FIRE DEPARTMENT APPARATUS ACCESS & WATER SUPPLY

Definitions

Approved: The design, material, or equipment is acceptable to the Fire Department.

Emergency Escape and Rescue Window: An operable window that provides a means of escape and access for rescue in an emergency.

Emergency Vehicle Access Easement (EVAE): An emergency access easement conveys the right of ingress and egress for fire protection and emergency services. Necessary easements are required to "be recorded" with the County of Santa Clara.

Fire Apparatus Access Roads: The means for emergency apparatus to access a facility or structure for emergency purposes. Roads must meet specified criteria for width, pavement characteristics, roadway gradient, turning radius, etc. Roadways must extend to within 150 feet of all portions of the exterior of the first floor of any structure., etc.

Hose Pull: The effective distance (150 feet is standard) firefighters can drag a hose from the fire apparatus to attack a fire. Hose pull is measured along a simulated path of travel, accounting for obstructions and not a straight line. The Fire Department always determines the starting point.

Knox Systems: Knox systems are used to secure keys for buildings or protect fire protection system components. All Knox systems are only accessible to fire department personnel.

Traffic Calming Devices: Traffic calming devices include the following: speed bumps, humps, dots, round-a-bouts, bollards, etc., and are not permitted on any fire access road unless specifically approved.

Apparatus Access Roadway Plan Submittal Requirements

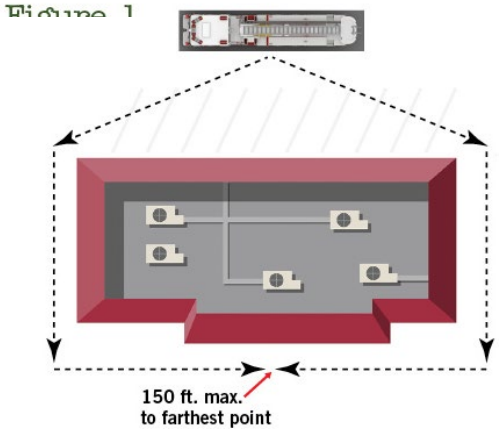
Construction documents must be submitted directly to the fire department documenting the following elements separate from the civil plans. The submittal can be deferred or incorporated into the Building Permit application. The following are examples of elements that must be presented:

- Fire Apparatus Access Roadways
- EVAE's
- Gates, Barriers, Bollards
- Fire Department Connection(s)
- Access Walkways/Ladder Pads
- Surface Materials
- Fire Hydrants (public & private)
- Roadways Section & Loading Capacity
- Fire Lane Identification
- Post Indicator Valve (PIV)
- Other Fire Protection Equipment
- Opticom/Tomar/Knox Systems

- Perimeter Pathways
- Addressing

Perimeter Access

1. When fire apparatus access roads are required, such improvements shall be installed and serviceable before vertical construction.
2. Fire apparatus access roadways shall be provided for every facility, building, or portion of a building so that all parts of an exterior of the first story of the building are located **not more** than 150 feet from a fire apparatus access as measured by an ***approved*** route around the exterior of the building. If the distance measured from the fire engine to the furthest point of the building exceeds 150 feet, additional fire access roadways are required.



3. The dimension of 150 feet concerning fire department access for smaller buildings is called hose pull distance. The pathway around the exterior of the building is required to be all-weather and a minimum of five feet in width (see Figures 5 & 6 in the Appendices for additional guidance). Fences, planters, bio-swale, water retention structures, trees, vegetation, and other structures must not obstruct these required pathways.

Small Buildings Only

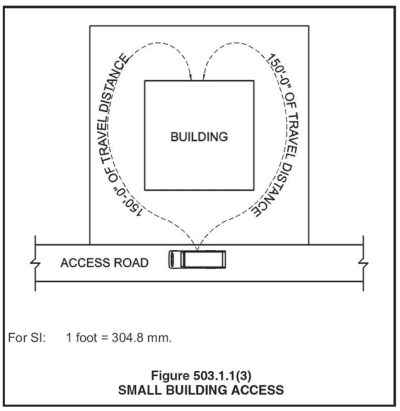


Figure 503.1.1(3)
SMALL BUILDING ACCESS

4. The following are two necessary clarifications to the applicable code section:
    a. We do not allow increases in hose pull distance for buildings equipped with fire sprinklers.

b. Dead-end access roads installed to meet hose pull requirements are typically not acceptable.

Multiple Access Point Requirements

1. **Commercial & Industrial Developments**: Buildings or facilities having a gross building area of more than 62,000 square feet shall be provided with two separate and approved fire apparatus access roads. Access roads must be placed a distance apart equal to not less than one-half the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.
2. **Multi-Family Residential Developments:** Multiple-family residential projects having more than 100 dwelling units shall be provided with two separate and approved fire access apparatus roads. Access roads must be placed a distance apart equal to not less than one-half the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

Aerial Access

1. Buildings with an eve height exceeding 30 feet from the lowest level of fire department access must have aerial apparatus roadway(s). The minimum number of sides is project-specific and depends on the building configuration, design, occupancy, construction type, etc.
2. Aerial apparatus roadways must be located such an aerial apparatus will have clear access to the "entire" face/sides of the building (**see Figure 5 in the Appendices for additional guidance**).
3. Aerial access roadways must be located not less than 15 feet and not greater than 30 feet from the building's face.

Width

1. The minimum width of fire apparatus access roadways is 26 feet (**see Figures 1 & 2 in the Appendices for additional guidance**)
   Exceptions:
   1) Building(s) that do not exceed 30 feet in height (roof height is measured from the roof even to the lowest level of fire department access.
   2) Roadways without fire hydrants installed.

Parking

Parking on two sides is permitted on private roads 38 feet or more in width (see Figures 1 & 2 in the Appendices for additional guidance). Parking on one side is allowed on a roadway at least 26 feet but less than 38 feet wide. No parking is permitted on streets narrower than 32 feet in width.

Vertical Clearance

Fire access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches. Aerial apparatus access roads may require additional vertical clearance. If a parking garage is

part of the required means of access, the minimum vertical clearance is 16 feet (see Figure 3 in the Appendices for additional guidance).

Surface Materials

A paved surface was designed and maintained to support the imposed load of fire apparatus with a gross vehicle weight of 75,000 pounds.
Exception:

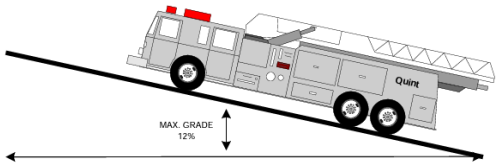
1) Alternative proposal required an AM&M application to be submitted for consideration.

Turning Radii

The minimum inside turning radius for fire apparatus access roads is 30 feet.
Traffic calming devices, including gates, bollards, speed bumps, speed humps, speed dots, roundabouts, etc., are not permitted on any designated fire access roadway unless approved.

Grade

The grade for access roads shall not exceed 12 percent to facilitate the safe operation of pumping equipment.



Bridges & Culverts

Where a bridge or culvert crossing is part of a fire apparatus access road, the bridge shall be constructed and maintained per AASHTO HB 17. Bridge and culvert crossings that serve as part of fire apparatus access roads shall be designed for a live load of a minimum of 75,000 pounds gross vehicle weight. Vehicle load limits shall be posted on both bridge and/or culvert crossing entrances when required.

Approach & Departure Angles

The approach angle shall not exceed 12.0 degrees, the angle of departure 10.0 degrees, and the break-over angle 5.82 degrees unless approved (see Figure 17 in the Appendices for additional guidance).

Dead-End Access Roadways:

1. Dead-end fire access roads more than 150 feet in length (measured from the curb perpendicular to the roadway) shall be provided with an approved turnaround. Turnarounds are approved on a project-by-project basis depending on various factors, including but not limited to fire department access, engineered fire protection, and project design.

2. Turnarounds must be dedicated to that purpose alone and stripped and post-fire lane or similar.

3. The Fire Department determines acceptable configuration(s) of turnarounds, not the project design team. See Appendix C of the California Fire Code as amended for guidance.
4. Highlighting that the fire apparatus stops at an imaginary line is not acceptable. If the roadway exceeds 150 feet in length, an approved turnaround is required.
5. Turnarounds below a building require specialized design parameters and must only be dedicated to that specific use.

Perimeter Access

1. When fire apparatus access roadways are not provided around the entire perimeter of a building or structure, all-weather pathways for firefighters are required and meet the following requirements (see Figure 8 in the Appendices for additional guidance):
    a. Pathway width must be a minimum of 60-inches and unobstructed.
    b. All-weather pathways must be concrete, asphalt, pavers, or another approved engineered surface.

Overhead Utility & Power Lines

Overhead utility and power lines easements must not be located over the fire apparatus access roadways or between the fire apparatus road and the building or structure to avoid the possibility of injury and equipment damage from electrical hazards (**see Figures 6 & 7 in the Appendices for additional guidance**).

Trees & Other Common Obstructions

1. Trees at full development must not exceed 30’ in height and not impair an aerial apparatus’ ability to sweep the sides of the building. Topping trees is not an acceptable alternative.
2. Other obstructions, such as site lighting and architectural features, are reviewed case by case.
3. Projections such as light poles, signposts, mailboxes, planter walls, and vegetation shall not be placed near the edge of the fire lanes where they can obstruct or be struck by portions of an emergency vehicle.

High-Rise Building

The California Fire and Building Codes define a high-rise building as having occupied floors more than 75 feet above the “lowest level” of fire department access (**see Figure 13 in the Appendices for additional guidance**).

Premise Identification

See each of the City of Santa Clara, Community Development Department, Building Division, and CRRD, Premises Identification standards for specific requirements.

Fire Lane Identification

1. Fire apparatus access roads shall be marked with permanent signage per the California Vehicle Code (CVC) “NO PARKING-FIRE LANE.” In specific circumstances, signage with “NO STOPPING-FIRE LANE” may be required. If required or provided, signage must have a minimum dimension of 12 inches wide by 18 inches high and have red letters on a white reflective background. The word “NO” shall be presented in a reverse color arrangement in the upper left-hand corner. Signs shall be posted on one or both sides of the fire apparatus road as required (**see Figure 9 in the Appendices for additional guidance**).
2. All designated fire lanes with raised curbs shall be painted red. “NO PARKING – FIRE LANE” or “NO STOPPING – FIRE LANE” shall be in white paint, 6 inches in height with a minimum 1-inch stroke, except curb heights less than 6 inches may have reduced letter sizes for the vertical signage on the curb but shall not be less than 4 inches. Lettering shall be painted at an interval of every 25 feet (**see Figure 9 in the Appendices for additional guidance**).
3. Property owners shall not designate and/or identify any roadway on their property as a fire lane without prior approval. The property owner must install and maintain all signs and curb markings. Exception:

    1) Alternative fire lane signage plans are considered on a case-by-case basis.

