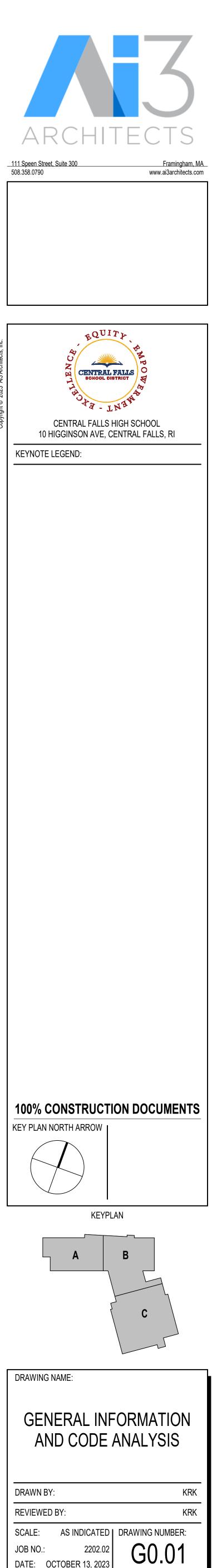
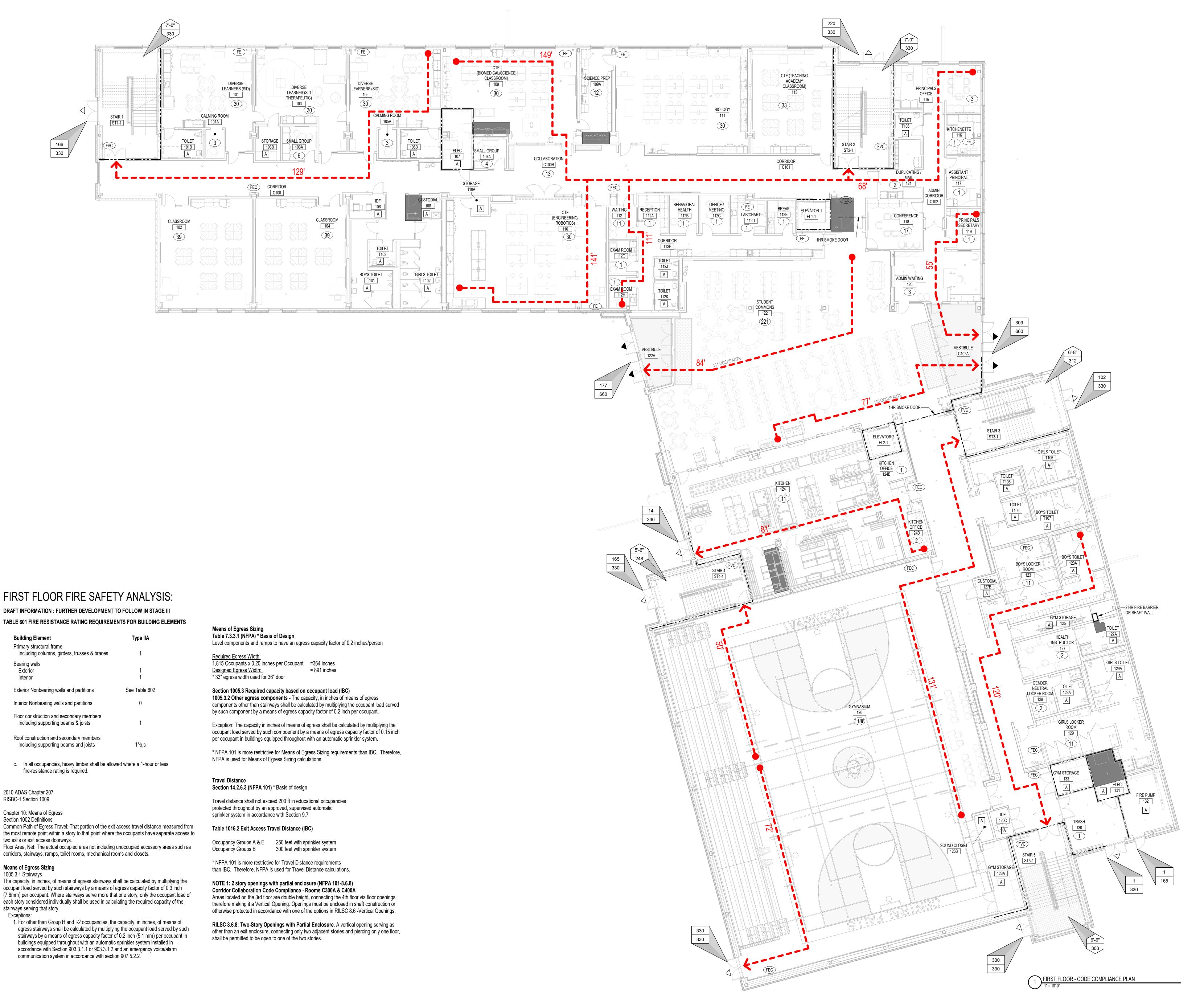


