

GENERAL REQUIREMENTS
BUILDING CODE ANALYSIS

6A.3.1 - 03



Code

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HVAC

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Electrical

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Plumbing

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Fire Protection

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Commissioning

NE Metro Regional Vocational Technical School

Wakefield, Massachusetts

Code Report

June 17, 2022

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Introduction

The Northeast Metro Regional Vocational Technical School project includes the construction of a new vocational high school in Wakefield, MA. The following is a list of applicable codes:

Code Type	Applicable Code (Model Code Basis)
Building	780 CMR: Massachusetts State Building Code, 9 th Edition (2015 International Building Code)
Fire Prevention	527 CMR: Massachusetts Fire Prevention Regulations (2015 NFPA 1) M.G.L. Chapter 148 Section 26G – Sprinkler Protection
Accessibility	521 CMR: Massachusetts Architectural Access Board Regulations
Electrical	527 CMR 12.00: Massachusetts Electrical Code (2020 National Electrical Code)
Elevators	524 CMR: Massachusetts Elevator Code (2013 ASME A17.1)
Mechanical	2015 International Mechanical Code (IMC)
Plumbing	248 CMR: Massachusetts Plumbing Code
Energy Conservation	2018 International Energy Conservation Code

1. Occupancy Classification:

Non-Separated Mixed Uses:

- Use Group A-3 (Gymnasium)
- Use Group B (Offices)
- Use Group E (Educational)

The assembly spaces including the Cafeteria and Auditorium are considered part of the Use Group E occupancy. However, the Gymnasium has not been considered part of the Use Group E occupancy, since it could be used by the general public for outside events not directly associated with the school (780 CMR 303.1.3).

Also, the building will contain hazardous materials. The quantity of hazardous materials must be maintained below the exempt limits per control area in order to avoid a Use Group H classification (780 CMR 307.1 & 414). Since the building will be one control area, the total quantity of hazardous materials throughout the building cannot exceed 100% of the maximum allowable quantities (MAQ) contained in 780 CMR Table 307.1(1). In addition, each floor individually also cannot exceed the percentage of the MAQ shown in the following table (780 CMR Table 414.2.2).

Floor	Percentage of the Maximum Allowable Quantity
Lower Level	75%
1 st Floor	100%
2 nd Floor	75%
3 rd Floor	50%
4 th Floor	50%

2. Min. Construction Type:

Type IB Construction (noncombustible, 2-hr rated)

3. Height and Area Limitations:

The following table summarizes the height and area limitations for the most restrictive use (Use Group E) based on Type IB construction:

Code Reference	Use Group E	
	Height	Area
<u>780 CMR Tables 504.3, 504.4 & 506.2:</u> Tabular Value	6 St. (180 ft)	UL
<u>780 CMR Section 506.2</u> Frontage Increase	-	-
Allowed Height and Area	6 St. (180 ft)	UL
Actual Height and Area	5 St.	~127,000 ft²

4. Fire Resistance Ratings:

The following fire resistance ratings are required in accordance with 780 CMR Table 601 and various sections of the code.

Building Element	Fire Resistance Rating (Hrs)
Primary Structural Frame ^A	2 ^{B,C}
Exterior Bearing Walls	2
Interior Bearing Walls	2 ^{B,C}
Exterior Non-Bearing Walls	Based on FSD
Interior Non-Bearing Walls	0
Floor Construction	2 ^C
Roof Construction	1 ^D

^{A.} Includes beams, trusses, floor members, etc. having a direct connection to the columns (780 CMR 202).

^{B.} Fire resistance ratings of structural frame and bearing walls are permitted to be reduced by one hour but not less than 1 hour rated where supporting a roof only.

^{C.} Not less than the rating supported (780 CMR 707.5, 709.4. and 712.4).

^{D.} Fire protection of 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.

Building Element		Fire Resistance Rating (Hrs)	Opening Protectives (Hrs)
Exit Access Corridors (780 CMR 1020.1)		0	0
Stair Shafts (780 CMR 1023.2) ^A		2	1½
Other Shafts (780 CMR 713.4)		2	1½
Elevator Machine Room (780 CMR 3005.4)		2	1½
Emergency Electrical Room (527 CMR 12.00 700-10(D)(2))		2 ^B	1½
Emergency Generator Room – Level 1 Installation (NFPA 110 Section 7.2.1.1)		2	1½
Electrical Closets	With Sprinklers	0	
	Without Sprinklers	2	
Fuel Oil Storage > 660 gallons		2	1½
Furnace room where any piece of equipment is over 400,000 Btu per hour input		Smoke resistant ^C	
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower		Smoke resistant ^C	
Paint shops		1 hour and provide automatic fire-extinguishing system	
Laboratories and vocational shops		Smoke resistant ^C	
Laundry rooms over 100 square feet		Smoke resistant ^C	
Waste and linen collection rooms over 100 square feet		Smoke resistant ^C	
Fire pump room (780 CMR 913.2.1)		1 hour ^D	

- A. If exterior walls expose the stair at an angle of less than 180 degrees either the stair wall or adjacent wall must be 1 hour rated with ¾ hour opening protectives for a distance of 10 feet from the stair wall (780 CMR Section 1023.7).
- B. No rating is required for the room when fully sprinklered, however a 2-hr rating is still required for the emergency feeder-circuit wiring and rooms containing an emergency generator (NFPA 110 Section 7.2.1.1).
- C. Where smoke resistant construction and automatic fire-extinguishing system are permitted, accessory occupancies shall be separated from the remainder of the building by construction capable of resisting the passage of smoke and doors shall be self- or automatic-closing upon detection of smoke.
- D. Location and access to the fire pump room shall be pre-planned with the fire department. The room must be directly accessed from the exterior or through a 1 hour fire resistance rated passageway that connects to the exterior (NFPA 20 Section 5.12.1.1.3).