Emergency Escape & Rescue Openings

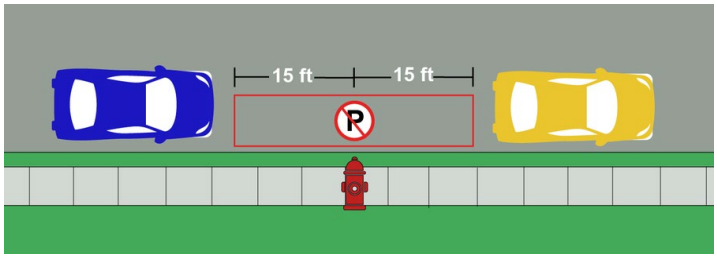
Emergency escape and rescue openings and associated fire department access to those openings are required in residential buildings of Type IIB, Type IIIB, Type VA, and Type VB construction. Openings are required in all sleeping rooms below the fourth story above grade plane per California Fire & Building Codes (**see Figure 18 in the Appendices for additional guidance**). If access is required to these openings, the required five-foot all-weather pathway must be coordinated since footing a ladder at a typical three-story building requires a minimum of 9 feet of space from the face of the building and an additional 4 feet for access on the other side of the ladder for a total of 13’.

Fire-Flow

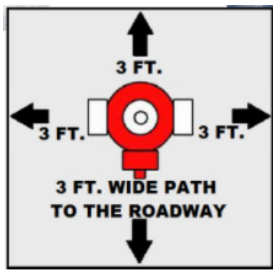
Fire-flow requirements are a collaboration between the Fire, and Water & Sewer Departments. If conflicts in the requirements arise the most restrictive requirement departments requirement shall apply. The fire-flow reduction for installing fire sprinklers is a maximum of 25 percent.

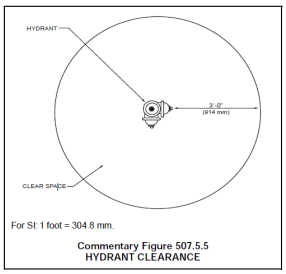
Fire Hydrants

1. Per the California Vehicle Code (CVC), section 22514, no person shall stop, park, or leave standing any vehicle within 15 feet of a fire hydrant (15 feet on either side of the fire hydrant for a total dimension of 30 feet). As reflected below, the curb in front of all fire hydrants located along roadways shall be stripped and/or provided signage with “NO STOPPING-FIRE LANE"(**see detail below and Figure 13 for additional information**). The CVC code section does not have to be stenciled.



2. As noted below, a minimum clear space shall be provided around the perimeter of fire hydrants.

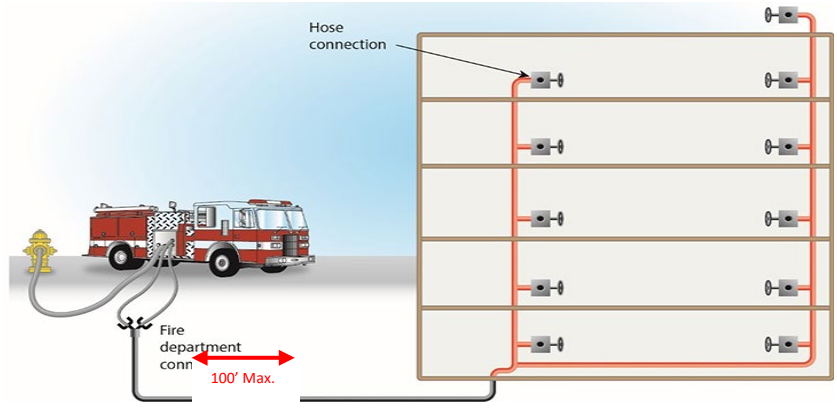




3. The location and spacing of hydrants are essential to the success of firefighting operations. The difficulty with determining the spacing of fire hydrants is that every situation is unique and has unique challenges. While California Fire Code Appendix C contains the minimum code requirements, we have provided specific installation guidance in the Appendices (**see Figure 14 in the Appendices for additional guidance**).
4. The developer must work with Public Works to install the blue dots on public roadways. The developer is always responsible for installing the dots in an ***approved*** manner (**see Figure 16 in the Appendices for additional guidance**).

Fire Department Connections

Fire department connections (FDCs) must be located no more than 100 feet from a public fire hydrant on the same side of the road.



1. Curbs in front of all Fire Department Connections (FDCs) shall be painted red for 15 feet (7.5 feet on either side of the FDC).

Gates

1. Permits are required for all new access gates, bollards, or barriers that may impede emergency vehicle or personnel access to a structure or facility. All-electric automatic opening gates must have a secondary power source to function during power loss.
2. Openings for access gates located across fire apparatus access roads shall be a minimum of 20 feet of clear width. They shall also have a minimum unobstructed vertical clearance of 13 feet, 6 inches. Project conditions may require extra width and/or vertical clearance by the project specifics (see Figure 11 in the Appendices for additional guidance).
3. **Automatic Gates**: All gates installed on designated fire department access roads must be electrically automatic powered gates. Gates shall be provided with emergency power or be of a fail-safe design, allowing the gate to be pushed open without special knowledge or equipment.
4. A detector/strobe switch shall be installed to control the automatic gates to allow emergency vehicles (e.g., Fire, Police, EMS) to flash a vehicle-mounted strobe light towards the detector/strobe switch, overriding the system and opening the gate. The gates shall have a TOMAR Strobe Switch or 3M OPTICOM Detector to facilitate this override. Said device shall be mounted at a minimum height range of eight to ten feet (8’ - 10’) above grade and is subject to an acceptance test witnessed by the Fire Department before final approval of the project.
5. **Manually Operated Gates – Construction Sites**: Manual gates and barriers shall be provided with Knox Padlocks, Model 3770, manufactured by the Knox Company. The Knox padlocks are used to secure manually operated gates or barriers. They can be used in conjunction with the property owner’s padlock(s) to allow property owners and emergency responders access. This access control system requires testing before the project's final approval (see Knox Systems Installation standard for specific guidance**)**.

Bollards

1. Bollards on emergency vehicle access roadways shall be steel not less than 6 inches in diameter. Bollards must be spaced not less than 6’- 6” feet on center between post(s). The center bollard or bollards shall be automatic retractable pneumatic type. The bollard(s) shall fail in the retracted position upon loss of power (see Figures 10 & 12 of this standard for additional information).
2. To control the automatic pneumatic bollard(s), a detector/strobe switch shall be installed to allow emergency vehicles (e.g., Fire, Police, EMS) to flash a vehicle-mounted strobe light towards the detector/strobe switch, which in turn overrides the system and retracts the bollard(s). The bollard(s) shall be equipped with a TOMAR Strobe Switch or 3M OPTICOM Detector to facilitate this override. Said device shall be mounted at a minimum height of eight to ten feet (8’ - 10’) above grade and is subject to an acceptance test witnessed by the Fire Department before final approval of the project (see Figures 10 & 12 of this standard for additional information).

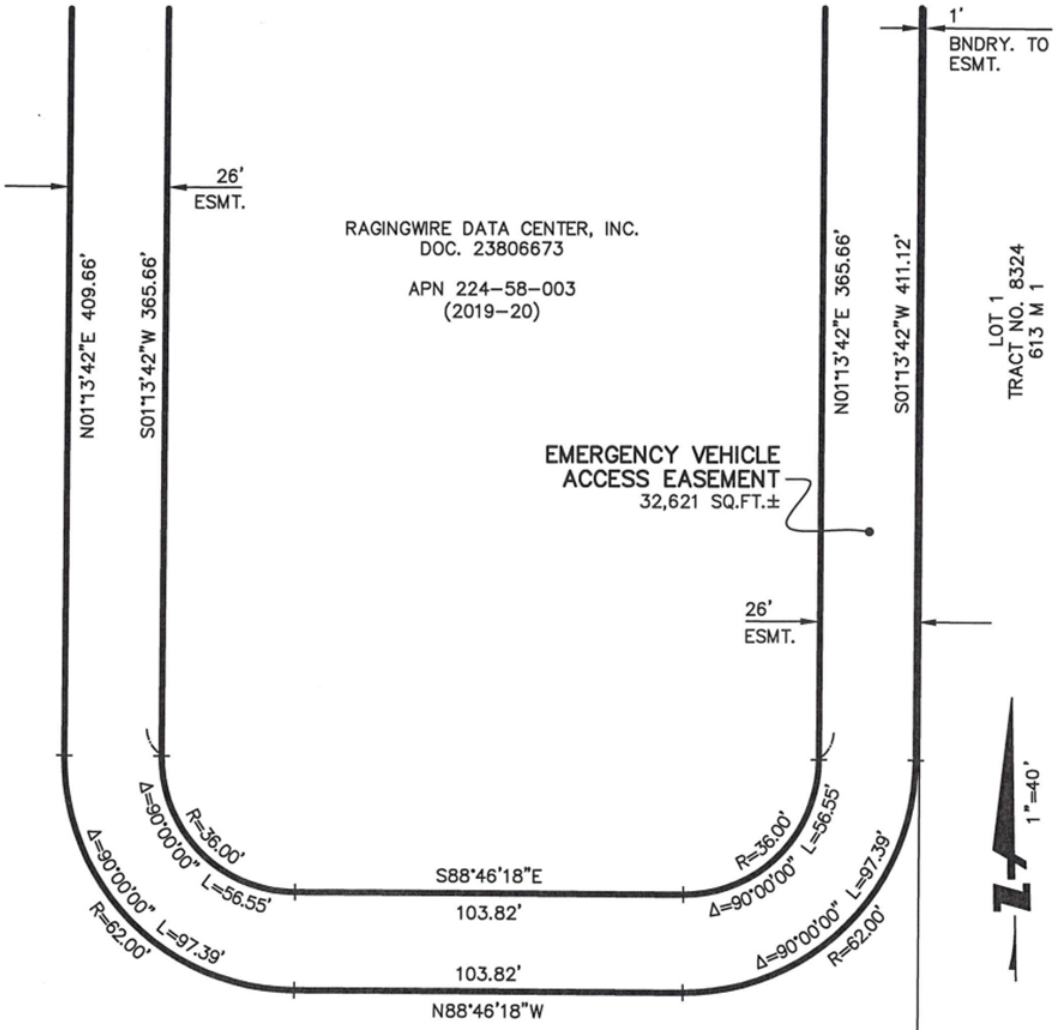
Fire Command Center (FCC)

1. The Fire Department must approve the fire command center's location, design, and layout.

2. The fire command center must be located on the exterior of the building with direct access to the interior of the building (**see Figure 13 of this standard for additional information**).
3. The fire command center shall be separated from the remainder of the building by not less than a 2-hour fire barrier constructed following the California Building Code.
4. The fire command center shall be not less than 0.015 percent of the total building area or 200 square feet in area, whichever is greater, with a minimum dimension of 0.7 times the square root of the room area or 10 feet, whichever is greater.

