CITY OF VICTORVILLE

FIRE PREVENTION DIVISION

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

Standard Number

A-1

Revision Date:
11-5-2025

FIRE PREVENTION STANDARD

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

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

(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

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

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

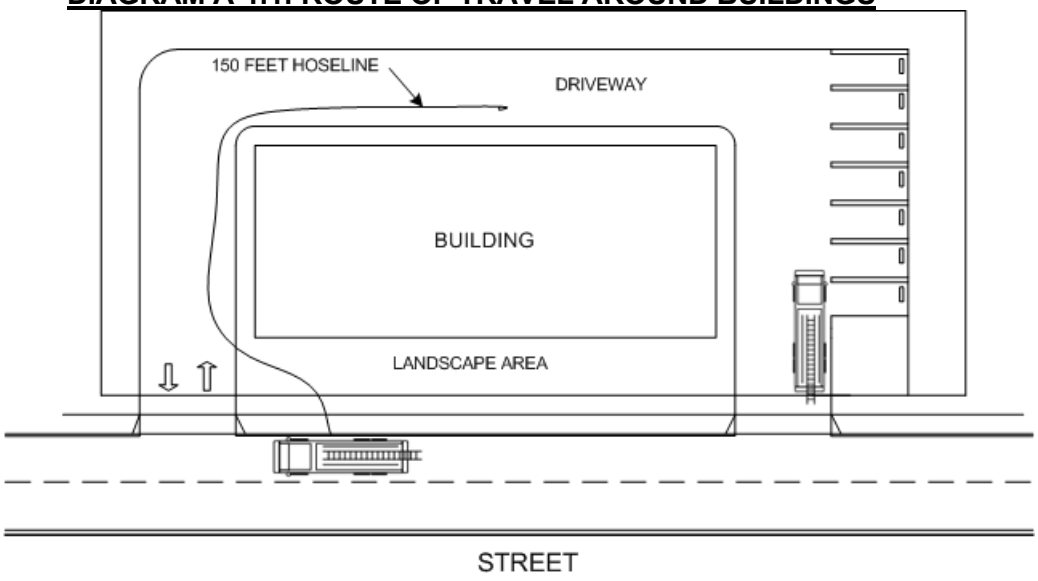

DIAGRAM A-1.2: METHOD OF MEASURING CUL-DE-SAC LENGTH

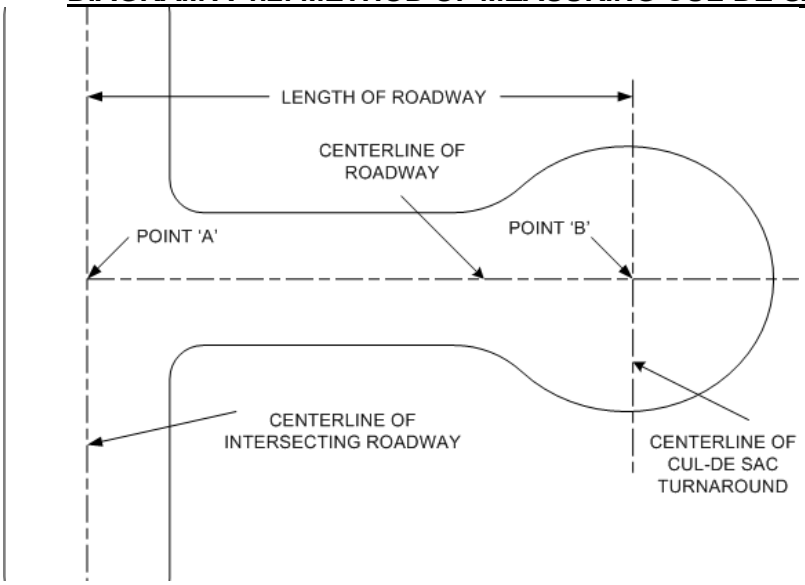

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DIAGRAM A-1.3: MULTIPLE POINTS OF ACCESS

