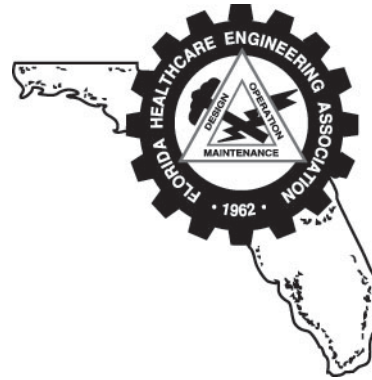


LIFE SAFETY 101

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Architecture
Interior Design
Planning
Sustainable Design

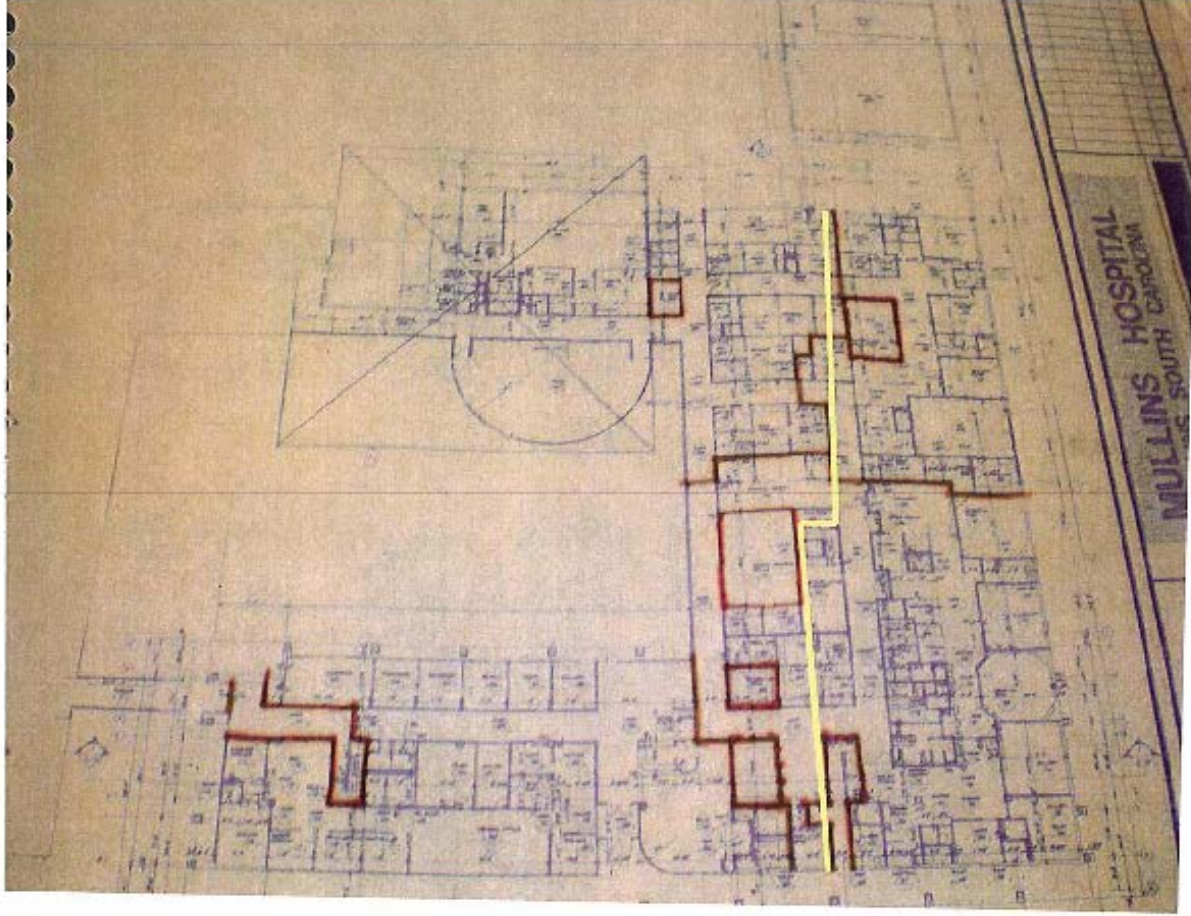




Life Safety Experience

TMPartners has performed over 100 life safety assessments for various hospitals and health systems around the nation. Our goal is to create usable life safety plans for use in regulatory agency surveys and to facilitate everyday maintenance and construction projects within each facility.





WALL LEGEND

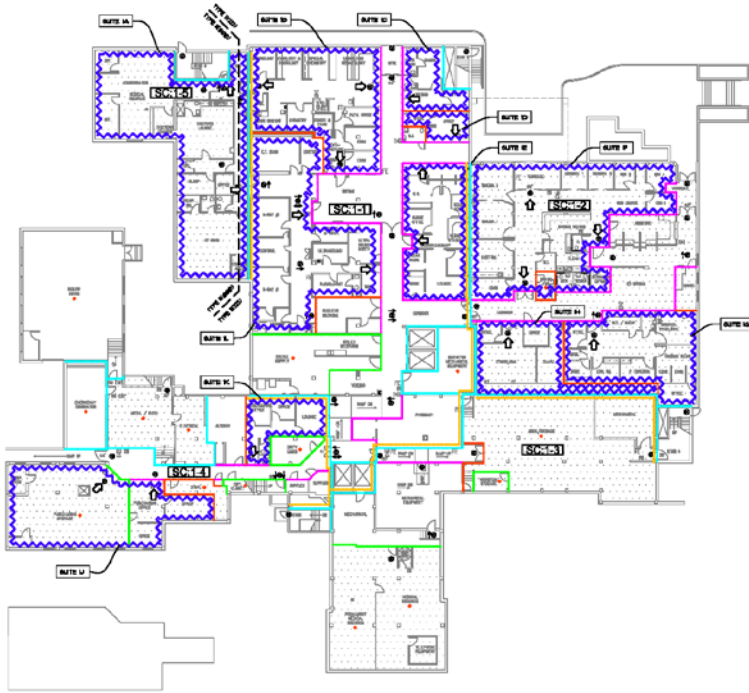
- EXISTING CONSTRUCTION**
- SUITE BOUNDARY
 - CORRIDOR WALL
 - SPACES PARTITION
 - 1 HOUR FIRE BARRIER
 - SPACES BARRIER
 - 2 HOUR FIRE BARRIER
 - HORIZONTAL AREA
 - HORIZONTAL DUCT
 - SUITE EXIT
 - RALLY APPROPRIATED AREA
 - AREAS UNDER THE CEILING TO PROHIBIT THE PASSAGE OF SMOKE

THIS LIFE SAFETY EVALUATION REPORT PROVIDES INFORMATION PERTAINING TO THE BUILDING'S LIFE SAFETY CODE ONLY. IT IS NOT A COMPLETE EVALUATION OF THE BUILDING'S SAFETY. THE INFORMATION PROVIDED IS FOR GENERAL INFORMATION ONLY AND DOES NOT INCLUDE ADJUSTED BUILDING CODE REQUIREMENTS.

NOTES: NON-APPROPRIATE SUITE PARTS OR JACKS SHOULD BE REMOVED FROM EXISTING SUITES THAT DO NOT MEET BUILDING CODE REQUIREMENTS. SUITE PARTS THAT DO NOT MEET BUILDING CODE REQUIREMENTS SHOULD BE REMOVED FROM EXISTING SUITES THAT DO NOT MEET BUILDING CODE REQUIREMENTS. THE INFORMATION PROVIDED IS FOR GENERAL INFORMATION ONLY AND DOES NOT INCLUDE ADJUSTED BUILDING CODE REQUIREMENTS.

SYMBOL LEGEND

⊙ EXIST BANK



FIRST FLOOR EXISTING HEALTHCARE OCCUPANCY

SUITE COMPARTMENT	FLOOR OR OCCUPANCY LEVEL	OCCUPANCY USE	APPROVED AUTOMATIC SMOKE SMOKE	TRAVEL DISTANCE TO EXIT	TRAVEL DISTANCE TO SAFE ROOM
SUITE M	SUITE M	HEALTHCARE	NON-APPROPRIATE	80'	80'
SUITE O	SUITE O	HEALTHCARE	FULLY APPROPRIATE	80'	80'
SUITE Q	SUITE Q	HEALTHCARE	FULLY APPROPRIATE	80'	80'
SUITE R	SUITE R	HEALTHCARE	FULLY APPROPRIATE	80'	80'
SUITE S	SUITE S	HEALTHCARE	FULLY APPROPRIATE	80'	80'
SUITE T	SUITE T	HEALTHCARE	FULLY APPROPRIATE	80'	80'

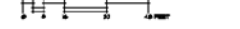
SUITE SCHEDULE

SUITE NUMBER	TOTAL SQ. FOOTAGE	AREA DESCRIPTION	# OF EXITS BY ACCESS DOORS	SAFE FIRE
SUITE M	500	PHYSICIAN	2	NON-APPROPRIATE
SUITE O	1000	LINEN	2	NON-APPROPRIATE
SUITE Q	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE R	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE S	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE T	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE U	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE V	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE W	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE X	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE Y	1000	PHYSICIAN	1	NON-APPROPRIATE
SUITE Z	1000	PHYSICIAN	1	NON-APPROPRIATE

NET GROSS SQUARE FOOTAGE

BY AREA TOTAL: 8000 SF	TOTAL: 8000 SF
------------------------	----------------

FIRST FLOOR LIFESAFETY PLAN



REVISIONS












NO.	DATE	DESCRIPTION

DRN BY: TP
 CK BY: DRU
 PROJ. NO.: A10114
 DATE:
FIRST FLOOR LIFESAFETY PLAN
A101



WALL LEGEND

EXISTING CONSTRUCTION

	SUITE BOUNDARY
	CORRIDOR WALL
	SMOKE PARTITION
	1 HOUR FIRE BARRIER
	SMOKE BARRIER
	2 HOUR FIRE BARRIER
	HAZARDOUS AREA
	HORIZONTAL EXIT
	SUITE EXIT
	FULLY SPRINKLERED AREAS
	AREAS USING THE CEILING TO RESIST THE PASSAGE OF SMOKE

