Fairfax County Office of the Fire Marshal (OFM)
Commercial Plan Review Submittal Requirements

1.0 PURPOSE

The purpose of this document is to meet the objectives of Fairfax First approach, obtain higher levels of customer engagement, and achieve compliance. This document serves as a guide/template to help industry achieve county submission requirements. To speed up plan approvals, gain consistency, and increase predictability, Fairfax County Office of the Fire Marshal (OFM) Plan Reviewers have generated these guidelines for building permit reviews. All Architects/Engineers (A/E) submitting plans to Land Development Services' (LDS) Building Division for permits are required to adhere to this document. Additionally, and most importantly, this document serves as a tool for improving the **quality** of plans submitted to county reviewers which will result in higher approval rates and quicker review times. Note, this document does not serve as a substitution for compliance with the Codes and County Ordinances. Where conflict occurs, the latter takes precedence.

We welcome comments and suggestions to improve future versions of this document. Please email fire.engplansreview@fairfaxcounty.gov.

2.0 GENERAL

1. A complete Building Plan Review Cover Sheet must be provided on all plans sets.
2. A key plan shall be provided on each applicable drawing to show the location(s) of work.
3. All plans shall include contact information. Provide name, address, phone, and email on the cover or individual plan sheets, where applicable.
4. Minimum scale of 1/8 inch = 1 foot for commercial, minimum scale of 1/4 inch = for all details.
5. Graphic scale provided on all plans.
6. Address on site plan matching construction document address and permit application.
7. Distinguished clearly between demolition work and new work.
8. A table of contents/index with all enclosed sheets in set with correct sheet numbers as on front cover sheet.
9. For all projects that had pre-submission meetings, the meeting minutes are provided in the plan set.

3.0 PLANS

3.01 Code Analysis

1. All editions (year) of all applicable state and local Building and Fire codes and standards and amendments thereto, on which the design is based, have been stated on plans.
2. For projects under Virginia Existing Building Code (VEBC), the following questions have been addressed on the code analysis sheet in some form, preferably in the scope of work narrative or on the cover sheet:
   a) What is the purpose of the renovation?
   b) What repairs are being conducted?
   c) What are the alterations?
   d) Are the alterations considered Level 1, or 2?

e) Is there a change of occupancy?
f) Is the structure a historic building?
g) Is the building being moved?

3.02 Fire Life Safety Plan Sheet

1. All projects shall have a Fire and Life Safety plan sheet or similar designated sheet such as FS-XXX. Example FS-101 for 1st or ground floor. Show the following information on this sheet:
   a) Exit signs (coordinated with electrical light plan)
   b) Exits
   c) Horizontal exits with occupant loads supported by each exit area
   d) Boundary of all fire/smoke rated walls including those around atrium
   e) Travel and common path of travel distances
   f) Egress capacity of exit doors and stairs
   g) Delayed egress or special locking location shown with appropriate symbols such as card readers, sensors, push to exit, etc.
   h) Occupant load calculated using Table 1004.5 for each room, space, or function on each floor per square footage and actual occupancy load where it exceeds the design occupant load (example based on furniture, seating, booths, etc.). Indicate at each case the actual load or design load used to calculate worse case.
   i) Total occupant load for each floor and entire building.
   j) Remoteness between required exits and exit access doors is clearly shown.

3.03 Construction Type

1. The construction type(s) of the project is identified for each building(s).
2. All buildings have been identified and compared to the required materials for the given construction type.
3. The building elements that carry a fire resistance rating have been identified. See VCC Table 601. Provide matrix like below with design number (example UL# U905) or Chapter 7 compliance section.