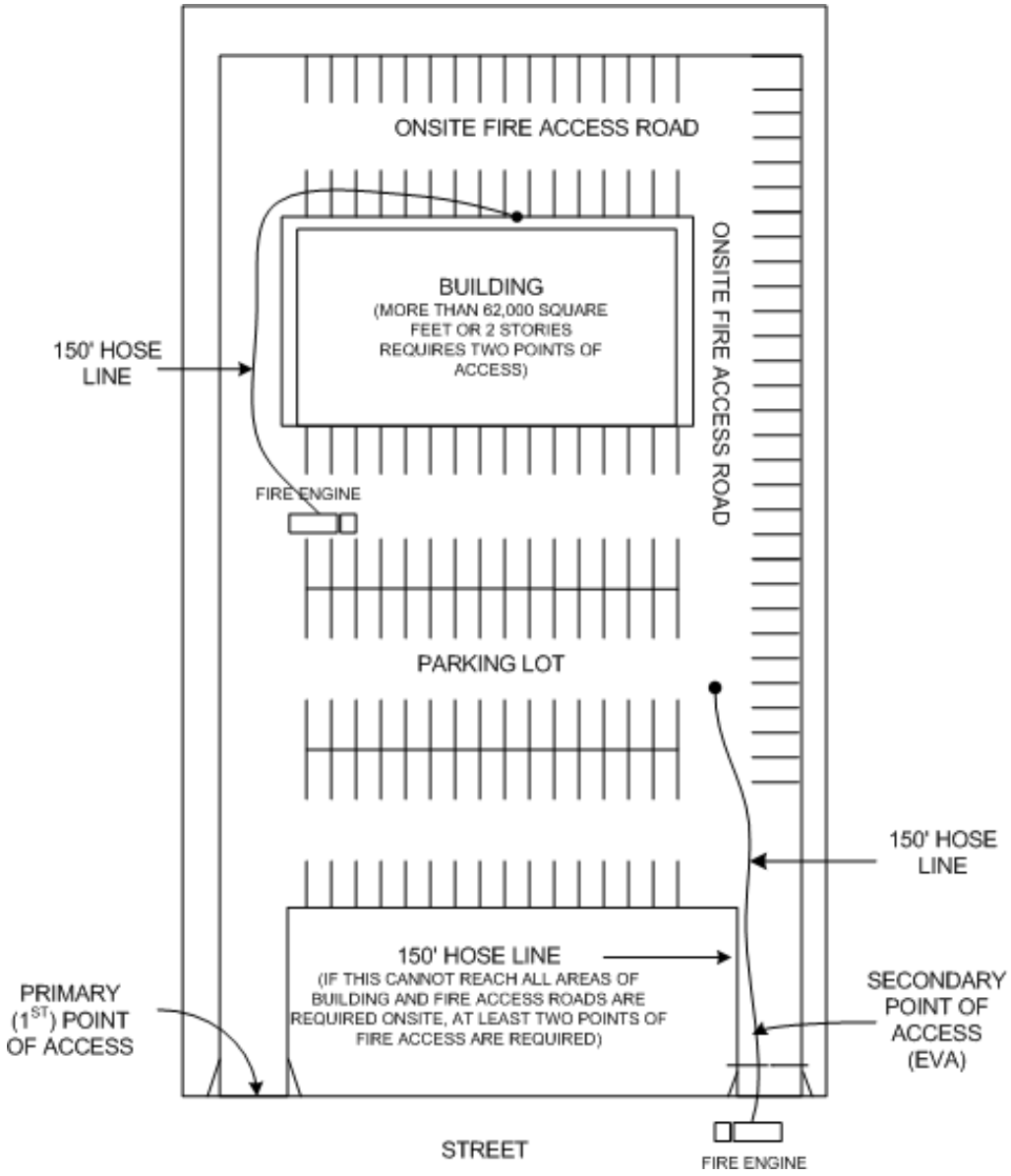

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