-connection program contained therein is hereby required.

2. That it shall be the duty of the County to cause surveys to be made of all properties served by the public water system where cross connections with the public water supply is deemed possible. The frequency of surveys and resurveys based on potential health hazards involved shall be as established by the County as approved by the Division.

3. That the representative of the County shall have the right to enter at any reasonable time any property served by a connection to the public water system of the County for the purpose of surveying the piping system or systems thereof for cross connections. On request, the owner, lessees, or occupants of any property so served shall furnish to the survey agency any pertinent information regarding the piping system or systems on such property. The refusal of such information or refusal of access, when requested, shall be deemed evidence of the presence of cross connection.

4. That the County is hereby authorized and directed to discontinue water service after reasonable notice to any property wherein any connection in violation of this ordinance exists and to take such other precautionary measures deemed necessary

to eliminate any danger of contamination of the public water system. Water service to such property shall not be restored until the cross connection(s) has been eliminated in compliance with the provisions of this ordinance.

5. That all testable backflow prevention assemblies shall be tested initially upon installation, repair or relocation to be sure that the assembly is working properly. Subsequent testing of assemblies shall be performed on an annual basis as required by the County and in accordance with Division requirements. Only individuals that are approved and certified by the State of Maryland shall be qualified to perform such testing. That individual(s) shall certify the results of his/her testing.

6. That the potable water supply made available on the properties served by the public water supply be protected from possible contamination as specified by this ordinance and by the state and County plumbing code. Any water outlet which could be used for potable or domestic purposes, and which is not supplied by the potable system must be labeled in a conspicuous manner such as:

WATER UNSAFE FOR DRINKING

7. That this ordinance does not supersede the state plumbing code, and County plumbing ordinance most recently adopted by the County, but is supplementary to them.

8. That any person or customer found guilty of violating any of the provisions of this ordinance or any written order of the County in pursuance thereof, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine for each violation as established by the Board and published each year. An established fee will be applied for each disconnect and reconnect of water service required due to any violations of this ordinance. Each day upon which a violation of the provisions of this act shall occur shall be deemed a separate and additional violation for the purposes of this ordinance.

Adopted this 18 day of March, 2025.
Effective the 1 day of July, 2025.

ATTEST:

Dawn L. Marcus
County Clerk

BOARD OF COUNTY COMMISSIONERS
OF WASHINGTON COUNTY, MARYLAND

John F. Barr, President

Approved as to form
and legal sufficiency:

Zachary J. Kieffer
County Attorney

After recording mail to:
Office of the County Attorney
100 W. Washington Street, Suite 1101
Hagerstown, Maryland 21740

Prepared for:

Washington County
100 West Washington Street
Hagerstown, MD, 21740

CROSS CONNECTION CONTROL PLAN

For

Washington County

Highfield, Mount Aetna,
Elk Ridge, Sandy Hook and
Sharpsburg Water Systems

Washington County Approved: (insert date)

Prepared by:

HYDROCORP
THE SAFE WATER AUTHORITY

5700 Crooks Rd., Suite 100
Troy, MI 48098
Phone: 248.250.5000

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1. INTRODUCTION

1.1. Purpose

The purpose of this document is to outline the Washington County's Cross Connection Control (CCC) policies for all commercial, institutional, industrial, and miscellaneous facilities having service connections to the Washington County public water supply and are summarized as follows:

- Protect the public water supply from contaminants and pollutants that could cause backflow through the service connection(s)
- Promote eliminating actual and potential cross connections between the public water supply and non-potable water systems, plumbing fixtures, and sources or systems containing substances of unknown or questionable quality.
- Promote eliminating actual and/or potential cross connections between the facility's water supply and non-potable water systems, plumbing fixtures, and sources or systems containing substances of unknown or questionable quality.
- Provide guidance for maintaining a continuing program for protection from the potential of the service line and interior cross-connections within the facility.

1.2. Legality

In accordance with the requirements of the Maryland Department of the Environment (MDE), Washington County proclaims this program as a continuing effort to maintain pure, clean, safe potable water. By reference to the State of Maryland Department of Environment, Code of Maryland Regulations (COMAR), Title 26 (*26.04.01.32 Cross Connection Control Programs*), "*we hereby establish the Washington County Cross Connection Control Program.*" This program was adopted by the hereby above described governing body on (ENTER DATE)

1.3. Local Ordinance

Legal authority to carry out and enforce the Washington County Cross-connection Control Program is provided in the Washington County code of ordinances, Article X, Part X. A copy of said ordinance can be found in Appendix A of this plan.

2. AUTHORITY/ADMINISTRATOR

Washington County shall be the Administrator of the Cross-connection Control (CCC) Program. This Cross-connection Control Program shall include, but not be limited to:

- Local Ordinance (See Appendix A)
- Applicable Rules and Regulations
- Inspection Process and Requirements
- Approved Backflow Prevention Devices and Assemblies
- Testing Requirements of Backflow Prevention Assemblies
- Data Management
- Reporting
- Public Education and Awareness

2.1. Inspector/Designated Agent

The Washington County or Designated Agent (Authority/Agent) conducting inspections on behalf of Washington County must be designated/approved by Washington County. The Authority/Agent must meet both 1) an experience component and 2) a certification/training component. Acceptable components are as follows:

Experience - Acceptable experience may include one- (1) or more of the following:

- Be employed by a Utility, Water Purveyor, Building Department, or body of jurisdiction and must meet the qualifications and training requirements as dictated by the Authority conducting inspections/surveys on behalf of Washington County
- Have held a similar position (CCC Inspector) with a previous municipality
- One-year full-time experience in conducting cross-connection control inspections in commercial, institutional, and industrial facilities

Certification/Training - Acceptable experience may include one- (1) or more of the following:

- Meet American Society of Sanitary Engineer Standards (ASSE) 5120 and completed their Cross Connection Inspector Course (40 hours)
- Possess a certificate of completion from one of the following:
  - American Society of Sanitary Engineers (ASSE) Certified Cross-connection Control Surveyor
  - University of Southern California (USC) Cross-connection Control Specialist Course (40 hours)
  - University of Florida TREEO Center (UFTREEO) Cross-connection Control Program Manager Course (40 hours)
- Other approved cross-connection courses for surveying, as approved by the Authority for conducting inspections/surveys on behalf of the "city name." Submission requirements for approvals must include the following:
  - Course outline
  - Outline of test questions
  - Certificate of satisfactory completion
  - Date of Attendance
  - Categories and grading criteria

3. INSPECTIONS

3.1. Inspection

Authorized Inspectors, having proper identification, shall be permitted to enter the building/premises at any reasonable time for inspection for the presence or absence of cross-connections, testing, repair, and maintenance of any part of the plumbing system or any cross-connection control device connected to the water system. The County shall deny or discontinue, after reasonable notice to the occupants, water service to any building/premises for refusal or failure to arrange a cross-connection inspection. The County shall deny or discontinue water service if there is reason to believe the building/premises pose a potential danger to the public or occupants.

