

BACKFLOW PREVENTION POLICY
OF THE GOFORTH SPECIAL UTILITY DISTRICT¹

SECTION 1 CROSS-CONNECTION CONTROL — GENERAL POLICY

1.1 Purpose

The purpose of this policy is:

1.1.1 To protect the public potable water supply of the Goforth Special Utility District (the "District") from the possibility of contamination or pollution by isolating within the customer's internal distribution system(s) or the customer's private water system(s) such contaminants or pollutants that could backflow into the public water system; and

1.1.2 To promote the elimination or control of cross connections, actual or potential, between the customer's in-plant potable water system(s) and nonpotable water systems, plumbing fixtures, and industrial piping systems; and

1.1.3 To provide for the maintenance of a continuing program of cross connection control that will systematically and effectively prevent the contamination or pollution of all potable water systems.

1.2 Responsibility

The General Manager shall be responsible for ensuring the protection of the District's potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If, in the judgment of the General Manager, an approved backflow-prevention assembly is required (at the customer's water service connection or within the customer's private water system) for the safety of the water system, the General Manager or his/her designated agent shall give notice in writing to said customer to install such an approved backflow-prevention assembly(s) at specific location(s) on his/her premises. The customer shall immediately install such approved assembly(s) at his/her own expense, and failure, refusal, or inability on the part of the customer to install, have tested, and maintain said assembly(s) shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

SECTION 2 DEFINITIONS

2.1 General Manager

The General Manager of the District is invested with the authority and responsibility for the implementation of an effective cross-connection control program and for the enforcement of the provisions of this policy.

¹ This policy is adapted from the model ordinance for the control of backflow and cross connections included in American Water Works Association Manual M14.

2.2 Approved

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

2.3 Auxiliary Water Supply

Any water supply on or available to the premises other than the District's approved public water supply. These auxiliary waters may include water from another retail public utility's potable water supply or any natural source(s), such as a well, spring, river, stream, harbor, and so forth; used waters; or industrial fluids. These waters may be contaminated or polluted, or they may be objectionable and constitute an unacceptable water source over which the District does not have sanitary control.

2.4 Backflow

The undesirable reversal of flow in the District's potable water distribution system as a result of a cross connection.

2.5 Backpressure

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

2.6 Backsiphonage

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

2.7 Backflow Preventer

An assembly or means designed to prevent backflow, including the following:

2.7.1 Air gap. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water to a tank, fixture, receptor, sink, or other assembly and the flood level rim of the receptacle. The vertical, physical separation must be at least twice the diameter of the water supply outlet, but never less than 1.0 inch.

2.7.2 Reduced pressure zone (RPZ) assembly. The approved reduced pressure zone assembly consists of two 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 tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks. (See attached diagrams).

2.7.3 Reduced pressure detector assembly (RPDA). The approved reduced pressure detector assembly consists of two approved reduced pressure zone assemblies, set in parallel, equipped with a meter on the bypass line to detect water leakage or use. (See attached diagram).

2.8 Contamination

The presence of any foreign substance (organic, inorganic, radiological or biological) in water which tends to degrade its quality so as to constitute a health hazard or impair the usefulness of the water.

2.9 Cross Connection

A physical connection between the District's water system and either another supply of unknown or questionable quality, any source which may contain contaminating or polluting substances, or any source of water treated to a lesser degree in the treatment process.

2.10 Cross Connections—Controlled

A connection between the District's water system and a nonpotable water system with an approved backflow-prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

2.11 Hazard, Degree of

The term is derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

2.11.1 Hazard—health. A cross-connection, potential contamination hazard, or other situation involving any substance that can cause death, illness, spread of disease, or has a high probability of causing such effects if introduced into the District's potable drinking water supply.

2.11.2 Hazard—plumbing. A plumbing-type cross connection in a consumer's potable water system that has not been properly protected by an approved air gap or an approved backflow-prevention assembly.

2.11.3 Hazard—nonhealth. A cross-connection, potential contamination hazard, or other situation involving any substance that generally will not be a health hazard, but will constitute a nuisance, or be aesthetically objectionable, if introduced into the public water supply.

2.11.4 Hazard—system. An actual or potential threat of severe damage to the physical properties of the District's potable water system or the consumer'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.

