

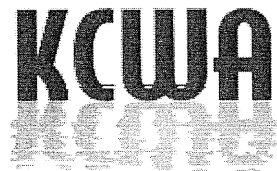
APPENDIX E

CROSS-CONNECTION CONTROL PROGRAM

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CROSS-CONNECTION
CONTROL PROGRAM

KENT COUNTY WATER AUTHORITY



KENT COUNTY WATER AUTHORITY

CROSS-CONNECTION CONTROL PROGRAM

SECTION 1

1.1 POLICY

- 1.1.1 The Kent County Water Authority recognizes its inherent responsibility to provide its customers with clean potable water meeting the regulatory requirements of the Environmental Protection Agency (EPA) and Rhode Island Department of Health (RIDOH). In order to facilitate this, the Kent County Water Authority must protect the public potable water supply from the possibility of contamination from plumbing and service infrastructure not under the Authority's sanitary control. The Kent County Water Authority will take reasonable measures to protect the water distribution system from hazards originating on the premises of its customers by requiring containment of the property owner's internal distribution system from the public water system infrastructure of the Kent County Water Authority. An appropriate backflow device shall be installed in every service line directly after the meter outlet valve and before any tap for an appliance, appurtenance, device, pump, pressure vessel, apparatus or outlet intended to serve or handle potable water or fire service. Fixture isolation after the containment backflow shall be per the RI Plumbing code and appropriate code official. In all cases cross-connections are strictly prohibited. Violation of this policy shall result in immediate discontinuance of public water service.

1.2 PURPOSE

- 1.2.1 Protect the public water supply under the sanitary control of the Kent County Water Authority from possible contamination through backflow, backsiphoning or introduction of contaminants from internal plumbing system or infrastructure under the sanitary control of the Customer.
- 1.2.2 Promote the elimination or code compliant control of existing cross-connection, actual or potential, between the public water system and customer's potable water and non-potable systems.
- 1.2.3 Provide a continuing program of cross-connection control awareness that shall effectively work to prevent the introduction of contaminants or pollution into the public potable water systems by cross-connection.

SECTION 2

2.1 AUTHORITY

- 2.1.1 The Federal Safe Drinking Water Act requires that the water purveyor have the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system. The Rhode Island Department Of Health further clarifies this intent in their Rules & Regulations, which are hereby incorporated by reference and made a part hereof.
- 2.1.2 Rhode Island General Law (RIGL) 46-15.3-22 et seq. authorizes the RIDOH to adopt consistent statewide regulations governing the content of cross-connection plans and require public water systems to prepare and certify to RIDOH that said plans comply with the regulations.
- 2.1.3 Rhode Island State Building Code, Plumbing Code Regulation SBC-3 makes the owner or designated agent responsible for safe and sanitary maintenance of the internal plumbing systems at all times in any of the owner's buildings or structures. It is unlawful to make any change in the occupancy of any structure, which will subject the structure to any special provision of the code or may hazard the public health, safety or welfare.
- 2.1.4 Kent County Water Authority Cross-Connection Regulations have been implemented to comply with the RIDOH Rules and Regulations for containment devices to prevent any potential for contamination by the very nature of not allowing direct connection in any form, actual or potential, to plumbing or infrastructure not under the sanitary control of the water supplier or any non-potable or potential contamination source.

SECTION 3

3.1 RESPONSIBILITY

- 3.1.1 Kent County Water Authority shall take reasonable steps for the protection of the public potable water distribution system from contamination due to the backflow, backsiphonage or return of contaminants through the property owner's water service connection not under the sanitary control of the public water system. In all cases of new construction, an approved backflow device shall be installed in every service line directly after the meter outlet valve and before any tap for an appliance, appurtenance, device, pump, pressure vessel, apparatus or outlet intended to serve or handle water. Per the RIDOH Rules and Regulations all existing customers shall have an approved backflow device by 2014. If, in the judgment of the Kent County Water Authority, an expedited installation of an approved backflow device is required on any customer's existing service infrastructure or plumbing, the

Authority shall give notice in writing to said customer to cause the installation of an approved backflow prevention device at each service connection.

- 3.1.2 As a condition of service, the property owner shall cause the proper installation of an approved backflow device and associated thermal expansion device in any existing premises, new construction; or upon change in occupancy or at the time of meter replacement; or upon written notice by the Authority. The installed device will be commensurate with the degree of potential hazard, as determined by the Kent County Water Authority, and/or at a minimum meet the requirements in section 7 of this regulation. All such backflow devices shall be positioned immediately after the outlet valve for the meter.
- 3.1.3 Owners shall, within 15 days of written notification of a deficiency, provide Kent County Water Authority with a corrective action schedule for said remediation work or installation of an approved device or devices; at the customer's own expense.
 - 3.1.3.1.1 For single family homes the schedule shall cause the installation to occur no later than forty five days from initial notification.
 - 3.1.3.1.2 Installation for commercial properties and/or services 2 inch or greater shall in no case extend beyond forty five days from initial notification.
 - 3.1.3.1.3 In accordance with the RIDOH regulations failure, refusal or inability on the part of the customer to install said device or devices or correct deficiencies within the schedule above, shall constitute grounds for discontinuing water service to the premises, without further notice until such corrective action has been completed and/or device or devices have been properly installed. In the case of a moderate or high hazard situation corrective action and/or installation of an appropriate device shall occur within 10 days of identification of the deficiency unless an extension of the timeline is granted by the Authority.
 - 3.1.3.1.4 Service shall be immediately terminated if access is refused to any location for carrying out a cross-connection survey or inspection of the service connection and appurtenances or an imminent hazard is posed.
- 3.1.4 The owner shall take immediate action to remedy any installation that in the opinion of the Kent County Water Authority or local plumbing inspector presents an imminent danger to the public water supply. The owner shall install such approved device and obtain inspection approval by the Kent County Water Authority and local plumbing code enforcement official.

SECTION 4

4.1 DEFINITIONS

- 4.1.1 Approved - Accepted by the Kent County Water Authority as meeting applicable specification stated or cited in the regulations or as suitable for the proposed use, as determined by Kent County Water Authority.
- 4.1.2 Authority - Kent County Water Authority proper or their designee, 1072 Main Street, West Warwick, Rhode Island.
- 4.1.3 Auxiliary Water Supply - Any water supply, on or available to the premises other than the purveyor's approved public potable water supply.
- 4.1.4 Backflow - The flow of water or other liquids, mixtures or substances, under pressure into the distribution pipes of a potable water supply system from any source other than its intended source.
- 4.1.5 Backflow Preventer - A device or means designed to prevent backflow or backsiphonage. Most commonly categorized as air gap, reduced pressure principle device, double check valve assembly, pressure vacuum breaker, atmospheric vacuum breaker, hose bib vacuum breaker, residential dual check, and double check with intermediate atmospheric vent. All commercial devices must be made in the USA and must have been approved by all of the following associations: University of Southern California (FCCCHR, USC), American Water Works Association and American Society of Sanitary Engineers. All low hazard non testable residential dual or double check valve assemblies must at a minimum be ANSI/ASSE approved.
 - 4.1.5.1 Air Gap - A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system. Physically defined as a distance equal to twice the diameter of the supply side pipe diameter, but never less than two (2) inches.
 - 4.1.5.2 Atmospheric Vacuum Breaker - A device that prevents backsiphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure in a water system.
 - 4.1.5.3 Double Check Valve Assembly - An assembly manufactured and designed of two (2) independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valves. Single check valves coupled together will not be considered.
 - 4.1.5.4 Double Check Valves With Intermediate Atmospheric Vent - A device having two (2) spring loaded check valves separated by an atmospheric vent

chamber.

