

AN ORDINANCE AMENDING CHAPTER 270, "WATER AND WASTEWATER", SEMINOLE COUNTY CODE, BY THE ADDITION OF PART 11, "SEMINOLE COUNTY CROSS-CONNECTION CONTROL PROGRAM"; PROVIDING FOR CODIFICATION IN THE SEMINOLE COUNTY CODE; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, in a previous revision of the Seminole County Land Development Code, certain sections of Appendix F of that Code containing the regulations pertaining to the Cross-Connection Control Program were inadvertently deleted from the Code; and

WHEREAS, the Cross-Connection Control Program is critical to the prevention of cross-connection hazards and other threats to the County's potable water supply and needs to be reinstated, appropriately, in the Seminole County Code; and

WHEREAS, the Board of County Commissioners of Seminole County hereby finds that this Ordinance is consistent with the objectives, goals and policies of Seminole County and is necessary for the public health, safety and welfare; and

WHEREAS, the Seminole County Home Rule Charter requires that an Economic Impact Statement be prepared to address the potential fiscal impacts and economic costs of this Ordinance upon the public and taxpayers of Seminole County and such Economic Impact Statement has been prepared and has been made available for public review and copying prior to the enactment of this Ordinance in accordance with the provisions of the Seminole County Home Rule Charter.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF SEMINOLE COUNTY, FLORIDA:

Section 1. Part 11, “Seminole County Cross-Connection Control Program”, of Chapter 270, “Water and Wastewater”, Seminole County Code, is hereby added to read as follows:

PART 11. SEMINOLE COUNTY CROSS-CONNECTION PROGRAM

Sec. 270.418. History. The American Water Works Association (AWWA) recognizes that the water purveyor has a responsibility to provide its customers at the service connection with water that is safe under all foreseeable circumstances. Thus, in the exercise of this responsibility the water purveyor must take reasonable precaution to protect the community distribution system from the hazards originating on the premises of its customers that may degrade the water in the community distribution system.

Cross-connection control and plumbing inspections on premises of its customers are regulatory in nature and should be handled through the rules, regulations and recommendations of the health authority or plumbing-code enforcing agencies having jurisdiction. The water purveyor, however, should be aware of any situation requiring inspection and/or re-inspections, necessary to detect hazardous conditions resulting from cross-connections. If, in the opinion of the utility, effective measures consistent with the degree of hazard have not been taken by the regulatory agency, the water purveyor should take such measures as he may deem necessary to ensure that the community distribution system is protected from contamination. Such action would include the installation of a backflow prevention assembly consistent with the degree of hazard, at the service connection, or discontinuance of the service.

In addition, customer use of water from the community distribution system for cooling or other purposes within the customer’s system and later return of the water to the community distribution system is not acceptable and is opposed by AWWA.

A cross-connection is defined in the rules of the Department of Environmental Protection (“DEP”), of the State of Florida, Chapter 62.550, Florida Administrative Code (“F.A.C”), as:

Any temporary or permanent connection between a public water system or customer’s potable water system and other system or source through which it is possible to introduce into any part of the public water system any substance other than the potable water that the public water system is supplying. A bypass arrangement, jumper connection, removable section, swivel or changeover device on any other temporary or permanent device through which, or because of which, backflow could occur are considered cross-connections. Cross-connections and the chance of backflow must be eliminated to prevent degrading the high quality of water that water purveyors strive to maintain.

Initially, the primary responsibility for safeguarding water quality on private property and eliminating cross-connection and preventing backflow was left to local health agencies and building and inspection departments. Beginning with the Safe Drinking Water Act, signed by President Ford on December 16, 1974, a chain of laws and regulations evolved that resulted in the State requirement (Florida Safe Drinking Water Act, Sections 403.850 403.864, Florida Statutes) for all the public water systems to have a Cross-Connection Control Program. Contained within the Rules of Department of Environmental Protection, Chapter 62-555, F.A.C. the State of Florida, on January 3, 1991, adopted the following policy:

“Community water systems shall establish a routine Cross-Connection Program to detect and prohibit cross-connections that create or may create an imminent and substantial danger to the public health. Such program shall be developed utilizing accepted practices of the American Water Works Association guidelines as set forth in AWWA manuals M14, “Backflow Prevention and Cross-Connection Control”, and “Cross-Connections and Backflow Prevention”,

latest edition. Upon discovery of a prohibited cross-connection, public water systems shall either eliminate the cross-connection by installation of an appropriate back flow prevention assembly acceptable to the Department or discontinue service until the contaminate source is eliminated.”

To comply with this mandate, the Seminole County Environmental Services Department, Utilities Operations Division, urges you to acquaint yourself with the Ordinance provisions presented in this Part. It is only through the education and commitment of our customers that we can control the hazards presented by cross-connections within our public drinking water supply. Seminole County stands behind this policy and its enforcement and will offer its assistance to all who share the responsibility of providing and maintaining safe water.

Sec. 270.419. Purpose. The purpose of the Cross-Connection Control Program (“Program”) is as follows:

(a) To protect the public potable water supply of Seminole County from the possibility of contamination; and

(b) To comply with all applicable Federal and State laws, rules and regulations, including, but not limited to, Chapter 62.555 F.A.C.

Sec. 270.420. Results of Noncompliance. Any person failing to comply with the Program or any part hereof shall be deemed in noncompliance. Service of water to any premise shall be subject to disconnection by the Utilities Operations Division if a backflow assembly required by law, rules, or regulations is not installed, tested and maintained, or if the Utilities Operations Division determines that a backflow prevention assembly has been removed or by-passed, or if unprotected cross-connections exist on the premises and there is inadequate backflow protection at the service connection. Water service shall not be restored until such

conditions or defects are corrected. All turn-off and turn-on service charges shall be paid by the consumer.

Sec. 270.421. Termination of Service.

(a) In emergency conditions as determined by the Utilities Operations Division, such as when contamination to the public potable water supply is occurring or the public potable water supply is in imminent danger of contamination, water service shall be disconnected immediately by the Utilities Operations Division without notification.

(b) If a violation of the Program exists, but does not create an emergency condition as determined by the Utilities Operations Division, water service shall be disconnected when the consumer has been duly notified of the violation and not corrected the problem within thirty (30) days of notice.

Sec. 270.422. Abbreviations.

<u>AG</u>	<u>Air Gap</u>
<u>ANSI</u>	<u>American National Standards Institute</u>
<u>ASSE</u>	<u>American Society of Sanitary Engineers</u>
<u>AVB</u>	<u>Atmospheric Vacuum Breaker</u>
<u>AWWA</u>	<u>American Water Works Association</u>
<u>BFP</u>	<u>Backflow Preventer or Backflow Prevention</u>
<u>CCC</u>	<u>Cross-connection Control</u>
<u>DCVA</u>	<u>Double Check Valve Assembly</u>
<u>DDCVA</u>	<u>Double Detector Check Valve Assembly</u>
<u>FAC</u>	<u>Florida Administrative Code</u>
<u>FDEP</u>	<u>Florida Department of Environmental Protection</u>
<u>HBVB</u>	<u>Hose Bibb Vacuum Breaker</u>
<u>Psi</u>	<u>Pounds per square inch</u>
<u>PVB</u>	<u>Pressure Vacuum Breaker</u>
<u>RDC</u>	<u>Residential Dual Check</u>
<u>RPZ</u>	<u>Reduced Pressure Zone Backflow Assembly</u>

<u>TREEO</u>	<u>Training, Research and Education for Environmental Occupations</u>
<u>USC/FCCHR</u>	<u>University of Southern California/Foundation for Cross-connection Control and Hydraulic Research</u>

9.42. Definitions.

Air Gap. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture, receptor, or other assembly and the flood level rim of the receptacle. These vertical, physical separations must be at least twice the diameter of the water supply outlet, never less than one (1) inch (25mm).

Approved. Accepted by the Seminole County Utilities Operations Division as meeting an applicable specification as cited herein or as suitable for the proposed use.

Auxiliary Water System or Supply. Any water supply on or available to the premises other than the purveyor's public water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source(s), including, but not limited to, a well, spring, river, stream, harbor, used waters, or industrial fluids. These waters may be contaminated or polluted, or may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

Backflow. The undesirable reversal of flow in a potable water distribution system as a result of a cross-connection.

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

Backflow Prevention Assembly or Backflow Preventer. An approved assembly that meets the design and performance standards of University of Southern California/Foundation for Cross-Connection Control and Hydraulic Research or the AWWA or the ASSE.

Backflow Prevention Assembly Tester. A certified tester approved by the Utilities Operations Division who is certified by the University of Florida TREEO Certification Program for BFP assembly testers or other USC/FCCHR or FDEP approved programs.

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

Contamination. An impairment of the potable water supply resulting from the introduction or admission of any foreign substance that degrades the quality and/or creates a health hazard.

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

Cross-connection Control by Containment. The installation of an approved backflow prevention assembly at the water service connection to any customer's premises where physically and economically unfeasible to find and permanently eliminate or control all actual or potential cross-connections within the customer's water system; or the installation of an approved backflow prevention assembly on the service line leading to and supplying a portion of a customer's water system where actual or potential cross-connections cannot be effectively eliminated or controlled at the point of cross-connection.

Double Check Valve Assembly. The approved double check valve assembly consists of two (2) internally loaded check valves, either spring loaded or internally weighted, installed as a unit between two (2) tightly closing resilient seated shutoff valves and fittings with properly

located resilient seated test cocks. This assembly shall only be used to protect against a non-health hazard (that is, a pollutant).

Fire Protection System. A system of piping and appurtenances designed for fire protection and in accordance with fire protection and engineering standards. The installation may include one or more water supplies.

Flood Level Rim. The edge of the receptacle from which water overflows.

Hazard - Degree of. The term is derived from an evaluation of the potential risk to public health and the adverse affect upon the potable water system. Establishing the degree of hazard is directly related to the type and toxicity of contaminates that could feasibly enter the public potable water system and can be classified as either a non-health or a health hazard.

Hazard – Health. An actual or potential threat of contamination to the public potable water system or the customer’s potable water system to such a degree or intensity that a danger to health exists.

Hazard – Plumbing. A plumbing type cross-connection in a customer’s potable water system that has not been properly protected by an approved air gap or an approved backflow prevention assembly.

Hazard - Non-Health or Pollutinal. A cross-connection or potential cross-connection involving any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable if introduced into the potable water supply.

Hazard – System. An actual or potential threat of severe damage to the physical properties of the public potable water system or the customer’s potable water system or of a pollution or contamination that would have a protracted effect on the quality of the potable water in the system.

Industrial Fluids System. Any system containing a fluid or solution that may be chemically, biologically or otherwise contaminated or polluted in a form or concentration, such as would constitute a health, system, pollution, or plumbing hazard, if introduced into a public potable water supply. This may include, but not be limited to: polluted or contaminated waters; all types of process waters and used waters originating from the public potable water system that may have deteriorated in sanitary quality; chemicals in fluid form, plating acids and alkalis; circulating cooling waters connected to an open cooling tower; and/or cooling towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters, including but not limited to, wells, springs, streams, rivers, bays, harbors, ease, irrigation canals or systems; oils, gases, glycerin, paraffins, caustic and acid solutions, and other liquid and gaseous fluids used in industrial or other purposes for fire fighting purposes.

Pollution. The presence of any foreign substance in water that tends to degrade its quality so as to constitute a non-health hazard or impair the usefulness of the water.

Premises Isolation. The prevention of backflow into a public water system from a customer's premises by installing a suitable backflow preventer (BFP) at the customer's service connection.

Reduced Pressure Zone Backflow Prevention Assembly. The approved reduced pressure principle backflow prevention assembly consists of two (2) independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and below the first check valve. These units are located between two (2) tightly closing resilient seated shutoff valves as an assembly and equipped with properly located resilient seated test cocks.

Residential Dual Check. A compact unit manufactured with two (2) independent spring actuated check valves. It may or may not have test cocks. See Rule 62-555.360, F.A.C.

Service Connection. The term service connection shall mean the terminal end of the public potable water system; that is, where the water purveyor loses jurisdiction and sanitary control over the water at its point of delivery to the customer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end or customer's side of the meter. Unprotected takeoffs from the service line ahead of any backflow prevention assembly or device located at the point of delivery to the customer's potable water system shall be prohibited.

Vacuum Breaker – Atmospheric. An approved vacuum breaker (non-pressure type) is a device designed for use where it will not be subject to static line pressure and consists of a float check, check seat and air inlet port. A shutoff valve immediately upstream may be an integral part of the device.

Vacuum Breaker – Pressure. An approved assembly which consists of an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve with properly located resilient seated test cocks and tightly closing resilient seated shutoff valves attached at each end of the assembly.

Water – Potable. Water from any source approved for human consumption by the health authority with jurisdiction over said source. Potable water is water of excellent quality intended for drinking, cooking and cleansing uses.

Water Purveyor. The term water purveyor shall mean the utility owner or operator of the public water system supplying an approved potable water supply to the public. The utility shall

operate pursuant to a valid permit from the F.D.E.P. The Seminole County Utilities Operations Division is the water purveyor for Seminole County.

Water Customer. The term water customer shall include any water system located on the water customer's premises, whether supplied by the public potable water system or an auxiliary water supply. The system may be either a potable water system or an industrial fluids system.

Water System or Water Supply - Public Potable. A water system, publicly or privately owned, operated as a public utility under a recent health permit to supply potable water. This system shall consist of the source facilities utilized in the production, treatment and storage of potable water and the distribution system used for delivery of potable water to the customer's system.

Water-Reclaimed. Water suitable, as a result of treatment of domestic wastewater, for a direct beneficial use or a controlled use that would not otherwise occur. Reclaimed water is also known as reuse water and is regulated pursuant to Chapter 62-610, F.A.C.

Water-Used. Any water supplied by a water purveyor from a public potable water system to a water customer after passage through the point of delivery and no longer under the control of the water purveyor.

Sec. 270.424. Hazard Review Process.

(a) Construction plans for a proposed facility or modifications to an existing facility shall be submitted to the Planning & Development Division of the Development Services Department at the time of application for the building permit, or, at a time of application for water service. The Utilities Operations Division's representative shall review the plans. Approval from the Utilities Operations Division must be obtained prior to the issuance of the Building

Permit or installation of new water service. Failure to comply with these requirements shall constitute a violation of the Program.

(b) Upon completion of the review process, the Utilities Operations Division shall designate the type of backflow prevention assembly to be used on the water service. The Utilities Operations Division shall further designate a hazard potential to describe deficiencies that must be corrected.

(c) Backflow prevention assemblies shall be installed according to the requirements of this Section.

Sec. 270.425. Effected Facilities.

(a) Plan review as defined in Section 270.424 shall be performed on all new commercial, industrial and multi-family facilities and existing facilities with proposed modifications at the time of application for the Building Permit.

(b) Existing commercial, multi-family and other residential customers with existing wells or alternate water sources available to their property or irrigation systems, or any customers who may reasonably be suspected to have a cross-connection to the County public water supply system, shall be inspected by the Utilities Operations Division. The owner/customer shall install an appropriate backflow prevention assembly as directed by the Utilities Operations Division.

