Include the following items on the project drawings or in specifications to demonstrate code compliance. See DCSM sections 2.4 and 2.7 for additional details on drawings. See DCSM section 2.7.5.9 for additional information for all fire protection and fire safety systems included in this checklist and DCSM section 3.10.2 for additional requirements for fire safety review of shop drawings.

**Instructions**:

Indicate your response to each item in the checklist. Select ‘Yes’ if the checklist item has been completed in full. Select ‘No’ or ‘N/A’ if that item is not included or not required for the specific project. Explain why that item has not been included in the submittal.

| **RESPONSE** | **REQUIREMENTS** |
| --- | --- |
|  | Fire Protection Information Plan and Calculations |
| Choose an item. | Identify the applicable edition of the VUSBC and other applicable codes, including accessibility standards. |
| Choose an item. | Provide the Use Group(s) per the VUSBC. For mixed-use occupancies, indicate which Use Groups are separated and non-separated. |
| Choose an item. | Provide the Construction Type per the VUSBC. |
| Choose an item. | Indicate type and extent of the fire protection sprinkler system and fire detection/fire alarm systems. |
| Choose an item. | Provide a tabulation of square footage per floor and total building area including new square footage, existing square footage to be renovated, other existing square footage, and total building volume (cubic feet). |
| Choose an item. | Provide a tabulation of units (number of auditorium seats, bedrooms, etc.). |
| Choose an item. | Provide calculations to support the indicated design occupant load on a use and function, and floor by floor basis. Include the design occupant load for the functions of the rooms and spaces in accord with the VUSBC. |
| Choose an item. | Indicate paths of means of egress, paths of exit access, travel distances, and common paths of travel. Indicate specific locations where access controls or security locking systems will be provided within means of egress paths. |
| Choose an item. | For projects that will have partial, phased occupancy, indicate locations and construction of temporary barriers, fire-resistance ratings of temporary barriers, locations of temporary exit signage, locations of temporary means of egress emergency lighting, and the temporary exit access patterns at each floor for each substantially completed phase. Include fire watch requirements as needed. |
| Choose an item. | Indicate rating of all fire-resistance-rated assemblies, smoke barriers, and smoke partitions. |
| Choose an item. | Completely show the continuity of vertical fire-resistance-rated assemblies, with reference symbols. Distinguish new walls from existing walls and new construction from existing construction. |
| Choose an item. | Identify the extent of horizontal fire-rated floor/ceiling and roof/ceiling assemblies, with reference symbols. |
| Choose an item. | Provide drawings that clearly define the locations and extent of the application of applied fire resistant materials. |
| Choose an item. | Define the UL design assemblies specific to the respective locations and application of applied fire resistant materials. |
| Choose an item. | Define the validation tests required for special inspections of applied fire resistant materials in the project. See the applied fire resistant materials checklist and DCSM section 2.7.5.9.7. |
| Choose an item. | Indicate locations of all portable fire extinguisher cabinets. |
| Choose an item. | Indicate whether the building is designated as an “essential facility” for purposes of compliance with seismic and snow provisions in the VUSBC. |
| Choose an item. | Indicate the seismic design category. |
| Choose an item. | Provide calculations in support of the indicated construction type, based on Use Group, allowable height and allowable area, and permitted or required height and area modifications. |
| Choose an item. | Provide calculations to support the indicated design occupant load on a use and function and floor by floor basis. |
| Choose an item. | Provide calculations to demonstrate and support the indicated capacity of the egress components throughout the building. |
| Choose an item. | Provide a matrix that defines the “fire-resistance rating requirements” for building elements including exterior walls, fire walls, fire barriers, shaft enclosures, fire partitions, smoke barriers, and horizontal assemblies. On the matrix, indicate the listed design assemblies proposed to achieve the required fire resistance ratings. Include copies of each listed assembly. |
| Choose an item. | Define the UL through penetration firestop assemblies for all utilities penetrating fire-rated construction. |
|  | Fire Suppression Systems — Sprinklers/Standpipes  Drawings |
