CHAPTER 5

GENERAL BUILDING HEIGHTS AND AREAS

User note:

About this chapter: *Chapter 5 establishes the limits to which a building can be built. Building height, number of stories and building area are specified in this chapter. Chapter 5 must be used in conjunction with the occupancies established in Chapter 3 and the types of construction established in Chapter 6. This chapter also specifies the impact that mezzanines, accessory occupancies and mixed occupancies have on the overall size of a building.*

SECTION 501
GENERAL

501.1 Scope. The provisions of this chapter control the height and area of structures hereafter erected and *additions* to existing structures.

SECTION 502
BUILDING ADDRESS

[S][F] 502.1 Address identification. New and existing buildings shall be provided with *approved* address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure. Address identification shall be maintained.

502.1.1 Enforcement by building official. The *building official* shall determine the address of any property in the City in accordance with the numbering system established in this chapter.

Whenever the irregularity of plats, the changing direction of streets, avenues, or other highways, the interruption of the continuity of highways or any other condition causes doubt or difference of opinion as to the correct number of any piece of property or any building thereon, the number shall be determined by the *building official*. The *building official* shall be guided by the specific provisions of this chapter as far as they are applicable and when not applicable, by such rules as are established to carry out the intent of this chapter.

502.2.1.1 Owners to affix and maintain building numbers. The owner of any *building* or other structure shall maintain the street number of each *building* and structure in a conspicuous place over or near the principal street entrance or entrances, or in other conspicuous places as is necessary for the easy locating of such address.

Exception: Where there are multiple *buildings* on a site, the *building official* is permitted to waive the requirement for posting an address on appurtenant or accessory buildings where individual identification of each building is not essential.

Where a property has frontage along more than one named street, or for any other property, where there may be confusion regarding the address of a *building* or *structure*, the *building official* is permitted to require the complete address, including street number and street name to be conspicuously posted.

For *buildings* served by a private road or a common driveway, the address number(s) shall be posted at the head of the road or driveway in a manner that can be easily read from the intersecting street. Where the existing street grid may not adequately allow for the assignment of street addresses that will promote the easy locating of such addresses, or for any other reason consistent with the intent of this chapter, the *building official* is permitted to assign a name to the private road or common driveway that shall be used for addressing purposes. In addition, the *building official* is permitted to require one or more property owners along the road or driveway to post a sign displaying the assigned name at a location near the intersection of the road or driveway with a named public street.

If the *building official* finds that a *building*, structure or premises is not provided with numbers as herein required, or is not correctly numbered, the *building official* is permitted to notify the owner, agent or tenant of the correct street number and require that the number be properly placed, in accordance with the provisions of this chapter, within a reasonable length of time. It is a violation of this code for any *person* to fail to comply with such notice.

502.1.2 Numbering system prescribed. The numerical designation of all doorways and entrances to buildings and lots fronting upon the named right-of-ways of the City are established in accordance with the following system:

Except where otherwise specified, 100 numbers are allotted to each block, provided that where a named right-of-way intervenes between consecutively numbered right-of-ways, 50 numbers shall be allotted for each block. One whole number is allotted to each 20 feet (6096 mm) of frontage in each block; even numbers shall be used on the northerly side of named right-of-ways extending in an easterly and westerly direction and on the easterly side of named right-of-ways extending in a northerly and southerly direction. Odd numbers shall be used on the southerly side of named right-of-ways extending in an easterly and westerly direction and on the westerly side of named right-of-ways extending in a northerly and southerly direction.

In the case of irregular named right-of-ways, the frontages shall be numbered as near as may be according to the uniform series of block numbers with which they most nearly correspond.

502.1.3 Numbering of buildings

502.1.3.1 Numbering of buildings downtown. Between Yesler Way and Denny Way all frontages upon named right-of-ways extending in a northerly and southerly direction and lying west of Broadway, East Union Street, Minor Avenue and Melrose Avenue shall be numbered as follows:

Yesler Way to Fir Street number 100 and upwards, Fir Street to Spruce Street number 150 and upwards, Spruce Street to Alder Street number 200 and upwards, continuing by consecutive hundreds to Pine Street; Pine Street to Olive Way number 1600 and upwards, Olive Way to Howell Street number 1700 and upwards, Howell Street to Stewart Street number 1800 and upwards, Stewart Street to Virginia Street number 1900 and upwards, continuing by consecutive hundreds to Denny Way.

Between East Yesler Way and East Denny Way all frontages upon named right-of-ways extending in a northerly and southerly direction and lying east of Broadway, East Union Street, Minor Avenue and Melrose Avenue shall be numbered as follows:

East Yesler Way to East Fir Street number 100 and upwards, East Fir Street to East Spruce Street number 150 and upwards, East Spruce Street to East Alder Street number 200 and upwards, continuing by consecutive hundreds to East Marion Street; East Marion Street to East Spring Street number 900 and upwards, East Spring Street to East Union Street number 1100 and upwards, East Union Street to East Pike Street number 1400 and upwards, continuing by consecutive hundreds to East Denny Way.

Between East Yesler Way and East Denny Way all frontages upon named right-of-ways extending in an easterly and westerly direction and lying west of Broadway, East Union Street, Minor Avenue and Melrose Avenue shall be numbered as follows:

Southwesterly from Elliott Avenue, or Alaskan Way if south of Lenora Street, number 51 and downwards; Elliott Avenue (or Alaskan Way) to Western Avenue number 52 and upwards; Western Avenue to First Avenue number 76 and upwards; First Avenue to Second Avenue number 100 and upwards, continuing northeasterly to Broadway, East Union Street, Minor Avenue, or Melrose Avenue by consecutive hundreds.

Between East Yesler Way and East Denny Way all frontages upon named right-of-ways extending in an easterly and westerly direction and lying east of Broadway, East Union Street, Minor Avenue and Melrose Avenue shall be numbered as follows:

Melrose Avenue to Bellevue Avenue number 300 and upwards, Bellevue Avenue to Summit Avenue number 400 and upwards, continuing by consecutive hundreds to Broadway.

Broadway to Tenth Avenue number 900 and upwards, Tenth Avenue to Eleventh Avenue number 1000 and upwards, continuing by consecutive hundreds corresponding with the numbered series of avenues eastward to Lake Washington.

On East Olive Way eastward from Melrose Avenue, the street numbers shall run upwards consecutively, eastward from the existing street numbers that are west of the Melrose Avenue intersection.

502.1.3.2 Numbering of buildings south of downtown and east of the East Waterway. South of Yesler Way the frontages upon the named right-of-ways extending in a northerly and southerly direction shall be numbered as follows:

Yesler Way (or East Yesler Way) to South Washington Street number 100 and upwards, South Washington Street to South Main Street number 200 and upwards, South Main Street to South Jackson Street number 300 and upwards, South Jackson Street to South King Street number 400 and upwards, continuing by consecutive hundreds to South Barton Place, with blocks and streets on Rainier Avenue South being taken as the controlling series.

South of South Barton Place, 51st Avenue South shall be taken as the controlling series to the southern City limits.

On Second Avenue Extension South from Fourth Avenue South to Yesler Way, the frontages shall be numbered as follows:

From Fourth Avenue South to South Jackson Street number 100 and upwards, South Jackson Street to South Main Street number 200 and upwards, South Main Street to South Washington Street number 300 and upwards, South Washington Street to Yesler Way number 400 and upwards.

South of Yesler Way the frontages upon named right-of-ways extending in an easterly and westerly direction shall be numbered as follows:

Westward from First Avenue South to the Harbor Line or East Waterway number 99 and downwards, First Avenue South to Occidental Avenue South number 100 and upwards, Occidental Avenue South to Second Avenue South number 150 and upwards, Second Avenue South to Third Avenue South number 200 and upwards, continuing by consecutive hundreds to Sixth Avenue South; Sixth Avenue South to Maynard Avenue South number 600 and upwards, Maynard Avenue South to Seventh Avenue South number 650 and upwards, Seventh Avenue South to Eighth Avenue South (or Airport Way south of South Hinds Street) number 700 and upwards, Eighth Avenue South (or Airport Way south of South Hinds Street) to Airport Way South (or Ninth Avenue South of South Hinds Street) number 800 and upwards, Airport Way South (or Ninth Avenue South of South Hinds Street) to Interstate Highway 5 number 900 and upwards, continuing eastward by consecutive hundreds corresponding with the numbered series of avenues to Lake Washington.

502.1.3.3 Numbering of buildings between downtown and the Lake Washington Ship Canal. North of Denny Way, East Denny Way, and East Howell Street east of Madrona Drive the frontages upon the named right-of-ways extending in a northerly and southerly direction shall be numbered as follows:

Denny Way (and East or West Denny Way) to John Street (and East or West John Street) number 100 and upwards, continuing by consecutive hundreds, the blocks and streets on Queen Anne Avenue North being taken as a controlling series for numbering purposes west of Fairview Avenue North (or Fairview Avenue East) and south of Bertona Street (or West Bertona Street); 36th Avenue West being taken as the controlling series for numbering purposes west of Fairview Ave North (or Fairview Ave East) and north of Bertona Street (or West Bertona Street); Tenth Avenue East being taken as the controlling series for numbering purposes east of Fairview Avenue North (or Fairview Avenue East).