- 4.1.5.5 Hose Bib Vacuum Breaker - A device which is permanently attached to a hose bib and which acts as an atmospheric vacuum breaker.
- 4.1.5.6 Non-Testable Dual Check – An assembly of two (2) spring loaded independently operating check valves without shut off valves.
- 4.1.5.7 Pressure Vacuum Breaker - A device containing two independently operated spring loaded check valves and an independently operated spring loaded air inlet valve located on the discharge side of the check or checks. Device includes tightly closing shut off valve on each side of the check valves and properly located test cocks for the testing of the check valve(s).
- 4.1.5.8 Reduced Pressure Principle Backflow Preventer - An assembly consisting of two (2) independently operating approved check valves with an automatically operating differential relief valve located between the two (2) check valves, tightly closing shut off valves on each side of the check valves, plus properly located test cocks for the testing of the check valves and the relief valve.
- 4.1.5.9 Testable Dual Check - An assembly of two (2) springs loaded, independently operating check valves without tightly closing shut off valves and properly located test cocks for the testing of the check valves.
- 4.1.6 Backpressure - A condition in which the owner's system pressure is greater than the supplier's system pressure.
- 4.1.7 Backsiphonage - The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.
- 4.1.8 Containment - A method of backflow prevention which requires a backflow prevention device at the water service entrance directly after the meter outlet valve and before the first tap to any appliance, appurtenance, device, pump, pressure vessel, apparatus or outlet intended to serve or handle water.
- 4.1.9 Contaminant - Any substance that has the potential to impair the quality of the water to a degree that it creates a health risk to the public, leading to poisoning or the spread of disease. It shall be considered in these regulations, any substance added to the potable water system, either directly or indirectly, other than by the Authority.
- 4.1.10 Cross-Connection - Any actual or potential connection between the public water supply and a source of contamination.

- 4.1.11 Customer – Property owner of legal record as recorded in the land evidence records. See definition of owner below.
- 4.1.12 Deficiency Report – Form letter notification of an inoperative device, non-complying installation or no device.
- 4.1.13 Fixture Isolation - A method of backflow prevention in which a backflow device is installed to correct a cross-connection at an in plant location or location in the property owner's plumbing or distribution system not under the sanitary control of the public water supplier. An approved service entrance containment backflow device must be installed in conjunction with the implementation of fixture isolation.
- 4.1.14 Occupancy – The use to which the property or building is occupied. The act of taking a property with the intent to own or occupy it.
- 4.1.15 Owner - Any person who has legal title to the property or premises as recorded in the land evidence records, or license to operate or habitat in a property upon which public water service is provided, and a cross-connection inspection or survey is to be made or upon which a cross-connection is or may be present.
- 4.1.16 Person - Any individual, partnership, company, public or Private Corporation, political subdivision or agency of the State, or instrumentality of the United States or any other legal entity.
- 4.1.17 Permit - A document issued by a city, town or local authority, specific to the installation, repair or alteration of the plumbing or distribution system including but not limited to the installation and use of a backflow preventer.
- 4.1.18 Strainer - Approved device specifically designed for water systems to prevent fouling of backflow preventer devices.
- 4.1.19 Sanitary Control - The segregation point in the owners' water system after the meter at the outlet to the containment backflow device and before the first tap for any protected or unprotected branch intended to serve or handle water. Considered by the water purveyor to be the sanitary control containment point directly after the meter.
- 4.1.20 Service Pipe – The pipeline extending from the main to the building or private connection served.
- 4.1.21 Service Pipe Ownership – The service pipe from the distribution main to/and including, the curb stop is owned and maintained by the Authority. The portion of the service pipe beyond the curb stop is owned, maintained and installed by the owner.

- 4.1.22 Water service entrance - The point in the property owner's water supply system beyond the sanitary control of the public water system. This will ordinarily be the outlet of the meter or containment backflow device.

SECTION 5

5.1 ADMINISTRATION

- 5.1.1 The Authority will administer a cross-connection control program, to include cross-connection survey, inspection and the maintenance of necessary records, which fulfill the requirements of the Cross-Connection Regulation approved by the Authority.
- 5.1.2 The Authority will cause the survey of existing service connections to determine if a device currently exists meeting the minimum level of protection identified in section 7 of this program. At a minimum all commercial and residential properties shall be required to install a device meeting the minimum standards identified in section 7 of this program.
- 5.1.2.1 As a condition of receiving service every owner shall allow their property to be inspected for possible cross-connections by the Authority and shall follow the provisions of the Authority's program along with all federal and state laws, or rules and regulations enacted by the Rhode Island Department of Health to remedy any discrepancy.
- 5.1.3 The Kent County Water Authority requires the public water supply be protected by a containment device in all water service applications. The owner shall be responsible for water quality beyond the outlet end of the containment device and shall utilize fixture outlet protection for that purpose, as prescribed in the plumbing code.
- 5.1.3.1 The Kent County Water Authority program does not include fixture survey of plumbing appliances and manufacturing processes after the containment device. These items are covered under the plumbing code. The property owner shall utilize qualified independent cross-connection control specialist and/or plumbing official so licensed, to assist in the survey of the owner's facilities not under the sanitary control of the Authority and to help in the selection of proper fixture outlet devices, and the proper installation of said devices. All costs shall be borne by the owner.
- 5.1.4 The Authority will monitor the completion of necessary corrective action and/or containment device installation to correct any known or identified potential cross-connection. All documentation resultant from these type activities will be filed with the Authority, in its' entirety, within 30 days of completion or the service is subject to termination.

SECTION 6

6.1 REQUIREMENTS OF THE AUTHORITY

- 6.1.1 The Authority will provide review of all new commercial and industrial service installation plans, in order to determine the minimum protection level of the containment backflow preventer and strainer. The Authority shall perform construction field inspections, as necessary, to ascertain that the device installation has occurred. The local plumbing inspector shall approve the final installation to be in compliance with the State of Rhode Island Building Code. The owner must submit a copy of the approved plumbing permit inspection letter to the Authority prior to water service activation.

