

Sedona Fire District

Access and Water Supplies



The purpose of this guide is to assist contractors and architects with the construction and design of current and future projects within the Sedona Fire District.

The information within this document reflects the 2024 International Fire Code, as amended and adopted by the Sedona Fire District. This guide is **not** all-inclusive and shall be referenced in conjunction with the 2024 International Fire Code.

Contact the Sedona Fire District's Community Risk Reduction Division with any questions or visit the District's website for additional information.

Sedona Fire District
Community Risk Reduction Division

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Fire Department Access

503.1.1: Fire apparatus access roads distance from buildings and turn arounds.

Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building. An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet.

503.3: Proximity to building.

One or more of the required access routes meeting this condition shall be located not less than 15 feet (4572 mm) and not greater than 30 feet (9144 mm) from the building and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be *approved* by the *fire code official*.

503.2.1: Fire apparatus access road width and vertical clearance.

Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for *approved* security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

D105.2: Aerial apparatus road widths.

Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7925 mm), exclusive of shoulders, in the immediate vicinity of the building or portion thereof.

D103.1: Access Road width with a hydrant.

Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see [Figure D103.1](#)).

D102.1: Surface and load capacities. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing up to 75,000 pounds (34 050 kg).

503.6: Security gates.

The installation of security gates across a fire apparatus access road shall be approved by the fire code official. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.

Fire apparatus access road gates: Gates securing the fire apparatus access roads shall comply with all of the following criteria:

- All gates shall be approved by the fire code official
- Electric gate operators, where provided, shall be *listed* in accordance with UL 325
- Gates intended for automatic operation shall comply with the requirements of ASTM F 2200
- The minimum gate width shall be 20 feet (16 feet if approved by the fire code official)
- Gates shall be of the swinging or sliding type

- Construction of gates shall be of materials that allow manual operation by one person
- Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective
- Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be from the “Knox Box” Brand Key Cylinder Entry system and are available for purchase through www.knoxbox.com.
- Manual opening gates shall not be locked with a padlock or chain and padlock unless they are approved by the Sedona Fire District fire code official.
- Locking device specifications shall be submitted for approval by the fire code official

Sedona Fire District Specifications

Security gate requirements:

1. Gates serving only one single family property or domicile shall be a minimum of width 16 feet.
2. Gates serving two or three single-family properties or domiciles (multi-family dwellings not included) or any combination thereof:
 - a. Minimum width 16 feet
 - b. Manually operated gates that are locked shall require the installation of a KNOX® padlock keyed to the type presently employed by Sedona Fire District. This lock is available for purchase from www.knoxbox.com.
 - c. A KNOX® padlock is not required for manually operated gates that are not locked
 - d. Electronically operated security gates shall be equipped with a Sedona Fire District key override cylinder available at www.knoxbox.com. This cylinder shall be keyed to the type presently employed by the Sedona Fire District.
3. Gates serving four or more single family residential properties or domiciles, multi-family dwellings (triplex or larger) and/or commercial developments or properties or any combination thereof:
 - a. Minimum width 20 feet
 - b. Manually operated gates that are locked shall require the installation of a KNOX® padlock keyed to the type currently used by Sedona Fire District. This lock is available for purchase from www.knoxbox.com
 - c. An KNOX® padlock is not required for manually operated gates that are not locked
 - d. Electronically operated security gates shall be equipped with a Sedona Fire District key override cylinder available at www.knoxbox.com. This cylinder shall be keyed to the type presently employed by the Sedona Fire District
 - e. In addition to key operation, a TOMAR (TOMAR Industries, <http://TOMAR.com>) optical sensor 2091-SD or similar, shall be installed.
4. All electronically operated gates require a battery backup system capable of operating the gate during a power outage.
5. All electronically operated gates shall be equipped with a ground-loop activation system or a TOMAR optical sensor and key override cylinder along the path of egress.

6. All gates equipped with a TOMAR optical sensor shall be programmed to remain open for as long as the signal is being transmitted by the emergency apparatus and for a period of not less than 60 seconds after the signal ceases to be sent.
7. Key override sensors shall be programmed to keep the gate open for a period of at least 60 seconds after the cylinder is returned to the momentary operation setting.
8. Gates with multiple fire department approach directions may require multiple TOMAR sensors on the approach side of the gate.
9. Plans shall be submitted to the Sedona Fire Community Risk Reduction Division for review to ensure compliance with the fire code prior to issuance of a permit for the installation of the gate.