Between Queen Anne Avenue North and Eastlake Avenue East (East Galer being the northeast boundary of this subsection) the frontages on the named right-of-ways extending in an easterly and westerly direction shall be numbered as follows:

Queen Anne Avenue North to First Avenue North number 1 and upwards, First Avenue North to Warren Avenue North number 100 and upwards, Warren Avenue North to Second Avenue North number 150 and upwards, Second Avenue North to Third Avenue North number 200 and upwards, continuing by consecutive hundreds corresponding to the numbered series of avenues with half hundreds in the case of Nob Hill, Taylor, Bigelow, Mayfair, and Dexter Avenues North, to Ninth Avenue North; Ninth Avenue North to Westlake Avenue North number 900 and upwards, Westlake Avenue North to Terry Avenue North number 950 and upwards, Terry Avenue North to Boren Avenue North number 1000 and upwards, Boren Avenue North to Fairview Avenue North number 1100 and upwards, Fairview Avenue North to Minor Avenue North number 1150 and upwards, Minor Avenue North to Pontius Avenue North number 1200 and upwards, Pontius Avenue North to Yale Avenue North number 1250 and upwards, Yale Avenue North to Eastlake Avenue East number 1300 and upwards.

East of Eastlake Avenue East (or Fairview Avenue East north of East Galer Street) and North of East Denny Way the frontages upon the named east-west right-of-ways extending in an easterly and westerly direction shall be numbered as follows:

Eastlake Avenue East to Melrose Avenue East number 200 and upwards continuing by consecutive hundreds eastward to Broadway East; Broadway East to Tenth Avenue East number 900 and upwards, Tenth Avenue East to Federal Avenue East number 1000 and upwards, Federal Avenue East to Eleventh Avenue East number 1050 and upwards, Eleventh Avenue East to Twelfth Avenue East number 1100 and upwards, continuing by consecutive hundreds eastward to Lake Washington.

West of Queen Anne Avenue North the frontages upon named east-west right-of-ways extending in an easterly and westerly direction shall be numbered westward as follows:

Queen Anne Avenue North to First Avenue West number 1 and upwards, First Avenue West to Second Avenue West number 100 and upwards, continuing by consecutive hundreds westward.

502.1.3.4 Numbering of buildings north of the Lake Washington Ship Canal. The plan for the numbering of frontages upon the various named right-of-ways in that portion of the City of Seattle lying north of the Lake Washington Ship Canal is established as follows:

The frontages upon the named right-of-ways extending in a northerly and southerly direction shall be numbered in accordance with the designations of the intersecting numbered streets as follows: northward from the State Harbor Line, number 2900 and upwards.

The frontages upon the named right-of-ways extending in an easterly and westerly direction shall be numbered as follows:

West from First Avenue Northwest, commencing with 100, and continuing west in correspondence with the numbers of the avenues to Puget Sound.

East from First Avenue Northwest, commencing with 100 and continuing as follows: East from Palatine Avenue North, 200 and upwards; from Greenwood Avenue North, 300 and upwards; from Phinney Avenue North, 400 and upwards; from Francis Avenue North, 450 and upwards; from Dayton Avenue North, 500 and upwards; from Evanston Avenue North, 600 and upwards; from Fremont Avenue North, 700 and upwards; from North Park Avenue North, 800 and upwards; from Linden Avenue North, 900 and upwards (800 and upwards south of North 65th Street); from Aurora Avenue North, 900 and upwards (1100 and upwards north of North 65th Street); from Winslow Place North, 950 and upwards; from Whitman Avenue North 1000 and upwards; from Albion Place North, 1050 and upwards; from Woodland Park Avenue North, 1100 and upwards; from Nesbit Avenue North, 1150 and upwards; from Midvale Avenue North, 1200 and upwards; from Lenora Place North, 1250 and upwards; from Stone Avenue North (Stone Way North south of North 46th Street), 1300 and upwards; from Interlake Avenue North, 1400 and upwards; from Ashworth Avenue North, l500 and upwards; from Carr Place North, 1550 and upwards; from Woodlawn Avenue North, 1600 and upwards, from Densmore Avenue North, 1700 and upwards; from Caroline Avenue North and Courtland Place North, 1750 and upwards; from Wallingford Avenue North, 1800 and upwards; from Burke Avenue North and Canfield Place North, 1900 and upwards; From Stroud Avenue North and Wayne Place North, 2000 and upwards; from Meridian Avenue North, 2100 and upwards; from Bagley Avenue North, 2200 and upwards; from Corliss Avenue North, 2300 and upwards; from Sunnyside Avenue North, 2400 and upwards; and from Eastern Avenue North, 2500 and upwards.

East from First Avenue Northeast, commencing with 100, and continuing east in correspondence with the numbered avenues to Lake Washington.

502.1.3.5 Numbering buildings on Harbor Island. The frontages upon named right-of-ways extending in a northerly and southerly direction shall be numbered as follows:

Southwest Massachusetts Street to Southwest Florida Street, number 1700 and upwards; Southwest Florida Street to Southwest Lander Street, number 2500 and upwards; Southwest Lander Street to Southwest Hanford Street, number 2700 and upwards; Southwest Hanford Street to Southwest Spokane Street, number 3200 and upwards.

The frontages upon named right-of-ways extending in an easterly and westerly direction shall be numbered as follows:

The East Waterway to 11th Avenue Southwest, number 900 and upwards; 11th Avenue Southwest to 13th Avenue Southwest, number 1100 and upwards; 13th Avenue Southwest to 16th Avenue Southwest, number 1300 and upwards; 16th Avenue Southwest to the West Waterway, number 1600 and upwards.

502.1.3.6 Numbering buildings west of the West Waterway and the Duwamish Waterway. The frontages upon named right-of-ways extending in a northerly and southerly direction, shall be numbered as follows:

North of Southwest Andover Street, commencing with 3800 and continuing north to the Duwamish Head by consecutive hundreds, the blocks and streets on California Avenue Southwest being taken as the controlling series for numbering purposes.

South of Southwest Andover Street, commencing with 4000 and continuing south to Southwest Roxbury Street by consecutive hundreds, the blocks and streets of California Avenue Southwest being taken as the controlling series for numbering purposes.

South of Southwest Roxbury Street, commencing with 9600 and continuing south to the south City limits by consecutive hundreds, in correspondence with the numbers of the intersecting streets.

The frontages upon named right-of-ways extending in an easterly and westerly direction, shall be numbered as follows:

West of California Avenue Southwest, commencing with 4300 and continuing westward in correspondence with the numbers of the intersecting avenues to Puget Sound.

East of California Avenue Southwest, commencing with 4200 and continuing eastward in correspondence with the numbers of the intersecting avenues to the Duwamish Waterway.

SECTION 503
GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

503.1 General. Unless otherwise specifically modified in Chapter 4 and this chapter, *building height*, number of *stories* and *building area* shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. *Building height*, number of *stories* and *building* area provisions shall be applied independently. For the purposes of determining area limitations, height limitations and type of construction, each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

503.1.1 Special industrial occupancies. Buildings and structures designed to house special industrial processes that require large areas and unusual *building heights* to accommodate craneways or special machinery and equipment, including, among

others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the *building height*, number of *stories* and *building area* limitations specified in Sections 504 and 506.

503.1.2 Buildings on same lot. Two or more buildings on the same lot shall be regulated as separate buildings or shall be considered as portions of one building where the *building height*, number of *stories* of each building and the aggregate *building area* of the buildings are within the limitations specified in Sections 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each *building*.

503.1.3 Type I construction. Buildings of Type I construction permitted to be of unlimited tabular *building heights and areas* are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited *building height* in Sections 503.1.1 and 504.3 or increased *building heights and areas* for other types of construction.

[W] 503.1.4 Occupied roofs. A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupied roofs shall not be included in the building area as regulated by Section 506.

Exceptions:

1. The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the *story* immediately below the roof where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Section 907.5 is provided in the area of the occupied roof. Emergency voice/alarm communication system notification per Section 907.5.2.2 shall also be provided in the area of the occupied roof where such system is required elsewhere in the building.
2. Assembly occupancies shall be permitted on roofs of open parking garages of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.

[S] 503.1.4.1 ((~~Enclosures over~~)) Enclosure of occupied roof areas. Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches (1220 mm) above the surface of the occupied roof.

Exception: Penthouses constructed in accordance with Section 1510.2 and towers, domes, spires and cupolas constructed in accordance with Section 1510.5.

SECTION 504
BUILDING HEIGHT AND NUMBER OF STORIES

504.1 General. The height, in feet, and the number of *stories* of a building shall be determined based on the type of construction, occupancy classification and whether there is an *automatic sprinkler system* installed throughout the building.

Exception: The *building height* of one-*story* aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be limited where the building is provided with an *automatic sprinkler system* or *automatic fire-extinguishing system* in accordance with Chapter 9 and is entirely surrounded by *public ways* or *yards* not less in width than one and one-half times the *building height*.

504.1.1 Unlimited area buildings. The height of unlimited area buildings shall be designed in accordance with Section 507.

504.1.2 Special provisions. The special provisions of Section 510 permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable heights of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in Section 510.

504.2 Mixed occupancy. In a building containing mixed occupancies in accordance with Section 508, no individual occupancy shall exceed the height and number of *story* limits specified in this section for the applicable occupancies.