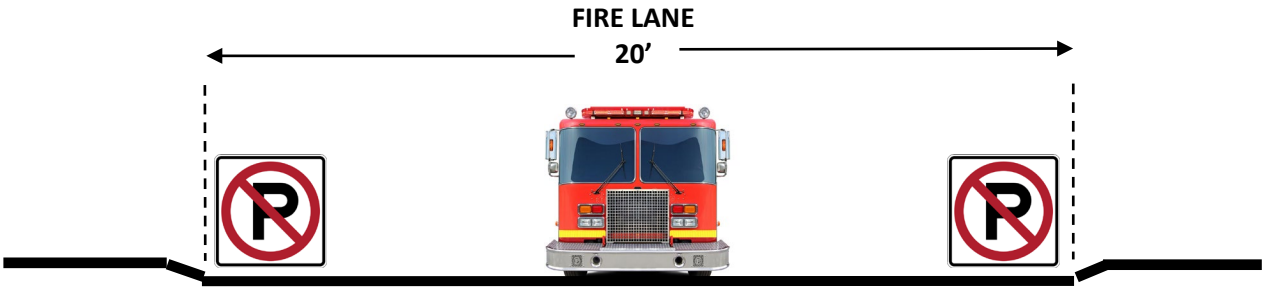
Emergency Vehicle Access Easement (EVAE):

Emergency vehicle access easements must be recorded for all private fire department apparatus access roadways. This conveys the right of ingress and egress for fire protection and emergency services for the project's life. Necessary easements are required to "be recorded" with the County of Santa Clara. Those requests are processed through the Department of Public Works. No other instruments, such as P.U.E, Ingress/Egress easements and/or City Right-of-Ways, will be considered as substitutions.



APPENDICES (Figures 1-18)

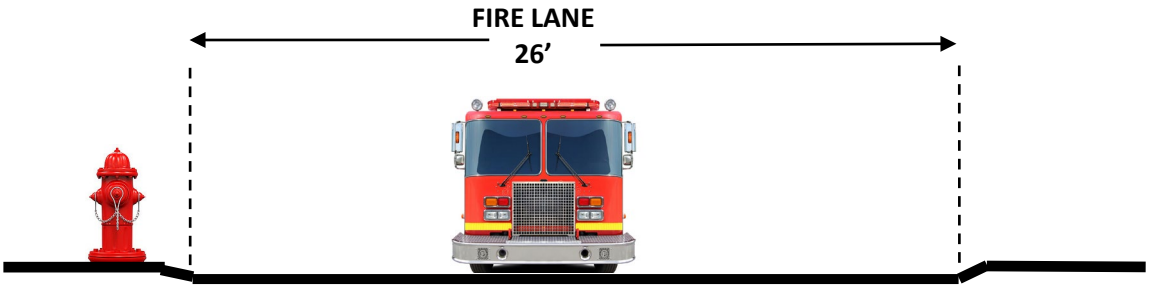
FIGURE 1 – Engine Road Width



The roadway can be 20’ if no on-street parking or fire hydrants exist. Both sides must be stripped and/or posted as fire lanes.

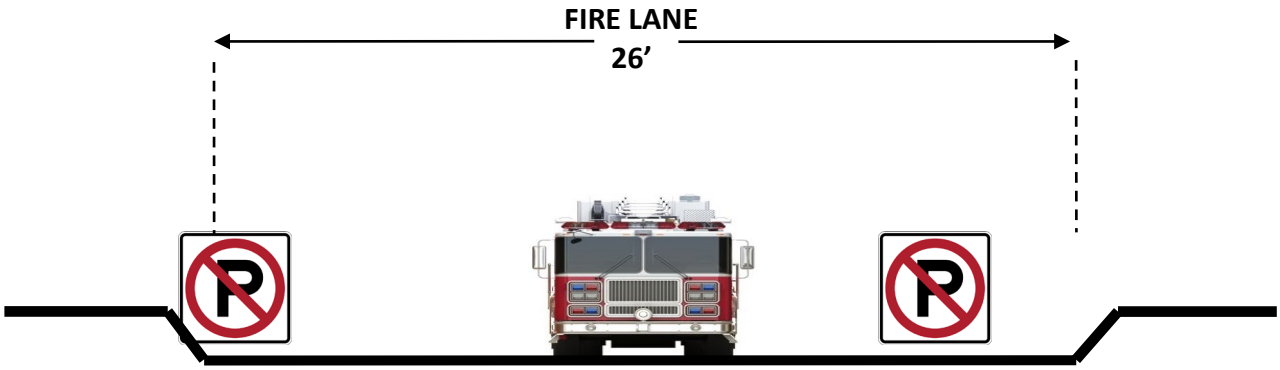
The roadway must be a minimum of 26’; the Roadway must be stripped and/or posted as a fire lane on at least one side.

Roadway 32’ or wider; Parking is permitted on both sides of the roadway.



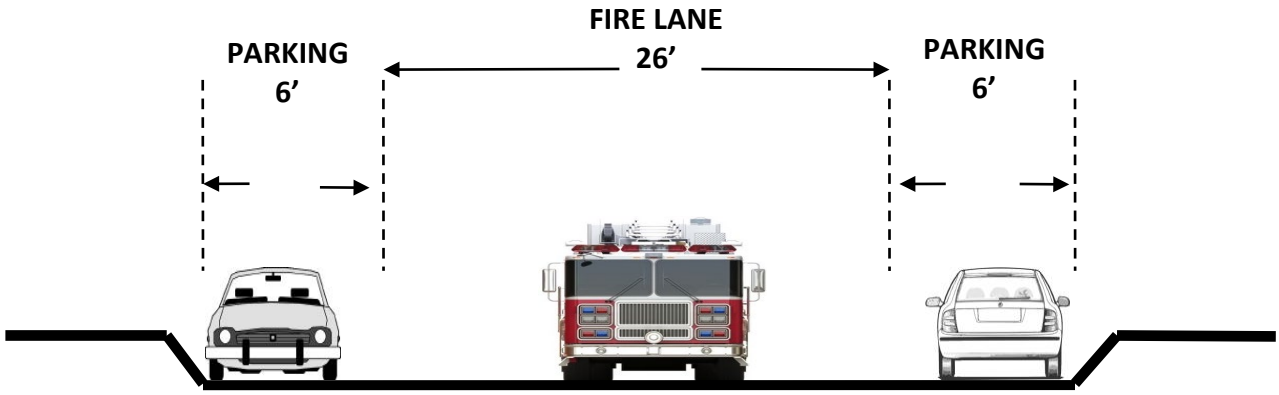
The roadway must be 26’ minimum when fire hydrants are installed along the street.

FIGURE 2 – Aerial Access Road Width



Roadway less than 26’; Parking is prohibited, and the roadway must be posted as a fire lane on both sides.

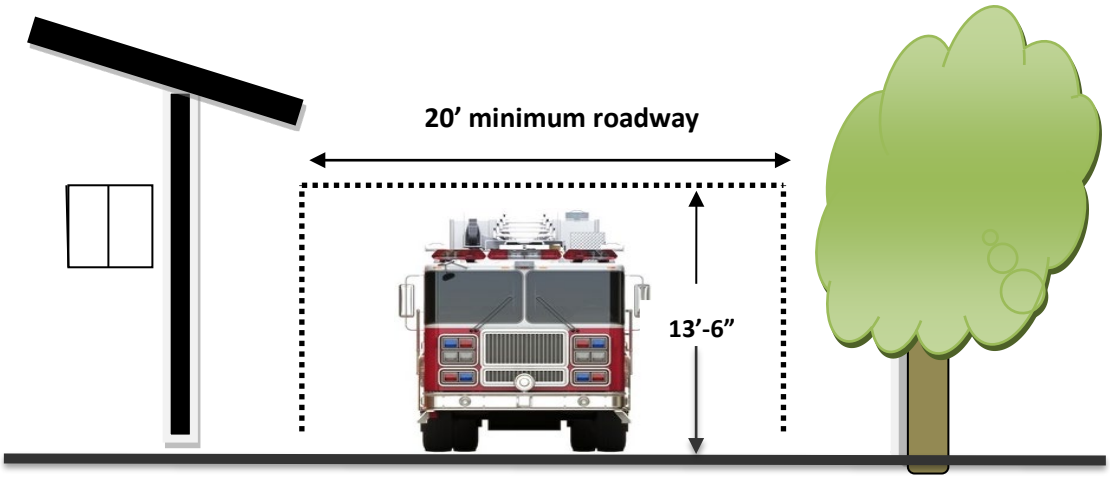
The roadway is at least 26’ but less than 32’. The roadway must be posted as a fire lane on at least one side.



Roadway 38’ or wider; Parking is permitted on both sides of the roadway.

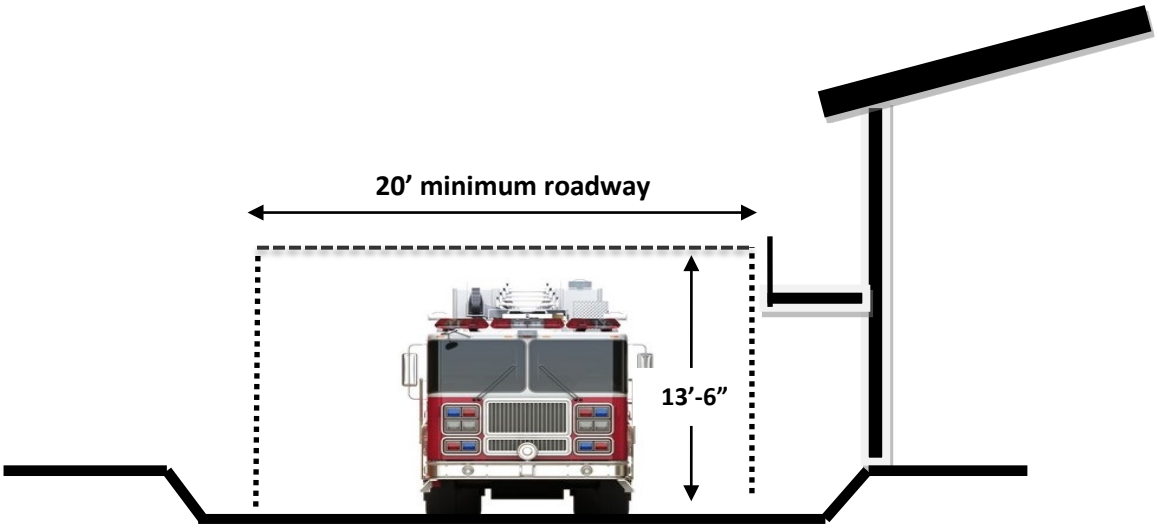
Note: All dimensions must be from face-of-curb to face-of-curb, excluding shoulders or rolled curbs. Additional roadway width greater than above may be required.

