CHARLESTON FIRE DEPARTMENT

Fire Marshal Division

Information Bulletin

Site Plan Review

A site plan is a crucial first step in the plan review process for new construction or substantial renovation projects and helps to ensure the project is headed in the right direction. In order to make sure the site plan submittal is successful we have established several minimum elements that must be included in order to initiate a site review. Please develop a plan entitled "Fire Protection Plan", or similar, that includes the following:

Building Information

1. Provide the construction type (IBC), total square footage, stories above and below grade.
2. Indicate if the project will include an automatic fire sprinkler system and the type of NFPA system.
3. Indicate or describe any anticipated fire separations or fire walls.
4. Indicate the location of any fuel storage in above or underground tanks, vaults or portable tanks whose capacity exceeds 660 gallons. Indicate the amount and type of fuel to be stored. All fuel storage tanks, vaults and/or pits will require vehicle impact protection. Please refer to our Impact Protection Informational Bulletin for additional requirements.

Hydrants

5. Indicate all existing hydrants in the area that are within 500' of the project. For buildings protected by a compliant NFPA 13 or 13R fire sprinkler system, this distance can be allowed to be 600'. Fire hydrant quantities and spacing must be approved. Guidance may be found in the Appendix C of the International Fire Code (IFC). Hydrants located outside of drawing area may be indicated by a measurement from a known reference point.
6. The spacing of hydrants shall not exceed 1,000' between hydrants and shall be subject to review and approval of the Fire Marshal Division.
7. Indicate the size and type of water mains servicing the fire protection (hydrants, sprinkler, etc.).
8. Provide the available fire flow at the site, measured at 20 PSI residual pressure, available for firefighting.
9. Indicate the required fire flow in accordance with an acceptable calculation method. Basic guidance may be found in the Appendix B of the IFC. Flow rate reductions must be submitted for review and approval.
10. Hydrants shall be clearly identified and color coded. Private hydrants shall be painted red, public hydrants shall be painted yellow. Private hydrants shall have the bonnet and caps color coded in accordance with NFPA 291 after verification flow testing has been completed.

Fire Department Connections

11. Indicate the location(s) of Building Mounted Fire Department Connections. Please refer to our Fire Department Connection and Locations Informational Bulletin.
12. Fire Department Connections shall be provided with appropriate signage. Please refer to our Fire Department Connection Signs Informational Bulletin.

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13. Fire Department Connections for standpipe systems shall include a minimum of three (3) 2-1/2" connection for buildings with 2 stairwells, with an additional connection for each additional stairwell up to a maximum of 5 connections.

Access

14. Provide fire apparatus access road in accordance with IFC section 503. It may be necessary to provide a vehicle overlay to verify turn radius – utilize a template for a 43' straight frame, non-articulating vehicle.
15. Projects with a single means of access will need to provide a means to offset this issue as allowed by IFC section 503.1.2. This may be done by requesting an Alternative Materials, Design and Methods of Construction and Equipment as allowed by IFC section 104.9. Appendix D of the IFC is a nationally consensus document that addresses this issue and can be used to support this request.
16. Access roads must be provided within 150 feet of all points of the structure and the minimum road width of 20' for all fire access lanes. An increase of up to a maximum 200' of the required access road may be allowed in buildings protected with a compliant NFPA 13, 13R or 13D fire sprinkler system.
17. Access roads must be designed to meet the imposed loads of fire apparatus and shall be constructed of an all-weather driving surface. Fire apparatus design weight shall be 75,000 lbs. All non-City owned fire access roads shall be inspected by a third party inspector approved by the Charleston Fire Marshal Office.
18. Indicate any substantial grade changes along a fire apparatus access route.
19. Provide an approved turn-around for any fire department required access roads greater than 150 feet in length.
20. Fire lane signs and stripping may be required in front of site hydrants, fire department connections, or other critical areas subject to obstructions. Indicate all anticipated fire lanes on the plan. Contractors shall receive approval from the Charleston Fire Marshal Office for striping and signage prior to initiating work.
21. Please note that if on street parking width is not added to the minimum road with of 20' then "No on street signage" per IFC 503.3 shall be provided.

Key Box

22. A key box for fire department use will be required on buildings equipped with an automatic fire sprinkler, fire alarm system or contain hazardous materials. A dual key override system shall be provided for secured gates along fire apparatus access routes. The Charleston Fire Department utilizes the "Knox" key system. Please refer to our Knox Box Installation Requirements Informational Bulletin for ordering, location, and mounting information.