



COALINGA FIRE DEPARTMENT

GREG DUPUIS, FIRE CHIEF

300 W. Elm Ave • Coalinga, CA 93210 • Phone (559) 935-1652 • Fax (559) 935-1638

CITY OF COALINGA FIRE DEPARTMENT		
FIRE PREVENTION STANDARD		
STANDARD TITLE:	FIRE HYDRANT SPACING, INSTALLATION & FIRE FLOW REQUIREMENTS	
STANDARD NUMBER: 403.003	EFFECTIVE DATE: March 15, 2022	REVISION DATE: March 15, 2022

PURPOSE

The purpose of this policy is to establish the requirements for fire hydrant spacing, installation, and minimum water flows (i.e., fire flow) and pressures for firefighting.

APPLICATION

This policy applies to those who may be installing fire hydrants within the City of Coalinga.

OPERATIONAL POLICY

A. General Requirements:

1. Fire hydrants will be installed and maintained in service prior to delivery of combustible material to the jobsite and during all subsequent phases of construction.
2. Fire hydrants will be installed in accordance with City of Coalinga Public Works Standards with not less than a minimum eight (8") inch water supply, unless otherwise specified below. Private fire hydrants installations may utilize any American Water Works Association (AWWA) approved dry barrel/top operating nut style hydrant model comparable to the current Public Works Standard W-4 style hydrant in use by the Water Division.
3. Fire hydrant installation at the end of cul-de-sacs or dead-end roads should be avoided wherever possible. Install fire hydrants at ½ the required fire hydrant spacing from the end of the street or drive aisle.
4. All fire hydrants will have an isolation gate valve installed in the lateral water line from the primary supply main. For private hydrants, the lateral may be reduced to six (6") inch provided the length does not exceed 50 feet. The isolation gate valve in the lateral will not be located within a parking stall or a loading zone. If located in a landscape area, the valve lid will be installed with a minimum 12" X 12" concrete pad.



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5. Private fire hydrants will be located between 30” and 72” (as measured to hydrant centerline) from the face of a minimum six (6”) inch curb or edge of road or wedged curb and provided with bollard protection per Public Works Standard W-23. The 4-1/2 inch outlet will face the fire access road and a 36 inch working space provided around the hydrant with the exception of W-23 bollards.
6. Private fire hydrants will be located so that all building openings are within 500 feet of a hydrant (300 foot maximum driving distance plus 200 foot hose pull from a fire engine).
7. Subject to the approval of the Fire Marshal, or designee, for large industrial developments with fire pumps and high demand fire sprinkler systems, private hydrants may be located downstream of the fire pump. The fire department connection for the system will be located adjacent to the public street to facilitate fire engine connection to a normal pressure public hydrant to bypass the fire pump and pressurize the private high pressure fire protection water main. The private fire protection water main installer will paint the entire body of each high-pressure hydrant in the shade Pantone 288C Blue.
8. As required by the City of Coalinga Water Division, the minimum backflow prevention requirement for four (4”) inch and larger fire services is a single detector check at property line in a vault and installed per Public Works Standards W-16, 17, & 18. Fire protection systems proposed with AFFF, other fire suppression agents, or other additives not approved for use in domestic water systems will be protected with an approved reduced pressure backflow double detector check assembly.
9. Installation of private fire protection water mains will be in accordance with the latest adopted edition of National Fire Protection Association (NFPA) 13 and 24, the California Fire Code, and the requirements of this policy.
10. All private fire service underground systems will be provided with isolation gate valves so that repairs of any portion of the private main will not shut off more than five (5) fire appurtenances (fire hydrants and individual fire sprinkler risers). Such valves must be the post indicator type (PIV) and be electronically supervised to an approved fire alarm monitoring central station service. The installing contractor will provide conduit in the trench back to a central location on site where the fire alarm monitoring panel is located for PIV and individual fire sprinkler water flow and riser control valve supervision.



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11. All fire protection water mains will have minimum 18 gauge blue tracer wire installed in the trench.