2.12 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 an approved 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 alkalies; 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, such as wells, springs, streams, rivers, bays, harbors, seals, irrigation canals or systems, and so forth; oils, gases, glycerine, paraffins, caustic and acid solutions, and other liquid and gaseous fluids used in industrial or other purposes for fire-fighting purposes.

2.13 Pollution

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

2.14 Water—Potable

Water that is safe for human consumption or household use in accordance with all applicable state and city laws and regulations.

2.15 Water—Nonpotable

Water that is not safe for human consumption or household use or that is of questionable quality.

2.16 Service Connection

The terminal end of a service connection from the District's potable water system, that is, where the District 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 of the meter, and the customer shall be responsible for all facilities and equipment on the customer's side of the meter, including any backflow-prevention assembly. If a meter is not installed at the end of the service connection, then the service connection shall be at the backflow preventer, with the customer being responsible for the backflow-prevention assembly and water lines leading from the backflow-prevention assembly to the customer's point of use. There should be no unprotected takeoffs from the District's service line ahead of any meter or backflow-prevention assembly located at the point of delivery to the customer's water system. Service connection shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the District's potable water system.

2.17 Water—Used

Any water supplied by a retail public utility from a public potable water system to a consumer's water system after it has passed through the point of delivery and is no longer under the sanitary control of the retail public utility.

SECTION 3 REQUIREMENTS

3.1 Water System

3.1.1 The water system shall be considered as made up of two parts: the District's system and the customer's system.

3.1.2 The District's system shall consist of the source facilities and the distribution system, and shall include all those facilities of the water system under the complete control of the District, up to the point where the customer's system begins.

3.1.3 The source facilities shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system.

3.1.4 The distribution system shall include the network of conduits used for the delivery of water from the source to the customer's system.

3.1.5 The customer's system shall include those parts of the facilities beyond the termination of the District's distribution system that are utilized in conveying District-delivered potable water to points of use.

3.2 Policy

3.2.1 No water service connection to any premises shall be installed or maintained by the District unless the water supply is protected as required by applicable state and city laws and regulations and this policy. Service of water to any premises shall be discontinued by the District if a backflow-prevention assembly required by this policy is not installed, tested, and maintained, or if it is found that a backflow-prevention assembly has been removed or bypassed, or if an unprotected cross connection exists on the premises. Service will not be restored until such conditions or defects are corrected.

3.2.2 The customer's system should be open for inspection at all reasonable times to authorized representatives of the District to determine whether cross connections or other structural or sanitary hazards, including violations of these regulations, exist. When such a condition becomes known, the General Manager or his/her designated agent shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with applicable state and city laws relating to plumbing and water supplies and this policy.

3.2.3 An approved backflow-prevention assembly shall be installed on each customer service line to a customer's water system at or near the property line or immediately inside the building being served; but in all cases, before the first branch line leading off the customer service line, wherever any of the following conditions exist:

3.2.3.a premises having an auxiliary water supply that is not or may not be of safe bacteriological or chemical quality and that is not acceptable as an additional source by the General Manager;

3.2.3.b premises on which any industrial fluids or any other objectionable substances are handled in such a fashion as to create an actual or potential hazard to the District's water system, including the handling of process waters and waters originating from the District's system that have been subject to deterioration in quality;

3.2.3.c premises having (1) internal cross connections that cannot be permanently corrected and controlled, or (2) intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross connections exist.

3.2.3.d premises where there is water or substance that would be objectionable but not hazardous to health, if introduced into the District's water system;

3.2.3.e premises where there is any material dangerous to health that is handled in such a fashion as to create an actual or potential hazard to the District's water system, including but not limited to, sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries, and plating plants;

3.2.3.f premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross-connection survey; or

3.2.3.g premises where, in the opinion of the General Manager, an undue health threat is posed because of the presence of extremely toxic substances.

3.2.4 If any of the conditions listed in section 3.2.3 exist, the District's water system shall be protected by an approved air-gap separation, an approved reduced pressure zone assembly, or an approved reduced pressure detector assembly. The type of protective assembly required shall be determined by the General Manager.