Construction type:		
Building element	Rating	Design # or Chapter 7 compliance section
Primary structural frame		
Bearing wall • Exterior • Interior		
Nonbearing walls and partitions • Exterior		
Nonbearing walls and partitions • Interior		
Floor construction and associated secondary members		

Roof construction and associated secondary members		
Shaft walls		
Exit stairs		
Exit passageway		
Elevators • Shaft • lobbies		
Construction barriers		
Mixed use separation (state use and separation for each)		
Podium separation		
Horizontal exits		
Fire wall		

4. For podium buildings or structures with multiple buildings and construction types, provide a chart for each building.
5. Construction type verification for existing buildings can found online. A/E has ultimate responsibility to verify and accurately state all information.
6. Rated design assembly information must be provided for all partition types, curtain wall assemblies, head of wall details, and special doors (example fire shutter, won doors, etc.), and these sheets shall use FD-XXX designation.

3.04 Use Group and Occupancy Classifications/Height and Area Calculations

1. All uses as per current codes including the main use group classification(s) and any incidental use(s) involved with the building have been identified.
2. Multiple use groups are classified as accessory, separated and non-separated, as per the building codes currently enforced with supporting calculations, i.e. show how 10% or less was derived for accessory.
3. The square footage of each use group is specified.
4. The actual height and area of the building is stated along with the calculated allowable height and area in accordance with the applicable building code.
5. The calculations used to derive the allowable height and area include all increases due to open perimeter and sprinklers, or any decreases due to the number of stories of the building. All calculations must be shown in a step-by-step format including new square footage (SF), existing SF to be renovated, other existing SF.
6. The building area shall be indicated on the drawings based upon the context of its usage. The square footage provided shall reflect the VCC definition of "Building Area" when determining compliance with VCC Table 506.2 - Allowable Area Factor (A_t = NS, S1, S13R, or SM, as applicable) in Square Feet.

3.05 Fire Site Drawing

1. A copy of site drawing approved by the Office of the Fire Marshal shall be provided where **any** of the following occurs in project scope:
   - Any building that is new (including a storage shed)
   - Any addition
   - A change in construction type where the construction type is decreasing in fire resistance rating, i.e. increasing in combustibility
   - A new sprinkler system is being installed in a building

- Modification in streetscape that decreases street access to the building or alters any existing fire lane, i.e. reduces fire truck access
- Ground floor pool addition
- Relocating existing fire department connection (FDC) or underground (UG) fire line
- Changes to water supply or relocation of fire hydrant

County fire plan reviewers will not approve any building plan for which a fire site drawing, when required, has not be approved by the Office of the Fire Marshal at the Public Safety Headquarters (PSHQ) building.

2. A copy of the fire site drawing must be provided with the construction documents for new, additions or change in construction type to building.
    a. Approved by the Office of the Fire Marshal
    OR
    b. If not approved, the latest copy is provided for reference which contains a plan.
3. The construction type and use group noted on the site plan cover sheet MUST match the building plan.

Please contact the Office of the Fire Marshal site reviewer at 703-246-4806 and see PFM Chapter 9 for fire flow requirements. Show FDC and covering fire hydrant, fire lines, area of building, construction type, height, number of stories, building area, separation distance, water flow information from water authority from closest fire hydrants on site, etc.

3.06 Occupant Load/Egress Calculations

1. The total occupant load of the building has been calculated in consideration of the uses of the spaces within the building.
2. The square footage of all usable spaces is shown along with the occupant load factor (person per square foot) for that area.
3. An egress plan with calculations, verifying adequate egress capacity is provided. The egress plan is a key plan of the building/floor illustrating routes the occupants may travel to arrive to an exit.
4. Travel distance, dead ends, and common paths of travel have been analyzed along with the allowable and actual distances.
5. Locations where access controls or security locking systems will be provided within means of egress paths have been identified on the plans.
6. Remoteness between required exits and exit access doors is clearly shown.
7. Atriums and horizontal exits have been identified with boundaries clearly identified on floor plans.