504.3 Height in feet. The maximum height, in feet, of a building shall not exceed the limits specified in Table 504.3.

Exception: Towers, spires, steeples and other rooftop structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1510.2.4. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height where of noncombustible materials and shall not extend more than 20 feet (6096 mm) above the allowable building height where of combustible materials (see Chapter 15 for additional requirements).

[W][S] TABLE 504.3[i]
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE[a]

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A, B, E, F, M, S, U	NS[b]	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	270	180	85	85	70	60
H-1, H-2, H-3, H-5	NS[c, d]	UL	160	65	55	65	55	120	90	65	65	50	40
	S												
H-4	NS[c, d]	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	140	100	85	85	70	60
I-1 Condition 1, I-3	NS[d, e]	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	180	120	85	85	70	60
I-1 Condition 2, I-2	NS[d, e, f]	UL	160	65	55	65	55	65	65	65	65	50	40
	S[i]	UL	180	85									
I-4	NS[d, g]	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	180	120	85	85	70	60
R[h]	NS[d]	UL	160	65	55	65	55	65	65	65	65	50	40
	S13D	60	60	60	60	60	60	60	60	60	60	50	40
	S13R	60	60	60	60	60	60	60	60	60	60	60	60
	S	UL	180	85	75	85	75	270	180	85	85	70	60

For SI: 1 foot = 304.8 mm.

UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.

b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

c. New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.

d. The NS value is only for use in evaluation of existing building height in accordance with the *International Existing Building Code*.

e. New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies Condition 1, see Exception 1 of Section 903.2.6.

f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code*.

g. For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.

h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

i. I-1, Condition 2 Assisted living facilities licensed per chapter 388-78A WAC and residential treatment facilities as licensed by Washington State under chapter 246-337 WAC shall be permitted to use the allowable height above grade plane for R-2 occupancies.

j. A maximum of 12 inches of insulation may be added to the roof of an *existing building* without such additional height contributing to the *building height*.

504.4 Number of stories. The maximum number of *stories* of a building shall not exceed the limits specified in Table 504.4.

[W] TABLE 504.4
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE[a, b]

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A-1	NS	UL	5	3	2	3	2	3	3	3	3	2	1
	S	UL	6	4	3	4	3	9	6	4	4	3	2
A-2	NS	UL	11	3	2	3	2	3	3	3	3	2	1
	S	UL	12	4	3	4	3	18	12	6	4	3	2
A-3	NS	UL	11	3	2	3	2	3	3	3	3	2	1
	S	UL	12	4	3	4	3	18	12	6	4	3	2
A-4	NS	UL	11	3	2	3	2	3	3	3	3	2	1
	S	UL	12	4	3	4	3	18	12	6	4	3	2
A-5	NS	UL	UL	UL	UL	UL	UL	1	1	1	UL	UL	UL
	S	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	NS	UL	11	5	3	5	3	5	5	5	5	3	2
	S	UL	12	6	4	6	4	18	12	9	6	4	3
E	NS	UL	5	3	2	3	2	3	3	3	3	1	1
	S	UL	6	4	3	4	3	9	6	4	4	2	2
F-1	NS	UL	11	4	2	3	2	3	3	3	4	2	1
	S	UL	12	5	3	4	3	10	7	5	5	3	2
F-2	NS	UL	11	5	3	4	3	5	5	5	5	3	2
	S	UL	12	6	4	5	4	12	8	6	6	4	3
H-1	NS[c, d]	1	1	1	1	1	1	NP	NP	NP	1	1	NP
	S							1	1	1			
H-2	NS[c, d]	UL	3	2	1	2	1	1	1	1	2	1	1
	S							2	2	2			
H-3	NS[c, d]	UL	6	4	2	4	2	3	3	3	4	2	1
	S							4	4	4			
H-4	NS[c, d]	UL	7	5	3	5	3	5	5	5	5	3	2
	S	UL	8	6	4	6	4	8	7	6	6	4	3
H-5	NS[c, d]	4	4	3	3	3	3	2	2	2	3	3	2
	S							3	3	3			
I-1 Condition 1	NS[d, e]	UL	9	4	3	4	3	4	4	4	4	3	2
	S	UL	10	5	4	5	4	10	7	5	5	4	3
I-1 Condition 2	NS[d, e]	UL	9	4	3	4	3	3	3	3	4	3	2
	S[i]	UL	10	5				10	6	4			
I-2	NS[d, f]	UL	4	2	1	1	NP	NP	NP	NP	1	1	NP
	S	UL	5	3				7	5	1			
I-3	NS[d, e]	UL	4	2	1	2	1	2	2	2	2	2	1
	S	UL	5	3	2	3	2	7	5	3	3	3	2
I-4	NS[d, g]	UL	5	3	2	3	2	3	3	3	3	1	1
	S	UL	6	4	3	4	3	9	6	4	4	2	2
M	NS	UL	11	4	2	4	2	4	4	4	4	3	1
	S	UL	12	5	3	5	3	12	8	6	5	4	2
R-1[h]	NS[d]	UL	11	4	4	4	4	4	4	4	4	((3)) 4	2
	S13R	4	4									4	3
	S	UL	12	5	5	5	5	18	12	8	5	((4)) 5	3

[W] TABLE 504.4—continued
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE[a, b]

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION													
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
R-2[h]	NS[d]	UL	11	4	4	4	4	4	4	4	4	((3)) 4	2
	S13R	4	4	4								4	3
	S	UL	12	5	5	5	5	18	12	8	5	((4)) 5	3
R-3[h]	NS[d]	UL	11	4	4	4	4	4	4	4	4	((3)) 4	3
	S13D	4	4									3	3
	S13R	4	4									4	4
	S	UL	12	5	5	5	5	18	12	5	5	((4)) 5	4
((~~R-4[h]~~	~~NS[d]~~	~~UL~~	~~11~~	~~4~~	~~4~~	~~4~~	~~4~~				~~4~~	~~3~~	~~2~~
	~~S13D~~	~~4~~	~~4~~									~~3~~	~~2~~
	~~S13R~~	~~4~~	~~4~~									~~4~~	~~3~~
	~~S~~	~~UL~~	~~12~~	~~5~~	~~5~~	~~5~~	~~5~~				~~5~~	~~4~~	~~3~~))
S-1	NS	UL	11	4	2	3	2	4	4	4	4	3	1
	S	UL	12	5	3	4	3	10	7	5	5	4	2
S-2	NS	UL	11	5	3	4	3	4	4	4	4	4	2
	S	UL	12	6	4	5	4	12	8	5	5	5	3
U	NS	UL	5	4	2	3	2	4	4	4	4	2	1
	S	UL	6	5	3	4	3	9	6	5	5	3	2

UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
c. New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
d. The NS value is only for use in evaluation of existing building height in accordance with the *International Existing Building Code*.
e. New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and 1103.5 of the *International Fire Code.*
g. For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
i. Group I-1, Condition 2. Assisted living facilities licensed per chapter 388-78A WAC and residential treatment facilities as licensed by Washington State under chapter 246-337 WAC shall be permitted to use the allowable number of stories for R-2 occupancies.

SECTION 505
MEZZANINES AND EQUIPMENT PLATFORMS

505.1 General. *Mezzanines* shall comply with Section 505.2. *Equipment platforms* shall comply with Section 505.3.

Interpretation I505.1: *Mezzanines* within individual *dwelling units* shall not be located above other *dwelling units* or common space other than corridors.

[S] 505.2 Mezzanines. A *mezzanine* or *mezzanines* in compliance with Section 505.2 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*. The clear height above and below the *mezzanine* floor construction shall be not less than 7 feet (2134 mm).

505.2.1 Area limitation. The aggregate area of a *mezzanine* or *mezzanines* within a room shall be not greater than ((~~one-third~~)) one-half 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~~)) Exception: ((~~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 be not greater than two-thirds of the floor area of the room.

((~~2. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction shall be not greater than one-half of the floor 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 907.5.2.2.~~

~~3. The aggregate area of a *mezzanine* within a *dwelling unit* that is located in a building equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be greater than one-half of the floor area of the room, provided that:~~

~~3.1. Except for enclosed closets and bathrooms, the *mezzanine* shall be open to the room in which such mezzanine is located;~~