3.2.5 Any backflow-prevention assembly required herein shall be a model and size approved by the General Manager. The term *approved backflow-prevention assembly* shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association titled:

AWWA C511-89—Standard for Reduced-Pressure Principle
Backflow-Prevention Assembly,

and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California established by "Specification of Backflow-Prevention Assemblies"—Sec. 10 of the most current issue of the *Manual of Cross-Connection Control*.

Said AWWA and FCCHR standards and specifications have been adopted by the District. Final approval shall be evidenced by a "Certificate of Approval" issued by an approved testing laboratory certifying full compliance with said AWWA standards and FCCHR specifications. A list of approved testing laboratories will be provided by the General Manager upon request.

Backflow preventers that may be subjected to backpressure or backsiphonage that have been fully tested and have been granted a certificate of approval by a qualified laboratory and are listed on the laboratory's current list of approved backflow-prevention assemblies may be used without further testing or qualification.

3.2.6 Installation of reduced pressure zone assemblies and reduced pressure detector assemblies shall comply with the following requirements:

3.2.6a Installation in a pit or below ground level is not permitted.

3.2.6b If such assemblies are installed in a vault, proper drainage, as determined by the General Manager, must be provided.

3.2.6c If installed in areas subject to freezing temperatures or conditions, protection from freezing must be provided.

3.2.6d Barricades and guard posts must be installed if necessary to protect the assembly from vehicular traffic. (See attached diagram).

3.2.7 It shall be the duty of the customer-user at any premises where backflow-prevention assemblies are installed to have certified inspections and operational tests made at least once per year. In those instances where the General Manager deems the hazard to be great enough, certified inspections may be required at more frequent intervals. These inspections and tests shall be at the expense of the water user and shall be performed by the assembly manufacturer's representative, District personnel, or by a certified tester approved by the General Manager. The customer-user will be billed for this expense in accordance with the District's rate order and service policies. The General Manager shall notify the customer-user in advance when the tests are to be undertaken so that the customer-user may witness the tests if so desired. These assemblies shall be repaired, overhauled, or replaced at the expense of the customer-user whenever said assemblies are found to be defective. Records of such tests, repairs, and overhaul shall be kept by the District and made available to the customer-user at the District's office during regular business hours.

3.2.8 All presently installed backflow-prevention assemblies that do not meet the requirements of this section, but were approved assemblies for the purpose described herein at the time of installation and that have been properly maintained, shall, except for the inspection and maintenance requirements under subsection 3.2.7, be excluded from the requirements of this policy so long as the General Manager is assured that they will satisfactorily protect the utility system. Whenever the existing assembly fails a test, breaks, needs replacement, is moved from the present location, requires more than minimum maintenance, or when the General Manager finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved backflow-prevention assembly meeting the requirements of this policy.

This Backflow Prevention Policy was adopted by the Board of Directors of the Goforth Special Utility District on the 24th day of June, 2009.



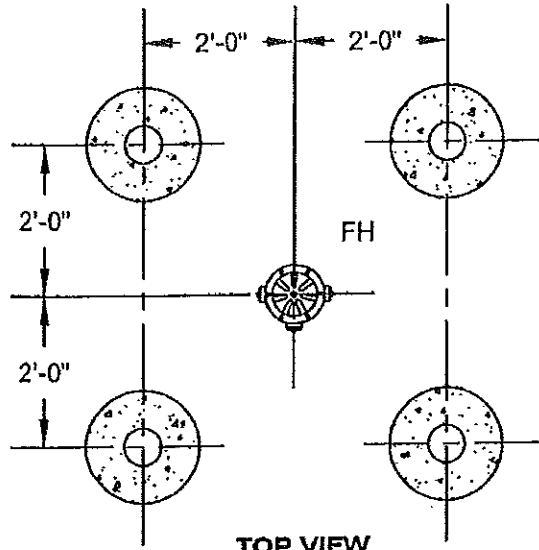
President

ATTEST:

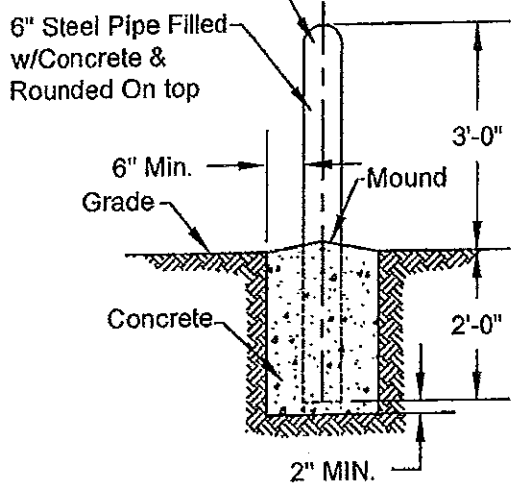


Secretary-Treasurer

Paint Exposed 6" Steel Pipe & Concrete Cap w/One Coat of Rust-Inhibitive Primer & One Outside Coat of Yellow Paint.



