a.

CROSS CONNECTION HAND OUT INFORMATION

Required Devices

1. An approved backflow prevention assembly shall be installed downstream of the meter on each service line to a customer's premises 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 service line, when any of the following conditions exist:

b. Impractical to provide an effective air-gap separation;

c.The owner/occupant of the premises cannot or is not willing to demonstrate to the Castalian Springs-Bethpage Utility District that the water use and protective features of the plumbing are such as to pose no threat to the safety or potability of the water;

c. The nature and mode of operation within a premises are such that frequent alterations are made to the plumbing;

d. There is likelihood that protective measures may be subverted, altered or disconnected;

e. The plumbing from a private well or other water source enters the premises served by the public water system.

2. The protective devices shall be of the reduced pressure zone type approved by the Tennessee Department of Environment and Conservation and the Castalian Springs-Bethpage Utility District, as to manufacture, model, size and application. The method of installation of back flow prevention devices shall be approved by the Castalian Springs-Bethpage Utility District prior to installation and shall comply with the criteria set forth in this policy. The installation and maintenance of back flow prevention devices shall be at the expense of the owner or occupant of the premises.

3. Applications requiring backflow prevention devices shall include, but shall not be limited to, domestic water service and/or fire flow connections for all commercial and educational buildings, construction sites, all industrial, institutional and medical facilities, all fountains, lawn irrigation systems, wells, water softeners and other treatment systems, and on all fire hydrant connections other than those by the fire department in combating fires.

a. Class I, Class 2 and Class 3 fire protection systems shall generally require a double check valve assembly; except 1) a double check detector assembly shall be required where a hydrant or other point of use exists on the system; or 2) a reduced pressure backflow prevention device shall be required where:

i. Underground fire sprinkler lines are parallel to and within ten (10) feet horizontally of pipes carrying sewage or significantly toxic materials;

ii. Premises have unusually complex piping systems;

d.

i. An approved air-gap shall separate the relief port from any drainage system. An approved air-gap shall be at least twice the inside diameter of the supply line, but never less than one (1 lf) inch.

j. An approved strainer shall be installed immediately upstream of the backflow prevention device, except in the case of a fire protection system.

k. Devices shall be located in an area free from submergence or flood potential, therefore never in a below grade pit or vault. All devices shall be adequately supported to prevent sagging.

l. Adequate drainage shall be provided for all devices. Reduced Pressure Backflow Prevention devices shall be drained to the outside whenever possible.

m. Fire hydrant drains shall not be connected to the sewer, nor shall fire hydrants be installed such that backflow/backsiphonage through the drain may occur.

n. Enclosures for outside installations shall meet the following criteria:

1. All enclosures for backflow prevention devices shall be as manufactured by reputable company or an approved equal.

2. For backflow prevention devices up to and including two (2") inches, the enclosure shall be constructed of adequate material to protect the device from vandalism and freezing and shall be approved by the Castalian Springs-Bethpage Utility District. The complete assembly, including valve stems and hand wheels, shall be protected by being inside the enclosure.

3. To provide access for backflow prevention devices up to and including two (2") inches, the enclosure shall be completely removable. Access for backflow prevention devices 2-1/2" and larger shall be provided through a minimum of two access panels. The access panels shall be of the same height as the enclosure and shall be completely removable. All access panels shall be provided with built-in locks.

4. The enclosure shall be mounted to a concrete pad in no case less than four (4") inches thick. The enclosure shall be constructed, assembled and/or mounted in such a manner that it will remain locked and secured to the pad even if any outside fasteners are removed. All hardware and fasteners shall be constructed of 300 series stainless steel.

5. Heating equipment, if required, shall be designed and furnished by the manufacturer of the enclosure to maintain an interior temperature of +40°F with an outside temperature of -30°F and a wind velocity of 15 miles per hour.

iii. Pumpers connecting to the system have corrosion inhibitors or other chemicals added to the tanks of the fire trucks.

b. Class 4, Class 5 and Class 6 fire protection systems shall require reduced pressure backflow prevention devices.

c. Wherever the fire protection system piping is not an acceptable potable water system material, or chemicals such as foam concentrates or antifreeze additives are used, a reduced pressure backflow prevention device shall be required.

4. The manager or his representative may require additional and/or internal back flow prevention devices wherein it is deemed necessary to protect potable water supplies within the premises.

5. Installation Criteria The minimum acceptable criteria for the installation of reduced pressure back flow prevention devices, double check valve assemblies or other backflow prevention devices requiring regular inspection or testing shall include the following:

a. All required devices shall be installed in accordance with the provisions of this policy, by a person approved by the Castalian Springs-Bethpage Utility District who is knowledgeable in the proper installation. Only licensed sprinkler contractors may install, repair or test backflow prevention devices on fire protection systems.

c. The entire device, including valves and test cocks, shall be easily accessible for testing and repair.

d. All devices shall be placed in the upright position in a horizontal run of pipe.

e.Device shall be protected from freezing, vandalism, mechanical abuse and from any corrosive, sticky, greasy, abrasive or other damaging environment.

f Reduced Pressure Backflow Prevention devices shall be located a minimum o f twelve (12") inches plus the nominal diameter of the device above either; 1) the floor, 2) the top of opening(s) in the enclosure or 3) maximum flood level, whichever is higher. Maximum height above the floor surface shall not exceed sixty (60") inches.

g. Clearance from wall surfaces or other obstructions shall be at least six (6") inches. Devices located in nonremovable enclosures shall have at least twenty-four (24") inches of clearance on each side of the device for testing and repairs.

h. Devices shall be positioned where a discharge from the relief port will not create undesirable conditions. The relief port must never be plugged, restricted or solidly piped to a drain.

e.

o. Where the use of water is critical to the continuance of normal operations or the protection of life, property or equipment, duplicate backflow prevention devices shall be provided to avoid the necessity of discontinuing water service to test or repair the protective device. Where it is found that only one device has been installed and the continuance of service is critical, the Castalian Springs-Bethpage Utility District shall notify, in writing, the occupant of the premises of plans to interrupt water services and arrange for a mutually acceptable time to test the device. In such cases, the Castalian Springs-Bethpage Utility District may require the installation of a duplicate device.

p. The Castalian Springs-Bethpage Utility District shall require the occupant of the premises to keep any backflow prevention devices working properly, and to make all indicated repairs promptly. Repairs shall be made by qualified personnel acceptable to the Castalian Springs-Bethpage Utility District. Expense of such repairs shall be borne by the owner or occupant of the premises. The failure to maintain a backflow prevention device in proper working condition shall be grounds for discontinuance of water service to a premises. Likewise the removal, bypassing or alteration of a backflow prevention device or the installation thereof, so as to render a device ineffective shall constitute a violation of this policy and shall be grounds for discontinuance of water service. Water service to such premises shall not be restored until the customer has corrected or eliminated such conditions or defects to the satisfaction of the Castalian Springs-Bethpage Utility District.

6. Testing of Devices Devices shall be tested annually by the Castalian Springs-Bethpage Utility District by a qualified person possessing a valid certification from the Tennessee Department of Environment and Conservation, Division of Water Supply for the testing of such devices. A record of this test will be on file with the Castalian Springs-Bethpage Utility District and a copy of this report will be supplied to the customer. Water service shall not be disrupted to test a device without the knowledge of the occupant of the premises.

Information provided by:

Castalian Springs-Bethpage Water Utility District

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