503.2.6: Bridges and elevated surfaces.

Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges where required by the *fire code official*. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces that are not designed for such use, *approved barriers*, *approved signs* or both shall be installed and maintained where required by the *fire code official*.

D103.2: Grade.

Fire apparatus access road shall not exceed 10 percent in grade.

Exception: Grades steeper than 10 percent as approved by the *fire code official*.

Note: A 12% grade may be exceeded when an automatic fire sprinkler system is installed, but in no case shall the grade exceed 15 percent.

503.2.4: Turning radius.

The required turning radius of a fire apparatus access road shall be determined by the *fire code official*. (2024 IFC Sec. 503.2.4) The inside turning radius and outside turning radius shall be not less than 28 feet* and 48 feet* respectively, measured from the same center point. – (See diagrams attached) *in certain cases, where topography or other constraints are present, the fire code official may approve a turn radius of less than 28' inside and 48' outside, but in no case shall the turn radius be less than 20 feet inside and 40 feet outside.

D103.4: Dead-end roads.

Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4 (see diagram attached).

503.1.2: Additional access roads.

The *fire code official* is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions, or other factors that could limit access.

- A. Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have not fewer than two means of fire apparatus access for each structure.

- B. Buildings or facilities having a gross *building area* of more than 62,000 square feet (5760 m²) shall be provided with two separate and approved fire apparatus access roads.
- C. Multiple-family residential projects having more than 100 dwelling units shall be equipped throughout with two separate and *approved* fire apparatus access roads.
- D. Multiple-family residential projects having more than 200 *dwelling units* shall be provided with two separate and *approved* fire apparatus access roads regardless of whether they are equipped with an *approved automatic sprinkler system*.

Exceptions may be allowed for an approved automatic sprinkler system. (2024 IFC Appendix D)

D103.6: No Parking signs.

Where required by the *fire code official*, fire apparatus access roads shall be marked with permanent “NO PARKING—FIRE LANE” signs (see attached). Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. The Fire Code Official may require that both signs and painted curbing be installed or allow signs only, painted curbs only, or any combination of the two as conditions warrant.

- A. *Fire lane* signs as specified in Section D103.6 shall be posted on both sides of fire apparatus access roads that are 20 to 26 feet wide (6096 to 7925 mm). (2024 IFC Sec. D103.6.1)
- B. *Fire lane* signs as specified in Section D103.6 shall be posted on one side of fire apparatus access roads more than 26 feet wide (7925 mm) and less than 32 feet wide (9754 mm). (2024 IFC Sec. D103.6.2)
- C. Signs shall read “NO PARKING - FIRE LANE” and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters and border on a white background. (2024 IFC Sec. D103.6) – (See diagram attached). Signs shall be placed no farther than 12.5 feet from the ends of the NO PARKING zone and spaced equally throughout the zone at a distance not to exceed 25 feet.

503.3: Marking.

Where required by the *fire code official*, *approved* signs or other *approved* notices or markings that include the words “NO PARKING—FIRE LANE” shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which *fire lanes* are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility. Where required, fire apparatus access roadway curbs shall be painted red and marked “NO PARKING FIRE LANE” at every 25 feet. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on a red background. The fire code official may require that both signs and painted curbing be installed, or allow signs only, painted curbing only, or any combination of the two, as conditions warrant.

ACCESS ROAD SIGNAGE: Access roads, private or public, shall be marked with approved signs in accordance with City or County standards and comply with Arizona Department of Transportation guidelines.

507.1: Required water supply.

An *approved* water supply capable of supplying the required fire flow for fire protection shall be provided to premises on which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

B105.1: Fire-Flow Requirements for Buildings.

The required fire flow for the building (including applicable reductions in fire flow as allowed by Section B105) shall not exceed 3,000 gallons per minute (GPM) or the available GPM in the water delivery system at 20 psi, whichever is less. Fire flows shall be determined by using table B105.1

B103.1: Decreases.

The *fire code official* is authorized to reduce the *fire-flow* requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full *fire-flow* requirements is impractical.

- A. Required fire flow for rural buildings shall be calculated in accordance with National Fire Protection Association Standard 1142. Please contact the fire code official's office for special help and other requirements that will apply.

Fire Hydrants

507.5.1: Fire hydrant.

Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an *approved* route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the *fire code official*. IFC2024

Exceptions:

1. For Group R-3 and Group U occupancies, the distance requirement shall be 600 feet (183 m).
2. For buildings equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the distance requirement shall be 600 feet (183 m).