By 2014 all commercial and/or industrial users shall be equipped with a containment (isolation) type reduced pressure zone (RPZ) backflow preventer of a testable type meeting the requirements of this program.

In all cases of new construction, containment backflow preventers shall be installed and operational prior to final activation of water service for occupancy of the premises. Any water service, plumbing system or distribution system application with medium or high hazard potential for contamination of the potable water system as determined by the Authority shall be equipped with a RPZ reduced pressure zone style backflow preventer to ensure that the infrastructure not under the sanitary control of the public water system is contained within the property in a manner that isolates it from the public water distribution system. Isolation valves shall be located on both sides of the backflow preventer with drain or test plug on the inlet valve to facilitate testing and repair of the containment device.

The owner of an existing commercial/industrial property shall be solely responsible to retrofit said property with a containment backflow device upon written notification by the Authority. The property owner must supply a copy of the local building official plumbing permit final installation inspection approval and any backflow test results to the Kent County Water Authority as part of the installation confirmation process.

- 6.1.2 At a minimum, all new and existing single-family residential buildings will be required to install a dual check valve device immediately after the water meter outlet valve, and in all cases, before the first tap to any outlet or appliance. The owner shall cause to have this device properly installed and replaced every 10-years at no cost to the Kent County Water Authority. Multi-unit residential apartments or condominiums fall under the commercial/industrial installation guidelines and require a testable reduced pressure zone vented device as identified in section 7.

The owner of an existing residential property shall be solely responsible to retrofit

said property. The property owner must supply a copy of the local building official plumbing permit final installation inspection approval to the Kent County Water Authority as part of the installation confirmation process. All properties shall be retrofitted prior to December 2014.

Installation of a backflow assembly results in a potential closed plumbing system within the premises. As such, the owner shall also be responsible to take actions, as necessary, to ensure all provisions of the plumbing code have been met to provide for thermal expansion within the closed loop system, such as the installation of thermal expansion devices and/or pressure relief valves.

- 6.1.3 All backflow prevention devices shall be installed in an approved location that is not subject to submergence or inundation by surface water, purge water or any other forms that may cause the backflow device from performing. Sumps with sufficient pumping capacity to deal with the full flow of the devices shall be installed in all basement applications. Heated above ground structures designed with blowout panels, exclusively for backflow preventers are preferred, and shall be required at all times unless approved in other locations by the Authority. Pit locations are prohibited for new construction. The owner is responsible to provide a design that will adequately support the needs of the project.
- 6.1.4 All existing pits, used to house backflow preventers, shall be reviewed by the Authority and local plumbing official, to determine if sufficient drainage is available to prevent submergence. All pits must be properly retrofitted to a design that will not adversely affect the proper operations of the backflow preventer and assure containment will not be compromised. Relocation to an above ground housing shall be considered, if necessary, based on both site conditions and hazards associated with occupancy. All costs for retrofit are to be borne by the owner and must be completed in accordance with the timeline identified in Kent County Water Authority correspondence.
- 6.1.5 All new construction residential, commercial and industrial hose bibs shall be of a design, which incorporates a built-in tamper proof vacuum breaker feature as manufactured by the hose bib maker. All hose bib fixtures shall be American made. This requirement is applicable to all interior and exterior hose bib applications. Existing properties shall be retrofitted with non-removable hose bib vacuum breaker assemblies specifically designed to adapt to the existing hose bib configuration.
- 6.1.6 At a minimum all commercial or residential lawn sprinkler/irrigation systems shall be provided with an appropriate backflow device, installed at the point where the system connects to the water supply, as required by the plumbing code. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer or air gap containment device. All devices shall be in a location that is always free draining and will not become submerged.

- 6.1.7 The Authority shall not allow any cross-connection to remain. In all instances, an approved containment backflow device must be installed to protect the public potable water system. The owner shall have the device regularly tested to ensure satisfactory operation
- 6.1.8 The Authority shall inform the owner in writing of any compliance deficiency. In the event that owner fails to take corrective action to remedy all noted deficiencies within the specified timelines, the Authority will inform the owner in writing that the water service to the owner's property/premises will be terminated. The Authority may at its discretion, allow additional time for the correction of the deficiencies for extenuating circumstances which may prevent the owner from being able to comply within the specified timeline for compliance. A time extension may be granted by the Authority for justifiable causes as determined by the Authority, but in no event to exceed sixty (60) days.

6.2 REQUIREMENTS OF THE OWNER

- 6.2.1 In accordance with the requirements of the Rhode Island State Plumbing Code and Rhode Island department of Health Regulations which are hereby incorporated by reference and made a part of hereof, the owner or the owner's designated agent shall be responsible to maintain the private infrastructure distribution and plumbing system in order that no hazard to life, health or property is created and not to allow any change in occupancy or use, which such change will result in any hazard to the public health, safety or welfare. To this end the owner shall be responsible for the elimination of all cross-connections within the property.
- 6.2.2 The owner, after having been informed by a letter of deficiency from the Authority, shall install, maintain, test, or cause to have tested on an annual basis, any and all containment backflow prevention devices on the owner's premises at the owner's expense.
- 6.2.3 The owner shall immediately correct any malfunction of a containment backflow preventer, which is revealed during the periodic testing.
- 6.2.4 The owner shall inform the Authority and local plumbing official of any proposed plumbing modifications that may result in a cross-connection or any existing cross-connections of which the owner may be aware.
- 6.2.5 The owner shall not install a bypass around any backflow preventer or strainer unless there is a backflow preventer and strainer of the same type on the bypass or an alternate design has been approved by the Authority. Any bypass must be approved in advance by the Authority and will be locked out and sealed by the Authority. Owners who cannot cease operation for testing of the device(s) must supply additional devices necessary to allow testing to take place.

- 6.2.6 The owner shall install the containment backflow preventer and strainer in a manner approved by the Authority and in compliance with manufactures instructions and State of Rhode Island Plumbing Code.
- 6.2.7 The owner shall install only backflow preventers and strainers approved by the Authority and meeting the requirements of Rhode Island general Law 46-13-22.
- 6.2.8 Any owner having a private well or other private water source shall not cross-connect it to any plumbing or infrastructure receiving service from the Authority's public water system. The owner shall be required to install a containment backflow preventer at the service entrance if a private water source is maintained on the site although not cross connected to the Authority's system.
- 6.2.9 The owner shall be responsible for the payment of all fees associated with annual or semi-annual device testing, retesting in the case that the device fails to operate correctly, and all inspections for compliance with Kent County Water Authority rules and regulations, RI Department of Health regulations or plumbing code requirements.

SECTION 7

7.1 DEGREE OF HAZARD

- 7.1.1 The Authority reiterates the threat to the public water system arising from cross-connections. All commercial multifamily occupancies and/or potential threats will be classified as high hazard and will require the installation of approved reduced pressure principle backflow prevention device as the containment devise.
- 7.1.2 All single family residential applications shall require the installation of a residential dual check valve assembly as the containment device.