3.2. Responsibility of the Owner

1. The Owner shall be responsible for the elimination or protection of all cross-connections on his premises.
2. The Owner, after having been informed by a letter from the County, shall at the owner's expense, install, maintain, and test, or have tested, any and all backflow preventers on the owner's premises.
3. All properties will be required to install a backflow prevention device immediately downstream of the water meter. The device and the installation will be at their expense, and must be completed within five years from the date of enactment of this policy.
4. On new installations: The owner shall submit a County Cross-Connection Permit application with associated fees and an approved backflow device test report(s) from a certified backflow device tester. Residential properties are currently not included in cross connection control enforcement fees.
5. For premises existing prior to the start of this program and/or permit renewals: The owner of high hazard properties shall submit to the County every two years a County cross-connection permit application with associated fees and an approved backflow device test report(s) from a certified backflow device tester. Residential properties shall submit to the County every ten years a county cross-connection permit application with an approved backflow device test report(s) from a certified backflow device tester.
6. The Owner shall correct any malfunction of the backflow preventer which is revealed by periodic testing.
7. The Owner shall inform the County of any proposed or modified cross-connections and also any existing cross connections of which the owner is aware, but has not been found by the County.
8. The Owner shall not install a bypass around any backflow preventer unless there is a backflow preventer of the same type on the bypass. Owners who cannot shut down operation for testing of the device(s) must supply additional devices necessary to allow testing to take place.
9. The Owner shall install backflow preventers in a manner approved by the County.
10. The Owner shall install only backflow preventers approved by the County.
11. In the event the Owner installs plumbing to provide potable water for domestic purposes which is on the County's side of the backflow preventer, such plumbing must have its own backflow preventer installed.

12. The Owner shall be responsible for the payment of all fees for permits, annual or semi-annual device testing, retesting in the case that the device fails to operate correctly, and second re-inspections for non-compliance with the County's requirements.

3.3. Service Line Protection Inspection

a) On new installations, after the start of this program, the County will provide on- site evaluation and/or inspection of plans in order to determine the type of backflow preventer, if any, that will be required, will issue permit, and perform inspection. In any case, a minimum of a dual check valve will be required in any new construction. New service line connections should be assessed before introducing the new service to determine what method of backflow protection is required.

b) For premises existing prior to the start of this program, the County will perform evaluations and inspections of plans and/or premises and inform the owner by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made. Ordinarily, ninety (90) days will be allowed, however, this time period may be shortened depending upon the degree of hazard involved and the history of the device(s) in question.

c) The County will not allow any cross-connection to remain unless it is protected by an approved backflow preventer for which a permit has been issued and which will be regularly tested to insure satisfactory operation.

d) The County shall inform the Owner by letter, of any failure to comply, by the time of the first re-inspection. The County 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 County 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. The County may charge a fee if the owner's water service is turned off. This fee must be paid before the water is turned on. In the event that the Owner informs the County of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the County but in no case will exceed an additional thirty (30) days.

e) If the County determines at any time that a serious threat to the public health exists, the water service will be terminated immediately.

f) The County shall have on file, a list of Private Contractors who are certified backflow device testers. All charges for these tests will be paid by the Owner of the building or property.

g) The County will begin initial premise inspections to determine of existing or potential hazards. Focus will be on high hazard industries and commercial properties.

3.4. Internal Plumbing System Inspection

Internal plumbing systems may require inspection at the discretion of the Superintendent. The facilities' internal water use practices shall be reviewed to determine whether there are actual or potential cross-connections to the plumbing system through which contaminants or pollutants could backflow into the public water supply or the facility's internal plumbing system.

3.5. Inspection/Survey Forms

An *Inspection/Survey Form* shall be used in every inspection, as required, and will be filed in a location as identified in Section 3.8, along with other pertinent information accumulated. This form will be used to record both existing backflow prevention devices discovered and any requirements for additional backflow prevention devices at the time of the inspection.

3.6. Inspection Procedures (for Internal Inspections Only)

Cross-connection control inspections shall be completed as follows:

a) Identify the building to be inspected and schedule the inspection.
b) Meet on-site with facility contact/owner.
c) Explain the Cross-connection Control Program to the facility contact/owner before the inspection.
d) Inspect/Evaluate the status of service line protection – complete all inspection forms as required (See line item "e" below).
e) Inspect the building downstream of the service line if required and complete the Inspection Form(s) as applicable/required with the following information:
f) Visually review all exposed piping and water outlets/uses downstream of the service connection
g) Document all existing backflow prevention assemblies, devices, and methods (including make, model#, size, and serial # if applicable) that are currently protecting cross-connections on the *Existing Devices and Assemblies Form*
h) Describe the point of use or equipment supplied for each backflow prevention assembly, device, or method on the *Existing Devices and Assemblies Form*
i) Use the *CCC Requirements Form* to provide specific requirements for corrective action
j) Fill out an *Inspection Form* to document general findings; provide a "Compliance Status" and any follow-up action to be taken. If no action is required (*i.e., Compliant*), provide a date of the next inspection due, if applicable. If the facility requires corrective action (i.e., Non-Compliant), give a due date to complete corrective action(s) as designated on *CCC Requirements Form*
k) Date all forms with the date of the in-field inspection
l) In addition to the field forms, a piping diagram or schematic of the plumbing system may be requested or required.

3.7. Request for Internal Cross-connection Control Information

The County has the right to request specific cross-connection control information, including but not limited to service line protection methods, assembly test records, CCC Program information, piping drawings, etc.

3.8. Record Keeping and Data Management Software

All data obtained from the *Inspection Forms, Existing Devices Forms,* and *Requirements Forms* will be input into a data management system and held for no less than ten- (10) years to facilitate the CCC Program. This information will include:

- Address and location
- Owner name and contact information
- Required re-inspection frequency
- Degree of hazard classification
- List of assemblies
- Location of assemblies
- Make, model, and size of assemblies
- Testing and maintenance of assemblies
- Description of other cross-connections within the facility
  - Air gaps
  - Non-testable devices

Additionally, all written backflow incident reports, and annual cross-connection control program activities reports shall be maintained for no less than ten – (10) years.

3.9. Inspection Frequencies

Inspection frequencies will be determined based on the County's water usage classifications. Properties with a C2 designation will be categorized as High Hazard and inspected annually. Properties with a C1 designation will be classified as Low Hazard and inspected once every five years. However, any property identified as having a connection posing a health hazard will require annual inspections, regardless of its water usage classification.

4. BACKFLOW PREVENTION ASSEMBLIES AND DEVICES

4.1. Responsibility

With respect to backflow prevention devices/assemblies or methods, Washington County shall require the following:

a) The Owner shall install and maintain assemblies, devices, and methods to protect all existing cross-connections.

