



CITY OF VICTORVILLE
FIRE PREVENTION DIVISION
 14345 Civic Center Drive
 Victorville, CA 92392
 (760) 955-5233

Standard Number
TC
 Revision Date:
 11-5-2025

FIRE PREVENTION STANDARD
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A-1 FIRE APPARATUS ACCESS ROAD DESIGN, CONSTRUCTION, AND MAINTENANCE

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 503.1, 503.2, and 504.1 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide for roadways that allow for safe, quick, and reliable access by emergency response fire apparatus onto premises to be protected.

SCOPE

This standard shall apply to the design, construction, and maintenance of all new fire apparatus access roads within the jurisdiction, as well as fire apparatus access roads at existing facilities when applied at the discretion of the fire code official.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The applicant shall provide on a scaled site plan or plot plan the following information at a minimum:

- 1) Location of all fire apparatus access roads and fire apparatus turnarounds for dead-end roadway.
- 2) Dimensions indicating width, length, and radii of all turns for all fire access roads.
- 3) Surfacing specifications of fire access roads, including pavement type and thickness. May also require a report from a registered engineer for certain conditions.
- 4) Gradient, camber (cross slope), and crown of all roadways used for fire access, indicated in percentage at regular intervals (can be submitted on a grading plan and with topographic lines).



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- 5) Locations of any types of obstructions to fire access roads (See also City of Victorville standard A-3).
- 6) The locations of all temporary and permanent structures and/or outside storage yards.
- 7) Location of all fire protection water sources (hydrants, tanks, etc.).
- 8) Locations of all parking areas, landscaping areas, walkways, and any other adjacent areas.
- 9) Location of significant hazards (i.e., flammable or combustible liquids, hazardous materials, or LPG tanks).

DEFINITIONS

EMERGENCY VEHICLE ACCESS (EVA) - A road or other passageway developed to allow the passage of fire apparatus. An emergency vehicle access is not necessarily intended for vehicular traffic other than fire apparatus.

FIRE APPARATUS ACCESS ROAD - A road that provides fire apparatus access from a fire station to a facility, building, structure, or any portion thereof. This is a general term inclusive of all other terms, such as fire lane, public street, private street, parking lot, drive aisle, or access roadway.

GENERAL

- 1) All access roads shall meet minimum fire department access road requirements, including width, distance, turnarounds, and height limitations per CFC CH. 5 or as approved by the fire code official.
- 2) For the purposes of determining adequate fire access as discussed above, “approved route” is the distance measured along a path that simulates the route a firefighter may take to extend a hose line around the exterior of a structure from a fire engine parked on the nearest fire apparatus access road. This is measured at a point located ten (10) feet from the edge of the roadway or curb. Under most circumstances, the approved route will not be a straight line. Fences, planters, other structures, topography, and any significant changes in elevation must be considered when determining whether a building or structure is accessible from a particular location on the fire access roadway. **(See Diagram A-1.1)**

NUMBER REQUIRED

- 1) For new residential development, additional points of access will be determined by the number of existing or future dwelling units that the roadway will provide fire access to, as well as by measuring the length of the roadway.
 - a. For single-family uses, a minimum of two points of access, meeting the requirements of the City



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Engineering department for unrestricted motor vehicle access as well as the requirements of this standard, are required when serving more than thirty (30) dwelling units. For multiple family uses, two or more separate points of access are required when serving more than one hundred (100) dwelling units.

- 2) In all commercial and industrial development, a minimum of two or more separate points of fire access into a site or premises, which meet the requirements of the City Engineering Department for unrestricted motor vehicle access as well as all the other requirements of this standard, shall be provided whenever fire apparatus access roadways are required on-site. **(See Diagram A-1.3)**
 - a. For development projects that are constrained with practical difficulties in providing two points of fire access as described above, one point of fire access for emergency ingress and egress shall be allowed at the discretion of the fire code official if it is unobstructed with no gates or other barriers, provides a minimum of thirty-five (35) feet in width, and provides access to buildings or structures totaling no more than sixty-two thousand (62,000) square feet and no more than thirty (30) feet or three (3) stories in height.
 - b. When a secondary point of fire access into a development is required, it may be permitted to be an Emergency Vehicle Access (EVA) with the approval of the fire code official. The EVA shall be secured with a gate or other barrier acceptable to the fire code official (See City of Victorville Standard A-3.)
- 3) For development projects that are constrained with practical difficulties: to be considered a separate point of fire access, such access shall be located at least one-half (1/2) of the diagonal distance of the development area served, apart from another point of fire access. (Diagonal distance may be reduced if not converging.)
- 4) The fire code official is authorized to require more than two means of fire access based on the potential for impairment of roadways by vehicle congestion, condition of terrain, climatic conditions, or other factors that could limit access. For example, certain uses or areas may require additional provisions for egress of a large number of the public during major disasters.

LOCATIONS

- 1) In all development except single-family residential, where required, fire apparatus access roadways shall be provided on at least one (1) side of every building or structure, which shall be the side with the greatest length. The access road shall run parallel to the entire length of the building. The roadway shall not be closer than ten (10) feet or farther than thirty (30) feet from the building, as measured from the face of the curb or edge of the access roadway to the exterior wall or projection of the building or structure. **(See Diagram A-1.4)**



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- 2) In addition, fire access roadways shall be located as per the following:
 - a) Buildings less than 50,000 square feet and greater than 100 feet in depth shall be provided with fire access roadways on two (2) sides, one of which shall be on the longest side.
 - b) Buildings that are 50,000 square feet or larger shall have fire access roadways provided on three (3) sides, two (2) of which will be on the longest sides.
 - c) Buildings which exceed 100,000 square feet shall have fire access roadways provided on all sides.
 - d) Buildings that are four (4) or more stories in height shall have fire access roadways provided on all sides **(See Diagram A-1.4)**

DIMENSIONS

- 1) Fire apparatus access roadways shall be measured from the face of a vertical curb, the edge of the roadway pavement, or flow line of a rolled curb, or the exterior wall or projection of a building **(See Diagram A-1.5)**
- 2) Fire apparatus access roadways serving all buildings, structures or facilities shall be a minimum of twenty-six (26) feet in unobstructed width. See (a) through (c) below for exceptions.
 - a. Residential driveways that provide fire access to not more than two (2) single-family dwellings and accessory structures shall be a minimum of twelve (12) feet in width.
 - b. Fire apparatus access roadways serving buildings that are three (3) stories, thirty (30) feet or more in height or more than 300,000 square feet in area shall be a minimum of thirty (30) feet in unobstructed width.
 - c. When approved by the fire code official, in areas as designated by the City or where topographical constraints exist, fire apparatus access roads that are less than the minimum width, but no less than twenty (20) feet in width, shall be permitted. Such roadways shall have turnouts that are a minimum of six feet (6') in width and fifty (50') feet in length and spaced at approximately every six hundred (600') feet. If fire hydrants are located on access roads, the turn-out shall be located at each fire hydrant and other points determined necessary for fire protection and emergency response. **(See Diagram A-1.8)**
 - d. One-way fire access roadways and roadways that have raised medians shall have an unobstructed one-way width of twenty (20) feet. Such medians shall be a maximum of fifty (50) feet in width except where approved by the fire code official. Roadways with raised medians shall have intersections or median breaks located a maximum of six hundred



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(600) feet apart or as recommended by the City Engineering Department. **(See Diagram A-1.7)**

- 3) All fire access roadways shall be no less than fourteen (14) feet six (6) inches in unobstructed vertical clearance, as measured from the roadway surface at its highest elevation to the lowest point of any obstruction.
- 4) All dead-end fire access roadways that exceed one hundred fifty (150') feet in length shall be provided with a turn-around in accordance with the "TURNAROUNDS" section of this Standard. The length of a roadway for the purposes of this standard shall be measured from
 - a. the center line of the intersecting roadway that provides at least two points of access to
 - b. the center point of the dead-end roadway terminus, such as a cul-de-sac or other turnaround.**(See Diagram A-1.2.)**

The maximum length of dead-end fire access roadways shall be:

- a. Six hundred (600) feet in length in all residential and commercial development
 - b. One thousand (1000) feet in length in industrial development
- 5) Parking of vehicles shall not be allowed to obstruct fire department access at any time. The following criteria shall be used to determine parking allowed on fire access roadways:
- a. Parking is not permitted on roadways that are less than thirty-two (32) feet in width.
 - b. Roadways that are a minimum of thirty-two (32) feet in width but less than forty (40) feet in width may have parallel parking on one (1) side of the roadway in accordance with City standards.
 - c. Roadways that are a minimum of forty (40) feet in width may be designated to have parallel parking on both sides of the roadway. For higher-density development, public or private streets that are a minimum of thirty-six (36) feet in width may be allowed to have
 - parking on both sides of the street with the approval of the fire code official, taking into consideration additional access provisions and other factors.
 - d. In addition, parking that is perpendicular or diagonal to the edge of the roadway shall not obstruct the required minimum width of 26 feet for fire access. **(See Diagram A-1.6).**

SURFACE

- 1) All fire access roadway surfaces, except for driveways providing fire access to no more than two (2) single family dwellings or accessory structures, shall be capable of supporting a fire apparatus with a gross vehicle weight of 80,000 pounds (lbs.) For design purposes, fire apparatus weight is distributed as 60,000 lbs. on the rear dual axles and 20,000 lbs. on the front axle. When required



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by the fire code official, the design of fire access roadways shall bear the stamp of a registered professional engineer in order to verify that they meet this requirement.

- 2) Fire access roadways shall be paved with a concrete or asphalt material in order to provide “all-weather” safe driving conditions. The appropriate thickness of surface materials and base materials shall be determined by a qualified engineer and subject to the approval of the City Engineering Department, but shall be in all cases, a minimum of four (4) inches.
- 3) Planted materials that are retained by a solid system such as “Turf Block,”® or “Grass-crete”® may be used for fire apparatus access surfacing, with approval of the fire code official, for limited or isolated areas no more than fifty (50) feet in length and where road grades do not exceed two percent (2%). Such areas shall be clearly signed as Emergency Vehicle Access per City of Victorville Standard A-3, Diagram A-3.1. These, as well as other alternate paving materials such as stone, concrete pavers, chip seal, or slag, shall be evaluated based on their ability to support the imposed load of a fire apparatus and shall be immediately recognizable to emergency responders as a drivable surface.
- 4) Where no paved roadways exist and road grades do not exceed eight percent (8%), and where serving only single-family dwellings or accessory buildings or structures not customarily occupied, roads may be constructed with approved native materials or gravel compacted to eighty-five percent (85%) compaction.

GRADIENT

- 1) Generally, the grade of a fire apparatus access road shall be a maximum of twelve percent (12%) at any point.
- 2) Fire apparatus access roadways or driveways may be increased to fourteen percent (14%) for a distance not to exceed 500 feet with the approval of the fire code official.
- 3) Grades across the width of a road section or within a turnaround area as described below shall not exceed five percent (5 %.)
- 4) In order to accommodate proper angles of approach and departure, the gradient in fire access roads shall not exceed a five percent (5%) change along any ten-foot (10') section. **(See Diagram A-1.9).**

TURNING RADIUS

- 1) All turns within fire access roadways that accommodate two-way traffic of fire apparatus shall be a minimum of nineteen feet (19') inside radius and forty-five feet (45') outside radius. **(See Diagram A-1.10.)**



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- 2) For fire access roadways that accommodate one-way traffic of fire apparatus, as well as roadways that have limited traffic, such as onsite drive aisles, shall be a minimum of nineteen feet (19') inside radius and thirty-six feet (36') outside radius. **(See Diagram A-1.10)**
- 3) Subject to the approval of the fire code official, a computer model fire apparatus turning template, set to the dimensions of a typical fire apparatus, can be used for determining the appropriate radius.
- 4) A minimum of fifty (50') foot straight section of roadway must be provided between radius turns within fire access roadways, measured from the end of one radius turn to the beginning of the next. **(See Diagram A-1.11)** A turning template may also be used to modify this requirement.

TURNAROUNDS

- 1) An approved fire apparatus turnaround in accordance with this section is required when fire access roadways exceed one hundred fifty (150) feet in length.
- 2) Driveways, alleys, and other private roadways that are not intended for public access may provide a "hammerhead" style turnaround complying with **Diagram A-1.12**.
- 3) Public and private streets that are intended for public access shall terminate in an approved cul-de-sac with a minimum radius of forty-five (45) feet. When allowed by the City Engineering Department for higher density development, cul-de-sacs that are a minimum of thirty-eight (38) feet in radius may be allowed with the approval of the fire code official, taking into consideration potential for parking and other factors. **(See Diagram A-1.13)**.

INSTALLATION

- 1) All fire access roadways required by the Fire Code and this standard shall be installed to an extent that will provide all-weather paved access for emergency vehicles prior to combustibles being brought to the site or combustible construction taking place. The fire code official shall determine the adequacy of fire access roads during construction; see also City of Victorville Standard B-2.
- 2) All secondary points of fire access, including those that are EVA only, shall be installed prior to the first phase or the beginning of combustible construction. Subject to the approval of the fire code official, additional points of access may be installed during later phases of construction, provided all other requirements of this Standard are met and all access roads and points of access are installed prior to final occupancy.
- 3) Prior to final approval for any development project, fire access roadways shall be complete with final lifts of asphalt, curbs and gutters, fire hydrant markers in accordance with City of Victorville standard W-2, and approved signage and striping in accordance with City Standard A-2.



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TEMPORARY FIRE ACCESS ROADS

- 1) When approved by the fire code official, temporary access roads that meet all applicable requirements of City of Victorville Standards may be installed during construction in lieu of permanent access roadways and maintained in place for a maximum period of one (1) year.
- 2) Temporary fire access roads shall be designed by a registered professional engineer and drawn on plans and submitted to the Fire Prevention Division in accordance with this Standard. Such roadways may be designed and constructed of any materials that will provide a safe, all-weather drivable surface, provided these are evaluated by the design engineer and meet all applicable requirements of this Standard.
- 3) See City of Victorville Standard B-2 for maintenance of temporary access roads.

MAINTENANCE

- 1) All fire apparatus access roads, private or public, shall be maintained unobstructed and in safe, drivable condition for emergency vehicle access at all times by the property owner or other responsible party.
- 2) In areas subject to snowfall, all roadways used for fire access shall be cleared of snow and repaired on a continual basis.
- 3) Landscaping and any other vegetation shall be maintained and cleared horizontally from the edges and extending vertically to fourteen (14) feet, six (6) inches in height for all fire access roads. Landscaping placed in decorative medians or near buildings shall not be obstructive to fire equipment. Consideration should be given to the size of mature growth for each species, so plants will not impede firefighting operations or access.
- 4) All roadways, as well as cul-de-sacs and other required turnarounds, shall be free of obstructions, including storage or the parking of vehicles.

JOINT EMERGENCY AND FIRE APPURATUS ACCESS ROADS

Emergency and fire apparatus access roads passing through multiple parcels or jurisdictions shall comply with the City of Victorville's municipal ordinances.

FIREFIGHTER ACCESS TO BUILDINGS

- 1) Fences, walls, landscaped areas, or other obstructions that may inhibit firefighters from extending hose lines from a fire apparatus parked on a fire access roadway to any building shall have



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minimum four-foot (4'-0") gates or openings provided, at locations acceptable to the fire code official.

- 2) A minimum four-foot (4'-0") paved pathway shall be provided from fire access roadways to all fire access doors as required for high-piled storage uses per the California Fire Code.



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DIAGRAM A-1.1: ROUTE OF TRAVEL AROUND BUILDINGS

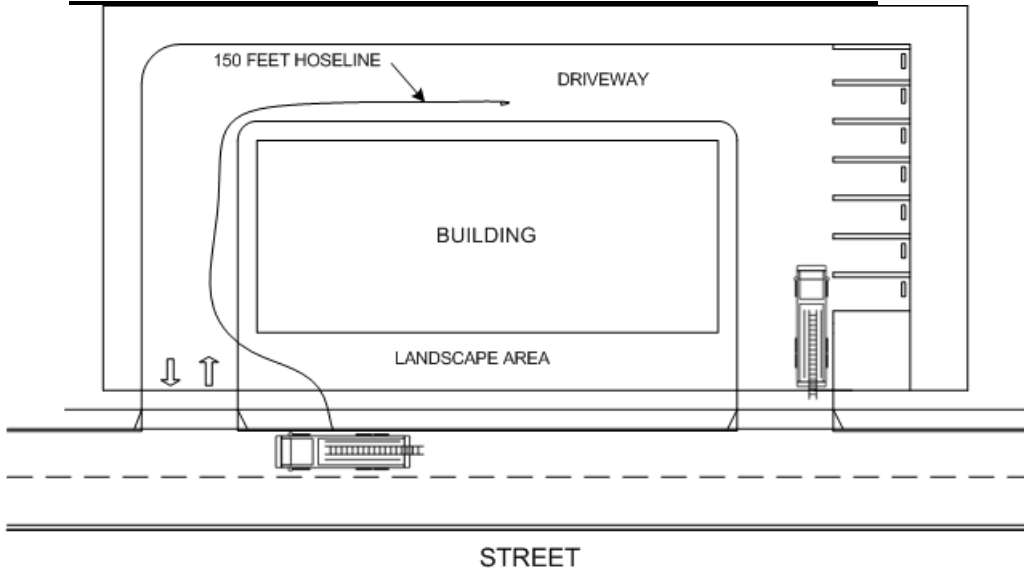
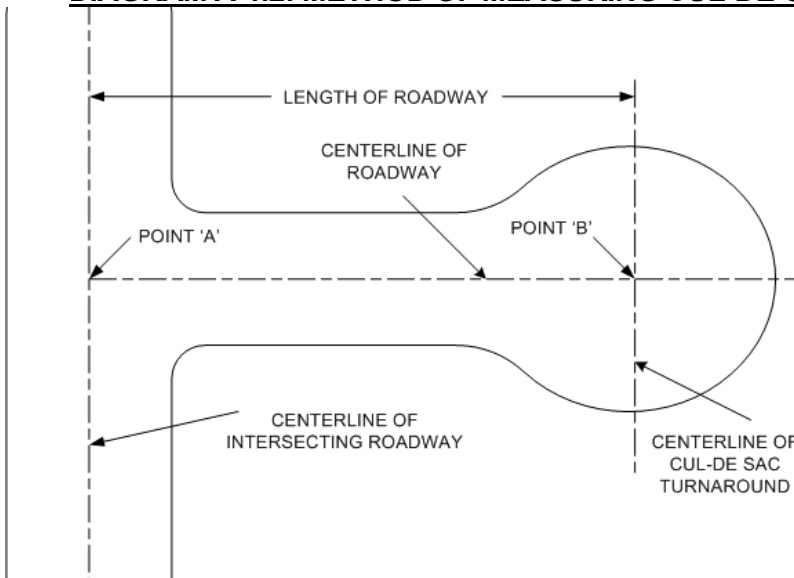


DIAGRAM A-1.2: METHOD OF MEASURING CUL-DE-SAC LENGTH





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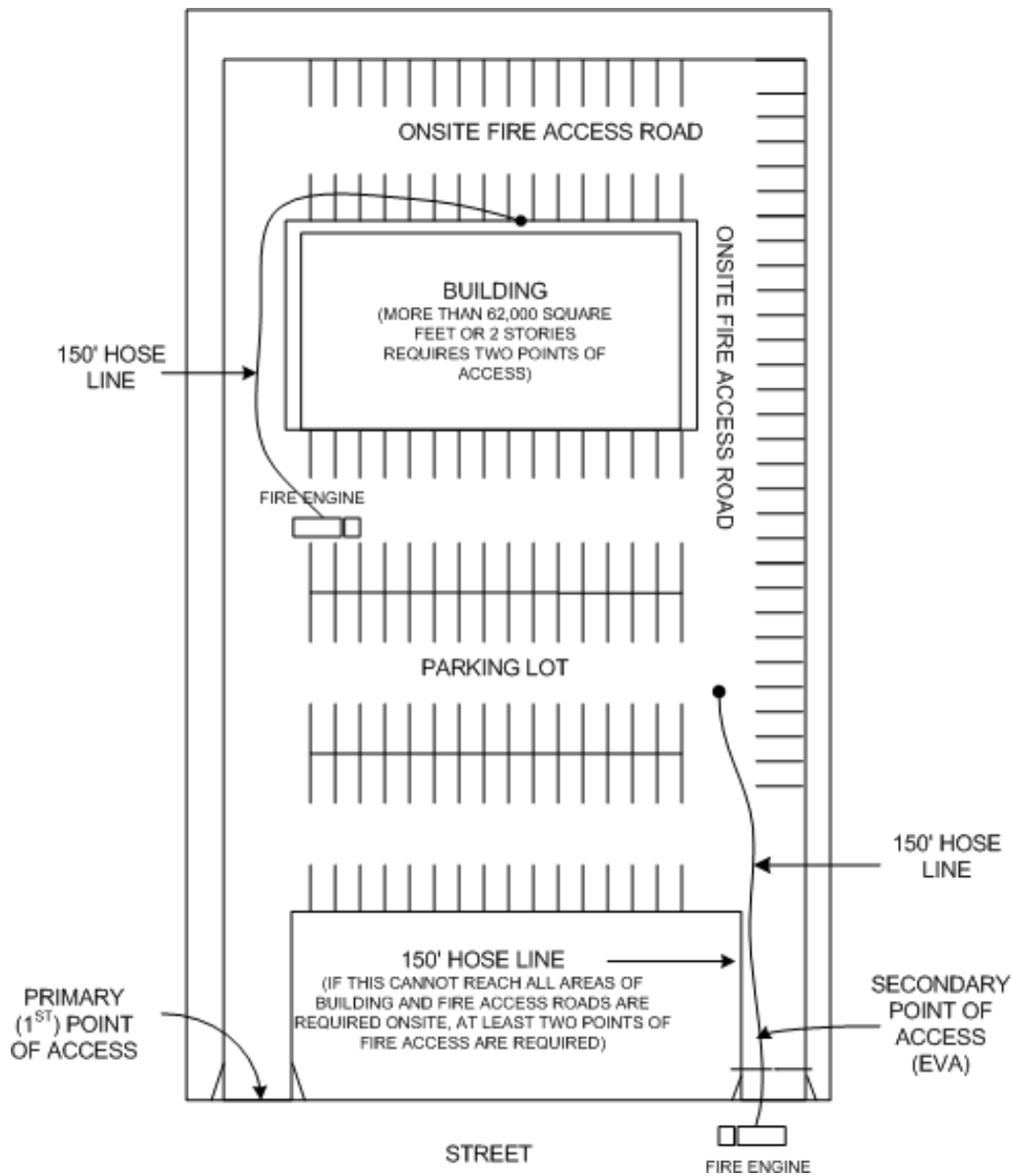
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DIAGRAM A-1.3: MULTIPLE POINTS OF ACCESS





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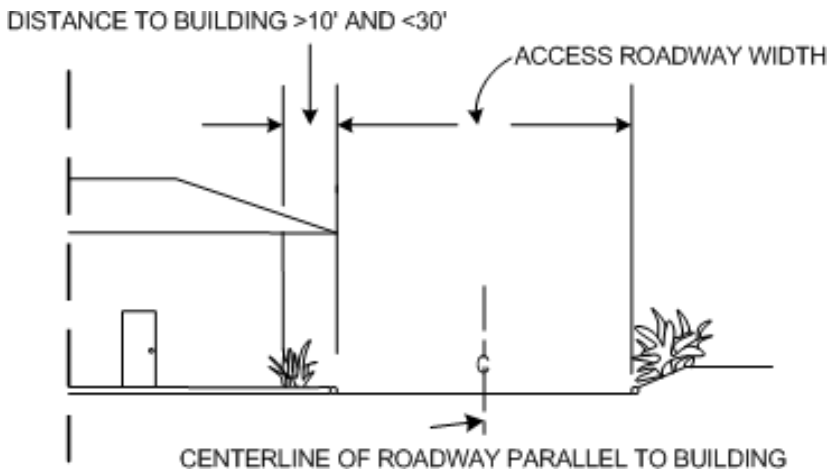
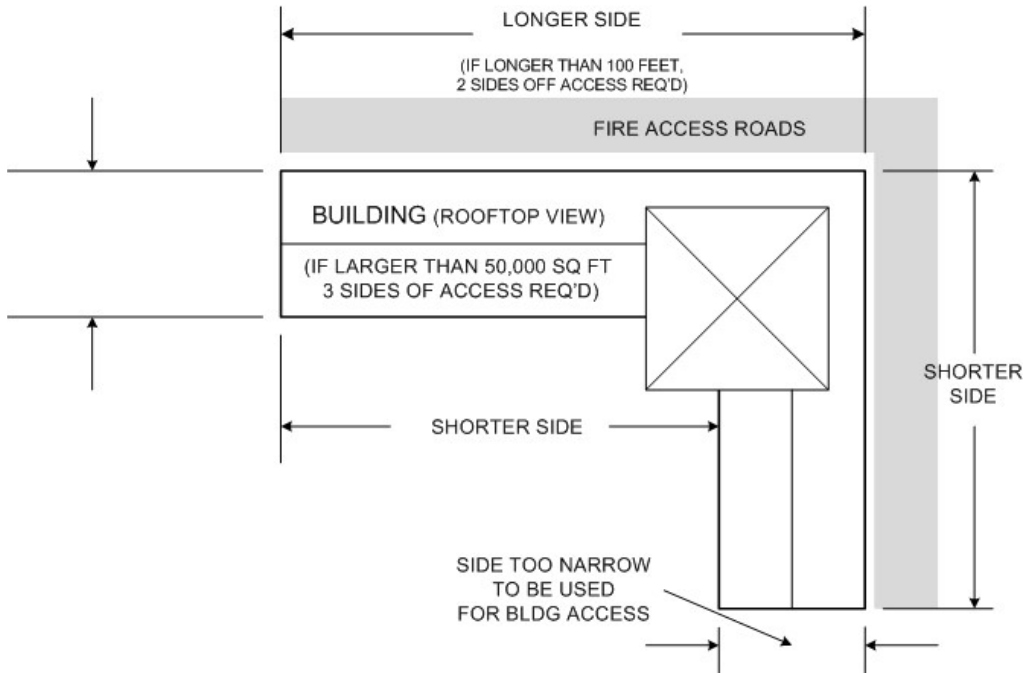
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DIAGRAM A-1.4: SIDES OF BUILDING ACCESS





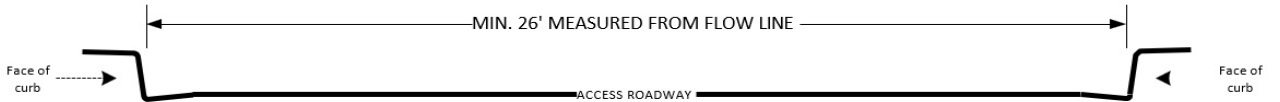
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DIAGRAM A-1.5: ROADWAY MEASUREMENT DETAIL

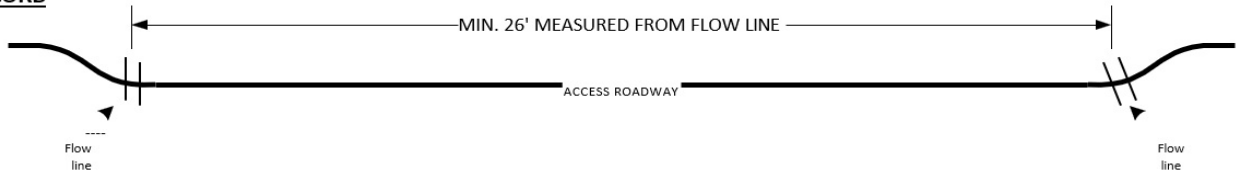
CURBED ROAD



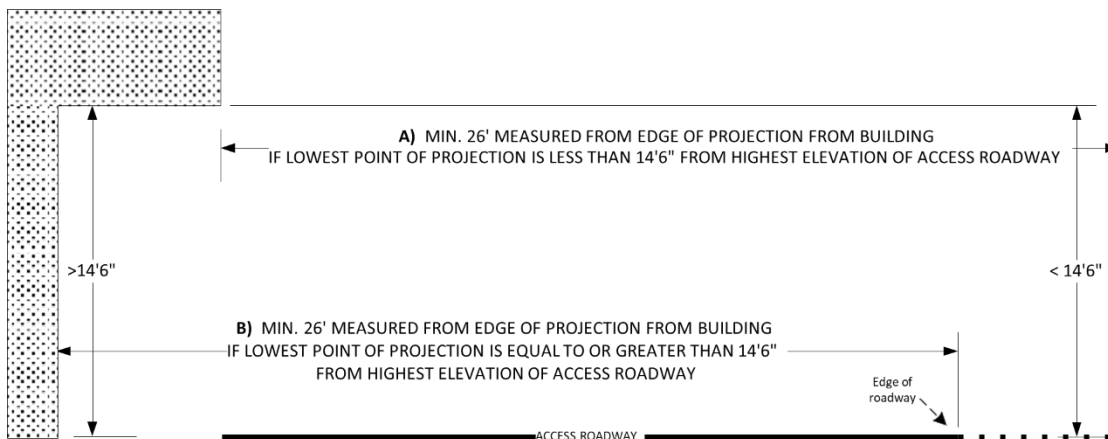
FLAT ROAD



ROLLED CURB



EDGE OF BUILDING OR PROJECTION





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DIAGRAM A-1.6: Fire Lane Parking

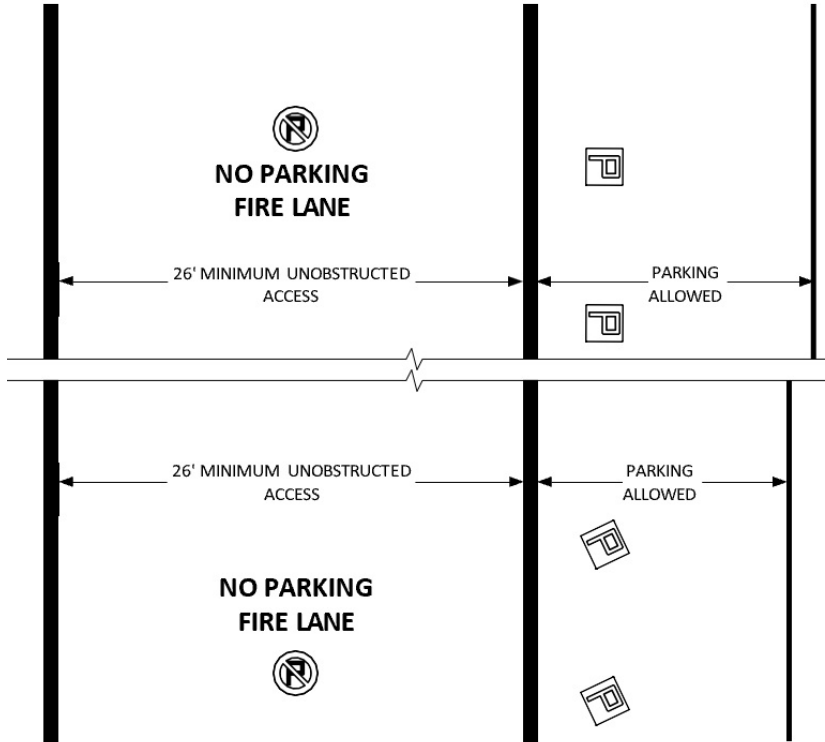
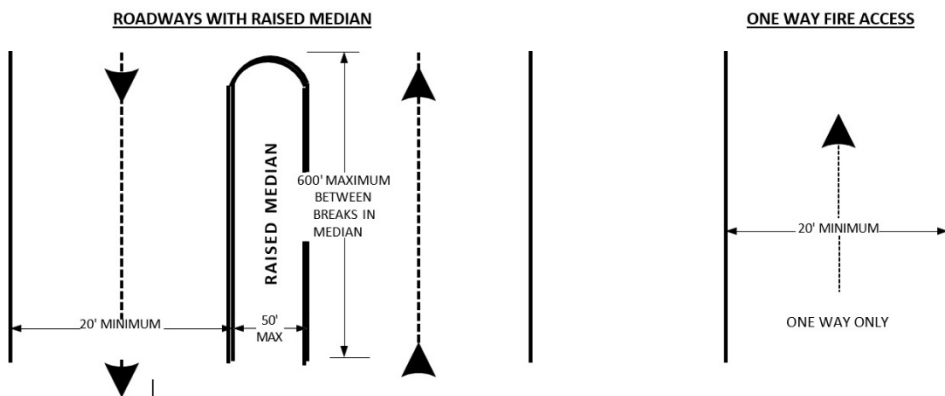


DIAGRAM A-1.7: ROADWAY MEDIAN BREAKS





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DIAGRAM A-1.8: ROADWAY TURNOUT DETAILS

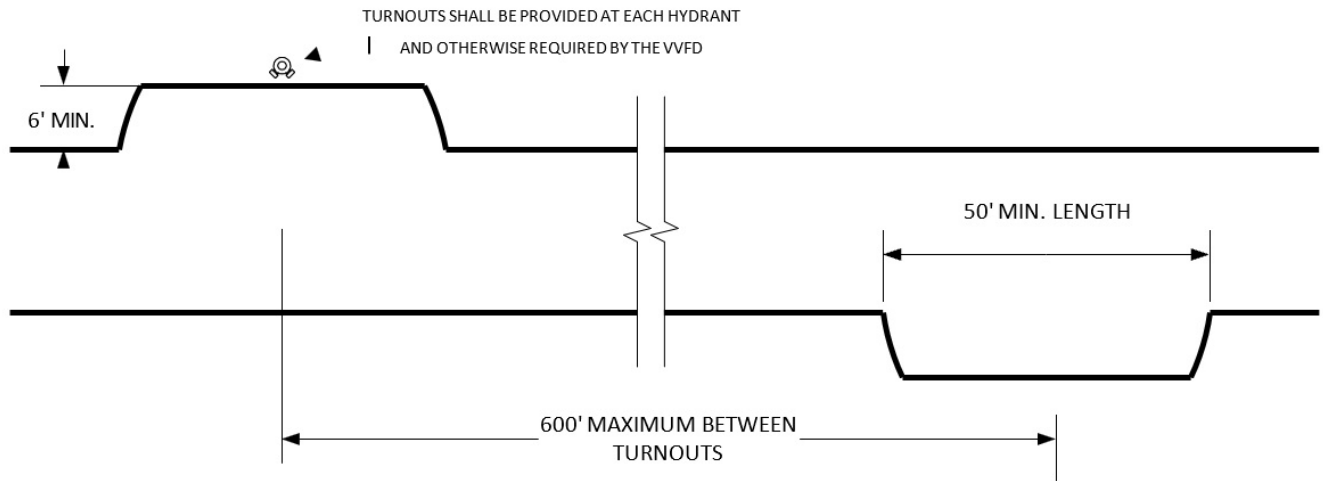
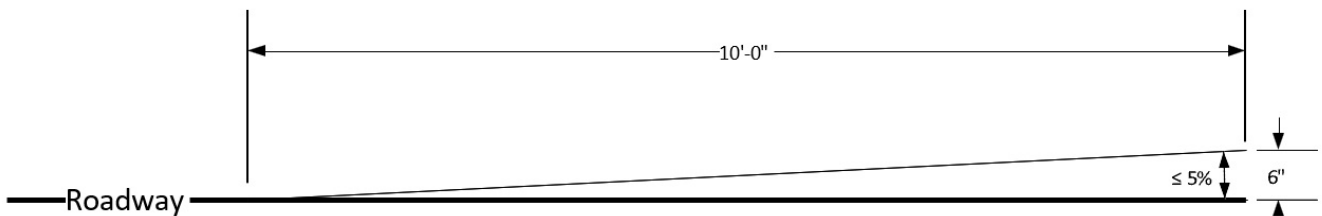


DIAGRAM A-1.9: ROADWAY GRADE DETAIL





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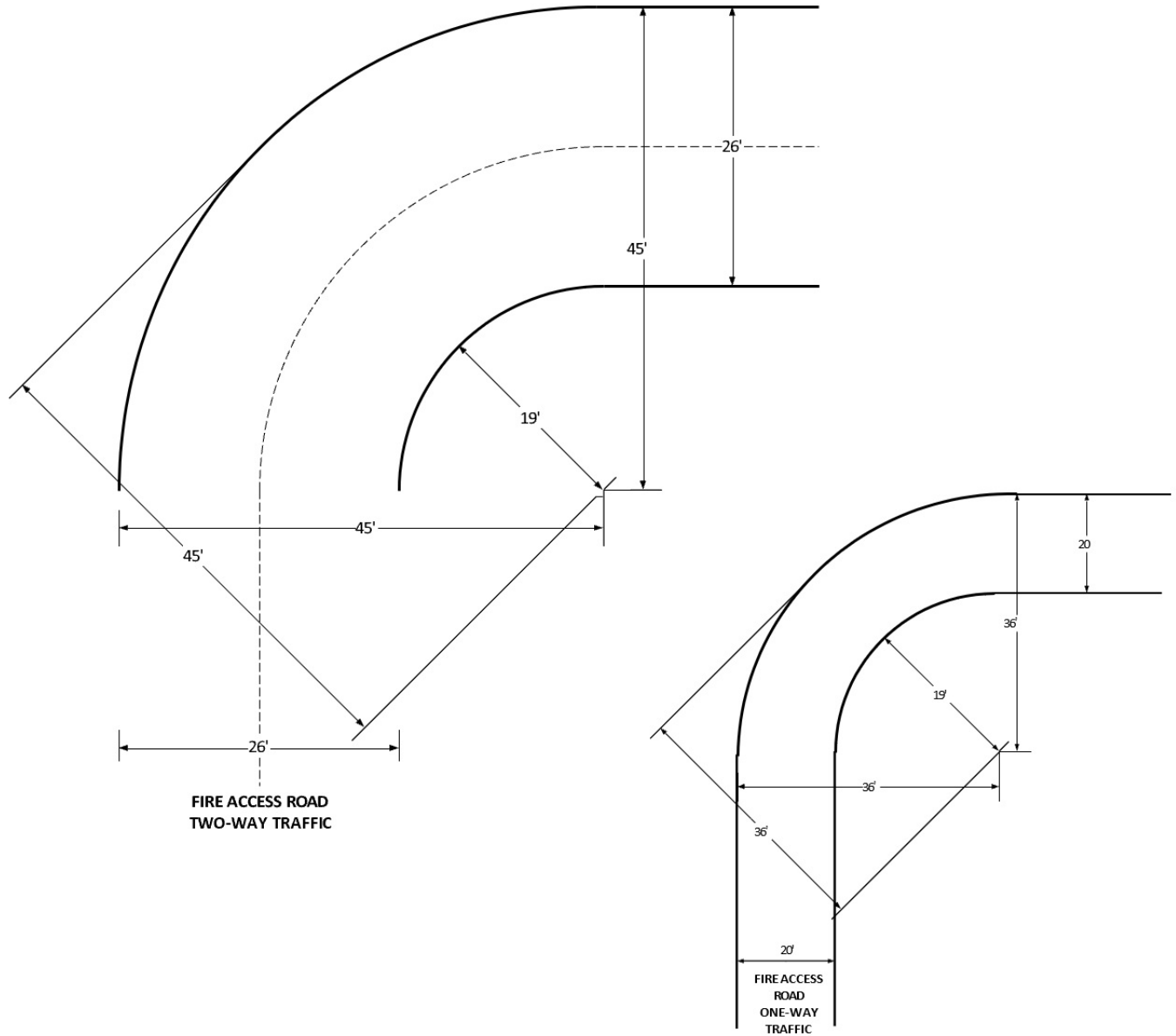
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DIAGRAM A-1.10: TURNING RADIUS DETAIL





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FIRE PREVENTION STANDARD FIRE APPARATUS ACCESS ROAD DESIGN, CONSTRUCTION, AND MAINTENANCE

DIAGRAM A-1.11: ROADWAY CURVES

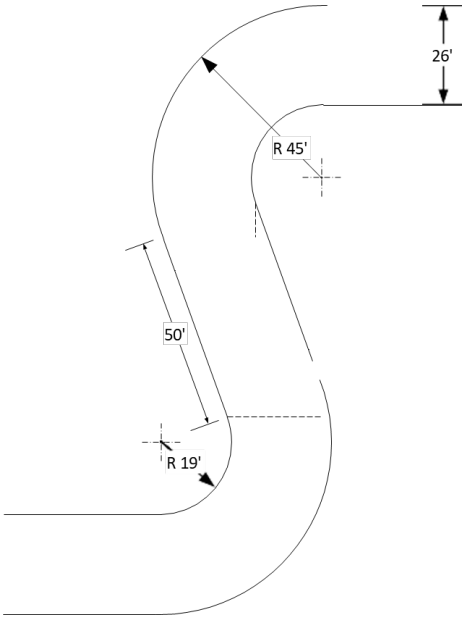
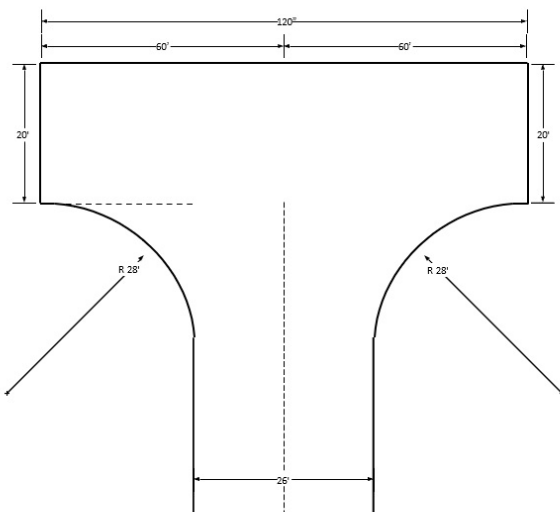


DIAGRAM A-1.12: HAMMERHEAD TURNAROUND DETAIL





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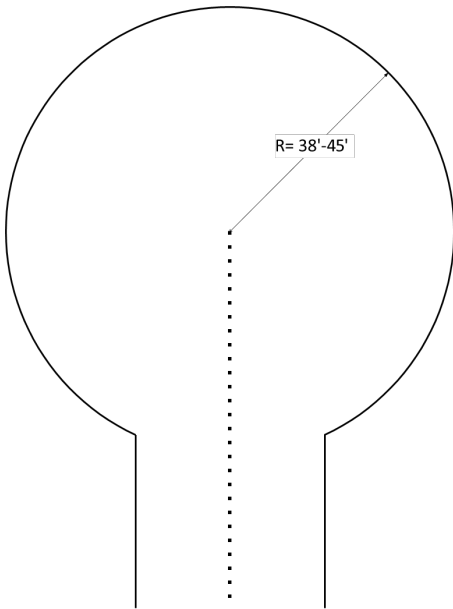
A-1

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FIRE APPARATUS ACCESS ROAD DESIGN, CONSTRUCTION, AND MAINTENANCE

DIAGRAM A-1.13: CUL-DE-SAC TURNAROUND DETAIL





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Standard Number

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Revision Date:
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**FIRE PREVENTION STANDARD
FIRE APPARATUS ACCESS ROAD DESIGNATION AND MARKING**

A-2 FIRE APPARATUS ACCESS ROAD DESIGNATION AND MARKING

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 503.3 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide the minimum requirements for the designation of fire lanes in accordance with the provisions of the California Fire Code (CFC), the California Vehicle Code (CVC) §22500 et seq., and §22658, as well as any locally adopted amendments to these codes.

SCOPE

This standard applies to the marking of all Fire Department access roadways for new construction and development. Existing roadways identified as fire access roadways or otherwise required for emergency access shall also be marked per this standard.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

Fire Department access roads shall be clearly identified on all new construction or tenant improvement plans submitted to the Fire Prevention Division for approval.

When required, a separate set of plans or an exhibit showing the details and identifying the specific

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means of fire apparatus access road designation shall be submitted to the Fire Prevention Division for approval. Such plans or exhibits shall be a scaled site plan or plot plan and shall contain the following information at a minimum:

- 1) Location(s) of all fire apparatus access roads, parking areas, fire appliances, buildings or structures, and any other significant features on the site. Location(s) of all “NO PARKING” signage, striping, or red curb markings per this standard.
- 2) Details of all signage and striping, as it complies with this standard. Location(s) of all “NO PARKING” signage, striping, or red curb markings per this standard.
- 3) Details of all signage and striping, as it complies with this standard.