C102.1: Minimum number of fire hydrants for a building.

The number of fire hydrants available to a building shall be not less than the minimum specified in Table C102.1.

C103.1: Hydrant spacing.

Fire apparatus access roads and public streets providing required access to buildings in accordance with Section 503 shall be provided with one or more fire hydrants, as determined by Section C102.1. Where more than one fire hydrant is required, the distance between required fire hydrants shall be in accordance with Sections C103.2 and C103.3.

C103.2: Average spacing.

The average spacing between fire hydrants shall be in accordance with Table C102.1.

Exception: The average spacing shall be permitted to be increased by 10 percent where existing fire hydrants provide all or a portion of the required number of fire hydrants.

C103.3: Maximum spacing.

The maximum spacing between fire hydrants shall be in accordance with Table C102.1.

C104.1: Existing fire hydrants.

Existing fire hydrants on public streets are allowed to be considered as available to meet the requirements of Sections C102 and C103. Existing fire hydrants on adjacent properties are allowed to be considered as available to meet the requirements of Sections C102 and C103 provided that a fire apparatus access road extends between properties and that an easement is established to prevent obstruction of such roads.

507.5.6: Physical protection.

Where fire hydrants are subject to impact by a motor vehicle, guard posts or other *approved* means shall comply with Section 312 of the 2024 IFC.

507.5.5: Clear space around hydrants.

A 3-foot (914 mm) clear space shall be maintained around the circumference of fire hydrants, except as otherwise required or *approved*. No parking within 15 feet of hydrants (ARS § 28-873).

Considerations for placing fire hydrants shall be as follows:

- Fire hydrant placement shall be approved by the fire district. All measurements are as the hose is laid by firefighting personnel and apparatus.
- Existing hydrants in the area may be used to meet the required number of hydrants. Hydrants that are over 500 feet away from the nearest point of the subject building shall not contribute to the required number of hydrants.
- Hydrants that are separated from the structure by a divided highway, freeway, or heavily traveled collector street shall not contribute to the required number of hydrants.
- Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the fire code official.
- Fire hydrants shall be placed not more than 15 feet from an approved access roadway unless approved by the *fire code official*.

Fire Department Connections

507.5.1.1: Hydrant for standpipe systems.

Buildings equipped with a standpipe system installed in accordance with Section 905 shall have a fire hydrant within 100 feet (30 480 mm) of the fire department connections.

Exception: The distance shall be permitted to exceed 100 feet (30 480 mm) where *approved* by the *fire code official*.

912.1: Installation.

Fire department connections shall be installed in accordance with the NFPA standard applicable to the system design and shall comply with Sections 912.2 through 912.7.

912.2: Location.

With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be *approved* by the *fire code official*.

912.2.1: Visible location.

Fire department connections shall be located on the street side of buildings or facing *approved* fire apparatus access roads, fully visible and recognizable from the street, fire apparatus access road or nearest point of fire department vehicle access or as otherwise *approved* by the *fire code official*.

912.2.2: Existing buildings.

On existing buildings, wherever the fire department connection is not visible to approaching fire apparatus, the fire department connection shall be indicated by an *approved* sign mounted on the street front or on the side of the building. Such sign shall have the letters "FDC" not less than 6 inches (152 mm) high and words in letters not less than 2 inches (51 mm) high or an arrow to indicate the location. Such signs shall be subject to the *approval* of the *fire code official*.

912.3: Fire hose threads.

Fire hose threads used in connection with standpipe systems shall be *approved* and shall be compatible with fire department hose threads.

912.4: Access.

Immediate access to fire department connections shall be maintained at all times and without obstruction by fences, bushes, trees, walls or any other fixed or moveable object. Access to fire department connections shall be *approved* by the *fire code official*.

Exception: Fences, where provided with an access gate equipped with a sign complying with the legend requirements of Section 912.5 and a means of emergency operation. The gate and the means of emergency operation shall be *approved* by the *fire code official* and maintained operational at all times.

912.4.1: Locking fire department connection caps.

The *fire code official* is authorized to require locking caps on fire department connections for water-based *fire protection systems* where the responding fire department carries appropriate key wrenches for removal.

912.4.2: Clear space around connections.

A working space of not less than 36 inches (914 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided and maintained in front of and to the sides of wall-mounted fire department connections and around the circumference of free-standing fire department connections, except as otherwise required or *approved* by the *fire code official*.

912.4.3: Physical protection.

