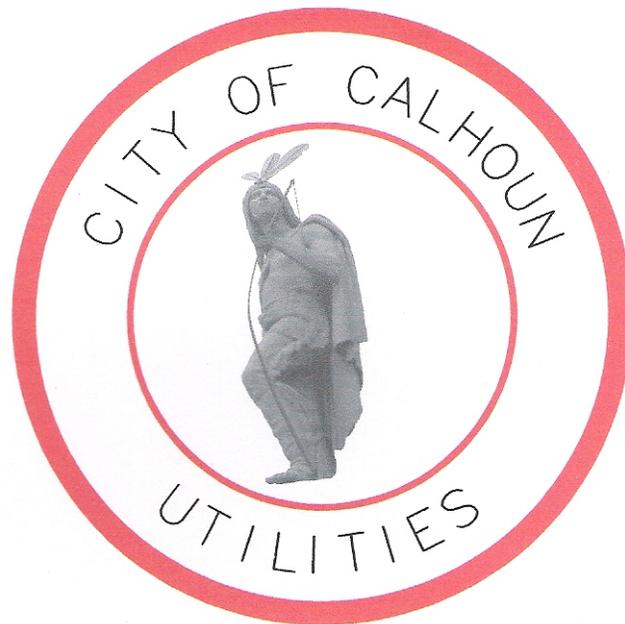


# City of Calhoun

## Utilities



## Cross-Connection Control Program

Prepared By: City of Calhoun Utilities

ADOPTED – SEPTEMBER 2, 1985

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## **Section I**

### **Purpose**

The purpose of this program is to prevent the entry of contaminants or pollutants into potable water supplied by the City of Calhoun water system. This program outlines the different degrees of potential hazard and type of back-flow preventer (device) to be installed in each case.

The procedures for back-flow and back siphonage and cross-connection control shall conform to those recommended by the American Water Works Association, Manual 14, Third Addition, and the U.S. Environmental Protection Agency Cross-Connection Manual, 2003 Addition.

This document is intended to be used as a means of interpretation and enforcement of the Code of Ordinances of the City of Calhoun Chapter 94, Article III, Division 2, "Cross-Connections".

## CITY OF CALHOUN, UTILITIES BACKFLOW PREVENTION

Protecting Water, Protecting People

### QUESTIONS COMMONLY ASKED ABOUT BACKFLOW PREVENTION

Q: What is backflow-prevention?

A: *The prevention of reverse flow in a water system from the normal or intended direction.*

Q: What can cause something like this to happen?

A: *Backflow and/or backsiphonage can be created in water system by a drop in supply pressure due to heavy demand or use such as fire fighting, repairs, or breaks in the supply pipe etc.*

Q: So, why is backflow prevention important to me? What does this have to do with us? It's not our problem if you people can't design the system so we have enough pressure, without the pipes bursting all the time.

A: *If everyone used the same amount of water all the time, with no fires, no hills to get water over, and no breaks due to climate change or aging pipes; this could become a reality. However, we all know this is not likely to happen. So it becomes every customer's responsibility to protect his own system as well as other users of the public water supply system against any potential contamination or pollution which may be generated on or from his premises, which could backflow or be backsiphoned into his and/or the main water supply system.*

Q: Why am I responsible for backflow prevention?

A: *The Federal Government passed the Safe Drinking Water Act in 1974, and Georgia adopted these federal standards that same year. In 1977, Georgia passed the Rules for Safe Drinking Water which states:*

*"A supplier of water or any person having control of facilities which may cause the contamination of the public water system has the responsibility to prevent water from unapproved sources or any contaminants from entering the public water system." The City of Calhoun requires that the customer be responsible for the installation, maintenance, annual testing, and all cost associated with backflow prevention.*

*The Georgia Department of Natural Resources: Environmental Protection Division, in 1983 amended this rule and mandated that all public water systems develop Cross-Connection Control and/or Backflow Prevention Programs.*

Q: Is there a city ordinance that covers this?

*A: Yes, to augment and further reinforce the Georgia State/City of Calhoun Plumbing Code, the City of Calhoun Council in 1985 passed Sec. 5-11 of the Code of Ordinances, and in 2008 amended the ordinance to include Chapter 94, Article III, Div. 2, Sec. 94-81 to Sec. 94-88.*

Q: Is there a Grandfather Clause in regard to the retrofit requirement?

*A: No, a contaminant and/or pollutant which might enter a system would be just as much a health hazard and create the same amount of damage regardless of the system's age. Older systems could in fact be a greater liability risk due to leakage, unauthorized changes, make-shift connections, etc.*

Q: Does the City of Calhoun install the backflow devices or test the devices?

*A: No, all installations must be done by properly certified personnel and testing must be done by state certified testers.*

Q: Why has my facility been singled out?

*A: No facility has been singled out. Federal and state law requires that each facility be evaluated by degree of hazard based on the type of facility.*

Q: Where can I find someone to test my backflow device?

*A: A data base is maintained by the Georgia Association of Water Professionals for the State of Georgia. A copy of the testers in our area may be picked up at our 700 West Line Street Offices or a complete list is available at:*

*<http://www.gawp.org/?page=Backflow>*

## **Section III**

### **Georgia Rules for Safe Drinking Water ( 391-3-5-.13(4) )**

**<http://rules.sos.state.ga.us/docs/391/3/5>**

Please refer to the following links for additional information on cross-connection control and backflow prevention.

American Backflow Prevention Association

<http://abpa.org/>

Georgia Association of Water Professionals

<http://www.gawp.org/>

Environmental Protection Agency Cross-Connection Control: A  
Best Practices Guide

**[http://www.epa.gov/safewater/smallsystems/pdfs/guide\\_smallsystems\\_crossconnectioncontrol.pdf](http://www.epa.gov/safewater/smallsystems/pdfs/guide_smallsystems_crossconnectioncontrol.pdf)**

Environmental Protection Agency Cross-Connection Control  
Manual

**[http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/crossconnectioncontrol\\_manual.cfm](http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/crossconnectioncontrol_manual.cfm)**

## Section IV :

# City of Calhoun Cross-Connection Ordinance

### Sec. 94-81. - Definitions.

The following words, terms and phrases, when used in this division, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*Auxiliary intake* means any piping connection or other device whereby water may be secured from a source other than that normally used.

*Bypass* means any system of piping or other arrangement whereby the water may be diverted around any part or portion of a water purification plant.

*Cross connection* means any physical arrangement whereby a public water supply is or may be connected directly or indirectly with a nonpotable water supply or unapproved water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated water, liquid, gases, sewage, or other waste of unknown or unsafe quality, which may be capable of imparting contamination to the public water supply as the result of backflow, bypass arrangements, jumper connections, removable sections, swivel or change-over devices, and other temporary, permanent, or potential connections through which or because of which backflow or backsiphonage could or would occur.

*Interconnection* means any system of piping or other arrangement whereby the public water supply is connected directly with a sewer, drain, conduit, pool, storage reservoir, or other device which does or may contain sewage or other waste or liquid which would be capable of imparting contamination to the public water supply.

*Person* means any and all persons, natural or artificial, including any individual, firm or association, and any municipal or private corporation organized or existing under the laws of this or any other state or county.

*Public water supply* means the waterworks system furnishing water to the citizens of the city and the county for general use and which supply is recognized as the public water supply by the state department of natural resources, environmental protection division.

(Code 1988, § 11-80)

**Cross reference**— *Definitions generally*, § 1-2.

#### **Sec. 94-82. - Compliance with state and federal law.**

The city public water supply is to comply with chapter 391-3-5-.13 of the Georgia Rules for Safe Drinking Water and PL 93-523 of the Federal Safe Drinking Water Act, legally adopted in accordance with this division, which pertains to cross connections and establish an effective, ongoing program to control these undesirable water uses.

(Code 1988, § 11-81)

#### **Sec. 94-83. - Violations; penalties.**

It shall be unlawful for any person to cause a cross connection, auxiliary intake, bypass, or other interconnection to be made, or allow one to exist for any purpose whatsoever, and any person who neglects or refuses to comply with any of the provisions of this division shall be deemed guilty of a misdemeanor and punished by a fine in the municipal court as is provided for in [section 1-7](#), and each day of continued violation after conviction shall constitute a separate offense. In addition to such fines, fees and penalties, the utilities general manager of the city shall be empowered to discontinue the public water supply service to any premises upon which there is found to be a cross connection, auxiliary intake, bypass, or interconnection or failure of annual testing, and service shall not be restored until such cross connection, auxiliary intake, bypass, or interconnection has been discontinued and payment of any fines, late fees and penalties.

(Code 1988, § 11-82)

#### **Sec. 94-84. - Filing of statement of nonexistence of cross connections.**

Any person whose premises are supplied with water from the public water supply, and who also has on the same premises a separate source of water supply or stores water in an uncovered or unsanitary storage reservoir from which the water stored therein is circulated through a piping system, shall file with the utilities general manager a statement of the nonexistence of unapproved or unauthorized cross connections. Such statement shall also contain an agreement that no cross

connection, auxiliary intake, bypass, or interconnection will be permitted upon the premises.

*(Code 1988, § 11-83)*

#### **Sec. 94-85. - Inspections.**

(a)

It shall be the duty of the city public water supply to cause inspections to be made of all properties served by the public water supply where cross connections with the public water supply are deemed possible. The frequency of inspections and reinspections based on potential health hazards involved shall be as established by the utilities general manager.

(b)

The utilities general manager or authorized representative shall have the right to enter, at any reasonable time, any property served by a connection to the city public water supply for the purpose of inspecting the piping systems thereof for cross connections, auxiliary intakes, bypasses, or interconnection. On request, the owner, lessee, or occupant of any property so served shall furnish to the inspection agency any pertinent information regarding the piping systems on such property. The refusal of such information or refusal of access, when requested, shall be deemed evidence of the presence of cross connections.

*(Code 1988, § 11-84)*

#### **Sec. 94-86. - Correction of existing conditions.**

Any person who now has cross connections, auxiliary intakes, bypasses or interconnections in violation of the provisions of this division shall be allowed a reasonable time within which to comply with the provisions of this division. After a thorough investigation of existing conditions and an appraisal of the time required to complete the work, the amount of time to be in compliance shall be designated by the utilities general manager, subject to review and appeal to the mayor and council in accordance with the procedure outlined in [section 18-33\(e\)](#).

*(Code 1988, § 11-85)*

#### **Sec. 94-87. - Conditions requiring protective devices; inspection and maintenance of protective devices.**

(a)

Where the nature of use of the water supplied to premises by the water department is such that it is deemed that:

(1)

- It is impractical to provide an effective air gap separation;
- (2) The owner and/or occupant of the premises cannot or is not willing to demonstrate to the official in charge of the system, or his designated representative, that the water use and protective features of the plumbing are such as to propose no threat to the safety or potability of the water supply;
- (3) The nature and mode of operation within the premises are such that frequent alterations are made to the plumbing; or
- (4) There is a likelihood that protective measures may be subverted, altered, or disconnected;
- (5) Any business, operation, industry or agricultural activity that may be categorized as being a risk under the city cross connection control program, as amended;

the utilities general manager, or his designated representative, shall require the use of an approved protective device on the service line serving the premises to ensure that any contamination that may originate in the customer's premises is contained therein. The protective device shall be a reduced pressure zone type backflow preventer or other device approved by the utilities general manager or his authorized representative as to manufacturer, model, and size. The type of approved device shall be established by the degree of hazard for each specific location. The method of installation of the backflow protective devices shall be approved by the utilities general manager or his authorized representative prior to installation and shall comply with the criteria set forth by the utilities general manager. The installation shall be at the expense of the owner or occupant of the premises.

- (b) The department shall have the right to inspect and test the devices on an annual basis or whenever deemed necessary by the utilities general manager or his designated representative. The owner or occupant of the premises shall be responsible for annual testing and submittal of test data. Testing shall be conducted by an approved certified tester. Failure of a backflow prevention device shall be considered as noncompliance and immediate repairs are required. The utilities general manager or his designated representative shall require the occupant of the premises to make all repairs and all cost of repairs shall be borne by the owner or occupant of the premises. These repairs shall be made by qualified personnel acceptable to the utilities general manager.

(c)

Failure to comply with the requirements for annual testing within 30 days of notification shall result in a late fee charge as defined within the city rate resolution. The late fee charge shall be issued at the discretion of the utilities general manager.

*(Code 1988, § 11-86)*

**Sec. 94-88. - Labeling of nonpotable water supply.**

The potable water supply made available on the properties served by the public water supply shall be protected from possible contamination as specified in this division. 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 follows:

**WATER UNSAFE FOR DRINKING**

The minimum acceptable sign shall have black letters one inch high located on a red background.

**Section V :**

**International Plumbing Code 2006, § 608**

*A Member of the International Code Family®*



# INTERNATIONAL PLUMBING CODE®

# 2006

2006 International Plumbing Code<sup>®</sup>

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# PREFACE

## Introduction

Internationally, code officials recognize the need for a modern, up-to-date plumbing code addressing the design and installation of plumbing systems through requirements emphasizing performance. The *International Plumbing Code*<sup>®</sup>, in this 2006 edition, is designed to meet these needs through model code regulations that safeguard the public health and safety in all communities, large and small.

