Riverside County Fire Department

Fire Department Access Requirements for Commercial & Residential Development
Guideline OFM-01A

PURPOSE & TABLE OF CONTENTS

The effectiveness of emergency response and firefighting operations is directly related to the proper design, installation, and maintenance of fire department access to structures and facilities. This document provides direction and guidance pertaining to the creation and maintenance of fire department access roads, access walkways, and associated features to and around buildings, as required by the 2022 California Fire and Building Codes (CFC and CBC) and as amended by Riverside County Ordinance 787 and other locally adopted ordinances. This guideline includes requirements for:
This document provides the best possible guidance when used in conjunction with Riverside County Fire Department, Office of the Fire Marshal (RVC-OFM) Guideline OFM-01B - Fire Department Water Supply and Fire Hydrant Requirements for Commercial and Residential Development. Fire department access road design must be coordinated with the design of firefighting water supply features to make them useful during emergency response.

Table of Contents

SCOPE

This guideline applies to new, remodeled, reconstructed, or relocated residential or commercial structures and developments to which emergency response may be necessary. The information contained in this document is intended to assist the applicant in attaining compliance and to ensure that privately owned roads necessary for emergency response purposes will be always available for use. Some of the topics discussed within this document may also be covered in more detail through other RVC-OFM guidelines and/ or policies.

NOTE 1: See Technical Policy #16-001 AND #16-002 AND #23-001 for potential alternatives pertaining to Development of One- and Two-Family Dwellings and/ or accessory buildings (new construction, alteration, or additions) upon a single-parcel containing no more than two buildings with no more than three dwelling units, and any number of accessory structures. Subdivision Map submittals shall comply with this Guideline.

NOTE 2: RVC-OFM provides services to 18 incorporated cities. While fire department access requirements are generally the same throughout RVC-OFM service area, some municipalities may have adopted more restrictive requirements which are not reflected within this document. Please contact RVC-OFM staff assigned to the city in which your project is located for additional information.

DEFINITIONS

The following definitions are provided to facilitate the consistent application of this guideline:

Access Walkways - An approved walking surface leading from fire access roads to exterior doors, the area beneath emergency escape and rescue windows, and other required openings in structures.

Bollards - Permanent or removable poles that are placed across a roadway for restricting vehicular access to a portion of a site or to protect an area, structure, or piece of equipment from potential vehicular damage.

Fire Apparatus Access Roads - 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 lane, and access roadway. Roads must extend to within 150 feet of all portions of the exterior of the first floor of any structure as measured by an approved route around the exterior of the building or facility, and must meet specified criteria for width, pavement characteristics, road gradient, turning radius, etc.

Fire Lane Identification – Signs or curb markings that allow fire apparatus access roads to be readily recognized so that they will remain unobstructed and available for emergency use at all times.

Gates and Barriers - Devices that restrict pedestrian and vehicle ingress and egress to and from a facility.

Gate and Barrier Locks - Devices that are installed on gates and barriers to secure a property or facility.

Hose Pull – The effective distance (150 feet) that firefighters can drag a hose from fire apparatus to attack a fire. Hose pull is measured along a simulated path of travel accounting for obstructions and **not** "along the shortest possible route". See Attachment 18.

Premises Identification - The visual means (address numbers) used to readily identify a property or facility street address. It may also be used to distinguish separate buildings within a single facility or property.

Emergency Escape and Rescue Openings – Exterior doors or windows required in all sleeping rooms in R occupancies located below the fourth story of a building that allow rescue of trapped occupants.

SUBMITTAL REQUIREMENTS

1. Plan Submittal Requirements

Plans shall be submitted for review and approval to demonstrate compliance with all codes and other regulations governing water availability for firefighting and emergency access to development of sites and new structures within the jurisdiction of RVC. In addition, alterations to existing structures or sites shall be reviewed by RVC-OFM to ensure that the modifications do not affect water availability or emergency access.

A. Submittals – All plan submittals and revisions must be electronically submitted via the RVC PLUS portal at: https://rivcoplus.org. Plan review and subsequent inspection services are provided on a deposit basis and due at the time plans are submitted.

B. Scope – The scope of work shall be clearly indicated on the plan. If the building or site in question was approved previously, include the RVC permit number of the prior approval on the new plans. A copy of the previously approved fire access and water supply plan(s) shall be submitted along with new plans for any revision.

C. Plan Submittal Sequencing – Sequencing of fire department access and water supply plan submittals shall meet one of the following options:

1) PREFERRED SEQUENCE: A site plan that demonstrates compliance with BOTH fire department access AND water supply/ fire hydrant requirements. This plan may be included as part of the architectural plan or submitted separately as part of the plot plan.

OR

2) ALTERNATIVE SEQUENCE: A site plan is submitted for RVC-OFM review demonstrating compliance with fire department access requirements.
After approval, a second plan demonstrating compliance with water supply/ fire hydrant placement requirements must be submitted RVC-OFM for review.

D. Building Data – Information related to the building's location, use, building size, and construction shall be clearly indicated on the plan.

1) Include the project's street address (or a working address of the job trailer or future building on the site when not known) and the tract, tentative tract, or parcel map number, and APN (Assessor's Parcel Number).

2) Indicate the specific types of occupancies that will be housed in each structure as listed in California Building Code (CBC), Chapter 3.

3) Indicate the building height on the plans as defined in CBC. Indicate the elevation change (measured from finished floor to finished floor) between the lowest floor giving access to the structure and the highest occupied floor or occupied roof deck.

4) Note the type of sprinkler system installed/proposed (e.g., NFPA 13, 13-R, or 13-D).

E. Required Plan Notes – Include the RVC–OFM Access Notes on the plan. See Attachment 1.

F. Conditions of Approval – To ensure consistency of the fire access plan with project conditions, include any conditions of approval pertaining to the review of the project on the plans. If the project does not require review and entitlement by the County/ City Planning Commission, Board of Supervisors/ City Council, or the Planning Department permit review process is required but has not yet been completed, please state this on the plan. If you are unsure whether your project requires planning approval, please contact the applicable County/ City Planning Department.

G. Complete Attachment 2, Fire Department Access Plan Submittal Checklist, and verify that basic project information has been provided and that general access and water requirements have been addressed on the plan.

2. Fire Apparatus Access Roads

Fire apparatus access roads, commonly referred to as fire lanes, shall be provided for every facility or building when any portion of an exterior wall of the first story is located more than 150 feet from an approved access roadway, as measured along an approved route. Extenuating circumstances, increased hazards, and additional fire safety features may affect these requirements. (CFC 503.1)

A. Fire Apparatus Access Road Design - Fire apparatus access roads must be engineered to support emergency response apparatus. Roads must be designed to facilitate turning radii of

apparatus and meet requirements for gradient, height clearance, and width. Specific criteria pertaining to the design of fire apparatus access roads are detailed below.

1) Fire apparatus access roads serving commercial or residential development shall be designed, constructed, and maintained to support the imposed loads of RVC fire apparatus with a total weight of 80,000 pounds. Apparatus weight is distributed as 55,000 pounds on tandem rear axles and 25,000 pounds on the front axle.

2) The surface shall be designed, constructed, and maintained to provide all-weather driving capabilities. *A letter or statement, wet-stamped and signed by a registered engineer, shall be provided on the plans certifying that any new road meets this 80,000, all-weather requirement*. Road base without an appropriate topping or binding material does not satisfy the all-weather requirement.

3) Number of Fire Apparatus Access Roads Required:

   a) One road is required if any portion of an exterior wall of the first story of a building is located more than 150 feet from a fire access road. Access is measured by an approved route around the exterior of the building (See Section 8: Access to Structures, and Attachment 18).

   b) More than one road may be required when the project contains:

      - More than 50 single family residences
      - More than 150 dwelling units
      - A commercial/ industrial building exceeds 50,000 square feet

   c) In addition, if it is determined that access by a single road may be insufficient due to terrain, location, travel distance, potential fire or life-safety hazards, designation as a Very High Fire Hazard Severity Zone, or other factors that could limit access or if vehicle congestion, railways, or weather conditions could impair the single-entry point. Supplementary access points shall be located to facilitate evacuation and emergency operations and minimize congestion or obstruction during an emergency incident. (CFC 503.1.2)

   NOTE: When more than one Fire Apparatus Road is required, use may be permitted to be restricted to emergency response personnel when approved by the RVC-OFM AND Public Works department.

4) Location of Fire Apparatus Access Roads - For purposes of determining the suitability of public roads and private fire apparatus access roads for staging fire apparatus and facilitating fire suppression operations for a particular structure, the following criteria shall apply:
   Multi-Story & Other Tall Buildings
   a) Buildings ≥ 30 Feet in Height - To protect fire apparatus, personnel, and equipment from damage and injury from falling debris, the edge of fire apparatus access roads shall be located no closer than 10 to 30 feet from the building, the actual distance being a function of overall building height with consideration given to building construction, presence of openings, and other potential hazards.
   b) Buildings ≥ 40 Feet in Height - The edge of fire apparatus access roads shall be located between 20 and 40 feet from the building. (*NOTE: Distances > 40 feet inhibit the use of vehicle-mounted ladders, while distances < 20 feet do not allow for a proper laddering angle*). These distances are measured from the face of the building to the top edge of the curb face or rolled curb flow line nearest the structure.

c) Fire Truck Deployment Areas - To ensure that fire apparatus mobility on properties with buildings ≥ 30 feet in height is maintained at all times, Fire Truck Deployment Areas shall be provided along the road to permit fire apparatus to pass Fire trucks that have outriggers extended. Consideration shall be given to the length of the road, roof and building design, obstructions to laddering, and other operational factors in determining the number, location, and configuration of Fire Truck Deployment Areas. Fire Truck Deployment Areas are typically required on at least two sides of the building. Road widths adjacent to Fire Truck Deployment Area shall be a minimum of 34 feet.

5) Width of Fire Apparatus Access Roads - The minimum clear width of a fire apparatus access road is 24 feet. Where a center median is installed, the required access road width of 24 feet shall be provided on at least one side of the median. The opposing access road width shall not be less than 16' for the single directional exit. The design and placement of a raised median shall consider turning radius requirements for emergency response vehicles.

6) Parking Restrictions/Obstructions - No parking or other obstruction (e.g.: trash receptacles) are permitted on roads that are narrower than 32 feet in width. Parking on one side is permitted on a road that is at least 32 feet but less than 40 feet in width. Parking on two sides is permitted on a road 40 feet or more in width. See Attachment 3.

7) Vertical Clearance - Fire apparatus access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches. If trees are located adjacent to the fire access road, place a note on the plans stating that all vegetation overhanging the fire access road shall be maintained to provide a clear height of 13 feet, 6 inches. See Attachments 4 and 5.

8) Angle of Approach/ Departure – For fire apparatus access roads, a maximum of 6% (4 degrees) grade change is allowed for the initial 25 feet of approach or departure.

9) Fire Apparatus Access Road Grade - The grade for access roads shall not exceed 14% (8 degrees). Cross-slope shall not be greater than 2.5% (1.43 degrees) for paved access roads.

10) Inside and Outside Turning Radii - The minimum inside turning radius for an access road shall be 24 feet. The minimum outside turning radius shall be 45 feet. As fire apparatus are unable to negotiate tight "S" curves, a 60-foot straight leg must be provided between these types of compound-turns or the radii and/or road width must be increased accordingly. (See Attachment 6).

11) Dead-end Access Roads - Dead-end roads in excess of 150 feet shall be designed and constructed with an approved cul-de-sac bulb turnaround or approved hammerhead. Turnarounds shall meet the turning radius requirements identified above (See Attachment 7). The minimum cul-de-sac radius is 45 feet with no parking allowed. Parking is allowed **if** the radius is increased by 8 feet. Dead end fire apparatus access roads shall not exceed:
    - 600 feet within a Very High OR High Fire Hazard Severity Zone.
    - 800 feet within a Moderate Fire Hazard Severity Zone.
    - 1320 feet within all other areas.

12) Bridges - When a bridge is required as part of a fire apparatus access road, it shall be a minimum of 24' in width and designed and constructed to accommodate a total live load weight of not less than 80,000 pounds. Apparatus weight is distributed as 55,000 pounds on tandem rear axles and 25,000 pounds on the front axle. Bridges shall be constructed and maintained in accordance with AASHTO HB-17. Vehicle load limits shall be posted at entrances to bridges.

13) Median breaks - Where medians or raised islands are proposed that prevent emergency apparatus from crossing over into opposing traffic lanes, breaks or pass-throughs may be required to be provided. The location and design specifications for the pass-through shall be coordinated with the applicable public works or engineering department. Crossovers shall be provided where medians exceed 600 feet in length.

3. Fire Access Road Identification

Fire lane identification will be required when it is necessary to restrict parking of vehicles to maintain the required width of fire access roads for emergency vehicle use. Unlawful use of fire lanes will be enforced by the property owner and local law enforcement agency in accordance with the California Vehicle Code (CVC). See Attachment 8.

A. Sign and Curb Marking Options - Areas designated as a fire lane require an acceptable method of marking that shall be approved prior to installation. Examples of dimensions and acceptable options for signage installations and markings are found in Attachments 9 through 14. The following methods are acceptable means of identifying designated fire lanes for public and private roads. (*NOTE: When Fire Lane designation and marking on public roads is necessary, coordination between the RVC–OFM and the applicable Traffic Engineer is required*). Choose either option 1 *OR* option 2 below.

1 - Specific areas designated by RVC as fire lanes shall be marked with red curbs meeting the specifications in Attachment 9. In addition, all entrances from public streets into the area marked with fire lanes shall be posted with approved fire lane entrance signs meeting the specifications in Attachments 10 and 11. This option is generally preferred by the RVC.
NOTE: Other uniquely shaped spaces may be required to be designated as a FIRE LANE to prevent obstruction. This may be accomplished by outlining the FIRE LANE portion of the area with red paint as provided in Attachment 9 and adding additional diagonal red markings within the designated area.

2 - "Fire Lane—No Parking" signs meeting the specifications in Attachment 12 shall be posted immediately adjacent to each designated fire lane and at intervals not to exceed 75 feet. See Attachments 12, 12a, 12b. In addition, all entrances from public streets into the area marked with fire lanes shall be posted with fire lane entrance signs per Attachments 10 and 11.

Note: Alternative signs must be approved through RVC – OFM

4. Premises Identification

Premise identification requirements are applicable to both new and existing buildings and facilities. RVC – OFM may require compliance with these requirements when necessary to facilitate emergency response.

