

CITY OF ARCADIA
CROSS-CONNECTION CONTROL
AND
BACKFLOW PREVENTION
MANUAL

INTRODUCTION

The purpose of this Manual is to establish procedures and requirements to implement a Cross-connection Control and Backflow Prevention Program for the City of Arcadia. This program is required by the City's Wastewater Treatment Plant Operation Permit, issued by the Florida Department of Environmental Protection, to safeguard the City's potable water system from potential contamination.

All comments regarding the City of Arcadia's Cross-connection Control and Backflow Prevention Program should be submitted to:

Cross-connection Control Program Coordinator
City of Arcadia Systems Department
P.O. Box 351
Arcadia, Florida 33821

Adopted by the Arcadia City Council at its regular Council meeting held on September 5, 1995 under the authority of Section 30-1 and 30-2 of the City of Arcadia Code of Ordinances.

CITY OF ARCADIA
CROSS-CONNECTION CONTROL PROGRAM

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S E C T I O N I .

DEFINITIONS.

SECTION I.

DEFINITIONS.

AIR-GAP. A physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air-gap separation" shall be at least double the diameter of the supply pipe measured vertically above the top of the rim of the vessel. In no case shall it be less than one (1) inch.

APPROVED. Accepted by the City of Arcadia.

AUXILIARY WATER SUPPLY. Any water supply on or available to the premises other than the water purveyor's approved public potable water supply.

BACKFLOW. The undesirable reversal of flow of water or mixtures of water and other liquids, gases, or other substances into the distribution system of the potable water supply from any source or sources.

BACK PRESSURE. Any elevation of pressure in the downstream piping system caused by a pump, elevated tank, boiler, or other means that could create pressure within that system greater than the supply pressure of the public potable water system, which would cause - or tend to cause - a reversal of the normal direction of flow.

BACKFLOW PREVENTION DEVICE, APPROVED. A device that has been investigated and approved for the prevention of backflow; as back pressure, back-siphonage, and/or both by the Foundation for Cross-Connection Control and Hydraulic Research.

BACKFLOW PREVENTION DEVICE TESTER, APPROVED. Any person holding a valid and current certificate as a Backflow Prevention Device Technician from the Florida Section of the American Water Works Association or other AWWA certified school providing such certification, as indicated in the Florida Administrative Code Section 17-22.660 (2).

BACK-SIPHONAGE. A form of backflow due to a reduction of pressure in the potable water system.

CONTAMINATION. An impairment of the quality of the potable water by sewage, industrial fluids or wastes, compounds or other materials to a degree which creates an actual hazard to the public health through poisoning or through the spread of disease.

CROSS-CONNECTION. Any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated water, sewage or other wastes or liquids of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as the

result of backflow. By-pass arrangements, jumper connections, removeable sections, swivel or changeable devices and other temporary or permanent devices through which or because of which backflow could occur are considered to be cross-connections.

CROSS-CONNECTION, CONTROLLED. A connection between a potable water system and a non-potable water system with an approved backflow prevention device properly installed that will continuously afford protection against contamination or pollution commensurate with the degree of hazard.

CROSS-CONNECTION CONTROL BY CONTAINMENT. The installation of an approved backflow prevention device at the service connection (downstream) to any customer's premises where it is not physically and economically feasible to find and permanently eliminate or control all actual or potential cross-connections within the customer's water system.

CROSS-CONNECTION CONTROL BY ISOLATION. The installation of an approved backflow prevention device or devices on the service line and/or at specific locations on the customer's water system or portion thereof where there are actual or potential cross-connections which cannot be effectively eliminated or controlled at the point of connection.

DOUBLE CHECK VALVE ASSEMBLY, APPROVED. An assembly composed of two single, independently acting, check valves including tightly closing "approved" shutoff valves located at each end of the assembly and "approved" connections (test cocks) for testing the water tightness of each check valve. The check valve shall permit no leakage in a direction reverse of normal flow. The closure element shall be internally weighted or otherwise loaded to promote rapid and positive closure. Only those double check valve assemblies approved by the Foundation for Cross-Connection Control and Hydraulic Research are acceptable for installation.

DOUBLE DETECTOR CHECK VALVE ASSEMBLY, APPROVED. An assembly of two independently operating approved check valves with tightly closing "approved" shutoff valves on each side of the check valves, plus properly located and "approved" test cocks for the testing of each check valve. A bypass arrangement consisting of an approved meter and an approved double check valve assemble shall be incorporated with the device for detection of leaks and/or unauthorized use of water. Only those double detector check valve assemblies approved by the Foundation for Cross-Connection Control and Hydraulic Research are acceptable for installation.

HAZARD, DEGREE OF. A measure of hazard derived from an evaluation of the potential risk to public health and the adverse affect of the hazard upon the potable water system.

HAZARD, HEALTH. Any condition, device or practice in the water supply system and its operation which could create, or in the judgement of the water purveyor, may create a danger to the health and well-being of the water consumer.

HAZARD - PLUMBING. An internal or plumbing type cross-connection in a consumer's potable water system that may be either a pollutional or a contamination type hazard. This includes but is not limited to cross-connections to toilets, sinks, lavatories, wash trays, washing machines and lawn sprinkling systems. Such a connection (unprotected) is considered to be a health hazard; therefore it must be protected by the installation of an appropriate type and approved backflow prevention device.

HAZARD - POLLUTIONAL. An actual or potential threat to the physical properties of the water system or to the potability of the public or the consumer's water system, but which would constitute a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances, but would not be dangerous to health.

HAZARD - SYSTEM. An actual or potential threat of severe damage to the physical properties of the public potable water system or the consumer's water system or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

INDUSTRIAL FLUIDS. Any fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration such as would constitute a health, plumbing, pollutional, or system hazard if introduced into an approved water supply and/or the 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 which may deteriorate in sanitary quality; chemicals in fluid form; plating acids and alkalies, circulated 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 such as from wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, etc.; oils, gases, glycerine, paraffins, caustic and acid solutions and other liquids and gaseous fluids used for industrial or other purposes or for fire-fighting purposes.

INDUSTRIAL PIPING SYSTEM - CONSUMER'S. Any system used by the consumer for transmission of or to confine or store any fluid, solid or gaseous substance other than an approved water supply. Such a system would include all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey or store substances which are or may be polluted or contaminated.

POLLUTION. An impairment of the quality of the water to a degree which does not create a hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

REDUCED PRESSURE BACKFLOW PREVENTER, APPROVED. An assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve. The unit shall include properly located and approved testcocks and tightly closing and approved shut-off valves at each end of the assembly. Only those reduced pressure backflow preventers approved by the Foundation for Cross-Connection Control and Hydraulic Research are acceptable for installation.

WATER - NONPOTABLE. Water which is not safe for human consumption.

WATER - POTABLE. Water from any source which has been investigated and approved for human consumption by the State of Florida, Department of Environmental Regulation.

WATER PURVEYOR. The owner and/or operator of any potable water system supplying an approved water supply to the public, under the jurisdiction of the State of Florida Department of Environmental Regulation.

WATER - SERVICE CONNECTION. The terminal end of a service connection from the public potable water system; i.e., where the Water Purveyor loses 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 side of the meter. There should be no unprotected takeoffs from the service line ahead of any meter or approved backflow prevention device located at the point of delivery to the customer's water system. Service connections shall also include water service connections from a fire hydrant and all other temporary or emergency water service connections from the public potable water system.

WATER SUPPLY - APPROVED. Any public potable water supply which has been investigated and approved by the State of Florida, Department of Environmental Regulation. The system must be operating under a valid permit.

WATER SUPPLY - AUXILIARY. Any water supply on or available to the premises other than the Water Purveyor's approved public potable water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source such as a well, spring, river, stream, harbor, etc., or "used waters" or "industrial fluids". They may be polluted or contaminated or they may be objectionable and constitute an unacceptable water source over which the Water Purveyor does not have sanitary control.