3.07 Fire Resistant Materials

1. All materials that carry a fire rating due to any requirement other than construction type are identified, such as exterior walls due to fire separation distance, firewalls, fire separation assemblies, exit enclosures, shaft enclosures, draft stopping, fire blocking, dampers, etc.
2. For Sprayed–on Fireproofing, the proposed design assemblies specific to the building structural elements is shown. Drawings clearly define the locations and show the extent of the application of applied fire-resistant materials.
3. Continuity of vertical fire resistance rated assemblies and extent of horizontal fire-rated floor/ceiling and roof/ceiling assemblies with reference symbols is shown.
4. New walls from existing walls and new construction from existing construction are distinguished.
5. All fire rated walls including all partitions are clearly delineated on all MEP, Fire, and IT security plans.
6. Where duct work penetrates the fire rated assembly, define on mechanical plans dampers (fire and/or smoke) or appropriate through-penetration firestop system design number. Provide reference sheet(s) detailing dampers and through-penetration firestop system.

7. Opening protectives and penetrations have been included in the analysis of the fire rated assemblies.
8. All design listings for fire rated assemblies have been included. Any special manufacturer details are shown along with design numbers.
9. All penetration details and their design numbers are called out on plans.

3.08 Emergency Lighting/Backup Power

1. Any area or component required to be provided with emergency lighting and/or emergency power has been identified.
2. The capacity of the emergency systems operation for equipment such as means of egress lighting, exit signs, door locks, fire pumps, communication, elevators, and other emergency equipment as required by the applicable code have been provided.
3. Size, type, fuel, and design number for any tank and/or onsite generator is identified with location shown from building(s) and property line(s).
4. Where delayed egress is utilized, the plans shall clearly show the required emergency lighting at the door.

3.09 Interior Finishes

1. All interior finishes including, but not limited to, fixed or movable walls and partitions (including partition details), columns, ceilings, floor finishes and paneling or any other finish applied for acoustical treatment, insulation, fire resistance, decoration, or similar purposes have been provided.
2. Flame spread and smoke development index per VCC Interior finish is called out clearly for material used.
3. Specify application method for all finish panels.

3.10 Special Use and Occupancy

1. Any special use and occupancy of the building such as malls, atriums, high-rise, hazardous areas, etc. and any special provisions such as a podium style building have been clearly identified.

3.11 Special Processes, Materials, or Hazards

1. Any requirements for special processes, materials, or hazards, such as elevators, etc. are identified.
2. Quantities of Hazardous Materials, Maximum Allowable Quantities (MAQ), and control areas are classified and identified on the floor plans.

4.0 PHASED CONSTRUCTION

1. Construction Phasing Plan with detailed information on the scope of work for each phase along with the appropriate number of permit applications for each phase, if applicable.
2. Show locations and construction of temporary barriers, fire resistance ratings of temporary barriers, locations of temporary exit signage, and locations of temporary means of egress emergency lighting and the temporary exit access patterns at each floor for each substantially completed phase have been indicated.
3. Provide dates and mark areas of phasing.

5.0 FIRE PROTECTION SYSTEMS

1. All required fire protection systems of the building must be identified.
2. Correct design and installation standards with edition are stated.
3. Type and extent, including protection area of fire protection systems, and related scope have been indicated clearly.

5.01 System Specific

To improve consistency and reduce redundancy between shop drawing and building plan reviews, the Office of the Fire Marshal (OFM) has generated the chart below to help guide the industry for system specific submittal requirements that will be reviewed during the building permit review.

In the chart below, 3rd column definitions are as follows:

'x' (or greyed out row) indicates items that **WILL** be **reviewed on building permit construction drawings** and must be shown on plans.

Blank cells without 'x' **WILL NOT** be reviewed by fire reviewers at building permit construction drawings. These items will be deferred to shop drawing reviews under a separate permit, a review conducted at the Office of the Fire Marshal in the Public Safety Headquarters (PSHQ) building.