(c) New water main construction shall be separated from the existing water system with the use of the temporary jumper connection as shown in Attachment A, Standard Detail Drawing A-13, which may be changed by Resolution as adopted from time to time by the Board. The backflow prevention assembly in the temporary jumper connection shall be tested according to the requirements of Part 11.

Sec. 270.426. Utilities Operations Division. The Utilities Operations Division is primarily responsible for protecting our public water system against backflow. This responsibility begins at the water supply source, includes the public water distribution system and ends at the point of water delivery to the customer's premises or system. The Utilities Operations Division protects its water systems against backflow by establishing the Cross-Connection Control Program and ensuring that proper backflow preventers are installed and maintained at service connections where appropriate.

Sec. 270.427. Building Official. The Seminole County Building Division has responsibility for overseeing and inspecting the customer's plumbing system and ensuring compliance with requirements of the Land Development Code and the Seminole County Code.

Sec. 270.428. Owner/Customer. The owner/customer's responsibility starts at the point of delivery from the public potable water system and includes the customer's water system. The owner/customer, at his or her own expense, shall install, operate, test and maintain approved backflow prevention assemblies, as directed by the Utilities Operations Division. The owner/customer shall maintain accurate records of tests and repairs made to backflow prevention assemblies and provide the Utilities Operations Division with copies of such records.

The records shall be on forms approved or provided by the Utilities Operations Division. In the event of accidental pollution or contamination of the public or owner/customer's premises, the owner/customer shall promptly take steps to confine further spread of pollution or contamination within the customer's premises, and shall immediately notify the Utilities Operations Division of the hazardous conditions.

Sec. 270.429. Backflow Prevention Device Installers.

(a) The installer's responsibility is to properly install backflow prevention assemblies in accordance with this Section, the manufacturer's installation instructions and any additional instructions required by the Utilities Operations Division.

(b) The installer is also responsible to ascertain whether an assembly is working properly when installed and is required to furnish the following information to the Utilities Operations Division immediately after a reduced pressure zone backflow assembly (RPZ), double check valve assembly (DCVA) or pressure vacuum breaker (PVB) is installed: (1) service address where device is located; (2) owner; (3) description of device's location and size; (4) date of installation (5) type of device; (6) manufacturer; (7) model number; (8) serial number; (9) water meter number; and (10) utility account number. All RPZ, DCVA and PVB assemblies are required to be tested immediately following installation by a certified backflow assembly tester approved by the Utilities Operations Division.

Sec. 270.430. Existing Facilities.

(a) All premises where cross-connections have the potential to occur shall be evaluated by the Utilities Operations Division to determine if a detailed inspection shall be required.

(b) The owner/customer of a premise which the Utilities Operations Division determines needs an inspection shall be notified thirty (30) days in advance to secure an appointment for inspection of the premises. If the facility is deemed to be in an emergency situation, "Emergency Procedures" as outlined Section 270.432 herein shall be followed. The owner/customer or his authorized representative shall accompany a representative from the Utilities Operations Division during the inspection of the premises.

(c) An inspection form will be completed by the Utilities Operations Division representative and signed by the owner/customer or his representative.

(d) The owner/customer shall be informed of any corrective measures to be made. The Utilities Operations Division shall send a letter of notification to the owner/customer indicating what corrective measures must be taken, the type of device to be installed and the time limit for the installation.

(e) Upon compliance with the requirements set forth in the notification letter, the owner/customer shall immediately notify the Utilities Operations Division to schedule a date for re-inspection.

(f) If the owner/customer refuses to permit an inspection, either internal or external, to the building, the owner/customer shall, within thirty (30) days after notification by the County, install and test a reduced pressure backflow preventer on the water service. The resulting test shall be submitted to the County within twenty-four (24) hours of test completion.

(g) Existing commercial, industrial, multi-family and single family irrigation systems shall comply with this Section, either by retrofitting a device of a type approved by the Division, or by replacement of an existing device, if necessary.

Sec. 270.431. Facilities.

(a) Each commercial, industrial or multi-family facility applicant for water service shall be required to comply with this Section.

(b) Applicants for water service to new single family residences may be screened for potential cross-connections to the County's water system and, if such potential conditions exist, shall be subject to this Section.

(c) If the Utilities Operations Division determines that a potential cross-connection exists, the Utilities Operations Division shall establish a hazard level commensurate with the degree of that hazard level utilizing AWWA standards as minimum guidelines. The Utilities Operations Division shall require the installation of a specific type of backflow prevention assembly for the premises.

(d) The Utilities Operations Division may send a letter of notification to the new applicant for water service, or the requirements may be noted on approved construction plans indicating what backflow prevention measures must be taken, the type of assembly to be installed, and the time limit for the installation.

(e) The Utilities Operations Division may notify the new applicant for water service in writing and arrange a meeting to discuss the requirements for backflow prevention. Procedures for inspection of the backflow prevention assembly shall be discussed at this meeting.

Sec. 270.432. Emergency Procedures. In the event a cross-connection is discovered or a water meter is found running steadily backwards, the County's potable water system shall be assumed to be in imminent danger of contamination, and the following procedures shall be instituted:

- (a) Shut off the water to the premises and, if possible, remove the water meter.
- (b) Immediately call the Seminole County Utilities Operations Division.
- (c) The Utilities Operations Division shall immediately report to the affected area, confirm the area is contaminated and isolate the water system within the area.
- (d) The Utilities Operations Division shall immediately notify the State of Florida, Department of Health local office and the F.D.E.P., Orlando Branch Office.

(e) The Utilities Operations Division shall take water samples at various stations within and without the isolated area of the water system to determine the extent of the contamination.

(f) The Utilities Operations Division shall provide a written report to FDEP and the State of Florida Department of Health local office within thirty (30) days after discovery of the backflow incident as set forth in Chapter 62-550, F.A.C.

Sec. 270.433. Frequency of Inspections. Water use requirements require revision due to improved models or components of equipment, methods of manufacturing or additions to plants and buildings. As a result, new cross-connections may be installed and existing protection may be by-passed, removed, or otherwise rendered ineffective. Therefore, the Utilities Operations Division may require an annual detailed inspection by the owner/customer or by an authorized representative of the Utilities Operations Division.

Sec. 270.434. Inspection of Existing Facilities. Duly authorized employees or agents of the Utilities Operations Division shall be permitted to enter upon the premises for the purpose of sampling or testing the potable water supply or inspecting or observing connections to the potable water supply. If the Utilities Operations Division's authorized employees or agents are not permitted to enter the premises to inspect or observe, the owner/customer shall be required to install a Reduced Pressure Zone Backflow Prevention Assembly. Failure to install the required device within thirty (30) days of receipt of notice from the Utilities Operations Division shall constitute noncompliance with this Section.

Sec. 270.435. Inspection of Newly Constructed Facilities. Upon making application for water service and prior to connection to the County's water system, the owner/customer or his agent shall have obtained the appropriate building permit, installed the correct backflow

prevention assembly as determined by the Utilities Operations Division and obtained an inspection by the Utilities Operations Division and/or the Building Department to determine compliance with the Program. The Utilities Operations Division shall not establish water service until the owner/customer complies with this Section.

Sec. 270.436. Inspection of Reclaimed Water Facilities. The Utilities Operations Division shall inspect commercial/industrial premises using reclaimed water on an annual basis, and residential premises will be inspected every three (3) years. Inspections shall be performed to ensure compliance with Chapters 62-610 and 62-555, F.A.C. These periodic inspections shall serve to detect any cross-connections between the reclaimed water system and the public potable water system.

Sec. 270.437. Degree or Type of Hazard. The following table lists various BFP assemblies and the types of hazards and backflow conditions a particular assembly will protect against.

<u>Types of BFP Assemblies</u>	<u>AG</u>	<u>RPZ</u>	<u>DCVA</u>	<u>PVB</u>	<u>AVB</u>	<u>Type of Degree of Hazard</u>
<u>Back Pressure</u>	<u>X</u>	<u>X</u>	<u>X</u>			<u>Non Health</u>
	<u>X</u>	<u>X</u>				<u>Health</u>
<u>Back Siphonage</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Non Health</u>
	<u>X</u>	<u>X</u>		<u>X</u>		<u>Health</u>

Sec. 270.438. Premise Isolation. An approved BFP assembly of the type designated shall be installed at each water service connection to the following list of premises. This list is presented as a guide and is not intended to be complete. The Utilities Operations Division Manager or designee may require a device providing a higher level of protection if, in the opinion of the Utilities Operations Division Manager, conditions warrant added protection. All residential customers will have a residential dual check installed on the meter serving the

customer's premises unless a higher level of protection is required by the Utilities Operations Division. This is to provide added protection for the distribution system.

<u>Premise Description</u>	<u>Assessment of Hazard</u>	<u>Required Assembly at Potable Service Connection</u>
<u>Apartment with fire hydrant, blowoff, pool or irrigation system</u>	<u>Health</u>	<u>RPZ</u>
<u>Brewer, Distillery</u>	<u>Health</u>	<u>RPZ</u>
<u>Car Wash with reclaimed water, recycling system and/or Wax Educator</u>	<u>Health</u>	<u>RPZ</u>
<u>Chemical Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Commercial Laundry</u>	<u>Health</u>	<u>RPZ</u>
<u>Dairy</u>	<u>Non-Health</u>	<u>DCVA or RPZ</u>
<u>Dentist or Doctor Office</u>	<u>Health</u>	<u>RPZ</u>
<u>Dock and Dockside facility</u>	<u>Health</u>	<u>RPZ</u>
<u>Fertilizer Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Film Laboratory or Processing Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Food and Beverage Processing Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Hospital, Clinic, Mortuary, Laboratory or Medical Facility*</u>	<u>Health</u>	<u>RPZ</u>
<u>Irrigation System</u>	<u>Health</u>	<u>RPZ or PVB</u>
<u>Irrigation System with Chemical Injector</u>	<u>Health</u>	<u>RPZ or Air Gap</u>
<u>Machine Tool Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Master Metered Strip Shop and Mall</u>	<u>Health or Non Health</u>	<u>RPZ</u>
<u>Individually Metered Store and Business in Commercial Strip and Mall</u>	<u>Health or Non Health</u>	<u>RPZ</u>
<u>Metal Processing Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Metal Plating Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Nursing Home</u>	<u>Health</u>	<u>RPZ</u>
<u>Packing House or Rendering Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Paper Products Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Pesticide, Herbicide or Exterminating Company **</u>	<u>Health</u>	<u>PVB overhead fill or AG overhead fill</u>

<u>Petroleum Processing Plant or Storage Facility</u>	<u>Health</u>	<u>RPZ</u>
<u>Pharmaceutical or Cosmetic Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Pleasure-Boat Marina</u>	<u>Health</u>	<u>RPZ</u>
<u>Power Plant or Steam Plant</u>	<u>Non Health</u>	<u>RPZ</u>
<u>Premise where inspection is restricted</u>	<u>Health</u>	<u>RPZ</u>
<u>Radioactive Material Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>Reclaimed Water System (Commercial); BFP to be installed on potable water line</u>	<u>Health</u>	<u>RPZ</u>
<u>Restaurant with Soap Educator and/or Industrial Type Disposal</u>	<u>Health</u>	<u>RPZ</u>
<u>Sand and Gravel Plant</u>	<u>Health</u>	<u>RPZ</u>
<u>School</u>	<u>Health</u>	<u>RPZ</u>
<u>Shopping Center</u>	<u>Health or Non Health</u>	<u>RPZ</u>
<u>Storm Water Pumping Station</u>	<u>Health</u>	<u>RPZ</u>
<u>Swimming Pool with Piped Fill Line</u>	<u>Health</u>	<u>AG at pool or RPZ</u>
<u>Tall Building (over three stories)</u>	<u>Health or Non Health</u>	<u>RPZ</u>
<u>Veterinary Establishment</u>	<u>Health</u>	<u>RPZ</u>
<u>Wastewater Pumping Station</u>	<u>Health</u>	<u>RPZ</u>
<u>Wastewater Treatment Plant or Reclaimed Storage Plant</u>	<u>Health</u>	<u>RPZ</u>

* See Sec. 270.439

** See Sec. 270.440

In addition to and including those types of premises listed above, an approved backflow prevention assembly of the type designated shall be installed on each potable water service connection to any premises containing the following real or potential hazards. The Utilities Operations Division Manager may require an assembly providing a higher level of protection if, in the opinion of the Utilities Operations Division Manager, conditions warrant added protection.

<u>Premises with an auxiliary water system not connected to public water system</u>	<u>RPZ</u>
<u>Premises with a water storage tank, reservoir, pond, or similar appurtenance</u>	<u>RPZ</u>
<u>Premises with a steam boiler, cooling system, or hot water heating system with chemical water conditioners</u>	<u>RPZ</u>
<u>Premises with submerged inlets to equipment</u>	<u>RPZ</u>
<u>Premises with self-draining yard hydrants, fountains, hose boxes, or similar devices presenting a health, or system hazard (i.e., chemical storage plants, tank farms, bulk storage yards)</u>	<u>RPZ</u>
<u>Single-family residences using reclaimed water; BFP to be installed on potable water line</u>	<u>RDC</u>

Sec. 270.439. Installations Requiring Continuous Service: Parallel Installation.

(a) All backflow prevention assemblies with test cocks are required to be tested with a minimum frequency of once per year. Testing requires a water shutdown usually lasting five (5) to twenty (20) minutes. For facilities requiring an uninterrupted supply of water or, if not possible to provide water service from two (2) separate meters, provisions shall be made for a “parallel installation” of backflow prevention assemblies.

(b) Multi-story buildings with flushometer toilets shall be equipped with parallel assemblies. Experience has shown when the water supply is shut off of building, flushometers may have to be manually reset. During testing one (1) assembly remains on while the other is tested. Usually the two (2) assemblies are one (1) assembly size smaller than the service line, e.g., one (1) two-inch assembly or two (2) 1½-inch assemblies, one (1) 8-inch assembly or two (2) 6-inch assemblies.

Sec. 270.440. Exterminating Companies. All tanks, tank trucks, and spraying apparatus used to convey pesticides in an extermination process shall use only “designated-protected” potable water fill locations. Filling with potable water at unspecified locations or private residences is prohibited. All filling locations shall consist of over-head piping arrangements with correctly installed pressure vacuum breakers and/or air gaps. If for any reason

an overhead piping arrangement cannot be used, a reduced pressure zone backflow preventer shall be installed on the fill line. All filling locations and methods of backflow prevention and types of assemblies used must be approved by the Utilities Operations Division.

Sec. 270.441. Fire Systems.