WATER SUPPLY - UNAPPROVED. A water supply which has not been approved for human consumption by the State of Florida, Department of Environmental Regulation.

WATER SYSTEM(S) - CONSUMER'S. Any water system located on the consumer's premises whether supplied by an approved public potable water system or an auxiliary water supply. The system or systems may be either a potable water system or an industrial piping system.

WATER SYSTEM - CONSUMER'S POTABLE. That portion of the privately owned potable water system lying between the point of delivery and the point of use. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey, store or utilize the potable water.

WATER SYSTEM - APPROVED PUBLIC POTABLE. Any publicly or privately owned water system operated as a public utility under a valid permit from the State of Florida, Department of Environmental Regulation. This system will include all sources, facilities and appurtenances between the source and the point of delivery such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey, treat or store a potable water for public consumption or use.

WATER - USED. Any water supplied by a water purveyor from an approved public potable water system to a consumer's water system after it has passed through the service connection and is no longer under the control of the water purveyor.

S E C T I O N II.

CROSS-CONNECTION CONTROL
RESPONSIBILITIES.

SECTION II
RESPONSIBILITIES

C 1. WATER PURVEYOR'S RESPONSIBILITY. The water purveyor is responsible for the following items.

- (1) The water purveyor shall provide the consumer with a supply of an approved potable water for consumption or use.
- (2) The water purveyor shall make sure that water from an unsuitable source or any other harmful substance does not enter the public water system. This responsibility begins at the source of the water supply and ends at the point of delivery to the consumer's premises providing that an approved backflow prevention device of the appropriate type has been installed (downstream) at the service connection.
- (3) The water purveyor may prohibit or discontinue service to any consumer who maintains a sanitation hazard in a potable water system (downstream of the meter or service connection), or whose plumbing is susceptible to cross-connections, unless the consumer has provided approved and appropriate backflow prevention devices for such system or systems.
- (4) The water purveyor shall require the consumer, when and where necessary, to install, operate and maintain an approved backflow prevention device of appropriate type at each service connection or other appropriate location on the public and/or private potable water system(s).
- (5) The water purveyor shall have the authority to prohibit or discontinue water service to any consumer who fails to install, operate and maintain an approved backflow prevention device of appropriate type as ordered by the water purveyor.

2. CONSUMER'S RESPONSIBILITY. The consumer is responsible for the following items.

- (1) The consumer has the responsibility of preventing any pollutants and contaminants on or about his premises from entering his private potable water system and/or the public potable water system.
- (2) Upon order from the water purveyor, the consumer shall at his own expense install, operate and maintain an approved backflow prevention device of appropriate type at the location or locations so ordered by the water purveyor.
- (3) The consumer shall at his own expense install and maintain an appropriate device for the control of thermal expansion, (ie. Diaphragm-type expansion tank, or approved pressure relief valve).

- (4) The consumer shall assist the water purveyor by providing any and all information requested by the water purveyor in determining the hazard(s) classification(s) of the consumer's potable water system(s).
- (5) The consumer shall notify the water purveyor of any pending changes in his potable water system and/or mode of operation which may have effect on his hazard classification and/or backflow prevention device(s) type and/or application. Such written notification to the water purveyor from the consumer shall precede any such changes.

S E C T I O N III.

CROSS-CONNECTION CONTROL
GENERAL RULES AND REGULATIONS.

SECTION III.

GENERAL RULES AND REGULATIONS GOVERNING CROSS-CONNECTION CONTROL

The following rules are hereby established in order to protect the public potable water supply from contamination due to cross-connections.

1. No installation of the public or a private (consumer) potable water supply piping or part thereof shall be made in such a manner that it will be possible for used, unclean, polluted or contaminated water, mixtures or substances to enter any portion of such piping from any tank, receptacle, equipment or plumbing fixture by reason of back-siphonage, back-pressure, or any other cause, either during normal use and operation thereof or when any such tank, receptacle, equipment or plumbing fixture is flooded, or subject to pressure in excess of the pressure in the hot or cold water piping.
2. No person shall make a connection or allow one to exist between pipes or conduits carrying potable water supplied by any private (consumer) potable water system or the public potable water system; and any pipes, conduits or fixtures containing or carrying water from any other source or containing or carrying water which has been used for any purpose whatsoever, or any substance whatsoever, unless there is provided an appropriate and approved backflow prevention device. The approval of the water purveyor must be obtained before any connection is made between the public potable water system and any consumer, contaminated, polluted or auxiliary water system.
3. No plumbing fixture, device or construction shall be installed or maintained or shall be connected to any public and/or private (consumer) potable water system, when such installation or connection may provide a cross-connection between such a public and/or private (consumer) potable water system which may become contaminated by such plumbing fixture, device or construction; unless there is provided an appropriate and approved backflow prevention device.
4. No water piping of a private (consumer) potable or non-potable water system or industrial piping system shall be connected to the public potable water system without the approval from the water purveyor.
5. Any person, firm, association, corporation, or other legal entity determined by the water purveyor to be a potential backflow source, or who meets the established requirements for backflow prevention protection, shall install or cause to be installed an appropriate and approved backflow prevention device(s).

S E C T I O N I V .

BACKFLOW PREVENTION DEVICES
GENERAL RULES.

GENERAL RULES GOVERNING BACKFLOW PREVENTION DEVICES.

1. Only those backflow prevention devices having approval from the Foundation for Cross-Connection Control and Hydraulic Research and having resilient seated gate valves (or ball valves on sizes 2-1/2 inches or less) and approved testcocks, are approved for installation under this Ordinance.
2. No backflow prevention device may be mounted in any type of pit or vault.
3. No backflow prevention device may be mounted in any position other than horizontal, unless a letter from the device manufacturer certifies that the device will function and can be used in that position as intended by the installer.
4. All backflow prevention devices installed in outside locations shall be protected from possible damage caused by normal traffic.
5. Those premises to which the constant delivery of potable water is absolutely essential, shall be equipped with a dual backflow prevention device system; involving the construction of parallel backflow preventors of appropriate size for the assured continuous delivery of water.
6. All backflow prevention devices shall be tested, repaired and overhauled only by an AWWA certified backflow prevention device technician.
7. All backflow prevention devices shall be tested at least once per year, and overhauled at least once every seven (7) years. Test frequencies include but are not limited to the following guidelines.

TEST FREQUENCYENTITIES.

QUARTERLY	- All hospitals; doctor and medical offices; medical and chemical laboratories; mortuaries; pharmacies; pest control companies; nursing homes and care facilities; facilities involving the manufacture, packaging and/or storage of any chemical or biological substance(s); sewage treatment facilities; florists; marinas; gas stations; airports.
SEMI-ANNUAL	- Commercial garages; car washes; restaurants; grocery stores; laundry mats.
ANNUAL	- Business offices; department stores; banks.

8. All backflow prevention devices installed in outside locations shall be a minimum of twelve (12) inches above finished grade and a maximum of thirty (30) inches above finished grade. All backflow prevention devices located in indoor locations shall

8. (continued)
be a minimum of twelve (12) inches above floor level. It shall be the responsibility of the device owner to insure that the device is located in such a way as to render it serviceable to testing, repair and overhaul. No backflow prevention device shall be mounted any closer than twelve (12) inches to any wall or other fixed appurature.
9. Any backflow prevention device failing its initial certification test must be repaired or replaced within thirty (30) days of its installation order letter.
10. Any backflow prevention device failing a regularly scheduled test must be repaired (or replaced) within ten (10) days of the initial test date. Even though a device fails its first (initial) test, such failure must be reported to the water purveyor; even if the device is repaired during that same visit.
11. Any backflow prevention device installed prior to this Ordinance which may not be an approved device but is of the appropriate type of device may be allowed to be used; however absolutely no repairs may be conducted on such a device. Should a repair become necessary or an overhaul on the device is scheduled, the device shall be replaced with an approved backflow prevention device of appropriate type instead. If the device is not of the appropriate type for the hazard classification, it must be replaced immediately (within 30 days).
12. The following are some of the reasons requiring repairs to backflow prevention devices.
 - (1) Leaking gate or ball valves.
 - (2) Leaking differential valve.
 - (3) Leaking check valves.
 - (4) Leaking testcocks.
 - (5) Below normal value on differential relief valve.
 - (6) "Sticking" differential relief valve.
 - (7) "Clogged" differential relief valve.
 - (8) Foreign materials fouling valves operation.