Three possible configurations of buildings or units within a building may exist and are identified as follows: freestanding buildings, multi-unit buildings, or multi-building clusters. Common to all configurations are the following requirements:

A. Approved numbers or addresses shall be placed on the front elevation of all new or existing buildings in such a position that is plainly visible and legible from the street or road on which the property is addressed. Addresses shall not be located where they have the potential of being

obstructed by signs, awnings, vegetation, or other building/site elements. An address monument at the vehicle entrance or other location clearly visible and legible from the public road may be provided in lieu of an address on the structure where only a single building with a single street address is present and no other structures are accessible from the fire apparatus access road serving that structure. CBC 501.2, CFC 505.1

B. The numbers/ letters shall contrast with their background.

1) One & Two Family Residential - The numbers/ letters shall be a ***minimum*** of 4" in height with a ½" stroke.

2) Commercial and Multi-Family - The numbers/ letters shall be a ***minimum*** of 12" for structures up to 25 ft. in height. Address numbers must be a minimum of 24" when the building exceeds 25 ft., The numbers shall have a minimum 1/2-inch stroke. When a building contains multiple addresses, an address range may be posted on the structure.

(*NOTE: Buildings that are set back from the primary roads more than 150 feet or otherwise not visible from the public road, shall have a monument provided as approved by RVC-OFM*).

C. Numbers for new buildings shall be internally or externally illuminated, to be visible at night. This requirement also applies to monuments. NOTE: Reflective type numbers may be acceptable for a single lot residential development project, when specifically approved by RVC–OFM.

D. Where it is unclear as to which street a building is addressed to (e.g., a building is accessed only from a street other than the one it is addressed to; multiple main entrances to the site or building itself front different streets), the name of the street shall also be identified as part of the posted address.

In addition to common requirements specified above, the following additional requirements pertain to each building configuration:

E. Multi-Unit Buildings - Suite/apartment 6" numbers/ letters shall be placed on or adjacent to the primary entrance for each suite/apartment and any other door providing access to fire department personnel during an emergency. Multiple residential and commercial units having entrance doors not visible from the street or road shall, in addition, have approved numbers grouped for all units within each structure and positioned to be plainly visible from the street or road.

F. Multi-Building Clusters - Approved numbers or addresses shall be placed on the front elevation(s) of all buildings that form the cluster. If all building addresses are not clearly visible or legible from the public road serving the structures, an address monument shall also be provided at the entry point(s) to the site indicating the range of addresses accessible from that entrance.

5. Obstructions to Emergency Vehicle Access

Existing or proposed gates and barriers crossing fire apparatus access roads must be shown on the plans. Information such as the location, type of gate (e.g., swinging, sliding), dimensions, and method of operation (manual, electric) must also be provided. Note or identify the following on the fire access plan:

A. Clear Width – Gated Entries located for egress and ingress of vehicles shall not be less than 24 feet clear width on not less than one side of a center median. The vertical clearance shall

not be less than 13 feet 6 inches, including landscaping and/or trees or other obstructions. Roads leading up to and beyond the guard house or gate shall meet standard fire lane width requirements prescribed in Section 2.A.5 of this guideline. Additional vehicle access gates located elsewhere on commercial property shall be a minimum of 24 feet in width. See Attachment 4

B. Turning Radii - The minimum inside turning radius is 24 feet with an outside radius of 45 feet for both the exterior and the interior approach to the gate.

C. Setbacks from the Street - Gates and barriers shall be located a minimum of 46 feet from any major street. A private driveway serving only one single-family residence is exempt from this requirement. If existing conditions prevent installation of the minimum setback, documentation supporting an acceptable alternative shall be provided. The alternative solution must facilitate emergency ingress without endangering emergency response personnel, emergency apparatus, and the general public. The alternative shall be subject to review and approval. See Attachment 15.

D. Manually Operated Gate and Other Barrier Designs - Typical gate designs may include sliding gates, swinging gates or arms, or guard posts with a chain traversing the opening.

1) Permanent or removable bollards are generally not permitted. CFC 503.4

2) For gates and barriers that are not used on a frequent basis or those that are located such that they have a reasonable likelihood of being blocked by vehicles, vegetation, furniture, or other obstructions (e.g., secondary fire department vehicle ingress/egress points, gates accessed from plazas), permanent signage constructed of 18-gauge steel or equivalent shall be attached on each face of the gate or barrier that reads “FIRE LANE—NO PARKING.” See Attachment 16 for an example of a barrier sign.

3) Manually operated gates and barriers shall have Knox padlocks, or weather-resistant Knox key boxes. The key box shall be placed four to five feet above the road surface at the right side of the access gate in a conspicuous location that is readily visible and accessible. The key box must be clearly labeled “FIRE DEPT.” CFC 506

E. Electrically Operated Gates and Barriers

1) Electric gate openers shall comply with UL 325. In the event of loss of normal power to the gate operating mechanism, it shall be automatically transferred to a fail-safe mode allowing the gate to be pushed open by a single firefighter without any other actions, knowledge, or manipulation of the operating mechanism being necessary and without the use of battery back-up power; this shall be noted on the plan. The manufacturer’s specification sheet demonstrating compliance with this method of operation during power loss shall be provided or scanned directly onto the plan. Should the gate be too large or heavy for a single firefighter to open manually, a secondary source of power by means of an emergency generator or a capacitor with enough reserve to automatically and immediately open the gate upon loss of primary power shall be provided.
2) The gate control for electronic gates shall be operable by a Knox emergency override key switch (with dust cover). The key switch shall be placed between 42” and 48” above the road surface at the right side of the access gate within two feet of the edge of the road. The key switch shall be readily visible and unobstructed from the fire lane leading to the gate. The key switch shall be clearly labeled “FIRE DEPT.”

3) Upon activation of the key switch, the gate shall open and remain open until returned to normal operation by means of the key switch. Where a gate consists of two leaves, the key switch shall open both simultaneously if operation of a single leaf on the ingress side does not provide for the width, turning radii, or setbacks necessary for fire apparatus to navigate the vehicle entry point. Note this requirement on the plan.

4) The key switch shall be labeled with a permanent red sign with not less than ½" contrasting letters reading "FIRE DEPT" or with a "Knox" decal. Note this requirement on the plan.

5) New motorized gates shall also be equipped with optical receivers to allow emergency response personnel to remotely open the gate when the emergency vehicle approaches the gate. The receiver shall be located to maximize signal reception from an approaching RVC apparatus Devices shall be compatible with RVC preemption devices. A functional test of the automatic opening equipment, witnessed by RVC-OFM is required prior to final acceptance.

F. Gate and Barrier Locks - Gate or barrier locks shall be reviewed and approved prior to their installation on any new and/or existing access gate or barrier.

6. Requirements for Residential Tract Developments

The following requirements apply to all new residential tract developments for single-family homes or duplexes. They may also be applied to individual single-family homes or duplexes or to multi-family housing projects as approved by the RVC-OFM.

A. Cul-de-sacs. (See Attachments 13a and 17).

1) Any street that is a required fire lane and greater than 150 feet in length shall be provided with a Cul; de sac with a minimum turning radius 45-foot or other approved turnaround within 150' of the end of the fire lane**.**

2) The cul-de-sac "bulb" (the portion at the end of the cul-de-sac street which is wider than the cul-de-sac "neck" leading to it) shall be identified as a fire lane with red curbs or "Fire Lane—No Parking" signs. Fire lane markings may be omitted from the bulb if one or more of the following applies:

a. The length of the cul-de-sac street, including any driveway or spur road accessed from the bulb that is a required fire lane, is not more than 150 feet; or

b. The radius of the cul-de-sac is at least 53 feet.

7. Engineered Alternative Fire Apparatus Access Road Systems

The use of Turf Block, Grasscrete, and all similar products are not permitted. (CFC 03.2.3)

8. Access to Structures

A. Hose Pull – The dimension of 150 feet when used in relation to fire department access is commonly referred to as "hose pull distance." As the name implies, this is the maximum distance that firefighters can effectively pull a fire hose or carry other equipment to combat a fire. The hose pull distance is set at 150 feet due to a variety of factors, including standard hose lengths,

weight of equipment, hydraulic properties, and accepted operational procedures. See Attachment 18.

1) Hose pull is measured along a path that simulates the route a firefighter may take to access all portions of the exterior of a structure from the nearest public road or fire lane. Under most circumstances, hose pull will not be a straight-line distance and should *not* be measured "as the crow flies."

2) All obstructions such as fences, planters, vegetation, and other structures must be considered when determining whether a building is accessible from a particular location on the fire access road. Topography may also affect the potential access route and any significant changes in elevation must be accounted for when measuring hose pull distances.

3) Hose pull measurements begin at a point in the street <u>located 10 feet from the edge of the curb</u>.

B. Access walkways - CFC 504.1 specifies the installation of approved access walkways from fire access roads to exterior openings required by either the CBC or CFC. RVC may require the construction of such walkways depending upon site conditions or project parameters. These conditions include, but are not limited to, building use or occupancy, topography, vegetation, and surface conditions. Design professionals must carefully consider these issues when developing a project site.

1) Access walkways must be provided to all required egress doors from a building, all firefighter access doorways in buildings with high-piled storage, and the area beneath each rescue window in "R" occupancies, at a minimum. Access walkways will typically be required around the entire perimeter of a structure to facilitate control of a fire through any other available openings.

2) Access walkways must be a minimum of five feet in width.

3) Access walkways shall consist of a surface that lends itself to safe use during building evacuation, firefighting, and rescue efforts. Solid surface walkways such as concrete or asphalt are preferable, though alternative surfaces such as decomposed granite (DG), gravel, or grass may also be permissible. Ground covers and shrubs that prevent or impede laddering of structures are not permitted to be planted within access walkways.

4) Where the grade itself presents a slip or fall hazard, an access walkway with a slip-resistant surface and/or stairway must be provided.

C. Path of travel obstructions - Firefighter access to and emergency egress from required openings must remain free and unobstructed at all times. Architects, landscape designers, and facility managers must take care to ensure that fences, planters, and vegetation will not interfere with access and egress routes.

1) Fences - Walls, fences, hedges, and similar obstructions may not be located within the area designated as an access walkway unless a gate through the obstruction equipped with an approved Knox Padlock or Knox Box has been provided for firefighters to access the perimeter of the structure. If the wall or fence blocks travel from required egress openings to the public way or an open area at least 50 feet from the structure ("Access to a public way" per CBC 1028.5), a gate operable by the occupants evacuating the structure must be provided that allows unimpeded egress to the public way. Where doors are provided as part

of the building's emergency egress path of travel are required to be equipped with panic hardware, exterior gates shall likewise be similarly equipped. NOTE: These requirements may not apply to individual single family residences.

2) Vegetation - As stated previously, certain types of ground cover and low-growing plants present an impediment to firefighting and rescue operations and are prohibited from being planted in the access walkway. In addition, taller vegetation such as shrubs and trees may not be located where they will, either when planted or upon maturation, present an obstruction to accessing rescue windows. Raised planter areas are not allowed to be used as rescue ladder access points.

3) Key boxes and key switches - Knox devices shall be provided where necessary to ensure that immediate access for firefighting, rescue, and other emergency purposes is possible. Knox equipment locations shall be shown on access plans.

a) Where required - At a minimum, Knox devices shall be provided for the following locations:
- gates along the paths of firefighter travel from the fire lane to all points along the perimeter of the structure;
- gates to pool and recreation enclosures;
- building gates or doors leading to interior courtyards containing rescue windows;
- building gates or doors leading to exterior hallways providing access to residential units or tenant suites;
- gates in exterior enclosures containing hazardous or combustible material storage;
- Buildings with permitable amounts of hazardous materials, and high rise (Knox Cabinet required)
- exterior doors to buildings, rooms containing main fire alarm panels, annunciators, and/ or fire supression systems;
- doors and gates providing access to parking structures;
- doors and gates to other areas identified by RVC-OFM.

Knox boxes or switches shall be located adjacent to and clearly visible from the gate or door served. They shall be securely mounted to a wall or fence at a height of 6 feet above grade in a location that is easily accessible to firefighters. Where the potential for vandalism or tampering is significant, key boxes may be mounted higher with RVC-OFM approval. Boxes and switches are not required to be electronically monitored; if they are, they shall not initiate an alarm signal that requires a response by the fire department.

b) Key box contents - The key used to unlock the gate or door shall be kept in the key box. When the key unlocks more than the individual adjacent gate or door, a label or tag shall be attached to the key identifying the gates or doors it operates. Where multiple gates or doors are served by a single box, two or more copies of the key(s) are recommended so that a copy will be available to each engine/ truck company responding to the site. <u>NOTE: All keys must have an address tag attached.</u>

c) Knox cabinet contents – When a Knox cabinet is specified, it shall contain floor plans, chemical inventories, SDS and other materials used to facilitate a response, in addition to the items described in Section b above.

d) Electric locks – Electromagnetically or electromechanically locked pedestrian gates and doors shall be equipped either with a Knox box containing a key to open the lock or, if the door lock cannot be operated with a key from the exterior, a Knox key switch shall be

provided adjacent to the door. Where key switches are provided, the door or gate lock shall remain disengaged until the key switch is returned to the "normal" closed or locked position.

e) Vehicle gates - See sections 5.E through 5.G for more information on requirements for Knox boxes and key switches serving vehicle gates across fire lanes.

9. Access During Construction

Fire department access roads for emergency response during construction shall comply with CFC Chapter 33 and the provisions listed in this section and, where applicable, elsewhere in this guideline. Construction activities at job sites not complying with these requirements may suspended at the discretion of the RVC - OFM Inspector until a reasonable level of compliance is achieved.

At no time shall construction projects impair or obstruct any existing fire access roads or access to and operation of existing fire hydrants serving other structures. Should existing roads or hydrants need to be moved or otherwise altered during construction, the developer shall provide alternative access routes and other mitigation features to ensure adequate fire and life-safety protection. Such alternatives and features shall be submitted to RVC-OFM for review and approval prior to alteration of existing conditions.

