

SLS Consulting, Inc.

Los Angeles | Miami | New York

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**FIRE PROTECTION AND LIFE SAFETY CODE REPORT**

PNAME

PADDRESS

PCITY, PSTATE PZIPCODE

Prepared For:

ARCH

ARCHADD

ARCHZIP

**Draft** - **DATE**

SLS # **PNUMBER**

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1. Introduction

SLS Consulting, Inc. (SLS) has prepared this Fire Protection/Life Safety Narrative report for the PNAME project located in PCITY, PSTATE. The Fire Protection/Life Safety Narrative report is intended to address the following major requirements as they relate to the proposed project:

* Construction Type.
* Means of Egress (e.g., occupant loading, number of exits, egress capacity, etc.).
* High Rise Requirements.
* Fire Protection Systems (e.g., sprinkler protection, fire alarm, smoke control, firefighter communication, etc.).
* Means of Egress Lighting and Markings.
* Emergency Power Requirements.

It is noted that this report is not intended to be “all inclusive” of fire protection/life safety requirements, but rather is intended to address major code compliance requirements. This *Fire Protection/Life Safety Narrative* report has been prepared based on the architectural drawings dated PLANSDATE and discussions with the project team regarding fire protection/life safety systems. This Narrative is intended to serve as a design validation tool and will be updated as the project design progresses to final design.

This report is primarily intended to address all life safety and building code related issues, however, requirements of each code listed in Section B relevant to life safety will also be evaluated. Mechanical, Plumbing, Electrical, and Fire Protection system designs are assumed to be in accordance with relevant installation standards. It is not the intent of this report to outline installation requirements, but rather to identify what systems are required as part of the referenced project.

* 1. Project Description

The proposed PNAME project will be a mixed used building composed of #-stories. The building has a primary use of [r-2], Residential (Levels # thru #) along with [S-2] ….

The building will be protected throughout by automatic sprinklers designed in accordance with NFPA 13, Standard for the Installation of Sprinklers and an emergency-voice alarm communication system designed in accordance with NFPA 72, National Fire Alarm and Signaling Code.

RenderingPic

Figure 1: Conceptual Rendering

* 1. Applicable Codes

The major applicable codes for the project include, but are not limited to, the following:

**Building Code**

* FBC: Florida Building Code, Seventh Edition.

**Fire Prevention/Life Safety Code**

* FFPC: Florida Fire Prevention Code, Seventh Edition.

**Electrical Code**

* NFPA 70: National Electrical Code® (NEC), 2017 Edition.

**Mechanical Code**

* FBC-M: Florida Building Code - Mechanical, Seventh Edition.

**Plumbing Code**

* FBC-P: Florida Building Code – Plumbing, Seventh Edition.

**Major NFPA Standards**

* NFPA 10: Standard for Portable Fire Extinguishers, 2018 Edition.
* NFPA 13: Standard for the Installation of Sprinkler Systems, 2016 Edition
* NFPA 14: Standard for the Installation of Standpipe and Hose Systems, 2016 Edition.
* NFPA 20: Standard for Installation of Stationary Fire Pumps for Fire Protection, 2016 Edition.
* NFPA 72: National Fire Alarm and Signaling Code®, 2016 Edition.
* NFPA 88A: Standard for Parking Garage Structures, 2015 Edition.
* NFPA 90A: Standard for the Installation of Air-Conditioning and Ventilating Systems, 2015 Edition.
* NFPA 92: Standard for Smoke Control Systems, 2015 Edition.
* NFPA 110: Standard for Emergency and Standby Power Systems, 2016 Edition.

1. Fire Protection and Life Safety Concepts
   1. Occupancy Classifications

The PNAME Project is designed as a *mixed-use* facility. As such, there will be several different *occupancies and uses* within the building, as summarized by the table below.

Table 1: Occupancy Classifications

|  |  |  |
| --- | --- | --- |
| Occupancy Group Classifications (FBC) | Occupancy Classifications (FFPC) | Specific Use / Location |
| Use Group A-1, *Assembly* occupancies (FBC §303.2) | *Assembly*  (Chapter 12 - LSC) | Cinema |
| Use Group A-2, *Assembly* occupancies (FBC §303.3) | *Assembly*  (Chapter 12 - LSC) | Restaurant/Dining/Commercial Kitchen |
| Use Group A-3, *Assembly* occupancies (FBC §303.4) | *Assembly*  (Chapter 12 - LSC) | Gym, Pool and Pool Decks,  Lobbies, Meeting Rooms > 750 ft2 |
| Use Group B, *Business* occupancies (FBC §304.1) | *Business*  (Chapter 38 - LSC) | Offices |
| Use Group M, *Mercantile* occupancies (FBC §309.1) | *Mercantile*  *(Chapter 36 - LSC)* | Retail Commercial spaces |
| Use Group R-1, *Residential* occupancies (FBC §310.3) | *Hotel*  (Chapter 28 - LSC) | Hotel Units |
| Use Group R-2, *Residential* occupancies (FBC §310.4) | *Apartment*  (Chapter 30 - LSC) | Apartment/Condominium |
| Use Group I-1, *Institutional* occupancies (FBC §308.3) | *Residential Board and Care*  *(Chapter 32 - LSC)* | Residential Care Units |
| Use Group I-3, *Institutional* occupancies (FBC §308.5) | *Detention and Correctional*  *(Chapter 22 - LSC)* | Cells, Day Rooms |
| Use Group S-1, *Moderate Hazard Storage* occupancies (FBC §311.2) | *Storage*  (Chapter 42 - LSC) | Loading Dock |
| Use Group S-2, *Low Hazard Storage* occupancies (FBC §311.3) | *Storage*  (Chapter 42 - LSC) | Parking, General Storage and M/E/P Support Spaces |

* 1. Building Classification Approach & Mixed-Use Approach

As stated above, the PNAME project will consist of multiple occupancies. The design approach is non-separated *mixed- use occupancy* in accordance with FBC Section 508.3. Therefore, fire rated separation is not required between the occupancies except as indicated below.

* 1. Construction Type
     1. Fire-Resistance Rating Based on Building Elements (FBC Table 601)

Due to the proposed occupancies classifications, building height, and number of stories in the PNAME project, the construction type for the building has to be BUILDTYPE Construction in accordance with FBC Tables 504.3, 504.4 and 506.2. The fire resistance rating requirements shown below for BUILDTYPE Construction are obtained from Table 601 of FBC.

Table 2: Fire-Resistance Ratings of Building Elements (Hours)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Building Element | Type IA | Type IB | Type IIA | Type IIB |
| Primary Structural Frame | 31 | 21 | 1 | 0 |
| Primary Column | 3 | 2 | 1 | 0 |
| Bearing Walls  Exterior5.6  Interior | 3  31 | 2  21 | 1  1 | 0  0 |
| Nonbearing Walls and Partitions  Exterior  Interior4 | (Table 602)  0 | (Table 602)  0 | (Table 602)  0 | (Table 602)  0 |
| Floor Construction and Secondary Members | 2 | 2 | 1 | 0 |
| Roof Construction and Secondary Members | 1 ½2 | 12,3 | 12,3 | 03 |

1Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

2Except in Group F-1, H, M and S-1 occupancies, fire protection of primary structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

3In all occupancies, heavy timber complying with Section 2304.11  shall be allowed where a 1-hour or less fire-resistance rating is required.

4Not less than the fire-resistance rating required by other sections of the FBC.

5Not less than required by Table 602 of the FBC based on the fire separation distances (FSDs).

6Not less than the rating as referenced in FBC Section 704.10

* + 1. High-Rise Building Construction Type Reduction

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* + 1. Open Parking Garage Specific Requirements

FBC Section 406.5.1 states that open parking garage shall be of Type I, II, or IV construction. The exterior side of the structure shall have uniformly distributed openings on two or more sides. The area of such openings in exterior walls on a tier shall be not less than 20 percent of the total perimeter wall area of each tier. The aggregate length of the openings considered to be providing natural ventilation shall be not less than 40 percent of the perimeter of the tier. Interior walls shall be not less than 20 percent open with uniformly distributed openings. However, openings are not required to be distributed over 40 percent of the building perimeter where the required openings are uniformly distributed over two opposing sides of the building.

In addition, FFPC, NFPA 101 Section 42.8.1.3 states that each parking level of an open parking structure shall have wall openings open to the atmosphere for an area of not less than 1.4 ft2 for each linear foot of its exterior perimeter.

The openings shall be distributed over 40 percent of the building perimeter or uniformly over two opposing sides. Interior wall lines and columns shall be at least 20 percent open with openings distributed to provide ventilation.

* + 1. Enclosed Parking Garage Specific Requirements

Enclosed vehicle parking garages and portions thereof that do not meet the definition of open parking garages shall be provided with a mechanical ventilation system in accordance with the Florida Mechanical Building Code per FBC Section 406.6.2. It shall also be equipped with an automatic sprinkler system per FBC Section 406.6.3.

* + 1. Exterior Wall Ratings and Allowable Openings (FBC Table 602 & Table 705.8)

The fire separation distance (FSD) is the distance measured from the building face to the closest interior lot line; centerline of a street, an alley or public way; or to an imaginary line between two buildings on the lot. The distance shall be measured at right angles from the face of the wall. If several buildings are located on the same lot, then an imaginary line shall be provided between the buildings to establish the fire separation distance.

Table 3, below, illustrates the exterior wall ratings and allowable openings based on the FSD and occupancy for all constructions types.