		persons persons	B. FIRE PROTECTION SYST	<u>EM</u>	
					such rooms or areas are protected with an approved automatic fire detection system and notification in accordance with section 907 that will ly because it is damp, of fire-resistance-rated construction or contains electrical equipment.
ded for ease of ref ument.	erence to the Constructio	<u>n</u>	(4) Machine rooms of traction/drum hydroulid	c elevators, elevator hoistway, or elevator pits. Such elevat	to reachine rooms, hoistways, or pits shall be constructed to meet the fire resistance rating specified in Table 601 and otherwise as required by nachine rooms, hoistways, or pits, such rating must be provided unless such ratings are governed by other sections of the code.
			C. ELECTRICAL ROOM FIRI	<u>E RATING</u>	
			Section 8.15.11 - Electrical Equipment		is are met:
			 No combustible storage is permitted to be Main Electrical Room: (All 4 conditions are met). 	Automatic water sprinkler system not required.	
nsidered a seperate occupancy.			Secondary Electrical Rooms: Non rated construct	e met). Automatic water sprinkler system not required. tion. Automatic water sprinkler system was provided.	
t rather an extension of the Group cl on of the building. Otherwise, the wo	luding auditoriums, cafeterias, gymnasiums and libra assification. It is worth mentioning, for these assemb uld be classified into the appropriate Group A occup ssembly space requirements specified for accessibi	ly functions ancy based	D. <u>MEANS OF EGRESS</u> Chapter 10: Means of Egress		
d therefore all space within the buildi	ng would fall within Group E occupancy. This will be	carried	Occupancy Loads: (IBC 2015) - Table 1004.1.2: Maximum Floor Area Allowance Assembly - Auditorium:	Per Occupant 400 (394 fixed seats + 6 accessible spaces)	
			Stage - Auditorium: Assembly - Student Dining: Assembly - Conference Room: Assembly - Gymnasium:	1 occupant per 15 nsf 1 occupant per 15 nsf 1 occupant per 15 nsf 1 occupant per 7 nsf	
ge ventilation.			Locker Rooms: 1 occupant per 50 gsf Exercise Rooms: 1 occupant per 50 gsf Business Areas: 1 occupant per 150 gsf Classroom: 1 occupant per 20 nsf Vocational Area: 1 occupant per 50 nsf		
			Vocational Area: Library - Reading Room: Library - Stack Area: Mechanical / Storage Rooms: Kitchen:	1 occupant per 50 nsf 1 occupant per 50 nsf 1 occupant per 100 nsf 1 occupant per 300 gsf 1 occupant per 200 gsf	
tomatic sprinkler system installed thro	ughout the building and the amount of building fronta	je on public	Chapter 10: Means of Egress Section 1005 Means of Egress Sizing	Load - Reference diagrams and floor plans, drawings G0.0	12 - G0 04 Fire Safety Plans
6.2.1 through 506.2.4 and Section 50	6.3.		 Table 1006.2.1 Spaces with One Exit or Exit Ac Occupancy Use Group E Meximum Occupa Maximum Common Path of Egress Travel D Table 1006.3.2 Minimum Number of Exits of Ac 	ccess Doorway int Load of Space - 49 istance - 75 Feet	
			1-500 Occupants 2 Exits 501-1000 Occupants 3 Exits More than 1000 Occupants 4 Exits		
	ction 903.3.1.2, use the actual number of building sto		Exit access stairways complying with Sec	tions 1009.3 and 1019.4 t of an accessible means of egress, a stairway between sto	blic way and shall consist of one or more of the following components: ories shall have a clear width of 48 inches minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level
anererore an space within the buildi	ng would fall within Group E occupancy. This will cau	ry amougn the	Exceptions: 2. The clear width of 48 inches between han 5. Areas of refuge are not required at stairwa	drails is not required in buildings equipped throughout with	an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 inkler system installed in accordance with Section 903.1.1 or 903.3.1.2
Total Building Allowable Area	Allowable Area takes into account the maximum frontage increase of 60% as there is access around the full perimeter. 506.3		Section 1017 Exit Access Travel Distance - Table 1017.2 Exit Access Travel Distance Occupancy Groups A & E - 250 feet with sprinkle Section 1019 Exit Access Stairways and Ramps	er system	
(SF) (Equation 5-2) 381,600	Projects largest floor is the First Floor at 41,180 SF, well under the 95,400 SF maximum allowed.				ontaining exit access stairways or ramps that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure
	Total Building Area is 124,374 SF, well under the 381,600 SF maximum allowed.		NFPA 101 Life Safety Code Section 14.3.6 Corric - Corridors shall be separated from other parts of (2) The following shall apply to buildings prot	dors the story by walls having 1-hour fire resistance rating in ac tected throughout by an approved, supervised automatic sp	