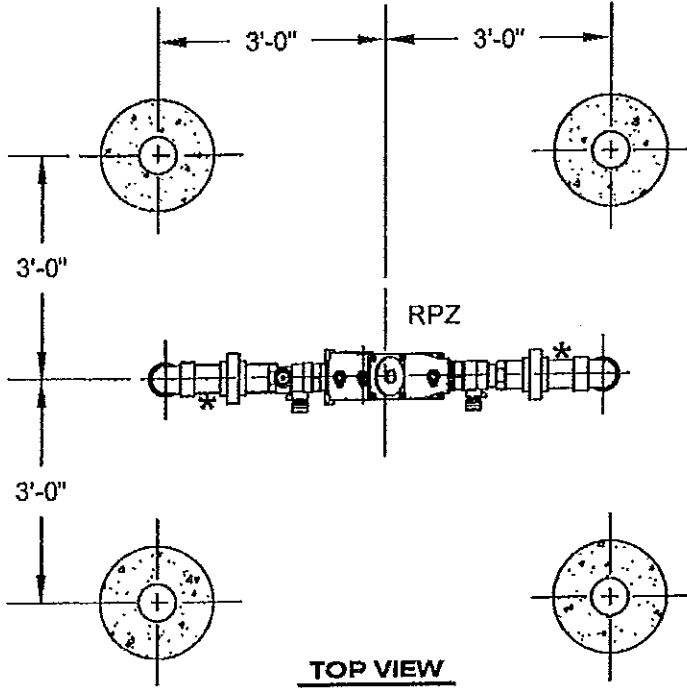
TOP VIEW
FH GUARD POST



TYPICAL ELEVATION

Note:
Install Guard Post as Required to Protect Fire Hydrant and RPZ from Vehicular Traffic.

For Highway Installation See TxDOT Specifications.



TOP VIEW
RPZ GUARD POST

GUARD POST DETAIL

SCALE: NONE



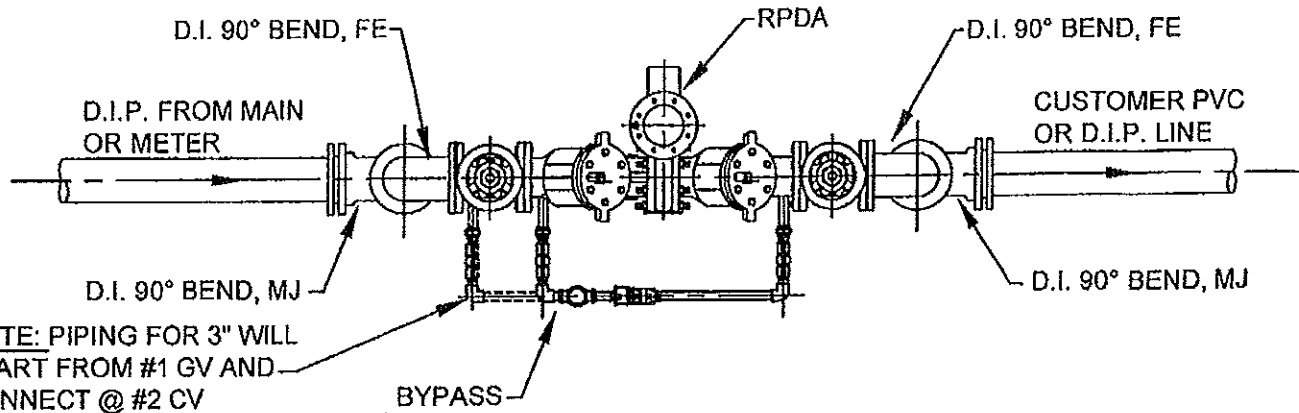
Southwest Engineers, Inc.