| Choose an item. | Identify the occupancy hazard classification. Show the location of sprinklers for each of the spaces on each floor within the buildings. Confirm that the location of sprinklers are based on the VCC, NFPA 13, and the user’s programmatic requirements with the understanding that the quantity, coverage, location, and type of sprinkler are not to be altered by the Contractor, without prior written approval by the A/E and the UBO. |
| Choose an item. | Show the location of fire department valves and risers within the building. Indicate that the fire department valves are attached to either standpipe risers, combined standpipe and sprinkler risers, or wet pipe sprinkler system risers. Confirm that the locations of fire department valves are based on the VCC, NFPA 13, NFPA 14, and the user’s programmatic requirements. |
| Choose an item. | Show proposed sprinkler piping and standpipe layout. Include the sprinkler mains and cross mains within the building. Show the layout of branch lines for the most hydraulically demanding zone(s) on each floor of each sprinkler system. Indicate the size of pipes that are shown. |
| Choose an item. | Provide a table summarizing the characteristics of each of the sprinkler systems. Define the type of sprinkler system(s), areas of coverage, hazard, minimum rate of water coverage (density) per area, water required for each area of coverage, hose stream allowances for each area, and total water requirements for each area of coverage. Provide hydraulically calculated pressure requirements at a common reference point at design flow for each area of coverage, and provide the water supply (flow and pressure) available at the common reference point. |
| Choose an item. | Provide a small scale drawing showing locations of water hydrants, test and flow hydrants (for water flow tests), and routing of underground pipe. Indicate the water flow test results, the date and time taken, and who conducted the test. Indicate the water supply (flow and pressure) at a reference point common with the sprinkler/standpipe system design. |
| Choose an item. | Show and identify all existing sprinkler systems and standpipe systems. |
| Choose an item. | Show and indicate all new connections to existing systems. |
| Choose an item. | Provide sprinkler riser diagram. Identify appropriate fittings, accessories, sizes, alarms, valves, etc. |
| Choose an item. | Show all system drains. |
| Choose an item. | Show all inspector’s test station locations and associated discharge or drainage piping. |
| Choose an item. | Show the location of the fire department connection(s) with all interconnecting piping to the sprinkler and standpipe systems. |
| Choose an item. | Show the location and details of the fire pump, driver, fire pump controller, piping, components and piping specialties. |
| Choose an item. | Show the location of the fire pump test header and all interconnecting piping. |
| Choose an item. | Show sprinkler head type, K-factor, and temperature ratings. |
| Choose an item. | Show the location and detail of each sprinkler system entrance. Include the supply riser, alarm valve, water motor alarm, fire department inlet connection, pressure or flow switch, fused disconnect switch, and associated electrical connections. |
| Choose an item. | Show the location where each sprinkler system begins including the connection to water distribution system piping. |
| Choose an item. | Show the location of sprinkler system control valves, post indicator valves, wall indicator valves, and inspector test stations. |
| Choose an item. | Show the area of sprinkler system coverage when the system is protecting partial areas. |
| Choose an item. | Provide details of sprinkler piping anchors where required. |
| Choose an item. | On renovation projects, indicate existing sprinkler piping layout and sprinkler heads on project drawings only if existing sprinkler system is being modified and such layout is necessary for clarity or coordination with new work. Show new sprinkler system work. |
| Choose an item. | Show predominate hazard classification. Identify any areas with a different classification. |
| Choose an item. | Show information on water supply and include water flow available in GPM, static water pressure in psi, residual water pressure in psi, and hydrant locations. |
|  | Fire Suppression Systems — Sprinklers/Standpipes  Specifications |
| Choose an item. | Provide complete specifications to reflect the systems that are defined on the drawings. |
| Choose an item. | Provide wording in the specifications that indicate that the type of systems, the location of major components, the quantity, type, coverage, and location of sprinklers, and modifications to the distribution system are not to be altered by the Contractor without prior written approval by the A/E and the UBO. Confirm that any changes to the design depicted within the construction documents shall be submitted to the UBO for review and approval. |
