



## **Fire Department Standard New Development Requirements for Commercial and Multi-Family Residential Buildings**

The following Central County Fire Department standard development requirements are to be addressed during design of a commercial or multi-family residential development project. This list highlights larger building and site design criteria, however all local, state and national code requirements apply and will be reviewed for compliance during the planning and building permit approval process. Review of the city's Municipal Fire Code is highly recommended when designing the development project.

### **1. Fire Apparatus Access Roads – California Fire Code §503.1, City Municipal Fire Code**

Approved fire apparatus access roads shall be provided for every building and be located within 150' feet of all portions of exterior walls on the first story of the building as measured by an approved route around the exterior of the building, not through the air. Fire access roads may include public way/streets or approved fire lanes.

When measuring fire access (150') distance, the furthest point the building is most likely the center point of a rear wall or the furthest corner of the building, depending on the access point(s) from fire access roads. Distances may be measured from more than one accessible point on the site, however must keep on the project parcel. Acceptable access paths to and around the building include non-pervious or semi-pervious walking surfaces such as concrete, asphalt and pavers, or lawn. Access paths are not acceptable through landscaping, over retaining walls higher than 18" without stairs, through fences without gates or up/down hillslopes greater than 10% without stairs. Fire access paths and distances must be indicated on the site plan or separate fire access plan. A fire access plan is recommended if the project includes any fire apparatus access road designs.

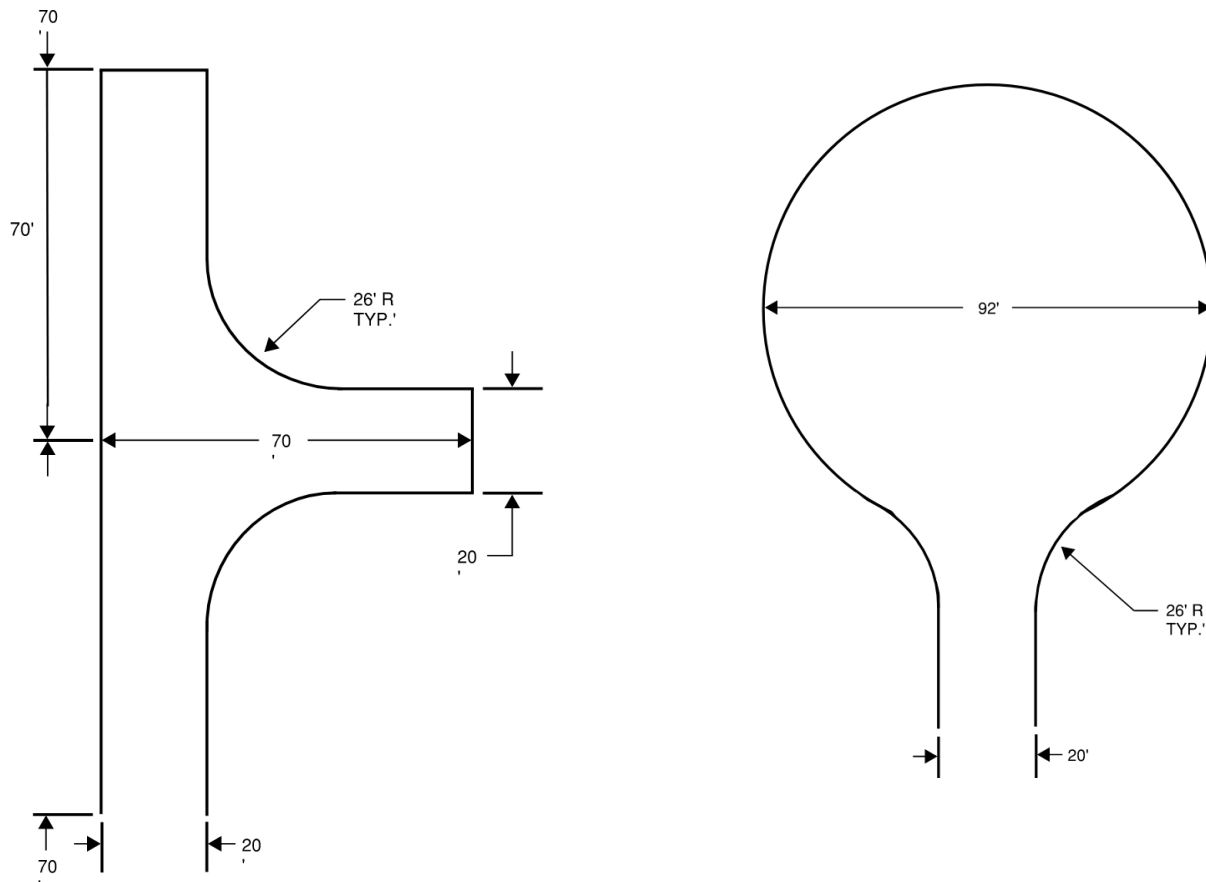
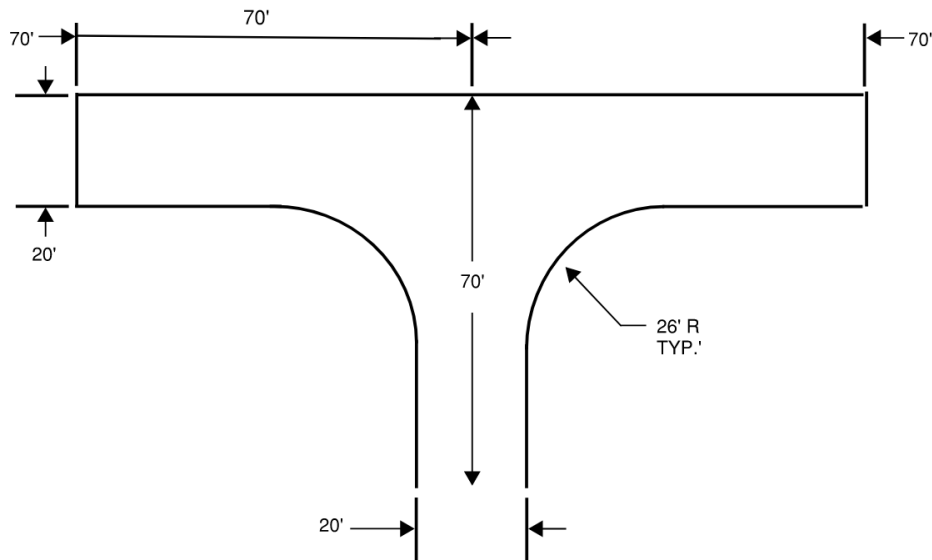
Design of fire apparatus access roads:

- Minimum 20' clear width
- Minimum 13'6" clear height
- Maximum 16% slope
- Minimum vehicle load of 65,000 lbs.
- First and last 15' of access road – maximum 5% slope for transitions
- Non-pervious driving surface
- Acceptable means of identifying the fire access road and prohibition of parking
- More than 150' in length requires a turnaround, designed per CCFD apparatus capabilities
- Minimum fire access road turnarounds, hammerhead or circular:



# Central County Fire Department

*Serving the communities of Burlingame, Hillsborough and Millbrae*





**2. Fire Hydrant/Fire Flow Requirements** – California Fire Code, §507; Appendix B (Fire Flow) and Appendix C (Fire Hydrants)

Fire flow requirements are in accordance with CFC Appendix B and determined based on the size and construction type of the building. Minimum fire flow required must be noted on the planning and building application plans and confirmation that all existing/new fire hydrants will supply the minimum flow.

Fire hydrant locations to be in accordance with CFC Appendix C and the number of hydrants is dependent on the 100% calculation of required fire flow. CFC §507 requires on-site fire hydrants if the furthest point of the building, as measured on a path around exterior walls, is greater than 400' (600' if building is sprinklered) from the closest hydrant on an approved fire apparatus access road. Fire hydrants flow capacity must be indicated by hydrant color marking per NFPA 291 requirements.

Consideration should be given to determining required minimum fire flow prior to hydrant spacing and locations as additional fire hydrants may be required to meet fire flow requirements.

**3. High-Rise Building** – California Building Code §403; California Fire Code §508

- Height is measured from the lowest level of fire department access to the highest occupied floor. Height greater than 75' determines the building as a high rise. All requirements for high rise buildings from CBC and CFC apply.
- If the building's proposed highest occupied floor is greater than 70' but less than 75', a fire department site inspection is required immediately after rough framing construction installation of highest occupiable floor, to witness the construction company's measurement of the actual height of the building from all public ways to confirm it is under 75'. If the measurement is over 75', the building permit plans must be revised to include all high-rise requirements. This requirement must be stated on the plan set title page.
- Fire Command Room shall be located with fire department access immediately from the exterior and separate from public entrances/exits. Size shall be not less than 0.015% of the total building area or 200 square feet, whichever is greater. Required features per CFC §508.6.1.