Civil - Environmental - Planning
Gonzales Austin

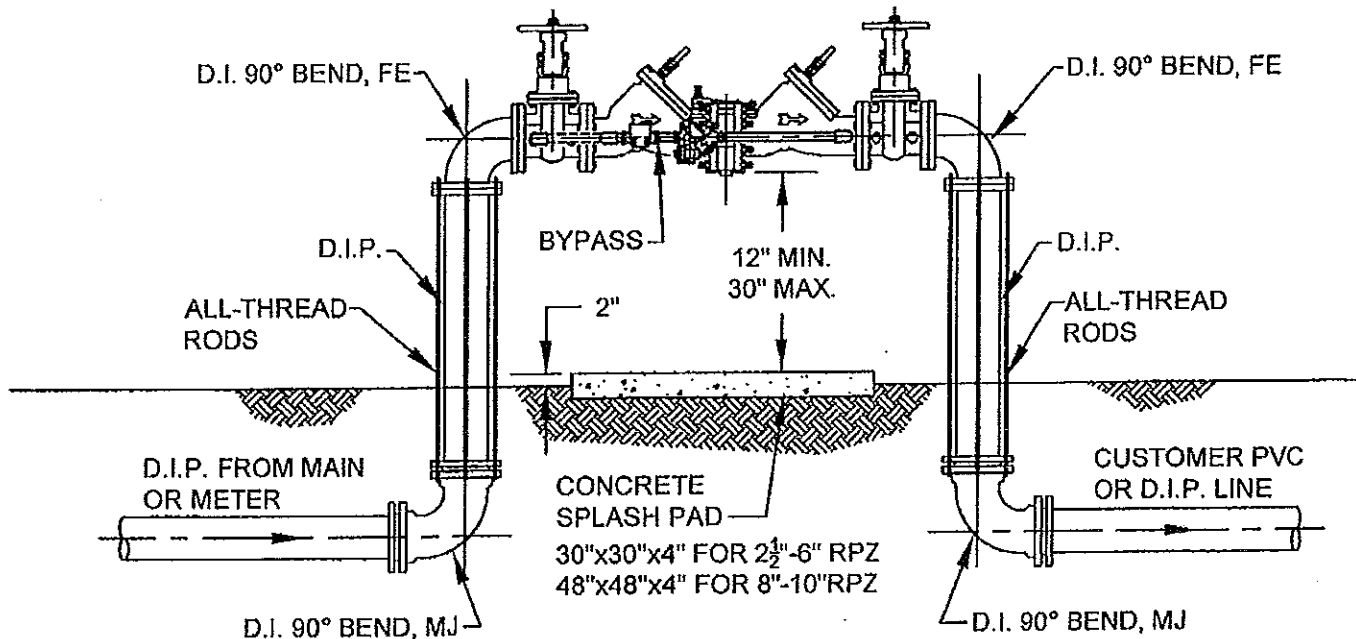
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GOFORTH S.U.D.

HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS



TOP VIEW



ELEVATION

NOTES:

- MEGA-LUGS TO BE USED ON ALL FITTINGS
- INSERT PIPE SUPPORTS IF NECESSARY
- FOR FIRE LINE OR ANY OTHER NON-METERED APPLICATIONS

REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA)
BACKFLOW PREVENTER DETAIL FOR 2 1/2" & LARGER ASSEMBLIES
(WATTS SERIES 909 RPDA OR APPROVED EQUAL)

