5.8. Diesel Fuel Storage

An underground fuel storage tank will be provided as shown below in Figure XX. It will contain approximately 30,000 gallons of diesel fuel to meet the facility's emergency power demand.

The design and installation of the underground tank must comply with the 2003 Edition of NFPA 30. The following requirements are for underground tank installations.

- Vent piping for the underground tank shall be sized in accordance with Figure 4.2.5.3
- Per 30.4.3.3.1, the distance from the tank to the property line or wall of any basement must be 1 foot.
- Per 30.4.3.3.2.1, the underground tank is required to be installed per the manufacturer's instructions. The tank shall be set on a firm foundation and surrounded with at least six inches of clean sand or gravel well-tamped in place.
- Per 30.4.3.3.2.2, tanks that will have vehicles pass over them shall be protected against damage by 36 inches of well-tamped earth and 6 inches of reinforced concrete (or eight inches asphaltic concrete) over the tank. The concrete shall extend 12 inches beyond the tank in all directions.
- Per 30.4.3.3.5.2, the tank shall be so constructed and installed that it will safely resist external pressures if submerged due to flooding.

5.9. Pedestrian Walkway

An enclosed, conditioned pedestrian walkway will connect L3 of the Grady CASS building to the existing hospital. The walkway will connect at the fire service access elevator lobby on L3 and can be considered as part of this lobby if 45-minute fire-rated doors are located at the bridge connection to the existing building. Otherwise, per IBC Section 3104.5, separation at the walkway connection is not required when the following conditions are met:

- The walkway is sprinklered,
- The walkway is no more than 55 feet above street level,
- The connected buildings are no less than 10 feet apart,
- And the walls separating the connected building from the walkway is capable of resisting the passage of smoke.

6. PASSIVE FIRE PROTECTION

6.1. Incidental Use/Hazardous Area Separations

Table 8 provides incidental use rooms or areas that constitute special hazards or risks to life safety that are required to be separated from the remainder of the building in accordance with the IBC. An incidental use is not permitted to occupy more than 10 percent of the building area of the story in which they are located (IBC Section 509.3).

Table 8: Incidental Use Separations [IBC Table 509; LSC Section 8.7.1.2, Section 8.4]

Occupancy	Required Fire Barrier Separation	Code Reference
Storage rooms (excluding hazardous material storage rooms)	Smoke partitions	IBC Section 509.2; LSC Section 8.7.1.2
Waste & linen rooms located in I-2 or Ambulatory Care Facility Occupancies	1-hour	IBC Table 509
Laundry and Waste/Linen Collection Rooms over 100 ft²	1-hour or provide automatic sprinkler system	IBC Table 509
Elevator machine rooms and machinery space	2-hour	IBC Section 3006.4
High-voltage (over 600 V nominal voltage) equipment rooms	Determined by electrical engineer	NEC Article 110
Transformer vault or room	3-hour or 1-hour	NEC Article 450-42
Electrical rooms containing dry-type transformers exceeding 112.5 kVA	1-hour fire resistance-rated enclosure*	NEC Article 450
Fire Pump Room	2-hour (with direct access to the exterior or 2-hour fire rated corridor)	IBC Section 913.2.1; NFPA 20
Boilers over 15 psi and 10 horsepower	1-hour or sprinkler	IBC Section 509.4.2; Table 509
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1-hour in Group B and S occupancies; 2 hours in Group I occupancies	IBC Table 509
Generator Room Louvers	2-hr air enclosure	NFPA 110 §7.7.3
Generator Room	2-hour	IBC §403.4.8.1

Exceptions: 1. Transformers with Class 155 or higher insulation systems and separated from combustible material by a fire-resistant, heat-insulating barrier or by not less than 6 ft. horizontally and 12 ft. vertically. 2. Transformers with Class 155 or higher insulation systems and completely enclosed except for ventilating openings.

6.2. Shaft Enclosures

In accordance with the Rules and Regulations for the State Minimum Fire Safety Standards, passive fire protection for shaft enclosures shall comply with the LSC. The minimum fire resistance rating for the enclosure of floor openings are as follows (LSC Section 8.6.5):

1) Enclosures connecting four or more stories – 2-hour fire-rated barriers
2) Other enclosures – 1-hour fire-rated barriers

6.3. Exit Enclosures

In accordance with the Rules and Regulations for the State Minimum Fire Safety Standards, passive fire protection for exit enclosures shall comply with the LSC.