4.2. Approved Backflow Prevention Assemblies and Devices

a) Washington County accepts backflow prevention devices, assemblies, and methods (downstream of service line protection) as recognized by the Maryland Building Code.
b) ASSE recognized backflow prevention devices, assemblies, and methods intended to protect the public water supply at the point of the service connection must be used.
c) New installation of Reduced Pressure Backflow Prevention Assemblies intended for service line protection must conform to AWWA Standards C510 and C511 and the ASME Standards.

4.3. Service Line Backflow Prevention Assembly Protection

Concerning backflow prevention assemblies installed at the service line, the County will require the following:

a) Service line protection shall be required at all commercial properties.
b) Where service line protection is required, the owner shall receive formal written notification detailing the requirement and instructions about the need for protection from thermal expansion (see *Containment Notification* located in Appendix C).
c) Service connections to fire protection systems shall be required in accordance with the AWWA M-14 Manual, current Edition. The continued use of UL-listed alarm check valves shall be accepted on any existing connection deemed a low hazard by the County/Agent. Residential properties with an internal fire protection system must have backflow prevention that conforms to these standards.
d) If an existing fire protection system requires a higher degree of protection than that which is currently installed and additional or new backflow prevention devices are required that may affect the hydraulics of the system, the owner shall receive formal written notification detailing the requirement and the owner's responsibility to hire a registered professional engineer or a certified fire-protection system contractor to ensure there will not be an adverse effect on the operation of the system.
e) The installation of a Reduced Pressure Backflow Prevention Assembly as service line protection shall be required at all commercial, industrial, and governmental facilities also served by reclaimed water or where secondary water systems exist.
f) The installation of residential Dual Checks or Double Checks shall be required as service line protection at all residential homes also served by reclaimed water or where an auxiliary water system exists.
g) Backflow prevention assemblies, devices, or methods installed as service line protection shall be installed downstream of the water meter and before the plumbing system's first branch line.
h) New Installation of Reduced Pressure Backflow Prevention Assemblies and Double Check Valve Assemblies must conform to AWWA Standards C510 and C511.

i) The installation of Reduced Pressure Backflow Prevention Assemblies, Pressure Vacuum Breaker Assemblies, and Atmospheric Vacuum Breakers below grade or in an underground pit shall be prohibited.

j) The installation of Double Check Valve Assemblies and residential Dual Checks below grade or in an underground pit shall be accepted under the following conditions:
   - If the test cocks are plugged
   - If adequate drainage is provided to maintain an ordinarily dry location

k) Assemblies located at the service line shall be tested upon installation, upon repair, upon responding to a reported backflow incident, and annually.

l) The County strongly recommends that all new retrofit installations of reduced pressure principal devices and double check valve backflow preventers include the installation of strainers located immediately upstream of the backflow device. 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 strainer

4.4. Lawn Irrigation Systems

Lawn irrigation systems supplied from a dedicated service line shall be equipped with a Reduced Pressure Backflow Prevention Assembly downstream of the water meter and before the first irrigation branch line. Lawn irrigation systems installed so that the supply originates downstream of the potable service line connection to a building shall be equipped with a Reduced Pressure Backflow Prevention Assembly or a Pressure Vacuum Breaker at the origination of the system. These assemblies must be installed in accordance with the Maryland (MD) Plumbing Code (current IPC version), Section 608, and the manufacturers' installation requirements.

4.5. Testing of Backflow Prevention Assemblies

a) All backflow prevention assemblies located at the service line and downstream shall be tested upon installation, upon repair, upon responding to a reported backflow incident, and on an annual basis. Assemblies must be tested in accordance with applicable standards referenced within the MD Plumbing Code, Section 608, and ASSE 5000 Series.

b) Equipment used to field test assemblies must be certified and calibrated for accuracy annually.

c) Assembly test form(s) to record test results will be maintained by the Owner and submitted to the County as required.

d) The Owner shall have all assemblies tested by a Licensed Plumber having completed the 40-hour ASSE Backflow Prevention Assembly Tester Training and Certification Course. All testers must also complete a recertification exam at an interval not to exceed once every two years. See reference "Maryland Business Occupations and Professions Section 12-306".

e) Washington County shall reserve the right to direct and administer testing and maintenance of any backflow prevention assemblies installed as service line protection. All costs associated with testing and any necessary repairs of these assemblies shall be the owner's responsibility. If the County assumes the responsibility for backflow assembly maintenance, all costs for testing, repairs, and installations will be charged back to the owner as deemed appropriate by the Superintendent.

f) Failure to test assemblies and submit appropriate test forms located at the service line may result in termination of water service.

4.6. Service Line Protection for Residential Properties

Effective the date of the acceptance of this Cross-Connection Control Program of Washington County residential buildings will be required to install a residential dual check device immediately downstream of the water meter. Installation of this residential dual check device on a retrofit basis on existing service lines will be instituted at a time and at a potential cost to the homeowner as deemed necessary by the County.

The owner must be aware that 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.

4.7. Application of Backflow Preventers

The following table outlines acceptable backflow protection for certain types of cross-connection conditions that may be encountered. The table will be used as a guideline in determining adequate cross-connection control measures, not as an absolute requirement; see Appendix G for sample installation schematics.

Backflow Preventer Type	Degree of Hazard	Application	Applicable Standard
Backflow prevention assemblies:			
Double Check Valve Assembly (DCV)	Low hazard	Backpressure or backsiphonage	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1
Double Check Detector Assembly (DCDA)	Low hazard	Backpressure or backsiphonage	ASSE 1048
Pressure Vacuum Breaker Assembly (PVB)	High or low hazard	Backsiphonage	ASSE 1020, CSA B64.1.2
Reduced Pressure Principle Backflow Prevention Assembly (RPBP)	High or low hazard	Backpressure or backsiphonage	ASSE 1013, AWWA C5411, CSA B64.4, CSA B64.4.1
Reduced Pressure Detector Assembly (RPDA)	High or low hazard	Backsiphonage	ASSE 1047
Spill-resistant Vacuum Breaker Assembly (SVB)	High or low hazard	Backsiphonage	ASSE 1056
Backflow prevention devices:			
Antiphon-type Fill Valve (FV)	High hazard	Backsiphonage	ASSE 1002, CSA B125.3
Atmospheric Vacuum Breaker (AVB)	High hazard	Backsiphonage	ASSE 1001, CSA B64.1.1
Backflow Preventer for Carbonated Beverage Equipment (VMBP)	Low hazard	Backpressure or backsiphonage	ASSE 1022
Backflow Preventer with Intermediate Atmospheric Vent (VDCV)	Low hazard	Backpressure or backsiphonage	ASSE 1012, CSA B64.3