DEFINITIONS

EMERGENCY VEHICLE ACCESS (EVA) - A road or other passageway developed to allow the passage of fire apparatus. An emergency vehicle access is not necessarily intended for vehicular traffic other than fire apparatus.

FIRE APPARATUS ACCESS ROAD - A Road that provides fire apparatus access from a fire station to a facility, building, or portion thereof. This is a general term inclusive of all other terms, such as fire lane, public street, private street, parking lot drive aisle, and fire access roadway.

FIRE APPLIANCE Apparatus or equipment provided or installed for Fire Department use in the event of an emergency.

FIRE LANE - A fire access roadway on private property that is identified and marked in accordance with this Standard and that must remain unobstructed at all times, including the parking of vehicles or loading or unloading activities.

GENERAL

- 1) Fire lanes shall be designated and marked adjacent to all multi-family residential, commercial, and industrial building access points and approaches.
- 2) All roadways equal to or less than City of Victorville standards for width, including private roads, where the roadway width would preclude any parking along the sides of the roadway or where parking along only one side of the road is allowed, shall be designated and marked as a fire lane.
- 3) All roadways encircling and/or providing direct access to commercial, industrial, or multi-residential buildings and manufactured home developments shall be designated as a fire lane.
- 4) Areas within fifteen (15) feet of any fire appliance shall be designated as a fire lane.

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FIRE APPARATUS ACCESS ROAD DESIGNATION AND MARKING**

- 5) Any other roadways may be designated as a fire lane by the fire code official on a case-by-case basis.
- 6) All fire apparatus access roads shall be identified by at least one of the following methods:
 - a) Approved signs
 - b) Approved red curbs
 - c) Approved pavement striping

SIGNAGE

- 1) Signs shall be no less than eighteen (18) inches high by twelve (12) inches wide and made of durable material.
- 2) Signs shall be labeled “NO PARKING”, “FIRE LANE”, and “CVC22500.1” in all upper-case letters.
- 3) Lettering shall be no less than three inches (3”) high with red lettering on a white background. “CVC 22500.1” shall be in one-inch (1”) letters.
- 4) The perimeter of the sign shall have a one-inch (1”) red border.
- 5) Signs shall be installed with no less than a seven-foot (7”) clearance from the bottom of the sign to finish grade.
- 6) Signs shall be installed within twenty-four inches (24”) of the curb face.
- 7) Signs shall be located no more than fifty feet (50’) apart when installed on one side of the street and one hundred feet (100’) apart when installed on both sides of the street.
- 8) There shall be a sign within five feet (5’) of the beginning and end of any fire lane.
- 9) Signs designed to a recognized City, County, or State standard shall be deemed acceptable if they meet the intent of the specifications above. **(See Diagram A-2.1)**

RED CURBING

- 1) Curbing used to designate fire lanes shall be painted in a weather-resistant red paint. Reflective paint may be used for higher visibility.
- 2) Curbing shall be labeled, “NO PARKING – FIRE LANE – CVC 22500.1” in all upper case letters
- 3) Lettering shall be no less than three (3”) inches high with white lettering on a red background and placed on the face and top of the curb.

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FIRE APPARATUS ACCESS ROAD DESIGNATION AND MARKING**

- 4) Lettering shall be located no more than fifty feet (50') apart and within five feet (5') of the beginning and end of any fire lane. (See Diagram A-2.2)

ROADWAY STRIPING

- 1) Roadway striping shall only be used where there are no curbs or adequate area to install signs.
- 2) Stripes shall not be less than eight inches (8") wide.
- 3) Striping used to designate fire lanes shall be painted in weather-resistant white and red paint. Reflective paint may be used for higher visibility.
- 4) Stripes shall have white lettering centered within the stripe, a minimum of six inches (6") in height, reading, "NO PARKING – FIRE LANE" as well as "CVC 22500.1," in all upper-case letters.
- 5) Lettering blocks shall be located no more than thirty-five feet (50') apart and within five feet (5') of the beginning and end of any fire lane. **(See Diagram A-2.3)**

PROVISIONS FOR TOWING

- 1) In order to tow vehicles parked in fire lanes, private property owners, including Homeowners Associations (HOAs), shall install signs in addition to standard fire lane markings, in plain view at all entrances to the property, pursuant to California Vehicle Code section 22658.
- 2) Signs for the purposes of towing vehicles for fire lane violations shall conform to the following:
 - a) Signs shall be no less than eighteen inches (18") wide and twenty-four inches (24") high.
 - b) Lettering shall be no less than one inch (1") high.
 - c) Signs shall state "PARKING IN A FIRE LANE IS PROHIBITED" and "VEHICLES IN VIOLATION WILL BE TOWED AT THE OWNER'S EXPENSE."
 - d) Signs shall provide the phone number of the local traffic enforcement agency.
 - e) Signs shall provide the name and phone number of each company participating in a towing agreement with the property owner or association. **(See Diagram A-2.4)**

MAINTENANCE OF MARKINGS AND SIGNAGE

- 1) Installation and maintenance of red curbing, signage, striping, and all other markings or

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**FIRE PREVENTION STANDARD
FIRE APPARATUS ACCESS ROAD DESIGNATION AND MARKING**

designators required by this Standard located on private property and private roadways shall be the responsibility of the property owner, management company representing the property owner, or an association.

DIAGRAM A-2.1: "NO PARKING" SIGNAGE DETAIL

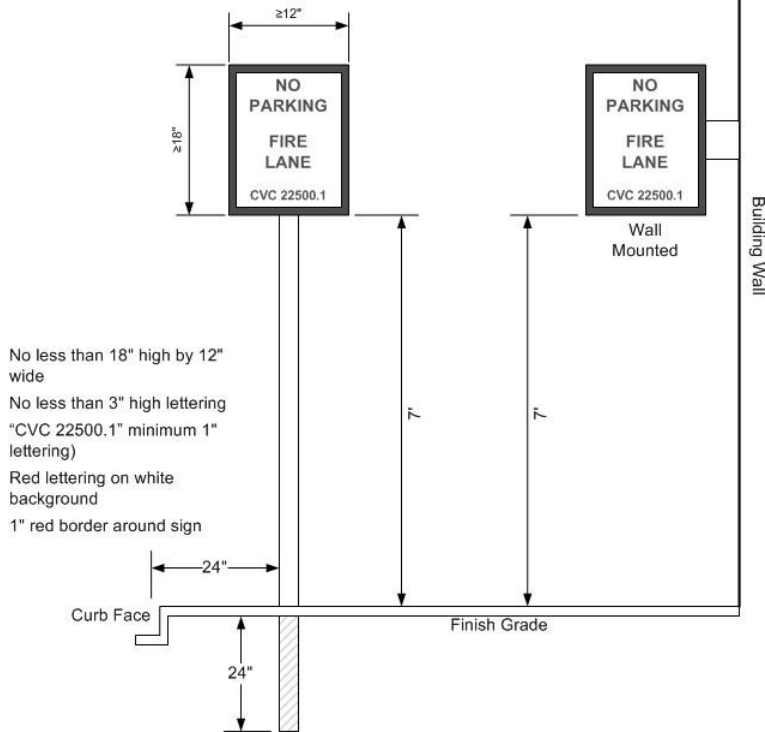
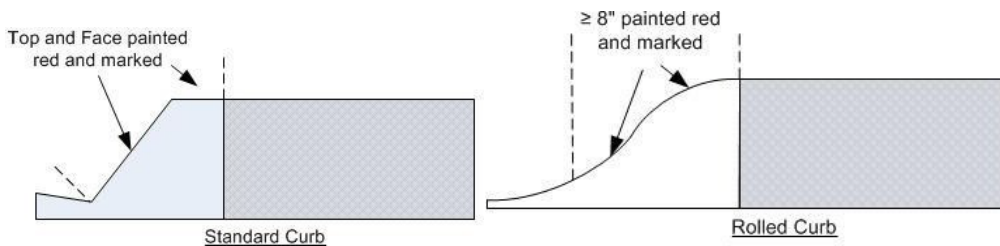


DIAGRAM A-2.2: CURB PAINTING DETAIL





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FIRE PREVENTION STANDARD

DIAGRAM A-2.3: ROADWAY STRIPING DETAIL

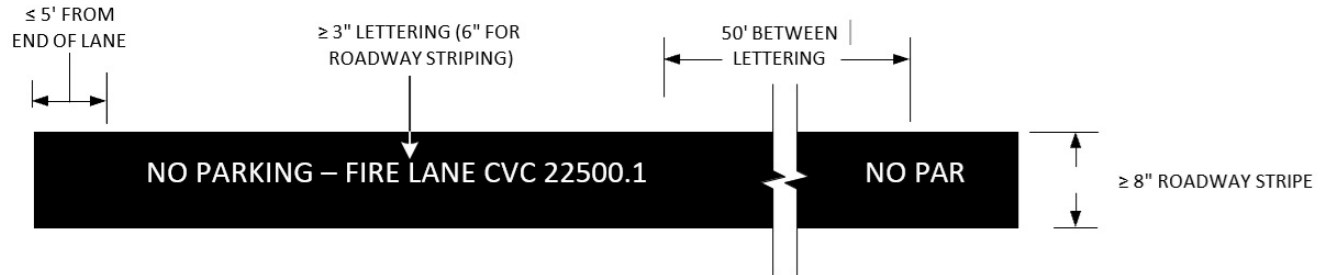
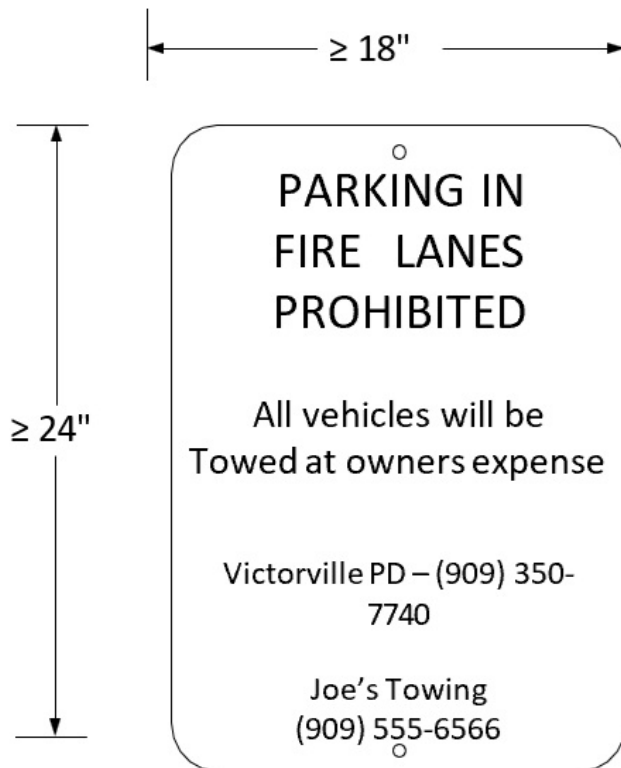


DIAGRAM A-2.4: DETAIL OF SIGNAGE FOR THE PURPOSES OF TOWING VEHICLES





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Standard Number

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Revision Date:
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FIRE PREVENTION STANDARD

A-3 GATES AND OTHER OBSTRUCTIONS TO FIRE DEPARTMENT ACCESS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 503.4, 503.5, and 503.6 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide guidance for the approved methods of installation and maintenance of gates and other obstructions to fire department access.

SCOPE

This standard shall apply to all obstructions, access control devices, traffic calming devices, or other similar systems within any roadways that serve as fire access in all new or existing residential, commercial, and industrial development. This standard does not apply to obstructions within parking aisles that do not serve as fire apparatus access roads.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

Detailed plans shall be submitted to the Fire Prevention Division for approval and permit prior to the installation of any obstructions, security gates, or other vehicle access control devices or systems. The plans shall contain, at a minimum, the following information:

- 1) Plot plan showing the locations of all fire department access roads, nearby buildings, fire protection equipment and appliances, means of emergency operation, and location(s) of any proposed gates or other obstructions.
- 2) Elevations and cross sections of all gates or other obstructions, with dimensions.
- 3) Details of the installation and manufacturer’s specifications sheets for all materials and associated equipment.



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- 4) Proposed signage and/or striping on all fire apparatus access roadways as required by the City of Victorville Standard A-1. Any other important details and information as required by this Standard. Once approved for installation, the work shall be inspected by the Fire Department prior to placing the system into operation.

Note: Please see the City of Victorville Standard A-4 pertaining to Knox ® key switches and key boxes.

DEFINITIONS

EMERGENCY VEHICLE ACCESS (EVA) – A road or other passageway developed to allow the passage of fire apparatus. An emergency vehicle access is not necessarily intended for vehicular traffic other than fire apparatus.

SPEED BUMP – A raised portion of roadway that is out of conformance with the minimum criteria in this Standard and not approved by the Fire Department.

SPEED HUMP – A raised portion of roadway that meets the minimum criteria as specified in this Standard as well as that of the City of Victorville Engineering Department.

TRAFFIC CALMING FEATURES – Roadway devices such as bottlenecks, curves, and roundabouts, which are designed to slow the speed of traffic.

GENERAL

- 1) All obstructions to fire department access shall be installed so as to provide both emergency ingress and egress. Direction-limiting devices with no override provision, such as fixed tire spikes, shall be prohibited.
- 2) The total number of obstructions to fire department access or associated systems, through which emergency responders must pass through to reach any address, shall not exceed one unless specifically approved by the fire code official.
- 3) The placement of gates or obstruction shall not at any time interfere with the use of fire protection equipment, i.e., fire hydrants, fire department connections, fire sprinkler valves etc.
- 4) All access control devices must be operable by emergency responders with no prior special knowledge, device, or effort.
- 5) All obstructions to fire department access that require electrical, hydraulic, or pneumatic power or force for normal operation shall automatically retract into an open position (“fail open”) when there is a malfunction or power loss and shall stay secured in an open position until normal operation is restored.



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FIRE PREVENTION STANDARD GATES AND OTHER OBSTRUCTIONS TO FIRE DEPARTMENT ACCESS

MANUALLY OPERATED SECURITY GATES

- 1) Access roads designated for Fire Department (EVA) use only may be gated with manually operated gates which are marked with a sign reading "EMERGENCY AND AUTHORIZED VEHICLES ONLY" per **Diagram A-3.1**, with red letters contrasting from their background and visible from all directions of approach and must meet other applicable requirements of the California Fire Code and City of Victorville Fire Department Standards.
- 2) Manual gates shall have a means of emergency operation that allows manual operation by one person. Manually operated gates shall be equipped with an approved "Knox ®" padlock or an equivalent locking system acceptable to the Fire Department.
- 3) Manual gates shall either slide open horizontally or swing inward in the direction of emergency vehicle ingress to open.
- 4) For development other than single-family dwellings, fire apparatus access openings or driveway approaches serving two-way vehicular traffic shall provide a minimum width of twenty (20) feet of clearance fully open. When medians or center dividers are present and openings or approaches serve one-way traffic, a minimum of twelve (12) feet of clearance shall be required when gates are fully open. One-way openings or approaches shall be within fifteen (15) feet of each other and shall meet all the requirements of this Standard.
- 5) For private driveways serving single-family dwellings, gates shall have a minimum clear open width of twelve (12) feet and shall meet all other applicable requirements of this Standard.
- 6) Gates that provide emergency access to fuel modification zones or wildland areas shall have a minimum clear open width of fifteen (15) feet and shall meet all other applicable requirements of this standard.
- 7) Parking of vehicles shall not obstruct any entrance or the operation of any gate installed per the requirements of this standard. "NO PARKING" signs designed and installed in accordance with City of Victorville Standard A-3 may be required as directed by the fire code official.
- 8) When required by the fire code official, entry gates shall be installed so as to provide a minimum of forty feet (40') of fire apparatus stacking from the intersecting road. **(See Diagram A-3.2)**

ELECTRICALLY OPERATED SECURITY GATES

- 1) Electrically operated security gates shall meet all the requirements of the "MANUALLY OPERATED SECURITY GATES" section above and must meet other applicable requirements of the California Fire Code and this section, as well as all other City of Victorville Fire Department Standards.



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GATES AND OTHER OBSTRUCTIONS TO FIRE DEPARTMENT ACCESS

- 2) Electric gates shall be equipped with an emergency preemption device as an automatic means of opening the gate for emergency access by fire department personnel. The location and type of emergency opening devices shall be approved by the fire code official and, at minimum, shall require Opticom® or equivalent sensors and shall also require Knox key switches as deemed necessary by the fire code official. **(See Diagram A-3.3)**
- 3) Any preemption devices on electric gates shall override all normal gate operations and completely open the gate(s). After preemption devices are activated, gates shall be maintained in an open position for a minimum of twenty (20) minutes, after which the gate controller shall automatically reset and close the gate.
- 4) All electric motors operating security gates that obstruct fire department access roadways or systems shall be listed in accordance with ASTM F2200 and UL 325 and shall reach the fully open position within a total time not to exceed one second for each one foot of obstructed required width.
- 5) A safety loop that prevents the gate from closing on vehicles going through the gate shall be installed on all electric gates.
- 6) An automatic exit loop that activates the gate in the direction of egress shall be installed on all electric gates, or an additional preemption device may be installed in the direction of emergency vehicle egress when approved by the fire code official.
- 7) Electric gates shall be provided with a manual release to allow the gate to be operated manually when electrical service is interrupted. A pedestrian gate will be required if the manual release is behind a locked gate that does not fail in the open position.

REMOVABLE OR RETRACTABLE BOLLARDS AND BARRICADES

- 1) Bollards and barricades of any type that are installed across fire apparatus access roads shall be either automatically retractable into an open position or manually removable. The location, type, and design of such obstructions shall be approved by the fire code official prior to installation.
- 2) Bollards or barricades that are automatically retractable shall have an approved means of emergency operation for Fire Department use, installed in a highly visible location.
- 3) Manually removable bollards or barricades shall not exceed forty pounds (40 lbs.) per bollard or barricade. Any padlocks or other security devices installed on removable bollards or barricades shall be a “break-away” type that can be easily forced open.
- 4) Bollards and barricades shall be painted with bright colored reflective yellow paint and have reflective decals installed for high visibility during the hours of darkness.

SPEED HUMPS



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FIRE PREVENTION STANDARD GATES AND OTHER OBSTRUCTIONS TO FIRE DEPARTMENT ACCESS

- 1) Speed humps installed within fire access roadways shall be designed pursuant to this standard or other recognized equivalent specification; and if installed on public streets, shall be approved by the City of Victorville Engineering Department. In general, speed humps shall be designed for vehicles with a travel speed of 25 mph, a minimum width of twelve feet (12'), a maximum height of four inches (4") and a minimum taper of 24 inches (24") (**See Diagram A-3.4**)
- 2) Speed humps shall be spaced no closer than 300 feet apart. Speed humps shall not be placed within five feet (5') of an intersection or driveway, or within twenty feet (20') of a fire hydrant.
- 3) Warning signs as well as reflective pavement marking shall be required per City Standards if speed humps are placed on public streets. Speed humps placed on private property shall have signage and diagonal pavement "hash" markings as shown in (**Diagram A-3.5.**)
- 4) Existing, non-conforming speed humps (such as speed bumps) will be subject to removal when deemed by the fire code official as a hazard to emergency response vehicles.

OTHER TRAFFIC CALMING FEATURES

- 1) Traffic calming features designed to slow the speed of traffic may be utilized, subject to approval by the fire code official. At no time will traffic calming devices be allowed to restrict the minimum width or turning radius within a fire department access route.
- 2) When approved, traffic calming devices shall be constructed and maintained as per appropriate standards. Plans shall be submitted to the Fire Prevention Division for review and approval prior to any construction taking place.

MAINTENANCE OF OBSTRUCTIONS

- 1) In order to ensure proper maintenance, a copy of a maintenance contract for automatic devices and systems is required to be supplied to the Fire Prevention Division for review. Regular inspections of equipment, on a minimum of a bi-annual basis, shall be performed and a record kept on file for Fire Prevention Division review.
- 2) The property owner and/or property owners' association shall be responsible for maintaining all equipment. All system components shall be maintained in an operative condition at all times and shall be replaced or repaired when defective.
- 3) The Fire Prevention Division shall have the authority to perform inspections to ensure proper maintenance and integrity of any systems or equipment on an as-needed basis.



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FIRE PREVENTION STANDARD GATES AND OTHER OBSTRUCTIONS TO FIRE DEPARTMENT ACCESS

DIAGRAM A 3.1: "EMERGENCY VEHICLES ONLY" SIGN DETAIL

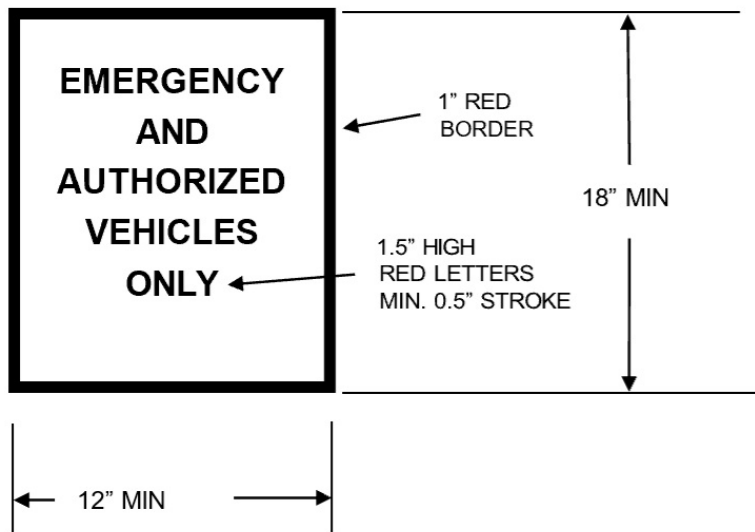
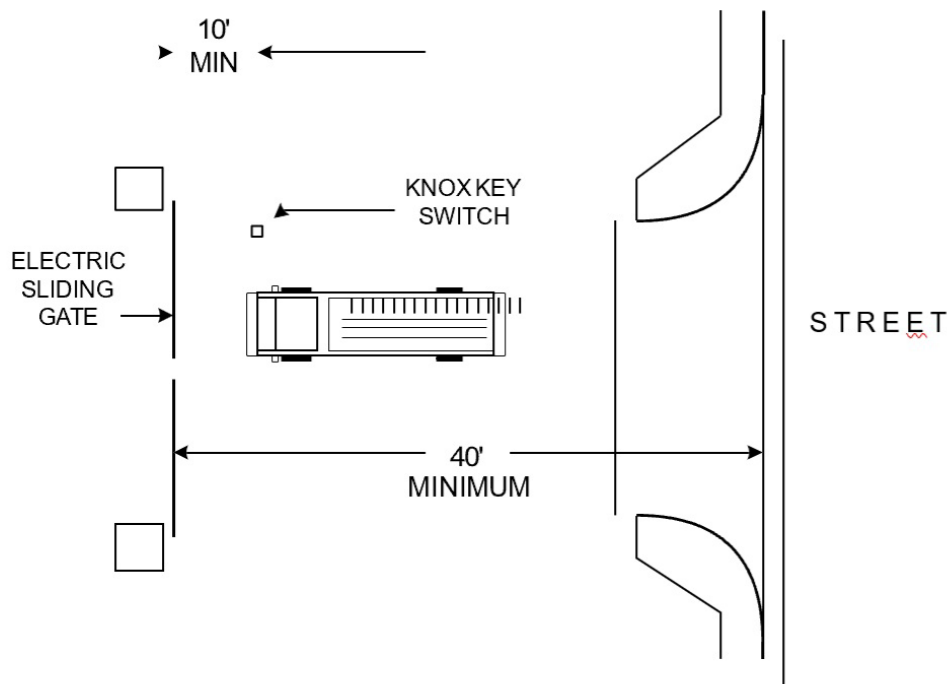


DIAGRAM A-3.2: ENTRY GATE STACKING





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DIAGRAM A-3.3: ELECTRICALLY OPERATED GATE

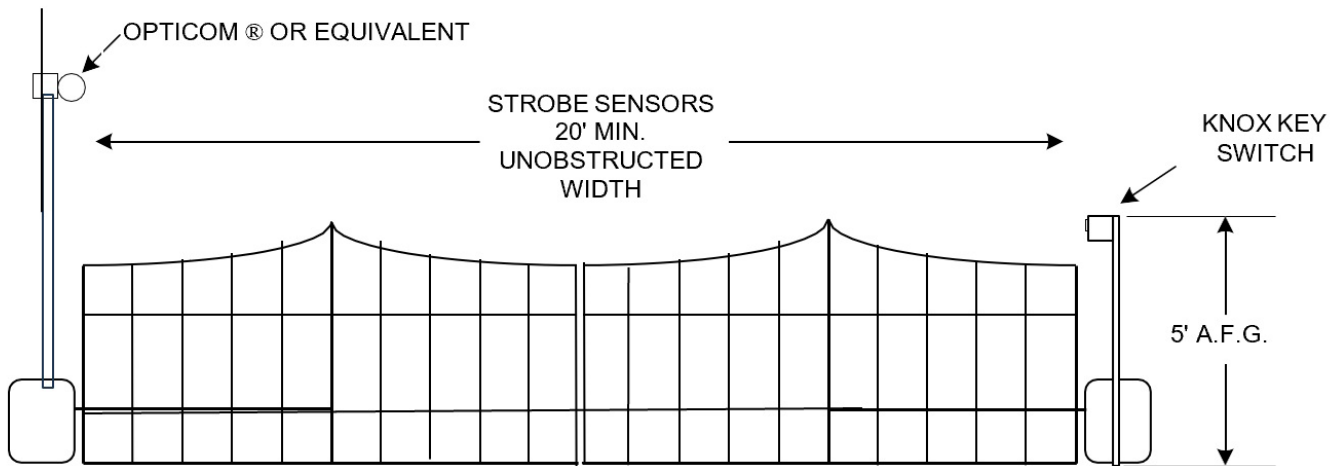


DIAGRAM A-3.4: SPEED HUMP

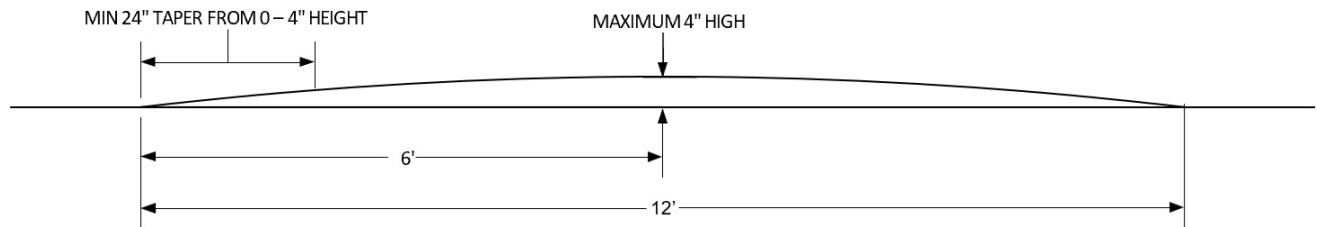


DIAGRAM A-3.5: SPEED HUMP STRIPING





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A-4

Revision Date:
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FIRE PREVENTION STANDARD

A-4 FIRE DEPARTMENT ACCESS KEY BOXES

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 506 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide guidance for the approved methods of installation and maintenance of fire personnel access key boxes for buildings within the scope of this standard.

SCOPE

This standard shall apply to all fire personnel access key boxes on all new and existing residential, commercial, and industrial developments and structures as determined by the Fire Code Official using the criteria set forth in this standard.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

An application shall be made to the Fire Prevention Division for approval and installation of all key box devices. The application shall contain the following information:

- 3) Plot plan, to scale, on minimum 8 ½" X 11" size paper, showing the locations of all buildings, fire apparatus access roads, and all fire department key boxes.
- 4) Size(s) and type(s) of all key boxes or other access devices
- 5) Applications and orders can be made by creating an account at knoxbox.com, ensuring "California" and "Victorville Fire Dept" are selected during the ordering process.



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FIRE PREVENTION STANDARD FIRE DEPARTMENT ACCESS KEY BOXES

DEFINITIONS

KEY BOX - An approved secure device with a lock operable only by a fire department master key and containing building entry keys and other keys, devices, or information that may be required in order to allow emergency responders easier access to a building or premises. For the purposes of this standard, the terms “key box” and “Knox® box” mean the same thing.

GENERAL

- 1) All buildings or portions of buildings newly constructed or retrofitted and that are protected with either an automatic fire sprinkler system, a fire alarm system, or both shall have at least one (1) key box installed on the exterior of the building.
- 2) Key boxes shall be of a secure design and of a recessed-mounted type with a hinged door, unless otherwise approved by the Fire Code Official for a retrofit installation.
- 3) Key boxes shall be ordered and purchased by the owner, contractor, developer, or other responsible party only from the approved vendor, the Knox ® Company.
- 4) Key boxes shall be installed a minimum of five feet (5') and a maximum of six feet (6') above adjacent finished grade and within a maximum of ten feet (10') of the main entrance door or as approved by the Fire Code Official. (See Diagram A-4.1)
- 5) Key boxes shall be sized large enough to contain all keys, electronic access cards, or other entry devices or information as required by the Fire Code Official that will enable access to all necessary areas and rooms within the facility. See “CONTENTS” section below.
- 6) Key boxes shall not be installed on gates or used in applications other than buildings without specific approval of the Fire Code Official. For installation of Knox ® locks on gates, see City of Victorville Standard A-3.
- 7) For existing buildings, see “Retrofits on Existing Buildings” (page 4).
- 8) For high-rise or multi-tenant buildings, see “Special Situations” (Page 4).

CONTENTS

- 9) A minimum of one (1) key for all listed areas and access card(s) if utilized, such as RFID or comparable device (must not require batteries to operate). Magnetic Key Cards are discouraged as the primary access medium, as magnetic key cards demagnetize over time and shall be migrated to an alternative medium as soon as possible or as determined by the fire code official when stored in an exterior Knox box. Other access devices or information as required by the Fire



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FIRE PREVENTION STANDARD FIRE DEPARTMENT ACCESS KEY BOXES

Code Official shall be provided for the following areas:

- 1) Locked doors at all points of entry to buildings and areas, whether internal or external
 - 2) Locked electrical, mechanical, and other similar rooms.
 - 3) Locked fire control rooms or rooms containing fire sprinkler risers.
 - 4) Locked Fire Alarm Control Panels (FACP's).
 - 5) All elevator control systems, panels, and/or keyed firefighter recall switches.
 - 6) Any other area, room, equipment, and/or system as directed by the Fire Code Official.
- 10) In buildings that are larger than 100,000 square feet or greater than three (3) stories in height, multiple sets of master keys shall be provided as required by the Fire Code Official. All keys and cards in key boxes shall be permanently labeled indicating the area that it provides access to.
- 11) When possible, and in particular for any multi-family or multi-tenant building, master keys and magnetic cards shall be provided in order to minimize the number of different access devices in key boxes.

MONITORING

- 12) Key boxes shall not be connected to, or monitored by, any fire alarm system.
- 13) With the approval of the Fire Code Official, key boxes may be monitored by a security or burglar alarm system. Key boxes that are monitored by a security system shall bear a sticker or other marker indicating the name and phone number of the monitoring company.
- 14) The method of connection or otherwise securing of any key box shall not interfere with the quick, safe, and easy operation of the key box.

INSPECTIONS AND MAINTENANCE

- 1) After installation and regularly thereafter, key boxes shall be inspected and secured by the Fire Prevention Division inspector.
- 2) The property owners or other representatives shall be solely responsible for maintaining key boxes operable and secure at all times.
- 3) The property owners or other representatives shall be responsible for ensuring that keys, cards, and other access devices and information contained within key boxes are current and will operate all locks effectively for all areas described within this Standard.



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FIRE PREVENTION STANDARD FIRE DEPARTMENT ACCESS KEY BOXES

RETROFITS ON EXISTING BUILDINGS

- 1) When required by the Fire Code Official, a minimum of one (1) key box shall be installed on the exterior of existing buildings or premises if one or more of the following conditions exist:
- 2) Emergency access would be extremely difficult or time-consuming, which could likely result in an increased risk to life safety or cause extensive fire damage.
- 3) Forcible entry operations could cause significant and costly damage to the premises, and such damage could be avoided by the installation of an access key box(s).
- 4) Key boxes required on existing buildings shall be permitted to be surface-mounted type with a hinged door, installed at an elevation of five (5) feet to six (6) feet above finished grade and within ten (10) feet of the main entrance door(s) or in a location approved by the Fire Code Official.

SPECIAL SITUATIONS

- 1) Buildings that have multiple tenant spaces and have no apparent main front entry door shall have a key box installed on the address side of the building, near the door providing access to the fire alarm panel, fire sprinkler riser, and other common area fire protection systems as required by City of Victorville codes and standards. If this location is not possible or practical, then the key box shall be installed near the center of the length or width of the building.
- 2) Key boxes shall not be installed on columns, architectural features such as "pop-outs," or any other place where security or visibility may be compromised.
- 3) For large buildings with multiple entrances, there shall be a key box at each entrance that is separated from other main entrances more than five hundred (500) feet along fire access roadways.
- 4) Buildings or facilities that have staff on the premises 24 hours a day may submit a written request to the Fire Code Official to waive the requirement for a key box. All such requests are subject to final approval by the Fire Code Official.
- 5) In high-rise and other large buildings where numerous sets of access devices may be required, master keys or cards may be placed in a secure vault or cabinet immediately inside the main entrance or fire control room within the building. The exterior key box shall contain keys to this vault or cabinet.



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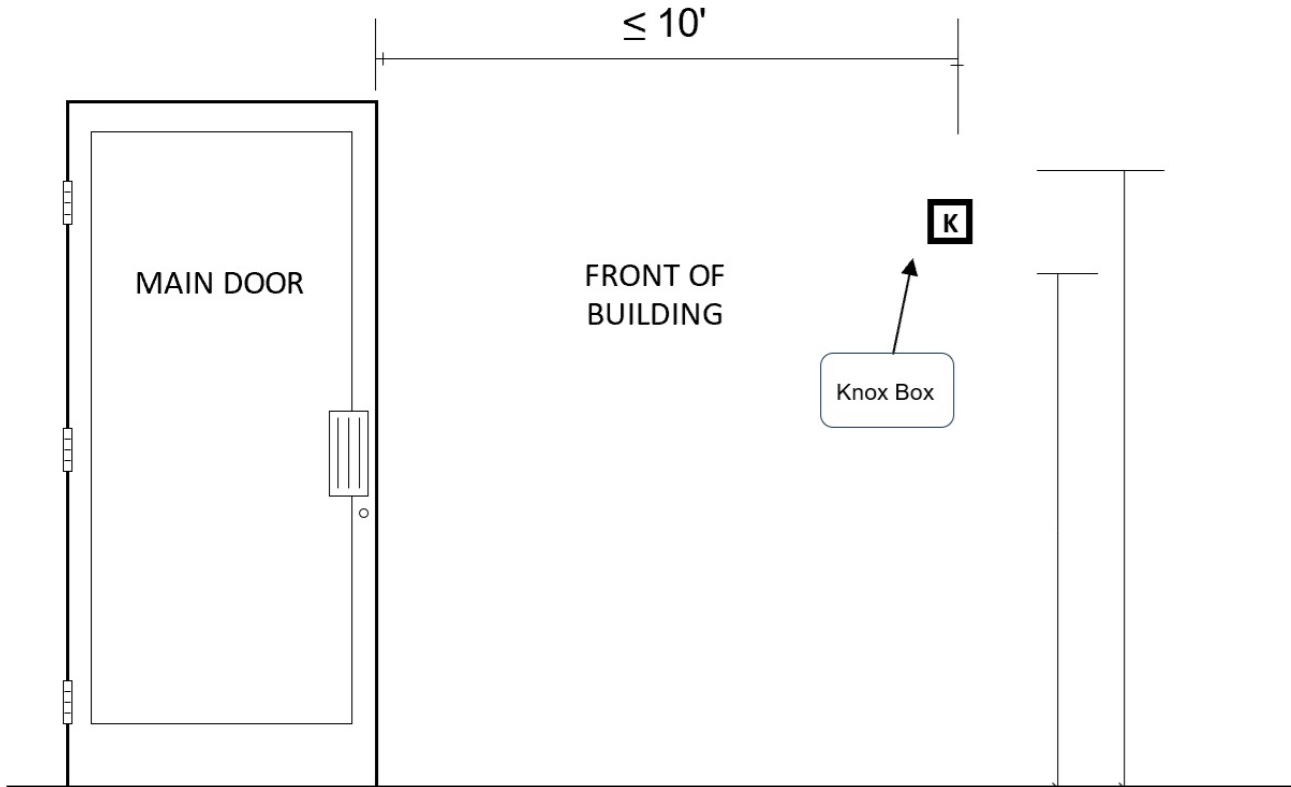
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DIAGRAM A-4.1: KNOX BOX MOUNTING HEIGHT
FIRE SAFETY STANDARD
PREMISE AND BUILDING IDENTIFICATION AND ADDRESSING



B-1 PREMISE AND BUILDING IDENTIFICATION AND ADDRESSING

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to



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FIRE SAFETY STANDARD

PREMISE AND BUILDING IDENTIFICATION AND ADDRESSING

specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 505 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide the minimum requirements for the identification and addressing of buildings and premises in accordance with the provisions of the California Fire Code (CFC) as well as any locally adopted amendments to these codes.

SCOPE

This standard applies to the marking of all buildings with address numbers for identification.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

Address and suite numbers shall be clearly identified on all new construction or tenant improvement plans submitted to the Fire Prevention Division for approval.

When required, a separate set of plans or an exhibit showing the details of the address or suite numbers shall be submitted to the Fire Department for approval. Such plans or exhibit shall be a scaled site plan or plot plan and shall contain the following information at a minimum:

- 1) Location of the address or suite numbers.
- 2) Size of the address or suite numbers.
- 3) Color of the address or suite numbers



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**FIRE PREVENTION STANDARD
PREMISE AND BUILDING IDENTIFICATION AND ADDRESSING**

GENERAL

Building and premises identification shall be in accordance with the CA Fire and Building codes and the City of Victorville Fire Dept Standard.

COMMERCIAL, CONDOMINIUMS, AND INDUSTRIAL BUILDINGS

- 1) The street address shall be posted with a minimum of twelve (12) inch in height numbers with a one (1) inch stroke, visible from the street of the corresponding address. During the hours of darkness, they shall be electrically illuminated either externally or internally.
- 2) Posted numbers shall contrast with their background and be legible from the street of the corresponding address prior to occupancy.
- 3) Where building setbacks exceed one hundred (100) feet from the roadway, additional non-illuminated contrasting numbers eighteen (18) inches in height with a one (1) inch stroke shall be displayed at the property access entrance on a permanent monument.
- 4) Commercial/Industrial buildings - Secondary or rear entrance doors shall be marked with unit designators with a minimum of six (6) inch high and 3/8-inch stroke numbers/letters.
- 5) In a multifamily complex, there shall be positioned at each entrance of the complex an illuminated diagrammatic representation of the complex showing the location of fire hydrants, egress/ingress, building and unit designators within the complex (**see Diagram B-1.1**).
- 6) Where interior buildings exist, completely detached from roadway circulation, illuminated or reflector signs shall be posted along walkway entrances from road circulation points, indicating interior buildings that take access from that particular path.
- 7) Each individual unit/building within the complex shall display a prominent identification letter, not less than six (6) inches in height and one-half (1/2) inch stroke, which is easily visible to approaching vehicular and/or pedestrian traffic. During the hours of darkness, these letters shall be internally or externally electrically illuminated.
- 8) Each individual unit shall have a number/letter with the first digit indicating floor level, not less than four (4) inches in height and one-half (1/2) inch stroke.

SINGLE-FAMILY HOMES

- 1) The street address shall be posted with a minimum of four (4") inches in height numbers.
- 2) with a one-half (1/2)-inch stroke, visible from the legal access road. During the hours of darkness, they shall be internally illuminated.



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PREMISE AND BUILDING IDENTIFICATION AND ADDRESSING

- 3) Prior to occupancy, the posted numbers shall be installed with numbers that contrast with their background and are legible from the street
- 4) Where building setbacks exceed fifty (50') feet from the roadway, an additional non-illuminated contrasting four (4) inch stroke shall be displayed at the property access entrance on a permanent monument.

STREET/ROAD SIGNS

- 1) The street sign shall be posted at the intersection closest to the project being constructed, and the location shall be approved by the local engineering department or the fire code official. **(See Diagram B-1.2).**
- 2) The sign shall be a 2" galvanized post., as described on **Diagram B-1.2**
- 3) Alternative method, when approved by the Fire Prevention Division, may be a 4" x 4" post constructed of redwood s4s (surface 4 sides) or equivalent. **(See Diagram B-1.3).**
- 4) All wood surfaces shall be given two coats of white enamel paint.
- 5) Street name letters shall be 3 inches high. Letters shall be stenciled with black enamel paint on all sides.

NEW DEVELOPMENT TRACTS. COMMERCIAL AND INDUSTRIAL

All new development projects shall have a temporary street sign installed on all street corners within that project prior to the placement of combustible materials on site. Permanent signs shall be installed prior to occupancy and shall comply with this Standard.



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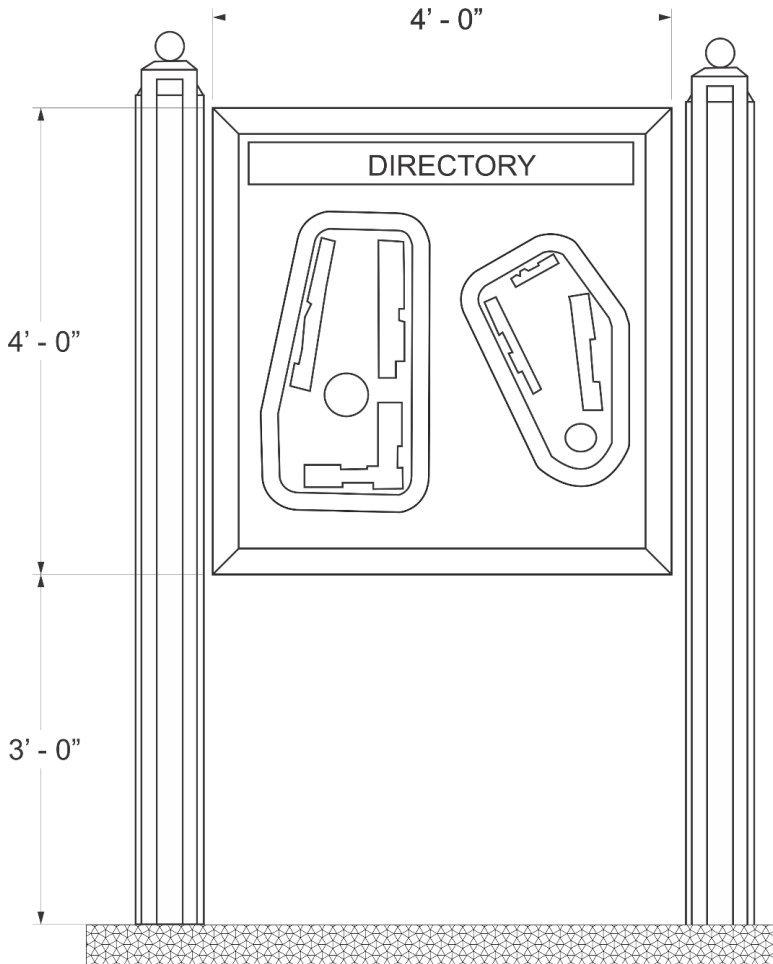
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**FIRE SAFETY STANDARD
PREMISE AND BUILDING IDENTIFICATION AND ADDRESSING**

DIAGRAM B-1.1: ILLUMINATED DIRECTORY DETAIL



TYPICAL 4'-0" X 4'-0" ILLUMINATED
DIAGRAM OF MULTI-FAMILY COMPLEX
DIRECTORY WITH COMPLEX NAME,
STREETS, BUILDING DESIGNATORS, OR
UNIT NUMBERS, AND FIRE HYDRANT
LOCATIONS.

DIAGRAM SHALL NOT BE SMALLER THAN 20 SCALE.