SECTION 8

8.1 EXISTING IN-USE BACKFLOW PREVENTION DEVICES

- 8.1.1 Any existing backflow preventer may be allowed by the Authority to continue in service unless, as determined by the Authority, the degree of hazard is such as to supersede the effectiveness of the present backflow preventer, or may result in an unreasonable risk to the public water supply. In the case of a residential installation converting to a business establishment, any existing backflow preventer must be upgraded to a reduced pressure principle device, or a reduced pressure principle device must be installed in the event that no containment backflow device was

present in that the degree of hazard would increase.

- 8.1.2 Testing of existing backflow preventer is required prior to final acceptance for use and annually thereafter.

SECTION 9

9.1 PERIODIC TESTING

- 9.1.1 Reduced pressure principle backflow devices, testable double check valves and strainer shall be tested and inspected at least annually. Non-testable residential devices shall be replaced on a 10-year cycle.
- 9.1.2 All strainers shall be cleaned and disinfected annually or if circumstances dictate more frequently to ensure all precautions against backflow preventer fouling.
- 9.1.2 Annual and periodic testing shall be performed by a certified tester only. All annual and periodic testing, if not performed by the Authority, shall be performed by certified testers employed by the owner. The owner shall be responsible for the payment of all costs associated with the testing and providing the certified test results to the Authority.
- 9.1.3 All testing shall be conducted during the Authority's regular business hours. Upon review of an owner's written request, the Authority may approve conducting the testing during other than normal business hours, subject to special needs or circumstances that would not permit testing during normal business hours. The owner shall be responsible for any and all additional charges associated with after hour testing.
- 9.1.4 Any containment backflow device, which fails during a test, shall be immediately repaired or replaced. The device in question shall be retested upon completion of repairs to ensure correct operation at owner expense. High hazard situations shall not be allowed to continue unprotected operations if the backflow preventer fails the test and cannot be repaired immediately. In other high hazard situations, a compliance date of not more than ten (10) days after the test date will be established and will be determined by the Authority.
 - 9.1.4.1 In all cases, the owner shall be responsible to maintain appropriate spare parts, repair tools, and/or a replacement device as necessary so that no extended loss in services will be experienced.
- 9.1.5 The Authority may require additional testing at owner expense in cases where there is a history of reoccurring test failures

SECTION 10

10.1 RECORDS AND REPORTS

10.1.1 Records - The Authority will initiate and maintain the following documentation in conjunction with its billing system data base and large meter testing program:

10.1.1.1 Master list of service connections relying upon approved containment backflow preventers to protect the public water system.

10.1.1.2 Inventory information on approved air gaps or backflow devices to include a description, installation date, history of inspections, tests and reported repairs and the name of the inspector tester.

10.1.1.3 Program summary reports and backflow incident reports.

SECTION 11

11.1 Fees - All costs associated with services involving the Kent County Water Authority will be billed at the rates posted in the current fee schedules or hourly labor rates. The Authority will invoice the owner for all direct costs or applicable fees, labor and material costs in for outside contractors in conjunction with the following services.

Testing fees
Retesting fees
Fees for second inspections
Charges for after-hour inspections or tests

Bills are due and payable within thirty (30) days of rendering. Failure to pay all billed costs by the due date will subject the service to immediate termination.

SECTION 12

12.1 Enforcement

12.1.1 Water service shall be terminated to any customer or property owner who fails to complete any corrective action deemed necessary upon due notice or refuses access for the inspection of the service connection by a representative of the public water system. No more than 45 days shall be allowed for correction of a low level hazard and 10 days for a moderate or high level hazard unless an extension is granted by the public water supplier. Service shall be terminated immediately if access is refused to any location for the inspection of the service connection or infrastructure not under the sanitary control of the public water system or if an immediate hazard is posed.

- 12.1.2 Water service shall be terminated immediately upon identification of an incidence of backflow or cross connection contamination. As a condition of service the customer and/or property owner shall assume all liability and hold harmless the Kent County Water Authority for any and all claims resultant from a backflow or cross connection incident.
- 12.1.3 Kent Count Water Authority will follow the response procedures outlined in its Emergency Response Plan upon notification or identification of backflow or cross connection incident. As a condition of receiving service, the customer and/or property owner shall be responsible for all costs associated with the response and remediation of a contamination event.

CROSS CONNECTION CONTROL PROGRAM INFORMATION SHEET

Kent County Water Authority is providing this information sheet in order to protect our water system from possible contamination. The Cross Connection Control Program is designed to achieve that goal. This information sheet highlights the program. Please review the program in detail for the specifics.

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- 1) All new construction shall be fitted with an approved backflow device located directly after the meter before the first tap to any appliance, device, pump, pressure vessel, apparatus or outlet intended to serve or handle water.
 - 2) The property owner shall be responsible to install an appropriate thermal expansion device in conjunction with the backflow preventer device installation.
 - 3) The property owner shall obtain inspection and final approval from the Kent County Water Authority and local plumbing inspector prior to meter installation in new construction and/or within 30 day of retrofit of existing plumbing.
 - 4) Any water service application or occupancy change with the potential for contamination of the potable water system, as determined by the Kent County Water Authority or the local plumbing inspector, shall be equipped with a reduced pressure zone (RPZ) style device directly after the meter.
 - 5) All hose bibs for new construction shall be of a design that incorporates, via the manufacturer, a built in tamper proof vacuum breaker feature. Existing shall be retrofitted with non-removable hose bib vacuum breaker assemblies.
 - 6) Existing residential, commercial and industrial customers shall install a backflow prevention device immediately downstream of the water meter upon written notification by the Authority.
 - 7) All lawn sprinkler/irrigation systems shall be provided with an appropriate backflow prevention device.
 - 8) All back flow preventer devices shall be American made and approved by the University of Southern California (FCCCHR, USC), American Water Works Association (AWWA) and American Society of Sanitary Engineers (ASSE).
 - 9) The property owner shall be responsible to maintain the internal plumbing in accordance with all building codes, so that no hazard to life, health, property or the public water supply is created.
 - 10) The property owner shall be responsible for the payment of all fees associated with periodic testing and compliance.
 - 11) In all cases, non-compliance with the Cross Connection Control Program will result in discontinuing service.

KENT COUNTY WATER AUTHORITY
CROSS-CONNECTION CONTROL PROGRAM

PROGRAM DOCUMENTS

CROSS CONNECTION CONTROL INSPECTION FORM

Address: _____ Date: _____
Premise: _____ Phone: _____
Owner/Agent: _____ Phone: _____
Person Interviewed: _____ Title: _____
Nuber of Violations: _____ Service Size: _____
Types of Hazard: _____ Toxic: _____ Chemical: _____ Biological: _____
Chemicals added to: _____ Fire System: _____ Boilers: _____ Air Cond.: _____
Other sources of water supply: _____

Backflow Prevention Device Information:

Location:	Make:	Size:	Serial Number:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Our Cross Connection Control Inspector visited your premise today to check for compliance to the Kent County Water Authority Rules and Regulations. You are expected to make these corrections immediately. Failure to do so will cause termination of your service.