This comprehensive plumbing code establishes minimum regulations for plumbing systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new plumbing designs. This 2006 edition is fully compatible with all the *International Codes*<sup>®</sup> (I-Codes<sup>®</sup>) published by the International Code Council (ICC)<sup>®</sup>, including the *International Building Code*<sup>®</sup>, *ICC Electrical Code*<sup>®</sup>, *International Energy Conservation Code*<sup>®</sup>, *International Existing Building Code*<sup>®</sup>, *International Fire Code*<sup>®</sup>, *International Fuel Gas Code*<sup>®</sup>, *International Mechanical Code*<sup>®</sup>, *ICC Performance Code*<sup>®</sup>, *International Private Sewage Disposal Code*<sup>®</sup>, *International Property Maintenance Code*<sup>®</sup>, *International Residential Code*<sup>®</sup>, *International Wildland-Urban Interface Code*<sup>™</sup> and *International Zoning Code*<sup>®</sup>.

The *International Plumbing Code* provisions provide many benefits, among which is the model code development process that offers an international forum for plumbing professionals to discuss performance and prescriptive code requirements. This forum provides an excellent arena to debate proposed revisions. This model code also encourages international consistency in the application of provisions.

## Development

The first edition of the *International Plumbing Code* (1995) was the culmination of an effort initiated in 1994 by a development committee appointed by the ICC and consisting of representatives of the three statutory members of the International Code Council at that time, including: Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO) and Southern Building Code Congress International (SBCCI). The intent was to draft a comprehensive set of regulations for plumbing systems consistent with and inclusive of the scope of the existing model codes. Technical content of the latest model codes promulgated by BOCA, ICBO and SBCCI was utilized as the basis for the development. This 2006 edition presents the code as originally issued, with changes as reflected in the subsequent editions through 2003 and with changes approved through the ICC Code Development Process through 2005. A new edition such as this is promulgated every three years.

This code is founded on principles intended to establish provisions consistent with the scope of a plumbing code that adequately protects public health, safety and welfare; provisions that do not unnecessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction; and provisions that do not give preferential treatment to particular types or classes of materials, products or methods of construction.

## Adoption

The *International Plumbing Code* is available for adoption and use by jurisdictions internationally. Its use within a governmental jurisdiction is intended to be accomplished through adoption by reference in accordance with proceedings establishing the jurisdiction's laws. At the time of adoption, jurisdictions should insert the appropriate information in provisions requiring specific local information, such as the name of the adopting jurisdiction. These locations are shown in bracketed words in small capital letters in the code and in the sample ordinance. The sample adoption ordinance on page v addresses several key elements of a code adoption ordinance, including the information required for insertion into the code text.

## Maintenance

The *International Plumbing Code* is kept up to date through the review of proposed changes submitted by code enforcing officials, industry representatives, design professionals and other interested parties. Proposed changes are carefully considered through an open code development process in which all interested and affected parties may participate.

The contents of this work are subject to change both through the Code Development Cycles and the governmental body that enacts the code into law. For more information regarding the code development process, contact the Code and Standard Development Department of the International Code Council.

While the development procedure of the *International Plumbing Code* ensures the highest degree of care, ICC and ICC's members and those participating in the development of this code do not accept any liability resulting from compliance or noncompliance with the provisions, since ICC and its members do not have the power or authority to police or enforce compliance with the contents of this code. Only the governmental body that enacts the code into law has such authority.

## Letter Designations In Front of Section Numbers

In each code development cycle, proposed changes to the code are considered at the Code Development Hearings by the ICC Plumbing Code Development Committee, whose action constitutes a recommendation to the voting membership for final action on the proposed change. Proposed changes to a code section that has a number beginning with a letter in brackets are considered by a different code development committee. For example, proposed changes to code sections that have [B] in front of them (e.g. [B] 309.2) are considered by the ICC Building Code Development Committee at the code development hearings.

The content of sections in this code that begin with a letter designation are maintained by another code development committee in accordance with the following:

- [B] = International Building Code Development Committee;
- [E] = International Energy Conservation Code Development Committee;
- [F] = International Fire Code Development Committee;
- [M] = International Mechanical Code Development Committee.

## Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2003 edition. Deletion indicators in the form of an arrow (➔) are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or a table has been deleted.

# ORDINANCE

The *International Codes* are designed and promulgated to be adopted by reference by ordinance. Jurisdictions wishing to adopt the *2006 International Plumbing Code* as an enforceable regulation governing plumbing systems should ensure that certain factual information is included in the adopting ordinance at the time adoption is being considered by the appropriate governmental body. The following sample adoption ordinance addresses several key elements of a code adoption ordinance, including the information required for insertion into the code text.

## SAMPLE ORDINANCE FOR ADOPTION OF THE INTERNATIONAL PLUMBING CODE ORDINANCE NO. \_\_\_\_\_

An ordinance of the [JURISDICTION] adopting the 2006 edition of the *International Plumbing Code*, regulating and governing the design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of plumbing systems in the [JURISDICTION]; providing for the issuance of permits and collection of fees therefor; repealing Ordinance No. \_\_\_\_\_ of the [JURISDICTION] and all other ordinances and parts of the ordinances in conflict therewith.

The [GOVERNING BODY] of the [JURISDICTION] does ordain as follows:

Section 1. That a certain document, three (3) copies of which are on file in the office of the [TITLE OF JURISDICTION'S KEEPER OF RECORDS] of [NAME OF JURISDICTION], being marked and designated as the *International Plumbing Code*, 2006 edition, including Appendix Chapters [FILL IN THE APPENDIX CHAPTERS BEING ADOPTED], as published by the International Code Council, be and is hereby adopted as the Plumbing Code of the [JURISDICTION], in the State of [STATE NAME] regulating and governing the design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of plumbing systems as herein provided; providing for the issuance of permits and collection of fees therefor; and each and all of the regulations, provisions, penalties, conditions and terms of said Plumbing Code on file in the office of the [JURISDICTION] are hereby referred to, adopted, and made a part hereof, as if fully set out in this ordinance, with the additions, insertions, deletions and changes, if any, prescribed in Section 2 of this ordinance.

Section 2. The following sections are hereby revised:

Section 101.1. Insert: [NAME OF JURISDICTION]

Section 106.6.2. Insert: [APPROPRIATE SCHEDULE]

Section 106.6.3. Insert: [PERCENTAGES IN TWO LOCATIONS]

Section 108.4. Insert: [OFFENSE, DOLLAR AMOUNT, NUMBER OF DAYS]

Section 108.5. Insert: [DOLLAR AMOUNT IN TWO LOCATIONS]

Section 305.6.1. Insert: [NUMBER OF INCHES IN TWO LOCATIONS]

Section 904.1. Insert: [NUMBER OF INCHES]

Section 3. That Ordinance No. \_\_\_\_\_ of [JURISDICTION] entitled [FILL IN HERE THE COMPLETE TITLE OF THE ORDINANCE OR ORDINANCES IN EFFECT AT THE PRESENT TIME SO THAT THEY WILL BE REPEALED BY DEFINITE MENTION] and all other ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section 4. That if any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance. The [GOVERNING BODY] hereby declares that it would have passed this ordinance, and each section, subsection, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses and phrases be declared unconstitutional.

Section 5. That nothing in this ordinance or in the Plumbing Code hereby adopted shall be construed to affect any suit or proceeding impending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance hereby repealed as cited in Section 3 of this ordinance; nor shall any just or legal right or remedy of any character be lost, impaired or affected by this ordinance.

Section 6. That the [JURISDICTION'S KEEPER OF RECORDS] is hereby ordered and directed to cause this ordinance to be published. (An additional provision may be required to direct the number of times the ordinance is to be published and to specify that it is to be in a newspaper in general circulation. Posting may also be required.)

Section 7. That this ordinance and the rules, regulations, provisions, requirements, orders and matters established and adopted hereby shall take effect and be in full force and effect [TIME PERIOD] from and after the date of its final passage and adoption.



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The overflow outlet shall be covered with a corrosion-resistant screen of not less than 16 by 20 mesh per inch (630 by 787 mesh per m) and by 0.25-inch (6.4 mm) hardware cloth or shall terminate in a horizontal angle seat check valve. Drainage from overflow pipes shall be directed so as not to freeze on roof walks.

**TABLE 606.5.4  
SIZES FOR OVERFLOW PIPES FOR WATER SUPPLY TANKS**

MAXIMUM CAPACITY OF WATER SUPPLY LINE TO TANK (gpm)	DIAMETER OF OVERFLOW PIPE (Inches)
0 - 50	2
50 - 150	2½
150 - 200	3
200 - 400	4
400 - 700	5
700 - 1,000	6
Over 1,000	8

For SI: 1 inch = 25.4 mm, 1 gallon per minute = 3.785 L/m.

**606.5.5 Low-pressure cutoff required on booster pumps.**

A low-pressure cutoff shall be installed on all booster pumps in a water pressure booster system to prevent creation of a vacuum or negative pressure on the suction side of the pump when a positive pressure of 10 psi (68.94 kPa) or less occurs on the suction side of the pump.

**606.5.6 Potable water inlet control and location.** Potable water inlets to gravity tanks shall be controlled by a fill valve or other automatic supply valve installed so as to prevent the tank from overflowing. The inlet shall be terminated so as to provide an air gap not less than 4 inches (102 mm) above the overflow.

**606.5.7 Tank drain pipes.** A valved pipe shall be provided at the lowest point of each tank to permit emptying of the tank. The tank drain pipe shall discharge as required for overflow pipes and shall not be smaller in size than specified in Table 606.5.7.

**TABLE 606.5.7  
SIZE OF DRAIN PIPES FOR WATER TANKS**

TANK CAPACITY (gallons)	DRAIN PIPE (Inches)
Up to 750	1
751 to 1,500	1½
1,501 to 3,000	2
3,001 to 5,000	2½
5,000 to 7,500	3
Over 7,500	4

For SI: 1 inch = 25.4 mm, 1 gallon = 3.785 L.

**606.5.8 Prohibited location of potable supply tanks.** Potable water gravity tanks or manholes of potable water pressure tanks shall not be located directly under any soil or waste piping or any source of contamination.

**606.5.9 Pressure tanks, vacuum relief.** All water pressure tanks shall be provided with a vacuum relief valve at the top of the tank that will operate up to a maximum water pressure of 200 psi (1380 kPa) and up to a maximum temperature of 200°F (93°C). The minimum size of such vacuum relief valve shall be 0.50 inch (12.7 mm).

**Exception:** This section shall not apply to pressurized captive air diaphragm/bladder tanks.

**606.5.10 Pressure relief for tanks.** Every pressure tank in a hydropneumatic pressure booster system shall be protected with a pressure relief valve. The pressure relief valve shall be set at a maximum pressure equal to the rating of the tank. The relief valve shall be installed on the supply pipe to the tank or on the tank. The relief valve shall discharge by gravity to a safe place of disposal.

**606.6 Water supply system test.** Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested in accordance with Section 312.

**SECTION 607  
HOT WATER SUPPLY SYSTEM**

**607.1 Where required.** In residential occupancies, hot water shall be supplied to all plumbing fixtures and equipment utilized for bathing, washing, culinary purposes, cleansing, laundry or building maintenance. In nonresidential occupancies, hot water shall be supplied for culinary purposes, cleansing, laundry or building maintenance purposes. In nonresidential occupancies, hot water or tempered water shall be supplied for bathing and washing purposes. Tempered water shall be supplied through a water temperature limiting device that conforms to ASSE 1070 and shall limit the tempered water to a maximum of 110°F (43°C). This provision shall not supersede the requirement for protective shower valves in accordance with Section 424.3.

**607.2 Hot water supply temperature maintenance.** Where the developed length of hot water piping from the source of hot water supply to the farthest fixture exceeds 100 feet (30 480 mm), the hot water supply system shall be provided with a method of maintaining the temperature in accordance with the *International Energy Conservation Code*.

**607.2.1 Piping insulation.** Circulating hot water system piping shall be insulated in accordance with the *International Energy Conservation Code*.

[E] **607.2.2 Hot water system controls.** Automatic circulating hot water system pumps or heat trace shall be arranged to be conveniently turned off, automatically or manually, when the hot water system is not in operation.

**607.2.3 Recirculating pump.** Where a thermostatic mixing valve is used in a system with a hot water recirculating pump, the hot water or tempered water return line shall be routed to the cold water inlet pipe of the water heater and the cold water inlet pipe or the hot water return connection of the thermostatic mixing valve.

**607.3 Thermal expansion control.** A means of controlling increased pressure caused by thermal expansion shall be pro-

vided where required in accordance with Sections 607.3.1 and 607.3.2.

**607.3.1 Pressure-reducing valve.** For water service system sizes up to and including 2 inches (51 mm), a device for controlling pressure shall be installed where, because of thermal expansion, the pressure on the downstream side of a pressure-reducing valve exceeds the pressure-reducing valve setting.

**607.3.2 Backflow prevention device or check valve.** Where a backflow prevention device, check valve or other device is installed on a water supply system utilizing storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.

**607.4 Flow of hot water to fixtures.** Fixture fittings, faucets and diverters shall be installed and adjusted so that the flow of hot water from the fittings corresponds to the left-hand side of the fixture fitting.

**Exception:** Shower and tub/shower mixing valves conforming to ASSE 1016 or CSA B125, where the flow of hot water corresponds to the markings on the device.

**SECTION 608  
PROTECTION OF POTABLE WATER SUPPLY**

**608.1 General.** A potable water supply system shall be designed, installed and maintained in such a manner so as to prevent contamination from nonpotable liquids, solids or gases being introduced into the potable water supply through cross-connections or any other piping connections to the system. Backflow preventer applications shall conform to Table 608.1, except as specifically stated in Sections 608.2 through 608.16.10.