Dual Check (DC)	Low hazard	Backpressure or backsiphonage	ASSE 1024, CSA B64.6
Hose Connection Backflow Preventer (HCBP)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1052, ASME A112.21.3, CSA B64.2.1.1
Hose Bibb Vacuum Breaker (HBVB)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1011, ASME A112.21.3, CSA B64.2, CSA B64.2.1
Anti-frost Hoe Bibb Vacuum Breaker	High or low hazard	Low head backpressure or backsiphonage	ASSE 1011, ASME A112.21.3, CSA B64.2, CSA B64.2.1
Lab Faucet Vacuum Breaker (LFVB)	High or low hazard	Backsiphonage	ASSE 1035, CSA B64.7
Backflow Preventer Type	**Degree of Hazard**	**Application**	**Applicable Standard**
Backflow prevention devices:			
Vacuum Breaker Wall Hydrants (HBIVB)	High or low hazard	Low head backpressure or backsiphonage	ASSE 1019, ASME A112.21.3, CSA B64.2.2
Other means or methods:			
Air Gap (AG)	High or low hazard	Backsiphonage	ASME A112.1.2
Air Gap Fittings for use with Plumbing Fixtures, Appliances, and Appurtenances	High or low hazard	Backsiphonage	ASME A112.1.3
Barometric Loop	High or low hazard	Backsiphonage	MI Plumbing Code Sec. 608.13.4

5. NEW SERVICE INSPECTION

5.1. Procedures

All plumbing plans and permits for a proposed building shall be reviewed by the County, Plumbing Inspector, Building Inspector, and building contractor(s). The County's Cross-connection Control Plan and Backflow Prevention requirements will be reviewed with the responsible party.

5.2. Inspections

The County/Designated Agent conducting the cross-connection control inspection shall inspect the building for compliance with the Cross-connection Control Program.

5.3. Compliance

Upon completion of the cross-connection control inspection and determination that the building complies and has met any required actions of this plan, a certificate of occupancy and water service may be initiated as applicable.

5.4. Non-Compliance

If the building does not comply with the Cross-connection Control Program, the County shall enforce this plan as required. The water service and the certificate of occupancy will not be initiated until compliance is achieved and approved.

6. PIPING IDENTIFICATION

6.1. Requirements

- When two or more piping systems are used for water in a building, extreme care should be taken not to interconnect the systems. There may be a potable water system and systems carrying lesser quality water, such as fire protection or re-use. To help prevent the possibility of two systems being interconnected, pipes must be identified adequately. Legends and color coding should be based on the American Standards Association "Scheme for Identification of Piping Systems" (ANSI Z535.1-199) or an identification plan accepted by the Authority and prominently posted throughout the facility.

- Color-coding and/or labeling should not be used solely to identify the contents of pipes but should be used supplementary to the use of legends. Potable water lines must be painted and/or labeled, and the words "Potable Water" must be put on the pipe at appropriate intervals. Pipes carrying water for fire protection must be painted or labeled. Piping systems having other materials or non-potable water must also be identified with the appropriate legends and color coding. Flow arrows should be included to indicate the direction of flow.

- Buildings that do not comply with the identification of piping system requirements on the effective date of this plan must be painted or labeled per this section. Identification must be completed as soon as reasonably possible.

- When the piping system layout creates an unusual or extreme situation in a limited area of inaccessibility, Washington County may permit permanently attached durable sign(s), or such piping segments may require substitute techniques to achieve identification. The use of substitute techniques shall not deviate from ANSI Z535.1-199 standards and must be approved by the County.

- All openings from which secondary water may be obtained shall have at all times a sign prominently posted within two (2) feet of the opening bearing the following warning: WATER UNSAFE FOR DRINKING. Such sign shall be at least eight (8) inches by ten (10) inches in size, prominently lettered in contrasting colors, with no letters less than one (1) inch in height. Signs are to be furnished and maintained by the owner of the secondary supply and must be of material and design acceptable to the County.

7. EMERGENCY RESPONSE PLAN

7.1. Emergency Response Plan Procedures

Washington County shall develop and maintain an Emergency Response Plan (ERP) document to appropriately respond to a backflow event. The written ERP shall be readily available to designated personnel.

Investigative actions to address an actual or potential backflow event are intended to:

a) Protect the distribution system from the spread of a contaminant detected in the water supply
b) Quickly restore the quality of water in the distribution system if a contaminant has entered the system through backflow
c) Prevent any further contamination of the distribution system

The facilities investigation should include these steps:

1) Locate the source of contamination
2) Isolate the source to protect the water distribution system from further contamination
3) Determine the extent of the spread of contamination through the distribution system and provide timely, appropriate notification to the public and its regulatory agencies as applicable
4) Take corrective action to clean the contamination from the distribution system
5) Restore water service

7.2. Emergency Scenarios

Common scenarios causing unintended backflow forcing execution of Emergency Response may include the following:

a) Main water supply pipe break
b) Internal facility water pipe break
c) Internal facility – unprotected cross-connection allowing contaminant to flow into the potable water distribution system
d) Report of illness due to water supply contamination
e) Report of discolored water

7.3. Sample Emergency Response Plan

BACKFLOW INCIDENT REPORT FORM

Many backflow incidents occur that are not reported. This is usually because they are of short duration, are not detected, the customer needs to be made aware they should be reported, or it may not be known to whom the incident should be reported. If you have any knowledge regarding incidents, please complete the form below and return it to the Municipal Engineer at the above address.

Reporting Agency: _____ Report Date: _____
Reported By: _____ Position: _____
Mail Address: _____ City: _____
Province: _____ Postal Code: _____ Telephone: _____
Date of Incident: _____ Time of Occurrence: _____
General Location (Street, etc.): _____

1. **Backflow Originated From:**

   Name of Premise: _____
   Street Address: _____ City: _____
   Contact Person: _____ Telephone: _____
   Type of Business: _____

2. **Description of Contaminant(s):**
   (Attach Chemical Analysis if available)
   _____
   _____

3. **Distribution of Contaminant(s):**

   Contained within customer's property: Yes: ___ No: ___
   Number of persons affected: _____

4. **Effect of Contamination:**

   Illness reported: _____

   Physical irritation reported: _____

5. **Cross-connection Source of Contaminant:**
   (boiler, chemical pump, irrigation system, etc.)
   _____
   _____

6. **Cause of Backflow:**
   (main break, fire flow, etc.)
   _____
   _____

7. **Corrective Measures Taken to Restore Water Quality:**
   (main flushing, disinfection, etc.)
   _____
   _____

8. **Corrective Action Ordered to Eliminate or Protect from Cross-connection:**
   (type of backflow preventer, location, etc.)
   _____
   _____

9. **Previous Cross-connection Survey of Premise:**

   Date: _____ By: _____

10. **Type(s) of Backflow Preventer Isolating Property:**

    RP: ___ RPDA: ___ DCVA: ___ DCDA: ___ PVB: ___ SVBA: ___
    AVB: ___ Air Gap: ___ None: ___ Other Type: _____

11. **Date of Latest Test of Device:** _____

12. **Notification of Health Department:**
    Date: _____ Time: _____ Person Notified: _____

Attach sheets containing any additional information, sketches, etc., to the back of this form.

