

Houston Amendments to The 2012 International Building Code



Effective ****

CHAPTER 2 DEFINITIONS

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the *International Energy Conservation Code, International Fuel Gas Code, City of Houston Electrical Code, International City of Houston Fire Code, International City of Houston Mechanical Code or International City of Houston Plumbing Code, City of Houston Residential Code, City of Houston Residential Energy Conservation Code, or City of Houston Commercial Energy Conservation Code*, such terms shall have the meanings ascribed to them as in those codes.

SECTION 202 DEFINITIONS

BUILDING OFFICIAL. ~~The officer or other designated authority charged with the administration and enforcement of this code~~ jurisdiction's Director of Public Works and Engineering, or a duly authorized representative.

CITY CODE. The Code of Ordinances, Houston, Texas.

DANGEROUS BUILDING CODE. The ordinances of this jurisdiction relating to abatement of dangerous buildings.

ELECTRICAL CODE. The National Electrical Code promulgated by the National Fire Protection Association, as adopted by this jurisdiction, and the City of Houston Electrical Code. See Section 101.4.

EXISTING STRUCTURE (For Chapter 34). A structure erected prior to the date of adoption of ~~the appropriate this~~ code, or one for which a legal building permit has been issued.

FIRE CODE. The City of Houston Fire Code, as adopted by this jurisdiction. See Section 101.4.

FIRE CODE OFFICIAL. The fire marshal or a duly authorized representative charged with the administration and enforcement of the Fire Code.

FIRE MARSHAL. The fire marshal of this jurisdiction or such other person as the fire chief of this jurisdiction may designate.

FULL CUTOFF FIXTURE. A light fixture that prevents more than ten percent (10%) of the light it

emits from emitting at all angles beginning at 80 degrees up from the nadir to less than 90 degrees, and no light (0%) from emitting at 90 degrees (horizontal plane) and above. This applies to all horizontal angles around the light fixture."

INTERNATIONAL ENERGY CONSERVATION CODE. The City of Houston Residential Energy Conservation Code or the City of Houston Commercial Energy Conservation Code, both based on the International Energy Conservation Code, as adopted by the State of Texas or on an alternate code that has been determined to be more stringent than the International Energy Conservation Code, as provided in Chapter 388 of the Texas Health & Safety Code, with amendments adopted by this jurisdiction. See Section 101.4.

INTERNATIONAL FIRE CODE. The City of Houston Fire Code, as adopted by this jurisdiction. See Section 101.4.

INTERNATIONAL FUEL GAS CODE. The City of Houston Plumbing Code, as adopted by this jurisdiction. See Section 101.4.

INTERNATIONAL MECHANICAL CODE. The City of Houston Mechanical Code as adopted by this jurisdiction. See Section 101.4.

INTERNATIONAL PLUMBING CODE. The City of Houston Plumbing Code, as adopted by this jurisdiction. See Section 101.4.

INTERNATIONAL RESIDENTIAL CODE. The City of Houston Residential Code, based on the International Residential Code for One- and Two-Family Dwellings, as adopted by the State of Texas in Subchapter G of Chapter 214 of the Texas Local Government Code, with amendments adopted by this jurisdiction. See Section 101.2.

MECHANICAL CODE. The City of Houston Mechanical Code, as adopted by this jurisdiction. See Section 101.4.3.-

OPEN BUILDING (For Chapter 9). A building having each wall at least 80 percent open.

PLUMBING CODE. The City of Houston Plumbing Code, as adopted by this jurisdiction. See Section 101.4.4.

RESIDENTIAL CODE. The City of Houston Residential Code, based on the International Residential Code for One- and Two-Family Dwellings, as adopted by the State of Texas in Subchapter G of Chapter 214 of the Texas Local Government Code, including amendments adopted by this jurisdiction. See Section 101.2.

SIGN CODE. The *Houston Sign Code*, Chapter 46 of this code, which is published as a separate document.

STAIRWAY. One or more flights of *stairs*, either exterior or interior, with the necessary landings and platforms connecting them, to form a continuous and uninterrupted passage from one level to another. *Stairs or ladders used only to attend equipment or to access an attic or window well are not considered as a stairway.*

TOWER STRUCTURE. A structure other than a building as defined previously in this chapter that has a height normally greater than its largest horizontal dimension. Examples of tower structures include antenna supports, chimneys, tank supports, sign supports, equipment supports and other structures as determined by the building official.

TOWNHOUSE. A single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides, *where units are separated by a property line.*

TRANSIT SHED. A covered structure erected on a wharf or quay for the temporary storage of goods in transit between ship and land carrier or warehouse.

VALUATION. The total cost of construction to the end user, excluding the land purchase costs and the overhead attributed to the land purchase. The value of donated goods and services is included.

WORK OF ART. Paintings, mural decorations, stained glass, statues, bas-reliefs or other sculptures, monuments, fountains, arches or other structures of a permanent or temporary character intended for ornament or commemoration.

*{**EDITORIAL NOTE:** ALL OTHER PORTIONS OF **SECTION 202** TO REMAIN AS SET FORTH IN THE *2012 INTERNATIONAL BUILDING CODE.*}

CHAPTER 3

USE AND OCCUPANCY CLASSIFICATION

[F] 307.1 High-Hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas constructed and located as required in Section 414. Hazardous uses are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the *International Fire Code*. Hazardous materials stored, or used on top of roofs or canopies shall be classified as outdoor storage or use and shall comply with the *International Fire Code*.

Exceptions: The following shall not be classified in Group H, but shall be classified in the occupancy that they most nearly resemble.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 NFPA 33, NFPA 34 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1- hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication in facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *International Mechanical Code*.
10. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building materials.
11. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.
12. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.

13. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.
14. Any building owned by the jurisdiction, located on any city airport, that is leased and used by a certificated air carrier for the in-transit storage of hazardous materials for a period of time that does not exceed seventy-two hours from the time such hazardous material is placed in the building until it is permanently removed.

NOTES:

1. Certificated air carrier is defined as: a U.S. or foreign airline operating scheduled or non-scheduled commercial services pursuant to certificates or exemptions issued by the United States Department of Transportation pursuant to 49 USC Sections 40109, 41102, 41103, or 41302, and certificates or exemptions issued by the United States Federal Aviation Administration pursuant to 14 CFR Parts 121, 125, 129 or 135.
2. City airport is defined in Chapter 9 of the City Code.
3. In-transit storage is defined as: the storage of materials which will be on-loaded onto or off-loaded from an aircraft owned, leased or operated by a certificated air carrier.

307.1.1 Hazardous materials. Hazardous materials in any quantity shall conform to the requirements of this code, including Section 414, and the *International Fire Code*.

Exception: Hazardous materials stored in any building exempted pursuant to Section 307.1, Exception 16.

312.2 Fences.

312.2.1 Location. Fence location is not restricted on property, but its foundation shall be subject to the same regulations on extensions onto public property as building foundations.

312.2.2 Barbed wire. Barbed wire for fences shall be allowed only 6 feet above ground except as otherwise allowed by the *City Code*.

CHAPTER 4

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

406.1.2 Area increase. Group U occupancies used for the storage of private or pleasure-type motor vehicles where no repair work is completed or fuel is dispensed are permitted to be 3,000 square feet (279 m²), when the following provisions are met:

1. For a mixed occupancy building, the exterior wall and opening protection for the Group U portion of the building shall be as required for the major occupancy of the building. For such a mixed occupancy building, the allowable floor area of the building shall be as permitted for the major occupancy contained therein.
2. For a building containing only a Group U occupancy, the exterior wall shall not be required to have a fire-resistance rating and the area of openings shall not be limited when the fire separation distance is 5 feet (1524 mm) or more.

Exception: Roofs of open non-combustible carports may extend to a point two feet from the property line.

More than one 3,000-square-foot (279 m²) Group U occupancy shall be permitted to be in the same building, provided each 3,000 square-foot (279 m²) area is separated by fire walls complying with Section 705.

406.1.4 Separation. Separations shall comply with the following:

1. The private garage shall be separated from the dwelling unit and its attic area by means of a minimum 1/2-inch (12.7 mm) gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8-inch Type X gypsum board or equivalent. Door openings between a private garage and the *dwelling unit* shall be equipped with either solid wood doors, or solid or honeycomb core steel doors not less than 1 3/8 inches (34.9 mm) thick, or doors in compliance with Section 716.5.3. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Doors shall be *self-closing* and self-latching. Attic disappearing stairs may be installed in the garage ceiling provided the exposed panel is not less than 3/8-inch thick fire retardant-treated plywood, covered with a minimum of 16 gage sheet metal, untreated plywood protected with 1/2 inch thick gypsum board, or untreated plywood protected with intumescent paint. In all cases, the opening protection material is applied to the garage side of the plywood.
2. Ducts in a private garage and ducts penetrating the walls or ceilings separating the dwelling unit from the garage shall be constructed of a minimum 0.019-inch (0.48 mm) sheet steel and shall have no openings into the garage.
3. A separation is not required between a Group R-3 and U carport, provided the carport is entirely open on two or more sides and there are not enclosed areas above.

406.2.11 Garage screening. Any part of an abutting development, as defined by section 42-1 of the City of Houston Code of Ordinances, used as a parking garage structure shall provide an exterior cover for each floor of the structure where parking occurs that directly faces property in use for or restricted to single family residential use. The exterior cover shall be made of an opaque surface or screen mesh material of sufficient rating to block headlights as defined in this Code. The exterior cover shall be at least 42 inches in height measured from the finished floor where parking occurs and shall not be required on any floor of the parking garage structure which has a finished floor over 50 feet in height from grade. For ramps and other sloped surfaces, the exterior cover shall be positioned to block headlights from emitting any light into adjacent properties in use for or restricted to single-family residential use.

412.7.3 Means of egress. The *means of egress* from *heliports* and *helistops* shall comply with the provisions of Chapter 10, except no stairwell, stairway, guardrail or other structure shall be required or allowed to penetrate the take-off and landing area specified for the helistop. All landings located on buildings or structures shall have two or more *means of egress*. For landing areas less than 60 feet (18 288 mm) in length, or less than 2,000 square feet (187 m²) in area, the second *means of egress* may be a fire escape, *alternating tread device* or ladder leading to the floor below.

SECTION 425

EGRESS PROVISIONS FOR CERTAIN DAYCARE AND EDUCATIONAL OCCUPANCIES

425.1 Specific requirements. Daycare and educational occupancies shall not allow children of second grade or less above the level of exit discharge unless the following provisions are met.

1. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, and
2. When children above the second grade are located on the same level, the children of the second grade or less shall have at least two exits for the exclusive use of those children.

SECTION 426

REUSE OF BUILDING MATERIALS

426.1 Reuse of building materials. Reuse of building materials shall be allowed in accordance with Appendix R of this code.

CHAPTER 5

GENERAL BUILDING HEIGHTS AND AREAS

[F] 501.2 Identifying Number Address—identification. New and existing buildings under construction shall be provided with *approved* address numbers or letters. Each character shall be not less than 4 inches (102 mm) in height and not less than 0.5 inch (12.7 mm) in width. They shall be installed on a contrasting background and be plainly visible from the street or road fronting the property. When required by the fire code official, address numbers 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 numbers shall be maintained.

All new and existing buildings are required to be numbered as provided in Article V of Chapter 10 of the City Code.

TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A, E ^e		I-1, I-3, I-4		I-2		R ^a		F-2, S-2 ^b , U		B, F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E ^e	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1, I-3, I-4	-	-	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	-	-	-	-	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	-	-	-	-	-	-	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F2, S-2 ^b , U	-	-	-	-	-	-	-	-	N	N	1	2	NP	NP	3	4	2	3	2	NP
B, F-1, M, S-1	-	-	-	-	-	-	-	-	-	-	N	N	NP	NP	2	3	1	2	1	NP
H-1	-	-	-	-	-	-	-	-	-	-	-	-	N	NP	NP	NP	NP	NP	NP	NP
H-28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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 to not less than 1 hour.
- c. See Section 406.3.4.
- d. Separation is not required between occupancies of the same classification.
- e. Daycare facilities shall be separated from assembly areas where alcohol is served.

510.1 General. The provisions in Sections 510.2 through 510.10 ~~510.9~~ 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 510.10 ~~510.8~~ are to be considered independent and separate from each other.

510.9 Basement and first story of open parking garages. Other provisions of this code notwithstanding, a basement or first story located below an open parking garage may be considered as a separate and distinct building for the purpose of occupancy, area limitation and type of construction, when the basement or first story is separated from the open parking garage above with a three-hour occupancy separation and the basement and first floor are protected throughout by an automatic sprinkler system.

*{EDITORIAL NOTE: RENUMBER 510.9 TO 510.10}

SECTION 511 **TRANSIT SHEDS**

511.1 The area of a Type IIB building meeting the definition of a “transit shed” may be increased to 250,000 square feet, provided there is no other building located closer than 200 feet to the building, and there is a paved access road at least 60 feet in width on all sides of the building.

SECTION 512 **FOUNDATION ELEVATION**

512.1 General. All new buildings constructed within this jurisdiction shall have the finished floor of the building not less than 12 inches above the nearest sanitary sewer manhole rim of the sewer connected to the building, or, where no sewer is available, the finished floor shall not be less than 4 inches above the crown of the street.

Exception: Buildings located in annexed subdivisions where the following conditions exist:

1. The subdivision was platted and recorded prior to annexation;
2. The sanitary sewer system for the subdivision was installed prior to annexation; and
3. The drainage piping from a building meets the requirements of Section 710 of the *Plumbing Code*.

NOTE: When a greater elevation is required by Chapter 19 of the *City Code*, then Chapter 19 shall govern.

512.2 Plans and applications. All construction plans and applications submitted for

construction, sewer connections or septic systems shall reflect the elevations of the finished floor of the building and the elevation of the nearest manhole rim of a sanitary sewer connected to the building or crown of the street, whichever is applicable.

