

CODE REVIEW

Code Review - IEBC 2009

Chapter 4 - Classification of Work

Section 401.2 - The work area (per Chapter 2) is designated on the drawings.
Section 401.3 - The main use group for this building is R-2 (per IEBC, section 310.1). The first floor (Units #1 and 2) are classified as Mercantile (per IEBC, section 309.1).
Section 403.1 - The extent of the repairs in this project shall be classified as *Level 1 Alterations*.

Section 403.2 - Chapter 6 of the IEBC applies to this project.
 Note: Level 2 Alterations do not apply due to the lack of reconfiguration. Level 3 Alterations do not apply as the Work Area is less than 50% of each floor area.

Chapter 6 - Alterations - Level 1

Section 602.1 - Interior wall and ceiling finishes shall comply with Chapter 8 of IEBC.
Section 602.2 - Interior floor finishes shall comply with Section 804 of IEBC.
Section 602.3 - Interior trim materials shall comply with Section 806 of IEBC.
Section 603.1 - Alterations shall be done in a manner that maintains (and does not lessen) the level of fire protection currently provided, per IEBC.
Section 604.1 - Alterations shall be done in a manner that maintains (and does not lessen) the level of protection provided for the means of egress.

Section 605.1 (ex. 1) - Only the altered elements that are primary functions are required to be on an accessible route. On the first floor, the retail space is required to be on an accessible route. The remainder of the work area is not required to be on an accessible route.

Section 605.1 (ex. 2) - An accessible means of egress is not required.

Section 605.1 (ex. 3) - The dwelling units are not required to be Type B units.

Section 605.1 (ex. 4) - There are no Type A dwelling units associated with this project.

Section 605.1.1 - The existing entrances are not being altered.

Section 605.1.4 - It is not anticipated that any ramps will be needed. However, if a ramp is installed, the slope of the ramp cannot exceed 1:8 with a maximum rise of 3 inches, and 1:10 with a maximum rise of 6 inches.

Section 605.1.8 - This project includes altering dwelling units in an R-2 Use Group. Therefore, the requirements of Section 1107 of the IEBC and Chapter 9 of the IEBC are applicable.

Section 1107 (IBC):

1107.1 - Dwelling units shall be provided with accessible features.

1107.4 - This section requires accessible units to be on an accessible route. However, per Section 605.1(1), the accessible units are not primary functions and not required to be on an accessible route.

1107.6.2.1.1 - This section requires structures containing more than 20 dwelling units, to have "Type A units. However, per Section 605.1.9 (IEBC), it limits the work to the altered units. This project is only altering 8 units, therefore, Type A units are not required.

1107.6.2.1.1 - This section requires structures containing 4 or more dwelling units to have those units be "Type B units. However, per Section 605.1.9 (4), these Type B units are not required.

Section 605.1.13 - The maximum height of thresholds shall be $\frac{3}{4}$ ".

Section 605.2 - The only primary function for this project is within Unit #1 and 2 (retail) space. This space shall be accessed by an accessible route. This space shall also include toilet facilities and drinking fountains serving the area of primary function.

Section 606 - This code review does not include a structural review. Please refer to the structural engineer drawings for all required updates and repairs.

Section 607.1 - Level 1 alterations are permitted without requiring the entire building to comply with the International Energy Conservation Code (IECC). However, the alterations must comply with the IECC as they relate to new construction.

Code Review - NFPA 101 2009

Chapter 43 - Building Rehabilitation

Section 43.1.2.1 - Because this structure is undergoing modifications (see 43.2.1.3 for definition), it shall comply with both Chapter 31 (Existing Apartment Buildings) and Chapter 43 (Building Rehabilitation).
 Note: Per the commentary in this section, Chapter 31 (Existing Apartment Buildings) applies to the entire structure, not just the modifications.

Section 43.2.2.1.3 - This section provides a definition of "Modification". Although there will be no reconfiguration of spaces, the AHJ has determined that once the stairs and structure is exposed, the category of "Modification" applies. It is this category of Modification that will be utilized for this project.

Section 43.4 - The renovation work (except for interior finishes) must be in compliance with Chapter 31 for Existing Apartment Buildings. Interior finishes must comply with Section 43.4.3. Furthermore, the building must also comply with the requirements of Chapter 31.

