

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

BUILDING INSPECTION

PERMIT

Permit Number: 081516

Please Read Application And Notes, If Any, Attached

This is to certify that TREE SCHOOL LLC /Scott Sh to
has permission to 1st floor Pre-school, 2nd Yoga School, 3rd floor Massage Therapy Change of Use, Addition of a door on the thi
AT 131 SPRING ST CB# 039 A030001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is altered or otherwise used-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. _____
Health Dept. _____
Appeal Board _____
Other _____
Department Name

WITHDRAW

Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 08-1516	Issue Date:	CBL: 039 A030001
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Location of Construction: 131 SPRING ST	Owner Name: TREE SCHOOL LLC	Owner Address: 325 GREELY RD	Phone: 207-730-1230
Business Name:	Contractor Name: Scott Shapiro	Contractor Address: PO Box 25 Cumberland	Phone 2077301230
Lessee/Buyer's Name	Phone:	Permit Type: Change of Use - Commercial	Zone: B-3

Past Use: Commercial/ Birthing Center	Proposed Use: Commercial/ 1st floor Pre-school, 2nd floor vacant, 3rd Floor Massage Therapist. Change of Use, Addition of a door on the third floor	Permit Fee: \$60.00	Cost of Work: \$3,500.00	CEO District: 2
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FIRE DEPT: Approved Denied

INSPECTION: Use Group: Type:

WITHDRAW

Signature: _____ Signature: _____

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: Approved Approved w/Conditions Denied

Signature: _____ Date: _____

Proposed Project Description:
1st floor Pre-school, 2nd floor vacant, 3rd Floor Massage Therapist. Change of Use, Addition of a door on the third floor

Permit Taken By: lmd	Date Applied For: 12/04/2008	Zoning Approval
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<ol style="list-style-type: none"> This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. Building permits do not include plumbing, septic or electrical work. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.. 	Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: 12/14/08 ABM	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	Historic Preservation Y3 <input type="checkbox"/> Not in District or Landmark <input checked="" type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: 1/4/09 SHH
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CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 08-1516	Date Applied For: 12/03/2008	CBL: 039 A030001
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Location of Construction: 131 SPRING ST	Owner Name: TREE SCHOOL LLC	Owner Address: 325 GREELY RD	Phone: 207-730-1230
Business Name:	Contractor Name: Scott Shapiro	Contractor Address: PO Box 25 Cumberland	Phone: (207) 730-1230
Lessee/Buyer's Name	Phone:	Permit Type: Change of Use - Commercial	

Proposed Use: Commercial/ 1st floor Pre-school, 2nd floor vacant, 3rd Floor Massage Therapist. Change of Use, Addition of a door on the third floor	Proposed Project Description: 1st floor Pre-school, 2nd floor vacant, 3rd Floor Massage Therapist. Change of Use, Addition of a door on the third floor
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Dept: Historic **Status:** Not Applicable **Reviewer:** Scott Hanson **Approval Date:** 01/06/2008

Note: Owner has informed Ann Machado that the new exterior door is not required by the FD and will not be installed, therefore no historic preservation approval is required as there are no exterior alterations. **Ok to Issue:**

Dept: Zoning **Status:** Approved with Conditions **Reviewer:** Ann Machado **Approval Date:** 12/04/2008

Note: Permit #98-1273 was change of use from apartments to a birthing center. Building is currently vacant. **Ok to Issue:**

- 1) ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.
- 2) This permit is establishing the first floor use as a pre-school and the third floor use as a massage therapist. The second floor is vacant at this time. Please note that this office will need a change of use and or tenant fit-up permit PRIOR to any occupancy of the second floor.
- 3) Separate permits shall be required for any new signage.
- 4) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

Dept: Building **Status:** Pending **Reviewer:** **Approval Date:**

Note: **Ok to Issue:**

Dept: Fire **Status:** Pending **Reviewer:** Capt Greg Cass **Approval Date:**

Note: **Ok to Issue:**

Comments:

12/4/2008-lmd: Applicant has recently purchased this building. He is unsure of the legal use of the property. He is also unsure of the legal number of units in the building. He is not 100% sure of the proposed uses of the 2nd and 3rd floor. He attempted to look at records and microfiche to find answers, he was not very succesful. I did not charge the customer for any C of O's at this time. I informed him that once a determination was made regarding the legal number of units in the building I will call him and let him know. We (the customer) and myself agreed that the permit would not go any further than zoning pending payment on the C of O's.. I had a conversation with Ann Machado and gave her all of the information I had.

12/4/2008-amachado: Applicant owes \$75 for a certificate of occupancy. Moving permit forward in the system for review. Do not issue the permit until the certificate of occupancy has been paid for.

Location of Construction: 131 SPRING ST	Owner Name: TREE SCHOOL LLC	Owner Address: 325 GREELY RD	Phone: 207-730-1230
Business Name:	Contractor Name: Scott Shapiro	Contractor Address: PO Box 25 Cumberland	Phone (207) 730-1230
Lessee/Buyer's Name	Phone:	Permit Type: Change of Use - Commercial	

12/10/2008-sth: The plans show a window being expanded into an egress door on the rear side of the building. This window is clearly visible from Park St. (due to the wide view created by parking lot behind the building) and any alterations there will require HP review. There is no information provided on the proposed door in the submitted materials, and therefore, it cannot be reviewed. Anne has been told they may not have to replace the window with a door. She is waiting to hear if Capt. Cass will require the door to be installed. She has asked me to sit on the permit until this question is answered.

1/8/2009-amachado: Owner has withdrawn this application. Is only doing the change of use to the first floor at this point, so does not need to do the work on the second and third floor. Has submitted new application (#09-001) for first floor work.



General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

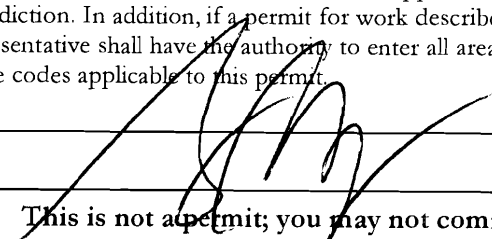
Location/Address of Construction: <u>131 SPRING ST. PORTLAND</u>		
Total Square Footage of Proposed Structure/Area	Square Footage of Lot	Number of Stories <u>3</u>
Tax Assessor's Chart, Block & Lot Chart# <u>39</u> Block# <u>A</u> Lot# <u>030</u>	Applicant *must be owner, Lessee or Buyer* Name <u>TREE SCHOOL, LLC</u> Address <u>131 SPRING ST</u> City, State & Zip <u>PORTLAND, ME 04101</u>	Telephone:
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name Address City, State & Zip	Cost Of Work: \$ <u>3,500.00</u> C of O Fee: \$ _____ Total Fee: \$ _____
<p>Current legal use (i.e. single family) <u>mixed</u> <u>Bottom Floor (1st) Commercial 2nd/3rd Residential</u> Number of Residential Units _____</p> <p>If vacant, what was the previous use? <u>Ballard House - Birth center</u></p> <p>Proposed Specific use: <u>Commercial use - 1st Floor School, 2nd/3rd Business Uses General</u></p> <p>Is property part of a subdivision? <u>NO</u> If yes, please name _____</p> <p>Project description: <u>2nd Floor - YOGA SCHOOL</u> <u>3rd Floor - Massage therapists</u> <u>1st Floor - pre school</u></p>		
Contractor's name: <u>SIOU SHAPIRO</u>		
Address: <u>PO Box 25</u>		
City, State & Zip <u>Portland, ME 04021</u>		Telephone: <u>730-1230</u>
Who should we contact when the permit is ready: <u>SIOU SHAPIRO</u>		Telephone: <u>730-1230</u>
Mailing address: _____		

WITHDRAWN

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature:  Date: 12/3/08

This is not a permit; you may not commence ANY work until the permit is issued

GRANT HAYS ASSOCIATES

ARCHITECTURE ♦ INTERIOR DESIGN

November 14, 2008

Rich McCarthy, Plans Inspector
Department of Public Safety
State Fire Marshal's Office
State House Station 52
Augusta, Maine 04333-0052

Re: Change of Use
131 Spring Street
Portland, Maine

Dear Rich,

Attached are supporting document submitted on behalf of Scott Shapiro for a change in use application for the above stated property. The submission includes the following:

- A) Permit Applications
- B) NFPA Appurtenances symbols and Fire Alarm/Sprinkler system notes
- C) NFPA details for stairs and railings
- D) Code Analysis with supporting copies of 2006 NFPA and 2006 IBC Codes
- E) Floor plan sketches indicating existing elements and new work to be performed
- F) Fee payments
- G) CD with existing conditions photographs

The existing building is a 3-story structure with masonry exterior/bearing walls and wood-framed floors and roof. The building is presently classified as Business Use on the first floor and Residential Use on the second & third floors. The building has one egress stair for all three floors, as was typical during the time this building was constructed and used primarily as a two-family residence.

When the last change of use occurred (Business/Residential), the building was upgraded with an NFPA fire alarm system and sprinkler systems. In considering the change in occupancy request to Educational/Business, the Owner has requested a code analysis to determine which elements of the existing building, if any, need to be upgraded to meet the relevant code requirements.

In summary, the attachments indicate specific areas in which improvements need to be made, most notably adding NFPA devices, adding handrails at stairs, repairing the existing fire escape, and converting a fire escape egress window to a door at the third floor level. Other modifications are also noted on the drawings and indicated in the supporting code analysis.

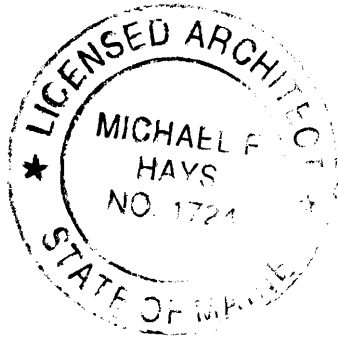
The Owner is also in the process of applying for a change of occupancy permit from the city of Portland. Copies of this same package will be presented to the City of Portland Code Enforcement Office and to Captain Greg Cass of the Portland Fire Department.

I trust you will find this package sufficient in which to complete your review for permitting the requested change in use. Please do not hesitate to contact the Owner directly with any questions, as I will be out of the office until the week of December 8, 2008.

Respectfully Submitted,



Michael F. Hays, RA
ARC #1724





STATE OF MAINE
Department of Public Safety
Bureau of Building Codes and
Standards
State House Station
Augusta, ME 04333-0052

JOHN ELIAS BALDACCI
GOVERNOR

ANNE H. JORDAN
COMMISSIONER

Project Information

Project Name: 131 SPRING STREET
Street Location: 131 SPRING STREET Town: PORTLAND
Square Footage: 3,432 Building Code Surcharge: \$137.28

Sec. 13.25 MRSA §2450-A is enacted to read:














§ 2450-A. Surcharge on plan review fee for Uniform Building Codes and Standards Fund

In addition to the fees established in section 2450, a surcharge of 4¢ per square foot of occupied space must be levied on the existing fee schedule for new construction, reconstruction, repairs, renovations or new use for the sole purpose of funding the activities of the Technical Building Codes and Standards Board with respect to the Maine Uniform Building and Energy Code, established pursuant to the Title 10, chapter 1103, the activities of the Bureau of Building Codes and Standards under chapter 314 and the activities of the Executive Department, State Planning Office under Title 30-A, section 4451, subsection 3-A, except that the fee for review of a plan for the renovation of a public school, including the fee established under section 2450, may not exceed \$450. Revenue collected from this surcharge must be deposited into the Uniform Building Codes and Standards Fund established by section 2374.

Date Fee Received: _____

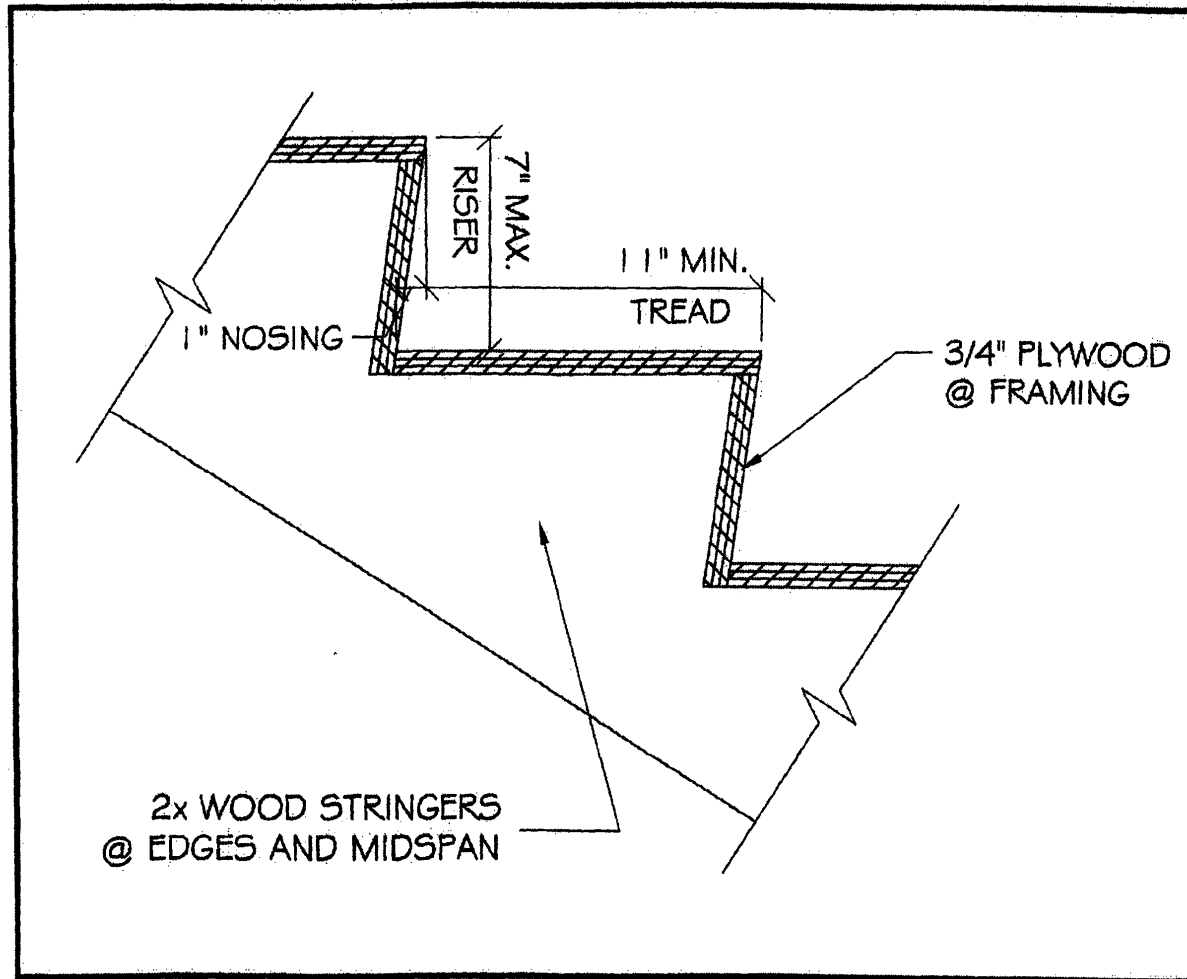
Check # : _____

LIFE SAFETY SYMBOLS SCHEDULE

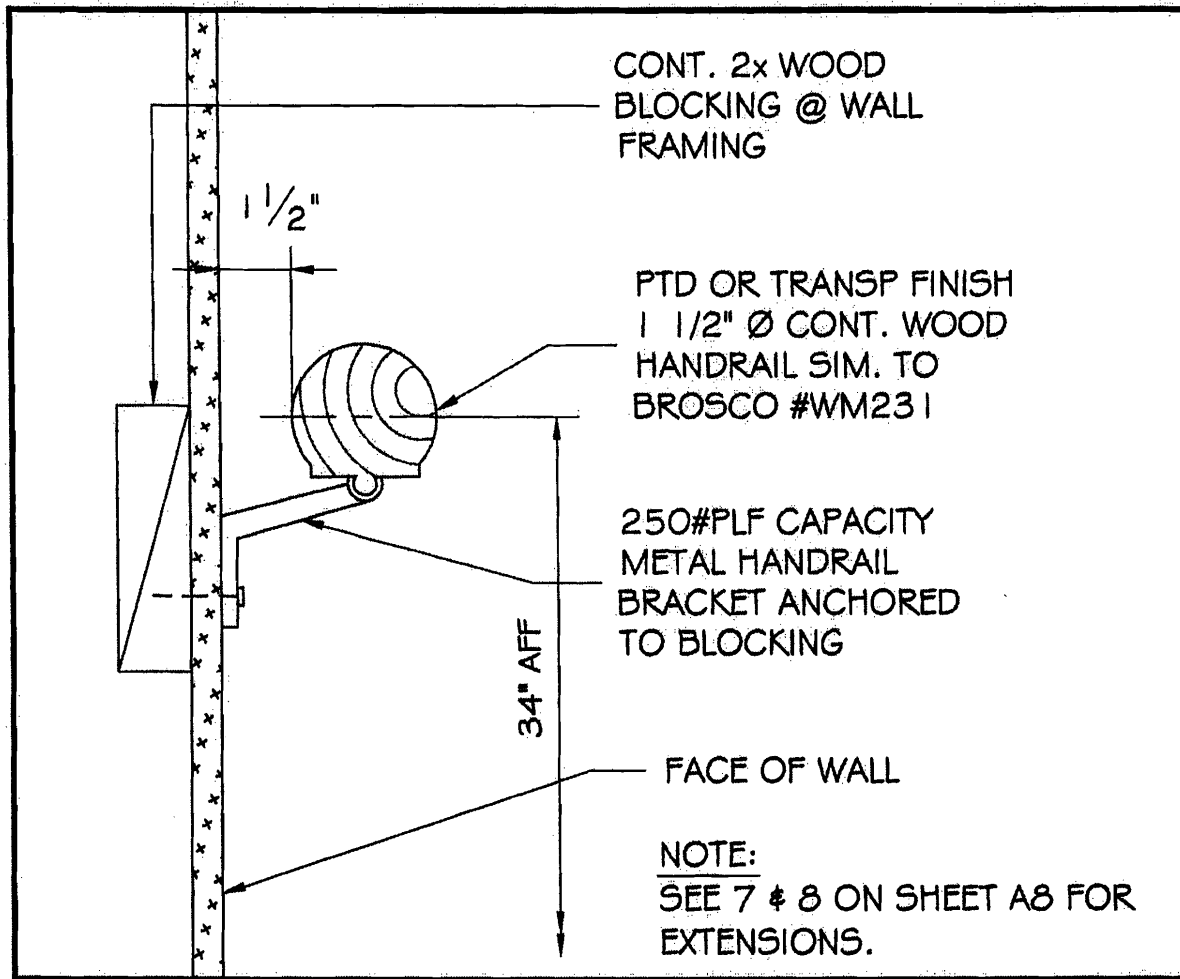
 HEAT DETECTOR	 EXIT LIGHT
 SMOKE DETECTOR	 EXIT LIGHT - DIRECTIONAL
 ALARM PULL STATION	 ALARM PANEL
 FIRE EXTINGUISHER	 AREA OF REFUGE
 STROBE LIGHT (15cd)	 KNOX BOX
 HORN/ STROBE UNIT (15cd/110db)	 "NOT AN EXIT" SIGN
 EMERGENCY LIGHT	

LIFE SAFETY GENERAL NOTES

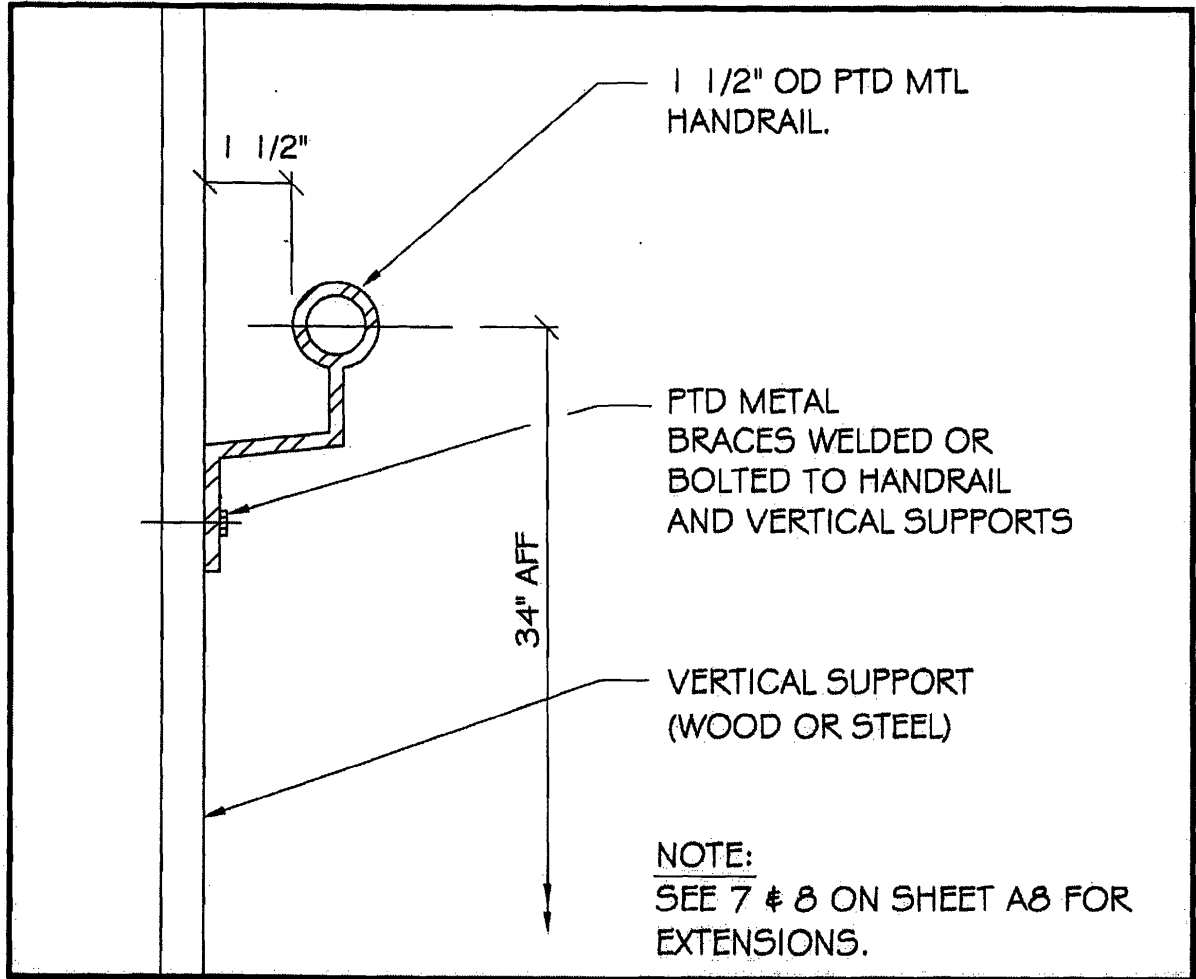
1. THE EXISTING BUILDING HAS A FULL NFPA 13 FIRE SPRINKLER AND ALARM SYSTEM AS PREVIOUSLY APPROVED BY THE LOCAL CODE ENFORCEMENT OFFICER, FIRE INSPECTOR, AND THE STATE OF MAINE FIRE MARSHAL'S OFFICE.
2. NEW FIRE ALARM SYSTEMS COMPONENTS SHALL BE ENGINEERED BY A QUALIFIED SPRINKLER AND ALARM DESIGN-BUILD SUBCONTRACTOR, WHO SHALL BE SOLELY RESPONSIBLE FOR FULL COMPLIANCE WITH LOCAL ORDINANCES, STATE, AND NATIONAL CODES.
3. ALL FIRE SPRINKLER AND FIRE ALARM PERMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE FIRE SPRINKLER AND FIRE ALARM SUBCONTRACTOR(S) SHALL COORDINATE WITH THE BUILDING OWNER FOR INTERFACE WITH ALL OTHER ASPECTS OF THE WORK.