512.3 Damage risk. All permits for connection shall be issued on the condition that the owner take all the risk of damage that may result from water backing up into the premises from the sewer.

512.4 Existing structures. When an existing structure is required to connect with a public or private sewer it shall have the finished floor a minimum of 12 inches above the nearest sanitary sewer manhole rim of a sewer connected to the building.

Exception: Where the public or private sewer is not of sufficient depth, or where structures required to be connected to the sewer cannot meet the minimum requirements of this section and other ordinances, the building official may authorize the issuance of a permit for an alternate method of construction or installation when this will not be detrimental to the health, welfare, and safety of the public.

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CHAPTER 6 TYPES OF CONSTRUCTION

SECTION 603

COMBUSTIBLE MATERIAL IN TYPE I AND II CONSTRUCTION

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. *Fire-retardant-treated wood* shall be permitted in:

- 1.1 Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
- 1.2 Nonbearing *exterior walls* where fire-resistance rated construction is not required.
- 1.3 Roof construction, including girders, trusses, framing and decking.

Exception: In buildings of Type IA construction exceeding two stories above *grade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).

- 1.4 Roof structures such as walkways, decks, fences, flower boxes or similar appendages.

*{EDITORIAL NOTE: ALL OTHER PORTIONS OF 603.1 REMAIN AS SET FORTH IN THE 2012 IBC}

CHAPTER 7

FIRE AND SMOKE PROTECTION FEATURES

714.1.1 Ducts and air transfer openings. Penetrations of fire-resistance-rated walls by ducts that are not protected with *dampers* shall comply with Sections 714.2 through 714.3.3. Penetrations of *horizontal assemblies* not protected with a shaft as permitted by Section 717.6. and not required to be protected with fire *dampers* by other sections of this code, shall comply with Sections 714.4 through 714.4.2.2. Ducts and air transfer openings that are protected with *dampers* shall comply with Section 717.

Penetrations may be made in gypsum wallboard membranes for one-hour protection for bathroom and clothes dryer exhaust ducts without fire dampers provided:

1. A minimum of 0.019-inch (26 gauge) steel ducts are used continuously from the opening to the exterior or into a rated shaft.
2. Voids around the duct penetration shall be sealed with approved materials to prevent the passage of flame.
3. The maximum size of the bathroom fan assembly shall be 100 square inches.
4. The maximum size of the clothes dryer duct shall be 20 square inches.

717.1.1 Ducts that penetrate fire-resistance-rated assemblies without dampers. Ducts that penetrate fire resistance-rated assemblies and are not required by this section to have *dampers* shall comply with the requirements of Sections 714.2 through 714.3.3. Ducts that penetrate *horizontal assemblies* not required to be contained within a shaft and not required by this section to have *dampers* shall comply with the requirements of Sections 714.4 through 714.4.2.2.

Penetrations may be made in gypsum wallboard membranes for one-hour protection for bathroom and clothes dryer exhaust ducts without fire dampers provided:

1. A minimum of 0.019-inch (26 gauge) steel ducts are used continuously from the opening to the exterior or into a rated shaft.
2. Voids around the duct penetration shall be sealed with approved materials to prevent the passage of flame.
3. The maximum size of the bathroom fan assembly shall be 100 square inches.
4. The maximum size of the clothes dryer duct shall be 20 square inches.

716.4 Access and identification. Fire and smoke dampers shall be provided with an approved means of access, which is large enough to permit inspection and maintenance of the damper and its operating parts in accordance with the *Mechanical Code*. The access shall not affect the integrity of fire-resistance-rated assemblies. The access openings shall not reduce the fire

resistance rating of the assembly. Access points shall be permanently identified on the exterior of the duct and at ceiling level by a label having letters not less than 0.5 inch (12.7 mm) in height reading: FIRE/SMOKE DAMPER, SMOKE DAMPER or FIRE DAMPER. Access doors in ducts shall be tight fitting and suitable for the required duct construction.

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CHAPTER 9 FIRE PROTECTION SYSTEMS

901.4 Threads. Threads provided for fire department connections to sprinkler systems, standpipes, yard hydrants or any other fire hose connection shall be ~~compatible with the connections used by the local fire department~~ National Standard hose threads.

901.5 Acceptance tests. Fire protection systems shall be tested in accordance with the requirements of this code and the *International Fire Code*. When required, the tests shall be conducted in the presence of the building official. Tests required by this code, the *International Fire Code* and the standards listed in this code shall be conducted at the expense of the owner or the owner's representative. It shall be unlawful to occupy portions of a structure until the required fire protection systems within that portion of the structure have been tested and approved.

The location of all fire department connections shall be approved by the fire marshal. Inspection of fire-extinguishing systems shall be conducted by the fire marshal, and such inspection and reports shall be forwarded to the building official for posting to occupancy records.

Exception: The building official shall have the authority to issue a temporary certificate of occupancy for the use of a portion or portions of a building prior to the completion of the entire structure.

901.6.2 Fire alarm systems. ~~Fire alarm systems required by the provisions of Section 907.2 of this code and Sections 907.2 and 907.9 of the *International Fire Code* shall be monitored by an approved supervising station in accordance with Section 907.6.5.~~

Exceptions:

1. Single- and multiple-station smoke alarms required by Section 907.2.11.
2. Smoke detectors in Group 1-3 occupancies.
3. Supervisory service is not required for *automatic sprinkler systems* in one- and two-family dwellings.

901.9 Fire pumps. Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency, and shall not deliver less than the required fire flow and pressure in accordance with the listing. Such pumps shall be automatic operation. (See the *Electrical Code* for additional requirements.) When such pumps are not approved for direct connection to the city main, the source of supply for such pumps shall be a minimum 2500-gallon suction tank served from the city main.

901.10 Outside sprinkler control valve. Outside control in the form of a wall post indicator valve or post indicator valve shall be provided for each sprinkler system. An indicating-type gate valve shall be required when sprinkler systems are supplied by the standpipe system.

901.11 Two-way standpipe connections. Class I and Class III standpipe systems shall be equipped with a two-way fire department inlet connection. Systems with three or more standpipes shall be provided with not less than two two-way fire department inlet connections.

901.12 Fire department connections. The location of all FDC (Fire Department Connections) shall be approved by the fire marshal, and all such hose connections shall be 2.5 inch.

IF] 903.2 Where required. Approved *automatic sprinkler systems* in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12.

Exceptions:

2.I Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines. provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or not less than 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both.

2.II In other than Group H occupancies, a sprinkler system shall not be required in open buildings.

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

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

Exception: In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one or more fire fighters of this jurisdiction will be present on the premises at all times when the amusement occupancy is open for use. The fire marshal shall promulgate regulations regarding the qualifications, deployment and numbers of fire fighters, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The jurisdiction shall not be obligated to provide fire fighters for this purpose. See the *Fire Code* for applicable fees and service conditions.

[F] 903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings floor areas with a Group R fire area.

Exception: One- or two-family dwellings.

[F] 903.3.1.1.1 Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire

detection system, in accordance with Section 907.2, that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance-rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the fire-code building official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a *fire resistance rating* of not less than 2 hours.
4. Rooms or areas that are of noncombustible construction with wholly noncombustible contents.
5. Fire service access elevator machine rooms and machinery spaces.
6. Machine rooms and machinery spaces associated with occupant evacuation elevators designed in accordance with Section 3008.

905.1.1 Fire pumps. Required standpipe system flow and pressure shall be sized based on not exceeding 100% of the pump rated capacity.

IF] 905.3.1 Height. Class III standpipe systems shall be installed throughout buildings where the floor level of the highest *story* is located more than 30 feet (9144 mm) above the lowest level of fire department vehicle access, or where the floor level of the lowest *story* is located more than 30 feet (9144 mm) below the highest level of fire department vehicle access.

Exceptions:

1. Class I standpipes are allowed in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
 - ~~2. Class I manual standpipes are allowed in *open parking garages* where the highest floor is located not more than 150 feet (45 720 mm).~~
 - ~~3. Class I manual dry standpipes are allowed in *open parking garages* that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.~~
 4. 2. Class I standpipes are allowed in basements equipped throughout with an *automatic sprinkler system*.
3. in determining the lowest level of fire department vehicle access, it shall not be required to consider:
- 3.1. Recessed loading docks for four vehicles or less; and
 - 3.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

Exceptions:

- ~~4.~~ Open-air-seating spaces without enclosed spaces.

- ~~1. Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings that are not high rise buildings.~~

[F] 905.3.4 Stages. Stages greater than 1,000 square feet in area (93m²) shall be equipped with a Class III II wet standpipe system with 1½ -inch ~~and 2½ -inch~~ (38 mm ~~and 64 mm~~) hose connections on each side of the stage.

Exception: Where the building or area is equipped throughout with an automatic sprinkler system the hose connections are allowed to be supplied from the automatic sprinkler system a 1½ -inch (38 mm) hose connection shall be installed in accordance with NFPA 13 or in accordance with NFPA 14 f200 or Class II or III standpipes.

[F] 905.3.5 Underground buildings. Underground buildings shall be equipped throughout with a Class I automatic wet ~~or manual wet~~ standpipe system.

[F] 905.8 Dry standpipes. Dry standpipes shall not be installed.

Exception: ~~Where subject to freezing and in accordance with NFPA 14.~~

905.11 Design pressure. Design pressure at the uppermost valve for a Class II standpipe system shall be 35 psi.

[F] 907.2 Where required – new buildings and structures. An *approved* fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.

A minimum of one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.

Exceptions:

1. The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.
2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event. Where provided, the manual fire alarm box shall not be located in an area that is accessible to the public.
3. In other than Group H occupancies, a fire alarm system shall not be required in open buildings.

907.2.2 Group B. A manual fire alarm system shall be installed in Group b occupancies where one of the following conditions exists:

1. The combined Group B *occupant load* of all floors is 500 or more.

2. The Group B *occupant load* is more than 100 persons above or below the lowest *level of exit discharge*.
3. The *fire area* contains an ambulatory care facility.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler waterflow.

907.2.3.1 Group E educational. Smoke detectors shall be installed in any interior corridor serving as an exit and in storerooms, mechanical rooms, janitorial rooms and similar areas. Smoke detectors shall not be required in toilet rooms, classrooms or offices.

Exception: Approved heat detectors may be installed in lieu of smoke detectors in mechanical rooms, janitorial rooms and similar areas.

907.2.3.2 Group E child care with an occupant load of 30 or more. Smoke detectors shall be installed in corridors, in common areas and in occupiable areas.

907.2.3.3 Group E child care with an occupant load of less than 30. Smoke detectors shall be installed in each occupiable area. All such detectors shall be interconnected in such a way that the activation of any detector shall automatically activate the alarm of all detectors, unless provided with a fire alarm system in accordance with Section 907.2.3.

907.2.3.4 Manual fire alarm boxes. Where required in Group E occupancies, manual fire alarm boxes shall be located in accordance with Section 907.3.

[F] 907.2.6 Group I. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group I occupancies. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in accordance with Sections 907.2.6.1, 907.2.6.2 and 907.2.6.3.

Exceptions:

- ~~1. Manual fire alarm boxes in resident or patient sleeping units of Group I-1 and I-2 occupancies shall not be required at exits if located at all care providers' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.3.1 are not exceeded.~~
2. Occupant notification systems are not required to be activated where private mode signaling installed in accordance with NFPA 72 is *approved* by the fire code official.

[F] 907.2.6.2 Group I-2. ~~Corridors in nursing homes (both intermediate care and skilled nursing facilities), detoxification facilities and spaces permitted to be open to the corridors by Section 407.2 shall be equipped with an automatic fire detection system. Hospitals shall be equipped with smoke detection as required in Section 407.2.~~

Exceptions:

1. ~~Corridor smoke detection is not required in smoke compartments that contain patient sleeping units where patient sleeping units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each patient sleeping unit and an audible and visual alarm at the nursing station attending each unit.~~
2. ~~Corridor smoke detection is not required in smoke compartments that contain patient sleeping units where patient sleeping unit doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.~~

907.2.6.2 Patient rooms. Patient sleeping units within Group I-1 and I-2 occupancies shall be provided with UL 268 type smoke detectors. Such detectors in Group I-2 shall provide a visual display on the corridor side of each patient sleeping unit and shall provide an audible and visual alarm at the nursing station attending each sleeping unit. In patient sleeping units equipped with automatic door closures having integral smoke detectors on the room side, the integral detector may substitute for the room smoke detector, provided it performs the required functions.

907.2.6.4 Group I-4. Group I-4 occupancies shall have a manual fire alarm and automatic fire detection system installed in accordance with 907.2.3.

907.2.11.1.4 Group E child day care facilities. Unless a fire alarm system is provided meeting the requirements of Section 907.2.3, a smoke alarm shall be provided in each occupiable area of child day care facilities with an occupant load of less than 30. Where more than one smoke alarm is required, the smoke alarms shall be interconnected in such a manner that activation of one alarm shall activate all the alarms.

907.5.2.2 Emergency voice/alarm communication systems. Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler water-flow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving *approved* information and directions for a general or staged evacuation in accordance with the building's fire safety and evacuation plans required by Section 404 of the *International Fire Code*. In high-rise buildings, the system shall operate on a ~~minimum~~ of the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. As a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. *Exit stairways*.
3. Each floor.
4. *Areas of refuge* as defined in Section 1002.1.

Alarms shall not sound in elevator groups or exit stairs.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

[F] **909.12.1 Wiring.** In addition to meeting requirements of NFPA 70, mechanical smoke control ~~at~~ wiring, regardless of voltage, shall be fully enclosed within continuous raceways. The requirement of this section shall apply only to wiring extending from the fire alarm system control unit that activates any required smoke-control system component such as relays, fans, dampers, or stair pressurization systems.