Where an exit enclosure connects three or fewer stories, the exit enclosure shall be separated from other parts of the buildings by a minimum 1-hour fire-resistance rating; for exit enclosures connecting four or more stories the minimum fire-resistance rating shall be 2-hours in accordance with the LSC Section 7.1.3.2.1.

An exit passageway that serves as a discharge from a stair enclosure shall have not less than the same fire resistance rating and opening protective fire protection rating as required for the stair in accordance with the LSC Section 7.2.6.3.

6.4. Exit Access Corridors

Exit access is the portion of a means of egress that leads to an exit. Corridors shall provide exit access without passing through any intervening rooms other than corridors, lobbies, and other spaces permitted to be open to the corridor. Access to exits within a business occupancy by means of a corridor shall be separated from other areas of the building by a fire barrier having a minimum 1-hour fire-resistance rating, unless the building is protected throughout by an approved, supervised automatic sprinkler system in accordance with the LSC Section 38.3.6.1. Corridors that are not required to be fire-resistance rated shall be permitted to discharge into open floor plan areas in accordance with the LSC Section 7.5.1.2.2.

6.5. Elevator Lobbies

In accordance with the LSC Section 9.4.2.1 and as modified by Chapter 120-3-3, elevator lobbies of the designated floor and the alternate floor specified by Rule 211.3 (a) and determined by the Fire Chief of the fire department having emergency response jurisdiction, shall be separated from the remainder of the building by 1-hour fire-rated construction. Additionally, elevator lobbies, smoke curtains, or elevator pressurization is required for elevator systems in high-rise buildings on all levels. If there is direct access to the outside on the main level, then the elevator lobbies on the main level are not required to be separated. In buildings equipped with automatic sprinkler protection, smoke partitions in accordance with LSC Section 8.2.4 may be used in lieu of 1-hour fire rated construction.

Per NFPA 101:7.1.3.2(9), openings in exit enclosures are limited to normally occupied spaces. So only normally occupied spaces can be open to the elevator lobbies.

Per the 120-3-3 amendment to NFPA 101:9.4.2.1, openings in the elevator lobby of the primary elevator recall level are limited to those required for access to the elevators from exit access corridors or exits only.

6.6. Fire Service Access Elevator and the Associated Lobbies

In accordance with IBC Section 3007.7, the fire service access elevators shall open into a fire service access elevator lobby that is not less than 150 ft² in area with a minimum dimension of 8 feet. For buildings with an occupied floor of 120 feet above the lowest level of fire department access, no fewer than two fire service access elevators shall be provided. The lobby shall be enclosed with a smoke barrier having a fire-resistance rating of not less than one hour and the lobby doors shall be provided with a ¾-hour fire door assembly which shall comply with smoke and draft control door assembly requirements. Additionally, the fire service access elevator shall have direct access to an enclosure for an interior exit stairway. The exit stair is required to have direct access to the floor without passing through the lobby. The lobby is intended as a staging area for firefighters. There is not a requirement for a fire fighter access lobby on street level.

The State Fire Marshal clarified that a fire service access elevator lobby is required for the fire service access elevators on every level except the level of exit access. Therefore, a fire service access elevator lobby is required on the mechanical level.

Chapter 30 of the IBC does not have restrictions on the types of rooms that are open to the fire service access elevator lobbies.

See Appendix A for clarification on elevator lobbies, fire service access elevator lobbies, and their associated protections.

Section 3007 provides requirements for fire service access elevator machine rooms:

1) Sprinkler coverage is prohibited (3007.3.1)
2) Area smoke detection is required (907.2.13.1.1(2))
3) There must be an approved method to prevent water infiltration (3007.4)
4) Shunt trip equipment is prohibited (3007.5)
5) Fire service access elevators are not required on levels with exit access (3007.7.2 Exception 2)

Additionally, Section 903.3.1.1.1 details areas of buildings that are exempt from automatic sprinkler coverage. In accordance with Section 903.3.1.1.1, the following areas are exempt:

1) Exception 5, fire service access elevator rooms and machinery spaces.
2) Exception 8, machine rooms and machinery spaces associated with occupant evacuation elevators designed in accordance with Section 3008.