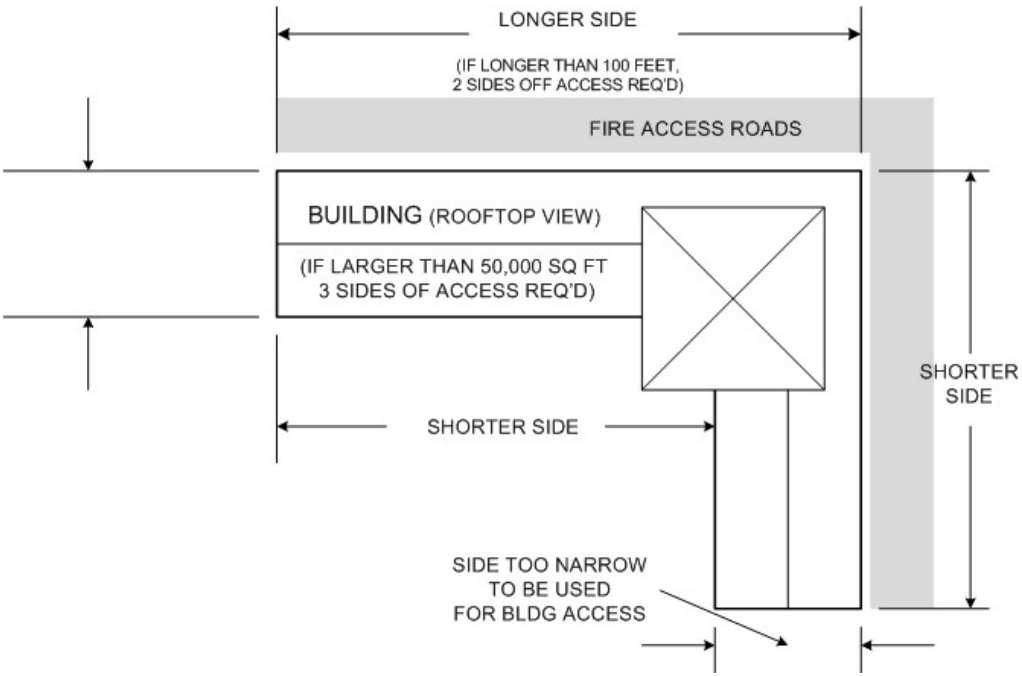
DIAGRAM A-1.4: SIDES OF BUILDING ACCESS