909.20 Smokeproof enclosures. Where required by Section 1022.10, a smokeproof enclosure shall be constructed in accordance with this section. A smokeproof enclosure shall consist of an enclosed interior *exit stairway* that conforms to Section 1022.2 and an open exterior balcony or ventilated vestibule meeting the requirements of this section. Where access to the roof is required by Section 1009.16.1 ~~the International Fire Code~~, such access shall be from the smokeproof enclosure where a smokeproof enclosure is required.

[F] **911.1.5 Required Features.** The fire command center shall comply with NFPA 72 and shall contain the following features:

1. The emergency voice/alarm communication system control unit....

*{EDITORIAL NOTE: KEEP EXISTING ITEMS 1-18 HERE WITHOUT AMENDMENT}

19. A means to automatically switch an alarm signal to an approved central station.

20. Two handsets per each 10 stories in building height.

[F] **912.2.1 Visible location.** Fire department connection shall be located where the identifying number is facing ~~on~~ the street side of buildings, fully visible and recognizable from the street or nearest point of fire department vehicle access or as otherwise *approved* by the fire chief.

CHAPTER 10

MEANS OF EGRESS

~~1003.3 Reserved. **Protruding objects.** Protruding objects shall comply with the requirements of Sections 1003.3.1 through 1003.3.4.~~

~~1003.3.1 **Headroom.** Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 provided a minimum headroom of 80 inches (2032 mm) shall be provided for any walking surface, including walks, corridors, aisles and passageways. Not more than 50 percent of the ceiling area of a *means of egress* shall be reduced in height by protruding objects.~~

~~**Exception:** Door closers and stops shall not reduce headroom to less than 78 inches (1981 mm).~~

~~A barrier shall be provided where the vertical clearance is less than 80 inches (2032 mm) high. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the floor.~~

~~1003.3.2 **Free-standing objects.** A free-standing object mounted on a post or pylon shall not overhang that post or pylon more than 12 inches (305 mm) where the lowest point of the leading edge is more than 27 inches (686 mm) and less than 80 inches (2032 mm) above the walking surface. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground.~~

~~**Exception:** This requirement shall not apply to sloping portions of *handrails* between the top and bottom riser of *stairs* above the *ramp* run.~~

~~1003.3.3 **Horizontal projections.** Structural elements, fixtures or furnishings shall not project horizontally from either side more than 4 inches (102 mm) over any walking surface between the heights of 27 inches (686 mm) and 80 inches (2032 mm) above the walking surface.~~

~~**Exception:** Handrails are permitted to protrude 4.5 inches (114 mm) from the wall.~~

~~1003.3.4 **Clear width.** Protruding objects shall not reduce the minimum clear width of accessible routes as required in Section 1104.~~

~~1003.7 **Elevators, escalators and moving walks.** Elevators, escalators and moving walks shall not be used as a component of a required *means of egress* from any other part of the building.~~

~~**Exception:** Elevators used as an *accessible means of egress* in accordance with Section 1007.4.~~

SECTION 1007

ACCESSIBLE MEANS OF EGRESS

{EDITORIAL NOTE: DELETE AND RESERVE ENTIRE SECTION.}

~~1008.1.7 **Thresholds.** Thresholds at doorways shall not exceed ¾ inch (19.1 mm) in height above the finished floor or landing for sliding doors serving dwelling units or 1/2 inch (12.7 mm)~~

above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than 1/4 inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

Exception: In occupancy Group R-2 or R-3, threshold heights for sliding and side-hinged exterior doors shall be permitted to be up to 7 3/4 inches (197 mm) in height if all of the following apply:

1. The door is not a component of the required means of egress.
- ~~2. The door is not part of an accessible route as required by Chapter 11~~
- ~~3. The door is not part of an Accessible unit, Type A unit or Type B unit.~~

1008.1.8 Door arrangement. Space between two doors in a series shall be 48 inches (1219 mm) minimum plus the width of a door swinging into the space. Doors in a series shall swing either in the same direction or away from the space between doors.

Exceptions:

1. The minimum distance between horizontal sliding power-operated doors in a series shall be 48 inches (1219 mm).
2. Storm and screen doors serving individual *dwelling units* in Groups R-2 and R-3 need not be spaced 48 inches (1219 mm) from the other door.
3. Doors within individual *dwelling units* in Groups R-2 and R-3 ~~other than within Type A dwelling units.~~

1008.1.9 Door operations. Whenever a building or space is occupied, Except as specifically permitted by this section, egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1008.1.9.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

1. Places of detention or restraint.
2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places or religious worship, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
 - 2.1. The locking device is readily distinguishable as locked,
 - 2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background,
 - 2.3. The use of the key-operated locking device is revokable by the building official for due cause.
3. Where egress doors are used in pairs, *approved* automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.

4. Doors from individual *dwelling* or *sleeping units* of Group R occupancies having an *occupant load* of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

5. Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.

6. In buildings in occupancy Group B that have an occupant load of 10 or less, doors may be equipped with a manually operated deadbolt in addition to a door latch.

1008.1.9.4 Bolt locks. Manually operated flush bolts or surface bolts that operate vertically are not permitted.

Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.

2. Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf.

3. Where a pair of doors serves an *occupant load* of less than 50 persons in a Group B, F or S occupancy, manually operated edge- or surface- mounted bolts are permitted on the inactive leaf. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.

4. Where a pair of doors serves a Group B, For S occupancy, manually operated edge- or surface- mounted bolts are permitted on the inactive leaf provided such inactive leaf is not needed to meet egress width requirements and the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.

5. Where a pair of doors serves patient care rooms in Group 1-2 occupancies, self-latching edge- or surface-mounted bolts are permitted on the inactive leaf provided that the inactive leaf is not needed to meet egress width requirements and the inactive leaf contains no doorknobs, panic bars or similar operating hardware.

6. In buildings in occupancy Group B that have an occupant load of 10 or less, doors may be equipped with a manually operated deadbolt in addition to a door latch.

1011.3 Illumination. Exit signs shall be internally or externally illuminated.

Exception: Tactile signs required by Section 1011.4 need not be provided with illumination.

~~**1011.4 Reserved. Raised character and Braille exit signs.** A sign stating EXIT in raised characters and Braille and complying with ICC A117.1 shall be provided adjacent to each door to an *area of refuge*, an exterior area for assisted rescue, an *exit stairway*, an *exit ramp*, an *exit passageway* and the *exit discharge*.~~

CHAPTER 11

ACCESSIBILITY

{EDITOR'S NOTE: DELETE CHAPTER 11 IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING.}

SECTION 1101

GENERAL

1101.1 State law. Accessibility issues for certain publicly and privately owned buildings and facilities are governed by state law and regulations, including Chapter 469 of the Texas Government Code and various regulations, standards and specifications issued thereunder.

1101.2 Responsibility of owners. It is the responsibility of the owner to ensure compliance with state and federal requirements. As provided by Section 469.102 of the Texas Government Code, the applicant for a building permit for an affected building or facility shall provide evidence of registration with the Texas Department of Licensing and Regulation as a part of the building permit application.

1101.3 Jurisdiction is not an agent of the state. This jurisdiction has not contracted with the state and is not authorized to review plans, grant waivers or modifications, perform inspections, or take any other action with respect to compliance with state or federal accessibility requirements. No action taken by this jurisdiction or the building official shall be deemed as excusing compliance with state or federal requirements.

CHAPTER 12

INTERIOR ENVIRONMENT

1203.3.2 Exceptions. The following are exceptions to Sections 1203.3 and 1203.3.1:

1. Where warranted by climatic conditions, ventilation openings to the outdoors are not required if ventilation openings to the interior are provided.
2. The total area of ventilation openings is permitted to be reduced to 1/1,500 of the under-floor area where the ground surface is treated with an approved vapor retarder material and the required openings are placed so as to provide cross ventilation of the space. The installation of operable louvers shall not be prohibited.
3. Ventilation openings are not required where continuously operated mechanical ventilation is provided at a rate of 1.0 cubic foot per minute (cfm) for each 50 square feet (1.02 L/s for each 10 m²) of crawl-space floor area and the ground surface is covered with an approved vapor retarder.
4. Ventilation openings are not required when the ground surface is covered with an approved vapor retarder, the perimeter walls are insulated and the space is conditioned in accordance with the *International Energy Conservation Code*.
5. ~~For buildings in flood hazard areas as established in Section 1612.3, the openings for under-floor ventilation shall be deemed as meeting the flood opening requirements of ASCE 24 provided that the ventilation openings are designed and installed in accordance with ASCE 24.~~

1207.1 Scope. This section shall apply to common interior walls, partitions and floor/ceiling assemblies between adjacent *dwelling units* or between *dwelling units* and adjacent public areas such as halls, *corridors*, *stairs* or service areas. When required by the airport land use ordinance sound attenuation shall be provided as specified in Appendix N of this code.

1209.2 Attic spaces. An opening not less than 20 inches by 30 inches (559 mm by 762 mm) shall be provided to any attic area having a clear height of over 30 inches (762 mm). Clear headroom of not less than 30-inch (762 mm) shall be provided in the attic space at or above the access opening. When the opening is located in a one-hour rated assembly, the opening shall be 5/8 inch Type X gypsum or permitted to be constructed as in Section 406.1.4 for attic disappearing stairs.

CHAPTER 13

ENERGY EFFICIENCY

1301.1.1 Criteria. Buildings shall be designed and constructed in accordance with the ~~*International*~~ Houston Commercial Energy Conservation Code or Houston Residential Energy Conservation Code, as applicable.

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CHAPTER 14

EXTERIOR WALLS

~~**1403.6 Flood resistance.** For buildings in flood hazard areas as established in Section 1612.3, exterior walls extending below the elevation required by Section 1612 shall be constructed with flood-damage-resistant materials. Wood shall be pressure-preservative treated in accordance with AWPAC UI for the species, product and end use using a preservative listed in Section 4 of AWPAC 1 or decay-resistant heartwood of redwood, black locust or cedar.~~

~~**1403.7 Flood resistance for high-velocity wave action areas.** For buildings in flood hazard areas subject to high-velocity wave action as established in Section 1612.3, electrical, mechanical and plumbing system components shall not be mounted on or penetrate through exterior walls that are designed to break away under flood loads.~~

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CHAPTER 15

ROOF ASSEMBLIES AND ROOFTOPSTRUCTURES

1504.8 Aggregate. Aggregate used as surfacing for roof coverings and aggregate, gravel or stone used as ballast shall not be used on the roof of a building located in a hurricane-prone region as defined in Section 202, or on any other building with a mean roof height exceeding that permitted by Table 1504.8 based on the exposure category and basic wind speed at the building site.

{***EDITORIAL NOTE:** DELETE TABLE 1504.8 IN ITS ENTIRETY}

TABLE 1505.1^{a,b}
MINIMUM ROOF COVERING CLASSIFICATION
TYPES OF CONSTRUCTION

IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
B	B	B	C ^c	B	C ^c	B	B	C ^c

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

- a. ~~Unless otherwise required in accordance with the *International Urban Wildland Interface Code* or due to the location of the building within a fire district in accordance with Appendix D.~~
- b. ~~Nonclassified roof coverings shall be permitted on buildings of Group R-3, as applicable in Section 101.2 and Group U occupancies, where there is a minimum fire separation distance of 6 feet measured from the leading edge of the roof.~~
- c. ~~Buildings that are not more than two stories in height and having not more than 6,000 square feet of projected roof area and where there is a minimum 10-foot fire separation distance from the leading edge of the roof to a lot line on all sides of the building, except for street fronts or public ways, shall be permitted to have roofs of No. 1 cedar or redwood shakes and No. 1 shingles.~~

SECTION 1510

REROOFING

1510.7 Wood shakes and shingles. Wood shakes and shingles shall not be permitted to be replaced unless they meet the requirements of Section 1505.6.

CHAPTER 16

STRUCTURAL DESIGN

~~1603.1.7 Flood design data. See Chapter 19 of the *City Code*. For buildings located in whole or in part in flood hazard areas as established in Section 1612.3, the documentation pertaining to design, if required in Section 1612.5, shall be included and the following information, referenced to the datum on the community's Flood Insurance Rate Map (FIRM), shall be shown, regardless of whether flood loads govern the design of the building.~~

- ~~1. In flood hazard areas not subject to high-velocity wave action, the elevation of the proposed lowest floor, including the basement.~~
- ~~2. In flood hazard areas not subject to high-velocity wave action, the elevation to which any nonresidential building will be dry flood proofed.~~
- ~~a. In flood hazard areas subject to high-velocity wave action, the proposed elevation of the bottom of the lowest horizontal structural member of the lowest floor, including the basement.~~

~~1609.3 Basic wind speed. The ultimate design wind speed, V_{ult} in mph, for the determination of the wind loads shall be determined by determined by Figures 1609A, 1609B and 1609C. The ultimate design wind speed, V_{ult} for use in the design of Risk Category II buildings and structures shall be 140 mph obtained from Figure 1609A. The ultimate design wind speed, V_{ult} for use in the design of Risk Category III and IV buildings and structures shall be 150 mph obtained from Figure 1609B. The ultimate design wind speed, V_{ult} for use in the design of Risk Category I buildings and structures shall be 130 mph obtained from Figure 1609C. The ultimate design wind speed, V_{ult} for the special wind regions indicated near mountainous terrain and near gorges shall be in accordance with Section 26.5.1 of ASCE 7. In nonhurricane-prone regions, when the ultimate design wind speed V_{ult} is estimated from regional climatic data, the ultimate design wind speed, V_{ult} shall be determined in accordance with Section 26.5.1 of ASCE 7.~~

SECTION 1612

*{EDITORIAL NOTE: DELETE SECTION 1612 IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING}

(See Chapter 19 of the *City Code*).