A. Access Inspection– An inspection shall be scheduled with a RVC-OFM inspector to verify that access roads and other access features have been provided for buildings under construction prior to:
   1) For buildings of Type I through V construction (and non-combustible structures that may have a portion of the exterior walls, façade, or other building elements comprised of wood or other combustible material on-site), the access inspection shall occur prior to Building Permit Issuance

      a) The street address of the site shall be prominently posted at each entrance. For projects on streets that do not have a name or street signs posted yet, the sign shall include the project name and tract/lot number.

      b) Gates through construction fencing shall be equipped with a Knox padlock.

      c) When required by the RVC-OFM Fire Inspector, fire lanes shall be posted with "Fire Lane—No Parking" signs or no parking areas shall be otherwise identified to maintain them free of obstructions during construction.

      d) Provisions shall be made to ensure that fire hydrants are not blocked by vehicles or obstructed by construction material or debris. A three-foot clear space shall be provided around the perimeter of the hydrant and no parking or similar obstructions shall be allowed along the adjacent road within 15 feet of the hydrant. Inoperable hydrants shall be bagged.

B. Temporary Fire Access Roads - Temporary Fire Access Roads and Fire Hydrants (e.g., the features do not match the approved location and configuration) may be permitted when approved by RVC-OFM.

   1) Plans for temporary access shall be submitted to RVC-OFM for review and approval. Plans shall be drawn to scale and show permanent (existing) roads, proposed temporary road locations, location of models, space dedicated to storage of construction materials, and

parking for work crews and construction vehicles. The plans shall clearly state that they have been submitted for temporary access and hydrants.

2) Plans shall be stamped and signed by a licensed civil engineer stating that the temporary access road can support 80,000 pounds of vehicle weight in all-weather conditions. The road base material shall be over soil compacted to at least 90% and be mixed or topped with a suitable binding material to provide all-weather characteristics; road base alone does not satisfy this requirement.

3) Provide a parking plan for the construction site detailing how the fire lane no parking regulations will be enforced. Include a clause in the letter stating that "the job-site superintendent is responsible for informing the work crews of parking requirements and that the entire jobsite is subject to shut-down by the RVC-OFM Inspector if parking is in violation of fire lane posting." The letter shall be written on company letterhead and scanned onto the plan.

4) All other access and water requirements shall apply (e.g., width, approach clearance, premises identification, locks, gates, barriers, etc.).

5) An inspection by the RVC-OFM Inspector is required to verify adherence to the approved plan.

C. Phased access - Incremental installation of permanent access roads as shown on a fire master plan may be permissible for commercial and residential developments. If phased installation is anticipated, the site superintendent or designee shall review the installation process with a RVC-OFM Inspector during the access inspection or pre-construction meeting. Depending on the complexity of the installation, size of the project, and other project-specific factors, the Inspector may allow phased installation to proceed immediately or may first require that all or some of the following items are satisfied:

1) Plans for phased access shall be submitted to the RVC-OFM, either as part of the original access plan submittal or as a revision to an approved fire access plan. Plans shall be drawn to scale and demonstrate that all access and water requirements are met during all phases of construction and that approval of one phase does not compromise or complicate completion of the subsequent phases. Plans shall show for each phase of construction:
   - The extent of building construction
   - Location of operable hydrants serving all buildings under construction
   - The location of construction fencing, barriers, and vehicle access gates
   - The location of all temporary or permanent "Fire Lane—No Parking" signs
   - Equipment/materiel staging locations
   - Worker parking areas (see item "4" below)

2) Phasing plans shall be stamped and signed by a licensed civil engineer stating that access roads can support 80,000 pounds of vehicle weight in all-weather conditions. The road base material shall be over soil compacted to at least 90% and be mixed or topped with a suitable binding material to provide all-weather characteristics; road base alone does not satisfy this requirement. The final road section less the final lift of asphalt topping may be acceptable if certified by the engineer.

3) The phasing plan shall identify any anticipated areas where fire department access roads may be temporarily inaccessible due to trenching, slurry coating, striping, or other construction activities after they have been installed and inspected. The plan shall indicate

the anticipated period of impairment and include provisions for providing plating over trenches and alternative access routes, notification to the fire department, and/or other forms of mitigation when such roads are impaired.

4) Provide a parking plan for the construction site detailing how the fire lane, no parking regulations will be enforced. Include a clause stating that “the job-site superintendent is responsible for informing the work crews of parking requirements and that the entire jobsite is subject to a STOP WORK order by the RVC-OFM Inspector if parking is in violation of fire lane posting.”

5) The approved phasing plan shall be available at the construction site prior to bringing combustible building materials on-site. A lumber drop inspection by a RVC-OFM Inspector will be required prior to the commencement of each phase.

6) All other access and water requirements shall apply (e.g., width, turning radii, approach clearance, premises identification, locks, gates, barriers, etc.).

INDEX OF ATTACHMENTS

NUMBER: SUBJECT ..... PAGE

ATTACHMENT 1

Riverside County Fire Department- OFM Access Plan Notes

All the notes listed in the INSPECTION REQUIREMENTS and GENERAL REQUIREMENTS sections shall be placed, verbatim, on the plan under the heading "FIRE DEPARTMENT ACCESS NOTES."

INSPECTION REQUIREMENTS

1. Riverside County Fire (RVC-OFM) inspections are required for this project. Email: RRUOFMSCHEDULING@FIRE.CA.GOV. Please provide at least 2-days advance notice.
2. An access and water supply inspection shall be performed prior to building permit issuance OR bringing combustible materials (or combustible fixtures and finishes for structures of non-combustible construction). All-weather access roads capable of supporting 80,000 lbs., topped with asphalt, concrete, or equivalent shall be in place and hydrants operational at time of the inspection.
1. For projects with fuel modification, a vegetation clearance inspection is required.
4. Phased installation of fire access roads requires additional inspections and shall be coordinated with RVC-OFM
5. An original approved, signed, stamped RVC fire department access plan shall be available on-site at time of the access inspection.
6. Access roads and hydrants shall be maintained and remain clear of obstructions at all times during and after construction. Areas where parking is not permitted shall be clearly identified at all times. Obstruction of fire lanes and hydrants may result in cancellation or suspension of inspections.
7. Temporary fuel tanks 60 (Class I, II, or IIIA Liquids) or more gallons shall be reviewed, inspected, and permitted by the RVC prior to use.
8. The project address shall be clearly posted and visible from the public road during construction.
9. All gates in construction fencing shall be equipped with either a Knox or breakaway padlock.

GENERAL REQUIREMENTS

10. Fire lane widths shall be measured from top face of the curb to top face of the curb for fire lanes with standard curbs and gutters and from flow-line to flow-line for fire lanes with modified curb designs (e.g., rolled, ramped, etc.). The developer is responsible to verify that all approved public works or grading department street improvement plans, or precise grading plans conform to the minimum street width measurements per the approved RVC-OFM fire department access plan and water improvement plans, and standards identified in RVC Fire Department Access Guideline (OFM-01A).
11. Permanent, temporary, and phased emergency access roads shall be designed and maintained to support an imposed load of 80,000 lbs. and surfaced to provide all-weather driving capabilities.
12. Fire lane signs and red curbs shall meet the specifications shown in RVC-OFM Fire Department Access Guideline and shall be installed as described therein. Additional fire lane markings may be required at the time of inspection depending on field conditions.
13. Address numbers shall be located and be of a color and size to be plainly visible and legible from the road from which the building is addressed in accordance with RVC-OFM Fire Department Access Guideline.
14. Access gates shall be approved prior to installation and shall be in compliance with Chapter 5 of the CFC and RVC-OFM Fire Department Access Guideline OFM-01A.
15. Approved access walkways shall be provided to all required openings and all rescue windows.
16. Vegetation shall be selected and maintained in such a manner as to allow immediate access to all hydrants, valves, fire department connections, pull stations, extinguishers, sprinkler risers, alarm control panels, rescue windows, and other devices or areas used for firefighting purposes. Vegetation or building features shall not obstruct address numbers or inhibit the functioning of alarm bells, horns, or strobes.
17. Dumpsters and trash containers larger than 1.5 cubic yards shall not be stored in buildings or placed within 5 feet of combustible walls, openings or combustible roof eave lines unless protected by an approved sprinkler system.
18. Any future modification to the approved Fire Department Access Plan(s) or approved site plan, including but not limited to road width, grade, speed humps, turning radii, gates, or other obstructions, shall require review, inspection, and approval by RVC-OFM
19. Approval of this plan shall not be construed as approval of any information or project conditions other than those items and requirements identified in RVC-OFM Fire Department Access Guideline, and related portions of the CFC and CBC. This project may be subject to additional requirements not stated herein upon examination of actual site and project conditions or disclosure of additional information.

ATTACHMENT 2
RVC-OFM Access & Water Plan Submittal Checklist

PROJECT INFORMATION

Scope of project is clearly defined on the plan?	☐ Yes	
Conditional Use Permit conditions included with submittal?	☐ Yes	☐ N/A (CUP was not required by County/City)
Tract/Tentative Tract/Parcel Map Number has been provided?	☐ Yes	
Standard RVC Access plan notes are included?	☐ Yes	
Building area, construction, occupancy, sprinklers noted on plan?	☐ Yes	
Allowable area calculation provided on plan?	☐ Yes	☐ N/A (Building less than 6000 sq.ft.)
AM&M request letter scanned onto plan?	☐ Yes	☐ N/A (No alternate methods proposed)
Sheets not relevant to fire master plan removed from plan set?	☐ Yes	
Access/hydrant phasing plan provided?	☐ Yes	☐ N/A (No phasing of access/hydrant installation)

ACCESS AND ROADS

Extent of the access road is clearly shown on the plan?	☐ Yes	
Turning radii and width (incl. road sections) shown on the plan?	☐ Yes	
Exterior of all structures within 150' hose pull distance?	☐ Yes	☐ No (Mitigation proposed via AM&M)
Engineer's certification provided for new paving?	☐ Yes	☐ N/A (No new paving)
Walkable surface provided to required openings?	☐ Yes	
Road and walkway grades >10%?	☐ Yes	☐ N/A (Grade <10%)

FIRE LANE IDENTIFICATION

Red curbs are identified with bold or dashed lines?	☐ Yes	☐ N/A (Signs provided)
Location of each "Fire Lane—No Parking" sign shown?	☐ Yes	☐ N/A (Red curbs provided)
Fire lane entrance sign provided at each vehicle entrance?	☐ Yes	
Detail drawings of red curbs/ "No Parking"/entrance signs shown?	☐ Yes	

GATES AND OBSTRUCTIONS

Are all gates, fences, and planters shown?	☐ Yes	
Are vehicle gates identified as manual or electric?	☐ Yes	☐ N/A (No gates)
Manual vehicle gates have "No Parking" sign noted?	☐ Yes	☐ N/A (No manual gates)
Knox boxes/locks/switches are noted on plans?	☐ Yes	☐ N/A (No gates)
RVC gate notes/specifications included on plan?	☐ Yes	☐ N/A (No gates)
Knox equipment ordered?	☐ Yes	☐ N/A (No gates)

OTHER REQUIREMENTS

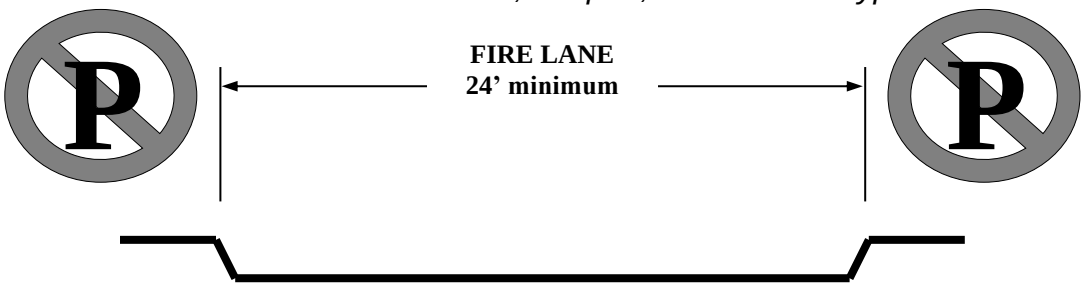
Premises ID/address monument location shown on plan?	☐ Yes	☐ N/A (Single family homes)
Trash enclosures are located at least 5' from buildings?	☐ Yes	☐ No (Enclosures are sprinklered)
Two entry points provided for 150 or more residences?	☐ Yes	☐ N/A (Non-residential project)
Parking enforcement letter provided?	☐ Yes	☐ N/A (Public streets only)

NOTE: This is a list of basic fire department access plan submittal requirements. Other information or requirements may be necessary depending on conditions specific to each project.

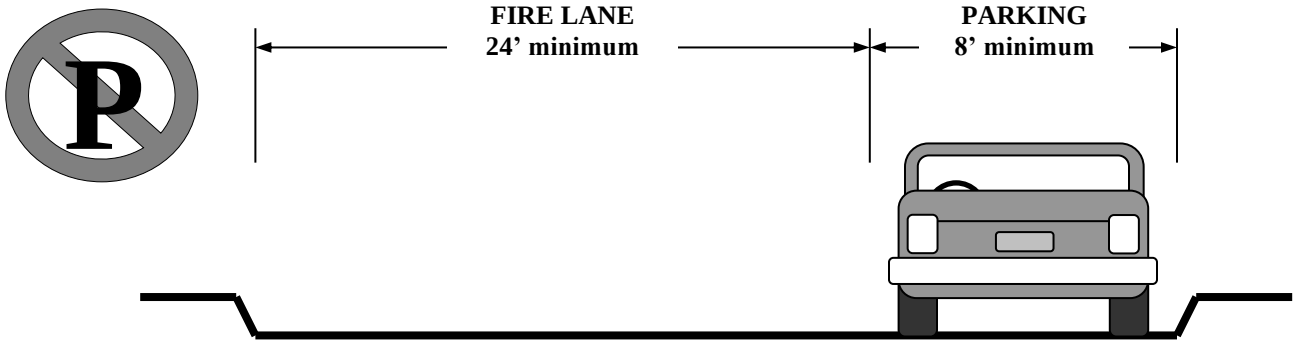
ATTACHMENT 3

Minimum Road Widths

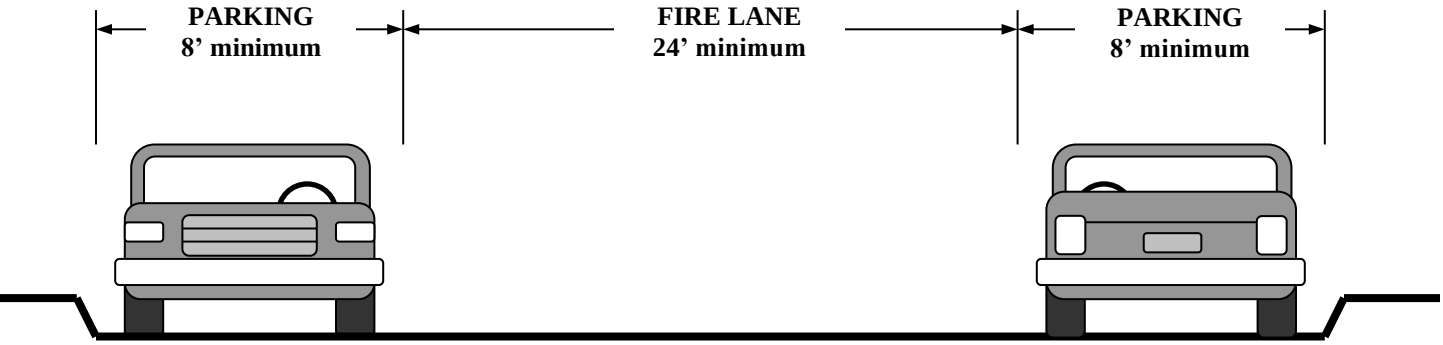
Measured from top face of curb to top face of curb for standard vertical curbs or flow line to flow line for rolled, ramped, or other curb types.