	with Sections 506.3.1 through 506.3.3. en space. Such open space shall be either on the sam	e lot or			in accordance with Section 8.4 ection 8.4 ection 8.4 section 8.4, Smoke Partitions, as they all extend from the floor to the underside of the floor or roof deck above, through concealed spaces, such as
perimeter shall have a minimum dista	ance of (W) of 20 feet (6096 mm) measured at right a	ngles from the	Exceptions:		e arranged such that there are no dead ends in corridors for than 20 feet. stem in accordance with 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet.
e calculated in accordance with Equa					
eter of the building. Therefore, W sh	all be calculated at 30 feet (9144 mm) with Equation	5-5.	E. <u>PLUMBING FIXTURES AS</u> Per SBC-3 State of Rhode Island Plumbing Code - (BUILDING
			Education (E): 1796 occupants Female: 1796 / 2 = 898 Water Closets Lavatories	<u>Required</u> 1 per 50 = 18 1 per 50 = 18	Designed 19 18
provided.			Male: 1796 / 2 = 898 Water Closets Urinals Lavatories	<u>Required</u> 1 per 50 = 18 (see 419.2) 1 per 50 = 18	Designed 10 10 18
lume of 10 cubic feet or greater. Aut	omatic sprinkler system provided.		Drinking Fountains:1796 Business (B): 270 occupants	<u>Required</u> 1 per 100 = 18	12
and Type IIB Construction as identif	ed in the chart below:		Female: 270 / 2 = 135 Water Closets Lavatories Male: 270 / 2 = 135	<u>Required</u> 1 per 25 for the first 50 then 1 per 50 = 4 1 per 40 for the first 40 then 1 per 80 = 4 Required	Designed 4 4 Designed
NTS (HOURS) Type II			Water Closets Water Closets Lavatories Drinking Fountains: 270	<u>Required</u> 1 per 25 for the first 50 then 1 per 50 = 4 1 per 40 for the first 40 then 1 per 80 = 4 <u>Required</u> 1 per 100 = 3	<u>Designed</u> 4 4 3
A	B		Auditorium (A-1): 570 occupants Fernale: 570 / 2 = 285 Water Closets	<u>Required</u> 1 per 65 = 5	Designed 5
1 1 See Table 602	0		Lavatories Male: 570 / 2 = 285 Water Closets Urinals	1 per 200 = 2 <u>Required</u> 1 per 125 = 3 see (419.2)	3 <u>Designed</u> 2 2
0	0		Lavatories Drinking Fountains: 570	1 per 200 = 2 <u>Required</u> 1 per 500 = 2	3 3
1b,c	0°		Cafeteria (A-2): 221 occupants Female: 221 / 2 = 111 Water Closets Lavatories	<u>Required</u> 1 per 75 = 2 1 per 200 = 1	Designed 2 3
			Lavatories Male: 221 / 2 = 111 Water Closets Urinals Lavatories	<u>Required</u> 1 per 75 = 2 see (419.2) 1 per 200 = 1	3 Designed 2 2 2
1.1 through 603.1.3:			Drinking Fountains: 221	<u>Required</u> 1 per 500 = 1	3
			Media Commons & Roof Terrace (A-3): 334 occupa Female: 334 / 2 = 167 Water Closets Lavatories	nts <u>Required</u> 1 per 65 = 3 1 per 200 = 1	<u>Designed</u> 2 1
is, smoke barriers and smoke partitions or any other wall required to have protected openings or penetrations			Male: 334 / 2 = 167 Water Closets Urinals Lavatories	<u>Required</u> 1 per 125 = 2 see (419.2) 1 per 200 = 1	1 <u>Designed</u> 2 0 1
-2000-000 WORKING, FIRE AND/UK SI	NOKE BARRIER - PROTECT ALL OPENINGS," or o		Drinking Fountains: 334 Physical Education Gymnasium (A-3): 1088 occupa	<u>Required</u> 1 per 500 = 1	3
gate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed shall comply with Sections 1019, 1023.4 and 1024.5, respectively.			Female: 1088 / 2 = 544 Water Closets Lavatories Male: 1088 / 2 = 544	<u>Required</u> 1 per 65 = 9 1 per 200 = 3 <u>Required</u>	Designed 8 3 Designed
tem in accordance with Section 903.			Water Closets Urinals Lavatories	1 per 125 = 5 see (419.2) 1 per 200 = 3 <u>Required</u>	5 2 3
,			Drinking Fountains: 1088	1 per 500 = 3	3
ermitted.			TOTAL Required fixtures by plumbing code: Water Closets: 81	TOTAL Provided in design: Water Closets: 81	
nce with Section 711, or both. re, and not less than 1 hour where connecting less than four stories. The number of stores connected by the assembly penetrated, but need not exceed 2 hours.		Lavatories: 62 Drinking Fountains: 28 SBC-3, Section 419 - URINALS	Lavatories: 63 Drinking Fountains: 30		
sses, but not less than the rating rec ng by fire barriers constructed in acc enclosure.	uired for the shaft enclosure, ordance with Section 707 or horizontal assemblies	constructed in		hroom or toilet room, urinals shall not be substituted for ts in assembly and educational occupancies.	
interior of the building except at the b sprinkler system. cordance with Section 713.13.4. es in the shaft and there are no open					
	ings or other penetrations through the shart e				
	ts, or both shall be permitted in accordance with Sec	ion 716.2.5.4.			
ies. sageways shall have a maximum tran:	smitted temperature rise of not more than 450°F (250	°C) above			
th NFPA 252, UL 10B or UL 10C. sidelights, or both, where a 3/4-hour fi	1.3.1.2. 165m2) shall be permitted in fire doors. Listed fire-res re protection rating or less is required and in 2-hour fi dance with ASTM E119 or UL 263 shall be permitted	re-resistance-			
s of buildings of Type I or II construc	tion.				
I roof coverings shall be listed and i	dentified as Class C by an approved testing agency.				