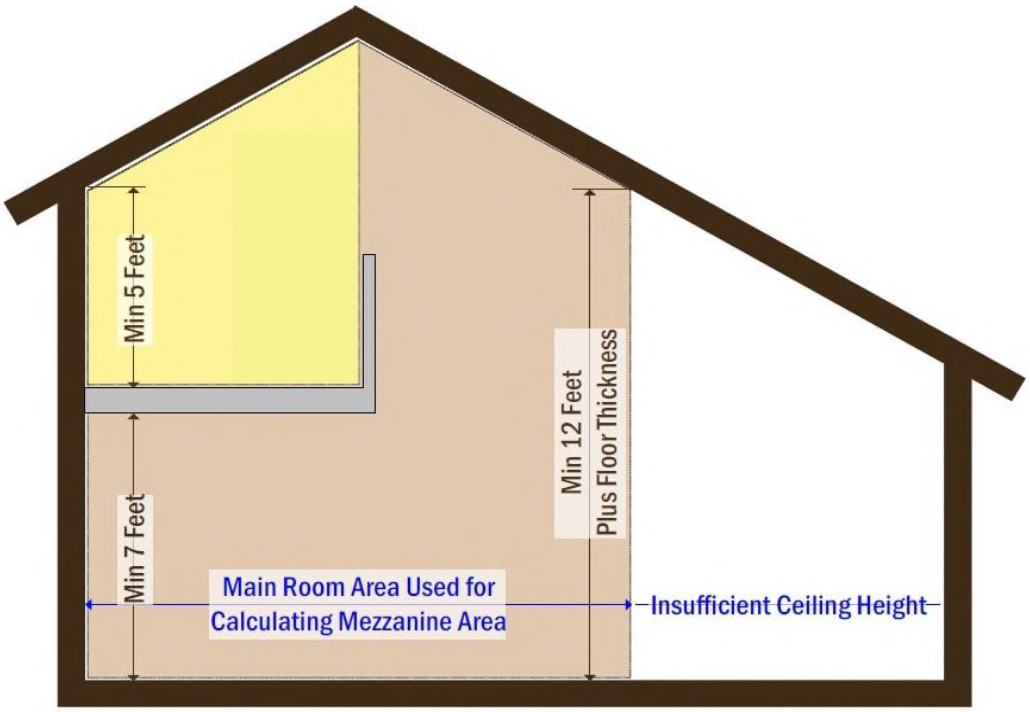
~~3.2. The opening to the room shall be unobstructed except for walls not more than 42 inches (1067 mm) in height, columns and posts; and~~

~~3.3. Exceptions to Section 505.2.3 shall not be permitted.~~))

Interpretation I505.2: Only the following unenclosed areas of the room or space containing the *mezzanine* shall be used for purposes of calculating the allowable *mezzanine* floor area:

1. Areas with a ceiling height of at least 7 feet located directly below the mezzanine, except that no additional area benefit shall be gained for stacked *mezzanines*; and
2. Areas where the ceiling has a slope of less than 2:12 and with a ceiling height of at least 14 feet plus the thickness of the *mezzanine* floor construction; and
3. Areas where the ceiling has a slope of 2:12 or more and has a ceiling height of at least 12 feet plus the thickness of the *mezzanine* floor construction, provided that the *mezzanine* complies with Section 1208.2, exception 2.

Within a *dwelling unit*, enclosed or unenclosed portions of the entire floor level containing the *mezzanine* that meet requirements of this interpretation for the room area may be used for purposes of calculating the allowable *mezzanine* floor area.



Basis for Calculating Allowable Mezzanine Area
When Using Sloped Ceiling Provisions

FIGURE I505.2(1)
BASIS FOR CALCULATING ALLOWABLE MEZZANINE AREA WHEN USING SLOPED CEILING PROVISIONS

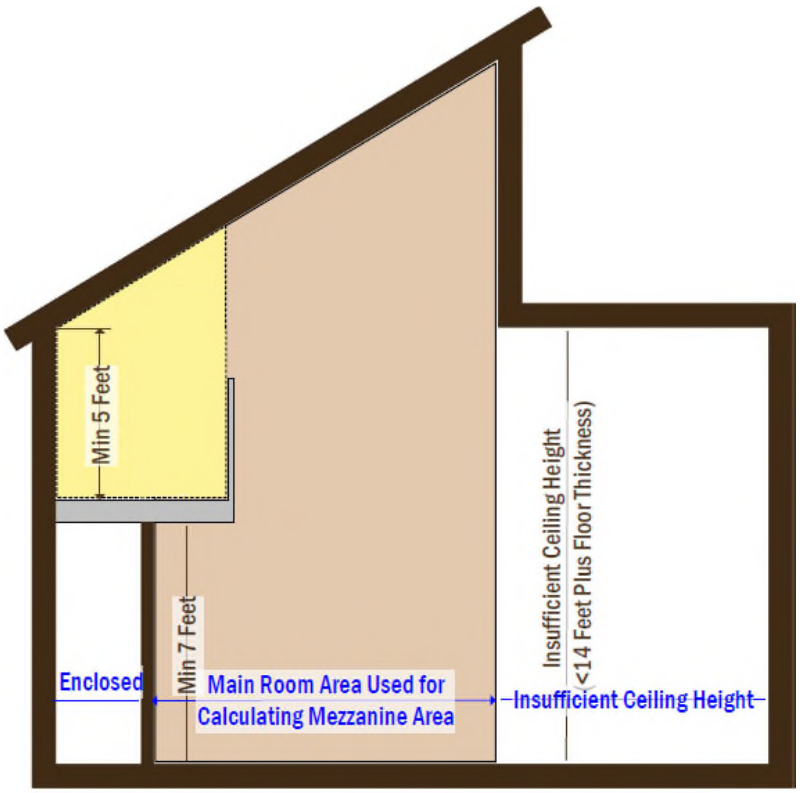


FIGURE I505.2(2)
BASIS FOR CALCULATING ALLOWABLE MEZZANINE AREA WITH OTHER CONDITIONS

505.2.1.1 Aggregate area of mezzanines and equipment platforms. Where a room contains both a *mezzanine* and an *equipment platform*, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located. The area of the *mezzanine* shall not exceed the area determined in accordance with Section 505.2.1.

505.2.2 Means of egress. The *means of egress* for *mezzanines* shall comply with the applicable provisions of Chapter 10.

505.2.3 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) in height, 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 is not greater than 10.
2. A *mezzanine* having two or more exits or access to exits is not required to be open to the room in which the *mezzanine* is located.
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 is not greater than 10 percent of the allowable *mezzanine* area.
4. In industrial facilities, *mezzanines* used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, which are no more than two *stories* 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 *exits* or *access to exits* shall not be required to be open to the room in which the *mezzanine* is located.

[S] 505.3 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* in accordance with Section 903. *Equipment platforms* shall not be a part of any *mezzanine* and such platforms and the walkways, *stairways*, *alternating tread devices* and ladders providing access to an *equipment platform* shall not serve as a part of the *means of egress* from the building.~~)) Equip-

ment platforms and building elements supporting only the platform shall be built of materials permitted for the type of construction of the building. *Equipment platforms* in building shall not:

1. Be considered as a portion of the floor below.
2. Contribute to either the *building area* or the number of *stories* as regulated by Section 503.1.
3. Be included in determining the *fire area* in accordance with Section 903.
4. Be a part of any *mezzanine*.
5. Serve as a part of the *means of egress* from the building, including the walkways, *stairs*, *alternating tread devices* and ladders providing access to an equipment platform.

505.3.1 Area limitation. The aggregate area of all *equipment platforms* within a room shall be not greater than 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 505.2.1 and the combined aggregate area of the *equipment platforms* and *mezzanines* shall be not greater than two-thirds of the room in which they are located. The area of the *mezzanine* shall not exceed the area determined in accordance with Section 505.2.1.

505.3.2 Automatic sprinkler system. 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.

505.3.3 Guards. *Equipment platforms* shall have *guards* where required by Section 1015.2.

SECTION 506
BUILDING AREA

[S] 506.1 General. The allowable floor area of a building shall be determined based on the type of construction, occupancy classification, whether there is an *automatic sprinkler system* installed throughout the building and the amount of building frontage on public way or open space.

506.1.1 Unlimited area buildings. Unlimited area buildings shall be designed in accordance with Section 507.

506.1.2 Special provisions. The special provisions of Section 510 permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable areas of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in Section 510.

506.1.3 Basements. Basements need not be included in the total allowable floor area of a building provided the total area of such basements does not exceed the area permitted for a one-story above grade plane building.

506.2 Allowable area determination. The allowable area of a building shall be determined in accordance with the applicable provisions of Sections 506.2.1 through 506.2.4 and Section 506.3.

506.2.1 Single-occupancy, one-story buildings. The allowable area of a single-occupancy building with no more than one *story above grade plane* shall be determined in accordance with Equation 5-1:

$$A_a = A_t + (NS \times I_f) \qquad \textbf{(Equation 5-1)}$$

where:

A_a = Allowable area (square feet).

A_t = Tabular allowable area factor (NS, S1, S13R or S13D value, as applicable) in accordance with Table 506.2.

NS = Tabular allowable area factor in accordance with Table 506.2 for nonsprinklered building (regardless of whether the building is sprinklered).