FIGURE 3 – Vertical Clearance



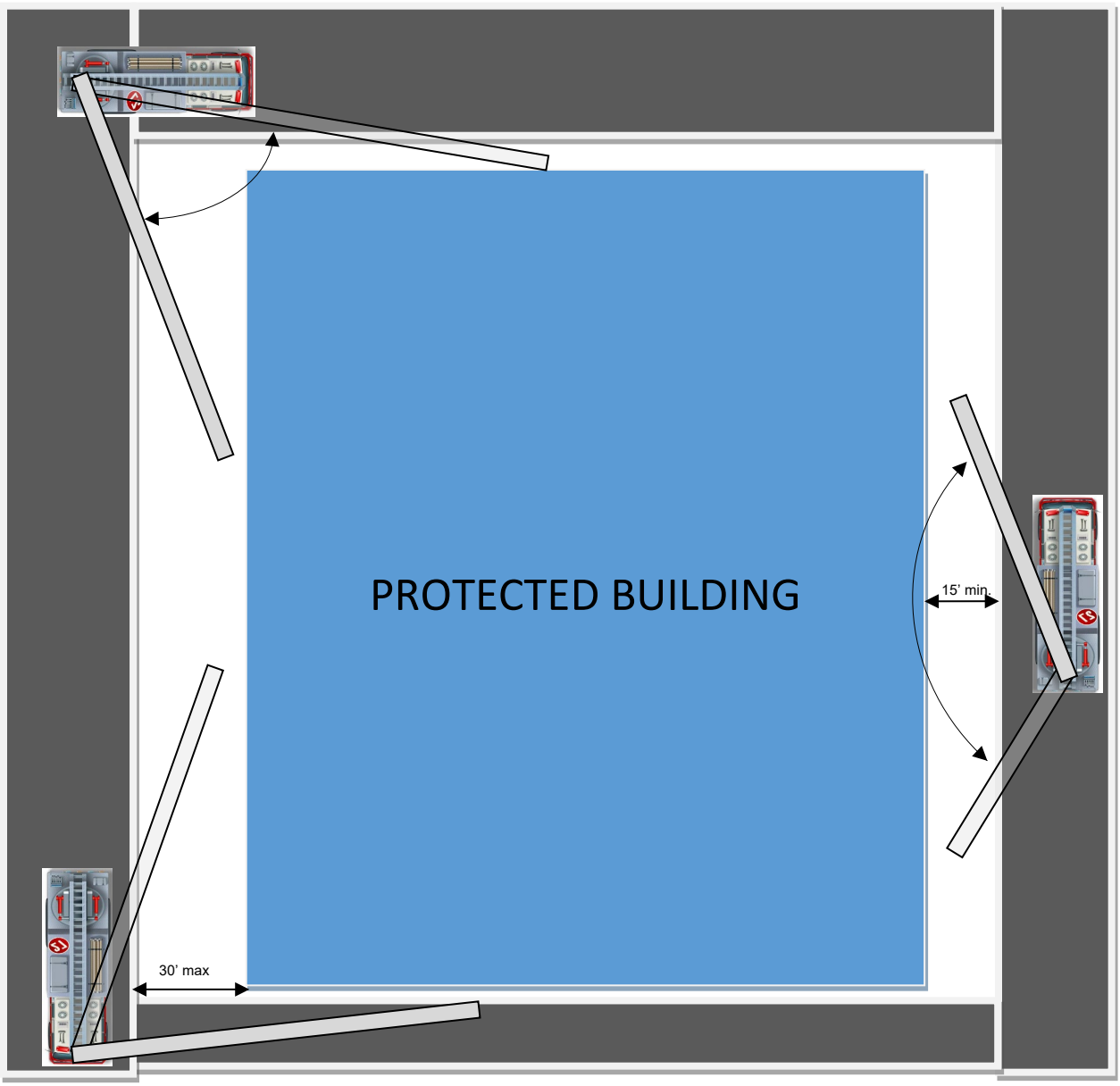
PROPER CLEARANCE PROVIDED

Eaves, balconies, and other obstructions do not encroach upon the 20’ wide by 13’-6” high fire access roadway envelope.



Note: Aerial apparatus access roads may require additional vertical clearances as determined by the fire department

FIGURE 4 – Aerial Access Sighting and Sweep of the Building



1. The fire department determines the number and location of aerial access roadways. It is not uncommon for access to all four sides of a large building to comply with minimum code requirements.
2. Most small buildings require a minimum of two aerial access roadways and are generally long sides. The purpose is to have the ability to access all four sides of the building readily.

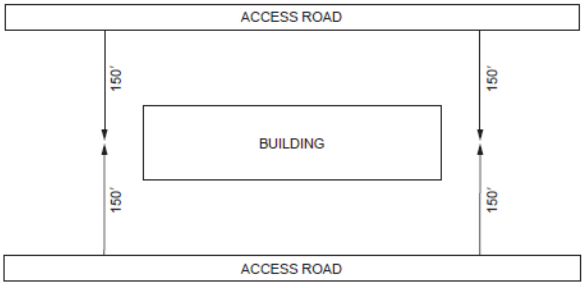
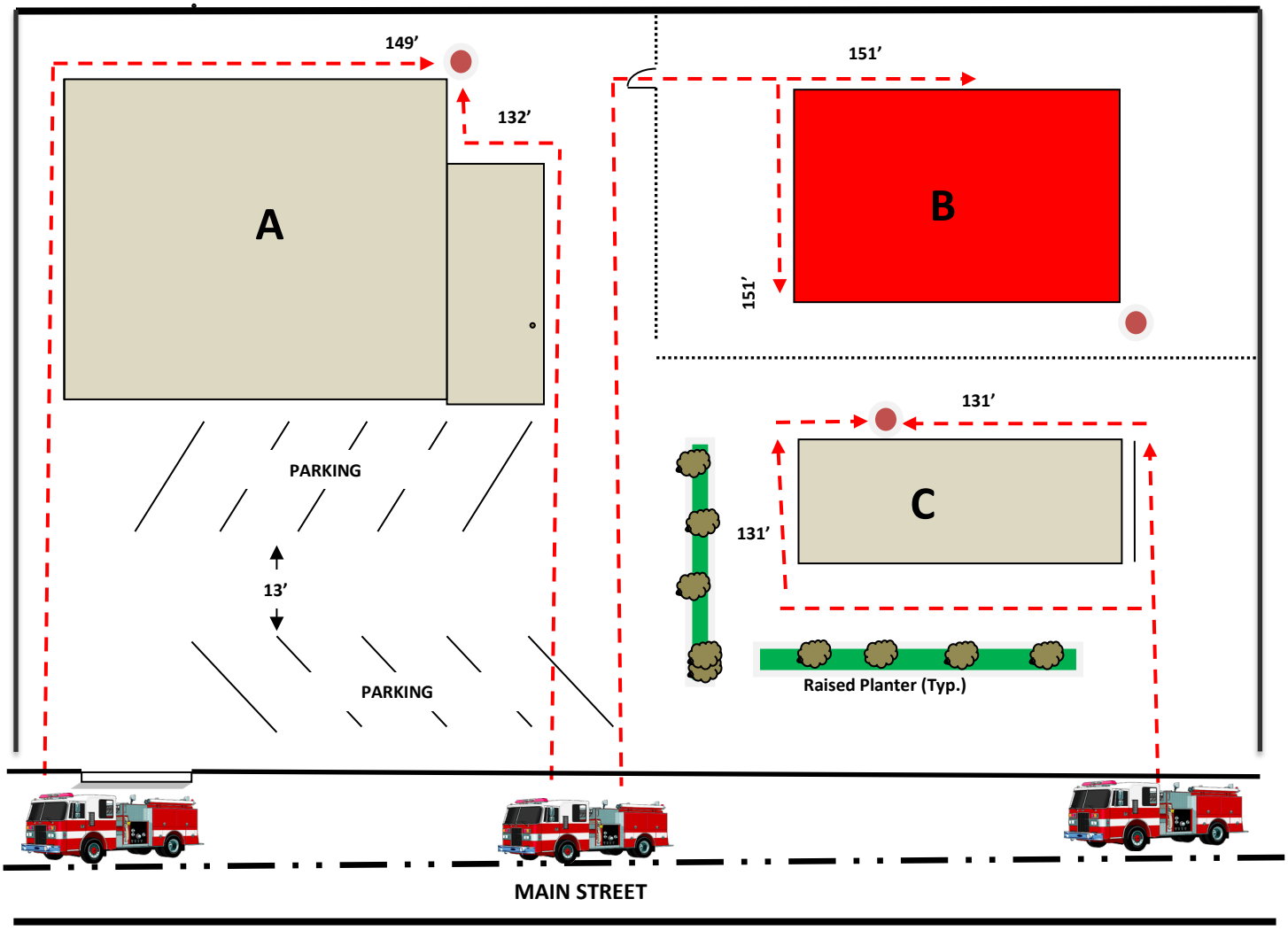


FIGURE 5 – Hose Pull for Smaller Buildings



<u>Informational Guidance</u>:

Assume that the parking lot is not accessible to fire apparatus due to the turning radii and roadway width:

1. All portions of Building "A" are within 150' of an approved roadway.
2. Building "B" is not accessible; a fenced enclosure forces firefighters to backtrack once they pass through the gate, increasing their travel distance beyond 150'.
   a. On-site fire apparatus access roadways or a change in the location of the gate would be necessary to provide access to Building "B."
3. Building "C" is also accessible despite the obstruction posed by the raised planter.
4. The fire department determines the ***<u>approved</u>*** path; a minimum 5' all-weather pathway is required.

● *- Denotes the furthest point on the exterior of the building as measured along the path of firefighter travel around the exterior of the building.*

FIGURE 6 – Trees and Overhead Power Lines

1. Trees between the access roadway and the building are limited to a maximum height of 30 feet at full maturity so that aerial apparatus can access the roof or sweep the side of the building, as reflected in Exhibit #1. Aerial apparatus ladders do not work with large tree canopies, as reflected in Exhibit #2. Standard plan details and illustrations have been provided in Figure 7.

