Code Review - NFPA 101 (Life Safety) 2009

SUMMARY

This project will add a floor to a 1,648 square foot portion of the existing industrial building to divide the existing space into two floors. Access to the lower (existing) floor will remain off Anderson Street. Access to the upper (new) level will be from the parking lot in the rear of the building.

There is no sprinkler system in the current building and is not expected to be provided.

There is no fire alarm system in the current building. However, as part of this project, a fire alarm system will be added to this tenant space.

Chapter 6 - Classification of Occupancy

Section 6.1.12.1 - This facility is classified as an "Industrial Occupancy".

Section 6.2.2.3 - The contents shall be classified as Ordinary Hazard contents.

Chapter 7 - Means of Egress

Section 7.2.1 - Doors shall comply with this section.

Table 7.2.2.2.1.1(a) - The stairs shall comply with this table for dimensional requirements.

Section 7.2.2.4.1 - Handrails shall be on both sides of stairs and comply with this section.

Section 7.2.2.4.5 - Guardrails shall comply with this section.

Table 7.3.1.2 - Occupant Load

Industrial tenant space: 1,648 s.f. / 100 s.f. = 17 people

Section 7.4.1.1 - For an occupant load of 17 people, 2 exits are required.

Note: Chapter 40 allows spaces with one means of egress, but only if the exit can be reached within the common path of travel (50'). This space does not comply, therefore 2 means of egress are required.

Section 7.5.1.3.2 - The exits shall be separated by a minimum of 1/2 the overall diagonal of the space (see Sheet T1.1, Egress Plan).

Section 7.5.4.1 - Accessible means of egress are not required as this is not a public building. Furthermore, due to the exterior terrain, an accessible ramp would be cost prohibitive and interfere with access to other tenants or vehicle access.

Table 7.6 - Common Path Limit = 50'; Dead-End Limit = 50'; Travel Distance Limit = 200'

Chapter 8 - Features of Fire Protection

Table 8.2.1.2 - The building is existing, but based on site evaluation, the construction type is assumed to be Type II (000).

Chapter 9 - Building Services and Fire Protection Equipment

Section 9.7.4.1 - Portable fire extinguishers shall be provided.

Note: Although fire extinguishers are not required in Industrial spaces, one will be provided for this tenant space.

Chapter 40 - New Industrial Occupancies

Section 40.1.4.1.1 - Building is defined as "General Industrial Occupancy".

Section 40.2.4.1.1 - Two means of egress are required. Section 40.2.4.1.2 allows spaces with one means of egress, provided they can be reached within the Common Path of Travel distance (50'). This space does not comply with that section and two means of egress are required.

Table 40.2.5 - Common Path of Travel = 50' (max.) / Dead-End Corridors = 50' (max.)

Table 40.2.6 - Maximum travel distance to exit = 200'

Section 40.2.8 - Means of egress shall be illuminated.

Section 40.2.9 - Emergency lighting shall be provided.

Section 40.2.10 - Exit signs shall be provided (see Egress Plan for locations).

Section 40.3.4.1. - A fire alarm is required in Industrial occupancies if the occupant load of the building is greater than 100. The existing building has an occupant load of 123, and with the addition of the floor in this project, the total occupant load is 140 people. Therefore, an alarm system is required. ~~However, since the building is existing the fire alarm system will be installed in the area of work only.~~ ***OMIT***

Section 40.3.5 - The current space is not protected with an automatic sprinkler system.

Code Review - IBC 2012

SUMMARY

This project will add a floor to a 1,648 square foot portion of the existing industrial building to divide the existing space into two floors. Access to the lower (existing) floor will remain off Anderson Street. Access to the upper (new) level will be from the parking lot in the rear of the building.

There is no sprinkler system in the current building and is not expected to be provided.

There is no fire alarm system in the current building. However, as part of this project, a fire alarm system will be added to this tenant space.

Chapter 3 - Use and Occupancy Classification

Section 306.1 - This building is classified as "Factory Industrial F-1 Moderate-Hazard Occupancy".

Chapter 5 - General Building Heights and Areas

Table 503 - This building is considered to be Type II (B) construction and is allowed 2 stories at 15,500 square feet each (Note: The building is existing and has 2 stories at 6,994 each, and might be subject to Building Area modifications per Section 506).