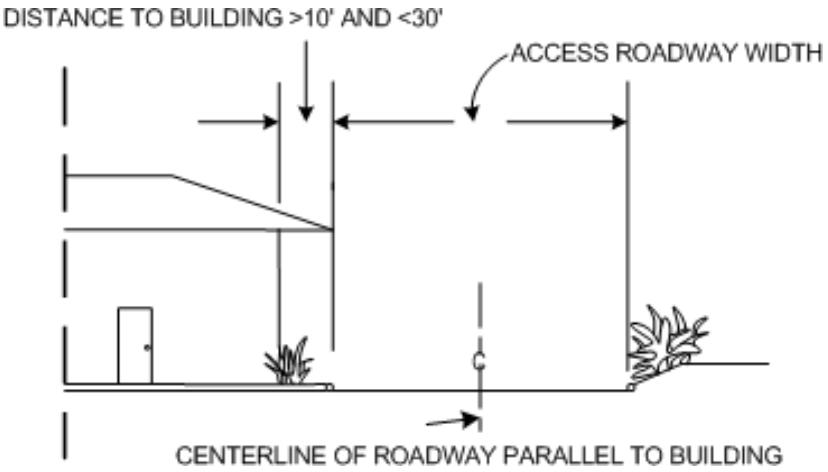


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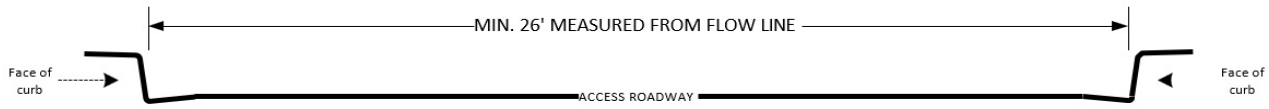
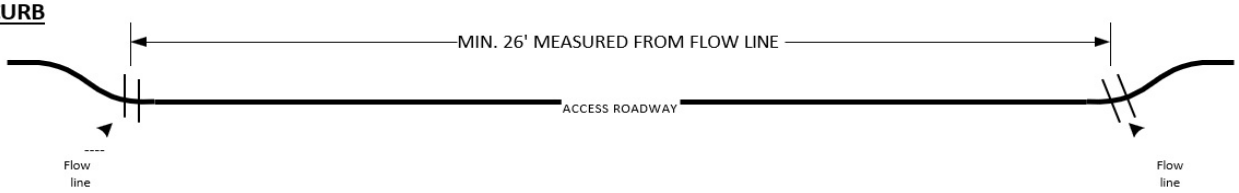
DIAGRAM A-1.5: ROADWAY MEASUREMENT DETAIL

CURBED ROAD



FLAT ROAD

ROLLED CURB



EDGE OF BUILDING OR PROJECTION

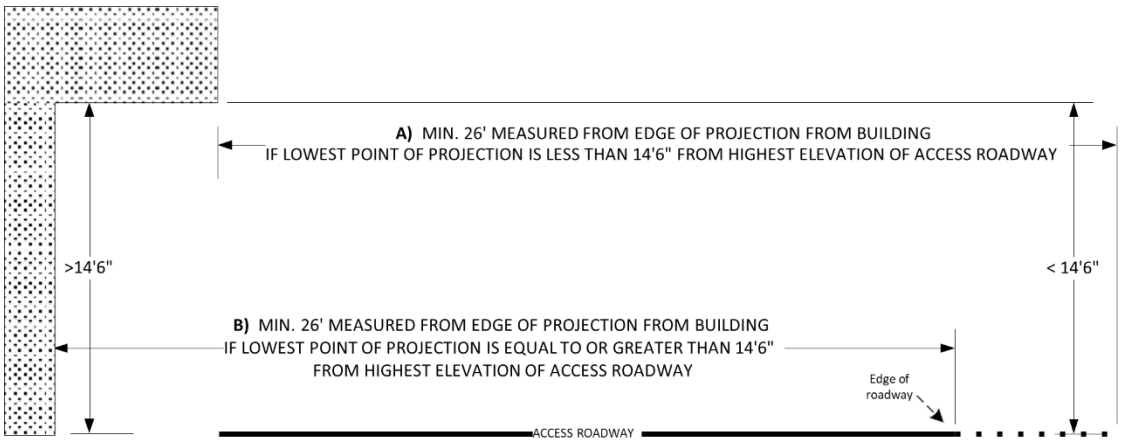


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DIAGRAM A-1.6: Fire Lane Parking

