

CITY OF HENDERSON  
BUILDING AND FIRE SAFETY  
FIRE SAFETY DIVISION  
UNIFORM GUIDELINES

---

**Effective Date:** October 1, 2007

**HFSD #** 002

**Supersedes:** All others

**Updated:** January 15, 2008

**Page 1** of 7

---

**TITLE:** **INSTALLATION AND SPECIFICATION  
OF FIRE HYDRANTS**

---

**PURPOSE:**

To standardize Fire Safety requirements throughout the City of Henderson by providing a uniform method of specifying and installing fire hydrants, in order to facilitate fire fighting operations during emergencies and to facilitate developers by standardization of requirements. An approved water main/hydrant system with the required water flow for fire protection shall be provided for facilities, buildings or portions of buildings hereafter constructed or moved into or within the jurisdiction. IFC § 508.1 Fire hydrants shall be installed and maintained serviceable prior to and during the time of construction, including bringing combustible materials on-site. Amendment 124, Section 1412.1.

---

**REFERENCE:** 2006 IFC and Appendix C and 2006 Amendments

---

**RULES & REGULATIONS**

**A. Plans shall have:**

1. Vicinity map.
2. Type of construction of each building, per Uniform Building Code.
3. Total square footage of each building.
4. Number of stories (floors) including basement of all buildings.
5. Use (occupancy) of building.
6. Fire resistive rating of all area separation walls, per International Fire Code.
7. Whether or not building is protected throughout with an automatic fire sprinkler system.
8. Exact location, size and type of new and existing water mains.
9. Exact location and number of new and existing fire hydrants.
10. Exact location of hydrant isolation and control valves.
11. Exact location of water main connections, stubs, etc.

12. Curb lines, sidewalks, alleys, driveways, walls, fences, property lines, vehicle parking layouts (indicate whether or not parking is covered or uncovered), power poles, adjacent structures, all on site buildings, any other items which are pertinent to hydrant placement.
13. Fire Safety Division "General Notes" (See Appendix A) must be provided on plans. Copies of current Fire Safety Division General Notes are available in the Development Services Center.

## **B. Hydrant Distribution**

The number and spacing of fire hydrants shall meet the approval of the Fire Safety Division. Fire hydrants shall be located adjacent to and accessible from fire apparatus access roads. Fire hydrants shall be spaced along fire apparatus access roads as follows:

1. The spacing of fire hydrants should normally start by placing fire hydrants at all intersections.
2. In all residential areas, hydrants will be spaced not to exceed 500 feet; 600 feet if protected by an approved automatic fire sprinkler system.
3. In all commercial areas, including R-1 and R-2 occupancies, hydrants will be spaced not to exceed 300 feet; 400 feet if protected by an approved automatic fire sprinkler system.
4. The required fire flow shall determine the number of fire hydrants to be installed, based on 1,000 gpm per fire hydrant.
5. Fire hydrants on adjacent properties shall not be considered unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads and a written contractual agreement exists.
6. Where streets are provided with median dividers or arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrants shall be spaced an average of 1,000 feet on each side of the street and be arranged at 500 feet on an alternating basis.

## **C. Fire Hydrant Installation Specifications**

1. On any building construction, accessible fire hydrants shall be installed before combustible materials are delivered to the site and construction commences. Said fire hydrants shall be in good working order with required water supply.

**NOTE:** If during construction it becomes necessary to close any control valve or place a hydrant out of service, the Henderson Fire Department Dispatch Center (267-4900 option 2) or the Henderson Fire Safety Office (267-3930) must be contacted.

2. Painting of curbs and/or asphalt parking areas shall be completed by the installer prior to final inspection and shall be as follows:

**CURB:** A suitable coat of industrial grade enamel (safety red) shall be applied to 30 feet of curb; 15 feet on each side of the hydrant.