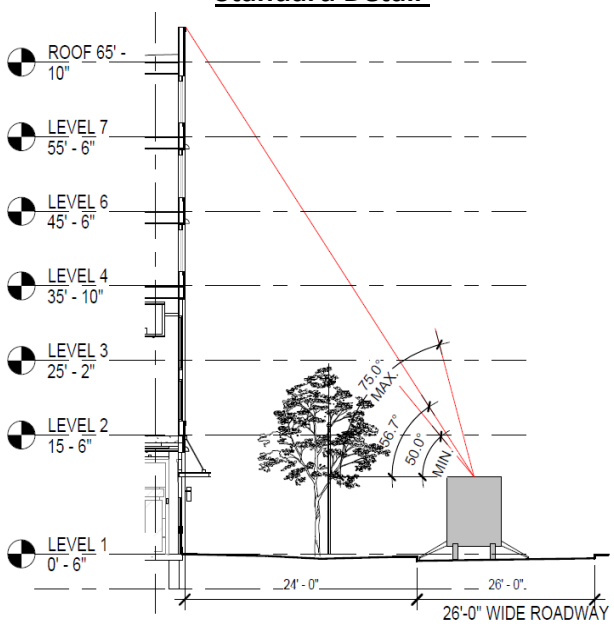
Exhibit #1

Exhibit #2

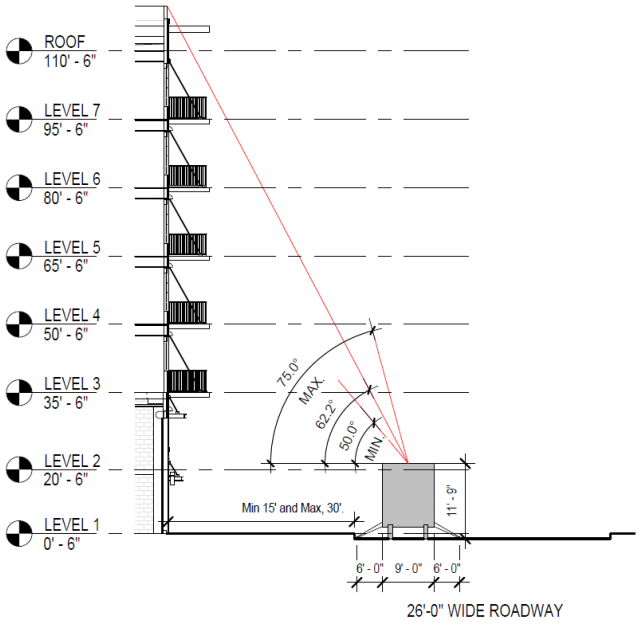
2. Overhead utility and power lines must not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building or structure. The photographs below illustrate what can happen when aerial apparatus contact power lines.

FIGURE 7 – Typical Tree Details

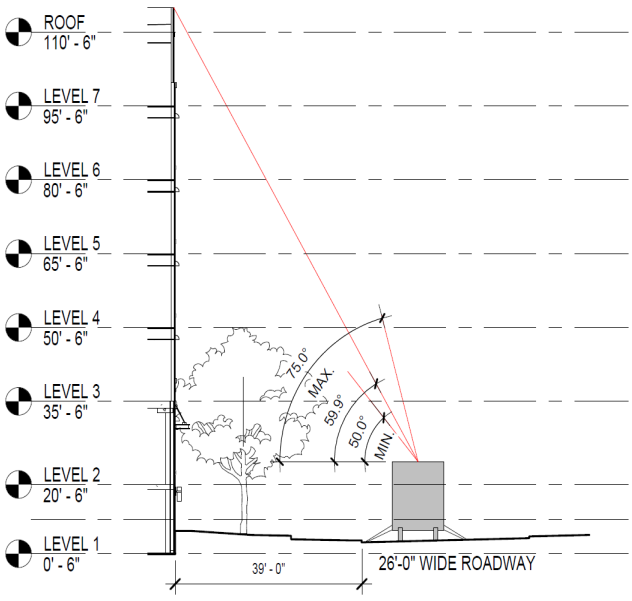
Standard Detail



Acceptable Installation

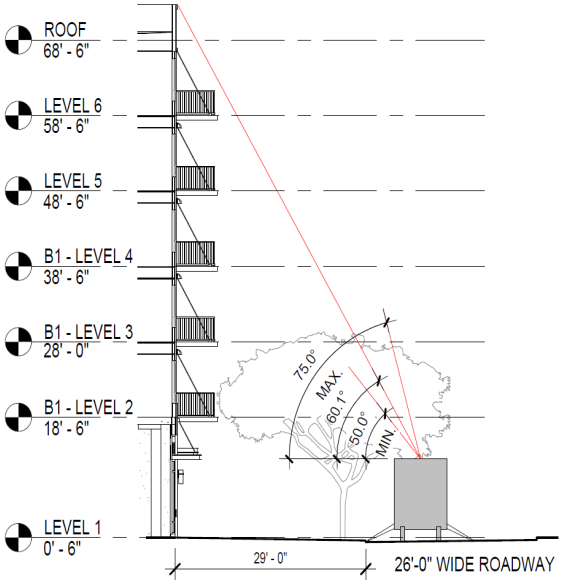


Not Acceptable



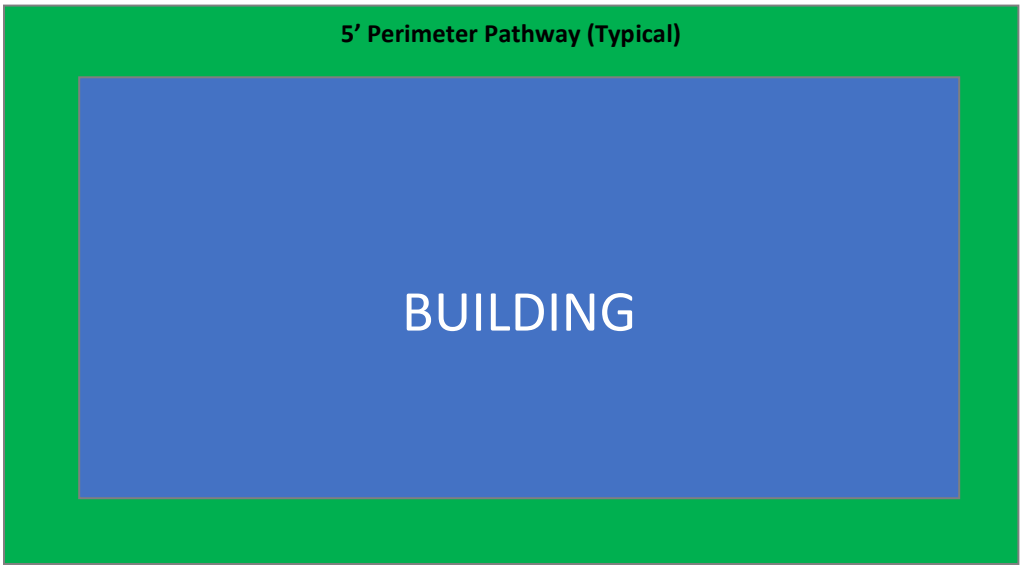
Conflicts: Tree height exceeds 30'; Tree canopy obstructs the use of ground ladders; and tree is in contact with the building which poses a fire hazard.

Not Acceptable



Conflicts: Tree canopy obstructs aerial access.

FIGURE 8 – Perimeter Pathway



Not to Scale

Requirements:

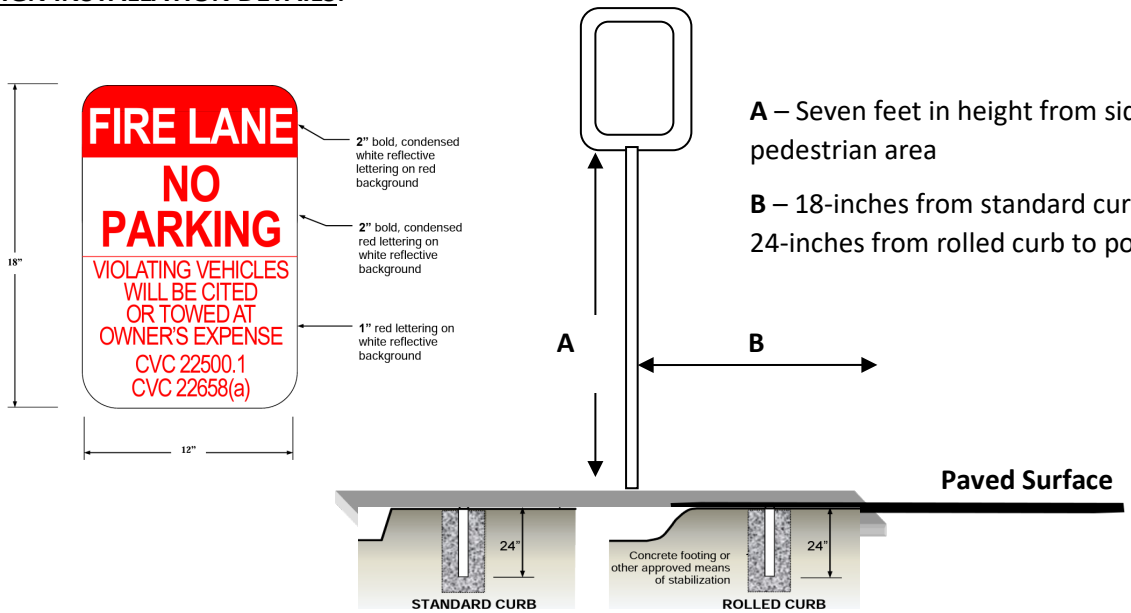
1. At a minimum, all buildings must have an approved engineered all-weather pathway of not less than 5 feet in width to facilitate firefighter access around the entire building perimeter.
2. All weather could be concrete, asphalt, pavers, or decomposed granite designed to support a 1500-lb load.