F.2 Typical Plumbing Fixtures Requiring Protection Against Cross-Connection

The following partial list of plumbing devices, and/or fixtures shall be provided with appropriate backflow prevention devices, the purpose of which is to protect the purity of potable water and thereby safeguard public health.

1. Air Conditioning
2. Air Conditioned Chill Water
3. Air Conditioned Cooling Tower
4. Aspirators, Medical or Others
5. Autoclave & Sterilizer & Steam Tables
6. Below-the-rim or inverted supply water inlets in aquariums, bidets, baptisteries, bedpan washers, bird baths, fish ponds, foot tubs, sinks, drinking fountains, siphon flush tanks, lavatories, tanks laundry and other tubs, vats, laboratory apparatus, therapeutic baths, X-ray developing tanks, etc.
7. Boiler Industrial Feeder lines
8. Condensers, Medical & Industrial
9. Commercial Dishwashing Machines
10. Chlorinators, Suction Side Pump
11. Degreasing Equipment
12. Digester, Hospital
13. Dye Vats & Tanks
14. Direct Connections, County Water and Sewer Pumps, Hydraulic Elevators and Industrial Processes
15. Dental Cuspidors & Saliva Ejector
16. Etching Tanks
17. Floor Drains with Trap Primers or Flushing Connections
18. Garbage Can Washers
19. Industrial In-Plant Plumbing Systems
20. Lawn Irrigation Systems with Fertilizer Injection Systems
21. Laundry Machine, Hospital
22. Post Mix Soda (soft drink) Equipment
23. Processing Tanks
24. Pumps for Unsafe Materials Primed by Water
25. Rubber Hoses
26. Swimming Pools, Home and Commercial
27. Steam Tables
28. Watering Troughs, Dairy & Stables
29. Watering Troughs with Vaccine, etc. Added for Poultry etc.
30. Water Operated Ejector

TYPICAL FACILITIES REQUIRING PROTECTION AGAINST CROSS-
CONNECTION; CONTAINMENT APPLICATIONS ONLY.

American Water Works Association (AWWA) standards shall be used as minimum guidelines. The following partial list of facilities shall be served by an approved backflow prevention device of the type designated; installed at the meter (downstream) or service connection of the public potable water system.

RP = REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTOR.
DC = DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTOR.
DDC = DOUBLE DETECTOR CHECK VALVE ASSEMBLY BACKFLOW PREVENTOR.
DRP = DETECTOR REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTOR.
DUC = DUAL CHECK ASSEMBLY BACKFLOW PREVENTOR.

1. All commercial facilities.....RP
2. All industrial facilities.....RP
3. Fire systems w/aux. supply (health hazard only)...RP
4. Fire systems (non-health hazard only).....DDC
5. Single family dwellings.....DUC *
6. Multi-family dwellings (single service connection).RP
7. Multi-family dwellings (individual service conn.)..DUC *
8. All public buildings.....RP
9. Public/semi-public swimming pools.....DC
10. Public water front and/or pier facilities (marinas)RP
11. All water treatment plant facilities.....RP
12. All sewage treatment plant facilities.....RP
13. Restricted, classified or other closed facilities..RP
14. All mobile home parks.....RP
15. All service connections where cross-connections are maintained.....RP

****NOTE:** Dual check assembly backflow preventors should be located just upstream of any plumbing appurtenances on the main service line. Generally these are located on the main service line, and prior to the air expansion

All Dual Check Assemblies installed shall be in line testable, and the dual check assembly backflow preventor shall be replaced every five (5) years or more frequently as deemed necessary and ordered by the water purveyor.

S E C T I O N V .

BACKFLOW PREVENTION
DEVICE TECHNICIANS.

SECTION V.

BACKFLOW PREVENTION DEVICE TECHNICIANS.

1. The water purveyor shall recognize and accept only those backflow prevention device technicians as certified by the American Water Works Association.
2. Any person wishing to become an AWWA certified backflow prevention device technician must complete a comprehensive training program established by the American Water Works Association. The University of Florida - TREMO Center conducts such a program.
3. The water purveyor shall keep a "List of AWWA Certified Backflow Prevention Device Technicians". Any person so certified may apply to be placed on that list by presenting to the water purveyor a copy of his AWWA certificate accompanied by a letter requesting admission to the list. Because recertification is required every two (2) years, it is a requirement that the applicant gain readmission to the list prior to the expiration of his certificate.
4. Only those AWWA certified backflow prevention device technicians appearing on the water purveyors "List" will be recommended by the water purveyor to work on backflow prevention devices within the service area of this water purveyor.
5. To prevent any conflicts of interest, employees of the water purveyor may not test, repair, overhaul or render any service whatsoever to any privately owned backflow prevention device.

S E C T I O N VI.

RECORDS.

SECTION VI.

RECORDS.

1. All records of surveys, inspections, tests, repairs and overhauls will be kept on file by the water purveyor; in the office of the designated official.
2. It is the responsibility of the premise owner and/or operator to keep records similar to those noted in item one (1) above along with all blueprints and/or drawings regarding plumbing and backflow prevention devices. All such records must be kept at the premise location.

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S E C T I O N V I I .

CROSS-CONNECTION CONTROL
PROGRAM PROCEDURES.

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CROSS-CONNECTION CONTROL PROGRAM PROCEDURES.

1. NEW FACILITIES. The following procedures are for all new facilities.
 - (1) CROSS-CONNECTION SURVEY REPORT. The premise owner(s) and/or his designated agent shall submit to the water purveyor a Cross-Connection Survey Report along with a set of blueprints for the proposed construction. This Survey Report may be completed by either a professional engineer or by an AWWA certified backflow prevention technician.
 - (2) CROSS-CONNECTION SURVEY REPORT REVIEW. After the water purveyor has received and reviewed the Cross-Connection Survey Report and blueprints of the proposed construction, the water purveyor may take the following action.
 - (A) The water purveyor may accept the Cross-Connection Survey Report as written.
 - (B) The water purveyor may require a meeting with the premise owner(s) and/or his designated agent before accepting and/or admending the Cross-Connection Survey Report.
 - (3) FINAL ACCEPTANCE - CROSS-CONNECTION SURVEY REPORT. Upon final acceptance of the Cross-Connection Survey Report the water purveyor shall establish the hazard classification for each instance of cross-connection, and assign an appropriate type of backflow prevention device for each such instance of cross-connection control.
 - (4) ORDER FOR BACKFLOW PREVENTION DEVICE(S) INSTALLATION. Within thirty (30) days after final acceptance of the Cross-Connection Survey Report, the water purveyor shall send a written order to the premise owner(s) and/or his designated agent requiring backflow prevention device(s) installation for the construction. The order shall contain the following directives.
 - (A) Define each point of cross-connection.
 - (B) Assign a backflow prevention device (type) for each point of cross-connection.

Any changes in the construction design may void all prior approvals by the water purveyor, and require the owner(s) and/or his designated agent to submit a new Cross-Connection Survey Report and blueprints for a new review.
 - (5) CONSTRUCTION PLAN REVIEW/APPROVAL. The owner(s) and/or his designated agent shall submit to the water purveyor those plans of construction for the backflow prevention device(s). Such plans should be submitted to the water purveyor prior to submission to the building department. The water purveyor will inspect the plans to insure that the backflow prevention device(s) are of the approved type and that the installation point(s) are acceptable. Upon acceptance by the water purveyor, the plans may be

submitted to the building department for approval and permit.