I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

[W][S] TABLE 506.2
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET[a, b]

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	45,000	30,000	18,750	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	180,000	120,000	75,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	135,000	90,000	56,250	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1												
	SM												
B	NS	UL	UL	37,500	23,000	28,500	19,000	108,000	72,000	45,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	432,000	288,000	180,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	324,000	216,000	135,000	108,000	54,000	27,000
E	NS	UL	UL	26,500	14,500	23,500	14,500	76,500	51,000	31,875	25,500	18,500	9,500
	S1	UL	UL	106,000	58,000	94,000	58,000	306,000	204,000	127,500	102,000	74,000	38,000
	SM	UL	UL	79,500	43,500	70,500	43,500	229,500	153,000	95,625	76,500	55,500	28,500
F-1	NS	UL	UL	25,000	15,500	19,000	12,000	100,500	67,000	41,875	33,500	14,000	8,500
	S1	UL	UL	100,000	62,000	76,000	48,000	402,000	268,000	167,500	134,000	56,000	34,000
	SM	UL	UL	75,000	46,500	57,000	36,000	301,500	201,000	125,625	100,500	42,000	25,500
F-2	NS	UL	UL	37,500	23,000	28,500	18,000	151,500	101,000	63,125	50,500	21,000	13,000
	S1	UL	UL	150,000	92,000	114,000	72,000	606,000	404,000	252,500	202,000	84,000	52,000
	SM	UL	UL	112,500	69,000	85,500	54,000	454,500	303,000	189,375	151,500	63,000	39,000
H-1	NS[c]	21,000	16,500	11,000	7,000	9,500	7,000	10,500	10,500	10,000	10,500	7,500	NP
	S1												
H-2	NS[c]	21,000	16,500	11,000	7,000	9,500	7,000	10,500	10,500	10,000	10,500	7,500	3,000
	S1												
	SM												
H-3	NS[c]	UL	60,000	26,500	14,000	17,500	13,000	25,500	25,500	25,500	25,500	10,000	5,000
	S1												
	SM												
H-4	NS[c, d]	UL	UL	37,500	17,500	28,500	17,500	72,000	54,000	40,500	36,000	18,000	6,500
	S1	UL	UL	150,000	70,000	114,000	70,000	288,000	216,000	162,000	144,000	72,000	26,000
	SM	UL	UL	112,500	52,500	85,500	52,500	216,000	162,000	121,500	108,000	54,000	19,500
H-5	NS[c, d]	UL	UL	37,500	23,000	28,500	19,000	72,000	54,000	40,500	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	288,000	216,000	162,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	216,000	162,000	121,500	108000	54,000	27,000
I-1	NS[d, e]	UL	55,000	19,000	10,000	16,500	10,000	54,000	36,000	18,000	18,000	10,500	4,500
	S1	UL	220,000	76,000	40,000	66,000	40,000	216,000	144,000	72,000	72,000	42,000	18,000
	SM	UL	165,000	57,000	30,000	49,500	30,000	162,000	108,000	54,000	54,000	31,500	13,500

[W][S] TABLE 506.2—continued
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET[a, b]

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
I-2	NS[d, f]	UL	UL	15,000	11,000	12,000	NP	36,000	24,000	12,000	12,000	9,500	NP
	S1	UL	UL	60,000	44,000	48,000	NP	144,000	96,000	48,000	48,000	38,000	NP
	SM	UL	UL	45,000	33,000	36,000	NP	108,000	72,000	36,000	36,000	28,500	NP
I-3	NS[d, e]	UL	UL	15,000	10,000	10,500	7,500	36,000	24,000	12,000	12,000	7,500	5,000
	S1	UL	UL	45,000	40,000	42,000	30,000	144,000	96,000	48,000	48,000	30,000	20,000
	SM	UL	UL	45,000	30,000	31,500	22,500	108,000	72,000	36,000	36,000	22,500	15,000
I-4	NS[d, g]	UL	60,500	26,500	13,000	23,500	13,000	76,500	51,000	25,500	25,500	18,500	9,000
	S1	UL	121,000	106,000	52,000	94,000	52,000	306,000	204,000	102,000	102,000	74,000	36,000
	SM	UL	181,500	79,500	39,000	70,500	39,000	229,500	153,000	76,500	76,500	55,500	27,000
M	NS	UL	UL	21,500	12,500	18,500	12,500	61,500	41,000	25,625	20,500	14,000	9,000
	S1	UL	UL	86,000	50,000	74,000	50,000	246,000	164,000	102,500	82,000	56,000	36,000
	SM	UL	UL	64,500	37,500	55,500	37,500	184,500	123,000	76,875	61,500	42,000	27,000
R-1[h]	NS[d]	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
R-2[h]	NS[d]	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	184,500	120,000	76,875	61,500	36,000	21,000
R-3[h]	NS[d]	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S13D												
	S13R												
	S1												
	SM												
((~~R-4[h]~~	~~NS[d]~~	~~UL~~	~~UL~~	~~24,000~~	~~16,000~~	~~24,000~~	~~16,000~~				~~20,500~~	~~12,000~~	~~7,000~~
	~~S13D~~												
	~~S13R~~												
	~~S1~~	~~UL~~	~~UL~~	~~96,000~~	~~64,000~~	~~96,000~~	~~64,000~~				~~82,000~~	~~48,000~~	~~28,000~~
	~~SM~~	~~UL~~	~~UL~~	~~72,000~~	~~48,000~~	~~72,000~~	~~48,000~~				~~61,500~~	~~36,000~~	~~21,000~~))
S-1	NS	UL	48,000	26,000	17,500	26,000	17,500	76,500	51,000	31,875	25,500	14,000	9,000
	S1	UL	192,000	104,000	70,000	104,000	70,000	306,000	204,000	127,500	102,000	56,000	36,000
	SM	UL	144,000	78,000	52,500	78,000	52,500	229,500	153,000	95,625	76,500	42,000	27,000
S-2	NS	UL	79,000	39,000	26,000	39,000	26,000	115,500	77,000	48,125	38,500	21,000	13,500
	S1	UL	316,000	156,000	104,000	156,000	104,000	462,000	308,000	192,500	154,000	84,000	54,000
	SM	UL	237,000	117,000	78,000	117,000	78,000	346,500	231,000	144,375	115,500	63,000	40,500
U	NS[i]	UL	35,500	19,000	8,500	14,000	8,500	54,000	36,000	22,500	18,000	9,000	5,500
	S1	UL	142,000	76,000	34,000	56,000	34,000	216,000	144,000	90,000	72,000	36,000	22,000
	SM	UL	106,500	57,000	25,500	42,000	25,500	162,000	108,000	67,500	54,000	27,000	16,500

For SI: 1 square foot = 0.0929 m^2.

UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

a. See Chapter 4 for specific exceptions to the allowable area in this chapter.

b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

c. New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.

d. The NS value is only for use in evaluation of existing building area in accordance with the *International Existing Building Code*.

e. New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code*.
g. New Group I-4 occupancies see Exceptions 2 and 3 of Section 903.2.6.
h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
i. The maximum allowable area for a single-story nonsprinklered Group U greenhouse is permitted to be 9,000 square feet, or the allowable area shall be permitted to comply with Table C102.1 of Appendix C.

506.2.2 Mixed-occupancy, one-story buildings. The allowable area of a mixed-occupancy building with no more than one *story above grade plane* shall be determined in accordance with the applicable provisions of Section 508.1 based on Equation 5-1 for each applicable occupancy.

506.2.2.1 Group H-2 or H-3 mixed occupancies. For a building containing Group H-2 or H-3 occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.

506.2.3 Single-occupancy, multistory buildings. The allowable area of a single-occupancy building with more than one *story above grade plane* shall be determined in accordance with Equation 5-2:

$$A_a = [A_t + (NS \times I_f)] \times S_a \qquad \textbf{(Equation 5-2)}$$

where:

A_a = Allowable area (square feet).

A_t = Tabular allowable area factor (NS, S13R, S13D or SM value, as applicable) in accordance with Table 506.2.

NS = Tabular allowable area factor in accordance with Table 506.2 for a nonsprinklered building (regardless of whether the building is sprinklered).

I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

S_a = Actual number of building *stories* above grade plane, not to exceed three. For buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.2, use the actual number of building *stories above grade plane*, not to exceed four.

No individual story shall exceed the allowable area (A_a) as determined by Equation 5-2 using the value of $S_a = 1$.

506.2.4 Mixed-occupancy, multistory buildings. Each story of a mixed-occupancy building with more than one *story above grade plane* shall individually comply with the applicable requirements of Section 508.1. For buildings with more than three *stories above grade plane*, the total building area shall be such that the aggregate sum of the ratios of the actual area of each *story* divided by the allowable area of such stories, determined in accordance with Equation 5-3 based on the applicable provisions of Section 508.1, shall not exceed three.

$$A_a = [A_t + (NS \times I_f)] \qquad \textbf{(Equation 5-3)}$$

where:

A_a = Allowable area (square feet).

A_t = Tabular allowable area factor (NS, S13R, S13D or SM value, as applicable) in accordance with Table 506.2.

NS = Tabular allowable area factor in accordance with Table 506.2 for a nonsprinklered building (regardless of whether the building is sprinklered).

I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

Exception: For buildings designed as separated occupancies under Section 508.4 and equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.2, the total building area shall be such that the aggregate sum of the ratios of the actual area of each *story* divided by the allowable area of such stories determined in accordance with Equation 5-3 based on the applicable provisions of Section 508.1, shall not exceed four.

506.2.4.1 Group H-2 or H-3 mixed occupancies. For a building containing Group H-2 or H-3 occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.

506.3 Frontage increase. Every building shall adjoin or have access to a public way to receive an area factor increase based on frontage. Area factor increase shall be determined in accordance with Sections 506.3.1 through 506.3.3.

506.3.1 Minimum percentage of perimeter. To qualify for an area factor increase based on frontage, a building shall have not less than 25 percent of its perimeter on a public way or open space. 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*.

506.3.2 Minimum frontage distance. To qualify for an area factor increase based on frontage, the public way or open space adjacent to the building perimeter shall have a minimum distance (*W*) of 20 feet (6096 mm) measured at right angles from the building face to any of the following:

1. The closest interior lot line.
2. The entire width of a street, alley or public way.
3. The exterior face of an adjacent building on the same property.

Where the value of *W* is greater than 30 feet (9144 mm), a value of 30 feet (9144 mm) shall be used in calculating the building area increase based on frontage, regardless of the actual width of the public way or open space. Where the value of *W* varies along the perimeter of the building, the calculation performed in accordance with Equation 5-5 shall be based on the weighted average calculated in accordance with Equation 5-4.