ROADWAY LESS THAN 30'
***Parking prohibited**.*
Roadway is required to be posted as a fire lane.



ROADWAY AT LEAST 32' BUT LESS THAN 40'
*Parking permitted on **one side** only.*
Roadway is required to be posted as a fire lane.

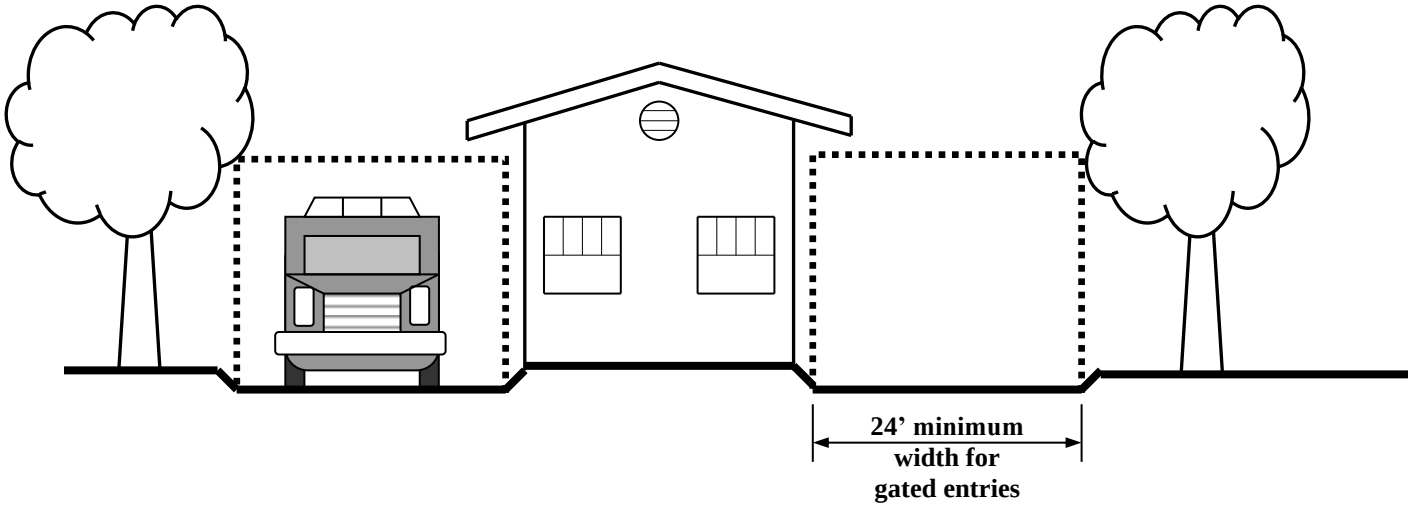


ROADWAY 40' OR WIDER
*Parking permitted on **both sides***

ATTACHMENT 4

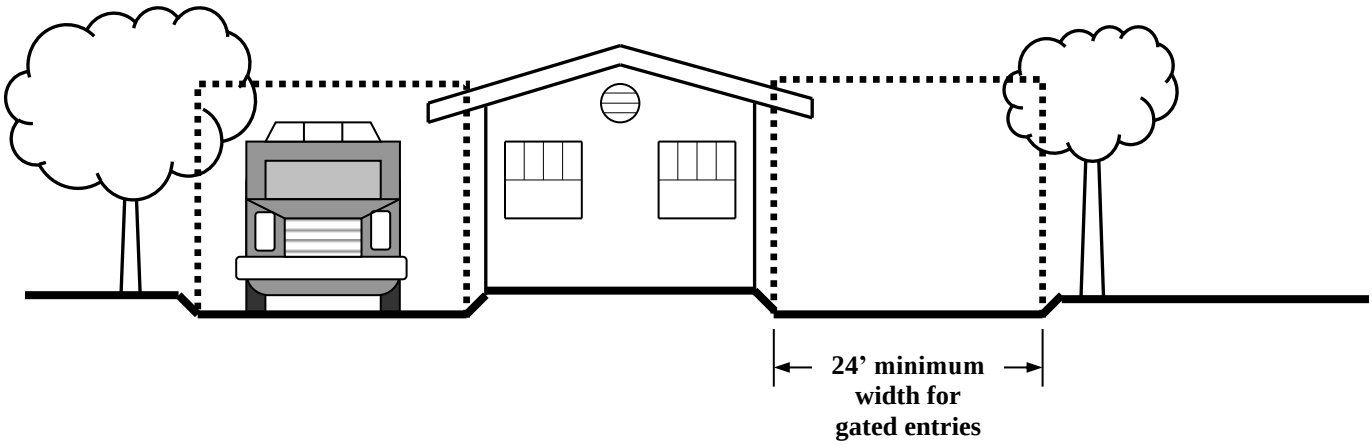
Fire Apparatus Access Road Clearance For Typical Gated Community Guard House

Fire lane width reductions detailed below are applicable only to the area immediately adjacent to the guard house or gate. Roads leading up to and beyond the guard house or gate shall meet standard fire lane width requirements prescribed in Section 2.A.5 of this guideline.



PROPER CLEARANCE PROVIDED

Eaves and vegetation do not encroach upon the 24'-wide by 13'-6" high minimum dimensions allowed for the fire access roadway next to the guard house.

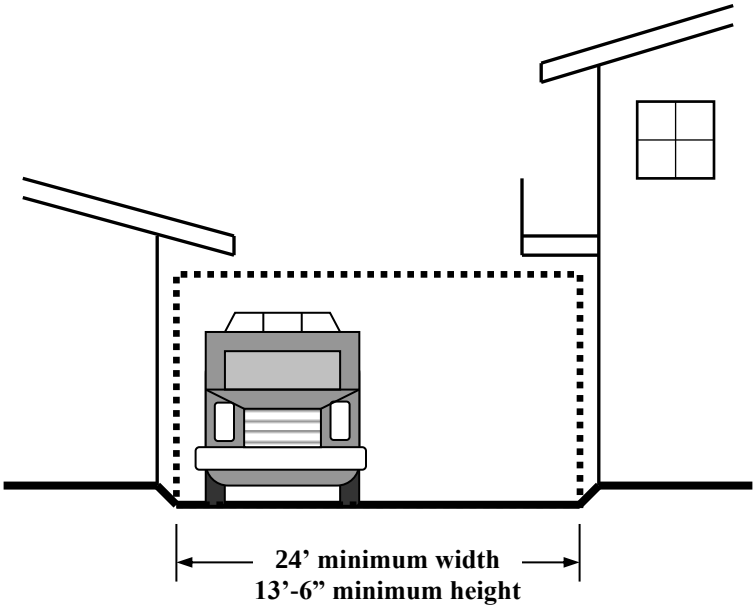


INSUFFICIENT CLEARANCE

While a 24'-wide access roadway is provided next to the guard house, eaves and vegetation encroach upon the minimum clear height of the fire lane.

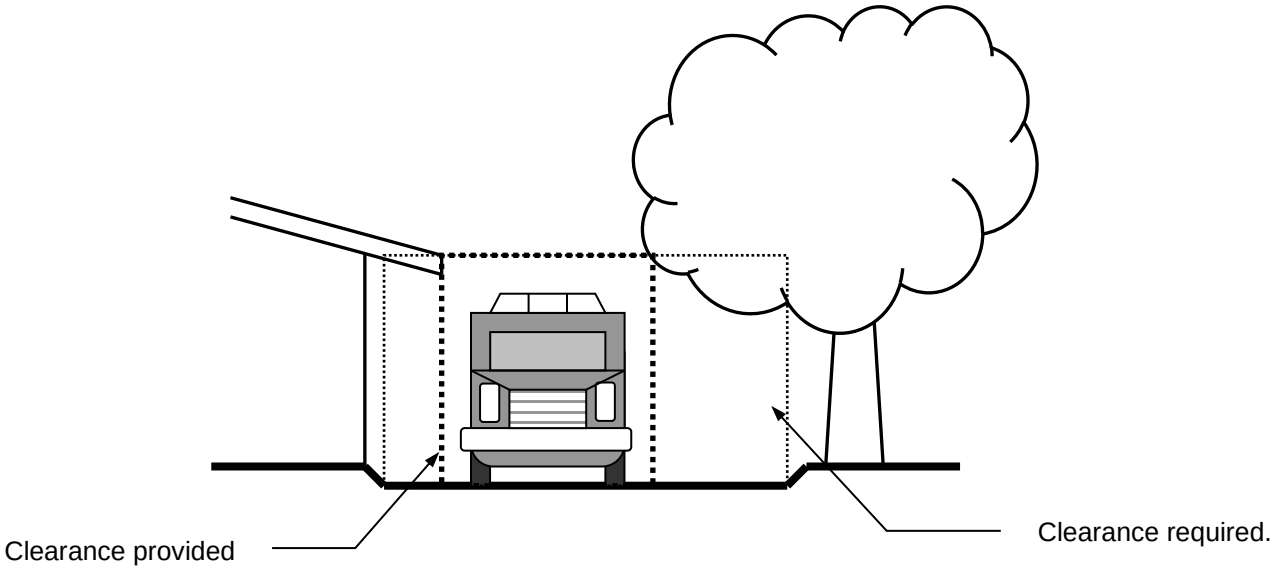
ATTACHMENT 5

Fire Apparatus Access Road Clearance



PROPER CLEARANCE PROVIDED

Eaves, balconies, and other obstructions do not encroach upon the 24’ wide by 13’-6” high fire access roadway envelope.

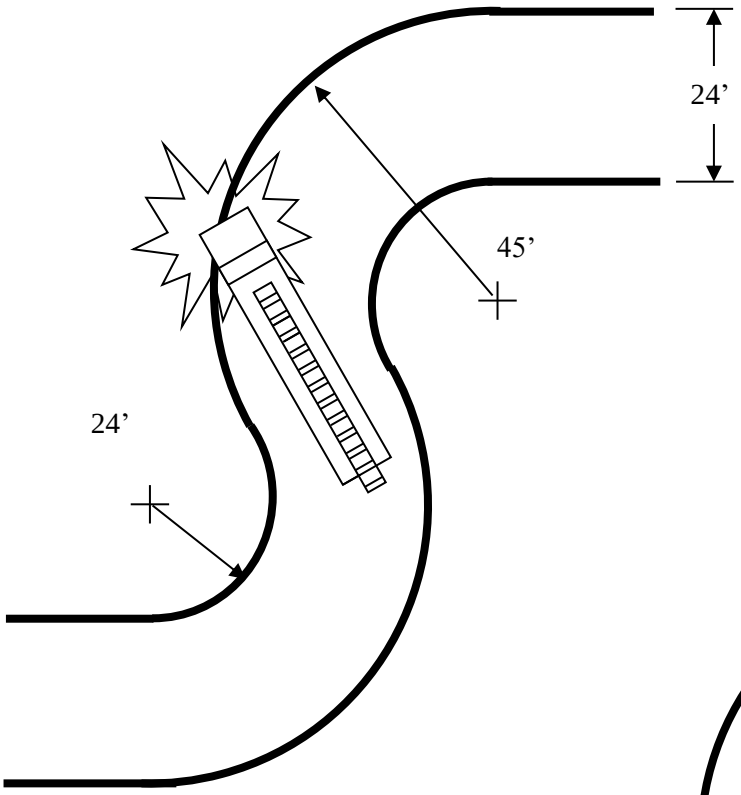


INSUFFICIENT CLEARANCE

A 24’-wide roadway has been provided, but eaves and vegetation effectively reduce the clear dimensions below required minimums.

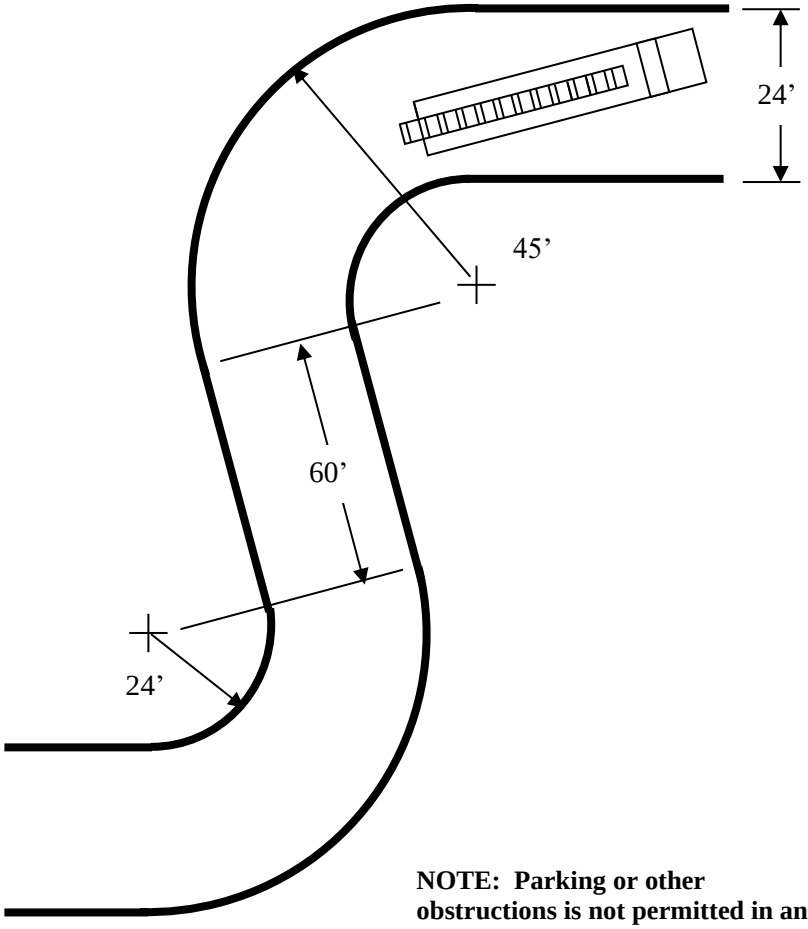
ATTACHMENT 6

"S" Curves



NOT PERMITTED

RVC fire apparatus are unable to negotiate tight "S" curves, such as the one shown to the left.



