Inspections Division
Date: 01/28/14

DIVERSIFIED COMMUNICATIONS
121 FREE STREET
PORTLAND, ME 04101

PROJECT DESCRIPTION:
Partial fit-up of first and second floor of existing 6 story building with masonry exterior bearing walls and steel & wood framed interior structure. Scope of work included two new convenience stairs each cutting a single floor plane. The existing lobby will be renovated, and a new lunch room and exercise rooms with locker rooms and showers will be created. Existing floor plate area is c. 18,700 s.f, and total bulding area is c. 99,800 s.f. The total fit-up area is c. 8,600 s.f. The building is fully sprinklered and has a fire alarm system. The building is mixed use/separated; Business and Mercantile, to which we are adding the Assembly spaces.

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PROJECT ARCHITECT: James P. Gauthier

DATE: November 14, 2013

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Code Criteria	IBC 2009	NFPA-101 2009	Discussion / Findings
Primary Use and Occupancy Classification	**Ch.3**	**Ch.39**	
IBC - Mixed Use/Separated **IBC - Business B**	§508 §304.1		Existing building occupancy is primarily Business with some Mercantile. Tenant performing modifications Business occupancy.
NFPA - 101 Existing Business Occupancies		Chapter 39	
A room that is used for assembly purposes with an occupant load of less than 50 shall be classified as Group B occupancy.	§303.1 ex. 2		Fitness room #202 (ccupant load 32) classified as Business. Lunch room #207 (occupant load 142) and Cardio room#106 (occupant load 135) classified as Assembly.
A room that is used for assembly purposes that is less than 750 s.f. shall be classified as Group B occupancy.	§303.1 ex. 3		
Building Heights and Areas	**Ch. 5**		
Allowable building heights and areas	table 503		Group B, Type 3-B: Allowable height 75' (with sprinklers 504.2). Allowable stories 4 (with sprinklers 504.2). Allowable area 19,000 without sprinkler increase.
			Building as type 3-B is existing non-conforming with regard to number of stories (6). In work area, we will rate primary structure 1 HR, as in type 3-A, which would allow 6 stories with sprinklers.
Mixed use and occupancy	§508		
Accessory occupancies	§508.2		Ancillary to the main occupancy. Shall not occupy more than 10% of the building area of the story in which they are located. No separation required.
Incidental accessory occupancies	table 508.2.5		Furnace room > 400,000 Btu/hr.: 1 HR or automatic extinguishing system.
Separation of occupancies	table 508.4		Required separation of occupancies: Business/Assembly = 1HR (w/ sprinklers). Business/Mercantile = none required. Assembly/Mercantile = 1HR (w/ sprinklers).
		table 6.1.14.4.1	Business/Assembly<300 = 1HR Business/Mercantile = 1HR w/ sprinklers Assembly<300/Mercantile = 1HR w/sprinklers

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			Lunch rm. and Cardio rm. will be Assembly spaces within Business occupancy, separated from it by 1HR assemblies. Separation between first floor Merchantile tenants and second floor Assembly space (Lunch rm) achieved by existing floor/ceiling assembly (New and existing penetrations to be firestopped).
Types of Construction	**Ch. 6**		
Type III-B construction	table 601		Existing non-combustible exterior masonry walls.
Primary structural frame rating			0 HR. (3-A = 1 HR)
Exterior bearing walls			2 HR. (3-A = 2 HR)
Interior bearing walls			0 HR. (3-A = 1 HR)
Floor construction			0 HR. (3-A = 1 HR)
Roof construction			0 HR. (3-A = 1 HR)
Fire Resistance Ratings for exterior walls based on Fire Separation Distance.	table 602		1 HR rated where less than 30' from centerline of alley or public way.
			Building is existing non-conforming as type 3-B. Type 3-A would require ratings noted above. Most of the building primary structure has been protected. Existing floor/ceiling assembly approximates 1 HR UL design L501, L512 and item number 13-1.1 on IBC table 720.1(3). Primary structure shall be protected in renovation work area.
Fire and Smoke Protection Features	**Ch. 7**		
Protection from Hazards		§39.3.2.1	Areas used for general storage, boiler or furnace rooms.
		§8.7.1.1	1). Enclose the area with a 1 HR fire barrier or 2.) protect the area with automatic extinguishing systems.
Enclosure and protection of stairs		§7.2.2.5.1.2	Inside stairs, other than those serving as an exit component, shall be protected in accordance with Section 8.6
Fire resistance ratings for enclosure of floor openings		§8.6.5	Less than 4 stories new construction: 1HR fire barrier.
Convenience openings		§8.6.8	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.