Section 43.4.2 - The capacity of means of egress per Section 7.3 shall be sufficient for the occupant load.

Occupant Load per Table 7.3.1.2 : 1 person per 200 square feet.

Section 43.4.3 - New interior finishes shall meet the requirements for new construction.

Chapter 31 - Existing Apartment Buildings

Section 31.1.1.1 - The structure shall comply with one of the four options for fire protection as described in this section. Of the four options that are available, Option 4 is the option that is being considered for this project. This option consists of installing a sprinkler system throughout the structure. The current structure has a fire alarm system, but at this time it is unclear if the system meets all the requirements to comply with Option 2.

Section 31.1.2.1 - Multiple occupancies shall be in accordance with 6.1.14.
 6.1.14.2.3 - Due to a portion of the first floor (Unit 1 and 2) being used for Mercantile, this building will be a Multiple Occupancy and further defined as a Separated Occupancy.

6.1.14.4.1 - Per the Table in this section, the separation between the Residential Apartment Building and the Mercantile shall be 2 hours. *Note:* This will be reduced to a 1-hour rating with a sprinkler system per Section 6.1.14.4.3. This may be further reduced per Section 31.1.2.3 and by the Authority Having Jurisdiction.

Section 31.1.2.2 - The dwelling units do not have their sole means of egress passing through the Mercantile occupancy.

Section 31.1.2.3 - Dwelling units may be located above a non-residential use (Mercantile) if the dwelling units and its exits are separated from the non-residential use by a 1-hour rating, or the non-residential use is sprinkled (also see 6.1.14.4.1). *Note:* Subsection 3 does not apply as there are more than 2 dwelling units above the Mercantile space.

Section 31.1.5 - For purposes of designing an automatic sprinkler system, the contents shall be classified as an "Ordinary" hazard.

Section 31.1.7 - Occupant load shall be determined per Table 7.3.1.2.

Table 7.3.1.2 - Occupant load for apartment buildings shall be 1 person per 200 s.f.
 Occupant load for mercantile shall be 1 person per 30 s.f.

Section 31.2.1.2 - Means of escape within the dwelling unit shall comply with Section 24.2.

24.2.2.1.2(2) - A secondary means of escape is not required if the dwelling unit is protected with an automatic sprinkler system.
Section 31.2.2.1.2 - In buildings using Option 4 (automatic sprinkler system throughout), exit enclosures shall be 1-hour rated, with 1-hour fire doors.

Section 31.2.2.2.1 - No door in any means of egress shall be locked against egress when the building is occupied.

Section 31.2.2.3.1 - The existing stairs shall have the dimensional criteria per Table 7.2.2.2.1.(b). The existing stairs do not appear to meet these dimensional criteria (also see 31.2.2.3.4 for Window Stairs). However, existing noncomplying stairs as approved by the AHJ do not have to meet these criteria per 7.2.2.1.2(2).

Section 31.2.3.2 - Street floor exits shall be sufficient for the occupant load of the street floor plus the required capacity of the stairs that discharge onto the street floor.

Note: The total occupant load of the top three floors of the work area is 27 (9 per floor). The occupant load of the ground floor Unit 1 is 26 for a total load of 53.

Section 31.2.4.1 - Every dwelling unit shall have two separate exits remotely located from each other. Note: The dimensional distance of $\frac{1}{2}$ of the diagonal between exits does not have to be met per Section 7.5.1.3.5.

Section 31.2.5.3.2 - The common path of travel (with a sprinkler system) shall be 50 feet. *Note:* The travel within a dwelling unit is not included.

Section 31.2.5.4 - Dead-end corridors shall not exceed 50 feet.

Section 31.2.6.1 - Travel distance within a dwelling unit to the corridor (or exit) door shall not exceed 125 feet for Option 4.

Section 31.2.6.4 - The travel distance from areas not within a dwelling unit, to an exit shall not exceed 250 feet (with a sprinkler system).

Section 31.2.8 - Means of egress shall be illuminated per Section 7.8

Section 31.2.9 - Emergency lighting shall be provided per Section 7.9.

Section 31.2.10 - Means of egress shall have signage per Section 7.10.