FIRST FLOOR FIRE SAFETY ANALYSIS:

DRAFT INFORMATION : FURTHER DEVELOPMENT TO FOLLOW IN STAGE III TABLE 601 FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

Building Element	Туре ІІА
Primary structural frame Including columns, girders, trusses & braces	1
Bearing walls Exterior Interior	1 1
Exterior Nonbearing walls and partitions	See Table 602
Interior Nonbearing walls and partitions	0
Floor construction and secondary members Including supporting beams & joists	1
Roof construction and secondary members Including supporting beams and joists	1^b,c

c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

2010 ADAS Chapter 207 RISBC-1 Section 1009

Chapter 10: Means of Egress

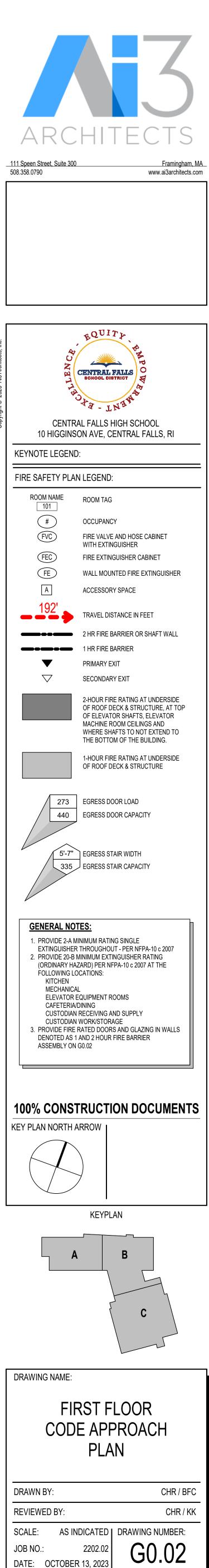
Section 1002 Definitions Common Path of Egress Travel: That portion of the exit access travel distance measured from the most remote point within a story to that point where the occupants have separate access to two exits or exit access doorways.

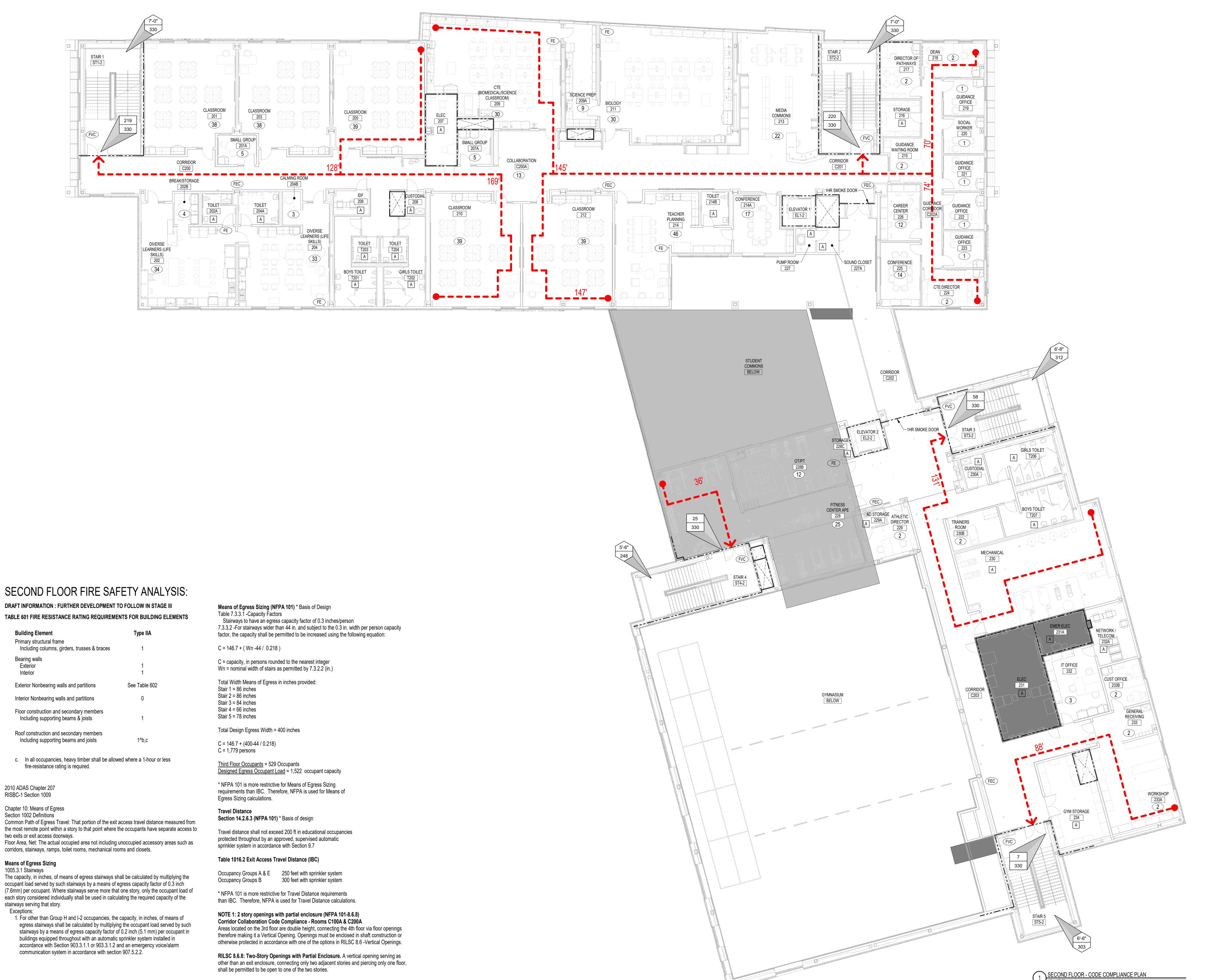
corridors, stairways, ramps, toilet rooms, mechanical rooms and closets.