**4. Emergency Responder Communication Enhancement System** - California Fire Code §510

Approved emergency radio communication capability is required throughout the building. If the building construction/layout cannot accommodate required radio communication strength, an Emergency Responder Radio Coverage System is required throughout. Riser wiring survivability rating shall be the same as interior wall ratings. The building's infrastructure should be designed for this rated shaft, alternates for this requirement will not be approved later in lieu of the rated shaft. A permit is required to be obtained through the Central County Fire Dept. prior to installation.



**5. Fire Sprinkler/Standpipe Systems** - California Fire Code §903 and §905; City Municipal Fire Code

Fire sprinkler systems are installed in accordance with CFC and NFPA standards based on the type of building size and occupancy use. Design criteria from CFC, NFPA and other recognized standards apply. A permit is required to be obtained through the Central County Fire Dept. prior to installation.

When a sprinkler system and/or standpipe system is required:

- Class III standpipe system, interconnected with the sprinkler system.
- Stairwell outlets shall be located on the intermediate stair landing of each floor. Roof outlets shall be adjacent to roof access points.
- Fire department connection shall be located within 5 feet of the sidewalk and not within city right-of-way. In Burlingame, if approved to recess into the building's exterior wall, use Public Works Standard #W-2779/W-2781 for recessed wall design.
- The water line's double-detector check valve assembly may be used as the sprinkler system's control valve in lieu of a post-indicator valve. Both assembly valves are required to be electronically tamper monitored.
- Main fire sprinkler system control valve must be located in the building's fire control room located on the first floor, unless approved to be on the exterior of the building.
- Increase of fire sprinkler density classification for garage areas with car stacking systems and/or electric vehicle charging areas. See item #10.
- All main drain and test valves shall be located to ensure water is placed directly into the properties sewer system (with air gap) or into landscape areas.
- During construction – at least one standpipe shall be provided prior to construction exceeding 40 feet.

**6. Fire Alarm & Detection Systems** – California Fire Code §907, City Municipal Fire Code

- Fire alarm and detection systems to comply with CFC, CBC, NFPA and other recognized standards. A permit is required to be obtained through the Central County Fire Dept. prior to installation.

When a fire alarm system is required:

- ✓ The fire alarm control panel must be located in the building's fire control room located on the first floor.
- ✓ Elevator shunt trip for emergency elevator shutdown is not allowed. Rated construction of elevator shafts and machine rooms is as required in the city municipal fire code.
- The fire alarm system and all fire alarm components shall be tested in accordance with NFPA 72. New fire alarm systems installed in commercial and multi-family buildings shall be UL-Certified. Certificate shall be posted next to fire alarm control panel at time of final inspection.



**7. Building Roof Access – California Fire Code §1011.12**

Roof access to comply with CBC and CFC requirements. If a roof hatch is permitted, a ships ladder with maximum 70% slope and handrails is required. The use of a vertical ladder is not permitted.

**8. Emergency Key Access – California Fire Code §506, City Municipal Fire Code**

Emergency fire department key access is required at exterior building entry doors, exterior stairway doors, and site entry pedestrian and driveway gates, using Knox Company products at [www.knoxbox.com](http://www.knoxbox.com). Electric gates may use a Knox key switch connected to the gate mechanism; manual operating gates may use a Knox key padlock. See city municipal fire code for access keys required inside the key box.

**9. Fire Control Room – City Municipal Fire Code**

A fire control room shall be provided that only contains all main fire protection system control valves (if not part of exterior double-backflow assembly), fire alarm control panels, ERRCS equipment, and other required fire equipment as required. The room shall be a minimum of 35 square feet. In high rise buildings, the fire control room shall not be less than 200 square feet. In buildings with a fire pump, the room shall not be less than 200 square feet.

**10. Parking Garage Areas with Electric Vehicle Charging Stations and/or Car Stacking System – City Municipal Fire Code**

- Areas that contain electric vehicle charging stations must have a fire sprinkler density design of a minimum Extra Hazard, Group 2 for the coverage of the charging stations and extends 15' in any direction of the charging stations.
- Areas that contain vehicle parking lifts or vehicle stacking system must have a fire sprinkler density design of Extra Hazard classification, with sidewall sprinkler heads designed at minimum Ordinary Group 2 in between each level.