See *Figure 1* for method to measure highest occupied floor level to lowest level of fire department access.

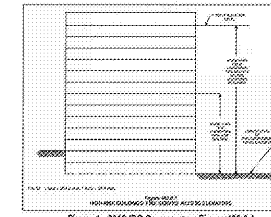

Figure 1 - 2012 IBC Commentary Figure 403.6.1

6.7. Other Elevator Requirements

Per IBC Section 3002.4, where elevators are provided in buildings four or more stories above, or four or more stories below, grade plane, at least one elevator shall be provided for fire department emergency access to all floors. The elevator car shall be of such a size and arrangement to accommodate an ambulance stretcher 24 inches by 84 inches (610 mm by 2134 mm) with not less than 5-inch (127 mm) radius corners, in the horizontal, open position and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall not be less than 3 inches (76 mm) in height and shall be placed inside on both sides of the hoistway door frame. Only one stretcher sized elevator is required, and it does not have to be a fire service access elevator.

Each fire service access elevator is required to have a 3,500lb capacity.

7. FIRE PROTECTION SYSTEMS

7.1. Sprinkler Systems

A high-rise building is required by the LSC Section 38.4.2 and Section 11.8.3.1 to be protected throughout by an approved, supervised automatic sprinkler system and provide a sprinkler control valve and a waterflow device for each floor.

Per IBC Section 403.3 Exception (1), an automatic sprinkler system is not required in spaces or areas of open parking garages in accordance with IBC Section 406.5.

7.2. Standpipe Systems

A Class I wet standpipe shall be provided per IBC Section 905. Standpipe systems are permitted to be combined with an automatic sprinkler system in accordance with IBC Section 905.3. The Class I standpipe system shall be provided for the below grade parking area in accordance with IBC Section 905.3.5. A Class I standpipe system is a system that provides 2½ inches hose connections to supply water for use by fire departments. The installation of the Class I standpipe system shall comply with applicable provisions of NFPA 14, Standard for the Installation of Standpipe and Hose Systems, in addition to IBC Section 905.

7.3. Fire Pump

Section 913 provides some guidance on fire pumps, but it defers to NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, for installation and design instructions. When a fire pump is required to meet the demand of the sprinkler and standpipe system, they shall be installed and tested in accordance with NFPA 20. For high-rise buildings, NFPA 20 requires that access to and location of the fire pump room be preplanned with the fire department. NFPA 20 also requires the fire pump room to have a 2-hour fire rating.

In accordance with IBC Section 403.3.2, the proposed facility must comply with the following:

1) The fire pump for a high-rise building must be connected to two water mains located on different streets.
2) Separate supply piping shall be provided between each connection to the main and pump.
3) Two connections to the same main are acceptable if the main is valved so that an interruption in water supply can be isolated.

7.4. Fire Command Center

In accordance with IBC Section 911, high rise buildings shall be provided with a fire comma[illegible] for fire department operation. The IFC and IBC require that the location and accessibility of the [illegible] center shall be approved by the fire chief. The fire command center shall be a minimum [illegible] 200 ft² [illegible] minimum dimension of 10 feet and shall be separated from the remainder of the [illegible] no less th[illegible] 1-hour fire barrier or a horizontal assembly.

7.5. Fire Detection, Alarm, and Communication Systems

High-rise buildings shall be provided with a fire alarm system [illegible] an approved emergency [illegible] alarm communication system in accordance with the LSC Section [illegible] need [illegible] voice communication is based on the ability for staged or partial evacuation vers[us] total evac[uation] of all [illegible]. The initiation of the fire alarm system shall be by one of the following [illegible] as stated [in] the LS[C Section] 38.3.4.2 and Section 20.3.4.2:

1) Manual means
2) Means of an approved automatic fire detect[ion system] and provides protection throughout the building

In accordance with the LSC Section [illegible]3.4.3 and Section 20.3.4.3, during all times that the building is occupied, the required fire alarm sys[tem], once initiated, shall activate a general alarm in accordance with LSC Section 9.6.3 throughout the [illegible] and [illegible]sitive alarm sequence in accordance with LSC Section 9.[illegible] be permitted. Any [illegible]vice in the fire alarm system shall be arranged to accomp[li]sh autom[atica]lly, without delay, any control functions required to be performed by that device per Section 20.3.4.[illegible]

Per LS[C Se]ction 20.3.5.2, where [illegible] two (2) or more sprinklers are installed in a single area for protection in acc[ordan]ce with Secti[on] 9.7.1.2, waterflow detection shall be provided to sound the building fire alarm [illegible] to no[tify] [illegible] a signal [illegible]ny constantly attended location at which necessary corrective action shall be [illegible]n.