Recommendations: _____

Acknowledgement: _____	Title: _____
Date Inspected: _____	Inspector: _____
Date to be reinspected: _____	Corrections Completed: _____
Remarks: _____	

TEST AND MAINTENANCE FIELD DATA

REDUCED PRESSURE PRINCIPLE ASSEMBLY

Instructions to Certified Testers: All applicable information should be typed or clearly printed. Please use **Y** or **N** to respond to Yes or No questions. Dates should be entered as mm/dd/yy.

SERVICE NUMBER: _____ MANUFACTURER: _____
ASSEMBLY NUMBER: _____ MODEL TYPE: _____
METER TYPE/SIZE: _____ SERIAL NUMBER: _____

INITIAL TEST

Check Valve #1	Tight: _____	PSID _____	
Check Valve #2	Closed Tight _____		Leaked: _____
Differential PRV	Opened At: _____	PSID _____	Did Not Open: _____
Passed: _____	Tester: _____		Certificate: _____
Date: _____			

MAINTENANCE

Check Valve #1	Cleaned: _____	Repaired: _____
Check Valve #2	Cleaned: _____	Repaired: _____
Differential PRV	Cleaned: _____	Repaired: _____
Repairs: _____		

Date: _____	Remarks: _____	

FINAL TEST

#1 Closed Tight _____	PSID _____	#2 Closed Tight _____	PSID _____
Differential PRV Opened at: _____ PSID _____			
Passed: _____	Tester: _____	Certificate: _____	
Date: _____	Remarks: _____		

Additional Comments: _____

The above report is certified to be true

Signature of Certified Tester

Use of this form reserved for BACKFLOW RECORDS owner

TEST AND MAINTENANCE FIELD DATA

DUAL CHECK ASSEMBLY

Instructions to Certified Testers: All applicable information should be typed or clearly printed. Please use **Y** or **N** to respond to Yes or No questions. Dates should be entered as mm/dd/yy.

SERVICE NUMBER: _____ MANUFACTURER: _____
ASSEMBLY NUMBER: _____ MODEL TYPE: _____
METER TYPE/SIZE: _____ SERIAL NUMBER: _____

INITIAL TEST

#1 Closed Tight	#1 Leaked	#2 Closed Tight	#2 Leaked
Check Valve _____	_____	_____	_____
Passed: _____	Tester: _____	Certificate: _____	_____
Date: _____	Remarks: _____	_____	

MAINTENANCE

#1 Cleaned	# Repaired	#2 Cleaned	#2 Repaired
Check Valve _____	_____	_____	_____
Repairs: _____	_____		
Date: _____	Repaired by: _____	_____	

FINAL TEST

Closed Tight	#1 _____	#2 _____
Passed: _____	Tester: _____	Certificate: _____
Date: _____	Repaired by: _____	_____

Additional Comments: _____

The above report is certified to be true

Signature of Certified Tester

Use of this form reserved for BACKFLOW RECORDS owner

Date _____

Re: Deficiency Report

Dear Sir:

You are hereby notified that on _____ an inspection and/or test of your backflow prevention device(s) revealed the following deficiencies:

- 1) INAPPROPRIATE DEVICE: _____
- 2) NO DEVICE INSTALLED: _____
- 3) OTHER DEFICIENCIES: _____

In accordance with the requirement of the Kent County Water Authority, the device(s) or installation must be brought into compliance on or before _____.

Please notify this office before any repairs are made for inspection. If repairs or replacement has not been made by _____, your service is subject to termination.

Very truly yours,
KENT COUNTY WATER AUTHORITY

Date_____

Re: Notice of Periodic Test for Backflow Prevention Assembly

Dear Water Customer:

The backflow prevention assembly described below is due for its periodic test, as required by the regulations listed below. Please have this test performed by a backflow prevention assembly tester that is certified to accomplish this work in the State of Rhode Island.

If the test discloses that the assembly is not operating satisfactorily, please have the necessary repairs made, and the assembly retested by the certified tester. On completion of a test showing that the assembly is operating satisfactorily, the certified tester should complete the enclosed Test and Maintenance Report Form, and forward it with a copy of this letter to our office no later than the compliance date give below. If you have any questions or concerns, please contact our office, and we will be glad to assist you.

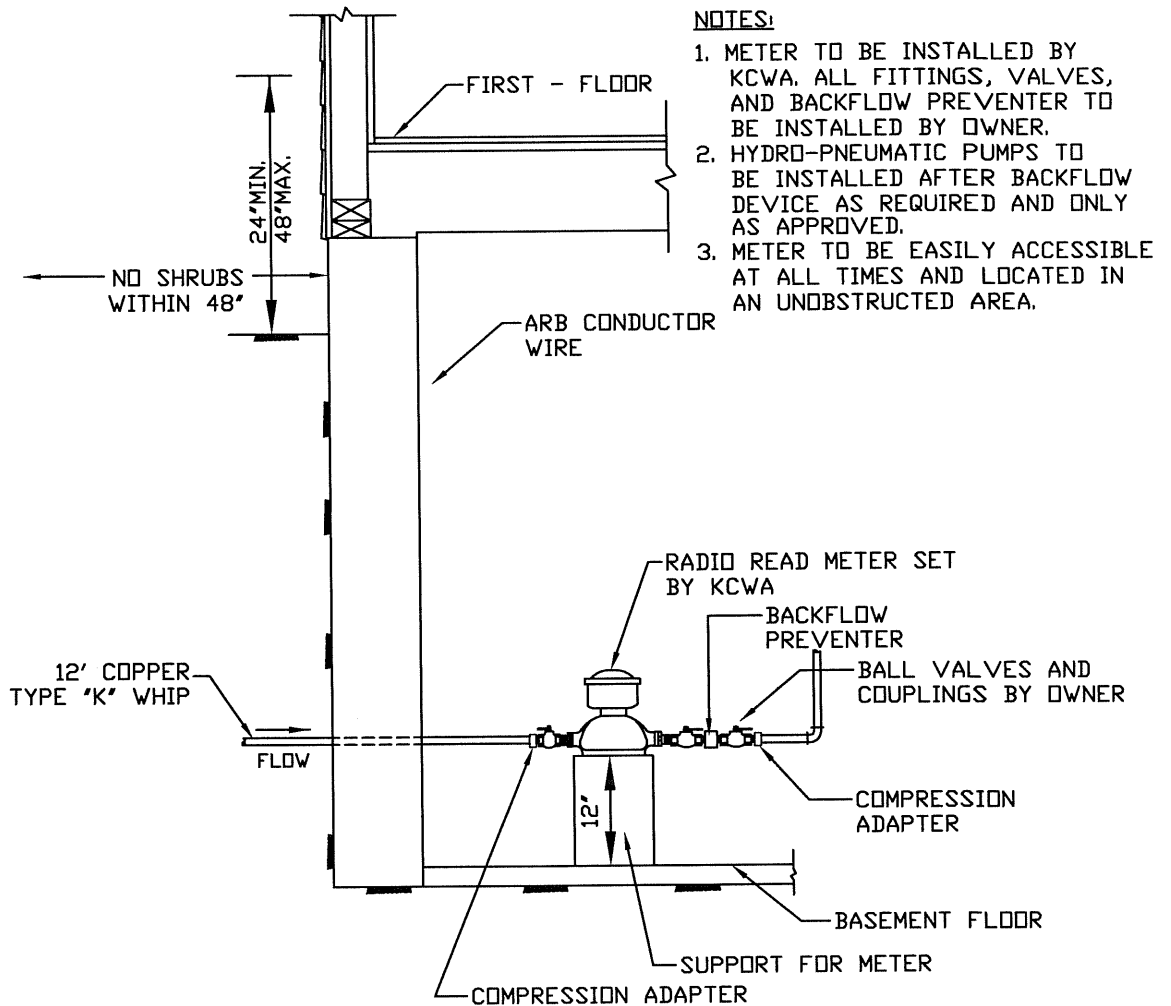
Very Truly Yours,
KENT COUNTY WATER AUTHORITY