- (6) BACKFLOW PREVENTION DEVICE(S) - CERTIFICATION REPORT. Upon construction completion, the owner(s) and/or his designated agent shall have each backflow prevention device tested and certified by an AWWA certified backflow prevention device technician. This certification report must be received by the water purveyor before the water purveyor may complete the site inspection.
- (7) INSTALLATION ACCEPTANCE BY THE WATER PURVEYOR. After the water purveyor has received the certification report(s) for the backflow prevention device(s), the water purveyor shall make a site inspection of the construction/installation of each backflow prevention device on the premise. Until the water purveyor gives final acceptance to all backflow prevention devices installed, no "certificate of occupancy" may be issued. Upon receiving final acceptance by the water purveyor, the owner(s) and/or his designated agent may contact the building department for final inspection.
- (8) TESTING/OVERHAUL FREQUENCY SCHEDULE. Within thirty (30) days after final acceptance is issued, the water purveyor shall send a letter of "TESTING/OVERHAUL FREQUENCY SCHEDULE" to the owner(s) of the premise. In this letter will be listed each backflow prevention device and how frequently it must be tested and overhauled. Only an AWWA certified backflow prevention device technician from the water purveyor's "List" may test, repair, overhaul and/or certify a backflow prevention device.
- (9) NON-COMPLIANCE. Any person, firm, association, corporation or other legal entity failing to comply with these provisions shall be deemed to be in non-compliance with Section 30.5 of the City Code.

2. EXISTING FACILITIES. The following procedures are for all existing facilities.

- (1) "LETTER OF NOTIFICATION". The water purveyor shall send this letter to all premises where cross-connections are suspected. Each premise is required, upon notification, to submit a Cross-Connection Survey Report.
- (2) CROSS-CONNECTION SURVEY REPORT. Each premise, upon notification by the water purveyor, shall submit within thirty (30) days a Cross-Connection Survey Report to the water purveyor. Such a Survey Report may be completed by either a professional engineer or an AWWA certified backflow prevention technician from the water purveyor's "List".
- (3) CROSS-CONNECTION SURVEY REPORT REVIEW. After the water purveyor has received and reviewed the Cross-Connection Survey Report, the water purveyor may take the following action.

- (A) The water purveyor may accept the Cross-Connection Survey Report as written.
- (B) The water purveyor may require a meeting with the owner(s) and the engineer or backflow prevention technician at the premise location. Such a meeting may include a tour of the premise. Concluding the meeting and/or tour, the water purveyor may accept or amend the Cross-Connection Survey Report before final acceptance is given.
- (4) FINAL ACCEPTANCE - CROSS-CONNECTION SURVEY REPORT.
Upon final acceptance of the Cross-Connection Survey Report the water purveyor shall establish the hazard classification for each instance of cross-connection, and assign an appropriate type of backflow prevention device for each instance of cross-connection control.
- (5) ORDER FOR BACKFLOW PREVENTION DEVICE(S) INSTALLATION.
Within thirty (30) days after final acceptance of the Cross-Connection Survey Report, the water purveyor shall send a written order to the owner(s) and/or operator(s) of the premise requiring backflow prevention device(s) installation. The order shall contain the following directives.
- (A) Define each point of cross-connection.
- (B) Assign a backflow prevention device (type) for each point of cross-connection.
- (C) Designate a construction schedule, not to exceed sixty (60) days, for the installation of all backflow prevention devices required.
- (6) CONSTRUCTION PLAN REVIEW/APPROVAL. The owner(s) and/or operator(s) of the premise shall submit to the water purveyor those plans of construction for the backflow prevention device(s). Such plans should be submitted to the water purveyor prior to submission to the building department. The water purveyor will inspect the plans to insure that the backflow prevention device(s) are of the approved type and that the installation point(s) are acceptable. Upon acceptance by the water purveyor, the plans may be submitted to the building department for approval and permit.
- (7) BACKFLOW PREVENTION DEVICE(S) - CERTIFICATION REPORT.
Upon construction completion, the owner(s) and/or operator(s) shall have each backflow prevention device tested and certified by an AWWA certified backflow prevention device technician from the water purveyor's "List". This certification report(s) must be received by the water purveyor within the sixty (60) days construction time limit.
- (8) INSTALLATION ACCEPTANCE BY WATER PURVEYOR. After the water purveyor has received the certification report(s) for the backflow prevention device(s), the water purveyor shall make a site inspection of the construction/installation of each backflow prevention device on the premise. After

the water purveyor has been issued final acceptance of the installation(s), the building department may be called for final inspection.

- (9) TESTING/OVERHAUL FREQUENCY SCHEDULE. Within thirty (30) days after final acceptance is issued, the water purveyor shall send a letter of "Testing/Overhaul Frequency Schedule" to the owner(s) and/or operator(s) of the premise. In this letter will be listed each backflow prevention device and how frequently it must be tested and overhauled. Only an AWWA certified backflow prevention device technician from the water purveyor's "list" may test, repair, overhaul and/or certify a backflow prevention device.
- (10) NON-COMPLIANCE. Any person, firm, association, corporation or other legal entity failing to comply with these provisions, shall be deemed to be in non-compliance with Section 30.5 of the City Code.

CROSS-CONNECTION SURVEY REPORT FORM

DATE: _____

PREMISE: _____

ADDRESS: _____

CITY, COUNTY, STATE, ZIP: _____

TELEPHONE NUMBER: _____

PREMISE REPRESENTATIVE/TITLE: _____

NUMBER AND LIST OF ALL WATER SOURCES: _____

PIPING SYSTEM(S) IN ADDITION TO POTABLE: _____

POINTS OF INTERCONNECTION (ALL SYSTEMS): _____

SPECIAL EQUIPMENT SUPPLIED WITH WATER AND SOURCE: _____

DESCRIPTION OF PREMISE USE: _____

REMARKS OR RECOMMENDATIONS: _____

A PRINT OR DRAWING OF ALL PLUMBING SYSTEMS MUST ACCOMPANY THIS REPORT. ATTACH SKETCHES OF CROSS-CONNECTIONS FOUND, AND DESCRIBE.

S E C T I O N V I I I .

CROSS-CONNECTION SURVEY REPORT FORM.

INSPECTION CHECK LIST

NAME OF FIRM _____

MAILING ADDRESS _____

TIME _____ DATE _____ WATER PRESSURE _____ PH _____ CHLORINE RES. _____

Air Conditioning _____
 Air Washers _____
 Air Conditioned Chillwater _____
 Air Conditioned Condenser Water _____
 Air Conditioned Cooling Towers _____
 Air Compressors _____
 Autopsy Tables _____
 Aspirator, Medical _____
 Aspirator Weedicide and Root Feeders _____
 Autoclave & Sterilizer _____
 Boiler Feed Line _____
 Baptismal Fount _____
 Bathtub Below Rim Filler _____
 Bedpan Washer, Flushing Rim _____
 Bidet _____
 Brine Tank _____
 Bottle Washer _____
 Chemical Feeder Tanks _____
 Chlorinator _____
 Coffee Urn _____
 Cuspidor, Dental _____
 Chiller Tanks _____
 Cooking Kettles _____
 Condensate Tank _____
 Demineralized System _____
 Dishwasher _____
 Drinking Fountain _____
 Degreasing Equipment _____
 Dye Vats & Tanks _____
 Developing Tanks _____
 Dairy Barn Equipment _____
 Etching Tanks _____
 Stills _____
 Starch Tanks _____
 Sitz Bath _____
 Sprinkler System, Fire Protection _____
 Shampoo Basin Hose Rinse, Beauty Shop _____
 Sinks, Wash-up _____
 Serrated Faucets _____
 Sizing Vats & Boxes _____
 Solution Tanks _____
 Urinal, Siphon Jet Blow-out _____
 Urinal, Trough _____