Table 3: Exterior Wall1,2 Ratings and Allowable Openings

|  |  |  |  |
| --- | --- | --- | --- |
| **Fire Separation Distance = X (feet)** | **Allowable Opening Area** | **Fire-Resistance Rating (Group F-1, M, S-1)** | **Fire-Resistance Rating (Group A, B, E, F-2, I, R, S-2, U)** |
| 0 < X < 3 | Not Permitted | 2 | 1 |
| 3 ≤ X < 5 | 15% | 2 | 1 |
| 5 ≤ X < 10 | 25% | 2(IA), 1(All others) | 1 |
| 10 ≤ X < 15 | 45% | 0 (IIB, VB), 1 (All others) | 0 (IIB, VB), 1 (All others) |
| 15 ≤ X < 20 | 75% | 0 (IIB, VB), 1 (All others) | 0 (IIB, VB), 1 (All others) |
| X≥20 | No Limit | 0 | 0 |

1Where Table 705.8 permits nonbearing exterior walls with unlimited area of unprotected openings, the required fire-resistance rating for the exterior walls is 0 hours.

2Nonbearing.

Table 4: North Exterior Wall Ratings & Openings Limitations

|  |  |
| --- | --- |
| Requirement | Allowed/Required  North Exterior Wall |
| Construction Classification | BUILDTYPE |
| Fire Separation Distance | NFSD |
| Exterior Wall Fire Resistance Rating  (Table 602) | NFSDRating |
| Exterior Wall Opening Protection  (FBC Table 705.8) | NFSDOpening |

NEWRPIC

Figure 2: North Wall Separation

Table 5: South Exterior Wall Ratings & Opening Limitations

|  |  |
| --- | --- |
| Requirement | Allowed/Required  South Exterior Wall |
| Construction Classification | BUILDTYPE |
| Fire Separation Distance | SFSD |
| Exterior Wall Fire Resistance Rating  (Table 602) | SFSDRating |
| Exterior Wall Opening Protection  (FBC Table 705.8) | SFSDOpening |

\*Open parking garages complying with FBC §406.5 shall not be required to have a fire-resistance rating.

SEWRPIC

Figure 3: South Wall Separation

Table 6: East Exterior Wall Ratings & Opening Limitations

|  |  |
| --- | --- |
| Requirement | Allowed/Required  East Exterior Wall |
| Construction Classification | BUILDTYPE |
| Fire Separation Distance | EFSD |
| Exterior Wall Fire Resistance Rating  (Table 602) | EFSDRating |
| Exterior Wall Opening Protection  (FBC Table 705.8) | EFSDOpening |

EEWRPIC

Figure 4: East Wall Separation

Table 7: West Exterior Wall Ratings & Opening Limitations

|  |  |
| --- | --- |
| Requirement | Allowed/Required  West Exterior Wall |
| Construction Classification | BUILDTYPE |
| Fire Separation Distance | WFSD |
| Exterior Wall Fire Resistance Rating  (Table 602) | WFSDRating |
| Exterior Wall Opening Protection  (FBC Table 705.8) | WFSDOpening |

WEWRPIC

Figure 5: West Wall Separation

* 1. Fire Separation Requirements

The following table indicates the spaces within the PNAME project where fire resistance rated separations should be provided. This includes incidental accessory occupancies.

Table 8: Required Fire-Resistance Rated Spaces

| Spaces | Required Rating1 | Reference |
| --- | --- | --- |
| Information technology  equipment - Critical | 1-hour *fire barrier* | NFPA 75 §5.1.3 |
| Fire Alarm equipment | 2-hour *fire barrier* | NFPA 72 Chapter 12 |
| Electrical Rooms with dry-type Transformers > 112.5 kVa | 2-hour *fire barrier (\*)* | NFPA 70 §450.21 |
| Transformer Vaults (oil-insulated) | 3-hour *fire barrier* | NFPA 70 §450.42 |
| Mechanical Shafts | 2-hour fire/smoke *barrier* | FBC §713, FFPC §8.6.5 |
| Stair Shafts2,4 | 2-hour fire/smoke *barriers* | FBC §713.4, FFPC §7.1.3.2.1 |
| Interior Residential Corridors | ½-hour *fire barrier* | FBC T-1020.1  FFPC §28.3.6, 30.3.6 |
| Fire Service Access Elevator/Occupant Evacuation Elevator Lobby | 1-hour *fire barrier* | FBC §3007 and §3008 |
| Elevator Lobby (other than above) | 1-hour *smoke partition* | FBC §3006.3 |
| Dwelling Unit Separations | 1-hour *fire barrier* | FBC §420, FFPC §28.3.7.2, 30.3.7.2 |
| Soiled Linen Rooms, Storage Rooms > 100 sq.ft. | 1-hour *fire barrier* | FFPC T-32.3.3.2.2 |
| Storage Rooms  50 sq.ft < A < 100 sq.ft. | 1-hour *smoke partition* | FFPC T-32.3.3.2.2 |
| Boiler and fuel-fired heater rooms more than a single guestroom or guest suite | 1-hour *fire barrier* | FFPC T-28.3.2.2.2, T-30.3.2.1.1 |
| Fire Command Center | 1-hour *fire barrier(\*)* | FBC §911.1.2 |
| Maintenance Shops | 1-hour *fire barrier* | FFPC T-28.3.2.2.2 T-30.3.2.1.1 |
| Trash Collection Rooms | 1-hour *fire barrier* | FBC T-509 |
| Emergency Switchgear Room | 2-hour *fire barrier* | NFPA 110 §7.2.1.1 |
| Battery Storage Rooms | 1-hour *fire barrier* | FBC T-509 |
| Fire Pump Room | 2-hour *fire barrier* | FBC §913.2, NFPA 20 §4.12.1 |
| Elevator Machine Rooms and Shafts (*connecting 4 stories or more*) 2,4 | 2-hour *fire barrier* | FBC §713 |
| Generator rooms (*inside bldgs*.)3 | 2-hour *fire barrier* | FBC §403, NFPA 110 §7.2.1.1 |
| Laundry rooms > 100 sq.ft. outside dwelling units | 1-hour *fire barrier* | FBC T-509, FFPC T-28.3.2.2.2 T-30.3.2.1.1 |
| Parking Garage | 2-hour *fire barrier* | NFPA 88A §5.2.1 |

Note 1: Fire Barriers are rated walls that are continuous from floor slab to slab above. Fire partitions are rated walls that are continuous from floor to underside of the rated floor/ceiling assembly.

Note 2: All smoke control equipment (e.g., fans, VFDs, etc.) associated with stair and elevator pressurization is required to be enclosed in dedicated two (2) hour fire rated enclosures.

Note 3: Per NFPA 110, Section 7.11.4 Generators outside or on roof need lightning protection designed and installed in accordance with NFPA 780, Standard for the Installation of Lightning Protection Systems.

Note 4: In accordance with FBC 713.4, the shaft enclosure rating must not be less than the floor rating for the construction type.

(\*) Code requires 1-hour, however 2-hours recommended by SLS to meet survivability requirements for cabling/equipment associated with FA or BDA systems.

FireExplosion FireExplosion2

* + 1. Fire Separation Marking

Each new fire wall, fire barrier, fire partition, smoke barrier, smoke partition, or any other new wall required to have protected openings shall be permanently identified with signs or stenciling above any decorative ceiling and in concealed spaces with the wording, “FIRE AND/OR SMOKE BARRIER – PROTECT ALL OPENINGS”. Such signs or stenciling shall be in 3-inch-high letters, 3/8-inch stroke in a contrasting color and be located within 15 feet of the end of each wall and at intervals not exceeding 30 feet measured horizontally along the wall or partition. This requirement is mandated by both FFPC, NFPA 101 Section 8.2.2.5 and FBC Section 703.7.

* + 1. Fire Barriers

Fire barriers shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab, or deck above and be securely attached. Shafts, interior exit stairways, and ramps that do not extend to the underside of the roof sheathing, deck or slab of the building shall be permitted to be enclosed at the top with construction of the same fire-resistance rating as the topmost floor penetrated by the shaft, but not less than the fire-resistance rating required for the shaft enclosure.

In accordance with FBC Section 707.5.1, the supporting construction for a fire barrier shall be rated at least as much as the fire barrier it is supporting.

In accordance with FBC Section 707.6, openings in a fire barrier shall be protected in accordance with FBC Section 716 and FFPC, NFPA 101 Section 8.3. Openings shall be limited to a maximum aggregate width of 25% of the length of the wall, and the maximum area of any single opening shall not exceed 156 sq.ft.

* Single opening limit of 156 sq.ft. does not apply, where adjoining floors are protected by an automatic sprinkler system.
* Single opening limit of 156 sq.ft. does not apply, where the opening protective is a fire door serving exit stairs, exit ramps, exit access stairs, or exit access ramps.
* Single opening limit of 156 sq.ft. does not apply, where the opening protective has been tested in accordance with ASTM E 119 or UL 263. The fire resistance rating of the opening must be equal to or more than the fire resistance rating of the wall.
* The 25% limit of the fire barrier does not apply, where the opening protective is a fire door serving exit stairs, exit ramps, exit access stairs, or exit access ramps.
* The 25% limit of the fire barrier does not apply, where the opening protective has been tested in accordance with ASTM E 119 or UL 263.
  + 1. Fire Partitions

Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above, or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above and must be securely attached.

* + 1. Smoke Barriers

Smoke barrier construction is required to form an effective membrane continuous from the top of the foundation of floor/ceiling assembly below to the underside of the floor or roof sheathing, deck or slab above, including continuity through concealed spaces, such as above suspended ceiling. The supporting construction is required to be protected to afford the required fire-resistance-rating of the wall supported.