SCALE: NONE



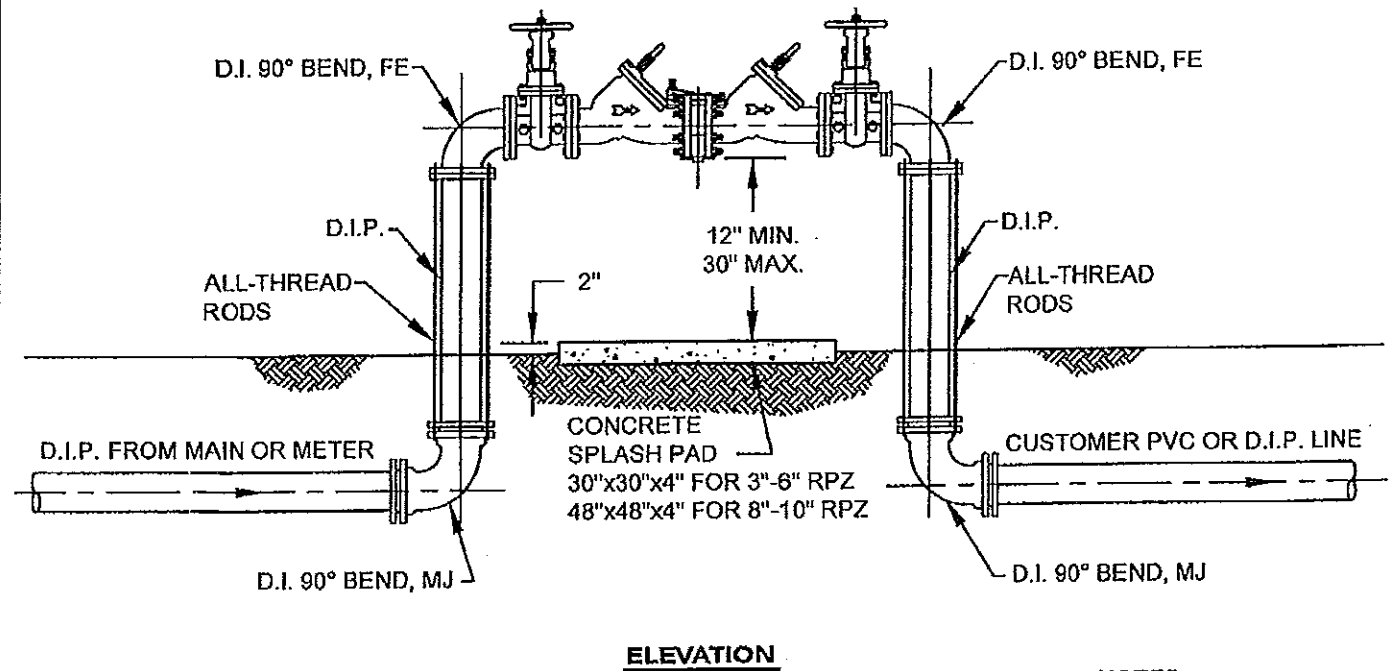
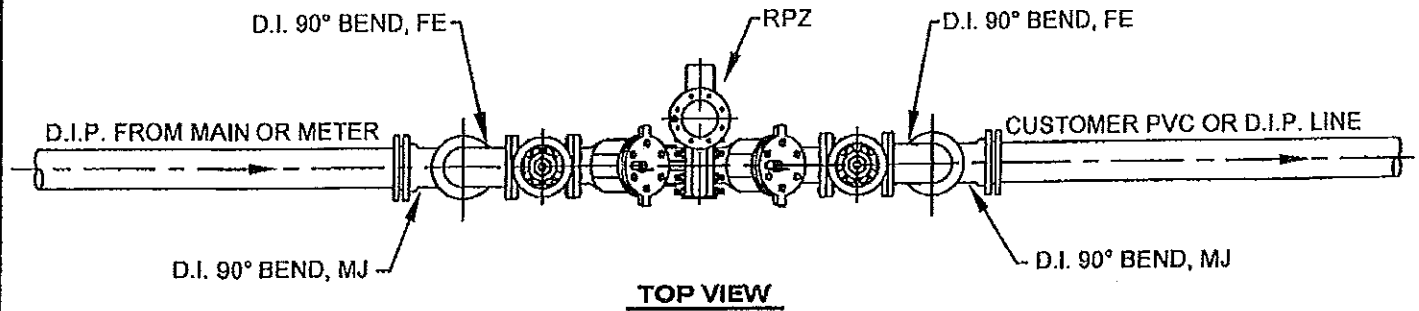
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HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS



- NOTES:**
- MEGA-LUGS TO BE USED ON ALL FITTINGS
 - INSERT PIPE SUPPORTS IF NECESSARY

REDUCED PRESSURE ZONE (RPZ) ASSEMBLY
BACKFLOW PREVENTER DETAIL FOR 3" & LARGER ASSEMBLIES
(WATTS SERIES 909 OR APPROVED EQUAL)

SCALE: NONE



Southwest Engineers, Inc.