Fountain, Ornamental _____
 Detergent Dispenser _____
 Floor Drains Flushing _____
 Garbage Can Washer _____
 Garbage Disposers _____
 Hydro-Therapy Baths _____
 Humidifier Tank & Boxes _____
 Hose Faucets _____
 Hot Water Heater & Tanks _____
 Ice Maker _____
 Janitor Closets _____
 Lab Equipment _____
 Laundry Machine _____
 Lavatory _____
 Lawn Sprinkler _____
 Boat, Marina _____
 Make-up Tank _____
 Pump, Prime Lines _____
 Pump, Water Oper Eject _____
 Photo Lab Sinks _____
 Photostat Equipment _____
 Pump Pneumatic Eject _____
 Pipette Washer _____
 Potato Peeler _____
 Processing Tanks _____
 Re-circulated Water _____
 Sewer, Sanitary _____
 Sewer, Storm _____
 Swimming Pool _____
 Sewer, Flushing Manhole _____
 Steam Cleaner _____
 Steam Table _____
 Digesters, Hospital _____
 Ultrasonic Baths _____
 Vats _____
 Telephone, Showers _____
 Water Closets, Tank _____
 Water Closets, Flush _____
 Water for Cooling _____
 Water Oper Equipment _____
 Water Treatment Tanks _____
 Water Well Secondary System _____
 Wash Tanks _____

REMARKS:

CROSS-CONNECTION INSPECTION CHECK LIST

Name of Firm: _____
 Address: _____
 Contact: _____
 Title: _____

Phone: _____
 Time: _____ Date: _____

MEDICAL/LABORATORY

- Aspirator, medical _____
- Aspirator, Hydro _____
- Autoclave _____
- Autopsy table _____
- Auxiliary Water System _____
- Bedpan Washer _____
- Bottle Washer _____
- Colonic Irrigator _____
- Condenser _____
- Cup Sink _____
- De-ionized Water System _____
- Dental Cuspidor _____
- Digester _____
- Distillation Equipment _____
- Electron Spectroscope _____
- Fermentation Tank _____
- Flushing Floor Drains _____
- Gas Chromatograph _____
- Heat Exchanger _____
- Hydro-Therapy Bath _____
- KJELDAHL _____
- KJELTEC Analyzer _____
- Laundry Equipment _____
- Mass Spectrograph _____
- Pipette Washer _____
- Retort _____
- Sitz Bath _____
- Spectrophotometer _____
- Thermal Energy Analyzer _____
- Ultrasonic Bath _____
- X-Ray Equipment _____

HVAC

- Boiler Feed Line _____
- Cooling Tower _____
- Expansion Tank Chilled _____
- Expansion Tank Boiler _____
- Solar System: Passive _____
- Active _____

PHOTO LAB

- Automatic Developer _____
- Film Washer _____
- KIS Photo Processor _____
- Print Washer _____
- Photostat Equip. _____
- Rinse Sinks _____

KITCHEN/RESTAURANT

- Coffee Urn _____
- Cooking Kettle _____
- Dishwasher _____
- Garbage Can Washer _____
- Garbage Disposal _____
- Grease Trap _____
- Ice Maker _____
- Mop Sink _____
- Overhead Spray Hose _____
- Potato Peeler _____
- Pressure Cooker _____
- Steam Table _____

DOMESTIC

- Bidet _____
- Dishwasher _____
- Fertilizer Injector _____
- Fish Pond _____
- Hose Bibbs _____
- Lawn Irrigation _____
- Photo Lab _____
- Solar System: Passive _____
- Active _____
- Swimming Pool _____
- Water Softener _____
- Well _____

SPECIALTY

- Aspirator, Weedicide _____
- Auto Shampoo & Wax _____
- Baptismal Font _____
- Blueprint Machine _____
- Compressors, Water Cooled _____
- Degreasing Equip. _____
- Dye Vats _____
- Etching Tanks _____
- Overhead Fill Tube/Hose _____
- Radiator Flushing Equip. _____
- Starch Tanks _____
- Steam Cleaner _____
- Welder, Water Cooled _____

MISCELLANEOUS

- Fire Sprinkler System _____
- Fountain, Ornamental _____
- Hose Bibbs _____
- Lawn Irrigation _____
- Water Softener _____

CROSS-CONNECTION SURVEY REPORT, PAGE 2 of 4.

- | | YES | NO |
|---|-----|-----|
| 1. Is there another source of water to the premise other than the service connection to the public potable water system? | () | () |
| 2. Is there an irrigation system on your property? | () | () |
| 3. Are there any facilities (such as a booster pump, elevated tank, etc.) to increase pressure above the supply pressure presently provided by the public potable water system? | () | () |
| 4. Are there any toxic or non-toxic chemicals used or stored in your premise? | () | () |
| 5. Are there any ejectors, asperators, or pumps used in your premise? | () | () |
| 6. Is water recycled during the operation of your air conditioner or any other equipment in your premise? | () | () |
| 7. Are there any water supply lines submerged in tanks, vats, etc.? | () | () |
| 8. Are there any backflow prevention device currently installed in any part of your piping? | () | () |
| 9. Is there a fire stand pipe or fire sprinkler system currently installed in your premise? | () | () |
| 10. Is your premise (building) more than two stories tall? | () | () |
| 11. At this time, is there any plans to remodel the current premise (building) piping system? | () | () |
| 12. At this time, is there any plans to expand the current premise (building)? | () | () |

AGE OF BUILDING: _____

(INSPECTOR NAME AND NUMBER) (COMPANY)

I hereby certify that the above information, as found and/or provided by the premise owner/manager, is accurate and accountable.

(SIGNATURE OF INSPECTOR) (DATE)



TEST & MAINTENANCE REPORT
CROSS CONNECTION CONTROL DEVICE

NAME OF PREMISE: _____
 PREMISE ADDRESS: _____
 CONTACTED: _____ TELEPHONE: _____

DEVICE LOCATION: _____
 DEVICE TYPE: _____ SIZE: _____ MANUFACTURER: _____
 MODEL NUMBER: _____ SERIAL NUMBER: _____

RP. PRESSURE DROP ACROSS FIRST CHECK VALVE: _____ PSI.
 LINE PRESSURE: _____ PSI, UPSTREAM OF BACKFLOW PREVENTOR.
 LINE PRESSURE: _____ PSI, DOWNSTREAM OF BACKFLOW PREVENTOR.
 METER READING ON DOUBLE DETECTOR CHECK ASSEMBLY: _____

REDUCED PRESSURE PRINCIPLE				
DOUBLE CHECK VALVE				
INITIAL TEST	CHECK VALVE #1	CHECK VALVE #2	DIFFERENTIAL PRESSURE RELIEF	DOUBLE DETECTOR CHECK VALVE
	CLOSED TIGHT _____ R.P. _____ PSID LEAKED _____	CLOSED TIGHT _____ LEAKED _____	OPEN AT _____ LEAKED _____ DIDN'T OPEN _____	CLOSED TIGHT _____ LEAKED _____
REPAIRS	CLEANED _____ REPLACED _____	CLEANED _____ REPLACED _____	CLEANED _____ REPLACED _____	CLEANED _____ REPLACED _____
	DISC _____	DISC _____	DISC _____	DISC _____
	SPRING _____	SPRING _____	SPRING _____	SPRING _____
	GUIDE _____	GUIDE _____	GUIDE _____	GUIDE _____
	PINS _____	PINS _____	PINS _____	PINS _____
	RETAINERS _____	RETAINERS _____	RETAINERS _____	RETAINERS _____
	SEATS _____	SEATS _____	SEATS _____	SEATS _____
OTHERS _____	OTHERS _____	DIAPHRAGM _____ LARGE _____ SMALL _____ SPACER _____ SCREWS _____ OTHER _____	OTHERS _____	
FINAL TEST	R.P. _____ PSID CLOSED TIGHT _____	CLOSED TIGHT _____	OPENED AT _____ PSID	CLOSED TIGHT _____

COMMENTS: _____

INITIAL TEST BY: _____ CERTIFIED TESTER # _____ DATE: _____
 REPAIRED BY: _____ REPAIR COMPANY: _____ DATE: _____
 FINAL TEST BY: _____ DATE: _____ CERTIFIED TESTER # _____

Date _____

Name _____

Address _____

Re: Test Schedule for Backflow
Prevention Device(s).