**608.2 Plumbing fixtures.** The supply lines and fittings for every plumbing fixture shall be installed so as to prevent backflow. Plumbing fixture fittings shall provide backflow protection in accordance with ASME A112.18.1.

**608.3 Devices, appurtenances, appliances and apparatus.** All devices, appurtenances, appliances and apparatus intended to serve some special function, such as sterilization, distillation, processing, cooling, or storage of ice or foods, and that connect to the water supply system, shall be provided with protection against backflow and contamination of the water supply system. Water pumps, filters, softeners, tanks and all other appliances and devices that handle or treat potable water shall be protected against contamination.

**608.3.1 Special equipment, water supply protection.** The water supply for hospital fixtures shall be protected against backflow with a reduced pressure principle backflow preventer, an atmospheric or spill-proof vacuum breaker, or an air gap. Vacuum breakers for bedpan washer hoses shall not be located less than 5 feet (1524 mm) above the floor. Vacuum breakers for hose connections in health care or laboratory areas shall not be less than 6 feet (1829 mm) above the floor.

**608.4 Water service piping.** Water service piping shall be protected in accordance with Sections 603.2 and 603.2.1.

**608.5 Chemicals and other substances.** Chemicals and other substances that produce either toxic conditions, taste, odor or discoloration in a potable water system shall not be introduced into, or utilized in, such systems.

**608.6 Cross-connection control.** Cross connections shall be prohibited, except where approved protective devices are installed.

**608.6.1 Private water supplies.** Cross connections between a private water supply and a potable public supply shall be prohibited.

**608.7 Stop-and-waste valves prohibited.** Combination stop-and-waste valves or cocks shall not be installed underground.

**608.8 Identification of potable and nonpotable water.** In all buildings where two or more water distribution systems, one potable water and the other nonpotable water, are installed, each system shall be identified either by color marking or metal tags in accordance with Sections 608.8.1 through 608.8.3.

**608.8.1 Information.** Pipe identification shall include the contents of the piping system and an arrow indicating the direction of flow. Hazardous piping systems shall also contain information addressing the nature of the hazard. Pipe identification shall be repeated at maximum intervals of 25 feet (7620 mm) and at each point where the piping passes through a wall, floor or roof. Lettering shall be readily observable within the room or space where the piping is located.

**608.8.2 Color.** The color of the pipe identification shall be discernable and consistent throughout the building.

**608.8.3 Size.** The size of the background color field and lettering shall comply with Table 608.8.3.

**TABLE 608.8.3  
SIZE OF PIPE IDENTIFICATION**

PIPE DIAMETER (Inches)	LENGTH BACKGROUND COLOR FIELD (Inches)	SIZE OF LETTERS (Inches)
3/4 to 1 1/4	8	0.5
1 1/2 to 2	8	0.75
2 1/2 to 6	12	1.25
8 to 10	24	2.5
over 10	32	3.5

For SI: 1 inch = 25.4 mm.

**608.9 Reutilization prohibited.** Water utilized for the cooling of equipment or other processes shall not be returned to the potable water system. Such water shall be discharged into a drainage system through an air gap or shall be utilized for non-potable purposes.

**608.10 Reuse of piping.** Piping that has been utilized for any purpose other than conveying potable water shall not be utilized for conveying potable water.

**608.11 Painting of water tanks.** The interior surface of a potable water tank shall not be lined, painted or repaired with any material that changes the taste, odor, color or potability of the water supply when the tank is placed in, or returned to, service.

TABLE 608.1  
APPLICATION OF BACKFLOW PREVENTERS

DEVICE	DEGREE OF HAZARD <sup>a</sup>	APPLICATION <sup>b</sup>	APPLICABLE STANDARDS
Air gap	High or low hazard	Backsiphonage or backpressure	ASME A112.1.2
Air gap fittings for use with plumbing fixtures, appliances and appurtenances	High or low hazard	Backsiphonage or backpressure	ASME A112.1.3
Antisiphon-type fill valves for gravity water closet flush tanks	High hazard	Backsiphonage only	ASSE 1002, CSA B125
Backflow preventer for carbonated beverage machines	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 3/8"	ASSE 1022, CSA B64.3.1
Backflow preventer with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 3/4"	ASSE 1012, CSA B64.3
Barometric loop	High or low hazard	Backsiphonage only	(See Section 608.13.4)
Double check backflow prevention assembly and double check fire protection backflow prevention assembly	Low hazard	Backpressure or backsiphonage Sizes 3/8" - 16"	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1
Double check detector fire protection backflow prevention assemblies	Low hazard	Backpressure or backsiphonage (Fire sprinkler systems) Sizes 2" - 16"	ASSE 1048
Dual-check-valve-type backflow preventer	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 1"	ASSE 1024, CSA B64.6
Hose connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure, backpressure or backsiphonage Sizes 1/2" - 1"	ASSE 1052, CSA B64.2.1.1
Hose connection vacuum breaker	High or low hazard	Low head backpressure or backsiphonage Sizes 1/2", 3/4", 1"	ASSE 1011, CSA B64.2, CSA B64.2.1
Laboratory faucet backflow preventer	High or low hazard	Low head backpressure and backsiphonage	ASSE 1035, CSA B64.7
Pipe-applied atmospheric-type vacuum breaker	High or low hazard	Backsiphonage only Sizes 1/4" - 4"	ASSE 1001, CSA B64.1.1
Pressure vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/2" - 2"	ASSE 1020, CSA B64.1.2
Reduced pressure principle backflow preventer and reduced pressure principle fire protection backflow preventer	High or low hazard	Backpressure or backsiphonage Sizes 3/8" - 16"	ASSE 1013, AWWA C511, CSA B64.4, CSA B64.4.1
Reduced pressure detector fire protection backflow prevention assemblies	High or low hazard	Backsiphonage or backpressure (Fire sprinkler systems)	ASSE 1047
Spillproof vacuum breaker	High or low hazard	Backsiphonage only Sizes 1/4" - 2"	ASSE 1056
Vacuum breaker wall hydrants, frost-resistant, automatic draining type	High or low hazard	Low head backpressure or backsiphonage Sizes 3/4", 1"	ASSE 1019, CSA B64.2.2

For SI: 1 inch = 25.4 mm.

- a. Low hazard—See Pollution (Section 202).
- High hazard—See Contamination (Section 202).
- b. See Backpressure (Section 202).
- See Backpressure, low head (Section 202).
- See Backsiphonage (Section 202).

**608.12 Pumps and other appliances.** Water pumps, filters, softeners, tanks and all other devices that handle or treat potable water shall be protected against contamination.

**608.13 Backflow protection.** Means of protection against backflow shall be provided in accordance with Sections 608.13.1 through 608.13.9.

**608.13.1 Air gap.** The minimum required air gap shall be measured vertically from the lowest end of a potable water outlet to the flood level rim of the fixture or receptacle into which such potable water outlet discharges. Air gaps shall comply with ASME A112.1.2 and air gap fittings shall comply with ASME A112.1.3.

**608.13.2 Reduced pressure principle backflow preventers.** Reduced pressure principle backflow preventers shall conform to ASSE 1013, AWWA C511, CSA B64.4 or CSA B64.4.1. Reduced pressure detector assembly backflow preventers shall conform to ASSE 1047. These devices shall be permitted to be installed where subject to continuous pressure conditions. The relief opening shall discharge by air gap and shall be prevented from being submerged.

**608.13.3 Backflow preventer with intermediate atmospheric vent.** Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012 or CSA B64.3. These devices shall be permitted to be installed where subject to continuous pressure conditions. The relief opening shall discharge by air gap and shall be prevented from being submerged.

**608.13.4 Barometric loop.** Barometric loops shall precede the point of connection and shall extend vertically to a height of 35 feet (10 668 mm). A barometric loop shall only be utilized as an atmospheric-type or pressure-type vacuum breaker.

**608.13.5 Pressure-type vacuum breakers.** Pressure-type vacuum breakers shall conform to ASSE 1020 or CSA B64.1.2 and spillproof vacuum breakers shall comply with ASSE 1056. These devices are designed for installation under continuous pressure conditions when the critical level is installed at the required height. Pressure-type vacuum breakers shall not be installed in locations where spillage could cause damage to the structure.

**608.13.6 Atmospheric-type vacuum breakers.** Pipe-applied atmospheric-type vacuum breakers shall conform to ASSE 1001 or CSA B64.1.1. Hose-connection vacuum breakers shall conform to ASSE 1011, ASSE 1019, ASSE 1035, ASSE 1052, CSA B64.2, CSA B64.2.1, CSA B64.2.1.1, CSA B64.2.2 or CSA B64.7. These devices shall operate under normal atmospheric pressure when the critical level is installed at the required height.

**608.13.7 Double check-valve assemblies.** Double check-valve assemblies shall conform to ASSE 1015, CSA B64.5, CSA B64.5.1 or AWWA C510. Double-detector check-valve assemblies shall conform to ASSE 1048. These devices shall be capable of operating under continuous pressure conditions.

**608.13.8 Spillproof vacuum breakers.** Spillproof vacuum breakers (SVB) shall conform to ASSE 1056. These devices

are designed for installation under continuous-pressure conditions when the critical level is installed at the required height.

**608.13.9 Chemical dispenser backflow devices.** Backflow devices for chemical dispensers shall comply with ASSE 1055 or shall be equipped with an air gap fitting.

**608.14 Location of backflow preventers.** Access shall be provided to backflow preventers as specified by the installation instructions of the approved manufacturer.

**608.14.1 Outdoor enclosures for backflow prevention devices.** Outdoor enclosures for backflow prevention devices shall comply with ASSE 1060.

**608.15 Protection of potable water outlets.** All potable water openings and outlets shall be protected against backflow in accordance with Section 608.15.1, 608.15.2, 608.15.3, 608.15.4, 608.15.4.1 or 608.15.4.2.

**608.15.1 Protection by air gap.** Openings and outlets shall be protected by an air gap between the opening and the fixture flood level rim as specified in Table 608.15.1. Openings and outlets equipped for hose connection shall be protected by means other than an air gap.

**608.15.2 Protection by a reduced pressure principle backflow preventer.** Openings and outlets shall be protected by a reduced pressure principle backflow preventer.

**608.15.3 Protection by a backflow preventer with intermediate atmospheric vent.** Openings and outlets shall be protected by a backflow preventer with an intermediate atmospheric vent.

**608.15.4 Protection by a vacuum breaker.** Openings and outlets shall be protected by atmospheric-type or pressure-type vacuum breakers. The critical level of the vacuum breaker shall be set a minimum of 6 inches (152 mm) above the flood level rim of the fixture or device. Fill valves shall be set in accordance with Section 425.3.1. Vacuum breakers shall not be installed under exhaust hoods or similar locations that will contain toxic fumes or vapors. Pipe-applied vacuum breakers shall be installed not less than 6 inches (152 mm) above the flood level rim of the fixture, receptor or device served.

**608.15.4.1 Deck-mounted and integral vacuum breakers.** Approved deck-mounted or equipment-mounted vacuum breakers and faucets with integral atmospheric or spillproof vacuum breakers shall be installed in accordance with the manufacturer's instructions and the requirements for labeling with the critical level not less than 1 inch (25 mm) above the flood level rim.

**608.15.4.2 Hose connections.** Sillcocks, hose bibbs, wall hydrants and other openings with a hose connection shall be protected by an atmospheric-type or pressure-type vacuum breaker or a permanently attached hose connection vacuum breaker.

**Exceptions:**

1. This section shall not apply to water heater and boiler drain valves that are provided with hose

TABLE 608.16.1  
MINIMUM REQUIRED AIR GAPS

FIXTURE	MINIMUM AIR GAP	
	Away from a wall <sup>a</sup> (inches)	Close to a wall (inches)
Lavatories and other fixtures with effective opening not greater than 1/2 inch in diameter	1	1 1/2
Sink, laundry trays, gooseneck back faucets and other fixtures with effective openings not greater than 3/4 inch in diameter	1.5	2.5
Over-rim bath fillers and other fixtures with effective openings not greater than 1 inch in diameter	2	3
Drinking water fountains, single orifice not greater than 7/16 inch in diameter or multiple orifices with a total area of 0.150 square inch (area of circle 7/16 inch in diameter)	1	1 1/2
Effective openings greater than 1 inch	Two times the diameter of the effective opening	Three times the diameter of the effective opening

For SI: 1 inch = 25.4 mm.

a. Applicable where walls or obstructions are spaced from the nearest inside-edge of the spout opening a distance greater than three times the diameter of the effective opening for a single wall, or a distance greater than four times the diameter of the effective opening for two intersecting walls.

connection threads and that are intended only for tank or vessel draining.

2. This section shall not apply to water supply valves intended for connection of clothes washing machines where backflow prevention is otherwise provided or is integral with the machine.

**608.16 Connections to the potable water system.** Connections to the potable water system shall conform to Sections 608.16.1 through 608.16.10.

**608.16.1 Beverage dispensers.** The water supply connection to beverage dispensers shall be protected against backflow by a backflow preventer conforming to ASSE 1022, CSA B64.3.1 or by an air gap. The backflow preventer device and the piping downstream therefrom shall not be affected by carbon dioxide gas.