3. **Protection of Fire Hydrants from Physical Injury:** Protective poles shall be installed when a hydrant is subject to physical injury or when deemed necessary by the Fire Department. The poles shall meet the following minimum specifications.
  - a) 4 inch outside diameter steel (or comparable material) pipe, grouted and at least 6 feet in length.
  - b) The top of the pole shall be parallel with the top of the hydrant; the remainder of the pole shall be concreted in the ground at least 3 feet the hole is to be at least 10 inches in diameter and 3 feet deep.
  - c) The poles shall not hinder operation or maintenance of the hydrants. (Poles shall not be installed closer than 3' from the circumference.)
4. **Fire Hydrant Markers:** All fire hydrant locations will be identified as to actual location by the placement of blue colored reflective marker adjacent to the fire hydrant on all improved Fire Apparatus Access Roadways with hard surfaces, including both public and private roads, streets, or fire lanes. These reflective markers shall be placed in accordance with the following specifications:
  - a) **On roadways with no parking permitted on the hydrant side;** the reflective button will be located eight (8) feet from the face of the curb on the hydrant side.
  - b) **On roadways with parking permitted on the hydrant side;** the reflective button will be located sixteen (16) feet from the face of the curb on the hydrant side.
5. No fire hydrant shall be located within 25 feet of any structure, or 5 feet of a driveway, power pole, light standard, or any other obstruction. For wall, fence and planter locations, a perimeter around the hydrant measuring a minimum of 3 feet from its exterior shall be maintained clear of all obstructions at all times.
6. Hydrant placement in cul-de-sacs - a hydrant shall not be placed in the circular portion of a cul-de-sac.
7. A sectional control valve shall be installed after every two (2) hydrants on a water system, in order that no more than two (2) hydrants will be out of service if there is a break in a water main.
8. All cap, hose nozzle and pumper nozzle threads shall be free of dirt, rust, etc., and shall be lightly greased.
9. Two sources of supply are required whenever there are more than 3 fire hydrants and/or sprinkler lead-ins installed on a single system.

#### D. Fire Hydrant Specifications

Fire hydrants shall conform to the 1985 Edition of the American Water Works Standards, C502, entitled "Standard for Dry-Barrel Fire Hydrant", or the latest revision thereof, 1 copies of which is on file in the Henderson City Clerk's Office and all fire hydrants shall conform to the following specifications:

1. The City of Henderson Public Works Division currently approves installation of **the Clow - Medallion, the Kennedy - Guardian #K81, the Mueller - Super Centurion #A423, the Waterous #WB-67, and the Pentroy - Patriot** for the type, make and model of Fire Hydrants which can be installed. No unauthorized make or model fire hydrant, including both public and private fire hydrants, shall be installed.
2. Type: Dry barrel.
3. Inside diameter of barrel shall be not less than 7".
4. The entire valve assembly shall be 5¼".
5. The entire valve assembly shall be effectively sealed against moisture.
6. Diameter of inlet connection: 6".
7. Inlet connection: Shall be either Push-on or Mechanical joint type suitable for the lateral pipe to be used. The connection shall be furnished with 2 strapping lugs.
8. Working pressure: 150 psi.
9. The facing of the main valve against seats shall be resilient.
10. Hydrants shall be constructed so that extension section in multiples of 6" with rod and coupling can be added to increase the barrel length. No more than one extension shall be used.
11. Hose nozzles: There shall be 2 hose nozzles size 2½", National Standard Thread, Higbee Cut.
12. Pumper nozzles: There shall be one pumper nozzle connection, size 4", National Standard Thread, Higbee Cut.
13. The center of the lowest nozzle from the ground level shall be not less than 16½".
14. The operating nut shall be a Solid Pentagon and shall measure 1-1/8" from point to flat at the base of the nut and the height of the nut shall not be less than 1".
15. All hydrants shall open left (i.e. counter clockwise).
16. **Painting of hydrants** shall be as follows:
  - a) **Public Hydrants** - A suitable prime coat followed by not less than 2 coats of an industrial grade enamel safety yellow in color.
  - b) **Private Hydrants** - A suitable prime coat followed by not less than 2 coats of an industrial grade enamel red in color.
17. Friction Loss: All hydrants must be guaranteed that they shall be able to deliver 600 gpm from the steamer nozzle with loss of not more than 2½ pounds in the hydrant and when discharging 250 gpm through each 2½" outlet the total friction loss in the hydrant must not exceed 2 pounds. The supplier shall submit a guaranteed friction loss test.
18. Hydrants shall be constructed so that the upper barrel can be rotated to any position.