Section 31.3.3.2 - Interior wall and ceiling finishes for exits, lobbies, and corridors shall be Class A or B. Finishes for other spaces shall be Class A, B, or C.

Section 31.3.3.3 - Floor finishes shall not be less than Class II (unless a sprinkler system is provided).

Section 31.3.4.1.1 - A fire alarm system per Section 9.6 shall be provided.

Section 31.3.4.2.1 - The fire alarm system shall have manual initiation per Section 9.6.2

Section 31.3.4.2.5 - Due to the use of Option 4 (see Section 31.1.1.1) the fire alarm system shall also be initiated upon operation of the automatic fire sprinkler system.

Section 31.3.4.3.1 - The fire alarm system shall have automatic sequence notification per Section 9.6 and visible signals shall be installed in units designed for the hearing impaired; positive alarm sequence per Section 9.6.3.4 shall be permitted; and existing approved presignal systems shall be permitted per Section 9.6.3.3.

Section 31.3.4.3.3 - An annunciator panel (location approved by the AHJ), shall be provided and connected to the fire alarm system.

Section 31.3.4.3.5 - Fire department notification shall be accomplished per Section 9.6.4.

Section 31.3.4.4.2 - Automatic fire detection devices shall be installed as follows:
 (1) Smoke detectors shall be installed in all common areas and work spaces outside of the dwelling unit, such as stairs, egress corridors, lobbies, storage rooms ect...
 (2) Heat detectors shall be located within each room of the living unit.

Section 31.3.4.5.1 - Unless an existing, complete automatic smoke detection system is installed throughout the building, smoke alarms shall be installed per Section 9.6.2.10, outside every sleeping room, on all levels of the dwelling units. *Note:* The smoke alarms are not required to be provided with secondary (standby) power per Section 31.3.4.5.2.

Section 31.3.4.5.3 - Unless an existing, complete automatic smoke detection system is installed throughout the building, or a complete, supervised automatic sprinkler system per Section 31.3.5 is installed throughout the building, smoke alarms shall be located in every sleeping room per 9.6.2.10. *Note:* These smoke detectors may be battery powered per 31.3.4.5.4.

Section 31.3.4.6 - Smoke detection shall be provided at each fire alarm control unit (even if a sprinkler system is installed).

Section 31.3.5.4 - Where an automatic sprinkler system is installed, it shall be per Section 9.7. Because this structure is 4 stories, an NFPA 13R system shall be permitted. Per Section 31.3.5.4, sprinklers are not required in closets smaller than 24 s.f., or in bedrooms smaller than 55 s.f. If a closet contains washers, dryers, furnaces, or water heaters, the closet must be sprinkled.

Section 31.3.5.10 - Supervision of the sprinkler system per Section 9.7 is not required (building is not 7 or more stories).

Section 31.3.6.1 - Exit access corridor walls shall consist of fire barriers per Section 8.3 with a minimum of $\frac{1}{2}$ -hour fire rating.

Section 31.3.6.2.2 - When utilizing Option 4 (Section 31.1.1.1) doors opening into exit access corridors shall resist the passage of smoke only. The 20-min rating per 31.3.6.2.1 is not required.

Section 31.3.6.3.2 - Spaces shall be permitted to be open to the exit access corridor provided they do not contain guest rooms or hazardous areas, that they are sprinkled, and the space does not obstruct access to the exit.

Section 31.3.6.4 - Transoms, louvers or grilles shall not be in walls or doors of exit access corridors.

Section 31.3.7.1 - Smoke partitions in exit access corridors as outlined in Section 31.3.7, are not required due to utilizing Option 4 (per Section 31.1.1.1).

Section 31.5.1 - Utilities shall comply with Section 9.1 of this code.

Section 31.5.2 - Heating, ventilating, and air-conditioning equipment shall comply with Section 9.2 of this code.

Section 31.5.3 - There are no elevators, escalators, or conveyors associated with this project.

Section 31.5.4 - There are no rubbish chutes, incinerators or laundry chutes associated with this project.

Section 31.7.1 - Emergency instructions shall be provided annually to each dwelling unit to indicate the location of alarms, egress paths, and action to be taken, both in response to a fire in the dwelling unit and in response to the sounding of the alarm system.

