4.10.3 Initiating Devices

- Automatic sprinkler system waterflow switches.
- Smoke detectors located:
  - In front of each entry to smokeproof enclosures.
  - In front of elevators.
  - In the elevator hoistway, elevator machine room, elevator machinery spaces, elevator control spaces, or elevator control rooms.
  - For release of automatic closing doors with magnetic hold opens devices.
  - Within 5-feet horizontally of smoke dampers at un-ducted openings in walls.
  - At the location of each fire alarm control unit, notification appliance circuit power extenders and supervising station transmitting equipment.
- Smoke detectors in air distribution systems, where air distribution systems are capable of spreading smoke beyond the room or space in which the smoke is generated:
  - In return air systems with design capacity in excess of 2,000 cfm.
  - At each connection to a vertical duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system. On the hotel levels, a smoke detector is allowed to be used in each return air riser carrying not more than 5,000 cfm and serving not more than 10 air-inlet openings.
- Manual fire alarm boxes located at the main entrance lobbies,
- Heat detectors located in areas where the installation of smoke detectors may not be appropriate due to high probability of nuisance alarms when approved by the local fire code official.
- Duct smoke detectors will shut down or close the associated equipment and will send a supervisory signal to the fire alarm panel and will not initiate the occupant notification system.

Fire pump running condition will send a supervisory signal to the fire alarm panel and will not initiate the occupant notification system.

4.11 Sleeping Area Requirements (Low Frequency Sounders)

NFPA 72 Section 18.4.6 has specific requirements for sleeping areas. Audible appliances for sleeping areas will produce a sound level of at least 15 dB above the average ambient sound level or 5 dB above the maximum sound level having a duration of at least 60 seconds or a sound level of at least 75 dBA, whichever is greater. These audible appliances provided for the sleeping areas to awaken occupants are required produce a low frequency alarm signal and have a fundamental frequency of 520 Hz+/- 10 percent.

4.12 Smoke Alarms

Smoke alarms are required to be installed in dwelling units at the following locations:

- On the ceiling or wall outside each separate sleeping area in the immediate vicinity of the bedroom.
- In each room used for sleeping purposes.
- Each story within a dwelling unit.

- Within a minimum 20-foot horizontal distance from a permanently installed cooking appliance. A smoke detector can be used as well.

Smoke alarms shall not be installed less than a 3-foot horizontal distance from the door or opening of a bathroom that contains a bathtub or shower. There may be other areas that require smoke alarm coverage in the dwelling unit based on the appliances provided and the configuration of the unit. The full list of specific locations can be found in NFPA 72 29.8.3.4.

If more than one smoke alarm is located within an individual dwelling unit, they will be required to be interconnected. The activation of one smoke alarm will activate all other alarms in the individual unit. The smoke alarm shall be clearly audible in all bedrooms with all intervening doors closed. The smoke alarms will receive primary power from the building's electrical system and will be equipped with backup batteries. Battery backup is not required if the smoke alarms are connected to the building's emergency power.

4.13 Carbon Monoxide Detection

Carbon monoxide detection is required, per UFC Section 1103.9, to be in dwelling units if the building contains fuel-burning appliances and fuel-burning fireplaces. Fuel-burning forced-air furnaces serving dwelling units are required to have carbon monoxide detection as well. Carbon monoxide detection is required to be installed in the following locations:

- Outside of each separate sleeping area in the immediate vicinity of the bedrooms
- On every occupiable level of a dwelling unit, including basements.
- Where a fuel-burning appliance is located within a bedroom or its attached bathroom, carbon monoxide shall be installed within the bedroom.

Carbon monoxide detection can be provided by either carbon monoxide alarms or carbon monoxide detection systems. Combination carbon monoxide/smoke alarms are acceptable to be installed if listed in accordance with UL 2034 and UL 217.

If more than one carbon monoxide alarm is located within an individual dwelling unit, they will be required to be interconnected. The activation of one carbon monoxide alarm will activate all other carbon monoxide alarms in the individual unit. The smoke alarms will receive primary power from the building's electrical system and will be equipped with backup batteries.

4.13.1 Supervisory Signals

The fire alarm system will receive supervisory signals from the following devices:

- Automatic fire sprinkler and standpipe system control valves.
- Duct smoke detectors.
- Fire pump controller (loss of phase, phase reversal, pump running, pump running on emergency power).

- Emergency generator status indicators.
- First responder radio amplification system.

4.13.2 Visual Alarms

Visual alarm devices will be located at all accessible public- and common-use areas, including toilet rooms, hallways and lobbies. Where the average ambient noise is greater than 105 decibels, visible alarm notification appliances only will be provided. Visual alarm devices are not required in exit enclosures and elevator cabs.

Each story that contains dwelling units will be provided with the capability to support visible alarm notification appliances.

Visual signaling appliances will operate in unison with the occupant notification system and will be synchronized as required by NFPA 72 (up to two separate groups of synchronized strobes are allowed within the field of view).

4.14 Elevators

4.14.1 Hoistway Protection

All elevator hoistways will be of 2-hour fire-resistive construction, with the exception of elevator hoistways that only connect two adjacent stories.

The elevator machine rooms, elevator machinery spaces, elevator control spaces, or elevator control room swill have 2-hour fire-resistance-rated enclosures.

4.14.2 Venting

Elevator machine rooms, machinery spaces that contain the driving machine, and control rooms or spaces that contain the operation or motion controller for elevator operation are required to be provided with an independent ventilation or air-conditioning system to protect against the overheating of the electrical equipment.

Elevator hoistway smoke vents are not required.