Review Type	System Information	Required for building permit (on construction document)
Door Locks and Hardware**	- type of hardware/operation	x
	- floor plans showing egress path and exit sign for entire floor including all tenants	x
	- location of all special locking, electronic, card reader, delayed identified on floor plan (any stairs) specially called out for that door (i.e. CR, delayed, sensor, etc.)	x – show sensor, card reader, symbols i.e. symbol for delayed egress These are shown either on electrical or life safety with exit signs.
	- door rating and door swing	x
	- sequence of operation	
	- type of locking per VCC	x
	- power supply, wiring, manufacturer cut sheet	
	- location of sensor, push button, components of system	x
	- signage	
	- verification and notation of use groups	x
	- verification and notation of occupant load	x
	- height of hardware, buttons	
	- wiring diagram	
	- power supply	
	- if fire alarm present, interface (seq of operation)	x – narrative/verbiage ok
Fire Alarm	- when is system required and type (i.e. manual, automatic smoke, evacuation)	x
	- scope of work, edition, standard	x
	- minimum design criteria for FA system, voice intelligibility, rooms, omitted, minimum dBA of space and those to be achieved	x – verify notes present for design to comply with NFPA 72 and VCC
	- schematic diagram showing all devices and equipment (panels, DACT/dialers, power supply) per	

	floor including smoke control interface, elevators (smoke and heat)	
	- A/V device spacing per NFPA 72. Verify candela and dBA	
	- manual pull stations	x – verify each tenant with separate entrance has at least one pull station at entrance
	- battery/voltage calculations	
	- matrix indicating sequence of operation	x
	- Annunciator location	x
	- FACP location	x
	- location of power (primary and secondary)	x
	- smoke detectors/heat detectors	x – residential plans, townhouses, 2 over 2
	- elevator protection	x – including Fire Service Access Elevator
	- location of Fire Command Center per CRP and layout of equipment in room	x
	- annunciator layout to match CRP	x
	- for multizone buildings and high-rise, a graphic of annunciator showing zones and boundary - see CRP	
	- firefighter telephones and Emergency responder radio coverage	x – for high-rise hard wire phones and compliance with 918. All others, documentation for signal coverage per 918 exception ok.
	- two-way communication for occupants (i.e. area of refuge)	x
	- sprinkler flow and tamper	
	- fire pump signals matrix	
	- detectors called out for HVAC, 2000cfm, 5000cfm	x – at minimum call out in general notes
	- Stair labelling per CRP	x
	- system monitoring	x – ok in notes
	- Zone and addressing coordination	
	- main fire alarm riser locations and penetrations	x – show power supply panels on riser diagram but no devices
Smoke Control	- smoke control detection, atrium/stair detector(s) locations	x
	- Smoke Control Manual	x – all info per manual
	- smoke control zones, sequence of Operation	x
Site Plan	- location and size of fire line to match site plan and plumbing/fire sheet	x
	- location of FDC to match site plan	x – coordinate with building features, exits, glass windows, etc.
	- fire pump test header location	
	- fire department key box	x
	- fire hydrant location and coverage	