Section 31.7.2.1 - Contents and furnishings are not required to comply with Section 10.3 for fire-resistance.

Section 31.7.2.2 - Furnishings and decorations of an explosive or highly flammable character shall not be used outside of dwelling units.

Section 31.7.2.3 - Fire-retardant coatings shall be maintained to retain their effectiveness.

Chapter 37 - Existing Mercantile Occupancies

Section 37.1.4.2.1(a) - The first floor shall be classified as a Class C Mercantile occupancy with one-story, and less than 3,000 square feet.

Section 37.1.5.2 - While the current spaces are currently unoccupied, it is not the intent to have high hazard contents.

Section 37.1.7 - The occupant load shall be per Table 7.3.1.2.

Table 7.3.1.2 - The occupant load for Mercantile with sales on a street floor is 1 occupant per 30 square feet. The area of the first floor Mercantile area is 317 square feet in Unit #1 (with 223 square foot Office area), and 158 in Unit #2, resulting in an occupant load of 39 persons (18 in Unit #1, 3 in Office area, and 18 in Unit #2).
Section 37.2.1.1 - Means of egress shall be in accordance with Chapter 7 of this code.
 Note: Retail area has 3 means of egress.

Section 37.2.2.6 - The existing ramp appears to meet Section 7.2.2.2(6), which allows a 1 : 6 slope.

Section 37.2.4.3 - A single means of egress shall be permitted if the travel distance to the exit is under 75' (currently have 53' and 3 exits)

Section 37.2.4.2 - Dead end corridors may not exceed 50 feet.

Section 37.2.5.1 - In sprinkled buildings, common paths of travel may not exceed 100'.

Section 37.2.5.7 - The only means of customer entrance is in the front. Therefore, this entrance must also serve one-half of the egress of this street floor. The occupant load of this floor is 39. The 36" wide door can accommodate exiting for 20.

Section 37.2.5.1.1 - The exiting out of Retail 1 does pass through the Office area. Although this is not technically a "Storeroom", the exiting does not contain more than 50% of the required persons, is shall not be subject to locking, and a continuous path of travel, 44" wide minimum shall be maintained.

Section 37.2.6.1 - In a sprinkled building, the travel distance to an exit shall not exceed 250'.

Section 37.2.8 - Means of egress shall be illuminated per Section 7.8.

Section 37.2.10 - Means of egress signs shall be provided from all portions of the sales floor.

Section 37.3.3.2.2 - Class C interior wall and ceiling finishes are permitted throughout Class C stores.

Section 37.3.4.1 - Although this is not a Class A mercantile occupancy, a fire alarm system is installed.

Section 37.3.5.1 - The Mercantile space does not exceed 15,000 sf per floor or 30,000 sf total, is not below the level of exit discharge, and is not a mixed occupancy, with any of these conditions. However, a sprinkler system is being installed.

Section 37.3.5.3 - Portable fire extinguishers shall be required per Section 9.7.4.1.

Note: See plan for fire extinguisher locations.

Additional Notes:

1. Although the IEBC code is being utilized for this project, this code did not address the close proximity of the windows on the North Elevation to the adjacent building. Per Table 705.8 of the IEBC, this elevation is permitted to have 15% unprotected openings with a sprinkled building. The current elevation has approximately 1,886 s.f. and would allow 282 s.f. of unprotected openings. Currently, there are nine (9) windows of 19.5 s.f. each for a total of 176 s.f. and well under the limit.

2. Section 31.3.7.1 of NFPA states that smoke partitions are not required in buildings utilizing Option 4 (sprinkler system). However, Section 30.3.7.2 (for new construction) states that the dwelling units shall be separated from each other with 30-minute fire-ratings if a sprinkler system is installed. Since Chapter 31 does not specifically address "separation of dwelling units from each other", the 30-minute requirement will be utilized.

Code Review - Chapter 10, City of Portland, Code of Ordinances

Section 10-2 - Any structure containing twelve (12) or more dwelling units shall be defined as a *Special Hazard Dwelling Unit*.
Section 10-3(b) - All new single and multiple station smoke alarm installations shall comply with Section 9.6.2.10 of NFPA 101. New detectors shall not use ionization detection technology.