~~1613.5.6 Determination of seismic design category. This jurisdiction is classified as Seismic Design Category A. Structures classified as Risk Category I, II or III that are located where the mapped spectral response acceleration parameter at 1-second period, S_1 , is greater than or equal to 0.75 shall be assigned to Seismic Design Category E. Structures classified as Risk Category IV that are located where the mapped spectral response acceleration parameter at 1-second period, S_1 is greater than or equal to 0.75 shall be assigned to Seismic Design Category F. All other structures shall be assigned to a seismic design category based on their risk category and the design spectral response acceleration parameters, S_{DS} and S_{D1} determined in accordance with Section 1613.3.4 or the site-specific procedures of ASCE 7. Each building and structure shall be assigned to the more severe seismic design category in accordance with Table 1613.3.5(1) or 1613.5.5(2), irrespective of the fundamental period of vibration of the structure.~~

CHAPTER 17

SPECIAL INSPECTIONS AND TESTS

1704.2.3 Statement of special inspections. The applicant shall submit a statement of *special inspections* in accordance with Section 107.1 as a condition for permit issuance. This statement shall be in accordance with Section 1704.3.

Exception: A statement of *special inspections* is not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.7 or the conventional light-frame construction provisions of Section 2308

~~**1704.2.4 Report requirement.** Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the *building official*, and to the *registered design professional in responsible charge*. Reports shall indicate that work inspected was or was not completed in conformance to *approved construction documents*. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the *building official* and to the *registered design professional in responsible charge* prior to the completion of that phase of the work. A final report documenting required *special inspections* and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon prior to the start of work by the applicant and the *building official*.~~ **Duties and responsibilities of the special inspector.** The special inspector shall observe the work to ascertain to the best of his/her knowledge and belief that it is in conformance with the approved design drawings and specifications.

The special inspector shall furnish inspection reports to the building official, engineer or architect of record, and other persons designated by the building official. All discrepancies shall be brought to the immediate attention of the contractor for correction, then to the design professional and to the building official.

The special inspector shall submit a final signed report properly certified by an engineer or architect with professional's seal embossed, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the design professional's permitted construction.

CHAPTER 23

WOOD

2308.2.1 Nominal design wind speed greater than 100 mph (3-second gust). Where V_{ult} as determined in accordance with Section 1609.3.1 exceeds 100 mph (3-second gust), the provisions of either AF&PA WFCM, Appendix K of this code or ICC 600 are permitted to be used. Wind speeds in Figures 1609A, 1609B, and 1609C shall be converted in accordance with Section 1609.3.1 for use with AF&PA WFCM or ICC 600.

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CHAPTER 29 PLUMBING SYSTEMS

[P] Table 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a
(See Sections 2902.2 and 2902.3)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS ^h (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAINS ^{e,f,i} (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
1	Assembly	A-1 ^d	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65 <u>60</u>	1 per 200		-	1 per 500	1 service sink ^g
		A-2 ^d	Nightclubs, bars, taverns, dance halls and buildings for similar purpose	1 per 40	1 per 40	1 per 75		-	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		-	1 per 500	1 service sink
		A-3 ^d	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 125	1 per 65 <u>60</u>	1 per 200		-	1 per 500	1 service sink
			Passenger terminals and transport facilities ^h	1 per 500	1 per 500	1 per 750		-	1 per 1,000	1 service sink
			Places of worship and other religious services	1 per 150	1 per 75	1 per 200		-	1 per 1,000	1 service sink
		A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 <u>35</u> for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150		-	1 per 1,000
A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 <u>35</u> for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150		-	1 per 1,000	1 service sink	

(continued)

**[P] Table 2902.1 – continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a**

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS ^b (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS ^{e,f,i} (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
2	Business	B	Building for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		-	1 per 100	1 service sink ⁹
3	Educational	E	Educational facilities	1 per 50		1 per 50		-	1 per 100	1 service sink
			<u>Daycares</u>	<u>1 per 17</u>		<u>1 per 17</u>		-	<u>1 per 100</u>	<u>1 service sink</u>
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		See Section 411 of the International Plumbing Code	1 per 400	1 service sink
5	Institutional	I-1	Residential care	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		I-2	Hospitals, ambulatory nursing home care recipient ^b	1 per per room ^c		1 per per room ^c		1 per 15	1 per 100	1 service sink
			Employees, other than residential care ^b	1 per 25		1 per 35		-	1 per 100	-
			Visitors, other than residential care	1 per 75		1 per 100		-	1 per 500	-
		I-3	Prisons ^b	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink
		I-3	Reformatories, detention centers and correctional centers ^b	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
		I-4	Adult day care and child care	1 per 15		1 per 15		1	1 per 100	1 service sink
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		-	1 per 1,000	1 service sink ⁹
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	-	1 service sink
		R-2	Dormitories, fraternities, sororities and boarding house (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	-	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS ⁿ (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS ^{e,f,i} (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
7	Residential	R-3	One- and two family dwellings	1 per dwelling unit		1 per 10		1 per dwelling unit	-	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		R-3	Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-4	Residential care/assisted living facilities	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage ^{l,k}	S-1 S-2	Structures for the storage of goods, warehouses, storehouses and freight depots, low and moderate hazard	1 per 100		1 per 100		See Section 411 of the International Plumbing Code	1 per 1,000	1 service sink

- a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.
- b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.
- c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.
- d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
- e. The minimum number of required drinking fountains shall comply with Table 2902.1 and Chapter 11.
- f. Drinking fountains are not required for an occupant load of 15 or fewer.
- g. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.
- h. Structures used for people awaiting transportation, such as transit centers, shall not be required to install plumbing facilities when the following conditions occur:
 1. No employees or security personnel remain on the premises unless in transit or providing temporary maintenance.
 2. The structure is an open-air structure with no enclosing walls.
 3. The structure is only intended to shelter people awaiting transportation.
- i. Buildings where water is served from bottled water coolers or buildings having an occupant load of less than 30 shall not be required to provide drinking fountains.
- j. Self-storage warehouses containing only unoccupied rental units for storing personal possessions and that are vehicle access buildings may waive the restroom requirement when the property has an office with available restroom facilities on site.
- k. Warehouses and parking garages that are dedicated to a building on site, with a path of travel to available restroom facilities located within 500 feet, and located on the same property shall be permitted to waive the restroom requirement.

2902.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for *dwelling units* and *sleeping units*.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or less.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or less.
4. Separate facilities shall not be required for child day care facilities with a total occupant load, including both adults and children, of 15 or less.
5. When restrooms are provided greater than the number required by this code, separate facilities are not required.

~~**2902.3.4 Pay facilities.** Where pay facilities are installed, such facilities shall be in excess of the required minimum facilities. Required facilities shall be free of charge.~~

2902.6 Fixture types. All water closets shall be either a dual flush or a high efficiency water closet. For males, when more than one water closet is required, 50% of the water closets shall be urinals. Urinals shall be of the non-water type or high efficiency urinals.

CHAPTER 30

ELEVATORS AND CONVEYING SYSTEMS

3001.1 Scope. This chapter governs the design, construction, installation, *alteration* and repair of elevators and conveying systems and their components.

The building official shall have the authority to adopt and enforce rules and regulations to administer the provisions of this chapter. Such rules and regulations may include, but shall not be limited to, establishing qualifications and other requirements for approval and registration of an approved agency, providing frequency of inspections, and providing for formats of reports, inspection checklists, and other required documents.

The building official shall issue such notices or orders as may be necessary to remove illegal or unsafe conditions, to secure necessary safeguards during construction, to enforce compliance with this chapter, to receive required applications, to issue permits and serial numbers, and to furnish the prescribed certificates.

3001.2 Referenced standards. Except as otherwise provided for in this code, the design, construction, installation, *alteration*, repair and maintenance of elevators and conveying systems and their components shall conform to ANSI A17.1/CSA B44, ANSI 17.3, ASME A10.4, ASME A90.1, ASME B20.1, ALI ALCTV, and ASCE 24 for construction in flood hazard areas established in Section 1612.3. **State/ASME/ANSI Standards.** Except as otherwise provided in this chapter, all elevators, dumbwaiters, escalators, moving walks, inclined stairway chairlifts, wheelchair lifts and alterations to such conveyances and the installation thereof shall conform to the requirements of the standards adopted in Chapter 754 of the Texas Health and Safety Code and the standards adopted thereunder by the Texas Commissioner of Licensing and Regulation. The term "Elevator Safety Code" as used in this code shall mean the foregoing state-adopted standards. Manlifts and alterations and installations thereof shall conform to the Safety Standards for Manlifts, American National Standards Institute, Publication No. ANSI A90.1, and the term "Manlift Safety Code" as used in this code shall mean the said publication. Personnel hoists and alterations and installations thereof shall conform to the Safety Requirements for Personnel Hoists, American National Standards Institute, Publication No. ANSI A1034, and the term "Personnel Hoist Safety Code" as used in this code shall mean the said publication.

3001.2.1 Adoption of state standards. Notwithstanding any provision of this code that may be construed to the contrary, it is the express intent of this jurisdiction that this code be construed as establishing standards of inspection and certification of elevators, escalators, and related equipment and standards for elevator inspection personnel that are no less stringent in any respect than those adopted in or pursuant to Chapter 754 of the Texas Health and Safety Code, which state standards and any amendments hereafter made thereto are adopted and incorporated into this code by reference. To the extent of any inconsistency between the state standards and the other provisions of this code, the more stringent provisions shall apply.

3001.4 Change in use. A change in use of an elevator from freight to passenger, passenger to freight, or from one freight class to another freight class shall not be made without the approval

of the building official. Said approval shall be granted only after it is demonstrated that the installation conforms to the requirements of the Elevator Code, ~~comply with Section 8.7 of ASME A17.1/GSA B44.~~

3001.5 Definitions. For purposes of this chapter, certain terms are defined in the Elevator Safety Code and read as follows:

ANSI ASME CODE is the current ASME/ANSI A17.1 Safety Code for Elevators and Escalators, an American National Standard published by the American Society of Mechanical Engineers. See Section 3001.2.

APPROVED AGENCY is an established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved.

AUTHORIZED COMPANY is an established and registered company regularly engaged in the installation or repair of elevators, escalators, dumbwaiters, or moving walks.

AUTHORIZED INSPECTOR is an inspector who is qualified as QEI-1 and is registered with the building official.

CERTIFYING ORGANIZATION is an independent organization that is competent, and widely recognized to accredit elevator inspectors and that has been approved by an organization that is nationally recognized and is approved or recognized by the department as competent to certify elevator inspectors.

MANLIFT is a device consisting of a power-driven endless belt provided with steps or platforms and handholds attached to it for transportation of personnel from floor to floor.

PERSONNEL HOIST is a special-purpose elevator or hoist erected outside a building or structure for transporting workers or materials in connection with the construction, alteration, maintenance or demolition of a building, structure, or other works.

WHEELCHAIR LIFT is a vertical wheelchair lift or an inclined wheelchair lift as governed by the Elevator Safety Code, whether of a public building or residential type.

3002.3 Emergency signs. An *approved* pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the *exit stairways* and not to use the elevators in case of fire. The sign shall read: IN CASE OF FIRE, ELEVATORS ARE OUT OF SERVICE. USE EXIT STAIRS. The lettering shall be at least ½ inch block letters on a background of contrasting color so that the lettering is clearly visible.

Exceptions:

1. The emergency sign shall not be required for elevators that are part of an *accessible means of egress* complying with Section 1007.4.
2. The emergency sign shall not be required for elevators that are used for occupant self-evacuation in accordance with Section 3008.

3002.9 Elevator pits. All elevator pits shall be provided with a sump pump as per ASME 17.1. The sump pump shall be discharged to the sanitary sewer.

[F) 3003.3 Standardized firefighter's service elevator keys. All elevators shall be equipped to operate with a standardized firefighter's service elevator key in accordance with the *International Fire Code*.

3005.1 General. Elevators, escalators, manlifts, moving walks, conveyors, inclined stairway chairlifts, wheelchair lifts, vertical reciprocating conveyors, personnel hoists and material hoists shall comply with the provisions of Sections 3005.2 through 3005.4.

3005.3 Conveyors. ~~Conveyors and conveying systems shall comply with ASME B20.1.~~

~~**3005.3.1 Enclosure.** Conveyors and related equipment connecting successive floors or levels shall be enclosed with *shaft enclosures* complying with Section 713.~~

~~**3005.3.2 Conveyor safeties.** Power-operated conveyors, belts and other material-moving devices shall be equipped with automatic limit switches which will shut off the power in an emergency and automatically stop all operation of the device.~~

Vertical reciprocating conveyors. Vertical reciprocating conveyors shall be installed to comply with ASME B20.1. An installation permit is required before the installation of any vertical Reciprocating conveyor. The fees shall be as required for elevators (see Section 117 for fees). A one-time final inspection report must be submitted to the building official by an approved inspection agency before the vertical reciprocating conveyor is put into operation. The building owner or owner's representative shall be responsible for the safe operation and maintenance of the vertical reciprocating conveyor.

3005.5 Escalator skirt deflector devices.

3005.5.1 Purpose. The purpose of this section is to improve the overall safety of escalators located within the jurisdiction by establishing provisions for the installation of escalator skirt deflector devices on new and existing escalators.

3005.5.2 Definitions.

ESCALATOR SKIRT DEFLECTOR DEVICE shall mean a device that reduces the risk of objects coming into contact with the skirt.

INSTALLATION DATE, for the purposes of this section only, shall be the date the permit was obtained for installation.

3005.5.3 Compliance program. All escalators installed on or after October 21, 2001, shall be equipped with escalator skirt deflector devices or equivalent protection in accordance with ASME A17.1 Safety Code for Elevators and Escalators. The owners of existing buildings in which one or more escalators were installed prior to October 21, 2001, shall have skirt deflector devices or equivalent protective equipment installed on all escalators no later than January 1, 2011.

3005.5.4 Approval. The building official shall have the authority to adopt and enforce rules and regulations to administer approval of the design, construction, configuration

and installation of skirt deflector devices for use in this jurisdiction. The building official shall promulgate such rules and regulations.