8. EDUCATION AND AWARENESS

The cross-connection control program staff must have a good understanding of the program. Washington County shall ensure their cross-connection control staff receives proper in-the-field training and classroom education focusing on terminology, backflow prevention devices/assemblies, regulations, and hydraulic concepts. In addition, cross-connection control staff will be encouraged to receive continuing education to be made aware of new backflow prevention devices/assemblies, regulation changes (i.e., plumbing code updates), new water use devices that pose cross-connection concerns, etc.

Furthermore, attempts to educate the public about cross-connections can be made by distributing pamphlets on common residential cross-connections, visiting schools, providing onsite education of facility management and maintenance staff during routine inspections, speaking at condominium association meetings, website information, newsletter article(s), or posting newspaper announcements.

Cross-connection staff shall also be available upon request to provide backflow prevention education to pertinent community officials and the Washington County employees.

APPENDIX A - LOCAL ORDINANCE

Washington County Cross Connection Control Ordinance
(Ordinance/Policy#XXX)

An ordinance regulating cross connections with the public water system, i.e., connections or arrangements of piping or appurtenances through which water of questionable quality, wastes or other contaminants can enter the public water system.

Be it ordained by the Board of County Commissioners of Washington County, State of Maryland:

Section 1. Washington County adopts by reference the "Washington County Cross Connection Control Plan", in conformance with the Maryland Department of the Environment Cross Connection Regulations under Code of Maryland Regulations Section 26.04.01.32, as may be updated and amended from time to time and which is incorporated herein by reference. Compliance with the manual and the cross-connection program contained therein is hereby required.

Section 2. That it shall be the duty of the County to cause surveys to be made of all properties served by the public water system where cross connections with the public water supply is deemed possible. The frequency of surveys and resurveys based on potential health hazards involved shall be as established by the County and as approved by the Maryland Department of the Environment.

Section 3. That the representative of the County shall have the right to enter at any reasonable time any property served by a connection to the public water system of County for the purpose of surveying the piping system or systems thereof for cross connections. On request, the owner, lessees, or occupants of any property so served shall furnish to the survey agency any pertinent information regarding the piping system or systems on such property. The refusal of such information or refusal of access, when requested, shall be deemed evidence of the presence of cross connection.

Section 4. That the County is hereby authorized and directed to discontinue water service after reasonable notice to any property wherein any connection in violation of this ordinance exists and to take such other precautionary measures deemed necessary to eliminate any danger of contamination of the public water system. Water service to such property shall not be restored until the cross connection(s) has been eliminated in compliance with the provisions of this ordinance.

Section 5. That all testable backflow prevention assemblies shall be tested initially upon installation, repair or relocation to be sure that the assembly is working properly. Subsequent testing of assemblies shall be performed on an annual basis as required by the County and in accordance with Division requirements. Only individuals that are approved and State of Maryland certified shall be qualified to perform such testing. That individual(s) shall certify the results of his/her testing.

Section 6. That the potable water supply made available on the properties served by the public water supply be protected from possible contamination as specified by this ordinance and by the state and County plumbing code. Any water outlet which could be used for potable or domestic purposes and which is not supplied by the potable system must be labeled in a conspicuous manner as:

WATER UNSAFE FOR DRINKING

Section 7. That this ordinance does not supersede the state plumbing code and County plumbing ordinance No._____", but is supplementary to them.

Section 8. That any person or customer found guilty of violating any of the provisions of this ordinance or any written order of the County in pursuance thereof, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine for each violation as established by the BOCC and published each year. An established fee will be applied for each disconnect and reconnect of water service required due to any violations of this ordinance. Each day upon which a violation of the provisions of this act shall occur shall be deemed a separate and additional violation for the purpose of this ordinance.

APPENDIX B - FIELD FORMS

Facility Comments	

Facility Information		
Facility Name:		
Address:		
Address 2:		
City:	State:	Zip:
Phone:	Ext:	Fax:
Contact Name:		

Mailing Information		
First:	Last:	
Address:		
Address 2:		
City:	State:	Zip:
Phone:	Ext:	Fax:
Email:		

Inspection Date		Facility Type		Requirements	
Inspection Status		Facility Status		Assemblies	
Inspection Frequency		Test Cycle		Devices	
High Hazard ☐				Last Insp Notice	
				Next Insp Notice	

Containment:

Potable Supply		Private Well		Reclaim Water	
Fire Supply		Surface Water		Grey Water	
Containment Existing ☐		Containment Required ☐		FP Properly Protect ☐	

Isolation Hazards:

Facility Comments	
Inspector's Name	
Contact's Name	
Contact's Signature	

Sample Inspection Form

Facility Name:	Service Address:	Insp Date:

ID#	Req	Type	Size	Manufacturer	Model	Serial #	PT	Recommendation
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APPENDIX C - ASSEMBLY AND DEVICE LEGEND

Backflow Preventer Legend			
A.S.S.E Standard	Legend	Acronym	Testable Device
1001	Atmospheric Type Vacuum Breakers	AVB	No
1002	Anti-siphon Fill Valves (Ballcocks)	ASBC	No
1011	Hose Connection Vacuum Breaker	HBVB	No
1012	Backflow Preventer w/Intermediate Atmospheric Vent	VDCV	No
1013	Reduced Pressure Backflow Prevention Assembly	RPBP	**Yes**
1015	Double Check Valve Backflow Prevention Assembly	DCV	**Yes**
1019	Vacuum Breaker Wall Hydrants	HBIVB	No
1020	Pressure Vacuum Breaker Assembly	PVB	**Yes**
1022	Backflow Preventer for Carbonated Beverage Machine	VMBP	No
1024	Dual Check Valve Type Backflow Preventers	DC	No
1024	Residential Dual Check	RDC	Yes/No
1035	Laboratory Faucet Backflow Preventer	LFVB	No
1037	Pressurized Flushing Devices (Flushometers)	PFD	No
1047	RP Detector Backflow Prevention Assembly	RPDA	**Yes**
1048	Double Check Detector Backflow Prevention Assembly	DDCV	**Yes**
1052	Hose Connection Backflow Preventer	HCBP	No
1055	Chemical Dispensing Systems	AG	No
1056	Spill Resistant Vacuum Breaker Assembly	SVB	**Yes**
1057	Freeze Resistant Yard Hydrant W/Backflow		No
A112.1.2	Air Gap	AG	No
	Single Check Valve	SCV	No

APPENDIX E - DEFINITIONS

Air Gap: The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture, receptor, or other assembly and the flood-level rim of the receptacle. These vertical, physical separations must be at least twice the diameter of the water supply outlet and at no time less than 1 inch.

Approved: Accepted by the authority responsible as meeting an applicable specification stated or cited in this plan or as suitable for the proposed use.

Auxiliary Water System: Any water system on or available to the premises other than the purveyor's approved public water supply.

Backflow: The undesirable reversal of flow in a potable water distribution system due to a cross-connection.

Backflow Preventer: An assembly, device or method designed to prevent backflow.

Backflow Prevention Assembly: A mechanical backflow preventer used to prevent backward flow of contaminants or pollutants into a potable water distribution system. An assembly has a resilient seated, full-flow shut-off valve before and after the backflow preventer making it testable in line.