FIRST FLOOR EXISTING HEALTHCARE OCCUPANCY

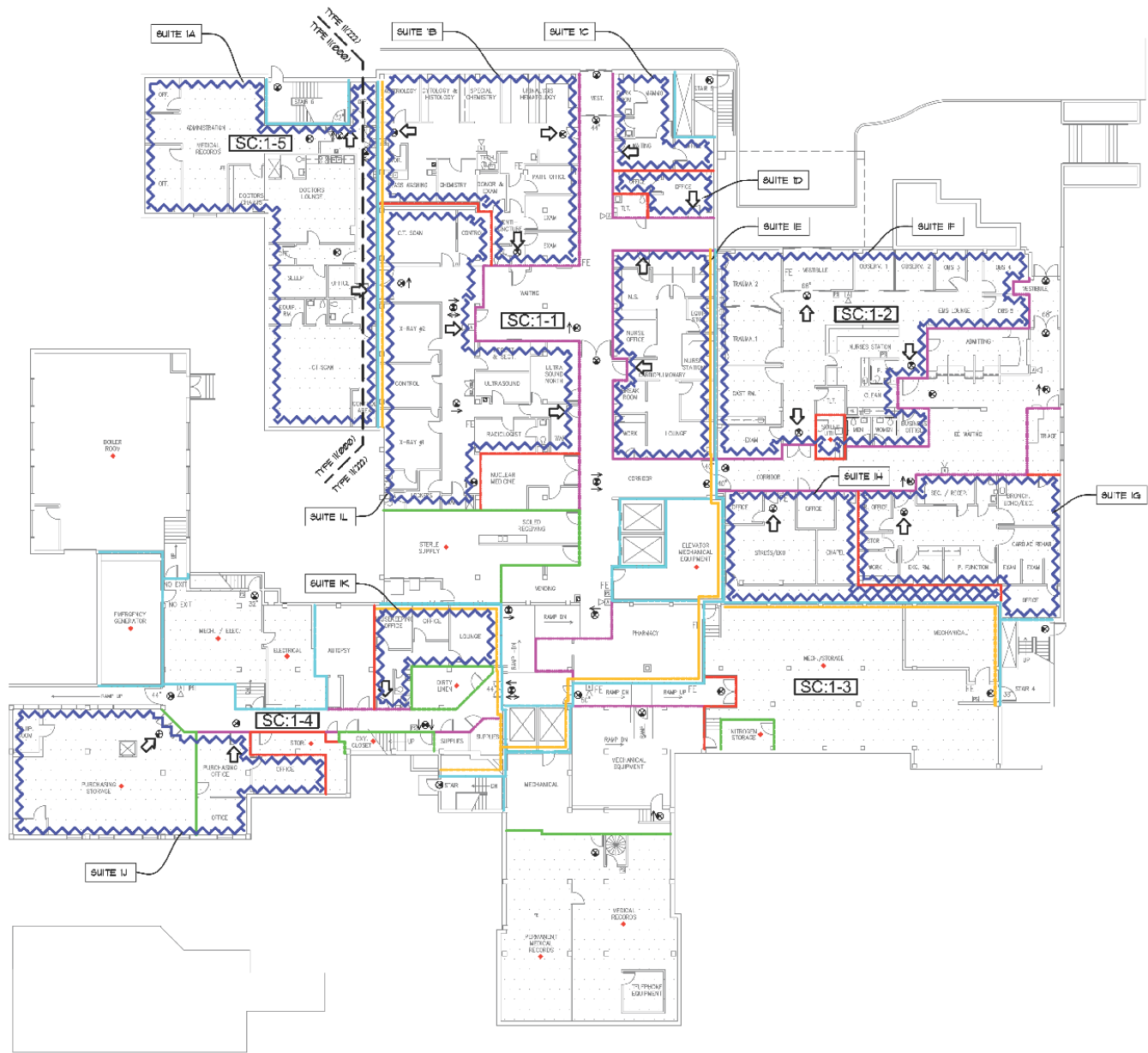
SMOKE COMPARTMENT	TOTAL SQ. FOOTAGE	MINIMUM OCCUPANT LOAD	OCCUPANCY USE	APPROVED AUTOAMTIC SPRINKLER SYSTEM	TRAVEL DISTANCE TO EXIT	TRAVEL DISTANCE TO SMOKE BARRIER
8C:1-1	13,303	55	TREATMENT	NON SPRINKLERED	140'	140'
8C:1-2	7,720	33	TREATMENT	FULLY SPRINKLERED	135'	110'
8C:1-3	6,662	67	BUSINESS	PARTIALLY SPRINKLERED	100'	131'
8C:1-4	5,570	56	BUSINESS	PARTIALLY SPRINKLERED	101'	130'
8C:1-5	3,265	13	TREATMENT	FULLY SPRINKLERED	112'	112'

SUITE SCHEDULE

SUITE NUMBER	TOTAL SQ. FOOTAGE	AREA DISCRPTION	# of REMOTE EXIT ACCESS DOORS	SUITE TYPE
SUITE 1A	3,151	IMAGING	2	NON-SLEEPING
SUITE 1B	1,961	LAB	2	NON-SLEEPING
SUITE 1C	440	IMAGING	1	NON-SLEEPING
SUITE 1D	233	ADMINISTRATION	1	NON-SLEEPING
SUITE 1E	1,355	CARDIO PULMONARY	1	NON-SLEEPING
SUITE 1F	2,970	EMERGENCY DEPARTMENT	2	NON-SLEEPING
SUITE 1G	1,457	CARDIAC REHAB	1	NON-SLEEPING
SUITE 1H	1,047	ADMINISTRATION	1	NON-SLEEPING
SUITE 1J	1,937	MATERIALS MGMT	1	NON-SLEEPING
SUITE 1K	500	HOUSE KEEPING	1	NON-SLEEPING
SUITE 1L	2,628	IMAGING	2	NON-SLEEPING

1ST FLOOR SQUARE FOOTAGE	
1ST FLOOR TOTAL SQ FT	36,256 SQ FT





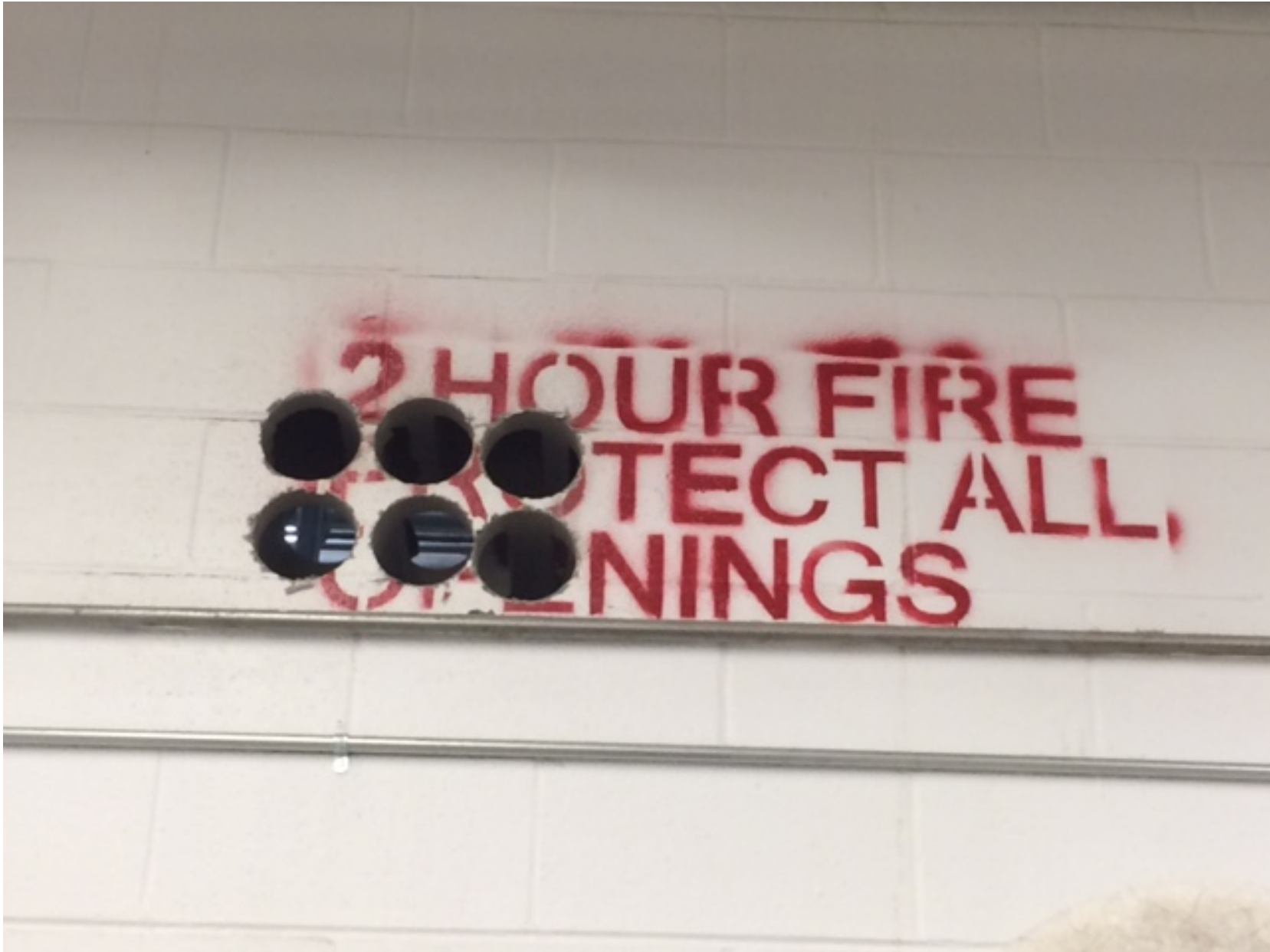
- **Occupancy Separation**

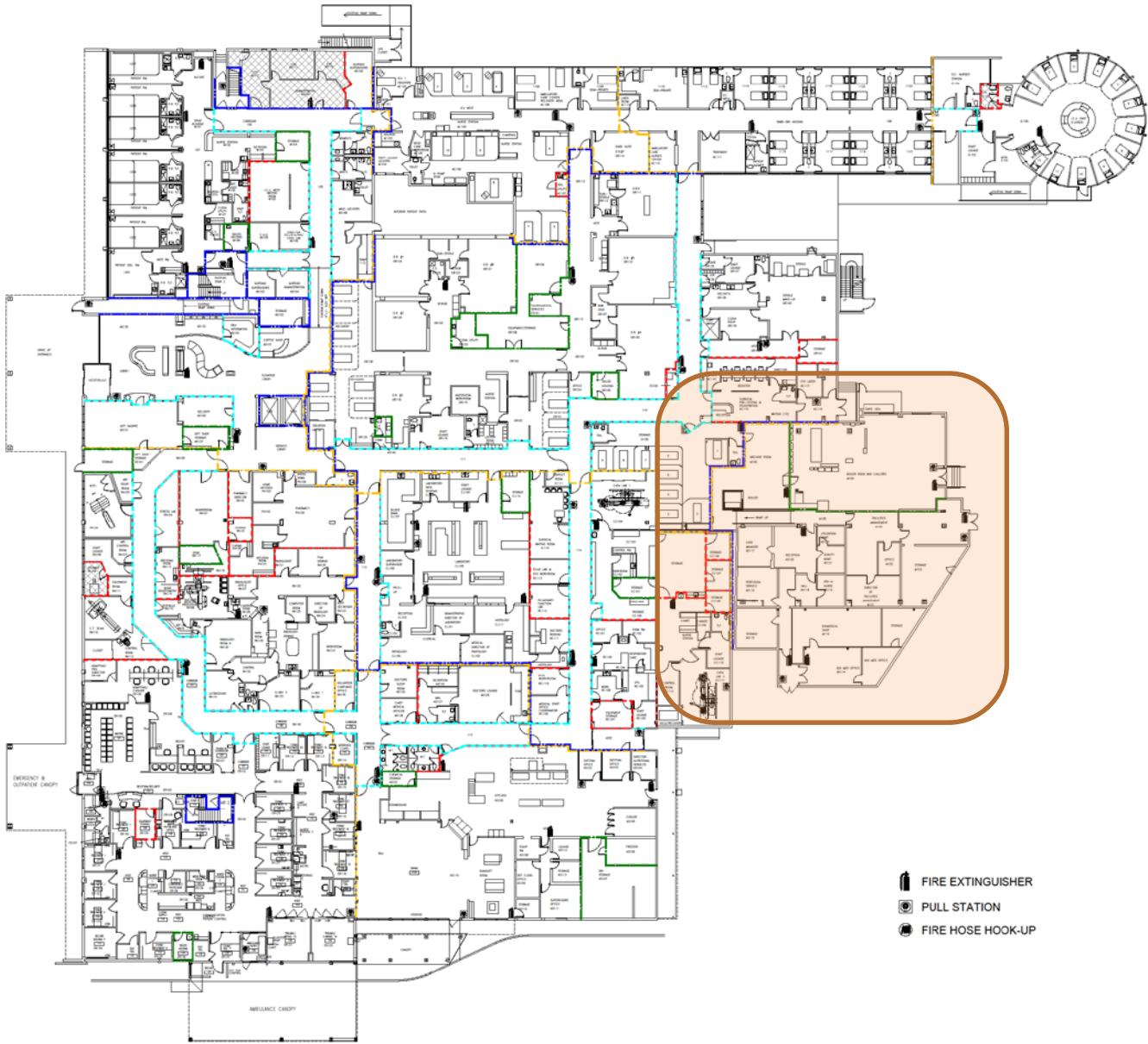
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