Means of Egress Sizing 1005.3.1 Stairways

The capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.3 inch (7.6mm) per occupant. Where stairways serve more that one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story. Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm





SECOND FLOOR FIRE SAFETY ANALYSIS:

DRAFT INFORMATION : FURTHER DEVELOPMENT TO FOLLOW IN STAGE III TABLE 601 FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

Building Element Primary structural frame	Туре IIA
Including columns, girders, trusses & braces	1
Bearing walls Exterior Interior	1 1
Exterior Nonbearing walls and partitions	See Table 602
Interior Nonbearing walls and partitions	0
Floor construction and secondary members Including supporting beams & joists	1
Roof construction and secondary members Including supporting beams and joists	1^b,c

c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

2010 ADAS Chapter 207 RISBC-1 Section 1009

Chapter 10: Means of Egress Section 1002 Definitions

Common Path of Egress Travel: That portion of the exit access travel distance measured from the most remote point within a story to that point where the occupants have separate access to two exits or exit access doorways.

corridors, stairways, ramps, toilet rooms, mechanical rooms and closets.

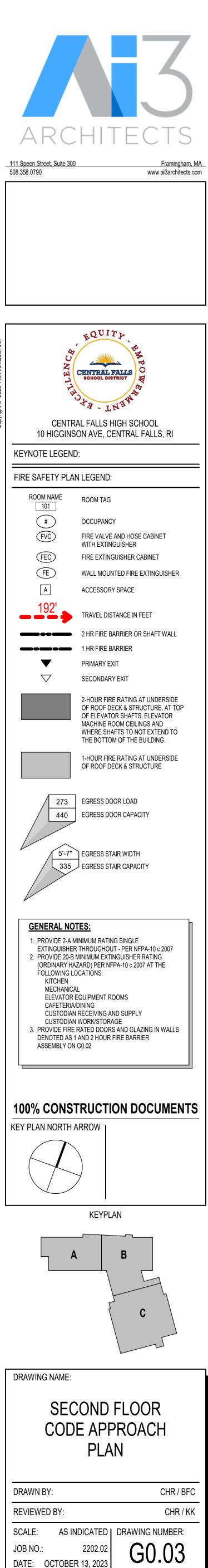
Means of Egress Sizing 1005.3.1 Stairways

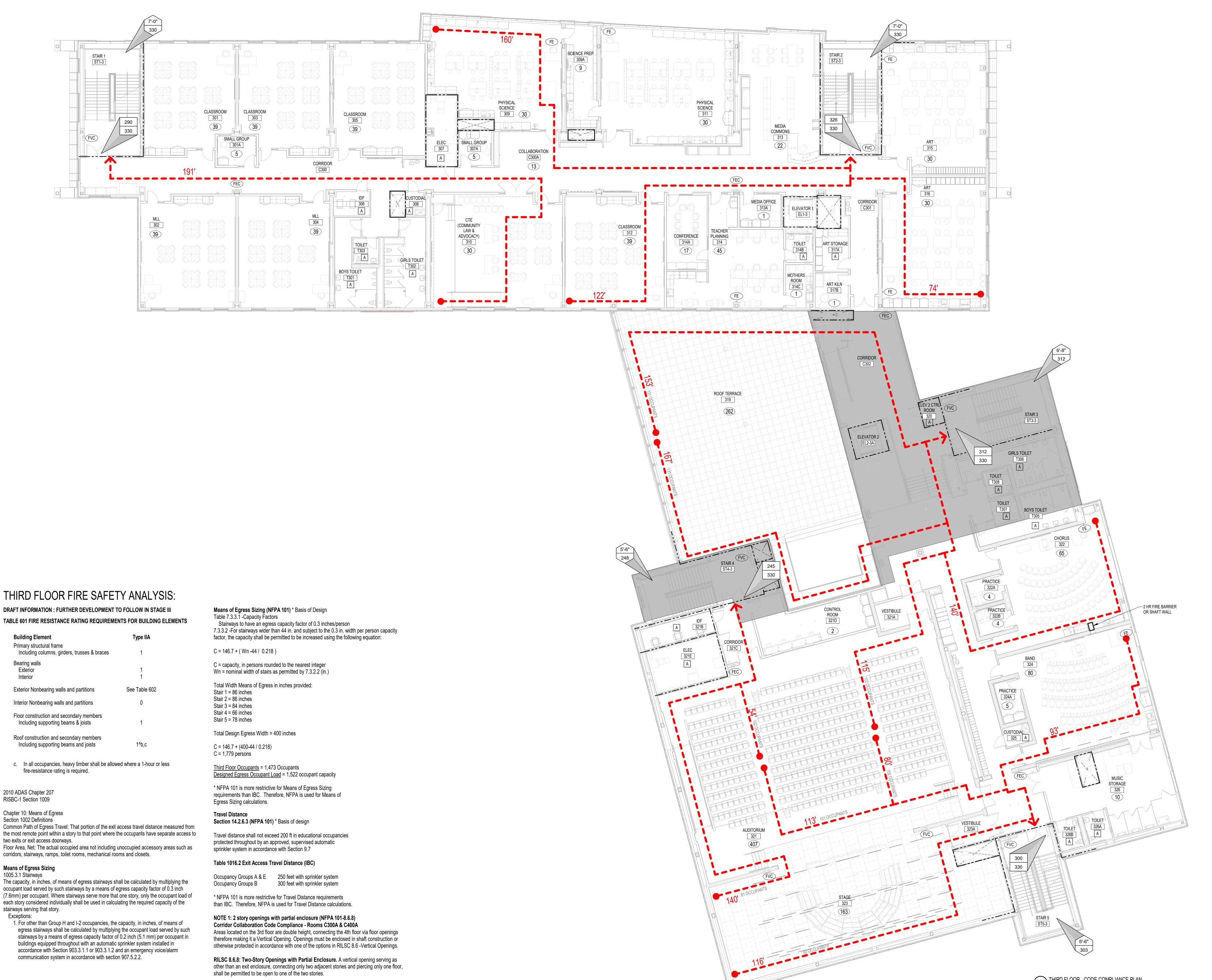
The capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.3 inch (7.6mm) per occupant. Where stairways serve more that one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story. Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with section 907.5.2.2.