Backflow Prevention Device: A mechanical backflow preventer without shut-off valves. Typically these devices are not testable in the field.

Backpressure: A pressure higher than the supply pressure caused by a pump, elevated tank, boiler, or any other means that may cause backflow.

Backsiphonage: Backflow caused by negative or reduced pressure in the supply piping.

Contaminant: Any foreign substance (liquid, solid, or gas) that degrades the quality of water and creates a health hazard.

Cross-connection: A connection or potential connection between any part of a potable water system and any other environment containing other substances in a manner that, under any circumstances, would allow such substances to enter the potable water system. Other substances may be gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable or non-potable), or any matter that may change the color or add an odor to the water.

Department: Washington County Water Quality Department

Owner: Person or entity receiving service from the public water distribution system.

Pollutant: Any foreign substance (liquid, solid, or gas) that degrades the quality of water to constitute a non-health hazard or impair the usefulness of the water.

Potable Water: Water safe for human consumption as described by the public health official having jurisdiction.

Non-Potable Water: Water unsafe for human consumption or questionable quality.

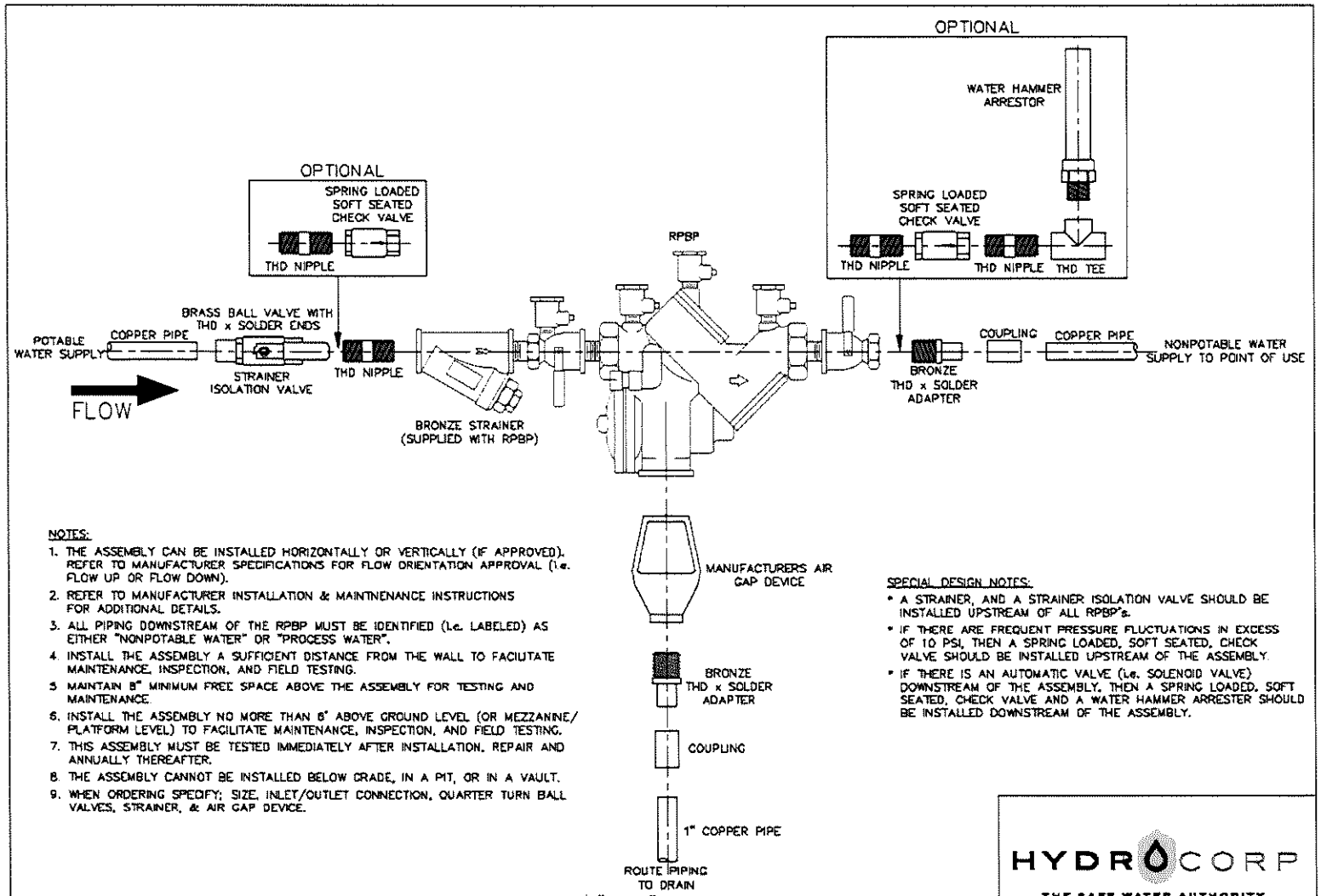
Reclaimed Water: Water that, as a result of the treatment of wastewater, is suitable for direct beneficial use or a controlled use that would not otherwise occur and is not safe for human consumption.

Service Line Protection: Installation of an approved backflow prevention device, assembly, or method at the point of service to confine potential contamination caused by a cross-connection within the facility where it arises; also referred to as containment.

Superintendent: The Field Operations Superintendent, or his delegated representative invested with the authority and responsibility for the implementation of a cross- connection control program.

APPENDIX F – INSTALLATION SCHEMATICS

Drawings contained in this section are only "typical" installations for reference purposes. All new installations must be installed per code and manufacturer specifications.



NOTES:

1. THE ASSEMBLY CAN BE INSTALLED HORIZONTALLY OR VERTICALLY (IF APPROVED). REFER TO MANUFACTURER SPECIFICATIONS FOR FLOW ORIENTATION APPROVAL (i.e. FLOW UP OR FLOW DOWN).
2. REFER TO MANUFACTURER INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
3. ALL PIPING DOWNSTREAM OF THE RPBP MUST BE IDENTIFIED (i.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
4. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
5. MAINTAIN 8" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
6. INSTALL THE ASSEMBLY NO MORE THAN 6" ABOVE GROUND LEVEL (OR MEZZANINE/ PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
7. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION. REPAIR AND ANNUALLY THEREAFTER.
8. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
9. WHEN ORDERING SPECIFY: SIZE, INLET/OUTLET CONNECTION, QUARTER TURN BALL VALVES, STRAINER, & AIR GAP DEVICE.