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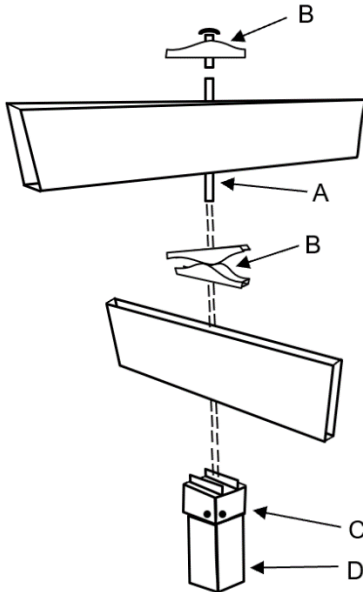
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FIRE PREVENTION STANDARD

DIAGRAM B-1.2: STREET SIGN DETAIL



1. 5/8" x 15" Cadmium plated carriage bolt.
2. Ornamental top shall be 14 gage anodized aluminum. Center cross saddle shall be one piece cast anodized aluminum.
3. One piece 2" cast anodized aluminum post cap with four 3/8" stainless steel allen head set screws.
4. 2" sq. steel post 8' – 12' long installed with a driven 2 1/2" sq. steel breakaway base 3' long as per city installation standard 303b.

ASSEMBLY

Design: Each four-way unit shall consist of two double-face signs with street names mounted at right angles with center rod assembly.

Bracket Assembly: The post cap, ornament, and center rod assembly shall be made to mount on 2" sq. galvanized post. The center rod shall be 5/8" cadmium-plated carriage bolt. Head of bolt shall form the top of the post cap. Post cap shall be secured to the post with three 3/8" stainless steel allen head set screws.

Material: Sign shall be green anodized aluminum extrusion of 6063T-4 alloy material. All Anodizing shall conform with Alumilite specification #215-R1.

Finish: Sign faces shall be FHWA Type-II reflective sheeting. The transparent screen process color shall be as recommended by the reflective sheeting manufacturer. Application of the reflective sheeting to the sign shall be by methods as approved by the reflective sheeting manufacturer.

Lettering: Street names shall be 4" high. Each name shall be individually laid out to fit either the 24" or 30" space. The letters shall be of the rounded type style conforming to the standard alphabet for highway signs designed by the U.S. Public Roads Administration. Letters shall be FHWA Type II reflective sheeting.

DIAGRAM B-1.3: STREET SIGNPOST



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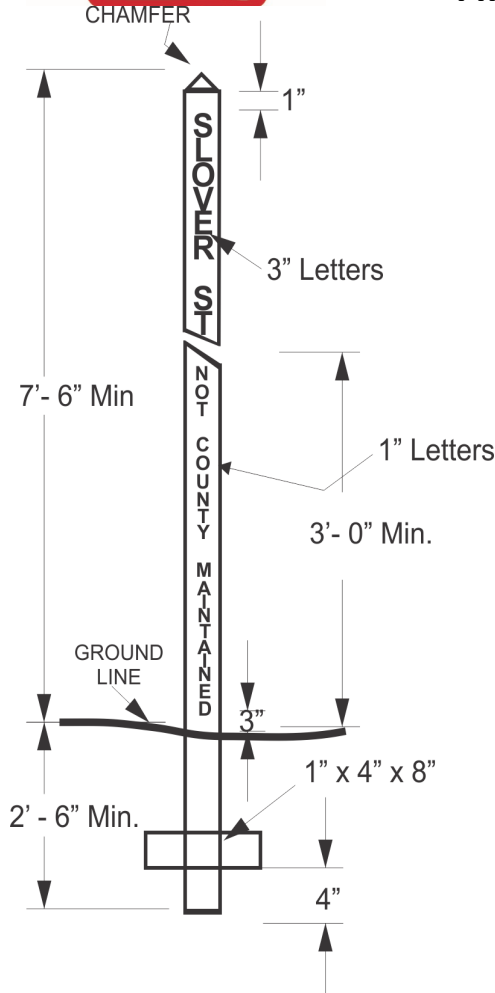
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- 1) See Standard No. 303a for marker locations.
- 2) The post shall be 4" x 4" construction heart structural redwood, S.4S., and/or equivalent as approved by the stand specifications.
- 3) All wood surfaces shall be given one coat of wood primer and two coats of enamel: signpost yellow, in accordance with the standard specifications.
- 4) Letters shall be stenciled with black paint on all sides.
- 5) Street name letters shall be 3" high and not county-maintained letters 1" high rounded type style conforming with the standard alphabet for highway signs designed by the U.S. Public Roads Administration.



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FIRE PREVENTION STANDARD

B-2 CONSTRUCTION SITE FIRE SAFETY

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 3301 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to prescribe minimum safeguards for new building construction and significant building alteration projects in order to provide a reasonable degree of safety to life and property from fire.

SCOPE

This standard establishes minimum requirements for fire safety during construction and demolition. This document shall not be construed to be in lieu of any other applicable State or Federal law or regulation related to construction site safety. The general contractor or other designee of the building owner shall be responsible for compliance with these standards.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

A written Fire Protection Plan shall be developed for significant or complex construction projects at the discretion of the Fire Code Official. The plan shall be approved by the Fire Code Official prior to proceeding past foundation work for new buildings or commencement of demolition work in alteration projects. The written plan shall be consistent with the fire safety precautions as specified in this Standard. The general contractor is responsible for carrying out the provisions of the Fire Protection Plan and communicating it to all subcontractors. The Fire Protection Plan shall include the following:

- 1) Procedures for reporting emergencies to the Fire Department.
- 2) Procedures for emergency notification, evacuation, and/or relocation of all persons in the building under construction and on the site.



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- 3) Procedures for hot work operations, management of hazardous materials, and removal of combustible debris and maintenance of emergency access roads.
- 4) Floor plans identifying the locations of exits, exit stairs, exit routes, and portable fire extinguishers.
- 5) Site plans identifying the designated exterior assembly areas for each evacuation route.
- 6) Site plans identifying required fire apparatus access roadways and on-site fire hydrants.
- 7) The name and contact phone number of the person(s) responsible for compliance with the Fire Protection Plan.

ACCESS AND PARKING

- 1) Construction projects shall provide and maintain Fire Department Access Roadways in accordance with the current California Fire Code and City of Victorville Fire Prevention Division Standards A-1 through A-4.
- 2) All construction sites shall be accessible by fire department apparatus by means of roadways having an all-weather driving surface of not less than twenty-six (26') feet of unobstructed width for two (2)-story buildings, thirty (30') feet for three (3)-story and taller buildings. The roads shall have the ability to withstand the live loads of fire apparatus weighing 80,000 lbs. and have a minimum of fourteen (14') feet six (6") inches of vertical clearance. Dead-end fire access roads in excess of 150 feet in length shall be provided with approved turnarounds.
- 3) When approved by the Fire Code Official, temporary access roadways may be utilized until such time as permanent roadways are installed. At a minimum, the roadway shall consist of a compacted sub-base and 6 inches of road base material (Class 2 aggregate base rock), both compacted to a minimum 85%. The perimeter edges of the roadway shall be contained and delineated by curb and gutter or other approved method. The use of geotextile reinforcing fabric underlayment or soil lime-treatment may be required if so determined by the project civil engineer. Provisions for surface drainage shall also be provided where necessary. The integrity of the roadway shall be maintained at all times.

PREMISES IDENTIFICATION

- 1) The address numbers of the property or project location shall be plainly visible and legible from the street or road fronting the property at the fire apparatus access point or as otherwise approved.
- 2) Premises identification shall comply with City of Victorville Fire Prevention Div Standard B-1.

FIRE PROTECTION SYSTEMS

- 1) Fire Hydrants: Where underground water mains and hydrants are required for the building(s) under construction, they shall be installed, completed, and in service prior to combustible construction materials accumulating on site. Fire hydrants shall comply with City of Victorville Fire Prevention Division Standard W-2.
- 2) Standpipes: Where standpipes are required, the standpipes shall be installed when the progress of construction is not more than 35 feet in height above the lowest level of the fire department



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access. Standpipes shall be provided with fire department hose connections and outlets at accessible locations adjacent to usable stairs. The standpipe system shall be extended as construction progresses to within one floor of the highest point of construction, having secured decking or flooring. Each floor shall be provided with a 2½-inch valve outlet for fire department use. Where construction height requires installation of a Class III standpipe, fire pumps, and water main connections shall be provided to serve the standpipe. Standpipes shall comply with the City of Victorville Fire Prevention Division Fire Standard.

- 3) Area Separation Walls: When area separation walls are required, the wall construction shall be completed (with all openings protected) immediately after the building is sufficiently weather-protected at the location of the wall(s).
- 4) Fire Sprinkler Systems: Where automatic fire sprinkler systems are required to be installed in new buildings, the system shall be placed in service as soon as possible. Immediately upon the completion of sprinkler pipe installation on each floor level, the piping shall be hydrostatically tested and inspected. After inspection approval from the Fire Code Official, each floor level of sprinkler piping shall be connected to the system supply riser and placed into service. For system activation notification, an exterior alarm bell can be installed and connected to the sprinkler water flow device prior to installation of the monitoring system.
 - a. For buildings equipped with fire sprinkler systems that are undergoing alterations, the sprinkler system(s) shall remain in service at all times except when system modifications are necessary. Fire sprinkler systems undergoing modifications shall be returned to service at the end of each workday unless otherwise approved by the Fire Code Official. The General contractor or his/her designee shall check the sprinkler control valve(s) at the end of each workday to confirm that the system has been restored to service.
- 5) Fire Alarm Systems: Fire alarm systems shall be maintained operational at all times during building alterations. When an alteration requires modification to a portion of the fire alarm system, the portion of the system requiring work shall be isolated, and the remainder of the system shall be kept in service whenever practical. When it is necessary to shut down an entire fire alarm system, fire watch or other mitigation approved by the Fire Code Official shall be implemented by the general contractor until the system is returned to full service.
- 6) Fire Extinguishers: Portable fire extinguishers shall be provided and shall be mounted on a wall or post at each usable stairway, and such that the travel distance to any extinguisher does not exceed 75 feet. Mounting height to the top of the extinguisher shall not exceed 5 feet. Extinguishers shall not have less than a 2-A:10-BC rating or as otherwise directed by the Fire Prevention Division. The general contractor shall ensure that an adequate number of individuals are trained in the proper use of portable fire extinguishers.

EXIT REQUIREMENTS

- 1) Minimum Number of Exits: All new buildings under construction shall have a least one



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unobstructed exit. All exits shall be identified in the Fire Protection Plan.

- 2) Multi-Story Buildings: Each level above the first story in new multi-story buildings shall be provided with at least two usable exit stairs after the floor decking is installed. The stairways shall be continuous and discharge to grade level. Stairways serving more than two floor levels shall be enclosed (with openings adequately protected) after exterior walls/windows are in place. Exit stairs in new and in existing, occupied buildings shall be lighted and maintained clear of debris and construction materials at all times.

***Exception:** For new multi-story buildings, one of the required exit stairs may be obstructed on not more than two contiguous floor levels for the purposes of stairway construction (i.e., installation of gypsum board, painting, flooring, etc.).*

- 3) Assembly Points: Designated exterior assembly points shall be established for all construction personnel to relocate to upon evacuation. The assembly points shall also be identified in the Fire Protection Plan.

FLAMMABLE AND COMBUSTIBLE LIQUIDS

- 1) Storage Areas: The following requirements shall apply to storage areas for flammable and combustible liquids:
 - 2) Storage areas shall be kept free of weeds and extraneous combustible materials.
 - 3) Open flames and smoking shall be prohibited in storage areas.
 - 4) Containers: Metal containers for Class I or II liquids shall be in accordance with DOT requirements or shall be of an approved design. Discharge devices shall not cause an internal pressure on the container. Individual containers shall not be interconnected and shall be kept closed when not in use.
 - 5) Secondary Containment: Secondary containment or a means of spill control, drainage control, and diking shall be required for containers and tanks as approved by the Fire Prevention Division and if applicable, local hazardous materials program agency.
 - 6) Marking: Tanks and containers shall be marked with the name of the product and "FLAMMABLE — KEEP FIRE AND FLAME AWAY." Tanks (i.e., containers in excess of 60 gallons) shall also be labeled "KEEP 50 FEET FROM BUILDINGS."
 - 7) Tank Installation Plans/Permit: Plans for the installation/use of any aboveground storage tank (i.e., container greater than 60 gallons) shall be submitted to the Fire Code Official and, if applicable, local hazardous materials program agency for review and permit prior to the proposed tank arriving at the site.

OTHER COMBUSTIBLE MATERIALS

- 1) Combustible Material Storage: Combustible construction materials shall be stored a minimum



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of 20 feet from buildings under construction or undergoing remodel.

- 2) **Exceptions:** Materials that are staged for installation on a floor level.
- 3) When approved by the Fire Code Official, materials may be stored in parking garages of Type I construction if the automatic fire sprinkler system is in service and vertical openings are protected.
- 4) Combustible Debris: Wood, cardboard, packing material, forms lumber, and similar combustible debris shall not be accumulated within buildings. Such debris, rubbish, and waste material shall be removed from buildings on a daily basis.

COMPRESSED GASSES

- 6) Protection of Gas Containers: Gas containers/cylinders shall be protected as follows:
- 7) Combustible materials shall be kept a minimum of 10 feet from gas containers.
- 8) Cylinders shall be protected against physical damage.
- 9) Cylinders shall be stored upright and secured to prevent falling.
- 10) Cylinders shall not be placed near elevators, unprotected platform edges or other areas where they could drop more than 2 feet.
- 11) Cylinders shall not be placed in areas where they may be damaged by falling objects.
- 12) When cylinders are not in use, protective valve caps shall be in place.
- 13) Ropes, chains or slings shall not be used to suspend gas cylinders, unless the cylinder was manufactured with appropriate lifting attachments.
- 14) Separation: When stored, gas cylinders shall be separated from each other based on their hazard classes.
- 15) Marking: Gas cylinders shall be marked with the name of the contents.
- 16) Use in Buildings: Propane containers may be used in buildings under construction or undergoing major renovation as a fuel source for temporary heating for curing concrete, drying plaster and similar applications in accordance with the following:
- 17) Heating elements (other than integral heater-container units) shall be located at least 6 feet from any LP-Gas container.
- 18) Integral heater-container units specifically designed for the attachment of the heater to the container, or to a supporting standard attached to the container, may be used, provided they are designed and installed so as to prevent direct or radiant heat application to the LP-Gas container.
- 19) Blower and radiant type units shall not be directed toward any LP-Gas container within 20 feet.
- 20) Heat-producing equipment shall be installed with clearance to the combustibles in accordance



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with the manufacturer's installation instructions.

- 21) Cylinders shall comply with DOT cylinder specifications and shall be secured in an upright position.
- 22) Regulators shall be approved for use with LP-Gas. Fittings shall be designed for at least 250 p.s.i.g. service pressure.
- 23) Hose shall be designed for a working pressure of at least 350 p.s.i.g. (unless limited to 5 p.s.i.g.) and shall be a maximum of 6 feet in length.
- 24) Portable heaters shall be equipped with an approved automatic device to shut off the flow of gas to the main burner and to the pilot in the event of flame extinguishment or combustion failure. Portable heaters with an input of more than 50,000 Btu/hr shall be equipped with either a pilot that must be proved before the main burner can be turned on or an approved electronic ignition system.
- 25) Occupied Buildings: In addition to the above, for LPG storage/use in buildings undergoing alteration and that are fully or partially occupied, the following shall also apply:
- 26) Specific approval must be obtained from the Fire Prevention Division prior to bringing LP-Gas containers on-site.
- 27) The maximum water capacity of individual containers shall be 5-gallon water capacity, and the number of containers in the building shall not exceed the number of workers assigned to using the LP-Gas.
- 28) Containers having a water capacity greater than 2½ pounds (1 quart) shall not be left unattended.

HOT WORK

- 1) Hot work includes any work involving operations capable of initiating fires or explosions, including cutting, welding, brazing, soldering, grinding, thermal spraying, thawing pipe, torch-applied roofing, or any other similar activity. The use of hot work equipment shall be in accordance with the following requirements, including a pre-site inspection, fire watch, and post inspection procedures.
- 2) Pre-Site Inspection: An inspection of the hot work site shall be conducted by the General Contractor or his/her designee prior to hot work operations to ensure that:
- 3) The hot work site is clear of combustibles, or that combustibles are protected.
- 4) Exposed construction is of noncombustible materials or where combustible materials are protected.
- 5) Openings are protected.
- 6) There are no exposed combustibles on the opposite side of partitions, walls, ceilings, floors, etc.
- 7) Fire extinguishers are available, fully charged and operable.



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- 8) Fire watch personnel are assigned, equipped, and trained.
- 9) Fire Watch: The sole duty of fire watch personnel shall be to watch for the occurrence of fire during and after hot work operations. Individuals designated to fire watch duty shall have fire extinguishing equipment readily available and shall be trained in the use of such equipment. Personnel assigned to fire watch shall be responsible for extinguishing spot fires and communicating an alarm. Hot work conducted in areas with vertical and horizontal fire exposures that cannot be observed by a single individual shall have additional personnel assigned to fire watches to ensure that all exposed areas are monitored.
- 10) Post-Work Inspection: The fire watch shall be maintained for a minimum of 30 minutes after the conclusion of the work to look out for leftover sparks, slag, or smoldering combustibles.

SPECIAL EQUIPMENT

- 1) Motorized Equipment: Motorized equipment, including internal-combustion-powered construction equipment, shall be used in accordance with the following:
 - a. Fuel for equipment shall be stored in an approved area outside of the building.
 - b. Equipment shall not be refueled while in operation.
 - c. Equipment shall be located so that exhausts do not discharge against combustible materials.
 - d. When possible, exhausts should be piped to the outside of the building.
- 2) Temporary Heating Equipment: Temporary heaters, such as those that are LPG fueled, shall be listed and shall be installed, used, and maintained in accordance with the manufacturer's instructions (See LPG storage and use requirements, above). Heating devices shall be secured properly and kept clear from combustible materials. Refueling operations shall be conducted in an approved manner.
- 3) Asphalt and Tar Kettles: Asphalt kettles shall not be located within 20 feet of any combustible material, combustible building surface, or building opening. With the exception of thermostatically controlled kettles, an attendant shall be within 100 feet of a kettle when the heat source is operating. Ladders or similar obstacles shall not form a part of the route between the attendance and the kettle. Kettles shall be equipped with tight-fitting covers. A minimum "20-B:C" rated portable fire extinguisher shall be located within 30 feet of each asphalt kettle when the heat source is operating. Minimum "20-B:C" rated portable fire extinguishers also shall be located on roofs during asphalt coating operations.



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FIRE PREVENTION STANDARD

F-1 FIRE SPRINKLER SYSTEMS IN COMMERCIAL AND INDUSTRIAL BUILDINGS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 903 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide minimum requirements for the design and installation of fire sprinkler systems in commercial and industrial use buildings, in order to aid in the detection and control of fires and thus provide improved protection against injury, life loss, and property damage.

SCOPE

This standard, in conjunction with the current edition of NFPA 13, shall apply to the design and installation of, and the modification to, all fire sprinkler systems in commercial and industrial occupancies. This standard and its interpretation is not intended to be applied or enforced where there is any conflict with NFPA 13 or the California Fire Code.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The following shall be submitted to the Fire Prevention Division for approval and permit prior to performing any work on any fire sprinkler system:

- 1) A completed City of Victorville Fire permit application.
- 2) Detailed plans describing the work to be done. (For information on what must be included on plans, see sections below in this Standard and the City of Victorville Plan Submittal Checklist.)
- 3) A set of hydraulic calculations for all design areas.
- 4) Manufacturer's specifications sheets (cut sheets) for all proposed materials and equipment.



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- 5) A water flow test report from the water purveyor dated within one (1) year of submittal.
- 6) A set of approved drawings showing private underground water supply lines, labeled.
- 7) Provide riser location and calculation plate information (if *pre-existing*).
- 8) Any other important details and information as required by this Standard.
- 9) Payment of all appropriate fees.

GENERAL

- 1) All automatic fire sprinkler systems for commercial/industrial projects shall be designed to the requirements of the current edition of NFPA 13 and other recognized standards as they apply to the hazard being protected. No deviations from these recognized standards will be made without approval from the Fire Code Official.
- 2) All installers of automatic fire sprinkler systems shall be qualified as listed below. Failure to show proper credentials will result in a failed inspection. All installers shall possess:
 - a. A State of California C-16 contractor's license (or be employed by the C-16 contractor), OR
 - b. A State of California A Contractor's license, AND
 - c. An Office of the State Fire Marshal issued Sprinkler Fitter card: Certified; Apprentice; or Trainee. If an Apprentice or Trainee card is possessed, someone with a Certified Sprinkler Fitter card IS required to be on site per California Code of Regulations Title 19.

SYSTEM RISERS

- 1) All system risers shall be installed inside of buildings to be protected, or in an approved weather-resistant exterior enclosure, and in a location acceptable to the Fire Code Official.
- 2) Risers shall be accessible to fire department personnel and shall have a minimum of eighteen inches (18") clearance from obstructions and around all components and equipment and shall be accessible for operation, inspection, test and maintenance. Risers located in an interior enclosure shall have a doorway or opening for access a minimum of thirty inches (30") in width and eighty inches (80") in height for access. **(See DIAGRAM F-1.1)**
- 3) When fire sprinkler systems are installed in buildings constructed for multiple tenants or residents and these systems protect multiple tenant spaces or dwellings, system risers shall be co-located with the Fire Alarm Control Panel inside a minimum 4' X 4' room, and accessible by means of at least one (1) exterior access door of not less than thirty-six inches (36") in width and eighty inches (80") in height. Signage for the room shall be in accordance with the 'Signage' section of this standard. Fire Dept Knox Box shall be installed outside of this door. **(See DIAGRAM F-1.2)**



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DRAINS AND VALVES

- 1) All drains and test valves shall be piped to the exterior of the building. Outlets of test valves and drains shall discharge preferably into landscaped areas, such as planters or basins, but in no case shall the installation allow water to flow into the public street or storm drain system.
 - a. As an alternate to exterior outlets, test valves and drains may have outlets that discharge into interior floor drains connected to the sewer system, or another suitable location approved by the Fire Code Official. Floor drains are to be adequately sized for the flow and pressure of the water being drained from the system.
 - b. Such outlets for systems with anti-freeze solutions shall not be allowed to drain onto the site. All anti-freeze systems shall have drain and test valve connections that allow for the safe collection of anti-freeze solutions.
- 2) Each sprinkler system shall have a Test Valve installed in an approved location.

SYSTEM MONITORING AND ALARMS

- 1) All valves controlling the fire sprinkler system(s), including any above-ground detector check valves, Post Indicator Valves, and sectional control valves, shall be monitored for tamper by an approved supervising station alarm system meeting the requirements of the current edition of NFPA 72 and City of Victorville Fire Prevention Standard F-5. This system shall be installed and in operation prior to final approval to occupy the building.
- 2) Each system containing more than twenty (20) sprinkler heads shall be provided with a separate local water-flow alarm bell, installed at the exterior of the protected building closest to the sprinkler riser. Water-flow alarm bells shall be a minimum of eight (8) inches in size and bear a sign stating "WHEN BELL RINGS CALL FIRE DEPT" in minimum one-inch (1") letters on a contrasting background.
- 3) Other local alarm devices may be provided with the approval of the Fire Code Official. See City of Victorville Fire Prevention Standard F-5 for fire alarm interior water-flow notification requirements.

SPECULATIVE WAREHOUSE BUILDINGS

Newly constructed warehouse buildings without an end user ("speculative") shall have the sprinkler system designed in accordance with NFPA 13 for a density of 0.6 gallons per minute / per square foot with a minimum operating area of 3,000 square feet.

- 1) When approved by the Fire Code Official, speculative warehouse buildings shall be allowed to



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have an Early Suppression Fast Response (ESFR) sprinkler system(s) designed and installed in accordance with NFPA 13.

- 2) When approved by the Fire Code Official, speculative warehouse buildings having interior roof deck maximum heights of twenty-five (25') feet or less shall be allowed to have the sprinkler system designed in accordance with NFPA 13 for a density of 0.45 gallons per minute / per square foot with a minimum operating area of 3,000 square feet. When approved by the Fire Code Official, speculative warehouse buildings having interior roof deck maximum heights of twenty (20) feet or less shall be allowed to have the sprinkler system designed in accordance with NFPA 13 for a density of 0.33 gallons per minute / per square foot with a minimum operating area of 3,000 square feet.

HYDRAULIC CALCULATIONS

- 1) All hydraulic calculations shall be designed for the system demand not to exceed 90% of the available water supply, or at least ten (10) p.s.i. below the available water supply, whichever is greater. This demand is to include the sprinkler system flow and the combined inside and outside hose allowance requirements but shall not be required to include fire-flow per Appendix B of the California Fire Code.
- 2) Hydraulic calculations shall be designed using data either from official flow tests performed by the water purveyor or performed by a licensed contractor and witnessed by the City of Victorville Fire Prevention Division. All water flow tests used in the design of sprinkler systems shall be less than one (1) year old.

TESTING AND MAINTENANCE

All sprinkler systems shall be tested in accordance with the current CCR Title 19 and NFPA 25 CA edition standards. All testing and maintenance reports and documentation shall be submitted to the Victorville Fire Prevention Division via The Compliance Engine website <https://thecomplianceengine.com> using an approved automatic extinguishing systems form available on the CA State Fire Marshal website, http://osfm.fire.ca.gov/strucfireengineer/strucfireengineer_aes.

INSPECTIONS

All sprinkler systems are required to be inspected by the Fire Code Official prior to final approval. The C-16 contractor of record shall contact the appropriate City of Victorville office at least forty-eight (48) hours prior to requesting an inspection and shall notify the City of Victorville office a minimum of twenty-four (24) hours for any cancellation of inspections.

The following inspections shall be required for all fire sprinkler systems in commercial and industrial buildings:

- 1) "OVERHEAD ROUGH INSPECTION":



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- 2) All piping and components are required to be in place and shall be exposed and visible, including fire department connection, sprinkler heads, valves, gauges, and flow switches. Installation shall be per the approved plans.
- 3) All seismic bracing, hangers, and other restraints shall be in place and installed per the approved plans.
- 4) "OVERHEAD HYDRO INSPECTION":
- 5) The system piping and all components shall be tested in accordance with NFPA 13.
- 6) Modifications to existing systems that do not add new branch lines or mains shall not be required to have this inspection per NFPA 13. Modifications to existing systems that include new branch lines or mains shall be subject to a hydro test of the new portion only if more than twenty (20) sprinkler heads are affected.
- 7) "FINAL INSPECTION":
 - a. A thorough flush of the underground supply piping shall be completed prior to connecting to the riser, witnessed by the Fire Prevention Division Inspector (See City of Victorville Standard W-2.)
 - b. Water motor gong bell, or electric water-flow alarm bell, and flow switch shall be functional, and all identification signs, system hydraulic data plates shall be installed. Spare head box, including additional sprinklers and sprinkler head wrench, shall be installed.
 - c. All sprinkler heads and escutcheons shall be in place. All sprinkler heads shall be free of protective caps, paint, texturing, or any other obstruction. Protective guards shall be installed on all heads in garage and storage areas. Any other protective coatings and plastic bags shall be in place on sprinkler heads installed in locations susceptible to corrosion or overspray.
 - d. A flow test shall be performed using the approved Inspector's Test Valve. If electrically operated, the water-flow alarm bell shall be connected to an energized source. Flow of water shall result in an audible alarm on the premises within 5 minutes after such flow begins and until such flow stops.
 - e. Contractor will provide a finalized Contractor's Material and Test Certification for aboveground Piping form to the Fire Prevention Division Inspector.

PROTECTION FROM FREEZING

- 1) All piping for new systems in areas subject to freezing temperatures and not maintained above 40°F shall be approved dry pipe, insulated wet pipe, or antifreeze systems in accordance with NFPA 13.
- 2) The need for freeze protection shall be as determined by the Fire Code Official and based on the California Energy Commission "Climate Zones" and Part 6 of CCR Title 24, the California Energy Code. Systems located in Climate Zone 16 shall not be protected solely by the use of insulation.



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Detailed maps of Climate Zones may be found on the Internet at <http://www.energy.ca.gov>.

- 3) The use of heat tape or other similar products shall be permitted in Climate Zone 14 when installed in accordance with NFPA 13.
- 4) All antifreeze solutions shall be factory premixed and approved in accordance with NFPA 13, and the California Fire Code. A metal placard shall be placed on all systems using antifreeze solutions at the main riser and at all ITV's. The placard shall contain the necessary information permanently stamped or engraved as shown in **DIAGRAM F-1.3**.

SIGNAGE

- 1) All signs for drains and test valves required on sprinkler systems shall be made of metal, no less than 10-gauge thickness, colored red and engraved with permanent white letters.
- 2) Hydraulic calculation plates required on risers shall be made of metal, unpainted, and the information permanently stamped or engraved, and attached to the riser with a metal "U- bolt" or chain.
- 3) All doors or other building materials enclosing or concealing sprinkler risers shall have a durable metal sign with a minimum of three-inch (3") red block letters on a contrasting background stating "FIRE RISER INSIDE," per **DIAGRAM F-1.4**. Signs shall be installed at five feet (5') above the finished floor on the outside of fire sprinkler riser access doors.

SPECIAL SITUATIONS

- 1) Sprinkler heads shall not be located within smoke vents or skylights.
- 2) Special uses, high-rise buildings, and other hazards may require special design or installation considerations. The contractor is encouraged to contact the Fire Prevention Division regarding these areas not covered in this standard.



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DIAGRAM F-1.1: INTERIOR ACCESS TO SPRINKLER RISE

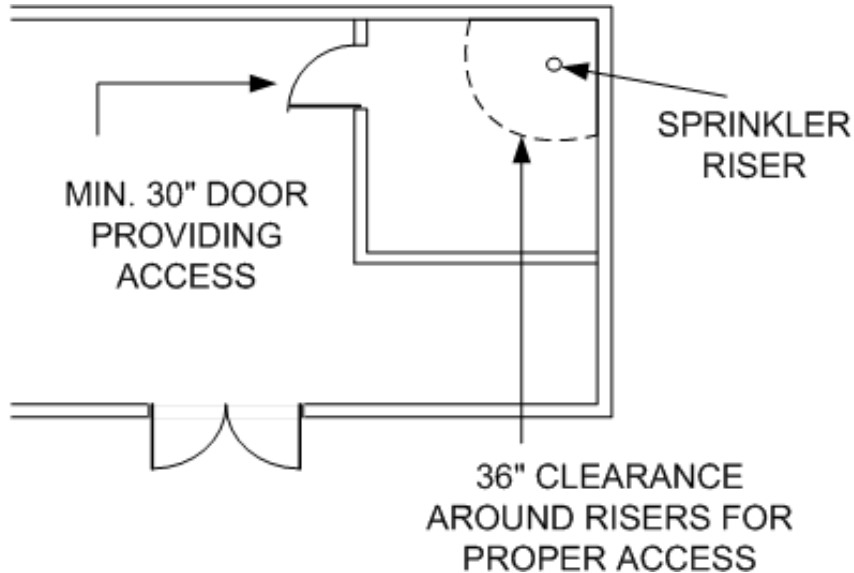
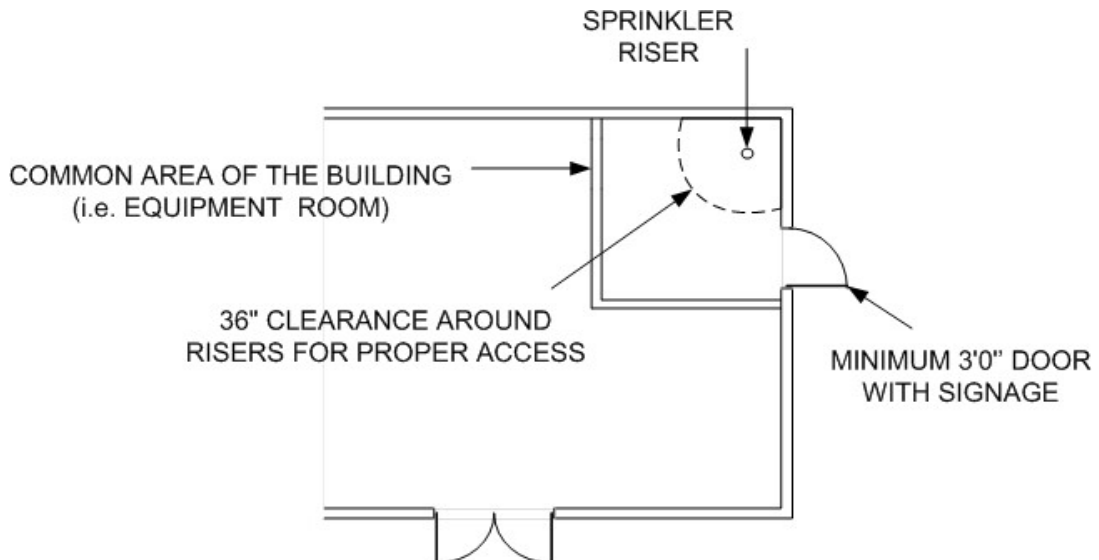


DIAGRAM F-1.2: EXTERIOR ACCESS TO SPRINKLER RISERS





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DIAGRAM F-1.3: SAMPLE PLACARD FOR ANTIFREEZE SYSTEMS

ANTI-FREEZE SYSTEM

The fire sprinkler system in this building contains an anti-freeze solution for protection against freezing.

Type of anti-freeze:

Manufacturer:

Trade name & brand:

Solution concentration: %

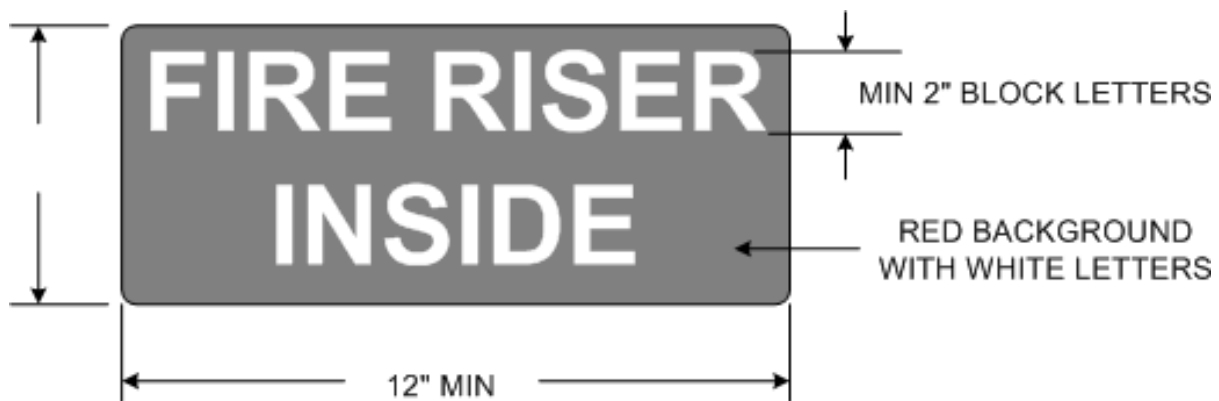
System volume: gallons

Protected to: degrees (°F/°C)

Location:

Date tested:

DIAGRAM F-1.4: DETAIL OF "FIRE RISER INSIDE" SIGN





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FIRE PREVENTION STANDARD

F-2 FIRE SPRINKLER SYSTEMS IN ONE- AND TWO-FAMILY DWELLINGS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 903 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide minimum requirements for fire sprinkler systems in one- and two-family residential use buildings, in order to aid in the detection and control of fires and thus provide improved protection against injury, life loss, and property damage.

SCOPE

This standard, in conjunction with the current edition of NFPA 13D shall apply to the design and installation of, as well as the modification to, all fire sprinkler systems in one- and two-family dwellings and manufactured homes. This standard shall NOT take precedence where there is any conflict with NFPA 13D.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed.

These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The following shall be submitted to the Fire Prevention Division for approval and permit prior to performing any work on any fire sprinkler system:

- 1) A completed City of Victorville Fire permit application
- 2) A detailed set of plans describing the work to be done. (For information on what must be included on plans, see sections below in this Standard and the City of Victorville Plan Submittal Checklist.)
- 3) A set of hydraulic calculations for all design areas.
- 4) Manufacturer's specifications sheets (cut sheets) for all proposed materials and equipment.



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- 5) A water flow test report from the water purveyor dated within one (1) year of submittal
- 6) Any other important details and information as required by this Standard.
- 7) Payment of all appropriate fees.

DEFINITIONS

SELF-CONTAINED AUTOMATIC RESIDENTIAL SPRINKLER SYSTEM -An approved fire sprinkler system, that conforms to NFPA 13 D, California Residential Code Section R313, and this Fire Prevention Standard, and is supplied by a water source independent from a municipal water distribution system. If the system is mechanically assisted by booster pumps, power to the pump shall be on a dedicated circuit.

GENERAL

- 1) All automatic fire sprinkler systems for one- and two-family residential dwelling projects shall be designed to the requirements of the latest edition of NFPA 13D or California Residential Code (CRC) section R313, and other recognized standards as they apply to the hazard being protected. No deviations from these recognized standards will be made without approval from the Fire Code Official.
- 2) Water supply other than from a public water purveyor utility shall be in accordance with this Standard or the requirements in the City of Victorville Standard W-1 and NFPA 1142.

SYSTEM COMPONENTS

- 1) In living areas within the dwelling unit, only approved listed residential or quick response sprinkler heads shall be used, per the listing of the manufacturer and NFPA 13D.
- 2) All CPVC plastic pipes used shall meet the requirements of the manufacturer's listing, particularly for applications when pipe is exposed.
- 3) All system components shall be rated for the maximum working pressure, but not less than 175 a. p.s.i.
- 4) Piping shall be supported from structural members using methods approved by the pipe manufacturer and NFPA 13D. Devices such as "J-hooks" or plumbers' tape are prohibited. Hangers shall not be attached to the structure by nails or any fastener that requires impact to fasten it to the structure. All hangers used on CPVC pipe shall be approved by the Fire Code Official.
- 5) All sprinkler riser assemblies shall be located in a wall, cabinet, or other enclosure (with a minimum twelve-inch (12") wide by thirty-six-inch (36") high access door), unless otherwise approved by the fire code official (See DIAGRAM F-2.1). When required by the fire code official, the location of the riser shall be identified with a sign permanently affixed with minimum 1/4" letters



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on a contrasting background.

- 6) The installation of a reduced pressure (RP) device or backflow device on sprinkler system risers shall be allowed when required by the water purveyor or by the Plumbing Code for well or tank fed private systems. When such RP or backflow devices are required, they shall be secured in an open position with valve handles removed, and an appropriate allowance shall be made for all such devices in the hydraulic calculations.
- 7) Local waterflow alarms shall be provided on all sprinkler systems in homes not equipped with smoke alarms or smoke detectors in accordance with NFPA 72, National Fire Alarm and Signaling Code. When installed, water-flow alarm bells shall be a minimum of six (6) inches in size and bear a sign stating "WHEN BELL RINGS CALL FIRE DEPT" in minimum three-quarters inch ($\frac{3}{4}$ ") letters on a contrasting background.
- 8) Where waterflow detection devices are installed, these devices, including the associated alarm circuits, shall be flow tested through the inspector's test connection and shall result in an audible alarm on the premises. The orifice of the ITV shall be equal to the hydraulically calculated most remote sprinkler head.

WATER SUPPLY

- 1) The City of Victorville Fire Prevention Division requires only one (1) domestic water supply service (or water meter) with separate connections to domestic and sprinkler systems. Local water companies may have other requirements. It is the contractor's or owner's responsibility to contact the local water purveyor prior to design of the system to find out these and any other specific requirements.
- 2) In areas not served by a water purveyor, or where the water supply is insufficient, an approved self-contained automatic fire sprinkler system is recommended and may be used to provide adequate protection. (See "SELF CONTAINED AUTOMATIC RESIDENTIAL SPRINKLER SYSTEMS")
- 3) Water meters shall be of sufficient size to supply the demand as determined by the approved hydraulic calculations.
- 4) Water supplies shall meet the requirements of NFPA 13D or CA Residential Code section R313.

SYSTEM DESIGN

- 1) Residential sprinkler heads shall be designed for a coverage area in accordance with the manufacturer's listing. Sprinklers other than residential sprinklers shall provide coverage as specified in NFPA 13.
- 2) Systems shall be supplied using a water meter of sufficient size to meet the hydraulically calculated demand and the manufacturer's listing for sprinkler heads used. In no case shall the meter be less than three-quarters inch ($\frac{3}{4}$ ") unless approved by the fire code official. Hydraulic calculations shall demonstrate the appropriate pressure loss through water meters, using the



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manufacturer's specification or NFPA 13D.

b.

- 3) Sprinkler systems shall be designed to provide the demand of the two (2) most hydraulically remote sprinkler heads, per the manufacturer's listings and specifications.
- 4) Systems fed by water supplies with very low inlet pressure (less than 40 p.s.i.) may utilize an approved automatic residential domestic shut-off valve, in order to eliminate the 5 GPM domestic allowances in the demand, as required by this Standard or by other connected systems, such as water softeners. Such automatic valves shall be listed for such use with fire sprinklers and be installed per the manufacturer's specifications. (See **DIAGRAM F-2.2**)

HYDRAULIC CALCULATIONS

- 1) Hydraulic calculations shall be provided to the fire code official demonstrating an adequate supply, from the water meter (source) to the most remote hydraulically calculated remote sprinkler(s).
c.
- 2) All hydraulic calculations shall be designed for the system demand not to exceed 90% of the available water supply, or at least ten (10) p.s.i. below the available water supply, whichever is greater.
- 3) All hydraulic calculations for new systems shall include in the demand a minimum of five (5) gallons per minute (GPM) allowance for domestic use.

OWNER BUILDER INSTALLED SYSTEMS

- 1) Any system that is to be installed by an owner-builder must conform to the requirements of the California Business and Professions Code section 7026 et. seq., and all applicable adopted codes as well as this Standard. Such owner-builders shall submit plans designed by a registered Professional Engineer (PE) or CA-licensed sprinkler contractor for approval prior to starting sprinkler system installation.
d.
- 2) Owner builders shall submit a declaration or affidavit in writing to the satisfaction of the Fire Code Official, certifying ownership of the property and structure where the system is to be installed, and assuming all responsibility and legal liability. Owner-builder shall also provide proof of sprinkler installation training given by the systems manufacturer. This documentation shall be submitted along with the application for a permit to install the system.
e.
- 3) Owner-builder-installed systems shall not exceed two (2) sprinkler systems per applicant per year.

INSPECTIONS



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All sprinkler systems are required to be inspected by the fire code official prior to final approval. The sprinkler contractor of record shall contact the appropriate City of Victorville office at least twenty-four (24) hours prior to requesting an inspection and shall notify the City of Victorville office a minimum of twenty-four (24) hours for any cancellation of inspections.

The following inspections shall be required for all fire sprinkler systems in one- and two-family residential dwellings:

1. “OVERHEAD ROUGH INSPECTION”:

f.

- a. a) All piping and components, including sprinkler heads, hangers, valves, gauges, and flow switches, are required to be in place and shall be exposed for visible inspection. If insulation is to be used for freeze protection, this shall be in place and fastened, and with the approval of the inspector, is permitted to cover the necessary exposed pipe.

NOTE: Sprinkler heads may be omitted at overhead rough inspection with Fire Prevention Division approval.

2. “OVERHEAD HYDRO INSPECTION”:

- a. The system shall be pressurized with water at a pressure comparable to working pressure during the duration of the inspection. All areas shall be exposed to check for leaks. Testing shall comply with the requirements of NFPA 13D.
- g.

3. “FINAL INSPECTION”:

- a. The underground supply system shall be flushed before it can be connected to the overhead piping.
- h.
- b. All sprinkler heads shall be uncovered, with escutcheons or trim rings in place. For concealed heads, the cover plates shall be off. Protective guards shall be installed on all heads in the garage and storage areas, if required.
- i.
- c. A flow test shall be performed using the Inspector's Test Valve (ITV), if installed. Where waterflow detection devices are installed, these devices, including the associated alarm circuits, shall be flow tested through the inspector's test connection and shall result in an audible alarm on the premises.

PROTECTION FROM FREEZING

- 1) Sprinkler systems installed in areas subject to freezing temperatures and not maintained above



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40°F shall be protected from freezing in accordance with the requirements NFPA 13D and the local water purveyor. The need for freeze protection shall be as determined by the Fire Code Official and based on the California Energy Commission “Climate Zones” and Part 6 of CCR Title 24, the California Energy Code. Systems located in Climate Zone 14, as defined by the California Energy Commission, may be protected solely by the use of insulation.

j.