PERMITTED

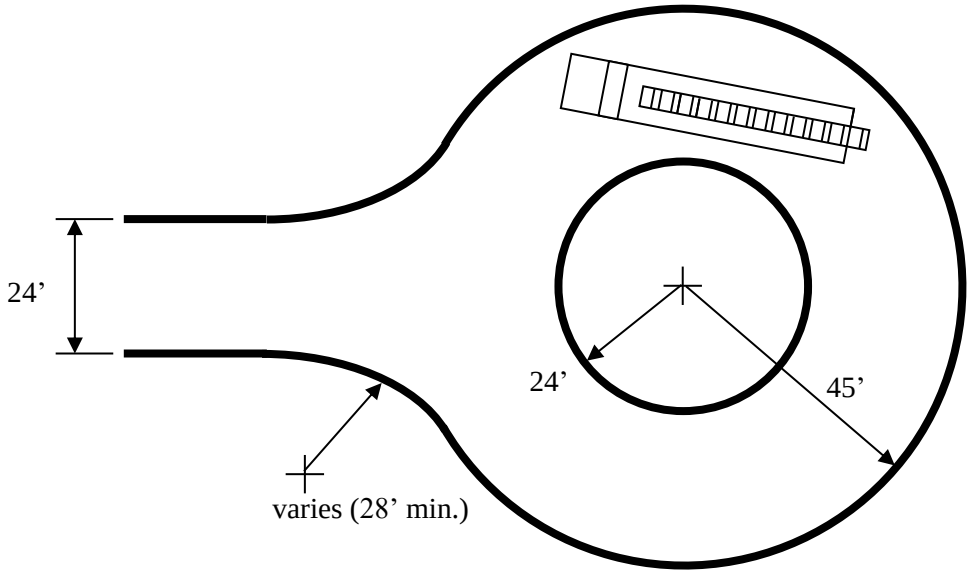
A 60' straight leg is required between the turns in a compound curve to provide sufficient recovery distance for the apparatus. Alternatively, the length of the straight leg may be reduced if the road width and/or turning radii are increased to allow for a wider turn.

NOTE: Parking or other obstructions is not permitted in any of these configurations at the dimensions shown.

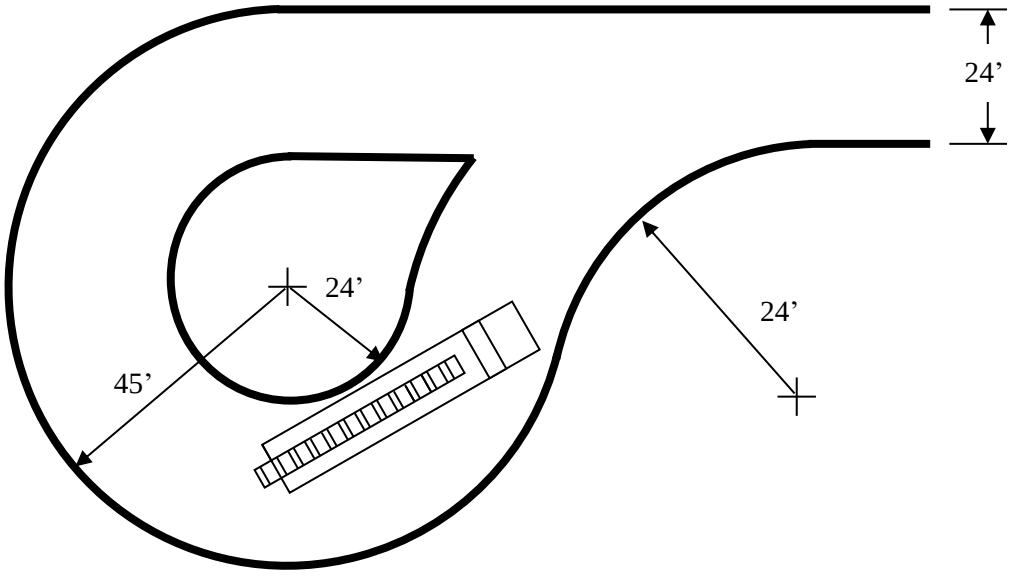
ATTACHMENT 7 (2 Pages)
Minimum Turnaround and Hammerhead Dimensions

NOTE: Parking is <u>not</u> permitted in these turnarounds at the dimensions shown.

Standard turnaround

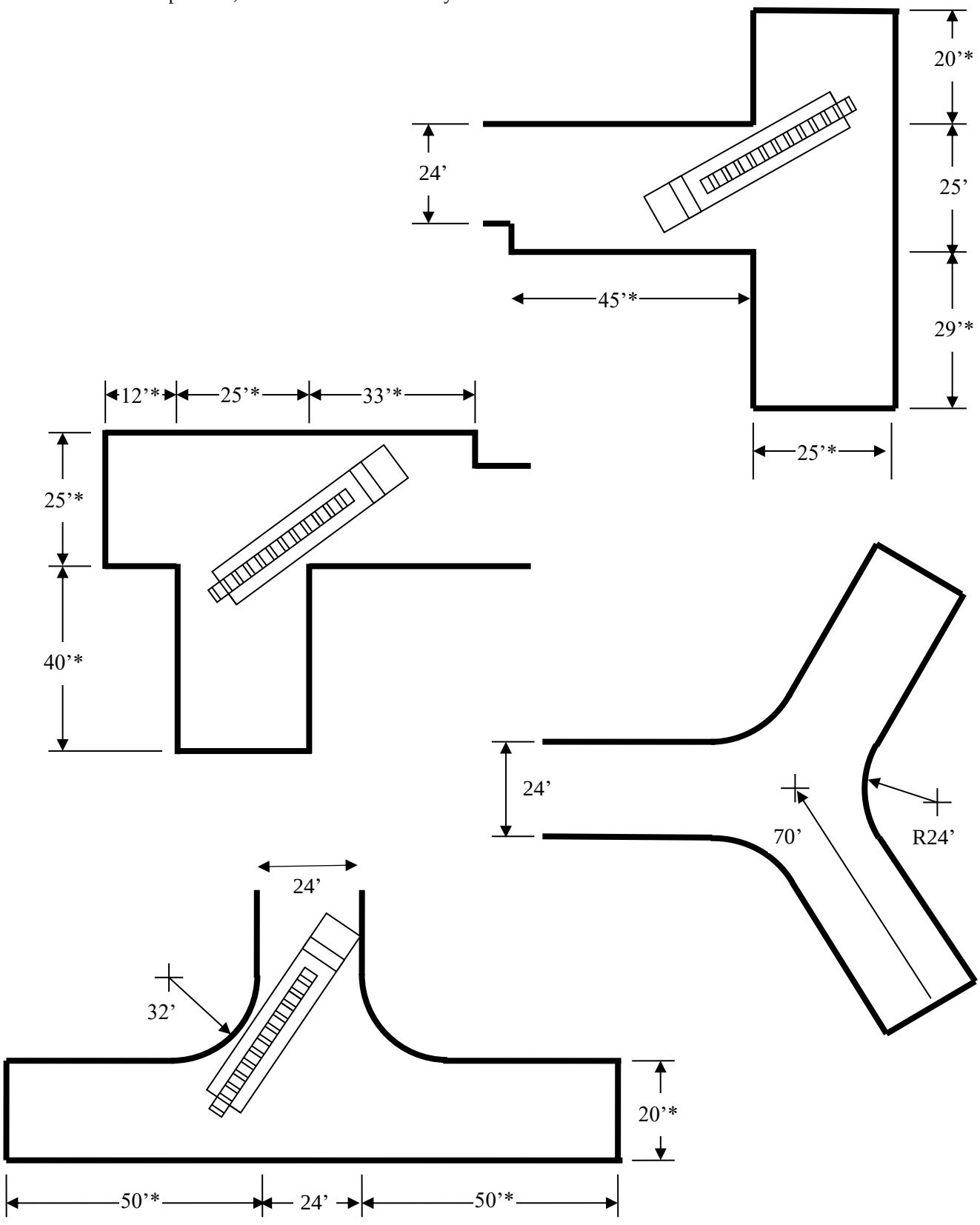


Offset turnaround



NOTE: Parking is not permitted in any of these hammerheads at the dimensions shown.

* Wherever possible, increase this dimension by five feet.



ATTACHMENT 8

Fire Lane Parking Violations

The California Fire Code (CFC) and California Vehicle Code (CVC) specify rules of the road for stopping, standing, and parking in fire lanes or near fire hydrants.

A. Section 22500.1 states that no person shall stop, park, or leave standing any vehicle whether attended or unattended, in any location designated as a fire lane by the fire department or fire district having authority over the area in which the place is located, except when necessary to avoid conflict with other traffic or in compliance with the direction of a peace officer or official traffic control device. Vehicles illegally parked in a fire lane may be towed per CVC 22953(b).

B. There shall be no parking of any vehicles other than fire department vehicles within 15 feet of either side of a fire hydrant in accordance with CVC 22514(c). Such vehicles may be towed per CVC 22651(e).

C. CVC 22658(a) permits the owner or person in lawful possession of any private property, after notifying local law enforcement, to cause the removal of a vehicle parked on such property to the nearest public garage, if:

   1) A sign is displayed in plain view at all entrances to the property specifying:

      a) The ordinance prohibiting public parking, *and*

      b) A notation indicating that vehicles will be removed at the owner's expense, *and*

      c) The telephone number of the local traffic law enforcement agency, *or*

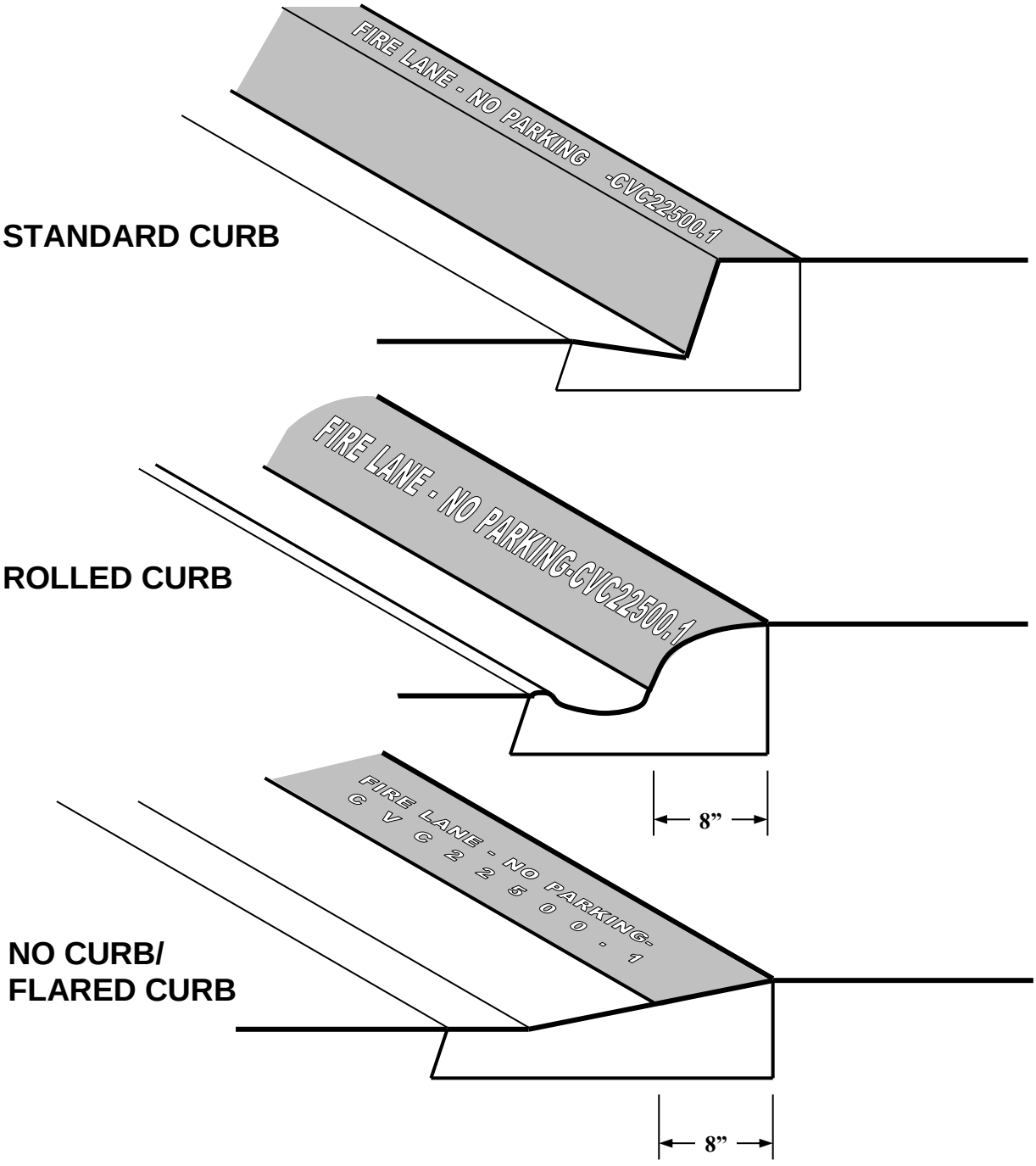
   2) The lot or parcel upon which the vehicle is parked has a single-family dwelling.

D. CFC 503.4 states that the required width of a fire apparatus access road shall not be obstructed in any manner, including parking of vehicles. Minimum required widths and clearances shall be maintained at all times.

E. CFC 507.5.4 states that vehicles and other obstructions shall not be placed or kept near fire hydrants, fire department inlet connections or fire-protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible. The fire department shall not be deterred or hindered from gaining immediate access to fire-protection equipment or hydrants.