I1I3PARTITION I1I3PARTITION2

I1I3PARTITION3 I1I3PARTITION4 I1I3PARTITION5

* + 1. Smoke Partitions

Smoke partitions are required to extend from the top of the foundation or floor below to the underside of the floor or roof sheathing, deck or slab above or to the underside of the ceiling above where the ceiling membrane is constructed to limit the transfer of smoke.

* + 1. Opening Protection

All openings and penetrations on fire/smoke rated walls described above must be protected in accordance with FBC, Chapter 7, *Fire and Smoke Protection Features*, FFPC, NFPA 1, Chapter 12, *Features of Fire Protection*, and FFPC, NFPA 101 Chapter 8, *Features of Fire Protection*.

* + 1. Penetrations

The following sections of this report are applicable to penetrations through fire barriers, fire partitions, and horizontal assemblies.

* + - 1. Through Penetrations

Penetrations shall be installed as tested in an approved fire-resistance-rated assembly, or in an approved penetration firestop system tested in accordance with ASTME 814 or UL 1479. Where the penetrating items are steel, ferrous, or copper pipes, tubes or conduits, the annular space between the penetrating item and the fire-resistance-rated wall is permitted to be protected via the following two scenarios:

* Holes with a maximum 6 in. diameter and 144 in² area are permitted to be protected with grout or mortar.
* The material used to protect the opening must pass ASTM E 119 or UL 263 test conditions.
  + - 1. Membrane Penetrations in Fire-Resistance-Rated Walls

Membrane penetrations must comply with FBC Section 714.4.2 where walls or partitions are required to have a fire-resistance rating, recessed fixtures shall be installed such that the required fire resistance will not be reduced.

* + - 1. Horizontal Assemblies

Penetrations of a fire-resistance-rated floor, ceiling assembly, or ceiling membrane must comply with FBC Sections 714.5.1.1 through 714.5.1.3.

Though penetrations must be installed as tested in the approved fire-resistance-rated assembly, or they must be protected by an approved through-penetration firestop system installed and tested in accordance with ASTM E814 or UL 1479 with an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated.

Membrane penetrations must comply with FBC Section 714.5.1.1 or 714.5.2.

Penetrations of non-fire-resistance-rated floor or floor/ceiling assemblies or the ceiling membrane of a non-fire-resistance-rated roof/ceiling assembly shall meet the requirements of FBC Section 713 or shall comply with FBC Section 714.6.1 or 7.14.6.2.

* Noncombustible penetrating items, connecting not more than five stories are permitted, provided that the annular space is filled to resist the free passage of flame and the products of combustion with an approved noncombustible material or with a fill, void or cavity material that is tested and classified for use in through-penetration firestop systems.
* Penetrating items that connect not more than two stories are permitted, provided that the annular space is filled with an approved material to resist the free passage of flame and the products of combustion.
  1. Vertical Opening Code Compliance Approach

Vertical openings within the PNAME project must be protected by fire-resistance rated construction in accordance with FBC Section 712 and FFPC, NFPA 101 Section 8.6 or classified accordingly.

* + 1. Shafts

Shaft enclosures in the project must be designed in compliance with Section 713 of the FBC. The shaft enclosures shall have a fire resistance rating of not less than 2 hours and not less than the floor assembly penetrated but need not exceed 2 hours. The construction shall be as fire barriers in accordance with Section 707 of the FBC.

* + 1. Elevators

ELEVATORSECTION

Per FBC Section 3006.2, elevator hoistway door openings must be protected where the elevator hoistway connects more than three stories, is required to be located in a shaft enclosure, and any of the following conditions apply:

The building is not provided with a sprinkler system

The building contains an I-1, Condition 2 occupancy, or an I-2 or I-3 occupancy

The building is a high-rise and the elevator hoistway is more than 75 feet in height. The height of the hoistway must be measured from the lowest floor to the highest floor of the floors served by the hoistway.

Exceptions:

1. Protection of elevator hoistway door openings is not required where the elevator serves only open parking garages in accordance with FBC 406.5
2. Protection of elevator hoistway door openings is not required at the level of exit discharge, provided with level of exit discharge is equipped with an automatic sprinkler system
3. Enclosed elevator lobbies and protection of elevator hoistway door openings are not required on levels where the elevator hoistway opens to the exterior

Hoistway openings protection must be provided using one of the four options listed in FBC Section 3006.3, as listed below:

1. An enclosed elevator lobby at each required floor to separate the hoistway doors from the floor by fire partitions in accordance with FBC Section 708 where the building is not equipped throughout with a sprinkler system. Doors protecting the openings in the fire partitions shall comply with FBC Sections 716.5.3 as required for corridor walls. Penetrations of the elevator lobby by ducts and air transfer openings shall be protected as required for corridors by FBC Section 717.5.4.1.
2. An enclosed elevator lobby at each required floor to separate the hoistway doors from the floor by smoke partitions in accordance with FBC Section 710 where the building is equipped throughout with a sprinkler system. Doors protecting the openings in the smoke partitions shall comply with FBC Sections 710.5.2.2, 710.5.2.3, and 716.5.9. Penetrations of the elevator lobby by ducts and air transfer openings shall be protected as required for corridors by FBC Section 717.5.4.1.
3. Additional doors provided at each elevator hoistway door. These doors shall comply with the smoke and draft control assembly requirements in accordance with FBC Section 716.5.3.1 when tested in accordance with UL 1784.
4. The elevator hoistway shall be pressurized in accordance with FBC [Section 909.21](https://up.codes/viewer/florida/fl-building-code-2017/chapter/9/fire-protection-systems#909.21).
   * 1. Stairs

STAIREDIT

* + 1. Trash/Linen Chutes

Trash/Linen Chutes must be installed in a 2-hour fire rated enclosure in accordance with FBC Section 713.13, FFPC, NFPA 101 Section 9.5, and NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment.*

* + 1. Occupancy-Specific Vertical Opening Requirements

VASSEMBLY VASSEMBLY2

VASSEMBLYNOTE

* + 1. Atria

ATRIUMSECTION ATRIUMSECTION2

* ATRIUMSECTION2
* ATRIUMSECTION3 ATRIUMSECTION4
* ATRIUMSECTION5
  + ATRIUMSECTION6
  + ATRIUMSECTION7
  + ATRIUMSECTION8
  + ATRIUMSECTION9
  + ATRIUMSECTION10
  + ATRIUMSECTION11
  + ATRIUMSECTION12
* ATRIUMSECTION13
* ATRIUMSECTION14
* ATRIUMSECTION15
* ATRIUMSECTION16 ATRIUMSECTION17
* ATRIUMSECTION18
* ATRIUMSECTION19
* ATRIUMSECTION20
* ATRIUMSECTION21
  + 1. Escalators

ESCALATORSECTION

ESCALATORSECTION1 ESCALATORSECTION2 ESCALATORSECTION3

ESCALATORSECTION4 ESCALATORSECTION5 ESCALATORSECTION6 ESCALATORSECTION7

* + 1. Convenience Openings

VO8.6.9.1

VO8.6.9.1NOTE

VO8.6.9.2

VO8.6.9.2NOTE

ConveniencePic

Table 9: FBC and FFPC Convenience Opening Requirements

| FBC  Summary of Requirements/Analysis | FFPC  Summary of Requirements/Analysis |
| --- | --- |
| (1) Does not connect more than two (2) stories. | VO1 |
| (2) Does not penetrate a horizontal assembly that separates fire areas or smoke barriers that separate smoke compartments. | VO2 |
| (3) Is not concealed within the construction of a wall or a floor/ceiling assembly. | VO3 |
| (4) Is not open to a corridor in Group I and R occupancies. | VO4 |
| (5) Is not open to a corridor on non-sprinklered floors | VO5 |
| (6) Is separated from floor openings and air transfer openings serving other floors by construction conforming to required shaft enclosures. | VO6 |

* + 1. Exit Access Stairway Enclosures

VO38.2.4.6

1. VO38.2.4.6P1

2. VO38.2.4.6P2

VO1019.1 VO1019.1B

VO1019.1P1 VO1019.1P1B

VO1019.1P2

* 1. Interior Finish Requirements

Interior finishes within the PNAME project are designed to comply with the requirements of the FBC and the FFPC. The major interior finish requirements for the project are summarized in the table below (FBC T-803.11 and FFPC, NFPA 101 T-A10.2.2). The sprinkler system reduction allowed by code has been applied.

