221113A BACKFLOW PREVENTION

Part 1 – GENERAL

1.1 Description

A. This section details the guidelines and expectations for the design and installation of backflow prevention devices on Johns Hopkins University Homewood Campus. Project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However, unless there is adequate written justification and approval from the JHFRE Engineering and Energy Department, it is expected that these guidelines will govern the design and specifications.

1.2 Submittals

A. All installed Backflow Prevention Devices, piping and accessories shall be tested by a Certified Backflow Prevention Device Tester. A letter certifying the testing results shall be submitted to JHU.

1.3 Quality Assurance

A. All designs and installations of potable water must adhere to local plumbing codes.

B. Elements and products used in design shall have a demonstrated record of success. Each manufacturer shall have been in business for a minimum of three years.

C. All cross connections within facilities and buildings must be protected by backflow prevention devices applicable to the hazard. Cross Connection Control and Backflow Prevention regulations shall be used to determine the degree of protection needed.

Part 2 – PRODUCTS

2.1 All backflow preventers for Domestic Water Service must be Watts 957 series and the fire protection must be Ames 2000SS Series.

2.2 Backflow Preventers and Specialties

A. Reduced Pressure Zone (RPZ) backflow protection devices must be provided on both the domestic and fire service lines between the water main tap and a building's unprotected water distribution system. RPZ devices installed on fire service lines must incorporate a detector meter to monitor flow. Devices must meet ASSE 1013 standard. Bypasses are not allowed.

B. Minimum static pressure for private or public water service shall be 40psi. Maximum static pressure shall be 80psi.

Part 3 – EXECUTION

3.1 Design

A. Backflow prevention devices shall be located to be fully accessible for servicing and testing while standing on grade. Backflow prevention devices shall be located so that all test ports are accessible and the BFP device shall be installed no more than 5’ above the floor or grade level.

B. For buildings where an uninterrupted water service is required, dual parallel backflow preventers should be installed to avoid downtime due to maintenance or failure. Consult owner regarding this determination. Dual backflow preventers are not required for all buildings.

C. Any vacuum breakers subject to constant pressure must be designed as continuous pressure vacuum breakers and clearly identified as such.

D. Floor mounted/installed hose bibs subject to flooding are prohibited. Coordinate mounting height with local code (48” minimum is recommended).

E. Backflow preventers shall not be installed in obscured areas unless approved by JHFRE. Backflow preventers installed in obscured areas, such as above suspended ceilings, shall have signage installed indicating the location of these backflow preventers.

F. Backflow preventer atmospheric vents shall be provided with hard piped drains discharging to the sanitary sewer in a manner that protects building from water damage and does not create a tripping hazard. Hard piped drains shall have an air gap immediately after or below the atmospheric vent.

G. Backflow preventers shall not be installed in pits or locations subject to flooding.

3.2 Installation Approval

A. The Authority Having Jurisdiction shall be contacted to review and approve all proposed backflow prevention devices prior to installation on both the domestic and fire service water supply lines.

B. Backflow prevention devices, systems, and associated materials shall be installed in accordance with manufacturer’s instructions and approved submittals.