3005.5.5 Technical requirements. Escalator skirt deflector devices shall be installed in accordance with the deflector device manufacturer's recommended installation instructions and the ASME A17.1 Safety Code for Elevators and Escalators.

3006.2 Venting. Elevator machine rooms that contain solid state equipment for elevator operation shall be provided with an approved independent ventilation or air-conditioning system to protect against the overheating of the electrical equipment. The system shall be capable of maintaining temperatures within the range established for the elevator equipment.

3006.3 Pressurization. The elevator machine room serving a pressurized elevator hoistway shall be pressurized upon activation of a *heat or smoke detector* located in the elevator machine room.

3006.4 Machine rooms and machinery spaces. Elevator machine rooms and machinery spaces shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

1. Where machine rooms and machinery spaces do not abut and have no openings to the hoistway enclosure they serve the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour *fire resistance rating*.
2. In buildings four *stories* or less above *grade plane* where machine room and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the machine room and machinery spaces are not required to be fire-resistance rated.

3006.5 Shunt trip. Where elevator hoistways or elevator machine rooms containing elevator control equipment are protected with automatic sprinklers, a means installed in accordance with NFPA 72, ~~Section 6.16.4~~, Elevator Shutdown, shall be provided to disconnect automatically the main line power supply to the affected elevator prior to the application of water. This means shall not be self-resetting. The activation of sprinklers outside the hoistway or machine room shall not disconnect the main line power supply.

3006.5.1 Delay. Upon activation of the heat detector used for elevator power shutdown, there shall be a delay in the activation of the power shunt trip. This delay shall be the time that it takes the elevator cab to travel from the top of the hoistway to the lowest recall level.

SECTION 3009

ELEVATORS FOR HIGH RISE BUILDINGS

3009.1 Elevators. Elevators and elevator lobbies for high rise buildings shall comply with the provisions in this section and the other provisions of this chapter.

1. A bank of elevators is a group of elevators or a single elevator controlled by a common operating system; that is, all those elevators that respond to a single call button constitute a bank of elevators. There is no limit on the number of cars that may be in a bank or group, but there may not be more than four cars within a common hoistway. Hoistways shall be separated by a two-hour fire resistive separation.
2. Each elevator lobby shall be provided with at least two approved listed smoke detectors located on the lobby ceiling, one positioned at each opening into the lobby other than elevator door entrances, or at least one approved listed smoke detector with alarm verification sequence per NFPA 72. When two detectors, each on a separate initiating circuit, or one alarm sequence verification detector on the same initiating circuit, are activated, elevator cars shall return to a floor providing direct egress from the building (or to a transfer floor if the cars do not serve an egress floor), and the elevator doors shall open to permit egress of passengers. In the event of a failure of normal electrical service, the standby power system shall have sufficient capacity to return all elevators to the floor of egress on an automatic or manual selective program of one elevator in each bank of elevators simultaneously. If the return system is manually actuated, an alarm system shall be provided to summon assistance.

NOTE: Banks of elevators not deactivated by the products of combustion detectors shall remain in normal operation. In the event of a fire on the lowest terminus floor, the elevator call shall stop on a floor above the floor of fire involvement.

3. Elevator hoistways shall not be vented through an elevator machine room.
4. An elevator lobby is defined as that portion of a corridor or space within 10 feet of an elevator entrance door. Buildings having banks of elevators serving more than two floors that terminate on an upper floor (sky lobbies) and do not return to a floor level providing direct egress from the building shall have elevator lobbies with a corridor directly connected to an exit stairway. The sky lobbies and connecting corridors shall be separated from the remainder of the building by a two-hour fire resistive occupancy separation.
5. When elevators are returned to the floor of egress due to the activation of the fire detection system, the elevator doors shall open for egress and the elevator shall be shut down. Door open buttons in each car shall remain active. Under this circumstance, facilities shall be provided to permit the operation of any one elevator in an elevator bank by the fire department through the use of a "firefighter's service key." The selected elevator shall be manually operated.
6. Elevators serving below the flood plane for the building shall have a water sensor installed in the hoistway below the lowest landing that the elevator serves to prevent the elevator from descending into a flooded area.

SECTION 3010

PERMITS, CERTIFICATES OF INSPECTION

3010.1 Construction permits.

3010.1.1 General. A separate permit shall be required before erecting or constructing any new elevator, dumbwaiter, escalator, manlift, moving walk, vertical reciprocating conveyor, inclined stairway chairlift, personnel hoist or wheelchair lift, or relocating such existing equipment. The installer of the equipment shall submit an application for such permit accompanied by plans and specifications in duplicate, in such form as the building official may prescribe. When such plans and specifications indicate compliance with this chapter and other provisions of this code, and the fees specified in Section 117 have been paid, the building official shall issue a construction permit. The plans and specifications shall be stamped "Approved" when the building official issues a construction permit where plans are required. Such approved plans and specifications shall not be changed, modified or altered without authorization from the building official, and all work shall be done in accordance with the approved plans.

3010.1.2 Notification of completion. It shall be the duty of each person installing, relocating or altering such conveyances to notify the building official in writing, at least seven days before completion of the work, and to subject the new, moved or altered portions of the equipment to the acceptance test required by the Elevator Safety Code, Manlift Safety Code or Personnel Hoist Safety Code, as applicable, to show that such equipment meets the requirements specified before placing the equipment into service.

3010.1.3 Acceptance inspections. All acceptance inspections shall be performed by the building official or an approved agency.

3010.2 Operating permits.

3010.2.1 General. An operating permit shall be issued by the building official for an elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift or wheelchair lift within 10 days following the receipt of an inspection report indicating compliance with this chapter and applicable safety codes and the payment of the fee provided in Section 117.

No owner or lessee of an elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist, or wheelchair lift shall suffer or permit the same to be operated by any person except under a current and valid operating permit or limited permit that has been issued for the equipment by the building official.

Exception: No operating permit or limited permit shall be required for the operation of the conveyance equipment if located in a Group R- 3 occupancy or in an individual dwelling unit of a Group R-2 Occupancy.

The operating permit shall be issued for a period of one year and shall be valid only for the operation of the equipment at the rated load and speed for such equipment, which shall be stated on the permit. Operating permits shall not be issued for personnel hoists, which shall be subject to operation only under a limited permit.

If an inspection report required by this chapter indicates failure of compliance with applicable requirements of this chapter, or, in the case of new or altered installations, with detailed plans and specifications approved by the building official, the building official shall give written notice

to the owner or lessee or the person or persons filing such plans and specifications of the deficiencies that must be cured for compliance therewith. After the equipment has been brought into conformity, the building official shall issue an operating permit.

3010.2.2 Annual operating permit. Permits will show the location, type, and number of units permitted.

3010.2.3 Posting of permits. Permits shall be posted in conspicuous locations that are readily accessible to the building official.

3010.2.4 Limited operating permit. The building official may issue a limited permit authorizing the temporary use of any elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist or wheelchair lift for passenger or freight service during its installation or alteration.

In the case of elevators, such limited permit will not be issued until the elevator has been tested with rated load; car safety and terminal stopping equipment have been tested to determine the safety of the equipment; and permanent or temporary guards or enclosures have been placed on the car, around the hoistway and at the landing entrances on each floor. Landing entrance guards shall be provided with locks that can be released from the hoistway side only. Automatic and continuous pressure elevators shall not be placed in temporary operation from the landing push buttons unless door-locking devices and/or interlocks required by the Elevator Safety Code are installed and operative. All tests required by this paragraph and reports thereof must indicate compliance with all applicable provisions of the Elevator Safety Code before a temporary permit will be issued.

For personnel hoists, a limited permit will not be issued until the hoist has been inspected in accordance with the Personnel Hoist Safety Code and has been determined to be in compliance therewith.

3010.2.5 Life of limited permits. Limited permits shall be issued in the same manner as operating permits, provided that they shall be valid for a period not to exceed 90 days. However, any equipment being operated pursuant to a limited permit shall be inspected at intervals not exceeding 30 days by the building official or an approved agency.

3010.2.6 Posting of limited permits. Each limited permit shall be conspicuously posted at a place that is near to or visible from each entrance to permitted equipment, and the limited permit shall also include a statement that the equipment has not been finally approved.

3010.2.7 Responsibility. The person installing, relocating, or altering any equipment operating under a limited permit shall be responsible for its operation and maintenance and for all required tests and inspections until the operating permit has been issued by the building official.

The owner or owner's representative shall be responsible for the safe operation and proper maintenance of such equipment after the operating permit has been issued and during the period of effectiveness of any limited permit. The owner or owner's representative shall also be responsible for all initial and periodic tests required by this chapter.

3010.2.8 Special permission for employee use. Special permission may be granted by the building official for use of freight elevators by employees of the establishment in which they are situated if the building official finds that there is compliance with the requirements of Rule 207.4 of the Elevator Safety Code. The application therefor shall be made when the operating permit is requested, and the special permission, if granted, shall be noted on the operation permit. Except in accordance with the provisions of a special operating permit granted under this paragraph, it shall be unlawful for any elevator owner or other person in control of a freight elevator to suffer or permit the freight elevator to be used to carry any passengers other than as may be required to operate the elevator and to load and unload freight that is being carried upon the elevator.

3010.3 Approval of personnel hoists.

3010.3.1 General. A manufacturer, distributor, or agent who desires approval of a hoist manufactured or distributed by him/her or by his/her principal shall submit a properly completed application meeting the requirements of this section, all data as hereafter prescribed, and payment of the fee for a manufacturer's design permit as required in Section 117. A manufacturer, distributor, or agent shall submit a separate application, the fee, and complete data for each model varying in tower construction, capacity, speed, or method of operation.

If the building official finds that the hoist meets all the requirements of this code, the Personnel Hoist Safety Code, and all other applicable statutes and ordinances, a permit shall be issued identifying the make, model, capacity, and type of tower. If the building official finds that the hoist does not meet the requirements of this code, the Personnel Hoist Safety Code, or any other applicable statute or ordinance, the building official shall so notify the applicant in writing.

Manufacturer's data that must accompany the application for approval of new hoists includes:

1. Tower stress analysis, including two copies of structural specifications, drawings, and calculations, proving that the tower and base contain the factors of safety specified in the Requirements for Personnel Hoists, American National Standards Institute, Publication No. ANSI A10.4.
2. A letter giving the tower serial number, if any, or model description shall accompany the specifications. Such letter shall state the maximum height, wind velocity, car speed and car capacity for which the structure is designed when subjected to strain by operation of the car safety device and the maximum load and striking speed for which the buffers and base structures are designed.
3. A complete description as to the operation of the hoisting equipment and function of safety devices, including a schematic wiring diagram of safety and brake circuits and controller.
4. Periodic maintenance and inspection checklists, which must specify the frequency of each inspection. Among other things, those lists must include maximum safe tolerance of brake clearance, safety jaw clearance, and guide displacement. Any special tools or equipment required in making an inspection shall be shown and described on each list.
5. All data described in the above items 1, 2, 3, and 4 must be approved by a professional engineer registered in the State of Texas.

3010.3.2 Inspections. Inspections will be made at a time convenient to the building official or approved agency and the construction job superintendent at least monthly and at such additional frequencies, if any, as are stated in the application for the personnel hoist as approved by the building official. The building official or approved agency shall immediately and verbally notify the construction job superintendent of any defects that would make the personnel hoist unsafe for continued operation, and the construction job superintendent shall take the personnel hoist out of service immediately and correct any defect that would make the hoist unsafe prior to continued operation. All other defects shall be corrected as soon as is reasonably possible. Within 24 hours after the inspection, the building official or an approved agency shall confirm the findings in a written report to the construction superintendent. If the building official or approved agency has directed that the personnel hoist be taken out of service pending its repair, then it shall not be returned to service until the building official or approved agency has reinspected the equipment and determined that it may safely be returned to service.

3010.3.3 Penalties for violation.

3010.3.3.1. User. It shall be unlawful for any person knowingly to use or to suffer or permit the operation of a personnel hoist with any defect that could make it unsafe for continued operation.

3010.3.3.2. Workers. It shall be the duty of the superintendent of each construction site to ensure that in the car of each hoist on the construction site, other than approved personnel hoists operating under a limited permit, there is conspicuously posted a card, furnished by the building official, stating: DO NOT RIDE THIS HOIST. VIOLATORS SUBJECT TO A \$200.00 FINE--CITY OF HOUSTON. Except as provided in Section 3008.3.6 below, it shall be unlawful for any person to ride in a car that is so posted.

3010.3.4 Manlifts. Nothing in this code or in the Personnel Hoist Safety Code shall be construed to prohibit the use of a manlift during construction.

3010.3.5 Hoist cage platform size. The restrictions in the Personnel Hoist Safety Code regarding the cage platform size do not apply if the cage is equipped with an overload safety device.

3010.3.6 Material hoist. Nothing in this chapter shall prohibit the general contractor from assigning a competent attendant to ride a material hoist during the required period of its use.

This attendant, when assigned, shall:

1. Prevent passengers from riding the hoist (other than the attendant);
2. Prevent overloading the hoist; and
3. Observe and report unsafe conditions to the construction superintendent.

3010.4 Tests, inspections.

3010.4.1 General. The owner or owner's representative shall be responsible for the safe operation and maintenance of each elevator, dumbwaiter, escalator or moving walk installation and shall cause annual inspections, tests and maintenance to be made on such conveyances

as required in this section.

3010.4.2 Periodic inspections and tests. Every elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift and wheelchair lift shall be periodically inspected for compliance with the requirements of this chapter and the Elevator Safety Code or Manlift Safety Code, as applicable, at intervals not exceeding 12 calendar months, provided any such inspection may be made during the month following the last calendar month during which the inspection was due. Such periodic tests shall not be required for any such equipment located in a Group R-3 occupancy or an individual dwelling unit of a Group R-2 occupancy.