Table 10: Interior Finish Requirements

| Occupancy Classifications | Floor Finish Requirement | Interior Wall and Ceiling Finish Requirements (FBC and FFPC) |
| --- | --- | --- |
| Assembly (A) | Exits: **Class II**  Corridors: **Class II**  Spaces not separated from corridor: **Class II** | Exit Enclosure: **Class B**  Corridors & Exit access stairs: **Class B**  Rooms & Enclosed Spaces: **Class C**  Lobbies: **Class B**  Assembly Rooms: **Class C**  Screens: **Class B**  **See Note 1** |
| *Business (B)* | Exits: **Class I or II** | Exit Enclosure: **Class B**  Corridors & Exit access stairs: **Class C**  Rooms & Enclosed Spaces: **Class C**  Other Spaces: **Class C**  **See Note 2** |
| *Institutional*  *(I-1)* | Exit: **Class II**  Corridors: **Class II**  Spaces not separated from corridor: **Class II** | * Exit Enclosure: **Class B** * Corridors & Exit access stairs: **Class C** * Rooms & Enclosed Spaces: **Class C** * Lobbies: **Class C** * Other Spaces: **Class C**   **See Note 1** |
| *Detention and Correctional*  *(I-3)* | Exit: **Class I**  Corridors: **Class I**  Spaces not separated from corridor: **Class I** | Exit Enclosure: **Class A**  Corridors & Exit access stairs: **Class A**  Rooms & Enclosed Spaces: **Class C**  Other Spaces: **Class C**  **See Note 2** |
| *Apartments*  *(R-2)* | Exit: **Class II**  Corridors: **Class II**  Spaces not separated from corridor: **Class II** | Exit Enclosure: **Class B**  Corridors & Exit access stairs: **Class C**  Rooms & Enclosed Spaces: **Class C**  Lobbies: **Class C**  Other Spaces: **Class C**  **See Note 2** |
| *Hotel (R-1)* | Exit: **Class II**  Corridors: **Class II**  Spaces not separated from corridor: **Class II** | Exit Enclosure: **Class B**  Corridors & Exit access stairs: **Class C**  Rooms & Enclosed Spaces: **Class C**  Lobbies: **Class C**  Other Spaces: **Class C** |
| *Mercantile (M)* | Exit: **Class I or II** | Exit Enclosure: **Class B**  Corridors & Exit access stairs: **Class C**  Rooms & Enclosed Spaces: **Class C**  Other spaces: **Class C** |
| *Storage (S)* | Exit: **Class II** | Exit Enclosure: **Class C**  Corridors & Exit access stairs: **Class C**  Rooms & Enclosed Spaces: **Class C**  Other Spaces: **Class C** |

**Note 1**: The ratings shown are from FBC, which has the most stringent requirements

**Note 2**: The ratings shown are from FFPC, which has the most stringent requirements

* All combustible materials used as interior wall, ceiling, and floor finishes must have proper documentation indicating that the finishes comply with the requirements above.
* It is recommended that the design for unique or custom interior finishes (e.g., wood finishes, textile wall coverings, foam finishes, material applied to fire doors, etc.) within the project be identified early in the design/construction process. Interior finishes consisting of unique materials or assembly of different materials will have to be tested by a nationally recognized laboratory.
* Interior wall and ceiling trim and incidental finishes must be identified by the project team and must be included for assessment. Interior floor trim material used as wall base or decorative border would also be included and tested as a wall finish or floor finish.
* Interior wall and ceiling finishes are normally tested as a single layer on noncombustible substrate. If the material is installed in any other manner, then the assembly of all materials must be tested in accordance with the standards above.
* Wood interior finish (e.g., millwork, wood lockers, etc.) must be tested as an assembly of all the components exactly how it will be installed including the adhesives, lacquers, glazings, etc.
* It is noted that normally the authority having jurisdiction will not accept the application of a flame-retardant treatment or coating to achieve the proper rating for new interior finishes.
* Depending on the occupancy classification, the furnishings in common areas, such as upholstered furniture, must also be evaluated before the furniture is installed in the facility.
* The fire department may require a Third (3rd) Party Evaluation of the interior finishes to ascertain compliance with above rating.
  1. Mezzanine Requirements

MEZZSECTION MEZZSECTION1 MEZZSECTION2

MEZZSECTION3 MEZZSECTION4

MEZZSECTION5 MEZZSECTION6

MEZZSECTION7

* 1. Stage and Platform Requirements

STAGESECTION

STAGESECTION2 STAGESECTION3

STAGESECTION4

STAGESECTION5 STAGESECTION6 STAGESECTION7 STAGESECTION8

STAGESECTION9 STAGESECTION10

STAGESECTION11 STAGESECTION12

STAGESECTION13 STAGESECTION14

STAGESECTION15

STAGESECTION16 STAGESECTION17

STAGESECTION18 STAGESECTION19

STAGESECTION20 STAGESECTION21

* 1. General Means of Egress Requirements
     1. Maximum Allowable Travel Distances:

As a building protected throughout by automatic sprinklers, the following maximum allowable travel distances are applicable to the PNAME project as required by FBC T-1006.2.1, Section 1020.4, T-1017.2 , and FFPC, NFPA 101 T-A.7.6.

Table 11: Travel Distance Requirements

| Occupancy Group Classifications (FBC) | Occupancy Classifications (FFPC) | Distances |
| --- | --- | --- |
| Use Group A,  *Assembly* occupancies | *Assembly* | **Max Travel Distance:** 250 feet  **Max Dead End Distance**: 20 feet  **Max Common Path Distance**: 20/75 feet1 |
| Use Group B,  *Business* occupancies | *Business* | **Max Travel Distance**: 300 feet  **Max Dead End Distance:** 50 feet  **Max Common Path Distance:** 100 feet |
| Use Group I-1,  Institutionaloccupancies | *Residential Board and Care* | * **Max Travel Distance:** 250 feet * **Max Dead End Distance:** 30 feet (FFPC) * **Max Common Path Distance:** 75 feet |
| Use Group I-3, *Detention and Correctional* occupancies | *Detention and Correctional* | **Max Travel Distance:**   * To an Exit: 200 feet (FBC) * To exit Access: 150 feet (FFPC) * Within sleeping unit: 50 feet (FFPC)   **Max Dead End Distance:** 50 feet  **Max Common Path Distance**: 100 feet |
| Use Group M *Mercantile* occupancies | *Mercantile* | **Max Travel Distance:** 250 feet  **Max Dead End Distance:** 50 feet  **Max Common Path Distance**: 75 feet (FBC) |
| Use Group R-1, *Residential* occupancies | *Hotel* | **Max Travel Distance:**   * Unit door to exit: 200 feet (FFPC) * Total travel from remote point inside unit to exit: 250 feet (FBC)   **Max Dead End Distance:** 50 feet  **Max Common Path Distance:** (FFPC)   * Common Path Within Unit: 125 feet * Common Path Outside Unit: 50 feet   **Max Common Path Distance:** (FBC)   * Common Path Including travel within Unit and corridor is 75 feet total |
| Use Group R-2, *Residential* occupancies | *Apartment* | **Max Travel Distance:**   * Unit door to exit: 200 feet (FFPC) * Total travel from remote point inside unit to exit: 250 feet (FBC)   **Max Dead End Distance:** 50 feet  **Max Common Path Distance**: (FFPC)   * Common Path In (Unit & Corridor): 125 feet * Common Path Outside Unit: 50 feet   **Max Common Path Distance:** (FBC)   * Common Path Including travel within Unit and corridor is 125 feet total |
| Use Group S-1, *Moderate Hazard Storage* occupancies | *Storage - Ordinary* | **Max Travel Distance**: 250 feet (FBC)  **Max Dead End Distance:** 50 feet (FBC)  **Max Common Path Distance:** 100 feet |
| Use Group S-2, *Low Hazard Storage* occupancies | *Storage - Low* | **Max Travel Distance**   * *Enclosed Parking:* 200 feet * *Open Parking:* 400 feet * *Storage:* 400 feet (FBC)   **Max Dead End Distance**   * *Enclosed Parking:* 50 feet * *Open Parking:* 50 feet * *Storage:* 50 feet (FBC)   **Max Common Path Distance**   * *Enclosed Parking:* 50 feet * *Open Parking:* 50 feet * *Storage:* 100 feet (FBC) |

1Assembly use spaces with an occupant load of 50 or more, shall have its common path of travel distance limited at 20-feet. If the occupant load is less than 50, then the common path of travel distance shall be limited at 75-feet.

* + 1. Number of Required Exits Per Floor

Each floor of the building is provided with the following minimum number of exits as required by FBC T-1006.3.1 and FFPC, NFPA 101 Section 7.4.1.2.

Table 12: Number of Exits Requirements

|  |  |
| --- | --- |
| Floor Occupant Load | Number of Exits Required |
| 0-500 occupants | 2 Exits |
| 501-1,000 occupants | 3 Exits |
| >1,000 occupants | 4 Exits |

* + 1. Unit Exit Access

R1I1UnitExit R1I1UnitExit2

* + 1. Additional Exit Stair

OEESection OEESection2

OEESection3

* + 1. Electrical Room Exit:

Electrical rooms with equipment rated 1200 Amps or more, and 6 feet wide that contain overcurrent devices, switching devices or control devices shall have two (2) exit access doors (one at each end of the working space). The doors must swing in the direction of egress and must be equipped with panic hardware or fire exit hardware.

Electrical rooms with equipment rated 800 Amps or more that contain overcurrent devices, switching devices or control devices, and the exit door is less than 25 feet from the working space, the door shall swing in the direction of egress and must be equipped with panic hardware or fire exit hardware (FBC Section 1010.1.10, FFPC, NFPA 101 Section 7.4.2, and NFPA 70, Article 110.26.(C)(2)).

Electrical rooms with equipment used in circuits over 600 volts with switchgear and control panels exceeding 6 feet in width shall have two (2) exit access doors (one at each end of the working space). The doors must swing in the direction of egress and must be equipped with panic hardware or fire exit hardware (FFPC, NFPA 101 Section 7.4.2 and NFPA 70, Article 110.33(A)).

* + 1. Boiler Rooms or Furnace Rooms:

Two (2) exits are required in boiler rooms where the area is over 500 sq.ft. and any fuel-fired equipment exceeds 400,000 Btu. The two exit doors must be remotely separated by a distance equal to one-half the diagonal dimension of the room (FBC Section 1006.2.2.1).

