



## Fire & Life Safety Department

# CIVIL CONSTRUCTION DRAWINGS COMMERCIAL PROJECTS

This guide is intended as a resource for the civil construction drawings submittal requirements for commercial developments. Civil construction plans are reviewed to determine compliance with fire & life safety code requirements as they relate to site construction, layout, building size, fire lanes, fire department access, fire hydrants, and other issues as designated. These requirements can be found in the 2021 International Fire Code, 2021 International Building Code, 2021 NFPA 1, and 2021 NFPA 101. In an effort to expedite the civil plan review process, please ensure the following list of items are incorporated into the proposed civil construction plans.

### GENERAL COMMENTS

1. Site Plan shall be submitted to Facilities Management as well as the Fire & Life Safety Department.

### FIRE DEPARTMENT ACCESS

2. Fire lane construction shall be in accordance with the Fire Departments *Fire Lane Guidelines* and construction detail information shall be indicated on the submittal drawings.
  - ☑ A minimum of two (2) points of emergency vehicle access shall be provided, unless approved otherwise.
4. Approved, unobstructed fire department access (fire lanes) shall be provided such that all portions of the exterior of the building shall be within 150 feet, as the hose lays, of a fire lane and/or public street. This can be increased to 200 feet for buildings that are protected by an automatic fire sprinkler system.
5. Additional fire lanes may be required based upon the layout of the site and size of the building(s) with regards to Fire Department access, mutual/cross access, special hazards or as designated by the Fire & Life Safety Department.
  - ☑ Fire lanes must be shaded, or otherwise, clearly marked on the plans.
  - ☑ Fire lanes must meet the following criteria:
    - ☑ Fire lanes with a width of 24 feet; require a turning radius of 30 feet, or
    - ☑ Fire lanes with a width of 26 feet, require a turning radius of 30 feet; or
    - ☑ Fire lanes with a width of 30 feet, require a turning radius of 20 feet.
    - ☑ Minimum clear vertical height clearance of 14 feet;
    - ☑ Provide an all-weather driving surface;
    - ☑ Support a minimum of a 80,000lbs fire apparatus;
    - ☑ Cannot exceed 6% in grade change, with grade transitions not exceeding 5%.
  - h. The maximum angle of departure and angle of approach is 6%.
    - i. The maximum cross slope is 3%.
    - j. Aerial Apparatus Access Roads. Buildings or portions of buildings exceeding 30 ft. in height above the lowest level of fire department vehicle access shall be provided with a 20ft. wide fire lane. The fire lane shall be a minimum of 15 ft to a maximum of 30 ft. from the building and shall be positioned parallel to one entire side of the building.
  - ☑ Fire lane construction detail drawings, including temporary emergency access easements.
  - ☑ Emergency access easements shall be approved by the Fire Department under a separate instrument.
  - ☑ Dead end fire lanes in excess of 150 feet shall be provided with an approved turnaround.

11. Size, type and location of turnarounds are required to be approved by the Fire Department.
12. A 10 feet wide clear, level unobstructed pathway round the exterior of the building shall be provided for fire department access. This is to include AC units, shrubs, trees, gates, or other construction or utilities.

#### **FIRE HYDRANTS AND WATER LINES**

13. Existing and proposed fire hydrants shall be indicated on the plans.
14. Location of valves.
15. Fire hydrant type and construction detail. Fire hydrants shall have (2) 2-½" connections and (1) 4" steamer connection. Hydrants shall be painted matching the specs of Richardson Fire Department.
16. Type and size of underground water lines serving the fire hydrants, and other utility services.
17. Size and location of the underground water line, Fire Service, for the fire sprinkler system.
18. Location of Backflow prevention.
19. A minimum of two (2) fire hydrants are required to serve each property and shall be located on-site. Credit for adjacent fire hydrants may be provided based upon specific site conditions.
20. A minimum required fire flow of 1,500 gpm is required. (IFC Appendix B, Section B105)
21. Fire hydrants shall be so spaced such that all portions of the exterior of the building are within the following distances as the hose lays:
  - a. 300 feet for non-sprinklered properties.
  - b. 300 feet for sprinklered properties.
22. Proposed location of the Fire Department Connection (FDC). Note that the FDC is required to be along the front of the fire lane and be within 130 ft., as the hose lays, of a fire hydrant, with minimum distance of 35 feet.
23. A minimum of a 10 foot wide pathway shall be provided from the fire hydrant to the FDC. Parking, landscaping, screening and loading spaces are considered an obstruction.
24. Indicate the following notation on the Utility Plan for the Fire Service.
25. Fire Sprinkler Underground Water Line Specifications.  
All underground piping shall be a minimum of Class 200 / DR 14 or better. Embedment shall be No. 4 crushed stone. Depth of Bury - minimum is 48 inches from grade to the top of the pipe. All underground lines begin at the point of connection to the circulating public/private water main and terminate at the top of the spigot piece 1 ft. above the finished floor and no more than 5 ft. inside the building.

#### **BUILDING SIZE, HEIGHT AND LOCATION REQUIREMENTS**

28. Minimum 10 feet clear width around the exterior of the building.
29. Building or facility size, in square feet, to be indicated on the site plan.
30. Building height to be indicated on the site plan.
31. Will the building(s) require automatic fire sprinklers? (Required for all buildings exceeding 12,000 ft<sup>2</sup>, 5000 ft<sup>2</sup> and 100 occupant load for A2 Occupancies, and for all R, I & H Occupancies regardless of size.). Note that this is provided to the applicant as information only)

#### **VERTICAL CONSTRUCTION**

32. Fire hydrants and fire lane access roadways shall be installed and maintained PRIOR TO VERTICAL CONSTRUCTION of any building or structure.

#### **EXTENSION**

A hose lay extension of up to 200 feet may be granted on a case-by-case basis for buildings that are fully equipped with an automatic fire sprinkler system.