3010.4.3 Load tests and inspections. Full load and safety tests shall be performed by an elevator company in the presence of the building official or an approved agency. Full load and safety tests and inspections shall be performed at intervals of five years for each traction-type elevator.

3010.4.4 Inspection costs. All costs of such inspections and tests shall be paid by the owner or owner's representative.

3010.4.5 Inspection reports. After each inspection, a full and correct report of such inspection shall be filed by the authorized inspector/approved agency with the building official within 5 days after the completion of the inspection. This report shall be in a format satisfactory to the building official and shall, at a minimum, indicate the name of the authorized inspector and the name of the authorized company or approved agency, the date of the inspection, the registration number of both the authorized inspector and the authorized inspecting company, the permanent identification number of the equipment inspected, name of the owner or the owner's representative and the tag number assigned by the jurisdiction to the equipment inspected. Tags and report forms shall be obtained from the building official by the authorized inspecting company. The report shall certify that the equipment inspected meets the requirements of this chapter and the Elevator Safety Code or Manlift Safety Code, as applicable, insofar as a thorough and diligent inspection of the equipment as installed allows. The report shall list all items that do not perform in accordance with this chapter or the said safety codes. Every report shall be signed by the persons performing the inspection and witnessing the tests, as applicable.

3010.4.6 Inspections. Inspections shall be performed and/or witnessed by certified and authorized inspection personnel of an authorized company or approved agency in accordance with criteria set forth by the jurisdiction.

3010.4.7 Registration. Each authorized inspector shall meet the qualification requirements of the certifying organization. All authorized inspectors and inspection supervisors shall be certified by an organization accredited by the certifying organization in accordance with requirements of the certifying organization and be annually registered with the jurisdiction. The business registration shall be authorization for such business organization to perform inspections and submit inspection reports. Only inspection reports submitted by authorized companies or approved agencies shall be acceptable when applying for a Certificate of Inspection.

Without limiting the building official's requirements, each approved agency shall be required to

demonstrate that it has professional errors and omissions insurance coverage with policy limits of \$500,000.00 or more, per occurrence; worker's compensation insurance coverage; and comprehensive general liability insurance coverage with policy limits of \$1,000,000.00 or more, per occurrence. The jurisdiction shall be designated as an additional insured on the liability coverage, and the coverage shall include a cross-liability endorsement and a provision for 10 days' written notice to the jurisdiction prior to any cancellation. The building official shall also require an indemnity and hold harmless agreement in a form approved by the City Attorney.

All coverage shall be written by an insurance firm with a rating of A or better in the most recent A.M. Best directory.

3010.4.8 Registration revocation. The building official, for due cause, may revoke registration of any inspecting organization or inspector. Appeals of revocations may be made to the jurisdiction through the appropriate appeals process.

3010.4.9 Delinquent inspections. Failure of the building official to advise the owner or owner's representative does not reduce the responsibility of the owner's or owner's representative for annual inspections or load tests as specified in Section 3008.4.2. In the event that any required report of an inspection is not filed with the building official by the 30th day after the final date when such equipment should have been inspected or tested, the owner of the equipment or the owner's representative shall be presumed to be in violation of the requirements of this code.

If, after a 120-day period, the owner or the owner's representative has not complied with the requirements of this chapter by providing the information required, the jurisdiction shall have the authority to assign inspection of the equipment in question to an authorized inspection organization for completion of the necessary inspections and tests. The costs of such inspections shall be borne by the owner or the owner's representative and the decision of the building official shall be binding on the owner or owner's representative.

3010.5 Fees for tests and inspections. Fees shall be required as scheduled in Section 117 of this code.

3010.6 Unsafe conditions. When an inspection reveals an unsafe condition, the inspector shall immediately file with the owner or owner's representative and the building official a full and true report of such inspection and such unsafe condition. If the building official finds that the unsafe condition endangers human life, the building official shall place on such elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, wheelchair lift or personnel hoist, in a conspicuous place, a notice stating that such conveyance is unsafe. The owner or owner's representative shall ensure that such notice of unsafe condition is legibly maintained where it was placed by the building official. The building official shall also issue an order in writing to the owner or owner's representative requiring the repairs or alterations to be made to such conveyance that are necessary to render it safe and may order the operation thereof discontinued until the repairs or alterations are made or the unsafe conditions are removed. A posted notice of unsafe conditions shall be removed only upon authority of the building official.

CHAPTER 31

SPECIAL CONSTRUCTION

3103.1.1 Permit required. Temporary structures that cover an area greater than 120 square feet (11.16 M²) including connecting areas or spaces with a common *means of egress* or entrance which are used or intended to be used for the gathering together of 10 or more persons, shall not be erected, operated or maintained for any purpose without obtaining a *permit* from the *building official*. Temporary buildings shall be completely removed upon the expiration of the time limit stated in the permit.

Exception: A separate permit is not required for a construction trailer or shed used during the construction of a structure when a permit has been obtained for the construction work.

3104.4 Contents. ~~Only materials and decorations approved by the building official shall be located in the pedestrian walkway.~~

3109.1 General. Swimming pools shall comply with the applicable requirements of the *City Code* and Chapter 757 of the Texas Health & Safety Code this section and other applicable sections of this code.

*{EDITORIAL NOTE: DELETE THE REMAINDER OF THIS SECTION IN ITS ENTIRETY.}

SECTION 3112

DRIVEWAYS, SIDEWALKS, PARKING LOTS AND ALLEYS

{Review NOTE: – Section 3112 is coordinated with the City Engineer ROW standards and is subject to change.}

3112.1 Purpose. This section establishes minimum regulations governing the design and construction of driveways, sidewalks, parking lots, alleys, and paving.

3112.2 Definitions. The following words and phrases, when used in this section, have the meanings respectively ascribed to them herein:

ALLEY. A public or private right-of-way that is not used primarily for through traffic and that provides vehicular access to rear entrances to buildings or properties that front on an adjacent street.

DRIVEWAY. An approved surface on private premises that is designated for motor vehicle use and connected to the driveway approach either directly or by other improved surfaces. (For purposes of this section, the definition of private street shall be the same as the definition of driveway.)

DRIVEWAY APPROACH. An entrance to and exit from private premises that is designated for motor vehicle use and is not open for vehicle traffic except by permission of the owner of such private premises. The approach is located entirely in the right-of-way, between the edge of the roadway paving and the property line. This definition shall also include the term “driveways” as defined in the Infrastructure Design Manual.

HIGHWAY, STREET OR ROAD. A general term denoting a public way for the purpose of vehicle travel, including the entire area within the right-of-way.

INFRASTRUCTURE DESIGN MANUAL (IDM). The design manual with latest revisions at the time of permit application that sets forth the standards for infrastructure design and construction as approved by the jurisdiction’s Office of the City Engineer in the Department of Public Works and Engineering.

LOADING BERTH. A space for the loading, unloading or parking of trucks and motor vehicles other than motor vehicles principally designed for passengers that complies with Section 3112.9 of this code and with the requirements of Article VIII of Chapter 26 of the *City Code*.

LOCAL STREET OR ROAD. A street or road primarily intended for access to a residence, business or other abutting property.

MAJOR THOROUGHFARE. (1) A public street that is designated as a principal thoroughfare, a thoroughfare or a major collector on the most recent "Major Thoroughfare and Freeway Plan" approved by the jurisdiction’s City Council; or (2) any street that is designated as an express street pursuant to Section 45-39 of the *City Code* and is shown in the "Express Street Plan" of the Traffic Engineer.

PARKING LOT. A paved, surfaced or leveled area designed and ordinarily used for accessory or public parking of motor vehicles, including commercial parking areas available for lease and leased premises available for public parking. The term shall not include parking garages.

PAVING. All firm flat surfaces made of stone, brick, concrete, or other material, that are located inside private property, and not defined as a driveway or parking lot.

PEDESTRIAN. Any person afoot.

RIGHT-OF-WAY. The entire area between the property boundary lines of every way (including but not limited to roads, streets, alleys, highways, boulevards, bridges, tunnels, or similar thoroughfares), whether acquired by purchase, grant, or dedication and acceptance by the jurisdiction or by the public.

ROADWAY (GENERAL). The portion of a highway, including shoulder, for vehicular use.

SIDEWALK. That portion of a street between the curb lines or the lateral lines of a roadway and the adjacent property lines that is intended for the use of pedestrians.

3112.3 Paving on private property. Driveways, sidewalks, patios, and other paving not located in the right-of-way, or not dedicated to the jurisdiction for purpose of sidewalk construction, shall comply with this section.

3112.3.1 Driveways. Driveways shall comply with the provisions of Section 3112.3.2 and shall connect to a driveway approach as provided in Section 3112.4.3.

3112.3.2 Paving. All other paving regulated under this section shall meet the minimum slab provisions of Section 1910 and any loads specified in Chapter 16 of this code, as applicable. These provisions shall be in addition to any standards required by Chapter 28 of the *City Code*, regarding parking in yards. All paving or improved surfaces shall comply with Section 3112.6 .

3112.3.3 Parking lots. The construction of parking lots shall be as required this section and Drawings 31-01 and 31-02 of Section 3112.4.5. Parking lots shall be designed to meet the loads as specified in Chapter 16 of this code. All driveway approaches and access to the parking lot shall be approved by the jurisdiction's Office of the City Engineer in the Department of Public Works and Engineering.

3112.3.3.1 General. When an area is being developed for parking, a plan shall be prepared and submitted to the building official showing the boundary, entrances and exits, geometric layout of parking stalls and aisles, operating plan, drainage, and surfacing or paving. The area being developed for parking shall be surfaced with materials that will not permit wind or waterborne erosion from the area.

3112.3.3.2 Exiting from lot. When the parking lot is designed to create a one-way aisle operation, an exit shall be provided to enable the vehicle exiting to enter the street in a head-out position.

3112.3.3.3 Wheel stops. A 6-inch curb/wheel stop shall be installed not less than 2.5 feet from the right-of-way line when property is improved for vehicle use within 3 feet of the right of-way line. Barrier fencing or minimum 4-inch-diameter posts spaced not more than 3 feet apart and not less than 2 feet in height may be installed on the right-of-way line as a substitute for wheel stops. If the improved area is concrete, a permanent 6-inch curb shall be installed in lieu of wheel stops.

3112.4 Work located in the jurisdiction's right-of-way. All work in the right-of-way shall be approved by the jurisdiction's Office of the City Engineer in the Department of Public Works and Engineering. Construction or repair of any sidewalk, driveway approach, curb or gutter shall comply with this section and Chapter 40, Article III, of the *City Code*, and the IDM.

3112.4.1 Jurisdiction approval of plans and specifications. No person shall construct or cause to be constructed any driveway approach, sidewalk, private street, parking lot or alley connecting private property with a public street, and there shall be no fill deposited in the right-of-way without prior approval of the jurisdiction's Department of Public Works and Engineering.

3112.4.2 Plot plan. A complete site plan shall be prepared to a reasonable scale and submitted to the jurisdiction's Department of Public Works and Engineering and the jurisdiction's Department of Planning and Development showing the following information:

1. All right-of-way lines and property lines that bound the property planned for improvement.
2. Width and design of all existing driveways, driveway approaches, sidewalks, and median openings as they exist on the ground.
3. Existing conditions between the right-of-way line and the traveled roadway, including curbs, ditches, storm sewer inlets, manholes, utility boxes, utility poles, fire hydrants, trees, etc. If median islands exist, the next median opening on each side of the property and any trees within the median adjacent to the property.
4. If open ditches exist, the diameter size and invert elevation of the nearest existing culvert pipe upstream and downstream.
5. The complete intersection when property planned for improvement fronts a "T" intersecting street.
6. All existing on-site conditions with dimensions when property is being improved with add-on construction, remodeling, accessories, repairs, erection of building, parking lots or any other improvements.
7. All proposed driveways and sidewalks, and the existing right-of-way conditions for a minimum fifteen feet beyond the property line on each side.
8. Proposed parking lot layout showing the number of stalls, aisle width, general vehicular circulation pattern, and a chart illustrating the proposed means of compliance with the required parking standards and loading berths as specified by Chapter 26 of the *City Code*.
9. Existing parking lot layout showing the number of parking stalls, aisle width and general vehicular circulation pattern.

3112.4.3 Driveway approach approval. Upon receipt of an application for a driveway approach permit, the jurisdiction's Office of the City Engineer in the Department of Public Works and Engineering shall make a determination, pursuant to the guidelines set out in Section 40-86 of the *City Code*, as to whether the driveway approach applied for is necessary to provide reasonable access to the private property consistent with the safety and convenience of the public.

If after review the jurisdiction's Office of the City Engineer in the Department of Public Works and Engineering finds that the plans comply with all applicable codes and

ordinances, the Office of City Engineer shall approve the plans.

3112.4.4 Sidewalks. When required by Section 10.06D chapter 10 of the IDM, public sidewalks shall be constructed in accordance the applicable Public Works drawing number, for the specified location and site conditions.

3112.4.5 Standards for design and construction. All construction regulated by this section shall be designed and constructed in accordance with the provisions of this section, including the following two-page drawing, and the IDM, latest revised edition, including the drawings therein.

1. Space Requirements for Off-street Parking (T&T Dwg. No. 2157).

3112.4.6 Loading berth. In no case shall a "back-in" loading berth be constructed on major thoroughfares where the vehicle will use the major thoroughfare for maneuvering purposes.

Where off-street "back-out" loading berths are constructed, the loading area shall be sufficiently designed and constructed to store the commercial motor vehicle, truck-tractor, tractor, trailer or semitrailer or combination of such vehicles within private property, and no part of the vehicle shall protrude over the property line or obstruct any public street or sidewalk area in whole or in part.

The depth of the loading berth from the right-of-way line extending into the private property shall be determined based on the types of commercial vehicles using the facility.