$W = (L_1 \times w_1 + L_2 \times w_2 + L_3 \times w_3 \ldots)/F$ **(Equation 5-4)**

where:

W (Width: weighted average) = Calculated width of public way or open space (feet).

L_n = Length of a portion of the exterior perimeter wall.

w_n = Width (^{3} 20 feet) of a public way or open space associated with that portion of the exterior perimeter wall.

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

Exception: Where a building meets the requirements of Section 507, as applicable, except for compliance with the minimum 60-foot (18 288 mm) *public way* or *yard* requirement, and the value of *W* is greater than 30 feet (9144 mm), the value of *W* shall not exceed 60 feet (18 288 mm).

506.3.3 Amount of increase. The area factor increase based on frontage shall be determined in accordance with Equation 5-5:

$I_f = [F/P - 0.25]W/30$ **(Equation 5-5)**

where:

I_f = Area factor increase due to frontage.

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

P = Perimeter of entire building (feet).

W = Width of *public way* or open space (feet) in accordance with Section 506.3.2.

SECTION 507
UNLIMITED AREA BUILDINGS

507.1 General. The area of buildings of the occupancies and configurations specified in Sections 507.1 through 507.13 shall not be limited. Basements not more than one story below grade plane shall be permitted.

507.1.1 Accessory occupancies. Accessory occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2, otherwise the requirements of Sections 507.3 through 507.13 shall be applied, where applicable.

507.2 Measurement of open spaces. Where Sections 507.3 through 507.13 require buildings to be surrounded and adjoined by *public ways* and *yards*, those open spaces shall be determined as follows:

1. Yards shall be measured from the building perimeter in all directions to the closest interior *lot lines* or to the exterior face of an opposing building located on the same *lot*, as applicable.
2. Where the building fronts on a *public way*, the entire width of the *public way* shall be used.

507.2.1 Reduced open space. The *public ways* or *yards* of 60 feet (18 288 mm) in width required in Sections 507.3, 507.4, 507.5, 507.6 and 507.12 shall be permitted to be reduced to not less than 40 feet (12 192 mm) in width provided all of the following requirements are met:

1. The reduced width shall not be allowed for more than 75 percent of the perimeter of the building.
2. The *exterior walls* facing the reduced width shall have a *fire-resistance rating* of not less than 3 hours.
3. Openings in the *exterior walls* facing the reduced width shall have opening protectives with a *fire protection rating* of not less than 3 hours.

507.3 Nonsprinklered, one-story buildings. The area of a Group F-2 or S-2 building not more than one *story* in height shall not be limited where the building is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.4 Sprinklered, one-story buildings. The area of a Group A-4 building not more than one *story above grade plane* of other than Type V construction, or the area of a Group B, F, M or S building no more than one story above grade plane of any construction type, shall not be limited where the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

Exceptions:

1. Buildings and structures of Type I or II construction for rack storage facilities that do not have access by the public shall not be limited in height, provided that such buildings conform to the requirements of Sections 507.4 and 903.3.1.1 and Chapter 32 of the *International Fire Code*.
2. The *automatic sprinkler system* shall not be required in areas occupied for indoor participant sports, such as tennis, skating, swimming and equestrian activities in occupancies in Group A-4, provided that all of the following criteria are met:
    2.1. *Exit* doors directly to the outside are provided for occupants of the participant sports areas.
    2.2. The building is equipped with a *fire alarm system* with *manual fire alarm boxes* installed in accordance with Section 907.
    2.3. An *automatic sprinkler system* is provided in storage rooms, press boxes, concession booths or other spaces ancillary to the sport activity space.

507.4.1 Mixed occupancy buildings with Groups A-1 and A-2. Group A-1 and A-2 occupancies of other than Type V construction shall be permitted within mixed occupancy buildings of unlimited area complying with Section 507.4, provided all of the following criteria are met:

1. Group A-1 and A-2 occupancies are separated from other occupancies as required for separated occupancies in Section 508.4.4 with no reduction allowed in the *fire-resistance rating* of the separation based upon the installation of an *automatic sprinkler system*.
2. Each area of the portions of the building used for Group A-1 or A-2 occupancies shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1.
3. *Exit* doors from Group A-1 and A-2 occupancies shall discharge directly to the exterior of the building.

507.5 Two-story buildings. The area of a Group B, F, M or S building not more than two *stories above grade plane* shall not be limited where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.6 Group A-3 buildings of Type II construction. The area of a Group A-3 building not more than one *story above grade plane*, used as a *place of religious worship*, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor *swimming pool* or tennis court of Type II construction, shall not be limited provided all of the following criteria are met:

1. The building shall not have a *stage* other than a *platform*.
2. The building shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. The building shall be surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.7 Group A-3 buildings of Type III and IV construction. The area of a Group A-3 building of Type III or IV construction, with not more than one *story above grade plane* and used as a *place of religious worship*, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor *swimming pool* or tennis court, shall not be limited provided all of the following criteria are met:

1. The building shall not have a *stage* other than a *platform*.
2. The building shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. The assembly floor shall be located at or within 21 inches (533 mm) of street or grade level and all *exits* are provided with ramps complying with Section 1012 to the street or grade level.
4. The building shall be surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.8 Group H-2, H-3 and H-4 occupancies. Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited area buildings containing Group F or S occupancies in accordance with Sections 507.4 and 507.5 and the provisions of Sections 507.8.1 through 507.8.4.

507.8.1 Allowable area. The aggregate floor area of Group H occupancies located in an unlimited area building shall not exceed 10 percent of the area of the building nor the area limitations for the Group H occupancies as specified in Section 506 based on the perimeter of each Group H floor area that fronts on a *public way* or open space.

507.8.1.1 Located within the building. The aggregate floor area of Group H occupancies not located at the perimeter of the building shall not exceed 25 percent of the area limitations for the Group H occupancies as specified in Section 506.

507.8.1.1.1 Liquid use, dispensing and mixing rooms. Liquid use, dispensing and mixing rooms having a floor area of not more than 500 square feet (46.5 m^2) need not be located on the outer perimeter of the building where they are in accordance with the *International Fire Code* and NFPA 30.

507.8.1.1.2 Liquid storage rooms. Liquid storage rooms having a floor area of not more than 1,000 square feet (93 m^2) need not be located on the outer perimeter where they are in accordance with the *International Fire Code* and NFPA 30.

507.8.1.1.3 Spray paint booths. Spray paint booths that comply with the *International Fire Code* need not be located on the outer perimeter.

507.8.2 Located on building perimeter. Except as provided for in Section 507.8.1.1, Group H occupancies shall be located on the perimeter of the building. In Group H-2 and H-3 occupancies, not less than 25 percent of the perimeter of such occupancies shall be an *exterior wall*.

507.8.3 Occupancy separations. Group H occupancies shall be separated from the remainder of the unlimited area building and from each other in accordance with Table 508.4.

507.8.4 Height limitations. For two-*story*, unlimited area buildings, Group H occupancies shall not be located more than one *story above grade plane* unless permitted based on the allowable height and number of *stories* and feet as specified in Section 504 based on the type of construction of the unlimited area building.

507.9 Unlimited mixed occupancy buildings with Group H-5. The area of a Group B, F, H-5, M or S building not more than two *stories above grade plane* shall not be limited where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width, provided all of the following criteria are met:

1. Buildings containing Group H-5 occupancy shall be of Type I or II construction.
2. Each area used for Group H-5 occupancy shall be separated from other occupancies as required in Sections 415.11 and 508.4.
3. Each area used for Group H-5 occupancy shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1 including modifications of Section 506.

   Exception: Where the Group H-5 occupancy exceeds the maximum allowable area, the Group H-5 shall be subdivided into areas that are separated by 2-hour fire barriers.

507.10 Aircraft paint hangar. The area of a Group H-2 aircraft paint hangar not more than one *story above grade plane* shall not be limited where such aircraft paint hangar complies with the provisions of Section 412.5 and is surrounded and adjoined by *public ways* or *yards* not less in width than one and one-half times the *building height*.

507.11 Group E buildings. The area of a Group E building not more than one *story above grade plane*, of Type II, IIIA or IV construction, shall not be limited provided all of the following criteria are met:

1. Each classroom shall have not less than two *means of egress*, with one of the *means of egress* being a direct *exit* to the outside of the building complying with Section 1022.
2. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. The building is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.12 Motion picture theaters. In buildings of Type II construction, the area of a motion picture theater located on the first *story above grade plane* shall not be limited where the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.13 Covered and open mall buildings and anchor buildings. The area of *covered and open mall buildings* and *anchor buildings* not exceeding three *stories* in height that comply with Section 402 shall not be limited.

SECTION 508
MIXED USE AND OCCUPANCY

[S] 508.1 General. 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 the applicable provisions of Section 508.2, 508.3 or 508.4, or a combination of these sections.

Exceptions:

1. Occupancies separated in accordance with Section 510.
2. Where required by Table 415.6.2, areas of Group H-1, H-2 and H-3 occupancies shall be located in a *detached building* or structure.