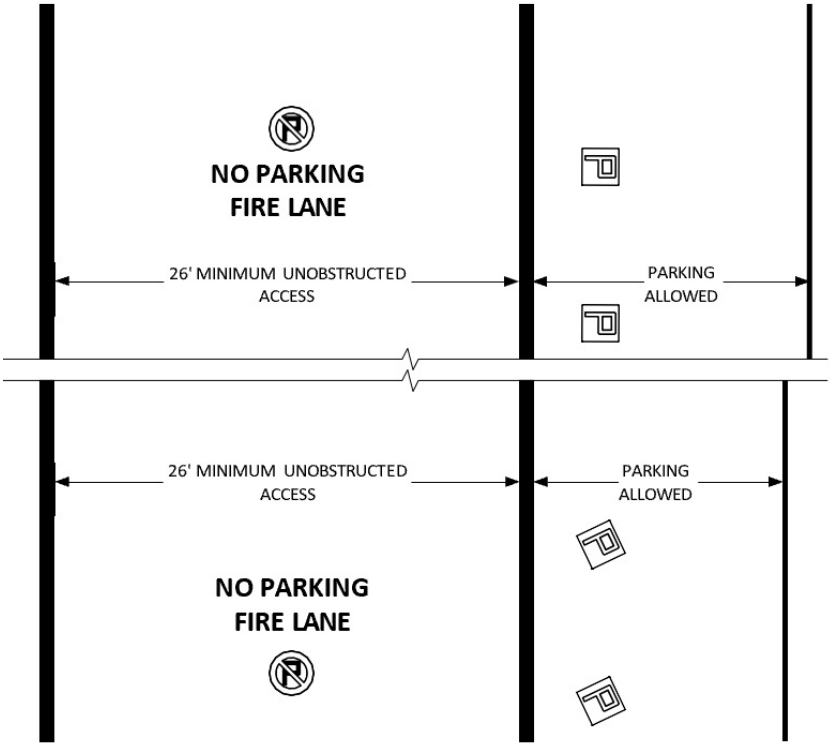

DIAGRAM A-1.7: ROADWAY MEDIAN BREAKS

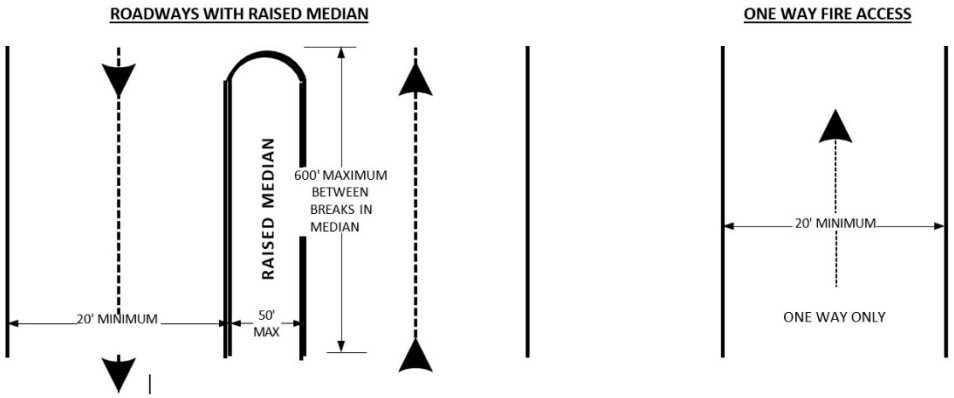

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DIAGRAM A-1.8: ROADWAY TURNOUT DETAILS