3112.4.7 Street curb and gutter replacement. Where construction of driveway approaches and sidewalks will require the removal and replacement of curb and gutter over a continuous run in excess of 25 percent of any one block, a plan shall be submitted to the jurisdiction's Office of the City Engineer in the Department of Public Works and Engineering. In addition to all other applicable requirements in this section the plans shall comply with the IDM.

3112.4.10 Bonded contractor. No permit shall be issued to construct, reconstruct, repair, or regrade any driveway approach, sidewalk, culvert pipe, curb or gutter within the jurisdiction unless the applicant shows evidence that he/she has secured a bond in accordance with Section 40-95 of the *City Code*.

Exception: A homeowner will be issued a permit to install culvert pipe or construct a driveway approach where no curb cut is required, in accordance with jurisdiction specifications, without the bond required above.

3112.4.11 Responsibility of property owners. For responsibility of property

owners abutting public streets relative to construction or repair of sidewalks, driveways, driveway approaches, and culverts, see Section 40-84 of the City Code. For jurisdiction requirements relative to altering the grades of driveways, sidewalks, culvert pipes, curbs and gutters see Section 40-90 of the City Code.

3112.4.12 Driveway approaches prohibited. Driveways approaches are prohibited within any of the following areas:

1. The areas set forth by the Texas Department of Transportation as "access denied."
2. The areas designated "access denied" on recorded subdivision plats or another plat required to be approved by the City of Houston Planning Commission.
3. At the end of any dead-end street not terminating in a cul-de-sac or permanent turnaround and intended to be extended in the future.
4. The limits of any intersection, with the exception that special consideration will be given to major thoroughfares with existing esplanades and streets primarily used for residential use.
5. Abutting a local street where there is less than 20 feet of unobstructed depth from the right-of-way line to any obstruction. An overhead door will not be deemed as an obstruction provided that the width of the door is equal to or greater than the width of the driveway and there is also a minimum of 20 feet unobstructed depth on the private property where vehicles can be parked.
6. An area abutting a major thoroughfare where the general design of parking does not provide the necessary depth of 44 feet (13 420 mm) to allow a vehicle when exiting to enter the thoroughfare in a head-out position.
7. Any area where the jurisdiction's Department of Public Works and Engineering finds that it would not provide reasonable access to the private property consistent with the safety and convenience of the traveling public.
8. Within areas of unpaved street or alley rights-of-way, except as authorized by Section 40-340 of the City Code.

Where the construction of any building or structure upon a property causes a driveway to no longer comply with item 6 or 7 above, the driveway shall be removed and the area converted so that it conforms to the design of the surrounding area .

3112.5 Off-street parking. No building or structure shall be constructed, altered or moved onto any lot or building site unless off-street parking spaces are provided pursuant to the restrictions or covenants contained in or related to the subdivision plat or development plat for the property and the parking requirements established in Chapter 26 of the City Code.

3112.6 Drainage. All paved areas including, but not limited to, alleys, yards, courts and courtyards shall be drained into a storm sewer system where such systems are available; otherwise, they shall be drained to a place of disposal approved by the jurisdiction's Office of the City Engineer in the Department of Public Works and Engineering. For other than single family residential properties, storm water drainage shall not discharge or flow over any public sidewalk or adjoining property. When required by Chapter 9 of the IDM detention shall be required.

***{EDITORIAL NOTE: ATTACH UPDATED COPIES OF PWE DRAWINGS 31-01 AND 3102 FOR “Space Requirements for Off Street Parking”}**

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CHAPTER 32

ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY

{Review Note – Chapter 32 is coordinated with the City Engineer ROW standards and is subject to change.}

3202.2 Encroachments above grade and below 8 feet in height. Encroachments into the public right-of-way above grade and below 8 feet (2438 mm) in height shall be prohibited except as provided for in Sections 3202.2.1 through 3202.2.3. ~~Doors and windows shall not open or project into the public right-of-way~~ Projections shall not encroach within the required width of a sidewalk.

3202.2.4 Doors. Power-operated doors and their guide rails shall not project over public property. Other doors, either when fully opened or when opening, shall not project more than 3 feet (915 mm) beyond the property line, except that in alleys no projection beyond the property line is permitted.

Exception: Doors that do not encroach within the required width of a sidewalk and that will not interfere with the sidewalk flow of pedestrian traffic as determined by the building official.
3202.3 Encroachments 8 feet or more above grade. Encroachments 8 feet (2438 mm) or more above grade shall comply with Sections 3202 .3.1 through 3202.3.4.

3202.3.1 Awnings, canopies, and marquees and signs. ~~Awnings, canopies, and marquees and signs shall be constructed so as to support applicable loads as specified in Chapter 16. Awnings, canopies, marquees and signs with less than 15 feet (4572 mm) clearance above the sidewalk shall not extend into or occupy more than two-thirds the width of the sidewalk measured from the building. Stanchions or columns that support awnings, canopies, and marquees and signs shall be located not less than 2 feet (610 mm) in from the curb line.~~

3202.3.3 Encroachments 15 feet or more above grade. ~~Encroachments 15 feet (4572 mm) or more above grade shall not be limited.~~ **Entrance-type canopy.** Entrance-type canopies may have combustible coverings supported on noncombustible frames. The lowest part of such frames shall be not less than 8 feet (2438 mm) above the grade immediately below, and the lowest part of any fringe attached to the covering shall be not less than 7 feet (2133 mm) above the grade immediately below. The horizontal clearance between the entrance-type canopy and curb line shall be not less than 2 feet (610 mm). In any case, where posts may be necessary for support at the street end of such canopies, such posts shall be installed 2 feet (610 mm) from the curb line. There shall not be any other such post on public property between these outer posts and the property line. Such canopies shall not be wider than 12 feet (3658 mm).

3202.3.4 Pedestrian walkways. The installation of a pedestrian walkway over a public right-of-way shall be subject to the approval of the applicable governing authority. The vertical clearance from the public right-of-way to the lowest part of a *pedestrian walkway* shall be not less than 15 feet (4572 mm).

3202.4 Temporary encroachments. Where allowed by the applicable governing authority, vestibules and storm enclosures shall not be erected for a period of time exceeding seven months in anyone year and shall not encroach more than 3 feet (914 mm) nor more than one fourth of the width of the sidewalk beyond the street *lot line*. Temporary entrance *awnings* shall be erected with a clearance of not less than 7 feet (2134 mm) to the lowest portion of the hood or *awning* where supported on removable steel or other *approved noncombustible support*.

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CHAPTER 33 SAFEGUARDS DURING CONSTRUCTION

3302.2 Manner of removal. Waste materials shall be removed in a manner which prevents injury or damage to persons, adjoining properties and public rights-of-way. **Construction or demolishing privileges.** Earth taken from excavations and materials or rubbish taken from buildings from day to day shall not be left upon the sidewalks or streets but shall be removed as rapidly as accumulated. When such materials are dry and likely to produce a dust when handled, they shall be kept moist so as to prevent the wind blowing the same about.

3303.8 Foundation. All concrete slabs shall be removed in conjunction with the demolition of the corresponding structure.

Exception: When a written request is submitted by the applicant and approved by the building official to use the foundation for an alternate use.

3304.1.5 Permanent excavation. Permanent excavations shall be protected by permanent means where necessary to prevent the movement of the earth of adjoining properties. Such protection shall be provided by the person causing the excavations to be made and shall be on the property and at the expense of the person causing the excavation to be made. The building official may require excavations that are not otherwise protected to be protected by the construction of a substantial barricade or fence not less than 6 feet (1829 mm) in height enclosing the excavated area.

3304.1.6 Protection of adjacent property. When a lot or plot is graded to a higher or lower finished grade level than the natural grade on adjacent property, the owner of such lot or plot shall provide a retaining wall or walls on his/her own property, to protect the adjacent property from caving of earth. Approved protection shall be provided to protect the adjacent property from overflow of water.

3304.1.7 Public property. The person causing any excavation to be made shall prevent the movement of the earth of adjoining properties and the trees and natural objects thereon or therein, and shall be responsible for maintaining or restoring public sidewalks, curbs and pavements, and the properties of public utilities that may be affected by the excavation. The maintenance or restoration of sidewalks, curbs and pavements shall be performed in accordance with the grades, levels and other requirements of the jurisdiction's Department of Public Works and Engineering, and the maintenance or restoration of the property of public utilities shall be in accordance with the procedures established by the owners thereof for new construction.

3304.2 Drainage. Whenever the surface of a lot or plot is excavated, filled or graded, catch basins or connected underdrains shall be installed to preclude the accumulation of surface water. Surface water shall not be drained onto adjacent property that is not in the same

ownership without written permission from the owner of the adjacent property, and existing natural ground drainage of the ground area surrounding the lot or plot that is excavated, filled, or graded shall not be obstructed. No condition shall be created, nor any existing condition maintained, whereby there will be upon any lot or plot excavations, depressions, pits, holes, gullies or other depressions that may accumulate and retain surface water. Any such condition shall be promptly abated and protected by filling in or by providing drainage as set forth above.

3307.1 Protection required. Adjoining public and private property shall be protected from damage during construction, remodeling and demolition work. Protection must be provided for footings, foundations, party walls, chimneys, skylights and roofs. Provisions shall be made to control water run-off and erosion during construction or demolition activities. The person making or causing an excavation to be made shall provide written notice to the owners of adjoining buildings advising them that the excavation is to be made and how that the adjoining buildings will ~~should~~ be protected. Said notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation. Such notice shall be in writing and shall state the depth and location of the proposed excavation.

3311.4 Temporary standpipes. Temporary standpipes may be provided in place of permanent systems if they are designed to furnish a minimum of 500 gallons (1893 L) of water per minute at 50 pounds (345 kPa) per square inch pressure with a standpipe size of not less than 4 inches (102 mm). All outlets shall be not less than 2½ inches (63.5 mm). Pumping equipment sufficient to provide this pressure and volume shall be available at all times when the building reaches 150 feet (45.72 m) above grade.

CHAPTER 34 EXISTING STRUCTURES

SECTION 3403 ADDITIONS ALTERATIONS AND REPAIRS

~~**3403.2 Flood hazard areas.** For buildings and structures in *flood hazard areas* established in Section 1612.3, any *addition* that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in *flood hazard areas* established in Section 1612.3, any additions that do not constitute substantial improvement of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.~~

~~**3403.3 Existing structural elements carrying gravity load.** Any existing gravity load-carrying structural element for which an *addition* and its related alterations cause an increase in design gravity load of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by this code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased shall be considered an altered element subject to the requirements of Section 3404.3. Any existing element that will form part of the lateral load path for any part of the *addition* shall be considered an existing lateral load-carrying structural element subject to the requirements of Section 3403.4.~~

~~**3403.3.1 Design live load.** Where the *addition* does not result in increased design live load, existing gravity load carrying structural elements shall be permitted to be evaluated and designed for live loads *approved* prior to the *addition*. If the *approved* live load is less than that required by Section 1607, the area designed for the nonconforming live load shall be posted with placards of *approved* design indicating the *approved* live load. Where the *addition* does result in increased design live load, the live load required by Section 1607 shall be used.~~

~~**3403.4 Existing structural elements carrying lateral load.** Where the *addition* is structurally independent of the *existing structure*, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the *addition* is not structurally independent of the *existing structure*, the *existing structure* and its *addition* acting together as a single structure shall be shown to meet the requirements of Sections 1609 and 1613.~~

~~**Exception:** Any existing lateral load-carrying structural element whose demand-capacity ratio with the *addition* considered is no more than 10 percent greater than its demand-capacity ratio with the *addition* ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects.~~

~~**When allowed.** Additions, alterations, and repairs may be made to any building or structure without requiring the existing building or structure to comply with all the requirements of this code, provided the addition, alteration, or repair conforms to those required for a new building or structure.~~

Additions, alterations or repairs shall not be made to an existing building or structure that will cause the existing building or structure to be in violation of any of the provisions of this code, and such additions or alterations shall not cause the existing building or structure to become unsafe. An unsafe condition shall be deemed to have been created if an addition or alteration will cause the existing building or structure to become structurally unsafe or overloaded, will not provide adequate egress in compliance with the provisions of this code or will obstruct existing exits, will create a fire hazard, will reduce required fire resistance, or will otherwise create conditions dangerous to human life. Any building so altered, which involves a change in use or occupancy, shall not exceed the height, number of stories and area permitted for new buildings. Any building plus new additions shall not exceed the height, number of stories and area specified for new buildings.

Additions, alterations or repairs shall not be made to an existing building or structure when such existing building or structure is not in full compliance with the provisions of this code except when such addition, alteration or repair will result in the existing building or structure being no more hazardous based on life safety, fire safety and sanitation, than before such additions, alterations, or repairs are undertaken.

Exception: Alterations of existing structural elements, or additions of new structural elements, which are not required by this code and are initiated for the purpose of increasing the lateral-force-resisting strength or stiffness of an existing structure, need not be designed for forces conforming to these regulations provided that an engineering analysis is submitted to show that:

1. The capacity of existing structural elements required to resist forces is not reduced;
2. The lateral loading to required existing structural elements is not increased beyond their capacity;
3. New structural elements are detailed and connected to the existing structural elements as required by these regulations;
4. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by these regulations; and
5. An unsafe condition as defined above is not created.