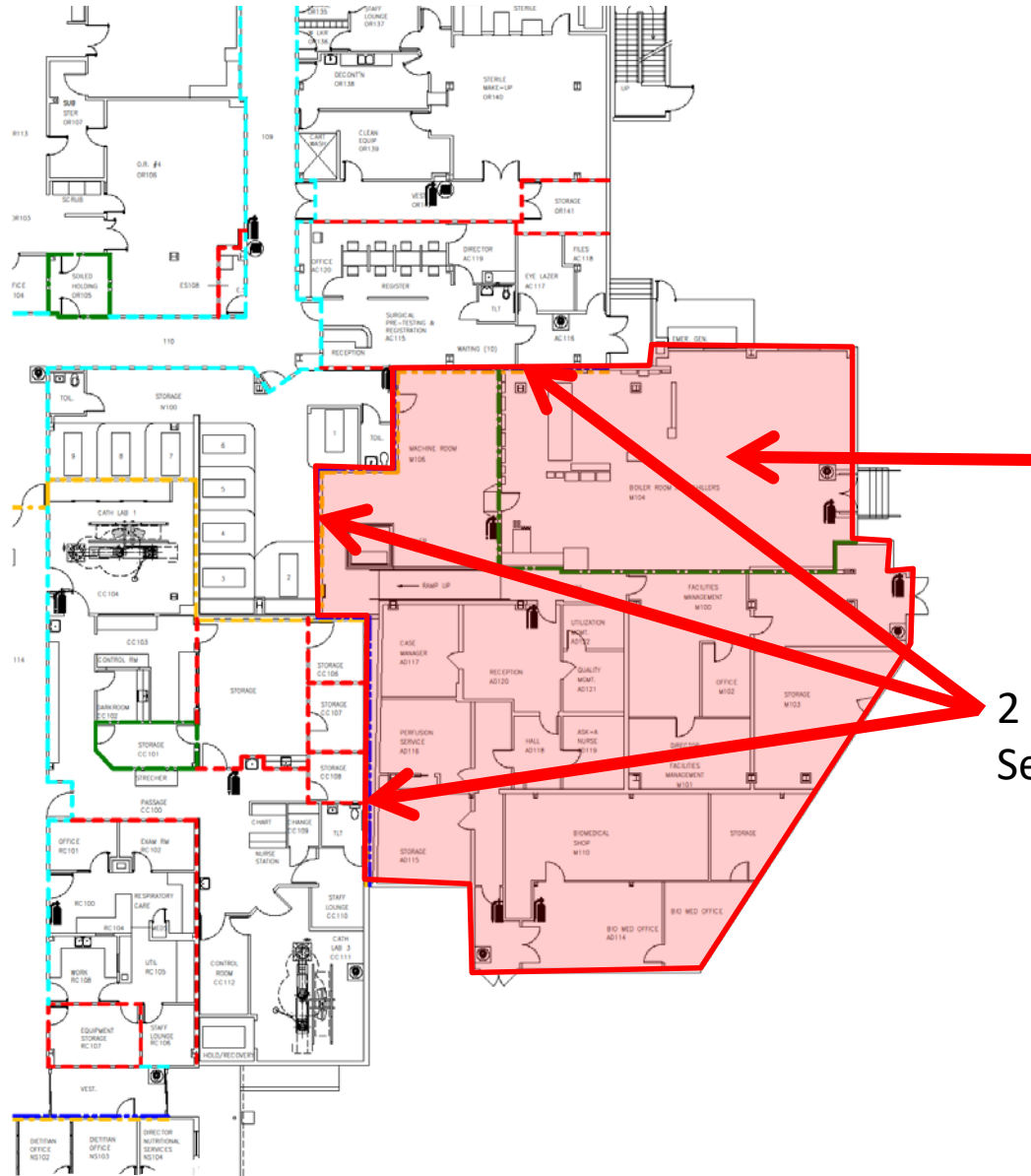
Occupancy Separation

- Must be separated with 2 hour fire rated construction









Business
Occupancy

2 Hour
Separation



- Occupancy Separation

- **Construction Type**

- Smoke Compartments

- Suites

- Locking Arrangements

- Hazardous Areas

- 50% Rule

- Chapter 43

Know your construction type and the extents

- You do not want any surprises during a construction project
- Must be separated with 2 hour fire rated construction





- Occupancy Separation

- **Construction Type**

- Smoke Compartments

- Suites

- Locking Arrangements

- Hazardous Areas

- 50% Rule

- Chapter 43

Know your construction type and the extents

- You do not want any surprises during a construction project
- Must be separated with 2 hour fire rated construction
- If you can talk intelligently about the construction type of your building, it is likely to buy you a lot of grace from inspectors



Table 18.1.6.1 Construction Type Limitations

Construction Type	Sprinklered [†]	Total Number of Stories of Building [‡]			
		1	2	3	≥4
I (442)	Yes	X	X	X	X
	No	NP	NP	NP	NP
I (332)	Yes	X	X	X	X
	No	NP	NP	NP	NP
II (222)	Yes	X	X	X	X
	No	NP	NP	NP	NP
II (111)	Yes	X	X	X	NP
	No	NP	NP	NP	NP
II (000)	Yes	X	NP	NP	NP
	No	NP	NP	NP	NP
III (211)	Yes	X	NP	NP	NP
	No	NP	NP	NP	NP
III (200)	Yes	NP	NP	NP	NP
	No	NP	NP	NP	NP
IV (2HH)	Yes	X	NP	NP	NP
	No	NP	NP	NP	NP
V (111)	Yes	X	NP	NP	NP
	No	NP	NP	NP	NP
V (000)	Yes	NP	NP	NP	NP
	No	NP	NP	NP	NP

X: Permitted. NP: Not permitted.

Table 19.1.6.1 Construction Type Limitations

Construction Type	Sprinklered [†]	Total Number of Stories of Building [‡]			
		1	2	3	≥4
I (442)	Yes	X	X	X	X
	No	X	X	X	X
I (332)	Yes	X	X	X	X
	No	X	X	X	X
II (222)	Yes	X	X	X	X
	No	X	X	X	X
II (111)	Yes	X	X	X	NP
	No	X	NP	NP	NP
II (000)	Yes	X	X	NP	NP
	No	NP	NP	NP	NP
III (211)	Yes	X	X	NP	NP
	No	NP	NP	NP	NP
III (200)	Yes	X	NP	NP	NP
	No	NP	NP	NP	NP
IV (2HH)	Yes	X	X	NP	NP
	No	NP	NP	NP	NP
V (111)	Yes	X	X	NP	NP
	No	NP	NP	NP	NP
V (000)	Yes	X	NP	NP	NP
	No	NP	NP	NP	NP

X: Permitted. NP: Not permitted.



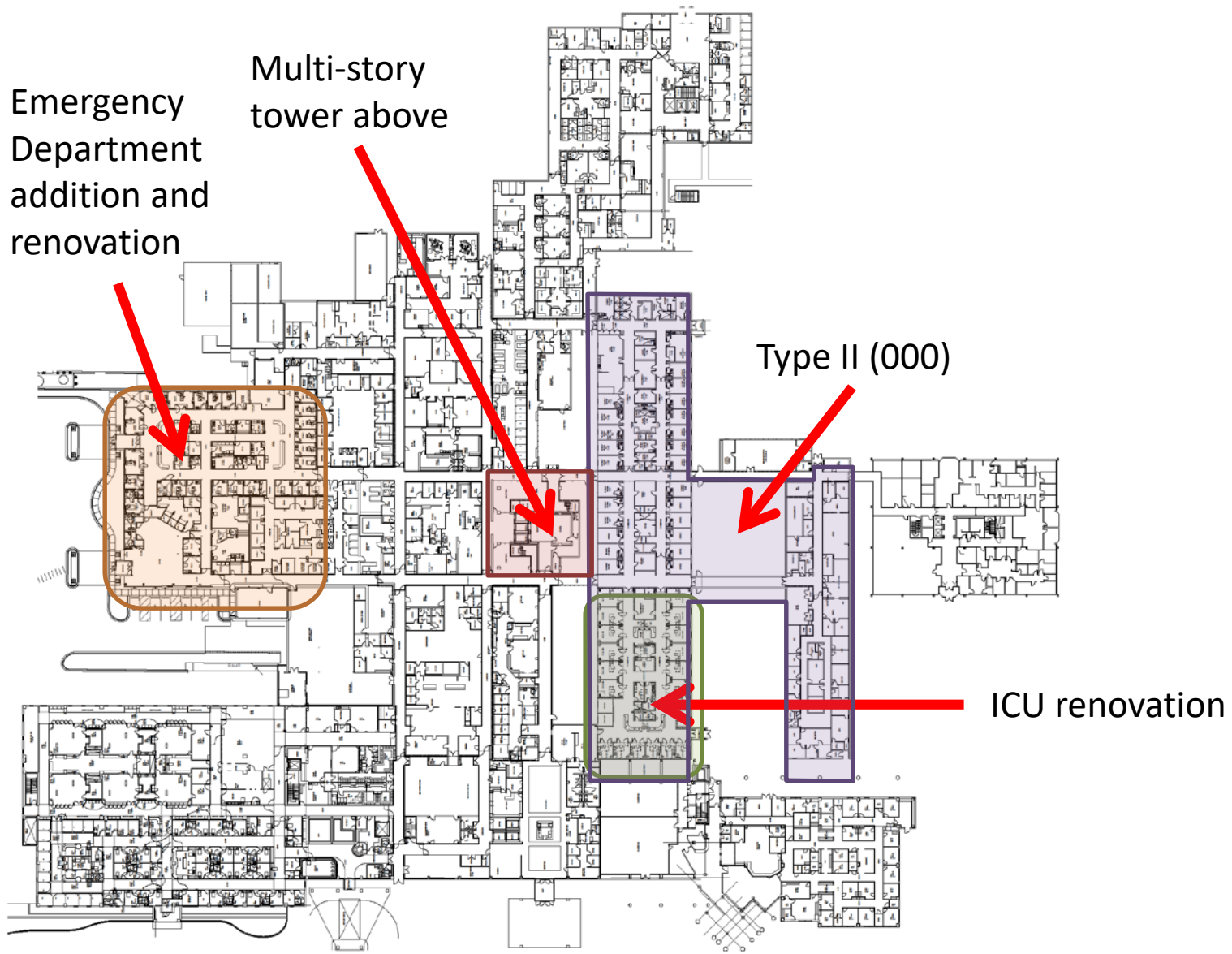
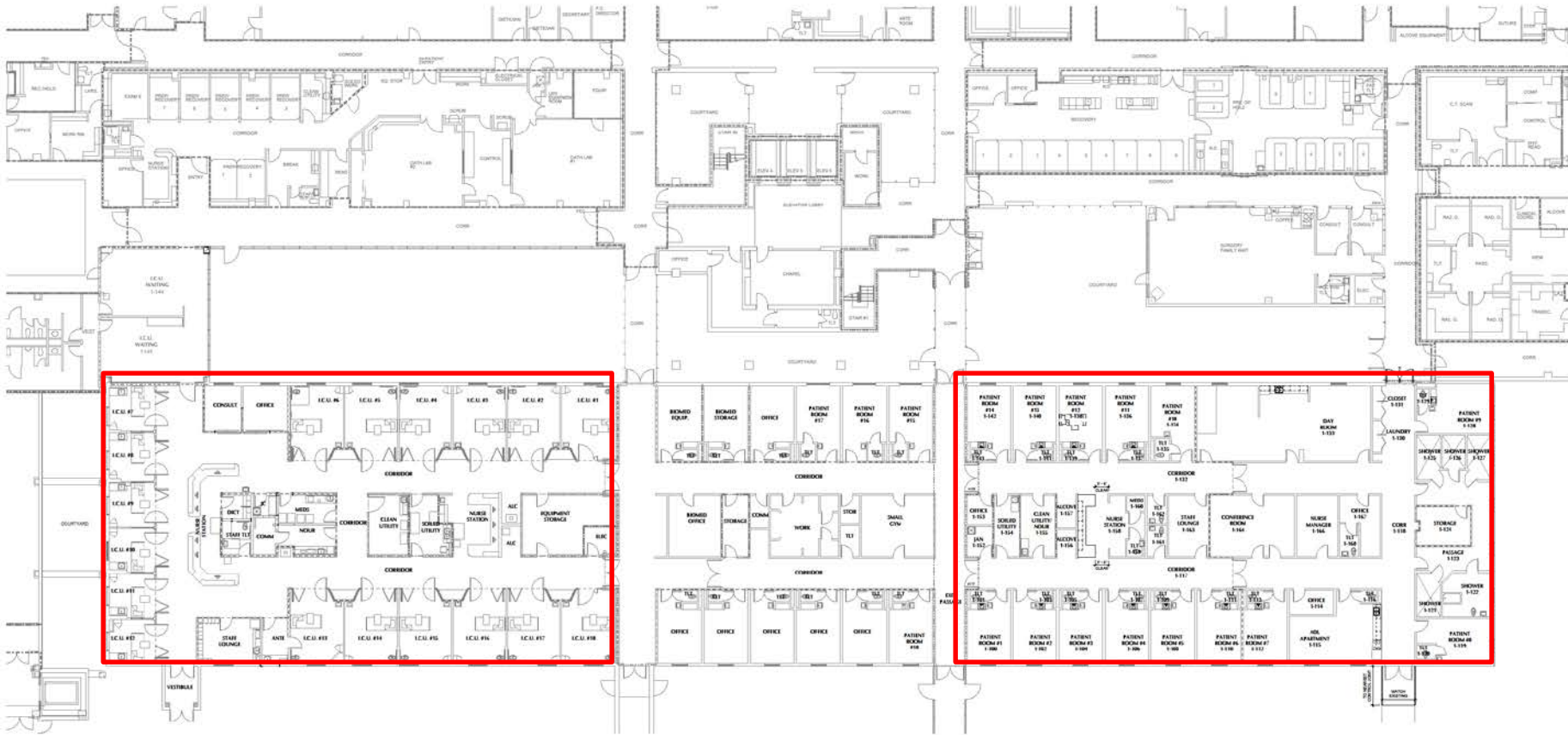