| Choose an item. | Provide a description of the acceptance testing requirements. Indicate which of the acceptance tests are to be witnessed by the regional State Fire Marshal’s Office (SFMO). |
|  | Fire Suppression Systems — Sprinklers/Standpipes  Calculations |
| Choose an item. | Provide final hydraulic calculations for each sprinkler system and standpipe system. |
| Choose an item. | Confirm that the calculations demonstrate the performance of the system with an automatic water supply for the most hydraulically demanding zone on each floor of the building for each of the fire sprinkler systems compliant with NFPA 13 and NFPA 14. |
| Choose an item. | Confirm that the calculations demonstrate the performance of the sprinkler and standpipe systems as connected to the manual water supply (fire department pumper truck) by the fire department connection and interconnecting piping compliant with VCC, NFPA 13, and NFPA 14. Confirm that the performance of the local fire department pumper truck has been validated for these calculations. |
|  | Fire Suppression Systems — Alternate Automatic Systems  Drawings |
| Choose an item. | Show and identify rooms, spaces, and components to be protected by the proposed fire suppression system. |
| Choose an item. | Show the enclosure partitions (full and partial height) of the protected area. |
| Choose an item. | Identify the locations of the major fire suppression system components. |
| Choose an item. | Show the routing of the fire suppression system lines between the stored agent and the dispersion nozzles within each of the protected spaces. Indicate sizes of pipes that are shown. |
| Choose an item. | Provide a table defining the type of fire suppression system(s), areas of coverage, hazard, minimum required concentration of fire suppression agent, volume of agent required for each area of coverage, and total volume of agent for the areas protected by this system. |
| Choose an item. | Show and identify all existing fire suppression systems. |
| Choose an item. | Show the location of all dispersion nozzles for all spaces or areas protected. |
| Choose an item. | Show the locations and components of the automatic detection system and agent releasing system. Define the specific locations for actuation devices. |
| Choose an item. | Show the location of and define the interface requirements to connect to the building’s fire alarm system. |
| Choose an item. | Show the location of components for means of manually releasing of agent. |
| Choose an item. | Location of controlled devices such as dampers and shutters. |
| Choose an item. | Provide fire suppression system riser diagram with appropriate fittings, fire suppression agent storage tanks, accessories, sizes, alarms, valves, etc. |
| Choose an item. | Show and indicate all new connections to existing systems. |
| Choose an item. | Show the location of instructional signage. |
|  | Fire Suppression Systems — Alternate Automatic Systems  Specifications |
| Choose an item. | Provide complete specifications to reflect the systems that are defined on the drawings. |
| Choose an item. | Provide wording in the specifications that indicate that the type of system, concentration requirements, quantity of agent required, location and type of dispersion nozzles, location of major components, and modifications to the distribution system are not to be altered by the Contractor without prior written approval by the A/E and the UBO. Confirm that changes to the design during the construction phase of the project shall be submitted to the UBO for review and approval. |
| Choose an item. | Provide complete step-by-step description of the system sequence of operations including functioning of abort and maintenance switches, delay timers, and emergency power shutdown. |
| Choose an item. | Provide a description of the acceptance testing requirements. Indicate which of the acceptance tests are to be witnessed by the regional SFMO. |
|  | Fire Suppression Systems — Alternate Automatic Systems  Calculations |
| Choose an item. | Provide complete calculations to determine enclosure volume and quantity of agent required. |
| Choose an item. | Provide calculations to define the size of backup batteries. |
| Choose an item. | Provide the method used to determine number and location of audible and visual indicating devices. |
| Choose an item. | Provide the method used to determine number and location of detectors. |
|  | Fire Pumps  Drawings |
| Choose an item. | Show the location of the fire pump, pressure maintenance pump, pump controllers, piping, components and piping specialties. |
| Choose an item. | Provide details of the fire pump, pressure maintenance pumps, pump controllers, suction piping, discharge piping, components and piping specialties. |