19. Not less than two (2) drain openings shall be provided to adequately drain the barrel of the hydrant when closed.
  20. The bonnet shall be dry type and shall be adequately protected against water entering from the barrel by the use of "O" rings. Stuffing box and glands are not acceptable. Operating nut shall be adequately protected against entrance of water and/or foreign matter or materials. The bonnet of the fire hydrant shall be attached to the upper barrel by means of a flange connection.
  21. The main valve shall be of the compression type, closing with the pressure. All working parts of the valve, including the main valve and seat ring, shall be removed through the top of the hydrant without the necessity of excavation.
-

**UNIFORM GUIDELINES HFSD 002  
APPENDIX A**

**CITY OF HENDERSON  
FIRE SAFETY DIVISION GENERAL NOTES**

**GENERAL:**

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE INTERNATIONAL FIRE CODE AS AMENDED AND THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS AS ADOPTED BY THE CITY OF HENDERSON.
2. FIRE APPARATUS ACCESS ROADS AND FIRE HYDRANTS INSTALLED FOR FIRE PROTECTION SHALL BE INSTALLED AND MADE OPERATIONAL PRIOR TO AND DURING THE TIME OF CONSTRUCTION.
3. ACCESS TO BUILDINGS FOR THE PURPOSE OF FIRE FIGHTING SHALL BE PROVIDED. CONSTRUCTION MATERIAL SHALL NOT BLOCK FIRE LANES, ACCESS TO BUILDINGS, HYDRANTS OR FIRE APPLIANCES (THIS INCLUDES BLOCKING BY OPEN UTILITY TRENCHING).
4. PRIOR TO CLOSING ANY WATER SUPPLY CONTROL VALVE OR PLACING ANY FIRE HYDRANT OUT OF SERVICE CONTACT HENDERSON FIRE DEPARTMENT DISPATCH CENTER (267-49000 option 2) AND ANY MONITORING FACILITY SUPERVISING THE CONTROL VALVE(S).

**FIRE HYDRANTS:**

5. FIRE HYDRANTS SHALL BE MAINTAINED IN AN OPERATIVE CONDITION WITH THE REQUIRED WATER SUPPLY. HYDRANTS SHALL BE MAINTAINED IN ACCORDANCE WITH NFPA 25.
6. MANUFACTURER AND MODEL OF FIRE HYDRANTS SHALL BE APPROVED BY UTILITIES PRIOR TO INSTALLATION.
7. FIRE HYDRANTS SHALL BE CONSIDERED ACCEPTED FOR USE WHEN APPROVED BY PUBLIC WORKS – QUALITY CONTROL DIVISION.
8. ALL PUBLIC FIRE HYDRANTS SHALL HAVE A SIX DIGIT NUMBER (AS DESIGNATED BY PUBLIC WORKS (267-3100)) PAINTED ON THE BARREL BY THE HYDRANT INSTALLER. THE NUMBER SHALL BE IN 1" HIGH BLOCK NUMBERS USING BLACK ENAMEL PAINT. ALL NUMBERS SHALL MATCH APPROVED PLANS.