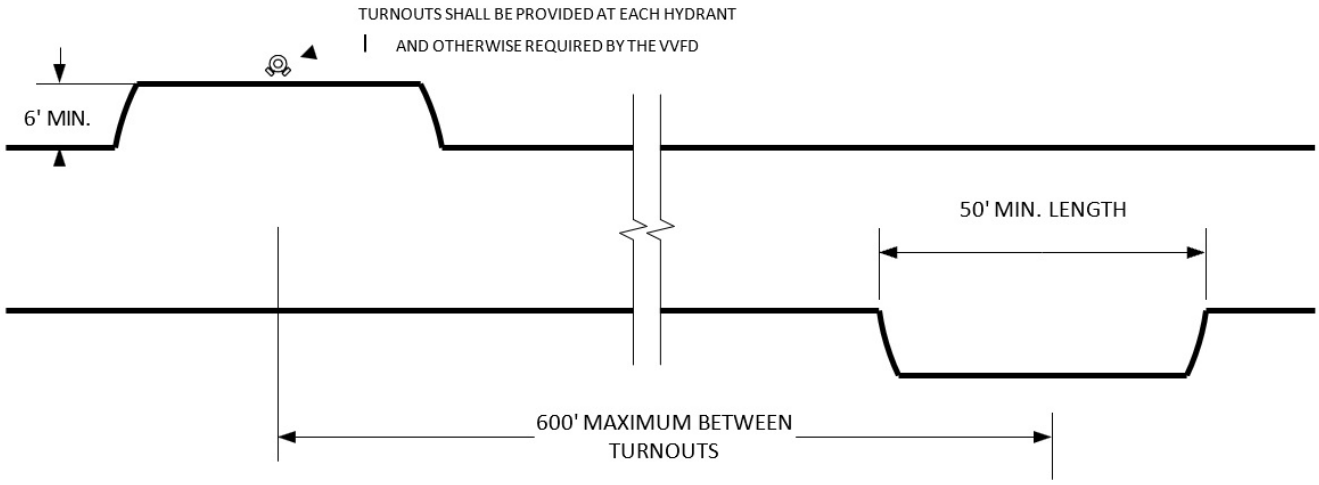

DIAGRAM A-1.9: ROADWAY GRADE DETAIL

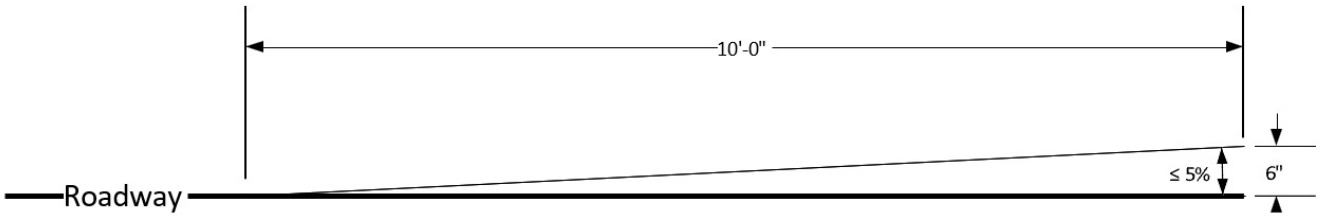

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DIAGRAM A-1.10: TURNING RADIUS DETAIL