In [acco]rdance with the LSC Section 11.8.4.2.1 and Section 11.8.4.2.2, a two-way communication service sha[ll be] provided.

7.6. Stair Pressurization

IBC Section 403.5.4 requires that each required exit stairway serving floors more than 75 feet above the highest level of fire department access to have smokeproof enclosures in accordance with IBC Sections 909.20. IBC Section 909.20.5 exempts the building from the smokeproof enclosure requirement where the building is equipped with an automatic sprinkler system, and:

1) Interior exit stairways are pressurized to
   - (a) A minimum of 0.10 inches of water and
   - (b) A maximum of 0.35 inches of water in the shaft, relative to the building with all stairway doors closed.

All stairs are 75 feet or higher from the lowest level (fire department access) to the highest floor they serve and will require stair pressurization.

7.7. Portable Fire Extinguishers

In accordance with the IFC Section 906.1, portable fire extinguishers shall be selected, installed and maintained in accordance with NFPA 10, Standard for Portable Fire Extinguishers, for business occupancies.

7.8. Other Ambulatory Health Care Specific Protection Requirements

In accordance with LSC Section 20.3.2.3, anesthetizing locations shall be protected in accordance with NFPA 99, Health Care Facilities Code.

In accordance with LSC Section 20.3.2.6, alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following conditions from Section 20.3.2.6 listed below are met:

1) Where dispensers are installed in a corridor, the corridor shall have a minimum width of 6 feet
2) The maximum individual dispenser fluid capacity shall be as follows:
   - (a) 0.32 gal for dispensers in rooms, corridors, and areas open to corridors
   - (b) 0.53 gal for dispensers in suites of rooms
3) Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz and shall be limited to Level 1 aerosols as defined in NFPA 30B, Code for the Manufacture and Storage of Aerosol Products.
4) Dispensers shall be separated from each other by horizontal spacing of not less than 48 inches
5) Not more than an aggregate of 10 gallons of alcohol-based hand-rub solution or 1135 ounces of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gallons or 1135 ounces, shall be in use outside of a storage cabinet in a single smoke compartment, except as otherwise provided in 20.3.2.6(6).
6) One dispenser per room complying with 20.3.2.6 (2) or (3), and located in the room, shall not be required to be included in the aggregated quantity specified in 20.3.2.6(5).
7) Storage of quantities greater than 5 gallons in a single smoke compartment shall meet the requirements of NFPA 30, Flammable and Combustible Liquids Code.
8) Dispensers shall not be installed in the following locations:
   - (a) Above an ignition source within a 1-inch horizontal distance from each side of the ignition source
   - (b) To the side of an ignition source within a 1-inch horizontal distance from the ignition source
   - (c) Beneath an ignition source within a 1-inch vertical distance from the ignition source
9) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered smoke compartments.
10) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.
11) Operation of the dispenser shall comply with the following criteria:
   - (a) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
   - (b) Any activation of the dispenser shall occur only when an object is placed within 4 inches of the sensing device.
   - (c) An object placed within the activation zone and left in place shall not cause more than one activation.

   - (d) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
   - (e) The dispenser shall be designed, constructed, and operated in a manner that ensures that accidental or malicious activation of the dispensing device is minimized.
   - (f) The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.

Per LSC Section 20.3.7.9, doors in smoke barriers shall be not less than 1 ¾ in. thick, solid-bonded wood core or the equivalent and shall be self-closing or automatic-closing in accordance with LSC Section 20.2.2.4.

8. MEANS OF EGRESS

The proposed building shall comply with the means of egress requirements of both chapters: New Ambulatory Health Care Occupancies (Chapter 20) and New Business Occupancies (Chapter 38).