4.14.3 Elevator Lobby

The elevator hoistway openings are required to be protected at each floor where an elevator shaft enclosure connects more than two stories. The elevator hoistway openings are not required to be protected at the street floor level or level of exit discharge. There are three options:

1. Traditional elevator lobby enclosures formed by 1-hour fire partitions. Doors in fire partitions are required to meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784.

2. An additional door (tested in accordance with UL 1784) to protect the hoistway opening. This door can be pocketed adjacent to the hoistway door and swing 180 degrees.
3. An elevator hoistways pressurization system.

Drawings indicate that the hoistways will open into residential corridors and that elevator lobbies will not be available in the development, and as such Options 2 and 3 are of interest, see Section 3.5.

Signage (also tactile) will be provided in front of the elevator landing, indicating to not use the elevator in case of fire. The signs will be pictorial signs and include the text that read "IN FIRE EMERGENCY, DO NOT USE ELEVATOR, USE EXIT STAIRS."

4.14.4 Elevator Recall

Elevators will be provided with emergency recall capabilities. Activation of a smoke detector in front of the elevators or elevator machine room smoke detector will cause automatic recall of the elevator to the primary recall level and will be under manual control only. Manual controls for elevator recall will be provided at the main grade level lobby of each elevator hoistway.

4.14.5 Manual Override

A three-position (on/off/bypass), key-operated switch will be provided at the primary recall level for each elevator for emergency override.

A three-position (on/off/hold), key-operated switch will be provided inside each elevator cab.

Elevator keys will be provided for the Fire Department in a lockable cabinet in the fire command center.

4.15 Emergency and Standby Power

4.15.1 Secondary Power

Secondary Power is split into two categories: Standby Power and Emergency Power. Emergency Power systems shall automatically provide power within 10 seconds after primary power is lost, while Standby Power systems shall automatically provide power within 60 seconds after primary power is lost.

4.15.2 Systems on Emergency or Standby Power

Emergency power will supply the following systems at a minimum (10 seconds transfer time):

- Exit signs.
- Means of egress illumination.
- Fire sprinkler alarm and supervisory systems.
- Fire alarm and supervisory systems.
- Fire detection and supervisory systems.
- Fire pump controller.

- Electrically powered fire pumps.
- Elevator car lighting.
- Radio repeater system.

Standby power will supply the following systems at a minimum (60 seconds transfer time):

- One elevator in each bank. The standby power will be manually transferable to any elevator in each bank.
- Where standby power is connected to elevators, the machine room ventilation or air conditioning shall be connected to the standby power source. Power and lighting for the fire command center.
- Fans serving shafts with steel exhaust subducts for the omission of dampers.
- Stair pressurization fans.

4.16 Fire Department Operations

4.16.1 Site Fire Department Access

Per the UFC, approved fire apparatus access roads are required to extend to within 150 feet of all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building. The only access to the development is along the new extension of Marsac Avenue along the north side of the development, and as such does not meet the 150 feet requirement.

The fire code official is authorized to increase the dimension of 150 feet where the building is equipped throughout with an approved automatic sprinkler system, or where fire apparatus access roads cannot be installed because of the location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.

The proposed fire apparatus access should be confirmed with Park City Fire Department.

The site fire department access roadway must meet the following requirements:

- Unobstructed width = 20 feet (exclusive of shoulders)
- Unobstructed height = 13 feet 6 inches
- Surface = capable of sustaining the imposed load of fire apparatus (75,000 lb) and must be an approved all-weather surface
- Minimum turning radius of 28 feet.
- Dead-ends in excess of 150 feet must be provided with an approved turn-around
- Grade ≤ 6% unless approved by the Park City Fire Department

4.16.2 Site Fire Department Utilities

Fire hydrants are required to be provided along the fire apparatus access road per the Park City Fire Department "Fire and Life Safety Development Guidelines". The fire-flow calculation requirement needs to be discussed with the Park City Fire Department, and is based on the construction type and area of the building.

Fire hydrants shall have an average spacing of 300 feet along streets and access roads adjacent to the buildings. When any portion of a building is in excess of 400 feet from a fire hydrant, on-site hydrants and mains capable of supplying the required fire flow shall be provided. The minimum water main size shall be 8 inches.

4.16.3 Fire Command Center

The fire command center will be minimum 200 square feet in area with a minimum dimension of 10 feet. The fire command center will be separated from other portions of the building by 1-hour fire barriers. The fire command center will be located in a location approved by the fire code official. A sign will be located on the door to indicate the fire command center location. The fire command center will be provided with an independent ventilation or air-conditioning system.

The fire command center will be provided with:

- The emergency voice/alarm communication system unit.
- The fire department communications system.
- Fire detection and alarm system annunciator.
- Annunciator unit visually indicating the location of the elevators and whether they are operational.
- Status indicators and controls for air distribution systems.
- The fire fighter's control panel for smoke removal and stair pressurization systems installed in the building.
- Controls for unlocking interior exit stairway doors simultaneously.
- Sprinkler valve and waterflow detector display panels.
- Emergency and standby status indicators.
- A telephone for fire department use with controlled access to the public telephone system.
- Fire pump status indicators.
- Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access and the location of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions.
- An approved Building Information Card.
- Work table.
- Generator supervision devices, manual start and transfer features.
- Public address system, where required.
- Elevator fire recall switch.
- Elevator emergency or standby power selector switch(es).

4.16.4 Emergency Responder Radio Coverage

Sommet Blanc is required to be constructed with an ERRC system infrastructure (i.e., rated enclosures, pathways, conduit, access panels, etc.) installed at the start of the project. Not less than a two-inch conduit having a minimum two-hour fire resistive rating is required to be installed between the first floor to the roof. If

the conduit is installed to be shared, load calculations are required to be provided demonstrating the volume capacity is not diminished by the size installed.

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CODE SUMMARY - FIRE LIFE SAFETY REPORT

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