Where fire department connections are subject to impact by a motor vehicle, vehicle impact protection shall be provided in accordance with Section 312 of the 2024 IFC.

912.5: Signs.

A metal sign with raised letters not less than 1 inch (25 mm) in size shall be mounted on all fire department connections serving automatic sprinklers, standpipes or fire pump connections. Such signs shall read: "AUTOMATIC SPRINKLERS," "STANDPIPES," "TEST CONNECTION," "STANDPIPE AND AUTOSPKR" or "AUTOSPKR AND STANDPIPT" or a combination thereof as applicable.

912.5.1: Lettering.

Each fire department connection (FDC) shall be designated by a sign with letters not less than 1 inch (25.4mm) in height. For manual standpipe systems, the sign shall also indicate that the system is manual and that it is either wet or dry.

912.5.2: Serving multiple buildings.

Where a fire department connection (FDC) services multiple buildings, structures, or locations, a sign shall be provided indicating the building, structures, or locations served. Where the FDC does not serve the entire building, a sign shall be provided indicating the portions of the building served.

912.6: Backflow protection.

The potable water supply to automatic sprinkler and standpipe systems shall be protected against backflow as required by the *International Plumbing Code*.

912.7: Inspection, testing and maintenance.

Fire department connections shall be periodically inspected, tested and maintained in accordance with NFPA 25. Records of inspection, testing and maintenance shall be maintained.

Fire Department Site Access and Water Supply

3307.1: Required access.

Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet (30 480 mm) of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

3307.2: Water supply for fire protection.

An *approved* water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible building materials arrive on the site, on commencement of vertical combustible construction and on installation of a standpipe system in buildings under construction, in accordance with Sections 3307.2.1 through 3307.4.

Exception: The *fire code official* is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

3072.1: Combustible building materials.

When combustible building materials of the building under construction are delivered to a site, a minimum fire flow of 500 gallons per minute (1893 L/m) shall be provided. The fire hydrant used to provide this fire-flow supply shall be within 500 feet (152 m) of the combustible building materials, as measured along an *approved* fire apparatus access lane. Where the site configuration is such that one fire hydrant cannot be located within 500 feet (152 m) of all combustible building materials, additional fire hydrants shall be required to provide coverage in accordance with this section

3072.2: Vertical construction of Types III, IV and V construction.

Prior to commencement of vertical construction of Type III, IV or V buildings that utilize any combustible building materials, the fire flow required by Sections 3307.2.2.1 through 3307.2.2.3 shall be provided, accompanied by fire hydrants in sufficient quantity to deliver the required fire flow and proper coverage.

3072.2.1: Fire separation up to 30 feet.

Where a building of Type III, IV or V construction has a *fire separation distance* of less than 30 feet (9144 mm) from property lot lines, and an adjacent property has an existing structure or otherwise can be built on, the water supply shall provide either a minimum of 500 gallons per minute (1893 L/m) or the entire fire flow required for the building when constructed, whichever is greater.

3307.2.2.2: Fire separation of 30 feet up to 60 feet.

Where a building of Type III, IV or V construction has a fire separation distance of 30 feet (9144 mm) up to 60 feet (18 288 mm) from property lot lines, and an adjacent property has an existing structure or otherwise can be built on, the water supply shall provide a minimum of 500 gallons per minute (1893 L/m) or 50 percent of the fire flow required for the building when constructed, whichever is greater.

3307.2.2.3: Fire separation of 60 feet or greater.

Where a building of Type III, IV or V construction has a fire separation of 60 feet (18 288 mm) or greater from a property *lot line*, a water supply of 500 gallons per minute (1893 L/m) shall be provided.

3307.3: Vertical construction, Type I and II construction.

If combustible building materials are delivered to the construction site, water supply in accordance with Section 3307.2.1 shall be provided. Additional water supply for fire flow is not required prior to commencing vertical construction of Type I and II buildings.

3307.4: Standpipe supply.

Regardless of the presence of combustible building materials, the construction type or the *fire separation distance*, where a standpipe is required in accordance with Section 3307.5, a water supply providing a minimum flow of 500 gallons per minute (1893 L/m) shall be provided. The fire hydrant used for this water supply shall be located within 100 feet (30 480 mm) of the fire department connection supplying the standpipe.

Alarms

903.4.3: Alarms.

An approved audible and visual sprinkler waterflow alarm device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler waterflow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a waterflow switch is required by Section 903.4.1 to be electrically supervised, such sprinkler waterflow alarm devices shall be powered by a fire alarm control unit or, where provided, a fire alarm system. Where a fire alarm system is provided, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

Exception: Automatic sprinkler systems protecting one- and two-family dwellings.