8.1. Occupant Loads

The occupant load in any building or portion thereof shall be not less than the number of persons determined by dividing the floor area assigned to that use by the occupant load factor for that use as specified in the LSC Table 7.3.1.2. *Table 9* provides the occupant load factors that are provided in the LSC Table 7.3.1.2

Table 9: Occupant Load Factors [LSC Table 7.3.1.2]

Use	ft²/person
Assembly Use	
Fixed Seating	Use number of fixed seats
Concentrated Use – without fixed seating	7 net
Less concentrated use – without fixed seating	15 net
Business Use	100 gross
Mercantile Use	
Sales area on street floor	30 gross
Storage Use	
In other than storage and mercantile occupancies	500 gross

8.2. Egress Capacity

In accordance with LSC Section 20.2.3.1, the capacity of any required means of egress shall be determined in accordance with Section 38.2.3 which requires that egress capacity is sized to accommodate the occupant load as determined by Section 7.3.1.2. The doors in the means of egress shall comply with Section 7.2.1 in accordance with Section 38.2.2.2.1. The minimum clear width for door openings in the means of egress shall be not less than 32 inches in accordance with Section 7.2.1.2.3.2. The minimum clear width may be larger for ADA Standards for Accessible Design purposes.

In accordance with the LSC Section 7.3.3.1, the egress capacity is based on the capacity factors shown in LSC Table 7.3.3.1. *Table 10* provides the egress capacity factors.

Table 10: Egress Capacity Factors [LSC Table 7.3.3.1]

Use	Inches/person
Stairways	0.3
Level Components and Ramps	0.2

In accordance with LSC §7.3.3.2, the capacity of stairways wider than 44 in. and subject to the 0.3 in. width per person capacity factor shall be permitted to be increased using the following equation provided from LSC §7.3.3.2:

$$C = 146.7 + \left(\frac{Wn - 44}{0.218}\right), where:$$

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

Wn = nominal width in inches of the stair as permitted by Section 7.3.2.2

The required capacity of a corridor shall be the occupant load that utilizes the corridor for exit access divided by the required number of exits to which the corridor connects, but the corridor capacity shall be not less than the required capacity of the exit to which the corridor leads (LSC Section 7.3.3.3).

8.3. Measurement of Door Widths and Egress Capacity Widths

In accordance with LSC §7.2.1.2.1.1, for swinging door assemblies, clear width shall be measured as follows:

1) The measurement shall be taken at the narrowest point in the door opening.
2) The measurement shall be taken between the face of the door leaf and the stop of the frame.
3) For new swinging door assemblies, the measurement shall be taken with the door leaf open 90 degrees.
4) For any existing door assembly, the measurement shall be taken with the door leaf in the fully open position.
5) Projections of not more than 4 inches into the door opening [illegible] on the hinge side shall not be considered reductions in clear width, provided that such projections are for purposes of accommodating panic hardware or fire exit hardware and are located not less than 34 inches, and not more than 48 in., above the floor.
6) Projections exceeding 6 feet 8 inches above the floor shall not be considered reductions in clear width.

In accordance with LSC §7.2.1.2.1.2, for other than swinging door assemblies, clear width shall be measured as follows:

1) The measurement shall be taken at the narrowest point in the door opening.
2) The measurement shall be taken as the door opening width when the door leaf is in the fully open position.
3) Projections exceeding [illegible] inches above the floor shall not be considered reductions in clear width.

In accordance with LSC §7.2.1.2.2.1, for swinging door assemblies, clear width shall be measured as follows:

1) The measurement shall be taken at the narrowest point in the door opening.
2) The measurement shall be taken between the face of the door leaf and the stop of the frame.
3) For new swinging door assemblies, the measurement shall be taken with the door leaf open 90 degrees.
4) For any existing door assembly, the measurement shall be taken with the door leaf in the fully open position.
5) Projections not more than 3.5 inches into the door openings at a height of not more than 38 inches shall not be considered reductions in egress capacity width.
6) Projections exceeding 6 feet 8 inches above the floor shall not be considered reductions in clear width.