**608.16.2 Connections to boilers.** The potable supply to the boiler shall be equipped with a backflow preventer with an intermediate atmospheric vent complying with ASSE 1012 or CSA B64.3. Where conditioning chemicals are introduced into the system, the potable water connection shall be protected by an air gap or a reduced pressure principle backflow preventer, complying with ASSE 1013, CSA B64.4 or AWWA C511.

**608.16.3 Heat exchangers.** Heat exchangers utilizing an essentially toxic transfer fluid shall be separated from the potable water by double-wall construction. An air gap open to the atmosphere shall be provided between the two walls. Heat exchangers utilizing an essentially nontoxic transfer fluid shall be permitted to be of single-wall construction.

**608.16.4 Connections to automatic fire sprinkler systems and standpipe systems.** The potable water supply to automatic fire sprinkler and standpipe systems shall be protected against backflow by a double check-valve assembly or a reduced pressure principle backflow preventer.

**Exceptions:**

1. Where systems are installed as a portion of the water distribution system in accordance with the requirements of this code and are not provided with a fire department connection, isolation of the water supply system shall not be required.
2. Isolation of the water distribution system is not required for deluge, preaction or dry pipe systems.

**608.16.4.1 Additives or nonpotable source.** Where systems under continuous pressure contain chemical additives or antifreeze, or where systems are connected to a nonpotable secondary water supply, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer. Where chemical additives or antifreeze are added to only a portion of an automatic fire sprinkler or standpipe system, the reduced pressure principle backflow preventer shall be permitted to be located so as to isolate that portion of the system. Where systems are not under continuous pressure, the potable water supply shall be protected against backflow by an air gap or a pipe applied atmospheric vacuum breaker conforming to ASSE 1001 or CSA B64.1.1.

**608.16.5 Connections to lawn irrigation systems.** The potable water supply to lawn irrigation systems shall be protected against backflow by an atmospheric-type vacuum breaker, a pressure-type vacuum breaker or a reduced pressure principle backflow preventer. A valve shall not be installed downstream from an atmospheric vacuum breaker. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer.

**608.16.6 Connections subject to backpressure.** Where a potable water connection is made to a nonpotable line, fixture, tank, vat, pump or other equipment subject to

back-pressure, the potable water connection shall be protected by a reduced pressure principle backflow preventer.

**608.16.7 Chemical dispensers.** Where chemical dispensers connect to the potable water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, 608.13.2, 608.13.5, 608.13.6, 608.13.8 or 608.13.9.

**608.16.8 Portable cleaning equipment.** Where the portable cleaning equipment connects to the water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, 608.13.2, 608.13.3, 608.13.7 or 608.13.8.

**608.16.9 Dental pump equipment.** Where dental pumping equipment connects to the water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, 608.13.2, 608.13.5, 608.13.6 or 608.13.8.

**608.16.10 Coffee machines and noncarbonated beverage dispensers.** The water supply connection to coffee machines and noncarbonated beverage dispensers shall be protected against backflow by a backflow preventer conforming to ASSE 1022 or by an air gap.

**608.17 Protection of individual water supplies.** An individual water supply shall be located and constructed so as to be safeguarded against contamination in accordance with Sections 608.17.1 through 608.17.8.

**608.17.1 Well locations.** A potable ground water source or pump suction line shall not be located closer to potential sources of contamination than the distances shown in Table 608.17.1. In the event the underlying rock structure is limestone or fragmented shale, the local or state health department shall be consulted on well site location. The distances in Table 608.17.1 constitute minimum separation and shall be increased in areas of creviced rock or limestone, or where the direction of movement of the ground water is from sources of contamination toward the well.

**TABLE 608.17.1  
DISTANCE FROM CONTAMINATION TO  
PRIVATE WATER SUPPLIES AND PUMP SUCTION LINES**

SOURCE OF CONTAMINATION	DISTANCE (feet)
Barnyard	100
Farm silo	25
Pasture	100
Pumphouse floor drain of cast iron draining to ground surface	2
Seepage pits	50
Septic tank	25
Sewer	10
Subsurface disposal fields	50
Subsurface pits	50

For SI: 1 foot = 304.8 mm.

**608.17.2 Elevation.** Well sites shall be positively drained and shall be at higher elevations than potential sources of contamination.

**608.17.3 Depth.** Private potable well supplies shall not be developed from a water table less than 10 feet (3048 mm) below the ground surface.

**608.17.4 Water-tight casings.** Each well shall be provided with a water-tight casing to a minimum distance of 10 feet (3048 mm) below the ground surface. All casings shall extend at least 6 inches (152 mm) above the well platform. The casing shall be large enough to permit installation of a separate drop pipe. Casings shall be sealed at the bottom in an impermeable stratum or extend several feet into the water-bearing stratum.

**608.17.5 Drilled or driven well casings.** Drilled or driven well casings shall be of steel or other approved material. Where drilled wells extend into a rock formation, the well casing shall extend to and set firmly in the formation. The annular space between the earth and the outside of the casing shall be filled with cement grout to a minimum distance of 10 feet (3048 mm) below the ground surface. In an instance of casing to rock installation, the grout shall extend to the rock surface.

**608.17.6 Dug or bored well casings.** Dug or bored well casings shall be of water-tight concrete, tile, or galvanized or corrugated metal pipe to a minimum distance of 10 feet (3048 mm) below the ground surface. Where the water table is more than 10 feet (3048 mm) below the ground surface, the water-tight casing shall extend below the table surface. Well casings for dug wells or bored wells constructed with sections of concrete, tile, or galvanized or corrugated metal pipe shall be surrounded by 6 inches (152 mm) of grout poured into the hole between the outside of the casing and the ground to a minimum depth of 10 feet (3048 mm).

**608.17.7 Cover.** Every potable water well shall be equipped with an overlapping water-tight cover at the top of the well casing or pipe sleeve such that contaminated water or other substances are prevented from entering the well through the annular opening at the top of the well casing, wall or pipe sleeve. Covers shall extend downward at least 2 inches (51 mm) over the outside of the well casing or wall. A dug well cover shall be provided with a pipe sleeve permitting the withdrawal of the pump suction pipe, cylinder or jet body without disturbing the cover. Where pump sections or discharge pipes enter or leave a well through the side of the casing, the circle of contact shall be water tight.

**608.17.8 Drainage.** All potable water wells and springs shall be constructed such that surface drainage will be diverted away from the well or spring.

**SECTION 609  
HEALTH CARE PLUMBING**

**609.1 Scope.** This section shall govern those aspects of health care plumbing systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to the requirements of this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed and maintained in the following occupancies: nursing homes, homes for the aged, orphanages, infirmaries, first aid stations, psychiatric

## **Section VI :**

### **Guidelines for Designing Backflow Prevention Assembly Installations**

**Supplement to the City of Calhoun 2008 Cross Connection Control Program  
Adopted September 2, 1985**

**Revised May 29, 2013**

#### **Purpose**

The purpose of these guidelines is to augment and/or clarify those guidelines outlined in the July 2008 Cross Connection Control manual. These guidelines reflect accepted design considerations based on experience in implementing cross connection control programs and policies set forth by the American Water Works Association, Manual 14, Third Addition, Environmental Protection Agency, Cross-Connection Manual, 2003 Edition, USC Foundation for Cross Connection Control and Hydraulic Research and state and local health departments. Pending revisions to the manual, these guidelines should clearly outline what an acceptable design and installation constitutes. They are to be reasonably interpreted and will be updated as new design solutions and technologies are offered.

#### **General Installation Details**

##### **I. Clearances**

All double check valve (DCV) and reduced pressure zone (RPZ) backflow prevention assemblies are designed for in-line service and must be installed to prevent freezing, flooding and mechanical damage with adequate space to facilitate maintenance and testing. Ideally, the installation should not require platforms, ladders or lifts for access. Adequate clearances from floors, ceilings and walls must be provided to access the test cocks and to allow the repair and/or removal of the relief valve and check valves; as follows:

- All assemblies shall be installed with a centerline height from 30 inches to 60 inches above the floor. Any installation at a greater height shall be provided with a fixed platform, a portable scaffold or a lift meeting OSHA standards.
- All RPZ devices must have an 18 inch minimum clearance between the bottom of the relief valve and the floor to prevent submersion and provide access for servicing and relief valve.

- A minimum of 12 inches of clear space shall be maintained above the assembly to allow for servicing check valves and for operation of shut-off valves.
- A minimum of 30 inches of clear space shall be maintained between the front side of the device and the nearest wall or obstruction.
- At least 8 inches clearance should be maintained from the back side of the device to the nearest wall or obstruction. This clearance may need to be increased for models that have side mounted test cocks or relief valves that would be facing the back wall.
- Within two-hundred (200) feet of the connection point to the City water main.

## II. Miscellaneous Considerations

- All assemblies shall be adequately supported and/or restrained to prevent lateral movement. Pipe hangers, braces, saddles, stanchions, piers, etc., should be used to support the device and should be placed in a manner that will not obstruct the function of or access to the relief valve.
- Strainers are recommended prior to each backflow prevention assembly on non-fire fighting water lines. **No strainer is to be used in a fire line without the approval of the Insurance Underwriters or the authority having jurisdiction.**
- The assembly should be sized hydraulically, taking into account both the volume requirements of the service and the head loss of the assembly. The head loss of the assembly is not necessarily directed proportional to flow. (Refer to the manufacturers head loss curves).
- Before selection and installation, refer to manufacturers literature for temperature ranges. All assemblies must be protected from freezing temperatures and if installed where temperatures will reach 100 degrees F or above, a hot water type assembly must be used. Consult manufacturers specifications for recommendations.
- Thermal water expansion and/or water hammer downstream of the assembly can cause excessive pressure. To avoid possible damage to the system and assembly, use water hammer arresters, surge protectors or expansion tanks as appropriate.
- All assemblies should be specified and installed with the manufacturer supplied resilient seated shut-off valves integral to the assembly.
- Water lines should be thoroughly flushed before installing the assembly. Most test failures on new installations are the result of debris fouling one of the check valves or the relief valve.
- All assemblies must be installed horizontally unless they are specifically approved for vertical installation. (Ref. Technical Reference PWS-14).
- Parallel installations should be considered at those facilities where water service cannot be interrupted. Manifold installations may also be used on any water line larger than 10 inches.
- Assemblies shall not be installed in areas containing corrosive, toxic or poisonous fumes or gases which could render the assembly inoperable or pose a safety hazard to personnel.
- Because of the inherent design of a reduced pressure backflow assembly, fluctuating supply pressure on an extremely low flow or static flow condition may cause nuisance dripping and potential fouling of the assembly. While not effective in all cases, the installation of a soft seated check valve immediately ahead of the RPZ will often hold the pressure constant to the assembly in times of fluctuating supply pressure.
- Where the distance between the water meter and the device is greater than 10 feet, all exposed piping should be stenciled "Feed Line to Backflow Preventer DO NOT TAP" at 5 foot intervals.

## III. Drainage

Drainage for backflow prevention assemblies shall be provided for all installations of DCV or RPZ to accommodate discharge during testing or draining of the unit and for RPZ relief valve discharges, as follows:

- **No part of the backflow prevention assembly shall be submerged in water, or installed in a location subject to flooding.**
- For RPZ devices, drainage capacity shall be sized to accommodate both intermittent discharges and a catastrophic failure of the relief valve (**Pit installations require submittal of a supporting engineering report prepared by a Georgia licensed professional engineer and specific written approval from the Water & Wastewater Director**).
- Refer to manufacturers flow curves to determine maximum discharge rate based on supply pressure or on-site pressure; whichever is greater (**Pit installations require submittal of a supporting engineering report prepared by a Georgia licensed professional engineer and require specific written approval from the Water & Wastewater Director**).
- Discharge from relief valves must be readily detectable to maintenance personnel either visually or by means of water level alarms, flow indicator lights, etc.
- All drainage from RPZs must be by gravity drains (to daylight). Sump pumps are not allowed unless they are sized to accommodate the maximum discharge rate **and** connected to emergency power supplies and **require specific written approval from the Water & Wastewater Director**.
- An air gap must be maintained between the RPZ relief valve opening and any discharge piping . The air gap must be at least twice the dimension of the effective opening of the relief valve; but in no case less than 12 inches.
- Manufacturers air gap fittings may be utilized provided that they maintain a proper air gap and do not enclose or cover the relief valve. These fittings are only sized to handle intermittent and low flow discharges. Additional drainage capacity may be required to accommodate a catastrophic relief valve failure.
- Discharge piping from relief valves shall be terminated a minimum of 12 inches above any floor drain or other receiving receptacle.
- Discharge piping connected to a storm sewer shall be equipped with backwater check valve (**prior approval required**).
- Discharge piping connected to a sanitary sewer shall not be acceptable
- Discharge piping from pits or other structures must be terminated above grade in an area not subject to flooding (generally one foot above the 100 year flood elevation). The terminal end of the discharge piping must have a rodent screen and may need to be supported by a headwall. Flap valves should also be considered to prevent entry of cold air.
- All exterior drains shall be kept free of debris.

#### **IV. Pit Installations**

Primarily due to considerations for access, safety and gravity drainage, it is preferred that backflow prevention devices not be installed in pits. Where pit installations are proposed, however, they shall be designed:

- Shall conform to the standard details.
- To be watertight with watertight manholes or access doors extending a minimum of 6 inches above grade and located to allow natural light into the pit during testing/maintenance.
- With stairways, ladders or step irons.