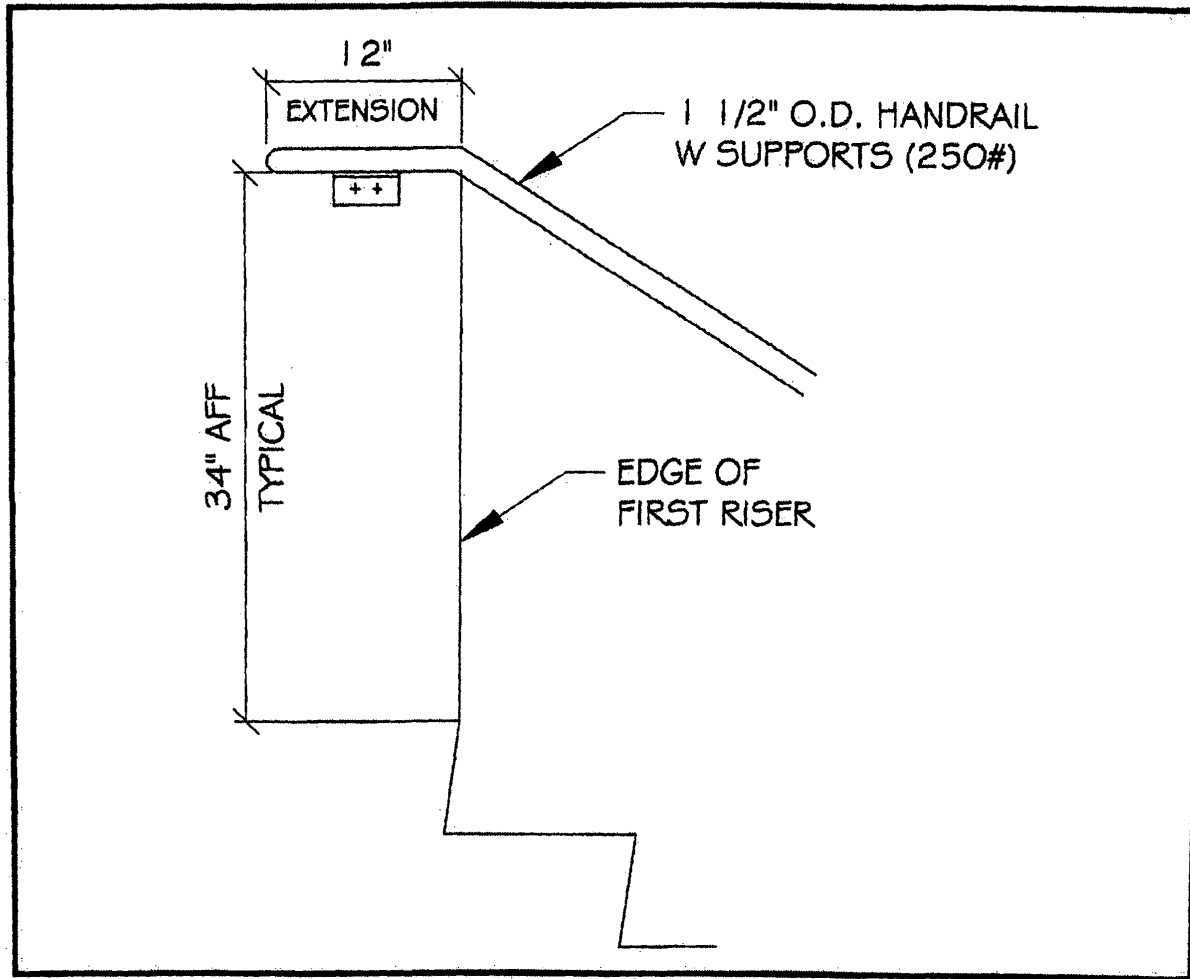
④ TYPICAL STAIR TREAD/RISER N.T.S.



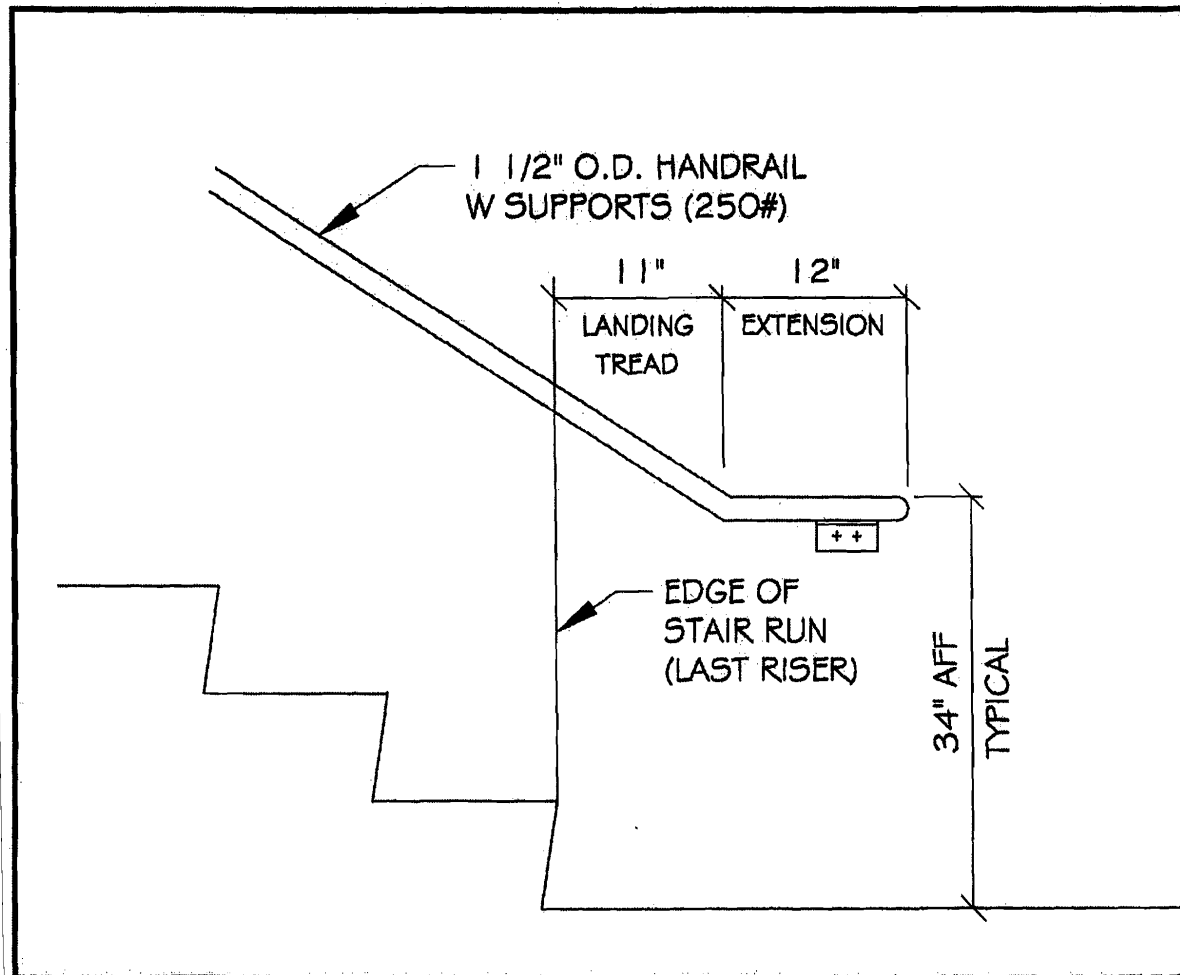
⑤ HANDRAIL @ INTERIOR PARTITION N.T.S.



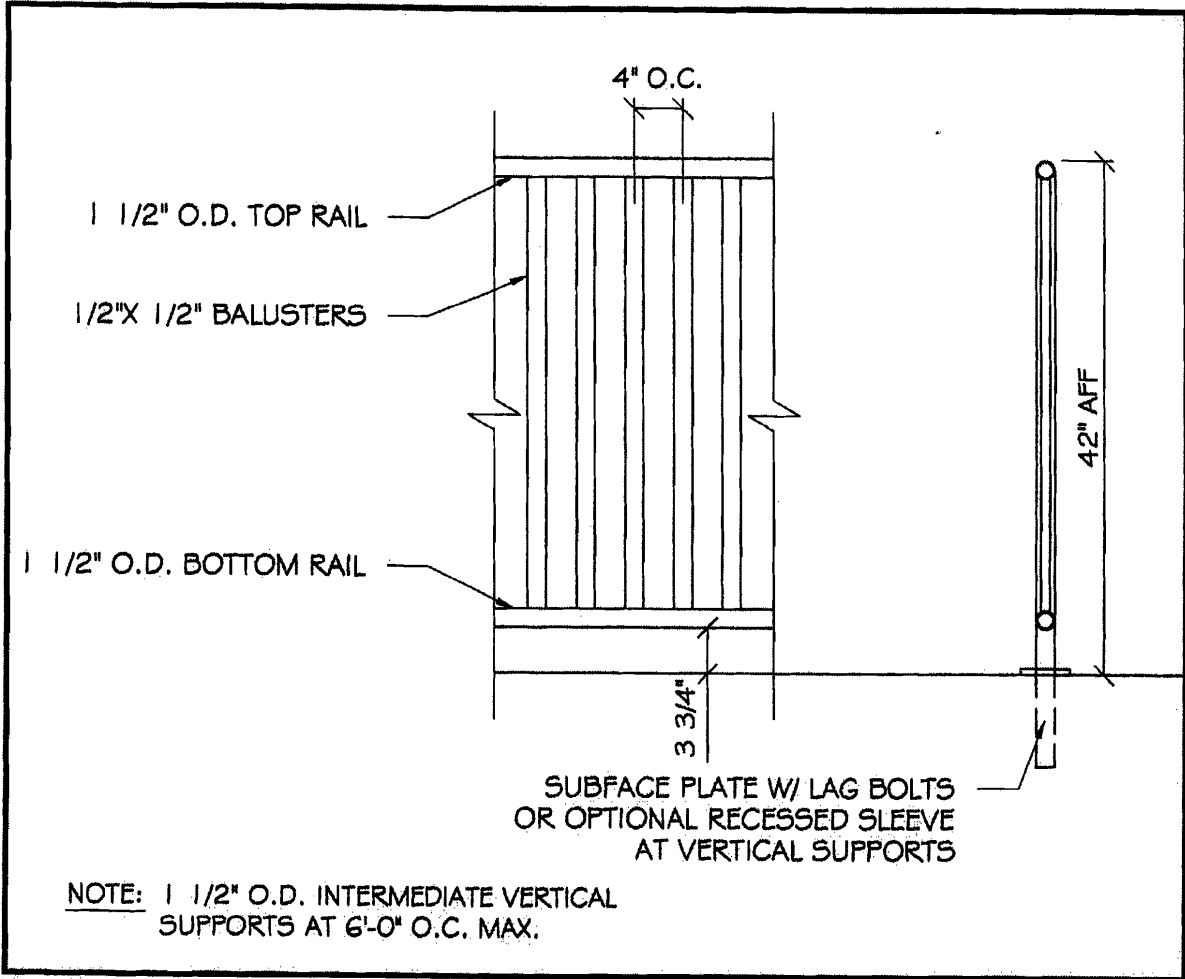
⑥ HANDRAIL @ EXTERIOR WALL N.T.S.



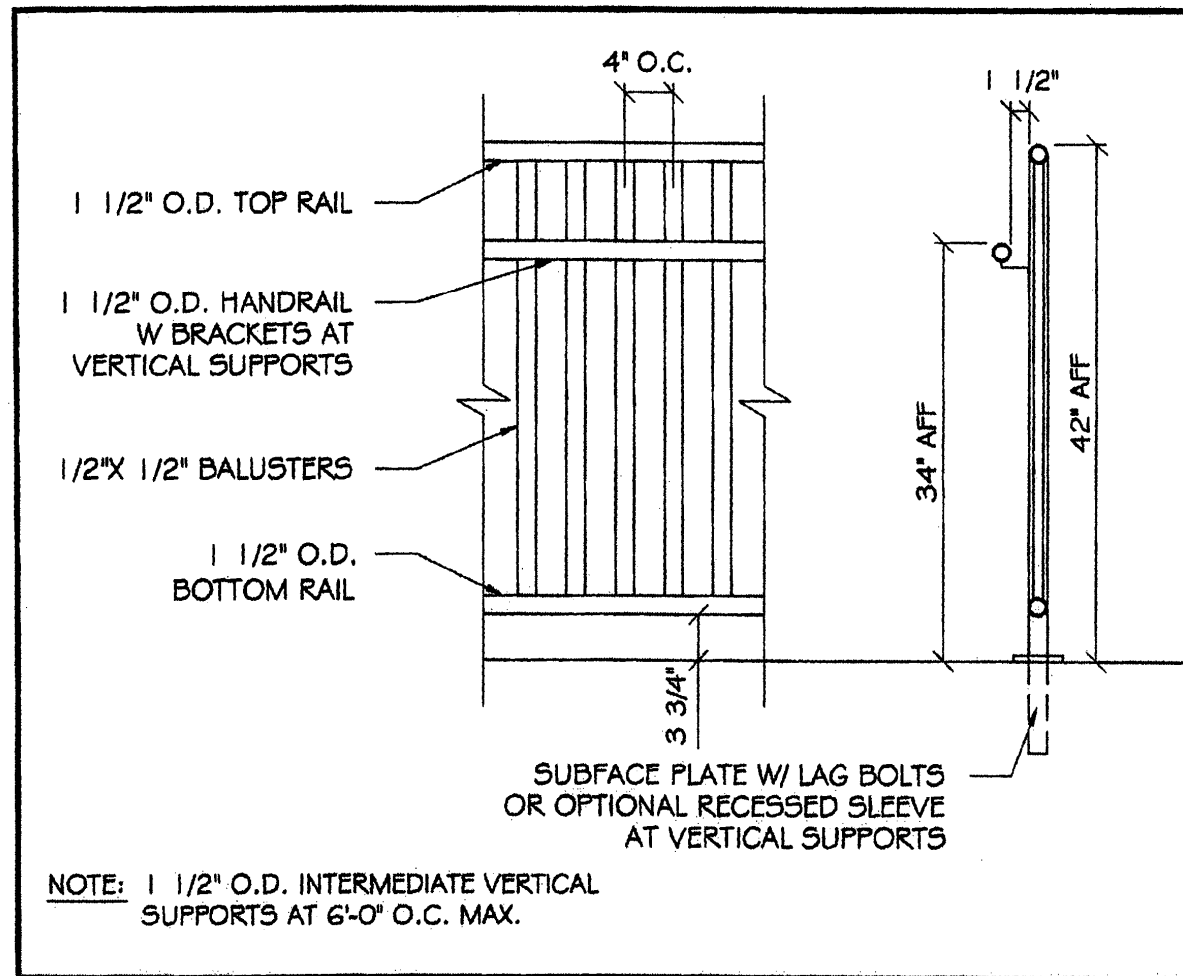
⑦ HANDRAIL EXTENSION @ TOP N.T.S.



⑧ HANDRAIL EXTENSION @ BOTTOM N.T.S.



⑨ TYPICAL EXTERIOR GUARDRAIL N.T.S.



⑩

EXTERIOR GUARDRAIL/HANDRAIL

N.T.S.

CODE ANALYSIS

EDUCATION/BUSINESS OCCUPANCY 131 SPRING STREET PORTLAND, MAINE

November 14, 2008

NFPA 101 Life Safety Code - 2006 Edition

Building Classification:	Educational (Ch. 14) at First Floor Level (LED) & Business (Ch 38) at Secod & Third Floors
Hazard Classification:	Ordinary Hazard
Occupant Loads:	Educational (20 sf/occ) – 67 occ (1350 SF) Business (100 sf/occ) – 16 occ (760 SF/FLR)
Separation of Use Rating:	1 hour (existing complies)
Janitor, Mech, Stor Rating:	1 hour (existing complies)
Stair Rating:	2 hours (1 hour is sprinkled) (existing complies)
Shafts/Elevators:	2 hours (NA)
Area of Refuge:	1 hour rated (existing complies)
Minimum Stair width:	44" clear; 36" if less than 50 occupants served (existing complies)
Maximum Riser height:	7"; 8" at existing (existing complies)
Minimum Tread width:	11"; 9" at existing (existing complies)
Minimum Headroom:	6'-8" at stairs; 7'-6" at occupied spaces (existing complies)
Maximum ht between landings:	12'-0" (existing complies)
Guardrail Height:	42"; 30" at existing (existing complies)
Handrail height:	34"-38"; 30" at existing (existing complies)
Handrail top extension:	12" horz. (at new handrails)
Handrail bottom extension:	11" angled + 12" horz. (at new handrails)
Handrail diameter:	1-1/4" O.D. (at new handrails)
Maximum balluster open space:	less than 4" (modify existing to comply)

<u>Egress Components</u>	<u>Educational</u>	<u>Business</u>
Max. Allowable Travel Distance:	150'/200'	200'/300'
Max. Allowable Common Path:	75'/100'	75'/100'
Max. Allowable Dead End Corridor:	20'/50'	20'/50'
Minimum Egress Corridor Width:	72"	36" (under 50 occ)
Minimum Number of Required Exits	2 at each floor	2; (1 w/ exceptions: Single Tenant; 2 story; sprinkled; 100' max travel distance)
Minimum Horz Egress Enclosure rating:	1 hr./none	1 hr./none
Separation of exits:	0.5/0.33	0.5/0.33
Fire Escapes as means of egress:	Allowed	Allowed
Minimum Egress Door Width:	36"/28" at existing	36"/28" at existing
Egress windows:	Not required	2 nd Floor existing
Smoke Barriers:	Not Required	Not required

Exit Lighting:	Required (existing)	Required (existing)
Emergency Lighting:	Required (existing)	Required (existing)
Fire Detection System:	Required (existing)	Required
Fire Sprinkler System:	Required (existing)	Required (existing)
Fire Alarm System:	Required (existing)	Required (existing)
Portable Fire Extinguishers:	Required (existing)	Required (existing)
Finishes at egress:	Class A (existing)	Class A (existing)
Finishes at occupied areas:	Class A or B (existing)	Class A or B (existing)

to individual rooms, apartments, or other occupied spaces. Where the authority having jurisdiction finds the required path of travel to be obstructed by furniture or other movable objects, the authority shall be permitted to require that such objects be secured out of the way or shall be permitted to require that railings or other permanent barriers be installed to protect the path of travel against encroachment.