506.1: Where required.

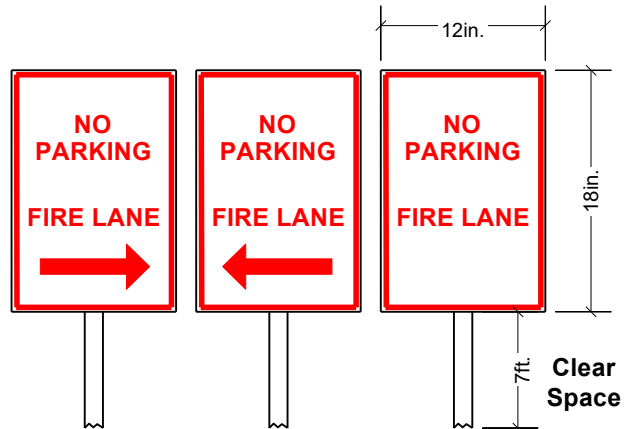
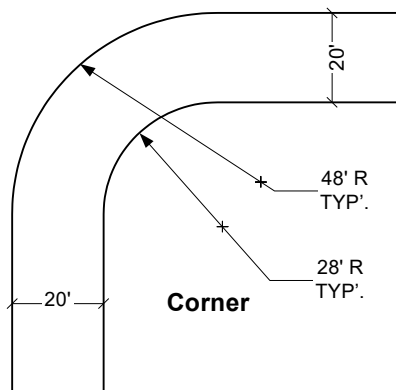
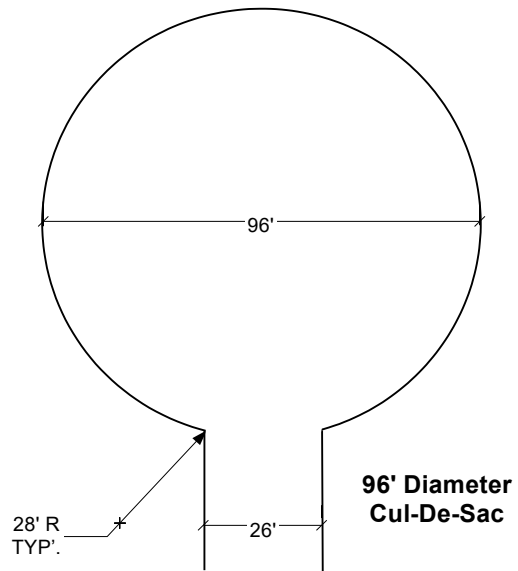
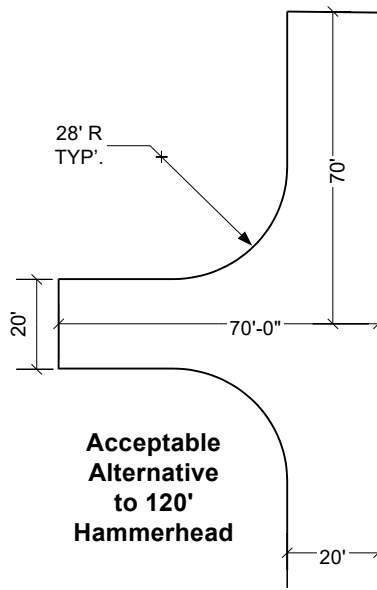
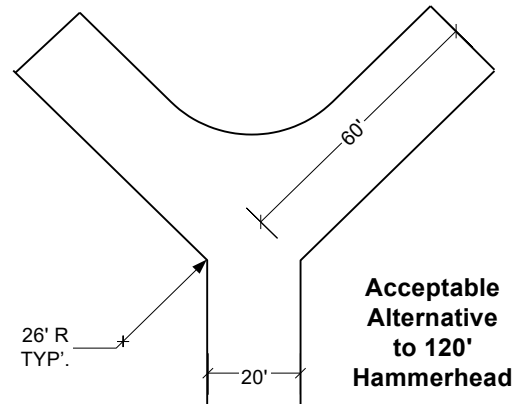
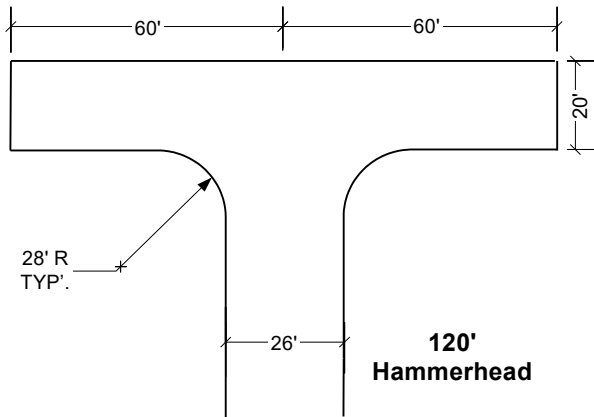
Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or firefighting purposes, the *fire code official* is authorized to require a key box to be installed in an *approved* location. The key box shall be of an *approved* type *listed* in accordance with UL 1037, and shall contain keys to gain necessary access as required by the *fire code official*.