- 2) The use of “Passive Purge” or combination systems (fire sprinkler and domestic use) is required to reduce the buildup of stagnant water and corrosion, which may interfere with the performance of the system.

k.

- 3) Insulation may be used as freeze protection for piping if the building or spaces containing piping can be maintained at a minimum of 40 degrees F at all times. The use of batt or blown-in insulation for freeze protection may be approved by the Fire Code Official and installed per the current edition of NFPA 13D.
- 4) All antifreeze solutions shall be a listed factory premixed solution and approved in accordance with NFPA 13D and the California Fire Code, which allows only propylene glycol solutions of no more than 40% or glycerin solutions of no more than 50% by volume. If a backflow or Reduced Pressure (RP) device is installed, the system shall have an approved expansion tank. The RP device shall be approved by the local water purveyor and the Victorville Cross-Connection Department.
- 5) A sign or sticker shall be placed on all systems using antifreeze solutions at or near the main riser. The sign shall contain the necessary information permanently and clearly written as shown in **Diagram F-2.3**.

SELF-CONTAINED AUTOMATIC RESIDENTIAL SPRINKLER SYSTEMS

- 1) In areas where an inadequate water supply exists, an approved automatic self-contained water system, meeting all other requirements in this standard and NFPA 13D may be installed. Such systems shall be listed for fire protection and be installed per the manufacturer’s specifications.
l.
- 2) Self-contained systems may use a pump with an approved primary power supply or compressed gas pressurization. An approved water supply tank shall be sized sufficiently to provide a minimum of ten (10) minutes of sprinkler demand and contain an automatic refill. Self-contained systems shall be flow tested at final inspection using a method approved by the fire code official, using the manufacturer’s recommendations.
- 3) If a pump is used, it must be freeze-protected in accordance with this standard.

SPECIAL SITUATIONS



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- 1) For systems where it may be difficult to verify the design by means of hydraulic calculations, such as those that are fed by a water pump system from a well or a tank, or those systems where visual inspection and verification of the overhead or underground piping is otherwise not possible, the fire code official may require a water flow (“bucket test”) inspection. The test shall include the two most remote sprinkler heads flowing water into an approved container(s), using an approved method to measure the observed flow and comparison to the listed flow and pressure of the sprinkler head. Bucket tests may be performed in combination with the Overhead Rough inspection or the Final inspection.
 - m.
- 2) Spray-applied or wrapped polyurethane foam insulation that comes into contact with non-metallic fire sprinkler piping, whether such is required for freeze protection or not, shall be listed for such use with pipe and applied according to the manufacturer’s recommendations. Information about any polyurethane foam insulation shall be made available to the fire code official upon request.



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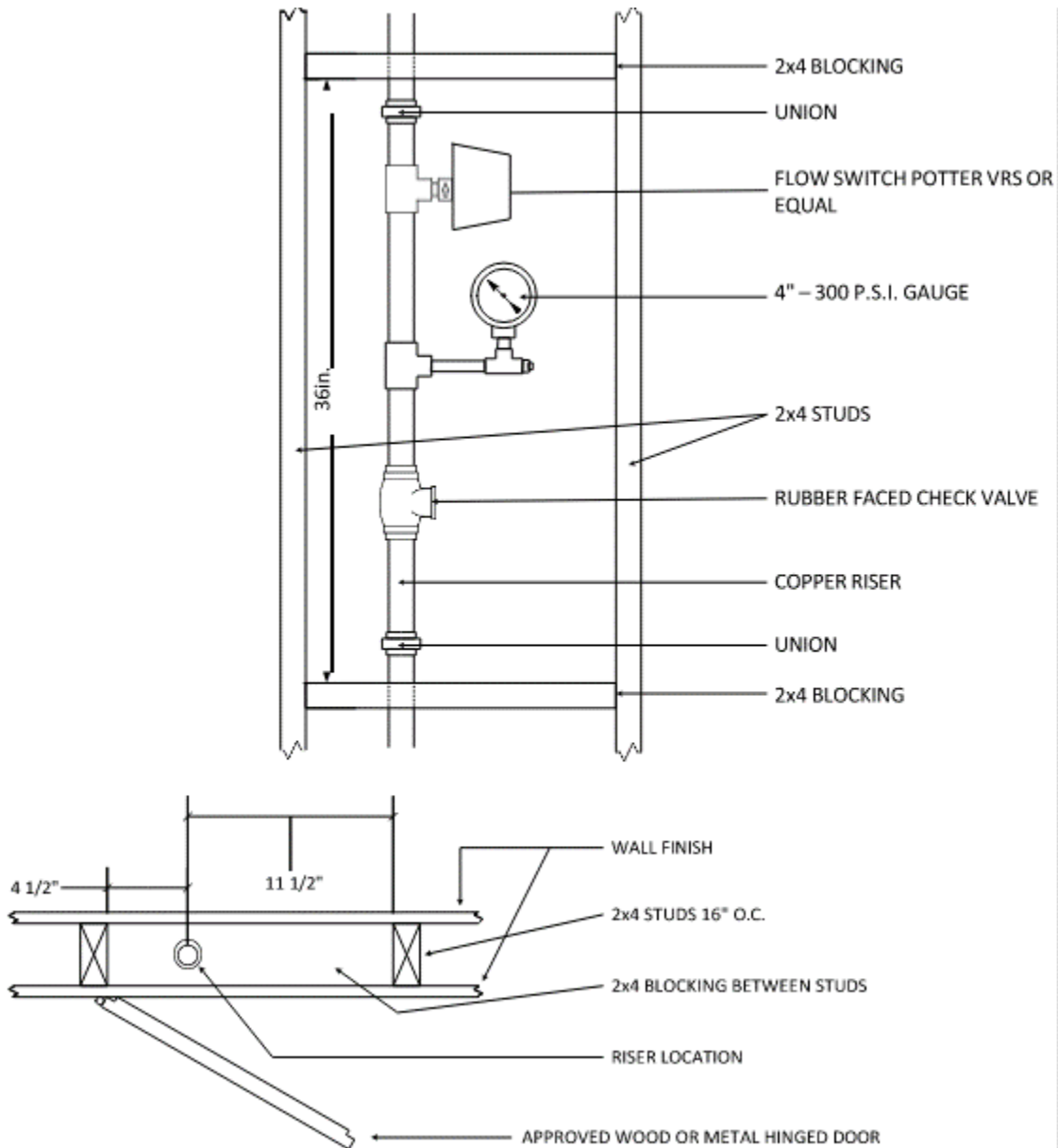
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DIAGRAM F-2.1: RISER ACCESS PANEL DETAILS





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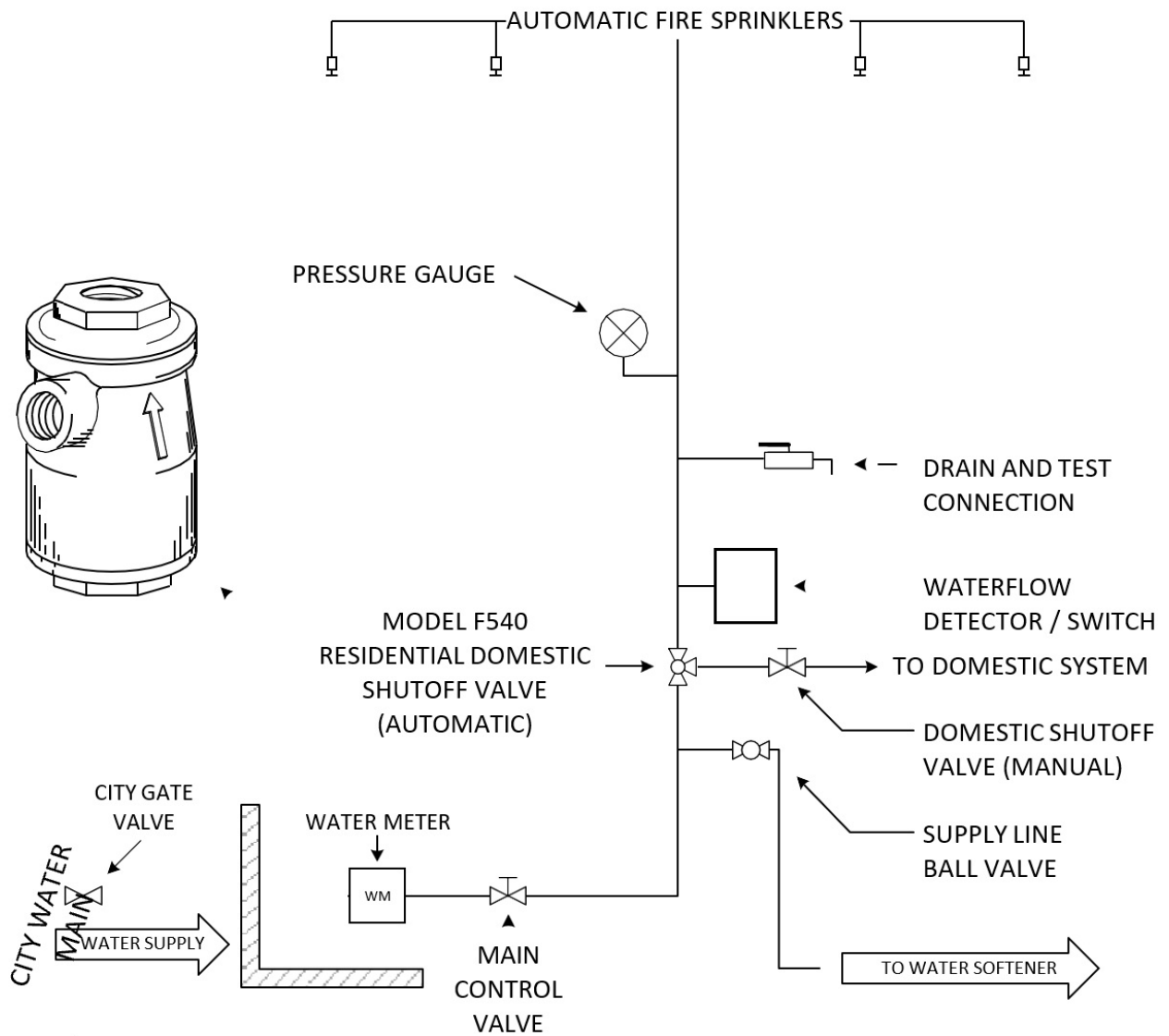
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DIAGRAM F-2.2: RESIDENTIAL AUTOMATIC DOMESTIC SHUTOFF VALVE





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DIAGRAM F-2.3: SAMPLE PLACARD FOR ANTIFREEZE SYSTEMS

ANTI-FREEZE SYSTEM

The fire sprinkler system in this building contains an anti-freeze solution for protection against freezing.

Type of anti-freeze:

Manufacturer:

Trade name & brand:

Solution concentration: %

System volume: gallons

Protected to: degrees (°F/°C)

Location:

Date tested:



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F-3 FIRE SPRINKLER SYSTEMS IN MULTI-FAMILY DWELLINGS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 903 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide minimum requirements for the design and installation of fire sprinkler systems in multifamily dwellings (Larger than single home residential and duplexes), in order to aid in the detection and control of fires and thus provide improved protection against injury, life loss, and property damage.

SCOPE

This standard, in conjunction with the current edition of NFPA 13R, shall apply to the design and installation of, and the modification to, all fire sprinkler systems in multi-family dwellings within buildings up to and including four (4) stories, or sixty (60) feet, in height. This standard and its interpretation is not intended to be applied or enforced where there is any conflict with NFPA 13 or the California Fire Code.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed.

These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The following shall be submitted to the Fire Prevention Division for approval and permit prior to performing any work on any fire sprinkler system:

- 1) A completed City of Victorville Fire permit application.
- 2) A set of detailed plans describing the work to be done. (For information on what must be included on plans, see sections below in this Standard and the City of Victorville Plan Submittal Checklist.)
- 3) A set of hydraulic calculations for all design areas.
 - n.
 - 4) Manufacturer's specification sheets (cut sheets) for all proposed materials and equipment.



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- 5) A water flow test report from the water purveyor dated within one (1) year of submittal.
- 6) When required, at least one (1) set of approved drawings showing private underground water supply lines, labeled "FOR REFERENCE". (*NOTE: This can also be a concurrent submittal*)
- 7) Any other important details and information as required by this Standard.
- 8) Payment of all appropriate fees.

GENERAL

All automatic fire sprinkler systems for multifamily residential projects shall be designed to the requirements of the current edition of NFPA 13R and other recognized standards as they apply to the hazard being protected. No deviations from these recognized standards will be made without approval from the fire code official.

SYSTEM RISERS

- 1) System risers shall be located exposed inside the building, or protected inside walls, or in an approved cabinet or enclosure, and in a location acceptable to the fire code official. All risers shall be located in a common area, and accessible without entering a dwelling unit.
- 2) Risers enclosed (protected) in a wall, cabinet, or other enclosure shall have a minimum twelve inch (12") wide by thirty-six inch (36") high access door, unless otherwise approved by the Fire Code Official. (See **DIAGRAM F-3.1**) When required by the fire code official, the location of the riser shall be identified with a sign permanently affixed with minimum 1/4" letters on a contrasting background.
- 3) Risers inside a common room (exposed) shall be co-located with the Fire Alarm Control Panel inside a minimum 4' X 4' room accessible by means of an exterior doorway or opening for access a minimum of thirty six inches (36") in width and eighty inches (80") in height for access. Signage for the room shall be in accordance with 'Signage' section of this standard. Fire Dept Knox Box shall be installed outside of this door (See **DIAGRAM F-3.2**).

DRAINS AND VALVES

- 1) All drains and test valves shall be piped to the exterior of the building. Outlets of test valves and drains shall discharge preferably into landscaped areas, such as planters or basins, but in no case shall the installation allow water to flow into the public street or storm drain system.
 - a. As an alternate to exterior outlets, test valves and drains may have outlets that discharge into interior floor drains connected to the sewer system, or another suitable location approved by the fire code official. Floor drains are to be adequately sized for the flow and pressure of the water being drained from the system.
 - b. Such outlets for systems with anti-freeze solutions shall not be allowed to drain onto the site. All anti-freeze systems shall have drain and test valve connections that allow



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for the safe collection of anti-freeze solutions.

- 2) Each sprinkler system shall have a Test Valve installed in an approved location.

SYSTEM MONITORING AND ALARMS

- 1) All valves controlling the fire sprinkler system(s), including any above ground detector check valves, Post Indicator Valves, and sectional control valves shall be monitored for tamper by an approved supervising station alarm system meeting the requirements of NFPA 72 and City of Victorville Standard F-5. This system shall be installed and in operation prior to any approval to occupy the building.
- 2) Each system shall be provided a separate local water-flow notification device, installed at the exterior of the protected building closest to the sprinkler riser. Water-flow notification devices shall be a minimum of six (6) inches in size and bear a weather resistant sign stating "WHEN BELL RINGS CALL FIRE DEPT" in minimum three quarters inch ($\frac{3}{4}$ ") letters on a contrasting background.
- 3) Other local alarm devices may be provided with the approval of the fire code official. See o. City of Victorville Standard F-5 for fire alarm interior water-flow notification requirements.

OTHER SYSTEM COMPONENTS

- 1) In living areas within dwelling units, only approved listed residential or quick response sprinkler heads shall be used, per the listing of the manufacturer.
p.
- 2) In storage areas, attics, and attached or detached garages, approved residential or quick response sprinkler heads may be used, with a minimum intermediate temperature rating.
- 3) All CPVC plastic pipe used shall meet the requirements of the manufacturers listing, particularly for applications when pipe is exposed.
- 4) An approved rubber-faced check valve shall be installed on systems that have a common fire protection and domestic supply, on the system side of the tee that feeds the sprinkler riser. For systems on which a separate backflow device is required on the riser, an additional check valve is not required.
- 5) A pressure relief valve (PRV), minimum of a one quarter inch ($\frac{1}{4}$ "), and set at 175 p.s.i shall be provided on the system side of the main riser check valve, when check valves are installed and the maximum system pressure exceeds 125 psi.
- 6) All system components shall be rated for the maximum working pressure, but not less than 175 p.s.i.



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- 7) Piping shall be supported from structural members using methods approved by the pipe manufacturer and NFPA 13R. Devices such as “J-hooks” or plumbers tape are prohibited. Hangers shall not be attached to the structure by nails or any fastener which requires impact to fasten it to the structure. All hangers used on CPVC pipe shall be approved by the Fire Code Official.
- 8) The installation of a reduced pressure (RP) device or backflow device on sprinkler system risers shall be allowed when required by the water purveyor or by the Plumbing Code for well or tank fed private systems. When such RP or backflow devices are required, they shall be secured in an open position and an appropriate allowance shall be made for all such devices in the hydraulic calculations.
- 9) A Test Valve shall be installed on all new systems in a location approved by the fire code official. The orifice shall be equal to the hydraulically calculated most remote sprinkler head.

SYSTEM DESIGN

- 1) The design density of the sprinkler system shall be as permitted in NFPA 13R, based on the area being protected.
- 2) Sprinklers shall be installed in all areas required by NFPA 13R.
- 3) Systems shall be supplied using a water meter of sufficient size to meet the hydraulically calculated demand and the manufacturer’s listing for sprinkler heads used. In no case shall the meter be less than three quarters inch (3/4”) unless approved by the fire code official. Hydraulic calculations shall demonstrate the appropriate pressure loss through water meters, using the manufacturer’s specification or NFPA 13R.
- 4) Sprinkler systems shall be designed to provide the demand of the four (4) most hydraulically remote sprinkler heads, or as required per NFPA13R or the manufacturer’s listing.
- 5) Systems fed by water supplies with very low inlet pressure (less than 40 p.s.i.) may utilize an approved automatic residential domestic shut-off valve, in order to eliminate the 10 GPM or greater domestic allowances in the demand, as required by NFPA 13R and this Standard. Such automatic valves shall be listed for such use with fire sprinklers and be installed per the manufacture’s specifications (See **DIAGRAM F-3.3**).

HYDRAULIC CALCULATIONS

- 1) All hydraulic calculations shall be designed for the system demand not to exceed 90% of the available water supply, or at least ten (10) p.s.i. below the available water supply, whichever is greater.
- 2) Hydraulic calculations shall be designed using data either from official flow tests performed by



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the water purveyor or performed by a licensed contractor and witnessed by the City of Victorville Fire Prevention Division. All water flow tests used in the design of sprinkler systems shall be less than one (1) year old.

- 3) All hydraulic calculations for new systems that are served by a combination fire protection and domestic connection shall include in the demand a minimum of ten (10) gallons per minute (GPM) allowance for domestic use.

TESTING AND MAINTENANCE

- 1) All sprinkler systems shall be tested in accordance with the proper CCR Title 19 and NFPA 25 standards. All test reports for "Five-year certifications" shall be submitted to the appropriate office of Community Safety at the Fire Department and in an approved format.

INSPECTIONS

All sprinkler systems are required to be inspected visibly by the fire code official prior to final approval. The C-16 contractor of record shall contact the appropriate City of Victorville office at least twenty-four (24) hours prior to requesting an inspection and shall notify the City of Victorville office a minimum of twenty-four (24) hours for any cancellation of inspections.

The following inspections shall be required for all fire sprinkler systems in multi-family dwellings:

- 1) "OVERHEAD ROUGH INSPECTION":
 - a. All piping and components are required to be in place and shall be exposed and visible, including fire department connection, sprinkler heads, valves, gauges, and flow switches. If insulation is to be used for freeze protection, this shall be in place and fastened, and with the approval of the inspector, is permitted to cover the necessary exposed pipe.
 - b. All seismic bracing, hangers, and other restraints shall be in place and installed per the approved plans.
- 3) "OVERHEAD HYDRO INSPECTION":
 - a. The system piping and all components shall be pressurized with water for a minimum of two (2) hours at two hundred (200) PSI, or at fifty (50) PSI above the static pressure, whichever is greater. There shall be no visible pressure drop on the gauge during the hydrostatic test. All areas shall be exposed to check for leaks.
- 4) "FINAL INSPECTION":
 - a. A thorough flush of the underground supply piping shall be completed prior to connecting to the riser, witnessed by the Fire Department inspector (See City of Victorville Standard W-2.)



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- b. Water motor gong bell, or electric water-flow alarm bell, and flow switch shall be functional, and all identification signs, and system hydraulic data plates shall be installed. A spare head box, including additional sprinklers and a sprinkler head wrench, shall be installed.
- c. All sprinkler heads and escutcheons shall be in place. All sprinkler heads shall be free of protective caps, paint, texturing, or any other obstruction. Protective guards shall be installed on all heads in garages and storage areas if required.
- d. A flow test shall be performed using the Test Valve. If electrically operated, the water-flow alarm bell shall be connected to an energized source and must ring in no more than sixty (90) seconds after opening the test valve.
- e. When required by the Fire Code Official, the installing contractor shall complete a 'Contractors Material and Test Certificate for Aboveground Piping', in accordance with NFPA 13R, and submit it to the Fire Code Official at the time of sprinkler final inspection.

PROTECTION AGAINST FREEZING

- 1) All piping for new systems in areas subject to freezing temperatures and not maintained above 40°F shall be protected against freezing in accordance with the current edition of NFPA 13R.
 - q.
- 2) The need for freeze protection shall be as determined by the fire code official and based on the California Energy Commission "Climate Zones" and Part 6 of CCR Title 24, the California Energy Code. Systems located in Climate Zone 14, as defined by the California Energy Commission, may be protected solely by the use of insulation. Detailed maps of Climate Zones may be found on the Internet at <http://www.energy.ca.gov>.
- 3) Insulation may be used as freeze protection for piping if the building or spaces containing piping can be maintained at a minimum of 40 degrees F at all times. The use of batt or blown-in insulation for freeze protection may be approved by the fire code official and installed per the current edition of NFPA 13R.
- 4) Foam pipe wrap, by itself, is not an approved method of freeze protection.
- 5) All antifreeze solutions shall be a listed factory premixed solution and approved in accordance with NFPA 13R and the California Fire Code, which allows only propylene glycol solutions of no more than 40% or glycerin solutions of no more than 50% by volume.
- 6) A metal placard shall be placed on all systems using antifreeze solutions at the main riser as well as the test valve. The placard shall contain the necessary information permanently stamped or engraved as shown in **(DIAGRAM F-3.4)**.

SIGNAGE



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- 1) All signs for drains and test valves required on sprinkler systems shall be made of metal, no less than 10-gauge thickness, colored red, and engraved with permanent white letters.
- 2) Hydraulic calculation plates required on risers shall be made of metal, unpainted, and the information permanently stamped or engraved, and attached to the riser with a metal "U-bolt" or chain.
- 3) All doors or other building materials enclosing or concealing sprinkler risers shall have a durable metal sign with a minimum of three-inch (3") red block letters on a contrasting background stating "FIRE RISER INSIDE." per **(DIAGRAM F-3.5)**. Signs shall be installed at five feet (5') above the finished floor on the outside of fire sprinkler riser access doors.

SPECIAL SITUATIONS

Spray-applied or wrapped polyurethane foam insulation that comes into contact with non-metallic fire sprinkler piping, whether such is required for freeze protection or not, shall be listed for such use with pipe and applied according to the manufacturer's recommendations. Information about any polyurethane foam insulation shall be made available to the fire code official upon request.



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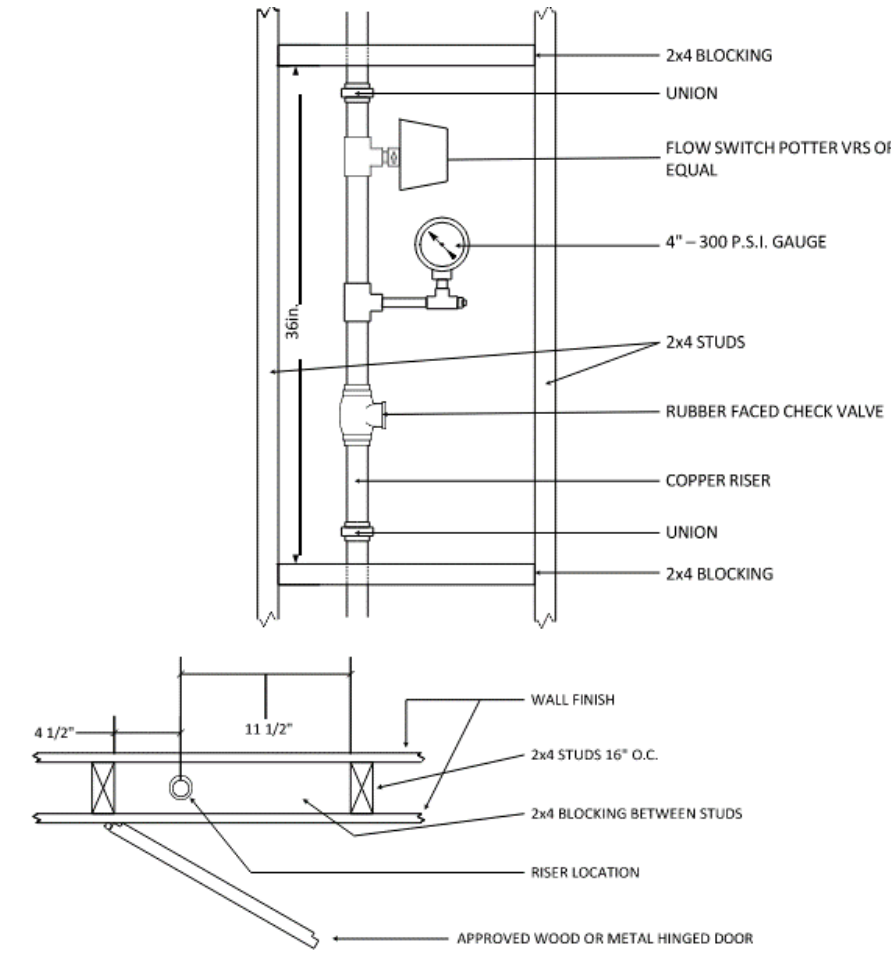
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DIAGRAM F-3.1: RISER ACCESS PANEL DETAIL





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F-3 FIRE SPRINKLER SYSTEMS IN MULTI-FAMILY DWELLINGS

DIAGRAM F-3.2: ACCESS TO SPRINKLER RISERS

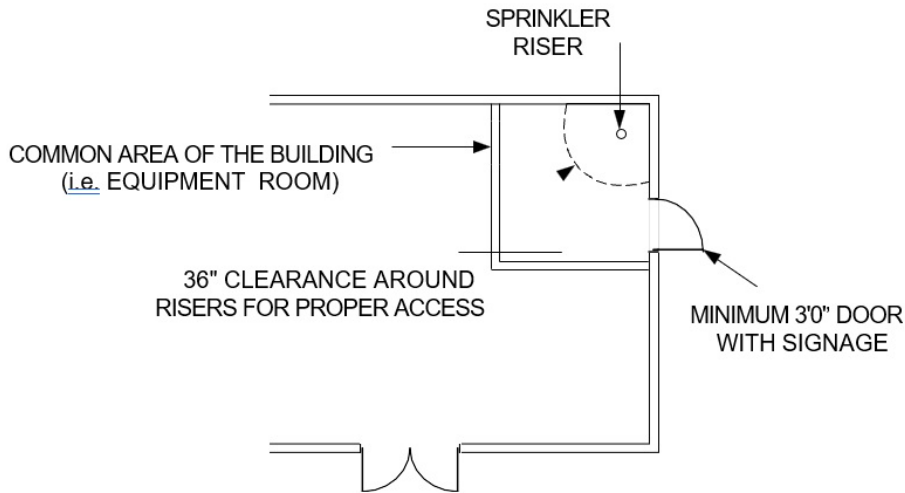
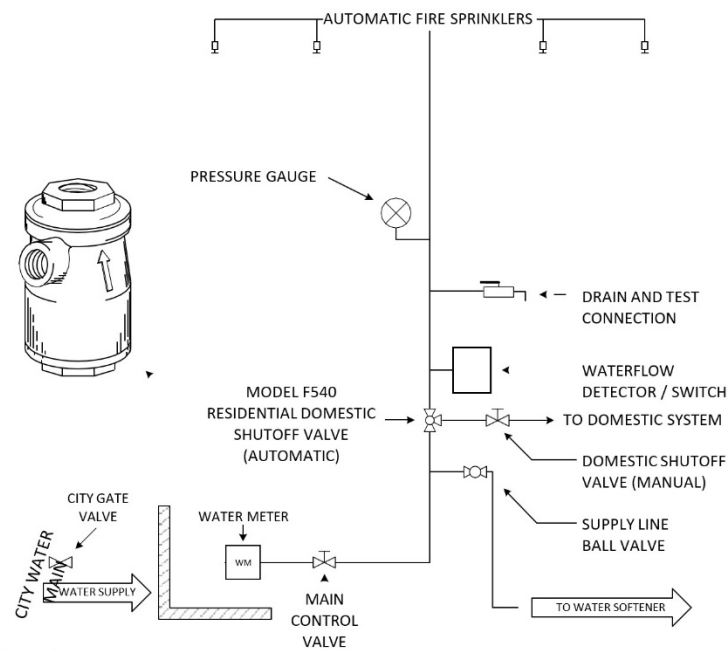


DIAGRAM F-3.3: DOMESTIC WATER SHUTOFF





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DIAGRAM F-3.4: SAMPLE PLACARD FOR ANTIFREEZE SYSTEMS

ANTI-FREEZE SYSTEM

The fire sprinkler system in this building contains an anti-freeze solution for protection against freezing.

Type of anti-freeze:

Manufacturer:

Trade name & brand:

Solution concentration: %

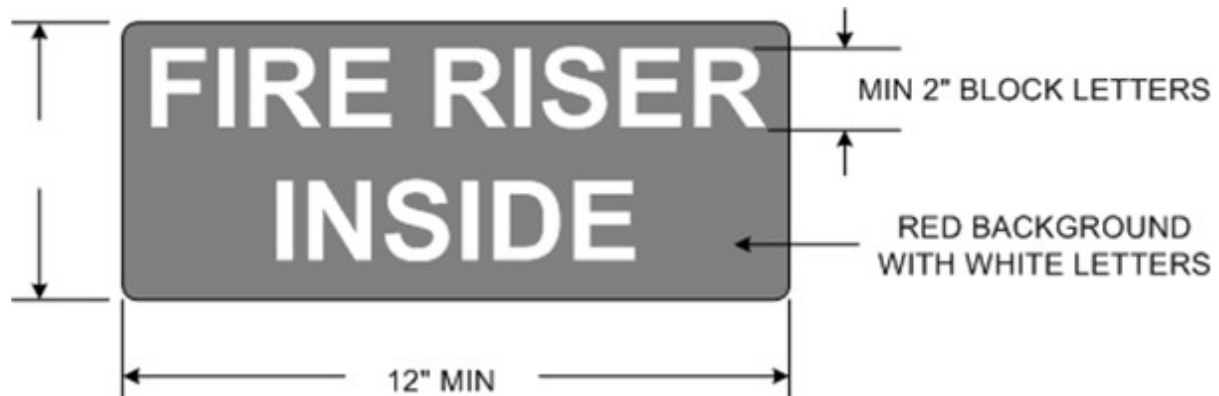
System volume: gallons

Protected to: degrees (°F/°C)

Location:

Date tested:

DIAGRAM F-3.5: FIRE RISER SIGN





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FIRE PREVENTION STANDARD

F-4 POST INDICATOR VALVES AND FIRE DEPARTMENT CONNECTIONS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 507 of the 2022 California Fire Code, and the currently adopted editions of NFPA 13, NFPA 13R, and NFPA 24, as amended. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide minimum requirements and guidelines for the installation of Post Indicator Valves (PIVs) and Fire Department Connections (FDCs) for fire sprinkler systems.

SCOPE

This standard, in conjunction with the current editions of NFPA 13, NFPA 13R, and NFPA 24, shall apply to the design and installation of, and the modification to, all new and existing fire sprinkler systems in commercial and industrial buildings and multi-family dwellings. This standard and its interpretation shall NOT take precedence where there is any conflict with NFPA standards.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed.

These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

- 1) Plans shall be submitted to the Fire Prevention Division for approval and permit prior to performing any work on any fire sprinkler or underground fire protection water system. For detailed submittal requirements, see City of Victorville Standards F-1 and W-2.

GENERAL

- 1) Each fire sprinkler system shall have at least one Post Indicator Valve and one Fire Department Connection serving it.
- 2) The number and locations of all PIVs and FDCs shall be approved by the Fire Code Official and shall be based on this Standard as well as on the type of construction of the building, the uses and occupancy classifications within the building, and any special hazards being protected.



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- 3) A minimum of three (3) feet of clearance of obstructions is required around all PIVs and FDCs. Limited ground cover type vegetation may be allowed with the approval of the fire code official.
- 4) Post Indicator Valves and Fire Department Connections shall be painted OSHA Safety Red or equivalent and maintained painted and in an operable condition by the property owner.

INSTALLATION

- 1) All PIVs and FDCs shall be located in an accessible area, as approved by the Fire Code Official. Additional signage per this Standard may be required by the fire code official for PIVs and FDCs that are located on the sides or rear yards of buildings or in areas that may be less visible to emergency responders.
- 2) PIVs and FDCs shall be located a minimum of twenty feet (20') from the structure protected, or a minimum of ten feet (10') farther from the building than the height of the wall adjacent to the connection and valve, whichever is greater. Unless approved by the Fire Code Official, PIVs and FDCs shall not be located more than 50' from the structure protected. In areas where this is not practical or possible due to site constraints, PIVs or FDCs may be installed closer (a minimum of three (3) feet) to the building, or a wall-mounted FDC or PIV may be used, installed in a location approved by the fire code official. In such cases, such close-proximity or wall-mounted PIVs or FDCs shall be installed in walls with non-combustible construction, away from building openings, and in an area accessible to emergency responders.
- 3) Post Indicator Valves and Fire Department Connections shall be set back a minimum of two (2) feet from the face of all concrete curbs in a raised planter or similar protected area (**See DIAGRAM F-4.1**) or shall be protected from vehicular damage with bollards or guard posts that comply with California Fire Code section 312, as excerpted below, or
- 4) the equivalent of all of the following specifications:
 - a. Constructed of Schedule 40 steel pipe steel not less than four (4) inches in diameter and concrete-filled.
 - b. Spaced not more than four (4) feet between posts on center.
 - c. Set not less than three (3) feet deep in a concrete footing of not less than a fifteen-inch
 - d. (15) inch diameter.
 - e. Set with the top of the posts not less than three (3) feet above ground.
 - f. Located not less than three (3) feet from the protected PIV or FDC.
 - g. Guard posts shall be painted with high-visibility OSHA safety yellow paint.

SPECIFIC REQUIREMENTS FOR FIRE DEPARTMENT CONNECTIONS

- 1) Buildings up to 100,000 square feet in floor area shall install all FDCs with a four-inch (4") riser



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and two, two-and-a-half-inch (2 ½") female inlet connections on a "Siamese" style fitting (4" x 2 ½" x 2 ½"). (See **DIAGRAM F-4.2**) Buildings 100,000 sq. or larger in floor area, and any size buildings with a fire protection supply that is boosted by a fire pump, shall install all FDCs with a six inch (6") riser and with one four inch (4") and two, two-and-a-half inch (2 ½") female inlet connections on a "Siamese" style fitting (6" X 4" X 2 ½" X 2 ½"). (See **DIAGRAM F-4.3**)

- 2) All hose connections on FDCs shall be of National Standard Hose Thread (NH or NST) and shall be provided with threaded plugs (plastic or brass) to protect the FDC connection. Break-away metal caps in may be used when the FDC is located in secured areas that are not subject to vandalism. If required by the fire code official because of concerns of vandalism, threaded locking plugs (Knox FDC Locking Caps) shall be provided on all inlets, secured with a chain.
- 3) All exposed brass components on FDCs shall be secured with a ¼" x # 20, grade 6, case-hardened steel bolt through the fitting and into the threads of the riser or steel inlet pipe. The head of the bolt shall be filed flush with the FDC fitting. Other equivalent methods of theft protection shall be accepted on a case-by-case basis, as approved by the fire code official.
- 4) All FDCs shall be provided with a welded flange and either a wafer check or swing check valve. In areas subject to freezing, the check valve shall be located one foot (1') below the frost line and shall have a ball drip valve. A bed of gravel shall be provided to allow for proper drainage of the above-grade piping. (See **DIAGRAM F-4.4**)
- 5) All FDCs shall be installed within fifty feet (50') of a fire hydrant that takes supply from a public circulating water main. When it is determined that this is not possible or practical, and with approval from the fire code official, FDCs may be located within fifty feet (50') of a private fire hydrant. Check valves shall be installed in order to prevent circular water flow during fire ground pumping operations (See City of Victorville Standard W-2)
- 6) Each building and each point of connection to the public water system shall have a separate FDC, installed onsite or when approved by the Fire Code Official, at the entrance to the property, as part of a Reduced Pressure Detector Assembly (RPDA) (See **DIAGRAM F-4.5** and City of Victorville Standard W-2.) A single FDC assembly may serve multiple buildings on a project, provided all of the following conditions are met:
 - a. The aggregate floor area of all buildings served by the entire system does not exceed 50,000 square feet.
 - b. The buildings are not on separate parcels or have individual addresses.
 - c. In special cases or when special hazards exist, the fire code official shall determine whether or not each building shall have a separate FDC.
 - d. FDCs shall serve only automatic fire sprinkler systems and standpipe systems and shall not be connected to on-site fire hydrant systems.

IDENTIFICATION AND SIGNAGE

- 1) Signage shall be provided on all PIVs and FDCs in accordance with this standard and the



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current editions of NFPA 13 and NFPA 24. (See Diagram F-4.6)

- 2) Identification signs on PIVs and FDCs shall be red in color with engraved one (1) inch block type white letters. Signs shall measure a minimum of ten (10) inches wide by five (5) inches high and be made of metal not less than 10 gauge (3 mm) in thickness. The sign shall be fastened by means of a “U” bolt or other similar secure method.
- 3) Identification signs shall indicate the following information:
 - a. The street address of the building(s), and the area or zone served if applicable.
 - b. The type of system it serves, i.e., sprinklers, standpipe, hydrants, sectional valves, etc.
 - c. Where the system demand pressure exceeds 150 p.s.i., the sign shall indicate the required design pressure of the system served.

EXISTING SYSTEMS

- 1) When additions or upgrades are made to existing buildings with automatic sprinkler systems, the PIVs and FDCs shall conform to this standard when required by the fire code official.
- 2) Existing breakaway caps on Fire Department Connections shall be replaced with threaded plugs and chains and/or Knox FDC Locking Caps when deemed necessary by the fire code official.
- 3) Existing Fire Department Connections that are vandalized or removed shall comply with this standard when replaced.