7.1.10.2.3 Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of egress.

7.1.11 Sprinkler System Installation. Where another provision of this chapter requires an automatic sprinkler system, the sprinkler system shall be installed in accordance with the subparts of 9.7.1.1 permitted by the applicable occupancy chapters.

7.2 Means of Egress Components.

7.2.1 Doors.

7.2.1.1 General.

7.2.1.1.1 A door assembly in a means of egress shall conform to the general requirements of Section 7.1 and to the special requirements of 7.2.1. Such an assembly shall be designated as a door.

7.2.1.1.2 Every door and every principal entrance that is required to serve as an exit shall be designed and constructed so that the path of egress travel is obvious and direct. Windows that, because of their physical configuration or design and the materials used in their construction, have the potential to be mistaken for doors shall be made inaccessible to the occupants by barriers or railings.

7.2.1.1.3* For the purposes of Section 7.2, a building shall be considered to be occupied at any time it is open for general occupancy, at any time it is open to the public, or at any other time it is occupied by more than 10 persons.

7.2.1.2 Width.

7.2.1.2.1* Egress Capacity Width. For purposes of calculating capacity, the width of doors shall be measured as follows:

- (1) For new swinging doors, only the width of the doorway when the door is open 90 degrees, as measured in accordance with 7.2.1.2.1(4) and 7.2.1.2.1(5), shall be included.
- (2) For other types of new doors, only the width of the doorway when the door is in the fully open position, as measured in accordance with 7.2.1.2.1(4) and 7.2.1.2.1(5), shall be included.
- (3) For any existing door installation, only the width of the doorway when the door is in the fully open position, as measured in accordance with 7.2.1.2.1(4) and 7.2.1.2.1(5), shall be included.
- (4) For all doors, projections not more than 3½ in. (90 mm) at each side of the doorway at a height of not more than 38 in. (965 mm) shall not be considered a reduction in egress capacity width.
- (5) For swinging doors, egress capacity width shall be measured between the face of the door and the stop.

7.2.1.2.2 Clear Width. Clear width shall be measured as follows:

- (1) At the narrowest point in the door opening
- (2) For swinging doors, between the face of the door and the stop
- (3) Without subtracting for the obstructions permitted by 7.2.1.2.3.2 and 7.2.1.2.3.3

7.2.1.2.3* Measurement.

7.2.1.2.3.1 For purposes of determining minimum door width, the clear width shall be used unless door leaf width is specified.

7.2.1.2.3.2 For swinging doors, projections of not more than 4 in. (100 mm) into the doorway width on the hinge side shall not be considered reductions in width, provided that such projections are for purposes of accommodating panic hardware or fire exit hardware and are located not less than 34 in. (865 mm) above the floor.

7.2.1.2.3.3 Projections exceeding 6 ft 8 in. (2030 mm) above the floor shall not be considered reductions in width.

7.2.1.2.4 Minimum Door Width. Door openings in means of egress shall be not less than 32 in. (810 mm) in clear width, unless one of the following conditions exists:

- (1) Where a pair of doors is provided, not less than one of the doors shall provide not less than a 32-in. (810-mm) clear width opening.
- * (2) Exit access doors serving a room not exceeding 70 ft² (6.5 m²) and not required to be accessible to persons with severe mobility impairments shall be not less than 24 in. (610 mm) in door leaf width.
- * (3) Doors serving a building or portion thereof not required to be accessible to persons with severe mobility impairments shall be permitted to be 28 in. (710 mm) in door leaf width.
- * (4) In existing buildings, the existing door leaf width shall be not less than 28 in. (710 mm).
- (5) Doors in detention and correctional occupancies as otherwise provided in Chapter 22 and Chapter 23 shall not be required to comply with 7.2.1.2.4.
- (6) Interior doors in dwelling units as otherwise provided in Chapter 24 shall not be required to comply with 7.2.1.2.4.
- (7) A power-operated door leaf located within a two-leaf opening shall be exempt from the minimum 32-in. (810-mm) single-leaf requirement in accordance with 7.2.1.9.1.5.
- (8) Revolving doors as provided in 7.2.1.10 shall be exempt from the minimum 32-in. (810-mm) width requirement.
- (9)*Where a single door is provided for discharge from a stairway required to comply with 7.2.2.2.1.2(B) and such door serves as the sole means of exit discharge from such stairway, the clear width of the door opening, measured in accordance with 7.2.1.2.2, shall be not less than two-thirds the nominal width of the stairway.

7.2.1.3 Floor Level.

7.2.1.3.1 The elevation of the floor surfaces on both sides of a door shall not vary by more than ½ in. (13 mm), unless otherwise permitted by 7.2.1.3.5 or 7.2.1.3.6.

7.2.1.3.2 The elevation of the floor surfaces required by 7.2.1.3.1 shall be maintained on both sides of the doorway for a distance not less than the width of the widest leaf.

7.2.1.3.3 Thresholds at doorways shall not exceed ½ in. (13 mm) in height.

7.2.1.3.4 Raised thresholds and floor level changes in excess of ¼ in. (6.3 mm) at doorways shall be beveled with a slope not steeper than 1 in 2.

7.2.1.3.5 In existing buildings, where the door discharges to the outside or to an exterior balcony or exterior exit access, the floor level outside the door shall be permitted to be one

CH 22
 CH 23
 CH 24
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- (3) Approved existing stairs shall be permitted to be rebuilt in accordance with the following:
 - (a) Dimensional criteria of Table 7.2.2.2.1.1(b)
 - (b) Other stair requirements of 7.2.2
- (4) The requirements for new and existing stairs shall not apply to stairs located in industrial equipment access areas where otherwise provided in 40.2.5.2.

Table 7.2.2.2.1.1(a) New Stairs

Feature	Dimensional Criteria	
	ft/in.	mm
Minimum width	See 7.2.2.2.1.2.	
Maximum height of risers	7 in.	180
Minimum height of risers	4 in.	100
Minimum tread depth	11 in.	280
Minimum headroom	6 ft 8 in.	2030
Maximum height between landings	12 ft	3660
Landing	See 7.2.1.3, 7.2.1.4.4, and 7.2.2.3.2.	



Table 7.2.2.2.1.1(b) Existing Stairs

Feature	Dimensional Criteria	
	ft/in.	mm
Minimum width clear of all obstructions, except projections not more than 4½ in. (114 mm) at or below handrail height on each side	36 in.	915
Maximum height of risers	8 in.	205
Minimum tread depth	9 in.	230
Minimum headroom	6 ft 8 in.	2030
Maximum height between landings	12 ft	3660
Landing	See 7.2.1.3 and 7.2.1.4.4.	

7.2.2.2.1.2 Minimum New Stair Width.

- (A) Where the total occupant load of all stories served by the stair is fewer than 50, the minimum width clear of all obstructions, except projections not more than 4½ in. (114 mm) at or below handrail height on each side, shall be 36 in. (915 mm).
- (B)* Where stairs serve occupant loads exceeding that permitted by 7.2.2.2.1.2(A), the minimum width clear of all obstructions, except projections not more than 4½ in. (114 mm) at or below handrail height on each side, shall be in accordance with Table 7.2.2.2.1.2(B) and the requirements of 7.2.2.2.1.2(C), (D), and (E).
- (C) The total cumulative occupant load assigned to a particular stair shall be that stair's prorated share of the total occupant load, as stipulated in 7.2.2.2.1.2(D) and (E), calculated in proportion to the stair width.

Table 7.2.2.2.1.2(B) New Stair Width

Total Cumulative Occupant Load Assigned to the Stair	Width
<2000 persons	44 in. (1120 mm)
≥2000 persons	56 in. (1420 mm)

- (D) For downward egress travel, stair width shall be based on the total number of occupants from stories above the level where the width is measured.
- (E) For upward egress travel, stair width shall be based on the total number of occupants from stories below the level where the width is measured.
- (F) The clear width of door openings discharging from stairways required to comply with 7.2.2.2.1.2(B) shall be in accordance with 7.2.1.2.4(9).

7.2.2.2.2 Curved Stairs.

7.2.2.2.2.1 New curved stairs shall be permitted as a component in a means of egress, provided that the depth of tread is not less than 11 in. (280 mm) at a point 12 in. (305 mm) from the narrower end of the tread and the smallest radius is not less than twice the stair width.

7.2.2.2.2.2 Existing curved stairs shall be permitted as a component in a means of egress, provided that the depth of tread is not less than 10 in. (255 mm) at a point 12 in. (305 mm) from the narrower end of the tread and the smallest radius is not less than twice the stair width.

7.2.2.2.3 Spiral Stairs.

7.2.2.2.3.1 Where specifically permitted for individual occupancies by Chapter 12 through Chapter 42, spiral stairs shall be permitted as a component in a means of egress in accordance with 7.2.2.2.3.2 through 7.2.2.2.3.4.

7.2.2.2.3.2 Spiral stairs shall be permitted, provided that the following criteria are met:

- (1) Riser heights shall not exceed 7 in. (180 mm).
- (2) The stairway shall have a tread depth of not less than 11 in. (280 mm) for a portion of the stairway width sufficient to provide egress capacity for the occupant load served in accordance with 7.3.3.1.
- (3) At the outer side of the stairway, an additional 10½ in. (265 mm) of width shall be provided clear to the other handrail, and this width shall not be included as part of the required egress capacity.
- (4) Handrails complying with 7.2.2.4 shall be provided on both sides of the spiral stairway.
- (5) The inner handrail shall be located within 24 in. (610 mm), measured horizontally, of the point where a tread depth of not less than 11 in. (280 mm) is provided.
- (6) The turn of the stairway shall be such that the outer handrail is at the right side of descending users.

7.2.2.2.3.3 Where the occupant load served does not exceed three, spiral stairs shall be permitted, provided that the following criteria are met:

- (1) The clear width of the stairs shall be not less than 26 in. (660 mm).
- (2) The height of risers shall not exceed 9½ in. (240 mm).
- (3) The headroom shall be not less than 6 ft 6 in. (1980 mm).
- (4) Treads shall have a depth not less than 7½ in. (190 mm) at a point 12 in. (305 mm) from the narrower edge.
- (5) All treads shall be identical.
- (6) Handrails shall be provided on both sides of the stairway.

7.2.2.2.3.4 Where the occupant load served does not exceed five, existing spiral stairs shall be permitted, provided that the requirements of 7.2.2.2.3.3(1) through 7.2.2.2.3.3(5) are met.

7.2.2.2.4* Winders.

7.2.2.2.4.1 Where specified in Chapter 12 through Chapter 42, winders shall be permitted in stairs, provided that they meet the requirements of 7.2.2.2.4.2 and 7.2.2.2.4.3.

7.2.2.2.4.2 New winders shall have a tread depth of not less than 6 in. (150 mm) and a tread depth of not less than 11 in. (280 mm) at a point 12 in. (305 mm) from the narrowest edge.

7.2.2.2.4.3 Existing winders shall be permitted to be continued in use, provided that they have a tread depth of not less than 6 in. (150 mm) and a tread depth of not less than 9 in. (230 mm) at a point 12 in. (305 mm) from the narrowest edge.

7.2.2.3 Stair Details.

7.2.2.3.1 Construction.

7.2.2.3.1.1 All stairs serving as required means of egress shall be of permanent fixed construction, unless they are stairs serving seating that is designed to be repositioned in accordance with Chapter 12 and Chapter 13.

7.2.2.3.1.2 Each stair, platform, and landing, not including handrails and existing stairs, in buildings required in this *Code* to be of Type I or Type II construction shall be of noncombustible material throughout.

7.2.2.3.2 Landings.

7.2.2.3.2.1 Stairs shall have landings at door openings, except as permitted in 7.2.2.3.2.5.

7.2.2.3.2.2 Stairs and intermediate landings shall continue with no decrease in width along the direction of egress travel.

7.2.2.3.2.3 In new buildings, every landing shall have a dimension, measured in the direction of travel, that is not less than the width of the stair.

7.2.2.3.2.4 Landings shall not be required to exceed 48 in. (1220 mm) in the direction of travel, provided that the stair has a straight run.

7.2.2.3.2.5 In one- and two-family dwellings and existing buildings, a door at the top of a stair shall be permitted to open directly to the stair, provided that the door does not swing over the stair and the door serves an area with an occupant load of fewer than 50 persons.

7.2.2.3.3 Tread and Landing Surfaces.

7.2.2.3.3.1 Stair treads and landings shall be solid, without perforations, unless otherwise permitted in 7.2.2.3.3.4.

7.2.2.3.3.2* Stair treads and landings shall be free of projections or lips that could trip stair users.

7.2.2.3.3.3 If not vertical, risers on other than existing stairs shall be permitted to slope under the tread at an angle not to

exceed 30 degrees from vertical, provided that the projection of the nosing does not exceed 1½ in. (38 mm).

7.2.2.3.3.4 The requirement of 7.2.2.3.3.1 shall not apply to noncombustible grated stair treads and landings in the following occupancies:

- (1) Assembly occupancies as otherwise provided in Chapter 12 and Chapter 13
- (2) Detention and correctional occupancies as otherwise provided in Chapter 22 and Chapter 23
- (3) Industrial occupancies as otherwise provided in Chapter 40

7.2.2.3.4* Tread and Landing Slope. The tread and landing slope shall not exceed ¼ in./ft (21 mm/m) (a slope of 1 in 48).

7.2.2.3.5* Riser Height and Tread Depth. Riser height shall be measured as the vertical distance between tread nosings. Tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge but shall not include beveled or rounded tread surfaces that slope more than 20 degrees (a slope of 1 in 2.75). At tread nosings, such beveling or rounding shall not exceed ½ in. (13 mm) in horizontal dimension.

7.2.2.3.6 Dimensional Uniformity.

7.2.2.3.6.1 Variation in excess of ⅜ in. (4.8 mm) in the depth of adjacent treads or in the height of adjacent risers shall be prohibited, unless otherwise permitted in 7.2.2.3.6.3.

7.2.2.3.6.2 The tolerance between the largest and smallest riser or between the largest and smallest tread shall not exceed ⅜ in. (9.5 mm) in any flight.

7.2.2.3.6.3 Where the bottom riser adjoins a sloping public way, walk, or driveway having an established grade and serving as a landing, the bottom riser shall be permitted to have a variation in height of not more than 1 in. in every 12 in. (25 mm in every 300 mm) of stairway width.

7.2.2.4 Guards and Handrails.

7.2.2.4.1 Handrails.

7.2.2.4.1.1 Stairs and ramps shall have handrails on both sides, unless otherwise permitted in 7.2.2.4.1.5 or 7.2.2.4.1.6.

7.2.2.4.1.2 In addition to the handrails required at the sides of stairs by 7.2.2.4.1.1, the following provisions shall apply:

- (1) For new stairs exceeding 6 ft 3 in. (1905 mm) in width, handrails shall be provided within 30 in. (760 mm) of all portions of the required egress width.
- (2) For existing stairs, handrails shall be provided within 44 in. (1120 mm) of all portions of the required egress width.

7.2.2.4.1.3 Where new intermediate handrails are provided in accordance with 7.2.2.4.1.2, the minimum clear width between handrails shall be 20 in. (510 mm).

7.2.2.4.1.4* The required egress width shall be provided along the natural path of travel.

7.2.2.4.1.5 If a single step or a ramp is part of a curb that separates a sidewalk from a vehicular way, it shall not be required to have a handrail.

7.2.2.4.1.6 Existing stairs, existing ramps, stairs within dwelling units and within guest rooms, and ramps within dwelling units and guest rooms shall be permitted to have a handrail on one side only.

7.2.2.4.2 Continuity. Required guards and handrails shall continue for the full length of each flight of stairs. At turns of new stairs, inside handrails shall be continuous between flights at landings.

7.2.2.4.3 Projections. The design of guards and handrails and the hardware for attaching handrails to guards, balusters, or walls shall be such that there are no projections that might engage loose clothing. Openings in guards shall be designed to prevent loose clothing from becoming wedged in such openings.

7.2.2.4.4* Handrail Details.

7.2.2.4.4.1 New handrails on stairs shall be not less than 34 in. (865 mm), and not more than 38 in. (965 mm), above the surface of the tread, measured vertically to the top of the rail from the leading edge of the tread.

7.2.2.4.4.2 Existing required handrails shall be not less than 30 in. (760 mm), and not more than 38 in. (965 mm), above the surface of the tread, measured vertically to the top of the rail from the leading edge of the tread.

7.2.2.4.4.3 The height of required handrails that form part of a guard shall be permitted to exceed 38 in. (965 mm), but shall not exceed 42 in. (1065 mm), measured vertically to the top of the rail from the leading edge of the tread.

7.2.2.4.4.4* Additional handrails that are lower or higher than the main handrail shall be permitted.

7.2.2.4.4.5 New handrails shall be installed to provide a clearance of not less than 2¼ in. (57 mm) between the handrail and the wall to which it is fastened.

7.2.2.4.4.6 Handrails shall include one of the following features:

- (1) Circular cross section with an outside diameter of not less than 1¼ in. (32 mm) and not more than 2 in. (51 mm)
- (2)*Shape that is other than circular with a perimeter dimension of not less than 4 in. (100 mm), but not more than 6¼ in. (160 mm), and with the largest cross-sectional dimension not more than 2¼ in. (57 mm), provided that graspable edges are rounded so as to provide a radius of not less than ⅛ in. (3.2 mm)

7.2.2.4.4.7 New handrails shall be continuously graspable along their entire length.

7.2.2.4.4.8 Handrail brackets or balusters attached to the bottom surface of the handrail shall not be considered to be obstructions to graspability, provided that the following criteria are met:

- (1) They do not project horizontally beyond the sides of the handrail within 1½ in. (38 mm) of the bottom of the handrail and provided that, for each additional ½ in. (13 mm) of handrail perimeter dimension greater than 4 in. (100 mm), the vertical clearance dimension of 1½ in. (38 mm) is reduced by ⅛ in. (3.2 mm).
- (2) They have edges with a radius of not less than 0.01 in. (0.25 mm).

7.2.2.4.4.9 New handrail ends shall be returned to the wall or floor or shall terminate at newel posts.

7.2.2.4.4.10 In other than dwelling units, new handrails that are not continuous between flights shall extend horizontally, at the required height, not less than 12 in. (305 mm) beyond the top riser and continue to slope for a depth of one tread beyond the bottom riser.

7.2.2.4.4.11 Within dwelling units, handrails shall extend, at the required height, to at least those points that are directly above the top and bottom risers.

7.2.2.4.5 Guard Details.

7.2.2.4.5.1 The height of guards required in 7.1.8 shall be measured vertically to the top of the guard from the surface adjacent thereto.

7.2.2.4.5.2 Guards shall be not less than 42 in. (1065 mm) high, except as permitted by one of the following:

- (1) Existing guards within dwelling units shall be permitted to be not less than 36 in. (915 mm) high.
- (2) The requirement of 7.2.2.4.5.2 shall not apply in assembly occupancies where otherwise provided in Chapter 12 and Chapter 13.

7.2.2.4.5.3* Existing guards on existing stairs shall be permitted to be not less than 30 in. (760 mm) high.

7.2.2.4.5.3* Open guards, other than approved, existing open guards, shall have intermediate rails or an ornamental pattern such that a sphere 4 in. (100 mm) in diameter is not able to pass through any opening up to a height of 34 in. (865 mm), and the following also shall apply:

- (1) The triangular openings formed by the riser, tread, and bottom element of a guardrail at the open side of a stair shall be of such size that a sphere 6 in. (150 mm) in diameter is not able to pass through the triangular opening.
- (2) In detention and correctional occupancies, in industrial occupancies, and in storage occupancies, the clear distance between intermediate rails, measured at right angles to the rails, shall not exceed 21 in. (535 mm).

7.2.2.5 Enclosure and Protection of Stairs.

7.2.2.5.1 Enclosures.

7.2.2.5.1.1 All inside stairs serving as an exit or exit component shall be enclosed in accordance with 7.1.3.2.

7.2.2.5.1.2 Inside stairs, other than those serving as an exit or exit component, shall be protected in accordance with Section 8.6.

7.2.2.5.1.3 In existing buildings, where a two-story exit enclosure connects the story of exit discharge with an adjacent story, the exit shall be permitted to be enclosed only on the story of exit discharge, provided that not less than 50 percent of the number and capacity of exits on the story of exit discharge are independent of such enclosures.

7.2.2.5.2* Exposures.

7.2.2.5.2.1 Where nonrated walls or unprotected openings enclose the exterior of a stairway, other than an existing stairway, and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees, the building enclosure walls within 10 ft (3050 mm) horizontally of the nonrated wall or unprotected opening shall be constructed as required for stairway enclosures, including opening protectives.

7.2.5.4.2 Handrails complying with 7.2.2.4 shall be provided along both sides of a ramp run with a rise greater than 6 in. (150 mm), unless otherwise provided in 7.2.5.4.4.