Table 19.1.6.1 Construction Type Limitations

Construction Type	Sprinklered [†]	Total Number of Stories of Building [†]			
		1	2	3	≥4
I (442)	Yes	X	X	X	X
	No	X	X	X	X
I (332)	Yes	X	X	X	X
	No	X	X	X	X
II (222)	Yes	X	X	X	X
	No	X	X	X	X
II (111)	Yes	X	X	X	NP
	No	X	NP	NP	NP
II (000)	Yes	X	X	NP	NP
	No	NP	NP	NP	NP
III (211)	Yes	X	X	NP	NP
	No	NP	NP	NP	NP
III (200)	Yes	X	NP	NP	NP
	No	NP	NP	NP	NP
IV (2HH)	Yes	X	X	NP	NP
	No	NP	NP	NP	NP
V (111)	Yes	X	X	NP	NP
	No	NP	NP	NP	NP
V (000)	Yes	X	NP	NP	NP
	No	NP	NP	NP	NP

X: Permitted. NP: Not permitted.





- Occupancy Separation
- Construction Type
- **Smoke Compartments**
- Suites
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

Subdivision of Building Spaces

- Each floor for patient care must be divided into at least 2 smoke compartments
 - Must be less than 22,500 sf
 - Try to have as few as possible

Smoke Barriers

- Must be constructed with a 1 hour rating
- Must be continuous (horizontally and vertically)
- Doors must be 20 minutes (or substantial doors – solid core doors 1-3/4 inches)
- Doors are NOT required to positive latch
- Doors MUST be self-closing
- Doors must have a view lite

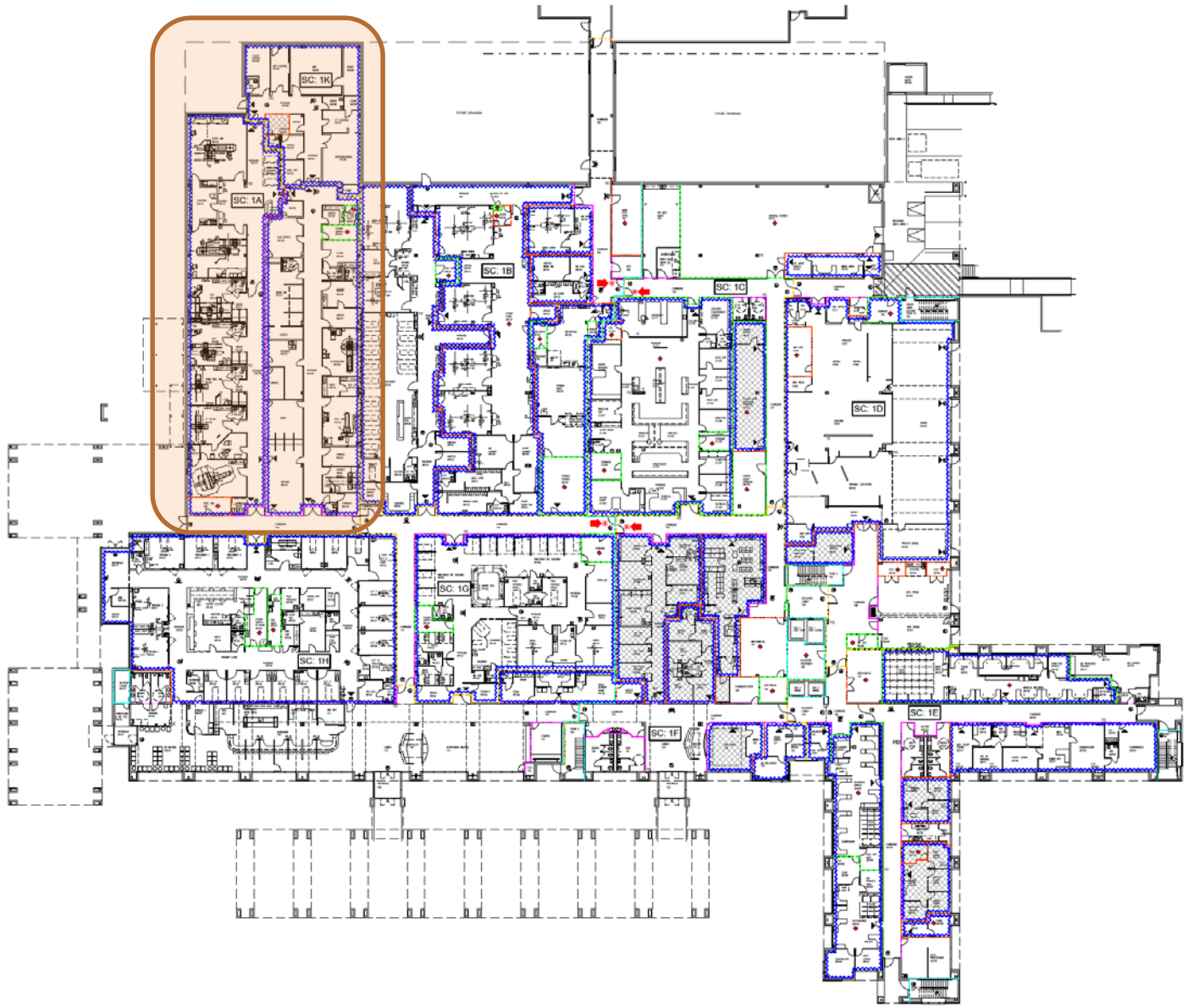


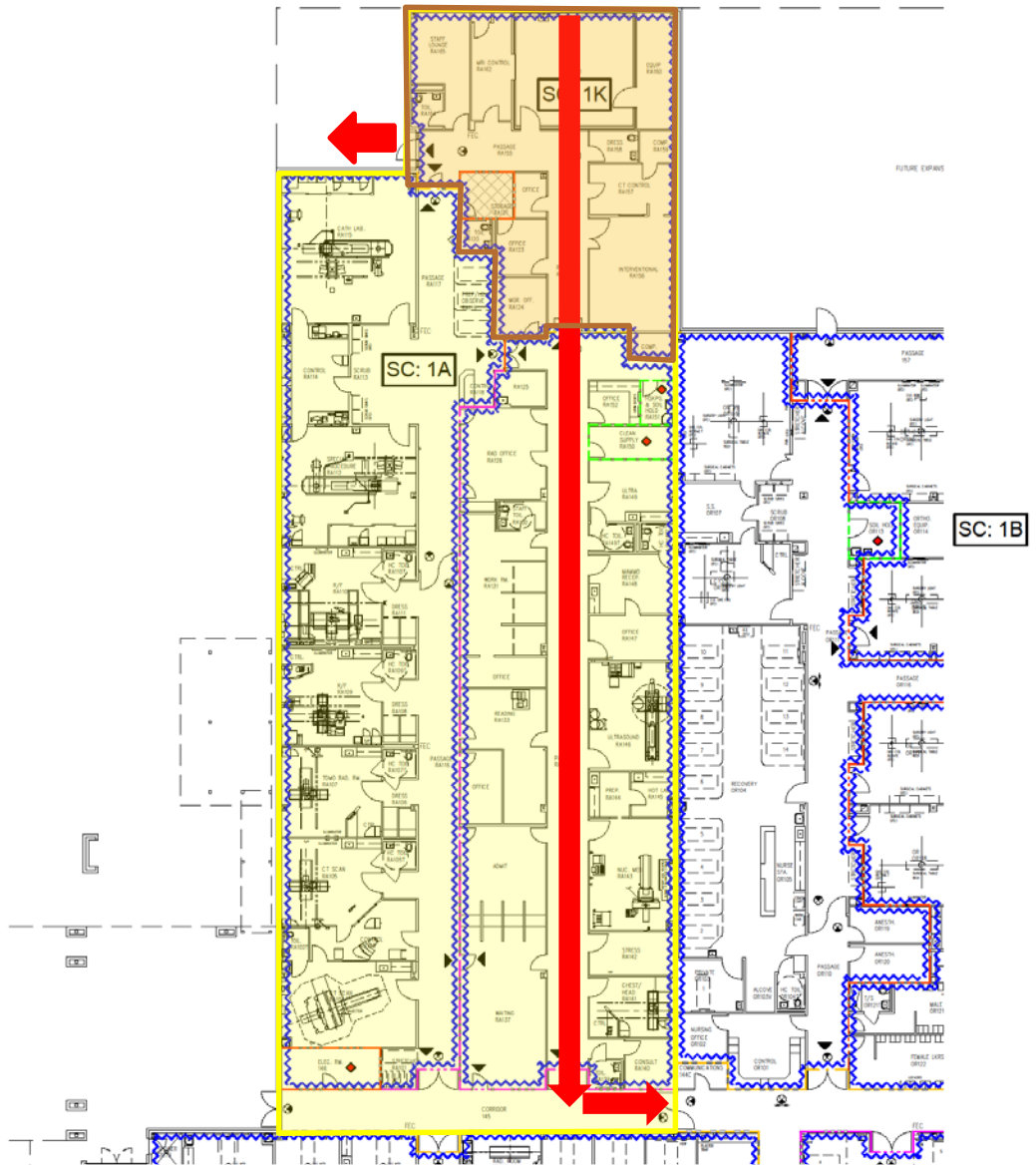
- Occupancy Separation
- Construction Type
- **Smoke Compartments**
- Suites
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- Hazardous Areas
- 50% Rule
- Chapter 43

Smoke Compartment Travel Distances

- Maximum travel distance of 200 ft
- Outlying compartments and associated travel distances are often overlooked







- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

ALL normally occupied rooms must have an exit access door directly to an exit access corridor (unless they are located in a suite).