Sprinklers	- when is system required, standard, edition, type, (wet, dry, etc.)	x
	- scope of work, edition, standard, any area omitted	x – for any areas omitted note NFPA 13 sections on plan, show details of how to achieve compliance, i.e. insulation, members, thickness
	- design criteria (density/area), hazard type	
	- remote area calculations, head locations and spacing, pipe sizing, system demand	
	- schematic of all pipes, BFP, valves, typical zone control details, drains & inspector tests on floor layout	x – Only coordinate location of incoming fire line with site plan
	- schematic of all pipes, BFP, valves, typical zone control details, drain & inspector tests riser diagram	x – Schematic riser diagram required for buildings with combined sprinkler/ standpipes, dry valve room locations
	- location of flow and tampers	
	- drain discharge location	x – for standpipes, PRVs, fire pumps
	- size of main and pipes	
	- location of FDC(s)	x – Coordinate with site and building features
	- system monitoring	x – Ok to state in general notes or cover sheet
	- elevator protection	x – exceptions for Fire Service Access Elevators
	- location all PRVs and drains	
	- indicate storage above 12 ft.	x
	- sprinkler head legend identifying head type	
	- details of hangers, pipe stands, bends, fittings, type of pipe	x – For engineering truss or wood construction, have note on drawings for structural engineer to account for sprinkler pipe loads when designed
	- riser/header details	
	- water curtain and draft stops around opening	x – a note or detail is acceptable providing location, provide material, dimensions of draft stop
	- exterior bell location	
	- type of water supply	x – Only if not public, i.e. tank, pond
	- water supply available	
	- Zone and addressing coordination	
	- townhouse, 2 over 2, single family	x – Verify only incoming fire line size and location with site plan. Do not show details, riser, or schematic.
Fire Pump	- type of fire pump (centrifugal, vertical inline, etc.)	
	- scope of work, edition, standard	x – For buildings over 200 ft., A/E to put note on plans that standpipe demand can be met by fire dept pumper. If not, auxiliary water supply

		approved by OFM will be required, i.e. tank, backup pump.
	- drain location in room	x
	- room rating and access, heating, lighting	x
	- schematic detail showing valves, lines, size, BFP, test header, FDC, bypass, driver	
	- size of fire pump	x – buildings over 150 ft.: verify that onsite pump can supply standpipe demand at 100% capacity. Example, fully sprinkler buildings with 2 standpipes, 750gpm required for standpipe demand, fire pump to be rated at 750gpm (not 500gpm)
	- controller(s) locations and clearance	x
	- jockey pump location	
	- pump test header	
	- power supply and emergency connection, fuel type	x – for electrical verify location of conduits, protection, etc.
Standpipes	- schematic riser diagram showing main pipe routing, valves, size of pipe	x – only for multiple zones or more than one standpipe per zone
	- design requirements, standard, edition	x
	- standpipe locations, rated enclosures, egress, obstructions – floor plan	x
	- FHV/PRV location in stairs per CRP – floor plan	x – show only FHV – locations per CRP & VCC
	- standpipe coverage – floor plan	x – coverage shall be shown along the path of travel and not as a crow flies
	- number of standpipes and labeling	
	- Roof manifold location	x
	- calculations for standpipe	
	- backup supply	x – For buildings over 200 ft., A/E to put note on plans that standpipe demand can be met by FD pumper. If not, auxiliary water supply approved by OFM will be required, i.e. tank, backup pump.
	- location of FDC	x – Coordinate with site and building features
	- dual hose valves at roof	
	- standpipe size 6” for combined sprinkler and standpipe system	x
	- when horizontal exits are added	x – A/E to provide notes on plan that additional hose valves added due to horizontal exits will require standpipe calcs and possible upsizing of existing standpipe pipe due to increase demand from new FHV

Storage Tank/ Generator	- location of tank with proximity to building and other structures (separation distance)	x
	- size of tank(s)	x
	- type of fuel	x
	- UL listing of tank	x
	- fuel connection/fill location/size of fuel line/ materials	
	- buoyancy calculation	
	- location of hazardous vents, emergency vents	
	- vehicle protection location/details	x
	- fill port location	
	- scope of work, edition, standard	x
Tents	- location with reference to other structures, buildings, other tents	x
	- size of tent	
	- any fuel, cooking	
	- egress layout, minimum width, exit signs	
	- exit out of tents	
	- width of streets and fire lanes serving tent	
	- fabric certificate for flame	
Kitchen Hoods	- location of pull stations in egress path	x
	- location local horn or strobe	
	- nozzle location, materials, etc.	
	- location of hoods	x
	- scope of work, edition, standard	x
	- fire alarm tie in (sequence of operation)	x – notes ok
Alternative Fire Extinguishing Systems	- type of hazard protected and proposed agent	x
	- location of tank(s) for extinguishing system	
	- routing of pipes, nozzle locations, materials, etc.	
	- manual pull stations	x
	- matrix indicating sequence of operation	x
	- scope of work, edition, standard	x
	- fire alarm tie in (sequence of operation)	x – notes ok
Fire Extinguishers	- Location on floor plans, type, travel distance	x
	- scope of work, edition, standard	x
High-piled Storage	- general notes and scope	x – If the AE/owner is unaware of what is to be stored, have notes on plans compliance with IFC chapter 32 and that an operational use permit will be submitted to OFM. If owner/AE is aware, review for items below.