(a) *Type of Backflow Protection Required - Fire Protection Service.* An approved backflow prevention assembly of the type designated shall be installed on each fire protection service to any premises where the fire protection system contains any of the following components unless the Utilities Operations Division determines that no real or potential hazard to the public water system exists. Fire systems may be divided into six (6) general classes. The following are typical:

	<u>Recommended Assembly</u>
<u>Class 1</u>	
<u>Direct connections from public water mains only; no pumps, tanks, or reservoirs; no physical connection from other water supplies; no antifreeze or other additives of any kind; all sprinkler drains discharging to atmosphere, dry wells, or other safe outlets.</u>	<u>DCVA or DDCVA</u>
<u>Class 2</u>	
<u>Same as Class 1 except that booster pumps may be installed in the connections from the street mains (booster pumps do not affect the potability of the system). It is necessary, however, to avoid drawing so much water that pressure in the water main is reduced below twenty (20) psi.</u>	<u>DCVA or DDCVA</u>
<u>Class 3</u>	
<u>Direct connection from public water supply mains, plus one or more of the following: elevated storage tanks; fire pumps taking suction from above ground covered reservoirs, or tanks; and pressure tanks. (All storage facilities are filled or connected to public water only, the water in the tanks are to be maintained in a potable condition. Otherwise, Class 3 systems are the same as Class 1.)</u>	<u>DCVA or DDCVA</u>

<u>Class 4</u>	
<u>Directly supplied from public mains, similar to Class 1 and Class 2, with an auxiliary water supply dedicated to fire department use and available to the premises, such as an auxiliary supply located within one thousand seven hundred (1,700) ft. (518m) of the pumper connection.</u>	RPZ
<u>Class 5</u>	
<u>Directly supplied from public mains and interconnected with auxiliary supplies, such as pumps taking suction from reservoirs exposed to contamination, or rivers and ponds; driven wells; mills or other industrial water systems; or where antifreeze or other additives are used.</u>	RPZ
<u>Class 6</u>	
<u>Combined industrial and fire protection system supplied from the public water mains only, with or without gravity storage or pump suction tanks.</u>	RPZ

(b) Special Considerations for Fire Systems or Fire Fighting Equipment.

(1) Pressure in the public potable water main shall not be reduced below twenty (20) psi as a result of fire fighting activities.

(2) Foam trucks or fire-fighting vehicles shall not be able to contaminate the public potable water supply. Necessary precautions shall be taken and BFP assemblies should be used where feasible.

(3) Pressure loss across BFP assemblies can be as much as fourteen (14) psi. The design of new fire systems should incorporate this pressure loss. Existing fire systems retrofitting BFP assemblies should determine if pressure loss across the BFP assembly will cause the fire system to become ineffective or non-functional for fire fighting activities.

Sec. 270.442. Other Cross-Connection Hazards.

(a) (1) Fixture Inlets or Valved Outlets. Hose attachments which may constitute a cross-connection shall be protected by the proper approved vacuum breaker (AVB, HBVB, etc.) installed at least six (6) inches to twelve (12) inches above the highest point of usage and

located on the discharge side of the last valve. Fixtures with an integral vacuum breaker manufactured as a unit may be installed in accordance with approved requirements.

(2) *Air Condition Cooling Tower.* A reduced pressure zone backflow preventer shall be attached to the potable water inlet.

(3) *Aspirators and Ejectors.* Shall have an AVB or PVB, depending upon the degree of hazard, on the faucet from which these devices are attached or operated.

(4) *Booster Pumps.* Interconnection shall not be permitted unless written approval is received from the Utilities Operations Division Manager or his designee.

(5) *Private Wells.* Interconnection shall not be permitted unless written approval is received from the Utilities Operations Division Manager or his designee.

(6) *Portable Spray and Cleaning Equipment.* Any portable pressure spray or cleaning units with the capacity to connect to any potable water supply and not containing a built-in approved air gap shall be fitted with an RPZ.

(7) *Miscellaneous Uses of Water From Fire Hydrants.* The operation of fire hydrants by other than authorized personnel is prohibited. The Utilities Operations Division may permit use of water from a fire hydrant for construction or other purposes provided the applicant shall properly apply for, and comply with, backflow requirements on a hydrant use permit.

(8) *Vacuum Breakers.* Those designed to prevent collapse or implosion of a steam-heated pressure vessel when cooled shall not be acceptable devices for protection against backflow in potable water lines.

(b) Any device, equipment, or situation not covered by this Section constituting a potential health hazard shall be examined for further appropriate treatment by the Utilities Operations Division.

Sec. 270.443. Inspections, Testing; Frequency. It shall be the responsibility of the owner/customer at any commercial/industrial premises where RPZ, DCVA and PVB are installed to have inspections and operational tests performed at least once a year and more often in those instances where inspections indicate otherwise. These inspections and tests shall be at the expense of the owner/customer and be performed by a Certified Backflow Prevention Assembly Tester. The Utilities Operations Division shall notify the owner/customer when tests are required and provide information regarding the tester forms. The owner/customer of the Certified Backflow Prevention Assembly Tester on behalf of the owner/customer, shall complete and return tester forms to the Utilities Operations Division by the date indicated. Residential customers, as part of the rate structure, will have their assemblies tested/repaired by the County. Replacement of assembly will be the residential customer's responsibility if the assembly cannot be repaired.

Sec. 270.444. Annual Testing.

(a) Testing shall be required on all backflow prevention assemblies. All testing shall be performed by a Certified Backflow Prevention Assembly Tester.

(b) All backflow prevention assemblies shall be tested a minimum of once every twelve months. If the Utilities Operations Division determines that a backflow prevention assembly is used in extremely high hazard applications or has a history of frequent failure, the Utilities Operations Division may require that the device be tested more often.

(c) The first annual testing shall be performed at the time of installation. Existing installations that have not had a first annual test performed shall be tested within the time period specified in the notification by the Utilities Operations Division.

(d) Subsequent annual tests shall be required by the owner/customer of a backflow assembly within thirty (30) days of notification by the Utilities Operations Division.

(e) In cases of noncompliance with the BFP assembly testing requirements contained in this Section, the Utilities Operations Division Manager may test or have tested, at the owner/customer's expense, any BFP assembly located on the owner/customer's premises.

(f) At its option, the Utilities Operations Division may annually test and/or repair or have tested and/or repaired, at the industrial/commercial owner/customer's expense, privately owned BFP assemblies in the Seminole County Water Service Area.

(g) The Utilities Operations Division shall notify the owner/customer that the water will be turned off during the testing procedure.

Sec. 270.445. Repair and Maintenance.

(a) The industrial/commercial owner/customer shall be responsible for repairs necessary to maintain good working condition of the backflow prevention equipment. Repair of the backflow prevention equipment shall be in accordance with Florida law, the County plumbing code and the manufacturer's instructions. Residential repairs will be the responsibility of the County.

(b) After repair of any BFP assembly, the assembly shall be tested by a Certified Backflow Prevention Assembly Tester. The Certified Backflow Prevention Assembly Tester shall determine the satisfactory repair and compliance of the backflow prevention equipment with these standards. An affirmation of compliance by the Certified Backflow Prevention Assembly Tester shall be provided to the Utilities Operations Division within ten (10) days of completion of such repairs.

(c) The industrial/commercial owner/customer of a backflow prevention assembly which fails a test or does not meet the standards of the Program shall repair, alter or replace the backflow prevention assembly to meet such standards. The industrial/commercial owner/customer shall have thirty (30) days from the date of the inspection report to correct any deficiencies or problems with the backflow prevention assembly.

(d) In cases of noncompliance with the BFP assembly repair requirements contained in this Section, the Utilities Operations Division Manager may repair or have repaired, at the owner/customer's expense, any BFP assembly located on the owner/customer's premises.

(e) The painted exterior surfaces of BFP assemblies, including valves and piping, shall be maintained in good condition without evidence of chipping, peeling and other deformations of the coating.

(f) BFP assemblies located on industrial/commercial customer's premises shall be painted as set forth in the Seminole County Building Code.

(g) BFP assemblies installed on fire systems lines on the customer's premises shall be painted as set forth in the Seminole County Building Code.

(h) Test cocks and identification tags on BFP assemblies shall not be painted.

Sec. 270.446. Records. The Utilities Operations Division shall retain all records of tests, inspections, surveys and repairs as required by Chapter 119, Florida Statutes, and Chapter 62-550, F.A.C. Records of numbered backflow devices, containing location, type, size, use, model and serial number of each device shall be cross referenced with records of tests, inspections, surveys and repairs.

Sec. 270.447. Tester and Tester's List.

(a) To ensure continued satisfactory operation of a BFP assembly, testing shall be performed by individuals who are trained and certified in the design, operation and testing of BFP assemblies. Certification shall be gained through the University of Florida TREEO Program for BFP assembly testers or other USC/FCCHR or FDEP approved programs.

(b) A certified BFP assembly tester must be approved by the Utilities Operations Division Manager to test BFP assemblies for owner/customer's provided service by County owned and operated public potable water system.

(c) A certified BFP assembly tester may be approved by the Utilities Operations Division Manager after supplying the Utility Division with the following information:

- (1) Copy of Current Testers Certification(s);
- (2) Expiration Date of Current Certification(s);
- (3) Name, Company Address, Telephone and Facsimile Numbers;
- (4) Copy of Recent Calibration of Test Equipment, and;
- (5) A valid Seminole County Occupational License.

(d) Upon receipt and review of the information set forth in (c) above, the Utilities Operations Division may approve an individual and place him or her on the Tester's List. Notice shall be sent to an individual who is not approved for BFP assembly testing by the Utilities Operations Division Manager. Grounds for disapproval include, but are not limited to, incorrect or insufficient information or lack of certification.

(e) BFP assembly testers are required to use testers forms approved by the Utilities Operations Division Manager. Testers forms sent to the Utilities Operations Division which are

inaccurate, incomplete or non-legible shall be returned to the BFP assembly tester along with a reason for return of the tester form.

(f) A BFP assembly tester shall be deleted from the testers list if his/her certification expires. Any violation of the Program may be grounds for removal from the testers list.

Sec. 270.448. Termination of Service.

(a) In emergency conditions as determined by the Utilities Operations Division, when the public potable water supply is being contaminated or is in imminent danger of contamination, water service shall be disconnected immediately by the Utilities Operations Division without notification.

(b) Failure of the owner/customer to install the appropriate BFP assembly after proper inspection and notification by the Utilities Operations Division shall be reason for termination of water service. Installation and testing of the appropriate BFP assembly shall be accomplished by the owner/customer within thirty (30) days of receipt of notification by the Utilities Operations Division.

(c) Failure of an owner/customer to annually test the BFP assembly after proper notification by the Utilities Operations Division shall be reason to terminate water service. Initial notification shall be sent by the Utilities Operations Division to an owner/customer. Failure of the owner/customer to test the BFP assembly upon initial notification shall result in a second notice to comply or risk termination of water service by the Utilities Operations Division. The owner/customer shall have thirty (30) days to comply after receipt of the initial notification to comply and fifteen (15) days to comply after receipt of the second notification prior to termination of water service by the Utilities Operations Division. Alternatively, the Utilities

Operations Division may opt to test or have tested the owner/customer's BFP assembly at the owner/customer's expense.

(d) Water service shall be terminated immediately by the Utilities Operations Division if a BFP assembly is altered in any way so as to render it non-functional or inoperable or if a BFP assembly is bypassed.

(e) Violation by an owner/customer of any part of these standards which may endanger the public health, contaminate the public potable water supply or structurally damage the public potable water system shall be reason to terminate water service.

Sec. 270.449. Violations & Liability. Any person or owner/customer violating the provisions of these standards shall be subject to:

(a) possible termination of water service;
(b) possible fines and/or fees according to Rate Resolution R98-120, or its successor;
(c) liability to the County for any expense or loss incurred as a result of physical or structural damage to the public potable water system or contamination of the public potable water system; and

(d) any appropriate Code Enforcement action.

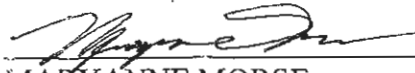
Section 2. Codification. It is the intention of the Board of County Commissioners that the provisions of this Ordinance, including its preamble, shall become and be made a part of the Seminole County Code, and that the word "ordinance" may be changed to "section", "article", or other appropriate word or phrase and the sections of this Ordinance may be renumbered or re-lettered to accomplish such intention; providing, however, that the Sections 2, 3 and 4 of this Ordinance shall not be codified.

Section 3. Severability. If any provision of this Ordinance or the application thereof to any person or circumstance is held invalid, it is the intent of the Board of County Commissioners that such invalidity shall not affect other provisions or applications of this Ordinance which can be given effect without the invalid provision or application and, to this end, the provisions of this Ordinance are declared severable.

Section 4. Effective date. This Ordinance shall take effect upon filing a copy of this Ordinance with the Department of State by the Clerk to the Board of County Commissioners.

BE IT ORDAINED by the Board of County Commissioners of Seminole County, this
13th day of May, 2014.

ATTEST:



MARYANNE MORSE
Clerk to the Board of
County Commissioners of
Seminole County, Florida

BOARD OF COUNTY COMMISSIONERS
SEMINOLE COUNTY, FLORIDA



ROBERT DALLARI, Chairman

Exhibit:
Attachment A

AEC/sjs/AWS

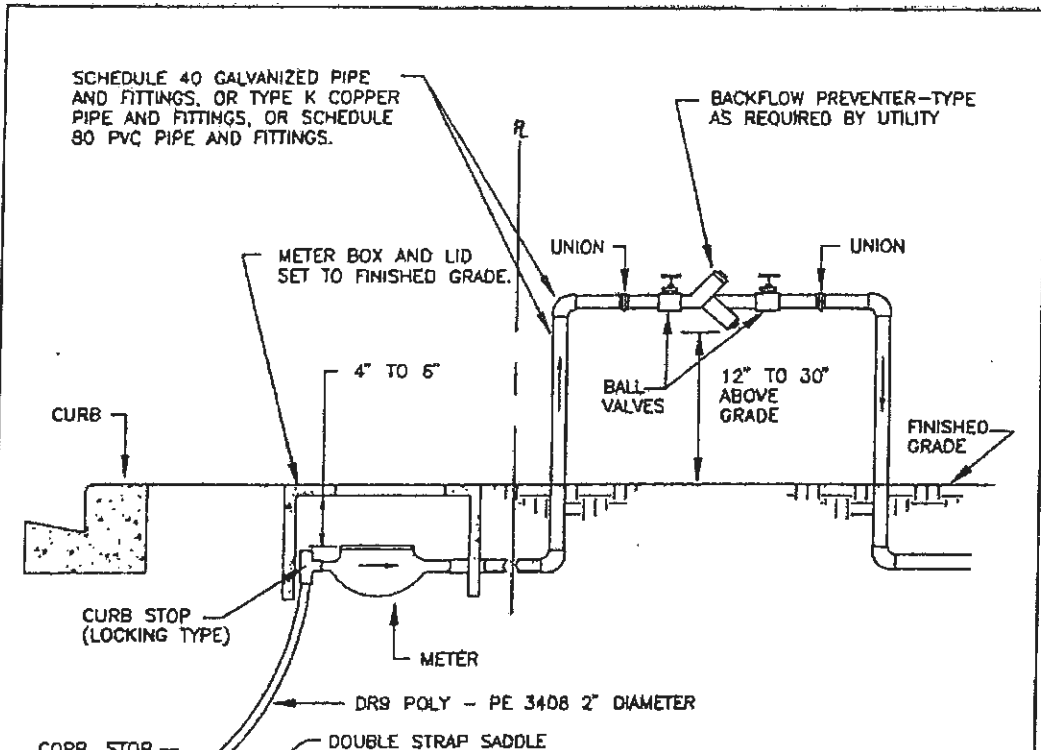
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ATTACHMENT A