Fire walls, fire barriers, fire partitions, smoke barriers, and smoke partitions, or any other wall required to have protected openings or penetrations must be identified with signs or stenciling within accessible concealed spaces (i.e. floor-ceiling, attic spaces) at 30 ft. intervals (780 CMR 703.7).

5. Stages

The stage areas must comply with 780 CMR 410. It is assumed that the stage height is less than 50 feet. The following requirements must be met.

- Stages must be constructed of materials as required for floors for the type of construction of the building unless the finished floor is constructed of wood or approved non-combustible materials and openings through stage floors shall be equipped with tight-fitting, solid wood trap doors with approved safety locks (410.3.1).
- Galleries, gridirons, and catwalks shall be constructed of approved materials consistent with the requirements of the type of construction of the building (410.3.2).
- Combustible materials used for sets and scenery shall meet NFPA 701 fire propagation performance criteria (410.3.6).
- Emergency ventilation shall be provided for stages larger than 1,000 square feet and follow one of the below (410.3.7).
 - Two or more heat activated roof vents with aggregate opening of not less than 5% of stage area.
 - Smoke control system that maintains a smoke layer interface not less than 6 feet above the highest level of the assembly seating.
- Stage shall be separated from other parts of the building including dressing rooms and scene docks by 1 hour-rated construction (410.5.1).
- Appurtenant rooms to the stage, such as dressing rooms, scene shop, and storerooms, must be separated by 1 hour-rated construction for each other (410.5.2).
- Means of egress on each side of the stage must be provided (410.6.1)

6. Exterior Wall Openings & Fire Resistance Rating:

The exterior wall rating requirements and opening limitations are based on the fire separation distance for each wall. The fire separation distance is measured perpendicular to the exterior wall to the centerline of a public street, an interior lot line, or an imaginary lot line between two buildings on the same lot (780 CMR 702.0). Since the fire separation distance is more than 20 ft. for the entire perimeter of the building, the exterior walls are not required to be rated and the allowable area of openings is not limited (780 CMR Table 602 and Table 705.8).

7. Vertical Floor Openings

Vertical openings are required to comply with 780 CMR 712. The building contains many floor openings that are enclosed in 2 hour fire resistance rated shafts including the exit stairs, elevators, and mechanical chases. The exit stair enclosures will contain glazing that must be fire resistance rated glazing that passes ASTM E119 unless an alternative design is approved that allows the use of sprinkler protected glazing (780 CMR Table 716.5 & 1023.4).

There will also be numerous unprotected floor openings that connect the 1st and 2nd Floor of the building, including the main Lobby, Cafeteria, and Auditorium that are allowed per 712.1.9.

An alternative design is also requested to allow for sprinkler protected glass, 2 hour rated fire barrier walls, or a combination thereof on the 3rd and 4th Floors to separate the upper levels from the floor openings that communicate to the lower floors, including the Gymnasium and Media Center. Since the floor openings will be completely separated from the upper 2 stories, the unprotected floor openings would be equivalent to an allowed two story floor opening that connects the 1st and 2nd Floors in accordance with 780 CMR 712.1.9.

8. Finishes:

Interior Finish

The interior finish of walls and ceilings in exits and corridors must comply with the code for new construction as shown in the table below.

Walls & Ceilings (IBC Table 803.11)

Building Component	Use Group A-3	Use Group B & E
Exit Enclosures and Passageways	Class B	Class B
Corridors	Class B	Class C
Rooms & Enclosed Spaces	Class C	Class C

Note that where exit stairs and exit access corridors serve all use groups, the most restrictive interior finish is required.

New Floor Finishes

Since the building will be equipped with an automatic sprinkler system, traditional floor coverings such as wood, vinyl, and other resilient floor coverings as well as carpeting passing the DOC FF-1 pill test are allowed throughout the building, including all exits, exit passageways and exit access corridors (780 CMR Section 804.4.2).

Exterior Finish

Exterior wall finishes must fully comply with the requirements of 780 CMR 14. Combustible materials are permitted to be used as an exterior wall finish for

this building in accordance with 780 CMR Section 1406.0; however, all exterior wall finishes and architectural trim located greater than 40 feet above grade plane must be constructed of approved noncombustible materials and must be secured to the wall with metal or other approved noncombustible brackets (780 CMR Section 1406.2.2). Additionally, combustible exterior wall finish is limited to 10% of the exterior wall surface area where the fire separation distance is 5 ft or less.

The use of foam plastic materials as part of the exterior wall assembly must comply with 780 CMR 26. The wall assembly must be tested in accordance with NFPA 285 (780 CMR 2603.5.5). Note that this test standard is a full scale assembly test. We recommend confirming with the manufacturer that the foam plastic insulation is part of an approved NFPA 285 assembly or complies with one of the alternative standards listed in 780 CMR Section 2604.1.

9. Means of Egress:

The calculated occupant load for the proposed floor plans, the corresponding required number of exits, the provided number of exits, and the provided egress capacity are summarized below (780 CMR Table 1004.1.2, Table 1006.3.1, and 1005.3). See Appendix A of this report for detailed egress calculations.

Means of Egress

Floor	Occupant Load	Number of Exits		Exit Capacity (persons)
		Required	Provided	
Lower Level	689	3	6	1,360
1 st	2,867	4	14	6,880
2 nd	2,387	4	6	2,390
3 rd	1,336	4	4	1,773
4 th	1,167	4	4	1,740

Where means of egress from floors above and below converge at an intermediate level, the capacity of the means of egress from the point of convergence shall not be less than the sum of the two floors (780 CMR 1005.6).

General Egress Requirements:

- The required maximum exit travel distances for a fully sprinklered building are listed below (780 CMR Table 1017.2, Table 1006.2.1, and 1020.4).