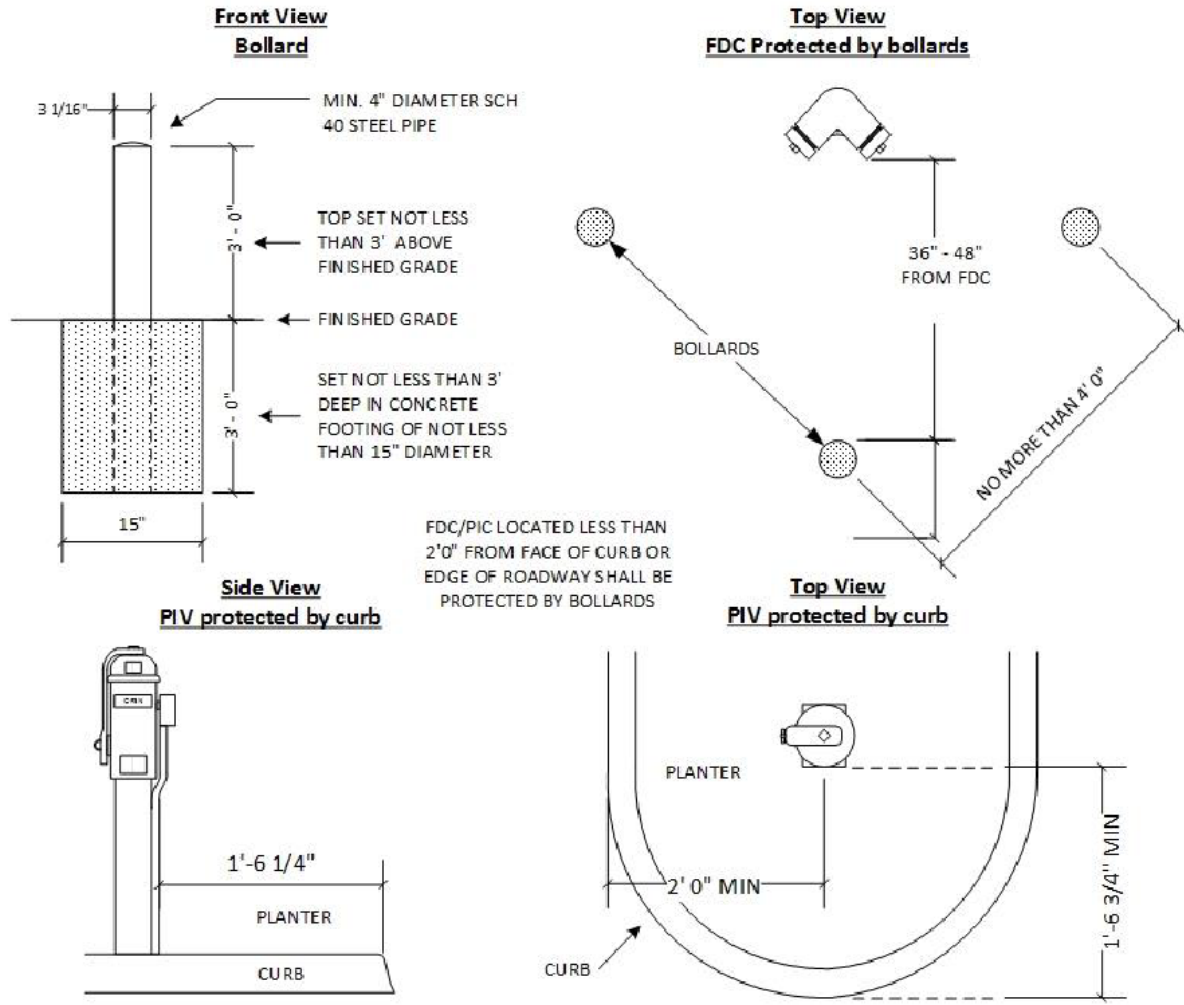


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DIAGRAM F-4.1: PIV AND FDC PROTECTION





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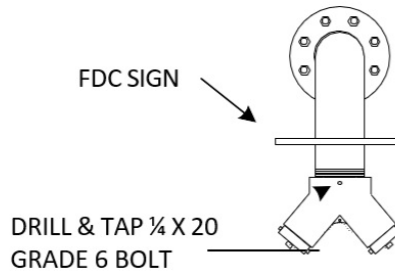
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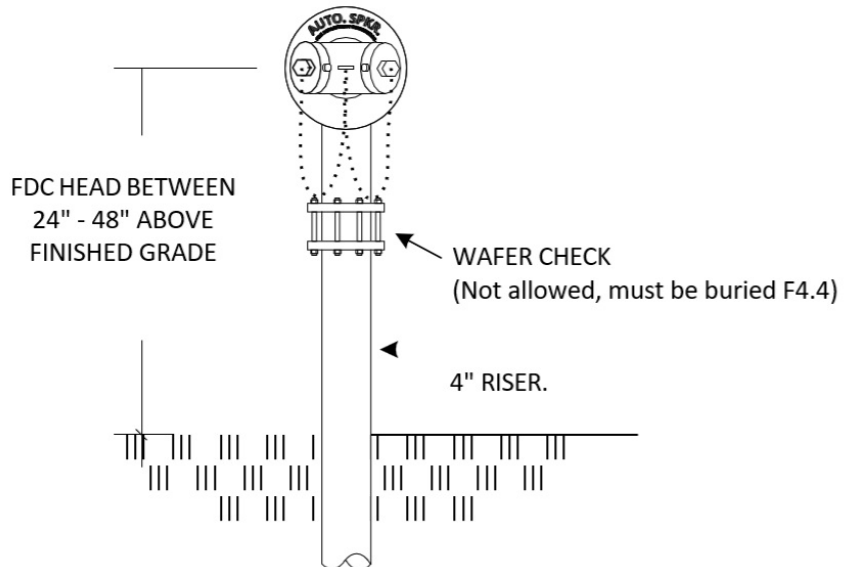
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DIAGRAM F-4.2: SINGLE 4" X 2 1/2" X 2 1/2" FDC DETAIL

TOP VIEW



FRONT VIEW





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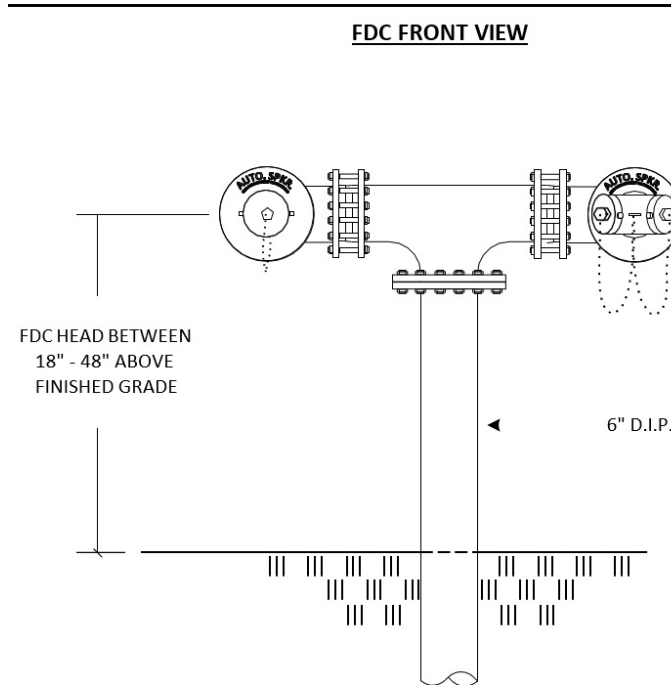
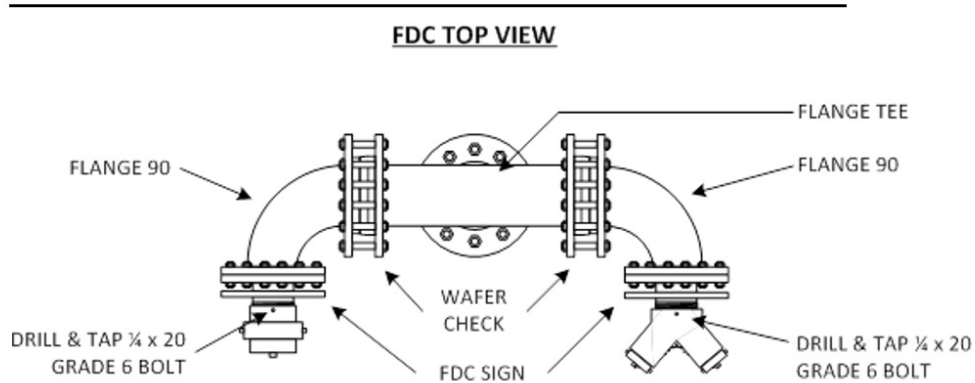
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DIAGRAM F-4.3: COMBINED 6" X 4" X 2 1/2" X 2 1/2" FDC DETAIL





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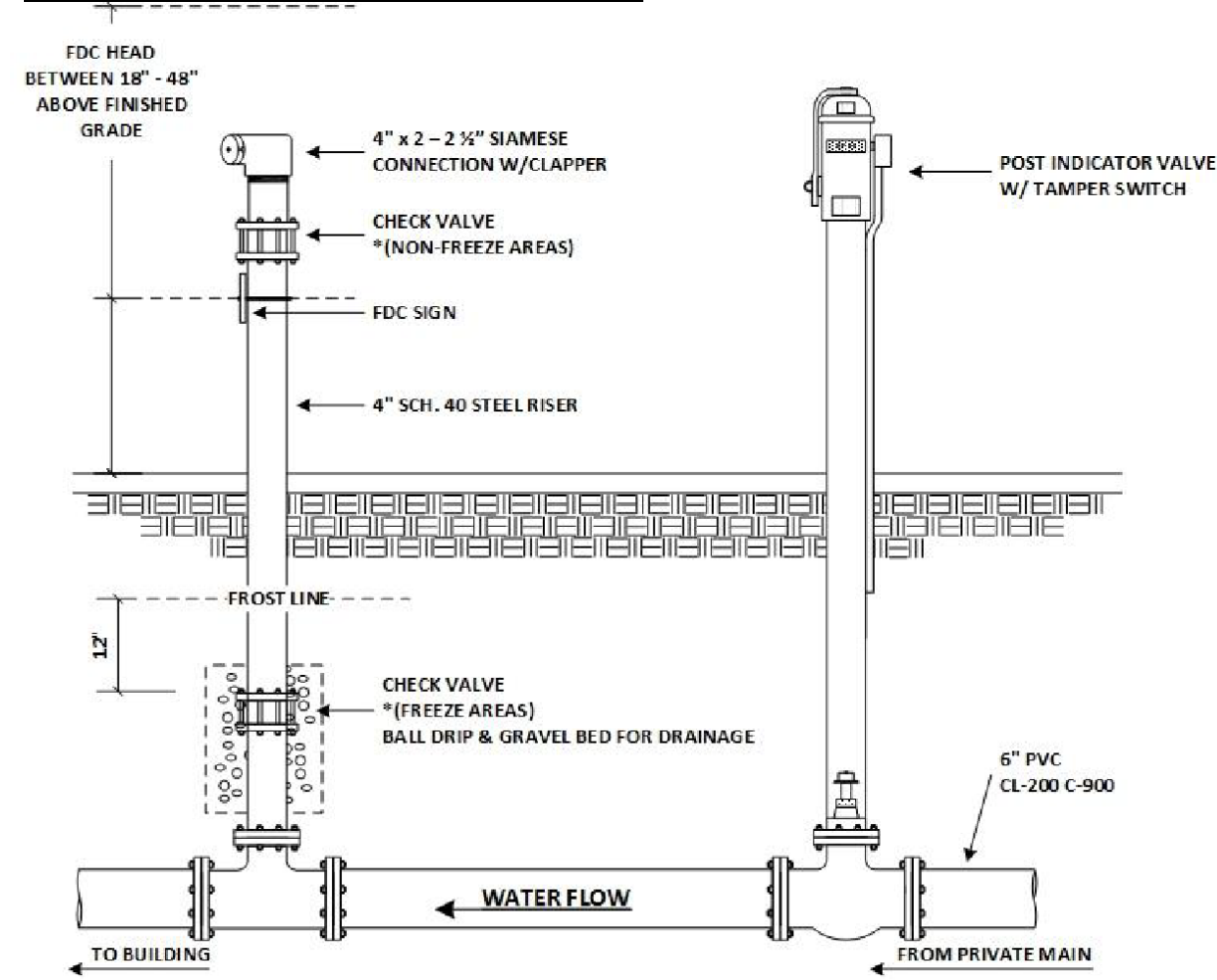
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DIAGRAM F-4.4: FDC CHECK VALVE DETAIL





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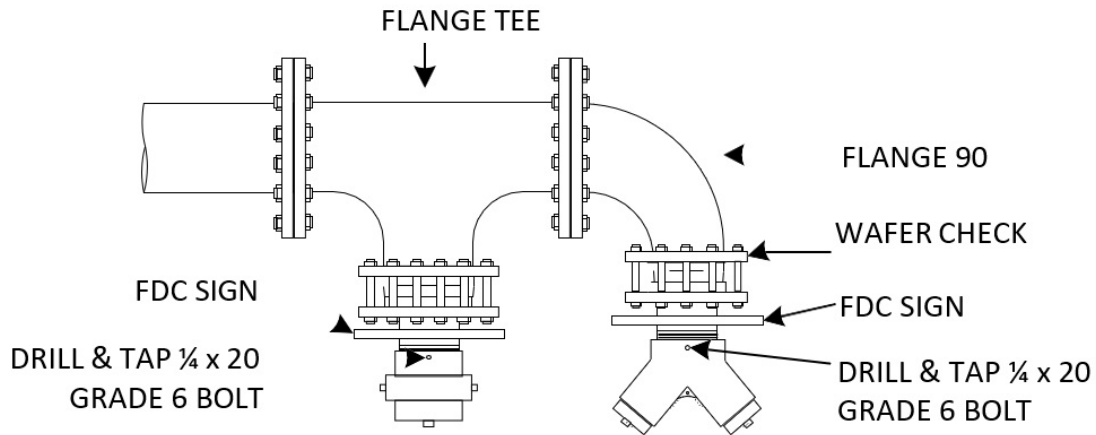
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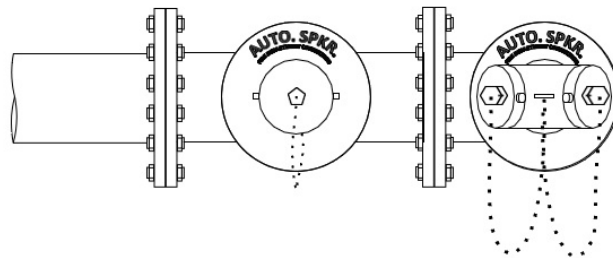
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DIAGRAM F-4.5: FDC ON DOUBLE DETECTOR CHECK VALVE ASSEMBLY

FDC TOP VIEW



FDC FRONT VIEW





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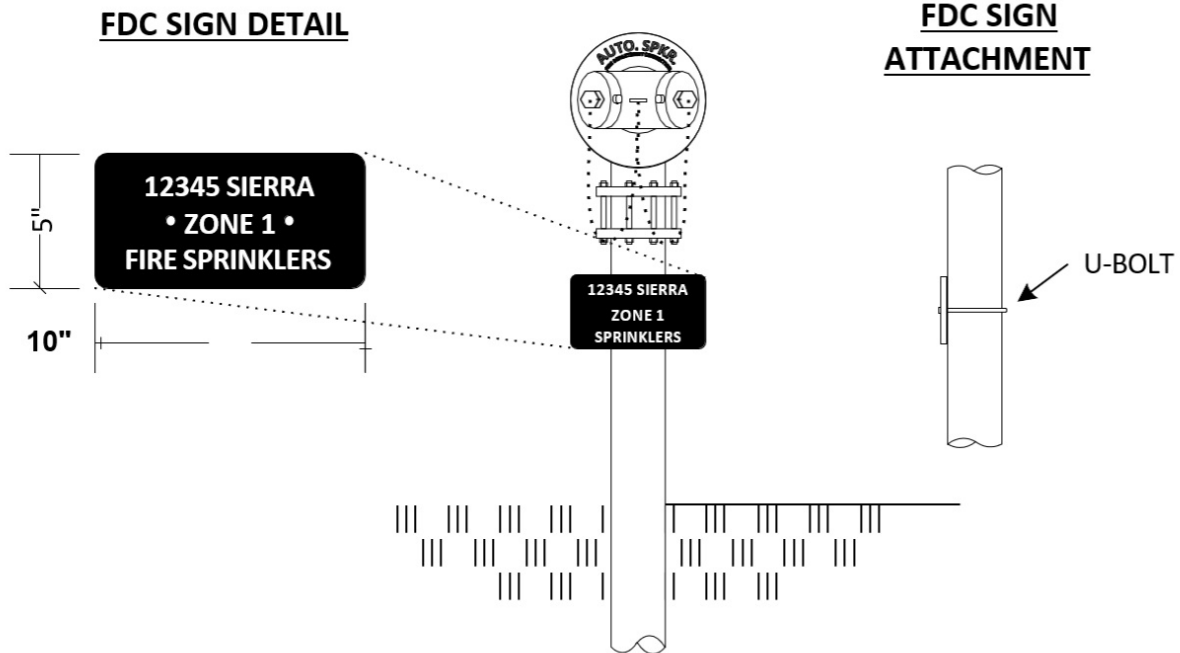
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DIAGRAM F-4.6: FDC IDENTIFICATION SIGNAGE DETAIL





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F-5 DESIGN, INSTALLATION, AND MAINTENANCE OF FIRE ALARM SYSTEMS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 907 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide the minimum requirements for the design, installation and maintenance of fire alarm systems, including those that are solely for the purpose of monitoring and supervision of a fire sprinkler system.

SCOPE

This standard, in conjunction with the current edition of NFPA 72, shall apply to all new installations and modifications of existing fire alarm systems, within new construction as well as building additions and tenant improvements within existing buildings. This standard and its interpretation are not intended to be applied or enforced where there is any conflict with NFPA 72 or the California Fire Code.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The following shall be submitted to the Fire Prevention Division for approval and permit prior to performing any work on any fire alarm system:

- 1) Completed City of Victorville Fire permit application.
- 2) A set of plans describing the work to be done. (For information on what must be included on plans, see sections below in this Standard and the City of Victorville Plan Submittal Checklist.)
 - r. **NOTE:** All fire alarm system plans shall use the symbols identified in NFPA 170, Standard for Fire Safety Emergency Symbols, current edition.



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- 3) NFPA 72 Record of Completion and supplemental forms, with required fields filled out (completed forms are required at the time of final inspection)
- 4) Manufacturer's specifications sheets (cut sheets) and CA State Fire Marshal listings for all proposed materials and equipment.
- 5) Copy of U.L. Certificate for Central Station monitoring service, if required.
- 6) Any other important details and information as required by this Standard.
- 7) Payment of all appropriate fees.

DEFINITIONS

FIRE SPRINKLER MONITORING SYSTEM – A fire alarm system that is required by the California Fire Code section 903 and generally installed for the primary purpose of monitoring water flow and supervising control valves of a fire sprinkler system. The presence of required or non-required manual pull stations, fire detectors, or notification devices on a Fire Sprinkler Monitoring System does not constitute an “Evacuation” type fire alarm system.

FIRE ALARM SYSTEM, EVACUATION TYPE OR “EVAC” TYPE – A fire alarm system that is required by California Fire code section 907 and is installed generally for the primary purposes of early notification and evacuation or relocation of building occupants or other responsible party. Systems of this type can also perform the functions of fire sprinkler water flow monitoring, elevator recall, activation or deactivation of fire doors or delayed egress, shutdown of HVAC units, and a variety of protected premises fire safety functions per NFPA 72. Manual fire alarm systems, automatic fire alarm systems, and combined manual and automatic fire alarm systems, as defined by the California Fire Code, fall under this definition.

GENERAL

- 1) Fire alarm systems shall be designed to the requirements of NFPA 72 and the currently adopted editions of the California Building Code (CBC), California Fire Code (CFC), with local amendments, National Electrical Code (NEC), and other applicable codes.
- 1) All fire protection or detection systems listed below that are installed within buildings containing an evacuation-type fire alarm system, and that perform one or more of the following functions, shall be interconnected to the building fire alarm system. Such interconnection and functionality shall be shown on the fire alarm system plans and demonstrated at field inspection:
 - a. Gas detection systems
 - b. Kitchen hood and duct extinguishing systems
 - c. Other fixed fire suppression systems, such as dry powder or clean agent
 - d. Emergency warning systems, such as those for hazardous materials release
 - e. Other systems as required by applicable codes or by the Fire Code Official



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- 1) Fire alarm systems shall not be integrated or combined with security systems or burglar alarm systems. Remote annunciators used in fire alarm systems shall not be used to annunciate security alarm or any other building system signals unless listed for this use and approved by the Fire Code Official.
- 2) All installers of fire alarm systems shall be qualified as listed below. Failure to show proper credentials may result in a failed inspection. All installers shall possess:
- 3) A State of California C-10 contractor's license (or be employed by the C-10 contractor) and be factory trained and certified for a specific manufacturer and brand of equipment, AND
- 4) An Electrician Certification-Fire/Life Safety Technician, issued by the State of California Department of Industrial Relations, Division of Labor Standards Enforcement ("blue card") when required by the Fire Code Official OR
- 5) A minimum of a Level II NICET certification in Fire Alarm Systems, when required by the Fire Code Official.

FIRE ALARM CONTROL PANELS

- 1) Fire Alarm Control Panels (FACPs), remote annunciators, and auxiliary power supply panels shall be installed in areas that are easily accessible to Fire Department personnel, with thirty-six (36") inches of clear space in front of the equipment. The top of the FACP or other equipment panels shall be mounted at a maximum of sixty (60) inches above the finished floor unless specifically approved by the Fire Code Official **(See Diagram F-5.1)**.
- 2) When a fire alarm system is installed in conjunction with a fire sprinkler system, the Fire Alarm Control Panel may be co-located with the fire sprinkler system risers inside a minimum 4' X 4' room, and accessible by means of an access door as specified in Victorville Fire Prevention Standard F-1. A sign indicating "FIRE ALARM CONTROL PANEL INSIDE" shall be installed on the access door. **(See Figure F-5.2.)** The sign shall be of a durable material, have a minimum one (1) inch block letters on a contrasting background, and shall be securely mounted. Instructions for silencing and resetting the fire alarm system to restore back to a "normal" condition shall be placed inside each FACP.
- 3) All FACP's shall be locked or otherwise secured to prevent unauthorized access. A key to each FACP shall be placed in the key (Knox ®) box on the exterior of the building or other easily identified secured location (See City of Victorville Standard A-4).

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- 4) When fire alarm systems are designed and installed in buildings constructed to protect multiple tenants or residents, the Fire Alarm Control Panel shall be located in an attached or included room or an approved weather-resistant enclosure with at least one exterior access door with dimensions of not less than thirty-six inches (36") in width and eighty inches (80"). A sign indicating "FIRE ALARM CONTROL PANEL INSIDE" shall be installed on the exterior access door. **(See Figure F-5.2.)** The sign shall be of a durable material, have a minimum one (1) inch



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block letters on a contrasting background, and shall be securely mounted.

- 5) When FACPs are installed in an area other than in a room directly adjacent to the main exit of the building, a remote annunciator shall be installed and located within ten (10) feet of such main exit, such as in an entry way or lobby, or in another easily accessible location as approved by the Fire Code Official. This shall not apply to multiple-tenant strip center buildings.

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- 6) When any fire alarm control panel(s) is replaced or upgraded, the entire fire alarm system shall be evaluated and treated as if the fire alarm system is a new installation, unless otherwise determined by the fire code official. Remediation and evaluation shall include, but are not limited to, notification and initiation device(s) location, quantity, and applicability with the current edition of NFPA 72 and the California Fire Code.

SMOKE AND HEAT DETECTORS

- 1) Smoke detectors and heat detectors shall be listed by the California State Fire Marshal (CSFM) for their use and specific application.
- 2) Duct smoke detectors used for the purposes of HVAC unit(s) shutdown as required by the California Mechanical Code (CMC) section 608, shall be the air-sampling type only. Such detectors shall be monitored for integrity by the fire alarm system and shall be permitted to initiate a supervisory signal only. A manual remote test switch for each detector shall be provided when required by the Fire Code Official for testing.
- 3) Individual duct smoke detectors used for shutdown of HVAC units shall be interconnected so that electrical power to all other individual air handling units within the same smoke compartment is interrupted upon the activation of any individual detector within that compartment (i.e., "global" shutdown).

MANUAL PULL STATIONS

- 1) When required, manual pull stations shall be placed near exits per the requirements of the CFC section 907 and NFPA 72. At no time shall a pull station be placed in a utility room or other location not accessible to the public unless specifically approved by the Fire Code Official.
- 2) Manual pull stations, which are subject to false alarms, may require the installation of a tamper-resistant device acceptable to the Fire Code Official or shall be removed when required.

INSPECTIONS

All fire alarm systems are required to be inspected and tested by the Fire Code Official prior to final approval. The contractor and installer of record shall contact the appropriate City of Victorville office at least twenty-four (24) hours prior to requesting an inspection and shall notify the City of Victorville office a minimum of twenty-four (24) hours for any cancellation of inspections.



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The following inspections shall be required for any work done on fire alarm systems:

1) "PRE-WIRE INSPECTION":

- a. The number, types, and locations of all control equipment, initiating and notification devices shall be per the approved plans.
- b. All electrical boxes shall be marked, dedicated power supply, and all conduit shall be in place where required.

2) "FINAL INSPECTION":

- a. All system components shall be tested by the installer prior to scheduling an inspection. The Fire Code Official shall have the authority to document the inspection as "FAILED" when such "pre-testing" has not been done.
- b. The correct number and type of batteries shall be present. A full 24-hour battery test will be performed when required by the Fire Code Official.
- c. A full function test of all devices shall be conducted in the presence of the Fire Code Official. All tools and equipment (i.e., ladders, canned smoke, decibel meter, etc.) shall be provided by the contractor. The system shall be tested both with the monitoring company in test mode as well as the Fire Department dispatch in test mode.
- d. All fire safety functions and other interfaced equipment, such as waterflow, HVAC shutdown, elevator recall, fire door activation, etc., shall be tested. Zoning and
- e. programming of all devices and functions shall be in accordance with the sequence of operations and the approved plans.
- f. Digital Alarm Communicating Transmitters (DACTs), Radio Frequency (RF), and other communications equipment shall be tested for reliability and transmission of appropriate signals.
- g. All power supply circuits shall be labeled per NFPA 72 and tested.
- h. All FACPs, power supplies, annunciators, and other control equipment shall be in place, secured, and properly labeled with signage this Standard and NFPA 72.
- i. Records of Completion, UL Central Station certificates, and contracts for the maintenance and monitoring shall be provided when required.
- j. Any design changes or other field changes to the system as represented on the approved plans will require revised or "as-built" drawings to be submitted and approved by the Fire Code Official prior to further inspections occurring.

FIRE SPRINKLER MONITORING SYSTEMS



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- 1) Fire sprinkler monitoring systems that are required only for the purpose of monitoring fire sprinkler water flow and for supervision of control valves shall comply with the requirements of this section, as well as other applicable codes and standards.
- 2) Fire sprinkler monitoring systems shall not be required to be interconnected to fixed hood and duct extinguishing systems installed per NFPA 17A, per SFM Code Interpretation 06-006.
- 3) Fire sprinkler monitoring systems shall be required to monitor fixed fire suppression systems, such as clean agent and dry powder systems, if such systems are installed in lieu of fire sprinkler systems.
- 4) Fire sprinkler monitoring systems shall not be required to include a manual pull station per SFM Code Interpretation 08-079.
- 5) Fire sprinkler monitoring systems shall include interior audible or visual notification devices in accordance with the City of Victorville Fire Code.
- 6) Fire sprinkler monitoring systems shall not be required to supervise duct detectors in HVAC units, unless automatic shutdown is required per the CMC section 608, per SFM Code Interpretation 06-053.
- 7) Fire sprinkler monitoring systems shall include a remote annunciator when the FACP is located in normally unoccupied locations or not within 10 feet of a main exit of the building (See FIRE ALARM CONTROL PANELS section above.)
- 8) Other equipment, such as notification devices, initiating devices, auxiliary system inputs, or relays to other fire protection systems or actuation devices, may be connected on a voluntary basis to fire sprinkler monitoring systems with the approval of the Fire Code Official. When such other equipment is connected, it shall not be considered a full evacuation fire alarm system. When in doubt, the Fire Code Official may require a formal letter of intent to be submitted by the building owner in order to verify the type of fire alarm system proposed.

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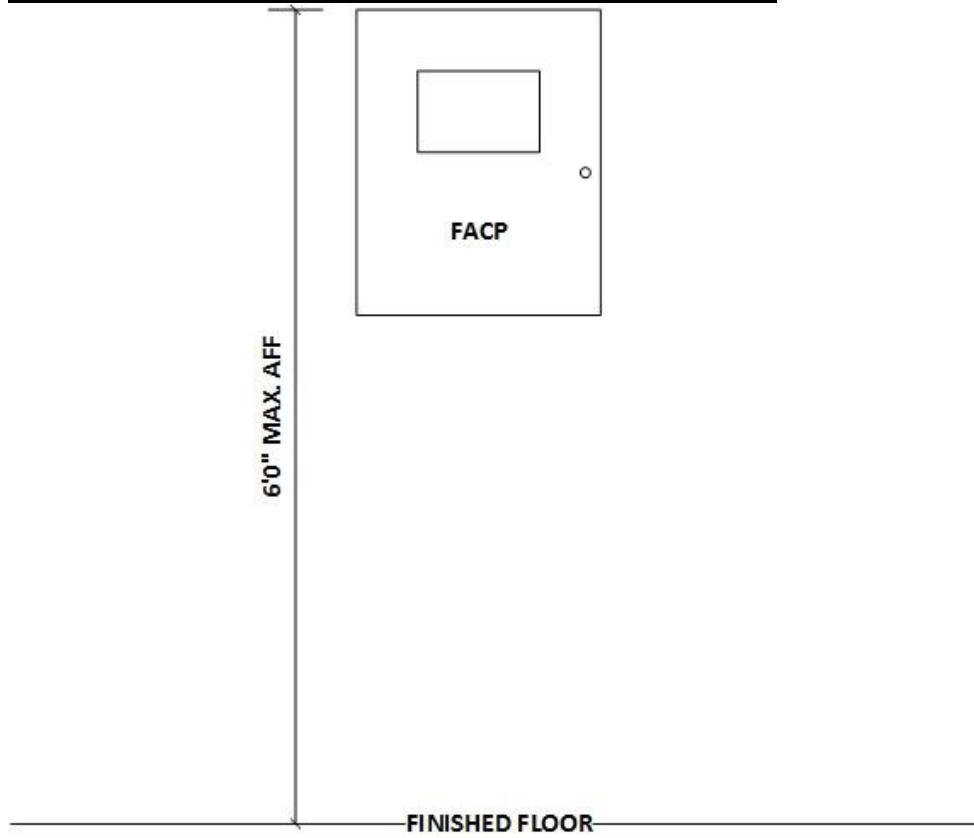
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FIGURE F-5.1: FIRE ALARM CONTROL PANEL DETAILS





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FIGURE F-5.2: FIRE ALARM CONTROL PANEL SIGNAGE

**FIRE ALARM CONTROL
PANEL INSIDE**



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FIRE PREVENTION STANDARD

F- 6 FIRE FLOW REQUIREMENTS FOR BUILDINGS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see Appendixes B and BB et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide procedures for determining the fire flow requirements for buildings or portions of buildings.

SCOPE

This standard shall apply to the design, construction, and maintenance of all new buildings or portions of a building constructed under the current California Fire Code and City of Victorville Municipal Code when applied at the discretion of the fire code official.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

DEFINITIONS

FIRE FLOW – The flow rate of a water supply, measured at 20 pounds per square inch (psi) residual pressure, that is available for firefighting.

FIRE FLOW CALCULATION AREA- The building or floor area, in square feet, used to determine the required fire flow.

GENERAL

- 1) All buildings and/ or portions of buildings constructed under the current California Fire Code and City of Victorville Municipal Code shall conform to this standard.
- 2) All fire flow requirements for the water system shall be designed at no less than 20 psi residual pressure and take into account daily water consumption for the location of the building or portions of the buildings.
- 3) Fire Prevention may require an inspection and acceptance test of fire flow for a water fire protection



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FIRE FLOW REQUIREMENTS FOR BUILDINGS

system.

- 4) For the purposes of determining adequate fire flow, the following will apply to the current California Fire Code Appendix B and the Victorville Municipal Code:
- Triplexes, fourplexes, apartment complexes (five or more units), and condominiums:
 - Fire flow and duration- as determined by B105.1(1), B105.1(2), and B105.2 of Fire Code
 - Reduction for an approved automatic fire sprinkler system shall read as follows in Table B105.2 (whichever is most applicable):
 - 50% of the value in Table B105.1(2)^b
 - 50% of the value in Table B105.1(2)^a
 - Other residential property and buildings, including hotels and motels; places of assembly and all other commercial, industrial, and hazardous occupancies:
 - Fire flow and duration- as determined by B105.1(1), B105.1(2), and B105.2 of Fire Code
 - Reduction for an approved automatic fire sprinkler system shall read as follows in Table B105.2:
 - 50% of the value in Table B105.1(2)^a

TABLE B105.2
REQUIRED FIRE FLOW FOR BUILDINGS OTHER THAN ONE- AND
TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND
TOWNHOUSES

AUTOMATIC SPRINKLER SYSTEM <small>(Design Standard)</small>	MINIMUM FIRE FLOW <small>(gallons per minute)</small>	FLOW DURATION <small>(hours)</small>
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the California Fire Code	50% of the value in Table B105.1(2) ^a	Duration in Table B105.1(2) at the reduced flow rate
Section 903.3.1.2 of the California Fire Code	50% of the value in Table B105.1(2) ^b	Duration in Table B105.1(2) at the reduced flow rate

For SI: 1 gallon per minute = 3.785 L/m.
 a. The reduced fire flow shall be not less than 1,000 gallons per minute.
 b. The reduced fire flow shall be not less than 1,500 gallons per minute.

X.



CITY OF VICTORVILLE

FIRE PREVENTION DIVISION

14345 Civic Center Drive
Victorville, CA 92392
(760) 955-5233

Standard Number

F-7

Revision Date:
11-5-25

FIRE PREVENTION STANDARD

F-7 FIRE WATCH REQUIREMENTS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 3305.5, 901.7, 3504.2 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The City of Victorville Fire Prevention Division enforces the California Fire Code for fire watch conditions when a building/premises presents a hazard to life or property as the result of construction, alteration, demolition, fire, or other emergency, or when any fire protection equipment/system has been rendered inoperable. The fire watch is used to mitigate a hazardous condition that, if not corrected, would normally require the evacuation of the structure or a portion thereof.

SCOPE

The assignment of a qualified person or persons having the sole responsibility for the continuous observation of a building or the premises for the purpose of detecting fires and transmitting an immediate alarm to the building occupants and the Fire Department.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

DEFINITIONS

FIRE WATCH – Fire Watch: A temporary measure intended to ensure continuous and systematic surveillance of a building or portion thereof by one or more qualified individuals for the purposes of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the fire department.



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Standard Number

F-7

Revision Date:
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FIRE PREVENTION STANDARD **FIRE WATCH REQUIREMENTS**

GENERAL

When conditions occur that necessitate the activation of a fire watch, the following guidelines shall be utilized: The duration and times per day for a fire watch shall be determined by the City of Victorville Fire Prevention Division. Fire Watch Personnel shall conduct periodic patrols of the entire building and/or facility. Patrols shall be conducted every 15 minutes if the building/facility has people sleeping, is an institutional facility, or an occupied assembly facility. Facilities not meeting the previous conditions shall be patrolled every 30 minutes and patrols documented every 60 minutes.

- 1) Fire watch personnel shall be pre-approved by the City of Victorville Fire Prevention Division and shall have the following responsibilities: Per CFC 403.11.1.2
 - a. Keep diligent watch for fires, obstructions to means of egress, and other hazards.
 - b. Take prompt measures for the remediation of hazards and extinguishment of fires that occur.
 - c. Take prompt measures to assist in the evacuation of the public from the structures.
 - d. Be able to communicate effectively.
 - e. Be thoroughly familiar with the area they are patrolling.
 - f. Patrol the entire building/facility, all rooms (offices, spaces, areas), including basements, shall be checked unless otherwise instructed by the Fire Prevention Division.
 - g. Make reports as instructed. A written record of patrol rounds and any significant information shall be recorded in accordance with the **Fire Watch log**.
 - h. Alert building occupants of an emergency and direct evacuation when required.
- y.
- 2) Fire watch personnel shall have access to cellular devices with sufficient signal strength, know the exact address of the property, and know how to report a fire or other emergency condition by calling **9-1-1**.
- 3) Fire watch personnel shall be trained in the use of fire extinguishers, shall have access to all facility fire extinguishers, and know the fire extinguisher locations.
- 4) Fire watch personnel shall have knowledge of and be trained in the facility's evacuation plan in the event of a fire. They shall be able to communicate with occupants well enough to give an evacuation order.
- 5) Fire watch personnel shall not be permitted, while on duty, to perform any other duties.
- 6) Fire watch personnel shall not be impaired and shall remain awake and alert at all times.
- 7) Personnel shall remain on duty until properly relieved and shall relay any special orders or pertinent information to relief personnel and/or management.
- 8) Fire watch personnel shall log all fire watch-related activities. This log shall include:



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FIRE PREVENTION STANDARD FIRE WATCH REQUIREMENTS

- a. address of the facility,
 - b. time of each patrol,
 - c. name of the fire watch person,
 - d. comments, and other related activities performed,
 - e. findings (i.e., all clear, checked hallways, kitchen clear, and exits operational).
 - f. The log shall be emailed or delivered daily to the City of Victorville Fire Prevention Division: prevention@victorvilleca.gov.
- 9) Fire watch shall be maintained until released in writing by the Fire Prevention Division.

Responsibility for Instruction:

The owner, manager, or person in charge or control of the building premises shall assign to the fire watch as many personnel as are required, and shall instruct fire watch personnel as to the following:

- 1) The procedure for notifying the City of Victorville Fire Prevention Division.
- 2) The area to be observed.
- 3) A method of notifying building occupants and an evacuation procedure.
- 4) Training necessary to ensure Fire Watch personnel are capable of reactivating disabled systems when required.
- 5) Training and proficiency in using fire extinguishers and/or appropriate fire suppression equipment.
- 6) Any special instruction required by the City of Victorville Fire Prevention Division.

Record Keeping:

Complete and retain for inspection by the Fire Prevention Division.

- 1) The owner, manager, or person in charge or control of the premises shall provide a logbook, which contains this Fire Watch Fire Prevention Standard, "Terminating Fire Watch" form (Exhibit A), the Fire Watch Information" form (Exhibit B) to assist in making emergency calls, and The logbook (Exhibit C) shall be the document used to record a history of observation rounds.
- 2) The logbook shall be maintained on the premises and be available for review by the Fire Prevention Division.
 - z. **Note:** *Random checks may be made by Fire Department personnel to ensure compliance with Fire Watch requirements.*
- 3) Logs may be required to be emailed daily, or as prescribed by the Fire Prevention Division, to prevention@victorvilleca.gov.



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Revision Date:
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FIRE PREVENTION STANDARD
FIRE WATCH REQUIREMENTS

Exhibit A:

(Provided for informational purposes only. See the City of Victorville Fire Prevention Web Page for the current downloadable document at <https://www.victorvilleca.gov>)

Terminating Fire Watch

The Fire Watch shall not be terminated until all fire protection equipment/systems have been rendered operable and tested by a licensed technician and approved by the City of Victorville Fire Prevention Division. FAILURE TO COMPLY MAY RESULT IN LEGAL ACTION.

Recipient Acknowledgment:

Received by: _____

Title: _____

Fire Watch Log shall be emailed to: Fireprevention@victorvilleca.gov



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FIRE WATCH REQUIREMENTS

Exhibit B:

(Provided for informational purposes only. See the City of Victorville Fire Prevention Web Page for the current downloadable document at <https://www.victorvilleca.gov>)

FIRE WATCH INFORMATION

Building/Project Name:

Building/Project Address:

Name of Responsible Party:

_____ Contact # _____

Names of Personnel Authorized to Conduct Fire Watch

1. Name _____ Contact # _____

2. Name _____ Contact # _____

3. Name _____ Contact # _____

4. Name _____ Contact # _____

5. Name _____ Contact # _____



CITY OF VICTORVILLE

FIRE PREVENTION DIVISION

14345 Civic Center Drive
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(760) 955-5233

Standard Number

G-1

Revision Date:
11-5-25

FIRE PREVENTION STANDARD **G-1 ORGANIC PRODUCT STORAGE**

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 2808 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide the minimum requirements for the storage of any organic products that may create a fire hazard in their natural or processed state when stored in bulk piles.

SCOPE

This standard applies to the indoor or outdoor bulk storage of miscellaneous organic products, such as yard or tree trimmings, manure, organic compost, wood chips, peat moss, sawdust, or any other piled finely divided materials that can accumulate heat and present a spontaneous combustion hazard.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed.

These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The owner shall provide a plot plan containing the following information:

- 1) Fire apparatus access roads
- 2) The locations of permanent structures, raw material piles, and all storage of finished products
- 3) Location of all water sources.
- 4) Location of all other hazards (i.e., flammable, combustible, or LPG tanks).



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FIRE PREVENTION STANDARD **ORGANIC PRODUCT STORAGE**

Standard Number

G-1

Revision Date:

11-5-25

GENERAL

- 1) Fire apparatus access roads, designed and constructed in accordance with California Fire Code section 503 and City of Victorville Fire Prevention Standard A-1, shall be maintained around the perimeter of the storage area.
 - aa.
 - bb.
- 2) Individual piles shall not be closer than twenty feet (20') from property lines.
- 3) Bulk storage of manure or organic products shall require an operational permit from the Fire Prevention Division and shall be renewed annually.
- 4) Individual piles shall not exceed 42,000 cubic feet of volume nor shall they exceed twenty-five (25') feet in height.
- 5) Minimum distance between piles and structures shall not be less than twenty feet (20').
- 6) A water supply shall be provided and maintained in accordance with City of Victorville Fire Prevention Standard W-1. The minimum fire flow shall be 1500 GPM @ 20 psi for 2 hours. Fire hydrants shall be spaced along fire access roads in approved locations in accordance with the California Fire Code Appendix C and City of Victorville Fire Prevention Standard W-2.
- 7) An adequate number of oscillating sprinklers with a sufficient length of hose shall be provided for wetting down burning/smoldering areas. These sprinklers shall be mounted on a base of substantial size to support the sprinklers on the manure pile.
- 8) No smoking shall be permitted except in designated areas. These areas shall be designated by an approved "**SMOKING AREA**" sign. "**NO SMOKING**" and "**NO OPEN FLAME**" signs shall be posted in conspicuous sight.
- 9) Flammable and combustible fuels for use in vehicles shall be stored in approved underground or approved aboveground vaulted tanks. These tanks shall be inspected and approved under a separate permit from the Fire Prevention Division.
- 10) Approved sizes and types of fire extinguishers shall be provided in the locations required by the Fire Prevention Division.
- 11) Equipment capable of moving the bulk products and disturbing or displacing the piles must be maintained on site.
- 12) If fire suppression activities are required, the business owner will be responsible for any and all costs that may occur for fire suppression efforts.



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Standard Number

G-2

Revision Date:
11-5-25

FIRE PREVENTION STANDARD

G-2 OUTSIDE FIREWOOD STORAGE AND LOGGING YARDS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 2806 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide the minimum requirements for the storage of any organic products that may create a fire hazard in their natural or processed state when stored in bulk piles.

SCOPE

This standard applies to the indoor or outdoor bulk storage of miscellaneous organic products, such as yard or tree trimmings, manure, organic compost, wood chips, peat moss, sawdust, or any other piled finely divided materials that can accumulate heat and present a spontaneous combustion hazard.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

For new facilities, the owner shall provide a plot plan containing the following information:

- 1) Fire apparatus access road
- 2) The locations of permanent structures, log decks or firewood stacks, and any other combustibles
- 3) Location of all water sources.
- 4) Location of all other hazards (i.e., flammable, combustible, or LPG tanks)



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Standard Number

G-2

Revision Date:
11-5-25

FIRE PREVENTION STANDARD OUTSIDE FIREWOOD STORAGE AND LOGGING YARDS

GENERAL

- 1) Wood shall be stacked tightly and neatly in cords, not to exceed eight (8) feet in height and not to exceed ten (10) cords per stack. (1 cord = 128 cubic feet)
- 2) The outdoor storage of firewood shall not exceed sixty (60) cords of wood unless approved by the fire code official.
- 3) Stacks shall be separated from property lines and other stacks by a distance of no less than one-half the height of the stack and in no case less than ten (10) feet. In the FS (Fire Safety) overlay, all areas used for the storage of firewood shall either be at least thirty (30) feet away from all structures or shall be wholly enclosed within a structure.
- 4) Wood in rounds and logs shall not be stored for longer than ninety (90) days.
- 5) Wood stacks shall be covered with tarps to prevent the accumulation of leaves, needles, debris, and sparks.
- 6) Storage yards shall be kept clean and free of excessive bark, wood chips, sawdust, and wood scraps.
- 7) Pressurized water-type extinguishers, with a minimum 2 ½ gallon capacity, or dry chemical-type fire extinguishers with a minimum 2A-10BC rating shall be maintained on-site in locations as determined by the fire code official.

cc.

FIRE ACCESS ROADS

If any portion of the operation is greater than one hundred fifty (150') feet from a public street, onsite fire access roads approved by the fire code official that comply with City of Victorville Fire Prevention Standard A-1 shall be required and shall provide reasonable access to all parts of the property, storage stacks, and structures.

WATER SUPPLY

- 1) An approved water supply for fire protection shall be provided in accordance with City of Victorville Fire Prevention Standard W-2, from hydrant(s) served by a water purveyor with a minimum fire flow of 1,500 gallons per minute (GPM) at a minimum residual operating pressure of twenty pounds per square inch (20 P.S.I.) for a minimum duration of two (2) hours, unless an alternate water storage and distribution is approved by the fire code official.



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FIRE PREVENTION STANDARD OUTSIDE FIREWOOD STORAGE AND LOGGING YARDS

- 2) When yards are not served by a water purveyor, an approved water supply shall be provided in accordance with City of Victorville Fire Prevention Standard W-1 and NFPA 1142.
- 3) Fire hydrants shall be provided along fire access roads in locations acceptable to the Prevention Division.

LOGGING AND HARVESTING OPERATIONS

All logging and timber harvesting shall be reviewed and approved by the City of Victorville Fire Prevention Division prior to beginning operations. If required, a plan recommending measures for fire apparatus access, fire protection, and fuel management shall be submitted to the Fire Prevention Division for approval by a registered forester.



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14345 Civic Center Drive
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Standard Number

G-3

Revision Date:
11-5-25

FIRE PREVENTION STANDARD

G-3 PALLETT REFURBISHING AND STORAGE YARDS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 508 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide minimum requirements for fire access, water supply and other general safety requirements for the outside storage of combustible pallets.

SCOPE

This standard applies to the outdoor storage of combustible idle pallets at pallet manufacturing, refurbishing, or storage facilities, and to the incidental storage of combustible pallets at commercial and industrial facilities.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

For new facilities, the owner shall provide a plot plan containing the following information:

- 1) All pages of plans shall have a three-inch (3) by three-inch (3) box labeled "FOR FIRE DEPARTMENT USE ONLY" located in the bottom right corner of every page for approval stamp.
- 2) Provide a scaled site plan or plot plan the following information at a minimum:
 - a. Location of all fire apparatus access roads and fire apparatus turnarounds for dead-end roadways.
 - b. Dimensions indicating width, length, and radii of all turns for all fire access roads.
 - c. Surfacing specifications of fire access roads, including pavement type and thickness. May also require a report from a registered engineer for certain conditions.



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FIRE PREVENTION STANDARD PALLET REFURBISHING AND STORAGE YARDS

- d. Locations of any types of obstructions to fire access roads. (See also VFPD standard A-3)
 - e. The locations of all temporary and permanent structures, log decks, firewood stacks and any other combustibles.
 - f. Location of all fire protection water sources (hydrants, tanks, etc.).
 - g. Locations of all parking areas, landscaping areas, walkways, and any other adjacent areas.
 - h. Location of significant hazards (i.e., flammable or combustible liquids, hazardous materials, or LPG tanks).
- 3) Planning Department approval letter

DEFINITIONS

Pallet - a portable platform for handling, storing, or moving materials and packages (as in warehouses, factories, or vehicles)

Stack - Single pallets placed horizontally on top of one another in an orderly and stable manner.

Pile - A group of single pallet stacks clustered closely together within 6 inches of each other.

Fire Department Access Road - A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, private street, parking lot lane and access roadway. Access roads shall be a minimum of 26' in width with an unobstructed clear height of 14'6".

Fire Flow - The flow rate of a water supply, measured at 20 psi residual pressure that is available for firefighting.

Permit - An official document or certificate issued by the authority having jurisdiction which authorizes performance of a specific activity.

GENERAL

- 1) Pallets stored outside shall be in accordance with the requirements of this Standard.
- 2) Pallets stored inside of a building shall be in accordance with the provisions of NFPA 13, currently adopted California Fire Code.
- 3) Pallets shall be stored in stacks in an orderly, stable manner and shall not exceed sixteen (16) feet in height. In areas of the county or in cities where zoning regulations require lower storage heights or screening, these shall be complied with.
- 4) Individual stacks of pallets may be clustered into piles not to exceed twenty (20) feet in width and twenty (20) feet in length and shall not exceed 6,400 cubic feet in volume. (See DIAGRAM G-3.1)
- 5) Pallet piles shall be separated by a minimum of twenty (20) feet from other piles, structures, or other exposures. These areas shall remain clear of obstructions, storage and equipment at all times. In areas where zoning regulations require greater setbacks or screen walls, these shall be complied with.



