



# WHIPPLE-CALLENDER ARCHITECTS

9.19.16 – 428 FOREST AVENUE CODE REVIEW SUMMARY- INCLUDES REFERENCE TO IBC 2009, IEBC 2009, NFPA 2009 & PORTLAND ZONING REGS.

## Portland Zoning- 2009- Relevant sections:

14-250 Dimensional Req.:

B-2b Community Business zone- permitted use, existing apartment/ multifamily ( 4 units) and existing restaurant

No minimum lot size

Setback requirements

Street frontage 20' min. We are in excess of 20'

Front setback- none, OK

Side setback- none for main, 5' for accessory, OK

Rear yard- 10', 5' for accessory, OK

Max. permitted imperv. surface – None for residential uses & 90% for B2b zone.

Max. permitted bldg. height is 50' with partial ground floor commercial occupancy.

Parking- Existing to remain, no site work. Per section 20, one space required per dwelling unit in B2b residential use, one per 150 s.f. of restaurant space not used for prep or storage.

## IBC- 2009- Relevant sections:

The existing building use is defined as Mercantile Class C for the Cafe and R-2 Apartment .

Per table 503 the Type V / R-2 structure can have 7,000 s.f. per floor and be 2 stories while remaining unsprinklered. WE ARE SPRINKLED AND DO NOT EXCEED THE S.F.

Table 508.4 indicates 1 hr. separation between Mercantile Class C and Residential-2 uses in sprinkled facilities.

The rehabbed structure is sprinkled, Type V / per table 601. No rating required for building elements including framing, all bearing walls, floor construction and roof construction.

## IEBC- 2009- Relevant sections:

405.1 Level 3 alterations apply where the work area exceeds 50% of the aggregate area of the building. LEVEL 3 PROJECT

405.2 APPLICATION- Level 3 alterations shall comply with the provisions of chapters 6,7 for Level 1 and 2 alterations, respectively as well as the provisions of chapter 8. LEVEL 3 PROJECT

607.1 Minimum Energy Requirements- Level 1 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the IECC or IRC. The elements shall conform to these codes as they relate to new construction only. THE PROJECT IS EXISTING, MINIMAL NEW CONSTRUCTION.

The existing structure is un-sprinkled, Type V A per table 601. One hour rated components include framing, all bearing walls, floor construction and roof construction.



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**Fire Department checklist-** please refer to plan for travel distance, smoke detectors, CO2 detectors, alarm panel

## **KNOX BOX SHALL BE PROVIDED**

1. Owner- **Brett Astor**
2. Architect- **Whipple Callender Architects, PO Box 1276 Portland, Maine 04101 (775-2696)**
3. Proposed use- **Existing multifamily and restaurant space**
4. Square footage of structure- **2,700 s.f. gross s.f. per floor**
5. Elevation of all structures- **existing 10' floor to floor**
6. Proposed fire protection of all structures- **fully sprinkled- 13 type at Mercantile, 13 R at Apartments.**
7. Hydrant Locations- **Forest Ave**
8. Water main sizes and locations- **On Pitt St. main size unknown.**
9. Access to any Fire Department Connections-**Connection to existing sprinkler system provided**
10. Access to all structures (2 sides Min.)- **Clear access to 3 sides**
11. A code summary shall be included referencing NFPA and all fire department technical standards-

**NFPA 101-2009 – Chapter 31: Existing Apartment Buildings (In this case, three stories, four total units).**

### **Table 6.1.14.4.1 (b) Required Separation of Occupancies**

The Table indicates a separation between Mercantile and Apartment uses of 2 hrs. As the building is protected throughout by an approved sprinkler system, the rating appears to be reduced to 1 hour. **A 1 HR. SEPARATION BETWEEN APARTMENT AND MERCANTILE WILL BE PROVIDED.**

### **31.1 General Requirements**

**31.1.1.1** The requirements of this chapter shall apply to existing buildings or portions thereof currently occupied as apartment occupancies. In addition, the building shall meet the requirements of one of the following options :