Occupancy	Exit Travel Distance	Common Path of Travel	Dead-End
E	250 ft.	75 ft.	50 ft.
A-3	250 ft.	75 ft.	20 ft.
B	300 ft.	100 ft.	50 ft.

- Maximum dead-end corridor length cannot exceed the value above or 2.5 times the least width of space (780 CMR 1020.4).

- All rooms or spaces other than dwelling units with an occupant load greater than 49 people or a travel distance greater than the value in the table above must be provided with two egress doors swinging in the direction of egress and illuminated exit signs at each exit (780 CMR Table 1006.2.1 & Sections 1010.1.2.1 & 1013.1).
- Boiler rooms require two means of egress if the room is greater than 500 sqft. and includes individual fuel-fired equipment greater than 400,000 Btuh input capacity. Also one of the two required exit access doorways is permitted to be a fixed ladder or alternating tread device (780 CMR Section 1006.2.2.1).
- Exit access through an enclosed elevator lobby is permitted provided access to not less than one of the required exits shall be provided without travel through the enclosed elevator lobbies required by Section 3006 (780 CMR 1016.2).
- Doors serving more than 49 people in group E and A occupancies must swing in the direction of egress and be provided with panic hardware (780 CMR 1010.1.10).
- Main electrical rooms must be provided with 2 means of egress via doors that swing in the direction of egress with panic hardware when containing large equipment (rated 1200 amperes or more and over 6' wide) (NFPA 70 Section 110.26(C)(2 & 3)).
- All means of egress lighting and exit signs throughout the building must be provided with an emergency power supply to assure continued illumination for not less than 1.5 hours in case of primary power loss (780 CMR 1008.2 & 1008.3.4).
- Remote means of egress must be separated by $\frac{1}{3}$ of the diagonal dimension of the room or space they serve (780 CMR 1007.1.1). The distance between exits must be measured in a straight line between exit doors / paths.
- Roofs and penthouses containing elevator equipment that must be accessed for maintenance are required to be accessed by a stairway (780 CMR 1011.12.1). Permanent means of access to any roof containing mechanical equipment must be provided in accordance with the Mechanical Code.
- All exits must discharge to the exterior of the building except that a maximum of 50% of the number and capacity of the exit enclosures are allowed to exit through areas on the level of discharge if the exit enclosures discharge to a free and unobstructed path of travel to an exterior exit that is readily visible from the discharge of the exit enclosure; the entire area of the level of exit discharge is separated from areas below by construction

consistent with the rating of the exit enclosure; and the egress path and all areas open to the egress path on the level of exit discharge must be fully sprinklered (780 CMR 1028.1).

- An approved barrier must be provided at the level of exit discharge where a stair enclosure continues below its level of exit discharge (780 CMR 1023.8).
- A two-way communication system is required at each elevator landing on accessible floors that are one or more stories above or below the level of exit discharge (780 CMR 1009.8).
- At least one passenger elevator must be sized to accommodate the loading and transportation of an ambulance gurney or stretcher sized 24" wide by 84" long with 5" radius corners (524 CMR 17.40(1)).

10. Required Fire Protection Systems:

- NFPA 13 sprinkler system (780 CMR Table 903.2 & M.G.L. c148 s26G)
- Fire alarm system with emergency voice/alarm communication capabilities (780 CMR 907.2.3)
- Emergency responder radio coverage (780 CMR 916)
- Carbon monoxide detection in accordance with 780 CMR 915 and 527 CMR 1 chapter 13.
- Fire extinguishers (780 CMR 906.1)

11. Energy Code Provisions

The project is subject to the provisions of the 2018 International Energy Conservation Code or ANSI/ASHRAE/IESNA 90.1 with Massachusetts Amendments (Massachusetts Energy Code). The City of Boston has also adopted the Stretch Energy Code (780 CMR Appendix AA). The 9th Edition states that the Stretch Code applies to non-residential buildings over 100,000 sqft. (780 CMR AA103.2). Since the aggregate area of the building is over 100,000 sqft, the stretch code does apply. The Stretch Code requires the building demonstrate energy use per square foot at least 10% below the energy requirements of ANSI/ASHRAE/IESNA 90.1 APPENDIX G Performance Rating Method on either a site or source energy basis.

12. Accessibility for Persons with Disabilities

Massachusetts Architectural Access Board Regulations

All areas open to the general public are required to comply with the requirements of the Massachusetts Architectural Access Board (521 CMR). This section includes the following major provisions:

- All public entrances must be accessible (521 CMR 25.1).