7.2.5.4.3 The height of handrails and guards shall be measured vertically to the top of the guard or rail from the walking surface adjacent thereto.

7.2.5.4.4 The requirements of 7.2.5.4.1 and 7.2.5.4.2 shall not apply to guards and handrails provided for ramped aisles in assembly occupancies as otherwise provided in Chapter 12 and Chapter 13.

7.2.5.5 Enclosure and Protection of Ramps. Ramps in a required means of egress shall be enclosed or protected as a stair in accordance with 7.2.2.5 and 7.2.2.6.

7.2.5.6 Special Provisions for Outside Ramps.

7.2.5.6.1* Visual Protection. Outside ramps shall be arranged to avoid any impediments to their use by persons having a fear of high places. For ramps more than three stories in height, any arrangement intended to meet this requirement shall be at least 48 in. (1220 mm) in height.

7.2.5.6.2* Water Accumulation. Outside ramps and landings shall be designed to minimize water accumulation on their surfaces.

7.2.6* Exit Passageways.

7.2.6.1* General. Exit passageways used as exit components shall conform to the general requirements of Section 7.1 and to the special requirements of 7.2.6.

7.2.6.2 Enclosure. An exit passageway shall be separated from other parts of the building as specified in 7.1.3.2, and the following alternatives shall be permitted:

- (1) Fire windows in accordance with 8.3.3 shall be permitted to be installed in the separation in a building protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.
- (2) Existing fixed wired glass panels in steel sash shall be permitted to be continued in use in the separation in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

7.2.6.3 Stair Discharge. An exit passageway that serves as a discharge from a stair enclosure shall have not less than the same fire resistance rating and opening protective fire protection rating as those required for the stair enclosure.

7.2.6.4 Width. The width of an exit passageway shall be adequate to accommodate the aggregate required capacity of all exits that discharge through it, unless one of the following conditions applies:

- (1)*Where an exit passageway serves occupants of the level of exit discharge as well as other stories, the capacity shall not be required to be aggregated.
- (2) As provided in Chapter 36 and Chapter 37, an exit passageway in a mall building shall be permitted to accommodate occupant loads independently from the mall and the tenant spaces. (See 36.2.2.7.2 and 37.2.2.7.2.)

7.2.6.5 Floor. The floor shall be solid and without perforations.

7.2.7 Escalators and Moving Walks. Escalators and moving walks shall not constitute a part of the required means of egress, unless they are previously approved existing escalators and moving walks.

7.2.8 Fire Escape Stairs.

7.2.8.1 General.

7.2.8.1.1 Fire escape stairs shall comply with the provisions of 7.2.8, unless they are approved, existing fire escape stairs.

7.2.8.1.2 Fire escape stairs shall not constitute any of the required means of egress, unless otherwise provided in 7.2.8.1.2.1 and 7.2.8.1.2.2.

***7.2.8.1.2.1** Fire escape stairs shall be permitted on existing buildings as provided in Chapter 11 through Chapter 42 but shall not constitute more than 50 percent of the required means of egress.

7.2.8.1.2.2 New fire escape stairs shall be permitted to be erected on existing buildings only where the authority having jurisdiction has determined that outside stairs are impractical. (See 7.2.2.)

7.2.8.1.2.3 New fire escape stairs permitted by 7.2.8.1.2.2 shall not incorporate ladders or access windows, regardless of occupancy classification or occupant load served.

7.2.8.1.3 Fire escape stairs of the return-platform type with superimposed runs, or of the straight-run type with a platform that continues in the same direction, shall be permitted. Either type shall be permitted to be parallel to, or at right angles to, buildings. Either type shall be permitted to be attached to buildings or erected independently of buildings and connected by walkways.

***7.2.8.2 Protection of Openings.** Fire escape stairs shall be exposed to the smallest possible number of window and door openings, and each opening shall be protected with approved fire door or fire window assemblies where the opening or any portion of the opening is located as follows:

- (1) Horizontally, within 15 ft (4570 mm) of any balcony, platform, or stairway constituting a component of the fire escape stair
- (2) Below, within three stories or 35 ft (10.7 m) of any balcony, platform, walkway, or stairway constituting a component of the fire escape stair, or within two stories or 20 ft (6100 mm) of a platform or walkway leading from any story to the fire escape stair
- (3) Above, within 10 ft (3050 mm) of any balcony, platform, or walkway, as measured vertically, or within 10 ft (3050 mm) of any stair tread surface, as measured vertically
- (4) Facing a court served by a fire escape stair, where the least dimension of the court does not exceed one-third of the height to the uppermost platform of the fire escape stair, measured from the ground
- (5) Facing an alcove served by a fire escape stair, where the width of the alcove does not exceed one-third, or the depth of the alcove does not exceed one-fourth, of the height to the uppermost platform of the fire escape stair, measured from the ground

7.2.8.2.1 The requirements of 7.2.8.2 shall not apply to openings located on the top story where stairs do not lead to the roof.

***7.2.8.2.2** The requirements of 7.2.8.2 shall be permitted to be modified by the authority having jurisdiction where automatic sprinkler protection is provided, where the occupancy is limited to low hazard contents, or where other special conditions exist.

***7.2.8.2.3** The requirements of 7.2.8.2 for the protection of window openings shall not apply where such window openings are necessary for access to existing fire escape stairs.

7.2.8.3 Access.

7.2.8.3.1 Access to fire escape stairs shall be in accordance with 7.2.8.4 and 7.5.1.1.1 through 7.5.1.2.2.

* **7.2.8.3.2** Where access is permitted by way of windows, the windows shall be arranged and maintained so as to be easily opened. Screening or storm windows that restrict free access to the fire escape stair shall be prohibited.

* **7.2.8.3.3** Fire escape stairs shall extend to the roof in all cases where the roof is subject to occupancy or provides an area of safe refuge, unless otherwise provided in 7.2.8.3.4.

* **7.2.8.3.4** Where a roof has a pitch that does not exceed 1 to 6, fire escape ladders in accordance with 7.2.9 or alternating tread devices in accordance with 7.2.11 shall be permitted to provided access to the roof.

7.2.8.3.5 Access to a fire escape stair shall be directly to a balcony, landing, or platform; shall not exceed the floor or window-

sill level; and shall not be more than 8 in. (205 mm) below the floor level or 18 in. (455 mm) below the windowsill level.

7.2.8.4 Stair Details.

7.2.8.4.1 General. Fire escape stairs shall comply with the requirements of Table 7.2.8.4.1(a). Replacement of fire escape stairs shall comply with the requirements of Table 7.2.8.4.1(b).

7.2.8.4.2 Slip Resistance. Stair treads and landings of new or replacement fire escape stairs shall have slip-resistant surfaces.

7.2.8.5 Guards, Handrails, and Visual Enclosures.

7.2.8.5.1 All fire escape stairs shall have walls or guards and handrails on both sides in accordance with 7.2.2.4.

7.2.8.5.2 Replacement fire escape stairs in occupancies serving more than 10 occupants shall have visual enclosures to avoid any impediments to stair use by persons having a fear of high places. For stairs more than three stories in height, any arrangement intended to meet this requirement shall be at least 42 in. (1065 mm) in height.

Table 7.2.8.4.1(a) Fire Escape Stairs



Feature	Serving More than 10 Occupants	Serving 10 or Fewer Occupants
Minimum widths	22 in. (560 mm) clear between rails	18 in. (455 mm) clear between rails
Minimum horizontal dimension of any landing or platform	22 in. (560 mm) clear	18 in. (455 mm) clear
Maximum riser height	9 in. (230 mm)	12 in. (305 mm)
Minimum tread, exclusive of nosing	9 in. (230 mm)	6 in. (150 mm)
Minimum nosing or projection	1 in. (25 mm)	No requirement
Tread construction	Solid ½ in. (13 mm) diameter perforations permitted	Flat metal bars on edge or square bars secured against turning, spaced 1¼ in. (32 mm) maximum on centers
Winders	None	Permitted subject to capacity penalty
Risers	None	No requirement
Spiral	None	Permitted subject to capacity penalty
Maximum height between landings	12 ft (3660 mm)	No requirement
Headroom, minimum	6 ft 8 in. (2030 mm)	6 ft 8 in. (2030 mm)
Access to escape	Door or casement windows, 24 in. × 6 ft 8 in. (610 mm × 1980 mm); or double-hung windows, 30 in. × 36 in. (760 mm × 915 mm) clear opening	Windows providing a clear opening of at least 20 in. (510 mm) in width, 24 in. (610 mm) in height, and 5.7 ft ² (0.53 m ²) in area
Level of access opening	Not over 12 in. (305 mm) above floor; steps if higher	Not over 12 in. (305 mm) above floor; steps if higher
Discharge to ground	Swinging stair section permitted if approved by authority having jurisdiction	Swinging stair, or ladder if approved by authority having jurisdiction
Capacity	½ in. (13 mm) per person, if access by door; 1 in. (25 mm) per person, if access by climbing over windowsill	10 persons; if winders or ladder from bottom balcony, 5 persons; if both, 1 person

CH. 10
 MEANS OF EGRESS
 TABLE 7.2.8.4.1
 CH. 8
 FIRE ESCAPE
 FEAT.
 EC. 8.
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 PENIN
 CH. 9
 BLDG
 F.P. E
 SEC
 ALAI
 SYS
 CH. 11
 INT. F
 FURNI

7.2.8.7.8 The pivot for swinging stairs shall be of a corrosion-resistant assembly or shall have clearances to prevent sticking due to corrosion.

7.2.8.7.9* Devices shall not be installed to lock a swinging stair section in the up position.

7.2.8.8 Intervening Spaces.

7.2.8.8.1 Where approved by the authority having jurisdiction, fire escape stairs shall be permitted to lead to an adjoining roof that is crossed before continuing downward travel. The direction of travel shall be clearly marked, and walkways with guards and handrails complying with 7.2.2.4 shall be provided.

7.2.8.8.2 Where approved by the authority having jurisdiction, fire escape stairs shall be permitted to be used in combination with inside or outside stairs complying with 7.2.2, provided that a continuous safe path of travel is maintained.

7.2.9 Fire Escape Ladders.

7.2.9.1 General. Fire escape ladders complying with 7.2.9.2 and 7.2.9.3 shall be permitted in the means of egress only where providing one of the following:

- (1) Access to unoccupied roof spaces as permitted in 7.2.8.3.4
- (2) Second means of egress from storage elevators as permitted in Chapter 42
- (3) Means of egress from towers and elevated platforms around machinery or similar spaces subject to occupancy not to exceed three persons who are all capable of using the ladder
- (4) Secondary means of egress from boiler rooms or similar spaces subject to occupancy not to exceed three persons who are all capable of using the ladder
- (5) Access to the ground from the lowest balcony or landing of a fire escape stair for small buildings as permitted in 7.2.8.4 where approved by the authority having jurisdiction

7.2.9.2 Construction and Installation.

7.2.9.2.1 Fire escape ladders shall comply with ANSI A14.3, *Safety Requirements for Fixed Ladders*, unless one of the following criteria is met:

- (1) Approved existing ladders complying with the edition of this *Code* that was in effect when the ladders were installed shall be permitted.
- (2) Industrial stairs complying with the minimum requirements for fixed stairs of ANSI A1264.1, *Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems*, shall be permitted where fire escape ladders are permitted in accordance with Chapter 40.

7.2.9.2.2 Ladders shall be installed with a pitch that exceeds 75 degrees.

7.2.9.3 Access. The lowest rung of any ladder shall not be more than 12 in. (305 mm) above the level of the surface beneath it.

7.2.10 Slide Escapes.

7.2.10.1 General.

7.2.10.1.1 A slide escape shall be permitted as a component in a means of egress where permitted in Chapter 12 through Chapter 42.

7.2.10.1.2 Each slide escape shall be of an approved type.

7.2.10.2 Capacity.

7.2.10.2.1 Slide escapes, where permitted as a required means of egress, shall have a capacity of 60 persons.

7.2.10.2.2 Slide escapes shall not constitute more than 25 percent of the required egress capacity from any building or structure or any individual story thereof, unless otherwise provided for industrial occupancies in Chapter 40.

7.2.11* Alternating Tread Devices.

7.2.11.1 Alternating tread devices complying with 7.2.11.2 shall be permitted in the means of egress only where providing one of the following:

- (1) Access to unoccupied roof spaces as permitted in 7.2.8.3.4
- (2) Second means of egress from storage elevators as permitted in Chapter 42
- (3) Means of egress from towers and elevated platforms around machinery or similar spaces subject to occupancy not to exceed three persons who are all capable of using the alternating tread device
- (4) Secondary means of egress from boiler rooms or similar spaces subject to occupancy not to exceed three persons who are all capable of using the alternating tread device

7.2.11.2 Alternating tread devices shall comply with the following:

- (1) Handrails shall be provided on both sides of alternating tread devices in accordance with 7.2.2.4.4.
- (2) The clear width between handrails shall be not less than 17 in. (430 mm) and not more than 24 in. (610 mm).
- (3) Headroom shall be not less than 6 ft 8 in. (2030 mm).
- (4) The angle of the device shall be between 50 degrees and 68 degrees to horizontal.
- (5) The height of the riser shall not exceed 9½ in. (240 mm).
- (6) Treads shall have a projected tread depth of not less than 5½ in. (145 mm), measured in accordance with 7.2.2, with each tread providing 9½ in. (240 mm) of depth, including tread overlap.
- (7) A distance of not less than 6 in. (150 mm) shall be provided between the stair handrail and any other object.
- (8) The initial tread of the stair shall begin at the same elevation as the platform, landing, or floor surface.
- (9) The alternating treads shall not be laterally separated by a distance of more than 2 in. (51 mm).
- (10) The occupant load served shall not exceed three.

7.2.12 Areas of Refuge.

7.2.12.1 General.

7.2.12.1.1 Unless otherwise provided in 7.2.12.1.2, an area of refuge used as part of a required accessible means of egress in accordance with 7.5.4, or used as a part of any required means of egress, shall conform to the following:

- (1) General requirements of Section 7.1
- (2) Requirements of 7.2.12.2 and 7.2.12.3

7.2.12.1.2 The requirements of 7.2.12.1.1(2) shall not apply to areas of refuge consisting of stories of buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

7.2.12.2 Accessibility.

7.2.12.2.1 Required portions of an area of refuge shall be accessible from the space they serve by an accessible means of egress.

7.2.12.2.2 Required portions of an area of refuge shall have access to a public way via an exit or an elevator without requiring

and certification that the inspection required by 13.7.10.2 has been performed.

13.7.11 Maintenance and Operation of Folding and Telescopic Seating.

13.7.11.1 Instructions in both maintenance and operation shall be transmitted to the owner by the manufacturer of the seating or his or her representative.

13.7.11.2 Maintenance and operation of folding and telescopic seating shall be the responsibility of the owner or his or her duly authorized representative and shall include the following:

- (1) During operation of the folding and telescopic seats, the opening and closing shall be supervised by responsible personnel who shall ensure that the operation is in accordance with the manufacturer's instructions.
- (2) Only attachments specifically approved by the manufacturer for the specific installation shall be attached to the seating.
- (3) An annual inspection and required maintenance of each grandstand shall be performed to ensure safe conditions.
- (4) At least biennially, the inspection shall be performed by a professional engineer, registered architect, or individual certified by the manufacturer.

13.7.12 Clothing. Clothing and personal effects shall not be stored in corridors, unless otherwise permitted by the following:

- (1) This requirement shall not apply to corridors protected by an approved automatic sprinkler system in accordance with Section 9.7.
- (2) This requirement shall not apply to corridor areas protected by a smoke detection system in accordance with Section 9.6.
- (3) This requirement shall not apply to storage in metal lockers, provided that the required egress width is maintained.

Chapter 14 New Educational Occupancies

14.1 General Requirements.

14.1.1 Application.

14.1.1.1 The requirements of this chapter shall apply to new buildings or portions thereof used as educational occupancies (see 1.3.1).

14.1.1.2 Educational facilities that do not meet the definition of an educational occupancy shall not be required to comply with this chapter but shall comply with the following requirements:

- (1) Instructional building — business occupancy
- (2) Classrooms under 50 persons — business occupancy
- (3) Classrooms, 50 persons and over — assembly occupancy
- (4) Laboratories, instructional — business occupancy
- (5) Laboratories, noninstructional — industrial

14.1.2 Multiple Occupancies.

14.1.2.1 General. Multiple occupancies shall be in accordance with 6.1.14.

14.1.2.2 Assembly and Educational.

14.1.2.2.1 Spaces subject to assembly occupancy shall comply with Chapter 12, including 12.1.2, which provides that, where auditorium and gymnasium egress lead through corridors or stairways also serving as egress for other parts of the building,

the egress capacity shall be sufficient to allow simultaneous egress from auditorium and classroom sections.

14.1.2.2.2 In the case of an assembly occupancy of a type suitable for use only by the school occupant load, and therefore not subject to simultaneous occupancy, the same egress capacity shall be permitted to serve both sections.

14.1.2.3 Dormitory and Classrooms.

14.1.2.3.1 Any building used for both classroom and dormitory purposes shall comply with the applicable provisions of Chapter 28 in addition to complying with Chapter 14.

14.1.2.3.2 Where classroom and dormitory sections are not subject to simultaneous occupancy, the same egress capacity shall be permitted to serve both sections.

14.1.3 Special Definitions. A list of special terms used in this chapter follows:

- (1) **Common Atmosphere.** See 3.3.21.1.
- (2) **Flexible Plan and Open Plan Educational or Day-Care Building.** See 3.3.28.6.
- (3) **Separate Atmosphere.** See 3.3.21.2.

14.1.4 Classification of Occupancy. See 6.1.3.

14.1.4.1 Educational occupancies shall include all buildings used for educational purposes through the twelfth grade by six or more persons for 4 or more hours per day or more than 12 hours per week.

14.1.4.2 Educational occupancies shall include part-day pre-schools, kindergartens, and other schools whose purpose is primarily educational, even though the children who attend such schools are of preschool age.

14.1.4.3 In cases where instruction is incidental to some other occupancy, the section of this *Code* governing such other occupancy shall apply.

14.1.4.4 Other occupancies associated with educational institutions shall be in accordance with the appropriate parts of this *Code*. (See Chapters 18, 20, 26, 28, 30, 40, and 42 and 6.1.14.)

14.1.5 Classification of Hazard of Contents. The contents of educational occupancies shall be classified in accordance with the provisions of Section 6.2.

14.1.6 Minimum Construction Requirements. (No requirements)

14.1.7 Occupant Load.

14.1.7.1 The occupant load, in number of persons for whom means of egress and other provisions are required, shall be determined on the basis of the occupant load factors of Table 7.3.1.2 that are characteristic of the use of the space or shall be determined as the maximum probable population of the space under consideration, whichever is greater.

14.1.7.2 The occupant load of an educational occupancy, or a portion thereof, shall be permitted to be modified from that specified in 14.1.7.1 if the necessary aisles and exits are provided.

14.1.7.3 An approved aisle or seating diagram shall be required by the authority having jurisdiction to substantiate the modification permitted in 14.1.7.2.

14.2 Means of Egress Requirements.

14.2.1 General.

14.2.1.1 Means of egress shall be in accordance with Chapter 7 and Section 14.2.

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* 14.2.1.2 Rooms normally occupied by preschool, kindergarten, or first-grade students shall be located on a level of exit discharge, unless otherwise permitted by 14.2.1.4.

14.2.1.3 Rooms normally occupied by second-grade students shall not be located more than one story above a level of exit discharge, unless otherwise permitted by 14.2.1.4.

14.2.1.4 Rooms or areas located on floor levels other than as specified in 14.2.1.2 and 14.2.1.3 shall be permitted to be used where provided with independent means of egress dedicated for use by the preschool, kindergarten, first-grade, or second-grade students.

14.2.2 Means of Egress Components.

14.2.2.1 **Components Permitted.** Components of means of egress shall be limited to the types described in 14.2.2.2 through 14.2.2.10.

14.2.2.2 Doors.

14.2.2.2.1 Doors complying with 7.2.1 shall be permitted.

14.2.2.2.2 Any door in a required means of egress from an area having an occupant load of 100 or more persons shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with 7.2.1.7.

14.2.2.2.3 Special locking arrangements complying with 7.2.1.6 shall be permitted.

14.2.2.3* **Stairs.** Stairs complying with 7.2.2 shall be permitted.

14.2.2.4 **Smokeproof Enclosures.** Smokeproof enclosures complying with 7.2.3 shall be permitted.

14.2.2.5 **Horizontal Exits.** Horizontal exits complying with 7.2.4 shall be permitted.

14.2.2.6 **Ramps.** Ramps complying with 7.2.5 shall be permitted.

14.2.2.7 **Exit Passageways.** Exit passageways complying with 7.2.6 shall be permitted.

* 14.2.2.8 **Fire Escape Ladders.** Fire escape ladders complying with 7.2.9 shall be permitted.

14.2.2.9 **Alternating Tread Devices.** Alternating tread devices complying with 7.2.11 shall be permitted.

