



**Hillsborough
County Florida**

WATER RESOURCES

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Public Utilities Technical Bulletin – 22-002

Revision to Water Resources Technical Specifications

Date: March 11, 2022

ASSISTANT COUNTY ADMINISTRATOR

George Cassady

Subject: Revision of Hillsborough County Specification 331001 & 339001; and Technical Manual Sections 2.0 and 3.0

Summary: This revision clarifies the requirement for blow-offs and auto-flushers on dead-end and looped potable water and reclaimed water lines.

Specifics: Add the attached revisions to specification 331001 & 339001; and Technical Manual Sections 2.0 and 3.0 dated October 2021.

Please contact Kathryn L. McAuliffe at 813-612-7764 if you have any questions about this Technical Bulletin.

Robert Tisdale

May 16, 2022

Robert H. Tisdale, P.E.

Effective Date

Utility Design Section Manager

Part 2.10 Specification 331001 – Potable Water

2.10.7 The water system is a closed system. All pipe ends must be capped or plugged.

2.10.7.1 To maintain water quality and provide increased reliability, dead-ends and looped systems require a fire hydrant, blow-off, or auto-flusher. A looped system is any single feed into a property that connects back into itself or a distribution line installed in a circle.

2.10.7.2 Dead ends: In order to provide increased reliability of service by reducing head loss and maintaining residual disinfectant concentration, dead ends shall be minimized by making appropriate tie-ins whenever practical.

2.7.10.3 Where dead-end lines occur, they shall be provided with a blow-off, hydrant, or auto-flusher for flushing purposes at the end of the line.

2.10.12 Auto-Flusher Stations

2.10.12.1 Auto-Flusher stations are required by WRD to assist in maintaining water quality by flushing water on a scheduled basis to remove aging water in order to maintain a residual disinfectant concentration above required minimum level. The number of Auto-Flusher stations and where they are to be located will be determined during the Utility Master Plan review and Site Plan review.

2.10.12.2 Auto-Flushers must be installed on six-inch and larger dead-end and cul-de-sac lines which exceed 600 lineal feet off the tee at the main.

2.10.12.3 Auto-Flushers must be installed on a looped line that does not have a hydrant installed within the “loop”.

2.10.12.4 Auto-Flushers must be sited to comply with the following criteria:

- a) Within 12 feet of a storm drain;
- b) Between two feet from the back of curb, and eight feet from the edge of pavement;
- c) Within five feet of the perpendicular property line;
- d) No trees or shrubs must be planted within five feet of an auto-flusher; and
- e) Maintain a minimum three-foot clearance from other Utilities (TECO, Gas, & Cable).

Part 3.10 Specification 331001 – Potable Water

3.10.1 Equipment must be self-contained and designed for automatic flushing of the distribution line through a control valve that is integral to the unit and equipped with a dechlorination tablet feeder.

3.10.2 System Sampling

3.10.2.1 The unit must include a stainless-steel sample quick-connect valve that is protected from contamination by way of a protective cap.

3.10.2.2 The sampling connection must be housed in a secure weather-tight area to minimize contamination of the sampling connection.

3.10.2.3 The sampling system must be constructed of stainless-steel, copper, polyethylene, or other material with equal or greater resistance to bacterial regrowth, and connected with brass or stainless-steel fittings.

3.10.2.4 The sampling system must include a quick-connect that can only be accessed by use of a portable sample valve (PSV).

3.10.3 The auto-flusher must be capable of being programmed to activate up to 12 times daily on the desired/scheduled days in increments from one -minute to six -hours. Scheduling must be on a continually rotating seven -day cycle, or on an interval between one to 30 days.