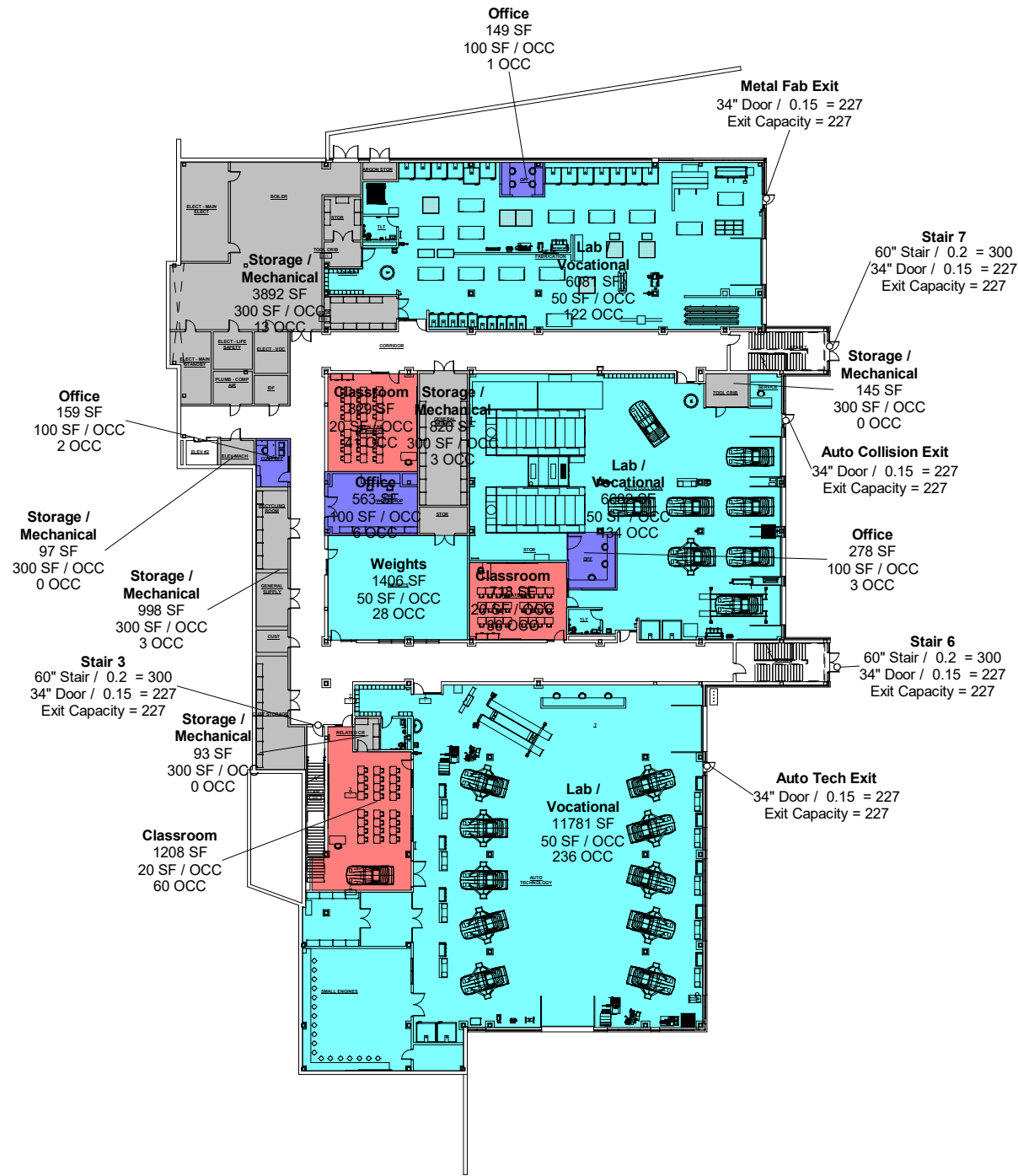
- All public and common use areas must be accessible and provided with an accessible route thereto (521 CMR Section 12.2.2 and 20.1).
- Accessible toilet rooms must be provided (521 CMR 30.1).
- Where tables, study carrels, computer workstations or fixed seating is provided at least 5% with a minimum of one of each item must be accessible (521 CMR Section 12.2.2).
- The auditorium and gymnasium must be provided with accessible seating and features in accordance with 521 CMR Chapter 14.

American's with Disabilities Act

The ADA Guidelines are not enforced by the Commonwealth of Massachusetts, they can only be enforced through a civil lawsuit or complaint filed with the U.S. Department of Justice. All public and common use areas must be accessible.

Although the provisions of the MAAB do not apply to employee only areas, the ADAAG requires that employee only work spaces must be designed to allow employees to approach, enter, and exit the work area. However, the work areas are not required be provided with accessible features (i.e. shelves, etc.).