* + 1. Mechanical Equipment Rooms:

Mechanical equipment rooms including boiler rooms, furnace rooms, and similar spaces shall be arranged to limit common path of travel to a distance not exceeding 100 feet for building protected by sprinkler system. Stories used for mechanical equipment rooms (including the roof) shall be permitted to have a single means of egress where the travel distance to an exit on that story does not exceed the common path of travel (FFPC, NFPA 101 Section 7.13.2). If the room has only open equipment area and no rooms, then the travel distance is not regulated.

* + 1. Elevator Lobby Exit:

Each elevator lobby must have access to at least one door leading to an exit per FBC Section 3007.6.1 and FFPC, NFPA 101 Section 7.4.1.6. In addition, occupants cannot pass through an elevator lobby to reach both exits.

* + 1. Exit Access Remoteness Requirements:

Where two (2) exit doors or exit access doors are required to be provided, the exits must be designed in order to be remote from one another in accordance with FBC Section 1007.1.1 *Exception 2* and FFPC, NFPA 101 Section 7.5.1.3.3. The exits must be separated by more than one-third of the maximum diagonal distance of the floor, space, or area served.

NONLoopedcorridor NONLoopedcorridor2

* + 1. Physical Exit Separation Requirements:

In the high-rise buildings, the exit stairs within the project must be designed to be physically separated from one another by 30-feet or one-fourth of the maximum diagonal of the area served (whichever is less) in accordance with FBC Section 403.5.1. The distance is measured in a straight line between the nearest points of the stair enclosures.

* + 1. Exit Discharge Configurations:

All the exits must discharge to the outside in accordance with FBC Section 1028.1 and FFPC, NFPA 101 Section 7.7.1. The exit discharge must comply with remoteness requirements of one-third of the maximum diagonal distance of the building. However, the Codes allow for a maximum of 50% of the number and 50% of the capacity of exits to discharge through the interior of the building provided that the following criteria are met:

* *Exterior Exit Visibility:* The exit enclosure discharges to a free and unobstructed path of travel to an exterior exit door and such exit is readily visible and identifiable from the point of termination of the exit enclosure in accordance with FBC Section 1028.1 *Exception 1.1* and FFPC, NFPA 101 Section 7.7.2.
* *Floor Separation:*The entire area of the level of exit discharge is separated from areas below by construction having a two (2) hour fire resistance rating (FBC Section1028.1 *Exception 1.2* and FFPC, NFPA 101 Section 7.7.2).
* *Sprinkler Protection:* The egress path is protected throughout by automatic sprinklers (FBC Section 1028.1 *Exception 1.3* and FFPC, NFPA 101 Section 7.7.2).

STAIRDISCHARGEPIC

* + 1. Street Floor Requirements:

StreetFloorREQ StreetFloorREQ2

* + 1. Stair Re-Entry:

Interior exit stairway doors must be designed to allow re-entry into the building in accordance with FFPC, NFPA 101 Section 7.2.1.5.8:

Re-entry from the stair enclosure to the interior of the building shall be provided at all times.

Doors locked shall automatically release with the initiation of the building fire alarm system. This method has no limit to the amount of doors which could be locked during normal operations.

Selected re-entry shall be provided in accordance with NFPA 101 Section 7.2.1.5.8.1.

In addition, if **any** stair door is locked then a button at the fire command center must be provided to simultaneously drop power to all locked stair doors in accordance with NFPA 101 Section 11.8.6.6 (3) and FBC 403.5.3.

If any of the methods allowed above result in stair doors being locked for consecutive five (5) floors then there must be a two-way communication system provided in the stairway on that 5th floor in accordance with FBC 403.5.3.1.

* + 1. Door hardware requirements:

DoorLockI1 DoorLockI2 DoorLockI3

PanicHardwareREQ PanicHardwareREQ1 PanicHardwareREQ2

* + 1. Occupant Load Factors:

The following occupant load factors have been used to calculate the occupant load of the spaces within the PNAME project as required by FBC T-1004.5 and FFPC T-7.3.1.2.

Table 13: Occupant Load Factors

| Use of Space | Occupant Load Factors [ft²/occupant] |
| --- | --- |
| Assembly –Standing | 5 net |
| Assembly –Concentrated | 7 net |
| Assembly –Unconcentrated Tables & Chairs | 15 net |
| Commercial Kitchen | 100 gross (FFPC) |
| Detention and Correctional | 120 gross |
| Exercise Room/Gym | With Equipment – 50 gross  Without Equipment – 15 gross |
| Institutional Inpatient Treatment | 240 gross |
| Institutional Outpatient / Ambulatory | 100 gross (FBC), 150 gross (FFPC) |
| Institutional Sleeping | 120 gross |
| Locker Rooms | 50 gross |
| Library Reading Rooms | 50 net |
| Library Stacking | 100 gross |
| Mercantile | 60 gross (FBC)  300 gross (storage, stock, shipping area)  30 gross (grade floor)1,2 (FFPC)  60 gross (upper floors)2 (FFPC) |
| Mechanical Spaces | 300 gross (FBC) |
| Offices | 150 gross |
| Pool Decks / Pools | Pool Deck – 30 gross (FFPC)  Pool Deck – 15 gross (FBC)  Water Surface of Pool – 50 gross |
| Parking Garage | 200 gross (FBC) |
| Residential Board and Care (Sleeping) | 200 gross ft2 per occupant (FFPC)  120 gross ft2 per occupant (FBC) |
| Residential Lobby | 15 net |
| Residential Floors Apartment (R-2) /Hotel (R-1) | 200 gross3,4 |
| Stages and Platforms | 15 net |
| Storage Areas | 300 gross (FBC) |
| Warehouses | 500 gross |

1Occupant load in mercantile occupancies where, a difference in finished ground level of the streets on different sides with two or more floors are accessible from the streets, each floor is permitted to be a street floor. The occupant load factor is then 40 ft2 of gross per occupant.

2Mercantile occupancies with no street floor, but with direct access to the street with stairs or escalators, the floor with the point of entrance to the mercantile is considered the street floor.

3For private pool decks, use the occupant load factor 200 ft²/occupant, including water surface

4Include balcony square footage in hotel unit occupant load

* + 1. Spaces with One Means of Egress Requirements:

Spaces with one (1) means of egress within the PNAME project shall comply with the following means of egress requirements as required by FBC T-1006.2.1 and FFPC, NFPA 101 Section 7.4.1.1.

Table 14: One Means of Egress

| Occupancy | Maximum Occupant Load | Maximum Exit Access/Common Path of Travel Distance (feet) |
| --- | --- | --- |
| Assembly | 49 | 75 feet |
| Business | 49 | 100 feet |
| Mercantile | 49 | 75 feet |
| Storage and Mechanical | 29 | 100 feet |
| Residential  (Apartment R-2) | 49 | 125 feet |
| Residential  (Hotel R-1) | 10 | 75 feet |
| Institutional (I-1, I-2, I-4) | 10 | 75 feet |
| Institutional/Detention and Correctional (I-3) | 10 | 100 feet |

The number of *accessible means of egress* from a space shall equal the number required for the means of egress or two (*whichever is less*), in accordance with Section FFPC, NFPA 101 Section 7.5.4 and FBC-Accessibility Section 207.

* + 1. Means of Escape:

MeansEscape MeansEscape2

* + 1. Egress Capacity Factors:

The egress capacity for the means of egress must be designed using the capacity factors indicated in the table below. In addition, the minimum width of the means of egress components must also be considered in the design. The minimum width is specified for each occupancy classification as stated in FBC Section 1005.3 and FFPC, NFPA 101 Section 7.3.3.

Table 15: Egress Capacity

|  |  |  |  |
| --- | --- | --- | --- |
| Occupancy | Egress Component | Egress Capacity Factor [inches/occupant] | |
| FFPC | FBC |
| Residential Board and Care | Stairways | 0.4 | 0.3 |
| Level Components | 0.2 | 0.2 |
| Healthcare, sprinklered | Stairways < 44 inches | 0.3 | 0.3 |
| Stairways > 44 inches | Refer to Note 1 | 0.3 |
| Level Components | 0.2 | 0.2 |
| Healthcare, non-sprinklered | Stairways | 0.6 | 0.3 |
| Level Components | 0.5 | 0.2 |
| High hazard contents | Stairways | 0.7 | 0.3 |
| Level Components | 0.4 | 0.2 |
| All others | Stairways < 44 inches | 0.3 | 0.3 |
| Stairways > 44 inches | Refer to Note 1 | 0.3 |
| Level Components | 0.2 | 0.2 |

Table 16: Egress Capacity

|  |  |  |  |
| --- | --- | --- | --- |
| Occupancy | Egress Component | Egress Capacity Factor [inches/occupant] | |
| FFPC | FBC |
| Residential Board and Care | Stairways | 0.4 | 0.2 |
| Level Components | 0.2 | 0.15 |
| Healthcare, sprinklered | Stairways < 44 inches | 0.3 | 0.3 |
| Stairways > 44 inches | Refer to Note 1 | 0.3 |
| Level Components | 0.2 | 0.2 |
| Healthcare, non-sprinklered | Stairways | 0.6 | 0.3 |
| Level Components | 0.5 | 0.2 |
| High hazard contents | Stairways | 0.7 | 0.3 |
| Level Components | 0.4 | 0.2 |
| All others | Stairways < 44 inches | 0.3 | 0.2 |
| Stairways > 44 inches | Refer to Note 1 | 0.2 |
| Level Components | 0.2 | 0.15 |

1For stairways in the referenced occupancies that are wider than 44 in., the capacity is permitted to be increased using the following equation:

C =

Where:

C = capacity, in persons, rounded to the nearest integer

*Wn =* nominal width of the stair [inches]

* + 1. Stair Width Requirements:

Stairs must have a minimum width of 44 inches. If the cumulative occupant load assigned to a stair is over 2,000 persons, the stair must have a minimum width of 56 inches per FFPC, NFPA 101 Table 7.2.2.2.1.2(B).