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Shaft Enclosures	§708		Openings through a floor/ceiling assembly shall be protected by a shaft enclosure.
Fire resistance rating	§708.4		1 HR when connecting less than 4 stories.
Openings	§708.7		Shall be protected as fire barriers. Doors shall be self- or automatic-closing by smoke detection.
Enclosure at the top	§708.12		A shaft enclosure that does not extend to the underside of the foor deck shall be enclosed at the topmost floor with construction with the same fire resistance rating as the shaft enclosure.
Minimum fire protection ratings for opening protectives		Table 8.3.4.2	Vertical shafts (including stairways): 1 HR.
			Fire door assemblies in 1 HR shaft: 1 HR.
Shaft enclosure exceptions	§708.2		Shaft enclosure not required in sprinklered building for stairway that is not portion of the means of egress and where the opening is protected by a draft curtain and closely spaced sprinklers.
			New communicating stairs #3 and #4 are not part of means of egress. We are considering them convenience stairs that do not require separation and require enclosure on only one level.
Corridor Rating	§709.4	§12.3.6	0 HR for corridor in Business occupancy with sprinklers per table 1018.1.
Fire Ratings for doors in exit enclosures & passageways	table 715.4		1 HR. barriers (exit passageway) = 60 min. dr.
			2 HR. barriers = 90 min. door
			1 HR. exterior = 45 min.
Glazng materials	715.4.7		Fire protection rated glazing conforming to the opening protection requirements shall be permitted in fire door assemblies.
Safety glazing	715.4.7.4		Fire protection rated glazing installed in fire doors subject to human impact in hazardous locations shall comply with Chapter 24.
INTERIOR FINISHES	**Ch. 8**		
Interior wall and ceiling finish requirements	Table 803.9		Exit enclosures and exit passageways: Class B
			Corridors: Class C
			Rooms and enclosed spaces: Class C
		§39.3.2.2	Class A or B in exits and exit access corridors.
			Class A , B, or C in other areas.

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FIRE PROTECTION SYSTEMS	**Ch. 9**		
Detection, Alarm, and Communication Systems		§39.3.4.1	Shall be provided in all business occupancies where any of the following exist: (1) three stories or greater (2) 100 or more occupants above or below level of exit discharge (3) total occupancy of 100 or more.
Supervisory service	§901.6, §903.4		Existing monitored sprinkler and fire alarm system to remain.
Automatic Sprinklers	§903.2.1.3		Existing automatic sprinklers to remain. Sprinklers to be modified as required for new floor plan.
Portable Fire Extinguishers for Class A fire hazards	table 906.3.1		Minimum rated single extinguisher: 2-A
			Maximum floor area per unit A: 1,500 s.f.
			Maximum floor area for Extinguisher: 11, 250 s.f.
			Maximum travel distance to extinguishers: 75'
Extinguishment requirements		§39.3.5	Portable extinguishers shall be provided in every business occupancy in accordance with 9.7.4.1.
MEANS OF EGRESS	**Ch. 10**	**Ch. 7**	
Means of Egress			
Continuity	1003.6		The path of egress travel along a means of egress shall not be interrupted by any building element other than a means of egress component.
			The required capacity of a means of egress system shall not be diminished along the path of egress travel.
Occupant Load	§1004		As determined by per unit area factor in table 1004.1.1 or where approved by AHJ the actual number of occupants for whom each occupied space is designed.
	table 1004.1.1		Business areas: 100 gross s.f./occupant
			Assembly unconcentrated: 15 net s.f./occupant.
			Exercise rms: 50 gross s.f./occupant
			Locker rms: 50 gross s.f. /occupant
			Accessory storage areas: 300 gross s.f. /occupant
		§39.1.7	In accordance with table 7.3.1.2 or the maximum probable popluation of the space, whichever is greater.
		Table 7.3.1.2	Business use: 100 s.f./person
			Assembly less concentrated: 15 net s.f./person
			Exercise room with equipment: 50 s.f./person
			Exercise room without equipment: 15 s.f./person