**FIRE DEPARTMENT CONNECTIONS (FDC):**

9. SHALL BE LOCATED WITHIN 100 FEET OF A FIRE HYDRANT AS MEASURED BY AN APPROVED UNOBSTRUCTED ROUTE.
10. SHALL BE LOCATED IN AN APPROVED LOCATION AS SHOWN ON THESE PLANS.
11. SHALL NOT BE CLOSER THAN 3 FEET TO ANY DOOR OR WINDOW OPENING AND SHALL NOT BE OBSTRUCTED BY TREES, SHRUBS, PARKING SPACES, ETC.

**UNIFORM GUIDELINES HFSD 002**  
APPENDIX A

**UNDERGROUND PIPING & VALVES:**

12. ALL SECTIONAL CONTROL VALVES CONTROLLING WATER SUPPLIES ON PRIVATE FIRE SERVICE MAINS SHALL BE LISTED POST INDICATING VALVES (PIV). (THIS SHALL INCLUDE PRIVATE FIRE SERVICE MAINS WHICH ONLY SERVE FIRE HYDRANTS)  
**EXCEPTION:** LISTED STREET VALVES WITH APPROVED DEBRIS “LOCKOUT” CAPS - WHEN THE VALVE IS LOCATED WITHIN A ROADWAY.
13. A POST INDICATING VALVE (PIV) SHALL BE PROVIDED AND INSTALLED A MINIMUM OF 5 FEET FROM THE BUILDING FOOTING FOR ALL FIRE SPRINKLER SYSTEMS AND SHALL BE SET SO THE TOP OF THE POST WILL BE 36” ABOVE THE FINAL GRADE.
14. ALL VALVES THAT CONTROL THE WATER SUPPLY TO PRIVATE FIRE SERVICE MAINS AND/ OR FIRE SPRINKLER SYSTEMS SHALL BE LISTED, INDICATING AND ELECTRICALLY SUPERVISED. THIS INCLUDES ALL VALVES STARTING FROM THE BACKFLOW ASSEMBLIES UNTIL THE WATER LINE ENTERS THE BUILDING.  
**EXCEPTION:** LISTED STREET VALVES WITH APPROVED DEBRIS “LOCKOUT” CAPS.
15. ALL PIPING AND VALVES SUPPLYING FIRE SPRINKLER SYSTEMS SHALL BE PROTECTED FROM FREEZING WHEN EXPOSED TO TEMPERATURES LESS THAN 40°F. FREEZE PROTECTION SHALL BE APPROVED, DURABLE AND PERMANENT.
16. ALL BACKFLOW OR CROSS CONNECTION REQUIREMENTS OF THE PUBLIC WORKS UTILITY DIVISION SHALL BE INSTALLED UPSTREAM OF THE FIRE SPRINKLER OR STANDPIPE SYSTEM “POST INDICATOR VALVE”.
17. ALL REQUIRED TESTING AND FLUSHING OF THE UNDERGROUND FIRE SPRINKLER / STANDPIPE WATER SUPPLY PIPING SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION (AHJ). THE INSTALLING CONTRACTOR SHALL FURNISH A “CONTRACTOR’S MATERIAL AND TESTING CERTIFICATE” (CM&T) COUNTERSIGNED BY THE PROPERTY OWNER OR REPRESENTATIVE. THE CM&T SHALL BE FILLED OUT COMPLETELY WITH THE AHJ’S INITIALS, WITNESSING EACH TEST. A COPY OF THE UNDERGROUND FLUSH AND HYDROSTATIC TESTING DOCUMENTATION SHALL BE ON-SITE AND SIGNED BY THE AHJ PRIOR TO THE CONNECTION OF THE UNDERGROUND WATER SUPPLY TO THE FIRE SPRINKLER SYSTEM.

**GATES:**

18. SHOP DRAWINGS FOR ALL GATES AND MOTORIZED OPENERS OBSTRUCTING FIRE DEPARTMENT ACCESS ROADS SHALL BE SUBMITTED SEPARATELY FOR REVIEW AND RECEIVE APPROVAL PRIOR TO INSTALLATION.