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FIRE PREVENTION STANDARD PALLET REFURBISHING AND STORAGE YARDS

- 6) Pallet manufacturing, refurbishing or other processing areas shall meet the fire protection requirements in the Fire Code and adopted standards. A minimum 4A:40BC Portable fire extinguisher shall be provided within seventy-five (75) feet of any pallet stack or manufacturing area.
- 7) 7) Welding or cutting operations shall not be conducted without first obtaining a “hot works” permit from the VFPD. Clearance to ignition sources shall be maintained from all combustibles at a minimum of twenty-five (25) feet, and an approved fire watch shall be in place during hot work activity and for thirty (30) minutes after the conclusion of such work; or as specified by the Fire Code.
- 8) A minimum of one “No Smoking” sign shall be posted at the facility, and additional signs in processing areas and other areas may be required where deemed appropriate by the fire code official. “Designated Smoking Area” signs shall be posted, if necessary, in an area a minimum of twenty-five (25) feet away from combustibles.
- 9) Flammable and combustible fuels for use in vehicles shall be stored in approved underground or approved aboveground vaulted tanks. These tanks shall be inspected and approved under a separate permit from the VFPD.
- 10) If fire suppression activities are required, the business owner will be responsible for any and all costs that may occur for fire suppression efforts.
dd.

FIRE ACCESS

- 1) Fire apparatus access roads shall be designed, constructed, and maintained in accordance with VFPD Standard A-1, A-2, A3 and the currently adopted California Fire Code section 503.
- 2) Fire access lanes of a minimum twenty-six feet (26’) in width shall be required along the interior perimeter of the yard adjacent to the property line.
- 3) Fire apparatus access roads shall not be obstructed by any vehicles or storage at any time.
- 4) A durable marking system shall be used to indicate the designated area for pallet stacks and fire access roads.
ee.

WATER SUPPLY

ff.

- 1) In areas served by a water purveyor, an approved water supply with a minimum fire flow of 2,250 GPM at 20 psi for a two (2) hour duration shall be provided from fire hydrants (s) and shall be installed in accordance with VFPD Standard W-2 and other applicable standards.
 - a. Required fire flow has been determined by combining the max pile square footage of four hundred (400) square feet with the clear aisle spacing of twenty (20) feet around the entire pile (6,400 sf). This method ensures the appropriate fire flow is



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available for fire suppression.

- 2) In areas without a water purveyor capable of supplying the required fire flow, an approved fire protection water system providing the required fire flow shall be installed in accordance with the fire code, VFPD Standard W-1 and other applicable standards.
- 3) Fire hydrants shall be spaced in accordance with the Victorville Fire Code and VFPD Standard W-2, at each entrance to the property, and where required along fire access roads, and in locations acceptable to the Fire Department.



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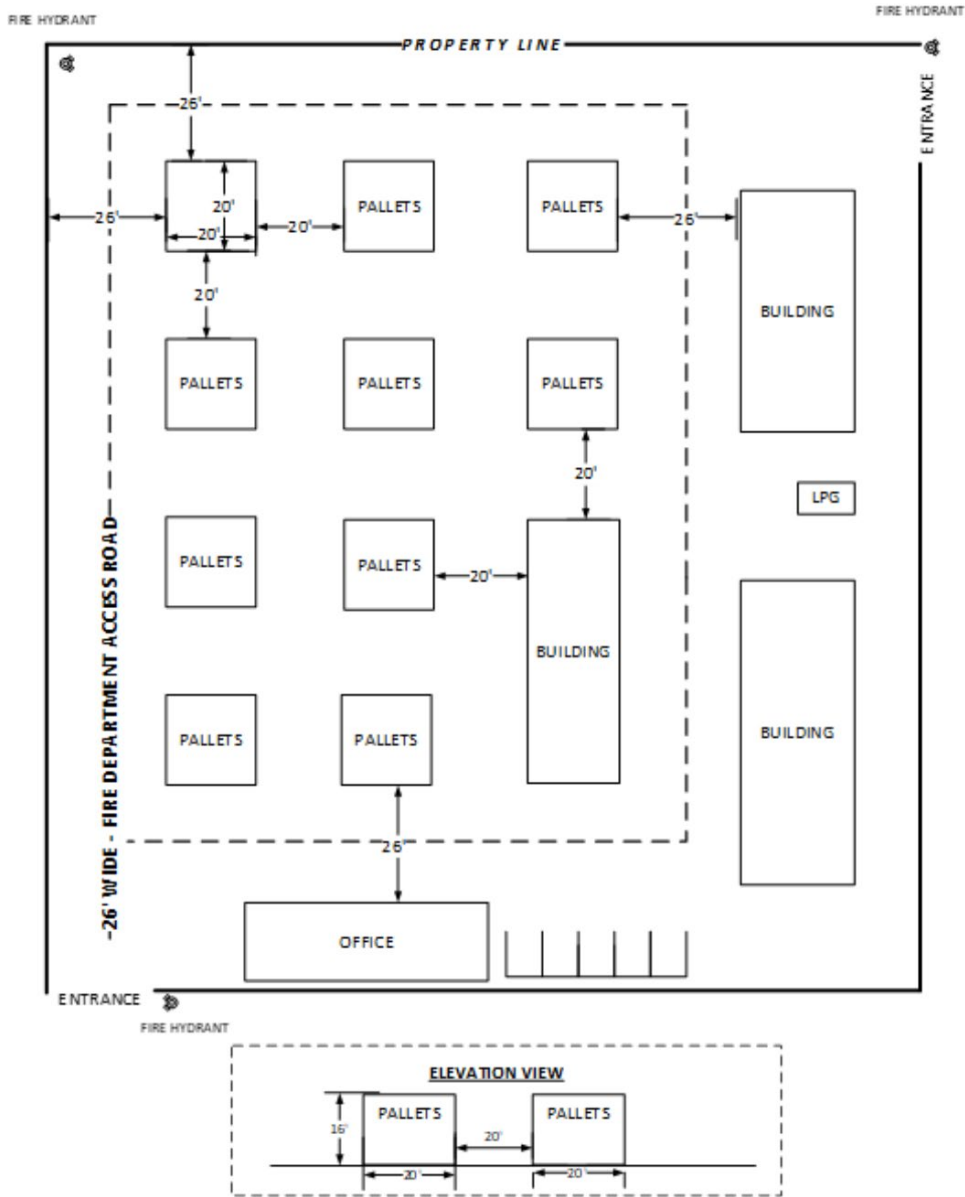
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FIRE PREVENTION STANDARD PALLETT REFURBISHING AND STORAGE YARDS

DIAGRAM G-3.1: STORAGE ARRANGEMENT WITHIN PALLET YARDS





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14345 Civic Center Drive
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Standard Number

M-1

Revision Date:
11-5-25

FIRE PREVENTION STANDARD M-1 CARBON DIOXIDE (CO₂) SYSTEMS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 5307.3 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide for the safe use and installation of carbon dioxide systems in commercial buildings.

SCOPE

This standard shall apply to the design, construction and maintenance of all new and existing facilities where carbon dioxide is used in systems containing 100 pounds of carbon dioxide or more.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The applicant shall provide on a scaled site plan or plot plan the following information at a minimum:

1. Floor plan of the building showing the following components:
 - a. When CO₂ is supplied from a bulk CO₂ system for use inside of a building, provide one of the following with the submittal:
 - i. Plans for the mechanical ventilation system including calculations and electrical connections OR
 - ii. Plans for the CO₂ Gas Detection System showing the following items:
 1. Locations of CO₂ Alarm Components:
 - a. CO₂ sensor/detectors
 - b. CO₂ audible/visible alarms
 - c. Central unit or annunciator



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FIRE PREVENTION STANDARD

Carbon Dioxide (CO₂) Systems

2. Method for connection to the fire alarm. NOTE: This work shall be performed by a licensed fire alarm contractor holding a valid Business License issued by the City of Victorville. A separate Fire Alarm Permit may be required; however, fire alarm work may be shown on the same floor plan as the CO₂ system.
 - b. Location of CO₂ tanks or cylinders
 - c. Mixing station location(s) and valves
 - d. Fill port location
 - e. Locations of required warning signage
2. Data sheets for all major components
3. Completed permit applications for each contractor:
 - a. CO₂ System Installer
 - b. Fire Alarm Contractor

DEFINITIONS

Carbon Dioxide (CO₂) - Carbon dioxide (CO₂) is a colorless, odorless, inert gas with a density that is heavier than air. When compressed and cooled to less than 87.8°F, gaseous CO₂ becomes liquified. CO₂ will remain in liquid form, regardless of the pressure applied, provided that its temperature is maintained below that critical point. Once the temperature rises above 87.8°F, CO₂ will return to a gaseous state.

When in a gaseous state, CO₂ can accumulate in hazardous amounts in low-lying areas without sufficient ventilation, especially inside confined spaces. High concentrations can displace oxygen in air and cause suffocation.

GENERAL

Because liquid CO₂ is routinely used to carbonate beverages, liquid CO₂ systems are commonly found in assembly occupancies, especially restaurants and microbreweries. This is cause for concern because frequently, owners, managers, staff, and patrons of these establishments are unaware of the associated risks with these systems. Some vendors have also installed systems without involving the Building Department or Fire Prevention Division; therefore, compliance with applicable codes is called into question. Additionally, it is important for emergency responders to have advanced knowledge of where these systems are located in the event of an emergency. Requirements of this document shall be applied retroactively to existing systems within 12 months of discovery.

*Requirements of this document do not apply to systems utilizing LESS THAN 100 pounds of carbon dioxide.

Construction Permits

A fire construction permit is required to install or modify a compressed gas system utilizing carbon dioxide (CO₂) in excess of 100 pounds or 875 cubic feet at normal temperature and pressure (NTP).



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Carbon Dioxide (CO₂) Systems

Design and installation shall comply with the applicable provisions of the following codes and standards: Current edition of the California Fire Code and the current edition of NFPA 72: National Fire Alarm and Signaling Code.

System Requirements

The following requirements apply to all compressed gas systems utilizing CO₂:

- 1) The fill port is to be piped to the outside atmosphere.
- 2) All venting (normal and emergency) is to be piped to the outside atmosphere.
- 3) When used, insulated liquid CO₂ containers are to be anchored to the slab.
- 4) When used, CO₂ compressed gas cylinders are to be properly secured from tipping or movement.
- 5) All hoses and fittings used within the systems are to be manufacturer approved.
- 6) Warning signs are required to be posted in accordance with the CFC.
- 7) A backup power source is required for all systems. Batteries are an acceptable option. Exception: backup power is not required when the system is monitored for loss of power and a trouble signal is initiated by the building's fire alarm control panel.
- 8) Battery backup is required for CO₂ sensors/detectors that reset to an alarm condition upon loss of primary power.
- 9) Inspection and testing of the gas detection system shall be conducted annually, at a minimum. Sensor calibration shall be confirmed upon installation and performed at the frequency specified by the sensor manufacturer.
- 10) Any CO₂ system found to be not in good working order shall be shut down and taken out of service immediately until appropriate corrective actions are made by professional service personnel.

Mechanical Ventilation

- 1) Mechanical ventilation is required to be installed in rooms or areas indoors where insulated liquid carbon dioxide storage tanks, cylinders, piping, and equipment are located and other areas where a CO₂ leak is expected to accumulate.
- 2) Mechanical ventilation systems shall be installed in compliance with the International Mechanical Code and must meet the following requirements:
- 3) Rooms containing CO₂ shall be maintained at a negative pressure in relation to the surrounding area.
- 4) Mechanical ventilation shall be at a rate of not less than 1 cubic foot per minute per square foot.
- 5) Systems shall operate continuously unless alternative designs are approved, and the system shall be operational during all times the building or space is occupied.



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Carbon Dioxide (CO₂) Systems

- 6) A manual shutoff control shall be provided adjacent to the access door or in another approved location. The switch shall be a break-glass type labeled VENTILATION SYSTEM EMERGENCY SHUTOFF.
- 7) Exhaust ventilation shall be taken from a point within 12 inches of the floor.
- 8) Exhaust and inlet air openings shall provide air movement across all portions of the floor or room.
- 9) Exhaust air shall not be recirculated.

*A gas detection system installed in compliance with the International Fire Code may be installed in lieu of mechanical ventilation.

Gas Detection Systems

- 1) When mechanical ventilation requirements are not met, a gas detection system shall be provided. Gas detection systems shall meet with following requirements:
 - 2) Detection shall be provided in rooms, indoor areas, and below-grade outdoor areas with insulated carbon dioxide systems.
 - 3) CO₂ sensors shall be installed within 12 inches of the floor at all points of use areas where the gas is expected to accumulate or where leaks are most likely to occur. These areas include, but are not limited to:
 - 4) All storage and/or supply areas with CO₂ containers, tanks, or cylinders
 - 5) Areas where pure CO₂ is piped into the building
 - 6) All mixing areas
 - 7) Other approved locations
 - 8) Gas sampling shall be continuous.
 - 9) A local alarm and strobe are to be provided in each room or area where sensors are located to provide audible and visible notification of an alarm condition. An additional notification appliance is required in an area occupied by members of the public (i.e., dining room).
- 10) Strobes shall have a minimum candela rating of 110 with an amber lens installed.
- 11) Alarm devices shall provide a minimum of 75 decibels at 10 feet.
- 12) A Central Unit or CO₂ system annunciator shall be installed in a normally attended location where all alerts and tones can be heard, and all installed sensors must report to one central unit or annunciator.
- 13) Gas detection systems shall be permanently connected to the building's power supply, with the electrical circuit for the CO₂ detection system labeled and locked, or power cords shall be connected to unswitched receptacles using approved, fixed restraints to secure the plug from tampering or accidental disruption of power.



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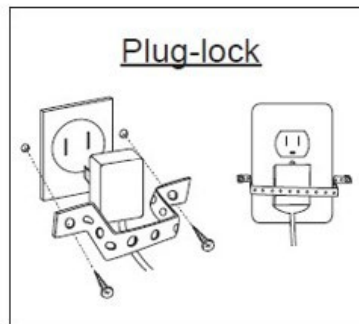
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FIRE PREVENTION STANDARD Carbon Dioxide (CO₂) Systems

Alarm Conditions and Monitoring



- 1) CO₂ concentration of 5,000 ppm or .5% shall activate an audible and visible supervisory alarm in a normally attended location (CO₂ system annunciator).
- 2) CO₂ concentration of 30,000 ppm or 3% shall activate audible and visible alarms
- 3) Initiating evacuation of the building (CO₂ alarm with amber strobe).
- 4) The gas detection system shall be monitored by the building fire alarm system when one is provided. Connections shall be approved and connected in accordance with the fire alarm equipment manufacturer's instructions. Exception: existing alarm panels without the capacity for additional signals or incompatible panels may be excluded with approval from the Fire Code Official.
- 5) Alarm signals from the CO₂ gas detection system shall report to the Central Station as "CO₂ Alarm". Exception: existing alarm panels without the capacity for additional signals or incompatible panels may be excluded with approval from the Fire Code Official.
- 6) Activation of the CO₂ alarm system shall not activate the fire alarm notification appliances.
- 7) When a building fire alarm is not provided, additional audible and visible notification is required outside the building to notify emergency responders of a CO₂ alarm condition. The notification device shall be labeled as a CO₂ alarm with an amber lens and shall be activated upon initiation of the CO₂ sensors.



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Alarm System Components





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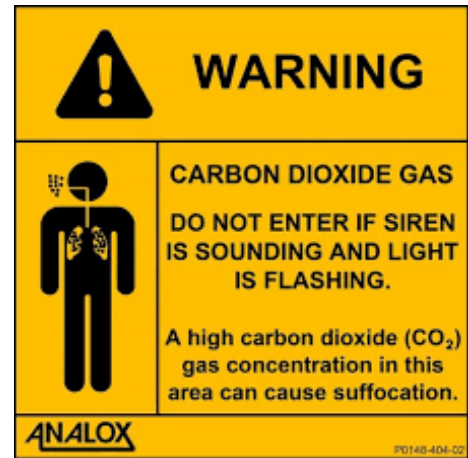
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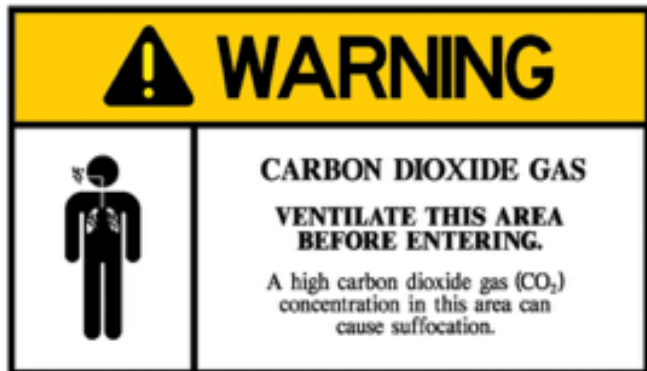
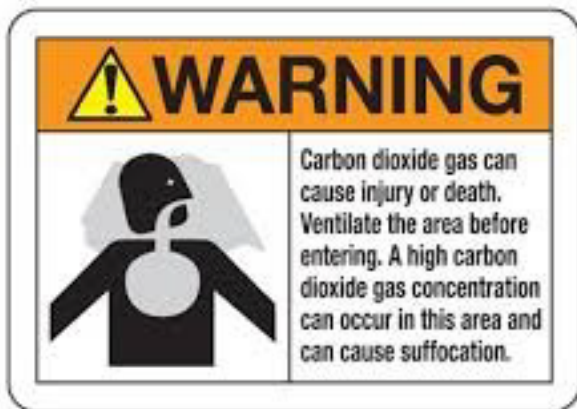
Warning Signs

A warning sign shall be placed next to each audible/visual notification appliance.



A warning sign shall also be placed at the entrance to the room where CO₂ tanks are located.

Signs shall be a minimum of 7”H by 10” W.





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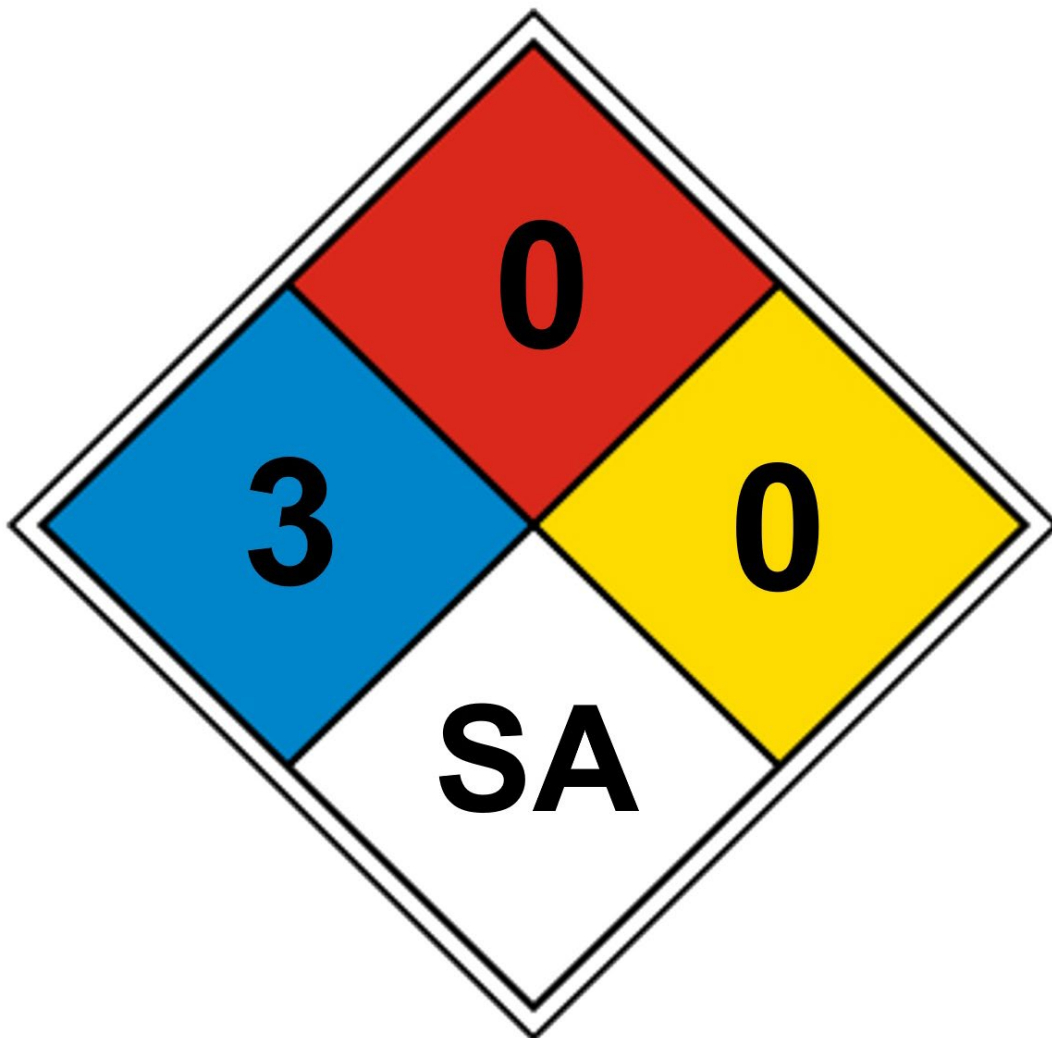
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Carbon Dioxide (CO₂) Systems

Hazard Identification Signage

Where liquid CO₂ containers are located in buildings, NFPA 704 placards displaying the hazard ratings shown below shall be posted at specific entrances (e.g. exterior doors closest to tanks, storage rooms doors) as determined by the fire code official.





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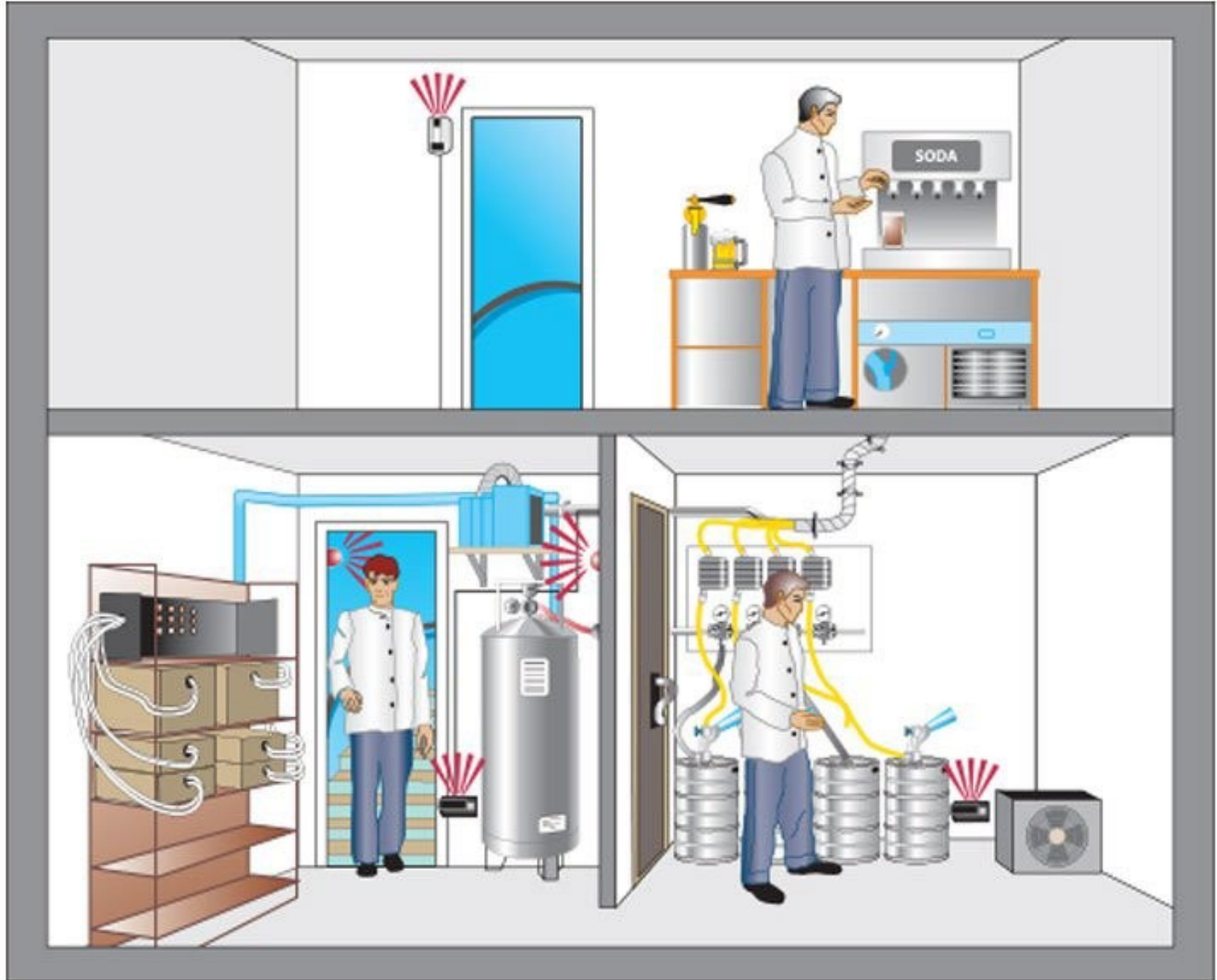
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Sensor and Alarm Location





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Points of Use/Mixing Areas





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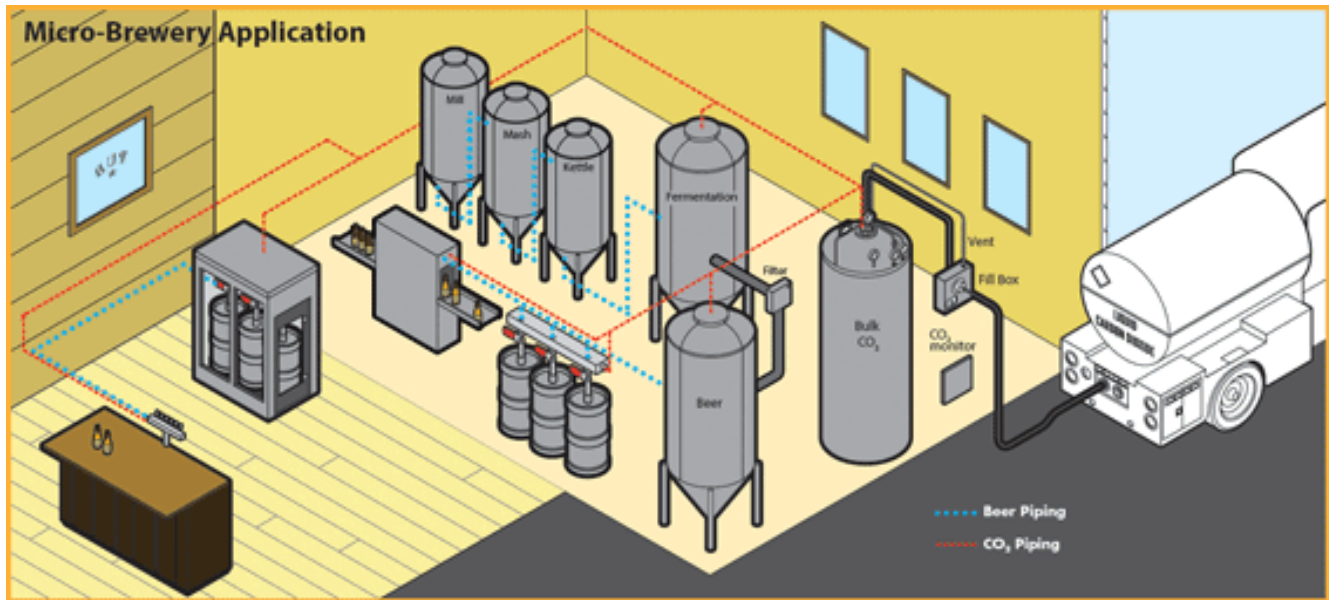
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FIRE PREVENTION STANDARD RESIDENTIAL LARGE FAMILY DAYCARE

R-1 RESIDENTIAL LARGE FAMILY DAYCARE

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see Chapters 9 and 10 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The following guideline is intended to ensure compliance with the appropriate requirements for residential large family daycare facilities. Regulations regarding residential daycare facilities can be found in the California Code of Regulations (CCR) Title 19, 2022 California Fire Code (CFC), 2022 California Building Code (CBC), 2022 California Residential Code (CRC), and the California Health and Safety Code (H&SC).

SCOPE

This guideline applies to licensed facilities classified as large family daycare by the Department of Social Services. These facilities may house up to 14 children for less than 24 hours and are located in an R-3 (single-family residence) or R-2 (multifamily residential building) occupancy. This document does not include all regulations that may apply to homes used for large family daycare—it is only intended to guide on issues and questions commonly encountered during fire clearance inspections.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

Department of Social Services (DSS) Form STD 850, along with a site and floor plan, must be forwarded from DSS to the Victorville Fire Prevention Division (VFPD) before scheduling the fire clearance inspection. Documents must be submitted at least two weeks before the scheduled fire clearance inspection date. Upon completion of the inspection, the 850 form will be completed and returned to DSS by VFPD. Please be aware that a fee will be charged for the fire clearance inspection, and additional fees will be accrued if more than one



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reinspection is necessary. Please review this guideline thoroughly and complete (Attachment D) before your inspection to facilitate fire clearance.

The fire clearance inspection request cannot be processed, and the 850 form cannot be completed by VFPD if the required information is not submitted on time or if the plans are incomplete. Please contact VFPD with any questions.

1. The plans must include the information listed below:
2. Building Address: Street name and number, city, zip code
3. Occupancy Classification: R-3, if located in a detached single-family home or duplex; R-2 if located in a multifamily residential building (apartment, condos)
4. Site Plan: Illustrating the following:
 - a. Outline of the home and any other structures on the property (detached garages, sheds, etc.)
 - b. Exit pathways from the home to the street—note the width of the pathway at its narrowest point.
 - c. Fences and walls over 3 feet tall
 - d. Gates—note the clear opening width.
5. Floor Plan: Illustrating the following:
 - a. All rooms in the home—Label each room with its function (bedroom, kitchen, bathroom, etc.) and clearly identify which spaces are proposed for daycare use and, of those spaces, which will be used for napping.
 - b. Attached garages—show doors, windows, or other openings between the garage and the rest of the home.
 - c. Interior and exterior doors—note the clear height/width of each door The location of all smoke alarms and carbon monoxide detectors—note whether they are existing devices or newly added.
 - d. The manual fire alarm pull station location (see Attachment B)
 - e. Location of all water sources.
 - f. Location of all other hazards (i.e., flammable, combustible, or LPG tanks).
6. Sprinkler System: Note if the home is equipped with a fire sprinkler system. A fire sprinkler system is required if any space used for daycare purposes is located above the first story.
 - gg.

(Please be aware that fire clearance from VFPD does not constitute approval from other agencies that may have jurisdiction over this facility. Please contact your local building or planning department regarding their zoning, construction, and permit requirements.)

GENERAL REQUIREMENTS

Large family daycare facilities shall comply with the requirements listed below:



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- 1) Smoke Alarms/Detectors: Smoke alarms are required in all dwellings used for large family daycare purposes. Smoke alarm devices shall be installed in accordance with the manufacturer's published guidelines/instructions. See (Attachment C) for smoke alarm locations.

Where more than one new smoke alarm is installed, all newly installed devices must be interconnected to each other physically or wirelessly so that when one activates, all of the other newly installed devices will also sound an alarm. Newly installed smoke alarms are recommended, but not required, to be interconnected with existing devices. When activated, smoke alarms shall be clearly audible in all sleeping rooms with all intervening doors closed. Smoke alarms shall be UL listed and California State Fire Marshal approved and shall be tested and maintained in accordance with the manufacturer's instructions. Smoke alarms that no longer function and/or are older than ten years shall be replaced; replace the device if a manufacturer's date cannot be found (CBC 907.2.10).

- 2) Carbon Monoxide Detectors/Alarms: Carbon monoxide (CO) detection is required in dwellings with gas or wood-burning fireplaces, or gas or fuel-oil forced air furnaces, or in homes with an attached garage where there is a door, duct, or other opening between the garage and the rest of the home. See (Attachment C) for CO device locations. CO devices shall be hardwired to the home's electrical system and shall have battery back-up. All CO devices shall be interconnected, either physically or wirelessly, so that if one activates, they all sound an alarm.
hh.

Exception: *Battery-operated devices are permitted in homes built prior to January 1, 2011, if any work done on the home does not result in exposure of the structure in the areas where devices are required. Install CO devices in accordance with the manufacturer's instructions. CO devices shall be UL listed and State Fire Marshal approved. Combination smoke and carbon monoxide detectors are permissible. Electrical work shall be approved by the local building department (CFC 915).*

- a. Fire Alarm: Every large family daycare facility shall be provided with a fire alarm that consists of at least one manual initiating device connected to a bell, horn, or other notification device. The initiating device and the notification device shall be listed by the California State Fire Marshal for use in a residential or commercial fire alarm system or as a component of a combination residential fire/burglar alarm system. The initiating device shall be placed between 42 and 48 inches off the floor at an approved location in the home and, upon activation, shall cause the notification device to sound an alarm signal that is loud enough to be clearly heard throughout the home above all background noise. The initiating and notification devices for the fire alarm must be securely attached to the structure. They can be a standalone system and are not required to be interconnected to any other alarm or detection device in the home (e.g., smoke alarms, CO detectors) unless those devices are being used to sound the alarm signal for the fire alarm (such as in a combination fire/burglar alarm system). The fire alarm does not need to be provided with back-up power. See (Attachment B) (CBC 907.2.6.4).



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- b. Exiting: There shall be a minimum of two approved exits from the dwelling that are remotely located from each other. Exit doors shall be at least 6 feet 8 inches in height with at least 32 inches of clearance when opened at a 90-degree angle. A sliding door may be used as one of the two required exits as long as it meets the 32-inch unobstructed opening width (CBC 1006.2.2.7). These required exit doors and any gates along the path of exit travel shall be equipped with hardware that does not require any special effort or knowledge, nor require the use of a key or other tool to operate. If a second lock such as a deadbolt is installed on a door, both the primary doorknob lock and the deadbolt lock shall release in tandem and allow the door to open freely when the doorknob is turned; no other locks or latches, such as a clasp and padlock, security chain, or surface-mounted slide bolt, are permitted (CBC 1010.1.9).
- 3) In addition to the requirements above, the following apply:
- a. Exit paths to the public way shall be maintained clear with no furniture, equipment, storage, or other obstructions that could hinder immediate use (CFC 1003.6).
 - b. Basements used for daycare purposes shall be provided with two approved exits that are remotely located from each other, one of which must provide access directly to the exterior (CBC 1006.2.2.7).
 - c. Daycare use is not allowed on stories above the first floor unless the home is protected by a fire sprinkler system. Stories above the first used for daycare purposes shall have two exits that are remotely located from each other, one of which must provide access directly to the exterior (CBC 1006.2.2.7).
 - d. Homes located entirely above the first floor that are used for daycare, as may be the case in apartment buildings, shall meet the requirements of CBC 436.1, CBC 455.6, and CBC 1006.2.2.7.
 - e. Emergency escape and rescue openings shall be maintained free of any obstructions other than those noted below and shall be operational from the inside of the room without the use of keys, tools, or special knowledge.
 - f. Bars, grilles, covers, screens, or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size is not compromised and such devices shall be releasable or removable from the inside without the use of a key, tool, special knowledge, or force greater than that which is required for normal operation of the emergency escape and rescue opening. The release mechanism shall be maintained operable at all times. Such bars, grills, grates, or any similar devices shall be equipped with an approved exterior release device for use by the fire department (CFC 1030.1).
- 4) **OTHER REQUIREMENTS:**
- a. Provide a minimum of (4) four-inch address numbers that contrast with their background. Address numbers are required to be attached to the structure and visible from the street (CFC 505.1).
 - b. Provide a fire extinguisher with a minimum classification/rating of 2A:10B:C. The extinguisher is required to be securely attached to a wall in a visible and readily accessible location with the



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top of the extinguisher mounted no more than 5 feet above finished floor level, with the bottom at least 4" above the floor, in a conspicuous and unobstructed location. The extinguisher is required to be visually inspected annually and serviced every six years by a licensed fire protection company. A current annual service tag is required to be attached to the fire extinguisher or if the extinguisher was purchased within the last year, proof of purchase date is required. Please review the manufacturer's guidelines for additional requirements and instructions on how to use the extinguisher (CBC 906.1, 906.9).

- c. Fireplaces and gas-fired water heaters and furnaces in areas used for daycare shall be protected in such a way to prevent children from making contact with those appliances (CBC 455.7).
- d. Maintain combustible storage clearance around water heaters as per manufacturer's specifications (CFC 305.1).
- e. All fire and smoke-rated construction separating the garage and the dwelling must be maintained in good condition with no open penetrations (CFC 703.1).
- f. If the garage is attached to the dwelling unit, doors between the dwelling and the garage shall be equipped with a self-closing device and be positive latching. The door shall be either solid wood or a solid honeycomb-core steel door that is a minimum of 1-3/8 inches thick; a 20-minute rated door equipped with a smoke gasket is also acceptable. There shall be no openings from the garage into any of the sleeping areas (CBC 406.3.2.1).
- g. The garage shall not be used as living quarters and/or daycare unless this conversion has been approved by the local building department (CBC 105.1).
- h. All modifications to the structure, including electrical or mechanical systems, must be reviewed, inspected, and approved by the local building department prior to scheduling a fire clearance inspection with VFPD (CBC 105.1).



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Attachment A- Site Plan Example

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY

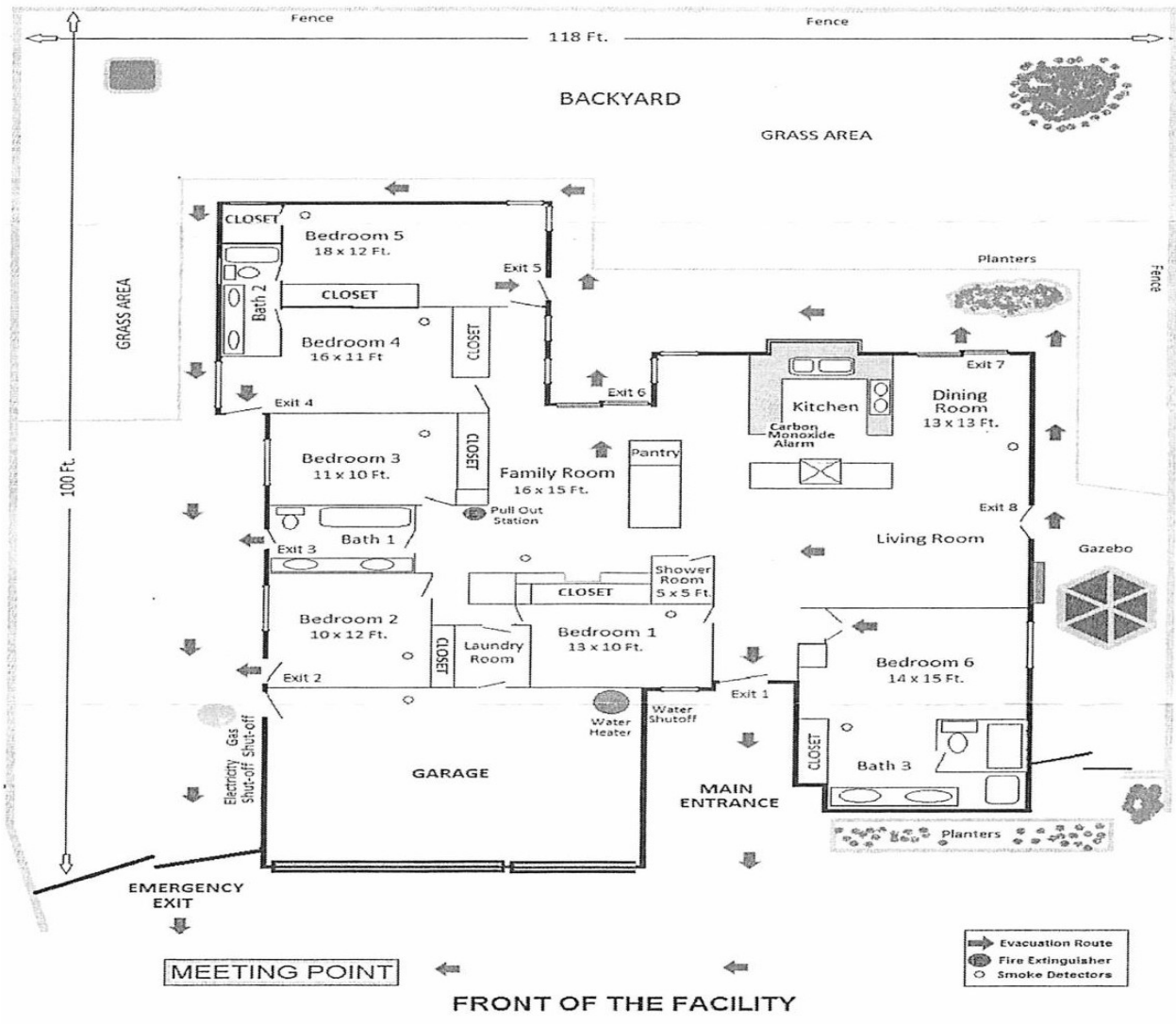
CALIFORNIA DEPARTMENT OF SOCIAL SERVICES

FACILITY SKETCH (Yard)

The yard sketch show all buildings in the yard including the home (with no detail), garage and storage building. Include walks, driveways, play area, fences, gates. Show any potential hazardous area such as pools, garbage storage, animal pens, etc. Try to keep de sizes close to scale.

FACILITY NAME:

GOLDEN YEARS - PROSPECT
 4232 Prospect, Yorba Linda, CA 92886





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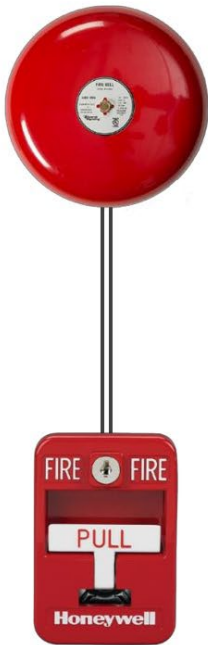
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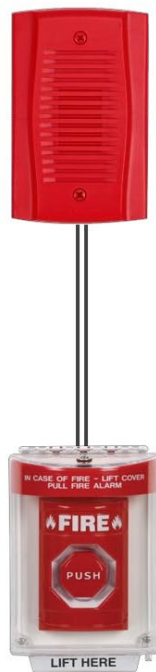
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Attachment B- Fire Alarm Configurations

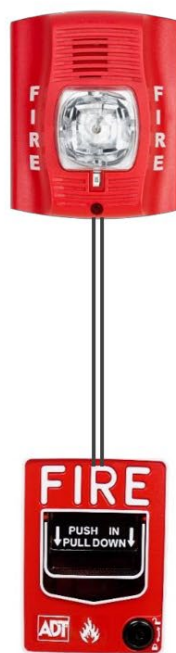
Pull station
& bell



Push-button (with cover)
& mini-horn



Pull station
& horn-strobe



Combination fire & burglar alarm system
with pull station or panic button
activating smoke alarms and/or mini-horns



The combinations of alarm initiating and notification devices shown above are examples only and are not intended to endorse any particular brand, model, or configuration. Other devices may be acceptable provided they are listed by the California State Fire Marshal as components of a residential fire alarm system, a commercial fire alarm system, or a combination residential fire and burglar alarm system.

Where the manual initiating device and/or the notification device is powered by the home's 120V electrical wiring, the connection shall be permitted, inspected, and approved by the local building department. Permits may not be needed where the devices are supplied by low-voltage wiring—verify construction, permit, and inspection requirements with the building department prior to installation.

This fire alarm system is not required to be interconnected with the smoke alarms or CO detectors unless those devices are being used to sound the alarm signal throughout the home.