In accordance with LSC §7.2.1.2.2.2, for other than swinging door assemblies, clear width shall be measured as follows:

1) The measurement shall be taken at the narrowest point in the door opening.
2) The measurement shall be taken as the door opening width when the door leaf is in the fully open position.
3) Projections not more than 3.5 inches at each side of the door openings at a height of not more than 38 inches shall not be considered reductions in egress capacity width.

4) Projections exceeding [illegible] inches above the f[loor] shall not be [con]sidered reductions in egress capacity width.

8.4. Number of Means of Egress

In accordance [with] LSC Section 20.2.4.1, the [num]ber of means of [egre]ss shall comply with Section 7.4. In accordance [with] Section 7.4.1.2, the number of [means] of egress [from] any story or portion thereof shall be no less than [illegible] (3) for occupant loads betwee[n] [illegible] and 1000 [in] accordance with Section 38.2.4.1 and Section 20.2.4 [illegible] less than two remotely locate[d] [illegible] be provided on every story. In accordance with Section 20.[illegible] not less than two (2) exits of th[illegible] described in Section 38.2.2 shall be accessible from each smoke [compa]rtment, and egress from sm[oke] compartments is permitted to go through adjacent compartments per [Section] 20.2.4.5. In acc[or]dance with Section 20.2.4.3, any patient care room and any patient care suite of r[ooms] of more than 2[illegible] ft² shall have not less than two (2) exit access doors remotely located from each other.

8.5. Arrangement of [Mea]ns of Egress

Where a single door opening is provided for discharge from a stairway required to be a minimum of 56 inches wide [and] serves as the sole means of exit discharge from the stairway, the clear width of the door opening shall be not less than two-thirds the required width of the stairway in accordance with the LSC Section 7.2.1.2.3.2(8).

In accordance with the LSC Section 7.2.1.4.2, doors serving a room or space with 50 or more persons, or in an exit enclosure shall swing in the direction of egress travel.

In accordance with the LSC Section 7.2.1.4.3.1, a door leaf in a means of egress shall leave not less than one-half of the required width of an aisle, a corridor, a passageway, or a landing unobstructed and shall project not more than 7 inches when fully open.

The following is the dimensional criteria for new stairs in accordance with the LSC Section 7.2.2.2. As shown below, *Table 11* provides the dimensional criteria for new stairs.

Table 11: Stair Dimensions [LSC Table 7.2.2.2.1.1(a)]

Use	Dimension Criteria
Minimum width	See 7.2.2.2.1.2
Maximum height of risers	7 inches
Minimum height of risers	4 inches
Minimum tread depth	11 inches
Minimum headroom	6 ft. 8 in.
Maximum height between landings	12 feet

In accordance with the LSC Table 7.2.2.2.1.2 (B), the minimum width clear of all obstructions, except projections not more than 4½ inches at or below handrail height on each side, shall be:

1) < 2,000 persons – 44 inches
2) ≥ 2,000 persons – 56 inches

In accordance with Section 20.2.3.2, corridors or exit access passageways shall be at least 44 inches in clear width. Per IBC Section 38.2.2.6, ramps used as a component in a means of egress shall conform to LSC Section 7.1 and Section 7.2.5. The ramps shall be installed in accordance with LSC Table 7.2.5.2(a). *Table 12* shown below provides the dimensional criteria for ramps.

Table 12: Ramp Dimensions [LSC Table 7.2.2.2.1.1(a)]

Use	Dimension Criteria
Minimum width clear of all obstructions, except projections not more than 4 ½ inches at or below handrail height on each side	44 inches
Maximum slope	1 in 12
Maximum cross slope	1 in 48
Maximum rise for a single ramp run	30 inches

In accordance with LSC Section 20.2.3.3, where minimum corridor width is 6 feet, projections above the handrail height and not more than 6 inches from the corridor wall shall be permitted for the installation of hand-rub dispensing units complying with Section 20.3.2.6.

In accordance with LSC Section 20.2.3.4, doors in the means of egress from treatment areas (x-ray, surgical, physical therapy, etc.) must provide at least 32 inches in clear width.

In accordance with the LSC Section 7.5.4.1, areas accessible to people with severe mobility impairment shall have not less than two accessible means of egress. An accessible means of egress is a means of egress that provides an accessible route to an area of refuge, a horizontal exit, or a public way (LSC Section 3.3.170.1).