APPENDIX A: Egress Plans

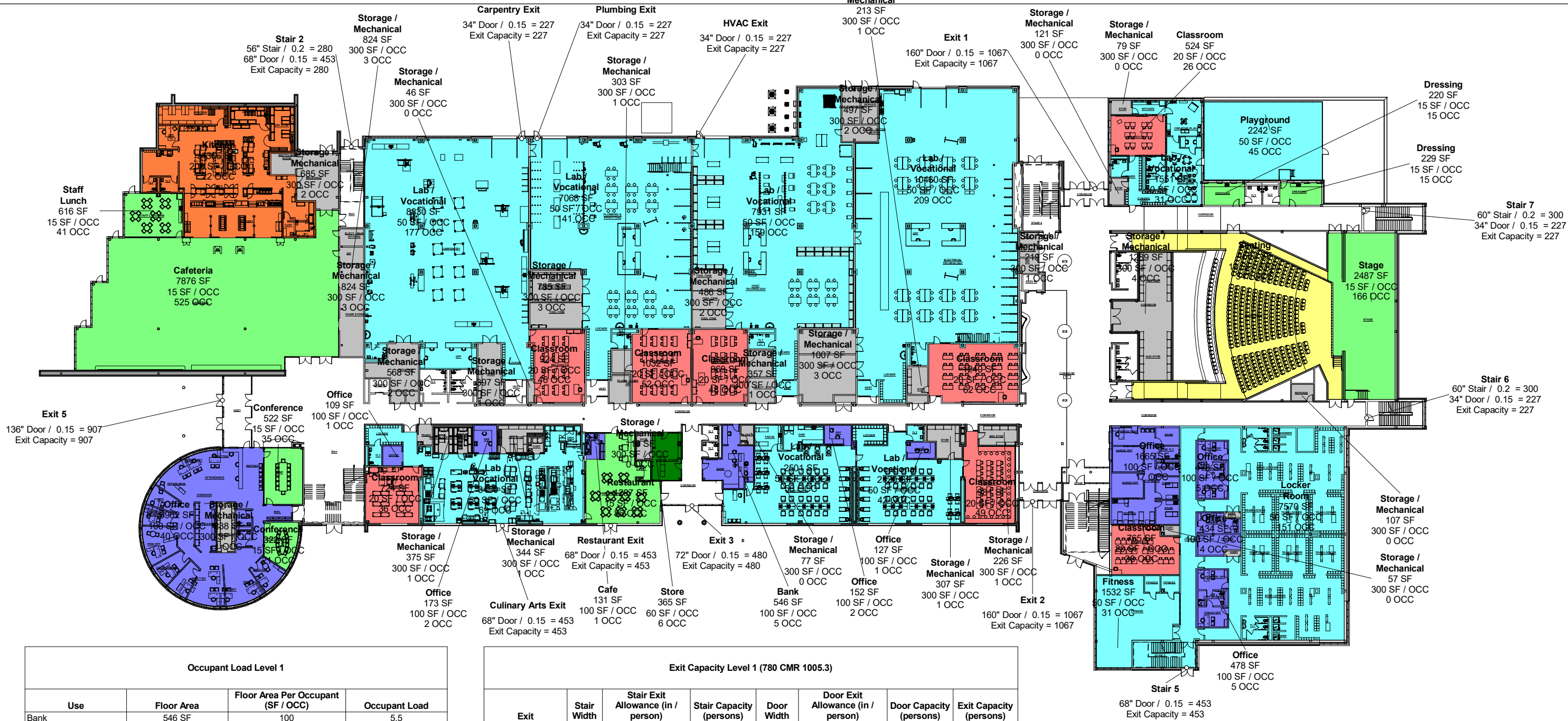


Occupant Load Level 0			
Use	Floor Area	Floor Area Per Occupant (SF / OCC)	Occupant Load
Classroom	2755 SF	20	137.8
Lab / Vocational	24544 SF	50	490.9
Office	1150 SF	100	11.5
Storage / Mechanical	6045 SF	300	20.1
Weights	1406 SF	50	28.1
	35900 SF		688.4

Exit Capacity Level 0 (780 CMR 1005.3)							
Exit	Stair Width	Stair Exit Allowance (in / person)	Stair Capacity (persons)	Door Width	Door Exit Allowance (in / person)	Door Capacity (persons)	Exit Capacity (persons)
Auto Collision Exit				34"	0.15	227	227
Auto Tech Exit				34"	0.15	227	227
Metal Fab Exit				34"	0.15	227	227
Stair 3	60"	0.2	300	34"	0.15	227	227
Stair 6	60"	0.2	300	34"	0.15	227	227
Stair 7	60"	0.2	300	34"	0.15	227	227

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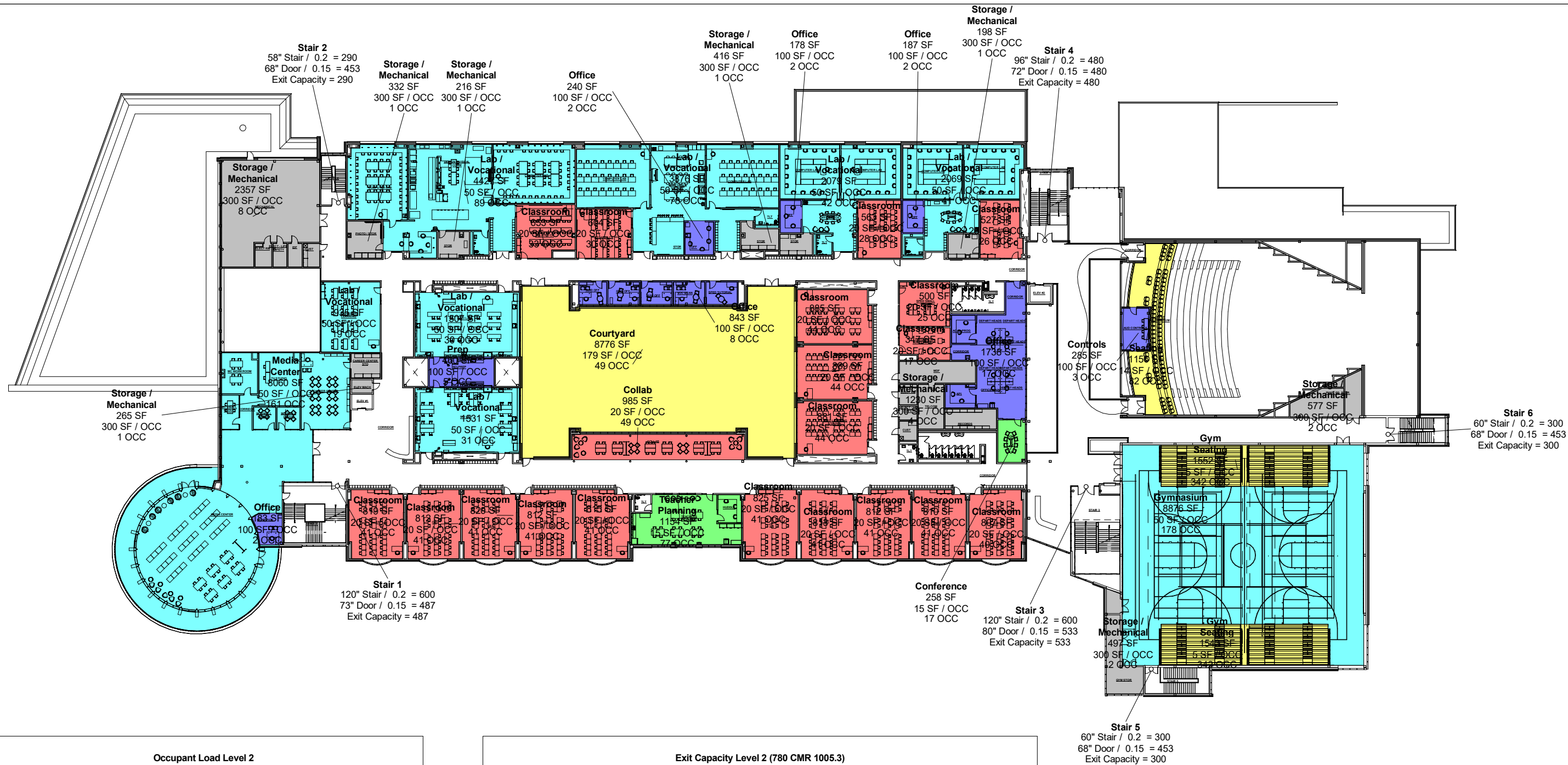
Occupant Load Densities (780 CMR TABLE 1004.1.2)	
<div></div> Actual Population	Assembly with Fixed Seats; Posted Occupant Load
<div></div> 15 Net S.F. / Occ.	Assembly without Fixed Seats - Unconcentrated (Tables and Chairs)
<div></div> 20 Net S.F. / Occ.	Classrooms
<div></div> 50 Net S.F. / Occ.	Educational - Shops and Laboratories; Reading Rooms
<div></div> 50 Gross S.F. / Occ.	Exercise and Fitness Areas; Locker Rooms
<div></div> 60 Gross S.F. / Occ.	Retail
<div></div> 100 Gross S.F. / Occ.	Office Areas
<div></div> 200 Gross S.F. / Occ.	Kitchen
<div></div> 300 Gross S.F. / Occ.	Storage / Mechanical