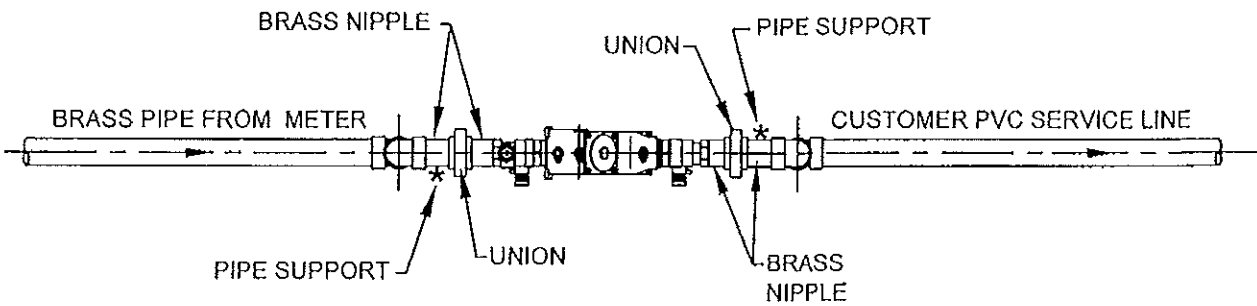
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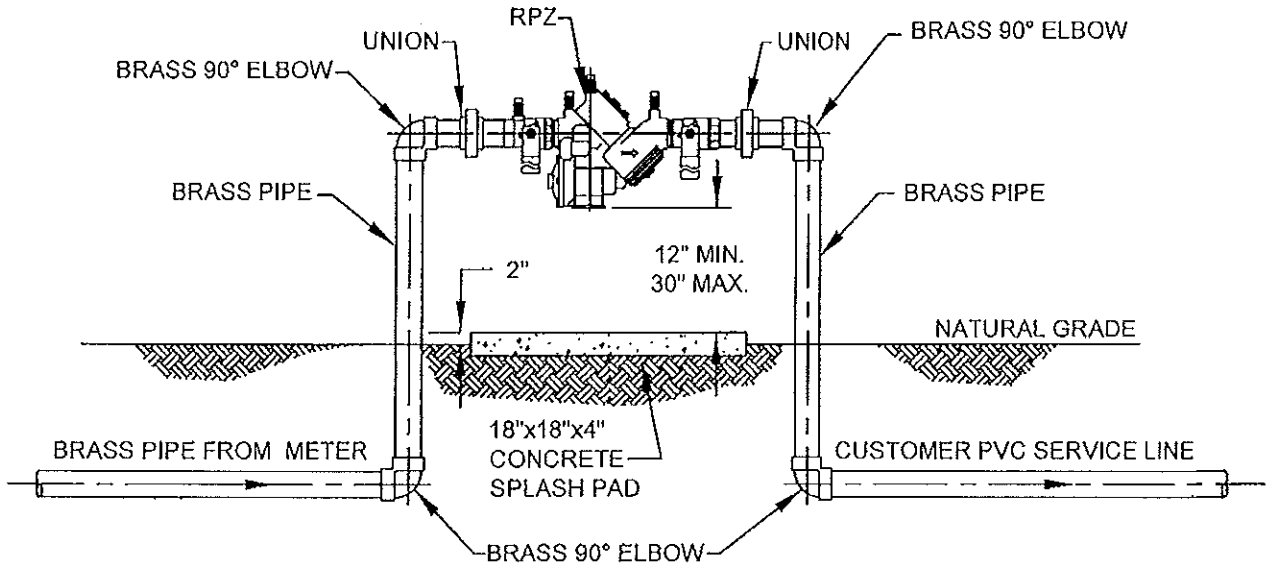
GOFORTH S.U.D.

HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS

* INSERT PIPE SUPPORTS
(POSTS OR TEE POSTS)



TOP VIEW



ELEVATION

REDUCED PRESSURE ZONE (RPZ) ASSEMBLY
BACKFLOW PREVENTER DETAIL FOR 3/4" - 2 1/2" ASSEMBLIES
(WATTS SERIES 909 OR APPROVED EQUAL)

SCALE: NONE



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