



**A C O O R N**

**ENGINEERING, INC.**

Assistant Chief Keith Gautreau  
City of Portland Fire Department  
380 Congress St.  
Portland, ME 04101

December 5, 2017

Subject: 149-155 Washington Avenue – Fire Department Checklist  
Section K of Application

On behalf of Diving Rock, LLC, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant

Diving Rock, LLC  
15 Howard Street  
Portland, Maine 04101  
(207) 577-3873

2. Name address, telephone number of architect

Ryan Senatore Architecture  
565 Congress Street #304  
Portland, Maine 04101  
(207) 747-5159

3. Proposed uses of any structures [NFPA and IBC classification]

NFPA: Business / IBC: B

4. Square footage of all structures, including decks [total and per story]

Existing Building		
1 <sup>st</sup> Floor	1,870	sf
<b>Total</b>	1,870	<b>sf</b>

Proposed Building		
1 <sup>st</sup> Floor	2,192	sf
2 <sup>nd</sup> Floor	3,128	sf
3 <sup>rd</sup> Floor	3,128	sf
4 <sup>th</sup> Floor	3,128	sf
<b>Total</b>	11,576	<b>sf</b>

#### 5. Elevation of all structures

Based upon the average grade plane defined by the IBC, the proposed building height is 44 feet. This height is below the allowable 45 feet within the B-1 zone. Please refer to the building elevations provided by the Architect for additional information.

#### 6. Proposed fire protection of all structures

The building will have a sprinkler system with additional protection per code. Fire flows and requirements for system storage or booster pumping are subject to the fire professional design which will be performed prior the request for a building permit.

#### 7. Hydrant locations

An existing hydrant is located directly across Washington Avenue from the west corner of the property. Hydrant flow data from the Portland Water District once received may be made available to the Fire Department upon request.

#### 8. Water main size and location

The redevelopment will be serviced by the existing water main within Washington Avenue. A 6" fire service line will extend from the existing water main to the building fire suppression system. The building is expected to have internal sprinkler risers and a Fire Department pump connection on the street side of the building.

#### 9. Access to all structures [min. 2 sides]

Access to the structure is provided directly on Washington Avenue. Additionally, the site is accessible by a fire truck through East Cove Street and the 20.5-foot driveway.

#### 10. The Architect has provided a code summary (attached).

### **NFPA 1 – Chapter 18 Fire Department Access and Water Supply**

#### 18.2 Fire Department Access:

The project site is located in a densely developed area and is fronted by a public street. The following pavement street width is currently available:

- Washington Avenue: 44 feet

Per NFPA 1 – Chapter 18.2.3.3.1, there will be public street access within 50 feet of at least one exterior door. Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 feet from a Fire Department access road.

### **City of Portland Technical Manual – Section 3 Public Safety**



*3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).*

Response: Not applicable

*3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.*

Response: As depicted on the site plan, the proposed building layout provides a minimum of two paved access points to the structure: one from Washington Avenue directly and one from East Cove Street.

*3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:*

- *Building Height.*
- *Building Occupancy.*
- *Construction Type.*
- *Impediments to the Structures.*
- *Safety Features Provided.*

Response: The proposed development layout has contemplated emergency access conditions and provides for safe and efficient access along the public street for emergency vehicles.

*3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.*

Response: The building will be provided with exterior doors that will be within 50' of a Fire Department access route, namely Washington Avenue.

*3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.*

Response: The proposed site maintains the required clearance height of nine feet in all cases except for the small area with covered parking. The four covered parking spots will have a clearance height of approximately eight feet.

*3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.*

Response: The elevators will be sized to accommodate an 80 x 24 stretcher, per the Architect's designs.


*3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.*

Response: The applicant will work with the City's Public Works Division to assign street addresses and numbering to meet City Standards.



Thank you for your review. Please let me know if you have any additional questions or comments.

Sincerely,



William H. Savage, P.E.  
Principal  
Acorn Engineering, Inc.