1. **Option One, Buildings without fire suppression or detection systems.**
2. **Option Two, Buildings provided with a complete approved automatic fire detection and notification system in accordance with 31.3.4.4.**
3. **Option Three, Buildings provided with approved automatic sprinkler protection in selected areas, as described in accordance with 31.3.5.9.**
4. **Option Four, Buildings protected throughout by an approved automatic sprinkler system. WE HAVE SELECTED OPTION #4**

### **31.2 Means of Egress Requirements**

**31.2.1.2** Means of escape within a dwelling unit shall comply with the provisions of Section 24.2 for one and two family dwellings. **NA- NO INTERIOR STAIRS**

**31.2.2.3.1** Stairs complying with 7.2.2 shall be permitted. **7.2.2 permits existing stairs with width of 36" and an 8" riser with 9" min. tread. EXISTING EXTERIOR EGRESS STAIRS COMPLY**

### **31.2.4 Number of Exits**

**31.2.4.3** A single exit shall be permitted in buildings where the total number of stories does not exceed four, provided all the following conditions are met:



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1. The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 31.3.5
2. The exit stairway does not serve more than ½ of a story below the level of exit discharge.
3. The travel distance from the entrance door to any dwelling unit to an exit does not exceed 35 feet.
4. The exit stairway is completely enclosed or separated from the rest of the building by barriers having a minimum 1 hour fire resistance rating.
5. All openings between the exit stairway enclosure and the rest of the building are protected by self closing doors having a minimum 1 hr. fire resistance rating.
6. All corridors serving as access to the exits have a min. ½ hr. fire resistance rating.
7. Horizontal and vertical separation having a min. ½ hr. fire resistance rating is provided between dwelling units. WE MEET THE ABOVE CONDITIONS.

## 7.3 Capacity of Means of Egress

7.3.4.2.1 In existing buildings, the width of exit access shall be permitted to be not less than 28" EXIT ACCESS WILL TYPICALLY BE IN EXCESS OF 28".

31.2.9 Emergency lights shall be provided in buildings 4 or more stories in height or with more than 12 dwelling units, unless each unit has a direct exit to the outside of the building at grade level- WE ARE NOT REQUIRED TO HAVE EMERGENCY LIGHTS AS WE ARE 3 STORIES, LESS THAN 12 DWELLING UNITS.

## 31.2 Means of Egress Components

31.2.1.2 Means of escape within a dwelling unit shall comply with the provisions of Section 24.2 for one and two family dwellings. NA- NO INTERIOR STAIRS

31.2.2.1.3 In non- highrise buildings using Option 2, exit stair doors shall be permitted to be 1 ¾" thick solid- bonded wood –core doors that are self closing, self latching and in wood frames not less than ¾" thick. WE WILL PROVIDE DOORS AS REQUIRED

### 31.2.2.2 Doors

31.2.2.2.1 No door in any means of egress shall be locked against egress when the building is occupied. EGRESS DOORS WILL ALWAYS BE OPERABLE FROM INSIDE THE APARTMENT.

### 31.2.2.3 Stairs

31.2.2.3.1 Stairs complying with 7.2.2 shall be permitted. 7.2.2 permits existing stairs with width of 36" and an 8" riser with 9" min. tread. EXISTING EGRESS STAIRS COMPLY w/ 8" RISER AND 10" TREAD

## 31.2.5 Arrangement of Means of Egress

31.2.5.1 Access to all required means of egress shall be in accordance with Section 7.5

31.2.5.3.1 No common path of travel shall exceed 35' in buildings not protected throughout by an approved, supervised automatic sprinkler system installed in accordance with 31.3.5. Travel within a dwelling unit shall not be included when calculating common path of travel. OK- THE COMMON PATH OF TRAVEL IS APPROX. 24' FOR BOTH FRONT AND REAR STAIRS

31.2.6.1 Travel distance within a dwelling unit to a corridor door shall not exceed the following limits: (2) for buildings using Option 2 or 4 , 125 feet. OUR MAXIMUM TRAVEL DISTANCE IS APPROXIMATELY 40'.