Enclosure

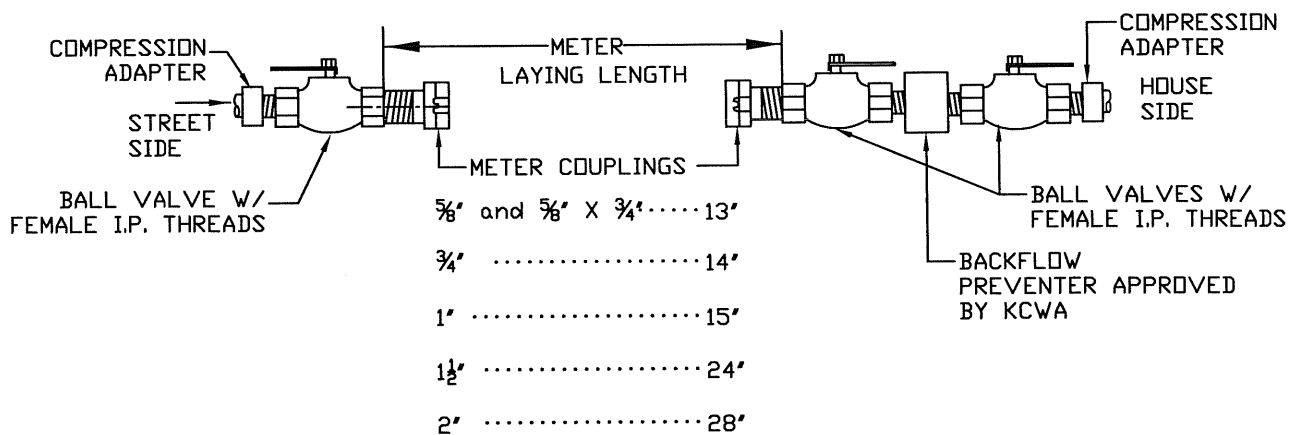
Test Due Date: _____	Report Date: _____
Account Number: _____	
Backflow Preventor Type: _____	
Location: _____	

KENT COUNTY WATER AUTHORITY
CROSS-CONNECTION CONTROL PROGRAM

TYPICAL INSTALLATION
DETAILS FOR
BACKFLOW PREVENTER DEVICES



RESIDENTIAL WATER METER INSTALLATION



WATER METER SETTINGS WITH FITTINGS

KCWA

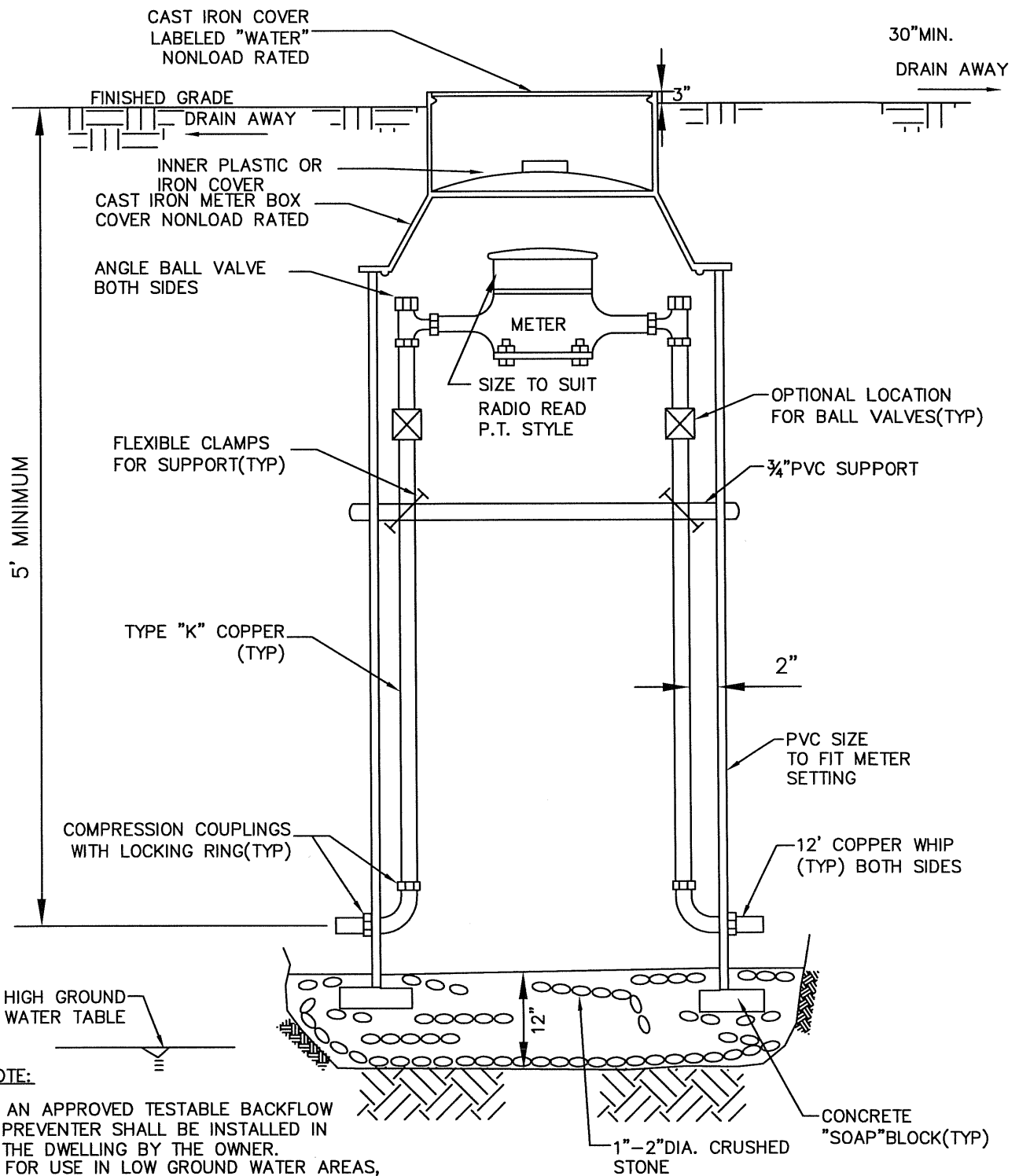
"proudly serving"