## Mixed-Use at 155 Washington Avenue

	IBC 2009		NFPA 101 2009	
4 floors above grade	502.1			
Sprinklers		NFPA 13		NFPA 13
Fire Alarm		Monitored Fire Alarm Required		Monitored Fire Alarm Required
Smoke and CO Detectors		Smoke detectors required		Smoke detectors required
Occupant Load	T 1004.1.1	Floor 1 = 1,095 sf Mercantile (30 gsf/occ) = 37 Floor 2 = 2,438 sf Business (100 gsf/occ) = 25 Floor 3 = 2,438 sf Business (100 gsf/occ) = 25 Floor 4 = 2,172 sf Business (100 gsf/occ) = 22 <b>Total Building Occupant Load = 109</b>	7.3.1.2	Floor 1 = 1,095 sf Mercantile (30 gsf/occ) = 37 Floor 2 = 2,438 sf Business (100 gsf/occ) = 25 Floor 3 = 2,438 sf Business (100 gsf/occ) = 25 Floor 4 = 2,172 sf Business (100 gsf/occ) = 22 <b>Total Building Occupant Load = 109</b>
Use Group(s)	309.1	Floor 1 - Mercantile (M)	6.1.10	Mercantile
	311.3	Floor 1 - Parking (S2)	6.1.13.1	Storage (Vehicles)
	310.1	Floors 2, 3, 4 - (B) Business	38.1	Business
Horizontal Separation	509.2	3 hr separation, Type 1A construction below separation		
Floor 1 - Const. Type	T 503	1A - non-combustible protected		I (332) non-combustible protected
Building Area	T 503	Unlimited Area per floor		
Building Elements	T 601	3 hr Structural Frame	38.1.6	No Minimum Construction requirements
	T 602	3 hr Bearing Walls Exterior		
	T 601	3 hr Bearing Walls Interior		
	T 601	0 hr Non-Bearing Walls Interior		
	T 602	1 hr Non-Bearing Walls Exterior (sep. dist 10' <= 30')		
	T602	2hr Non-Bearing Walls Exterior (sep. dist 0' < 10')		
	T 602	0 hr Non-Bearing Walls Exterior (sep. dist >30')		

Floor 2,3,4 Const. Type	T 503	5B - combustible unprotected		V (000) combustible unprotected
Building Height	T 503 and 504.2	Sprinkler increase = 3 stories and 60' max.  The proposed building is 3 stories (on top of the 1 story podium) The Proposed building height is 45'		
Building Area	T 503	9,000 sf max floor plate allowed  Floor plate of 3,128 sf		
Building Elements	T 601	0 hr Structural Frame	38.1.6	No Minimum Construction requirements
	T 602	0 hr Bearing Walls Exterior (sep. dist >= 10')  The building is 33'-0" from the Southern Property Line The building is 11'-6" from the centerline of East Cove Street The building is 33'-6" from the centerline of Washington Avenue The building is 45'-0" from the Western Building on the Property		
	T 602	1 hr Bearing Walls Exterior (sep. dist <10')		
	T 601	0 hr Bearing Walls Interior		
	T 601	0 hr Non-Bearing Walls Interior		
	T 602	0 hr Non-Bearing Walls Exterior (sep. dist >= 10')		
	T 602	1 hr Non-Bearing Walls Exterior (sep. dist <10')		
	705.5	Exterior Wall with >10' sep. needs rating only from inside		
	T 601	0 hr Floor Construction ( 1hr between units )		
	T 601	0 hr Roof Construction		
Separations				
	508.4	M and S-2 = 1 hr	6.1.14.4.1	Mercantile and Storage (ord.) = 1hr with sprink.
	508.4	M and B = 0 hr	6.1.14.4.1	Mercantile and Business = 1hr with sprinkler
	508.4	B and S-2 = 1 hr		
	708.4	2 hr Elevator Shaft >= 4 stories	8.6.5	2 hr >= 4 stories
	708.4	1 hr Elevator Shaft < 4 stories	8.6.5	1 hr < 4 stories
	708	2 hr Mechanical Shaft >= 4 stories		
	708	1 hr Mechanical Shaft < 4 stories		
	1022.1	2 hr Stair Shaft >= 4 stories		
	1022.1	1 hr Stair Shaft < 4 stories		
	709.1	1 hr Between Dwelling Units		