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31.2.9 Emergency lights shall be provided in buildings 4 or more stories in height or with more than 12 dwelling units, unless each unit has a direct exit to the outside of the building at grade level- **WE ARE NOT REQUIRED TO HAVE EMERGENCY LIGHTS AS WE ARE 2 STORIES, LESS THAN 12 DWELLING UNITS.**

31.3.2.1.1 Boiler rooms, Laundry and storage areas require 1 hr. rated separation.- **WE WILL PROVIDE 1 HR. SEPARATION AT BOILER ROOM, LAUNDRY AND STORAGE AREAS.**

## **31.3.4.1 Detection, Alarm and Communication Systems**

31.3.4.1.1 A fire alarm system shall not be required where each dwelling unit is separated from other contiguous units by fire barriers having a minimum ½ hour fire resistance rating and where each dwelling unit has either its own independent exit or its own independent stairway or ramp discharging at the finished ground level.

## **31.3.4.2 Initiation**

31.3.4.2.2 Initiation of the required fire alarm system by manual means shall not be required in buildings 4 or fewer stories in height, containing not more than 16 dwelling units and protected throughout by an approved, supervised sprinkler system installed in accordance with 31.3.5.3 **THE ALARM SYSTEM SHALL NOT HAVE MANUAL PULL STATIONS**

31.3.4.2.5 In buildings using Option 4, the required fire alarm system shall be initiated by the automatic fire detection system and in addition to the manual initiation means of 31.3.4.2.1 . **THE ALARM SYSTEM SHALL BE INITIATED BY THE SPRINKLER SYSTEM**

## **31.3.4.3 Notification**

31.3.4.2.1 Occupant Notification shall be provided automatically in accordance with Section 9.6.2 and the following shall also apply:

1. Visible signals shall be installed in units for the visually impaired. **HORNS AND STROBES WILL BE INSTALLED AT BEDROOMS AND LIVING AREAS TYPICALLY**
2. Positive alarm system in accordance with 9.6.3.4 shall be permitted.
3. Existing approved signals shall be permitted. NA- NO EXISTING SIGNALS

31.3.4.3.3 Annunciation shall not be required in buildings TWO or fewer stories in height and not having more than 50 rooms. **NO ANNUNCIATOR PANEL WILL BE INSTALLED**

31.3.4.4.2 Automatic smoke detection shall be installed as follows:

1. Smoke detectors shall be installed in all common areas and work spaces outside the living unit such as exit stairs, egress corridors, lobbies, storage rooms, equipment rooms, and other tenantless spaces in environments that are suitable for proper smoke detector operation.
  2. Heat detectors shall be located within each room of the living unit.
- WE PLAN ON INSTALLING HARD WIRED SMOKE DETECTORS AND CO2 DETECTORS AS REQUIRED.**

## **31.3.4.5 Smoke Alarms**

31.3.4.5.2 Smoke alarms shall be required outside every bedroom per 9.6.2.10 and 31.3.5.4 . **SMOKE DETECTORS WILL BE LOCATED OUTSIDE BEDROOMS AND ALL LEVELS INCLUDING THE BASEMENT**



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## 31.3.2.1.1 Hazardous Area Protection

Boiler and fuel fired heating rooms serving more than a single dwelling unit. 1 hour or sprinklers. THE BOILER ROOM & MECHANICAL SPACES WILL BE PROTECTED WITH 1 HR. RATED WALLS AND CEILING AND SPRINKLER COVERAGE.

## NFPA 101-2009 – Chapter 37: Existing Mercantile Occupancies

### 37.1 General Requirements

37.1.1.1- The requirements of this chapter shall apply to existing buildings or portions thereof currently occupied as mercantile occupancies. EXISTING MERCANTILE USE TO REMAIN AS SUCH.

37.1.1.3.2- Existing portions of the structure shall not be required to be modified , provided that the new construction has not diminished the fire safety of the facility. RATED SEPARATIONS WILL BE INSTALLED BETWEEN THE MERCANTILE USE AND APARTMENTS & A SPRINKLER SYSTEM INSTALLED.