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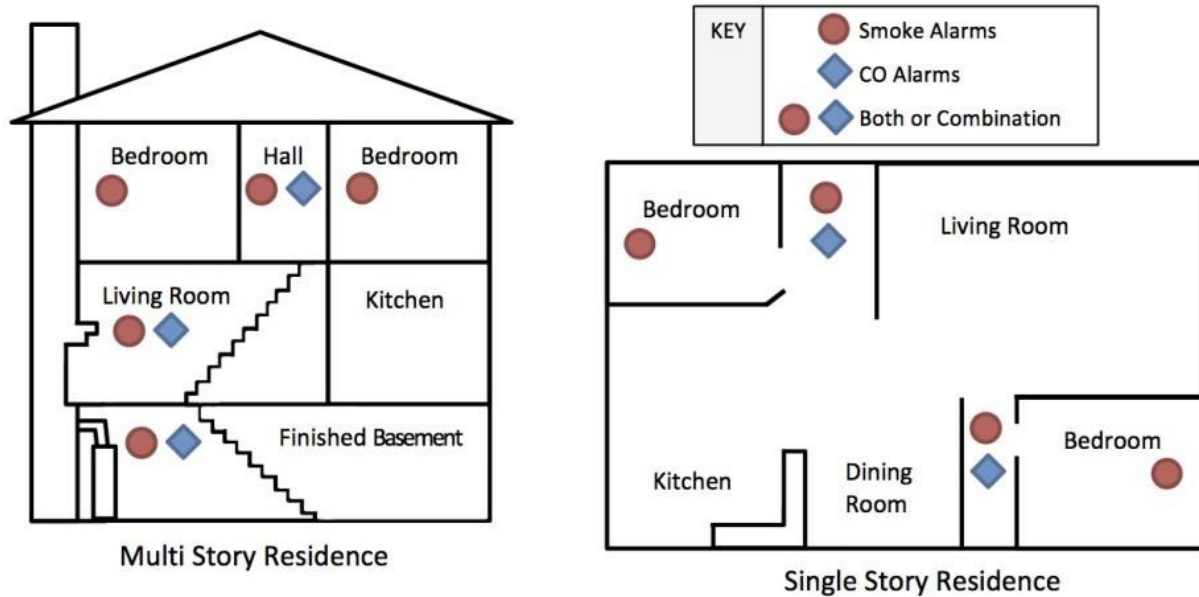
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Attachment C -Required Smoke and Carbon Monoxide Alarm Locations



Smoke Alarms:

- 1) In each bedroom/sleeping area
- 2) In the room or space leading to each separate bedroom/sleeping area in the home (for example, in the hallway serving one or more bedrooms)
- 3) On each additional story of the dwelling, including basements and finished attics. In split-level homes where there is no intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than a full story below the upper level
 - ii.

Do not install smoke alarms in the kitchen, bathrooms, garage, crawl space, or unfinished attics. Do not install photoelectric smoke alarms within 3' of a door to a bathroom that has a tub or shower unless this would prevent placement of a device in a space that requires it.

Carbon Monoxide Alarms:

- 1) In the room or space leading to each separate bedroom/sleeping area in the home (for example, in the hallway serving one or more bedrooms)
- 2) On every occupiable level, including basements
- 3) In every bedroom or sleeping area where there is a fireplace or other fuel-burning appliance located within the space or an attached bathroom



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FIRE PREVENTION STANDARD RESIDENTIAL LARGE FAMILY DAYCARE

Attachment D- Business Owner Pre-inspection Checklist

Use this checklist in conjunction with Standard R-01 to prepare your large family daycare for a fire-clearance inspection by VFPD. As the design and use of individual homes can vary, this checklist is not all-inclusive and other requirements that are not included herein may apply.

GENERAL

- Building modifications have been approved by the building department
- Garage is not used for daycare unless approved as a living space by the building department
- Home has minimum 4" high address numbers clearly visible from the street

DETECTORS/ALARMS

- Smoke alarms installed and functional
- Carbon monoxide alarms installed and functional
- Fire alarm installed and audible throughout the home

EXITING

- Two exit paths from the daycare area to the street are provided
- All exit doors have minimum 32" clear opening width
- Single-action hardware is installed on all exit doors and gates
- Deadbolts open in tandem with the primary door knob
- Keys are not required to open the exit doors/gates in the direction of exit travel
- Exit paths are clear of obstructions
- Basements and sleeping rooms have emergency escape/rescue openings
- Emergency escape/rescue openings lead to the public way and are accessible to firefighters
- Bars/grills over emergency escape/rescue openings are openable from the inside

FIRE EXTINGUISHERS

- 2A:10B:C fire extinguisher has been provided
- Extinguisher is new or has been serviced in the last year
- Extinguisher is mounted to the wall in a visible and accessible location

FIRE SAFETY

- Fireplaces and gas-fire water heaters are protected from contact by children
- No combustibles are stored near water heaters or other sources of ignition
- Door between the dwelling and garage is in good condition
- Door between the dwelling and garage is self-closing and latching
- Door between the dwelling and garage is of proper type
- There are no dog-doors, windows, or other openings between the garage and dwelling

FIRE SAFETY STANDARD

RESIDENTIAL CARE FACILITY



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R-2 RESIDENTIAL CARE FACILITY

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see Chapters 9 and 10 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The following guideline is intended to ensure compliance with the appropriate requirements for Residential care facilities. Regulations regarding residential care facilities can be found in the California Code of Regulations (CCR) Title 19, 2022 California Fire Code (CFC), 2022 California Building Code (CBC), 2022 California Residential Code (CRC), and the California Health and Safety Code (H&SC).

SCOPE

This guideline is intended to provide the minimum requirements necessary for review and approval of care facilities licensed by the Department of Social Services to house six or fewer non-ambulatory or bedridden clients in a single-family residence. Plans for residential or commercial care facilities housing more than six clients must be submitted through to the Victorville Fire Prevention Division (VFPD) for approval. Contact the VFPD at 760-955-5227 for more information regarding facilities housing more than six clients.

For residential care facilities housing only ambulatory occupants, see Guideline R-01.

This document does not include all regulations that may apply to residentially based care facilities—it is only intended to provide guidance on issues and questions commonly encountered during fire clearance inspections.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.



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**FIRE SAFETY STANDARD
RESIDENTIAL CARE FACILITY**

SUBMITTALS

Department of Social Services (DSS) Form STD 850 must be forwarded to VFPD (via email to fireprevention@victorvilleca.gov) from DSS prior to scheduling your fire clearance inspection. The fireprevention@victorvilleca.gov email is for DSS submissions only. The applicant will be required to set up a Customer Service Portal account so that information, including the invoice and finalized 850 form, can be accessed electronically. Upon completion of the inspection, the 850 form will be completed and returned to the applicant by VFPD. Please be aware that a fee will be charged for the fire clearance if a reinspection is necessary. Please review this guideline thoroughly and complete (Attachment 3) before your inspection to facilitate fire clearance sign-off by VFPD.

At least two weeks before your scheduled fire clearance inspection date, you must submit site and floor plans to VFPD for review via the Customer Service Portal. Your fire clearance inspection request cannot be processed, and your 850 form cannot be completed if VFPD has not received the requested information in time or if the plans are incomplete. If you have questions on the submittal requirements or inspection process, please contact VFPD.

The plans must include the information listed below:

- Building Address:** Street name and number, city, zip code
- Occupancy Classification:** R-3.1
- Site Plan:** Show the following:
 - a. Outline of the home and any other structures on the property (detached garages, sheds, etc.)
 - b. Exit pathways from the home to the street—note the dimensions of the narrowest point along the exit path
 - c. Fences and walls over 3 feet tall
 - d. Gates—note the clear opening width
- Floor Plan:** Show the following:
 - a. All rooms in the home—label each room with its function (bedroom, kitchen, bathroom, etc.) and clearly identify which spaces are proposed for clients and their ambulatory status (ambulatory, non-ambulatory, bedridden); indicate how many clients will reside in each sleeping room.
 - b. Attached garages—show doors, windows, or other openings between the garage and the rest of the home
 - c. Interior and exterior doors—note the clear height/width of each door
 - d. Width of all hallways in client areas
 - e. The location of all smoke alarms and carbon monoxide detectors



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RESIDENTIAL CARE FACILITY**

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Sprinkler System: Note if the home is equipped with a fire sprinkler system. A fire sprinkler system is required if more than one client is bedridden, if any non-ambulatory clients are housed on the second or higher story, or if any clients are housed on the third or higher story. (CBC 903.2.8)

Please be aware that a fee will be charged for the fire clearance inspection, and additional fees will be accrued if more than one reinspection is necessary. Please review this guideline thoroughly and complete (Attachment 3) prior to your inspection to facilitate fire clearance sign-off by VFPD.

Fire clearance from VFPD does not constitute approval from other agencies that may have jurisdiction over this facility. Contact the building or planning department regarding their zoning, construction, and permit requirements.

GENERAL REQUIREMENTS

Residentially based care facilities shall comply with the requirements listed below:

Smoke Alarms/Detectors: Smoke alarms are required in all habitable areas of the dwelling, such as bedrooms, living rooms, dining rooms, hallways, foyers, basements, and similar spaces. Alarms are not required in kitchens, bathrooms, closets, garages, and unfinished attics or crawl spaces. Smoke alarm devices shall be installed in accordance with the manufacturer's published guidelines/instructions. (CBC 907.2.10.2, 907.2.11.8)

All alarm devices must be interconnected to each other, physically or wirelessly, so that when one is activated, they all sound an alarm simultaneously. When activated, smoke alarms shall be clearly audible throughout the home. (CFC 907.2.10.5)

In new construction and where existing homes are converted into residential care facilities, Smoke alarms shall be hardwired to the home's primary power supply and be equipped with a battery back-up. They shall not be on a circuit with a shut-off switch other than that required for overcurrent protection. Electrical work shall be approved by the building department. (CFC 907.2.10.6)

Smoke alarms shall be UL listed and California State Fire Marshal approved and shall be tested and maintained in accordance with the manufacturer's instructions. Smoke alarms that no longer function and/or are older than ten years shall be replaced; replace the device if a manufacturer's date cannot be found. (CFC 907.2.10)

Protective social care facilities that house persons who are hearing impaired shall be provided



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with notification appliances for the hearing impaired installed in accordance with NFPA 72. Such devices must activate upon initiation of the smoke alarms (CFC 907.5.2.3.4).

Definition of Protective Social Care: *The housing and care of any person of any age when such person is referred to or placed within such home or facility for care and supervision services by any governmental agency.*

Carbon Monoxide Detectors/Alarms: Carbon monoxide (CO) detection is required in dwellings with gas or wood-burning fireplaces, or gas or fuel-oil forced air furnaces, or in homes with an attached garage where there is a door, duct, or other opening between the garage and the rest of the home.

Devices shall be provided in the following locations:

- 1) In the room or space leading to each separate bedroom/sleeping area in the home (for example, in the hallway serving one or more bedrooms)
- 2) On every occupiable level, including basements.
- 3) In every bedroom or sleeping area where there is a fireplace or other fuel-burning appliance located within the space or an attached bathroom.
- 4) CO devices shall be hardwired to the home's electrical system and shall have battery backup. All CO devices shall be interconnected, either physically or wirelessly, so that if one activates, they all sound an alarm simultaneously.

Exception: *Battery operated devices are permitted in homes built prior to January 1, 2011, if any work done on the home does not result in exposure of the structure in the areas where devices are required.*

- 5) Install CO devices in accordance with the manufacturer's instructions. CO devices shall be UL listed and State Fire Marshal approved. Combination smoke and carbon monoxide detectors are permissible. Electrical work shall be approved by the building department. (CBC 915)

General Exiting: There shall be a minimum of two approved exits from the dwelling that are remotely located from each other. Exit doors serving clients shall be at least 6 feet 8 inches in height with at least 32 inches of clearance when opened at a 90-degree angle. For double doors, if the secondary door leaf requires operation of anything other than a doorknob or handle to open, such as slide bolts or pins, measurements shall be taken with the secondary leaf closed and only the normally active leaf open. Sliding doors may be used as required exits as long as they meet the 32-inch unobstructed opening width. (CBC 1010.1.1, 435.8.3)

Hallways serving clients shall not be less than 36 inches wide. Exit paths both inside and outside



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the home shall be maintained clear with no furniture, equipment, storage, or other obstructions that could hinder immediate use. (CBC Table 1020.2, 1005.7, 1003.6)

The exit path from common spaces serving clients to an exterior exit door shall not pass through more than one intervening room, nor shall it pass through storerooms, closets, garages, or spaces used for similar purposes. The egress path shall not pass through kitchens where building construction separates the kitchen from other rooms. (CBC 435.8.3.4)

All lockable doors and gates along the paths of exit travel shall be equipped with hardware that does not require any special effort or knowledge, nor require the use of a key or other tool, to operate in the direction of exit travel. Where the total occupant load of the facility (clients, staff, caretakers, and other individuals normally working or residing at the home) is greater than 10, operation of the primary doorknob shall also simultaneously unlock the dead bolt. Security chains are allowed on exterior exit doors in facilities with 10 or fewer occupants, provided they do not require the use of a key or tool. Manually operated flush or slide bolts are not permitted, regardless of occupant load. (CBC 435.8.3, 1010.1.9)

Emergency escape and rescue openings shall be maintained free of any obstructions other than those noted below and shall be operational from the inside of the room without the use of keys, tools, or special knowledge. Bars, grilles, covers, screens, or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size is not obstructed and such devices can be released or removed from the inside without the use of a key, tool, special knowledge, or force greater than that which is required for normal operation of the emergency escape and rescue opening. The release mechanism shall be maintained operable at all times. Such bars, grills, grates, or any similar devices shall be equipped with an approved exterior release device for use by the fire department. (CBC 1030)

Exiting from Client Rooms in a Sprinklered Home: Bedrooms serving bedridden or non-ambulatory clients shall be provided with an exit path that conforms to at least one of the following:

- 1) From the client's bedroom directly to the exterior.
- 2) From the client's bedroom into an adjacent bedroom, then directly to the exterior
- 3) From the client's bedroom into a hallway, then directly to the exterior.
- 4) From the client's bedroom into a hallway, then into another client's bedroom, then directly to the exterior

Where a hallway serves as part of the exit path, as in conditions 3 and 4 above, the hallway be separated from other parts of the home such as living and dining rooms, kitchens, foyers, and other similar spaces by a solid wall consistent with the construction of other interior walls in the



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dwelling; the doorway through this wall shall be protected with a solid wood door that is at least 1-3/8 inches thick. The door shall be self-closing or shall close automatically upon activation of a smoke detector. See Attachment 2. (CBC 435.8.3.2)

Bedrooms serving bedridden clients shall be located on the first floor only. (CBC 435.3.2)

Exiting from Client Rooms in an Unsprinklered Home: Where the home is not protected by a fire sprinkler system, exiting requirements are different for non-ambulatory and bedridden clients.

Non-ambulatory clients: Bedrooms serving non-ambulatory clients shall be provided with an exit path that conforms to at least one of the following:

- 1) From the client's bedroom directly to the exterior.
- 2) From the client's bedroom into an adjacent bedroom, then directly to the exterior
- 3) From the client's bedroom into a hallway, then directly to the exterior.
- 4) From the client's bedroom into a hallway, then into another client's bedroom, then to the exterior

Where a hallway serves as part of the exit path, as in conditions 3 and 4 above, the hallway be separated from other parts of the home such as living and dining rooms, kitchens, foyers, and other similar spaces by solid walls consistent with the construction of other interiorwalls in the dwelling; the doorway through this wall shall be protected with a solid wood door that is at least 1-3/8 inches thick. The door shall be self-closing or shall close automatically upon activation of a smoke detector. See Attachment 2. (CBC 435.8.3.2)

Bedridden client: Only a single bedridden client can be housed in an unsprinklered home. That bedroom shall be provided with all of the following:

- 1) A direct exit to the exterior of the home.
- 2) Doors to the room shall be 1-3/8" thick solid wood.
- 3) Door openings shall be provided with a gasket along the jamb on both sides and at the top to inhibit the passage of smoke.
- 4) Doors to the room shall be self-closing or shall close automatically upon activation of a smoke detector.
- 5) Doors leading to other interior spaces such as hallways, living or dining spaces, or similar general use areas of the home shall not be provided with a night latch, dead bolt, security chain, or any similar locking device.
- 6) The exterior exit door in a bedridden client's bedroom shall be operable from both the interior and exterior of the home.
- 7) The door shall provide at least 32 inches of clear width with the door open at 90 degrees.



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- 8) The bedroom shall be located on the first story. See Attachment 2. (CBC 435.8.3.3)
II.

Use of floors other than the 1st story: Where non-ambulatory clients are housed above the first floor in an un-sprinklered home, construction that will prevent migration of smoke between stories is required. Construction of this floor separation shall be equivalent to 1/2-inch gypsum wallboard on at least one side of the building's framing. Openings in this smoke separation shall be protected with solid wood doors at least 1-3/8 inches thick. Doors shall be positive latching and have a smoke gasket along the jambs at the sides and top of the opening. The door shall be self-closing or automatic-closing by smoke detection. Glazing in the door shall be limited to 1,296 square inches and no more than 54 inches in any dimension. This floor separation is not required where there is at least one exterior exit door from the floor(s) occupied by tenants. (CBC 435.8.7)

Use of existing stairs, except for spiral and winding stairs, is permitted provided that the stairs have a maximum rise of 8 inches with a minimum run of 9 inches. Minimum stairway width is 30 inches. (CBC 435.8.6.2)

Where the home has three or more stories and/or more than 3,000 square feet of area above the first story, non-ambulatory clients shall not be housed in spaces above the first floor unless the home is built of at least 1-hour fire resistive rated construction throughout. Please be aware that most homes do not meet this requirement as originally constructed. (CBC 435.3.2)

Bedridden client sleeping rooms shall not be located above or below the first story. (CBC 435.3.2)

Other Requirements:

- 1) Provide a minimum of (4) four-inch address numbers that contrast with their background. Address numbers are required to be attached to the structure and visible from the street. (CFC 505.1)
- 2) Provide a fire extinguisher with a minimum classification/rating of 2A:10B:C. The extinguisher is required to be securely attached to a wall in a visible and readily accessible location with the top of the extinguisher mounted no more than 5 feet above finished floor level, with the bottom at least 4" above the floor. The extinguisher is required to be visually inspected annually and serviced every six years by a licensed fire protection company. A current annual service tag is required to be attached to the fire extinguisher or, if the extinguisher was purchased within the last year, proof of purchase date is required. Please review the manufacturer's guidelines for additional requirements and instructions on how to use the extinguisher. (CBC 906.1 item 7, 906.9)
- 3) Maintain combustible storage clearance around water heaters as per manufacturer's



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specifications. (CFC 305.1)

- 4) All fire and smoke-rated construction separating the garage and the dwelling must be maintained in good condition with no open penetrations. (CFC 703.1)
- 5) If the garage is attached to the dwelling unit, doors between the dwelling and the garage shall be equipped with a self-closing device and be positive latching. The door shall be either solid wood or a solid- or honeycomb-core steel door that is a minimum of 1-3/8 inches thick; a 20-minute rated door equipped with a smoke gasket is also acceptable. There shall be no openings from the garage into any of the sleeping areas. (CBC 406.3.2.1)
- 6) The garage shall not be used as living or sleeping quarters unless this conversion has been approved by the building department. (CBC 105.1)
- 7) Changes in elevation inside the home that are between 1/4 inch and 1/2 inch high shall be beveled at a slope not to exceed 1 unit in vertical distance for every 2 units in horizontal distance. Changes in interior elevation between 1/2 inch and 12 inches shall be accomplished by means of a ramp. (CBC 435.8.5)
- 8) All modifications to the structure, including electrical or mechanical systems, must be reviewed, inspected, and approved by the building department prior to scheduling a fire clearance Inspection with VFPD. (CBC 105.1)
- 9) Post evacuation signs in locations where they will be readily visible to clients and care providers. The signs shall, at a minimum, include a floor plan showing the location of exits, how to identify a fire alarm (i.e., the sound and, if visual alarm notification devices are provided, appearance), and state "In case of emergency, dial 9-1-1." (CCR Title 19)

Temporary Bedridden Clients:

Clients who become temporarily bedridden may continue to be housed on any story in homes classified as Residential Care Facilities for the Elderly (RCFE). Every RCFE admitting or retaining a bedridden resident shall, within 48 hours of the resident's admission or retention in the facility, notify the VFPD of the estimated length of time the resident will retain his or her bedridden status in the facility. (CBC 435.3.2, CBC 435.10)



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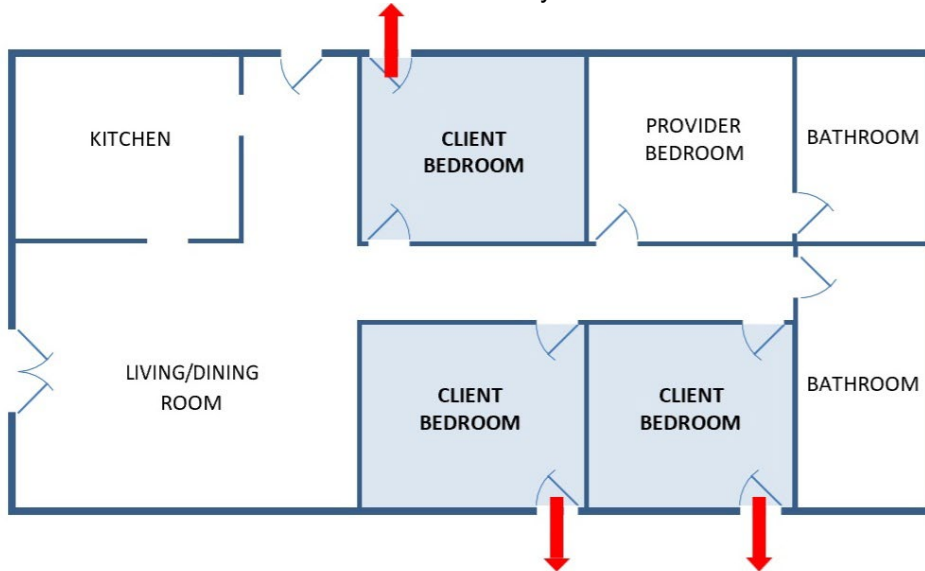
FIRE SAFETY STANDARD

RESIDENTIAL CARE FACILITY

Attachment 1- Exiting Configurations for Client Bedrooms

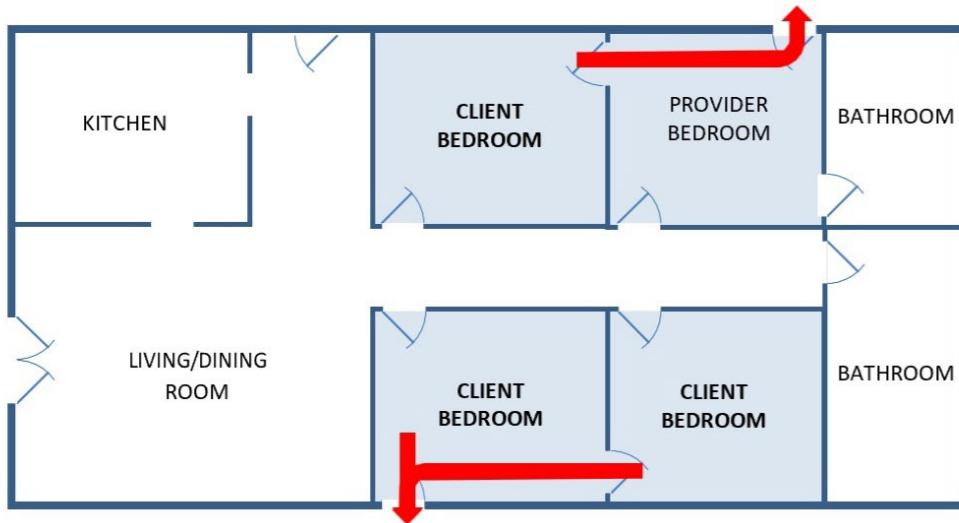
Condition #1

Exit from Bedroom Directly to Exterior



Condition #2

Exit Through Adjacent Bedroom, then to Exterior





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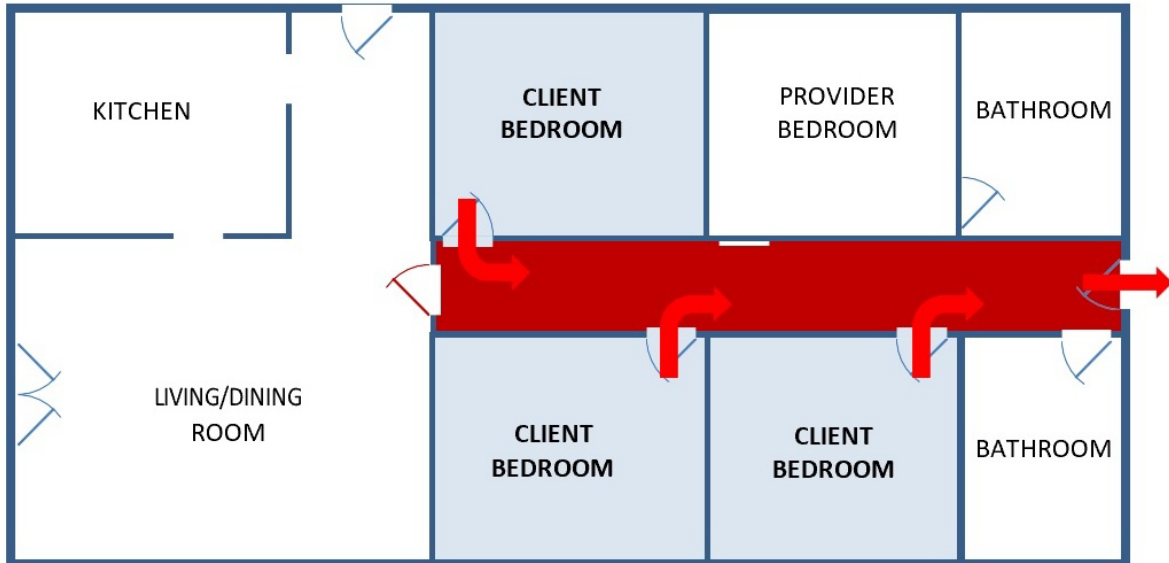
FIRE SAFETY STANDARD

Attachment 1- (continued)

**RESIDENTIAL CARE FACILITY
Condition #3**

Exit from Bedroom into Hallway, then to Exterior

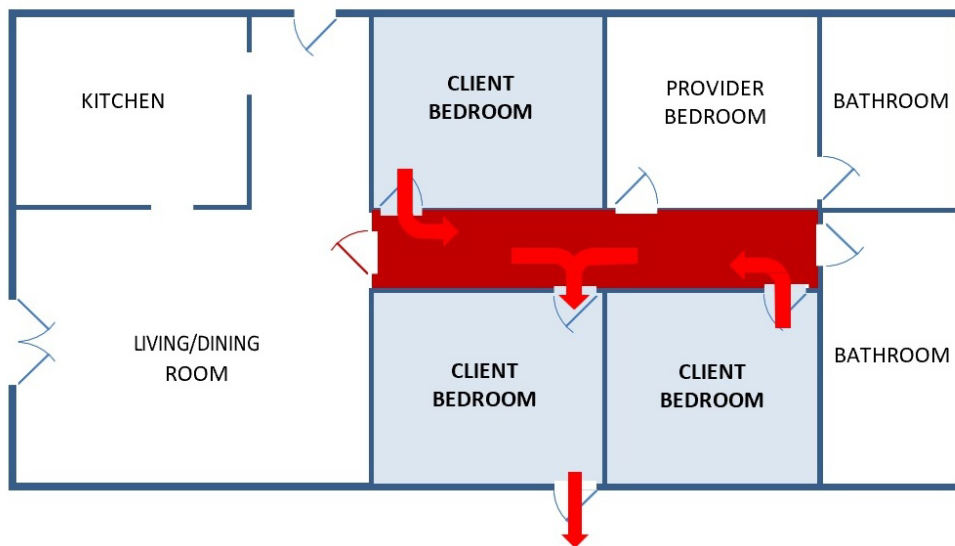
NOTE: When the hallway is part of the exit path, it must be separated from the rest of the home



Condition #4

Exit from Bedroom into Hallway, then to another Bedroom, then to Exterior

NOTE: When the hallway is part of the exit path, it must be separated from the rest of the home





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RESIDENTIAL CARE FACILITY

Attachment 2- Business Owner Pre-inspection Checklist

Use this checklist in conjunction with Guideline R-02 to prepare your home for a fire-clearance inspection by VFPD. As the design and use of individual homes can vary, this checklist is not all-inclusive, and other requirements that are not included herein may apply.

GENERAL

- Building modifications have been approved by the building department.
- Garage is not used for a living space unless approved as one by the building department
- Home has minimum 4" high address numbers clearly visible from the street
- No bedridden client rooms are located above or below the first floor.
- Non-ambulatory clients shall not use spaces above the first floor in homes with 3+ stories or >3,000 unless the building is of 1-hour construction

DETECTORS/ALARMS

- Smoke alarms installed in all habitable spaces
- Smoke alarms are interconnected to each other
- Smoke alarms are hardwired with battery back-up
- Smoke alarms are audible throughout the home
- Carbon monoxide alarms installed and functional

EXITING

- Two exit paths from the home to the street are provided; exit paths are clear of obstructions
- Two exit doors from the interior of the home are remotely located from one another
- Each exit path serving common areas in the home goes through no more than one intervening space before reaching an exterior exit door
- Exit paths do not pass through or storerooms, closets, garages, or similar spaces
- Exit paths do not pass through the kitchen, unless the kitchen is completely open to the adjoining room
- Keys are not required to open exit doors/gates in the direction of exit travel
- If there are more than 10 occupants in the home, single action hardware is installed on all exit doors and gates
- All exit doors have minimum 32" clear opening width
- The exit path from each client room matches one of the four required configurations
- Basements and sleeping rooms have emergency escape/rescue openings
- Emergency escape/rescue openings lead to the public way and are accessible to firefighters



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- Bars/grills over emergency escape/rescue openings are openable from the inside

HALLWAY SEPARATION

- If the hallway is part of the exit path from client rooms, it is separated from the rest of the home
- The hallway separation door is self- or auto-closing
- The hallway separation door is solid-core wood, minimum 1-3/8" thick

FLOOR SEPARATION FOR CLIENTS ON THE 2nd+ FLOOR

- Smoke separation has been provided between stories
- The smoke separation door is solid wood core, minimum 1-3/8" thick
- The smoke separation door is positive latching and has a smoke seal
- The smoke separation door is automatic-closing by activation of a smoke detector
- Door glazing is limited to 1296 square inches and no more than 54 inches in any dimension.
- An exterior exit door is provided on the story with clients; if so, the above requirements do not apply

BEDRIDDEN CLIENT IN UNSPRINKLERED HOME

- The bedroom door is self- or auto-closing and has smoke seals
- The bedridden client's room has a direct exit to the exterior; door is operable from the interior and exterior sides
- Doors to the room shall be 1-3/8 thick solid wood
- Doors from the bedroom to other interior spaces do not have night latches, dead bolts, security chains, or any other similar locking device

FIRE EXTINGUISHERS

- 2A:10B:C fire extinguisher has been provided
- Extinguisher is new or has been serviced in the last year
- Extinguisher is mounted to the wall in a visible and accessible location

GENERAL FIRE SAFETY

- No combustibles are stored near water heaters or other sources of ignition
- Door between the dwelling space and garage is in good condition
- Door between the dwelling space and garage is self-closing and latching
- Door between the dwelling space and garage is of proper type
- There are no dog-doors, windows, or openings other than an approved door and permitted ducting between the garage and dwelling space



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FIRE SAFETY STANDARD

R-3 RESIDENTIAL ADULT CARE FACILITY

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see Chapters 9 and 10 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

This information bulletin has been developed to assist development applicants, architects, and contractors in determining the minimum requirements for licensed care facilities housing six or more clients. This occupancy may contain more than six non-ambulatory and/or bedridden clients.

SCOPE

This guideline is intended to provide the minimum requirements necessary for review and approval of care facilities, buildings, structures, or parts thereof housing clients, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services to house six or more clients which may contain more than six non-ambulatory and/or bedridden clients. Plans for residential or commercial care facilities housing more than six clients must be submitted through to the Victorville Fire Prevention Division (VFPD) for approval. This group shall include, but not be limited to, the following:

Assisted Living Facilities such as:

- Residential Care Facilities
- Residential Care Facilities for the Elderly (RCFE's)
- Adult Residential Care
- Congregate Living Health Facilities
- Group Homes
- Residential Care Facilities for the Chronically Ill
- Congregate Living Health Facilities for the Terminally Ill.

Social Rehabilitation Facilities such as:

- Halfway houses
- Community Correctional Centers
- Community Correction Re-Entry Centers

Community Treatment Programs



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**FIRE SAFETY STANDARD
RESIDENTIAL CARE FACILITY**

Work Furlough Programs
Alcoholism / Drug Abuse Recovery or Treatment Facilities

For residential care facilities housing only ambulatory occupants of 6 or fewer, see Guideline R1.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

Department of Social Services (DSS) Form STD 850 must be forwarded to VFPD (via email to fireprevention@victorvilleca.gov) from DSS prior to scheduling your fire clearance inspection. The fireprevention@victorvilleca.gov email is for DSS submissions only. The applicant will be required to set up a Customer Service Portal account so that information, including the invoice and finalized 850 form, can be accessed electronically. Upon completion of the inspection, the 850 form will be completed and returned to the applicant by VFPD. Please be aware that a fee will be charged for the fire clearance if a reinspection is necessary. Please review this guideline thoroughly and complete (Attachment 3) before your inspection to facilitate fire clearance sign-off by VFPD.

At least two weeks before your scheduled fire clearance inspection date, you must submit site and floor plans to VFPD for review via the Customer Service Portal. Your fire clearance inspection request cannot be processed, and your 850 form cannot be completed if VFPD has not received the requested information in time or if the plans are incomplete. If you have questions on the submittal requirements or inspection process, please contact VFPD. Please be aware that clearance from the VFPD does not constitute zoning clearance. Contact the community development or planning department for current zoning information.

- 1) Two sets of engineered dimensioned or scaled site and floor plans which must include:
 - a. Building address
 - b. Occupancy and the location of engineered sprinkler systems
 - c. Smoke detectors / alarms,
 - d. Exit doors, landings, ramps, stairways, steps, sidewalks and gates.
- 2) A detailed letter identifying all intended use and operations of the facility. Include room locations for staff, ambulatory, non-ambulatory and bedridden clients.
- 3) Furniture shall be in place for the inspection.



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4) Addressing:

- a. New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Addressing shall be in accordance with VFPD Standard B-1.

5. Key Boxes:

- a. Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type and shall contain keys to gain necessary access as required by the fire code official.
- b. An approved lock shall be installed on gates or similar barriers when required by the fire code official.
- c. See VFPD Standard A-4 for more key box details.

nn. 4) Emergency Information:

- oo. a. Emergency procedures information printed on a floor plan shall be posted at every stairway landing, at every elevator landing and immediately inside all public entrances to the building. The information shall be representative of the floor level and be posted so that the bottom edge of such information is not located more than 4-feet above the floor, where it can be easily identified. Emergency procedures information shall be printed with a minimum of 3/16-inch non-decorative lettering providing a sharp contrast to the background. Title 19 3.09
- d. Emergency procedures information shall include, but not be limited to that described in subsection (a)(2)(A-D) . Title 19 3.09
 - i) Owner(s) and operator(s) of hotels, motels, lodging houses, high rise office buildings and Group R-2.1 occupancies as defined in the State Building Code (except honor farms and conservation camps) shall appoint a Fire Safety Director, who shall: CCR, Report to owner(s) or operator(s):
 - ii) Coordinate fire safety activities of the facility with the authority having jurisdiction:
 - iii) Conduct, or cause to be conducted, all training as described in subsection (e) for all building employees and maintain records of dates, subjects, and attendance of each training session; and, Develop and maintain a written facility emergency plan acceptable to the authority having jurisdiction. Upon request, the facility emergency plan shall be made physically available at the respective facility to the authority having jurisdiction. Facility emergency plans shall include, but not be limited to the following: CCR, Title 19 3.09



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RESIDENTIAL CARE FACILITY**

- (1) Fire department emergency telephone number 911:
 - (2) Other emergency response telephone numbers;
 - (3) Evacuation or relocation plan for the building occupants;
 - (4) Duties of the Fire Safety Director and other designated emergency personnel;
 - (5) Building employee responsibilities in case of emergency , including individual assignments and reporting responsibilities : and,
 - (6) Procedures to identify and assist the non-ambulatory and physically disabled.
- d) Assure that the requirements of subsection (d)(4)(F), procedures to identify and assist the nonambulatory and physically disabled are accomplished as follows: CCR, Title 19 3.09
- i) Hotels, motels, and lodging houses shall comply with subsection (b)(3):
 - ii) Owners or operators of high-rise office buildings shall maintain a list of all permanent building tenants who have disabilities. Building owners or operators shall be notified in writing by those who have disabilities. Information provided in the list shall include any special emergency evacuation needs and permanent work location of such physically disabled persons. The list shall be located in the building manager's office;
 - iii) (C)(3) Group R-2.1 occupancies as defined in the California Building Code (except honor farms and conservation camps) shall comply with normal hospital policies of assisting patients and guests during an emergency evacuation.
- e) Group R-2.1 occupancies as defined in the California Building Code (except honor farms and conservation camps) shall conduct quarterly fire emergency training for individuals listed in subsection (d)(3). CCR, Title 19 3.09
- i) Fire safety Directors and their designated emergency personnel shall receive training in the identification and use of facility fire safety equipment, communication procedures, people movement procedures, fire prevention practices and their duties outlined in their respective emergency plan. The training curriculum shall be approved by, and made available to the authority having jurisdiction.
 - ii) Individuals designated in subsection (d)(3) shall receive training covering the identification and use of facility fire safety equipment, fire prevention practices and appropriate procedures to follow in the event of a fire.
 - iii) Actual evacuation or relocation of building occupants, pursuant to procedures contained in the emergency plan shall be conducted at least annually by those individuals designed in subsection (d)(3). Appropriate records, including dates, floor or buildings involved, and persons conducting evacuation or relocation procedures shall be maintained and make immediately available to the authority having jurisdiction upon their request. The authority having jurisdiction shall be notified not less than 48 hours in advance of such planned evacuation or relocation. CCR, Title 19 3.09



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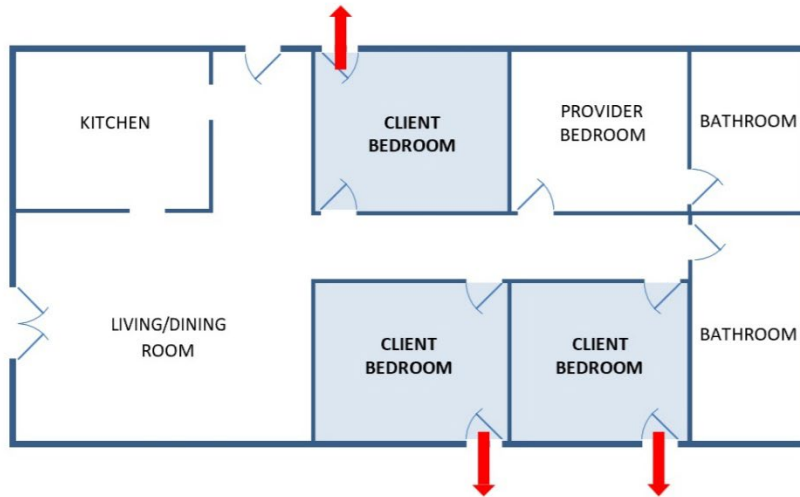
FIRE SAFETY STANDARD

RESIDENTIAL CARE FACILITY

Attachment 1- Exiting Configurations for Client Bedrooms

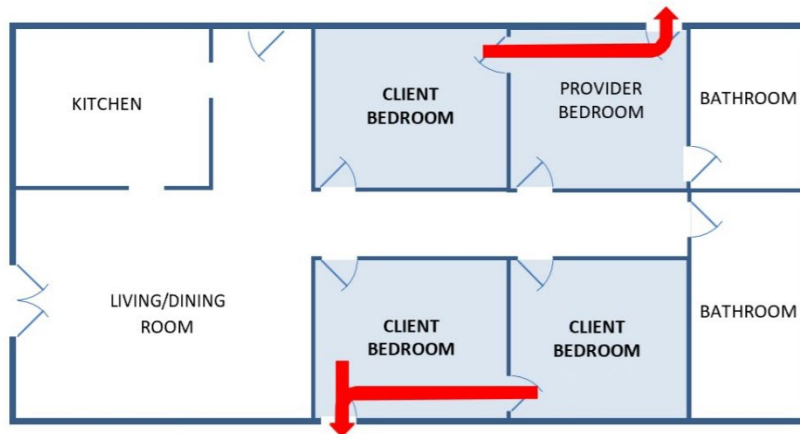
Condition #1

Exit from Bedroom Directly to Exterior



Condition #2

Exit Through Adjacent Bedroom, then to Exterior





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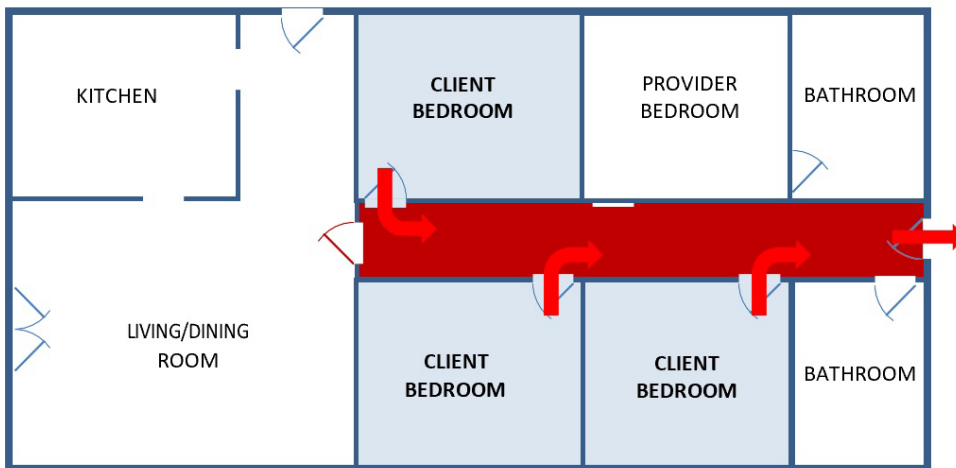
Attachment 1- (continued)

RESIDENTIAL CARE FACILITY

Condition #3

Exit from Bedroom into Hallway, then to Exterior

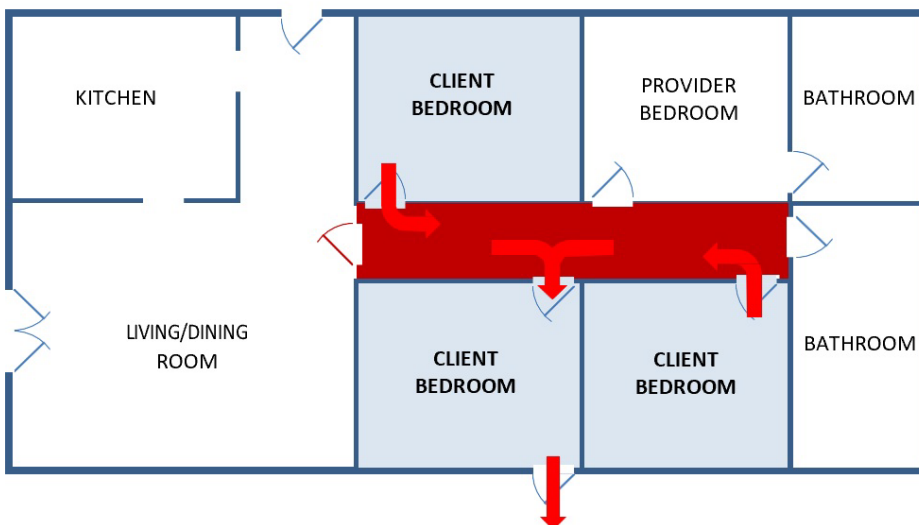
NOTE: When the hallway is part of the exit path, it must be separated from the rest of the home



Condition #4

Exit from Bedroom into Hallway, then to another Bedroom, then to Exterior

NOTE: When the hallway is part of the exit path, it must be separated from the rest of the home





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Attachment 2- Business Owner Pre-inspection Checklist

Use this checklist in conjunction with Guideline R-02 to prepare your home for a fire-clearance inspection by VFPD. As the design and use of individual homes can vary, this checklist is not all-inclusive, and other requirements that are not included herein may apply.