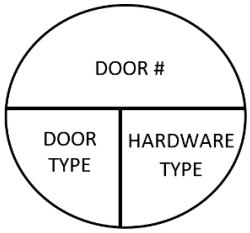
	- design criteria per IFC including table in IFC (fire access lanes, fire doors, exterior door hardware for fire department use, key box, roof vents, whether sprinkler/fire alarm required, etc.)	x
	- verify location of racks, aisles	x
	- storage type, class/commodity, quantity, volume, square footage	x
	- design criteria for sprinklers	
	- warehouse storage agreement when storage is to be 12 ft. or less and not high-piled, i.e. less than 6 ft. for Group A plastic, etc. See definition of high-piled.	x – high ceiling warehouses with low claimed storage
Hazardous Materials	- identify location, MAQ, control area, barriers, etc.	x

For **building permit construction documents**, submit information for system(s) as indicated in chart above. **DO NOT** show locations of strobes, horns, or speakers or location of sprinklers in building permit drawings. A complete review will take place during shop drawings submittal.

5.02 **Door Locks and Hardware:

1. All door schedules must be on plans. All door hardware sets must be called out and present on plan sheet. **Referring to Specification WILL NOT be accepted.**
2. All hardware supporting access control and associated component locations allowing for free egress must be clearly identified.
3. Notes calling out for door hardware 'existing to remain' **will not be acceptable**.
4. Details of door schedule on architectural drawing should include door number, door type, and hardware type.

Preferred format:



6.0 DEFERRED SHOP DRAWINGS- FIRE INSTALLATIONS PLANS

1. Shop drawings are required to be submitted for the following:
   a) Fire protection systems: automatic sprinkler systems, standpipes, alternative fire extinguishing systems (such as kitchen hood suppression), fire detection and alarm, fire pumps, etc.
   b) Access control locks or special locking arrangements
   c) Tanks storing flammable and combustible liquids including those associated with generators

For more information about fire marshal installation permits see Fire Marshal Installation Permit Requirements | Fire and Rescue (fairfaxcounty.gov)

2. Provide notes on your building permit construction set that clearly indicate shop drawings will be submitted to the Office of the Fire Marshal for permit and approval prior to installation. Submit shop drawings on PLUS following the instruction provided at Planning and Land Use System (PLUS) | Fire and Rescue (fairfaxcounty.gov). Contact 703-246-4806 for additional information.

7.0 RESUBMISSION (CORRECTIONS)

Revision clouds shall be provided with the appropriate delta symbol and revision number matching the revision block number with date.

8.0 REVISIONS- AMENDMENT (TO PREVIOUSLY APPROVED PLANS)

1. The Sheet Index designating the revised sheets.
2. A letter indicating all the changes made and the sheet numbers they are made on.
3. Revision clouds provided with the appropriate delta symbol and revision number matching the revision block number with date.

9.0 COUNTY RESOURCES

Engineering Plans Review | Fire and Rescue (fairfaxcounty.gov)

1. Smoke Control Manual and Fairfax County Special Inspection Program Manual 2021 – Smoke Control Special Inspections Program | Land Development Services (fairfaxcounty.gov))
2. Code Reference Package (CRP) 2021
3. Public Facilities Manual (PFM) Chapter 9