### 37.1.4.2 Sub-classification of occupancy

37.1.4.2.1- Mercantile occupancies shall be subclassified as follows :

(3) Class C. All mercantile occupancies of not more than 3,000 s.f. gross area used for sales purposes and occupying one story only, excluding mezzanines. THE EXISTING MERCANTILE SPACE IS LESS THAN 3,000 S.F. AND IS CLASSIFIED AS CLASS C.

### 37.1.5 Classification of Hazard of Contents

37.1.5.1- The contents of mercantile occupancies shall be classified in accordance with Section 6.2. SEE SECTION 6.2

6.2.2.2- Low Hazard Contents. Low hazard contents shall be classified as those of such low combustibility that that no self propagating fire therein can occur. The mercantile area shall be finished with brick interior wall exposed, tile floors and ceramic tile display.

37.1.7- Occupant Load. Occupant load shall be determined using table 7.3.1.2. Less concentrated use without fixed seating, 15 s.f. per occupant. THE STAFF IS ANTICIPATED TO BE 4 PEOPLE AND THE DINING AREA IS SIZED FOR 46 PERSONS X 15 S.F. PER = 690 S.F. OF SEATING SPACE.

### 37.2- Means of Egress Requirements

37.1.2.1.1- All means of egress shall comply with Chapter 7 and this chapter.

### 37.2.2 Means of Egress Requirements

37.2.2.2.10- In Class C mercantile occupancies, doors shall be permitted to swing inward against the direction of egress travel where such doors serve only the street floor area. IN SWING DOOR WILL REMAIN AT STREET ENTRY

### 37.2.3- Capacity of Means of Egress.

37.2.3.1- The capacity of means of egress shall be in accordance with Section 7.3. SECTION 7.3 INDICATES .2" PER PERSON, A SINGLE 36" LEAF CAN HANDLE 180 PEOPLE.

### 37.2.4 Number of Exits

37.2.4.1 Exits shall comply with the following, except as otherwise permitted by 37.2.4.2 through 37.2.4.5.



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**37.2.4.4 – A single means of egress shall be permitted in a Class C mercantile occupancy provided that the travel distance to the exit does not exceed 75'. WE DO NOT EXCEED 75' OF TRAVEL DISTANCE.**

**37.2.5 Arrangement of Means of Egress- refer to 37.2.4.4 above**

**37.3.4 Detection, Alarm and Communication Systems**

**37.3.4.2 Initiation. Initiation of the fire alarm system shall be by one of the following means: (2) Approved automatic sprinkler system that complies with 9.6.2.1(3) and provides protection throughout the building , plus a minimum of one manual fire alarm box in accordance with 9.6.2.6. THE FIRE ALARM WILL BE ACITIVATED BY THE SPRINKLER SYSTEM.**

**37.3.4.3- Notification.**

**37.3.4.3.1 Occupant Notification- During all times that the mercantile occupancy is occupied, the required fire alarm system, once initiated, shall perform one of the following functions. WE WILL COMPLY WITH (1) It shall activate an alarm in accordance with 9.6.3 throughout the mercantile occupancy , and positive alarm sequence in accordance with 9.6.3.4 or a pre-signal system in accordance with 9.6.3.3 shall be permitted.**

## **NFPA 101-2009 – Chapter 43: Building Rehabilitation**

**43.6.4 Extinguishing Requirements**

**43.6.4.1- In a building with rehabilitation work areas involving over 50% of the aggregate building area, automatic sprinkler systems shall be provided on the highest floor containing a rehabilitation work area and on all floors below in accordance with other sections of the Code applicable to the new construction for the occupancy. WE WILL PROVIDE AND INSTALL A NEW APPROVED SPRINKLER SYSTEM.**

**43.10.4.9.2- Existing handrails and guards on grand staircases shall be permitted to remain in use, provided they are not structurally dangerous. THE EXISTING STAIR IS STRUCTURALLY SOUND AND WILL REMAIN IN USE.**