



*Pride in Service with Integrity*

**Department of Fire Rescue & Emergency Services  
Fire Marshal's Office  
Dania Beach District**

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Office: (954)342-4262 • Fax: (954)342-4265

## **SITE PLAN SUBMITTAL REQUIREMENTS**

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### **WATER SUPPLY**

#### **NEEDED FIRE FLOW REQUIREMENT FOR BUILDINGS**

Identify the Needed Fire Flow Requirements for all buildings / structures. Fire flow calculations shall be prepared by a professional engineer currently licensed in the state of Florida for each newly constructed building. The Needed Fire Flow Requirement must be in accordance with N.F.P.A. 1 (2006 Ed.), Annex H or The Guide for Determination of Needed Fire Flow, latest edition, as published by the Insurance Service Office (ISO). All calculations must be demonstrated and provided.

#### **APPROVED WATER SUPPLY – HYDRANT FLOW TEST**

Provide a Hydrant Flow Test to determine the available water supply to this project. This test must be performed by a qualified company of the builder's choice. In addition, the static pressure at the water main shall be determined by a recorded method (ie. water wheel) for a minimum twenty-four (24) hour period. The actual flow test must be witnessed by, and recorded data sent to the Broward Sheriff's Office Fire Marshal's Bureau, Dania Beach District in any area where water is being supplied by the City of Dania Beach Public Services.

If the water is being supplied by Broward County, the entire hydrant flow test is to be performed by Broward County O.E.S. Please contact the Broward Sheriff's Office Fire Marshal's Bureau, Dania Beach District at (954)342-4262 for determination of where the water is being supplied from.

#### **FIRE FLOW REQUIREMENT FOR BUILDINGS PROVIDING OR REQUIRING AUTOMATIC FIRE PROTECTIONS SYSTEMS (AFPS) AND AUTOMATIC STANDPIPE SYSTEMS (ASS)**

The Hydrant Flow Test must be in accordance with the Broward County Amendments (2005 Ed.) to the Florida Fire Prevention Code (2007 Ed.) as follows:

# **Broward County Amendments to the Florida Fire Prevention Code**

## **2005 Amendments**

### F-22 – Automatic Sprinklers Required

F-22.1 – Fire flow testing of the Water Supply for Automatic Fire Protection Systems (AFPS) and Automatic Standpipe systems (ASS) using water as an extinguishing agent for new buildings and structures and structures and existing buildings and structures where the AFPS and ASS are altered by more than seventy-five percent (75%) of their value shall be as follows:

- a. Fire flow test of the water supply for AFPS and ASS shall be in accordance with NFPA 291, Recommended Practice for Fire Flow Testing and Marking of Hydrants, Florida Administrative Code (FAC) 69A-60.005(2).
- b. Design for AFPS and/or ASS shall be calculated using a maximum of fifty (50) pounds per square inch (psi) as the static pressure to allow for drought conditions.  
**Example:** If the results of a Fire Flow Test have a static pressure of eighty (80) psi, a residual pressure of seventy-two (72) psi and a flow of 1,300 gallons per minute (gpm), the design water supply for an AFPS and/or ASS would be a static pressure of fifty (50) psi, a residual pressure of forty-two (42) psi and a flow of 1,300 gpm.
- c. Design for AFPS and/or ASS at or below a static pressure of 55.56 PSI shall be calculated using a ten (10) percent reduction in the static pressure from the fire flow test to allow for drought conditions.  
**Example:** If the results of a Fire Flow Test has a static pressure of fifty-three (53) psi, a residual pressure of forty-five (45) psi and a flow of 925 gpm, the design water supply for an AFPS and/or ASS would be a static pressure of 47.70 psi, a residual pressure of 39.70 psi and a flow of 925 gpm.
- d. Design for AFPS and/or ASS for the residual pressure shall be equal to the difference between the static and residual pressures as obtained from the fire flow test to allow for drought conditions.  
**Example:** If the result of a Fire Flow Test has a static pressure of eighty-five (85) psi, a residual pressure of seventy-seven (77) psi, the difference in the static and residual pressures would be eight (8) psi which would be utilized for the drought condition water supply design criteria. If the result of a Fire Flow Test has a static pressure of forty (40) psi, the difference in the static and residual pressures would be ten (10) psi which would be utilized for the drought condition water supply design criteria.
- e. Design of the water flow for the AFPS and/or ASS shall be the same as that obtained from the fire flow test.
- f. The residual pressure at the required water flow at the connection to the water main for an AFPS and/or Ass shall not be less than 20 psi.
- g. The static pressure at the water main shall be determined by a recorded method for a minimum twenty-four (24) hour period.