- For crane access for installing and removing large assemblies.
- With adequate horizontal and vertical clearances to allow access to the device.
- With a full flow screened gravity drain terminating above grade for all RPZ installations as detailed in the drainage requirements **(for approved installations only)**.
- With sump pumps or gravity daylight drains for all DCVA installations.
- With floors pitched to drain.
- With adequate ground cover to prevent freezing.
- With surface grading to divert runoff away from the entrance way.
- Semi-buried pits for berm installations may be necessary to satisfy gravity drainage requirements.
- Within two-hundred (200) feet of the connection point to the City water main.

**V. Above Grade Installations- Protective Enclosures**

An above grade installation is generally necessary to provide gravity drainage from RPZ devices. The additional benefits of improved access and enhanced safety are also realized with an above grade installation. Two companies, "Hot Box" and "Hydrocowl", have designed prefabricated insulated enclosures that provide heat, gravity drainage and removable access panels for servicing and testing. As an alternate, wood frame, fiberglass, steel, masonry or precast concrete structures may be utilized. All enclosures shall be designed:

- With a floor elevation that is at least 6 inches above finished grade.
- To provide adequate clearances around the device to access the test cocks, shutoff valves, check valves and relief valve.
- With electric heaters or heat trace wire for any water service used year round.
- With provisions for natural or artificial light.
- With full flow gravity drains according to the drainage requirements.
- With security measures such as locking doors and panels, flow alarms or flow indicator lights, power indicator lights, etc
- Within two-hundred (200) feet of the connection point to the City water main.

**VI. Installation Within a Building**

Where containment at the property line cannot be achieved or is waived based on extenuating circumstances, installation within a building is often desirable as the unit can be installed in a mechanical room or other area that has heat and light. Access and drainage considerations must also be satisfied and the devices should be located to avoid electrical panels, areas of excessive heat, etc.

1. Above grade installations shall be provided with adequate clearances and discharge can be directed to floor or drains or through a sidewall above grade via screened louvers, scuppers, pipe sleeves with flap valves, etc., in accordance with the drainage requirements.
2. Below grade or basement installations are acceptable for DCVAs. RPZs are only allowed below grade where one or more of the following conditions can be met:
  - Where an adequate gravity drainage system is provided to accommodate a relief valve failure**(for approved installations only)**.
3. Where water level alarms are installed to detect flow from the device and alert maintenance or security personnel.
4. Where sump pumps are sized to accommodate a relief valve failure and are connected to emergency power**(for approved installations only)**.
5. Where the floor area and volume below the device could accommodate discharge from a relief valve failure. For 2 inch and smaller units, 2,000 cubic feet

is generally acceptable. For larger units, the time to submerge the device based on the maximum discharge rate and floor area/volume should be no less than 8 hours. Installation must be within two-hundred (200) feet from the connection point to the City water main.

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

## 6. Submission and Approval of Plans

In accordance with Section 10 of the Cross Connection Control manual, the submission of plans and specifications for the installation of backflow prevention assemblies must include the following:

1. A **site plan** (to scale or with dimensions) of the facility containing a general location map, name and address of facility, property lines, buildings, the size and location of public water main(s) and all fire and domestic water services, meter pits, backflow device pits, yard piping and hydrants, pumper connection(s), interconnections, and the location of the proposed backflow preventer(s).
2. A **plumbing floor plan** (plan view) or **partial floor plan** indicating water services, name and address of facility, water meter layout, proposed backflow preventer(s), booster pump system, floor drain(s) and all nearby objects (examples: electrical panels, boilers, chillers, storage tanks, fire pumps, fire sprinkler risers, etc.). The plan must be drawn **to scale** or **with dimensions** indicated from walls and all nearby objects.
3. A **vertical cross section(s)** of the proposed installation with elevations from floor, ceiling, outside grade and all nearby objects.
4. All drawings must include the name and address of the facility, be stamped and signed by the designer and have a clear space for approval stamps.
5. All fire sprinkler systems, fire hydrant locations, FDCs, and yard piping must be submitted to the City of Calhoun Fire Department for approval.

## 7. Engineers Report

An engineering report must be included with the plan submittal. The report must describe the project **in detail**. Items that should be included or described in the report include:

0. General use of water within the facility;
  1. Size and description of all fire and domestic water services;
  2. Number of floors within the facility
  3. Actual or estimated maximum flow demand;
  4. Pressures - existing and after the installation of the backflow preventer;
  5. Description of the fire fighting system - indicate the A.W.W.A. Manual M-14 class of sprinkler service;
  6. Description of the proposed installation of the backflow preventer indicate the location of backflow preventer, drainage, lighting, heating, access to unit, square footage of the floor level where the backflow preventer is to be located;
  7. The need for dual backflow preventer(s). Does the facility need a continuous water supply?

8. The elevation and location of the 100 year flood plain in relation to the facility. A reduced pressure zone (RPZ) backflow preventer must generally be installed 3 foot above the 100 year flood plain elevation.
9. An inventory of any existing containment devices to include the make, model, size and serial number of the device. Current annual test reports must also be submitted. The degree of hazard for these services must be determined to insure that the device provides the correct protection.

8. **Certified Testing and Completed Works Approval**

After an approval of plans has been issued and the assembly has been installed, it must be tested by a certified tester. The designer (or water supplier) is then responsible to certify that the installation was done in accordance with approved plans; or describe any changes or submit "As Built" plans as appropriate. After **Approval of the installation, the assembly must be tested at least annually by a certified tester with the results reported on the supplied required form, to the City of Calhoun Utilities, 700 West Line Street, Calhoun, Georgia 30701.**

## **Section VII**

### **Typical Types Hazards**

The types of hazards may include but are not limited to the following:  
**Auxiliary Water Systems (Wells, connections to irrigation systems, fountains, swimming pools, fish ponds, cooling towers, baptismal Pools, reclaimed water, and water storage tanks for fire fighting or other use.**

**Beverage-Bottling Plants and Breweries**

**Canneries, Packing Houses, Food Service Facilities, Restaurants, and Reduction Plants**

**Chemical Plants and Other Facilities: Cleaning, Manufacturing, Processing, Compounding, Servicing, Treatment or Washing**

**Cooling Systems: Open or Closed**

**Dairies and Cold-Storage Plants**

**Dry-Pipe Nonpressurized Fire-Suppression Systems (Deluge)**

**Dry-Pipe Pressurized and Preaction Fire-Suppression Systems**

**Dye Plants or Plants with Dying Operations**

**Film Laboratories: Photo and X-Ray**

**Fire Sprinkler Systems, Commercial**

**Hospitals, Laboratories, Medical Offices and Facilities, Dialysis Centers, Dentists Office, Health Department, Hospices, Pharmacies, Medical Research Centers, Sanitariums, Morgues, Mortuaries, Autopsy Facilities, and other Human or Animal Clinics**

**Laundries and Dye Works (Commercial Laundries)**

**Marine Facilities and Dockside Watering Points**

**Metal Manufacturing, Cleaning, Processing, and Fabricating**

**Multistoried Buildings (With or Without Booster Pumps)**

**Oil and Gas Production, Storage, or Transmission Properties**

**Paper and Paper-Product Plants**

**Plating Plants and Facilities**

**Radioactive Material or Substances, Plants or Facilities Handling**

**Steam Boiler Plants**

**Where any Reclaimed or Recycled water is in use**

**Residential Water Services**

**Schools**

**Residential, Single Family Fire Sprinkler Systems**

**Water Hauling Equipment or Water Filling Stations**

**Fire Hydrants**

**Wet Pipe Fire Sprinkler Systems**

**Chicken Houses or other Agricultural Operations including watering troughs**

**Irrigation Systems**

**Waste Treatment Plants**

**Water Treatment Plants**

**Landfills**

**Hotels and Motels**

**Jails and Prisons**

**Pest Control Companies**

**Dry Cleaners**

**Car Washes**

## **Section VIII:**

### **Degree of Potential Hazard**

The Georgia Rules for Safe Drinking water (391-3-5.13 (4) requires suppliers of drinking water to ensure that no connections with unapproved water sources or cross-connections with non-potable systems are made to the public water system. With a goal of preventing or correcting potentially hazardous cross-connections to the City of Calhoun's water system, the following outlines the degree of potential hazard by category.

**Category I – High Risk, Contaminants:** Contaminants are any substances that are toxic or present a health hazard. These are substances that can cause sickness or death. After notification, the water user shall have a maximum of thirty (30) days to have a Reduced Pressure Zone (RPZ) type backflow preventer installed and tested. Water users that fall into this category include but are not limited to:

#### **Beverage-Bottling Plants and Breweries**

#### **Canneries, Packing Houses, Food Service Facilities, Restaurants, and Reduction Plants**

#### **Dairies and Cold-Storage Plants**

#### **Hospitals, Laboratories, Medical Offices and Facilities, Dialysis Centers, Dentists Office, Health Department, Hospices, Pharmacies, Medical Research Centers, Sanitariums, Morgues, Mortuaries, Autopsy Facilities, and other Human or Animal Clinics**

#### **Chemical Plants and Other Facilities: Cleaning, Manufacturing, Processing, Compounding, Servicing, Treatment or Washing**

#### **Film Laboratories: Photo and X-Ray**

#### **Dry-Pipe Pressurized and Preaction Fire-Suppression Systems**

#### **Laundries and Dye Works (Commercial Laundries)**

#### **Metal Manufacturing, Cleaning, Processing, and Fabricating**

#### **Oil and Gas Production, Storage, or Transmission Properties**

**Plating Plants and Facilities**

**Radioactive Material or Substances, Plants or Facilities Handling**

**Where any Reclaimed or Recycled water is in use**

**Chicken Houses, Livestock Facilities or other Agricultural Operations**

**Waste Treatment Plants**

**Jails and Prisons**

**Pest Control Companies**

**Dry Cleaners**

**Car Washes**

**Landfills**

**Note: All connections associated with a particular location shall be have the same type of back-Flow prevention device, for example; a chemical plant that requires an RPZ type device on the potable water connection, shall have an RPZ on the fire sprinkler connection.**

**Category II – Medium Risk, Pollutants: Pollutants** are any substances that are objectionable to taste, odor, or color, but do not present a health hazard. These pollutants impair the quality of clean water. After notification, the water user shall have a maximum of thirty (30) days to have a Double Check Valve Assembly (DCC) type backflow preventer installed and tested. Water users that fall into this category include but are not limited to:

**Schools**

**Residential, Single Family Fire Sprinkler Systems**

**Water Hauling Equipment or Water Filling Stations**

**Fire Hydrants**

**Wet Pipe Fire Sprinkler Systems**

**Irrigation Systems**

**Water Treatment Plants**

**Hotels and Motels**

**Dry-Pipe Pressurized and Preaction Fire-Suppression Systems**

**Note: All connections associated with a particular location shall be have the same type of back-Flow prevention device, for example; a chemical plant that requires an RPZ type device on the potable water connection, shall have an RPZ on the fire sprinkler connection.**

**Category III – Low Risk, Public: These are all other water connections to the City of Calhoun water system. These connections consist primarily of homes, retail stores, office's. These are required to have a Dual Check Backflow preventer. The City of Calhoun is in the progress of retrofitting all existing meter yokes with proper backflow prevention devices for ¾" and 1" service connections.**

## **Section IX :**

### **General Requirements**

The City of Calhoun shall inspect each water service connection being two-inch (2") and larger on an annual basis. Notification shall be given with as much advance notice as possible and at no times the notification shall be less than forty-eight (48) hours. The City of Calhoun Cross-Connection Program's personnel shall be allowed access for the purpose of inspecting as per Section 94-85, Inspections of the City of Calhoun Code of Ordinances as amended.

The party responsible for installation, maintaining and testing of each backflow prevention device shall be the same as listed on the customer account with the City of Calhoun. The City of Calhoun Cross-Connection Program's personnel shall coordinate with the designated representative of the customer to insure a proper time to schedule the inspection. At no time shall the inspection be postponed for more than ten (10) working days.

The customer shall provide written proof of testing and compliance with the requirements stated herein and in conjunction with the City of Calhoun Code of Ordinances. Testing shall be required on an annual basis and accomplished by an approved certified backflow tester.

Notification of Compliance shall be in written form and sent to the customer for retention of records.

Notification shall be in written form and follow-up inspection shall be scheduled to occur at the end of the period for compliance (30 days for Category I and 60 days for Category II.) Should the customer fail to comply with the requirements of this program, then the customer shall be subject to the actions as determined within the City of Calhoun Code of Ordinances.