* + 1. Corridor Width:

The minimum clear width is 44 inches and must be increased to accommodate the occupant load (FBC Table 1020.2).

* + 1. Assembly Seating Arrangement:

Furniture layout in meeting rooms and ballrooms must comply with aisle width and aisle accessway width requirements as stated in FFPC, Sections 12.2.5.7 and 12.2.5.8. Seating NOT at tables must comply with Sections 12.2.5.5 and 12.2.5.6. Seating at tables must comply with Section 12.2.5.7.

FFPC, NFPA 101 Section 12.7.9 states that seats accommodating more than 200 persons shall be securely fastened to the floor, except where fastened together in groups of not less than three.

* + 1. One Exit Unavailable Analysis:

The means of egress must be designed with adequate width and capacity such that the loss of one exit leaves the other exits available to handle at least 50% of the occupant load. Analysis and calculation must be shown on plans (FBC Section 1005.5 and FFPC, NFPA 101 Section 7.3.1.1.2).

In addition, the main entrance/exit shall have a width to accommodate ½ of the total occupant load (FBC Section 1029.2, FFPC, NFPA 101 Section 12.2.3.6).

* + 1. Pool Barriers:

FBC Section 454.1.3.1.9 requires that pool barriers be provided to prevent unsupervised access by children to the swimming pool(s). Pool barrier gates and other child-access control devices must be designed for the project, such that they do not interfere or obstruct the required means of egress in an emergency. Add more detailed information including electronic locking mechanism.

* + 1. Exterior Doors (NOA):

All exterior windows and doors must comply with the requirements of FBC Section 1709. The designer must consider the potential conflict between the manufacturer’s notice of approval (NOA) and the required swing of exit doors. The conflict may occur in assembly areas located outdoors that require occupants to egress through the building. All exit doors serving an occupant load of 50 or more people must swing in the direction of egress travel. The doors equipped with panic hardware would swing into the building or into the stairwells. These exit doors must have the proper NOA as required by the FBC.

* + 1. Exit Signage:

Exit signs are required at all exit doors and directional signs are required within the means of egress where the path of egress is not apparent. Exit sign placement shall be such that no point in the exit access corridor is more than 100 feet from the nearest exit sign (FBC Section 1013.1).

LOWEXIT LOWEXIT2

* + 1. Luminous Egress Markings:

LUMINOUSMARKSECTION LUMINOUSMARKSECTION2

* + 1. Means of Egress Lighting:

Normal lighting must be designed to provide a minimum of 1 ft-candle measured at the floor within exit access routes, exits, and the exit discharge routes. In the stairs, the minimum illumination shall be at least 10 ft-candle measured at the walking surface. The elevator code requires adequate lighting of 10 ft-candle at the landing sill of elevators measured with doors open/closed (FBC Section 1008, FFPC, NFPA 101 Sections 7.8 and 7.9, ASME A17.1 Section 2.11.10.2).

Additionally, lighting is required to be arranged such that the failure of a single lighting unit does not reduce illumination levels to less than 0.2 ft-candle as required by FFPC, NFPA 101 Section 7.8.1.4 and FBC Section 1008.3.

The emergency lighting must provide an average of 1 ft-candle measured at the floor throughout the means of egress with a minimum of 0.1 ft-candle at any point. The illumination of 10 ft-candle for the elevator threshold is still required under emergency lighting conditions.

It is noted that the FDPT Fire Department and BDPT Building Department strictly enforce the reliability of emergency lighting and require that the system be arranged to provide the required illumination automatically in the event of interruption of normal lighting due to any of the following as required by FFPC, NFPA 101 Section 7.9.2.3:

* Failure of a public utility or outside electrical power supply.
* Opening of a circuit breaker or a fuse.
* Manual acts including accidental opening of a switch controlling normal lighting.

As per standard practice, it is recommended that the project team ensure that battery back-up lighting is provided in the following locations: emergency generator room, fire command centers, fire pump room, and the emergency responder radio coverage room (if provided).

Emergency lighting must be provided in mechanical rooms and electrical rooms as required in NFPA 70, Articles 110.26(D) and 700.16.

Emergency lighting is required on the egress side of delayed egress door and access control doors when provided in the building in accordance with FFPC, NFPA 101 Section 7.2.1.6.

* 1. Major Life Safety Accessibility Requirements Overview

Accessibility requirements are indicated in FBC-Accessibility Code (FBC-A) Seventh Edition. The PNAME Project must comply with all the applicable accessibility requirements mandated for each occupancy. The complete review of accessibility code compliance is outside the scope of this Narrative Report and outside the expertise of SLS Consulting, Inc. The items listed below are not all inclusive of the requirements in FBC and FFPC. However, the list below provides a quick reference of some basic requirements related to fire and life safety that may be missed during the design.

* + 1. Accessible Means of Egress

Per Section 207.1 of the FBC-Accessibility Code, accessible means of egress shall comply with Section 1007 of the 2003 Edition of the *International Building Code* (IBC). In addition to this, accessible means of egress shall also comply with the requirements of FFPC, NFPA 101 Section 7.5.4. Two accessible means of egress must be provided whenever two exits are required from the space, floor, or building. If one means of egress is permitted by the Code, then only one accessible means of egress needs to be provided. Travel distance and common path of travel limits must be followed equal to the required means of egress. Each accessible means of egress shall be continuous from each accessible occupied space to a public way or area of refuge. Required portions of an area of refuge shall have access to a public way via *a) an exit or b) an elevator* without requiring return to the building spaces through which travel to the area of refuge occurred.

a) Exit stair must comply with clear width of landings and stair of 48 inches measured between handrails.

**NOTE to a):** The clear width above is not required in buildings protected by an automatic sprinkler system.

b) Elevators must comply with firefighters’ emergency operations, power supply shall be protected against interruption, and must be located in a smokeproof enclosure (FFPC, NFPA 101 Sections 7.5.4 and 7.2.12.2).

**NOTE to b):** The smokeproof enclosure is not required in buildings protected by an automatic sprinkler system.

* + 1. Elevators

In buildings where a required accessible floor is four or more stories above the level of exit discharge (5-story building), then at least one required accessible means of egress shall be an elevator. The elevator must comply with the emergency operation and signaling requirements of ASME A17.1 Section 2.27. Standby power shall be provided (FBC-Accessibility Section 207).

* + 1. Area of Refuge

An area of refuge as part of the accessible means of egress in a building protected by an automatic sprinkler system may consist of each story with or without two accessible rooms in accordance with FFPC, NFPA 101 Section 7.2.12. The story can serve for Area of Refuge for both exits. The two accessible rooms must be separated from each other by smoke partitions. In an open floor plan, an enclosed elevator lobby with smoke partitions can serve as the two accessible rooms. The requirement for accessible rooms is exempted for most of the occupancies, but not for occupancies such as Assembly, Storage, Educational , Health Care, Res Board and Care, Industrial, and Day Care Occupancies.

**NOTE:** Florida Statute 633.202(19) was adopted, and it changed the requirements pertaining to an area of refuge as stated in FFPC. An area of refuge and related requirements in FFPC, NFPA 101 Section 7.2.12 will not be applicable to this project since the FBC does not require an area of refuge in a building protected by an automatic sprinkler system.

* + 1. Area of Refuge: Communication

Each story as mentioned above must comply with the following requirements for a two-way communication in accordance with FFPC, NFPA 101 Section 7.2.12.1:

* Each elevator landing shall be provided with a two-way communication system to communicate between the elevator landing and the fire command center, or a central point approved by the fire department.
* Directions for the use of the two-way communication system; instructions for summoning assistance; and written identification of the location shall be posted adjacent to the two-way communication system.
* The two-way communication system shall include both audible and visible signals.

**NOTE:** Florida Statute 633.202(19) was adopted, and changed the requirements pertaining to an area of refuge as stated in FFPC. The two-way communication mentioned above will not be applicable to this project since the FBC does not require an area of refuge in a building protected by an automatic sprinkler system.

* + 1. Exit Door Signage

Tactile signage shall be provided to meet all the following criteria in accordance with FFPC, NFPA 101 Section 7.10.1.3: a) tactile signs shall be located at each exit door requiring an exit sign; b) tactile sign shall read EXIT; and c) tactile signs shall comply with ANSI A117.1, *American National Standard for Accessible and Usable Buildings and Facilities*.

* 1. Fire Protection and Life Safety Systems Overview
     1. Equipment Locations / Flood Zone

All fire protection and life safety equipment are required to be located 1 ft. above the base flood elevation (FBC Section 1612). Equipment cannot be located below flood level even if the story is protected with flood proofing systems. The Architect of Record shall verify this condition.

* + 1. Fire Command Center

The building will have a fire command center as required for high-rise buildings. The fire command center must be located near the entry point and must be at least 200 sq. ft. in size with a minimum dimension of 10 ft. (FBC Section 911.1.3). The fire command center must be constructed of at least 1-hour fire barrier enclosure (FBC Section 911.1.2). The location and accessibility of the fire command center shall be approved by the fire chief (FBC Section 911.1.1).