Occupant Load Level 1			
Use	Floor Area	Floor Area Per Occupant (SF / OCC)	Occupant Load
Bank	546 SF	100	5.5
Cafe	131 SF	100	1.3
Cafeteria	7876 SF	15	525.1
Classroom	6929 SF	20	346.4
Conference	844 SF	15	56.3
Dressing	449 SF	15	30.0
Fitness	1532 SF	50	30.6
Kitchen	4366 SF	200	21.8
Lab / Vocational	45150 SF	50	903.0
Locker Room	7570 SF	50	151.4
Office	7579 SF	100	75.8
Playground	2242 SF	50	44.8
Restaurant	1287 SF	15	85.8
Seating	4662 SF	13	347.0
Staff Lunch	616 SF	15	41.0
Stage	2487 SF	15	165.8
Storage / Mechanical	8772 SF	300	29.2
Store	365 SF	60	6.1
	103402 SF		2866.9

Exit Capacity Level 1 (780 CMR 1005.3)							
Exit	Stair Width	Stair Exit Allowance (in / person)	Stair Capacity (persons)	Door Width	Door Exit Allowance (in / person)	Door Capacity (persons)	Exit Capacity (persons)
Carpentry Exit				34"	0.15	227	227
Culinary Arts Exit				68"	0.15	453	453
Exit 1				160"	0.15	1067	1067
Exit 2				160"	0.15	1067	1067
Exit 3				72"	0.15	480	480
Exit 4				88"	0.15	587	587
Exit 5				136"	0.15	907	907
HVAC Exit				34"	0.15	227	227
Plumbing Exit				34"	0.15	227	227
Restaurant Exit				68"	0.15	453	453
Stair 2	56"	0.2	280	68"	0.15	453	280
Stair 5	68"			68"	0.15	453	453
Stair 6	60"	0.2	300	34"	0.15	227	227
Stair 7	60"	0.2	300	34"	0.15	227	227
							6880

Occupant Load Densities (780 CMR TABLE 1004.1.2)	
Actual Population	Assembly with Fixed Seats; Posted Occupant Load
15 Net S.F. / Occ.	Assembly without Fixed Seats - Unconcentrated (Tables and Chairs)
20 Net S.F. / Occ.	Classrooms
50 Net S.F. / Occ.	Educational - Shops and Laboratories; Reading Rooms
50 Gross S.F. / Occ.	Exercise and Fitness Areas; Locker Rooms
60 Gross S.F. / Occ.	Retail
100 Gross S.F. / Occ.	Office Areas
200 Gross S.F. / Occ.	Kitchen
300 Gross S.F. / Occ.	Storage / Mechanical