Dear _____

Your Backflow Prevention Device(s) require regular testing,
and inspection.

Your test frequency schedule for calendar year _____
per device is as follows.

Device _____

Model _____

Serial Number _____

Location _____

Frequency Schedule _____

Please contact an AWWA Certified Backflow Prevention Device
Technician from the enclosed list to have your device(s) tested,
and inspected.

Copies of our test reports are available at the Water
Department, or from your technician.

Please mail the results of the test(s) to the City of Arcadia
Water Department, P.O. Box 351, Arcadia, Florida 33821.

Sincerely,

Date _____

Name _____

Address _____

Re: (Acceptance/Denial) to the
"List of AWWA Certified Backflow
Prevention Device Technicians."

Dear _____

Please be advised that you have been (accepted/denied) for placement on our "List of AWWA Certified Backflow Prevention Device Technicians."

We look forward to working with you, and your clients in the future.

Sincerely,

S E C T I O N I X .

BACKFLOW PREVENTION DEVICE
CERTIFICATION FORM AND
SAMPLE LETTERS.

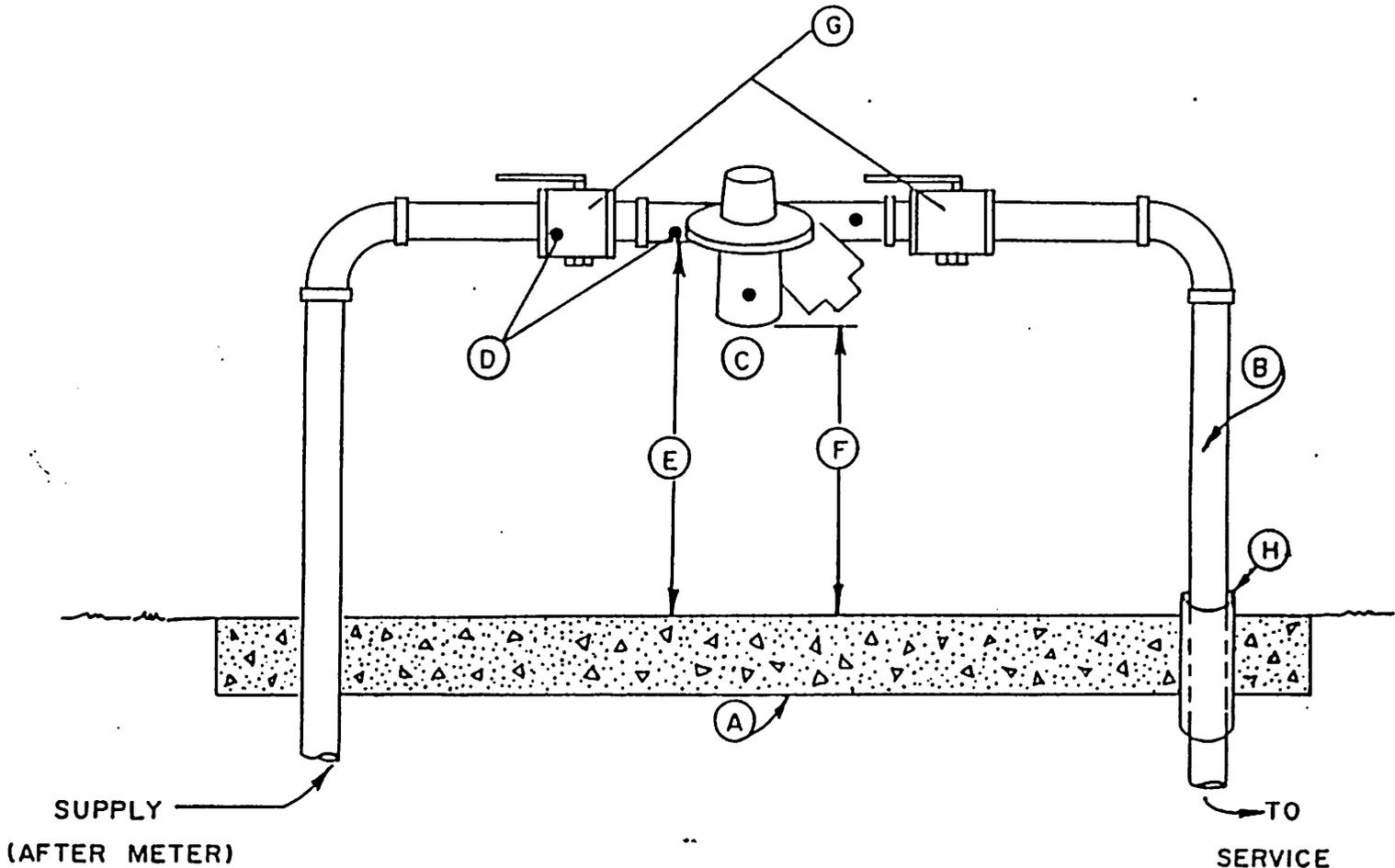
S E C T I O N X .

SAMPLE INSTALLATION DRAWINGS
OF BACKFLOW PREVENTION DEVICES.

INSTALLATION GUIDE

++++SAMPLE ONLY++++

SINGLE SERVICE (UP TO 2" DIAMETER)



- (A) CONCRETE PAD 4" THICK.
- (B) TYPE "L" OR "K" HARD COPPER OR BRASS / NO GALVANIZED.
- (C) APPROVED BACK FLOW PREVENTER (R.P.) OR (D.C.).
- (D) APPROPRIATE TEST COCKS.
- (E) 12" MIN. - 18" MAX. CLEARANCE (D.C.).
- (F) 12" MIN. 18" MAX. CLEARANCE (R.P.).
- (G) APPROVED RESILIENT SEAT GATE VALVE OR BALL VALVE.
- (H) SLEEVE AROUND PIPE TO PROTECT IT FROM CONCRETE.