**MDandCOMFCC MDandCOMFCC2**

FCCPIC

Figure 7: Fire Command Center Location

It is noted that the lighting and HVAC system in the fire command center must be tied into emergency power. The following items must be provided in the fire command center:

* The emergency/voice alarm communications system.
* The fire department communication systems; two-way telephone communication service panels and controls.
* 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 required by Section 909.16 for smoke control systems installed in the building.
* Controls for unlocking *stairway* doors simultaneously.
* Sprinkler valve and water flow detector display panels.
* Emergency and standby power 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, 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.
* Worktable.
* Generator supervision devices, manual start and transfer features.
* Public address system, where specifically required by other sections of this code.
* Elevator fire recall switch in accordance with ASME A17.1.
* Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.
  + 1. Sprinkler Systems

Per FBC Section 903.2.1, FBC Section 903.2.6, FBC Section 903.2.7 and FFPC Section 11.8.3.1, sprinkler protection designed in accordance with NFPA 13 shall be installed throughout the buildings. This building will have the protection system connected to the city water supply. SPRINKLER420 SPRINKLER420B

SPRINKLERTERRACE SPRINKLERTERRACE2

* + - 1. Sprinkler Supervision and Alarms

The following water supply control valves are required to be electrically supervised by a listed fire alarm control unit per FBC Section 903.4:

* Automatic sprinkler systems
* Pumps
* Tanks
* Water levels and temperatures
* Critical air pressures
* Water-flow switches on all sprinkler systems
* Exception: Jockey pump control valves sealed and locked in the open position, control valves to commercial kitchen hoods, valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position

One exterior approved audible alarm located on the exterior of the building shall be connected to each sprinkler system. They should activate upon flow through the sprinkler system equivalent to the smallest orifice sprinkler head installed in the system being discharged (FBC Section 903.4.2).

* + - 1. Monitoring

Alarm supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved supervising station, or, where approved by the fire code official, shall sound an audible signal at a constantly attended location (FBC Section 903.4.1).

FSESprinkler FSESprinkler2

* + - 1. Site Water Supply Systems

The site water supply for fire protection systems shall be provided in accordance with the requirements of Chapter 23 of NFPA 13. MAINWATER420

Fire hydrants must be installed within 100 feet of the fire department connections in accordance with NFPA 14. Backflow preventer must be designed and installed as required by the local water department jurisdiction.

* + - 1. Secondary Water Supply

For high-rise buildings assigned to Seismic Design Category C, D, E, or F as determined by FBC Section 1613, an automatic secondary water supply is required per FBC Section 403.3.3. This secondary water supply must have a capacity not less than the hydraulically calculated sprinkler demand, including hose stream requirement. The water supply duration must not be less than 30 minutes.

An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the automatic sprinkler system.

* + - 1. Standpipe Systems

Per FBC Section 905.3.1 and FFPC, NFPA 101 Section 11.8.3.2, Class I automatic standpipes shall be provided within the PNAME project since the building is fully sprinklered. The installation of standpipes shall be designed and installed in accordance with NFPA 14, *Standard for the Installation of Standpipe and Hose Systems.*

Standpipe hose connections are to be provided in the following locations in accordance with FBC Section 905.4:

* In every required stairway on each floor level above and below grade. Hose connections shall be located at an intermediate landing between stories unless otherwise approved by the fire code official.
* On each side of the wall adjacent to the exit opening of a horizontal exit, except where floor areas adjacent to a horizontal exit are reachable from an interior exit stairway hose connection by a nozzle attached to 100 feet of hose as measured along the path of travel.
* In every exit passageway at the entrance from the passageway to other areas of the building.
* In the highest landing of a stairway with access to the roof or on the roof
* Where the most remote portion of a story is more than 150 feet from a hose connection, the fire code official is authorized to require additional hose connections be provided in approved locations. The distances from a hose connection shall be measured along the path of travel.

Buildings with more than one standpipe shall have interconnected standpipes in accordance with NFPA 14 and FBC Section 905.4.2.

STANDPIPE120 STANDPIPE120B

* + 1. Fire Pump:

This building will have a fire pump to supply the sprinkler and standpipe systems. The installation of the fire pump shall be designed and installed in accordance with NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*.

The fire pump room must be accessed directly from the exterior. The fire pump rooms that are not directly accessible from the outside shall be accessible through an enclosed passageway from an enclosed stairway or exterior exit. The enclosed passageway shall have a fire-resistance rating not less than the fire-resistance rating of the fire pump room (2-hours) (NFPA 20 Section 4.12.2.1).

For a high zone fire pump, there must be a redundant fire pump, which can be in the same room as the high zone fire pump and supplied by the same supply line.

In high-rise buildings, the two independent water lines mentioned above include extending the piping to the fire pump room.

FirePumpPic

Figure 8: Fire Pump Room Location

* + 1. Fire Department Connections:

A high-rise building is required to have two fire department connections located at remote points of the property. At least one of the fire department connections must be located within 100 ft. of a fire hydrant. The fire department connections must be visible, accessible, and clearly marked for fire department use.

* + 1. Special Suppression Systems:

SUPPRESSIONSYSTEM

At this time, the only special fire suppression systems anticipated within the PNAME project will be for commercial kitchen hood suppression systems. This system must be designed and installed in accordance with NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*.

* + 1. Fire Extinguishers:

Fire extinguishers must be provided throughout the building as required by FFPC, NFPA 1 and FBC Section 906. The fire extinguishers must be installed in accordance with NFPA 10, *Standard for Portable Fire Extinguishers.* The table below provides a brief overview of the installation requirements.

Table 17: Fire Extinguishers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Hazard Area | Minimum Size and Type | Maximum Travel Distance to Extinguisher [ft] | Maximum Floor Area per Unit of A [ft²] | Maximum Floor Area per Extinguisher [ft²] |
| Commercial Kitchen | Class K | 30 ft.  to cooking appliance | N/A | N/A |
| Low Hazard  (Residential floors, Assembly areas, Office spaces) | 2A:10B:C  Increase rating based on limits | 75 | 3,000 | 11,250 |
| Moderate Hazard  (Parking Garage, Storage) | 2A:20B:C  Increase rating based on limits | 50 | 1,500 | 11,250 |

* 1. Fire Alarm & Emergency Responder Radio Systems
     1. Fire Alarm Systems

As a *high-rise* building, and in accordance with FBC Section 403.4.4 and FFPC, NFPA 101 Section 11.8.4.1, an emergency voice communication fire alarm system shall be provided. The fire alarm system must be designed and installed in accordance with NFPA 72. Audible and visual appliances must be installed in accordance with FBC and FFPC. Selective evacuation signal is permitted where general evacuation is impractical due to building configuration per FFPC, NFPA 101 Section 9.6.3.6.2.

The fire alarm system must be designed to interface or monitor other life safety systems in the building such as automatic sprinkler system, fire pump, smoke control system, generator, etc.

HOTELFA

Table 18: Dwelling Unit Visible Alarms

|  |  |
| --- | --- |
| Number of sleeping units | Sleeping accommodations with visible alarms |
| 6 to 25 | 2 |
| 26 to 50 | 4 |
| 51 to 75 | 7 |
| 76 to 100 | 9 |
| 101 to 150 | 12 |
| 151 to 200 | 14 |
| 201 to 300 | 17 |
| 301 to 400 | 20 |
| 401 to 500 | 22 |
| 501 to 1,000 | 5% of total |
| 1,001 and over | 50 plus 3 for each 100 over 1,000 |

In Apartment (R-2) occupancies, all dwellings units and sleeping rooms shall be provided with the capability to support visible alarm notification appliances in accordance with ICC A117.1 (FBC Section 907.5.2.3.3).

* + 1. Remote Annunciator Panel

As per usual practice with the Fire Department, a remote fire alarm annunciator panel and remote generator annunciator panel should be provided at the lobby reception desk.

* + 1. Fire Alarm Monitoring:

The fire alarm system shall be monitored by a central station in accordance with Section 13.7.1.4.11.1 of the FFPC (NFPA 1).

* + 1. Fire Fighter Telephone Jacks:

It is the understanding of SLS Consulting, that the Fire Department will require that fire fighter telephone jacks be provided in accordance with FBC Section 907.2.13.2 despite consideration that the building shall also be provided with an emergency response radio coverage system.

* + 1. Emergency Responder Radio System:

In addition to fire-fighter telephone jacks provided as required by NFPA 72, the building shall be provided with emergency responder radio coverage as required by FBC Section 403.4.5 and NFPA 1, Section 11.10. The requirements of the Emergency Responder Radio System are listed in NFPA 72 Section 24.5. The Fire Department will also have specific requirements for their radio system in addition to the basic items below.

* *Radio Signal Strength:* Signal strength measurements in 95% of all areas of each floor of the building should the following minimum signal strengths:
  + *-*95 dBm minimum signal strength within the building;
  + -95 dBm minimum signal strength should be received by the agency’s radio system when transmitted from within the building.
* *Secondary Power:* The emergency responder radio coverage system shall be provided with an approved secondary source of power capable of providing an 8-hour supply.

New buildings shall comply with “In Building Public Safety Radio Enhancement System”. Per Miami-Dade County policy, every new building shall be provided with a 2-hour fire-rated room protected with emergency power and air conditioning for equipment installation at the top level preferably, or in the fire command center, AND a 2-hour fire- rated vertical shaft through the entire building with an access panel at each level for future use.