KENT COUNTY WATER AUTHORITY

RESIDENTIAL WATER METER

NOT TO SCALE

DATE: 09/2006

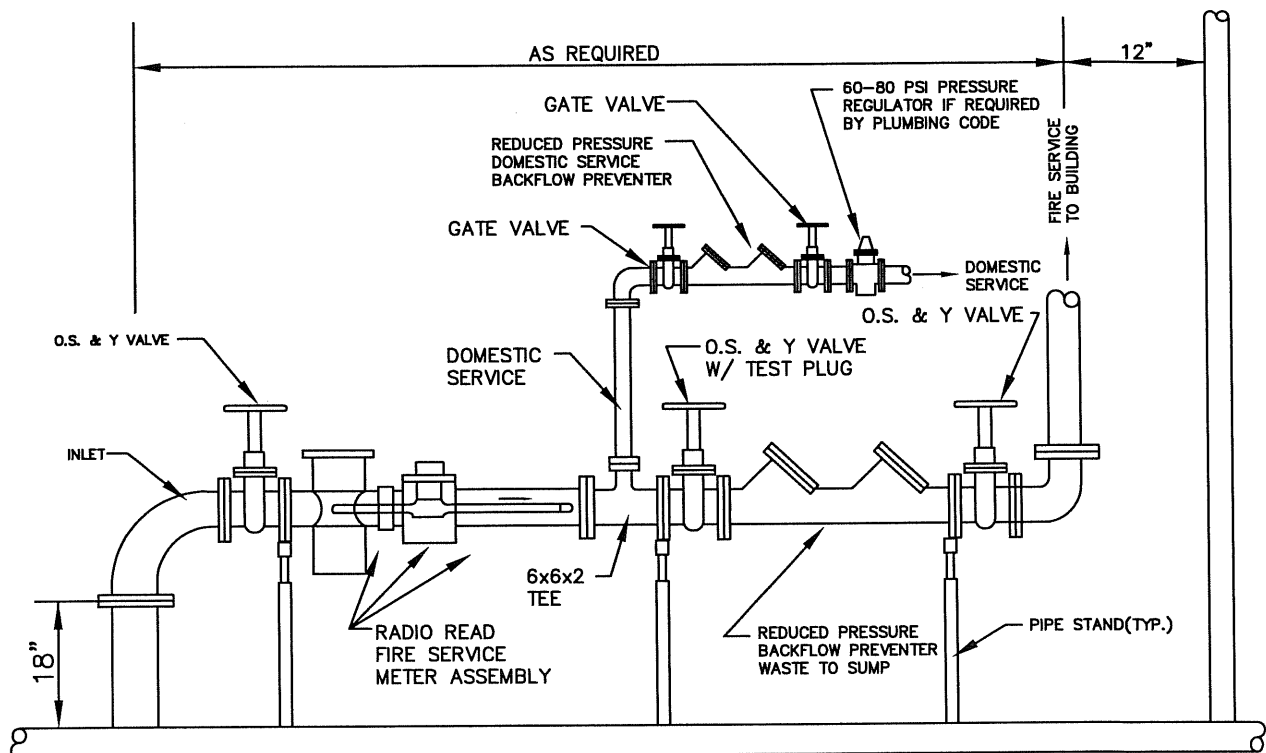


KCWA
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KENT COUNTY WATER AUTHORITY
OFF ROAD SINGLE SERVICE
METER PIT NONLOAD RATED