| Choose an item. | Provide a table summarizing the water supply characteristics for the most demanding area of each of the sprinkler systems supplied by the fire pump. Define the type of sprinkler system(s), water flow and pressure requirements for each area of coverage, hose stream allowances for each area, resulting total water flow and pressure requirements for each area of coverage, water supply (flow and pressure) available, fire pump, resulting available water supply, resulting safety factor in psig for each sprinkler system. |
| Choose an item. | Provide a small scale drawing showing locations of water hydrants, test and flow hydrants (for water flow tests), and routing of underground pipe. Indicate the water flow test results, the date and time taken and who conducted the test. Indicate the water supply (flow and pressure) at a reference point common with the sprinkler/standpipe system design. |
| Choose an item. | Show and identify all existing sprinkler systems and standpipe systems in the vicinity of the fire pump(s). |
| Choose an item. | Show and indicate all new connections to existing systems. |
| Choose an item. | Show the location of the fire department connection(s) with all interconnecting piping back to the fire pump. |
| Choose an item. | Show the location of the fire pump test header and all interconnecting piping. |
| Choose an item. | Show the location of the electrical components of the fire pump, driver, fire pump controller and ancillary electrical components. |
| Choose an item. | Show the location, size and routing of the conduits and conductors serving the fire pump, driver, fire pump controller, and ancillary electrical components. |
| Choose an item. | Provide details of the electrical components serving the fire pump, driver, fire pump controller, piping, components and piping specialties. |
| Choose an item. | Where multiple fire pumps or multiple sources of power are required, provide a diagram on the drawings that defines all of the applicable components and defines the sequence of operation. |
| Choose an item. | Show the configuration, slope to drain, and sizes for each piping system. |
| Choose an item. | Provide the location and type of each pump. Include associated equipment and appurtenances. |
| Choose an item. | Provide the capacity of each item of equipment. |
| Choose an item. | Show locations and details for special supports for piping. |
| Choose an item. | For pipe larger than 12 inches, show details of anchoring piping including pipe clamps and tie rods. |
|  | Fire Pumps  Specifications |
| Choose an item. | Provide complete specifications to reflect the systems that are defined on the drawings. |
| Choose an item. | Provide wording in the specifications that indicate that the type of system, concentration requirements, quantity of agent required, location and type of dispersion nozzles, location of major components, and modifications to the distribution system are not to be altered by the Contractor without prior written approval by the A/E and the UBO. Confirm that changes to the design during the construction phase of the project shall be submitted to the UBO for review and approval. |
| Choose an item. | Provide a description of the acceptance testing requirements. Indicate which of the acceptance tests are to be witnessed by the regional SFMO. |
|  | Fire Pumps  Calculations |
| Choose an item. | Provide hydraulic calculations that demonstrate that the most hydraulically demanding zone(s) of the fire sprinkler system(s) is satisfied by the automatic water supply (water supply plus fire pump) compliant with the requirements of NFPA 13, NFPA 14, and NFPA 20. |
| Choose an item. | Where the height of the structure is beyond the capacity of the fire department apparatus, provide hydraulic calculations that demonstrate the performance of the standpipe system(s) as connected to the automatic water supply (water supply plus fire pump) compliant with the VCC, NFPA 13, and NFPA 14. |
|  | Fire Detection and Fire Alarm Systems  Drawings |
| Choose an item. | Locate and identify all fire alarm system alarm-initiating and notification appliances. |
| Choose an item. | Locate and identify where protective covers are utilized with fire alarm system alarm initiating and notification appliances. |
| Choose an item. | Locate and identify all fire alarm control and trouble signaling equipment. |
| Choose an item. | Locate and identify all existing alarm system alarm-initiating and notification appliances. |
| Choose an item. | Locate and identify all existing fire alarm control and trouble signaling equipment. |
| Choose an item. | Locate and identify the interface requirements for all fire alarm system alarm initiating devices provided by other trades such as HVAC duct smoke detectors, kitchen hood fire suppression systems, and fire sprinkler flow and tamper switches. |