Occupant Load Level 2

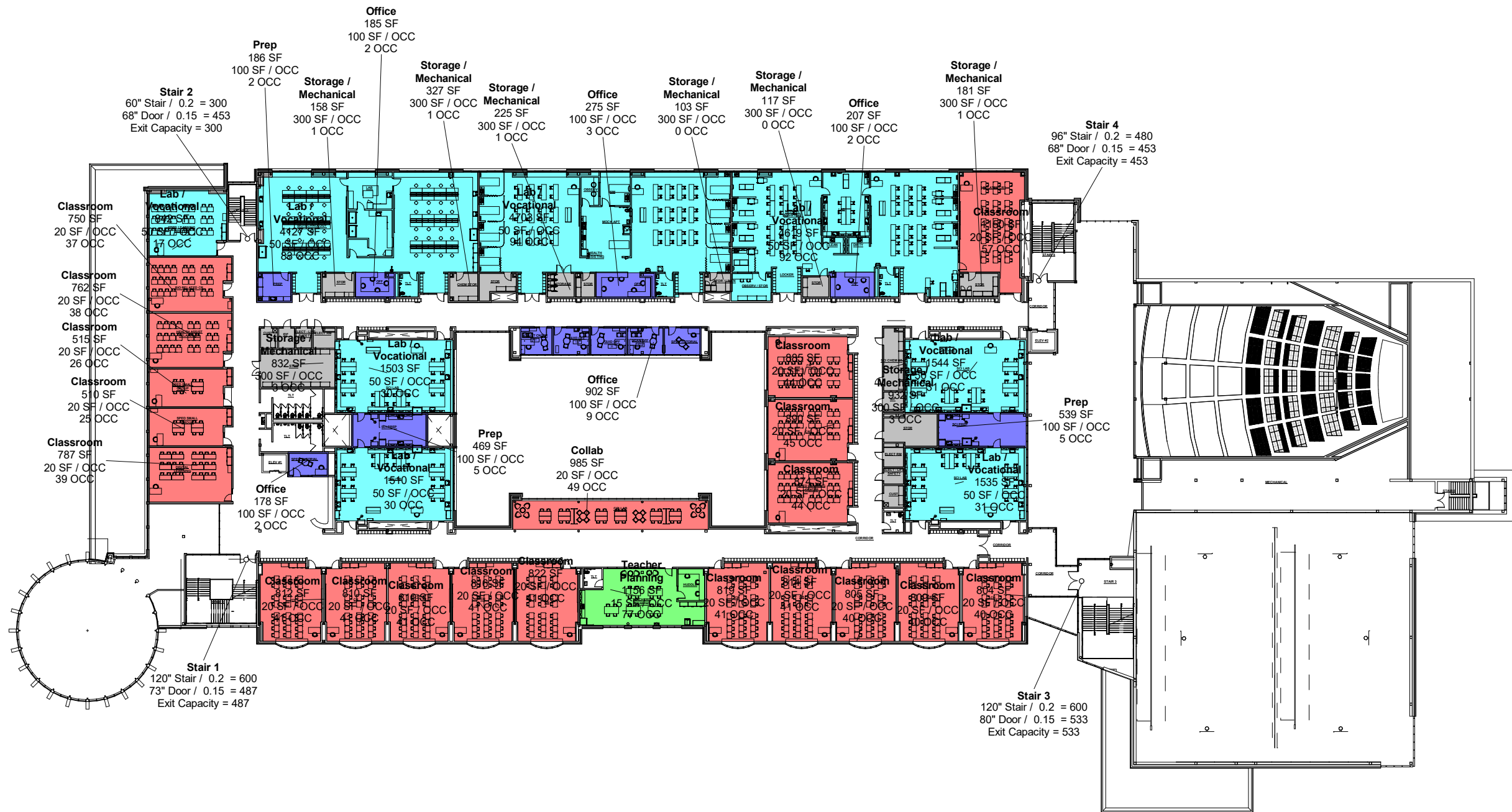
Use	Floor Area	Floor Area Per Occupant (SF / OCC)	Occupant Load
Classroom	13995 SF	20	699.7
Collab	985 SF	20	49.2
Conference	258 SF	15	17.2
Controls	285 SF	100	2.8
Courtyard	8776 SF	179	49.0
Gym Seating	3095 SF	5	684.0
Gymnasium	8876 SF	50	177.5
Lab / Vocational	16424 SF	50	328.5
Media Center	8060 SF	50	161.2
Office	3369 SF	100	33.7
Prep	460 SF	100	4.6
Seating	1156 SF	14	82.0
Storage / Mechanical	6089 SF	300	20.3
Teacher Planning	1154 SF	15	76.9
	72982 SF		2386.8

Exit Capacity Level 2 (780 CMR 1005.3)

Exit	Stair Width	Stair Exit Allowance (in / person)	Stair Capacity (persons)	Door Width	Door Exit Allowance (in / person)	Door Capacity (persons)	Exit Capacity (persons)
Stair 1	120"	0.2	600	73"	0.15	487	487
Stair 2	58"	0.2	290	68"	0.15	453	290
Stair 3	120"	0.2	600	80"	0.15	533	533
Stair 4	96"	0.2	480	72"	0.15	480	480
Stair 5	60"	0.2	300	68"	0.15	453	300
Stair 6	60"	0.2	300	68"	0.15	453	300










Occupant Load Densities (780 CMR TABLE 1004.1.2)

