

Fire Prevention Division
Public Facilities Manual – Appendix XVIII-E
Drafting Basin
Design, Installation, Inspection, Testing and Maintenance

1. Purpose

To provide adequate fire protection for residential developments located in rural and suburban areas in which city water is not available. NFPA 1142 provide guidance on establishing alternate methods of supplying water for fire protection.

2. Scope

The land developer is responsible for the engineering design, installation and performance testing of drafting basin hydrants. Drafting basin hydrant systems for residential subdivisions will be dedicated to the City of Chesapeake for maintenance once the facility meets performance testing and activation.

3. Design Standards

Public drafting basin hydrant systems shall meet the following design criteria;

- a. The drafting basin hydrant system shall be designed in accordance with PFM volume II MH2-FDC, "Drafting Basin".
- b. The Drafting Basin shall be designed to be submerged at all times.
- c. The Drafting Basin shall be a City Standard 48" MH-2.
- d. Minimum in-flow pipe size shall be 24" HDPE, and shall not exceed 400' in length. Requests to exceed 400' limit shall include all necessary calculations to support alternative design.
- e. The in-flow pipe shall be located a minimum of 2' off the bottom of the water source pond or lake.
- f. Each Drafting Basin shall have one 6" Fire Department Connection.
- g. The in-flow pipe shall have a minimum of 2' of water (head) above the top of the pipe during drought conditions.
- h. Water source volume and depth calculations that meet the fire flow demand and duration shall be in accordance with PFM appendix 18.
- i. The required Fire Flow Volume shall not include the 2' of head above the top of the inflow pipe.
- j. Static lift shall not exceed 10 feet.
- k. When fire fighting demand exceeds 1,500 gpm, the engineer must provide an alternative design capable of delivering the balance of the required fire flow. The engineer must submit alternative design (such as a fire pump) for approval by the Fire Code Official.

4. Construction, Inspection, Testing & Acceptance

- a. A Fire Permit must be obtained prior to the installation of the drafting basin hydrant facility.
- b. All tests and inspections are to be coordinated with Development Construction inspector. Call 382-6384 to schedule inspection.
- c. Fire Department performance test is required prior to final approval.
- d. Any required drafting basin hydrant system shall be; permitted, constructed, successfully tested and have final approval prior to issuance of any Certificate of Occupancy. The drafting hydrant system shall be bonded prior to plat recordation.
- e. Final Testing;
 1. The developer shall provide testing and certification by an independent third party agency using a centrifugal pump.
 2. Drafting basin hydrant shall be flushed before testing.
 3. The drafting basin hydrant must deliver the required fire flow for a minimum of 30 minutes.
 4. Water flow must reach the pump within 1 minute. No more than 3 attempts shall be made to draw water to the pump.
 5. After successful centrifugal pump testing, the dry hydrant shall be tested by a Fire Department pumper.