ATTACHMENT 9

Fire Lane Identification – Red Curbs

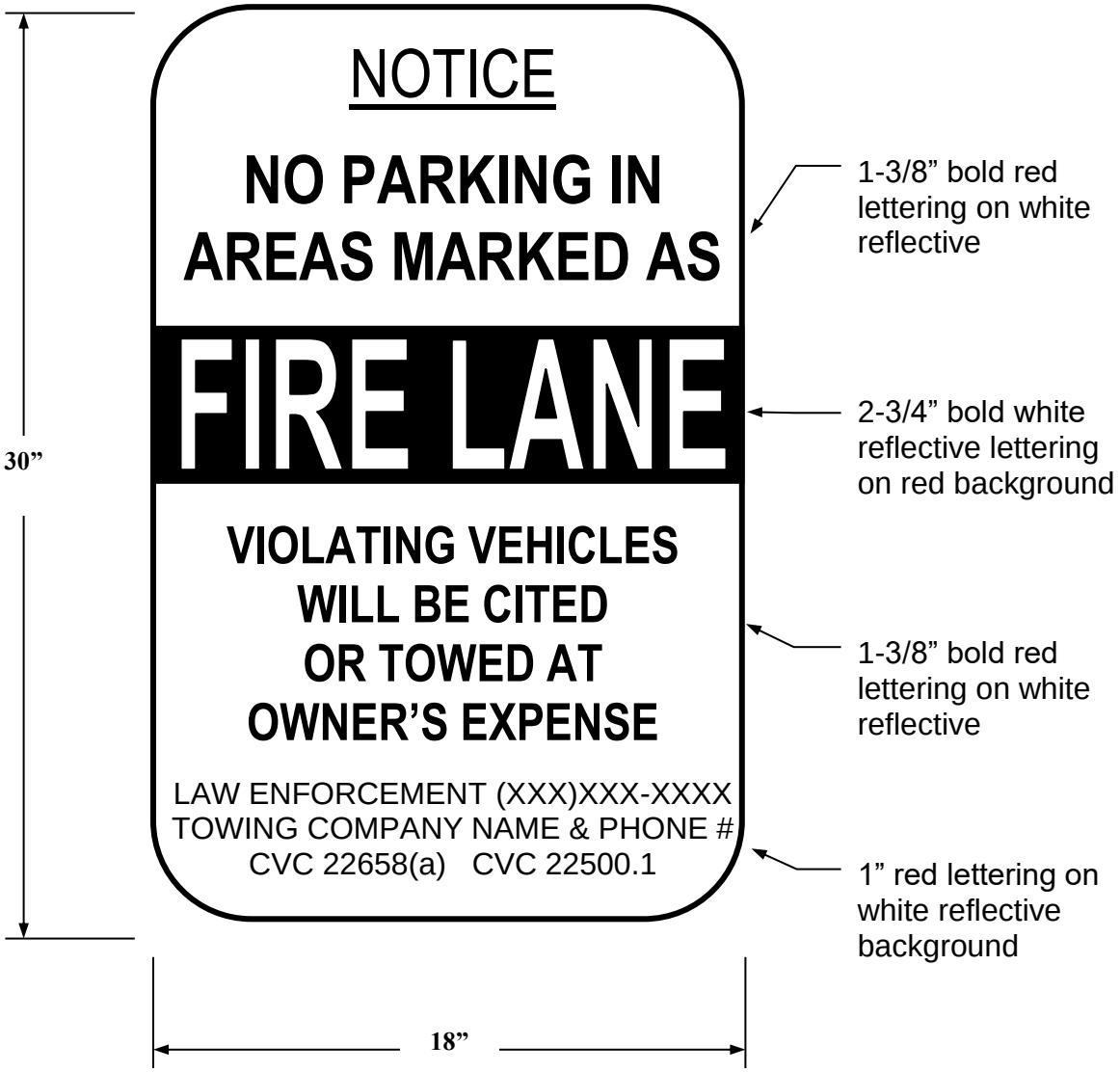


1. Fire lane entrance sign(s) shall also be provided per Attachment 10 or 11.
2. Curbs shall be painted OSHA safety red.
3. "FIRE LANE – NO PARKING – CVC 22500.1" shall be painted on top of curb in 3" white lettering at a spacing of 30' on center or portion thereof.
4. Other uniquely shaped areas that are part of a fire lane, may be outlined using these same methods, and adding diagonal RED lines within the designated fire lane area.

ATTACHMENT 10

Specifications for Fire Lane Entrance Signs

To be used only at *vehicle entry points*
to areas that contain "Fire Lane—No Parking" signs or red curbs



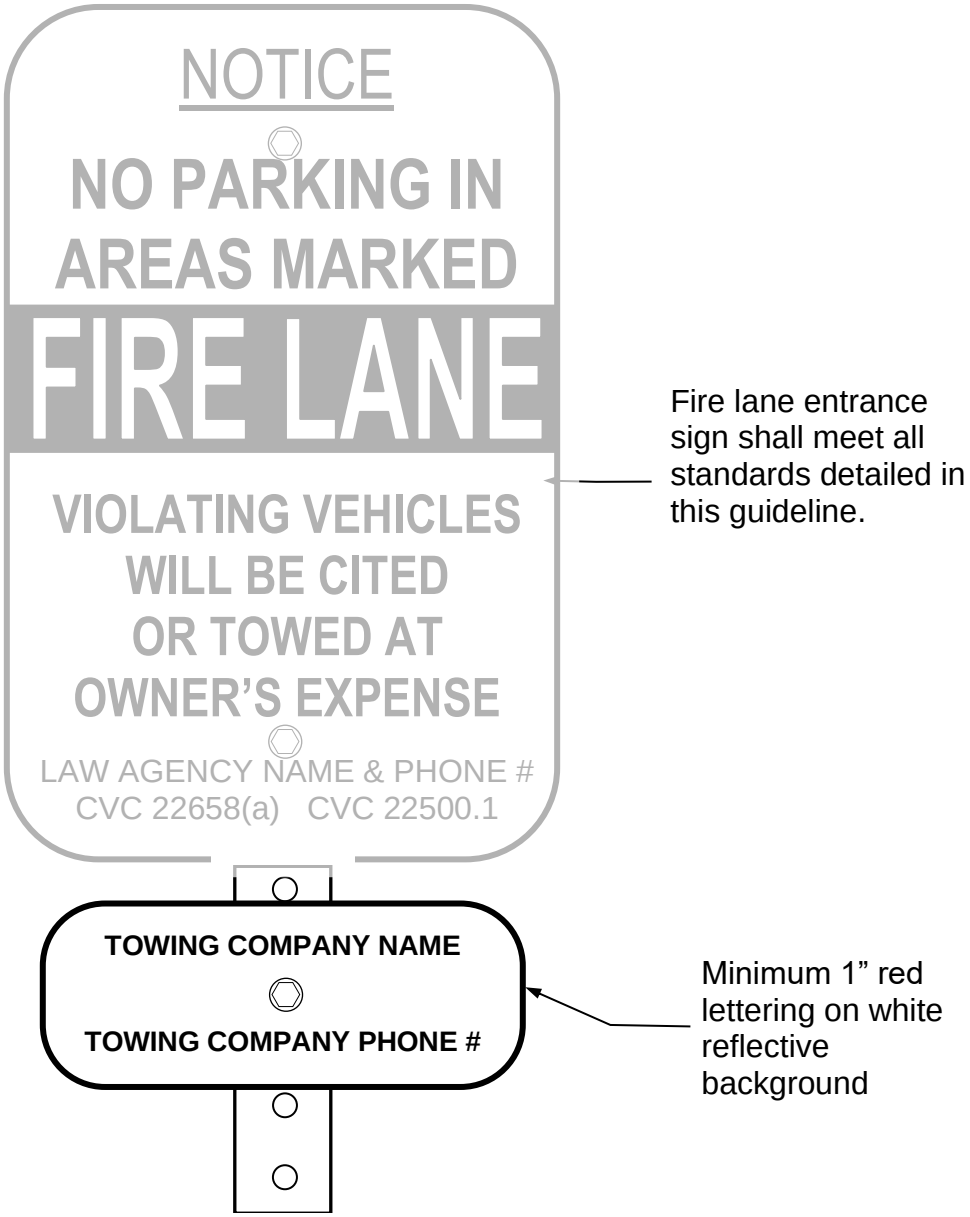
All sign and lettering dimensions shown are minimums. "Arial Narrow" font used is used in sample above though other legible sans-serif fonts may be acceptable.

This sign shall be posted at all vehicle entrances to areas marked with either red curbs or fire lane "No Parking" signs. Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachments 13 and 14.

Towing company contact information is required for all properties with a standing written agreement for services with a towing company per the California Vehicle Code.

ATTACHMENT 11

Specifications for Alternate Location of Towing Company Information



Towing company contact information is required for all properties with a standing written agreement for services with a towing company per the California Vehicle Code.

To facilitate periodic changes in towing company contracts, the towing company contact information may be posted on a separate sign mounted directly below the fire lane entrance sign instead of on the entrance sign itself. The method of attachment to the post shall not obscure the wording on either sign.

ATTACHMENT 12

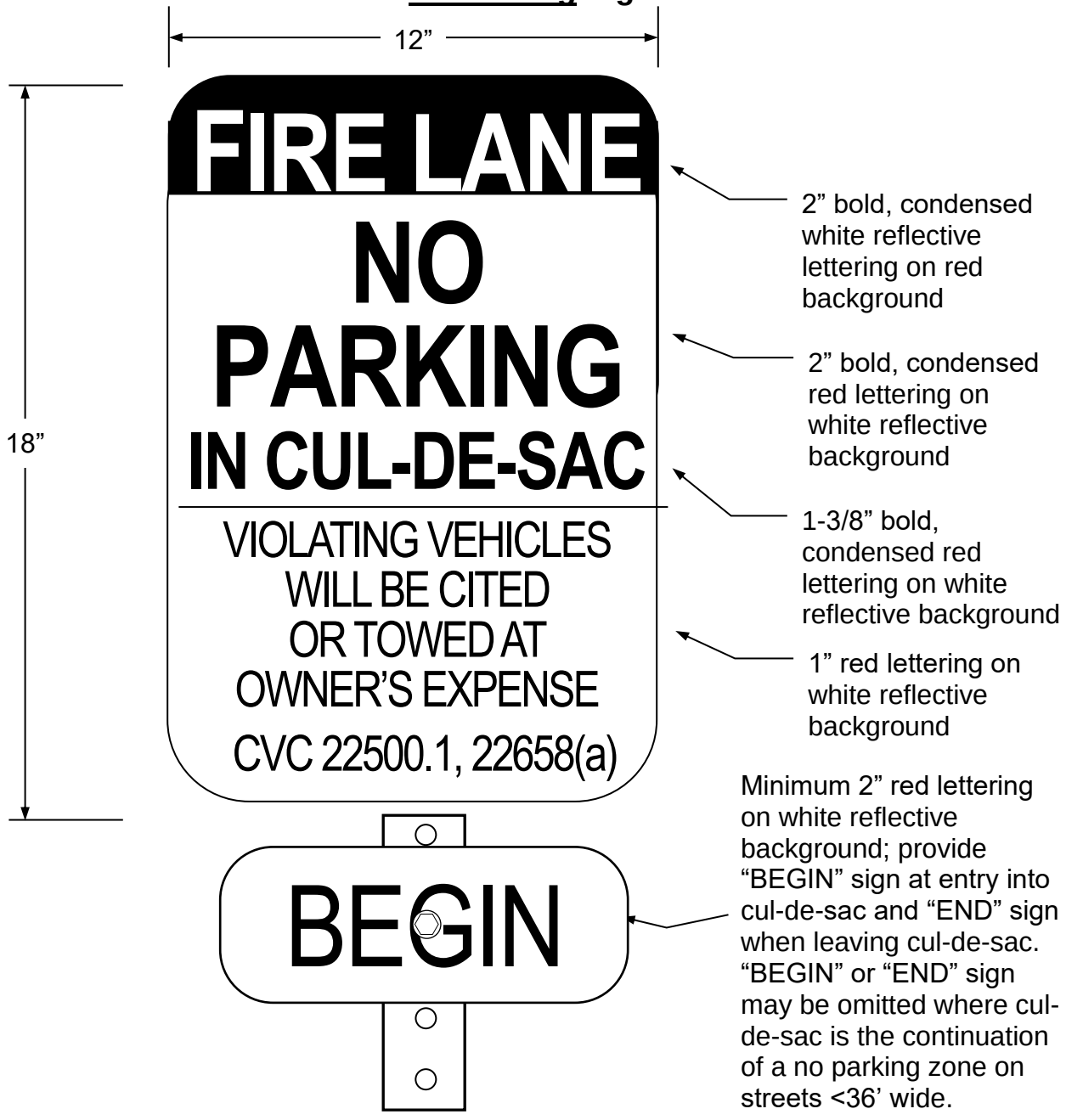
Specifications for
Fire Lane No Parking Signs

All sign and lettering dimensions shown are *minimums*. "Arial Narrow" font used is used in sample above though other legible sans-serif fonts may be acceptable.

Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachments 13 and 14.

ATTACHMENT 12a

Specifications for Cul-de-Sac Fire Lane No Parking Signs



All sign and lettering dimensions shown are *minimums*. “Arial Narrow” font used is used in sample above though other legible sans-serif fonts may be acceptable.

Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachments 13 and 14.

ATTACHMENT 12b

Specifications for Alternative Fire Lane No Parking Signs

Additional verbiage shall be 1” bold, condensed red lettering on white reflective background. Where parking stalls are not present, sign may omit “except in designated stalls“ and sign height may be reduced to 18”.