14.2.2.10 **Areas of Refuge.** Areas of refuge complying with 7.2.12 shall be permitted.

14.2.3 Capacity of Means of Egress.

14.2.3.1 **General.** Capacity of means of egress shall be in accordance with Section 7.3.

14.2.3.2 **Minimum Corridor Width.** Exit access corridors shall have not less than 6 ft (1830 mm) of clear width.

* 14.2.4 **Number of Exits.** Not less than two separate exits shall be as follows:

- (1) Provided on every story
- (2) Accessible from every part of every story and mezzanine

14.2.5 **Arrangement of Means of Egress.** See also Section 7.5.

14.2.5.1 Means of egress shall be arranged in accordance with Section 7.5.

* 14.2.5.2 No dead-end corridor shall exceed 20 ft (6100 mm), other than in buildings protected throughout by an approved,

supervised automatic sprinkler system in accordance with Section 9.7, in which case dead-end corridors shall not exceed 50 ft (15 m).

* 14.2.5.3 No common path of travel shall exceed 75 ft (23 m), other than for the first 100 ft (30 m) in a building protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.2.5.4 Every room or space larger than 1000 ft² (93 m²) or with an occupant load of more than 50 persons shall comply with the following:

- (1) The room or space shall have a minimum of two exit access doors.
- (2) The doors required by 14.2.5.4(1) shall provide access to separate exits.
- (3) The doors required by 14.2.5.4(1) shall be permitted to open onto a common corridor, provided that such corridor leads to separate exits located in opposite directions.

14.2.5.5 Every room that is normally subject to student occupancy shall have an exit access door leading directly to an exit access corridor or exit, unless otherwise permitted by the following:

- (1) This requirement shall not apply where an exit door opens directly to the outside or to an exterior balcony or corridor as described in 14.2.5.9.
- (2) One room shall be permitted to intervene between a normally occupied student room and an exit access corridor, provided that all of the following criteria are met:
 - (a) The travel from a room served by an intervening room to the corridor door or exit shall not exceed 75 ft (23 m).
 - (b) Clothing, personal effects, or other materials deemed hazardous by the authority having jurisdiction shall be stored in metal lockers, provided that they do not obstruct the exit access, or the intervening room shall be sprinklered in accordance with Section 9.7.
 - (c) One of the following means of protection shall be provided:
 - i. The intervening room shall have approved fire detection that activates the building alarm.
 - ii. The building shall be protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.2.5.6 Doors that swing into an exit access corridor shall be arranged to prevent interference with corridor travel. (See also 7.2.1.4.4.)

14.2.5.7 Aisles shall be not less than 30 in. (760 mm) wide.

14.2.5.8 The space between parallel rows of seats shall not be subject to the minimum aisle width, provided that the number of seats that intervene between any seat and an aisle does not exceed six.

14.2.5.9* Exterior exit access shall comply with 7.5.3.

14.2.6 Travel Distance to Exits.

* 14.2.6.1 Travel distance to an exit shall not exceed 150 ft (46 m) from any point in a building. (See also Section 7.6.)

* 14.2.6.2 Travel distance shall not exceed 200 ft (61 m) in educational occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.2.7 Discharge from Exits. Discharge from exits shall be arranged in accordance with Section 7.7.

14.2.8 Illumination of Means of Egress. Means of egress shall be illuminated in accordance with Section 7.8.

14.2.9 Emergency Lighting. Emergency lighting shall be provided in accordance with Section 7.9.

14.2.10 Marking of Means of Egress. Means of egress shall have signs in accordance with Section 7.10.

14.2.11 Special Means of Egress Features.

14.2.11.1* Windows for Rescue.

14.2.11.1.1 Every room or space greater than 250 ft² (23.2 m²) and used for classroom or other educational purposes or normally subject to student occupancy shall have not less than one outside window for emergency rescue that complies with the following, unless otherwise permitted by 14.2.11.1.2:

- (1) Such windows shall be openable from the inside without the use of tools and shall provide a clear opening of not less than 20 in. (510 mm) in width, 24 in. (610 mm) in height, and 5.7 ft² (0.5 m²) in area.
- (2) The bottom of the opening shall be not more than 44 in. (1120 mm) above the floor, and any latching device shall be capable of being operated from not more than 54 in. (1370 mm) above the finished floor.
- (3) The clear opening shall allow a rectangular solid, with a width and height that provides not less than the required 5.7 ft² (0.5 m²) opening and a depth of not less than 20 in. (510 mm), to pass fully through the opening.
- (4) Such windows shall be accessible by the fire department and shall open into an area having access to a public way.

14.2.11.1.2 The requirements of 14.2.11.1.1 shall not apply to the following:

- (1) Buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7
- (2) Where the room or space has a door leading directly to the outside of the building
- (3) Rooms located higher than three stories above grade

14.2.11.2 Lockups. Lockups in educational occupancies shall comply with the requirements of 22.4.5.

14.3 Protection.

14.3.1 Protection of Vertical Openings.

14.3.1.1 Any vertical opening, other than unprotected vertical openings in accordance with 8.6.8.2, shall be enclosed or protected in accordance with Section 8.6.

14.3.1.2 Where the provisions of 8.6.6 are used, the requirements of 14.3.5.4 shall be met.

14.3.2 Protection from Hazards.

14.3.2.1 Rooms or spaces for the storage, processing, or use of materials shall be protected in accordance with the following:

- (1) Such rooms or spaces shall be separated from the remainder of the building by fire barriers having a fire resistance rating of not less than 1 hour or protected by automatic extinguishing systems as specified in Section 8.7 in the following areas:

- (a) Boiler and furnace rooms, unless such rooms enclose only air-handling equipment
 - (b) Rooms or spaces used for the storage of combustible supplies in quantities deemed hazardous by the authority having jurisdiction
 - (c) Rooms or spaces used for the storage of hazardous materials or flammable or combustible liquids in quantities deemed hazardous by recognized standards
 - (d) Janitor closets [see also 14.3.2.1(4)]
- (2) Such rooms or spaces shall be separated from the remainder of the building by fire barriers having a fire resistance rating of not less than 1 hour and protected by automatic extinguishing systems as specified in Section 8.7 in the following areas:
- (a) Laundries
 - (b) Maintenance shops, including woodworking and painting areas
 - (c) Rooms or spaces used for processing or use of combustible supplies deemed hazardous by the authority having jurisdiction
 - (d) Rooms or spaces used for processing or use of hazardous materials or flammable or combustible liquids in quantities deemed hazardous by recognized standards
- (3) Where automatic extinguishing is used to meet the requirements of 14.3.2.1(1) or (2), the protection shall be permitted in accordance with 9.7.1.2.
- (4) Where janitor closets addressed in 14.3.2.1(1)(d) are protected in accordance with the sprinkler option of 14.3.2.1(1), the janitor closet doors shall be permitted to have ventilating louvers.

14.3.2.2 Cooking facilities shall be protected in accordance with 9.2.3. Openings shall not be required to be protected between food preparation areas and dining areas.

14.3.2.3 Stages shall be protected in accordance with Chapter 12.

14.3.3 Interior Finish.

14.3.3.1 General. Interior finish shall be in accordance with Section 10.2.

14.3.3.2* Interior Wall and Ceiling Finish. Interior wall and ceiling finish materials complying with Section 10.2 shall be permitted as follows:

- (1) Exits — Class A
- (2) Other than exits — Class A or Class B
- (3) Low-height partitions not exceeding 60 in. (1525 mm) and used in locations other than exits — Class A, Class B, or Class C

14.3.3.3 Interior Floor Finish.

14.3.3.3.1 Interior floor finish shall comply with Section 10.2.

14.3.3.3.2 Interior floor finish in exit enclosures and exit access corridors and spaces not separated from them by walls complying with 14.3.6 shall be not less than Class II.

14.3.3.3.3 Interior floor finish shall comply with 10.2.7.1 or 10.2.7.2, as applicable.

14.3.4 Detection, Alarm, and Communications Systems.

14.3.4.1 General.

14.3.4.1.1 Educational occupancies shall be provided with a fire alarm system in accordance with Section 9.6.

14.3.4.1.2 The requirement of 14.3.4.1.1 shall not apply to buildings meeting all of the following criteria:

- (1) Buildings having an area not exceeding 1000 ft² (93 m²)
- (2) Buildings containing a single classroom
- (3) Buildings located not less than 30 ft (9.2 m) from another building

14.3.4.2 Initiation.

14.3.4.2.1 General. Initiation of the required fire alarm system, other than as permitted by 14.3.4.2.3, shall be by manual means in accordance with 9.6.2.1(1).

14.3.4.2.2 Automatic Initiation. In buildings provided with automatic sprinkler protection, the operation of the sprinkler system shall automatically activate the fire alarm system in addition to the initiation means required in 14.3.4.2.1.

14.3.4.2.3 Alternative Protection System. Manual fire alarm boxes shall be permitted to be eliminated in accordance with 14.3.4.2.3.1 or 14.3.4.2.3.2.

14.3.4.2.3.1* Manual fire alarm boxes shall be permitted to be eliminated where all of the following conditions apply:

- (1) Interior corridors are protected by smoke detectors using an alarm verification system as described in *NFPA 72, National Fire Alarm Code*.
- (2) Auditoriums, cafeterias, and gymnasiums are protected by heat-detection devices or other approved detection devices.
- (3) Shops and laboratories involving dusts or vapors are protected by heat-detection devices or other approved detection devices.
- (4) Provision is made at a central point to manually activate the evacuation signal or to evacuate only affected areas.

14.3.4.2.3.2* Manual fire alarm boxes shall be permitted to be eliminated where all of the following conditions apply:

- (1) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.
- (2) Provision is made at a central point to manually activate the evacuation signal or to evacuate only affected areas.

14.3.4.3 Notification.

14.3.4.3.1 Occupant Notification.

14.3.4.3.1.1* Occupant notification shall be accomplished automatically in accordance with 9.6.3.

14.3.4.3.1.2 Positive alarm sequence shall be permitted in accordance with 9.6.3.4.

14.3.4.3.1.3 Where installed and operated per *NFPA 72, National Fire Alarm Code*, the fire alarm system shall be permitted to be used for other emergency signaling or for class changes.

14.3.4.3.1.4 To prevent students from being returned to a building that is burning, the recall signal shall be separate and distinct from any other signals, and such signal shall be permitted to be given by use of distinctively colored flags or banners.

14.3.4.3.1.5 If the recall signal required by 14.3.4.3.1.4 is electric, the push buttons or other controls shall be kept under lock, the key for which shall be in the possession of the principal or another designated person in order to prevent a recall at a time when there is an actual fire.

14.3.4.3.1.6 Regardless of the method of recall signal, the means of giving the recall signal shall be kept under lock.

14.3.4.3.2 Emergency Forces Notification. Fire department notification shall be accomplished in accordance with 9.6.4.

14.3.5 Extinguishment Requirements.

14.3.5.1 Every portion of educational buildings below the level of exit discharge shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.3.5.2 Reserved.

14.3.5.3 Reserved.

14.3.5.4 Buildings with unprotected openings in accordance with 8.6.6 shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.3.5.5 Where another provision of this chapter requires an automatic sprinkler system, the sprinkler system shall be installed in accordance with 9.7.1.1(1).

14.3.6 Corridors. Corridors shall be separated from other parts of the story by walls having a 1-hour fire resistance rating in accordance with Section 8.3, unless otherwise permitted by the following:

- (1) Corridor protection shall not be required where all spaces normally subject to student occupancy have not less than one door opening directly to the outside or to an exterior exit access balcony or corridor in accordance with 7.5.3.
- (2) In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7, corridor walls shall not be required to be rated, provided that such walls form smoke partitions in accordance with Section 8.4.
- (3) Where the corridor ceiling is an assembly having a 1-hour fire resistance rating where tested as a wall, the corridor walls shall be permitted to terminate at the corridor ceiling.
- (4) Lavatories shall not be required to be separated from corridors, provided that they are separated from all other spaces by walls having not less than a 1-hour fire resistance rating in accordance with Section 8.3.
- (5) Lavatories shall not be required to be separated from corridors, provided that the building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.3.7 Subdivision of Building Spaces.

14.3.7.1 Educational occupancies shall be subdivided into compartments by smoke partitions having not less than a 1-hour fire resistance rating and complying with Section 8.4 where one or both of the following conditions exist:

- (1) The maximum floor area, including the aggregate area of all floors having a common atmosphere, exceeds 30,000 ft² (2800 m²).
- (2) The length or width of the building exceeds 300 ft (91 m).

14.3.7.2 The requirement of 14.3.7.1 shall not apply to the following:

- (1) Where all spaces normally subject to student occupancy have not less than one door opening directly to the outside or to an exterior or exit access balcony or corridor in accordance with 7.5.3
- (2) Buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7

14.3.7.3 The area of any smoke compartment required by 14.3.7.1 shall not exceed 30,000 ft² (2800 m²), with no dimension exceeding 300 ft (91 m).

14.4 Special Provisions.

14.4.1 Limited Access Buildings and Underground Buildings. Limited access buildings and underground buildings shall comply with Section 11.7.

14.4.2 High-Rise Buildings. High-rise buildings shall comply with Section 11.8.

14.4.3 Flexible Plan and Open Plan Buildings.

14.4.3.1 Flexible plan and open plan buildings shall comply with the requirements of this chapter as modified by 14.4.3.2 through 14.4.3.5.

14.4.3.2 Each room occupied by more than 300 persons shall have two or more means of egress entering into separate atmospheres.

14.4.3.3 Where three or more means of egress are required, the number of means of egress permitted to enter into the same atmosphere shall not exceed two.

14.4.3.4 Flexible plan buildings shall be permitted to have walls and partitions rearranged periodically only if revised plans or diagrams have been approved by the authority having jurisdiction.

14.4.3.5 Flexible plan buildings shall be evaluated while all folding walls are extended and in use as well as when they are in the retracted position.

14.5 Building Services.

14.5.1 Utilities. Utilities shall comply with the provisions of Section 9.1.

14.5.2 Heating, Ventilating, and Air-Conditioning Equipment.

14.5.2.1 Heating, ventilating, and air-conditioning equipment shall comply with the provisions of Section 9.2.

14.5.2.2 Unvented fuel-fired heating equipment, other than gas space heaters in compliance with NFPA 54/ANSI Z223.1, *National Fuel Gas Code*, shall be prohibited.

14.5.3 Elevators, Escalators, and Conveyors. Elevators, escalators, and conveyors shall comply with the provisions of Section 9.4.

14.5.4 Rubbish Chutes, Incinerators, and Laundry Chutes. Rubbish chutes, incinerators, and laundry chutes shall comply with the provisions of Section 9.5.

14.6 Reserved.

14.7 Operating Features.

14.7.1 Emergency Plan. Emergency plans shall be provided in accordance with Section 4.8.

14.7.2 Emergency Egress Drills.

14.7.2.1* Emergency egress drills shall be conducted in accordance with Section 4.7 and the applicable provisions of 14.7.2.2.

14.7.2.2 Emergency egress drills shall be conducted as follows:

(1) Not less than one emergency egress drill shall be conducted every month the facility is in session, unless both of the following criteria are met:

(a) In climates where the weather is severe, the monthly emergency egress drills shall be permitted to be deferred.

(b) The required number of emergency egress drills shall be conducted, and not less than four shall be conducted before the drills are deferred.

(2) All occupants of the building shall participate in the drill.

(3) One additional emergency egress drill, other than for educational occupancies that are open on a year-round basis, shall be required within the first 30 days of operation.

14.7.2.3 All emergency drill alarms shall be sounded on the fire alarm system.

14.7.3 Inspection.

14.7.3.1* It shall be the duty of principals, teachers, or staff to inspect all exit facilities daily to ensure that all stairways, doors, and other exits are in proper condition.

14.7.3.2 Open plan buildings shall require extra surveillance to ensure that exit paths are maintained clear of obstruction and are obvious.

14.7.4 Furnishings and Decorations.

14.7.4.1 Draperies, curtains, and other similar furnishings and decorations in educational occupancies shall be in accordance with the provisions of 10.3.1.

14.7.4.2 Clothing and personal effects shall not be stored in corridors, unless otherwise permitted by the following:

(1) This requirement shall not apply to corridors protected by an automatic sprinkler system in accordance with Section 9.7.

(2) This requirement shall not apply to corridor areas protected by a smoke detection system in accordance with Section 9.6.

(3) This requirement shall not apply to storage in metal lockers, provided that the required egress width is maintained.

14.7.4.3 Artwork and teaching materials shall be permitted to be attached directly to the walls in accordance with the following:

(1) The artwork and teaching materials shall not exceed 20 percent of the wall area in a building that is not protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

(2) The artwork and teaching materials shall not exceed 50 percent of the wall area in a building that is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.7.4.4 The provision of 10.3.2 for cigarette ignition resistance of newly introduced upholstered furniture and mattresses shall not apply to educational occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.7.5 Open Flames. Approved open flames shall be permitted in laboratories and vocational/technical areas.

Chapter 15 Existing Educational Occupancies

15.1 General Requirements.

15.1.1 Application.

15.1.1.1 The requirements of this chapter shall apply to existing buildings or portions thereof currently occupied as educational occupancies.



37.4.5.2.2 Not less than 50 percent of the required egress capacity shall be located independent of the main entrance/exit doors.

37.4.5.3 Storage, Arrangement, Protection, and Quantities of Hazardous Commodities. The storage, arrangement, protection, and quantities of hazardous commodities shall be in accordance with the applicable provisions of the following:

- (1) NFPA 13, *Standard for the Installation of Sprinkler Systems*
- (2) NFPA 30, *Flammable and Combustible Liquids Code*
- (3) NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products*
- (4) NFPA 230, *Standard for the Fire Protection of Storage*
- (5) NFPA 430, *Code for the Storage of Liquid and Solid Oxidizers*
- (6) NFPA 432, *Code for the Storage of Organic Peroxide Formulations*
- (7) NFPA 434, *Code for the Storage of Pesticides*
- (8) NFPA 1124, *Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles*

37.4.5.4 Detection, Alarm, and Communications Systems.

37.4.5.4.1 General. Bulk merchandising retail buildings shall be provided with a fire alarm system in accordance with Section 9.6.

37.4.5.4.2 Initiation. Initiation of the required fire alarm system shall be by means of the required approved automatic sprinkler system (see 37.4.5.5) in accordance with 9.6.2.1 (3).

37.4.5.4.3 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:

- (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 shall be permitted.
- (2) It shall activate an alarm signal in a continuously attended location for the purpose of initiating emergency action, by personnel trained to respond to emergencies, as follows:
 - (a) Emergency action shall be initiated by means of live voice public address system announcements originating from the attended location where the alarm signal is received, unless otherwise permitted by 37.4.5.4.3(2)(c).
 - (b) The live voice public address system shall be permitted to be used for other announcements, provided that the emergency action use takes precedence over any other use.
 - (c) In lieu of live voice public address system announcements, any other occupant notification means in accordance with 9.6.3 shall be permitted.

37.4.5.4.4 Emergency Forces Notification. Emergency forces notification shall be provided and shall include notifying the following:

- (1) Fire department in accordance with 9.6.4
- (2) Local emergency organization, if provided

37.4.5.5 Extinguishing Requirements. Bulk merchandising retail buildings shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) and the applicable provisions of the following:

- (1) NFPA 1, *Uniform Fire Code*
- (2) NFPA 13, *Standard for the Installation of Sprinkler Systems*
- (3) NFPA 30, *Flammable and Combustible Liquids Code*
- (4) NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products*

37.4.5.6 Emergency Plan and Employee Training.

37.4.5.6.1 There shall be in effect an approved written plan for the emergency egress and relocation of occupants.

37.4.5.6.2 All employees shall be instructed and periodically drilled with respect to their duties under the plan.

37.5 Building Services.

37.5.1 Utilities. Utilities shall comply with the provisions of Section 9.1.

37.5.2 Heating, Ventilating, and Air-Conditioning. Heating, ventilating, and air-conditioning equipment shall comply with the provisions of Section 9.2.

37.5.3 Elevators, Escalators, and Conveyors. Elevators, escalators, and conveyors shall comply with the provisions of Section 9.4.

37.5.4 Rubbish Chutes, Incinerators, and Laundry Chutes. Rubbish chutes, incinerators, and laundry chutes shall comply with the provisions of Section 9.5.

37.6 Reserved.

37.7 Operating Features.

37.7.1 Drills. In every Class A or Class B mercantile occupancy, employees shall be periodically trained in accordance with Section 4.7.

37.7.2 Extinguisher Training. Employees of mercantile occupancies shall be periodically instructed in the use of portable fire extinguishers.

37.7.3 Food Service Operations. Food service operations shall comply with 13.7.2.

37.7.4 Upholstered Furniture and Mattresses. The provisions of 10.3.2 shall not apply to upholstered furniture and mattresses.

Chapter 38 New Business Occupancies

38.1 General Requirements.

38.1.1 Application.

38.1.1.1 The requirements of this chapter shall apply to new buildings or portions thereof used as business occupancies (see 1.3.1).