Smoke-resistive partitions

- Entire perimeter must be constructed as smoke-resistive partitions/ corridor walls





- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
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ALL normally occupied rooms must have an exit access door directly to an exit access corridor (unless they are located in a suite).

Smoke-resistive partitions

- Entire perimeter must be constructed as smoke-resistive partitions/ corridor walls

Door latching

- All doors in perimeter walls must positive latch

Dead-end corridors

- Dead end corridors do not apply within a suite



- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

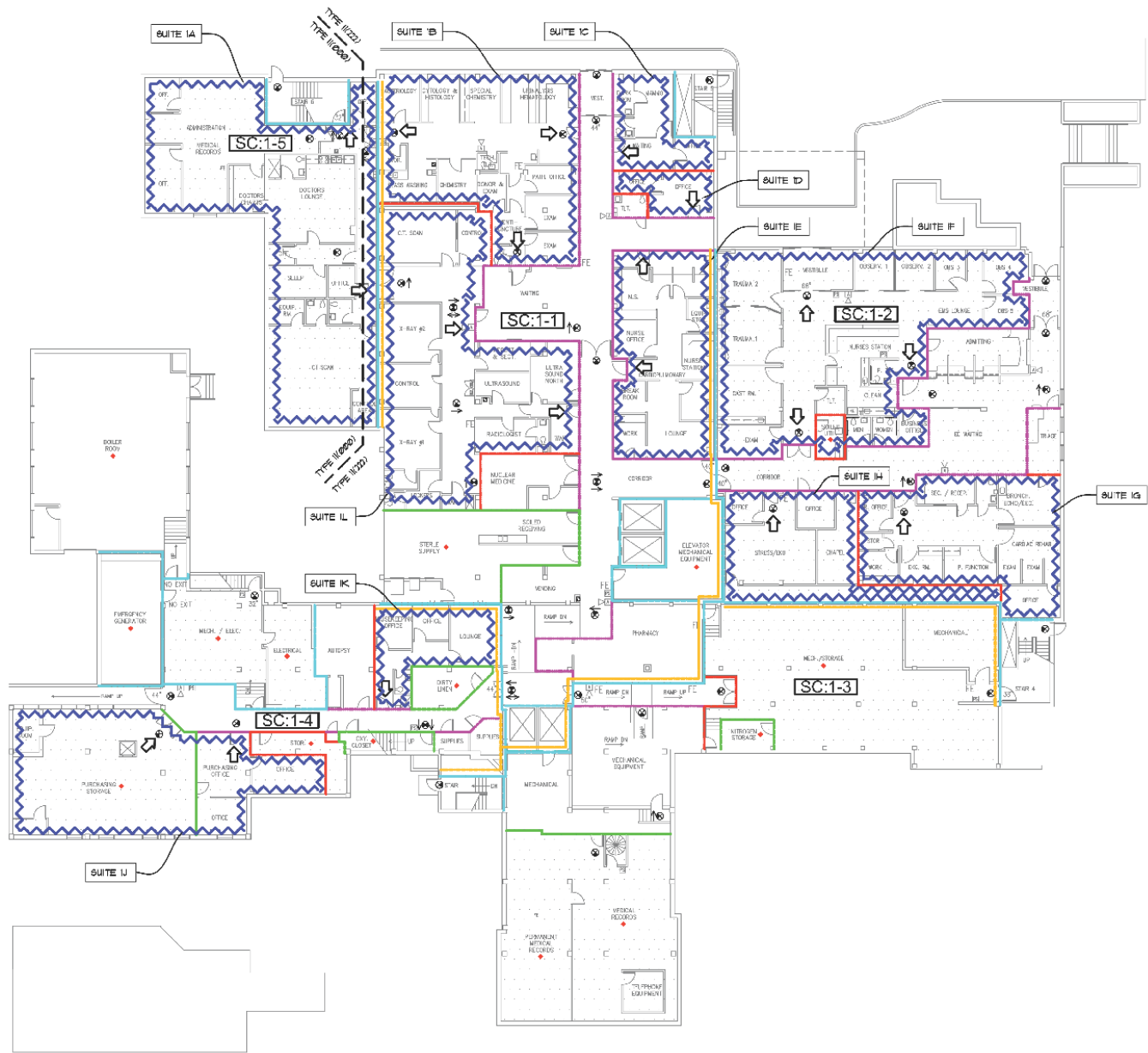
Intervening Rooms

- Intervening room requirements for suites have been removed from the 2012 NFPA 101

Suite Exiting

- All suites are required to have at least **one** exit directly into an exit access corridor
- If a suite is large enough to require 2 exits, one of the required exits is allowed to be directly into another suite
- The second required exit can also be directly into a stair, exit passage or exit directly to the outside
- Travel distance to suite exit is limited to 100 feet



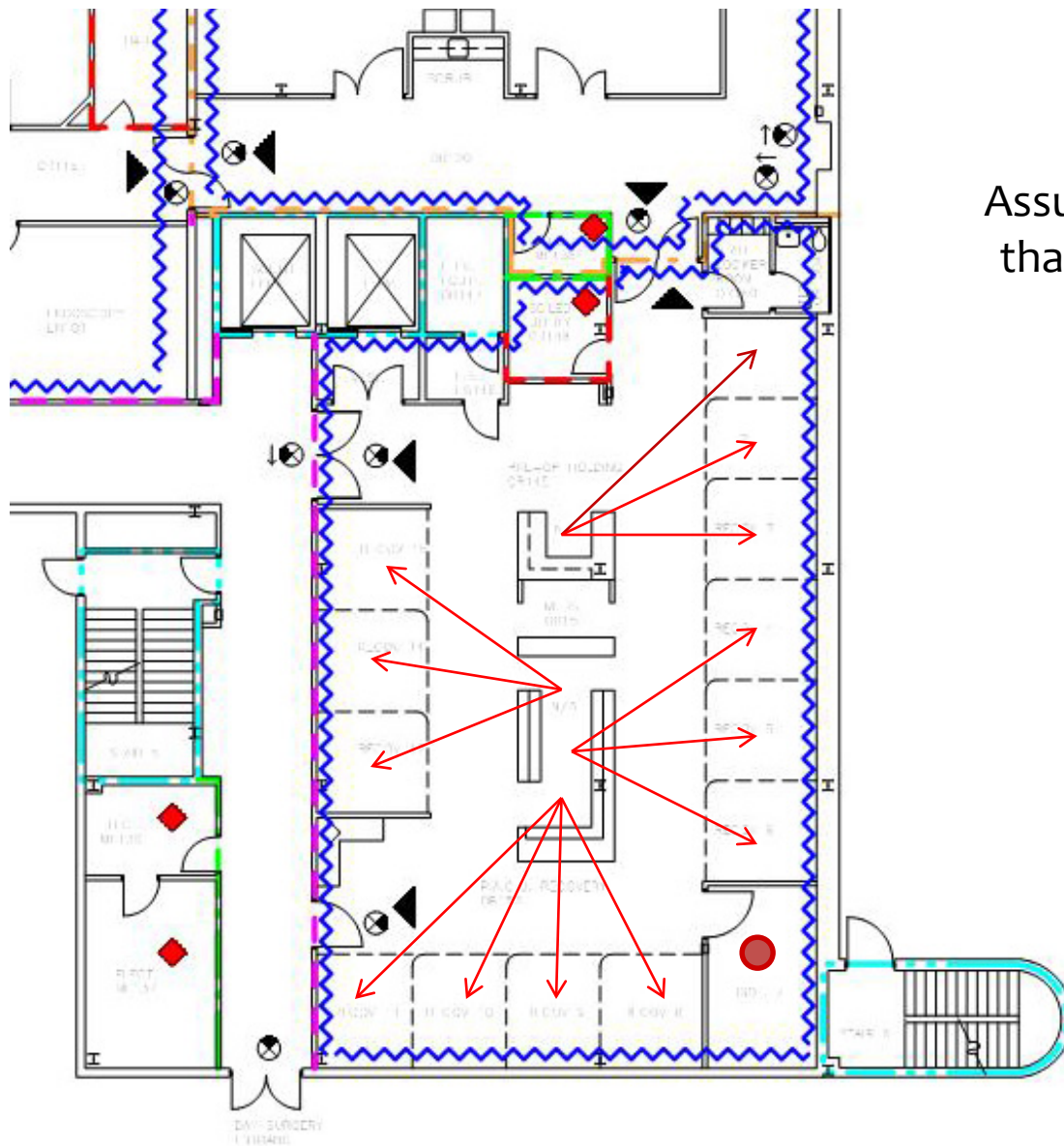


- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

Suite Provisions – New Health Care

- New Health Care is required to be fully sprinklered with quick response heads
- Sleeping Suites can be sized up to 7,500 square feet if:
 - All sleeping rooms have direct supervision from a normally attended location within the suite
- OR**
- Any sleeping room without direct supervision must have smoke detection