## **Section X :**

### **Plan Submittal**

Digital plans (pdf) must be submitted to the Calhoun Utilities Engineering Department for the initial review, along with a digital site plan that is tied to State Plane coordinates showing existing and proposed roadways, utilities, and property lines. Plans shall be prepared together in a set that includes a title sheet, a vicinity map and a sheet index and shall not be of greater scale than 1"=50". Plans may be submitted on size D drawing sheets (24" x 36") and must carry the stamp of a registered professional engineer. Please insure that all required standards are met prior to submittal. Incomplete submittal packages will not be reviewed. A minimum of two weeks are required for review. Larger projects may require extended review periods. Plans shall indicate the following information:

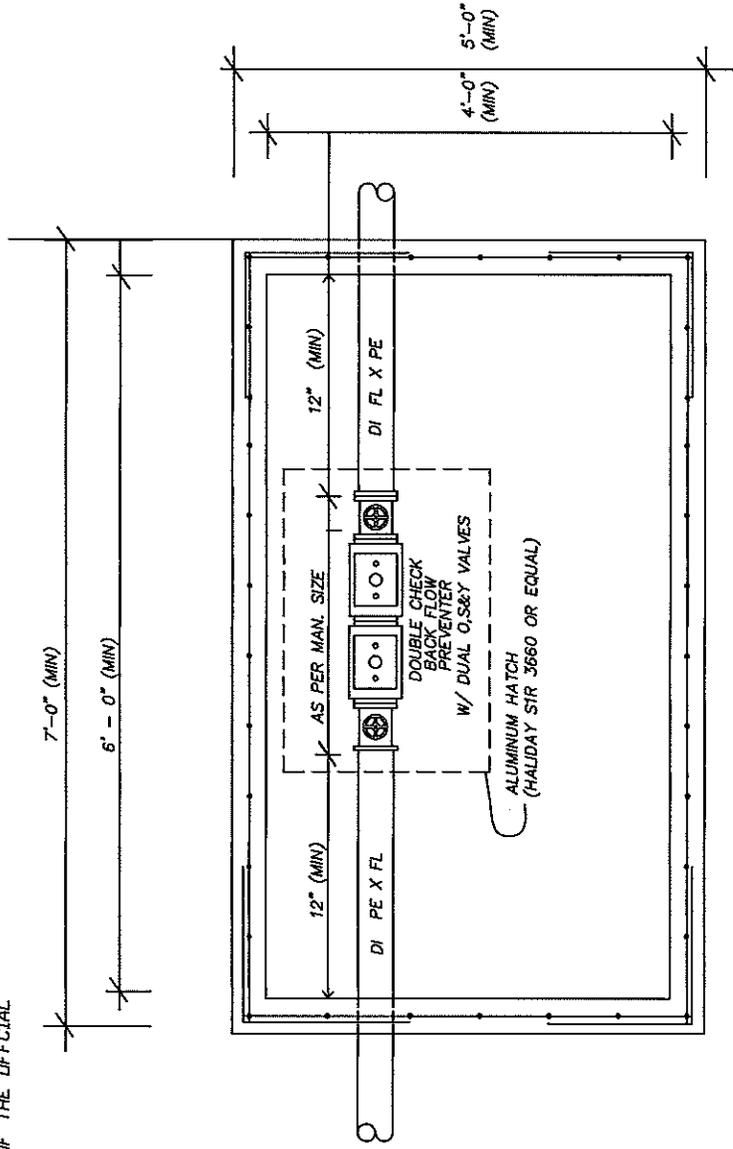
- a. Street locations with street names;
- b. Street address and Name of business or owner;
- c. Property line locations, with North arrow;
- d. Water pipe material type, size, and location;
- e. Location of proposed valves, pits, and backflow device or devices;
- f. Location of all proposed fire hydrants;
- g. Existing water line locations, sizes, and types of material;
- h. Detailed drawing of proposed water line tie-in to existing water mains;
- i. Standard pit details as contained herein.

**Section XI :**

**Standard Details**

ALL INSTALLATIONS ARE SUBJECT TO CHAPTER 50 OF THE OFFICIAL CODE OF ORDINANCES OF CALHOUN, GEORGIA

Codified through Ordinance No. 505, adopted December 19, 2011.



NOTE: ALL CONCRETE SHALL BE 6" THICKNESS & 3000 PSI

-REINFORCEMENT: CONCRETE SHALL BE REINFORCED W/ #4 REBAR @ 1' O.C. EACH WAY

-CORNER BARS: CORNER BARS SHALL BE #4 REBAR @ 1' O.C.

-ALL PIPE SHALL BE CLASS 350 DI

-ALL PIPE, FITTINGS, & BFP SHALL BE FULLY SUPPORTED

BY CONCRETE OR STEEL PIERS

-PIT DIMENSIONS MAY NEED TO BE GREATER. THE MINIMUM CLEARANCE

OF 12" EACH SIDE OF THE DEVICE CANNOT VARY!

- INSTALLATION AND MAINTENANCE ARE THE OWNERS RESPONSIBILITY

- ANNUAL TESTING BY CERTIFIED TESTER IS REQUIRED

- ALL RPZ TYPE BACK FLOWS SHALL BE INSTALLED ABOVE GROUND A MINIMUM OF 12" ABOVE GRADE AND NOT MORE THAN 36" ABOVE GRADE.

## DOUBLE CHECK BACKFLOW ASSEMBLY

### PLAN VIEW

## CITY OF CALHOUN

ENGINEERING/INSPECTION

DEPARTMENT

700 WEST LINE STREET

CALHOUN, GEORGIA 30701

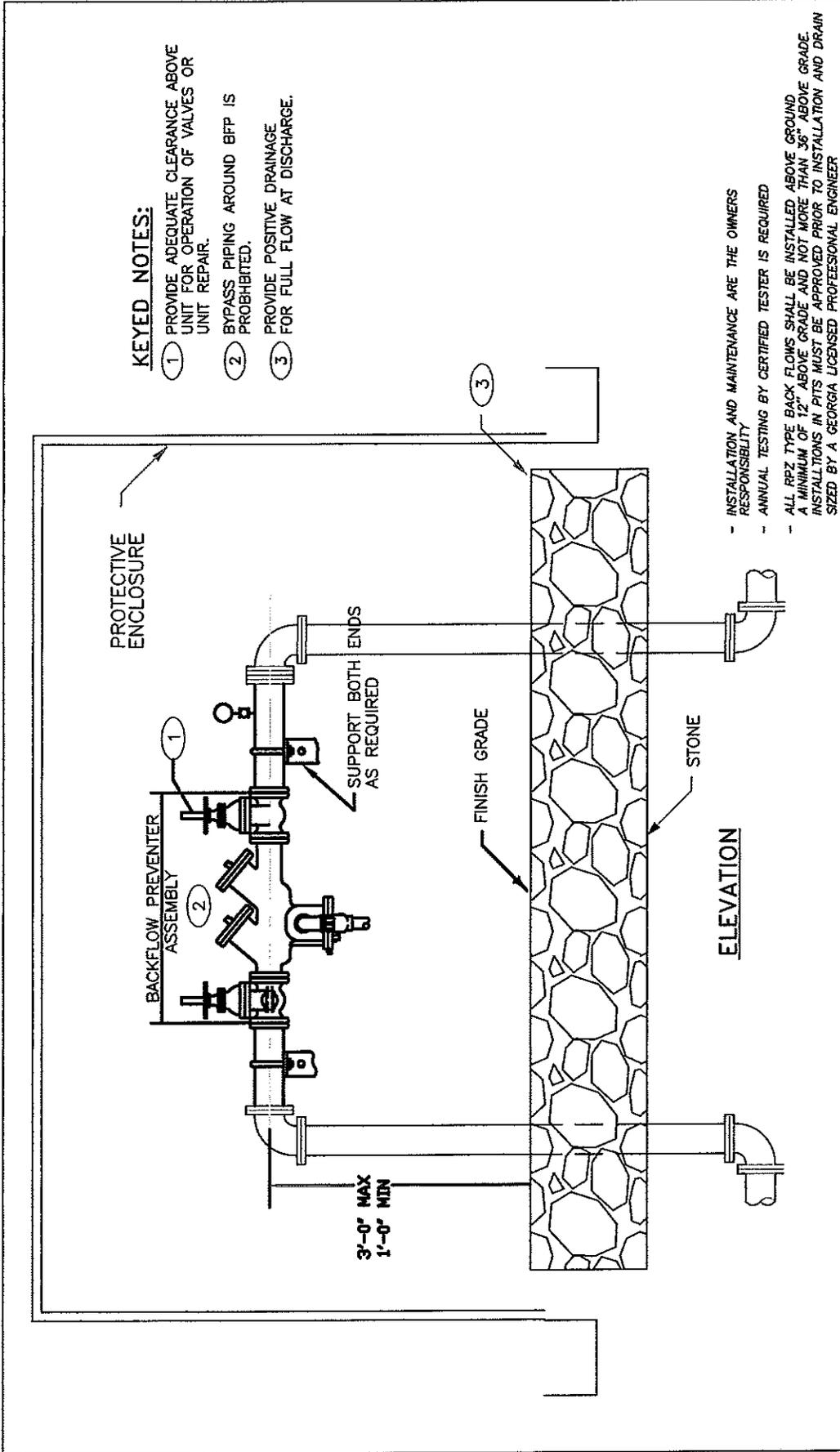
TELEPHONE (706) 602-6081

DRAWN BY: JGS

SCALE: NTS

DATE: Rev 3/17/14

DWG. NO.: PIT INSTALLATION DC BACKFLOW DEVICE



**KEYED NOTES:**

- ① PROVIDE ADEQUATE CLEARANCE ABOVE UNIT FOR OPERATION OF VALVES OR UNIT REPAIR.
- ② BYPASS PIPING AROUND BFP IS PROHIBITED.
- ③ PROVIDE POSITIVE DRAINAGE FOR FULL FLOW AT DISCHARGE.

- INSTALLATION AND MAINTENANCE ARE THE OWNERS RESPONSIBILITY
- ANNUAL TESTING BY CERTIFIED TESTER IS REQUIRED
- ALL RPZ TYPE BACK FLOWS SHALL BE INSTALLED ABOVE GROUND A MINIMUM OF 12" ABOVE GRADE AND NOT MORE THAN 36" ABOVE GRADE. INSTALLATIONS IN PITS MUST BE APPROVED PRIOR TO INSTALLATION AND DRAIN SIZED BY A GEORGIA LICENSED PROFESSIONAL ENGINEER

RPZ TYPE BACKFLOW DEVICE  
 3/4" TO 12"  
 PLAN VIEW

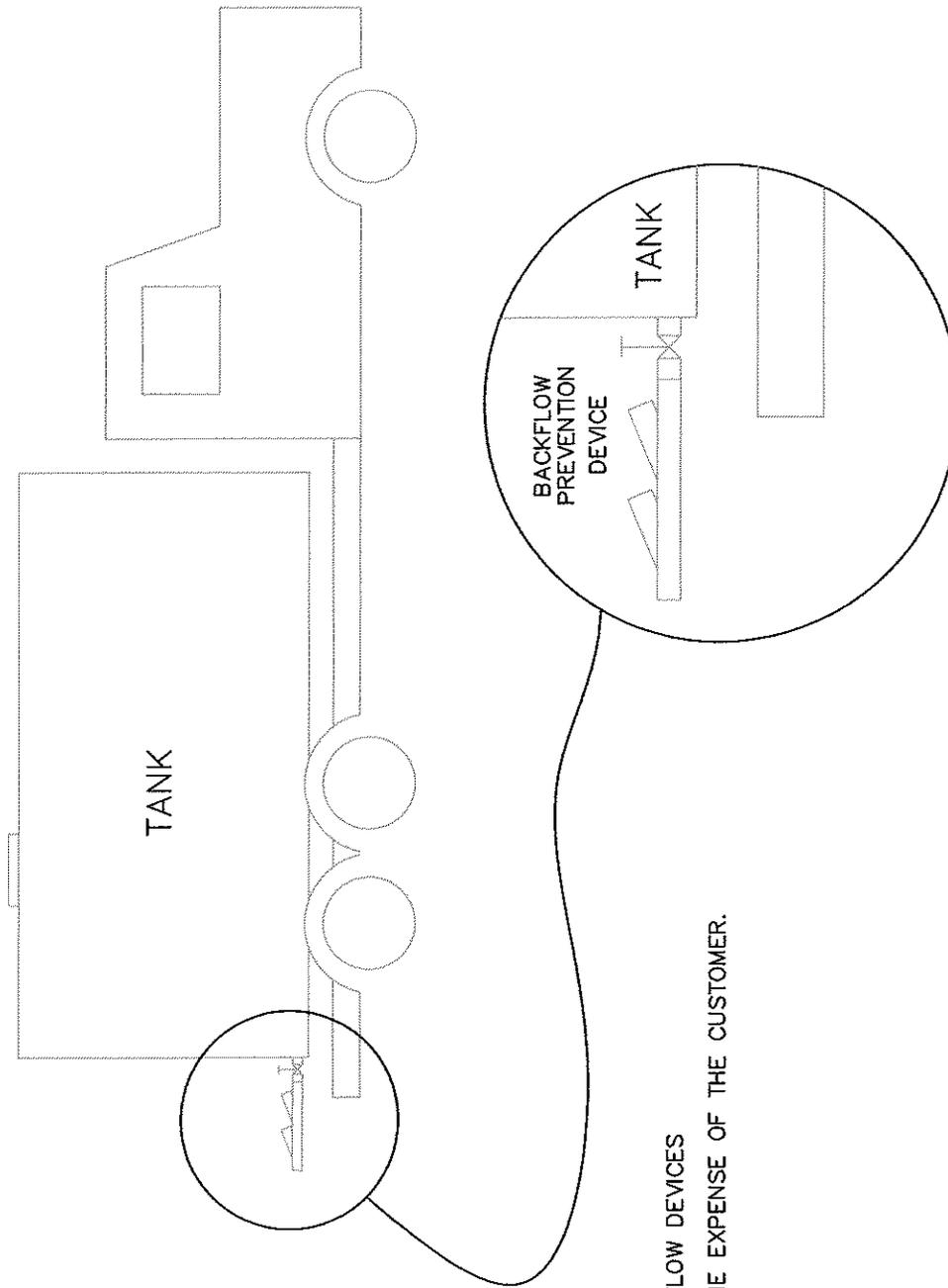
CITY OF CALHOUN  
 ENGINEERING/INSPECTION  
 DEPARTMENT  
 700 WEST LINE STREET  
 CALHOUN, GEORGIA 30701  
 TELEPHONE (706) 602-6081