38.1.1.2 The provisions of this chapter shall apply to life safety requirements for all new business buildings.

38.1.1.3 Additions to existing buildings shall conform to the requirements of 4.6.7. Existing portions of the structure shall not be required to be modified, provided that the new construction has not diminished the fire safety features of the facility.

38.1.2 Multiple Occupancies.

38.1.2.1 General.

38.1.2.1.1 All multiple occupancies shall be in accordance with 6.1.14 and 38.1.2.

38.1.2.1.2 Where there are differences in the specific requirements in this chapter and provisions for mixed occupancies or separated occupancies as specified in 6.1.14.3 and 6.1.14.4, the requirements of this chapter shall apply.

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38.1.2.2 Combined Business Occupancies and Parking Structures.

38.1.2.2.1 The fire barrier separating parking structures from a building classified as a business occupancy shall be a fire barrier having a fire resistance rating of not less than 2 hours.

38.1.2.2.2 Openings in the fire barrier required by 38.1.2.2.1 shall not be required to be protected with fire protection-rated opening protectives in enclosed parking structures that are protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), or in open parking structures, provided that all of the following conditions are met:

- (1) The openings do not exceed 25 percent of the area of the fire barrier in which they are located.
- (2) The openings are used as a public entrance and for associated sidelight functions.
- (3) The building containing the business occupancy is protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).
- (4)*Means are provided to prevent spilled fuel from accumulating adjacent to the openings and entering the building.
- (5) Physical means are provided to prevent vehicles from being parked or driven within 10 ft (3050 mm) of the openings.
- (6) The openings are protected as a smoke partition in accordance with Section 8.4, with no minimum fire protection rating required.

38.1.3 **Special Definitions.** Special terms applicable to this chapter are defined in Chapter 3.

38.1.4 **Classification of Occupancy.** Business occupancies shall include all buildings and structures or parts thereof with occupancy as defined in 6.1.11.

38.1.5 **Classification of Hazard of Contents.** The contents of business occupancies shall be classified as ordinary hazard in accordance with Section 6.2.

38.1.6 **Minimum Construction Requirements.** (No requirements)

38.1.7 **Occupant Load.** The occupant load, in number of persons for whom means of egress and other provisions are required, shall be determined on the basis of the occupant load factors of Table 7.3.1.2 that are characteristic of the use of the space, or shall be determined as the maximum probable population of the space under consideration, whichever is greater.

38.2 Means of Egress Requirements.

38.2.1 General.

38.2.1.1 All means of egress shall be in accordance with Chapter 7 and this chapter.

38.2.1.2 If, owing to differences in grade, any street floor exits are at points above or below the street or ground level, such exits shall comply with the provisions for exits from upper floors or floors below the street floor.

38.2.1.3 Stairs and ramps serving two or more floors below a street floor occupied for business use shall be permitted in accordance with 38.2.1.3.1 and 38.2.1.3.2.

38.2.1.3.1 Where two or more floors below the street floor are occupied for business use, the same stairs or ramps shall be permitted to serve each.

38.2.1.3.2 An inside open stairway or inside open ramp shall be permitted to serve as a required egress facility from not more than one floor level below the street floor.

38.2.1.4 Floor levels that are below the street floor; are used only for storage, heating, and other service equipment; and are not subject to business occupancy shall have means of egress in accordance with Chapter 42.

38.2.2 Means of Egress Components.

38.2.2.1 **Components Permitted.** Means of egress components shall be limited to the types described in 38.2.2.2 through 38.2.2.12.

38.2.2.2 Doors.

38.2.2.2.1 Doors complying with 7.2.1 shall be permitted.

38.2.2.2.2* Locks complying with 7.2.1.5.4 shall be permitted only on principal entrance/exit doors.

38.2.2.2.3 Reserved.

38.2.2.2.4 Delayed-egress locks complying with 7.2.1.6.1 shall be permitted.

38.2.2.2.5 Access-controlled egress doors complying with 7.2.1.6.2 shall be permitted.

38.2.2.2.6 Horizontal or vertical security grilles or doors complying with 7.2.1.4.1.4 shall be permitted to be used as part of the required means of egress from a tenant space.

38.2.2.2.7 Reserved.

38.2.2.2.8 Revolving doors complying with 7.2.1.10 shall be permitted.

38.2.2.3 Stairs.

38.2.2.3.1 Stairs complying with 7.2.2 shall be permitted.

38.2.2.3.2 Spiral stairs complying with 7.2.2.2.3 shall be permitted.

38.2.2.4 **Smokeproof Enclosures.** Smokeproof enclosures complying with 7.2.3 shall be permitted.

38.2.2.5 **Horizontal Exits.** Horizontal exits complying with 7.2.4 shall be permitted.

38.2.2.6 **Ramps.** Ramps complying with 7.2.5 shall be permitted.

38.2.2.7 **Exit Passageways.** Exit passageways complying with 7.2.6 shall be permitted.

38.2.2.8 Reserved.

38.2.2.9 Reserved.

38.2.2.10 **Fire Escape Ladders.** Fire escape ladders complying with 7.2.9 shall be permitted.

38.2.2.11 **Alternating Tread Devices.** Alternating tread devices complying with 7.2.11 shall be permitted.

38.2.2.12 Areas of Refuge.

38.2.2.12.1 Areas of refuge complying with 7.2.12 shall be permitted.

38.2.2.12.2 In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), two rooms or spaces separated from each other by smoke-resistant partitions in accordance with the definition of area of refuge in 3.3.18 shall not be required.

38.2.3 Capacity of Means of Egress.

38.2.3.1 The capacity of means of egress shall be in accordance with Section 7.3.

38.2.3.2* The clear width of any corridor or passageway serving an occupant load of 50 or more shall be not less than 44 in. (1120 mm).

38.2.3.3 Street floor exits shall be sufficient for the occupant load of the street floor plus the required capacity of stairs and ramps discharging through the street floor.

38.2.4 Number of Exits.

38.2.4.1 Exits shall comply with the following, except as otherwise permitted by 38.2.4.2 through 38.2.4.6:

- (1) The number of means of egress shall be in accordance with Section 7.4.
- (2) Not less than two separate exits shall be provided on every story.
- (3) Not less than two separate exits shall be accessible from every part of every story.

38.2.4.2 Exit access, as required by 38.2.4.1(3), shall be permitted to include a single exit access path for the distances permitted as common paths of travel by 38.2.5.3.

38.2.4.3 A single exit shall be permitted for a room or area with a total occupant load of fewer than 100 persons, provided that the following criteria are met:

- (1) The exit shall discharge directly to the outside at the level of exit discharge for the building.
- (2) The total distance of travel from any point, including travel within the exit, shall not exceed 100 ft (30 m).
- (3) The total distance of travel specified in 38.2.4.3(2) shall be on the same floor level or, if traversing of stairs is necessary, such stairs shall not exceed 15 ft (4570 mm) in height, and the stairs shall be provided with complete enclosures to separate them from any other part of the building, with no door openings therein.
- (4) A single outside stair in accordance with 7.2.2 shall be permitted to serve all floors permitted within the 15 ft (4570 mm) vertical travel limitation.

38.2.4.4 Any business occupancy not exceeding three stories, and not exceeding an occupant load of 30 people per floor, shall be permitted a single separate exit to each floor, provided that the following criteria are met:

- (1) This arrangement shall be permitted only where the total travel distance to the outside of the building does not exceed 100 ft (30 m) and where the exit is enclosed in accordance with 7.1.3.2, serves no other levels, and discharges directly to the outside.
- (2) A single outside stair in accordance with 7.2.2 shall be permitted to serve all floors.

38.2.4.5 A single means of egress shall be permitted from a mezzanine within a business occupancy, provided that the common path of travel does not exceed 75 ft (23 m), or 100 ft (30 m) if protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).

38.2.4.6 A single exit shall be permitted for a maximum two-story, single-tenant space/building that is protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) and where the total travel to the outside does not exceed 100 ft (30 m).

38.2.5 Arrangement of Means of Egress.

38.2.5.1 Means of egress shall be arranged in accordance with Section 7.5.

38.2.5.2 Dead-end corridors shall be permitted in accordance with 38.2.5.2.1 or 38.2.5.2.2.

* **38.2.5.2.1** In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), dead-end corridors shall not exceed 50 ft (15 m).

38.2.5.2.2 In buildings other than those complying with 38.2.5.2.1, dead-end corridors shall not exceed 20 ft (6100 mm).

38.2.5.3 Limitations on common path of travel shall be in accordance with 38.2.5.3.1, 38.2.5.3.2, and 38.2.5.3.3.

* **38.2.5.3.1** Common path of travel shall not exceed 100 ft (30 m) in a building protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).

38.2.5.3.2 Common path of travel shall not exceed 100 ft (30 m) within a single tenant space having an occupant load not exceeding 30 persons.

38.2.5.3.3 In buildings other than those complying with 38.2.5.3.1 or 38.2.5.3.2, common path of travel shall not exceed 75 ft (23 m).

38.2.6 Travel Distance to Exits.

* **38.2.6.1** In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), the travel distance shall not exceed 300 ft (91 m).

38.2.6.2 In buildings other than those complying with 38.2.6.1, the travel distance, measured in accordance with Section 7.6, shall not exceed 200 ft (61 m).

38.2.7 Discharge from Exits. Exit discharge shall comply with Section 7.7.

38.2.8 Illumination of Means of Egress. Means of egress shall be illuminated in accordance with Section 7.8.

38.2.9 Emergency Lighting.

38.2.9.1 Emergency lighting shall be provided in accordance with Section 7.9 in any building where any one of the following conditions exists:

- (1) The building is two or more stories in height above the level of exit discharge.
- (2) The occupancy is subject to 50 or more occupants above or below the level of exit discharge.
- (3) The occupancy is subject to 300 or more total occupants.

38.2.9.2 Emergency lighting in accordance with Section 7.9 shall be provided for all underground and limited access structures, as defined in 3.3.240.3 and 3.3.240.11.

38.2.10 Marking of Means of Egress. Means of egress shall have signs in accordance with Section 7.10.

38.2.11 Special Means of Egress Features.**38.2.11.1 Reserved.**

38.2.11.2 Lockups. Lockups in business occupancies shall comply with the requirements of 22.4.5.

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38.3 Protection.**38.3.1 Protection of Vertical Openings.**

38.3.1.1 Vertical openings shall be enclosed or protected in accordance with Section 8.6, unless otherwise permitted by the following:

- (1) Unenclosed vertical openings in accordance with 8.6.8.2 shall be permitted.
- (2) Exit access stairs shall be permitted to be unenclosed in two-story, single-tenant spaces that are provided with a single exit in accordance with 38.2.4.6.

38.3.1.2 Floors that are below the street floor and are used for storage or other than a business occupancy shall have no unprotected openings to business occupancy floors.

38.3.2 Protection from Hazards.

38.3.2.1* General. Hazardous areas including, but not limited to, areas used for general storage, boiler or furnace rooms, and maintenance shops that include woodworking and painting areas shall be protected in accordance with Section 8.7.

38.3.2.2* High Hazard Contents Areas. High hazard contents areas, as classified in Section 6.2, shall meet the following criteria:

- (1) The area shall be separated from other parts of the building by fire barriers having a fire resistance rating of not less than 1 hour, with all openings therein protected by $\frac{3}{4}$ -hour, fire protection-rated, self-closing fire door assemblies.
- (2) The area shall be protected by an automatic extinguishing system in accordance with 9.7.1.1(1) or 9.7.1.2.

38.3.2.3 Cooking Equipment. Cooking equipment shall be protected in accordance with 9.2.3, unless the cooking equipment is one of the following types:

- (1) Outdoor equipment
- (2) Portable equipment not flue connected
- (3) Equipment used only for food warming

38.3.3 Interior Finish.

38.3.3.1 General. Interior finish shall be in accordance with Section 10.2.

38.3.3.2 Interior Wall and Ceiling Finish.

38.3.3.2.1 Interior wall and ceiling finish material complying with Section 10.2 shall be Class A or Class B in exits and in exit access corridors.

38.3.3.2.2 Interior wall and ceiling finishes shall be Class A, Class B, or Class C in areas other than those specified in 38.3.3.2.1.

38.3.3.3 Interior Floor Finish.

38.3.3.3.1 Interior floor finish shall comply with Section 10.2.

38.3.3.3.2 Interior floor finish in exit enclosures shall be Class I or Class II.

38.3.3.3.3 Interior floor finish shall comply with 10.2.7.1 or 10.2.7.2, as applicable.

38.3.4 Detection, Alarm, and Communications Systems.

38.3.4.1 General. A fire alarm system in accordance with Section 9.6 shall be provided in all business occupancies where any one of the following conditions exists:

- (1) The building is two or more stories in height above the level of exit discharge.
- (2) The occupancy is subject to 50 or more occupants above or below the level of exit discharge.
- (3) The occupancy is subject to 300 or more total occupants.

38.3.4.2 Initiation. Initiation of the required fire alarm system shall be by one of the following means:

- (1) Manual means in accordance with 9.6.2.1(1)
- (2) Means of an approved automatic fire detection system that complies with 9.6.2.1(2) and provides protection throughout the building
- (3) Means of an approved automatic sprinkler system that complies with 9.6.2.1(3) and provides protection throughout the building

38.3.4.3 Occupant Notification. During all times that the building is occupied, the required fire alarm system, once initiated, shall perform one of the following functions:

- (1) It shall activate a general alarm in accordance with 9.6.3 throughout the building, and positive alarm sequence in accordance with 9.6.3.4 shall be permitted.
- (2) It shall activate an alarm signal in a continuously attended location for the purpose of initiating emergency action, by personnel trained to respond to emergencies, as follows:
 - (a) Emergency action shall be initiated by means of live voice public address system announcements originating from the attended location where the alarm signal is received, unless otherwise permitted by 38.3.4.3(2)(c).
 - (b) The live voice public address system shall be permitted to be used for other announcements, provided that the emergency action use takes precedence over any other use.
 - (c) In lieu of live voice public address system announcements, any other occupant notification means in accordance with 9.6.3 shall be permitted.

38.3.5 Extinguishment Requirements. Portable fire extinguishers shall be provided in every business occupancy in accordance with 9.7.4.1.

38.3.6 Corridors.

38.3.6.1* Where access to exits is provided by corridors, such corridors shall be separated from use areas by walls having a fire resistance rating of not less than 1 hour in accordance with Section 8.3, unless one of the following conditions exists:

- (1)*Where exits are available from an open floor area
- (2)*Within a space occupied by a single tenant
- (3) Within buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1)

38.3.6.2 Openings in corridor walls required by 38.3.6.1 to have a fire resistance rating shall be protected in accordance with Section 8.3.

38.3.7 Subdivision of Building Spaces. (No special requirements)

38.4 Special Provisions.

38.4.1 Limited Access or Underground Buildings. See Section 11.7.

38.4.2* High-Rise Buildings. High-rise buildings shall comply with Section 11.8.

38.5 Building Services.

38.5.1 Utilities. Utilities shall comply with the provisions of Section 9.1.

38.5.2 Heating, Ventilating, and Air-Conditioning. Heating, ventilating, and air-conditioning equipment shall comply with the provisions of Section 9.2.

38.5.3 Elevators, Escalators, and Conveyors. Elevators, escalators, and conveyors shall comply with the provisions of Section 9.4.

38.5.4 Rubbish Chutes, Incinerators, and Laundry Chutes. Rubbish chutes, incinerators, and laundry chutes shall comply with the provisions of Section 9.5.

38.6 Reserved.

38.7 Operating Features.

38.7.1 Drills. In all business occupancy buildings occupied by more than 500 persons, or by more than 100 persons above or below the street level, employees and supervisory personnel shall be periodically instructed in accordance with Section 4.7 and shall hold drills periodically where practicable.

38.7.2 Extinguisher Training. Designated employees of business occupancies shall be periodically instructed in the use of portable fire extinguishers.

38.7.3 Food Service Operations. Food service operations shall comply with 12.7.2.

38.7.4 Upholstered Furniture and Mattresses. The provisions of 10.3.2 shall not apply to upholstered furniture and mattresses.

Chapter 39 Existing Business Occupancies

39.1 General Requirements.

39.1.1 Application.

39.1.1.1 The requirements of this chapter shall apply to existing buildings or portions thereof currently occupied as business occupancies.

39.1.1.2 The provisions of this chapter shall apply to life safety requirements for existing business buildings. Specific requirements shall apply to high-rise buildings (*see definition in 3.3.28.7*) and are contained in paragraphs pertaining thereto.

39.1.2 Multiple Occupancies.

39.1.2.1 General.

39.1.2.1.1 All multiple occupancies shall be in accordance with 6.1.14 and 39.1.2.

39.1.2.1.2 Where there are differences in the specific requirements in this chapter and provisions for mixed occupancies or separated occupancies as specified in 6.1.14.3 and 6.1.14.4, the requirements of this chapter shall apply.

39.1.2.2 Combined Business Occupancies and Parking Structures.

39.1.2.2.1 The fire barrier separating parking structures from a building classified as a business occupancy shall be a fire barrier having a fire resistance rating of not less than 2 hours.

39.1.2.2.2 Openings in the fire barrier required by 39.1.2.2.1 shall not be required to be protected with fire protection-rated opening protectives in enclosed parking structures that are protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), or in open parking structures, provided that all of the following conditions are met:

- (1) The openings do not exceed 25 percent of the area of the fire barrier in which they are located.
- (2) The openings are used as a public entrance and for associated sidelight functions.
- (3) The building containing the business occupancy is protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).
- (4)*Means are provided to prevent spilled fuel from accumulating adjacent to the openings and entering the building.
- (5) Physical means are provided to prevent vehicles from being parked or driven within 10 ft (3050 mm) of the openings.
- (6) The openings are protected as a smoke partition in accordance with Section 8.4, with no minimum fire protection rating required.

39.1.3 Special Definitions. Special terms applicable to this chapter are defined in Chapter 3.

39.1.4 Classification of Occupancy. Business occupancies shall include all buildings and structures or parts thereof with occupancy as defined in 6.1.11.

39.1.5 Classification of Hazard of Contents. The contents of business occupancies shall be classified as ordinary hazard in accordance with Section 6.2.

39.1.6 Minimum Construction Requirements. (No requirements)

39.1.7 Occupant Load. The occupant load, in number of persons for whom means of egress and other provisions are required, shall be determined on the basis of the occupant load factors of Table 7.3.1.2 that are characteristic of the use of the space, or shall be determined as the maximum probable population of the space under consideration, whichever is greater.

39.2 Means of Egress Requirements.

39.2.1 General.

39.2.1.1 All means of egress shall be in accordance with Chapter 7 and this chapter.

39.2.1.2 If, owing to differences in grade, any street floor exits are at points above or below the street or ground level, such exits shall comply with the provisions for exits from upper floors or floors below the street floor.

39.2.1.3 Stairs and ramps serving two or more floors below a street floor occupied for business use shall be permitted in accordance with 39.2.1.3.1 and 39.2.1.3.2.

39.2.1.3.1 Where two or more floors below the street floor are occupied for business use, the same stairs, escalators, or ramps shall be permitted to serve each.

39.2.1.3.2 An inside open stairway, inside open escalator, or inside open ramp shall be permitted to serve as a required egress facility from not more than one floor level below the street floor.