BFP ASSEMBLY AND INSTALLATION DETAILS LIST

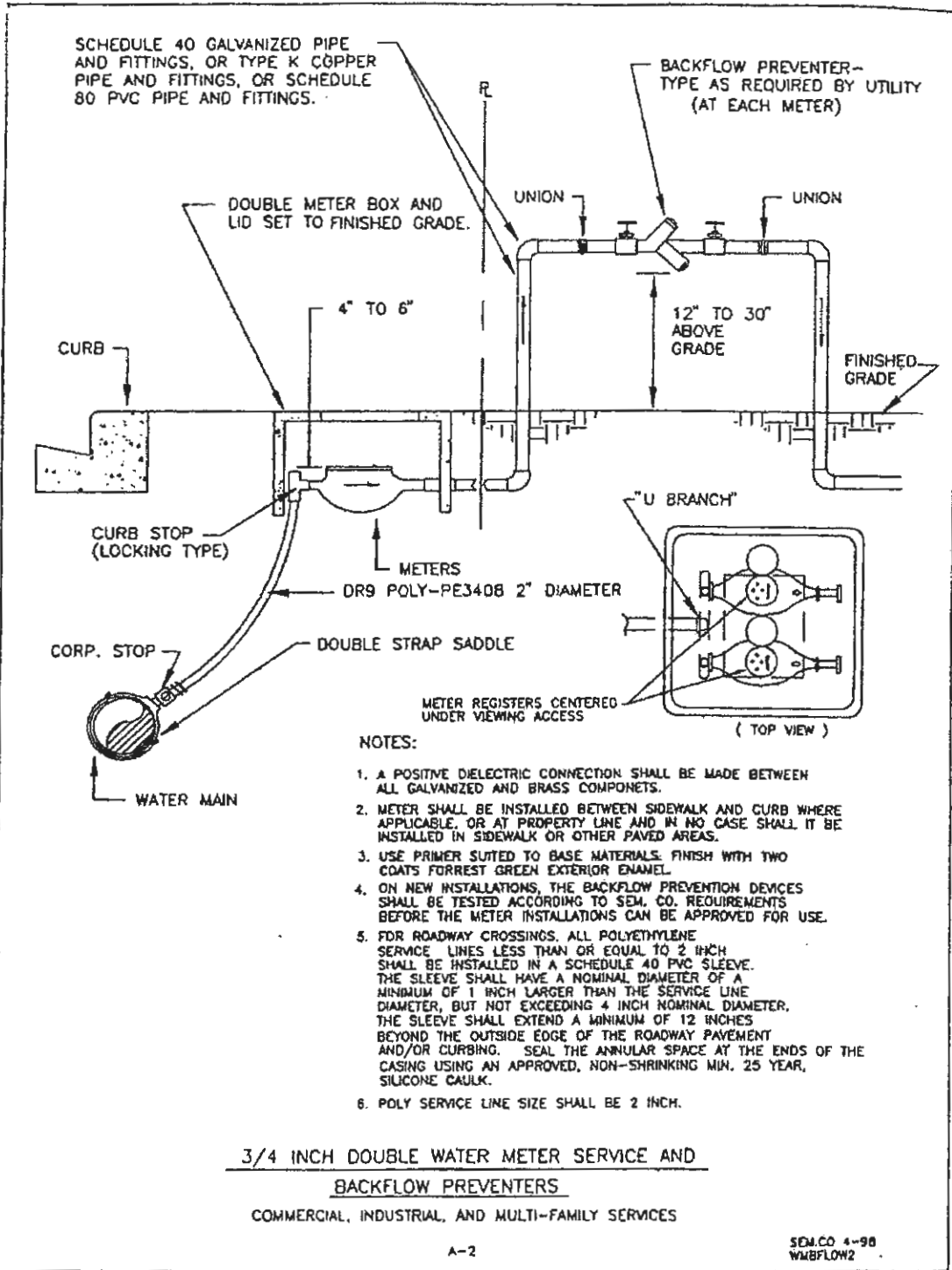
- A-1 3/4", 1", 1 1/2", 2" Water Meter and Backflow Preventer
Commercial, Industrial and Multi-Family Services
- A-2 3/4" Double Water Meter Service and Backflow Preventer
Commercial, Industrial and Multi-Family Services
- A-3 Double Water Meter Service and Backflow Preventer
Where one or both meters are larger than 3/4"
Commercial and Industrial Services
- A-3A 3/4", 1" and 1 1/2" Single Water Meter and Backflow Preventer, Residential
Where reclaimed irrigation is available
- A-4 3" and Larger Master Meter and Backflow Preventer
- A-5 Irrigation Meter and Pressure Vacuum Breaker Backflow Preventer
- A-6 Potable Water Irrigation Meter and Reduced Pressure Zone Backflow Prevention
Assembly
- A-7 Double Detector Check Assembly
- A-8 Parallel Installation with BFP Assemblies for 3/4" through 2" Service Connections
- A-9 3" and Larger Reclaimed Water Meter
- A-10 Reclaimed Service Connection for Car Washing Facilities
- A-11 Pipe Identification (Reclaimed Water)
- A-12 Reclaimed Water Irrigation Sign
- A-13 Temporary Jumper Connection
- A-14 Air Gap Backflow Preventer and Atmospheric Vacuum Breaker Backflow Preventer
- A-15 Pressure and Hose Bib Vacuum Breaker Assembly Backflow Preventers
- A-16 Residential Meter Configurations
- A-17 Commercial Meter Configurations ($\leq 2"$ Meter)

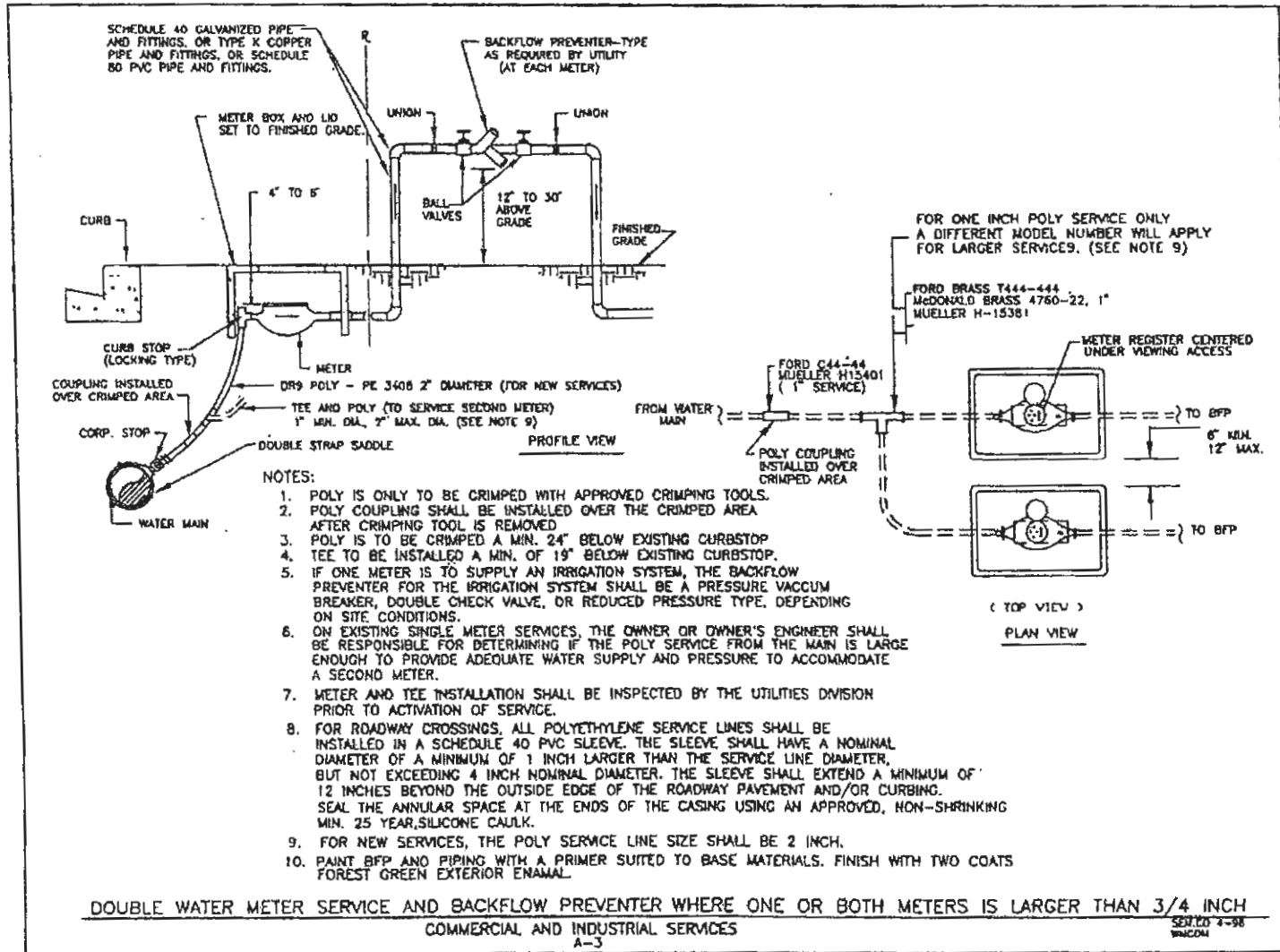


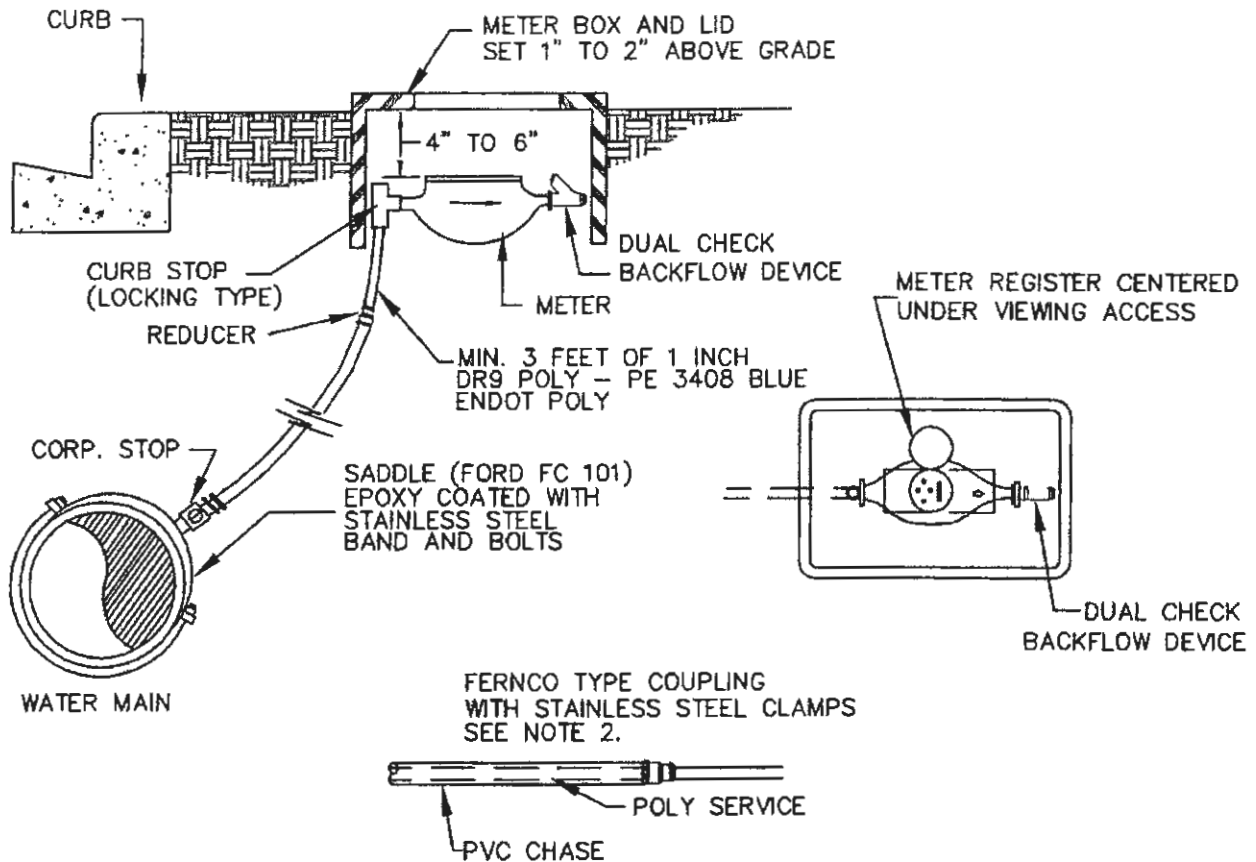
NOTES:

1. A POSITIVE DIELECTRIC CONNECTION SHALL BE MADE BETWEEN ALL GALVANIZED AND BRASS COMPONENTS.
2. METER SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB WHERE APPLICABLE, OR AT PROPERTY LINE AND IN NO CASE SHALL IT BE INSTALLED IN SIDEWALK OR OTHER PAVED AREAS.
3. PAINT BFP AND PIPING WITH A PRIMER SUITED TO BASE MATERIALS. FINISH WITH TWO COATS FORREST GREEN EXTERIOR ENAMEL.
4. ON NEW INSTALLATIONS, THE BACKFLOW PREVENTION DEVICE SHALL BE TESTED ACCORDING TO SEM. CO. REQUIREMENTS BEFORE THE METER INSTALLATION CAN BE APPROVED FOR USE.
5. FOR ROADWAY CROSSINGS, ALL POLYETHYLENE SERVICE LINES SHALL BE INSTALLED IN A SCHEDULE 40 PVC SLEEVE. THE SLEEVE SHALL HAVE A NOMINAL DIAMETER OF A MINIMUM OF 1 INCH LARGER THAN THE SERVICE LINE DIAMETER, BUT NOT EXCEEDING 4 INCH NOMINAL DIAMETER. THE SLEEVE SHALL EXTEND A MINIMUM OF 12 INCHES BEYOND THE OUTSIDE EDGE OF THE ROADWAY PAVEMENT AND/OR CURBING. SEAL THE ANNULAR SPACE AT THE ENDS OF THE CASING USING AN APPROVED, NON-SHRINKING, MIN. 25 YEAR, SILICONE CAULK.
6. POLY SERVICE LINE SIZE SHALL BE 2 INCH.