Fire Flow Test Data shall not be more than one (1) year prior to the plans, hydraulic calculation and submittals for the AFPS and/or ASS being submitted to the Authority(ies) Having Jurisdiction(AHJ's) for their review and acceptance. The results of the fire flow test shall be provided to the AHJ at the time of the submittal of the plans, hydraulic calculations and submittals for the water based AFPS and/or ASS.

### **PRIVATE FIRE SERVICE MAINS CONNECTION FROM WATERWORKS SYSTEMS**

By P.I.V. [24:5.5] or Underground Gate Valve [24:6.1.5]

### **POST INDICATING VALVES TO BE LOCATED MIN. 40 FT. FROM BLDGS.**

Post indicating valves shall be located not less than 40 ft. from buildings [24:6.3.3.1]

## **DISTRIBUTION SYSTEMS TO BE LOOPED**

All distribution systems shall be designed to reduce the dead-end mains and provide a loop for new and existing mains.

## **MINIMUM SIZE FOR PRIVATE FIRE SERVICE MAINS**

Private Fire Service Mains. Pipe smaller than 8 inches in diameter shall not be installed as a private service main supplying hydrants. [24:5.2.1]

## **SPRINKLER SYSTEM REQUIRED**

Buildings 3 or more stories in height and 3 or more units attached shall be equipped with a complete automatic fire sprinkler system. Completed engineered fire sprinkler drawings are required with construction document submittal. Please Note. [FBC 903.6.]

## **HOSE STATIONS REQUIREMENTS FOR PRIVATE BOAT DOCKING FACILITIES**

1. Private boat docking facilities shall have sufficient 1 ½ " fire hose connected to a 2 ½ " valve with a 2 ½ " x 1 ½ " reducer to reach all portions of the dock facilities.
2. Supply shall be a minimum of 2 ½ " underground fire line.
3. Supply shall have a minimum capability of delivering 40 gallons of water per minute at 25 pounds per square inch pressure through a combination fog nozzle.
4. Hose stations must be designed and sealed by a Florida Engineer. [BCA F-26.3]

# **FIRE DEPARTMENT ACCESS**

## **PROVIDE ADDRESS IDENTIFICATION DETAIL & LOCATION**

Address numbers shall be easily identifiable. Numbers must be a minimum of six (6) inches in height and must be in contrasting color to their background.

## **KNOX BOX / KNOX KEY SWITCHES / KNOX PAD LOCKS**

Access boxes for access to the structure, Key switches for electronic locking mechanisms and/or padlocks for vertical gates are required. Contact the B.S.O. Fire Marshal's Office (Dania Beach District) to obtain an application. 954-342-4262.

## **FIRE LANE LOCATIONS**

The inner edge (side closest to the building) of required fire lanes must be:

1. Minimum of 10 feet from the building
2. Maximum of 30 feet from the building. [1:18.2.3.1.5]

## **GENERAL DRIVE AISLES WIDTH AND HEIGHT**

Drive aisles must be a minimum of 12 feet in width. [AHJ]

## **VERTICAL CLEARANCES FOR APPARATUS**

Vertical clearances of 14 ft. minimum are required by AHJ.

### **WIDTH REQUIREMENT FOR FIRE DEPARTMENT ACCESS ROADS**

Fire Department access roads shall have an unobstructed width of not less than 20 feet. [1:18.2.3.4.1.1]

### **WIDTH & SIGNAGE REQUIREMENTS FOR CURBSIDE VEHICLE PARKING IN FIRE DEPARTMENT ACCESS LANES**

1. Fire Department Access Roads 20 Ft. to 27 Ft. – “NO PARKING” Signs on both sides of the road.
2. Fire Department Access Roads 28 Ft. to 35 Ft. – “NO PARKING” Signs on one side of the road
3. Fire Department Access Roads 36 Ft. or greater – No signage required. [AHJ]

### **“NO PARKING” SIGNAGE, PAINTED CURBS AND / OR FIRE LANE STRIPING REQUIRED FOR FIRE LANES, FIRE DEPARTMENT ACCESS ROADS AND IN FRONT OF FIRE DEPARTMENT CONNECTIONS**

Fire Lanes, Fire Department Access Roads and the areas in front of the fire department connections, shall be designated by yellow painting, striping, or markings on the curbs and roadways.