Chapter 6 - Types of Construction

Table 602 - If the fire separation distance is equal to, or greater than 10', no fire ratings are required.

Section 602.3 - The construction type shall be Type II B.

Chapter 7 - Fire and Smoke Protection Features

Section 705.8 - When the fire-separation distance is over 15', the maximum allowable area of exterior wall openings shall be 25%. With the added openings of this project, the openings in the front wall are 19%, in the side wall are 10%, and in the rear wall are 13%.

Section 705.8.5 - Openings in exterior walls must be separated vertically by 36" minimum. The windows on the front elevation are 3'-9" apart even though this building falls under Exception #1 for this section and is only 2 stories above the grade plane.

Figures 706.6 - There are no openings in the adjacent wall above the roof.

Chapter 9 - Fire Protection Systems

Figure 903.2 - A sprinkler system is not required as there are no fire areas in excess of 12,000 square feet, the building is less than three stories, and less than 24,000 square feet in total area.

Section 906 - Portable fire extinguishers are required.

Section 907.2.4 - A fire alarm system is not required. Although this building is two stories in height, the building is under the 500 person occupant load (above the level of exit discharge) requirement. (Note: A fire alarm system is required under the NFPA code. See Section 40.3.4.1).

Chapter 10 - Means of Egress

Table 1004.1.1 - Occupant Load

Industrial area (existing): 12,340 square feet / 100 s.f. = 124 people)

Note: This is an existing space and is currently an Industrial area that will remain. The 12,340 s.f. is a gross area. There are numerous closets, restrooms, ect... and the 124 people is a maximum number.

Industrial area (new): 1,560 square feet / 100 s.f. = 16 people

Note: Total square footage is 1,648 s.f.

Total Occupant Load = 140 people

Section 1005.1 - The egress width per occupant is .3" for stairs and .2" for other components.

Section 1007.1 - Accessible means of egress are not required. Although this floor is "new" does not fall under Exception 1, according to 35.151 of 2010 ADA, since this is not for the use of a public entity, ADA does not apply.

Section 1008.1.1 Doors shall have a minimum clear width of 32".

Section 1009.1 - Stairways shall be 44" minimum.

Section 1009.4.2 - Stairways shall have 7" maximum risers and 11" minimum treads.

Section 1009.12 - Stairways shall have handrails on both sides of stairways.

Section 1011.1 - Exit signs will be provided (see Egress Plan for locations).

Section 1013.1 - Guards will be provided at all levels 30" above grade.

Section 1014.2.1 - This tenant space has separate means of egress from other tenants.

Section 1014.3 - The common path of travel for an F-1 area is 75' (unsprinkled).