Table 13 summarizes the dead-end corridor length, common path of travel and exit access travel distance limitations.

Table 13: Dead Ends, Common Path of Travel, and Travel Distance Limitations

Use Group	Dead End Limit (ft)	Common Path of Travel Limit (ft)	Travel Distance Limit (ft)
	LSC	LSC	LSC
Assembly	20	20* 75*	150***
Business	50	100	150***
Mercantile	50	100	150***
Storage**	100	100	150***

** LSC Section 12.2.5.1.3 A common path of travel shall be permitted for the first 20 feet from any point where the common path serves any number of occupants, and for the first 75 feet from any point where the common path serves not more than 50 occupants.*

*** Means of egress limitations based on Ordinary Hazard Storage Occupancy, LSC Table 42.2.5 and 42.2.6*

**** In accordance with LSC Section 20.2.6.2.2, the maximum travel distance may be increased by 50 feet in buildings protected throughout by an automatic sprinkler system complying with Section 9.7.*

In accordance with LSC Section 20.3.7.3, travel distance from any point to reach a door in a smoke barrier shall not be greater than 200 feet.

8.6. Accessible Means of Egress

In accordance with the LSC Section 38.2.2.12.2, a story in a building protected throughout by an approved, supervised automatic sprinkler system can be used as an area of refuge; the rooms or spaces are not required to be separated from each other by smoke-resistant partitions.

Buildings protected throughout with an approved, supervised automatic sprinkler system and having an accessible story that is one or more stories above or below a story of exit discharge shall meet the following criteria in accordance with LSC Section 7.2.12.1.1:

1) Elevator landings are provided with a two-way communication system.
2) Directions for the use of the two-way communication system.
3) The two-way communication system shall include both audible and visible signals.

8.7. Exit Discharge

In accordance with the LSC Section 38.2.7 and Section 38.2.7, exit discharge shall comply with LSC Section 7.7. Exits shall terminate directly, at a public way or at an exterior exit discharge. Exits are permitted to discharge through interior building areas provided all the criteria in LSC Section 7.7.2 are met. The number of exits permitted to discharge through the interior of the building shall not be more than 50 percent and not more than 50 percent of the required egress capacity. The interior exit discharge shall lead to a free and unobstructed way to the exterior of the building, which shall be readily visible and identifiable from the point of discharge from the exit in accordance with LSC Section 7.7.2.

In buildings protected throughout with an approved, supervised automatic sprinkler system, [the] minimum separation distance between exits, exit accesses, or exit discharges shall be not less than on[e-third] the length of the maximum overall diagonal dimension of the building or area to be serve[d] (LSC Section 7.5.1.3.3)

8.8. Lighting and Essential Electrical Systems

The means of egress shall be illuminated and provided with emergency lighting [in] accor[dan]ce with LSC Section 38.2.9.1 in any building where any one of the following conditions exists:

1) The building is three or more stories in [illegible]
2) The occupancy is subject to 50 or m[ore] occupa[illegible] or [illegible] level of ex[it dis]charge.
3) The occupancy is subject to 300 [or] more total occup[illegible]

In addition to providing emergency lighting, [lu]minous egress path [marking]s are [requ]ired to be installed in accordance with IBC Section 403.5.5. The [egre]ss path marking syste[m pro]vides a [visib]le delineation of the path of travel along the designated exit acc[ess] and should be essentia[lly co]ntinuous [exce]pt as interrupted by doorways, hallways, corridors or other s[uch a]rchitectural features. Th[e eg]ress path [ma]rking system shall be installed in accordance with LSC Secti[on] [illegible]2.2.5.5.1 through Se[ction] 7.2.2.[illegible]5.11, which includes the following:

1) Exit Stair Treads
2) Exit Stair Landings
3) Exit Stair Handrails
4) Perimeter Demarcation Marking
5) Obstacles
6) Doors Serving Exit Enclosures
7) Door Hardware Marking
8) Emergency Exit Symbol
9) Uniformity
10) Materials
11) Exit Stair Illumination

Each ambulatory health care facili[ty sh]all be pro[vid]ed with [an e]ssential el[ectric]al system in accordance with NFPA 99, Heal[th Care] Facilities [Co]de, where genera[l anesth]esia or li[fe s]upport equipment is used unless otherwis[e] [illegible] any of th[e fo]llowing:

1) [Wh]ere battery [oper]ated equip[men]t is prov[ided] and acc[ept]able to the AHJ.
2) [Whe]re a facility [use]s life-suppo[rt e]quipment [for] emergency purposes.