3/4", 1", 1 1/2" & 2" WATER METER &
BACKFLOW PREVENTER
 COMMERCIAL, INDUSTRIAL, AND MULTI-FAMILY SERVICES



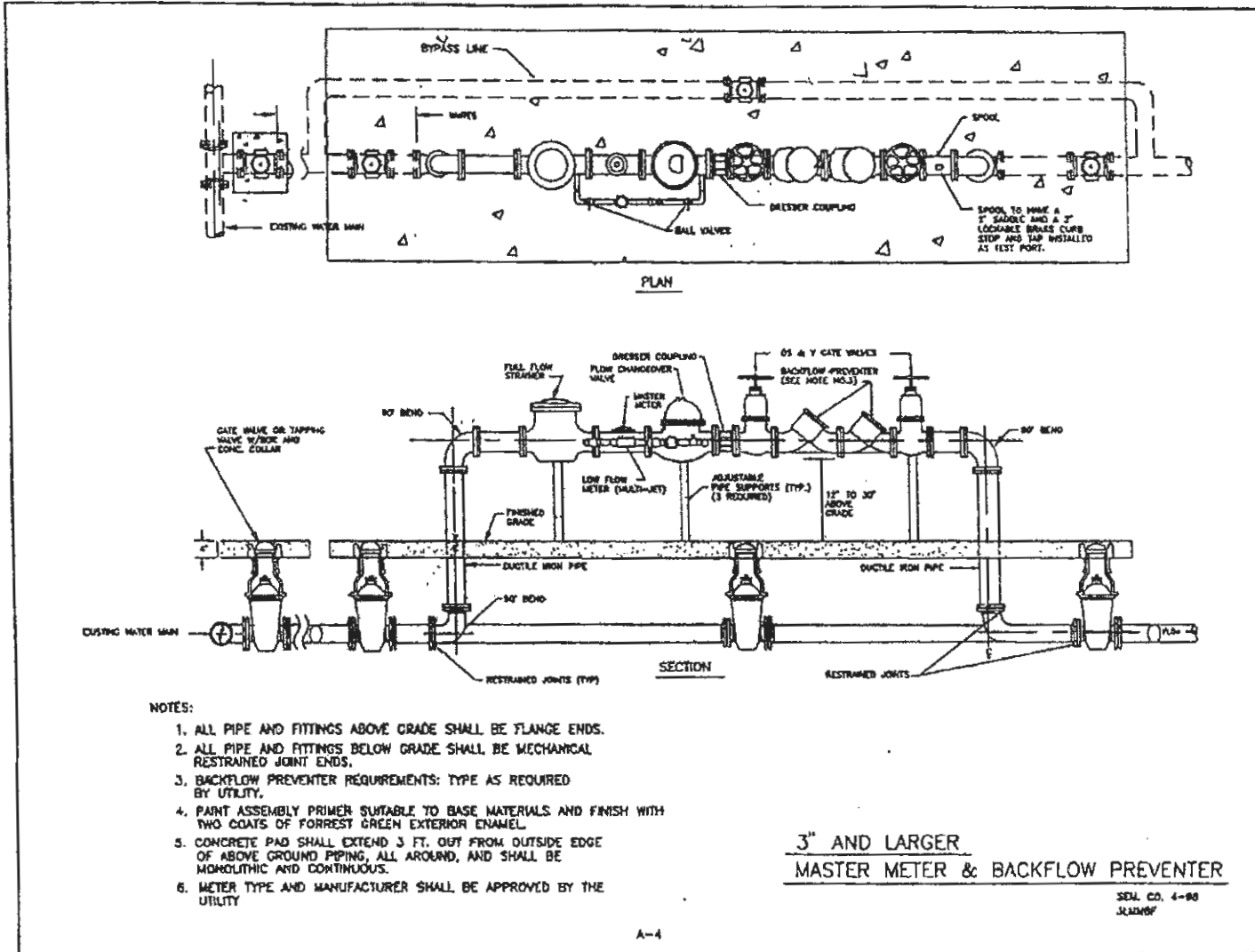


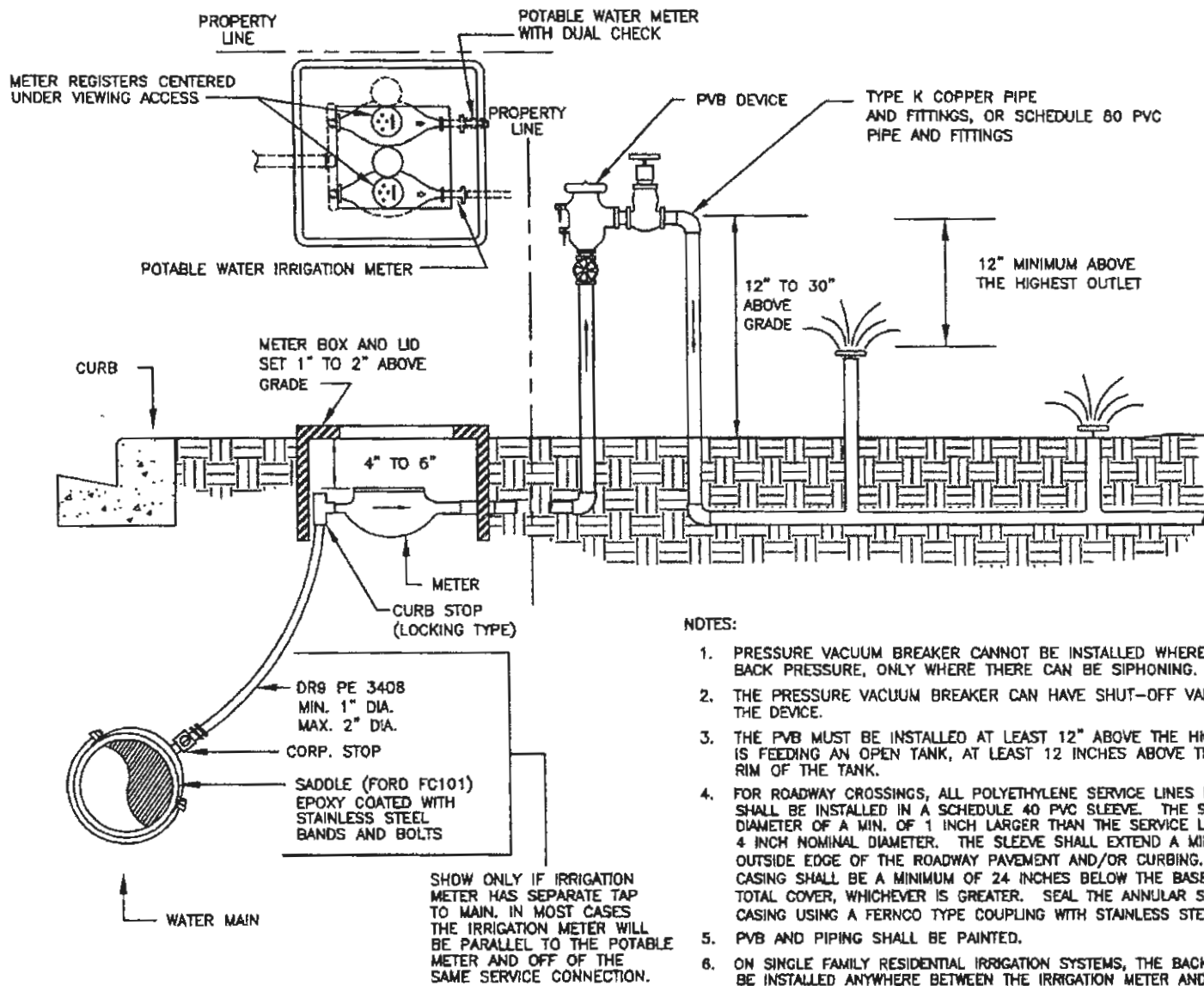


NOTES:

1. METER BOXES SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB WHERE APPLICABLE OR AT THE PROPERTY LINE, CENTERED BETWEEN THE LOT LINES AND IN NO CASE SHALL IT BE INSTALLED IN THE SIDEWALK OR OTHER PAVED AREAS.
2. FOR ROADWAY CROSSINGS, ALL POLYETHYLENE SERVICE LINES SHALL BE INSTALLED IN A SCHEDULE 40 PVC SLEEVE. THE SLEEVE SHALL HAVE A NOMINAL DIAMETER OF A MINIMUM OF 1 INCH LARGER THAN THE SERVICE LINE DIAMETER, BUT NOT EXCEEDING 4 INCH NOMINAL DIAMETER. THE SLEEVE SHALL EXTEND A MINIMUM OF 12 INCHES BEYOND THE OUTSIDE EDGE OF THE ROADWAY PAVEMENT AND/OR CURBING. THE DEPTH OF COVER OVER THE CASING SHALL BE A MINIMUM OF 24 INCHES BELOW THE BASE COURSE OR A TOTAL OF 36 INCHES, WHICHEVER IS GREATER. THE ANNULAR SPACE AT THE ENDS OF THE CASING SHALL BE SEALED WITH A CASING SEALER AND A FERNCO TYPE COUPLING WITH STAINLESS STEEL CLAMPS SHALL BE INSTALLED.
3. POLY SERVICE LINE SIZED BY SERVICE CONNECTION (1-1/2" MIN.)
4. POTABLE WATER LINE SHALL BE RETROFITTED WITH A REDUCED PRESSURE BACKFLOW PREVENTION (RPZ) ASSEMBLY WHEN AN ALTERNATE WATER SUPPLY OTHER THAN POTABLE OR RECLAIMED WATER IS USED.
5. ANY RESIDENTIAL PROPERTY THAT HAS AN ALTERNATIVE WATER SUPPLY OTHER THAN RECLAIMED WATER SHALL HAVE A REDUCED PRESSURE BACKFLOW (RPZ) PREVENTION ASSEMBLY INSTALLED. THE RPZ CAN BE LOCATED WITHIN 50 FEET OF THE WATER METER, HOWEVER IF THE RPZ IS NOT INSTALLED WITHIN 2 FEET OF THE METER ASSEMBLY A DUAL CHECK DEVICE SHALL ALSO BE INSTALLED AT THE METER.

3/4", 1" AND 1 1/2" SINGLE WATER METER & BACKFLOW PREVENTER
RESIDENTIAL WHERE RECLAIMED IRRIGATION IS AVAILABLE

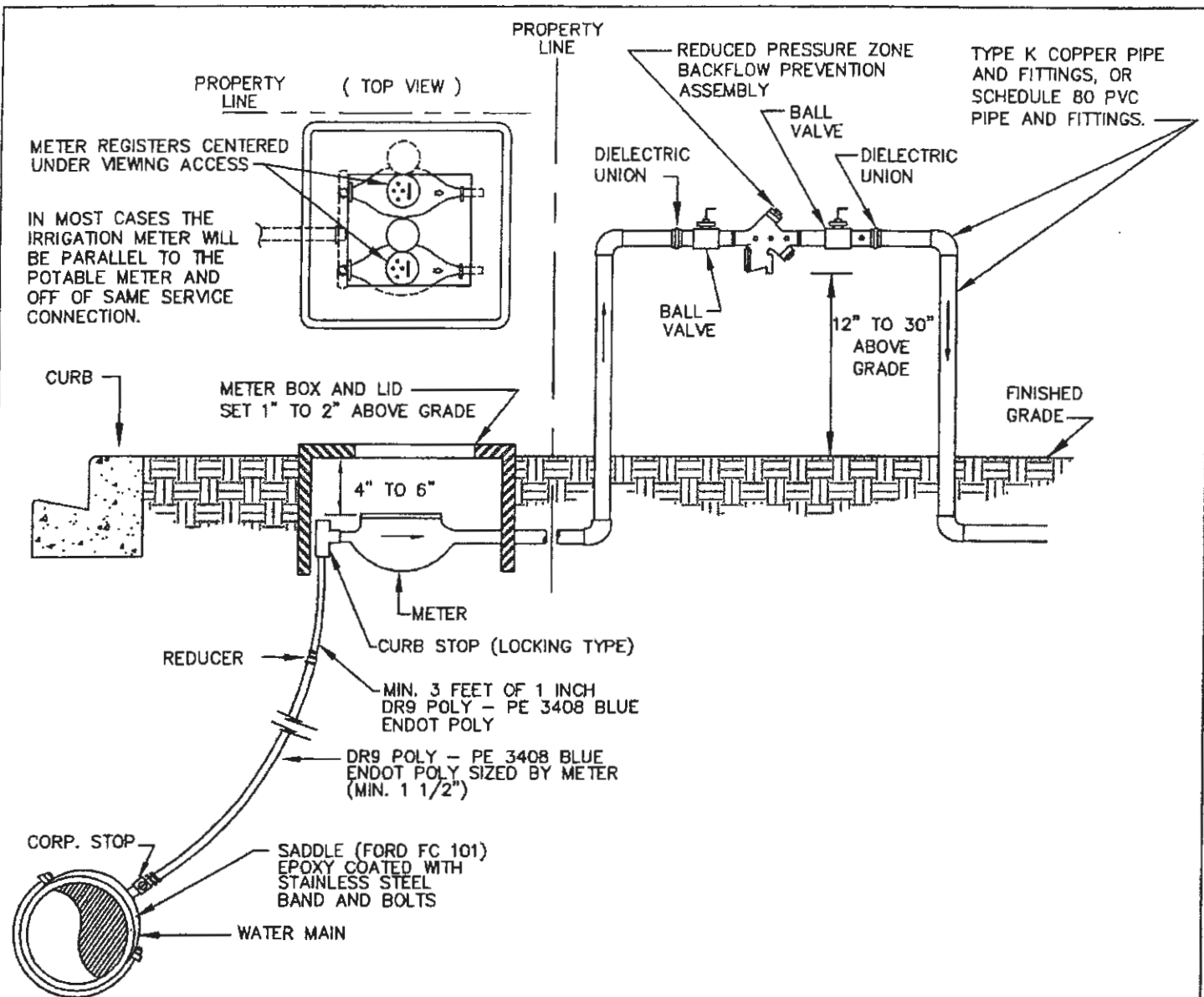




**RESIDENTIAL IRRIGATION METER AND PRESSURE VACUUM BREAKER BACKFLOW PREVENTION ASSEMBLY
POTABLE WATER ONLY**

NOTES:

1. PRESSURE VACUUM BREAKER CANNOT BE INSTALLED WHERE THERE CAN BE BACK PRESSURE, ONLY WHERE THERE CAN BE SIPHONING.
2. THE PRESSURE VACUUM BREAKER CAN HAVE SHUT-OFF VALVES DOWNSTREAM OF THE DEVICE.
3. THE PVB MUST BE INSTALLED AT LEAST 12" ABOVE THE HIGHEST OUTLET OR, IF IT IS FEEDING AN OPEN TANK, AT LEAST 12 INCHES ABOVE THE HIGHEST OVERFLOW RIM OF THE TANK.
4. FOR ROADWAY CROSSINGS, ALL POLYETHYLENE SERVICE LINES LESS THAN OR EQUAL TO 2 INCH SHALL BE INSTALLED IN A SCHEDULE 40 PVC SLEEVE. THE SLEEVE SHALL HAVE A NOMINAL DIAMETER OF A MIN. OF 1 INCH LARGER THAN THE SERVICE LINE DIAMETER, BUT NOT EXCEEDING 4 INCH NOMINAL DIAMETER. THE SLEEVE SHALL EXTEND A MINIMUM OF 12 INCHES BEYOND THE OUTSIDE EDGE OF THE ROADWAY PAVEMENT AND/OR CURBING. THE DEPTH OF COVER OVER THE CASING SHALL BE A MINIMUM OF 24 INCHES BELOW THE BASE COURSE OR 36 INCHES OF TOTAL COVER, WHICHEVER IS GREATER. SEAL THE ANNULAR SPACE AT THE ENDS OF THE CASING USING A FERNOCO TYPE COUPLING WITH STAINLESS STEEL CLAMPS.
5. PVB AND PIPING SHALL BE PAINTED.
6. ON SINGLE FAMILY RESIDENTIAL IRRIGATION SYSTEMS, THE BACKFLOW PREVENTER MAY BE INSTALLED ANYWHERE BETWEEN THE IRRIGATION METER AND THE HOUSE, BUT SHALL BE UPSTREAM OF ANY OUTLETS AND SHALL MEET ALL OTHER INSTALLATION REQUIREMENTS.
7. METER SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB WHERE APPLICABLE. IN NO CASE SHALL IT BE INSTALLED UNDER CONCRETE OR ANY TYPE OF PAVEMENT.
8. THIS DETAIL TO BE USED ONLY WHEN POTABLE WATER IS THE ONLY SOURCE OF IRRIGATION.
9. PVB SHALL NOT BE INSTALLED IN THE RIGHT OF WAY.