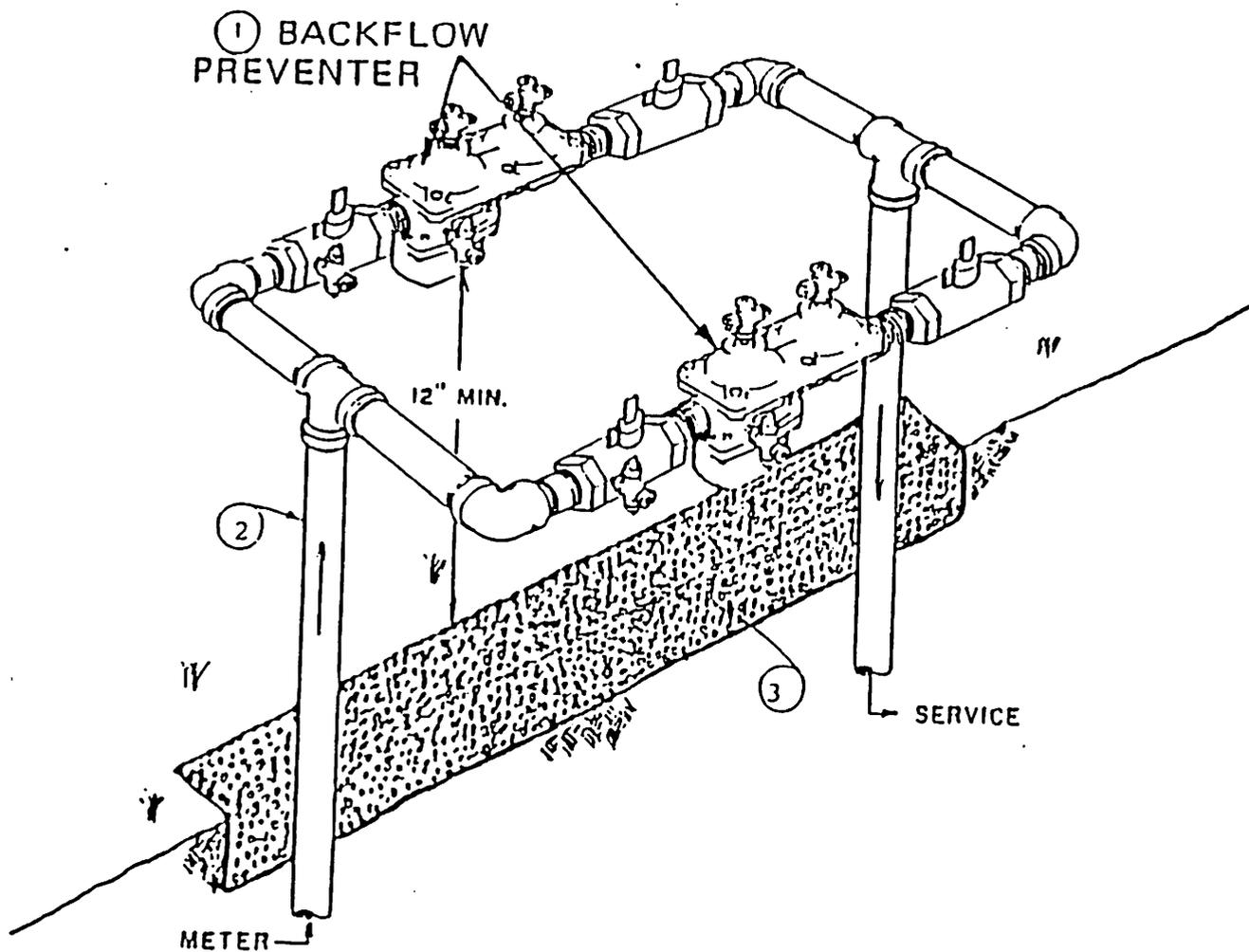
NOTE: ALL RIGID PIPE & FITTINGS, NO PVC ABOVE GROUND.

INSTALLATION GUIDE -
SINGLE SERVICE - B.F.P. - UP TO 2" DIA.

STANDARD
DETAIL DWG.
NO. 7B

DOUBLE CHECK OR REDUCED PRESSURE
BACKFLOW PREVENTER
DUAL SERVICE: 3/4", 1", 1-1/2", 2"

+++++ SAMPLE ONLY +++++

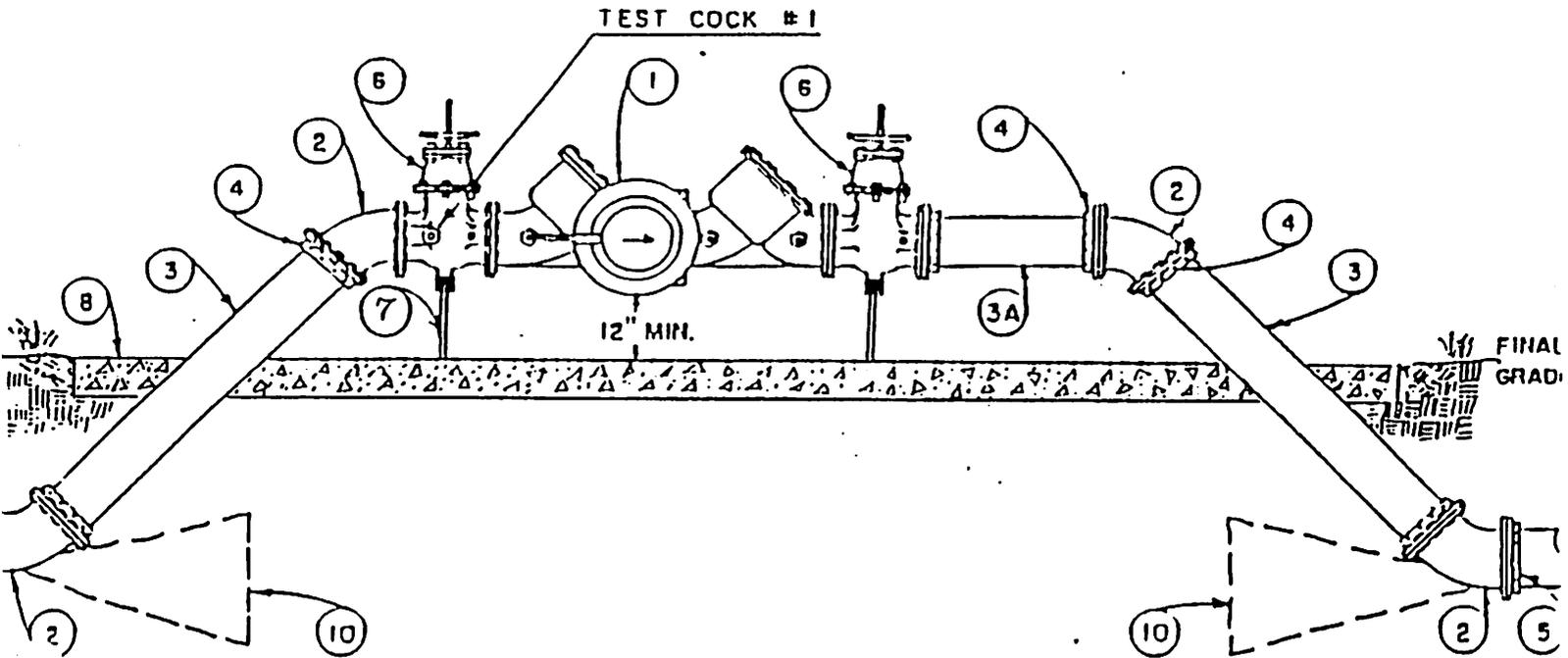


NOTES:

- (1) APPROVED BACKFLOW PREVENTER
- (2) COPPER TYPE L OR K HARD
- (3) CONCRETE SLAB 4" THICK

REDUCED PRESSURE
BACKFLOW PREVENTER
SINGLE SERVICE' 3", 4", 6", 8", 10"