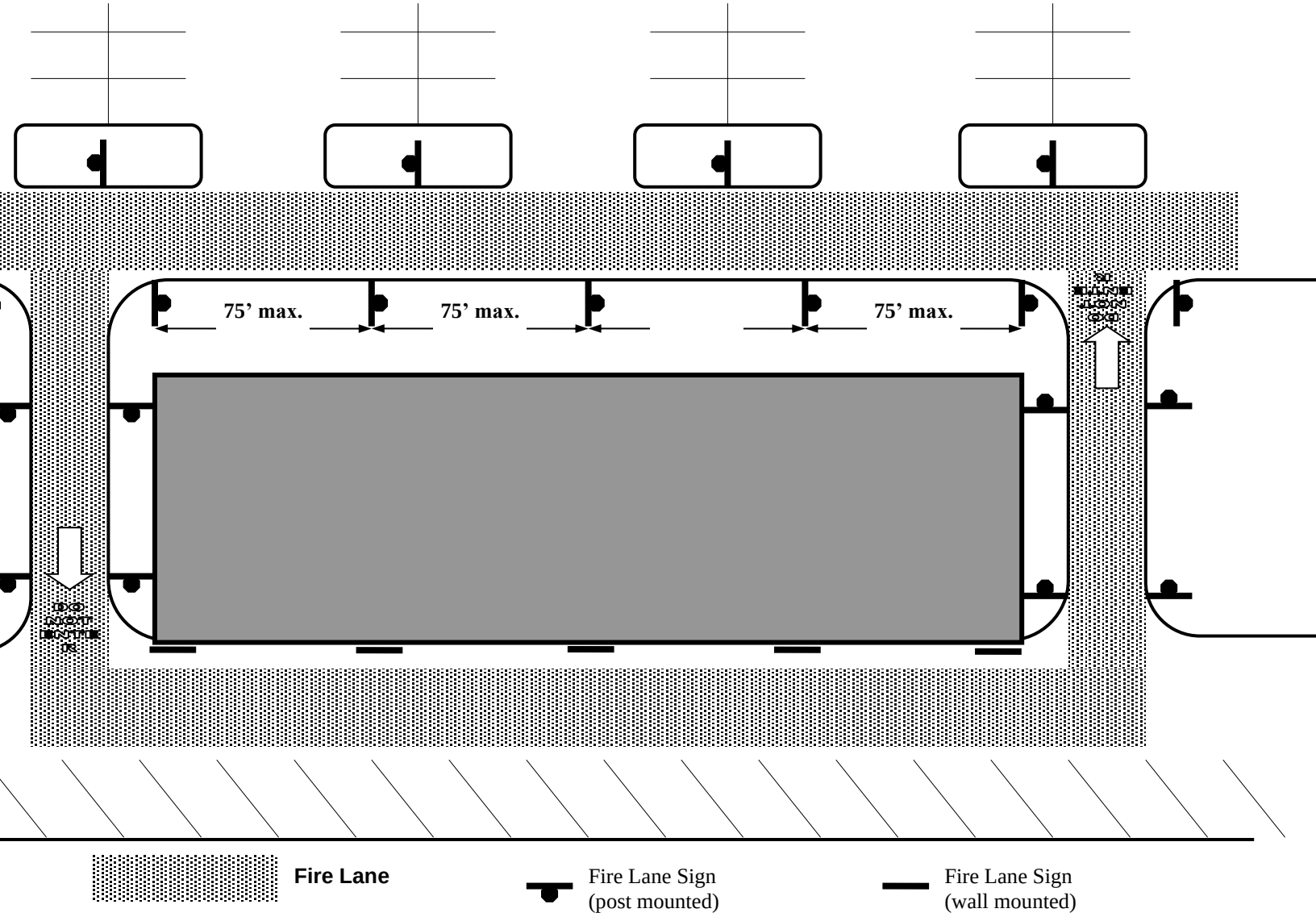
Specifications for the rest of the sign shall match those of standard fire lane no parking signs.

All sign and lettering dimensions shown are *minimums*. “Arial Narrow” font used is used in sample above though other legible sans-serif fonts may be acceptable.

Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachments 13 and 14.

ATTACHMENT 13

Fire Lane No Parking Sign Locations



Fire Lane

Fire Lane Sign (post mounted)

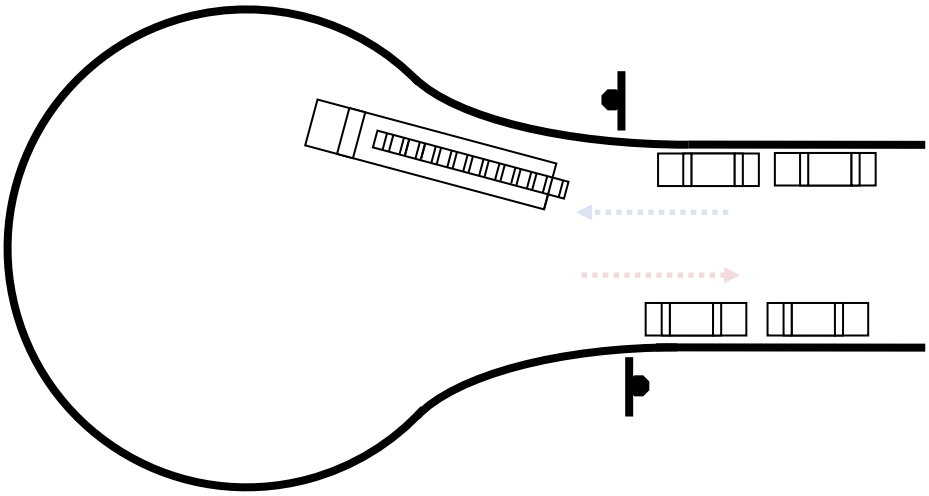
Fire Lane Sign (wall mounted)

Signs are required within 3' of the end of each designated fire lane and spaced a maximum of 75' along the entire designated lane. At least one sign is required for each island adjacent to the fire lane.

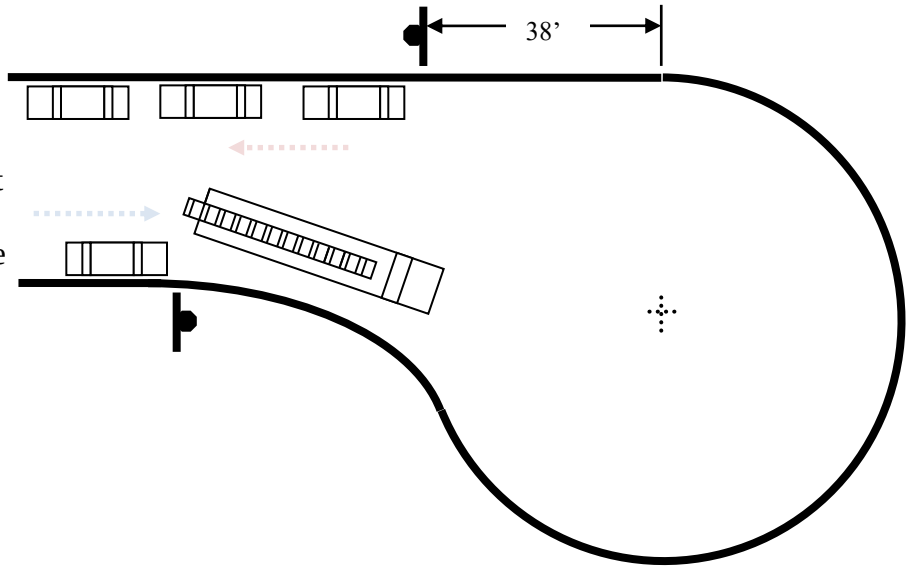
Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachment 14. Where signposts are not practical, signs may be mounted on a wall or fence. RVC inspectors will determine if additional signs or sign locations are required.

ATTACHMENT 13a

Fire Lane No Parking Sign Locations for Cul-de-sacs



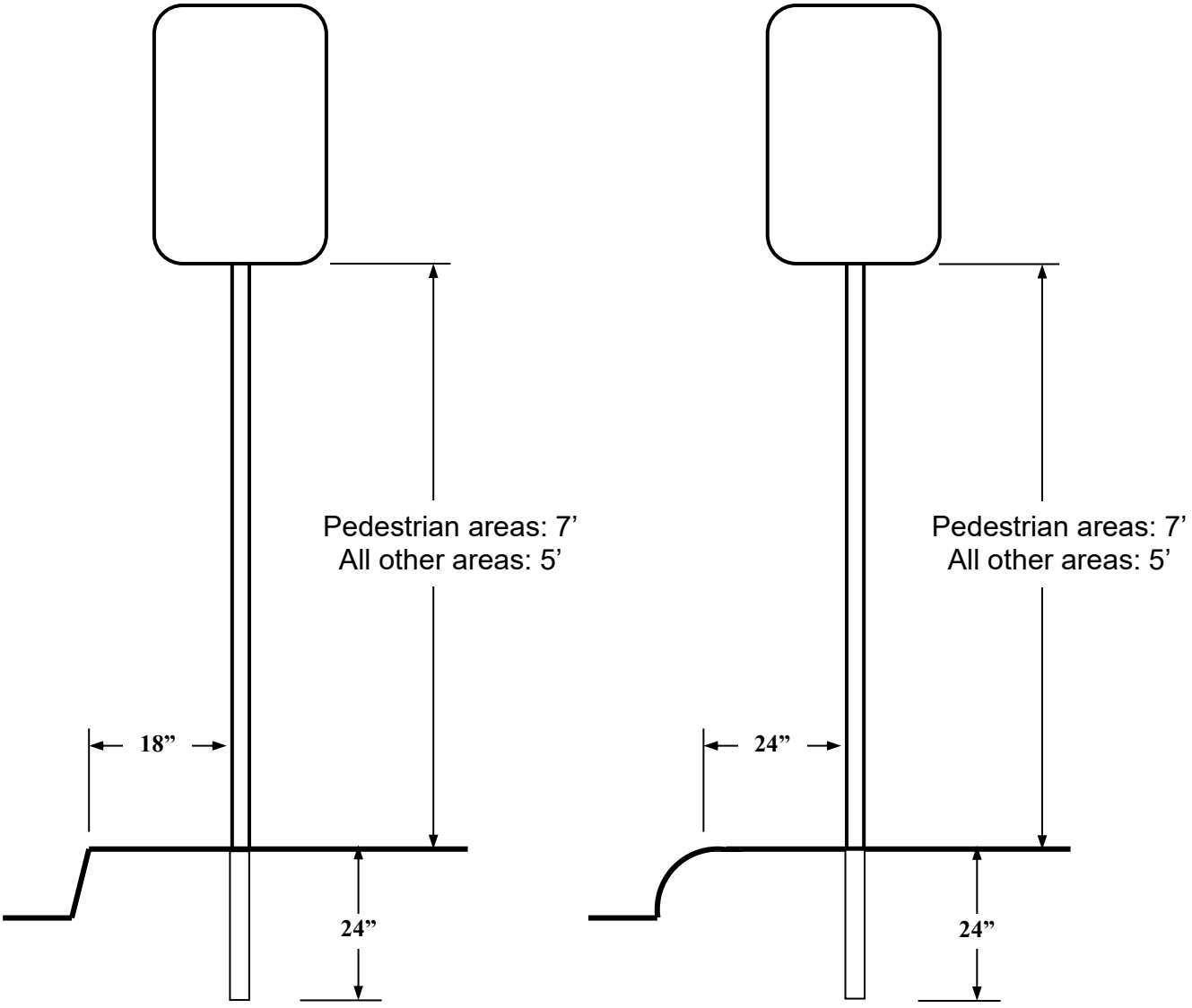
Standard 45’ radius cul-de-sac “no-parking entire cul-de-sac begin” and “end” signs shall be located at the point where the street begins to widen into the bulb (see Attachment 12a)



Offset 45’ radius cul-de-sac: “no-parking entire cul-de-sac begin” and “end” signs shall be located at the point where the street begins to widen into the bulb and at a point 45’ from where the cul-de-sac and street are tangent (see Attachment 12a)

ATTACHMENT 14

Mounting Specifications for Fire Lane Entrance and No Parking Signs



STANDARD CURB **ROLLED CURB**

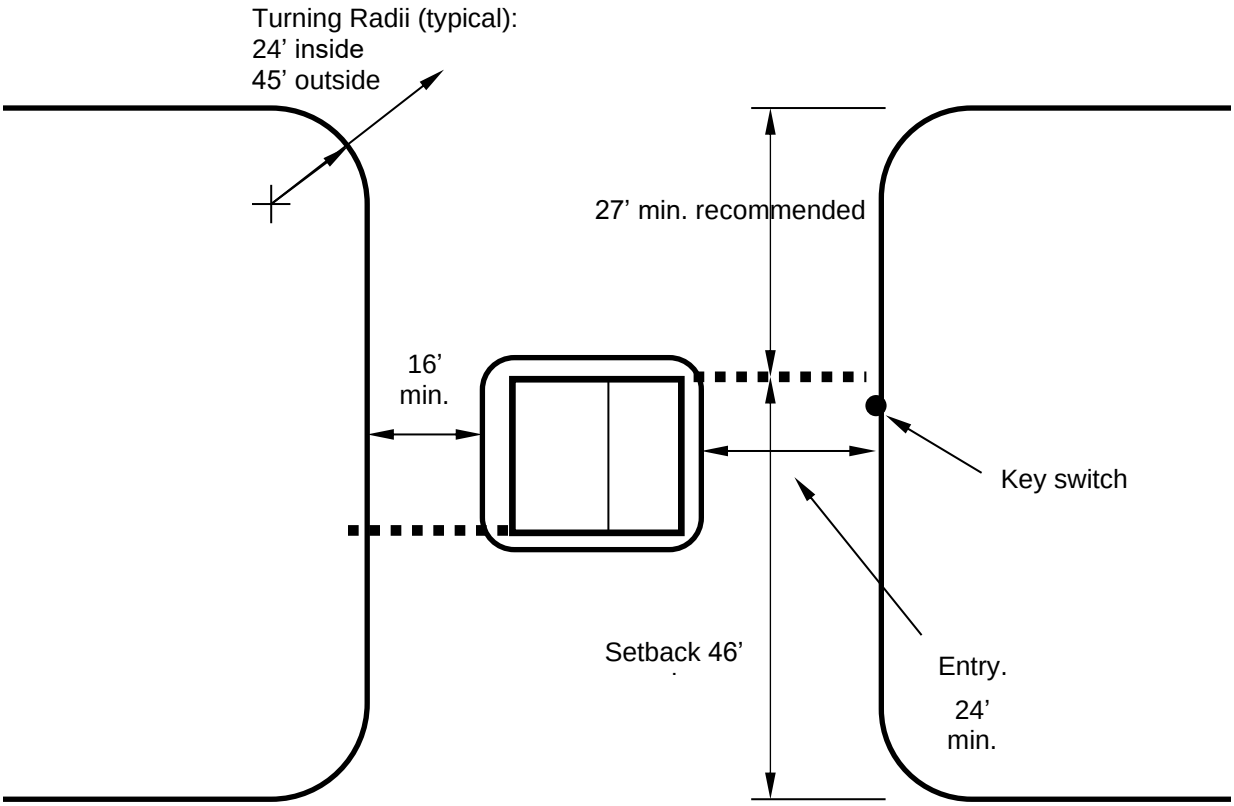
Signs shall be mounted facing the direction of vehicular travel.

Signs may be mounted on existing posts or buildings where the centerline of the sign is no more than 24" from the edge of the roadway.