12. For a single source private fire service water main with service taken from a ten (10”) inch or larger circulated public water main and when a minimum fire flow of 1500 gpm is required, the maximum allowable dead end run of eight (8”) inch fire main to the most remote fire hydrant is 1000 feet (including equivalent feet of fitting losses). A single eight (8”) inch service that transitions on site to a looped piping configuration may be subject to verification of friction loss at the most remote hydrant with hydraulic calculations by the design engineer of record.

13. For fire services where a 1500 gpm fire flow is required and the service is taken from a ten (10”) inch or larger circulating public water main, the fire service, detector check, and private main size may be reduced to six (6”) inch if the distance from private hydrant to the public main is 200 feet or less with the least number of direction changes possible.

14. For other than C-16 fire sprinkler contractors, fire service underground plans will be submitted to, and installation permits obtained from the City of Coalinga’s Building and Safety Division. Site utility plans with fire protection water mains are routed to Fire Prevention for review and approval. All field inspections of fire service undergrounds including the required full flow flushing will be conducted by Coalinga Fire Department for permits issued.

B. Fire Flow and Hydrant Spacing Requirements:

Required fire flow is water available for fire suppression purposes above peak domestic water demand at a residual pressure of 20 psi at the hydrant as calculated using the methods describe in NFPA 291. Under the authority of the California Fire Code (CFC), Sections 507.3, Fire Flow, and 507.5, Fire Hydrant Systems, the Department has specific local fire flow and hydrant spacing requirements as follows:



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1. Single-Family Dwellings and Multi-family Dwellings up to 4 Units per Building:
 - Required public and private hydrant fire flow is 1500 gpm minimum with a maximum fire hydrant spacing of 600 feet.
 - In sub-divisions where streets with medians in accordance with Public Works **Standard P-57** are proposed, fire hydrants will be located at the intersections of the maximum allowed street length of 600 feet.

2. Multi-Family Dwellings Development (Condominiums, Apartments, Hotels, and Motels more than 4 units per building):
 - Public hydrant fire flow is 2500 gpm minimum with a maximum hydrant spacing of 450 feet.
 - With the installation of either an NFPA 13 or NFPA 13R fire sprinkler system in each building, private hydrant fire flow may be reduced to 1500 gpm with a maximum spacing of 600 feet. Non-fire sprinklered community buildings and other structures not required to be fire sprinklered by the local fire sprinkler ordinance can also utilize this fire flow.
 - Under certain conditions and subject to review and approval by the Fire Department and the Water Division for one (1) and two (2) story multi-family residential development, a combination water system for domestic and fire protection (hydrants and fire sprinkler supply) with Water Division installed UL/FM fire protection approved water meter(s) may be utilized. Reduced pressure backflow devices will not be allowed on this type of service due to the inherent friction loss of these devices having a negative impact on available water pressure for fire hydrant and fire sprinkler system design.

3. Commercial, Industrial, and Institutional Development:
 - Public hydrant fire flow is 2500 gpm minimum with a maximum hydrant spacing of 450 feet.
 - With the installation of an NFPA 13 or City of Coalinga Reduced Hydraulic Demand Fire Sprinkler Design (See Fire Prevention Manual, Section 405.012, Reduced Hydraulic Demand Sprinkler System Design) fire sprinkler systems, private fire hydrant flow may be reduced to 1500 gpm with a maximum spacing of 600 feet.



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- The Fire Marshal, or designee, is authorized to specify an increased fire flow for certain high hazard occupancies such as, but not limited to, petroleum tank farms, aircraft hangers, flammable liquid/chemical manufacturing plants, and other high hazard uses.

OPERATIONAL GUIDELINE

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PROCESS

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INFORMATION

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DEFINITIONS

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CROSS REFERENCES

City of Coalinga Department of Public Works Standard Drawings

California Fire Code

Section 507.3, Fire Flow

Section 507.5, Fire Hydrant Systems

National Fire Protection Association

NFPA 13



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NFPA 13R

NFPA 24

NFPA 291

Fire Prevention Manual

Section 405.012, Reduced Hydraulic Demand Sprinkler System Design