Stair 1	= 86	inches
Stair 2	= 86	inches
Stair 3	= 84	inches
Stair 4	= 66	inches
Stair 5	= 78	inches







THIRD FLOOR FIRE SAFETY ANALYSIS:

DRAFT INFORMATION : FURTHER DEVELOPMENT TO FOLLOW IN STAGE III TABLE 601 FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

Building Element	Type IIA
Primary structural frame Including columns, girders, trusses & braces	1
Bearing walls Exterior Interior	1 1
Exterior Nonbearing walls and partitions	See Table 602
Interior Nonbearing walls and partitions	0
Floor construction and secondary members Including supporting beams & joists	1
Roof construction and secondary members Including supporting beams and joists	1^b,c

c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

2010 ADAS Chapter 207 RISBC-1 Section 1009

Chapter 10: Means of Egress

Common Path of Egress Travel: That portion of the exit access travel distance measured from the most remote point within a story to that point where the occupants have separate access to two exits or exit access doorways.

corridors, stairways, ramps, toilet rooms, mechanical rooms and closets.

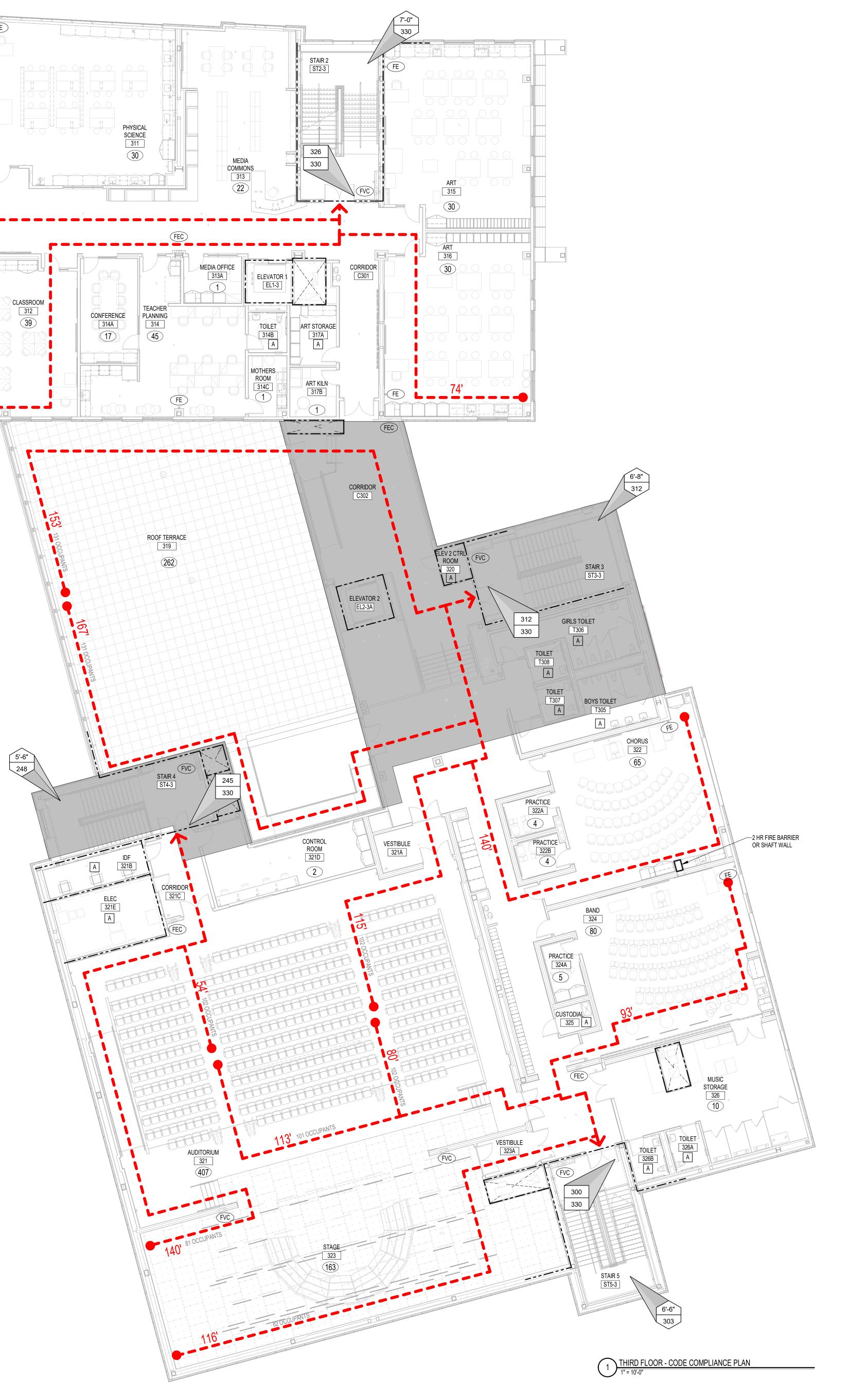
Means of Egress Sizing 1005.3.1 Stairways