Depth of bury shall be a *minimum* of 24" and rebar, a concrete footing, or another method to prevent removal of the sign is required. Footings for signs located in the public right-of-way shall be per the local jurisdiction's requirements.

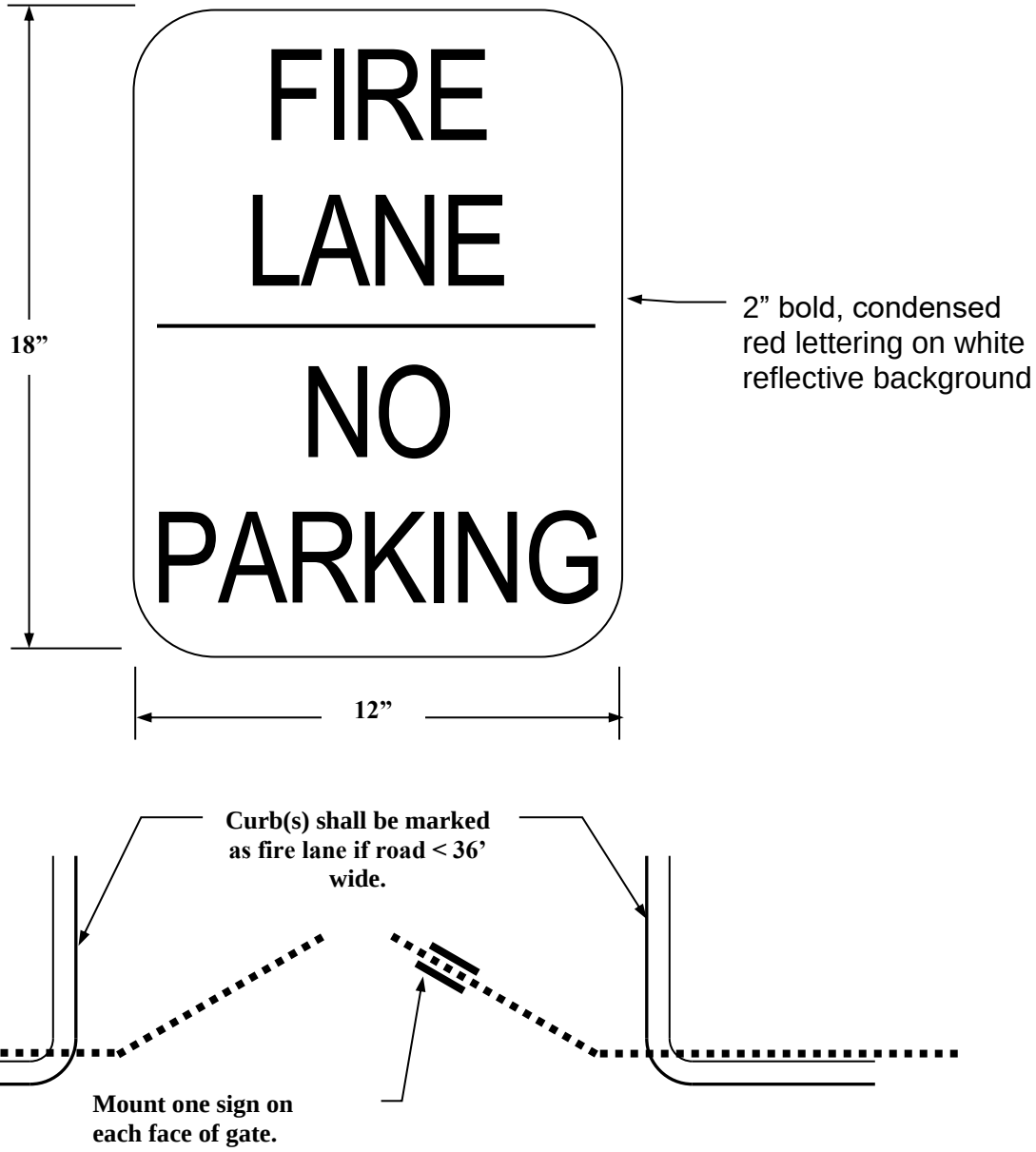
ATTACHMENT 15

Minimum Gate Setbacks



ATTACHMENT 16

Specifications for "Fire Lane - No Parking" Signs for Manually Operated Gates and Barriers



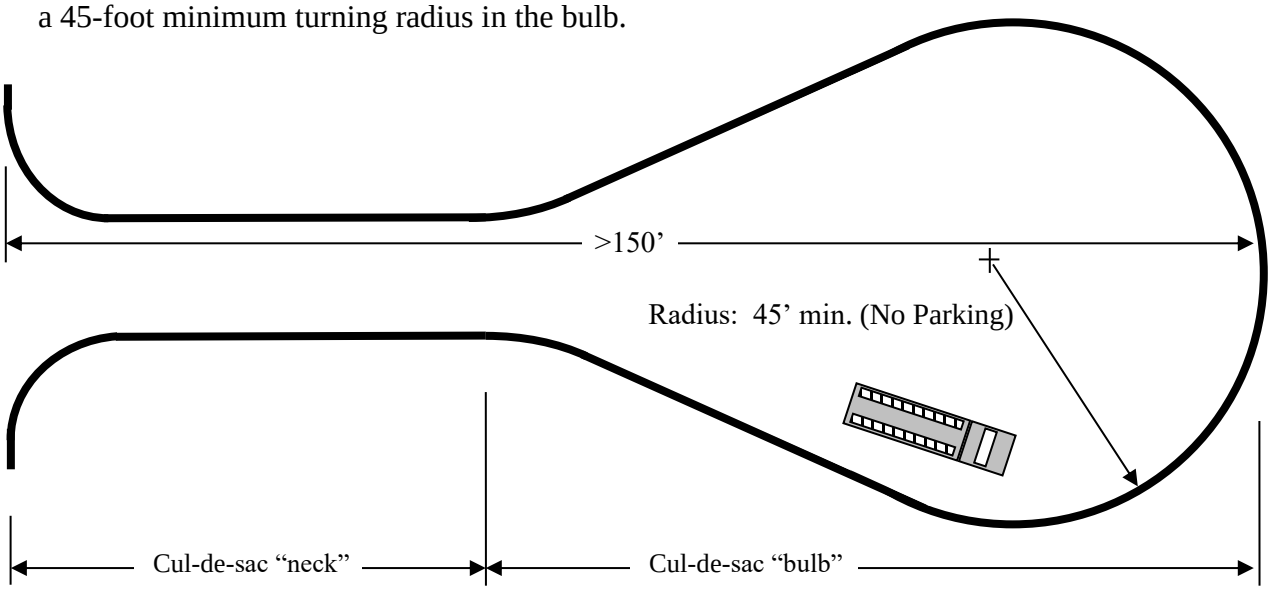
All sign and lettering dimensions shown are minimums. "Arial Narrow" font used is used in sample above though other legible sans-serif fonts may be acceptable.

"Fire Lane—No Parking" sign shown in Attachment 12 may be used as an alternative. Signs shall be securely mounted on the front and back face of the gate clearly visible to traffic entering the designated area. Signs shall be made of a durable material.

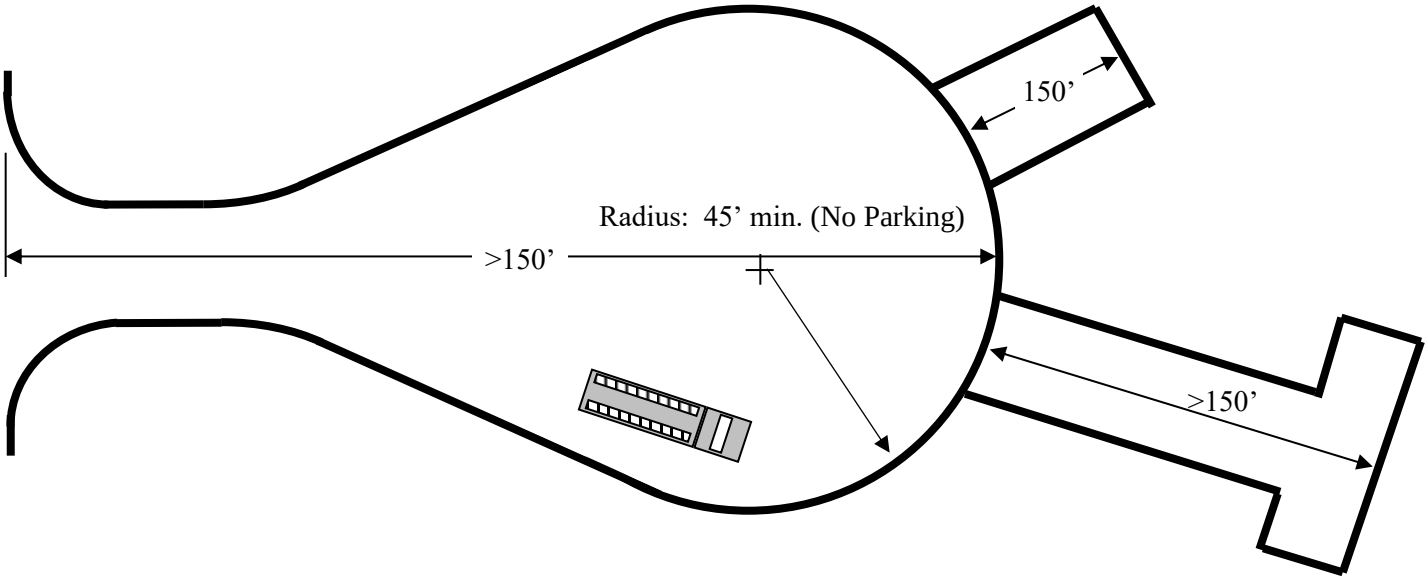
ATTACHMENT 17

Cul-de-sacs and Dead-end Roads

1) Cul-de-sac streets greater than 150 feet in length that are required fire lanes shall be provided with a 45-foot minimum turning radius in the bulb.



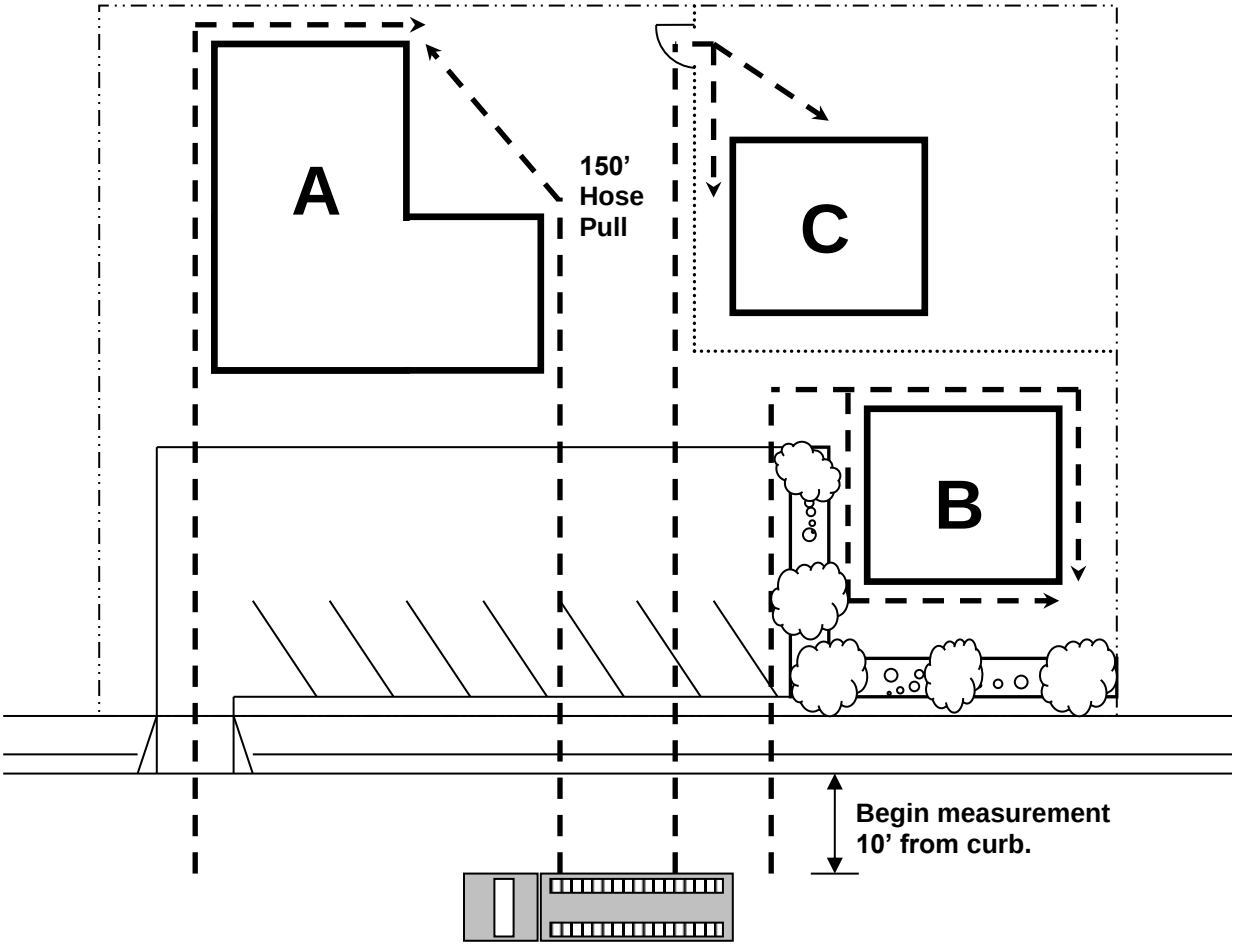
2) Where a spur road or private driveway that is a required fire lane is accessed via the cul-de-sac road, the driveway or spur shall be no more than 150’ in length unless an approved turnaround has been provided within 150’ of the end of the spur or driveway.



Drawing not to scale

ATTACHMENT 18

Hose Pull



In the example above, assume that the parking lot is not accessible to fire apparatus due to turning radii and fire lane widths less than the required minimums.

- All portions of building “A” are within 150’ feet of the public road as measured along the path of firefighter travel. This building is in access.
- Building “B” is also in access despite the obstruction presented by the planter and hedges.
- Building “C” is out of access; the presence of a chain-link fence forces firefighters to backtrack once they pass through the gate, increasing their travel distance beyond 150’. On-site fire access roads or a change in the location of the gate and would be necessary to provide access to Building “C”.