- 3.10.4 Auto-flushers must be programmable by means of an integrated programmer (built-in) or by Bluetooth.
 - 3.10.4.1 Where built-in style programming is used, the flushing device must be capable of being powered by a single 9-volt alkaline battery with the ability to install a secondary 9-volt alkaline battery for redundancy and extended life.
 - 3.10.4.2 A Bluetooth equipped device must be powered by a single 9-volt alkaline battery that can power a minimum of 5,000 on/off events over the life of the battery.
- 3.10.5 The device's control valve must be designed with a straight-through pass cavity (no internal wall construction inside the valve body) capable of passing sand and other debris up to five-eighths inch in diameter without obstructing the valve's throat.
- 3.10.6 The unit's internal piping must be Schedule 80 PVC or brass.
- 3.10.7 The internal piping and control valve must have a recommended operating rating of 200 psi (minimum).
 - 3.10.7.1 Where pressures are likely to be sustained at or above 120 psi, a pressure reducing valve must be installed in-line with the device.
 - 3.10.7.2 The internal piping and control valve must be capable of being removed from the housing by a single point quick-connect, permitting easy maintenance and repairs.
 - 3.10.7.3 The unit must be supplied with a standard two-inch male nominal pipe threaded water supply connection.
- 3.10.8 Housing
 - 3.10.8.1 The components must be designed to dissipate the energy and distribute the flow of pressurized water leaving the water distribution system in a circular pattern inside the device's above-grade protective exterior before discharging to atmosphere.
 - 3.10.8.2 Discharge water must be directed downward and pass through an energy dissipating vented shield onto a ground-level splash pad at the bottom of the device's above-ground protective housing. The splash pad must direct the flow of water horizontally onto the surrounding area in a manner that does not promote erosion in adequately prepared areas.
 - 3.10.8.3 The protective stainless-steel diffuser screen that serves to diffuse water energy from the water being flushed from the device must be slotted to reduce the potential that animals, reptiles, etc., can nest inside the device. The diffuser screen must be stainless steel (recommended minimum gauge:16).
 - 3.10.8.3 The self-contained device must be supplied with a below-grade, bottom-vented base to provide stability and anti-buoyancy capabilities. The base must be constructed of high to medium density polyethylene or other non-corrosive material.
 - 3.10.8.4 The device's above-grade components must be constructed of a non-corrosive, maintenance-free material and must be permanently colored light green to blend with typical residential and commercial environments. The material must be specifically designed for direct exposure to the sun and weather, and have a minimum life expectancy of 15 years.
 - 3.10.8.5 All mounting brackets and hardware must be stainless steel, marine-grade polyethylene (minimum thickness ½ inch), or anodized aluminum.

Part 4.9 Specification 331001 – Potable Water

- 4.9.4 Auto Flushers
 - 4.9.4.1 Locations for the auto flushers are approximate. The Contractor must coordinate with the Engineer of Record or Project Manager for final site selection. Prior to installation

the drainage patterns for the intended installation location shall be viewed to ensure that any discharged water will not create hazardous conditions for pedestrian or vehicular traffic. The selected location's drainage pattern shall also permit discharged water to flow away from the automatic flushing unit or be absorbed by the surrounding soil as to prevent pooling.

- 4.9.4.2 The area around the automatic flusher shall be prepared in order to prevent erosion.
- 4.9.4.3 The Contractor shall furnish and install auto flushers as shown on the Construction drawings and the manufacturer's installation requirements.

Part 2.10 Specification 339001 – Reclaimed Water

2.10.7 The reclaimed water system is a closed system. All pipe ends must be capped or plugged.

- 2.10.7.1 To maintain water quality and provide increased reliability, dead-ends and looped systems require a blow-off. A looped system is any single feed into a property that connects back into itself or a distribution line installed in a circle.
- 2.10.7.2 Dead ends: In order to provide increased reliability of service by reducing head loss, dead ends shall be minimized by making appropriate tie-ins whenever practical.
- 2.7.10.3 Where dead-end lines occur, they shall be provided with a blow-off at the end of the line for flushing purposes.

2.10.11 Blow-off Assembly

- 2.10.11.1 A blow-off assembly must be installed on dead-end mains, at the end of cul-de-sac mains, and on looped systems. See Specification 339002, Exhibits R-4A and R-4B for details. For looped systems the blow-off must be located at the mid-point of the loop and must be connected to the distribution line using a tee.

TECHNICAL MANUAL SECTION 2.0 ADDITIONS

- 2.1.1.3 Based on the submitted Master Plan, the Utility Planning Section working with the Environmental Programs Section will verify/determine the number and location of required Dedicated Sampling Taps (DSTs). DSD will review the plans to verify these items are included in the Approved Construction plans.
- 2.1.1.4 During the Master Plan review, the Utility Planning Team will also indicate if there are any dead-ends/looped systems that require blow-offs/auto-flushers. DSD will review the plans to verify that these items are included in the Approved Construction plans.

TECHNICAL MANUAL SECTION 3.0 ADDITIONS

3.5.10 Water Quality: In order to maintain water quality, dead-ends and looped systems require a fire hydrant, blow-off, or auto-flusher. A looped system is any single feed into a property that connects back into itself or a distribution line installed in a circle.