Nolensville / College Grove Utility District

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INSTALLATION CRITERIA FOR REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLIES (RPBP)

General: All backflow prevention assemblies shall be inspected to verify that the units meet the requirements listed below and shall be tested to ensure compliance with the performance requirements set forth in the latest edition of the *Manual for Cross-Connection Control*, published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California.

MINIMUM INSTALLATION REQUIREMENTS (RPBP)

A. Flood Protection: Assemblies shall never be subject to flooding and shall therefore:

1. Not be located in pits or other areas subject to flooding.
2. Avoid the use of piped drains for enclosures housing the units. Provisions shall be made for discharging water (maximum design discharge) directly through the enclosure wall at an elevation slightly higher than the surrounding ground level or maximum flood level.
3. Be installed so that the lowest point of the relief valve discharge port is a minimum of **12 inches plus the nominal size of the discharge opening** above the highest of the following:
    - Ground level
    - Top of enclosure wall opening(s)
    - Maximum flood level

B. Approval: Reduced-pressure backflow prevention assemblies installed in Tennessee for the protection of a public water system shall be included on the most current list of *Approved Backflow Prevention Assemblies* maintained by the Foundation for Cross-Connection Control and Hydraulic Research. This list is available through the Tennessee Department of Environment and Conservation (TDEC), Division of Water Supply.

C. Location, Accessibility, and Installation: Assemblies shall be installed in locations that allow easy testing and repair and shall comply with the manufacturer's installation instructions.

1. **Assemblies shall be installed at the water meter or immediately downstream of the meter unless otherwise approved by the water system.**
2. **Assemblies installed outdoors or in exposed locations shall be housed in a weatherproof stainless-steel enclosure designed specifically for backflow prevention assemblies.**
3. Assemblies **2 inches and smaller** shall have a minimum clearance of **6 inches** from all walls. Assemblies **larger than 2 inches** shall have a minimum clearance of **12 inches** from all walls.
4. Assemblies installed in stationary enclosures shall have at least **2 feet of clearance** on each side to facilitate testing and servicing. Adequate drainage shall be provided.
5. Assemblies shall not be installed more than **5 feet above the floor or ground** to the centerline of the unit unless safe, permanent access is provided for testing and servicing.

D. Pipeline Preparation > Pipelines shall be thoroughly flushed to remove foreign material and debris prior to installation. A strainer shall be installed on the inlet side of the assembly, except for fire protection service line

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E. Valves and Unions > Assemblies shall be installed with unions and isolation valves on both the inlet and outlet sides to allow removal of the assembly for repair or replacement.

F. Freeze Protection > Provisions shall be made to protect assemblies from freezing. Insulating materials shall not restrict relief valve discharge or access to test cocks or the unit nameplate. Enclosures shall be designed to provide adequate drainage for relief valve discharge.

G. Relief Valve Discharge > The relief valve shall never be plugged, restricted, or solidly piped to a drain, ditch, or pump. Rigidly secured air-gap funnels may be used to direct discharge away from the unit, provided an approved air-gap separation is maintained at both the relief valve discharge and the drainpipe outlet. An adequate area drain is recommended to handle maximum relief valve flow and prevent flooding.

H. Identification and Access > Test cocks, valve stems, and nameplates shall not be painted. Their accessibility, operation, and legibility shall not be impaired, nor shall the relief valve discharge passage be restricted by insulation or other coverings.

I. Orientation > Assemblies shall be installed in the upright position within a horizontal pipe run unless specifically approved for other orientations. Special support shall be provided when necessary.

J. High-Temperature Applications > For applications where water temperatures exceed **110°F (43°C)**, only approved hot water backflow prevention devices shall be used.

K. Thermal Expansion > Prior to installation, temperature-pressure relief valves on heating vessels shall be properly installed and in good working condition. Installation of thermal expansion tanks or other pressure-relief devices is recommended rather than relying solely on the temperature-pressure relief valve.

L. Structural Support > Assemblies shall be adequately supported to prevent sagging. Special support is required for assemblies sized **4 inches through 10 inches**.