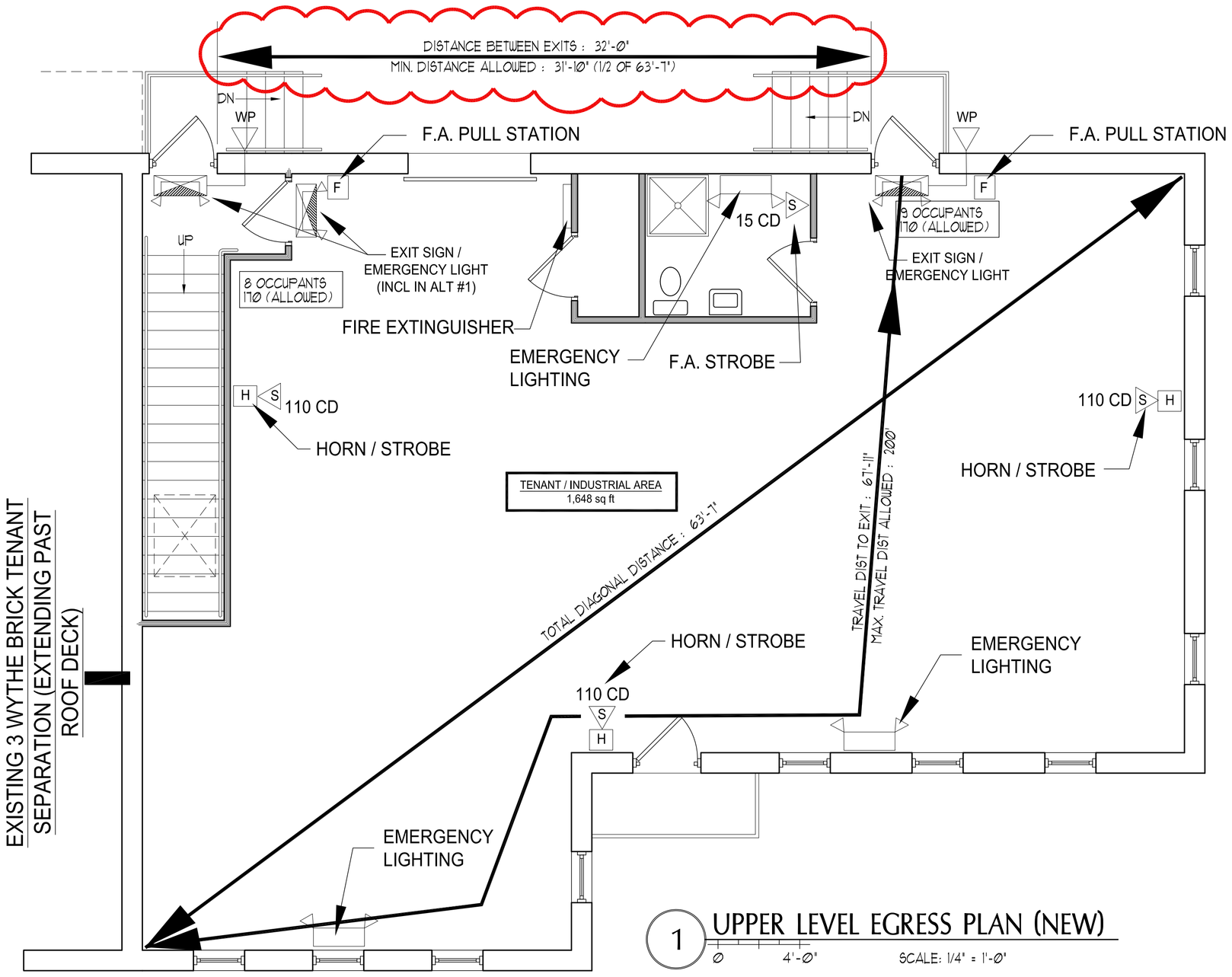
Section 1015.1 - Two exits have been provided for this space. Although this code allows one means of egress (Common Path of Travel under 75' and Occupant Load under 50), the NFPA code has a maximum Common Path of Travel of 50'. Furthermore, the State MUBEC adoption has deleted this section and references NFPA Table A.7.6. Therefore, this space does not meet the requirements for one means of egress and two are provided.

Section 1015.2.1 - The exits from each space shall be placed a minimum of 1/2 of the diagonal of each space.

Table 1016.1 - The maximum exit travel distance shall be 200'.

Section 1018.4 - The maximum dead end length is 20'.

Section 1022.1 - The stair up the to roof is a convenience stair only and is not part of a means of egress. It also does not penetrate a rated floor and is not required to have a fire-separation rating.



1 UPPER LEVEL EGRESS PLAN (NEW)
Ø 4'-Ø" SCALE: 1/4" = 1'-Ø"

NOTE:
THIS BUILDING IS NOT SPRINKLED.

NOTE:
ALL STAIRS TO HAVE 7" RISERS (MAX. AND 11" TREADS (MIN.)

NOTE:
ALL GUARDRAILS TO BE 42" HIGH AND LIMIT OPENINGS TO 4" MAX.

NOTE:
STAIRS TO HAVE 1½" DIA HANDRAILS ON BOTH SIDES OF STAIR AT 34" ABOVE THE LEADING EDGE OF THE TREADS AND EXTEND 12" (HORIZ) PAST THE TOP AND BOTTOM OF THE STAIR.

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Structural Integrity
Consulting Engineers, Inc.

PERMIT SET
- NOT FOR CONSTRUCTION -

ANDERSON STREET INDUSTRIAL

219 Anderson Street
Portland, Maine

#	DATE	DESCRIPTION
1	9/19/14	PERMIT SET
2	12/3/14	REVISION SET

Date Issued 12-3-2014
Project Number 14116
Drawing Scale AS NOTED

EGRESS PLAN / CODE REVIEW

Drawn By MC
Checked By ACH, LAS

T-1.1