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Egress Width	§1005.1		The total width of means of egress shall not be less than the occupant load served by the means of egress multiplief by .0.3" per occupant for stairways and by 0.2" per occupant for other egress components.
Means of Egress Capacity		Table 7.3.3.1	Stairways 0.3 in/person. Level components 0.2 in/person.
Accessible Means of Egress	§1007.1		Accessible means of egress are not required in alterations to existing buildings.
Means of Egress Doors	§1008.1		Shall be readily distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors.
Access-controlled egress doors	§1008.1.4.4		Entrance doors in a means of egress and entrance doors to tenant spaces are permitted to be equipped with an approved entrance and egress access control system installed in accordance with 1008.1.4.4
		§7.1.6.2	Permitted with approved entrance and egress access control system meeting the criteria of 7.2.1.6.2
Electrically controlled egress door assemblies		§7.2.1.5.5	Permitted with approved hardware that meets the conditions of 7.2.1.5.5
Ramps	§1010.2		Shall have running slope not steeper than one unit vertical in 12 units horizontal.
Rise	§1010.4		Vertical rise shall be 30" maximum.
Width	§1010.5		Minimum width of egress ramps shall not be less than that required for corridors. The clear width between handrails shall be 36" minimum.
Landings	§1010.6		Shall have landings at the bottom and top of each ramp, points of turning, entrance, exits and at doors, as wide as adjoining ramp run and 60" min length.
Construction	§1010.7		Shall be of materials consistent with with the types of materials permitted for the construction.
Handrails	§1010.8		Ramps with a rise greater than 6" shall have handrails on both sides.
Exit and Exit Access	§1014		
Egress through intervening spaces	§1014.2		Egress from a room or space shall not pass through adjoing or intervening rooms or areas, except where such areas and the area served are accessory to one or the other and provide a discernible path of egress travel.

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Arrangement of means of egress		§7.5.1.2	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, unless provided for in 7.5.1.2.1 and 7.5.1.2.2.
		§7.5.1.2.1	Existing corridors that require passage through a room to access an exit shall be permitted to be used provided that the (1) path of travel is marked in accordance with 7.10 and (2) doors to such rooms comply with 7.2.1.
		§7.5.1.2.2	Corridors that are not required to be fire rated shall be permitted to discharge into open floor plan areas.
			The second means of egress from Lunch room will pass along the edge of Fitness room via an unenclosed clearly demarked path of travel to the common lobby.
Common path of egress travel	§1014.3	39.2.5.3.1	In Group B occupancies with sprinkler system, not more than 100 ft.
		39.2.5.2	Common Path of Travel 100' w/ sprinklers.
Number of Exits		§39.2.4.1	Not less than two separate exits on every story.
Exit and Exit Access Doorways	§1015.1		Two exits shall be provided in Business occupancies of 50 or greater.
Exit Separation Distance	§1015.2	§7.5.1.3.3	The separation distance of the exit doors shall not be less than one third of the length of the maximum overall diagonal dimension of the area served (with sprinklers).
		§7.5.1.3.1	Exits shall be remotely located from each other and be arranged to minimize the possibility that more than one has the potential to be blocked by any one fire or other emergency condition.
		§7.15.1.3.5	In existing buildings the exits shall be exempt from the diagonal measurement separation distance provided that such exits are remotely located in accordance with Section 7.5.1.3.1.
Exit Access Travel Distance	Table 1016.1		300' maximum exit access travel distance from most remote point (Group B w/ sprinklers).
		§39.2.6.3	300' in Business Occupancy with sprinkler.
Aisles	§1017.2		In accordance with §1005.1 but not less than 36"
Exit Access Corridors		§7.1.3.1	1 HR. rating requirement does not apply to existing buildings provided that the occupancy does not change.
Corridor rating	§1018.1		0 HR rating with sprinklers (table 1018.1)

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Dead End Corridors	§1018.4.2		The dead end in a corridor shall not exceed 50' (Group B w/ sprinklers).
		§39.2.5.2	50' in existing Business Occupancies.
Exit enclosures	§1022.1		2 HR fire rating when connecting 4 stories or more.
Exits		§7.1.3.2.1	In existing buildings with sprinklers existing stair enclosures shall have minmum 1HR rating.
No Exit		§7.10.8.3	Any door passage, or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified by a sign that reads "NO EXIT".