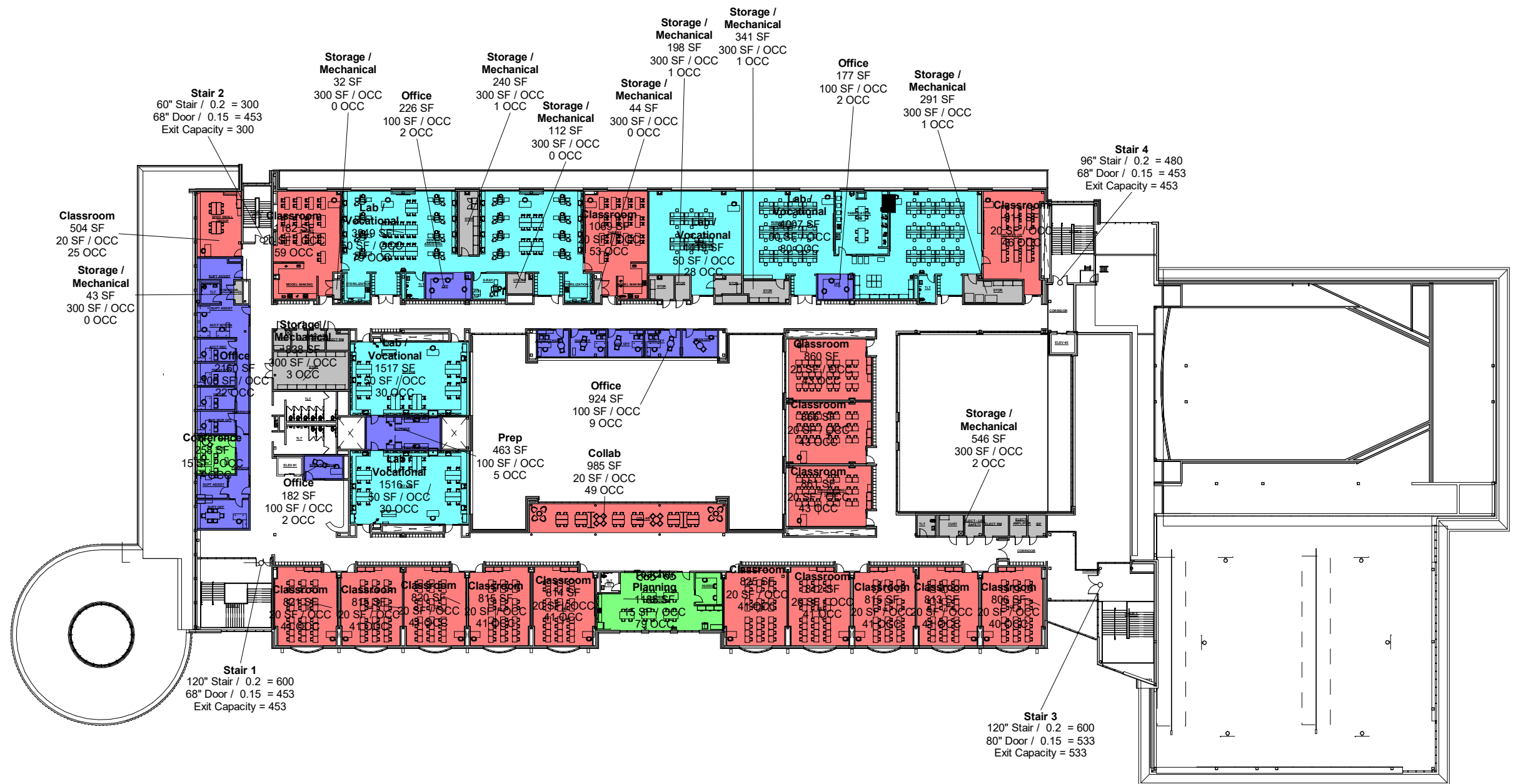
Actual Population	Assembly with Fixed Seats; Posted Occupant Load
15 Net S.F. / Occ.	Assembly without Fixed Seats - Unconcentrated (Tables and Chairs)
20 Net S.F. / Occ.	Classrooms
50 Net S.F. / Occ.	Educational - Shops and Laboratories; Reading Rooms
50 Gross S.F. / Occ.	Exercise and Fitness Areas; Locker Rooms
60 Gross S.F. / Occ.	Retail
100 Gross S.F. / Occ.	Office Areas
200 Gross S.F. / Occ.	Kitchen
300 Gross S.F. / Occ.	Storage / Mechanical



Occupant Load Level 3			
Use	Floor Area	Floor Area Per Occupant (SF / OCC)	Occupant Load
Classroom	15252 SF	20	762.6
Collab	985 SF	20	49.2
Lab / Vocational	20383 SF	50	407.7
Office	1746 SF	100	17.5
Prep	1194 SF	100	11.9
Storage / Mechanical	2875 SF	300	9.6
Teacher Planning	1156 SF	15	77.1
	43591 SF		1335.5

Exit Capacity Level 3 (780 CMR 1005.3)							
Exit	Stair Width	Stair Exit Allowance (in / person)	Stair Capacity (persons)	Door Width	Door Exit Allowance (in / person)	Door Capacity (persons)	Exit Capacity (persons)
Stair 1	120"	0.2	600	73"	0.15	487	487
Stair 2	60"	0.2	300	68"	0.15	453	300
Stair 3	120"	0.2	600	80"	0.15	533	533
Stair 4	96"	0.2	480	68"	0.15	453	453

Occupant Load Densities (780 CMR TABLE 1004.1.2)	
 Actual Population	Assembly with Fixed Seats; Posted Occupant Load
 15 Net S.F. / Occ.	Assembly without Fixed Seats - Unconcentrated (Tables and Chairs)
 20 Net S.F. / Occ.	Classrooms
 50 Net S.F. / Occ.	Educational - Shops and Laboratories; Reading Rooms
 50 Gross S.F. / Occ.	Exercise and Fitness Areas; Locker Rooms
 60 Gross S.F. / Occ.	Retail
 100 Gross S.F. / Occ.	Office Areas
 200 Gross S.F. / Occ.	Kitchen
 300 Gross S.F. / Occ.	Storage / Mechanical



Occupant Load Level 4			
Use	Floor Area	Floor Area Per Occupant (SF / OCC)	Occupant Load
Classroom	14455 SF	20	722.8
Collab	985 SF	20	49.2
Conference	258 SF	15	17.2
Lab / Vocational	12409 SF	50	248.2
Office	3670 SF	100	36.7
Prep	463 SF	100	4.6
Storage / Mechanical	2686 SF	300	9.0
Teacher Planning	1185 SF	15	79.0
	36111 SF		1166.6

Exit Capacity Level 4 (780 CMR 1005.3)							
Exit	Stair Width	Stair Exit Allowance (in / person)	Stair Capacity (persons)	Door Width	Door Exit Allowance (in / person)	Door Capacity (persons)	Exit Capacity (persons)
Stair 1	116"	0.2	580	68"	0.15	453	453
Stair 2	60"	0.2	300	68"	0.15	453	300
Stair 3	120"	0.2	600	80"	0.15	533	533
Stair 4	96"	0.2	480	68"	0.15	453	453

Occupant Load Densities (780 CMR TABLE 1004.1.2)	
Actual Population	Assembly with Fixed Seats; Posted Occupant Load
15 Net S.F. / Occ.	Assembly without Fixed Seats - Unconcentrated (Tables and Chairs)
20 Net S.F. / Occ.	Classrooms
50 Net S.F. / Occ.	Educational - Shops and Laboratories; Reading Rooms
50 Gross S.F. / Occ.	Exercise and Fitness Areas; Locker Rooms
60 Gross S.F. / Occ.	Retail
100 Gross S.F. / Occ.	Office Areas
200 Gross S.F. / Occ.	Kitchen
300 Gross S.F. / Occ.	Storage / Mechanical