		1018.1	0 hr Corridor with sprinkler system	38.3.6.1.3	0 hr corridor with sprinkler
		508.2.5	1 hr Boiler Room	38.3.2.1.1	1 hr Boiler Room
		508.2.5	1 hr Trash Room	38.3.2.1.1	1 hr Trash Room
		508.2.5	1 hr Storage Room	38.3.2.1.1	1 hr Storage Room
		3006.4	2 hr Elevator Machine Room		
		715.4	90 minute Stairwell Doors (2hr shaft)		
Distances and Exits		1021.1	2 Exits required	7.4.1.1	2 Means of Egress required
		1016.1	250' Travel Distance to exits with Sprinklers	38.2.6.2	200' Travel distance
		1014	125' Common Path of Travel	36.2.5.3.2	100' Common Path of Travel with sprinkler
		1021.2	M - single means of egress with 75' travel max. and 49 occ.	36.2.4.5	Single means of egress allowed M with sprinkler and 100' Common Path of Travel max.
		1018.4	50' Dead End	35.2.5.2.1	50' Dead End
				30.2.6.2	125' Travel Distance within Dwelling to Corridor
Unprotected Openings		T 705.8	15% when exterior wall sep. dist. is 3'>5'		
		T 705.8	45% when exterior wall sep. dist. is 10'>15'		
		T 705.8	75% when exterior wall sep. dist. is 15'>20'		
		T 705.8	Unlimited when exterior wall sep. dist. is 25'>30'		
		T 705.8	Unlimited when exterior wall sep. dist. is >30'		
Elevator Lobby		708.14.1.4	Not required as Sprinkled with 13		
Elevator as MoE		1007.2.1.1	Not req. as bldg. is not 4 stories above the level of exit discharge		
Egress Stairs		1009.1	Occ. Load >50 = 44" min width	24.2.5.4	36" min. stair width
		1009.1	Occ. Load <=50 = 36" min width	7.2.2.2.1.2(B)	44" min. over 50 occ.
		1003.3	Handrails can protrude into stair 4.5" max	7.2.2.2.1.2	Handrails can protrude into stair 4.5" max
		1005.2	Door Swings may not reduce egress width by > 1/2		
		1009.2	80" min headroom	7.2.2.2.1.1(a)	6'-8" min. headroom
		1009.3	7" max. riser	7.2.2.2.1.1(a)	7" max. riser
		1009.3	11" min Tread depth	7.2.2.2.1.1(a)	11" min. tread
		1009.6	12' max. total rise between floors or landings	7.2.2.2.1.1(a)	12' max. height between landings
Ramps		1010.2	1:12 (8%) Max slope	7.2.5.2(a)	1:12 max. slope

		1010.6	60" long landings at top and bottom		
		1010.6	2% max slope of landings	7.2.5.2(a)	1:48 max. cross slope
		1010.8	>6" rise must have handrails on both sides of ramp		
Egress Corridors		1018.2	44" min. when Occ. > 50		
		1018.2	36" min. when Occ. <= 50		
		1018.2	24" min. at service corridors to mechanical equipment		
Sound		1207.2	STC > 50 at walls and floors/ceilings		
		1207.3	IIC > 50 at walls and floors/ceilings		
Energy IECC 2006		T 402.1.1	0.35 Fenestration U-Factor		
<b>Zone 6</b>			R-49 Ceiling		
Commercial		T 402.1.1	0.35 Fenestration U-Factor		
			R-20c Ceiling entirely above deck		
			R-38 Ceiling at Attic and other		
			R-13+7.5c Metal Framed wall		
			R-30 Floor		
			R-7.5c Basement wall		
			R-10 to 4ft Slab		
			U 0.45 Storefront		
			U 0.80 Entrance Door		
			U 0.55 Other		
Accessibility					
			Ch 11 of IBC 2009 does not apply as State of ME did not adopt it as part of MUBEC		
			Maine Human Rights Act Applies		
			Retail Space must meet ADA 2010		
Plumbing			UPC 412.3 exception #3		
			For Mercantile uses with a total of less than 1,500 sf (1) Toilet Facility		
			for use by one person at a time shall satisfy the requirement of serving customers and employees of both sexes.		