1. Provide a curb detail note to indicate that all curbs are to be painted yellow.
2. All pavement markings shall be of thermoplastic paint.
3. Demonstrate that these areas are to be marked with freestanding signs with the wording, **“NO PARKING FIRE LANE BY ORDER OF THE FIRE DEPARTMENT”** or similar wording.
4. Such signs shall be 12 inches by 18 inches with a white background and red letters.
5. These signs shall be a maximum of seven feet in height from the roadway to the bottom of the sign.
6. These signs shall be within sight of the traffic flow and be a **maximum of 60 feet apart.** [1:18.2.3.5]

### **SURFACE COMPACTION**

Demonstrate that the required Fire Department access road shall have a surface designed to :

1. Accommodate fire apparatus with a minimum weight of 32 tons. [1:18.2.2.1.3]
2. Have a surface suitable for all-weather driving capabilities. [1:18.2.2.5.2] – Examples: Turf Block, Concrete, Stone, etc.

### **OBSTRUCTION OF FIRE DEPARTMENT ACCESS ROADS**

The required width of a fire department access road shall not be obstructed in any manner. [1:18.2.4.1.1]

### **GATES REQUIREMENT**

Where gates are utilized, provide a Knox entry system to allow Fire Department Access [1:18.2.2.1] (Obtain application from the Fire Prevention Bureau (954)893-5060)

### **TURNING RADIUS**

Demonstrate turning radii of 38 ft. inside radius and 50 ft. outside radius with a clear sweep of 12 ft. of drive aisle for all Fire Department access roads / lanes. [1:18.2.3.4.3]

## **CUL-DE-SACS**

Cul-de-sac turnarounds must be no less than 100 ft. in diameter.

## **DEAD ENDS**

Dead-end fire department access roads in excess of 150 ft. in length shall be provided with approved provisions for the turning around of fire apparatus (Hammerhead "T" Turn-around, Cul-de-sacs, Alternative (Modified) "T" Turn-around, etc.). [1:18.2.3.4.4]

## **BUILDING ACCESSIBILITY FROM FIRE DEPARTMENT ACCESS ROADS**

Any portion (furthest point) of any 1<sup>st</sup> Floor exterior wall must be:

1. Not more than 150 ft. from Fire Department Access Roads – Un-sprinklered Buildings. [1:18.2.3.2.2]
2. Not more than 450 ft. from Fire Department Access Roads – Sprinklered Buildings. [1:18.2.3.2.2.1]

## **DISTANCE TO EXTERIOR DOORS OF BUILDINGS FROM FIRE DEPARTMENT ACCESS ROADS**

A single exterior door providing access to the interior of any building must be located within 50 feet of a fire department access road. [1:18.2.3.2.1]

## **BRIDGES**

The bridge shall be designed for a live load sufficient to carry the imposed loads of fire apparatus with a minimum weight of 32 tons. [1:18.2.3.4.5.2]

## **LOAD LIMITS TO BE POSTED**

Vehicle load limits shall be posted at both entrances to bridges, ramps and elevated roadways where required by the AHJ. [1:18.2.3.4.5.3]

## **GRADE**

The angle of approach and departure for any means of fire department access shall not exceed 1 foot drop in 20 feet (5%), and the design limitation of the fire apparatus of the fire department shall be subject to approval by the AHJ. [1:18.2.3.4.6.2\*]

# **FIRE HYDRANTS & FIRE PROTECTION APPLIANCES**

## **HYDRANT DETAIL REQUIREMENTS**

Please provide fire hydrant detail in accordance with the following:

1. The center of a hose outlet shall be not less than 18 inches above final grade, (or where located in a hose house, 12 inches above the floor) [24:7.3.3]
2. The Steamer opening is to be 4 ½ inches in size with four (4) National Standard Threads per inch.
3. All fire hydrants shall be "traffic type" to break-away upon impact.
4. The fire hydrant main body valve shall open against the flow and shall close with the flow.