* + 1. Carbon Monoxide Alarms:

Carbon monoxide detection shall be provided in accordance with the requirements of the FBC, Section 915 and FFPC, NFPA 101 Sections 28.3.4.6 and 30.3.4.6. Carbon monoxide detectors are required in buildings having fuel burning appliances, a fireplace, an attached garage, or other element that emits carbon monoxide as a byproduct of combustion. The FBC requires that carbon monoxide alarms be located within 10 feet from sleeping rooms. Carbon Monoxide detection shall be installed in accordance with NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*.

* + 1. Smoke Alarms:

R1R2SMOKEALARM R1R2SMOKEALARMB

* R1R2SMOKEALARM1
* R1R2SMOKEALARM2
* R1R2SMOKEALARM3

R1R2SMOKEALARMEND R1R2SMOKEALARMENDB

* + 1. Smoke Detection System:

SMOKEDETECTION

* + 1. Smoke Detection System:

FBC Section 907.2.13.1 states that smoke detection shall be provided in the following spaces that are not protected by sprinkler system: mechanical equipment, electrical transformer, telephone equipment, or similar room. In addition, smoke detection must be provided in each elevator machine room and in elevator lobbies.

A corridor smoke detection system is normally required for hotel occupancies in accordance with FBC and FFPC, but it may be omitted for buildings with sprinkler system protection. However, a smoke detection system would be required to initiate the smoke control system.

* 1. Emergency and Standby Power Systems
     1. Emergency Power Systems:

The emergency power systems shall be designed in accordance with the following (FBC Section 2702 and FFPC, NFPA 101 Section 7.9.2.2):

* NFPA 70, National Electrical Code (NEC).
* NFPA 110, Standard for Emergency and Standby Power Systems.
* NFPA 111, Standard on Stored Electrical Energy Emergency and Standby Power Systems.

The standby system shall have the capacity to supply the following:

* Fire Command Center lighting and HVAC (FBC §911.1 and NFPA 101 §11.8.5).
* Elevators used as accessible means of egress elevators (FBC §1009 and FAC 207).
* Electrical generator and main switchgear room lighting circuits (NFPA 110).
* Essential floor, sewage ejector and sump pumps.
* Fire pump room lighting circuit (NFPA 20).
* Jockey pump (NFPA 101 §11.8.5.4.4).
* Electric fire pumps (NFPA 101 §11.8.5).
* Smoke control systems (FBC §2702.2.16).
* Stair Pressurization Systems and Controls (FBC §2702.2.16 and NFPA 101 §11.8.5).
* Horizontal sliding doors (FBC §2702.2.10).
* Emergency voice communication systems (FBC §2702.2.4).
* Elevators (FBC §3003.1).

The emergency system should have the capacity to supply the following:

* Exit Signs (FBC §2702.2.6).
* Means of Egress Lighting (FBC §2702.2.12).
* Elevator Car Lighting (FBC §403.4.8.4).
* Automatic detection systems (FBC §403.4.8.4).
* Fire Alarm and Communication systems (FBC §403.4.8.4).

Elevator machine room ventilation and/or air conditioning should be connected to the Building’s standby power source. Where more than one (1) elevator is provided, all elevators should be provided with standby power and return to the designated level. After this point, one (1) elevator should remain operable from the standby power source (FBC Section 3003.1.3).

R1R2EMERGENCYPOWER

R1R2EMERGENCYPOWERCOM

GeneratorPic

* 1. Smoke Control Systems Overview

The building will have a smoke control system designed in accordance with FBC Section 909. The design of the smoke control system for the PNAME Project can incorporate active and passive protection. The building components that will require smoke control system protection are listed below. All smoke control equipment (e.g., fans, VFDs, etc.) is required to be enclosed in a dedicated 2-hour fire rated enclosure. The smoke control system interfaces with the fire alarm system for activation (i.e., automatic or manual) and for supervision (e.g., monitoring of the disconnect switches for voltage and current loss).

* + 1. Stairs

Stairs serving floors more than 75-feet above the lowest level of fire department vehicle access will be designed as *smoke-proof enclosures* in accordance with FBC Section 909.20.5 and Section 1023. The stairways in the high-rise building must be pressurized to comply with the requirements in FBC.

* + 1. Elevators

The elevator hoist-ways and associated elevator machine rooms must be protected in accordance with the requirements of FBC Section 713, Section 3006.2 and 3006.3. The elevator hoist-ways must be protected by lobby enclosure or by pressurization when the elevator shaft connects more than three (3) floors.

* + 1. Floor-to-Floor/Zoned System

The corridors on each floor of the high-rise building must be provided with the ability to be either exhausted or pressurized by mechanical systems designed in accordance with the FBC. It is noted that each floor within the building is considered a dedicated *smoke zone* and, as such, shall be separated by passive smoke barriers constructed in accordance with the requirements of FBC Table 601 and FBC Section 909.5.

* + 1. Vertical Openings:

VOFans

* + 1. Smoke Removal System

SMOKEREMOVAL SMOKEREMOVAL2 SMOKEREMOVAL3 SMOKEREMOVAL4

* + 1. Smoke Control System

SCRADESIGN

* 1. Hazardous Materials Approach

The quantities of hazardous materials will be below the exempt amounts/maximum allowable quantities (MAQ’s) and no Use Group H, High Hazard occupancies are proposed. It is noted that the fuel located within vehicles are exempted by the Florida Building Code, the FFPC and NFPA 30. All rooms containing hazardous materials within the PNAME project (e.g. fuel storage room/emergency generator room, pool chemical rooms, etc.) should be provided with an NFPA 704 Hazmat placard.

* 1. Fire Department Access
     1. Site Access/Set-Up Sites:

The site must comply with FFPC, NFPA 1, Chapter 18 for the minimum fire department site access requirements as follows:

* Fire department access road shall extend to within 50-ft of at least one exterior door that can be opened from the outside and provides access to the interior of the building (FFPC 18.2.3.2.1).
* Fire department access road dead ends more than 150-ft shall be provided with approved provisions for fire apparatus to turn around (FFPC 18.2.3.5.4).
* Fire department access roads shall have an unobstructed width of 20 feet and a vertical clearance of 13 ft 6 inches (FFPC 18.2.3.5.1.1 & 18.2.3.5.1.2).
* When required by AHJ, roads or parking lots providing access to the main entrance doors shall be considered access roads and shall comply with the requirements of FFPC, Sections 18.2.3.4.1.1 AND 18.2.3.4.1.2 (FFPC 18.2.3.2.1.2).
* Fire department access roads shall be designed and maintained to support a minimum of 32 tons and shall be provided with a surface suitable for all-weather driving capabilities (FFPC 18.2.3.5.2).
* Fire department access roads shall be provided such that any portion of an exterior wall of the first story of the building shall be located no more than 150-ft or 450-ft for sprinklered buildings from a fire department access road as measured from an approved route around the exterior of the building (FFPC 18.2.3.2.2.1).

SiteAccessPic

Figure 9: Site Access

MiamiDadeSite MiamiDadeSite2 MiamiDadeSite3 MiamiDadeSite4

* + 1. Elevator – Emergency Medical Services

Any building that is more than three stories or where the vertical distance to the top landing exceeds 25 feet, must contain at least one passenger elevator that is operational for building occupants and fire department access to all floors. The elevator car shall be able to accommodate an ambulance stretcher (24 inches x 76 inches) with 5 inches radius corners. The elevator car must be identified by the international symbol for emergency medical services (star of life). The symbol must be at least 3 inches high and located inside on both sides of the hoist-way door frame (FBC Section 3002.4).

* + 1. Fire Service Access Elevator

FSAESECTION FSAESECTION1

* *FSAESECTION2*
* *FSAESECTION3*
* FSAESECTION4
* FSAESECTION5

FSAESECTION6 FSAESECTION7 FSAESECTION8

FSAESECTION9 FSAESECTION10

FSAESECTION11 FSAESECTION12

FSAESECTION13

FSAEPic

Figure 10: Fire Service Elevator Configuration

* FSAESECTION14
* FSAESECTION15 FSAESECTION16
* FSAESECTION17
* FSAESECTION18 FSAESECTION19
* FSAESECTION20
* FSAESECTION21
  + FSAESECTION22 Elevator equipment
  + FSAESECTION23 Elevator hoist-way lighting
  + FSAESECTION24 Elevator machine room ventilation and cooling equipment
  + FSAESECTION25 Elevator controller cooling equipment
* FSAESECTION26 FSAESECTION27
  + 1. New 2018 IBC Requirements

The elevator department reviews plans based on the applicable code at date of review and not the applicable code on the date of submittal. This may cause sections of the new 2020 FBC to be applicable, regarding the following:

IBC Section 3001.2 “Emergency elevator communication systems for the deaf, hard of hearing and speech impaired. An emergency two-way communication system shall be provided that:

Is visual and text-based and a video-based 24/7 live interactive system.

Is fully accessible by the deaf hard of hearing and speech impaired and shall include voice-only options for hearing individuals.

Has the ability to communicate with emergency personnel utilizing existing video conferencing technology, chat/text software or other approved technology.”

1. Summary and Conclusion

This report provides an outline of building and fire code related requirements for this project and information associated with the general approach to fire protection, life safety and building code compliance. As a living document, this report will be revised, modified, and amended as the project progresses. To ensure accuracy of this report, close coordination, review, and concurrence from design team members is required.

In case of conflict, it should be noted that the requirements of the applicable codes take precedent over this report.

Prepared by:

**SLS Consulting, LLC.**

Signature

Title

Reviewed by:

Signature

Title