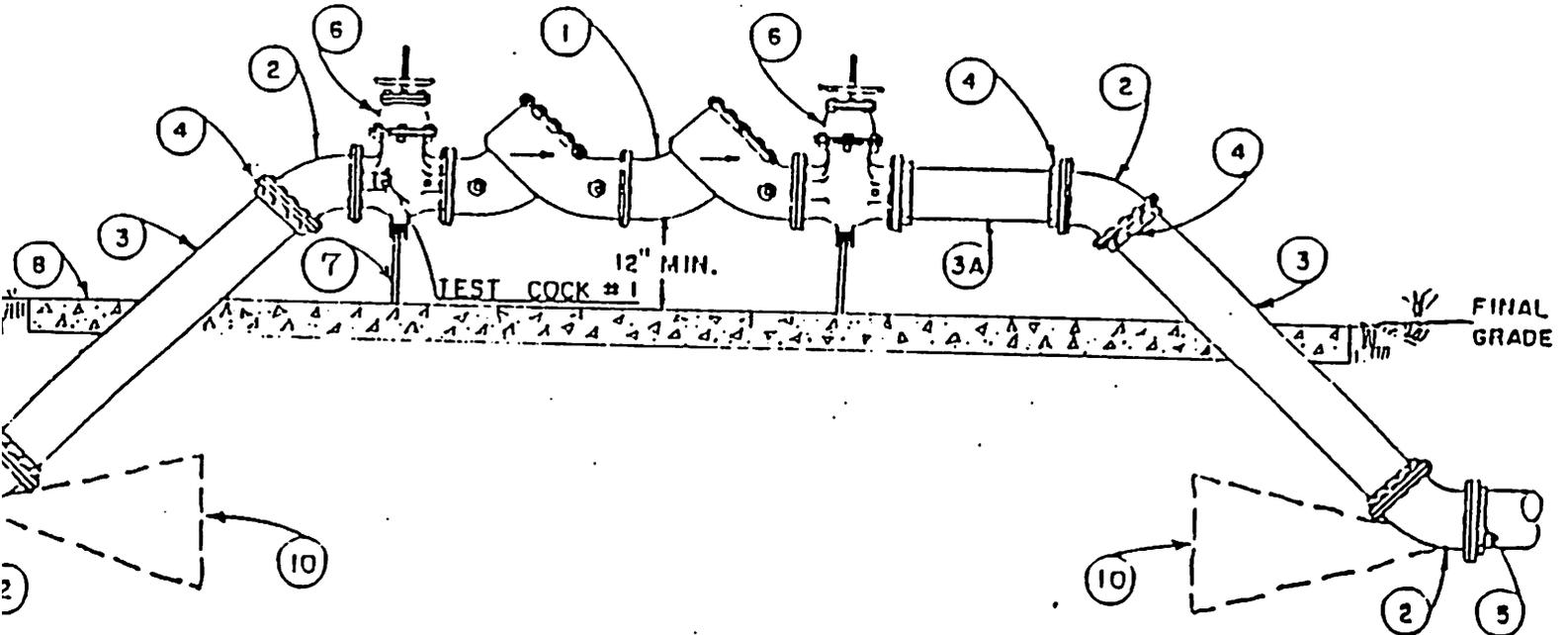
+++++ SAMPLE ONLY +++++



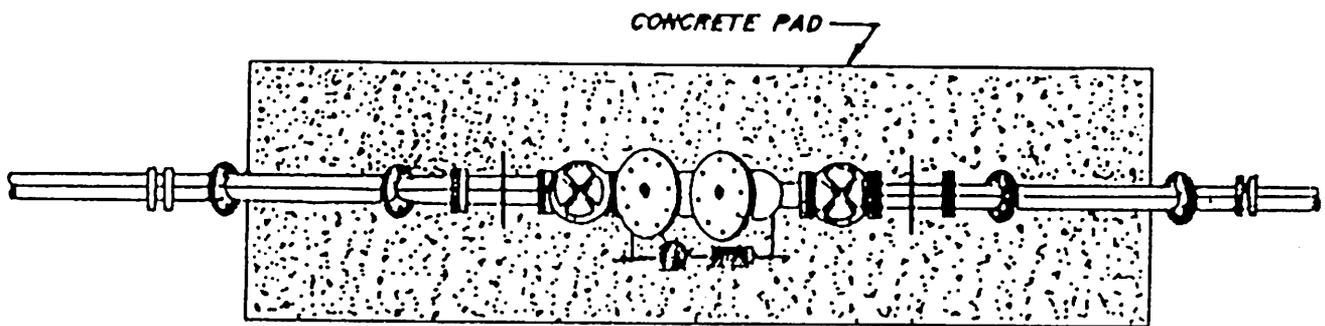
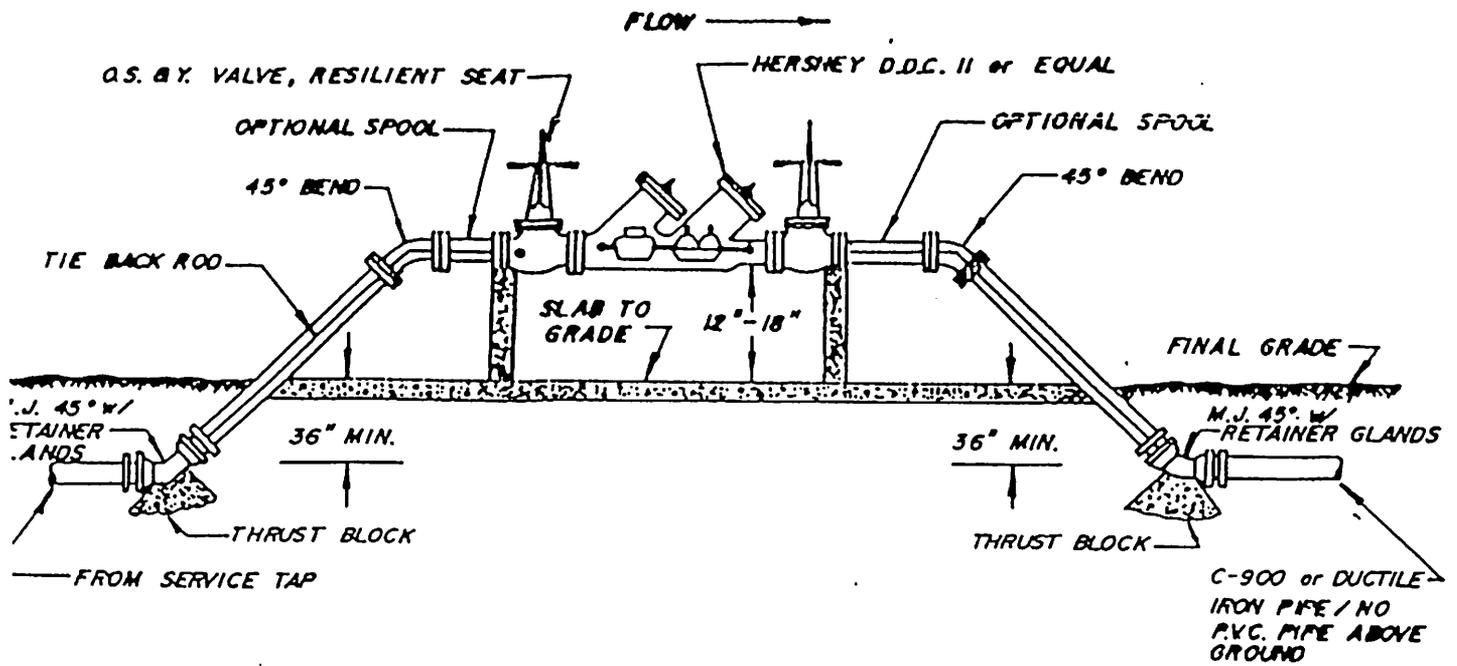
M A T E R I A L S		
ITEM	QUANT.	D E S C R I P T I O N
1	1	REDUCED PRESSURE VALVE ASSEMBLY
2	4	45 DEG. BEND
3	2	ADAPTER RISER
3A	1	ADAPTER SPOOL (OPT.)
4	3	ADAPTER FLANGE D.I.P.
5	2	ADAPTER FLANGE D.I.P. OR P.V.C.
6	2	RESILIENT SEAT GATE VALVE
7	2	GATE VALVE SUPPORTS
8	1	CONCRETE SLAB TO GRADE 4" THICK
10	2	REACTION BLOCK

DOUBLE CHECK
BACKFLOW PREVENTER
SINGLE SERVICE: 3", 4", 6", 8", 10"

+++++ SAMPLE ONLY +++++



M A T E R I A L S		
I T E M	Q U A N T .	D E S C R I P T I O N
1	.1	DOUBLE CHECK VALVE ASSEMBLY
2	4	45 DEG. BEND
3	2	ADAPTER RISER
3A	1	ADAPTER SPOOL (OPT.)
4	3	ADAPTER FLANGE D.I.P.
5	2	ADAPTER FLANGE D.I.P. OR P.V.C.
6	2	RESILIENT SEAT GATE VALVE
7	2	GATE VALVE SUPPORTS
8	1	CONCRETE SLAB TO GRADE 4" THICK
10	2	REACTION BLOCK



DOUBLE DETECTOR CHECK ASSEMBLY