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CODE ANALYSIS

EDUCATION/BUSINESS OCCUPANCY 131 SPRING STREET PORTLAND, MAINE

November 14, 2008

2006 INTERNATIONAL BUILDING CODE

Use Group Classification: Educational (E) 1350 sf at First Floor (LED) & Business (B) 1520 sf at Second & Third Floors
Occupant Loads: Educational = 67; Business = 16 (8 per floor)
Occupancy Separation Ratings: 2 hours (1 hr if sprinkled) (existing complies)
Tenant Separation Party Walls: 1 hour (Not applicable)
Janitor, Mech & Storage Rooms: 1 hour if over 100 sf

Building Limitations

Construction Type: 5B Non-Combustible/Unprotected/Sprinkled
Maximum Height: 1 Story @ E; 2 Story @ B
Maximum Area / Floor: 9,500 @ E; 9,000 @ B
Height/Area Sprinkler Increases: +1 Story/20' and + 200% area (27,000 sf +)
(existing complies with allowable height/area)

Fire Resistance Design Criteria

Load Bearing Exterior Walls: None
Load Bearing Interior Walls: None
Fire Separation Exits (Stairs): 1 hour (existing complies)
Shafts & Elevator Hoistways: 2 hour (NA)
Other Assemblies/Smoke Barriers: 1 hour (existing complies)
Exit Corridors: 1 hour (None if fully sprinkled) (existing complies)
Minimum Number of Exits: 2 per floor; 1 with exceptions @ B
(Section 1015 – under 30 occupants; less than 75'
Travel distance to exit' fully sprinkled)
(existing complies)
Separation of Exits: .5 the diagonal distance (.25 if fully sprinkled)
Maximum Dead End Corridor Length: 20' (existing complies)
Maximum Common Travel Path: 75' (existing complies)
Maximum Exit Travel Distance: 200' (250' if fully sprinkled) (existing complies)
Minimum Stair/Corridor Width: 44" ; 36" if less than 50 occupants
Maximum Riser Height: 7"; 8" at existing (existing complies)
Minimum Tread Depth: 11"/9" at existing (existing complies)
Minimum Ramp Width: 44" (NA)
Maximum Ramp Pitch: 1:12(NA)
Handrails & Guardrails: Same as NFPA 101 (existing complies; new per 2006)
Minimum Ceiling Height: 7'-6" (existing complies)
Egress Fire Escapes: Allowed (existing complies)
Fire Alarm System: Required (existing complies)
Fire Sprinkler System: Required (existing complies)
Exit Lighting: Required (existing complies)
Emergency Lighting: Required (existing complies)

Portable Fire Extinguishers:

Required (existing complies)

Building Live Loads

Lobbies:	100 psf
Corridors:	100 psf
Classrooms	40 psf
Offices	80 psf (upper floors)
Storage:	125 psf
Roof	20 psf + drift

End of Code Analysis

TABLE 503
ALLOWABLE HEIGHT AND BUILDING AREAS^a
 Height limitations shown as stories and feet above grade plane.
 Area limitations as determined by the definition of "Area, building," per story

GROUP	HGT(feet)	TYPE OF CONSTRUCTION									
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V		
		A	B	A	B	A	B	HT	A	B	
	HGT(S)	UL	160	65	55	65	55	65		50	40
A-1	S	UL	5	3	2	3	2	3	2	1	
	A	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500	
A-2	S	UL	11	3	2	3	2	3	2	1	
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000	
A-3	S	UL	11	3	2	3	2	3	2	1	
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000	
A-4	S	UL	11	3	2	3	2	3	2	1	
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000	
A-5	S	UL	UL	UL	UL	UL	UL	UL	UL	UL	
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL	
B	S	UL	11	5	4	5	4	5	3	2	
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000	
E	S	UL	5	3	2	3	2	3	1	1	
	A	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500	
F-1	S	UL	11	4	2	3	2	4	2	1	
	A	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500	
F-2	S	UL	11	5	3	4	3	5	3	2	
	A	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000	
H-1	S	1	1	1	1	1	1	1	1	NP	
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP	
H-2 ^d	S	UL	3	2	1	2	1	2	1	1	
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000	
H-3 ^d	S	UL	6	4	2	4	2	4	2	1	
	A	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000	
H-4	S	UL	7	5	3	5	3	5	3	2	
	A	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500	
H-5	S	4	4	3	3	3	3	3	3	2	
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000	
I-1	S	UL	9	4	3	4	3	4	3	2	
	A	UL	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500	
I-2	S	UL	4	2	1	1	NP	1	1	NP	
	A	UL	UL	15,000	11,000	12,000	NP	12,000	9,500	NP	
I-3	S	UL	4	2	1	2	1	2	2	1	
	A	UL	UL	15,000	10,000	10,500	7,500	12,000	7,500	5,000	
I-4	S	UL	5	3	2	3	2	3	1	1	
	A	UL	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000	
M	S	UL	11	4	4	4	4	4	3	1	
	A	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000	
R-1	S	UL	11	4	4	4	4	4	3	2	
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000	
R-2	S	UL	11	4	4	4	4	4	3	2	
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000	
R-3	S	UL	11	4	4	4	4	4	3	3	
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL	
R-4	S	UL	11	4	4	4	4	4	3	2	
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000	
S-1	S	UL	11	4	3	3	3	4	3	1	
	A	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000	
S-2 ^{b,c}	S	UL	11	5	4	4	4	5	4	2	
	A	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500	
U ^c	S	UL	5	4	2	3	2	4	2	1	
	A	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500	

*
*

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

UL = Unlimited, NP = Not permitted.

a. See the following sections for general exceptions to Table 503:

1. Section 504.2, Allowable height increase due to automatic sprinkler system installation.
2. Section 506.2, Allowable area increase due to street frontage.
3. Section 506.3, Allowable area increase due to automatic sprinkler system installation.
4. Section 507, Unlimited area buildings.

b. For open parking structures, see Section 406.3.

c. For private garages, see Section 406.1.

d. See Section 415.5 for limitations.



504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one. These increases are permitted in addition to the area increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one, but shall not exceed 60 feet (18 288 mm) or four stories, respectively.

Exceptions:

1. Fire areas with an occupancy in Group I-2 of Type IIB, III, IV or V construction.
2. Fire areas with an occupancy in Group H-1, H-2, H-3 or H-5.
3. Fire-resistance rating substitution in accordance with Table 601, Note e.

504.3 Roof structures. Towers, spires, steeples and other roof structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1509.2.1. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height if of noncombustible materials and shall not extend more than 20 feet (6096 mm) above the allowable height if of combustible materials (see Chapter 15 for additional requirements).

SECTION 505 MEZZANINES

505.1 General. A mezzanine or mezzanines in compliance with Section 505 shall be considered a portion of the story below. Such mezzanines shall not contribute to either the building area or number of stories as regulated by Section 503.1. The area of the mezzanine shall be included in determining the fire area defined in Section 702. The clear height above and below the mezzanine floor construction shall not be less than 7 feet (2134 mm).

505.2 Area limitation. The aggregate area of a mezzanine or mezzanines within a room shall not exceed one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the mezzanine is located. In determining the allowable mezzanine area, the area of the mezzanine shall not be included in the floor area of the room.

Exceptions:

1. The aggregate area of mezzanines in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall not exceed two-thirds of the area of the room.
2. The aggregate area of mezzanines in buildings and structures of Type I or II construction shall not exceed

one-half of the area of the room in buildings and structures equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 and an approved emergency voice/alarm communication system in accordance with Section 907.2.12.2.

505.3 Egress. Each occupant of a mezzanine shall have access to at least two independent means of egress where the common path of egress travel exceeds the limitations of Section 1014.3. Where a stairway provides a means of exit access from a mezzanine, the maximum travel distance includes the distance traveled on the stairway measured in the plane of the tread nosing. Accessible means of egress shall be provided in accordance with Section 1007.

Exception: A single means of egress shall be permitted in accordance with Section 1015.1.

505.4 Openness. A mezzanine shall be open and unobstructed to the room in which such mezzanine is located except for walls not more than 42 inches (1067 mm) high, columns and posts.

Exceptions:

1. Mezzanines or portions thereof are not required to be open to the room in which the mezzanines are located, provided that the occupant load of the aggregate area of the enclosed space does not exceed 10.
2. A mezzanine having two or more means of egress is not required to be open to the room in which the mezzanine is located if at least one of the means of egress provides direct access to an exit from the mezzanine level.
3. Mezzanines or portions thereof are not required to be open to the room in which the mezzanines are located, provided that the aggregate floor area of the enclosed space does not exceed 10 percent of the mezzanine area.
4. In industrial facilities, mezzanines used for control equipment are permitted to be glazed on all sides.
5. In other than Groups H and I occupancies no more than two stories in height above grade plane and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, a mezzanine having two or more means of egress shall not be required to be open to the room in which the mezzanine is located.

505.5 Equipment platforms. Equipment platforms in buildings shall not be considered as a portion of the floor below. Such equipment platforms shall not contribute to either the building area or the number of stories as regulated by Section 503.1. The area of the equipment platform shall not be included in determining the fire area. Equipment platforms shall not be a part of any mezzanine and such platforms and the walkways, stairs and ladders providing access to an equipment platform shall not serve as a part of the means of egress from the building.

505.5.1 Area limitations. The aggregate area of all equipment platforms within a room shall not exceed two-thirds of the area of the room in which they are located. Where an

equipment platform is located in the same room as a mezzanine, the area of the mezzanine shall be determined by Section 505.2 and the combined aggregate area of the equipment platforms and mezzanines shall not exceed two-thirds of the room in which they are located.

[F] 505.5.2 Fire suppression. Where located in a building that is required to be protected by an automatic sprinkler system, equipment platforms shall be fully protected by sprinklers above and below the platform, where required by the standards referenced in Section 903.3.

505.5.3 Guards. Equipment platforms shall have guards where required by Section 1013.1.



**SECTION 506
AREA MODIFICATIONS**

506.1 General. The areas limited by Table 503 shall be permitted to be increased due to frontage (I_f) and automatic sprinkler system protection (I_s) in accordance with the following:

$$A_a = \{A_t + [A_t \times I_f] + [A_t \times I_s]\} \quad \text{(Equation 5-1)}$$

where:

A_a = Allowable area per story (square feet).

A_t = Tabular area per story in accordance with Table 503 (square feet).

I_f = Area increase factor due to frontage as calculated in accordance with Section 506.2.

I_s = Area increase factor due to sprinkler protection as calculated in accordance with Section 506.3.

506.1.1 Basements. A single basement that is not a story above grade plane need not be included in the total allowable area, provided such basement does not exceed the area permitted for a building with no more than one story above grade plane.

506.2 Frontage increase. Every building shall adjoin or have access to a public way to receive an area increase for frontage. Where a building has more than 25 percent of its perimeter on a public way or open space having a minimum width of 20 feet (6096 mm), the frontage increase shall be determined in accordance with the following:

$$I_f = [F/P - 0.25] W / 30 \quad \text{(Equation 5-2)}$$

where:

I_f = Area increase due to frontage.

F = Building perimeter that fronts on a public way or open space having 20 feet (6096 mm) open minimum width (feet).

P = Perimeter of entire building (feet).

W = Width of public way or open space (feet) in accordance with Section 506.2.1.

506.2.1 Width limits. "W" must be at least 20 feet (6096 mm). Where the value of W varies along the perimeter of the building, the calculation performed in accordance with Equation 5-2 shall be based on the weighted average of each

portion of exterior wall and open space where the value of W is greater than or equal to 20 feet (6096 mm). Where W exceeds 30 feet (9144 mm), a value of 30 feet (9144 mm) shall be used in calculating the weighted average, regardless of the actual width of the open space.

Exception: The quantity of W divided by 30 shall be permitted to be a maximum of 2 when the building meets all requirements of Section 507 except for compliance with the 60-foot (18 288 mm) public way or yard requirement, as applicable.

506.2.2 Open space limits. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane.



506.3 Automatic sprinkler system increase. Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the area limitation in Table 503 is permitted to be increased by an additional 200 percent ($I_s = 2$) for buildings with more than one story above grade plane and an additional 300 percent ($I_s = 3$) for buildings with no more than one story above grade plane. These increases are permitted in addition to the height and story increases in accordance with Section 504.2.

Exception: The area limitation increases shall not be permitted for the following conditions:

1. The automatic sprinkler system increase shall not apply to buildings with an occupancy in Use Group H-1.
2. The automatic sprinkler system increase shall not apply to the floor area of an occupancy in Use Group H-2 or H-3. For mixed-use buildings containing such occupancies, the allowable area shall be calculated in accordance with Section 508.3.3.2, with the sprinkler increase applicable only to the portions of the building not classified as Use Group H-2 or H-3.
3. Fire-resistance rating substitution in accordance with Table 601, Note e.

506.4 Area determination. The maximum area of a building with more than one story above grade plane shall be determined by multiplying the allowable area of the first story (A_a), as determined in Section 506.1, by the number of stories above grade plane as listed below:

1. For buildings with two stories above grade plane, multiply by 2;
2. For buildings with three or more stories above grade plane, multiply by 3; and
3. No story shall exceed the allowable area per story (A_a), as determined in Section 506.1, for the occupancies on that story.

Exceptions:

1. Unlimited area buildings in accordance with Section 507.
2. The maximum area of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2 shall be determined by multiplying the allowable area

508.3 Mixed occupancies. Each portion of a building shall be individually classified in accordance with Section 302.1.

Where a building contains more than one occupancy group, the building or portion thereof shall comply with Sections 508.3.1, 508.3.2, 508.3.3 or a combination of these sections.

Exceptions:

- Occupancies separated in accordance with Section 509.
- Where required by Table 415.3.2, areas of Group H-1, H-2 or H-3 occupancies shall be located in a separate and detached building or structure.

508.3.1 Accessory occupancies. Accessory occupancies are those occupancies subsidiary to the main occupancy of the building or portion thereof. Aggregate accessory occupancies shall not occupy more than 10 percent of the area of the story in which they are located and shall not exceed the tabular values in Table 503, without height and area increases in accordance with Sections 504 and 506 for such accessory occupancies.

Exceptions:

- Accessory assembly areas having a floor area less than 750 square feet (69.7 m²) are not considered separate occupancies.
- Assembly areas that are accessory to Group E occupancies are not considered separate occupancies except when applying the assembly occupancy requirements of Chapter 11.

- Accessory religious educational rooms and religious auditoriums with occupant loads of less than 100 are not considered separate occupancies.

508.3.1.1 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. Code requirements shall apply to each portion of the building based on the occupancy classification of that accessory space, except that the most restrictive applicable provisions of Section 403 and Chapter 9 shall apply to the entire building or portion thereof.

508.3.1.2 Allowable area and height. The allowable area and height of the building shall be based on the allowable area and height for the main occupancy in accordance with Section 503.1. The height of any accessory occupancy shall not exceed the tabular values in Table 503, without height and area increases in accordance with Sections 504 and 506 for such accessory occupancies.

508.3.1.3 Separation. No separation is required between accessory occupancies or the main occupancy.

Exception: Group H-2, H-3, H-4 or H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.3.3.

508.3.2 Nonseparated occupancies. Buildings or portions of buildings that comply with the provisions of this section shall qualify as nonseparated occupancies.

508.3.2.1 Occupancy classification. Nonseparated occupancies shall be individually classified in accordance with Section 302.1. Code requirements shall apply



**TABLE 508.3.3
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

OCCUPANCY	A ^a , E		I		R ^d		F-2, S-2 ^{c,d} , U ^d		B ^b , F-1, M ^b , S-1		H-1		H-2		H-3, H-4, H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A ^a , E ^c	N	N	1	2	1	2	N	1	1	2	NP	NP	3	4	2	3 ^a
I	—	—	N	N	1	NP	1	2	1	2	NP	NP	3	NP	2	NP
R ^d	—	—	—	—	N	N	1	2	1	2	NP	NP	3	NP	2	NP
F-2, S-2 ^{c,d} , U ^d	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3 ^a
B ^b , F-1, M ^b , S-1	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2 ^a
H-1	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP
H-3, H-4, H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

For SI: 1 square foot = 0.0929 m².

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

a. For Group H-5 occupancies, see Section 903.2.4.2.

b. Occupancy separation need not be provided for storage areas within Groups B and M if the:

- Area is less than 10 percent of the floor area;
- Area is equipped with an automatic fire-extinguishing system and is less than 3,000 square feet; or
- Area is less than 1,000 square feet.

c. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.

d. See Section 406.1.4.

e. Commercial kitchens need not be separated from the restaurant seating areas that they serve.

603.1.2 Piping. The use of combustible piping materials shall be permitted when installed in accordance with the limitations of the *International Mechanical Code* and the *International Plumbing Code*.

603.1.3 Electrical. The use of electrical wiring methods with combustible insulation, tubing, raceways and related components shall be permitted when installed in accordance with the limitations of the *ICC Electrical Code*.



TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A ^e	B	A ^e	B	HT	A ^e	B
Structural frame ^a	3 ^b	2 ^b	1	0	1	0	HT	1	0
Bearing walls									
Exterior ^e	3	2	1	0	2	2	2	1	0
Interior	3 ^b	2 ^b	1	0	1	0	1/HT	1	0
Nonbearing walls and partitions	See Table 602								
Exterior									
Nonbearing walls and partitions	0	0	0	0	0	0	See Section 602.4.6	0	0
Interior ^f									
Floor construction	2	2	1	0	1	0	HT	1	0
Including supporting beams and joists									
Roof construction	1 1/2 ^c	1 ^{c, d}	1 ^{c, d}	0 ^{c, d}	1 ^{c, d}	0 ^{c, d}	HT	1 ^{c, d}	0
Including supporting beams and joists									

For SI: 1 foot = 304.8 mm.

- a. The structural frame shall be considered to be the columns and the girders, beams, trusses and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. The members of floor or roof panels which have no connection to the columns shall be considered secondary members and not a part of the structural frame.
- b. Roof supports: Fire-resistance ratings of structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- c. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- d. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- e. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.
- f. Not less than the fire-resistance rating required by other sections of this code.
- g. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

[F] **WIRELESS PROTECTION SYSTEM.** A system or a part of a system that can transmit and receive signals without the aid of wire.

[F] **ZONE.** A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent or an area in which a form of control can be executed.



SECTION 903 AUTOMATIC SPRINKLER SYSTEMS

[F] **903.1 General.** Automatic sprinkler systems shall comply with this section.

[F] **903.1.1 Alternative protection.** Alternative automatic fire-extinguishing systems complying with Section 904 shall be permitted in lieu of automatic sprinkler protection where recognized by the applicable standard and approved by the fire code official.

[F] **903.2 Where required.** Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in this section.

Exception: Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic fire alarm system and are separated from the remainder of the building by fire barriers consisting of not less than 1-hour fire-resistance-rated walls and 2-hour fire-resistance-rated floor/ceiling assemblies.

[F] **903.2.1 Group A.** An automatic sprinkler system shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the automatic sprinkler system shall be provided throughout the floor area where the Group A-1, A-2, A-3 or A-4 occupancy is located, and in all floors between the Group A occupancy and the level of exit discharge. For Group A-5 occupancies, the automatic sprinkler system shall be provided in the spaces indicated in Section 903.2.1.5.

[F] **903.2.1.1 Group A-1.** An automatic sprinkler system shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.
4. The fire area contains a multitheater complex.

[F] **903.2.1.2 Group A-2.** An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (465 m²);
2. The fire area has an occupant load of 100 or more; or

3. The fire area is located on a floor other than the level of exit discharge.

[F] **903.2.1.3 Group A-3.** An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

[F] **903.2.1.4 Group A-4.** An automatic sprinkler system shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

[F] **903.2.1.5 Group A-5.** An automatic sprinkler system shall be provided for Group A-5 occupancies in the following areas: concession stands, retail areas, press boxes and other accessory use areas in excess of 1,000 square feet (93 m²).

* [F] **903.2.2 Group E.** An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than 20,000 square feet (1858 m²) in area.
2. Throughout every portion of educational buildings below the level of exit discharge.

Exception: An automatic sprinkler system is not required in any fire area or area below the level of exit discharge where every classroom throughout the building has at least one exterior exit door at ground level.

[F] **903.2.3 Group F-1.** An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. Where a Group F-1 fire area exceeds 12,000 square feet (1115 m²);
2. Where a Group F-1 fire area is located more than three stories above grade plane; or
3. Where the combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

[F] 905.9 **Valve supervision.** Valves controlling water supplies shall be supervised in the open position so that a change in the normal position of the valve will generate a supervisory signal at the supervising station required by Section 903.4. Where a fire alarm system is provided, a signal shall also be transmitted to the control unit.

Exceptions:

1. Valves to underground key or hub valves in roadway boxes provided by the municipality or public utility do not require supervision.
2. Valves locked in the normal position and inspected as provided in this code in buildings not equipped with a fire alarm system.

[F] 905.10 **During construction.** Standpipe systems required during construction and demolition operations shall be provided in accordance with Section 3311.



**SECTION 906
PORTABLE FIRE EXTINGUISHERS**

[F] 906.1 **General.** Portable fire extinguishers shall be provided in occupancies and locations as required by the *International Fire Code*.



**SECTION 907
FIRE ALARM AND DETECTION SYSTEMS**

[F] 907.1 **General.** This section covers the application, installation, performance and maintenance of fire alarm systems and their components.

[F] 907.1.1 **Construction documents.** Construction documents for fire alarm systems shall be submitted for review and approval prior to system installation. Construction documents shall include, but not be limited to, all of the following:

1. A floor plan which indicates the use of all rooms.
2. Locations of alarm-initiating and notification appliances.
3. Alarm control and trouble signaling equipment.
4. Annunciation.
5. Power connection.
6. Battery calculations.
7. Conductor type and sizes.
8. Voltage drop calculations.
9. Manufacturers, model numbers and listing information for equipment, devices and materials.
10. Details of ceiling height and construction.
11. The interface of fire safety control functions.

[F] 907.1.2 **Equipment.** Systems and their components shall be listed and approved for the purpose for which they are installed.

[F]907.2 **Where required.** An approved manual, automatic or manual and automatic fire alarm system installed in accordance

with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.9, unless other requirements are provided by another section of this code. Where automatic sprinkler protection installed in accordance with Section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

The automatic fire detectors shall be smoke detectors. Where ambient conditions prohibit installation of automatic smoke detection, other automatic fire detection shall be allowed.

[F]907.2.1 **Group A.** A manual fire alarm system shall be installed in Group A occupancies having an occupant load of 300 or more. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the alarm notification appliances will activate upon sprinkler water flow.

[F] 907.2.1.1 **System initiation in Group A occupancies with an occupant load of 1,000 or more.** Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more shall initiate a signal using an emergency voice/alarm communications system in accordance with NFPA 72.

Exception: Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed 3 minutes, for the sole purpose of allowing a live voice announcement from an approved, constantly attended location.

[F] 907.2.1.2 **Emergency power.** Emergency voice/alarm communications systems shall be provided with an approved emergency power source.