3. Uses within *live/work units*, complying with Section 419, are not considered separate occupancies.

4. Offices, mercantile, food preparation establishments for off-site consumption, personal care salons or similar uses in Group R *dwelling units*, which are conducted primarily by the occupants of a *dwelling unit* and are secondary to the use of the unit for dwelling purposes, and which do not exceed 500 square feet (46.4 m^2) are not considered a separate occupancy.

[S] 508.2 Accessory occupancies. Accessory occupancies are those occupancies that are ancillary to the main occupancy of the building or portion thereof. Accessory occupancies shall comply with the provisions of Sections 508.2.1 through 508.2.4.

508.2.1 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.

508.2.2 Allowable building height. The allowable height and number of *stories* of the building containing accessory occupancies shall be in accordance with Section 504 for the main occupancy of the building.

508.2.3 Allowable building area. The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for nonsprinklered buildings in Table 506.2 for each such accessory occupancy.

508.2.4 Separation of accessory occupancies. No separation is required between accessory occupancies and the main occupancy.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.

508.3 Nonseparated occupancies. Buildings or portions of buildings that comply with the provisions of this section shall be considered as nonseparated occupancies.

508.3.1 Occupancy classification. Nonseparated occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 that apply to the nonseparated occupancies shall apply to the total nonseparated occupancy area.

508.3.1.1 High-rise buildings. Where nonseparated occupancies occur in a *high-rise building*, the most restrictive requirements of Section 403 that apply to the nonseparated occupancies shall apply throughout the *high-rise building*.

508.3.1.2 Group I-2, Condition 2 occupancies. Where one of the nonseparated occupancies is Group I-2, Condition 2, the most restrictive requirements of Sections 407, 509 and 712 shall apply throughout the fire area containing the Group I-2 occupancy. The most restrictive requirements of Chapter 10 shall apply to the path of egress from the Group I-2, Condition 2 occupancy up to and including the exit discharge.

508.3.2 Allowable building area, height and number of stories. The allowable *building area, height* and number of *stories* of the building or portion thereof shall be based on the most restrictive allowances for the occupancy groups under consideration for the type of construction of the building in accordance with Section 503.1.

508.3.3 Separation. No separation is required between nonseparated occupancies.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from other occupancies contiguous to them in accordance with the requirements of Section 420.

[S] 508.4 Separated occupancies. Buildings or portions of buildings that comply with the provisions of this section shall be considered as separated occupancies.

Exceptions:

1. No separation is required between Group A-2 or A-3 and Groups B or M occupancies when both are protected by an *automatic sprinkler system.*
2. Subject to the approval of the *building official*, unprotected openings are permitted in separations between parking areas and enclosed portions of buildings such as entry lobbies and similar areas provided:

   2.1. The floors of the enclosed *building* with unprotected openings are protected by an *automatic sprinkler system*;

   2.2. The openings are glazed with either tempered or laminated glazing materials;

2.3. When required by the *building official*, the glazing is protected on the parking side with a sprinkler system designed to wet the entire glazed surface; and

2.4. The parking areas are used primarily for passenger loading and unloading and vehicle drive-through uses.

508.4.1 Occupancy classification. Separated occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building. The most restrictive provisions of Chapter 9 that apply to the separate occupancies shall apply to the total nonfire-barrier-separated occupancy areas. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring a fire protection system shall also comply with Section 901.7.

508.4.2 Allowable building area. In each *story*, the *building area* shall be such that the sum of the ratios of the actual *building area* of each separated occupancy divided by the allowable *building* area of each separated occupancy shall not exceed 1.

508.4.3 Allowable building height and number of stories. Each separated occupancy shall comply with the *building height limitations* and *story* limitations based on the type of construction of the building in accordance with Section 503.1.

Exception: Special provisions of Section 510 shall permit occupancies at *building heights* and number of *stories* other than provided in Section 503.1.

508.4.4 Separation. Individual occupancies shall be separated from adjacent occupancies in accordance with Table 508.4.

[W] 508.4.4.1 Construction. Required separations shall be *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, so as to completely separate adjacent occupancies. Mass timber elements serving as fire barriers or horizontal assemblies to separate occupancies in Type IV-B or IV-C construction shall be separated from the interior of the building with an approved thermal barrier consisting of a minimum of 1/2 inch (12.7 mm) gypsum board or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.

[S] TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)[f]

OCCUPANCY	A, E		B[e]		I-1[a], I-3, I-4		I-2		R[a]		F-2, S-2[b], U		((B[e],)) F-1, ((M,)) S-1		M		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	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	1	2	2	NP	1	2	N	1	1	2	1	2	NP	NP	3	4	2	3	2	NP
B[e]	—	—	N	N	1	2	2	NP	1	2	N	N	1	2	N	N	NP	NP	2	3	1	2	1	NP
I-1[a], I-3, I-4	—	—	—	—	N	N	2	NP	1	NP	1	2	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	—	—	—	—	—	—	N	N	2	NP	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R[a]	—	—	—	—	—	—	—	—	N	N	1[c]	2[c]	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2[b], U	—	—	—	—	—	—	—	—	—	—	N	N	1	2	1	2	NP	NP	3	4	2	3	2	NP
((B[e],)) F-1, ((M,)) S-1	—	—	—	—	—	—	—	—	—	—	—	—	N	N	N	N	NP	NP	2	3	1	2	1	NP
M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP
H-1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1[d]	NP	1	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

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. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but not to less than 1 hour.

c. See Section 406.3.2.

d. Separation is not required between occupancies of the same classification.

e. See Section 422.2 for ambulatory care facilities.

f. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring fire protection systems shall also comply with Section 707.3.10 and Table 707.3.10 in accordance with Section 901.7.

SECTION 509
INCIDENTAL USES

509.1 General Incidental uses located within single occupancy or mixed occupancy buildings shall comply with the provisions of this section. Incidental uses are ancillary functions associated with a given occupancy that generally pose a greater level of risk to that occupancy and are limited to those uses listed in Table 509.

Exception: Incidental uses within and serving a *dwelling unit* are not required to comply with this section.

[F] TABLE 509
INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
[S] Stationary storage battery systems having an energy capacity greater than the threshold quantity specified in Table 1206.2 of the *International Fire Code*	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of NFPA 70 for protection and separation requirements.
[W] Dry type transformers over 112.5 kVA and required to be in a fire-resistance-rated room in accordance with Seattle Electrical Code Section 450.21 (B)[1]	1 hour or provide automatic sprinkler system
Elevator control and machine rooms	See Section 3020.4

For SI: 1 square foot = 0.0929 m^2, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m^3.

[1] Dry type transformers rated over 35,000 volts and oil-insulated transformers shall be installed in a transformer vault complying with Section 430 and the Seattle Electrical Code.

509.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1. Incidental uses shall be included in the building occupancies within which they are located.

Interpretation I509.2: For the purpose of this section, occupied roofs are considered floors used for human occupancy if the occupant load of the roof is ten or more on a building not equipped with an *automatic sprinkler system* or where the occupant load is 50 or more on the roof of a building that is equipped with an *automatic sprinkler system*.

[S] 509.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located. Incidental uses that occupy more than 10 percent of the *building area* of the *story* in which they are located shall comply with either Table 509 or Section 508.4, whichever requires a greater separation.

509.4 Separation and protection. The incidental uses listed in Table 509 shall be separated from the remainder of the building or equipped with an *automatic sprinkler system*, or both, in accordance with the provisions of that table.

509.4.1 Separation. Where Table 509 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the *building* by a *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both. Construction supporting 1-hour *fire barriers* or *horizontal assemblies* used for incidental use separations in buildings of Type IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.

[W] 509.4.1.1 Type IV-B and IV-C construction. Where Table 509 specifies a fire-resistance-rated separation, mass timber elements serving as fire barriers or a horizontal assembly in Type IV-B or IV-C construction shall be separated from the interior of the incidental use with an approved thermal barrier consisting of a minimum of 1/2 inch (12.7 mm) gypsum board or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.

509.4.2 Protection. Where Table 509 permits an *automatic sprinkler system* without a *fire barrier*, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke. The walls shall extend from the top of the foundation or floor assembly below to the underside of the ceiling that is a component of a fire-resistance-rated floor assembly or roof assembly above or to the underside of the floor or roof sheathing, deck or slab above. Doors shall be self- or automatic-closing upon detection of smoke in accordance with Section 716.2.6.6. Doors shall not have air transfer openings and shall not be undercut in excess of the clearance permitted in accordance with NFPA 80. Walls surrounding the incidental use shall not have air transfer openings unless provided with smoke dampers in accordance with Section 710.8.

509.4.2.1 Protection limitation. Where an *automatic sprinkler system* is provided in accordance with Table 509, only the space occupied by the incidental use need be equipped with such a system.

SECTION 510
SPECIAL PROVISIONS

510.1 General. The provisions in Sections 510.2 through ((~~510.9~~)) 510.10 shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable *building heights and areas* of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in this section for such condition and other applicable requirements of this code. The provisions of Sections 510.2 through ((~~510.8~~)) 510.7 are to be considered independent and separate from each other.

Interpretation I510.1: Sections 510.2 through 510.7 are not permitted to be used in combination with each other. Sections 510.8 through 510.10 are permitted to be used in combination with Section 510.2.

[W][S] 510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. Where vertical offsets are provided as part of a horizontal assembly, the vertical offset and the structure supporting the vertical offset shall have a *fire-resistance rating* of not less than 3 hours.
2. The building below, including the *horizontal assembly*, is of Type IA construction.
3. *Shaft*, *stairway*, *ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.

   Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

   1. The building above the *horizontal assembly* is not required to be of Type I construction;
   2. The enclosure connects fewer than four *stories*; and

3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.

4. Interior exit stairways located within the Type IA building are permitted to be of combustible materials where both of the following requirements are met:

4.1. The building above the Type IA building is of Type III, IV, or V construction.

4.2. The stairway located in the Type IA building is enclosed by 3-hour *fire-resistance-rated* construction with opening protectives in accordance with Section 716.

((~~4~~)) 5. The building or buildings above the *horizontal assembly* shall be permitted to have ((~~multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.~~)) any of the following occupancies:

5.1. One or more Group A occupancy uses, each with an occupant load of less than 300;

5.2. Group B;

5.3. Group I-1, Condition 2 licensed care facilities and residential treatment facilities;

5.4. Group M;

5.5. Group R;

5.6. Group S-2 parking garage used for the parking and storage of private motor vehicles; and

5.7. Uses incidental to the operation or serving occupants of the *building* (including entry lobbies, mechanical rooms, storage areas and similar uses).

((~~5~~)) 6. The building below the *horizontal assembly* ((~~shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be~~)) is permitted to be any occupancy allowed by this code except Group H.

((~~6~~)) 7. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

8. All portions of the *buildings* above and below the three-hour *horizontal assembly* shall be protected throughout with an *automatic sprinkler system* that complies with Section 903.3.1.1.

9. Occupied floors shall be not more than 75 feet above the lowest level of fire department vehicle access.

Interpretation I510.2: For the purpose of this item, occupied roof decks are considered floors used for human occupancy if the occupant load of the deck is 10 or more on the roof of a building not equipped with an *automatic sprinkler system* or where the occupant load is 50 or more on the roof of a *building* that is equipped with an *automatic sprinkler system.*

10. Interior exit stairways serving more than 6 *stories above grade plane* shall be pressurized in accordance with Section 909.20.6 for low-rise stairways.

510.3 Group S-2 enclosed parking garage with Group S-2 open parking garage above. A Group S-2 enclosed parking garage with not more than one *story* above *grade plane* and located below a Group S-2 *open parking garage* shall be classified as a separate and distinct building for the purpose of determining the type of construction where all of the following conditions are met:

1. The allowable area of the building shall be such that the sum of the ratios of the actual area divided by the allowable area for each separate occupancy shall not exceed 1.
2. The Group S-2 enclosed parking garage is of Type I or II construction and is at least equal to the *fire-resistance* requirements of the Group S-2 *open parking garage*.
3. The height and the number of tiers of the Group S-2 *open parking garage* shall be limited as specified in Table 406.5.4.
4. The floor assembly separating the Group S-2 enclosed parking garage and Group S-2 *open parking garage* shall be protected as required for the floor assembly of the Group S-2 enclosed parking garage. Openings between the Group S-2 enclosed parking garage and Group S-2 *open parking garage*, except *exit* openings, shall not be required to be protected.
5. The Group S-2 enclosed parking garage is used exclusively for the parking or storage of private motor vehicles, but shall be permitted to contain an office, waiting room and toilet room having a total area of not more than 1,000 square feet (93 m^2) and mechanical equipment rooms incidental to the operation of the building.

[S] 510.4 Parking beneath Group R. Where a maximum one *story above grade plane* Group S-2 parking garage, enclosed or open, or combination thereof, of Type I construction or open of Type IV-HT construction, with grade entrance, is provided under a building of Group R, the number of *stories* to be used in determining the minimum type of construction shall be measured from the floor above such a parking area. The floor assembly between the parking garage and the Group R above shall comply with the type of construction required for the parking garage and shall also provide a *fire-resistance rating* not less than the mixed occupancy separation required in Section 508.4. For purposes of this section, the Group R occupancy shall be no more than four *stories* in height. *

((~~510.6~~)) 510.5 Group R-1 and R-2 buildings of Type IIA construction. The height limitation for buildings of Type IIA construction in Groups R-1 and R-2 shall be increased to nine *stories* and 100 feet (30 480 mm) where the building is separated by not less than 50 feet (15 240 mm) from any other building on the *lot* and from *lot lines*, the *exits* are segregated in an area enclosed by a 2-hour fire-resistance-rated *fire wall* and the first floor assembly has a *fire-resistance rating* of not less than 1-1/2 hours.

((~~510.7~~)) 510.6 Open parking garage beneath Groups A, I, B, M and R. *Open parking garages* constructed under Groups A, I, B, M and R shall not exceed the height and area limitations permitted under Section 406.5. The height and area of the portion of the building above the *open parking garage* shall not exceed the limitations in Section 503 for the upper occupancy. The height, in both feet and *stories*, of the portion of the building above the *open parking garage* shall be measured from *grade plane* and shall include both the *open parking garage* and the portion of the building above the parking garage.

((~~510.7.1~~)) 510.6.1 Fire separation. *Fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711 between the parking occupancy and the upper occupancy shall correspond to the required *fire-resistance rating* prescribed in Table 508.4 for the uses involved. The type of construction shall apply to each occupancy individually, except that structural members, including main bracing within the open parking structure, which is necessary to support the upper occupancy, shall be protected with the more restrictive fire-resistance-rated assemblies of the groups involved as shown in Table 601. *Means of egress* for the upper occupancy shall conform to Chapter 10 and shall be separated from the parking occupancy by *fire barriers* having not less than a 2-hour *fire-resistance rating* as required by Section 707 with *self-closing* doors complying with Section 716 or *horizontal assemblies* having not less than a 2-hour *fire-resistance rating* as required by Section 711, with *self-closing* doors complying with Section 716. *Means of egress* from the *open parking garage* shall comply with Section 406.5.

((~~510.8~~)) 510.7 Group B or M buildings with Group S-2 open parking garage above. Group B or M occupancies located below a Group S-2 open parking garage of a lesser type of construction shall be considered as a separate and distinct building from the Group S-2 *open parking garage* for the purpose of determining the type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 2 hours.
2. The occupancies in the building below the *horizontal assembly* are limited to Groups B and M.
3. The occupancy above the *horizontal assembly* is limited to a Group S-2 *open parking garage*.
4. The building below the *horizontal assembly* is of Type IA construction.

   Exception: The building below the *horizontal assembly* shall be permitted to be of Type IB or II construction, but not less than the type of construction required for the Group S-2 *open parking garage* above, where the building below is not greater than *one story* in height above grade plane.
5. The height and area of the building below the *horizontal assembly* does not exceed the limits set forth in Section 503.
6. The height and area of the Group S-2 *open parking garage* does not exceed the limits set forth in Section 406.5. The height, in both feet and *stories*, of the Group S-2 *open parking garage* shall be measured from *grade plane* and shall include the building below the *horizontal assembly*.
7. *Exits* serving the Group S-2 *open parking garage* discharge directly to a street or *public way* and are separated from the building below the *horizontal assembly* by 2-hour *fire barriers* constructed in accordance with Section 707 or 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both.

((~~510.9~~)) 510.8 Multiple buildings above a horizontal assembly. Where two or more buildings are provided above the *horizontal assembly* separating a Group S-2 parking garage or building below from the buildings above in accordance with the special provisions in Section 510.2, 510.3 or ((~~510.8~~)) 510.7, the buildings above the *horizontal assembly* shall be regarded as separate and distinct buildings from each other and shall comply with all other provisions of this code as applicable to each separate and distinct building.

[W][S] ((~~510.5~~)) 510.9 Group R-1 and R-2 buildings of Type IIIA construction. ((~~The height limitation for~~)) For buildings of Type IIIA construction in Groups R-1 and R-2 the maximum allowable height in Table 504.4 shall be increased ((~~to six *stories* and 75 feet (22 860 mm)~~)) by one story where the first floor assembly above the *basement* has a *fire-resistance rating* of not less than 3 hours and the floor area is subdivided by 2-hour fire-resistance-rated *fire walls* into areas of not more than 3,000 square feet (279 m^2). **

510.10 Group R-2 buildings of Type IIIA construction. The height limitation for *buildings* of Type IIIA construction in Group R-2 shall be increased to six *stories* where all of the following conditions are met:

1. The first story of Type IIIA construction is separated from stories above with a *horizontal assembly* having a *fire-resistance rating* of not less than 2 hours. Fire-resistance rated mass timber is permitted in the horizontal assembly and its supporting structure.

2. All stories of Type IIIA construction greater than 6,000 gross square feet shall be subdivided into compartments, by 2-hour fire-resistance rated *fire walls*, with areas of not more than 12,000 gross square feet.
3. Each compartment shall have an enclosed *exit stairway*, and a standpipe in accordance with Section 905.
4. Unprotected vertical openings, including unenclosed interior *exit access stairways*, shall not penetrate floor/ceiling assemblies between stories of Type IIIA construction or between stories of Type IIIA and Type IA construction.
5. Mezzanines shall not be allowed in any story of the Type IIIA construction.
6. The maximum total design *dead load* shall be 50 psf for all roof areas above the sixth story of Type IIIA construction.

Note: The *dead load* shall be calculated as specified in Chapter 2 and Section 1607.13.3.1.

Note: The maximum total design *dead load* of 50 psf is permitted to be applied over the entire roof area above the sixth story of Type IIIA construction.