FIGURE 9 – Fire Lane Identification

STANDARD CURB DETAIL

ROLLED CURB DETAIL

SIGN INSTALLATION DETAILS:



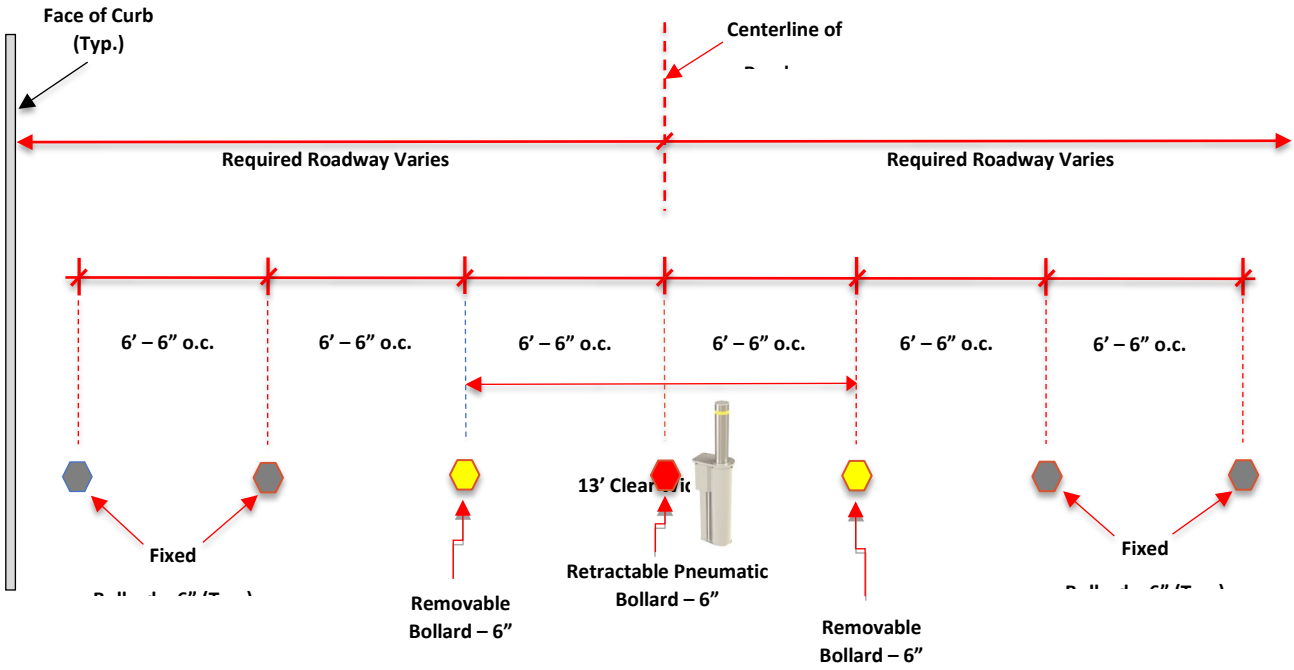
A – Seven feet in height from sidewalk or pedestrian area

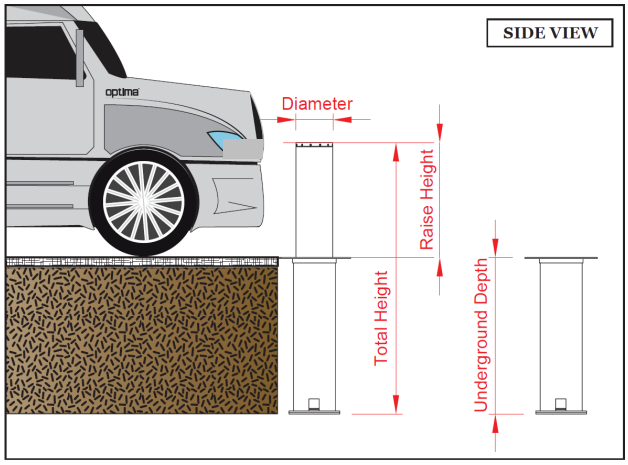
B – 18-inches from standard curb to post; 24-inches from rolled curb to post

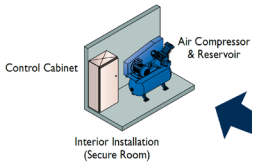
Requirements:

1. All sign and lettering dimensions shown are minimums. Arial Narrow font is used in the sample though other legible fonts can be approved.
2. Signs shall be mounted facing the direction of vehicular travel.
3. Depth of bury shall be a minimum of 24" and rebar, a concrete footing, or another method to prevent removal of the sign is recommended. Public Works Department must approve footings in the public right-of-way.
4. Signs may be mounted on existing posts, fences, or buildings if the post, fence, or building is no more than 24-inches from the curb or edge of the road surface.
5. 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.

FIGURE 10 – Retractable Pneumatic Bollards



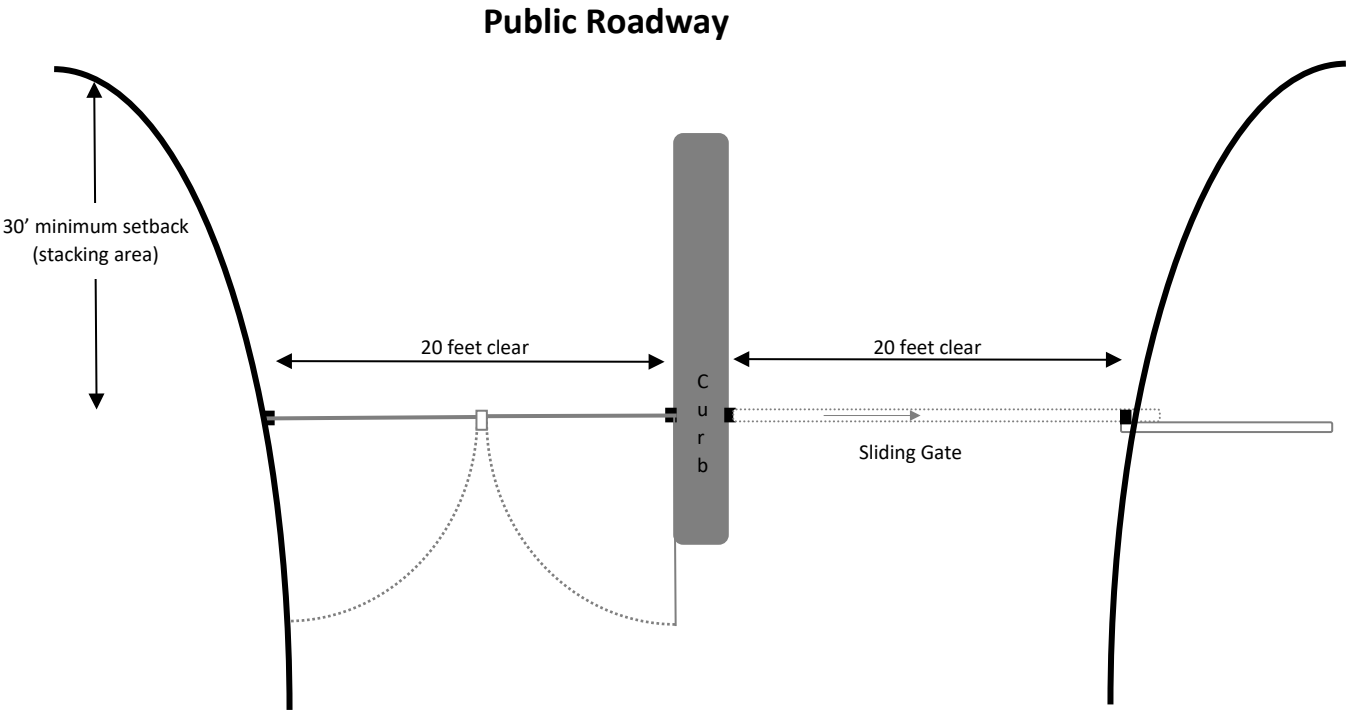




<u>Requirements</u>: Retractable Pneumatic bollard(s) are required to be equipped with Opticom Detector or Tomar Strobe Switches as outlined in Figure 12. Other installation configurations may be acceptable based on field limitation.

FIGURE 11 – Security Gates on Fire Department Apparatus Access Roadways

Automatic Gate



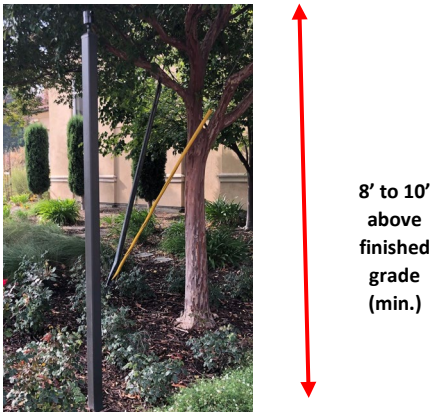
Requirements:

1. All gates must be automatic opening and equipment with an Opticom/Tomar receiver to allow emergency vehicle access.
2. **Fail-Safe Operation**: In the event of a power failure, automatic gates must be equipped with battery backup or capable of being pushed open without special knowledge.

FIGURE 12 – Opticom & Tomar Emergency Access Control Receivers

Dual Strobe Detector (2-way access)

Single Strobe Detector (one-way access)



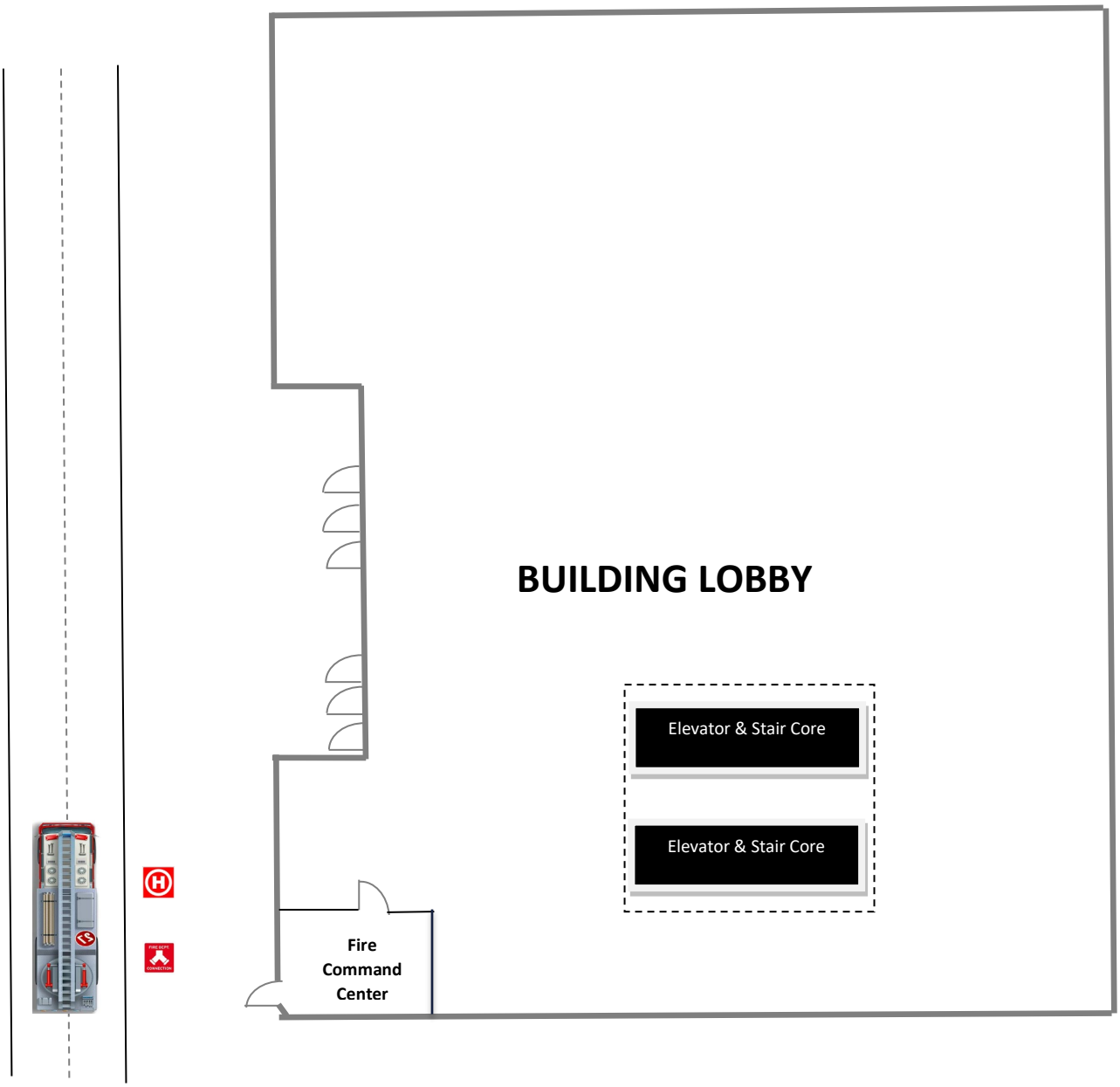
Requirements:

1. Emergency access control systems consist of two components. The first is a detector installed on the control system. The second is an emitter on the emergency vehicle (Fire, Police, or EMS) apparatus. The transmission from the vehicle-mounted device triggers the detector to open the barrier as the vehicle pulls up to it. This prevents the emergency vehicle from stopping and provides the property owner with the security they expect.
2. Delays in arriving on the scene can put property and lives at risk. A delay in responding to a fire can cause the fire to reach flashover, resulting in catastrophic losses. According to the Sudden Cardiac Arrest Foundation, a patient's chance of surviving drops by 7 to 10 percent every minute it takes to arrive at a cardiac event.
3. The type of sensor needed is always project-specific, so please consult your plan reviewer if you have specific questions.