GENERAL

- Building modifications have been approved by the building department.
- Garage is not used for a living space unless approved as one by the building department
- Home has minimum 4" high address numbers clearly visible from the street
- No bedridden client rooms are located above or below the first floor.
- Non-ambulatory clients shall not use spaces above the first floor in homes with 3+ stories or >3,000 unless the building is of 1-hour construction

DETECTORS/ALARMS

- Smoke alarms installed in all habitable spaces
- Smoke alarms are interconnected to each other
- Smoke alarms are hardwired with battery back-up
- Smoke alarms are audible throughout the home
- Carbon monoxide alarms installed and functional

EXITING

- Two exit paths from the home to the street are provided; exit paths are clear of obstructions
- Two exit doors from the interior of the home are remotely located from one another
- Each exit path serving common areas in the home goes through no more than one intervening space before reaching an exterior exit door
- Exit paths do not pass through or storerooms, closets, garages, or similar spaces
- Exit paths do not pass through the kitchen, unless the kitchen is completely open to the adjoining room
- Keys are not required to open exit doors/gates in the direction of exit travel
- If there are more than 10 occupants in the home, single action hardware is installed on all exit doors and gates
- All exit doors have minimum 32" clear opening width
- The exit path from each client room matches one of the four required configurations
- Basements and sleeping rooms have emergency escape/rescue openings
- Emergency escape/rescue openings lead to the public way and are accessible to firefighters



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- Bars/grills over emergency escape/rescue openings are openable from the inside

HALLWAY SEPARATION

- If the hallway is part of the exit path from client rooms, it is separated from the rest of the home
- The hallway separation door is self- or auto-closing
- The hallway separation door is solid-core wood, minimum 1-3/8" thick

FLOOR SEPARATION FOR CLIENTS ON THE 2nd+ FLOOR

- Smoke separation has been provided between stories
- The smoke separation door is solid wood core, minimum 1-3/8" thick
- The smoke separation door is positive latching and has a smoke seal
- The smoke separation door is automatic-closing by activation of a smoke detector
- Door glazing is limited to 1296 square inches and no more than 54 inches in any dimension.
- An exterior exit door is provided on the story with clients; if so, the above requirements do not apply

BEDRIDDEN CLIENT IN UNSPRINKLERED HOME

- The bedroom door is self- or auto-closing and has smoke seals
- The bedridden client's room has a direct exit to the exterior; door is operable from the interior and exterior sides
- Doors to the room shall be 1-3/8 thick solid wood
- Doors from the bedroom to other interior spaces do not have night latches, dead bolts, security chains, or any other similar locking device

FIRE EXTINGUISHERS

- 2A:10B:C fire extinguisher has been provided
- Extinguisher is new or has been serviced in the last year
- Extinguisher is mounted to the wall in a visible and accessible location

GENERAL FIRE SAFETY

- No combustibles are stored near water heaters or other sources of ignition
- Door between the dwelling space and garage is in good condition
- Door between the dwelling space and garage is self-closing and latching
- Door between the dwelling space and garage is of proper type
- There are no dog-doors, windows, or openings other than an approved door and permitted ducting between the garage and dwelling space



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FIRE PREVENTION STANDARD

S-1 HIGH PILE STORAGE/WAREHOUSE BUILDINGS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville Fire Department shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 508 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide the requirements for the protection of high-piled combustible storage (HPS) for a variety of commodities. HPS increases the potential fire hazard within a structure by increasing the vertical height of storage and by providing stability of storage (e.g., rack and automated storage) in a fire situation. The following requirements will ensure that appropriate measures have been taken to provide safety to the public and that the required protection of these commodities has been designed for the appropriate level of hazard as required by the California Fire Code (CFC), Chapter 32. The California Building Code, NFPA 13, City of Victorville Fire Prevention Standards and any other nationally applicable standards, shall still apply.

SCOPE

This standard shall apply to all storage occupancies designated as High Piled Combustible Storage as defined by current California Fire Code (CFC), Chapter 32, the City of Victorville Fire Code and Standards, and any other nationally applicable standards.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Department at (760) 955-5227 to determine if these standards have changed.

These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

At the time of permit application for a high-piled combustible storage permit, plans and specifications, including but not limited to the information listed below, shall be submitted for review and approval. For certain HPS reviews, the services of a design professional familiar with the requirements contained in CFC Chapter 32 may be of great assistance. Once approved, a copy of the approved plan shall be maintained on the premises in an approved location. To determine whether a High-Piled Combustible Storage plan is required to be submitted, please refer to **Attachment S-1.1**.



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If a submittal is required, a sets of plans shall be submitted for review and approval, and shall include the requirements of CFC section 3201.3, items 1-14, plus the following:

- 1) A letter of intent containing a detailed description of the products to be stored and the description of all containers, pallets, and packaging materials. This letter must also include a detailed description of the storage methods (racks, shelves, pallets), the total storage area in square feet, maximum storage height, aisle widths, and flue spaces. Within this letter, state that approved high piled storage plans will be maintained on site for the life of the HPS system(s). An authorized officer of the company or business must sign this letter. The letter shall be copied onto the plans.

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- 2) A scaled site plan that shows the entire building, including all fire access lanes, fire hydrants, fire department connection, and fire sprinkler risers.

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- 3) The designation of a high-piled combustible storage area, or portion thereof intended for storage of a different commodity class, shall be based on the highest hazard commodity class stored, unless an engineering analysis has been submitted for review and approval.

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- 4) Note: In buildings with multi-tenant spaces, the plan shall show if the tenant spaces within the building are separated by a one-hour fire barrier, or that the adjacent tenant(s) does not have HPS. In the event that the adjacent tenant(s) has HPS and are not separated by a one-hour fire barrier per CBC Section 707, the aggregate of all areas of HPS within the building shall be used for the application of Table 3206.2. Additionally, the provisions of CFC 3206.3.2 for multiclass high-piled combustible storage areas shall apply.

ss.

- 5) The sprinkler design requirements based on commodity type, aisle width, and sprinkler temperature rating as outlined in NFPA 13 (e.g., .45/3000 with 286-degree heads). A complete sprinkler design shall be submitted under a separate permit by a C16 licensed sprinkler contractor.

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- 6) The location, make, model, type, and automatic link temperature of any automatic/manual release smoke/heat vents.

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- 7) Mechanical Smoke Exhaust. If the building is equipped, the plans shall show location, size, operation, supply air, interlocks, wiring and control.

vv.

- 8) Fire control room location.

ww.

- 9) Pallet/commodity stop details for maintaining the required flue space (**See Diagram S-1.1**).



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DEFINITIONS

COMMODITY ANALYSIS- A questionnaire, which is required to be answered pertaining to the identity and description of stored materials. This standardized format will provide vital information to help determine the required fire protection needed for warehouse business. This information shall be filed, as a record of the business, and as part of the application permit. (**See Attachment S-1.1**)

FIRE CONTROL ROOM- A central control station room for fire department operations housing the fire alarm control panel, fire protection systems site map, mechanical exhaust controls, etc.

ENCAPSULATED STORAGE- Encapsulated commodities are products wrapped on six sides with plastic. Sprinkler water is not able to penetrate into the commodity if it is encapsulated. Typically, encapsulated products require a higher level of fire sprinkler protection.

EXPANDED PLASTIC- A foam or cellular plastic material having a reduced density based on the presence of numerous small cavities or cells dispersed throughout the material.

EXTRA-HIGH-RACK COMBUSTIBLE STORAGE- Storage on racks of Class I, II, III or IV commodities which exceed 40 feet in height and storage on racks of high-hazard commodities which exceed 30 feet in height.

HIGH-PILED COMBUSTIBLE STORAGE- The storage of combustible materials in closely packed piles or combustible materials on pallets, in racks, or on shelves where the top of storage is greater than 12 feet in height. Where required by the fire code official, high-piled combustible storage also includes certain high-hazard commodities, such as rubber tires, Group A plastics, flammable and combustible liquids, idle pallets, and similar commodities where the top of storage is greater than 6 feet in height.

HIGH-PILED STORAGE AREA- An area within a building which is designated, intended, proposed or actually used for high-piled combustible storage, including operating aisles.

NON-ENCAPSULATED STORAGE- Non-encapsulated commodities are products which may be wrapped on four or five sides, with the top remaining open to permit fire sprinkler water to penetrate within the pile.

OPEN RACK- Racks without shelving or with shelving in racks that are fixed in place with shelves having a solid surface and shelf area equal or less than 20 sq ft or with shelves having a wire mesh, slatted surface, or other material with openings representing at least 50 percent of the shelf area including the horizontal area of rack members and where the flue spaces are maintained.



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PALLET/COMMODITY STOPS- A method of restricting the positioning of pallets on a rack so as to not obstruct the required longitudinal flue space. **(See Diagram S-1.1).**

RACK STORAGE- A combination of vertical, horizontal, and diagonal members that support stored materials. Racks can be fixed or portable.

SHELF STORAGE- Storage on structures up to and including 30in. deep and separated by aisles at least 30 in. wide. For larger shelves and other storage arrangements see Rack Storage.

SOLID SHELVING- Shelving that is fixed in place, slatted, wire mesh, or other type of shelves located within racks. The area of a solid shelf is defined by perimeter aisle or flue space on all four sides or by the placement of loads that block openings that would otherwise serve as the required flue spaces. Solid shelves having an area equal to or less than 20 square feet are defined as open racks. Shelves of wire mesh, slats, or other materials more than 50 percent open and where the flue spaces are maintained are defined as open racks.

GENERAL

- 1) Fire-protection and life safety features for high-piled storage areas shall be in accordance with the currently adopted CFC Chapter 32, the current edition of NFPA 13 and other nationally recognized standards approved.
- 2) Plans and specifications shall be submitted to City of Victorville Fire Prevention Division. A CFC permit is required when a building or portion thereof is used for high-piled storage that exceeds 500 square feet in area. All permits will be issued following plan approval and completion of corresponding inspections of the HPS installation. CFC permits for high-piled storage shall be renewed annually, or upon a change in commodity or configuration. A previously approved HPS plan may be used for renewing permits, unless changes in the storage configuration and/or commodity result in the need for a new plan review, update and/or approval.

TECHNICAL ASSISTANCE

Due to the complex building design requirements specified within the CFC and adopted standards, the Fire Code Official is authorized to require a technical report and plans with the stamp and signature of a professional engineer, and it is often necessary to obtain the service of a fire protection design professional to assist with developing a protection scheme that meets the requirements of both the California Building and Fire Codes. This requirement will be determined by the plans reviewer and/or if, the commodities being stored are High Hazard or Group "A" plastics or similar commodities.

FIRE CONTROL ROOM

A central control station room for fire department operations shall be provided. The location and accessibility of the central control station room shall be approved by the Fire Code Official. The



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central control station room shall be separated from the remainder of the building by not less than a one-hour fire-resistive occupancy separation. When the building is required to have a fire pump to maintain the required fire flow, the fire control room shall be located adjacent to the fire pump house. The room shall be a minimum of 96 square feet with a minimum dimension of 8 feet (2438 mm). It shall contain the following as a minimum:

- 1) The fire alarm control panel and system site map. The site map is to be a plexiglass floor plan with LED lights to indicate the locations and status (alarm, trouble, operating, etc) of all sprinkler risers, fire suppression water valves, mechanical smoke removal systems, roll down fire doors, etc.
- 2) Status indicators and controls for mechanical smoke removal system.
- 3) Sprinkler valve and water-flow detector display panels.
- 4) Schematic building plans indicating the typical floor plan, means of egress, fire- protection systems, firefighting equipment and access.
- 5) Other fire-protection equipment and system controls as required by the Fire Code Official.
- 6) Lighting for the central control station shall have emergency lighting powered by the standby electrical system.
- 7) Provide signage on the door stating, "FIRE CONTROL ROOM". Letters are to be minimum 4" high with 1: stroke, red on a white background.
- 8) The Knox lockbox for the building shall be located at the fire control room.

SPRINKLER SYSTEMS

- 1) Fire sprinkler systems shall be designed in accordance with the current edition of NFPA 13 and Fire Dept Standard F-1 to protect the commodity class of the materials being stored.
- 2) Where more than two sprinkler systems protect the high pile storage area, the components of the systems shall be individually identified to allow easy recognition of the system in question. Any method of identification approved by the Fire Code Official may be used (colored tapes, paint, numbers, letters, etc). At a minimum, the following components shall be identified: risers, cross mains, branch line tails, fire hose connections.

BUILDING ACCESS

- 1) Where building access is required by the fire code, fire apparatus access roads shall be provided to within 150 feet of all portions of the exterior walls of the building used for high-piled storage.
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- 2) Exception: Where fire apparatus access roads cannot be installed because of topography, railways, waterways, non-negotiable grades or other similar conditions, the Fire Code Official is authorized to require additional fire protection.
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- 3) Where access doors are required, fire department access doors shall be provided in each 100 linear feet, or fraction thereof, of the exterior walls which face the required fire apparatus access roads. Access doors shall not be less than 3 feet in width and 6 feet 8 inches in height. Roll-up



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doors shall not be used unless approved by the Fire Code Official.

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- 4) Access doors shall be numbered. Numbers shall be minimum three (3) inch, contrasting color, located in the top half of the door, inside and outside of the door.

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- 5) Where fire department hose connections are required in the building, the doors that provides access to these connections shall have a blue reflector (hydrant marker) attached to the wall to identify the access to the hose connection (see Standard W-2 for specifications of the hydrant markers).

FLUE SPACES

- 1) Flue spaces shall be provided in accordance with Table 3208.3. Required flue spaces shall be maintained. Single and double-row racks shall be equipped with a transverse flue space. A mechanical means shall be provided to maintain the transverse flue space at the uprights. Transverse flue spaces between uprights shall be marked with a 3 or 6 inch yellow strip on the load beam with words in red that read, "Keep Clear," as indicated below. Durable vinyl tape, paint, or other methods as approved by the Fire Code Official may be used.
- 2) Double-row racks shall be equipped with a pallet/commodity stop along the longitudinal flue space at each level. The stop along the longitudinal flue space shall be steel or other ferrous material $\frac{1}{4}$ " thick and, in the mounted position, shall extend a minimum of 4 inches above the shelf or cross member, or other method (i.e., 12-gauge chain link) approved by the fire code official (**See Diagram S-1.1**).
- 3) In double-row racks, where products are hand-stacked, chain link shall be securely attached to the rear of both racks. The chain link shall be a minimum of 12 gauge. Attachment method shall be as approved by the fire code official.

NOTE: Regardless of the design of the pallet stop, the longitudinal flue space shall be measured from the back of the pallet stop to the back of the opposing pallet stop. Transverse flue space is measured as the distance between the loads, not the distance between the racks. A flue space's net width is a measure of its gross width minus any horizontal obstructions, such as rack uprights, located within the flue space. In other words, a rack upright (typically 3 in. wide) is not considered a flue space, due to the cross bracing used.

MECHANICAL SMOKE REMOVAL

Mechanical smoke removal systems shall be provided for buildings protected by ESFR sprinkler systems as required by the Fire Code Official. The mechanical smoke removal systems shall meet the requirements of the Fire Code and the following:



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- 1) Override controls for the smoke exhaust system shall be located in the fire control room. Controls shall allow the fire personnel to turn each fan on or off individually, with operational status indicators.
- 2) Maximum spacing for fans: within 150' of perimeter walls, no greater than 250' between fans.
- 3) Fans are to be evenly spaced throughout the roof area.



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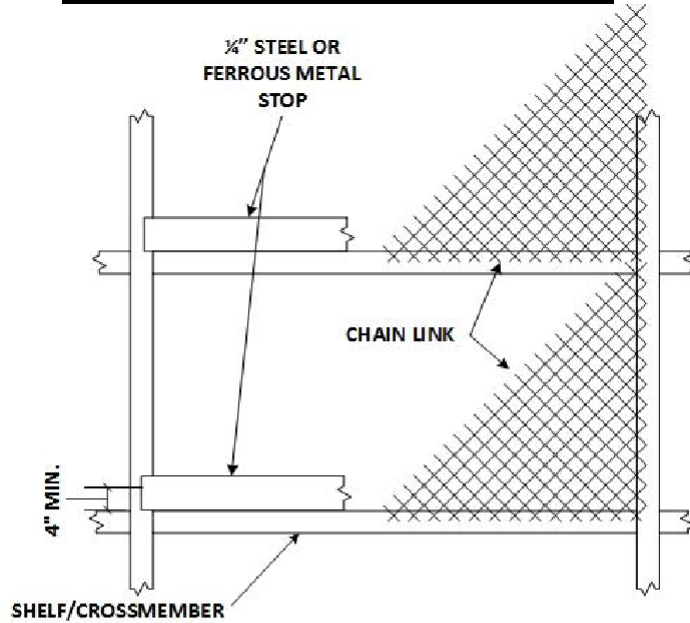
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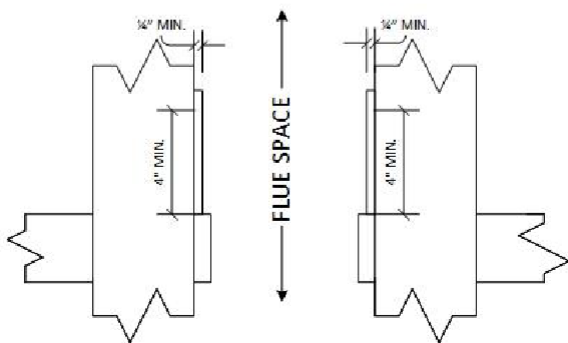
Revision Date:
11-30-22

FIRE PREVENTION STANDARD HIGH PILE STORAGE/WAREHOUSE BUILDINGS

DIAGRAM S-1.1 PALLET STOP DETAILS



SIDE VIEW



11



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FIRE PREVENTION STANDARD HIGH PILE STORAGE/WAREHOUSE BUILDINGS

ATTACHMENT S-1.1

High Pile Storage (HPS) Required Information

The following information shall be completed and copied onto the HPS plans for all projects within City of Victorville jurisdiction:

Commodity Classification: I II III IV High Hazard Group A plastic Commodity

description: _____

Cartoned Free flowing Non-expanding Encapsulated Non-encapsulated
Other _____

The area designated in the building and used for high piled storage is _____ square feet.

CLASS _____ commodity, _____ sq ft.

CLASS _____ commodity, _____ sq ft.

CLASS _____ commodity, _____ sq ft.

The maximum permitted storage height (solid pile _____ rack _____)

The following storage methods are employed at this facility:

Solid pile storage Palletized Single row rack Double row rack Multi-row rack

Other _____

Rack storage shelf: N/A Load beam only Wire mesh Wood slates Plywood

Other (Describe): _____

Minimum distance between top of storage and sprinkler _____

Smoke vents required: Yes No

Operation of smoke vents (if applicable)

Manual Automatic via fusible link which releases at _____ degree F.

(Note: New installations require manual & automatic release)

Inspection Report shall indicate which vents were tested

Draft Curtains Required? Yes No

The overhead fire sprinkler system utilizes the following heads:

ESFR: K _____ at _____ PSI with _____ degrees F heads



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Standard Coverage Heads: K _____ Pendant ____ Upright _____ degrees F with a density of _____ gpm over _____ square feet spaced at a maximum of _____ square feet per fire sprinkler

The fire sprinkler system density and area of application for the storage area is _____ gpm over _____ square feet

In-rack sprinklers required? Yes ____ No ____

There is/are _____ level(s) of in-rack fire sprinkler protection.

The aisles between the racks shall be maintained at _____ feet.

Fire Doors required? Yes ____ No ____

Flue Spaces required? Yes ____ No ____

Flue space between racks shall be maintained a minimum of:

Transverse _____" clear. Must be vertically aligned (for storage >25')

Longitudinal _____" clear

Column protection required? Yes ____ No ____

Pallet Stops Required? Yes ____ No ____

Longitudinal pallet stop configuration:

Chain Link Roll Form "C" Channel Transverse

Flue Pallet Stop configuration:

Mechanical means (flue keepers, etc.) Load beam markings "Keep Clear"

Hand Stack? Yes ____ No ____ # of tiers: _____ Chain link required? Yes ____ No ____

Wooden palletized storage shall not exceed 5 feet? Yes ____ No ____

Storage configuration and height delineated by indication on floor or walls. Yes ____ No ____

Additional conditions



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FIRE PREVENTION STANDARD

Standard Number

S-2

Revision Date:
11-5-25

S-2 AUTO WRECKING AND STORAGE YARDS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide guidance for the safe operation of auto wrecking and storage yards, and to minimize the risk of fires and thus provide improved protection against injury, life loss, and property damage.

SCOPE

This standard shall apply to the use and operation of automotive wrecking and storage yards.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed.

These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

GENERAL

Automobile wrecking yards shall be in accordance with this standard.

FIRE APPARATUS ACCESS ROADS

- 1) Fire apparatus access roads shall be provided in accordance with the current California Fire Code, Victorville Municipal Code, and City of Victorville Fire Prevention Standards A1, A2, A3.
- 2) Fire apparatus access roads shall not be obstructed by any vehicles or storage at any time.

FIRE HYDRANTS

- 1) Required fire flow for auto wrecking and storage yards is 1500 GPM at 20 PSI.
- 2) Fire hydrants shall be spaced at three hundred (300) feet apart, with no part of the building more than one hundred fifty (150) feet from any hydrant. Additional on-site hydrants may be
- 3) required by the Fire Code Official.



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FIRE PREVENTION STANDARD

AUTO WRECKING AND STORAGE YARDS

HAZARDOUS MATERIALS

- 1) Contact the Hazardous Material Division of San Bernardino County Fire Department Office of Fire Marshal (CUPA) and submit a Business Emergency/Contingency Plan.
- 2) Obtain a valid EPA ID number.
- 3) Motor vehicle fluids shall be drained from salvage vehicles when such fluids are leaking. Flammable and combustible liquids shall be stored in accordance current California Fire Code, Victorville Municipal Code, and all applicable Hazardous Materials and Hazardous Waste Generator laws and regulations.
- 4) Lead-acid Batteries shall be stored in a covered storage area on an impervious surface with secondary containment, or in a non-leaking container with a lid, and properly managed.
- 5) All storage containers shall be properly labeled.
- 6) Safety Data Sheets shall be current and available for viewing.
- 7) Compressed gas cylinders shall be secured to prevent falling due to contact, vibration or seismic activity per the current California Fire Code and Victorville Municipal Code.
- 8) Stored vehicles shall have a barrier between the fluid leaks and the ground.
- 9) Provide secondary containment for all hazardous liquids.
- 10) A minimum of one 4A40BC fire extinguisher shall be readily available and the individual employees shall be trained in the proper use of the fire extinguisher.

HOT WORK

- 1) Welding and cutting shall not be conducted in areas where flammable liquids or combustibles are in close proximity. A welding permit is required.
- 2) Appropriate shielding shall be provided, along with a fire watch during hot work operations.
- 3) Combustible material shall be cleared a minimum of 35 feet radius from hot work area.
- 4) A least one portable fire extinguisher with a minimum rating of 4A40BC shall be readily accessible within 30 feet of the location where hot work is performed.
- 5) All containers, cylinders, and tanks shall be secured and stored per the current California Fire Code and Victorville Municipal Code.

HOUSEKEEPING

- 1) Combustible debris and vegetation shall be removed from the location and placed in approved containers.



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AUTO WRECKING AND STORAGE YARDS

- 2) Oily rags shall be kept in an approved metal container with a self-closing metal lid.

TIRE STORAGE

- 1) Tire storage shall be in accordance with California Fire Code, Chapter 34, and Victorville Municipal Code. Note: when deemed a hazard, the Fire Code Official may require smaller pile dimensions.
- 2) Individual tire pile storage shall not exceed 5,000 square feet of continuous area. Pile width shall not exceed 50 feet. Piles shall not exceed 50,000 cubic feet in volume or 10 feet in height.
- 3) Separation between tire piles and between other stored products shall be a minimum of 40 feet.
- 4) Tire pile distance from property lines and buildings shall be 50 feet.
- 5) Tire storage piles with less than 500 tires shall be permitted to be located 10 feet from property lines and buildings. Piles shall not be higher than 6 feet within 20 feet from building(s) and property line(s).
- 6) Interior rack storage of tires shall comply with the current California Fire Code and Victorville Municipal Code.



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FIRE PREVENTION STANDARD

Standard Number

W-2

Revision Date:
11-5-25

W-2 ONSITE FIRE PROTECTION WATER SYSTEMS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville Fire Prevention Division shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 507 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to serve as a guideline to the current edition of NFPA 24 and NFPA 25 CA for establishing an on-site private water supply capable of providing an adequate water supply for firefighting purposes, as determined by the requirements in the Fire Code.

SCOPE

This standard establishes minimum requirements for the installation and maintenance of all private fire hydrants and appliances related to an onsite fire protection system.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The following shall be submitted to the Fire Prevention Division for approval and permit prior to performing any work on any fire sprinkler system:

- 1) A completed City of Victorville Fire permit application
- 2) A set of detailed plans describing the work to be done. (For information on what must be included on plans, see sections below in this Standard and the City of Victorville Plan Submittal Checklist.)
The designer of the system shall provide a certification statement with the following text verbatim:
"I certify that the design of the water system is in accordance with the requirements of the City of Victorville".
- 3) Manufacturer's specifications sheets (cut sheets) for all proposed materials and equipment.



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- 4) A water flow test report from the water purveyor dated within one (1) year of submittal.
- 5) Any other important details and information as required by this Standard.
- 6) Payment of all appropriate fees.
- 7) No work shall commence until plans are approved by the Fire Prevention Division and/or the water company having jurisdiction.

UNDERGROUND PIPING SYSTEMS

- 1) Commercial/industrial projects with a building(s) exceeding 100,000 square feet or a private underground supply that serves five (5) or more sprinkler risers or fire hydrants shall be required to have a looped fire line system with a minimum of two (2) points of connection to the public and/or private water source.
- 2) Underground pipe shall be laid with the identification data facing up to permit inspection and verification of pipe nomenclature.
- 3) Thrust blocks or restrained joints shall be provided as per NFPA 24 and (Figure W-3.1).
- 4) When plastic mains are installed, they shall be marked with 12-gauge tracer wire, taped to the top of the pipe, or with approved tracer tape installed in the trench according to the manufacturer's instructions.
- 5) Underground sprinkler piping serving fire sprinkler systems shall be installed in accordance with City of Victorville Standard W-2 and the current edition of NFPA 13 and NPFA 24.
- 6) Post Indicator Valves (PIVs) and Fire Department Connections (FDCs) serving fire sprinkler systems shall be installed in accordance with City of Victorville Fire Prevention Standard F-4 and the current edition of NFPA 13 and NFPA 24.

FIRE HYDRANT DISTANCES

- 1) All fire hydrants, public and private, shall be located within one hundred fifty (150) feet from all portions of the building(s) to be protected, as measured along approved fire apparatus access routes.
- 2) In no case shall fire hydrants be closer than twenty-five (25) feet to any building, unless approved by the Fire Code Official.
- 3) Public fire hydrants installed to support a fire sprinkler system shall not exceed fifty (50) feet from the fire department connection nor be closer than three (3) feet. **(See Diagram W-2.1).**



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FIRE HYDRANT SPACING

- 1) RESIDENTIAL AREAS (SINGLE-FAMILY):
- 2) Single-family residential developments may have spacing between hydrants no more than six hundred (600') feet, and the hydrant shall not be more than three hundred (300') feet (as measured along vehicular travel ways) to the main driveway on the address side of the proposed single-family structure.
 - a. Shorter hydrant spacing may be required by local ordinances and regulations.
- 3) MULTIPLE FAMILY RESIDENTIAL, INDUSTRIAL, AND COMMERCIAL AREAS:
 - a. Public fire hydrants shall be installed on public streets at distances no greater than three hundred (300') feet between each appliance.
 - b. Public fire hydrants shall be required on both sides of a public street if the public right-of-way exceeds eighty (80') feet.
 - c. Private on-site fire hydrants may be required if any portion of the building(s) to be protected exceeds three hundred fifty (300') feet from the public fire hydrant as measured along vehicular travel-ways.

HYDRANT SIZE, INSTALLATION, LOCATION AND TYPE

- 1) The centerline of the riser shall be normally two (2') feet behind the curb face, unless otherwise approved by the Fire Code Official. (**See Diagram W-2.2**).
- 2) Where curbs and/or sidewalks exist, the centerline of the bottom outlet must be no lower than eighteen (18") inches and no higher than twenty-four (24") inches above the finished grade. In the absence of a curb, set the center of the bottom outlet no lower than eighteen (18") inches and no higher than twenty-four (24") inches above the crown of the road (the crown of the road is the highest point in the middle of the roadway) and provide steel pipe barricades, four (4") inches in diameter filled with concrete, three (3) feet from the hydrant so as not to obstruct the outlets and valve nuts. (**See Diagram W-2.2**).
- 3) Fire hydrant shut-off valves (street valves) shall be located in the drive aisle, directly in front of the 4" port, 3' to 10' from the hydrant, covered with a metal valve box cover painted blue. (**See Diagram W-2.3**).



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- 4) No fire hydrant shall be installed closer than five (5') feet from the edge of driveway aprons.
- 5) Fire hydrants on cul-de-sacs shall be located between the short portions of 2 driveways and shall not be located at the end of the cul-de-sac. On main-line extensions, fire hydrants shall not be located at the end of the line. There shall be a blow-off at the end of line, if required by the local water purveyor. (**See Diagram W-2.4**).
- 6) Wet barrel fire hydrants shall be manufactured to ANSI and AWWA standards. The six
- 7) (6") inch riser and outlets (two - 2 1/2 inch and one - 4 inch) shall be cast as an integral part of the head. They shall be fastened/locked to the head in such a manner to prevent the unintentional removal of the outlets out of the head.
- 8) Manufacturer's specifications of fire hydrants shall be submitted to the Fire Code Official upon request.
- 9) All hydrants on private property shall be an approved hydrant with breakaway bolts.
- 10) Private dry barrel fire hydrants in areas subject to freezing shall meet the same specifications as local public dry barrel fire hydrants maintained by the local water purveyor. In no case shall a dry barrel hydrant be less than 6" x 4" x 2 1/2" x 2 1/2".
- 11) The exterior of the hydrant head, including the riser, excluding the threads, shall be painted with two coats of primer and two coats of exterior oil-based safety yellow paint.

bbb.

THRUST BLOCKING

- 1) Thrust blocking shall be installed for all fire underground systems where a change in elevation and/or a change in direction occurs.
- 2) The typical concrete rating shall be a minimum rating of 2,500 P.S.I., and with a width typically 1-2 times greater than in height. (see figure W-3.1), contact the City of Victorville Engineering Department to confirm specifications.

WATER MAIN SIZES

- 1) Multi-residential and Commercial-Industrial water main size - shall be determined by the required fire flow.
- 2) Final flow tests shall be made by flowing fire hydrants of all new water distribution systems constructed in accordance with approved water plans. The tests shall be observed by the Fire code official and calculated to establish adequate water is provided prior to final inspection.

HYDRANT MARKERS



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- 1) The developer/contractor shall install blue reflective markers in accordance with the following specifications:
 - 2) Markers shall be Ray-O-Lite 2SRPM-DB or equivalent.
 - 3) Adhesive shall be Ray-O-Lite 2SRMESS1 or equivalent.
 - 4) Location of pavement markers: Markers shall be placed eighteen (18) inches from the painted center line (CL) or, if no painted CL exists, eighteen (18) inches from the center of the roadway on the side nearest the hydrant.
 - 5) On a four- (4) lane street with a turn lane at the intersection, the marker shall be eighteen (18) inches from the edge of the turn lane on the side nearest the hydrant.
 - 6) Streets with a median having a hydrant on the roadside shall have markers placed eighteen (18) inches from the edge of the painted line closest to, and on the side nearest the hydrant.
 - 7) Hydrants at an intersection shall have markers placed on both streets.
 - 8) Hydrants on a median shall have a marker eighteen (18) inches from the median edge on both sides of the median.
 - 9) For multi-lane streets with a center turn lane not at an intersection, the marker shall be eighteen (18) inches from the edge of the turn lane on the side nearest the hydrant.
- ccc.
- 10) In areas subject to regular snow coverage, alternative marking devices may be used with the approval of the Fire Code Official.

SYSTEM TESTING

- 1) All underground piping shall be hydrostatically tested in accordance with NFPA 24 and flushed prior to connection to any overhead sprinkler piping.
- 2) It is the underground contractor's responsibility to give proper notification of these tests prior to any piping being concealed.
- 3) At completion of testing, the contractor will provide the Fire Prevention Division Inspector with a completed copy of the Contractor's Material and Test Certification for Underground piping.

SPECIAL CONCERNS

- 1) Special hazard areas, high-rise buildings, and other areas of fire protection not covered in this standard may require special consideration. The contractor is encouraged to contact the Fire Code Official regarding these areas not covered in this standard.



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FIRE PREVENTION STANDARD ONSITE FIRE PROTECTION WATER SYSTEMS

DIAGRAM W-2.1: FIRE HYDRANT AND PIV DETAILS

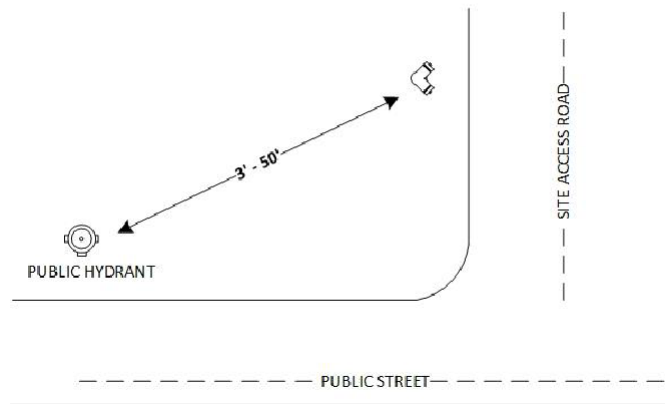
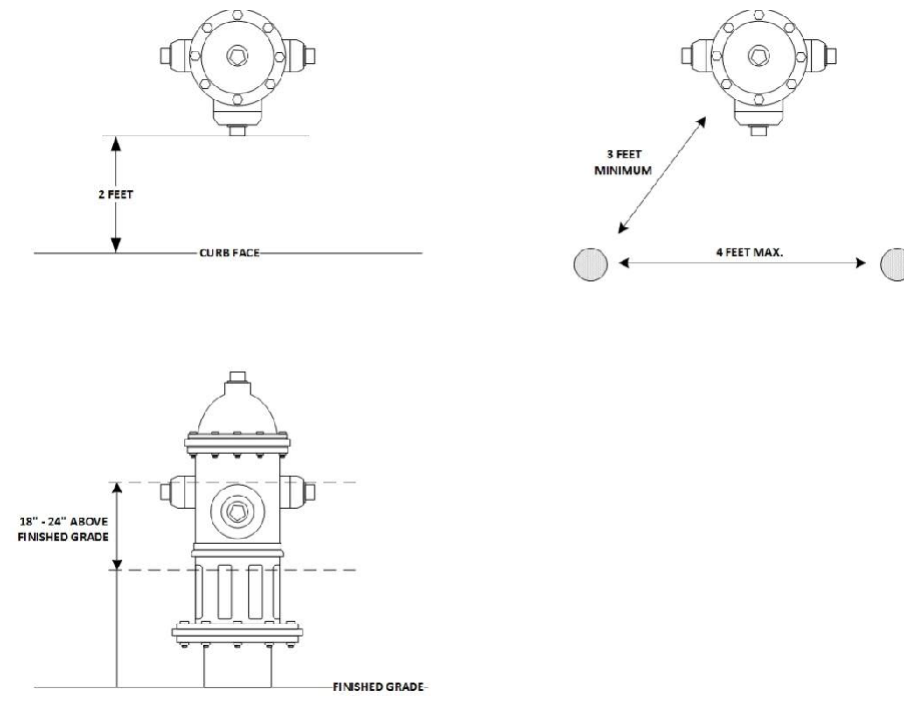


DIAGRAM W-2.2: FIRE HYDRANT INSTALLATION DETAILS





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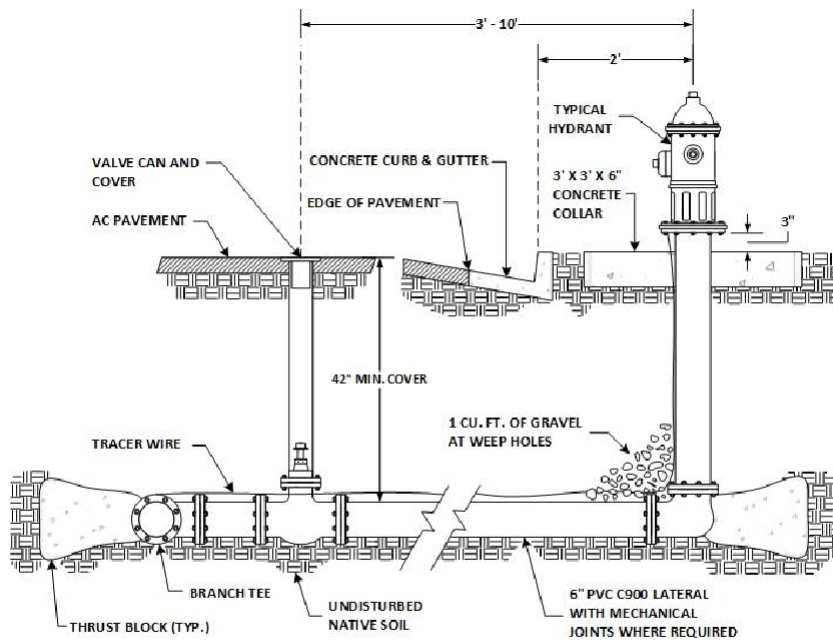
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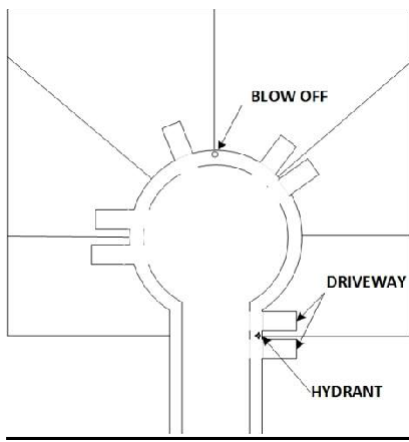
11-5-25

DIAGRAM W-2.3: FIRE HYDRANT INSTALLATION DETAILS



TYPICAL FIRE HYDRANT DETAIL

DIAGRAM W-2.4: FIRE HYDRANT DETAILS





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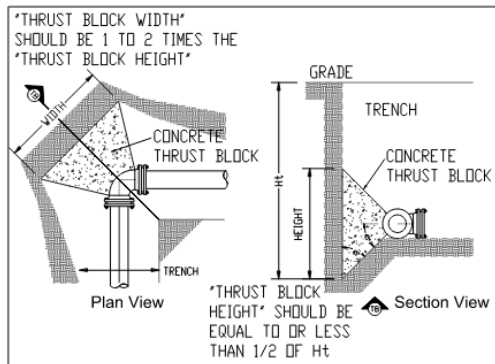
DIAGRAM W-2.5:

3000 PSF - THRUST BLOCK BEARING AREA (S.F.) AND DIMENSIONS (FT.)

PIPE SIZE	TEES / DEAD END			90° BEND			45° BEND			22 1/2° BEND			11 1/4° BEND		
	AREA	WIDTH	HEIGHT	AREA	WIDTH	HEIGHT	AREA	WIDTH	HEIGHT	AREA	WIDTH	HEIGHT	AREA	WIDTH	HEIGHT
4"	2.04	1.75	1.17	2.88	2.08	1.39	1.56	1.53	1.02	0.79	1.09	0.73	0.40	0.77	0.52
6"	4.21	2.51	1.67	5.95	2.99	1.99	3.22	2.20	1.47	1.64	1.57	1.05	0.82	1.11	0.74
8"	7.24	3.29	2.20	10.23	3.92	2.61	5.54	2.88	1.92	2.82	2.06	1.37	1.42	1.46	0.97
10"	10.89	4.04	2.69	15.40	4.81	3.20	8.33	3.54	2.36	4.25	2.52	1.68	2.13	1.79	1.19
12"	15.40	4.81	3.20	21.77	5.71	3.81	11.78	4.20	2.80	6.01	3.00	2.00	3.02	2.13	1.42

AREAS IN THIS TABLE WERE DERIVED USING 225 PSI WATER PRESSURE AND 3000 LB/SQ FT SOIL RESISTANCE. THIS IS BASED UPON NFPA 13, 2022 TABLE A.6.6.1(b) FOR SANDY SILT SOIL TYPES.

NOTE: THRUST BLOCK SIZE REPRESENTS BEARING SURFACE THAT IS AGAINST UNDISTURBED SOIL



TYPE OF FITTING	90° BEND	45° BEND
TYP. INSTALLATION		
TYPE OF FITTING	CROSS w/PLUG	TEE w/PLUG
TYP. INSTALLATION		
TYPE OF FITTING	11 1/4° OR 22 1/2° BEND	TEE OR DEAD END
TYP. INSTALLATION		



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Standard Number

W-4

Revision Date:
11-5-2025

FIRE PREVENTION STANDARD

W-4 TEMPORARY WATER SUPPLY SYSTEMS FOR FIRE PROTECTION

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04⁽⁵⁾ of the City of Victorville Municipal Code provides that the fire code official of the City of Victorville shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 507 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide guidance for the use of temporary fire protection water supply systems during construction.

SCOPE

This standard will allow a developer to begin construction of residential or commercial projects prior to the construction of a permanent water supply. In no way shall this standard be misconstrued to allow occupancy of any project without completion of an approved permanent water supply for fire protection.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed.

These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

- 1) A set of plans shall be submitted to the Fire Prevention Division for approval. These plans shall show all temporary water tanks, lines, and their appurtenances, and shall establish the minimum fire flow needed for the proposed project(s).
- 2) These plans may be designed by a plumbing contractor, civil engineer, or grading contractor.
- 3) No work on the project shall commence until plans are approved by the Fire Code Official.

GENERAL

Prior to the delivery of any combustible materials to any site that does not have a permanent water supply system, a temporary water supply may be installed with the approval of the Fire Code Official, after submittal of a permit application and site plan indicating the tank, hydrants, water lines, etc.

- 1) This water supply may consist of a temporary water line with temporary hydrants when approved by



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the Fire Code Official.

- 2) Hydrants shall be anchored in a manner to withstand the surge of water flowing out of the outlets at high pressure. If required, a 3' x 3' x 3' concrete footing for each hydrant shall be provided, maintained to withstand construction traffic.
- 3) A temporary water supply will consist of an approved elevated water tank containing a minimum of 10,000 gallons of storage capacity. Fire Flow shall be as required by Appendix B of the California Fire Code and Victorville Fire Prevention Standard F-6.
- 4) Temporary hydrants for new developments shall not be more than three hundred (300) feet (as measured along an approved vehicular path of travel) to the main driveway on the address side of the proposed structure.
- 5) Each applicant shall check with the affected water district prior to Fire Code Official approval of connection to any public water system. The required fire flow for the project shall be met during construction.

ABOVEGROUND TANK INSTALLATION

- 1) The tank location and access must be approved by the Fire Code Official prior to delivery of combustible materials to the job site. The temporary water supply system shall be maintained operational at all times.
- 2) The tank shall be elevated a minimum of six (6) feet above grade.
- 3) The tank shall be located within three hundred (300) feet of the most distant building being protected.
- 4) A roadway to the tank capable of supporting fire apparatus shall be provided and maintained during the time that the tank is being used for fire protection.
- 5) The tank shall be kept filled at all times and shall be posted "FOR FIRE DEPARTMENT USE ONLY" The letters shall be six (6) inches high, on a contrasting background, as approved by the Fire Code Official.
- 6) All valves are to be locked with an approved fire department Knox Lock or breakaway lock.
- 7) Four (4) inch suction hose end to be locked to the tank with an approved fire department Knox Lock or breakaway lock.
- 8) Signs stating "NO PARKING WITHIN 100 FEET" shall be posted on all sides of the tank.

ABOVEGROUND WATER LINES

- 1) Aboveground water lines (minimum 6") may be acceptable at the discretion of the Fire Code
- 2) Official. This shall be reviewed on a case-by-case basis.
- 3) Aboveground water lines shall be located to provide protection from construction traffic.