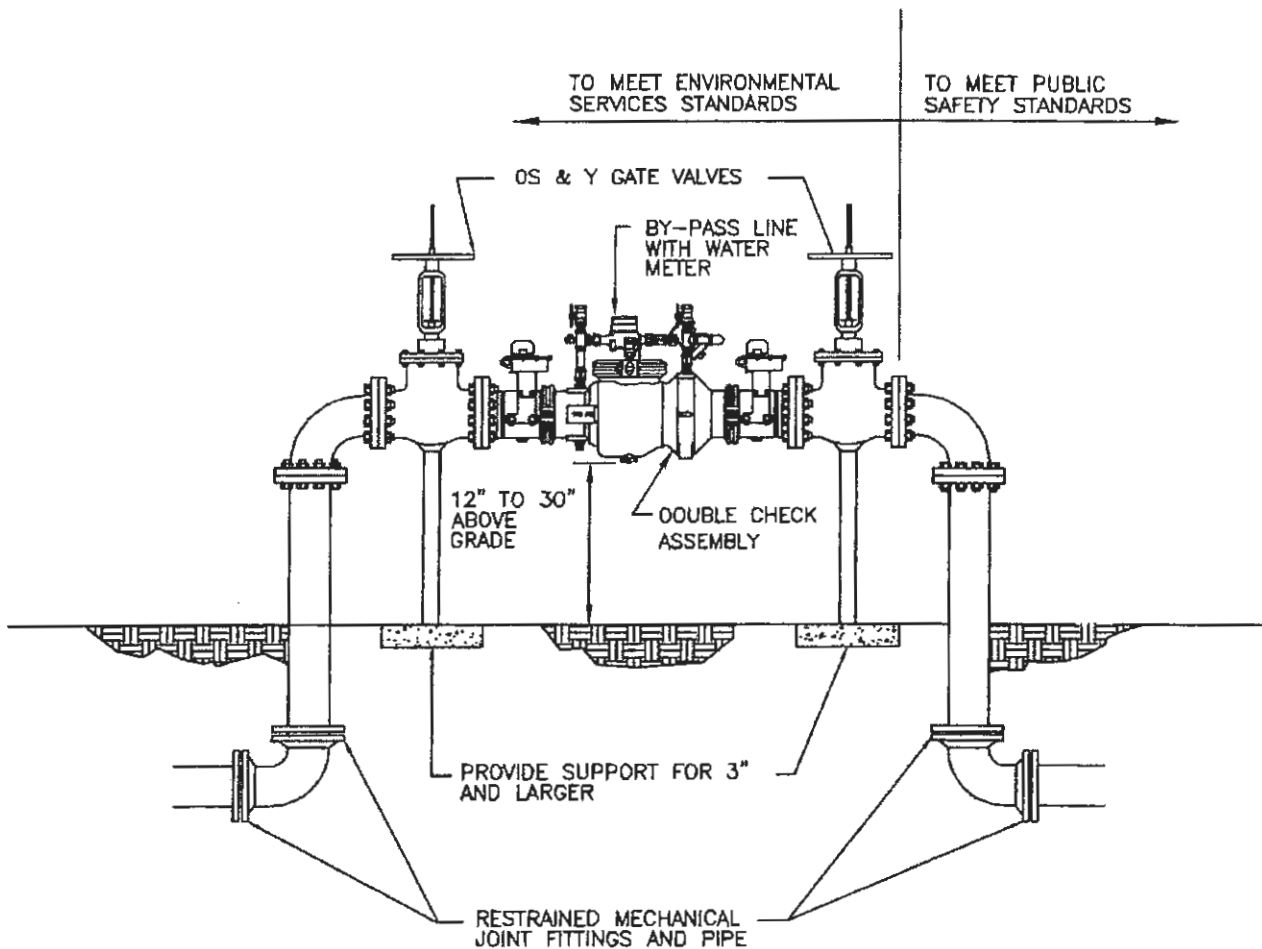
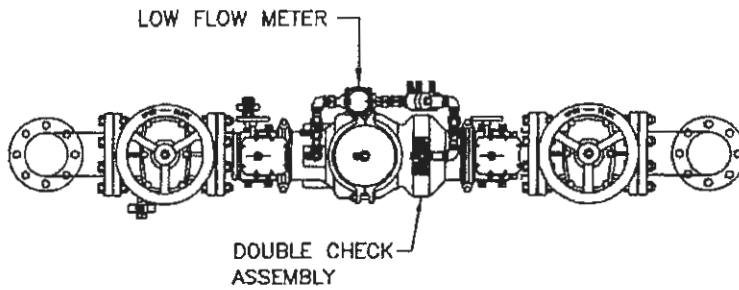


NOTES:

1. A POSITIVE DIELECTRIC CONNECTION SHALL BE MADE BETWEEN ALL GALVANIZED AND BRASS COMPONENTS.
2. METER SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB WHERE APPLICABLE, OR AT PROPERTY LINE AND IN NO CASE SHALL IT BE INSTALLED IN SIDEWALK OR OTHER PAVED AREAS.
3. FOR COMMERCIAL INSTALLATION, BACKFLOW PREVENTION ASSEMBLIES (BFP) AND PIPING SHALL BE PAINTED WITH A PRIMER SUITED TO BASE MATERIALS AND SHALL BE FINISHED WITH TWO COATS EXTERIOR ENAMEL (COLOR OPTIONAL).
4. ON NEW INSTALLATIONS, THE BFP SHALL BE TESTED IN ACCORDANCE WITH SEMINOLE COUNTY ORDINANCE 99-29 SECTION 9.14, BEFORE THE METER INSTALLATION CAN BE APPROVED FOR USE.
5. FOR ROADWAY CROSSINGS, ALL POLYETHYLENE SERVICE LINES SHALL BE INSTALLED IN A SCHEDULE 40 PVC SLEEVE. THE SLEEVE SHALL HAVE A NOMINAL DIAMETER OF A MINIMUM OF 1 INCH LARGER THAN THE SERVICE LINE DIAMETER, BUT NOT EXCEEDING 4 INCH NOMINAL DIAMETER. THE SLEEVE SHALL EXTEND A MINIMUM OF 12 INCHES BEYOND THE OUTSIDE EDGE OF THE ROADWAY PAVEMENT AND/OR CURBING. THE DEPTH OF COVER OVER THE CASING SHALL BE A MINIMUM OF 24 INCHES BELOW THE BASE COURSE OR 36 INCHES OF TOTAL COVER, WHICHEVER IS GREATER. THE ANNULAR SPACE SHALL BE SEALED WITH A CASING SEALER. A FERNOCO TYPE COUPLING WITH STAINLESS STEEL CLAMPS SHALL BE INSTALLED AT THE CASING ENDS.
6. MAINTENANCE OF THE BFP, PIPING AND APPURTENANCES DOWNSTREAM OF THE METER SHALL BE THE RESPONSIBILITY OF THE OWNER.
7. ON SINGLE FAMILY RESIDENTIAL IRRIGATION SYSTEMS, THE BFP MAY BE INSTALLED ANYWHERE BETWEEN THE IRRIGATION METER AND THE HOUSE, BUT NOT FARTHER THAN 50 FEET FROM THE METER AND SHALL BE UPSTREAM OF ANY OUTLET AND SHALL MEET ALL OTHER INSTALLATION REQUIREMENTS.
8. THE BFP SHALL NOT BE INSTALLED IN THE RIGHT OF WAY.

POTABLE WATER IRRIGATION METER &
REDUCED PRESSURE ZONE BACKFLOW PREVENTION ASSEMBLY

SEM.CO 1-10
A-6 MRPBF

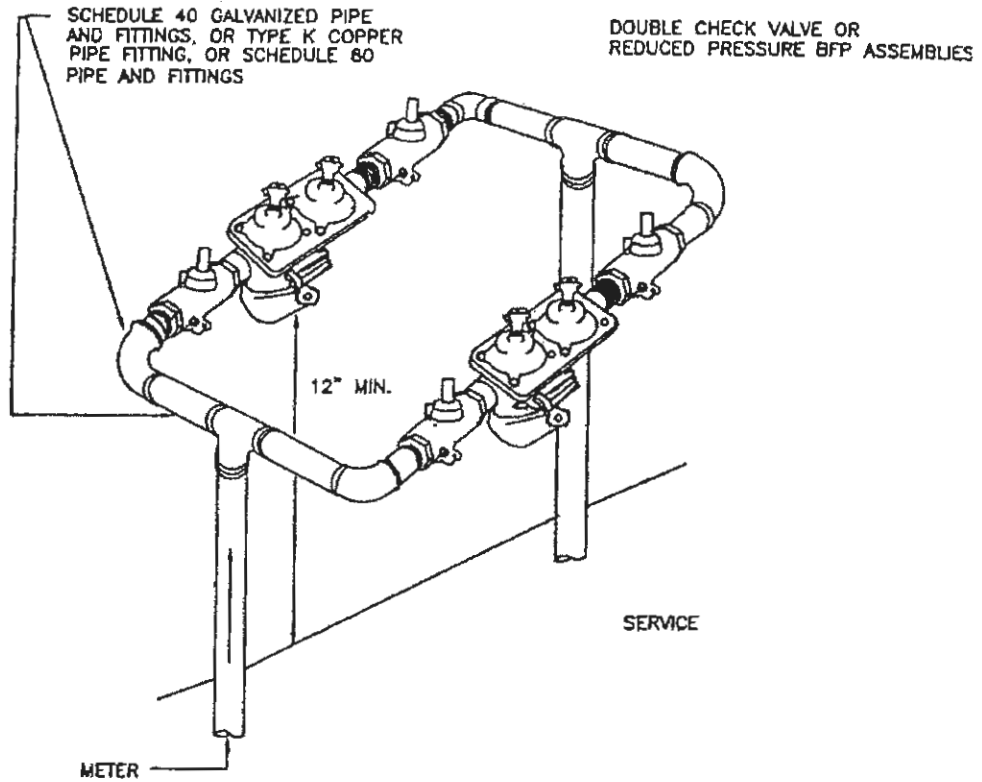


NOTES:

1. ALL PIPE AND FITTINGS ABOVE GRADE SHALL HAVE FLANGED ENDS.
2. BY-PASS METER ASSEMBLY SHALL BE REQUIRED ON MONITORED FIRE SPRINKLER PROTECTION SYSTEMS.
3. THE CHECK VALVE ASSEMBLY, VALVES AND PIPING AND THE BYPASS METER AND DOUBLE CHECK SHALL BE PAINTED WITH A PRIMER SUITED TO THE BASE MATERIALS AND FINISHED WITH TWO COATS OF EXTERIOR ENAMEL (COLOR IS RED).
4. BYPASS METER AND BACKFLOW PREVENTER SHALL BE ASSEMBLED WITH APPROPRIATE FITTINGS TO ALLOW REMOVAL AND RE-INSTALLATION.

DOUBLE DETECTOR CHECK ASSEMBLY

SEM. CO 1-05
A-7 DDCA



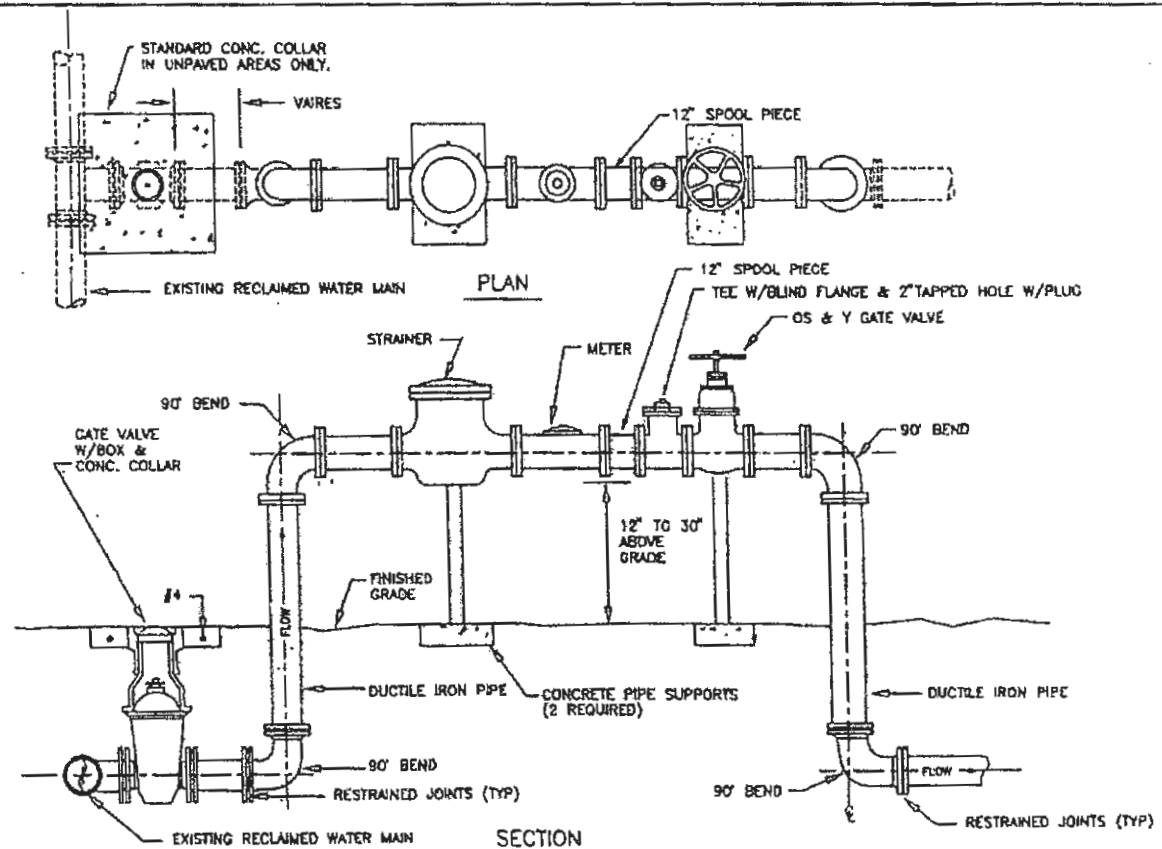
NOTES:

1. A POSITIVE DIELECTRIC CONNECTION SHALL BE MADE BETWEEN ALL GALVANIZED AND BRASS COMPONENTS.
2. PAINT BFP AND PIPING WITH A PRIMER SUITED TO BASE MATERIALS. FINISH WITH TWO COATS FORREST GREEN EXTERIOR ENAMEL.
3. PARALLEL INSTALLATIONS ARE USED WHERE CONTINUOUS WATER SERVICE IS NECESSARY; ONE SIDE CAN BE SHUT OFF FOR MAINTENANCE AND TESTING WHILE THE OTHER SIDE IS STILL IN SERVICE.
4. THE TWO (2) BFP ASSEMBLIES ARE GENERALLY ONE SIZE SMALLER THAN THE INCOMING SERVICE LINE.