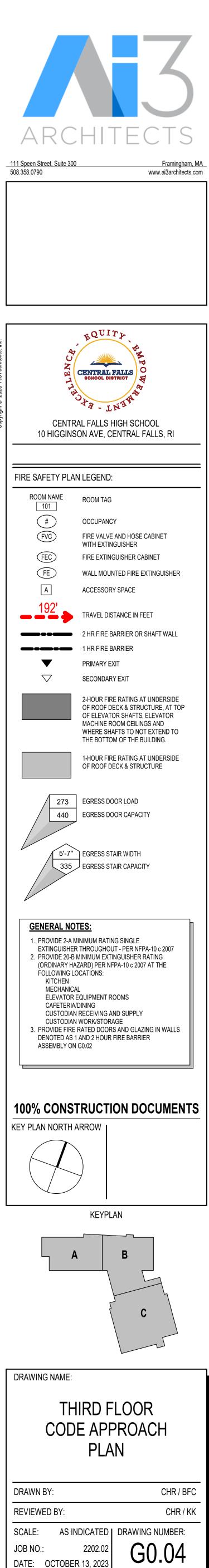
The capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.3 inch (7.6mm) per occupant. Where stairways serve more that one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story. Exceptions:

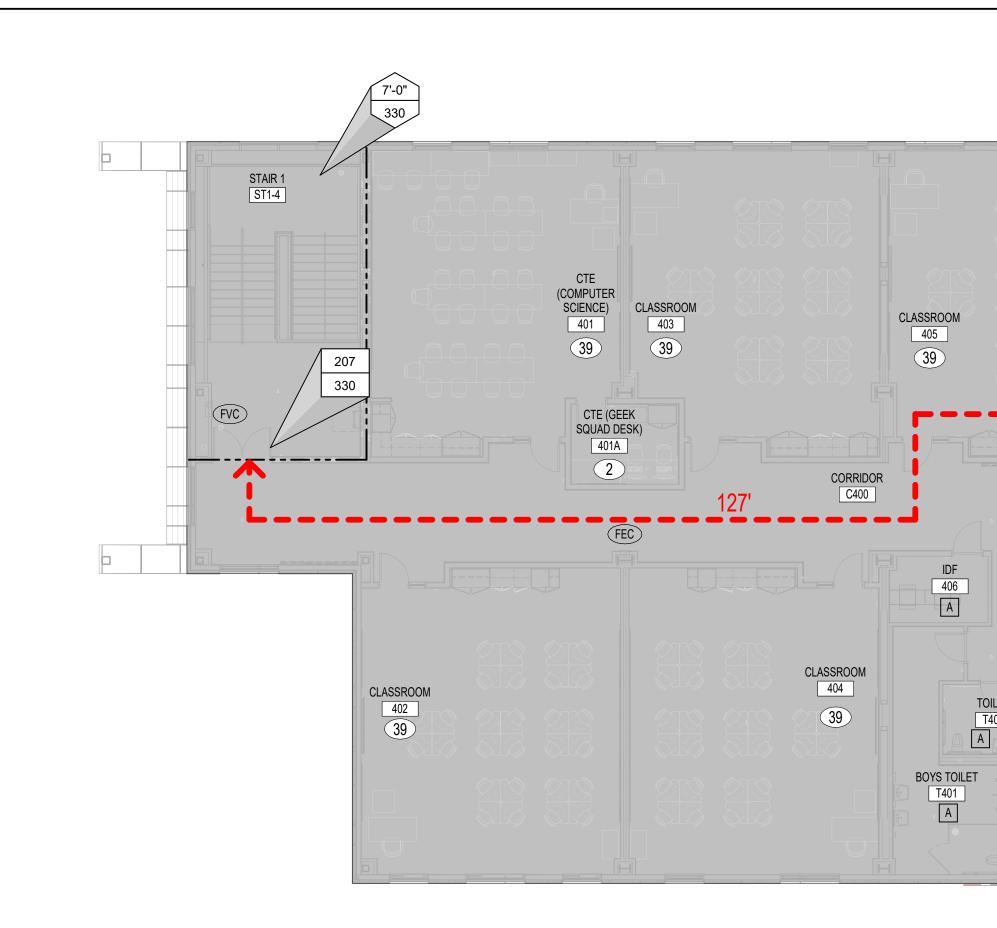
1. For other than Group H and I-2 occupancies, the capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm

Stair 1 = 86 inches
Stair 2 = 86 inches
Stair 3 = 84 inches
Stair 4 = 66 inches
Stair 5 = 78 inches

Occupancy Groups A & E	250 feet with sprinkler system
Occupancy Groups B	300 feet with sprinkler system







THIRD FLOOR FIRE SAFETY ANALYSIS:

DRAFT INFORMATION : FURTHER DEVELOPMENT TO FOLLOW IN STAGE III TABLE 601 FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

Building Element Primary structural frame	Туре ІІА
Including columns, girders, trusses & braces	1
Bearing walls Exterior Interior	1 1
Exterior Nonbearing walls and partitions	See Table 602
Interior Nonbearing walls and partitions	0
Floor construction and secondary members Including supporting beams & joists	1
Roof construction and secondary members Including supporting beams and joists	1^b,c

c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

2010 ADAS Chapter 207 RISBC-1 Section 1009

Chapter 10: Means of Egress Section 1002 Definitions

Common Path of Egress Travel: That portion of the exit access travel distance measured from the most remote point within a story to that point where the occupants have separate access to two exits or exit access doorways.

Floor Area, Net: The actual occupied area not including unoccupied accessory areas such as corridors, stairways, ramps, toilet rooms, mechanical rooms and closets.

Means of Egress Sizing 1005.3.1 Stairways

The capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.3 inch (7.6mm) per occupant. Where stairways serve more that one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story. Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with section 907.5.2.2.

Means of Egress Sizing (NFPA 101) * Basis of Design Table 7.3.3.1 -Capacity Factors Stairways to have an egress capacity factor of 0.3 inches/person 7.3.3.2 -For stairways wider than 44 in. and subject to the 0.3 in. width per person capacity factor, the capacity shall be permitted to be increased using the following equation:

C = 146.7 + (Wn -44 / 0.218)

C = capacity, in persons rounded to the nearest integer Wn = nominal width of stairs as permitted by 7.3.2.2 (in.)

Total Width Means of Egress in inches provided: Stair 1 = 86 inches Stair 2 = 86 inches

Total Design Egress Width = 172 inches

C = 146.7 + (172-44 / 0.218) C = 733 persons

<u>Third Floor Occupants</u> = 492 Occupants <u>Designed Egress Occupant Load</u> = 499 occupant capacity

* NFPA 101 is more restrictive for Means of Egress Sizing requirements than IBC. Therefore, NFPA is used for Means of Egress Sizing calculations.

Travel Distance Section 14.2.6.3 (NFPA 101) * Basis of design

Travel distance shall not exceed 200 ft in educational occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7

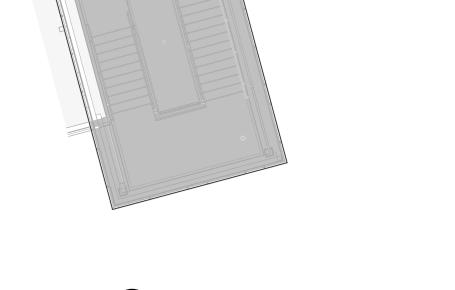
 Table 1016.2 Exit Access Travel Distance (IBC)

Occupancy Groups A & E 250 feet with sprinkler system Occupancy Groups B 300 feet with sprinkler system

* NFPA 101 is more restrictive for Travel Distance requirements than IBC. Therefore, NFPA is used for Travel Distance calculations.

NOTE 1: 2 story openings with partial enclosure (NFPA 101-8.6.8) Corridor Collaboration Code Compliance - Rooms C300A & C400A Areas located on the 3rd floor are double height, connecting the 4th floor via floor openings therefore making it a Vertical Opening. Openings must be enclosed in shaft construction or otherwise protected in accordance with one of the options in RILSC 8.6 -Vertical Openings.

RILSC 8.6.8: Two-Story Openings with Partial Enclosure. A vertical opening serving as other than an exit enclosure, connecting only two adjacent stories and piercing only one floor, shall be permitted to be open to one of the two stories.



TOILET TOILET T403 T404 A A **GIRLS TOILET** T402 Α

ELEC 409

A

FEC

FEC ROOM SMALL GROUP CLASSROOM (NEWCOMERS) 412 39 412A 6 416 CLASSROOM 410 39 Α