NOT TO SCALE

DATE: 09/2006

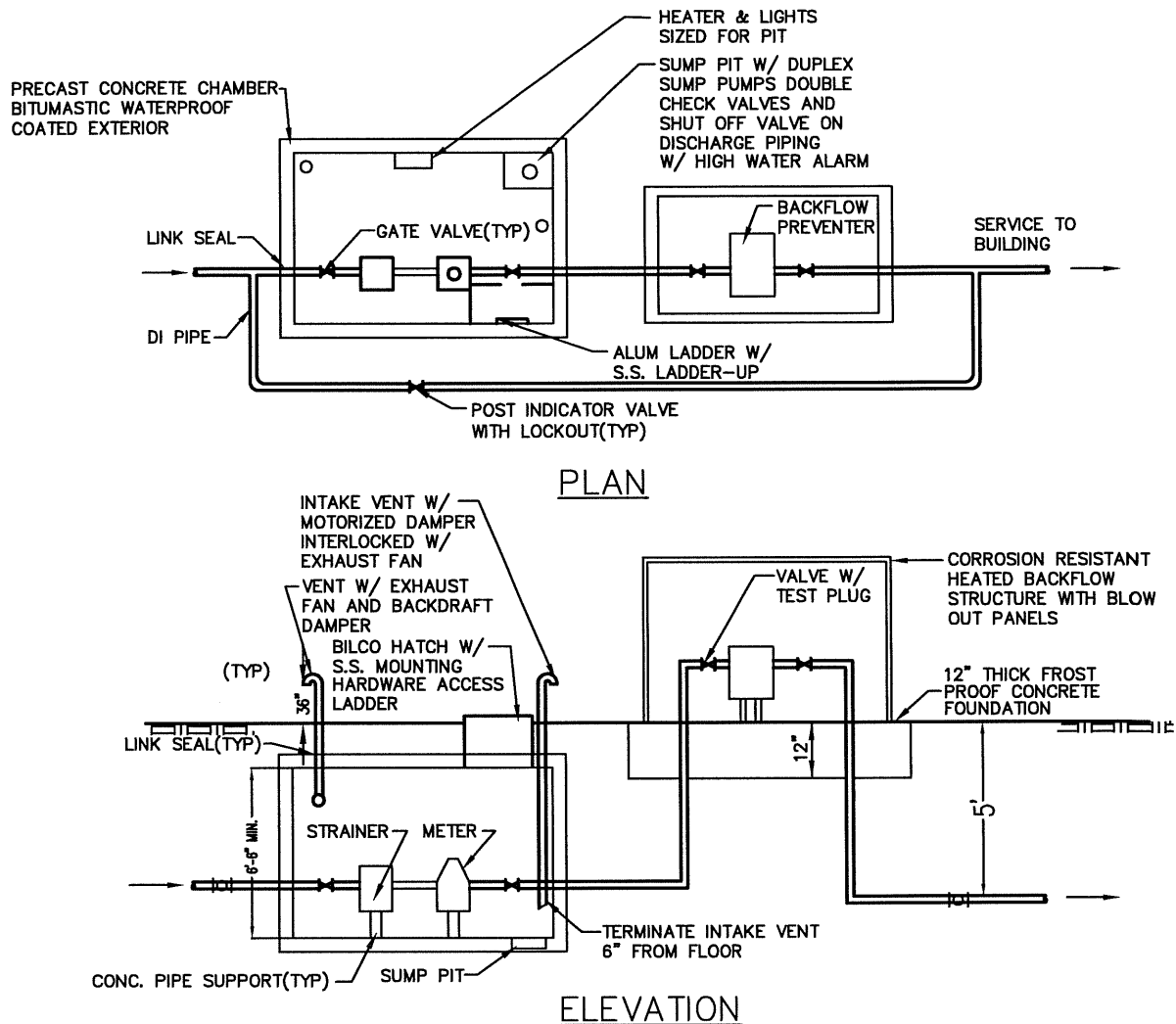


KCWA
"proudly serving"

KENT COUNTY WATER AUTHORITY
**ABOVE GRADE FIRE &
DOMESTIC INSTALLATION**
NOT TO SCALE

DATE: 09/2006

ADFDI.DWG



NOTES:

- 1.) ALL EXTERIOR PIPING, VALVES AND FITTING JOINTS TO HAVE RESTRAINED JOINTS.
- 2.) SUMP PUMP DISCHARGE PIPING TO HAVE 2 CHECK VALVES AND SHUT OFF VALVE.
- 3.) PROVIDE LIGHTING, HEATER WITH THERMOSTAT AND POWER VENTILATION SYSTEM. SWITCH FOR LIGHTS AND VENTILATION TO BE MOUNTED AT OPENING.
- 4.) INTERIOR PIPING AND VALVE JOINTS TO BE FLANGED.
- 5.) PIT MUST HAVE POSITIVE DRAINAGE SUFFICIENT FOR RPZ FLOW OR RPZ MUST BE LOCATED IN AN ABOVE GROUND ENCLOSURE.
- 6.) SLOPE FLOOR TO SUMP PUMP PIT.
- 7.) METER AND BACKFLOW PREVENTERS TO BE PROPERLY SUPPORTED ABOVE FLOOR.
- 8.) GOOSENECK VENT PIPE AT EACH END OF CHAMBER. SIZE TO MEET OSHA REQUIREMENTS W/ S.S. NON REMOVABLE INSECT SCREEN AND VERMIN SCREEN.

KCWA

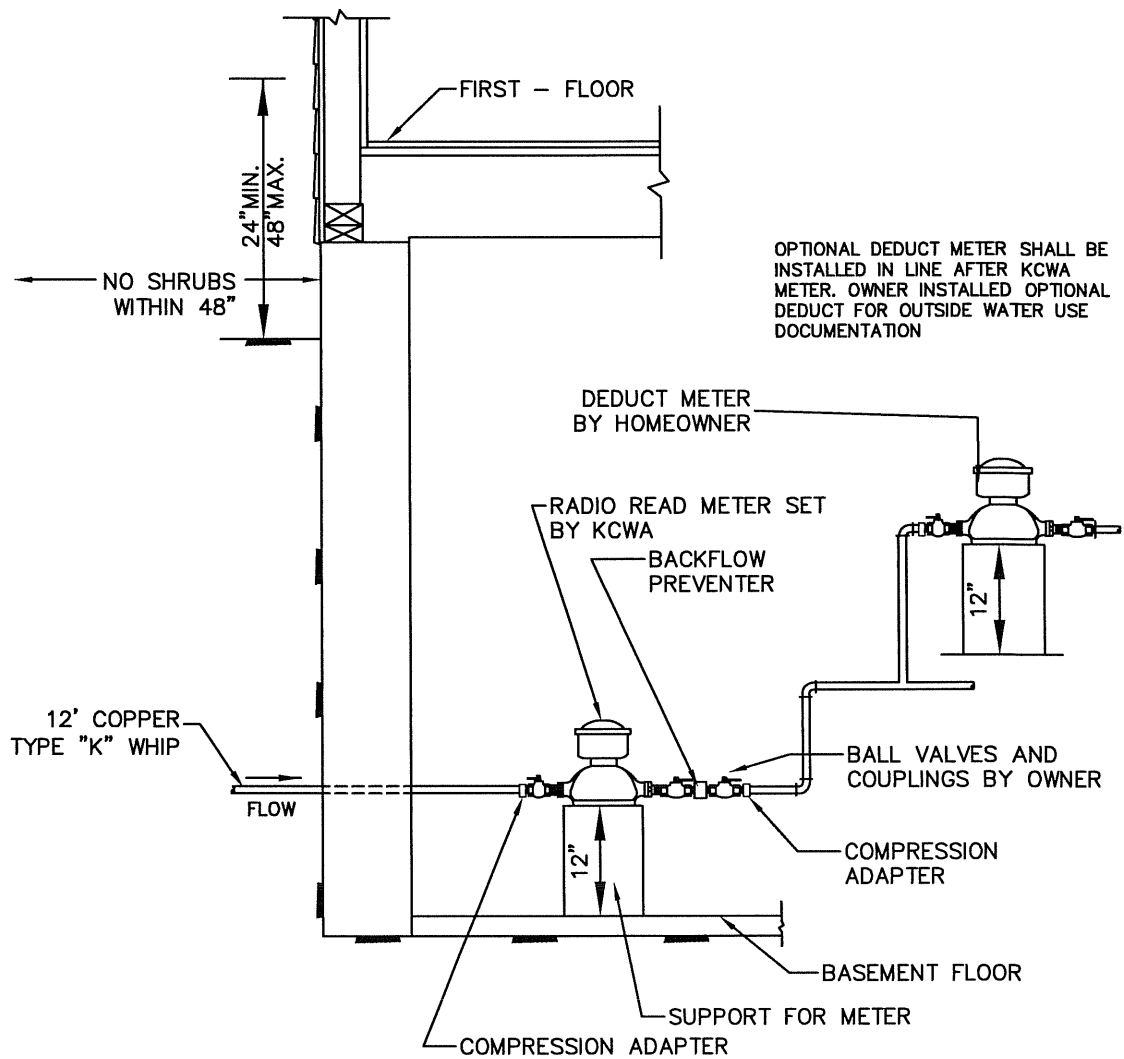
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KENT COUNTY WATER AUTHORITY

ABOVE GROUND BACKFLOW CHAMBER

NOT TO SCALE

DATE: 09/2006



KCWA
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KENT COUNTY WATER AUTHORITY
DEDUCT METER INSTALLATION
HOMEOWNERS RESPONSIBILITY

NOT TO SCALE

DATE: 09/2006

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