Assume suite is less than 7,500 square feet

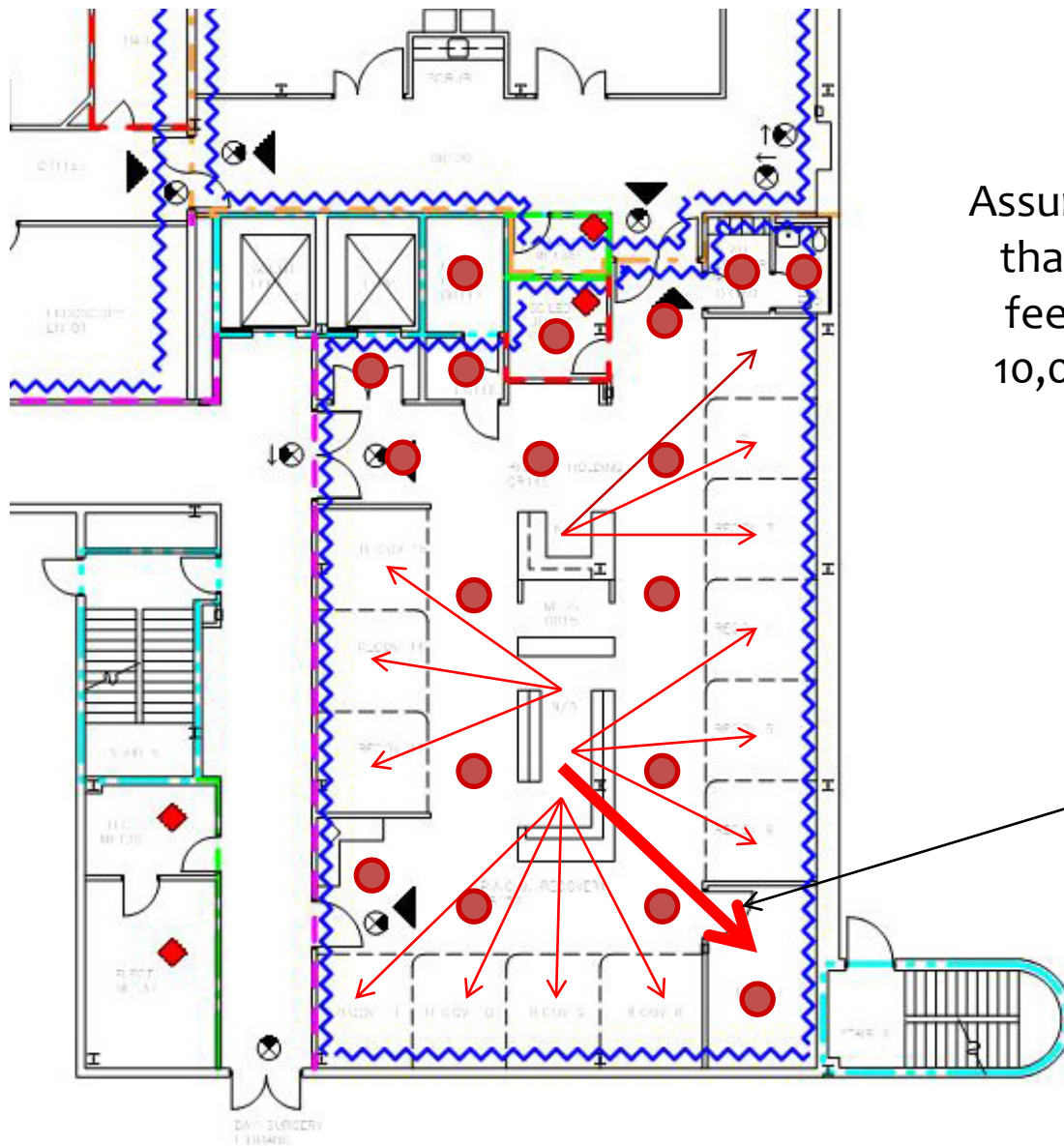


- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

Suite Provisions – New Health Care

- Sleeping suites up to 10,000 square feet are allowed if:
 - **ALL** sleeping rooms have direct supervision from a normally attended location within the suite
 - AND**
 - Total (complete) smoke detection in **ALL** spaces





Assume suite is more than 7,500 square feet but less than 10,000 square feet

This door will have to be replaced with a half glass door to allow direct supervision



- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

Suite Provisions – Existing Health Care

- Sleeping Suites can be sized up to 7,500 square feet if:
 - The entire smoke compartment is sprinklered and has total (complete) smoke detection
- OR**
- The entire smoke compartment is sprinklered with quick response heads



- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

Suite Provisions – Existing Health Care

- Sleeping Suites can be sized up to 10,000 square feet if:
 - **ALL** sleeping rooms have direct supervision from a normally attended location within the suite
 - AND**
 - Total (complete) smoke detection in **ALL** spaces
 - AND**
 - Sprinklered with quick response heads



- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

Non-Sleeping Suites

- Limited to 10,000 square feet



- Occupancy Separation
- Construction Type
- Smoke Compartments
- **Suites**
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- Chapter 43

Non-Patient-Care Suites

- This is a new type of suite category and is defined as a suite within a health care occupancy that is not intended for sleeping or treating patients
- There is not a size limitation
- Egress provisions are to be designed according to the primary use and occupancy of the space



- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- **Locking Arrangements**
- Hazardous Areas
- 50% Rule
- Chapter 43

Egress Doors

- If there is an exit sign above it, it is in the path of egress
- Locking egress doors
- Delayed egress
 - The limitation that prohibited more than one delayed egress lock in any egress path has been removed
- Clinical needs
 - Rapid removal of occupants
 - Staff must carry keys at all times

Non-egress doors





- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- **Hazardous Areas**
- 50% Rule
- Chapter 43

Hazardous Areas

- Indicated in tables 18.3.2.1 and 18.4.3.5



Table 18.3.2.1 Hazardous Area Protection

Hazardous Area Description	Protection/ Separation [†]
Boiler and fuel-fired heater rooms	1 hour
Central/bulk laundries larger than 100 ft ² (9.3 m ²)	1 hour
Laboratories employing flammable or combustible materials in quantities less than those that would be considered a severe hazard	See 18.3.6.3.11.
Laboratories that use hazardous materials that would be classified as a severe hazard in accordance with NFPA 99, <i>Standard for Health Care Facilities</i>	1 hour
Paint shops employing hazardous substances and materials in quantities less than those that would be classified as a severe hazard	1 hour
Physical plant maintenance shops	1 hour
Rooms with soiled linen in volume exceeding 64 gal (242 L)	1 hour
Storage rooms larger than 50 ft ² (4.6 m ²) but not exceeding 100 ft ² (9.3 m ²) and storing combustible material	See 18.3.6.3.11.
Storage rooms larger than 100 ft ² (9.3 m ²) and storing combustible material	1 hour
Rooms with collected trash in volume exceeding 64 gal (242 L)	1 hour

[†]Minimum fire resistance rating.

Table 18.4.3.5 Hazardous Area Protection (Nonsprinklered Buildings)

Hazardous Area Description	Protection [†] /Separation
Boiler and fuel-fired heater rooms	1 hour and sprinklers
Central/bulk laundries larger than 100 ft ² (9.3 m ²)	1 hour and sprinklers
Laboratories employing flammable or combustible materials in quantities less than those that would be considered a severe hazard	1 hour or sprinklers (Also see 18.4.3.7.2.2.)
Laboratories that use hazardous materials that would be classified as a severe hazard in accordance with NFPA 99, <i>Standard for Health Care Facilities</i>	1 hour and sprinklers
Paint shops employing hazardous substances and materials in quantities less than those that would be classified as a severe hazard	1 hour and sprinklers
Physical plant maintenance shops	1 hour and sprinklers
Soiled linen rooms	1 hour and sprinklers
Storage rooms larger than 50 ft ² (4.6 m ²) but not exceeding 100 ft ² (9.3 m ²) and storing combustible material	1 hour or sprinklers (Also see 18.4.3.7.2.2.)
Storage rooms larger than 100 ft ² (9.3 m ²) and storing combustible material	1 hour and sprinklers
Trash collection rooms	1 hour and sprinklers

[†]Minimum fire resistance rating.



- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements

- **Hazardous Areas**

- 50% Rule
- Chapter 43

Hazardous Areas

- New construction must be protected by a one-hour fire barrier with very few exceptions
- Existing construction (approved for construction before July 5, 2016) is allowed to be smoke-resistive partitions if the room is sprinklered

Doors

- Doors must be 45 minute rated
- Doors must be self closing
- Doors are NOT required to positive latch, unless they are also a corridor door

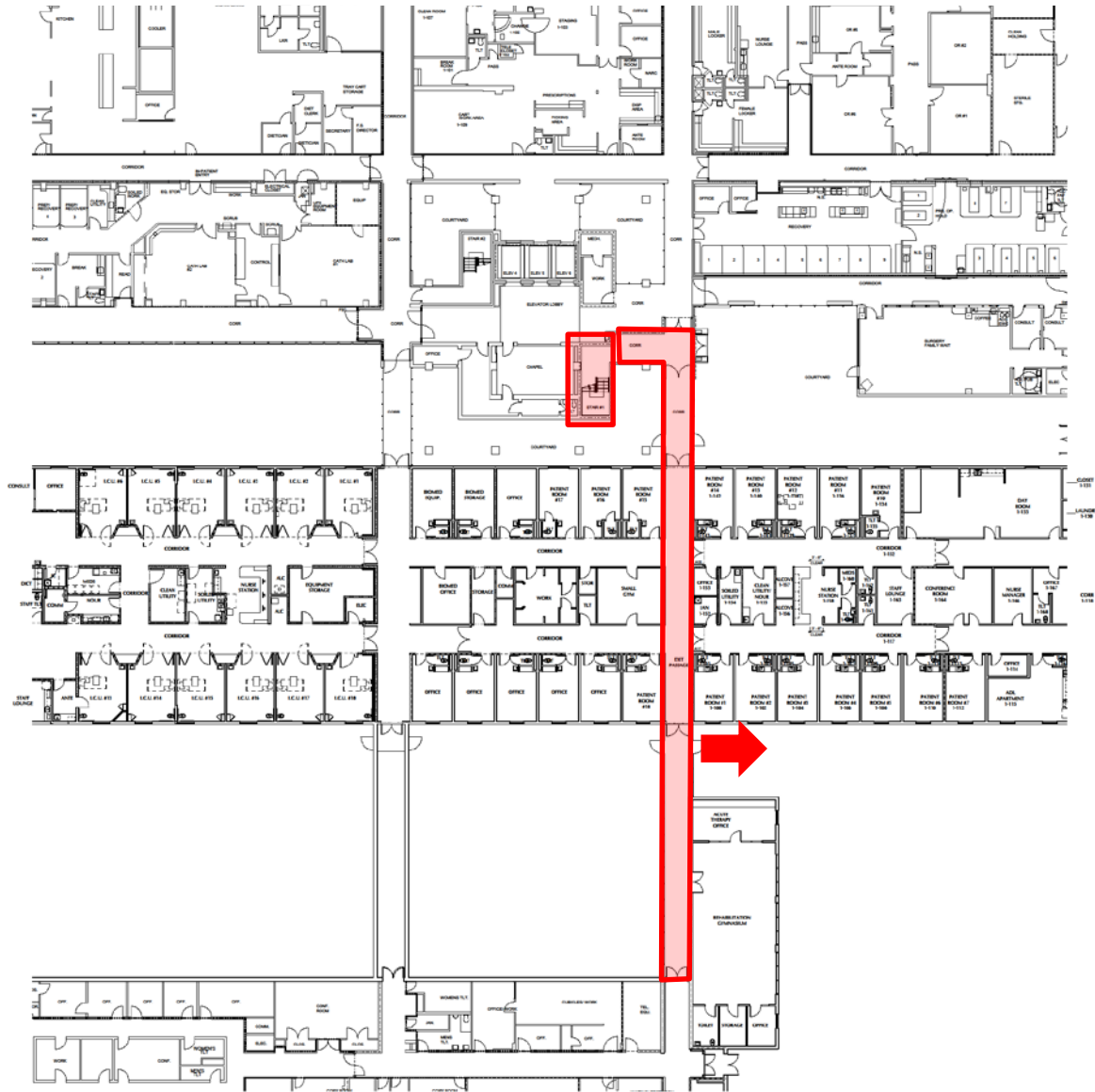




- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- Hazardous Areas
- **50% Rule**
- Chapter 43

- Most large hospitals have at least one stair that does not exit directly to the outside.
- This is handled in two ways:
 - An exit passageway





- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- Hazardous Areas
- **50% Rule**
- Chapter 43

- Most large hospitals have at least one stair that does not exit directly to the outside.