[F] 907.2.2 **Group B.** A manual fire alarm system shall be installed in Group B occupancies having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the alarm notification appliances will activate upon sprinkler water flow.



[F] 907.2.3 **Group E.** A manual fire alarm system shall be installed in Group E occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. Group E occupancies with an occupant load of less than 50.
2. Manual fire alarm boxes are not required in Group E occupancies where all the following apply:

where a person has a choice of two or more paths of egress travel to separate exits.

1014.5 Egress balconies. Balconies used for egress purposes shall conform to the same requirements as corridors for width, headroom, dead ends and projections.

1014.5.1 Wall separation. Exterior egress balconies shall be separated from the interior of the building by walls and opening protectives as required for corridors.

Exception: Separation is not required where the exterior egress balcony is served by at least two stairs and a dead-end travel condition does not require travel past an unprotected opening to reach a stair.

1014.5.2 Openness. The long side of an egress balcony shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

dimension of the building or area to be served measured in a straight line between exit doors or exit access doorways. Interlocking or scissor stairs shall be counted as one exit stairway.

Exceptions:

1. Where exit enclosures are provided as a portion of the required exit and are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1017, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

1015.2.2 Three or more exits or exit access doorways. Where access to three or more exits is required, at least two exit doors or exit access doorways shall be arranged in accordance with the provisions of Section 1015.2.1.

1015.3 Boiler, incinerator and furnace rooms. Two exit access doorways are required in boiler, incinerator and furnace rooms where the area is over 500 square feet (46 m²) and any fuel-fired equipment exceeds 400,000 British thermal units (Btu) (422 000 KJ) input capacity. Where two exit access doorways are required, one is permitted to be a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the length of the maximum overall diagonal dimension of the room.

1015.4 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two exits or exit access doors. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of room.

All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in travel distance is permitted in accordance with Section 1016.1.

Doors shall swing in the direction of egress travel, regardless of the occupant load served. Doors shall be tight fitting and self-closing.

1015.5 Refrigerated rooms or spaces. Rooms or spaces having a floor area of 1,000 square feet (93 m²) or more, containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two exits or exit access doors.

Travel distance shall be determined as specified in Section 1016.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an exit or exit access door where such rooms are not protected by an approved automatic



**SECTION 1015
EXIT AND EXIT ACCESS DOORWAYS**

1015.1 Exit or exit access doorways required. Two exits or exit access doorways from any space shall be provided where one of the following conditions exists:

1. The occupant load of the space exceeds the values in Table 1015.1.
2. The common path of egress travel exceeds the limitations of Section 1014.3.
3. Where required by Sections 1015.3, 1015.4 and 1015.5.

Exception: Group I-2 occupancies shall comply with Section 1014.2.2.

**TABLE 1015.1
SPACES WITH ONE MEANS OF EGRESS**

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E, F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29

a. Day care maximum occupant load is 10.

1015.1.1 Three or more exits. Access to three or more exits shall be provided from a floor area where required by Section 1019.1.

1015.2 Exit or exit access doorway arrangement. Required exits shall be located in a manner that makes their availability obvious. Exits shall be unobstructed at all times. Exit and exit access doorways shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2.

1015.2.1 Two exits or exit access doorways. Where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal

2. A fire-resistance rating is not required for corridors contained within a dwelling or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1015.1.

1017.2 Corridor width. The minimum corridor width shall be as determined in Section 1005.1, but not less than 44 inches (1118 mm).

Exceptions:

1. Twenty-four inches (610 mm)—For access to and utilization of electrical, mechanical or plumbing systems or equipment.
2. Thirty-six inches (914 mm)—With a required occupant capacity of less than 50.
3. Thirty-six inches (914 mm)—Within a dwelling unit.
4. Seventy-two inches (1829 mm)—In Group E with a corridor having a required capacity of 100 or more.
5. Seventy-two inches (1829 mm)—In corridors serving surgical Group I, health care centers for ambulatory patients receiving outpatient medical care, which causes the patient to be not capable of self-preservation.
6. Ninety-six inches (2438 mm)—In Group I-2 in areas where required for bed movement.

1017.3 Dead ends. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.

Exceptions:

1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B and F where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the

length of dead-end corridors shall not exceed 50 feet (15 240 mm).

3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

1017.4 Air movement in corridors. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

Exceptions:

1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.
2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of 1,000 square feet (93 m²) or less in area, utilization of corridors for conveying return air is permitted.

1017.4.1 Corridor ceiling. Use of the space between the corridor ceiling and the floor or roof structure above as a return air plenum is permitted for one or more of the following conditions:

1. The corridor is not required to be of fire-resistance-rated construction;
2. The corridor is separated from the plenum by fire-resistance-rated construction;
3. The air-handling system serving the corridor is shut down upon activation of the air-handling unit smoke detectors required by the *International Mechanical Code*.
4. The air-handling system serving the corridor is shut down upon detection of sprinkler waterflow where the building is equipped throughout with an automatic sprinkler system; or
5. The space between the corridor ceiling and the floor or roof structure above the corridor is used as a component of an approved engineered smoke control system.

**TABLE 1017.1
CORRIDOR FIRE-RESISTANCE RATING**

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system ^c
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted	0.5
I-2 ^a , I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1 ^b

a. For requirements for occupancies in Group I-2, see Section 407.3.

b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7.

c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.

1017.5 Corridor continuity. Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms.

Exception: Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.

**SECTION 1018
EXITS**

1018.1 General. Exits shall comply with Sections 1018 through 1023 and the applicable requirements of Sections 1003 through 1013. An exit shall not be used for any purpose that interferes with its function as a means of egress. Once a given level of exit protection is achieved, such level of protection shall not be reduced until arrival at the exit discharge.

1018.2 Exterior exit doors. Buildings or structures used for human occupancy shall have at least one exterior door that meets the requirements of Section 1008.1.1.

1018.2.1 Detailed requirements. Exterior exit doors shall comply with the applicable requirements of Section 1008.1.

1018.2.2 Arrangement. Exterior exit doors shall lead directly to the exit discharge or the public way.

**SECTION 1019
NUMBER OF EXITS AND CONTINUITY**

1019.1 Minimum number of exits. All rooms and spaces within each story shall be provided with and have access to the minimum number of approved independent exits required by Table 1019.1 based on the occupant load of the story, except as modified in Section 1015.1 or 1019.2. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story, basement or individual space shall be maintained until arrival at grade or the public way.

**TABLE 1019.1
MINIMUM NUMBER OF EXITS FOR OCCUPANT LOAD**

OCCUPANT LOAD (persons per story)	MINIMUM NUMBER OF EXITS (per story)
1-500	2
501-1,000	3
More than 1,000	4

1019.1.1 Parking structures. Parking structures shall not have less than two exits from each parking tier, except that only one exit is required where vehicles are mechanically parked. Vehicle ramps shall not be considered as required exits unless pedestrian facilities are provided.

1019.1.2 Helistops. The means of egress from helistops shall comply with the provisions of this chapter, provided that landing areas located on buildings or structures shall have two or more exits. For landing platforms or roof areas less than 60 feet (18 288 mm) long, or less than 2,000 square feet (186 m²) in area, the second means of egress is permitted to be a fire escape or ladder leading to the floor below.

***1019.2 Buildings with one exit.** Only one exit shall be required in buildings as described below:

- Buildings described in Table 1019.2, provided that the building has not more than one level below the first story above grade plane.
- Buildings of Group R-3 occupancy.
- Single-level buildings with the occupied space at the level of exit discharge provided that the story or space complies with Section 1015.1 as a space with one means of egress.

*** TABLE 1019.2
BUILDINGS WITH ONE EXIT**

OCCUPANCY	MAXIMUM HEIGHT OF BUILDING ABOVE GRADE PLANE	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
A, B ^d , E ^g , F, M, U	1 Story	49 occupants and 75 feet travel distance
H-2, H-3	1 Story	3 occupants and 25 feet travel distance
H-4, H-5, I, R	1 Story	10 occupants and 75 feet travel distance
S ^a	1 Story	29 occupants and 100 feet travel distance
B ^e , F, M, S ^a	2 Stories	30 occupants and 75 feet travel distance
R-2	2 Stories ^c	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.

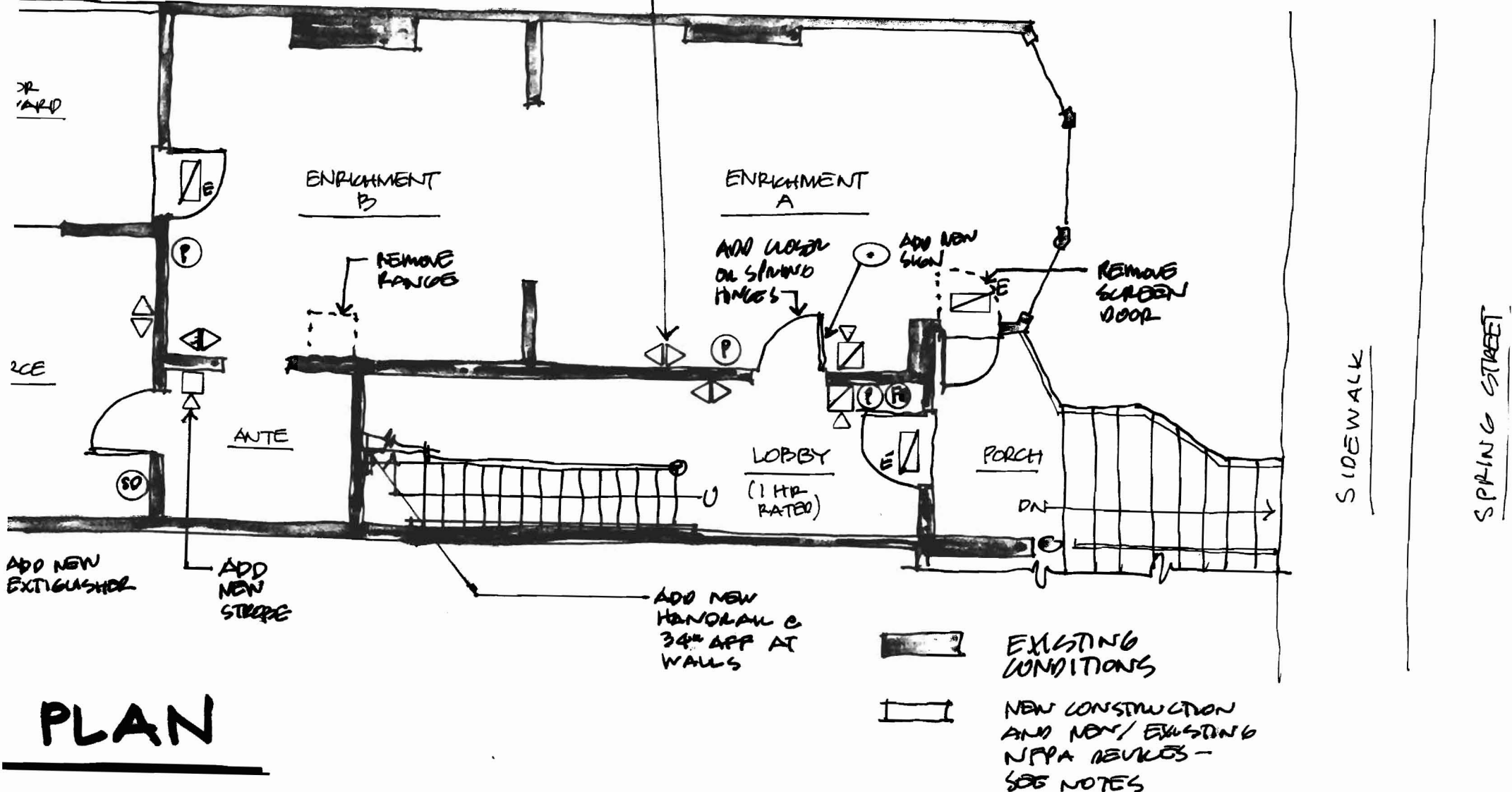
- For the required number of exits for open parking structures, see Section 1019.1.1.
- For the required number of exits for air traffic control towers, see Section 412.1.
- Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1026 shall have a maximum height of three stories above grade plane.
- Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 with an occupancy in Group B shall have a maximum travel distance of 100 feet.
- Day care maximum occupant load is 10.

1019.3 Exit continuity. Exits shall be continuous from the point of entry into the exit to the exit discharge.

1019.4 Exit door arrangement. Exit door arrangement shall meet the requirements of Sections 1015.2 through 1015.2.2.

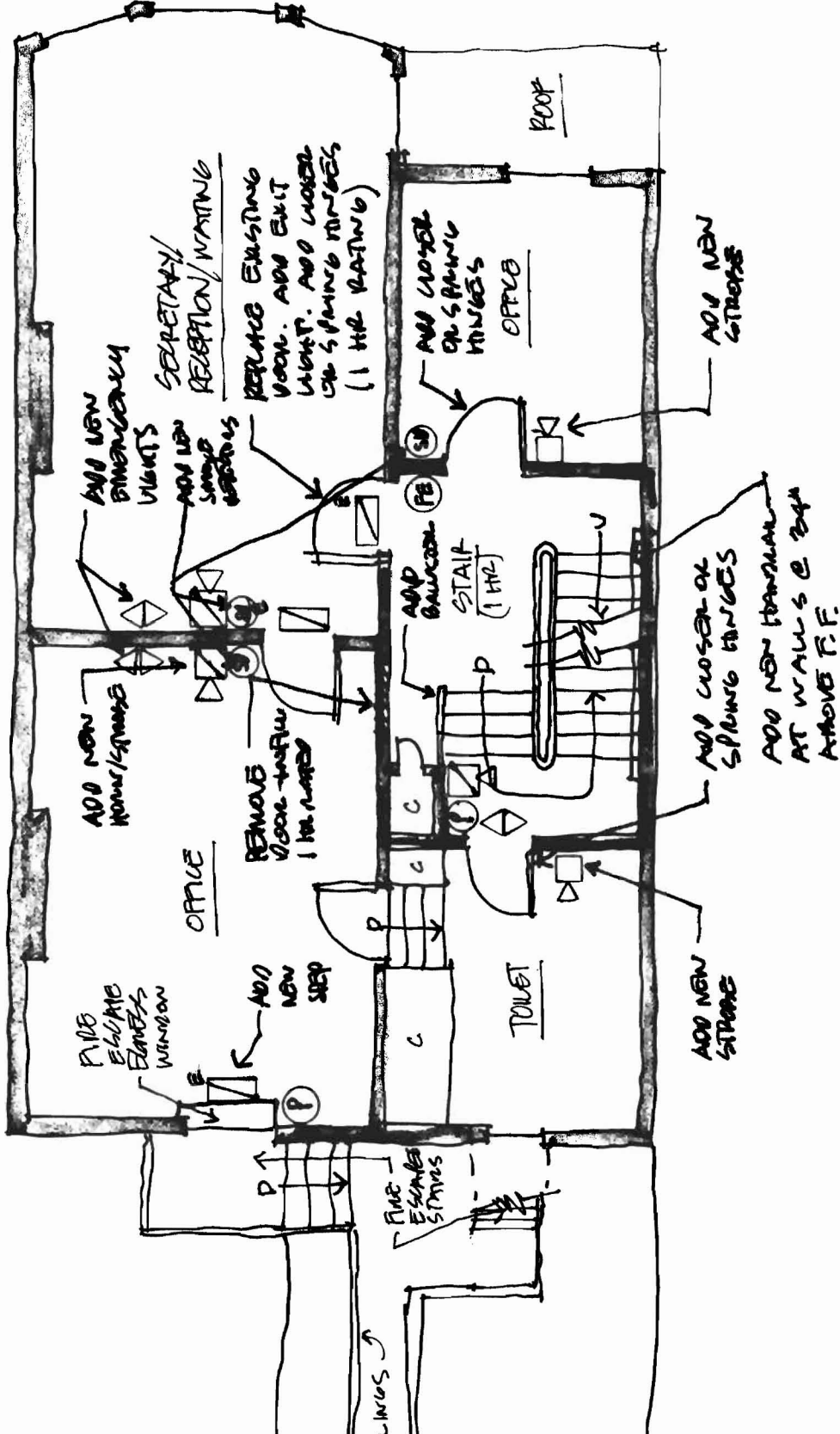
**SECTION 1020
VERTICAL EXIT ENCLOSURES**

1020.1 Enclosures required. Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both. Exit enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the exit enclosure shall include any basements



@ 131 SPRING STREET
 NOV 14, 2008

GRANT HAYS ASSOCIATES
 ARCHITECTURE & INTERIOR DESIGN
 P.O. BOX 6179 FALMOUTH, MAINE 04105
 207-871-5900 TEL 207-871-9308 FAX



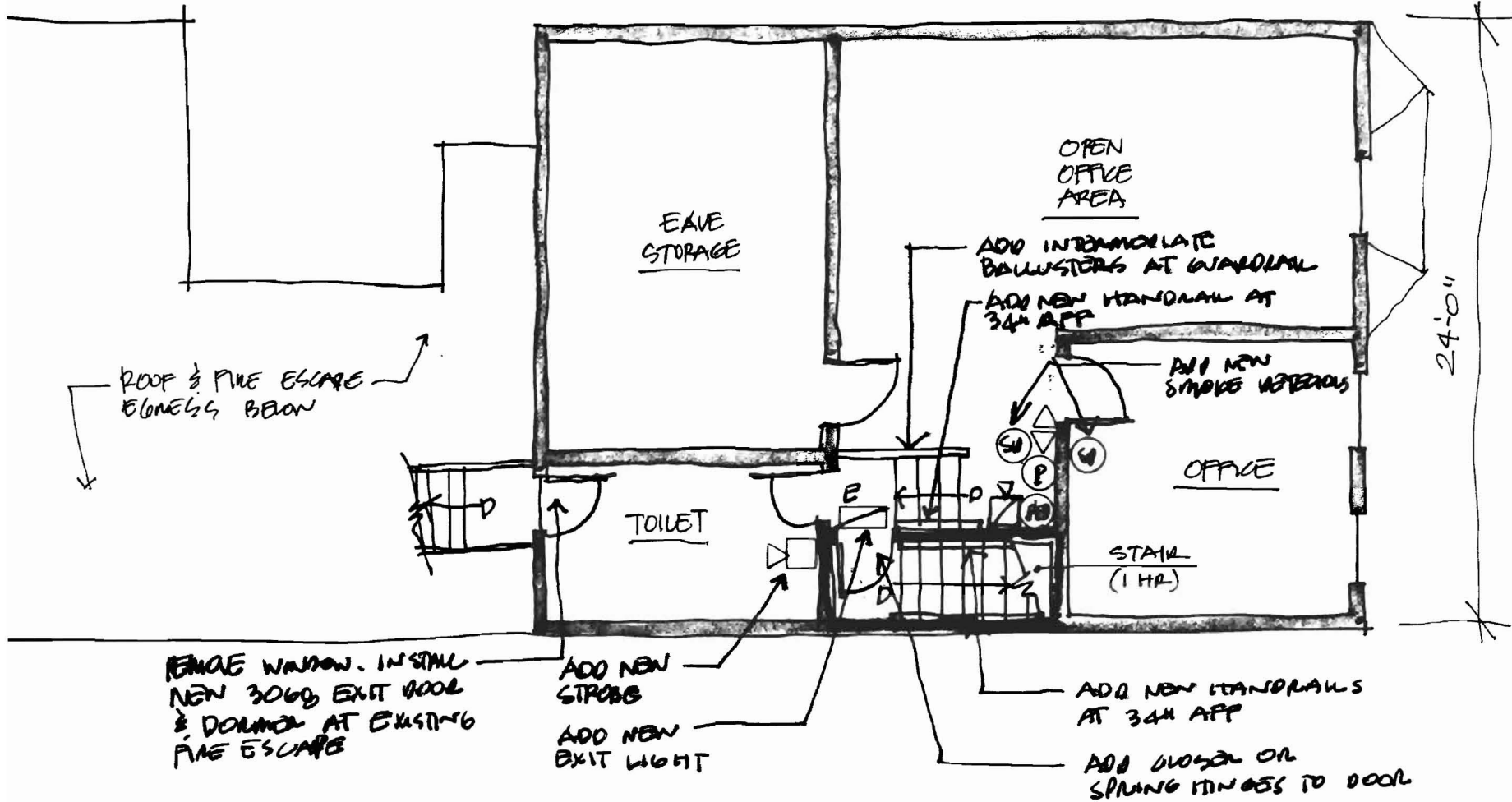
EXISTING CONSTRUCTION
 NEW CONSTRUCTION AND NEW/EXISTING NTPA DEVICES - SEE NOTES

OFFICE PLAN

DES @ 131 SPRING STREET

NOV 14, 2008

AE



1ST FLOOR PLAN

UPGRADES @ 131 SPRING STREET

AND, MAINE

NOV 14, 2009

GRANT HAYS ASSOCIATES
 ARCHITECTURE & INTERIOR DESIGN

PO. BOX 6179 FALMOUTH, MAINE 04105
 207-871-5900 TEL 207-871-9308 FAX