| Choose an item. | Locate and identify the interface requirements for all devices whose operation is initiated by the fire alarm system such as door hold open devices, fire shutters, elevator recall, electronic door hardware, and smoke control systems. |
| Choose an item. | Identify the primary and secondary power supplies and connections. |
| Choose an item. | Identify the candela output levels for all visual alarm notification appliances. Confirm compliance with candela rating requirements. Candela ratings such as “15/75” are not compliant. |
| Choose an item. | Provide a matrix that defines the interface of the fire safety control functions. Define the action that will initiate an alarm or trouble condition. Define the alarm-initiating device activated, the action of the control and trouble signaling equipment, and the resulting alarm notification appliance actions and resulting operation of interfaced equipment. |
| Choose an item. | Provide fire alarm system riser diagram showing all system components. Define the “zones” to be protected. Diagrammatically define the location of the constantly attended location from which the fire alarm system will be supervised. Define the interface between the fire alarm system and the constantly attended location. |
| Choose an item. | Provide a description of the acceptance testing requirements. Indicate which of the acceptance tests are to be witnessed by the regional SFMO. |
| Choose an item. | Demonstrate that the quantity and location of the audible alarms as indicated on the drawings attain the required sound pressure levels in each of the respective spaces. |
| Choose an item. | Demonstrate that the required capacity of the secondary power supply is attained. |
| Choose an item. | Demonstrate that the indicated candela performance is attained for alarm notification devices where protective covers are utilized. |
| Choose an item. | On electrical power floor plans, show location of control panel, battery and charger, transmitter, annunciator, fusible safety switch, remote trouble device, alarm devices, and each actuation device including fire extinguishing system switches. |
| Choose an item. | On the electrical site plan, show location of master fire alarm box, annunciator, circuit run to the connection to the campus fire alarm circuit, circuit run into the building and connection to control panel, and circuit run for master box marker light. Show conduit size and numbers and size of conductors on circuit runs. |
| Choose an item. | Show single line fire alarm riser diagram. Indicate connection of equipment using circuit runs in lieu of conduit runs. Do not indicate number and size of conductors for interconnection of fire alarm components. |
| Choose an item. | Show mounting height for panels on elevation or detail drawings, if critical. |
| Choose an item. | Show the locations of visual annunciators (strobe lights) adjacent to exits or exit signs to meet requirements of the ADA Standards for Accessible Design, latest edition, and the current applicable edition of NFPA 72. |
| Choose an item. | Identify the intercom system for Areas of Refuge. |
|  | Fire Detection and Fire Alarm Systems  Specifications |
| Choose an item. | Provide wording in the specifications: “The location and type of fire alarm system alarm-initiating appliances, the type of fire alarm notification appliances and control and trouble-signaling equipment, and the location of major components are not to be altered by the Contractor without prior written approval by the A/E and the UBO. Changes to the design during the construction phase of the project shall be submitted to the UBO for review and approval.” |
| Choose an item. | Provide a description of the acceptance testing requirements. Indicate which of the acceptance tests are to be witnessed by the regional SFMO. |
|  | Smoke Control Systems  Drawings |
| Choose an item. | Submit a preliminary Rational Analysis (a detailed design report) to the UBO for review. See DCSM section 2.7.5.9.5. |
| Choose an item. | Provide conceptual floor plans which identify the locations of the major components, pertinent calculations, sequence of operation, and any other information that may assist in the evaluation of the methods in the documents submitted to the UBO. |
| Choose an item. | Locate and identify all of the walls, floors, and ceilings that define the perimeter of the space(s) to be protected by the smoke control system. |
| Choose an item. | Locate and identify the HVAC system components respective to the smoke control system. |
| Choose an item. | Locate and identify all smoke dampers respective to the smoke control system. |
| Choose an item. | Locate and identify all motorized dampers respective to the smoke control system. |