Contact Sedona Fire District's CRR Office for instructions regarding installation and placement. Orders can be made directly from Knox Box at their website, www.knoxbox.com. Please reference Sedona zip code, 86336 for all orders.

505.1: Address identification.

New and existing buildings shall be provided with *approved* address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where required by the *fire code official*, address identification shall be provided in additional *approved* locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the *public way*, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

Dead End, Turning Radius and No Parking Sign Diagrams



Fire Department Access Criteria

The following requirements have been adopted by Sedona Fire District as established minimum access roadway design criteria for fire apparatus to all proposed and newly constructed structures.

Wheel load

Required access roads and streets shall be constructed to support a minimum of 12,500 pounds wheel point load and a gross vehicle weight of 75,000 pounds. Road design and compaction reports verifying load carrying capacity shall be submitted prior to construction. An inspection may be required for final approval.

Wheel load is weight applied to contact area.

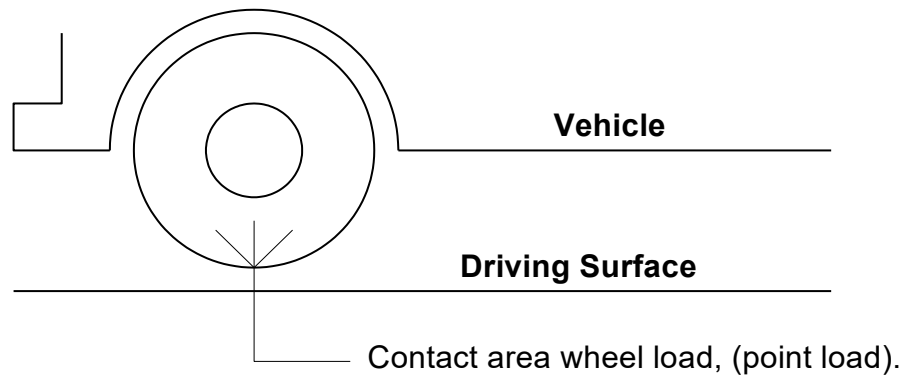


TABLE C102.1 REQUIRED NUMBER AND SPACING OF FIRE HYDRANTS^h

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS^{a, b, c, f,} ^g (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT^{d, f, g}
1,750 or less	1	500	250
1,751–2,250	2	450	225
2,251–2,750	3	450	225
2,751–3,250	3	400	225
3,251–4,000	4	350	210
4,001–5,000	5	300	180
5,001–5,500	6	300	180
5,501–6,000	6	250	150
6,001–7,000	7	250	150
7,001 or more	8 or more ^e	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

- a. Reduce by 100 feet for dead-end streets or roads.
- b. Where streets are provided with median dividers that cannot be crossed by firefighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis.
- c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
- d. Reduce by 50 feet for dead-end streets or roads.
- e. One hydrant for each 1,000 gallons per minute or fraction thereof.
- f. A 50 percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with [Section 903.3.1.1](#) of the *International Fire Code*.
- g. A 25 percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with [Section 903.3.1.2](#) or [903.3.1.3](#) of the *International Fire Code* or [Section P2904](#) of the *International Residential Code*.
- h. The *fire code official* is authorized to modify the location, number and distribution of fire hydrants based on site-specific constraints and hazards.

TABLE D103.4 REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0–150	20	None required
151–500	20	120-foot Hammerhead, 60-foot “Y” or 96-foot diameter cul-de-sac in accordance with Figure D103.1
501–750	26	120-foot Hammerhead, 60-foot “Y” or 96-foot diameter cul-de-sac in accordance with Figure D103.1
Over 750		Special approval required

For SI: 1 foot = 304.8 mm.