9. VERTI[CAL O]PENINGS

Based on the two p[ossib]le conditions, piercing two levels or piercing 3 levels above the entrance lobby area, the following re[quire]ments apply:

1. Two levels are p[ierced] (Ground, Parking L1, and Parking L2 open to each other) and the upper levels are not op[en] to the communicating space.
   - a. Treating the opening as a shaft by separating the upper levels with 2-hour rated glazing is acceptable
   - b. The communicating space provisions of NFPA 101: 8.6.6 can be used to protect this space if all items are met (1) through (8). The requirements are shown in Figure 2.

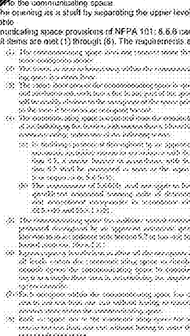

Figure 2 - NFPA 101:8.6.6

   - i. The requirements of 101:8.6.6 (1) through (7) are met based on the provided set of plans
   - ii. The building is provided with an automatic sprinkler system so (4) (a) permits the space to be separated from the remainder of the building by a smoke barrier in accordance with section 8.5

   - iii. (8) requires that each occupant not in the communicating space has access to not less than one exit without having to enter the communicating space
     1. As shown in Figure 3, the TLT, Workroom, Restrooms, and WC Storage rooms will need to have access to an exit without entering the communicating space

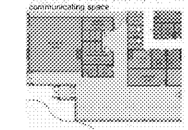

Figure 3 - Area of Communicating Space

2. Three levels pierced (Ground, Parking L1, Parking L2, and Parking L3 open to each other)
   - a. Atrium
     - i. The atrium provisions of NFPA 101: 8.6.7 would have to be met. An engineering analysis is required and could mitigate requirements for 1-hour separation of the atrium, a smoke control system, and openings into the atrium.
   - b. Same strategy (communicating space) of piercing two levels but continuing the rating of the floor (2-hour) to extend from the ceiling of the Parking L2 up to the ceiling of Parking L3.
   - c. Treating the opening as a shaft by separating the upper levels with 2-hour rated glazing is acceptable

A. APPENDIX A: ELEVATOR PROTECTION REQUIREMENTS FOR GRADY CASS

	All Elevators	Fire Service Elevators	Public Elevators		
	No Exceptions / Alternatives		Choose Method of Protection for Elevators		
Level	Primary/Alternate Elevator Recall Lobby for ALL Elevators	Fire Service Access Elevator Lobby	Method of Protection for Elevators as required by the High-Rise and other provisions in IBC		
Penthouse	N/A	Required	Elevator Lobby	Elevator Pressurization (****)	Opening Protectives (*****)
8	N/A	Required			
7	N/A	Required			
6	N/A	Required			
5	N/A	Required			
4	N/A	Required	Not Required (**)		Not Required
3	N/A	Required	Not Required (**)		Not Required
2	N/A	Required	Not Required (**)		Not Required
1	Not Required(**)	Required	Not Required (**)		Not Required
Ground	Required	Not Required (***)	Not Required (*)		Not Required

(*) Level of Exit Discharge IBC 3006.3 Ex1
(**) Not required because level is Open Parking garage
(***) Not required on level of exit discharge IBC 3007.7.2 Ex1
(****) Can be provided in lieu of Elevator Lobbies IBC 909.22
(*****) Can be provided based on approval by the AHJ

Figure A1: Elevator Protection Requirements for the Grady CASS Elevators

Grady

Project
THE CENTER FOR ADVANCED SURGICAL SERVICES (CASS)
80 GILMER STREET SE
ATLANTA, GA 30303

Prepared For
GRADY HEALTH SYSTEM
80 JESSE HILL DR. SE
ATLANTA, GA 30303

HOK

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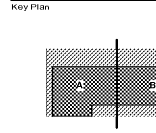

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No.	Description	Date
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