DRAWN BY: JGS

SCALE: NTS

DATE: 9/25/2007

DWG. NO.: RPZ BACKFLOW DEVICE INSTALLATION

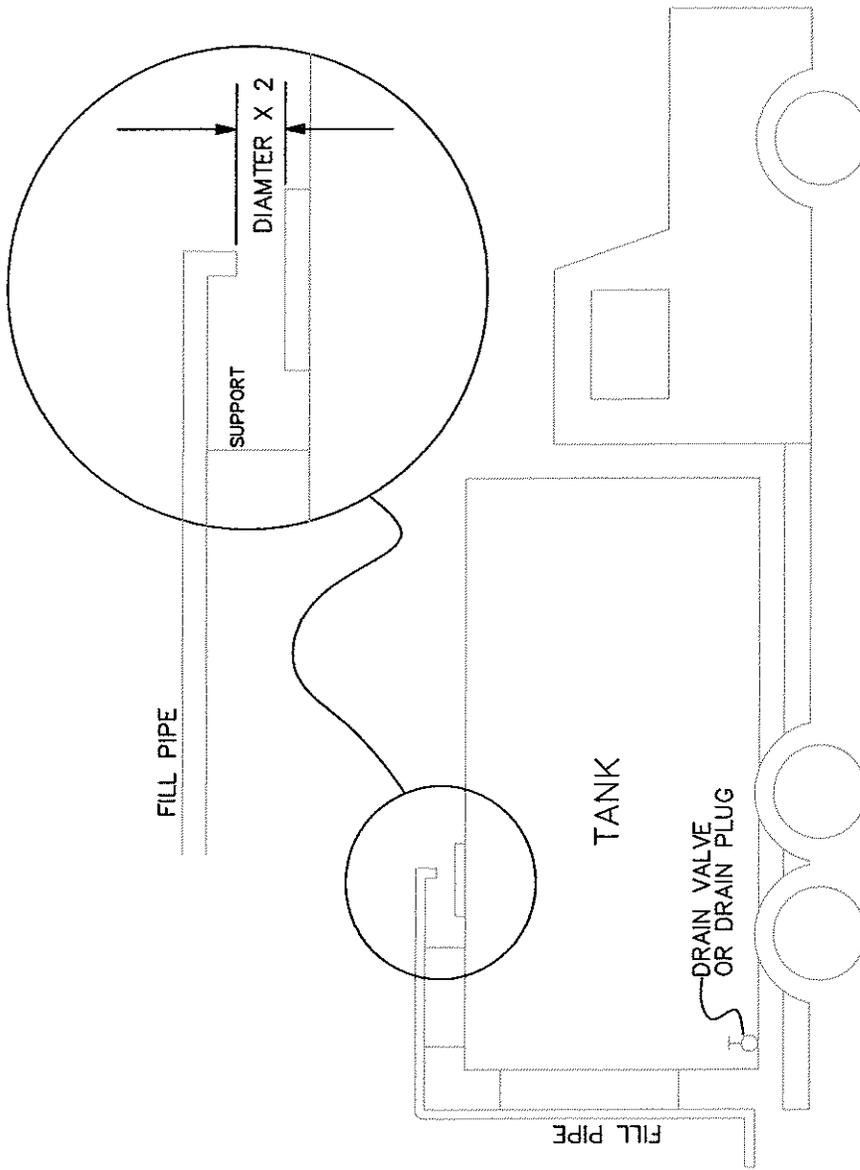


NOTE:  
 ALL BACKFLOW DEVICES  
 ARE AT THE EXPENSE OF THE CUSTOMER.

NOTE:  
 BACKFLOW DEVICE MUST BE INSTALLED BETWEEN DRAIN VALVE AND WATER SOURCE.  
 DEVICE SHALL BE A MINIMUM OF DC TYPE FOR CONSTRUCTION WATER USE.  
 DEVICE SHALL BE A MINIMUM OF RPZ FOR PESTICIDE, HERBICIDE, OR ANY CHEMICAL MIXING.  
 DC & RPZs MUST HAVE PROOF OF TESTING WITHIN THE LAST TWELVE MONTHS.

TANKER TRUCK BACKFLOW PREVENTION DEVICE ASSEMBLY DETAIL SHEET		CITY OF CALHOUN WATER DISTRIBUTION SYSTEM 700 West Line Street CALHOUN, GEORGIA 30701 TELEPHONE (706) 629-4701	
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DRAWN BY: N/A	SCALE: NTS	DATE: 9/06/04	DWG. NO.: AirGap
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NOTE:  
 FILL LINE AND DRAIN MUST NOT BE CONNECTED.  
 AIR GAP SHALL BE A MINIMUM OF TWICE THE DIAMETER  
 OF THE FILL LINE.

TANKER TRUCK  
 AIR GAP ASSEMBLY  
 DETAIL SHEET

CITY OF CALHOUN  
 WATER DISTRIBUTION SYSTEM

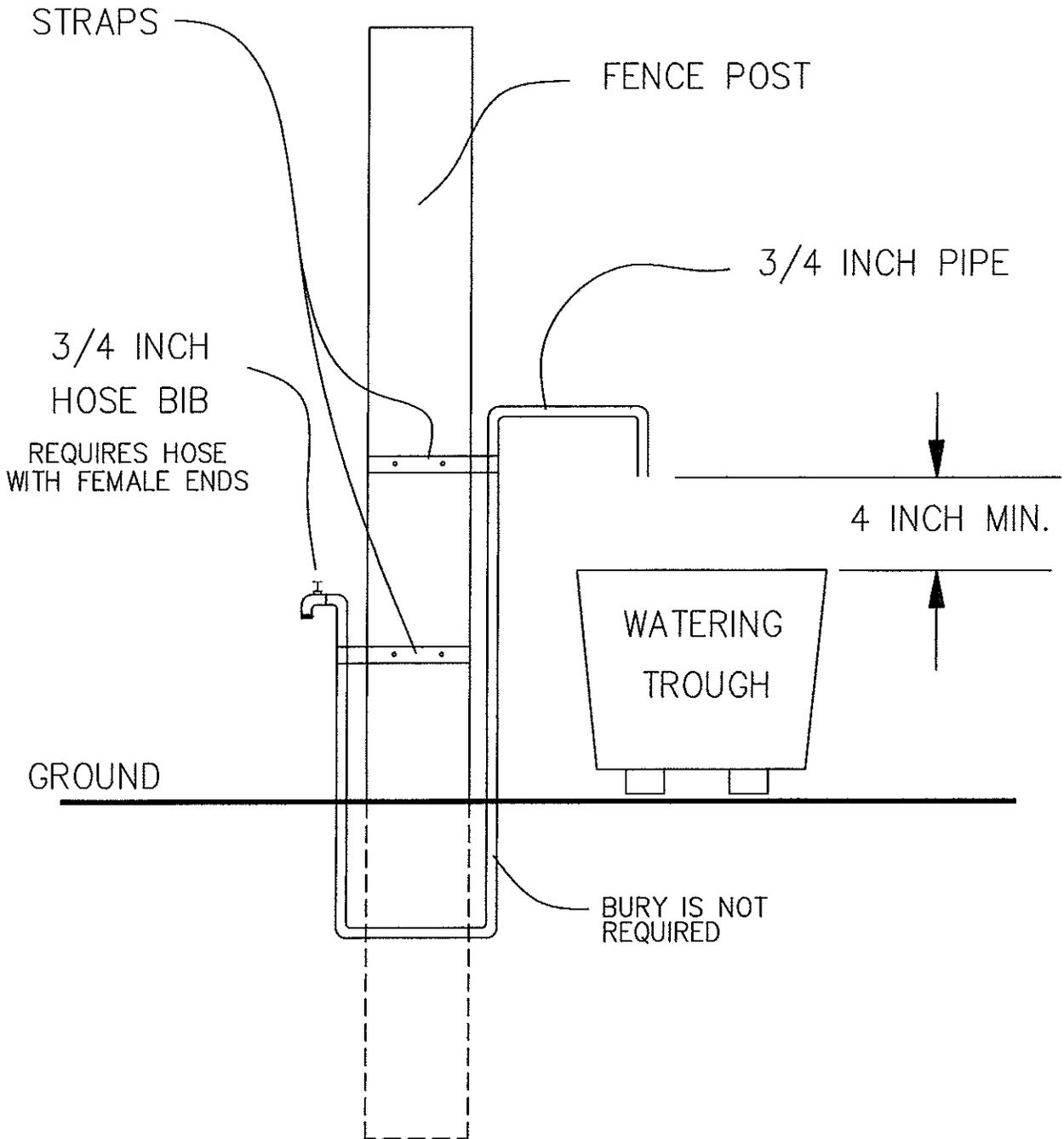
700 West Line Street  
 CALHOUN, GEORGIA 30701  
 TELEPHONE (706) 629-4701

DRAWN BY: N/A

SCALE: NTS

DATE: 9/06/04

DWG. NO.: AirGap



WATERING TROUGH  
AIR-GAP DETAIL

CITY OF CALHOUN  
CROSS-CONNECTION CONTROL  
700 WEST LINE STREET  
CALHOUN, GEORGIA 30701  
TELEPHONE (706) 629-4701

DRAWN BY: N/A

SCALE: NTS

DATE: 02/28/11

DWG. NO.: TROUGHAIRGAP

## Section XII :

# Emergency Procedures

Taken From the City of Calhoun ERP for Mauldin Road WTP/ Brittany Drive WTP

## Response Protocol for Distribution System Contamination by Accidental Cross-Connection

- Make notes of addresses of complaints of water quality or location of persons with illnesses.
- Notify Water Construction Superintendent for additional manpower.
- Stop all pumping stations, water plants and intakes.
- Close as many key distribution valves as possible.
- Notify your supervisor or the plant Superintendent immediately.
- Superintendent must notify the Water and Sewer Director and Utilities immediately.
- Isolate the facility and as much of the distribution system as possible.
- Turn off all meters in isolated area.
- Stop all inter datum transfers from the suspect section of the system.
- Stop all wholesale distribution.
- Notify all major industrial water users to stop operations.
- Identify cross-connection and eliminate.
- Begin flushing procedures and begin disinfection procedures.
- Chlorine gas or sodium hypochlorite may be used for disinfection.
- Conduct Sampling at designated sampling points.
- Public Notification- Only the following person (s) are authorized to make statements to the press, radio, television, etc. and shall be in charge of handling the emergency order listed:
  - 1) General Manager
  - 2) Water and Wastewater Director
  - 3) Designated agent (s)

## **Section XIII :**

# **Boil Water Advisory**

## **A Boil Water Advisory Is In Affect for Your Area!**

### **What is a Boil Water Advisory? Is it the same as a Boil Water Notice?**

A Boil Water Advisory (BWA) is a public statement advising customers to boil tap water before consuming it. Advisories are issued when an event has occurred allowing the possibility for the water distribution system to become contaminated. An advisory does not mean that the water is contaminated, but rather that it could be contaminated; because the water quality is unknown, customers should assume the water is unsafe to drink and take the appropriate precautions. An advisory is different from a Boil Water Notice, which is issued when contamination is confirmed in the water system. During a notice, all customers must boil their water before consuming it or use bottled water.

### **What should I do during a Boil Water Advisory or Notice?**

You should boil tap water vigorously for at least one full minute prior to using it for drinking or cooking (the minute starts when the water begins to bubble). This includes water used for brushing teeth, making ice, washing raw foods, preparation of drinks, and water for pets. Wait for the water to cool before using it, or store it in the refrigerator in a clean container. Boiling removes harmful bacteria in the water that may cause illness. You should throw away ice made during the time the advisory or notice was issued, as freezing does not kill bacteria.

After an advisory or notice has been lifted (if contamination of the water system did occur), you should flush household pipes, ice makers, water fountains, etc. prior to using for drinking or cooking. Flushing simply means letting the water run to ensure that no contaminated water remains in your pipes. Follow these guidelines for flushing:

- Run all cold water faucets in your home for one minute
- To flush automatic ice makers, make three batches of ice and discard
- Run water softeners through a regeneration cycle
- Run drinking water fountains for one minute
- Run water coolers with direct water connections for five minutes.

### **Do I still need to boil my water if I have a filter system on my faucet or refrigerator?**

Most point-of-use (POU) filters are designed to improve the aesthetics of water (improve taste and odor), not remove harmful bacteria. You can learn about the capability of your filter by contacting the manufacturer or [NSF International](#), an independent testing group located in Ann Arbor, Michigan (Ph. 1-800-673-8010). If in doubt, you should boil your water or use bottled water even if you have a filtering system.

### **Is the water safe for washing dishes, laundry, and bathing?**

The water is safe for washing dishes, but you should use hot, soapy water (you may add one tablespoon of bleach per gallon as a precaution) and rinse dishes in boiled water. There are no restrictions on doing laundry. The water is also safe for bathing during an advisory or notice; if the water is contaminated by a chemical that will cause harm on contact, City of Calhoun Water System will issue a **Do Not Use Notice**, meaning the water should not be used for bathing.

### **How long must a Boil Water Advisory or Notice be in effect?**

An advisory or notice will remain in effect until test samples show the water is safe to drink. Testing for bacteria requires 18-24 hours to complete, depending on the type of test used. The samples are incubated to actually grow bacteria, if any are present. As a result, advisories and notices will be in effect for at least 18-24 hours.