PARALLEL INSTALATION WITH BFP ASSEMBLIES FOR
3/4" THROUGH 2" SERVICE CONNECTIONS

A-8

PARALLEL
SEM. CO. 4-98

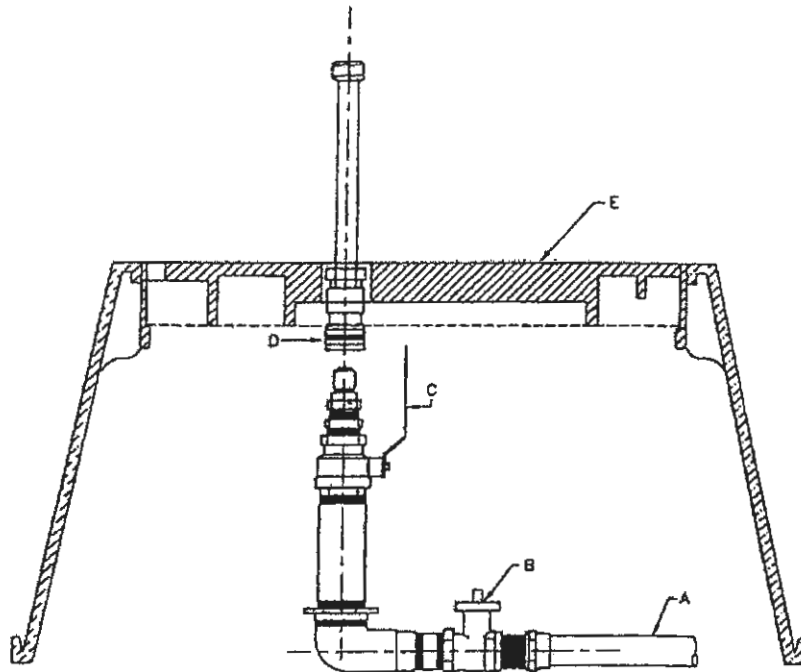


NOTES:

1. ALL PIPE AND FITTINGS ABOVE GRADE SHALL HAVE FLANGED ENDS.
2. ALL PIPE AND FITTINGS BELOW GRADE SHALL BE MECHANICAL RESTRAINED JOINT ENDS.
3. PIPE SHALL BE COLOR CODED AND/OR MARKED TO SEM CO SPECIFICATIONS.
4. INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF 62-610 FAC.
5. PIPING AND APPURTENANCES SHALL BE PAINTED PANTONE PURPLE 522C. PVC PIPE SHALL BE COLORED FROM THE FACTORY WITH PANTONE PURPLE 522C USING LIGHT STABLE COLORANTS.
6. METER SHALL BE CAPABLE OF ACCURATELY MEASURING THE ENTIRE RANGE OF EXPECTED FLOWS AND THE TYPE AND MANUFACTURE SHALL BE APPROVED BY THE UTILITY.

3" AND LARGER RECLAIMED WATER METER

SEM. CO 4-98
LRORCLMW

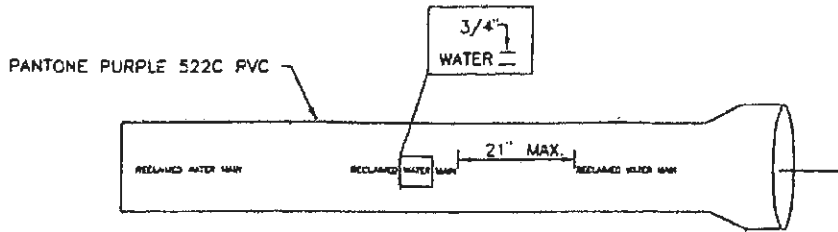


- A - CONNECTION TO UNDERGROUND IRRIGATION SYSTEM
- B - LOCKABLE CURB STOP IDENTIFIED WITH THE WORDS "RECLAIMED WATER" CAST INTO THE LOCKING WING.
- C - CONTROL HANDLE - TURNS SYSTEM PRESSURE ON AND OFF (REMOVE HANDLE WHEN NOT IN USE)
- D - QUICK DISCONNECT DEVICE FITS ANY 5/8" GARDEN HOSE (DETACH WHEN NOT IN USE)
- E - SERVICE CONNECTION IS CONTAINED IN A METER BOX LABELED "RECLAIMED WATER". BOX LID IS LEVEL WITH THE FINISHED GRADE.
- F - EXPOSED PIPING SHALL BE PAINTED WITH MINIMUM 3 COATS OF PANTONE PURPLE 522C OR SHALL BE COLOR CODED FROM THE FACTORY.
- G - A RECLAIMED SIGN, PER STANDARD DETAIL C-13 SHALL BE INSTALLED ADJACENT TO THE CONNECTION POINT AND AT OTHER POINTS WITHIN THE WASHING AREA AS REQUIRED BY THE UTILITY.

RECLAIMED SERVICE CONNECTION
FOR CAR WASHING FACILITIES

SEM. CO. 7-96
RECLSERC

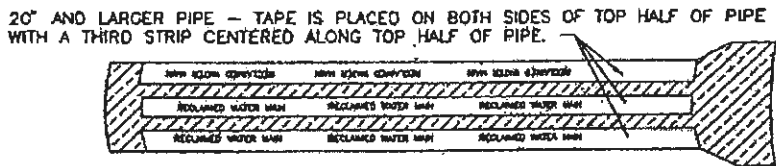
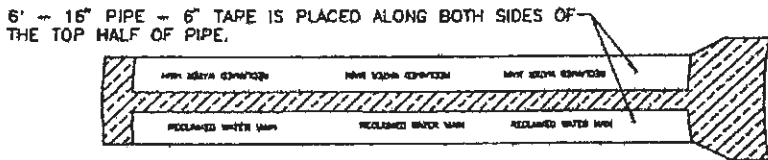
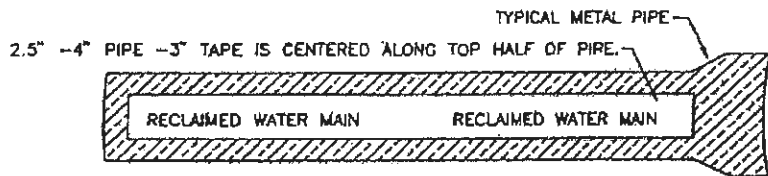
A-10



1. LETTERING SHALL APPEAR ON 3 SIDES OF THE PIPE AND RUN THE ENTIRE LENGTH OF THE PIPE.
2. LETTERING SHALL BE A MIN. OF 3/4" IN HEIGHT AND APPEAR ONE OR MORE TIMES EVERY 21" ALONG THE LENGTH OF THE PIPE.
3. LETTERING MUST BE PERMANENTLY IMPREGNATED INTO THE PVC (IT MAY NOT BE STENCILED TO THE PIPES SURFACE).
4. LETTERING SHALL BE WHITE OR OTHER CONTRASTING COLOR.

PVC RECLAIMED WATER MAIN

NTS



PURPLE TAPE WITH WHITE OR OTHER CONTRASTING PERMANENTLY-IMPREGNATED LETTERING SHALL BE USED. THE TAPE SHALL RUN FROM JOINT TO JOINT ALONG THE LENGTH OF THE PIPE.

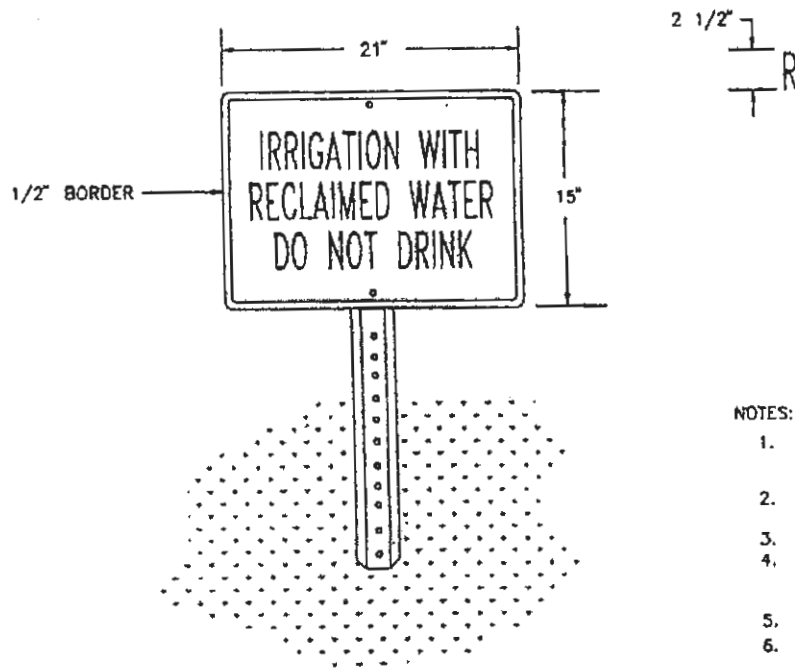
DUCTILE IRON RECLAIMED WATER MAIN WITH AFFIXED IDENTIFICATION TAPE

NTS

PIPE IDENTIFICATION
(RECLAIMED WATER)

SEM. CO. 4-98
PIPEID

A-11



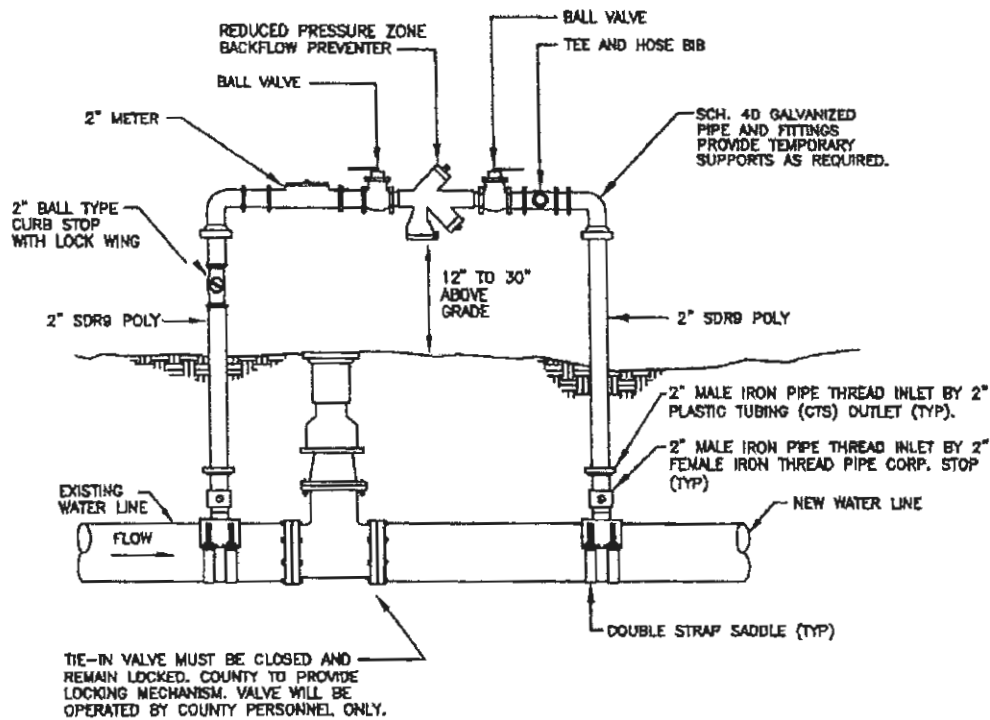
NOTES:

1. HEIGHT OF SIGN WILL DEPEND ON LOCATION AND SURROUNDING LANDSCAPE PLANT TYPES. IN ALL CASES, THE SIGN SHALL BE VISIBLE TO THE PUBLIC.
2. BACKGROUND SHALL BE 3M SCOTCHLITE 710 PROCESS COLOR OR EQUIVALENT. (FEDERAL HIWAY SIGN COLOR)
3. SIGN LETTERS SHALL BE REFLECTIVE MATERIALS
4. POST SHALL BE U CHANNEL, 2 LB. HOT ROLLED HIGH TENSILE RAIL OR BILLET STEEL WITH GALVANIZED FINISH PER ASTM A-123.
5. MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
6. MINIMUM DEPTH OF BURIAL OF SIGN POST SHALL BE 4 FEET.
7. SIGN BLANK SHALL BE REFLECTIVE ALUMINUM WITH A THICKNESS OF 0.080 INCHES.