   Opticom: http://www.gtt.com

   Tomar: http://tomar.com/access-control

FIGURE 13 – Fire Command Center



<u>Requirements</u>:

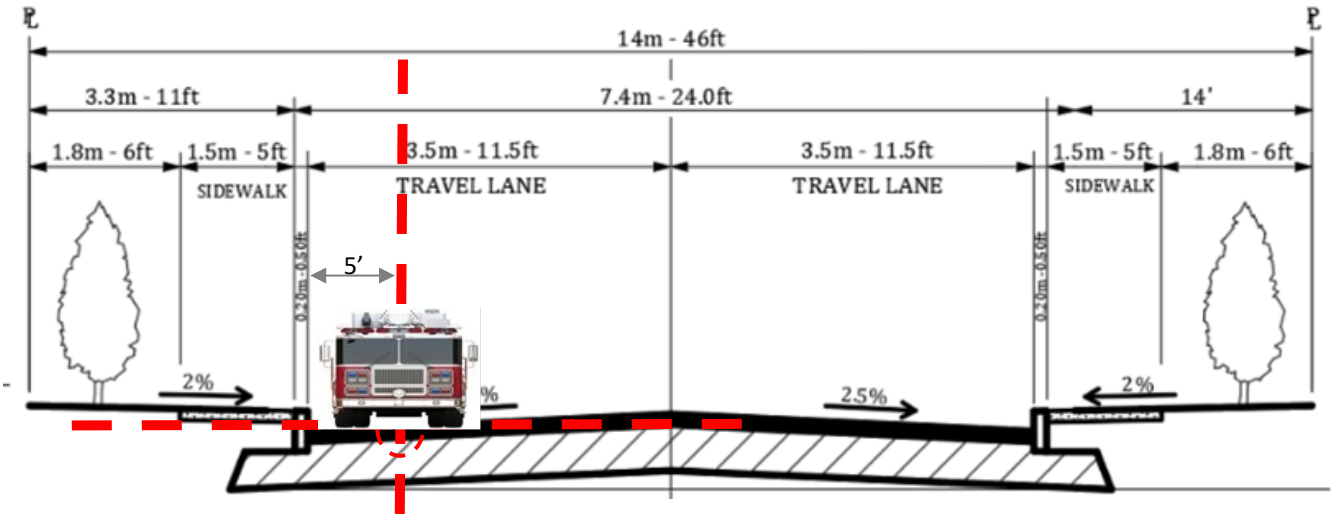
1. Fire Command Centers must be at least 200 square feet and located on the exterior wall of the building (generally on the address side of the building) with an external access door.
2. An interior door into the building with access to the ground floor building core is required.
3. Fire Command Centers are required to be 2-hour construction, and no other equipment than that required for fire suppression operations shall be located within this room (e.g., FACP, Smoke Control System Digital Display, ERRCS, Generator), exception building with only 1-hour construction.

4. A fire hydrant and fire department connection (FDC) must be nearby. There will always be additional fire hydrants and possible multiple FDCs.

FIGURE 14 – IS MY BUILDING A HIGH-RISE?

1. The California Fire & Building Codes define a high-rise building as any building with an occupied floor of seventy-five feet or greater above the lowest level of fire department access.
2. We keep it simple where the height is measured from the lowest fire department apparatus access roadway where an engine/truck may operate. If the road's elevation around the building's perimeter varies in height, the lowest street must be utilized. For reference, see the figure below:

3. Where do you take the elevation from? The elevation is taken 6 feet from the curb face at the lowest point along the fire department access roadway.



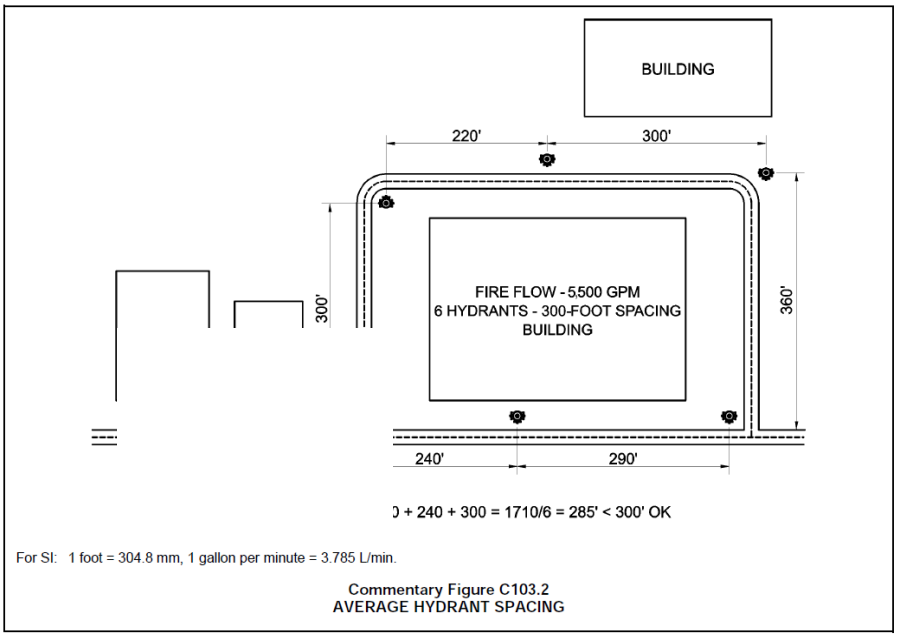
FAQ's:

- Will you accept a grade plan calculation since that is how many Building Division determines the building height? **Response: No**

Will you accept the sidewall elevation as the lowest level of fire department access? **Response: No**

FIGURE 15 – Fire Hydrant Spacing & Placement Examples

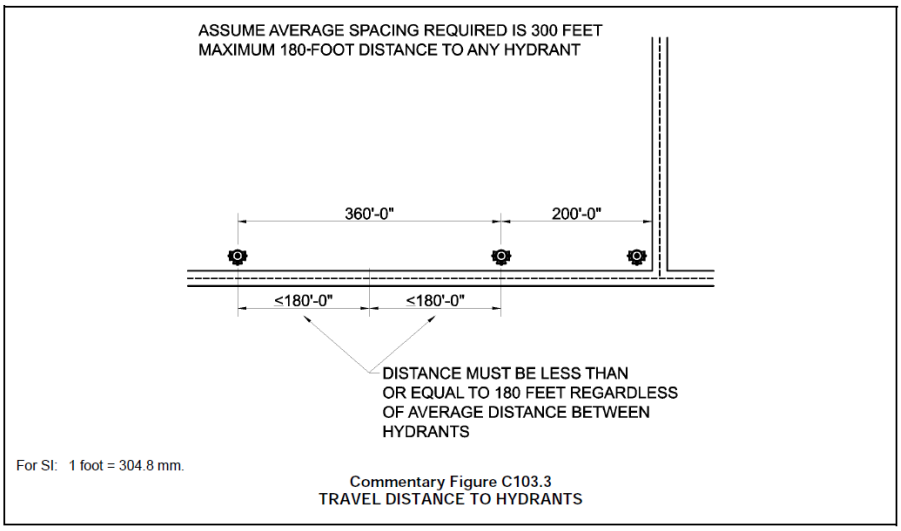
Building Perimeter Spacing



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

Commentary Figure C103.2
AVERAGE HYDRANT SPACING

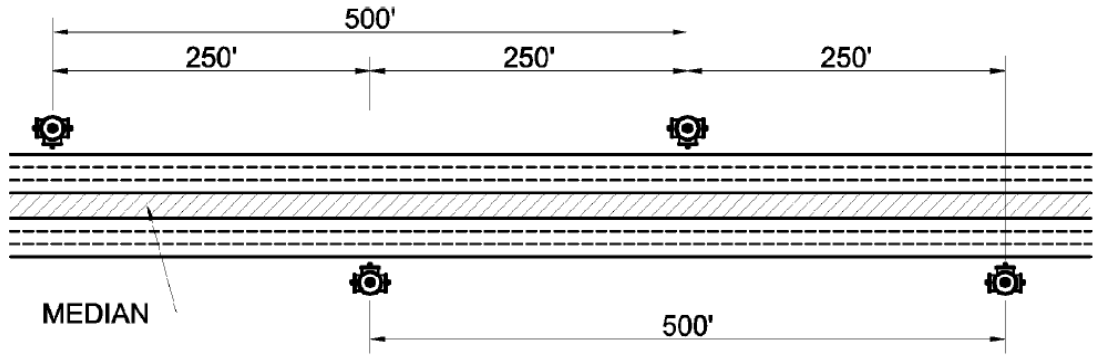
Maximum Travel Distance Versus Average Spacing



For SI: 1 foot = 304.8 mm.

Commentary Figure C103.3
TRAVEL DISTANCE TO HYDRANTS

Divided Roadway



For SI: 1 foot = 304.8 mm.

Commentary Figure C102.1(2)
HYDRANT SPACING ALONG BOULEVARDS AND HIGH-VOLUME ARTERIAL STREETS

Fire Hydrant Number & Spacing Table

REQUIRED NUMBER AND SPACING OF FIRE HYDRANTS[h]

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

Number & Spacing Requirement:

1. The number and spacing of fire hydrants are based on the “Base Fire-Flow” before fire sprinkler credit.
2. Fire-flow requirements are a collaboration between the Fire Department and Water & Sewer Departments. The most restrictive requirement shall apply.