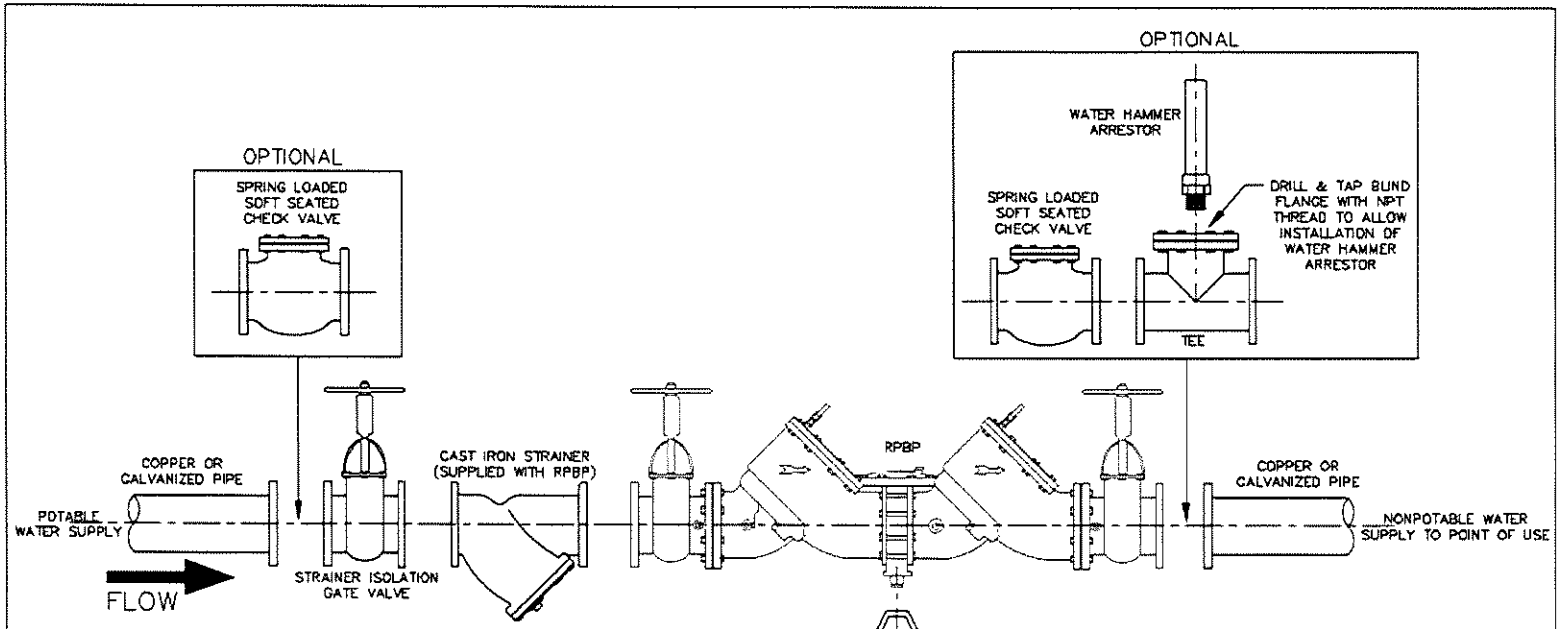
SPECIAL DESIGN NOTES:

- A STRAINER, AND A STRAINER ISOLATION VALVE SHOULD BE INSTALLED UPSTREAM OF ALL RPBP's.
- IF THERE ARE FREQUENT PRESSURE FLUCTUATIONS IN EXCESS OF 10 PSI, THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE SHOULD BE INSTALLED UPSTREAM OF THE ASSEMBLY.
- IF THERE IS AN AUTOMATIC VALVE (i.e. SOLENOID VALVE) DOWNSTREAM OF THE ASSEMBLY, THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE AND A WATER HAMMER ARRESTER SHOULD BE INSTALLED DOWNSTREAM OF THE ASSEMBLY.

TYPICAL 3/4" – 2" RPBP INSTALLATION
REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
ASSE 1013
WATTS MODEL NO: 909QT-S
CONBRACO MODEL NO: 40-200

HYDROCORP
THE SAFE WATER AUTHORITY
5700 Crooks Rd. Suite 100
Troy, Michigan 48098
ph: 248.250.5000
fax: 248 786 1789

dwg. name: PB3.dwg effective: 2/27/02



NOTES:

1. THE ASSEMBLY CAN BE INSTALLED HORIZONTALLY OR VERTICALLY (IF APPROVED). REFER TO MANUFACTURER SPECIFICATIONS FOR FLOW ORIENTATION APPROVAL (i.e. FLOW UP OR FLOW DOWN).
2. REFER TO MANUFACTURER INSTALLATION AND MAINTNENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
3. ALL PIPING DOWNSTREAM OF THE RPBP MUST BE IDENTIFIED (i.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
4. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
5. MAINTAIN 12" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
6. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE/ PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
7. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
8. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
9. WHEN ORDERING SPECIFY; SIZE, INLET/OUTLET CONNECTION, NON-RISING STEM GATE VALVES, STRAINER, AND AIR GAP DEVICE.

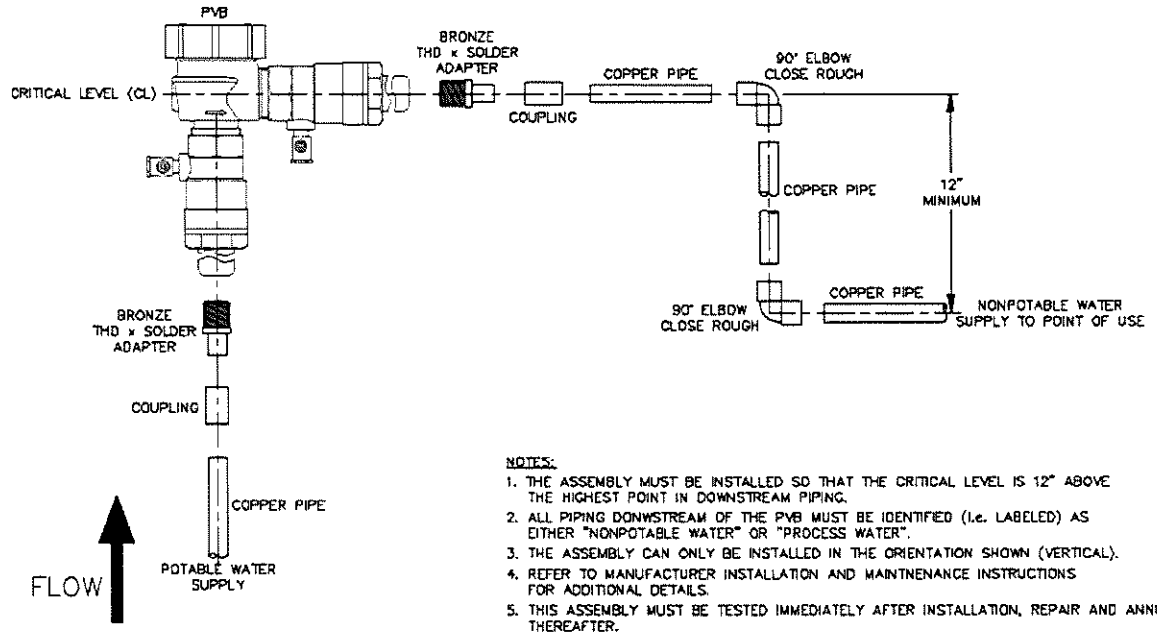
SPECIAL DESIGN NOTES:

- A STRAINER, AND A STRAINER ISOLATION VALVE SHOULD BE INSTALLED UPSTREAM OF ALL RPBP's.
- IF THERE ARE FREQUENT PRESSURE FLUCTUATIONS IN EXCESS OF 10 PSI, THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE SHOULD BE INSTALLED UPSTREAM OF THE ASSEMBLY.
- IF THERE IS AN AUTOMATIC VALVE (i.e. SOLENOID VALVE) DOWNSTREAM OF THE ASSEMBLY, THEN A SPRING LOADED, SOFT SEATED, CHECK VALVE AND A WATER HAMMER ARRESTER SHOULD BE INSTALLED DOWNSTREAM OF THE ASSEMBLY.