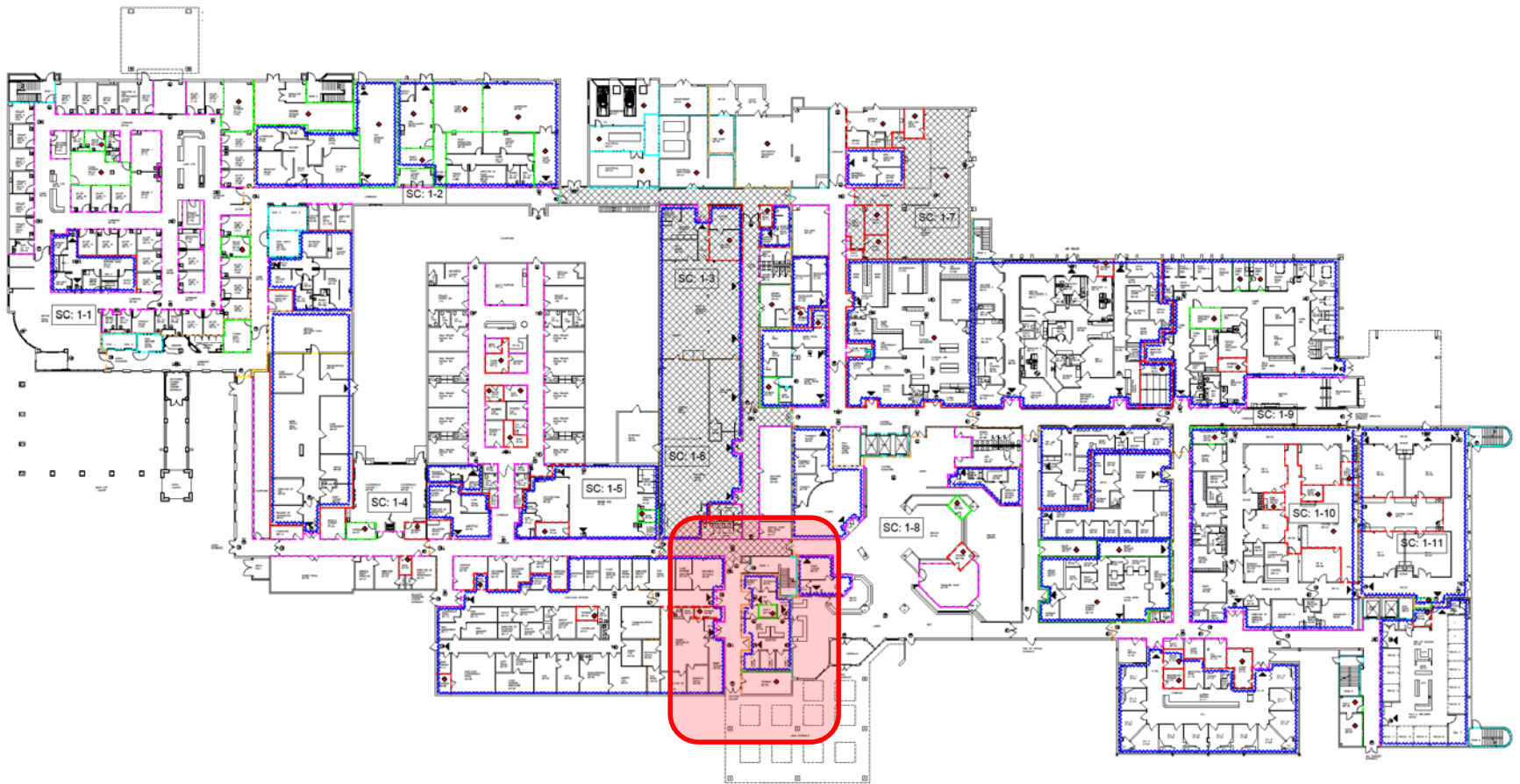
- This is handled in two ways:

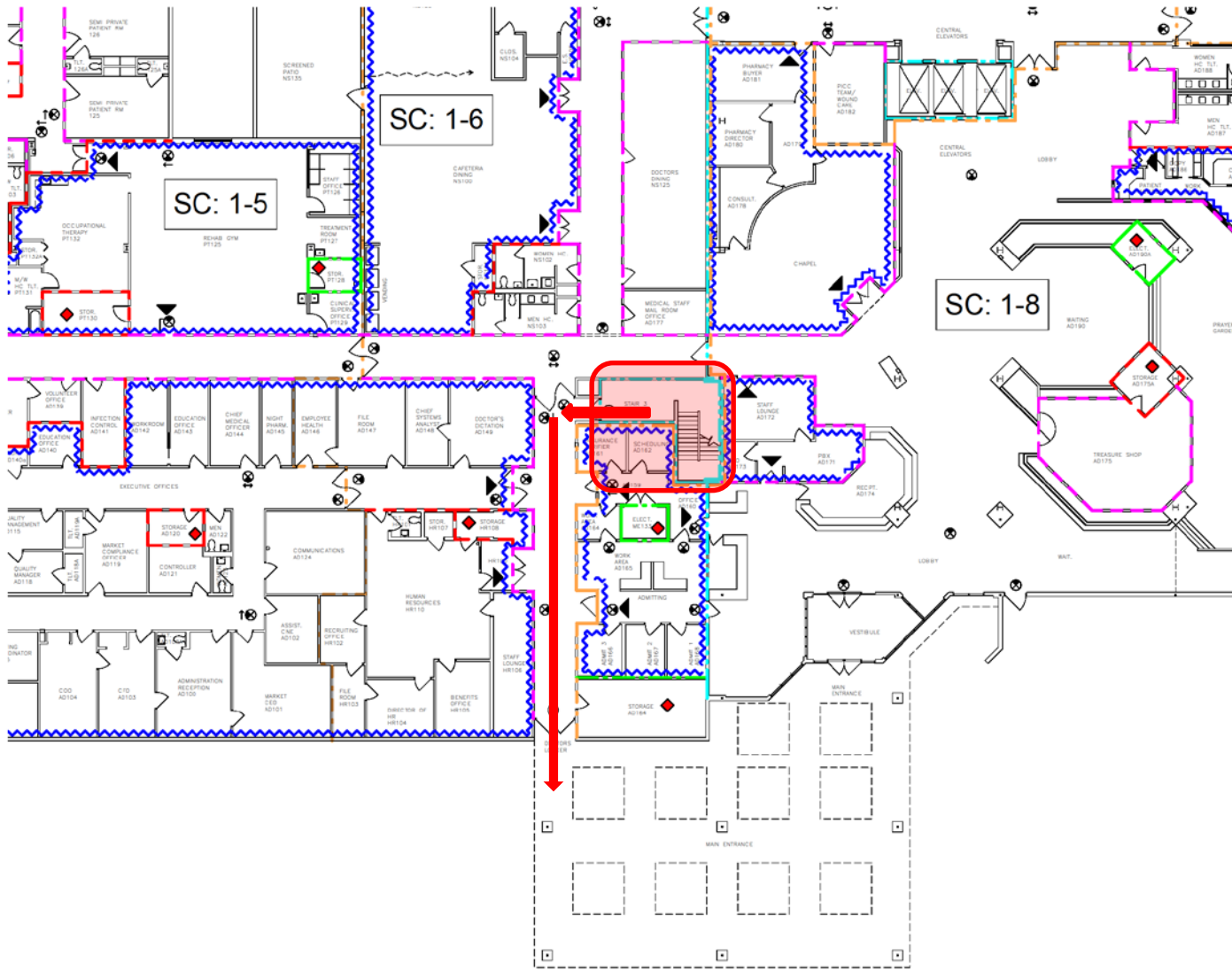
- An exit passageway
- 50% rule

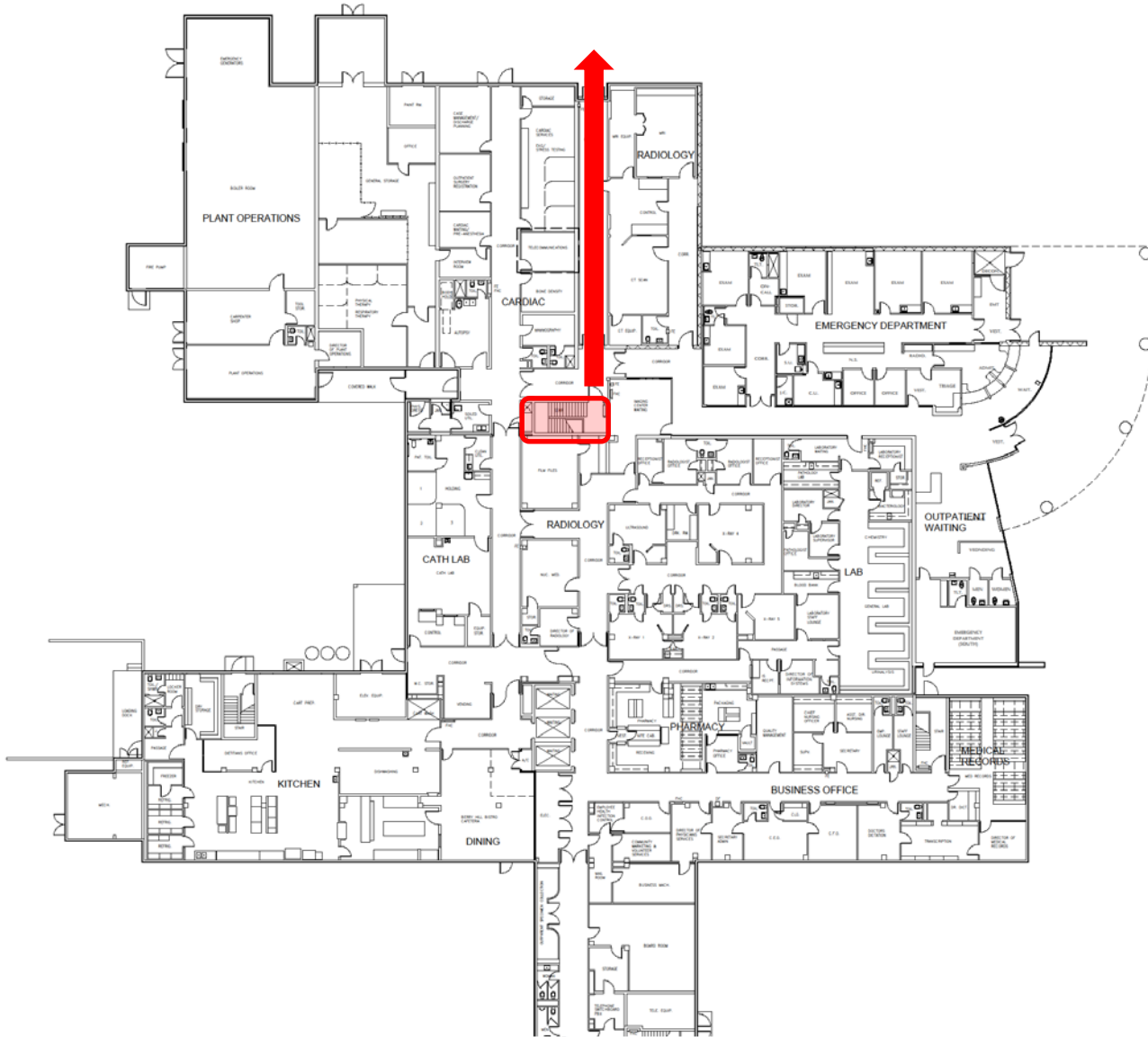
7.7.2 Not more than 50 percent of the required number of exits, and not more than 50 percent of the required egress capacity, shall be permitted to discharge through areas on any level of discharge, except as otherwise permitted by one of the following:

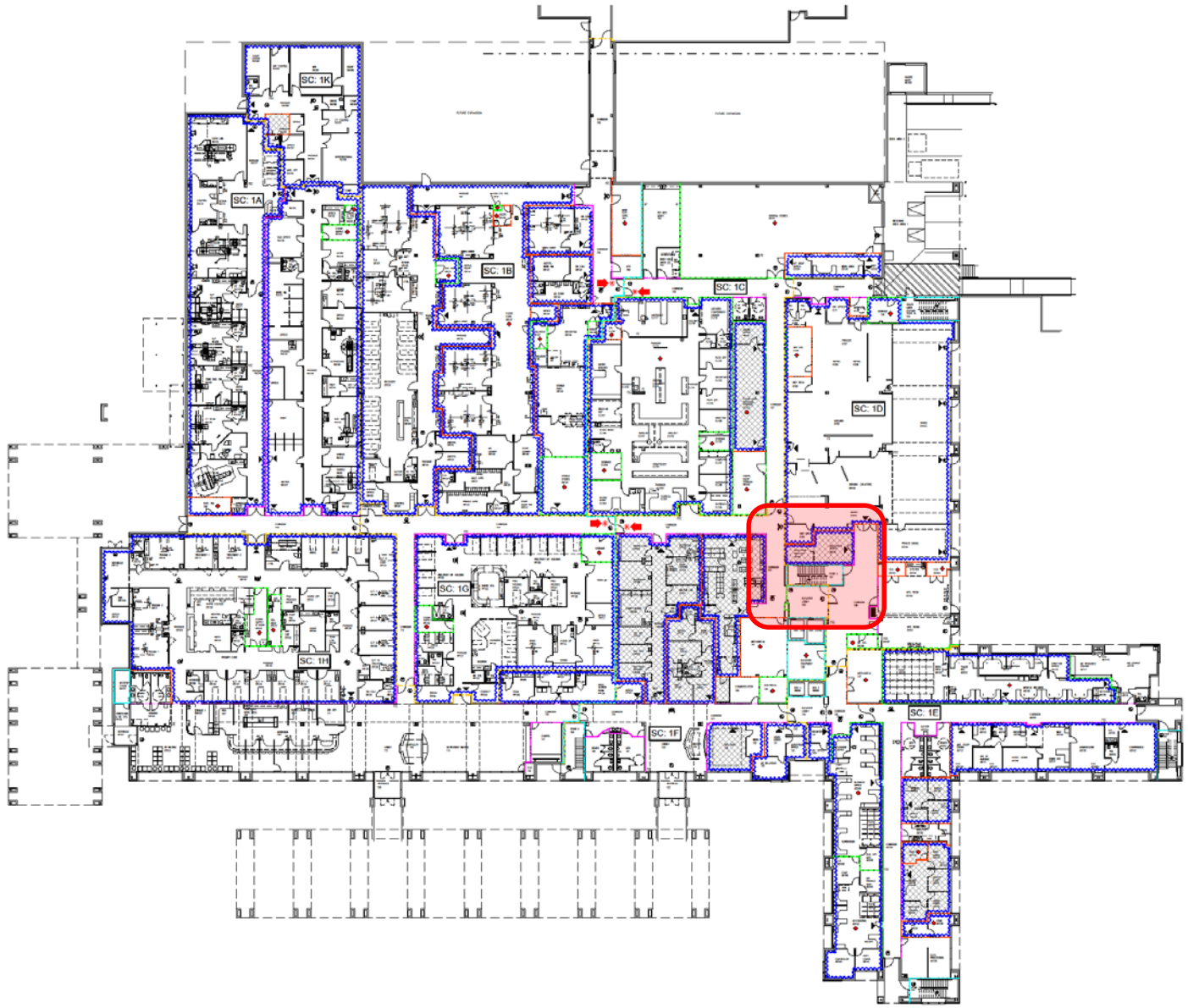
- (1) Such discharge shall lead to a free and unobstructed way to the exterior of the building, and such way is readily visible and identifiable from the point of discharge from the exit.
- (2) The level of discharge shall be protected throughout by an approved, automatic sprinkler system in accordance with Section 9.7, or the portion of the level of discharge used for this purpose shall be protected by an approved, automatic sprinkler system in accordance with Section 9.7 and shall be separated from the nonsprinklered portion of the floor by a fire resistance rating meeting the requirements for the enclosure of exits (*see 7.1.3.2.1*).
- (3) The entire area on the level of discharge shall be separated from areas below by construction having a fire resistance rating not less than that required for the exit enclosure.

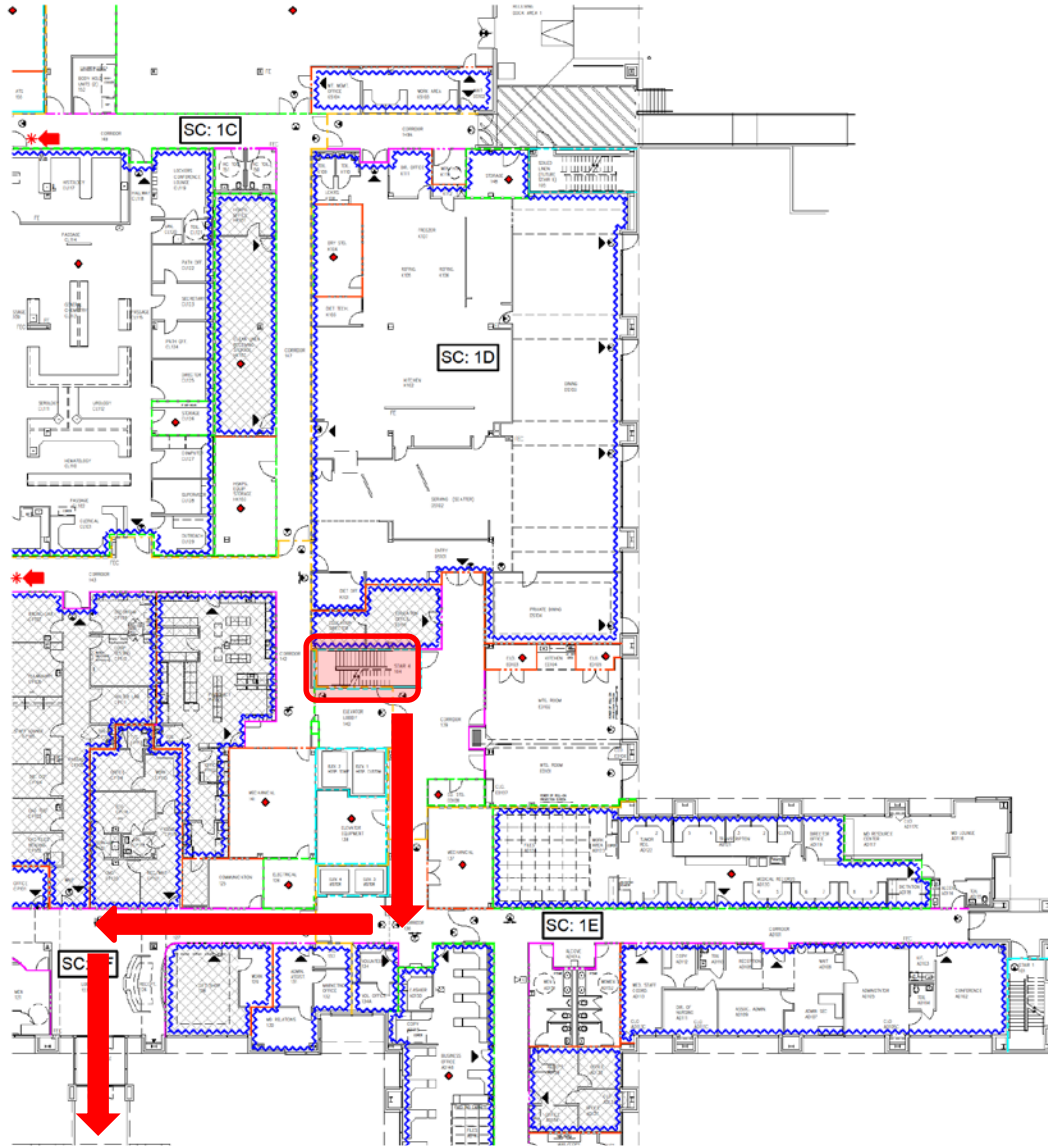












- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- **Chapter 43**

Chapter 43: Building Rehabilitation

- This chapter covers the requirements for work that happens in your building that does not necessarily fit solely into Chapter 18 or Chapter 19

Repair

- The patching, painting or restoration of materials, elements, equipment or fixtures for the purpose of maintaining such materials, elements, equipment or fixtures in good or sound condition
 - Repair work cannot make the building any less compliant with the code or any other previously approved arrangements



- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- **Chapter 43**

Renovation

- The replacement in kind, strengthening, or upgrading of building elements, materials, equipment, or fixtures, that does not result in a reconfiguration of the building spaces within
 - All renovation work must meet the requirements of Existing Construction
 - Renovation work cannot make the building any less compliant with the code or any other previously approved arrangements



- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- **Chapter 43**

Modification

- The reconfiguration of any space; the addition, relocation, or elimination of any door or window; the addition or elimination of load-bearing elements; the reconfiguration or extension of any system; or the installation of any additional equipment
 - Newly constructed elements, components and systems must meet the requirements of New Construction



- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- **Chapter 43**

Change of Use

- A change in the purpose or level of activity within a structure that involves a change in application of the requirements of the Code
 - Change of use that does not require a change of occupancy classification must meet the requirements of Existing Chapters



- Occupancy Separation
- Construction Type
- Smoke Compartments
- Suites
- Locking Arrangements
- Hazardous Areas
- 50% Rule
- **Chapter 43**

Change of Use

- If the change of use creates a hazardous area, then the hazardous area must meet the requirements of New Construction **except:**
 - In a fully sprinklered, existing healthcare occupancy, a new hazardous area up to 250 square feet can be created as long as perimeter walls are smoke partitions, the door is self closing and the door does not have any plates extending more than 48 inches above the floor

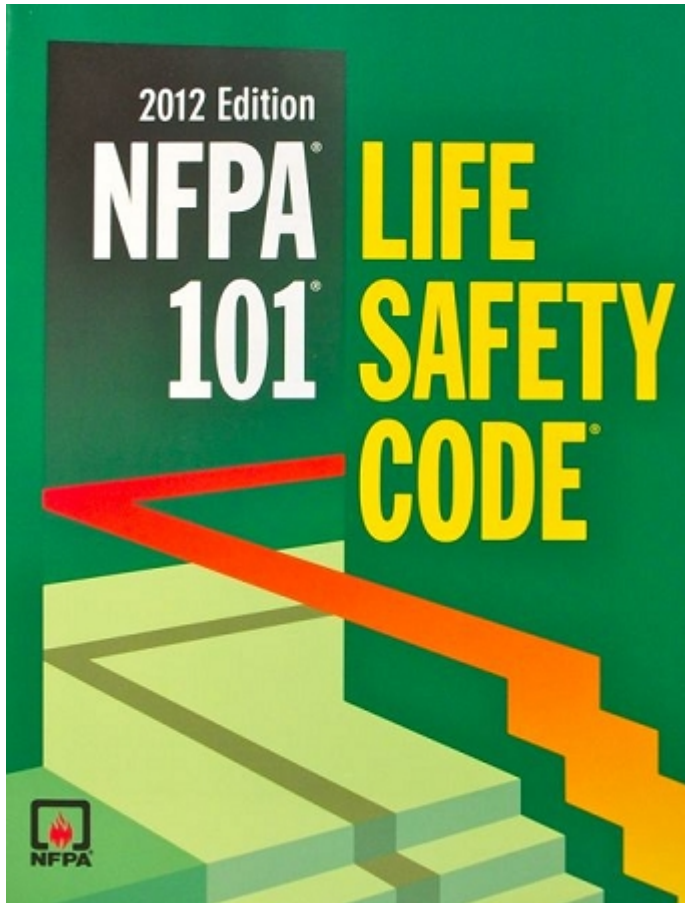


- Occupancy Separation
- Construction Type
- Smoke Compartments
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- **Chapter 43**

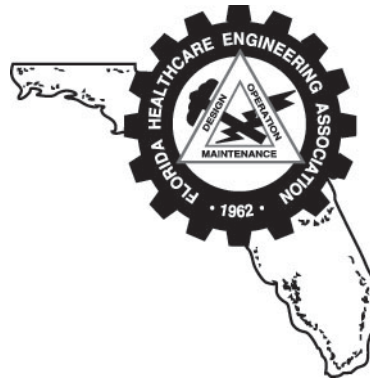
Addition

- An increase in the building area, aggregate floor area, building height, or number of stories of a structure
 - The new area must meet the requirements of New Construction, existing areas must meet the requirements of Existing Chapters
 - The addition cannot create or extend any fire safety or means of egress non-conformity
 - The addition cannot extend the height of the existing building beyond the provisions allowed for New Construction





QUESTIONS??



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