FIGURE 16 – Reflective Hydrant Marker "Blue Dot" Installation

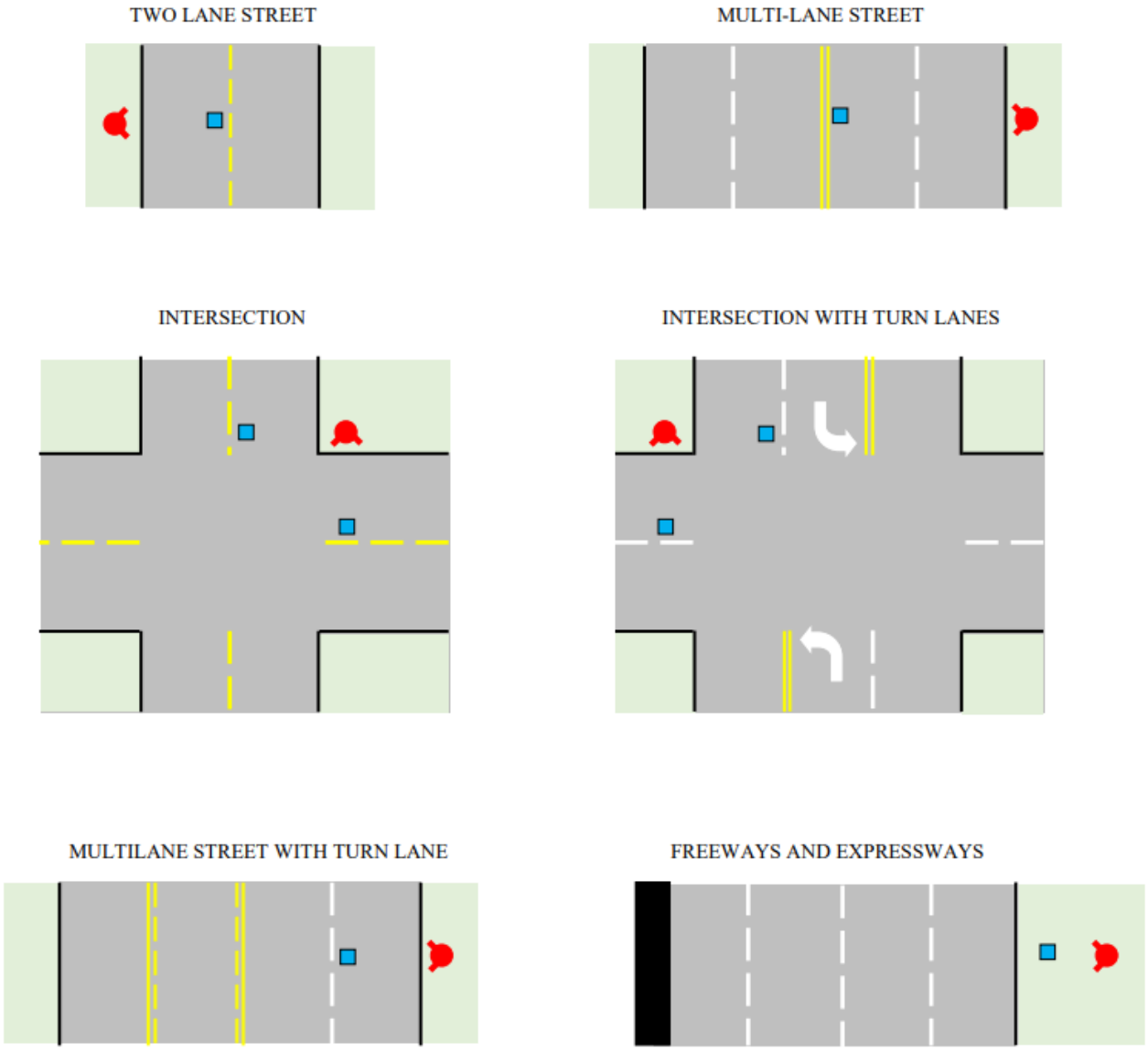
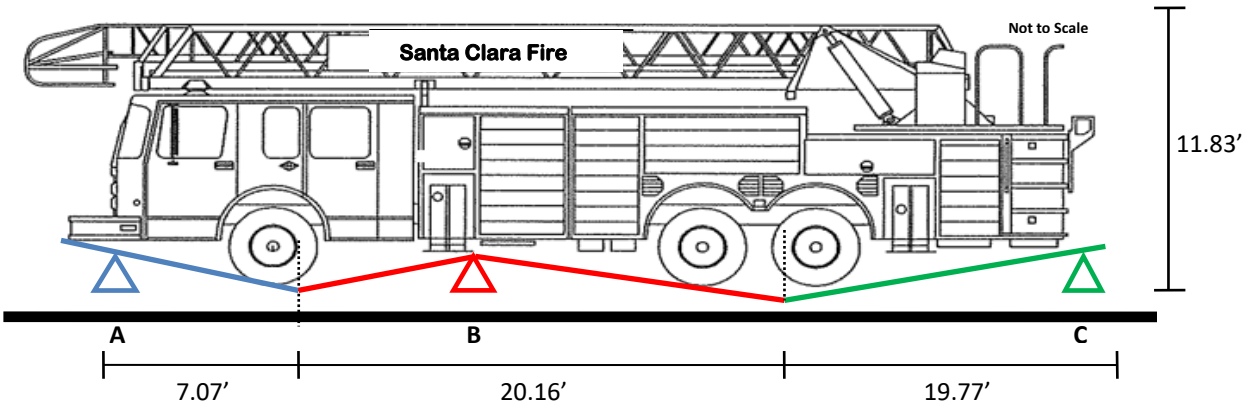


FIGURE 17 – Apparatus Specifications

APPARATUS SPECIFICATIONS:

1. The apparatus illustration noted below is not to scale and reflects a compilation of the most restrictive elements of our emergency vehicle fleet.
2. When driving at speed is not required and ***approved*** by the fire department Auto TURN or similar computer modeling software can be utilized to reduce the size of the standard internal turning radius required.



APPARATUS SPECIFICATIONS:

- Length: 47.0 feet
- Cab Width: 8 feet
- Overall Width: 9.5 feet (mirror-to-mirror)
- Front Bumper to Front Axel: 7.07 feet
- Rear Axle to Rear Bumper 19.77 feet
- Wheelbase: 20.16 feet
- Wall-to-Wall Radius: 47.7 feet
- Inside Cramp Angle: 45 degrees
- Track Wheel: 8.5-feet

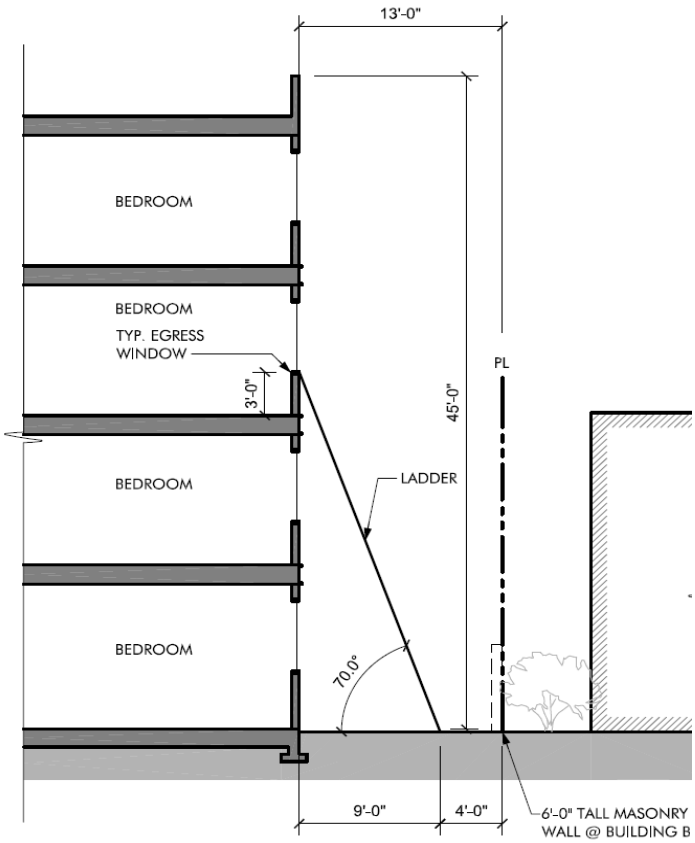
FIGURE 18 – Emergency Escape and Rescue Window Access

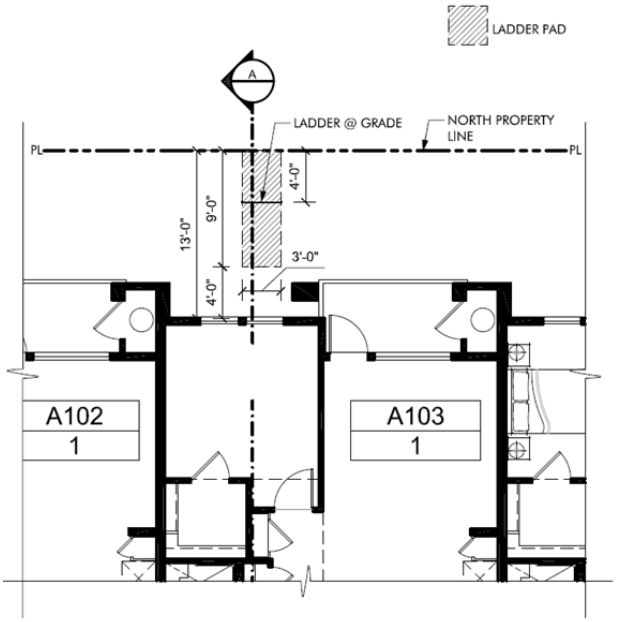
Large Buildings:

1. To the extent feasible, emergency escape and rescue windows are accessed utilizing aerial apparatus, not ground ladders.

Small & Medium Buildings:

1. An all-weather pathway must be provided for ground ladder access around the entire perimeter of the building;
2. Pathway width must be a minimum of 60-inches.
3. A pathway shall be designed and installed so that the extended angle of inclination for extended ladders is at least 70° and no greater than 76° from horizontal. An easy way to determine the proper distance is to divide the required ladder length by four. For example, if 36 feet of ladder is needed to reach a window on the third floor, the butt of the ladder should be placed a minimum of 9 feet from the building.
4. Architectural features, trees, or landscaping shall not obstruct the ladder set-up.


13'-0"
BEDROOM
BEDROOM
TYP. EGRESS WINDOW
3'-0"
45'-0"
PL
LADDER
BEDROOM
BEDROOM
70.0°
9'-0"
4'-0"
6'-0" TALL MASONRY WALL @ BUILDING B


LADDER PAD
A
LADDER @ GRADE
NORTH PROPERTY LINE
PL
PL
4'-0"
13'-0"
9'-0"
3'-0"
4'-0"
A102
1
A103
1