TYPICAL 2 1/2" – 10" RPBP INSTALLATION
REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
ASSE 1013
WATTS MODEL NO: 909NRS-S-FDA
CONBRACO MODEL NO: 40-200

HYDROCORP
THE SAFE WATER AUTHORITY
5700 Crooks Rd. Suite 100
Troy, Michigan 48098
ph: 248.250.5000
fax: 248.785.1789

dwg. name: PW1D.dwg effective: 2/27/02



NOTES:

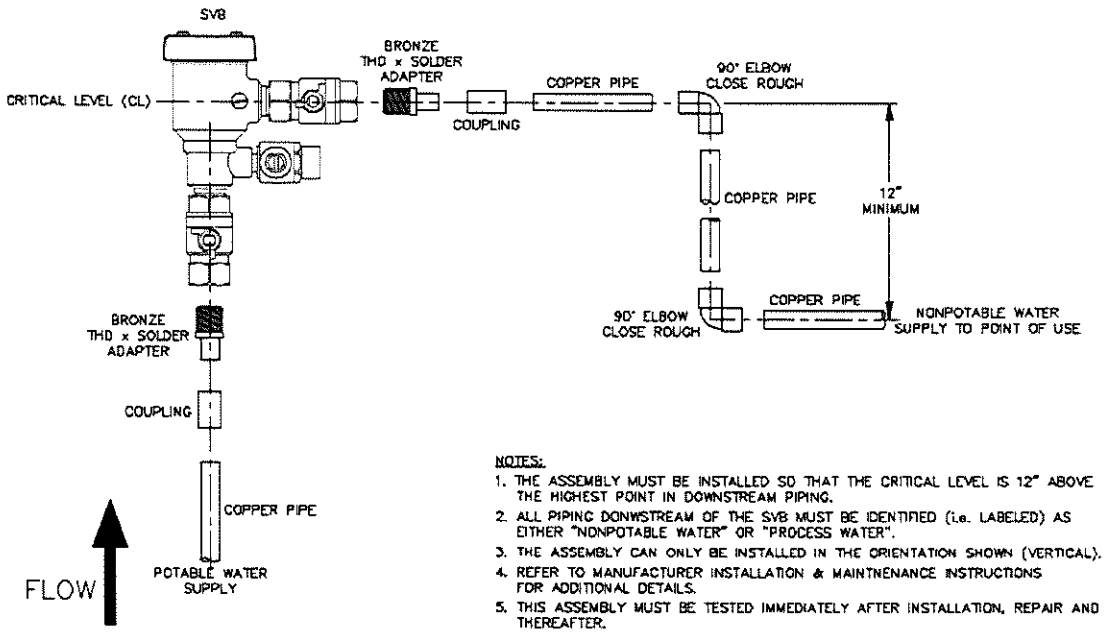
1. THE ASSEMBLY MUST BE INSTALLED SO THAT THE CRITICAL LEVEL IS 12" ABOVE THE HIGHEST POINT IN DOWNSTREAM PIPING.
2. ALL PIPING DONWSTREAM OF THE PVB MUST BE IDENTIFIED (i.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
3. THE ASSEMBLY CAN ONLY BE INSTALLED IN THE ORIENTATION SHOWN (VERTICAL).
4. REFER TO MANUFACTURER INSTALLATION AND MAINTNENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
5. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
6. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE/ PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
7. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
8. MAINTAIN 8" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
9. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
10. WHEN ORDERING SPECIFY; SIZE, INLET/OUTLET CONNECTION, AND QUARTER TURN BALL VALVES.

TYPICAL PVB INSTALLATION

PRESSURE VACUUM BREAKER ASSEMBLY
ASSE 1020
WATTS MODEL NO: 800M4QT
CONBRACO MODEL NO: 40-500

HYDROCORP
THE SAFE WATER AUTHORITY
5700 Crooks Rd. Suite 100
Troy, Michigan 48098
ph: 248.250.5000
fax: 248 785 1789

dwg. name PVB.dwg effective: 2/27/02



NOTES:

1. THE ASSEMBLY MUST BE INSTALLED SO THAT THE CRITICAL LEVEL IS 12" ABOVE THE HIGHEST POINT IN DOWNSTREAM PIPING.
2. ALL PIPING DOWNSTREAM OF THE SVB MUST BE IDENTIFIED (i.e. LABELED) AS EITHER "NONPOTABLE WATER" OR "PROCESS WATER".
3. THE ASSEMBLY CAN ONLY BE INSTALLED IN THE ORIENTATION SHOWN (VERTICAL).
4. REFER TO MANUFACTURER INSTALLATION & MAINTENANCE INSTRUCTIONS FOR ADDITIONAL DETAILS.
5. THIS ASSEMBLY MUST BE TESTED IMMEDIATELY AFTER INSTALLATION, REPAIR AND ANNUALLY THEREAFTER.
6. INSTALL THE ASSEMBLY NO MORE THAN 6' ABOVE GROUND LEVEL (OR MEZZANINE/ PLATFORM LEVEL) TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
7. INSTALL THE ASSEMBLY A SUFFICIENT DISTANCE FROM THE WALL TO FACILITATE MAINTENANCE, INSPECTION, AND FIELD TESTING.
8. MAINTAIN 8" MINIMUM FREE SPACE ABOVE THE ASSEMBLY FOR TESTING AND MAINTENANCE.
9. THE ASSEMBLY CANNOT BE INSTALLED BELOW GRADE, IN A PIT, OR IN A VAULT.
10. WHEN ORDERING SPECIFY: SIZE, INLET/OUTLET CONNECTION, AND QUARTER TURN BALL VALVES.

TYPICAL SVB INSTALLATION

SPILL RESISTANT VACUUM BREAKER ASSEMBLY
ASSE 1056
WATTS MODEL NO: 008QT
CONBRACO MODEL NO: N/A

HYDROCORP
THE SAFE WATER AUTHORITY
5700 Crooks Rd. Suite 100
Troy, Michigan 48098
ph: 248.250.5000
fax: 248 786 1789

dwg. name: PW4.dwg effective: 2/27/02