RECLAIMED WATER IRRIGATION SIGN

A-12

SEM. CO 4-98
RSING



TEMPORARY JUMPER DETAIL

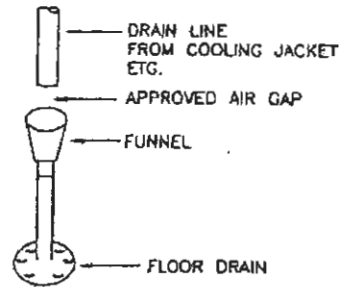
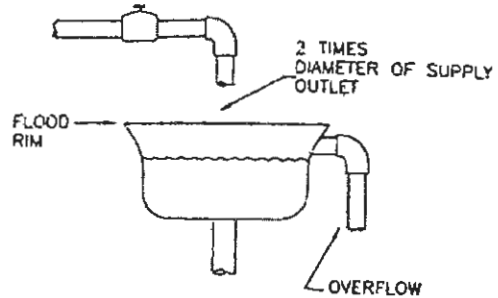
NOTES:

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS. A HYDRANT MAY BE USED IN A TEMPORARY SITUATION (LESS THAN 24 HOURS) IF APPROVED BY THE UTILITIES OPERATION DIVISION.
2. THE DETAIL ABOVE IS TO BE USED FOR FILLING ANY NEW WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY) AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) & OTHER PERTINENT AGENCIES HAS BEEN RECEIVED BY SEMINOLE COUNTY UTILITIES. THIS JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS ALL THE TIME AFTER DISINFECTION AND UNTIL THE FDEP CLEARANCE LETTER IS OBTAINED. ADEQUATE RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION. THE TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C651 LATEST EDITION.
3. FLUSHING MAINS MAY BE DONE THROUGH THE TIE-IN VALVE UNDER VERY CONTROLLED CONDITIONS.
THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:
 - A. THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.
 - B. THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR THE BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.
 - FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAINS.
 - ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE-IN VALVE.
 - PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE-IN POINT. THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 PSI.
 - TIE-IN VALVE SHALL BE OPENED A FEW TURNS ONLY, ENSURING A PRESSURE DROP ACROSS THE VALVE IS ALWAYS GREATER THAN 10 PSI.
 - THE AMOUNT OF WATER USED FOR FLUSHING SHALL BE MEASURED AND REPORTED TO COUNTY PERSONNEL AS "LOST WATER".
 - C. THE TIE-IN VALVE SHALL BE LOCKED CLOSED BY THE UTILITY COMPANY UNTIL FLUSHING BEGINS.
 - D. THE TIE-IN VALVE SHALL BE OPENED ONLY FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE UTILITY COMPANY AND OBSERVED BY THE ENGINEER.
 - E. AFTER FLUSHING, THE TIE-IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY.
4. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE DOUBLE CHECK BACKFLOW PREVENTION DEVICE HAS BEEN TESTED WITHIN ONE (1) YEAR AT THE TIME OF INSTALLATION AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION. THE TEST SHALL BE PERFORMED BY A QUALIFIED BACKFLOW PREVENTION TECHNICIAN AS APPROVED BY SEMINOLE COUNTY'S CROSS-CONNECTION CONTROL PROGRAM.
5. EXCEPT AS REQUIRED TO FLUSH LINES OF GREATER THAN 6" DIAMETER, THE TIE-IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY. THE TIE-IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.
6. UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
7. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE, FITTINGS, VALVES ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

TEMPORARY JUMPER CONNECTION

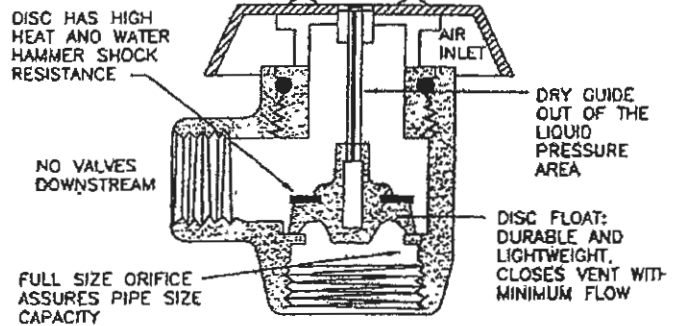
AG- AIR-GAP

- GOOD FOR TOXIC AND NON-TOXIC SUBSTANCES
- GOOD AGAINST BACKPRESSURE AND BACKSIPHONAGE
- A VERTICAL DISTANCE OF 2-TIMES THE DIAMETER OF SUPPLY PIPE, NEVER LESS THAN A 1" GAP ABOVE FLOOD RIM
- BEST PROTECTION AGAINST BACKFLOW PROVIDED IT IS INSTALLED PROPERLY AND NOT CIRCUMVENTED
- ANSI STANDARD NO. A112.1.2
- REPRESENTS EASIEST METHOD OR SITUATION SUBJECT TO MODIFICATION TO A CROSS CONNECTION



AVB ATMOSPHERIC VACUUM BREAKER

- GOOD FOR MOST TOXIC AND ALL NON-TOXIC SUBSTANCES
- GOOD FOR BACKSIPHONAGE ONLY
- NO CONTROL VALVES ON DISCHARGE SIDE OF DEVICE
- MINIMUM OF 6" BETWEEN BASE OF DEVICE AND THE HIGHEST OUTLET
- NO MORE THAN 12 HOURS CONTINUOUS SERVICE IN A DAY
- SIZES AVAILABLE: 1/4" - 3"
- ASSE ATANDARD NO. 1001
- NOT USABLE FOR CONTAINMENT

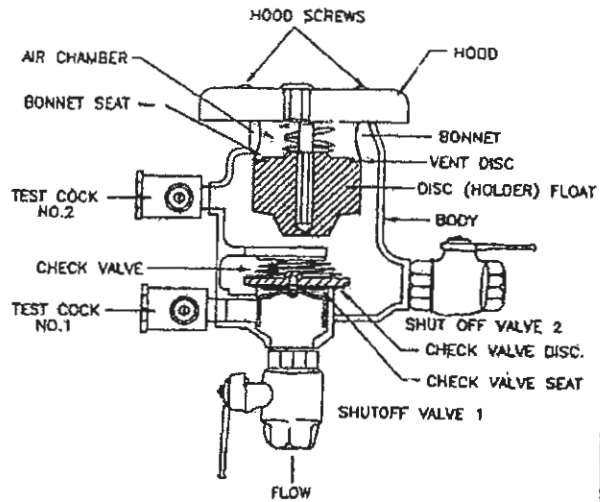


BASE OF DEVICE
MAY BE CONSIDERED
"CRITICAL LEVEL" IF NOT
OTHERWISE SPECIFIED

DUE TO THE INABILITY TO TEST ATMOSPHERIC VACUUM BREAKERS AND THE EASE IN WHICH AIR-GAPS MAY BE CIRCUMVENTED, THESE TWO FORMS OF PROTECTION ARE USUALLY AUGMENTED BY ADDITIONAL AREA OR PREMISES ISOLATION. THIS TYPE OF DEVICE IS ONLY APPROVED FOR USE IN THOSE SITUATIONS AS DESCRIBED IN SECTION 9, AND AS APPROVED BY THE UTILITIES MANAGER.

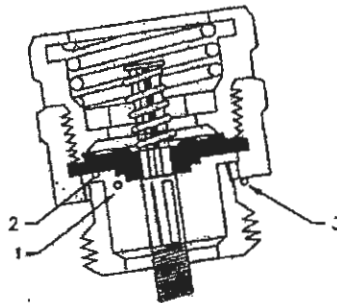
**PVB-PRESSURE
VACUUM BREAKER ASSEMBLY**

- GOOD FOR TOXIC AND NON-TOXIC SUBSTANCES
- GOOD FOR BACKSIPHONAGE ONLY
- CAN BE INSTALLED UNDER CONTINUOUS PRESSURE (VALVES DOWNSTREAM)
- MINIMUM OF 12" BETWEEN BASE OF DEVICE AND HIGHEST OUTLET
- MUST BE TESTED ANNUALLY
- SIZES AVAILABLE: 1/2" - 2" (2 1/2", 10" NOT NORMALLY USED)
- ASSE STANDARD NO. 1020, USC-FCC APPROVED
- RESILIENT SEATED SHUT-OFF VALVES REQUIRED



**HBVB-HOSE
BIBB VACUUM BREAKER**

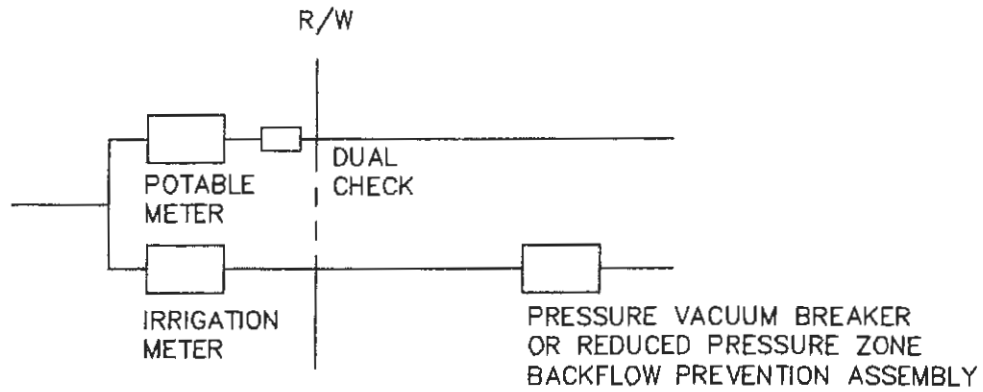
- TO BE INSTALLED ON ALL HOSE THREADED FAUCETS
- GOOD AGAINST BACKSIPHONAGE AND VERY LOW BACKPRESSURE
- NOT TO BE SUBJECT TO CONTINUOUS PRESSURE
- NO MORE THAN 12 HOURS CONTINUOUS SERVICE IN A DAY
- SIZE: 3/4"
- ASSE STANDARD NO. 1011



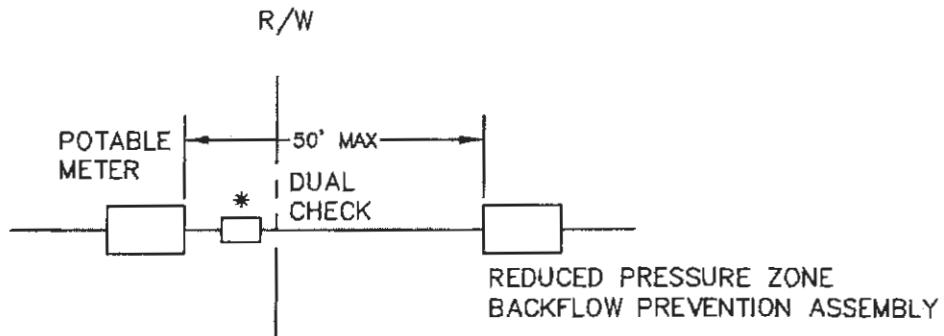
NON- REMOVEABLE
TYPES HAVE COIL
OR BREAKABLE
SET SCREW

WITH LOSS OF WATER SUPPLY,
DISC (1) SEALS TIGHTLY AGAINST
DIAPHRAGM (2) PREVENTING
BACKSIPHONAGE OR BACKFLOW
OF WATER AND OPENS
ATMOSPHERIC VENTS (3)

THIS TYPE OF DEVICE IS ONLY APPROVED FOR USE IN THOSE SITUATIONS AS DESCRIBED IN SECTION 9, AND AS APPROVED BY THE UTILITIES MANAGER.

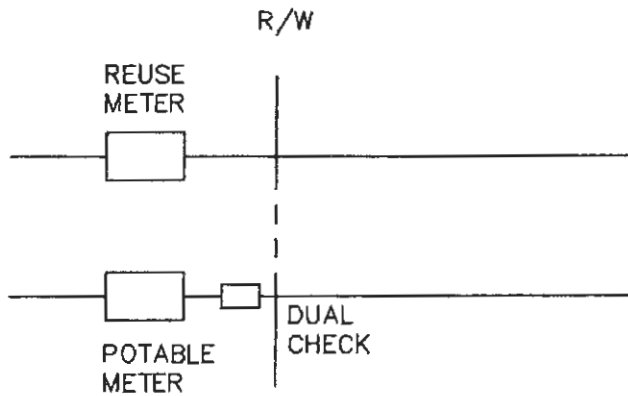


POTABLE SERVICE WITH POTABLE IRRIGATION



* CAN REMOVE THE DUAL CHECK ON POTABLE IF RPZ IS WITHIN 3'.

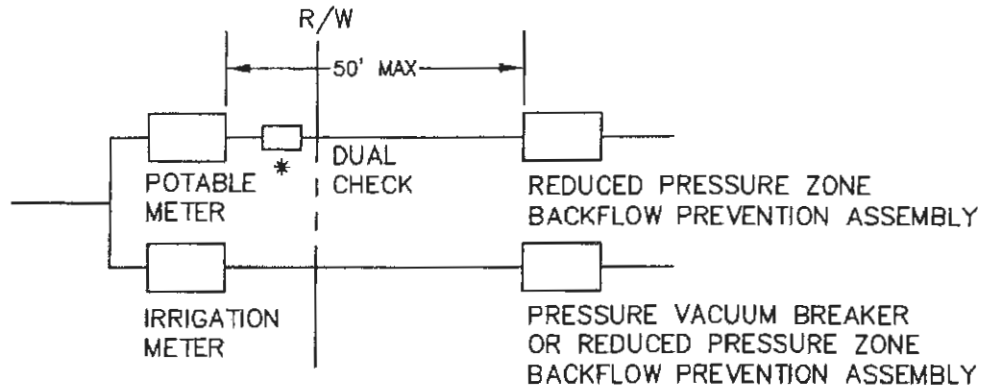
POTABLE SERVICE WITH ALTERNATE SOURCE FOR IRRIGATION



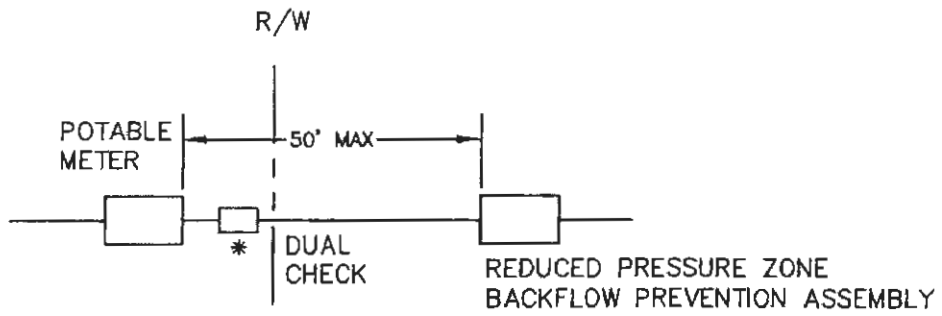
POTABLE SERVICE WITH REUSE FOR IRRIGATION

RESIDENTIAL METER CONFIGURATIONS

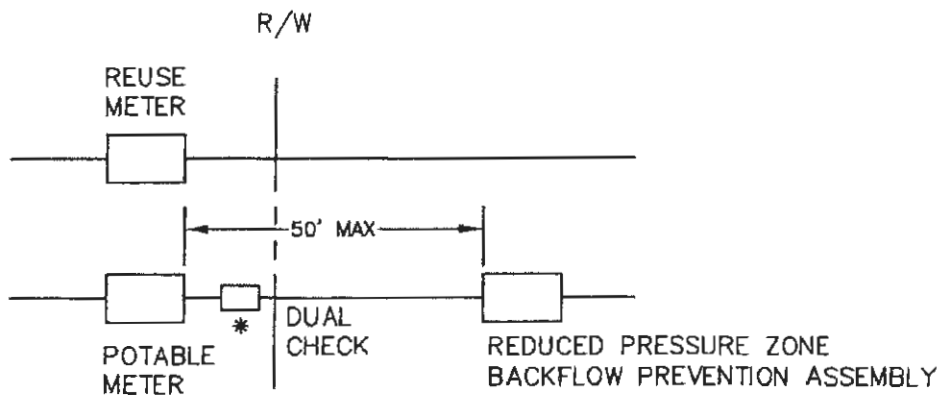
SEM.CO OCT 4-10
A-16 SVCSCHM2



POTABLE SERVICE WITH POTABLE IRRIGATION



POTABLE SERVICE WITH ALTERNATE SOURCE FOR IRRIGATION



POTABLE SERVICE WITH REUSE FOR IRRIGATION

* CAN REMOVE THE DUAL CHECK ON POTABLE IF RPZ IS WITHIN 3'.

COMMERCIAL METER
CONFIGURATIONS ($\leq 2''$ METER)

SEM.CO 4-10
A-17 SVCSCHM1