### **What are total coliform bacteria?**

Total coliform bacteria are a collection of microorganisms that live in large numbers in the intestines of humans and animals, as well as in most soils and surface water. A sub-group of these microorganisms is the fecal coliform bacteria, the most common member being E coli. These bacteria occur naturally in lakes and streams, but indicate that the water is contaminated with human or animal waste and therefore may pose a health risk to people who drink it. The water treatment process removes these bacteria from the water, but events such as a water main break or a loss of pressure in the water distribution system may allow these bacteria to enter water lines through cracks in pipes or back-siphoning from a residential plumbing system. Boiling water vigorously for one minute will kill these bacteria and make water safe to drink.

### **How will I be notified if my home/business is affected by an advisory or notice?**

By regulation, City of Calhoun Water System must follow certain public notification efforts, which include dissemination to media outlets, door-to-door notification, and any other means to notify water users.

### **Under what circumstances will the City of Calhoun Water System issue a Boil Water Advisory or Notice?**

The Georgia Department of Natural Resources, Environmental Protection Division regulates water utilities and specifies instances when an advisory or notice must be issued.

An *advisory* must be issued in the following instances:

- If untreated water reaches the distribution system
- Loss of pressure in the entire distribution system or a significant portion of the system
- A water main break where dirt and debris have entered the distribution piping
- After or during events of natural disasters where the integrity of the distribution system is in question.

A Boil Water *Notice* must be issued under the following circumstances:

- When test samples indicate the presence of total coliform bacteria.

These situations are not the only times when an advisory or notice should be issued. Specific situations, upon consultation with the Georgia Department of Natural Resources, Environmental Protection Division, may also require an advisory or notice.

### **How will I know when the advisory or notice has been lifted?**

The City of Calhoun Water System will issue a repeal of the advisory or notice when the water is safe to drink; stay tuned to radio and television stations for updates. City of Calhoun Water System will also post information on its web site and post an automated message on the Customer Service phone menu system, which can be access by dialing (706) 629-2758.

## Section XIV:

# **Emergency Contact Information City of Calhoun**

Utilities General Manager - Larry Vickery

Radio Number- Car 2

Office Phone - 602-6127 or 629-4701

Mobile - 770- 773-4866

Water and Wastewater Director – Jerry Crawford

Radio Number - 338

Office Phone - 602-6078

Mobile - 770-548-1282

Personal Mobile- 706-263-1993

Water Treatment Plant Supt. – Danny Stephens

Radio Number

Office Phone - 602-6063 or 602-6067

Mobile - 770-548-1816

Home Phone -706-629-1962

Water Treatment Plant Ass. Supt. – Ben Hall

Radio Number

Office Phone - 602-6066

Mobile - 770-548-0623

Home Phone -706-629-1674

Water Construction Supt. – Mark Williamson

Radio Number - 36

Office Phone - 602-6080

Mobile - 706-280-1623

Electric Department Supt.- Jeff Defoor

Radio Number

Office Phone - 602-6140

Mobile - 770548-4382

Home Phone – 629-1596

Telecommunications & IT Department Supt.- Brad Carrick

Radio Number

Office Phone - 602-6156  
Mobile - 770-548-0298  
Home Phone - 602-9254

WTP / WWTP Maintenance Supt. – Bobby Robertson  
Mobile - 706-280-4652  
Home Phone – 256-447-9358

## **Call 911 First**

City Administrator – Eddie Peterson

Radio Number Car 3  
Office Phone - 602-6025  
Mobile - 706-314-2484  
Home Phone – 625-8336

Police Department – 629-1234  
Police Chief - Gary Moss  
Office Phone 602-5750

Fire Chief – Lenny Nesbitt  
Office Phone - 602-5700  
Mobile - 706-280-5431  
Home Phone – 629-0809

Fire Station No.1 – 629-2244

Fire Station No. 2 – 602-5721

Fire Station No. 3 – 602-5731

Public Works Director- Kevin McEntire

Radio Number 69  
Office Phone – 602-6027  
Mobile - 770-578-0072  
Home Phone – 629-7823

Public Works after hours Pagers – 770-773-4217  
770-773-8072

Other City Departments which may be needed:

Wastewater Treatment Plant – 629-4969

City Hall – 629-0151

Line Street Annex – 629-4701

Calhoun City Schools – 629-2900

## **Gordon County**

### **Contact Information**

EPA LEPC

LEPC Name : Gordon County, GA

Address: 100 Nine One One Boulevard

Contact Person: Bill Miller

Phone: 706-602-2905

Internal LEPC ID Number GA 113

Gordon County EMA (Emergency Management Agency)

Director: Richard Cooper

Address: 870 Harris-Beamer Road  
Calhoun, GA

Phone: 706-602-2905

GEMA Area Coordinator : Tim Reeve Phone: 706-624-1399

Consequence Management : Ralph Reichert Phone: 404-635-7080

Hazard Mitigation Analysis and Risk Assessment: Paul Putnam  
Phone: 912-486-7942

9-1-1 Coordinator: Elaine Sexton  
Phone: 770-535-5490

Gordon County Fire Department – 629-2395

Gordon County Sheriffs Department – 706-879-2601

Gordon Hospital – 629-2895

Gordon County Road Department Supt. – Barry Hice

Office Phone – 629-2785

Mobile - 706-314-2822

Gordon County Schools- 629-7366

Gordon County Environmental Health – 624-1440

## **State and Federal Agencies**

### **Contact Information**

Environmental Protection Agency (EPA)

US EPA Region 4, Drinking Water Section – David Apanian

61 Forsyth Street, SW

Atlanta, GA 30303

Office Phone – 404-562-9477

Fax - 404-562-9439

US EPA Region 4, Drinking Water Section – Dale Froneberger

61 Forsyth Street, SW

Atlanta, GA 30303

Office Phone – 404-562-9446

Fax - 404-562-9439

#### **EPA Laboratory List:**

Web Address: [CDX.EPA.GOV](http://CDX.EPA.GOV) surveyforyou ws2fornow

**Water ISAC** -1-866-426-4722

Federal Bureau of Investigation (FBI) -706-866-2525 or 404-679-9000

Georgia Bureau of Investigation (GBI) – 404-244-2600 or 800-673-9213

Georgia State Patrol (GSP) – 624- 1477

Georgia Environmental Protection Division – 800-241-4113 or 404-656-4300

**Center for Disease Control – 1-800-232-4636**

[www.bt.cdc.gov/lrn](http://www.bt.cdc.gov/lrn)

**Association of Public Health Laboratories – 202-822-5227**

**National Response Center  
Toxic Chemical and Oil Spills – 800-424-8802**

Georgia Forestry Commission – 624-1432 (24 hours)

Poison Control Center – 800-282-5846

Georgia Department of Transportation (GDOT)  
District Six 770-387-3602  
Utility Inspector,  
Office Phone - 770-387-3680

## **Other Related Agencies**

### **Contact Information**

City of Rome Water Treatment Plant 706-236-4527

Norfolk Southern Railroad Police &  
Norfolk Southern Railroad Emergencies – 800-453-2530

CSX Transportation Police Department & Railroad Emergencies – 800-232-0144

Corp of Engineers Carters Lake – 706-334-2248  
706-334-2906

Georgia Power – 888-891-0938

North Georgia EMC – 629-3160

Atlanta Gas & Light AGL - 800-427-5463

## Sample letters

### First Contact

(Today's Date)

(Customer's Name)

(Customer's Mailing Address)

Re: Cross-Connection Control, Notice of Inspection

Dear (Customer Name),

Calhoun Utilities has, after extensive review, determined that the Cross-Connection Control Program and many of our customers are not meeting the requirements of Federal and State regulations regarding Cross-Connection and Backflow Prevention as stated in The Georgia Rules for Safe Drinking Water (391-3-5-.13(4) and PL 93-523 of the Federal Safe Drinking Water Act.

Our staff will be conducting inspections of each of our customer's potable water and fire sprinkler connections during the next few months. Please find the attached list of categories, one of which will pertain to your facility. If you already have backflow prevention devices in place, please evaluate them to make sure that the proper type is in place. Please note that the devices must be inspected and tested annually by a Georgia certified backflow tester. If you have not had your backflow prevention device or devices tested during the last twelve months, please arrange for testing and repairs (if needed) as soon as possible. The current city ordinance allows for fines for each day for non-compliance under Section 94-83. of the Code of Ordinances of Calhoun, Georgia. Proof of testing must be submitted to City of Calhoun Cross-Connection Control Program, 700 West Line Street, Calhoun, Georgia, 30701.

Our staff will schedule a date and time for the inspection.

During the inspection our personnel will provide you with updated information regarding the required documentation. This documentation is also available on our web site at [www.cityofcalhoun-ga.com](http://www.cityofcalhoun-ga.com).

Please call if you have questions.

Sincerely,

City of Calhoun Utilities  
Cross-Connection Control Program

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Jerry W. Crawford, Water & Wastewater Director

## Negative Inspection & Required Testing

(Today's Date)

(Customer's Name)

(Customer's Mailing Address)

Re: Cross-Connection Control, Notice of Inspection Results

Dear **(Customer Name)**,

The results of our **(date of Inspection)** inspection of your premise indicates that your backflow prevention devices currently installed are inadequate for the risk categorization of your service. You must have installed and test for proper operation a **(type of backflow preventer)** backflow prevention device not later than **(today's date = 30 days)**. A listing of qualified installers and testers may be found on our web site or may be obtained from the City of Calhoun, Utilities located at 700 West Line Street, Calhoun, Georgia, 30701.

The device must be tested annually and test results must be submitted via fax (706) 602-6079 or mailed to the address stated above, within a window of thirty days prior or thirty days after the anniversary date.

Failure to comply with this requirement will result in enforcement actions as determined within the City of Calhoun Code of Ordinances. A late charge of \$25.00 will be added to the water bill for each week of non-compliance up to four weeks beginning 30 days after due date. At the end of the four week period, if the location is found to be in non-compliance, the water services to that location shall be terminated without further notice.

Your cooperation is appreciated.

Thank You,

Sincerely,

City of Calhoun Utilities  
Cross-Connection Control Program

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Jerry W. Crawford, Water & Wastewater Director

# City of Calhoun Utilities

## Backflow Prevention Site Inspection Report

Inspection Date: \_\_\_\_\_

Name of Business: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: (     ) \_\_\_\_\_

Customer Acc. No. \_\_\_\_\_ Meter No. \_\_\_\_\_

Type of Business: \_\_\_\_\_

Size of service: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Print name

Is backflow protection in place for potable water service? Yes No (Circle One)

Is backflow protection in place for fire line service? Yes No (Circle One)

If yes, where is backflow device located?

In Pit Above Ground Inside Building (Circle One)

BFP Information: \_\_\_\_\_

Type

Manufacturer

Model

Risk Classification: High Medium Low BFP Last Tested \_\_\_\_\_

Current Type of BFP RPZ DC None Documentation of last test Yes No

Required Type of BFP RPZ DC None

Comments:

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Inspection By: \_\_\_\_\_



# City of Calhoun, Utilities

## Cross-Connection Control Program

### Backflow Prevention Assembly Test Form

Location of Assembly: \_\_\_\_\_ Premises Number: \_\_\_\_\_

Type: \_\_\_\_\_ Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_ Size: \_\_\_\_\_ Serial No.: \_\_\_\_\_

Name of Owner: \_\_\_\_\_

Service Address: \_\_\_\_\_

City, State & Zip Code: \_\_\_\_\_

Tester: \_\_\_\_\_ Certification No.: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Type of Service: \_\_\_\_\_ New Test  Recertification Test  Line Pressure: \_\_\_\_\_

Test Kit: \_\_\_\_\_ Serial No. \_\_\_\_\_ Calibration Date \_\_\_\_\_

NO. 1 CHECK VALVE	NO. 2 CHECK VAVLE	RELIEF VALVE	PRESSURE VACUUM BREAKER
<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight Diff Pressure Across Check Valve __. __PSID	<input type="checkbox"/> Leaked <input type="checkbox"/> Closed Tight Diff Pressure Across Check Valve __. __PSID	Opened at ____ . ____ PSID	Air Inlet ____ . ____ PSID <input type="checkbox"/> Did not open Check Valve ____ . ____PSID <input type="checkbox"/> Leaked
<input type="checkbox"/> Cleaned <input type="checkbox"/> Replaced: _____ _____	<input type="checkbox"/> Cleaned <input type="checkbox"/> Replaced: _____ _____	<input type="checkbox"/> Cleaned <input type="checkbox"/> Replaced: _____ _____	<input type="checkbox"/> Cleaned <input type="checkbox"/> Replaced: _____
Closed Tight at ____ . ____PSID	Closed Tight at ____ . ____PSID	Opened at ____ . ____PSID	Air Inlet ____ . ____PSID Check Valve ____ . ____PSID
Shut Off Valve #1 _____ Leaked      _____ Closed Tight		Buffer: _____	Shut Off Valve #2 _____ Leaked      _____ Closed Tight

Comments: \_\_\_\_\_

This Assembly:      \_\_\_\_\_ PASSED      \_\_\_\_\_ FAILED

I hereby certify that this data is accurate and reflects the proper operation and maintenance of the assembly.

\_\_\_\_\_  
(Signature of Licensed Tester and Date)

\*All Repairs must be made within 10 Business Days

City of Calhoun, Utilities, 700 West Line Street, Calhoun, Georgia 30701, Phone: (706) 629-4701 Fax (706) 602-6079