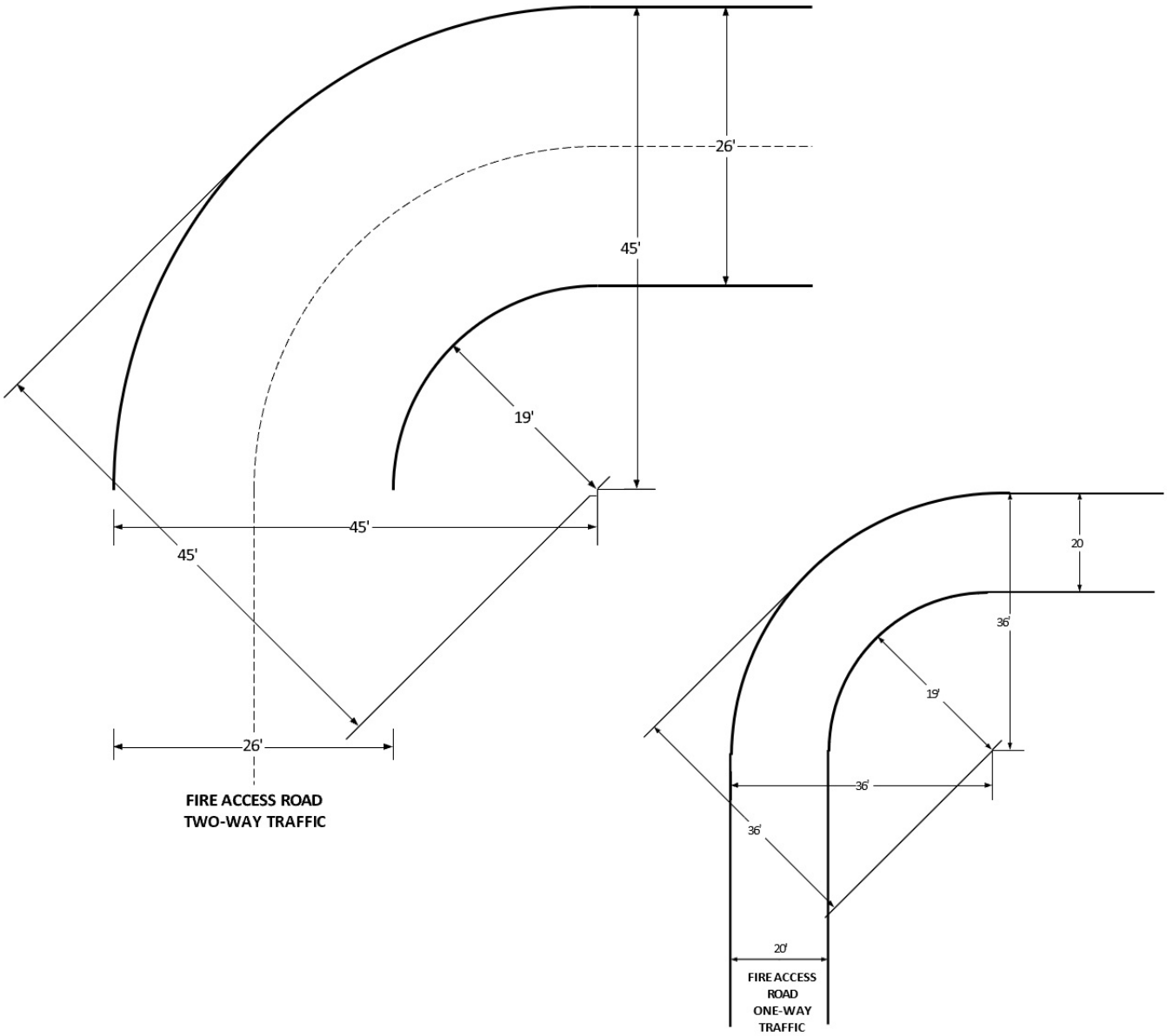

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DIAGRAM A-1.11: ROADWAY CURVES

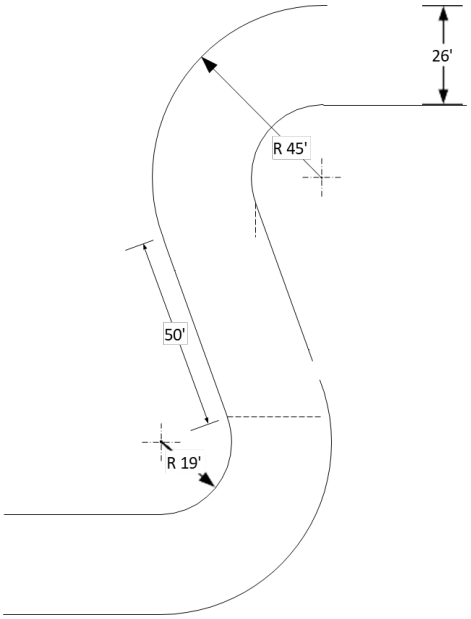

DIAGRAM A-1.12: HAMMERHEAD TURNAROUND DETAIL

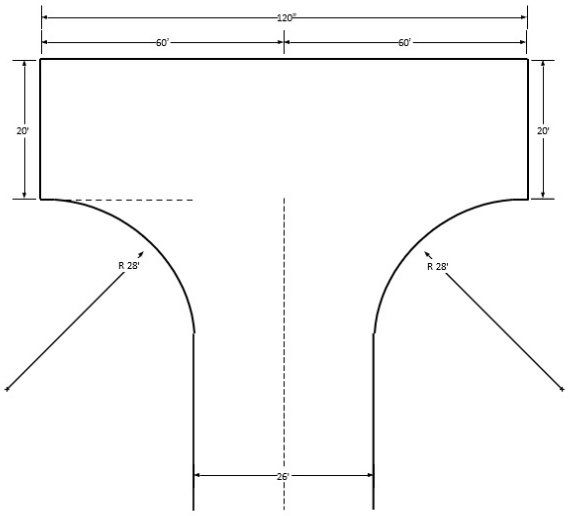

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DIAGRAM A-1.13: CUL-DE-SAC TURNAROUND DETAIL