| Choose an item. | Locate and identify the interface requirements with the fire alarm system. |
| Choose an item. | Locate and identify the interface requirements for all devices whose operation is required by the smoke control system such as door hold open devices, smoke dampers, fire shutters, motorized ventilation dampers, fans, air handlers and smoke detectors. |
| Choose an item. | Identify the primary and secondary power supplies and connections. |
|  | Smoke Control Systems  Specifications |
| Choose an item. | Provide wording in the specifications that neither the components nor the locations of the components of the smoke control system are to be altered by the Contractor, without prior written approval by the A/E and the UBO. Confirm that changes to the design depicted within the construction documents shall be considered substitutions in accord with the General Conditions and are to be documented by change order. |
| Choose an item. | Provide a description of the acceptance testing requirements. Indicate which of the acceptance tests are to be witnessed by the regional SFMO. |
|  | Smoke Control Systems  Calculations |
| Choose an item. | Provide calculations as defined by the VCC and NFPA 92B that establish the performance requirements for the method of smoke control for this project. |
|  | Access Control Systems  Drawings |
| Choose an item. | On the building floor plans, define the locations and components of the access control hardware proposed. |
| Choose an item. | Show door hardware details and elevations. Define the locations of all associated access control hardware. |
| Choose an item. | Submit a copy of the door hardware (mechanical hardware) shop drawings for the doors where the access controls are to be provided. |
| Choose an item. | Provide a sequence of operations demonstrating compliance with the requirements of the VUSBC. |
| Choose an item. | Provide documentation demonstrating that each of the access control components are listed for the intended use and that per the manufacturer’s documentation the specific components are compatible with each other. |
| Choose an item. | Provide a description of how the elements interface with the building’s fire alarm system. |
|  | Applied Fire-Resistant Materials  Drawings |
| Choose an item. | Provide drawings (small-scale structural framing plans) including typical and special details that clearly define the locations and extent of applied fire-resistant materials. Confirm that drawings are structural steel plans without irrelevant walls, doors, and other features that would obscure a clear representation of the extent of fireproofing. |
| Choose an item. | Define the UL design assemblies specific to the respective locations and application of the applied fire-resistant materials. |
| Choose an item. | Provide complete specifications to reflect the applied fire-resistant materials assemblies that are defined on the drawings. |
| Choose an item. | Clearly state in the specifications that no asbestos-containing material will be permitted. Confirm that Contractor certifies that the material being used contains no asbestos. |
| Choose an item. | Demonstrate compliance where 1) a protected steel member or 2) an unprotected steel member with a cross-sectional area exceeding 4.65 inches square connects to a protected steel member with a greater required thickness of applied fire-resistive material, the greater thickness of material shall extend onto the adjoining steel member a minimum of 18 inches from the point of connection. Refer to the UL Best Practice Guide for Passive Fire Protection for Structural Steelwork: Fire Resistance and External Exposure Characteristics, 1st Edition, October 2018. |
| Choose an item. | Demonstrate compliance where an unprotected steel member with a cross-sectional area equal to or less than 4.65 inches square, including metal attachments such as miscellaneous angles, light gage framing, hangers, etc., connects to a protected steel member, the area of attachment shall be covered with the same thickness of applied fire resistant materials as the structural member. |
| Choose an item. | Show the location of all sprayed fire protection. |
| Choose an item. | Indicate the thickness of sprayed-on fire protection and the rating required. |
| Choose an item. | Confirm that drawings show fire protection other than sprayed-on for the following items:   1. Concrete fire protection of steel bearing members in elevator hoistways; 2. Plaster fire protection of structural steel and underside of steel decks in machine rooms; and 3. Equivalent masonry, concrete, or plaster fire protection on outside surfaces of exterior structural peripheral members. |
| Choose an item. | Identify specific locations and members on the drawings. Bearing for members in certain areas may not require fire protection. |