## **BLUE REFLECTIVE HYDRANT MARKERS**

Provide one (1) blue double-reflective department of transportation type road marker (Roadway Pavement Marker (RPM)) to be adhered to the hard surfaces of the roadway in the middle of the lane nearest to, and directly in front of the newly installed fire hydrants. [AHJ]

## **IMPACT PROTECTION**

Provide bollards consisting of three inch steel pipe buried at three feet deep, with three feet of height above ground level and spaced three feet apart, These bollards are to be filled with concrete and capped are acceptable. [24:7.3.5] [24:7.3.6] [13:8.15.1.3.2]

## **CLEARANCE REQUIREMENTS FOR FIRE HYDRANTS & FIRE PROTECTION APPLIANCES**

Provide clearances of 7'6" in front of and to the sides of the fire hydrant, with a 4' clearance to the rear of any hydrant or fire protection appliance. [1:18.3.4.1]

## **HYDRANT MAIN SIZE – 8"**

Hydrants mains must have a minimum 8" diameter connection with the mains [24:7.1.1]

## **HYDRANT SPACING FOR COMMERCIAL PROPERTY**

Hydrant spacing shall not exceed 300 feet linear separation (as the fire apparatus drives) for commercial properties (to also include apartment buildings, condominiums, townhouses, etc.) [24:7.2.1] [AHJ]

## **HYDRANT SPACING FOR PRIVATE RESIDENTIAL PROPERTY**

Hydrant spacing shall not exceed 500 feet linear separation for residential one and two family dwellings. [24:7.2.1] [AHJ]

## **HYDRANTS TO BE 40' OR MORE FROM BLDGS.**

Hydrants shall be located not less than 40 ft. from the building or wall hydrants shall be permitted to be used where approved by the AHJ. [24:7.2.4]

## **STANDPIPE SYSTEMS REQUIRED**

Provide a Class I standpipe system in accordance with the provisions of N.F.P.A. 1, Section 13.2.2.2 and NFPA 14, where any of the following conditions exist:

1. More than three stories above grade
2. More than 50 ft. above grade and containing intermediate stories or balconies
3. More than one story below grade
4. More than 20 ft. below grade

## **LOCATIONS OF FIRE DEPARTMENT CONNECTIONS**

Fire department connections shall be located:

1. On the street side of buildings.
2. Where fully visible and recognizable from the street or nearest point of fire department apparatus accessibility.

3. And arranged so that hose lines can be attached to the inlets without interference from nearby objects, including buildings, fences, posts, or other fire department connections. [14:6.3.5.1]
4. Not more than 100 ft. from the nearest fire hydrant connected to an approved water supply. [14:6.3.5.4]
5. On the same side of the roadway or fire lane as the nearest fire hydrant. [AHJ]
6. Within three ft. (3') of the curb line of fire lanes, streets. [AHJ]
7. In a place that will allow a space four feet (4') on both sides of the fire department connection centerline that must be kept open at all times.

### **SIGNAGE FOR FIRE DEPARTMENT CONNECTIONS**

1. The FDC must be identified as to the building (complete address) or portion of the building it serves. Provide a permanent tactile sign at the FDC to meet the above requirement. [14:6.3.5.3]
2. Each fire department connection shall be designated by a sign having raised letters, at least 1 inch in height, cast on a plate or fitting that reads "STANDPIPE", "STANDPIPE AND AUTOSPKR" or "AUTOSPKR AND STANDPIPE". [14:6.3.5.2]
3. A sign also shall indicate the pressure required at the inlets to deliver the system demand. [14:6.3.5.2.2]

### **BACKFLOWS REQUIRED (See NFPA 13, Chapter 15, Section A.15.1.8 & Handbook)**

Provide a Backflow Prevention Assembly for the Fire Sprinkler System that meets the following requirements:

1. All backflow preventers must be Accessible for service and maintenance [13:8.16.4.6]
2. All backflow preventers must be Listed for fire protection service [24:5.4.2]
3. All backflow preventers must be installed above ground [AHJ]

### **SIAMESE CONNECTION REQUIRED FOR PRIVATE BOAT DOCKING FACILITIES**

1. Where such docking facilities are inaccessible to Fire Department equipment
2. Where docking facilities exceed 150 feet from Fire Department vehicular access, a 2 ½ " Fire Department Siamese connection shall be provided.
3. Location of Siamese shall be approved by the Fire Department. [BCA F-26.4]

### **DEMONSTRATE FIRE DEPARTMENT ACCESS ROUTES DURING THE CONSTRUCTION PHASE.**

### **DEVELOP A FIRE SAFETY AND PREVENTION PROGRAM IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 241 (2004 ED.), CHAPTER 7 FOR THE CONSTRUCTION SITE DURING THE CONSTRUCTION PHASE.**

### **PROVIDE A COPY OF THE COMPLETE SET OF APPROVED PLANS IN PDF FORMAT ON CD-ROM DISC.**