Section 10-3(d) - Existing buildings shall comply with the AHJ's Standards for Building, Stair, Suite, and Room designation systems.

Section 10-4(a) - The following shall be located on-site in Special Hazard Dwelling Units, in a fire resistant container and in a location fully accessible by the AHJ at all times:
 • A detailed floor plan of the existing conditions
 • Sufficient master keys
 • A list of special hazards

• An approved contact information and the location of any occupants requiring special assistance in the event of an emergency.
 • Emergency contact information and the location approved by the AHJ indicating the current building owner, property management company or condominium association responsible for the building, and the legal mailing address and phone number of said entity.

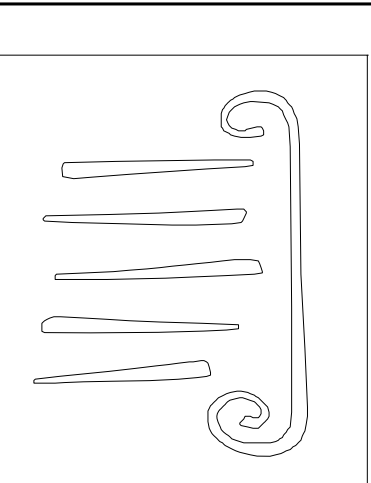
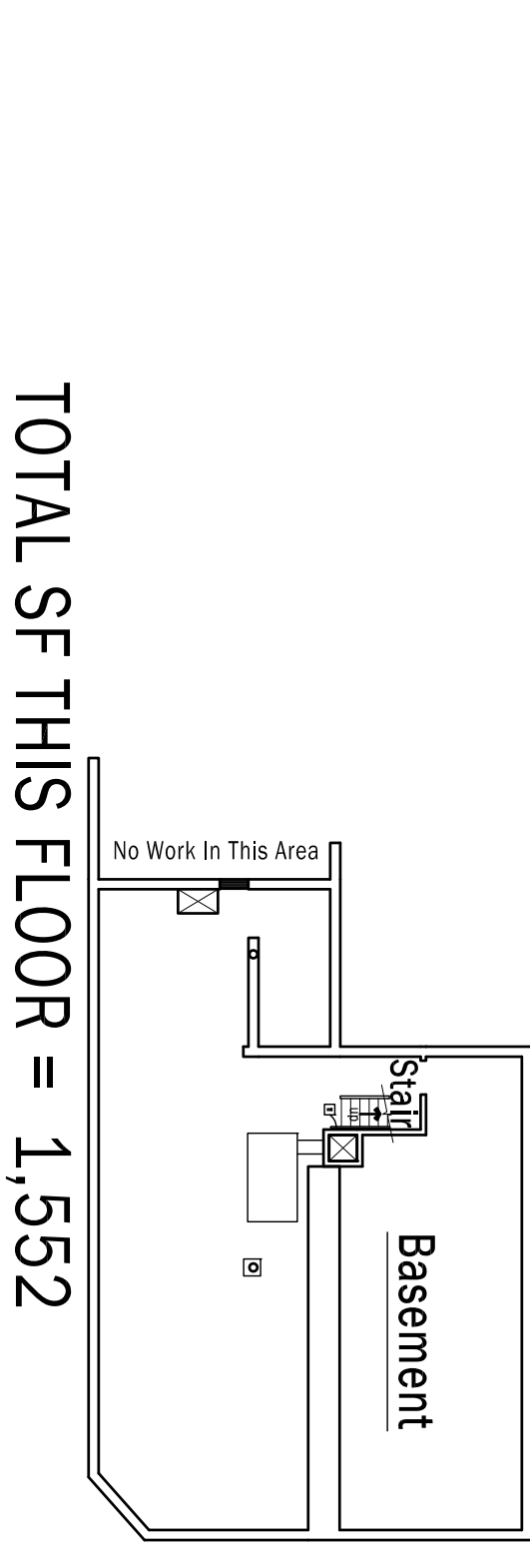
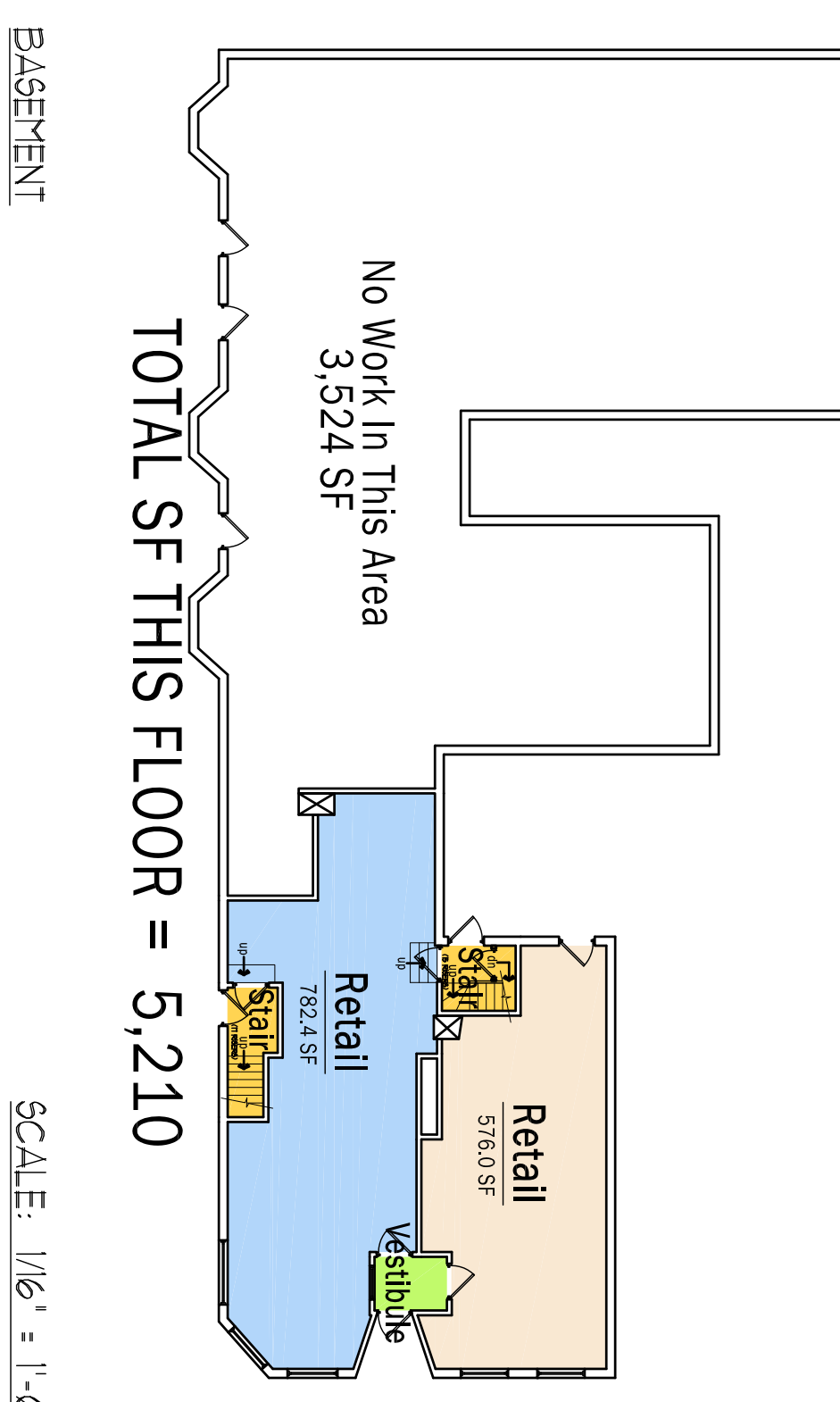
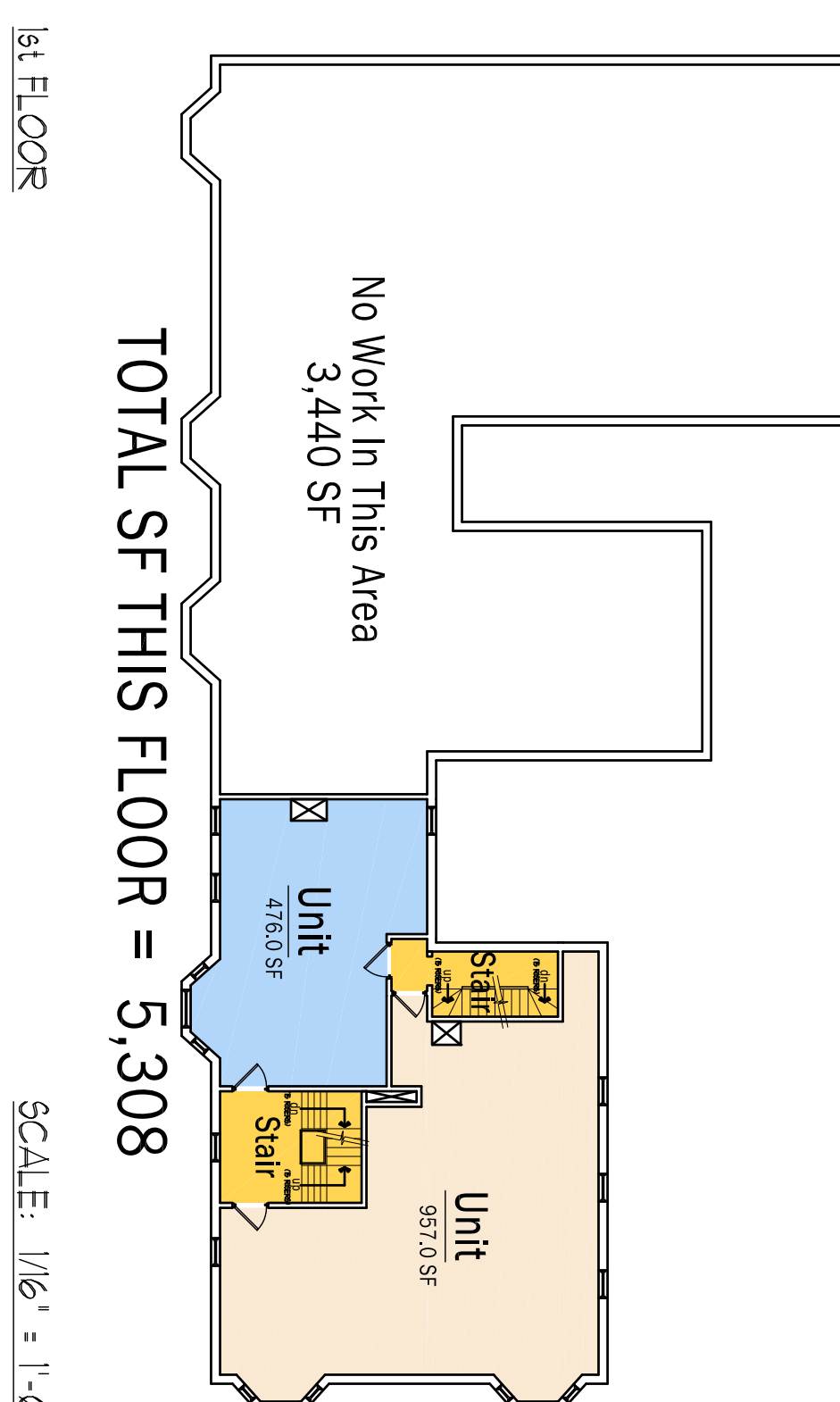
Section 10-4(b) - Low proximity signage, identifying the number of each dwelling unit by number or letter, shall be installed on each access door as follows: the bottom of the sign shall be at least 6" but not more than 8" above the floor, with retro reflective letters (or numbers) 3" high and comply with 7.10.8.2 of NFPA.

Section 10-18(h) - All structures with a life safety signaling system or a fire suppression system shall be provided with a Knox box. The number, make, model, and location of the box shall be determined by the AHJ. All keys required to operate the life safety signaling system or the fire suppression system, and building keys shall be placed within the box.

PLAN DIAGRAMS

2nd, 3rd, AND 4th FLOORS

SCALE: $\frac{1}{16}$ " = 1'-0"



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229 Congress St
 Apartments
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 Maine

#	DATE	DESCRIPTION	FOR PERMIT
1	8-5-13		
REVISIONS			

Date Issued: Aug 5, 2013
 Project Name: 13116
 Drawing Scale: SHEET NAME
CODE REVIEW

Drawn By: T1.1
 Checked By: T1.1

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