3403.4.5 Smoke alarms in existing portions of a building. *Where an addition is made to a building or structure of a Group R or 1-1 occupancy, the existing building shall be provided with smoke alarms in accordance with the ~~Section 1103.8 of the International Fire Code.~~ Individual sleeping units and individual dwelling units in Group R and 1-1 occupancies shall be provided with smoke alarms in accordance with the Fire Code.*

{Editorial Note: Delete Section 3404 in its entirety}

SECTION 3405

REPAIRS TO DAMAGED BUILDINGS

3405.2.3 Extent of repair for noncompliant buildings. If the evaluation does not establish compliance of the pre-damage building in accordance with Section ~~3403.3~~ 3404.2.1, then the building shall be rehabilitated to comply with applicable provisions of this code for load

combinations that include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by this code. Earthquake loads for this rehabilitation design shall be those required for the design of the pre-damage building, but not less than 75 percent of those prescribed in Section 1613. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

~~**3405.5 Flood hazard areas.** For buildings and structures in *flood hazard areas* established in Section 1612.3, any *repair* that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in *flood hazard areas* established in Section 1612.3, any *repairs* that do not constitute substantial improvement or repair of substantial damage of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.~~

3408.1 Conformance. No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the *building official*, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is equally or less hazardous, based on life and fire risk, than the existing use and meets the minimum standards of Appendix M.

~~**3409.1 Historic buildings.** The provisions of this code relating to the construction, *repair, alteration, addition, restoration* and movement of structures, and change of occupancy shall not be mandatory for *historic buildings* where such buildings are judged by the *building official* to not constitute a distinct life safety hazard. Repairs, alterations and additions necessary for the preservation, restoration, rehabilitation or continued use of a building or structure may be made without conformance to all the requirements of this code when authorized by the building official, provided:~~

1. The building or structure has been designated as having special historical or architectural significance by the City Council of this jurisdiction as a landmark or is a contributing structure within a historic district as designated by the City Council of this jurisdiction. The foregoing designations shall be as provided in Article VII of Chapter 33 of the *City Code*.
2. Any unsafe conditions described in this code are corrected.
3. The restored building or structure will be no more hazardous based on life safety, fire safety, and sanitation than the existing building.

~~**3409.2 Flood hazard areas.** Within *flood hazard areas* established in accordance with Section 1612.3, where the work proposed constitutes *substantial improvement* as defined in Section 1612.2, the building shall be brought into compliance with Section 1612.~~

~~**Exception :** *Historic buildings* that are:~~

- ~~1. *Listed* or preliminarily determined to be eligible for listing in the National Register of Historic Places;~~
- ~~2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or~~
- ~~3. Designated as historic under a state or local historic preservation program that is *approved* by the Department of Interior.~~

SECTION 3411

{EDITORIAL NOTE: DELETE SECTION 3411 IN ITS ENTIRETY AND RESERVE.}

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CHAPTER 46
HOUSTON SIGN CODE

The Houston Sign Code, which is published as a separate document, constitutes Chapter 46 of this code.

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CHAPTER 62
LAKE HOUSTON STRUCTURES

SECTION 6201

PURPOSE

6201.1 General. This chapter prescribes design requirements applicable to bulkheads, piers, jetties and pontoon- or raft-type boats constructed in or on Lake Houston as allowed in Chapter 23 of the *City Code*.

A separate permit shall be required for each structure. In addition to the building permit, a yearly license must be obtained as required in Chapter 23, Article II, Division 2 of the *City Code*.

All pier, bulkhead, and jetty sites will be inspected before a permit is issued and after construction is completed and shall be subject to final inspection.

All bulkheads, jetties, piers shall be designed by and bear the seal of a professional engineer licensed by the State of Texas.

6201.2 Existing structures. All floating structures shall be brought into conformance with the requirements of this chapter. All other structures shall be subject to the requirements of Sections 102.6.1 and 115 of this code.

6201.3 Definitions. For the purpose of this chapter, certain terms are defined as follows:

BULKHEAD. A retaining wall designed to retard erosion of and prevent the banks of a lake from sloughing off.

COMMERCIAL PIER. *Commercial pier* means a pier that is used for mooring of vessels for money or other consideration, including, but not limited to, any of the following: vessel livery; commercial fishing camp; public beach; camping area; private club; and homeowners' association. The term also includes any pier to be used for the mooring of more than two vessels that require licenses under this chapter.

JETTY. *Jetty* means a permanent structure built in the lake to influence the current, or flow of water.

PIER. *Pier* means any platform or structure in or adjoining the water to which vessels may be moored, from which vessels may be boarded, or on which persons may walk or sit, and includes, but is not limited to any wharf, boat dock, boat house, or gangway.

PRIVATE PIER. A pier other than a commercial pier.

SECTION 6202

PIER CONSTRUCTION

6202.1 Pier construction. All piers shall comply with the following:

6202.1.1 Projection. No pier may project more than 30 feet past the point at which a 5-foot depth of water is encountered when the lake is at spillway level. No pier shall project so as

to be closer to another property than that from which it projects, at any point on such pier. No pier may project more than one third of the distance across any body of water, inlet, bay, channel, stream, or cove. No pier may be located closer than 5 feet to an extended property line. The maximum width of a commercial pier shall not exceed 12 feet and the maximum width of a private pier shall not exceed 8 feet.

6202.1.2 Superstructures. Piers may be provided with posts, railings and roofs, but shall be without walls of any kind whatsoever. Upper decks shall be limited to 600 square feet in total area. The total area for a superstructure, upper deck and boathouse combined shall not exceed 1300 square feet.

Exception: Enclosed storage that does not exceed 40 square feet may be provided to store fishing and boating equipment.

6202.1.3 Electric power. Electric wiring shall comply with the *Electrical Code*.

6202.1.4 Lumber. Wood piles and all lumber used in pier construction shall be pressure treated with an approved preservative.

6202.1.5 Warning devices. Amber or yellow reflectors with 3-inch-minimum-diameter lenses shall be placed on all piers and other surface installations placed in the lake. Reflectors shall be placed not more than 8 feet apart and shall be 18 inches above the water when the lake is at spillway elevation or elevation 44 1/2 feet above mean sea level.

6202.1.6 Design requirements. Commercial piers shall be designed for at least 100 pounds per square foot live floor load. Private piers shall be designed for at least 50 pounds per square foot live floor load.

Wave action on piers shall be computed by the following formula: $P=125h^2 (\tan \text{ angle})$, in which the point of application is assumed to be at $3/8h$; P =wave pressure, in pounds per linear foot of wave or per square foot of pier area at $3/8h$; h =height of wave in feet (minimum for h shall be 4 feet); and angle =maximum angle between center line of pier and wave front (minimum angle is 15 degrees).

6202.1.7 Plumbing. Plumbing shall comply with the *Plumbing Code*.

6202.1.8 Alternative materials. A pier constructed of alternative materials shall meet or exceed minimum structural requirements and shall support or resist a surcharge of dead weight or load against it as outlined in Section 6202.1.6 above.

6202.2 Private piers. In lieu of the design requirements in Section 6202.1.6, private piers may be constructed as follows:

6202.2.1 Piles. The minimum diameter of a pile shall be 4 inches. Piles shall be embedded at least 30 inches in firm soil.

6202.2.2 Column action. All piles shall be braced with diagonal braces with not less than 2-inch by 4-inch lumber, pressure treated, and bolted with at least 1/2-inch galvanized bolts. Two bents (set of diagonal braced piles) in any pier shall be connected with X braces.

6202.2.3 Framing. Ledgers shall be at least 2-inch by 6-inch nominal in size and shall be bolted with at least two 1/2-inch galvanized bolts.

6202.2.4 Stringers. Stringers shall be at least 2-inch by 8-inch nominal in size and spaced no more than 3 feet on center.

6202.2.5 Decking. Decking must not be less than 2 feet above 44 1/2 feet elevation. Nominal size planks shall not be less than 2-inch by 6-inch No. 2 grade, spaced not less than 1/4 inch and not more than 1 inch apart, nailed with at least two 16d galvanized nails at each bearing.

SECTION 6203

FLOATING PIERS

6203.1 Floating piers. The provisions of this section shall not apply to canoes, row boats, sail boats and other boats having a single hull. All floating piers, rafts, houseboats and other structures in use on the waters of Lake Houston shall comply with applicable requirements of Section 6202.2 and the following:

6203.1.1 Flotation. Flotation shall be by properly sealed barrels, drums, tanks or pontoons constructed of marine plywood, cypress, redwood, fiberglass, foam plastic or metal. Ferrous metals shall be covered with a marine rust-resistant coating.

6203.1.2 Fasteners. All barrel, drums, tanks or pontoons used as floats shall be secured in place by means of steel straps, bolts, welds or other fasteners of similar strength and permanency. All fasteners, including bolts, nails and screws used in the floats, shall be coated with rust-resistant marine coatings. No strap shall be less than 16 U.S. gauge in the least dimension.

6203.1.3 Steel framing. Steel framing members shall meet the requirements of Chapter 22 of this code. All steel fasteners shall be covered with a marine rust-resistant coating or be galvanized.

6203.1.4 Wood framing. All timber shall be redwood, cypress, or any other wood that has been pressure treated against decay. The least dimension of a beam or girder shall be 4 inches in width and the depth shall not be less than 8 inches.

6203.1.5 Flooring. Flooring shall be at least 2 inches nominal thickness and shall be cypress, redwood, or any other wood that has been pressure treated against decay.

Exception: Marine or exterior-grade plywood, 3/4 inch minimum, may be used for flooring if it meets the requirements of Chapter 23 of this code.

6203.1.6 Fasteners. All fasteners shall be galvanized or coated with a rust-resistant marine material.

6203.1.7 Superstructures. Rooms, cabins, houses and roofs above the platform level shall meet the requirements of Chapters 22 and 23 of this code.

6203.1.8 Projection. Notwithstanding Section 6202.1.1, floating piers shall not exceed 300 square feet in total area, with a minimum width of 8 feet and a maximum width of 12 feet.

SECTION 6204

BULKHEAD CONSTRUCTION

6204.1 Bulkhead construction. Bulkheads shall be constructed of wood, steel, concrete or aluminum. All wood used in construction of bulkheads shall be pressure treated with an approved preservative.

All private bulkheads shall be constructed on private property. This chapter shall not prohibit the city from constructing or causing to be constructed retaining walls or bulkheads where there is a hazard to life, limb or property or where there is evidence of pollution on the lake.

6204.2 Wood bulkheads. All bulkheads shall be designed by and bear the seal of a professional engineer licensed by the State of Texas and shall comply with the following.

6204.2.1 Piles. The minimum diameter of a pile shall be 5 inch tops. Piles shall be embedded a minimum of 5 feet into firm soil. Piles shall be 1 inch larger in diameter and shall be embedded 1 foot deeper for each 5 feet above ground. Piles shall not be spaced further apart than 6 feet center to center.

6402.2.2 Horizontal members. Horizontal members shall be of at least 3-inch by 8-inch lumber. Two horizontal members are required for piles less than 5 feet above natural ground. Three horizontal members are required for piles over 5 feet above natural ground. Horizontal members shall be attached to the wood piles with not less than 1/2-inch galvanized bolts, washers and nuts, or not less than two 60d common galvanized nails.

6402.2.3 Vertical members. Vertical members shall be of at least 2-inch by 6-inch nominal lumber. All vertical members shall be embedded a minimum of 3 feet into firm soil. Cracks between members shall not exceed 1/8 inch. Vertical members shall be attached to each horizontal member with not less than two 16d common galvanized nails.

6402.2.4 Anchors. Anchors shall be at least 8 inches wide and not less than 4 feet in length and shall be embedded into firm soil a minimum of 30 inches. All piles shall be secured to an anchor. Not more than three piles shall be secured to any one anchor. For corners 90 degrees or less, three piles, from the corner may be secured with cross braces forming angles to the piles. Anchor ties shall be a minimum of 1/2-inch galvanized cable with two galvanized clamps on each end or a minimum size 1/2-inch rod secured to the bulkhead and anchor. Other types of anchors may be used when approved by the building official.

6204.3 Concrete bulkheads. Concrete bulkheads shall comply with the following:

6204.3.1 General. All concrete bulkheads shall be of at least four and one-half sack mix and test a minimum of 2500 lbs./in.² at 28 days. The bulkhead shall be embedded a minimum of 36 inches into firm soil and shall not extend more than 30 inches above the grade of the fill behind the bulkhead. The width of the concrete shall be a minimum of 10 inches for the part below grade and at least 6 inches for the part above grade.

6204.3.2 Reinforcing. Reinforcement shall consist of reinforcing steel rods of at least No. 3 size placed every 18 inches vertically and every 18 inches horizontally. All intersecting steel shall be securely tied or welded to insure position in the foundation.

6204.3.3 Anchors. If anchors are used, they must be of an approved type.

6204.4 Steel sheet pile bulkheads. Steel sheet pile bulkheads shall comply with the following:

6204.4.1 General. Steel shall meet standards of ASTM A 245. All piles shall be of not less than No. 12 gauge. The depth of crimp shall not be less than 1 ½ inches and the width of the crimp shall not be less than 3 ½ inches. Piles shall not have less than 1 inch crimped interlocks along both vertical sides. Finished pile width shall not be less than 12 inches. Piles shall be embedded not less than 4 feet into firm soil, and shall not extend more than 30 inches above grade. A form-fitting driving head or sheet driver shall be used to prevent pile damage.

6204.4.2 Anchors. If anchors are used, they shall be of an approved type.

6204.5 Alternative materials. A bulkhead constructed of alternative materials shall meet or exceed minimum structural requirements according to accepted engineering practices and shall support or resist a surcharge of dead weight or load against it, as is necessary for it to retain. The alternative material shall also be non-polluting and non-corrosive.

SECTION 6205
JETTY CONSTRUCTION

6205.1 Jetty construction. It shall be unlawful to build, erect, alter, or make major repairs to any jetty on or in the lake.

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APPENDIX J

EXCAVATION AND GRADING

SECTION J102

DEFINITIONS

J102.1 Definitions. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of the *International Building Code* for general definitions.

BENCH. A relatively level step excavated into earth material on which fill is to be placed.

CIVIL ENGINEER. A professional engineer registered with the State of Texas to practice in the field of civil works.

COMPACTION. The densification of a fill by mechanical means.

CUT. See "Excavation."

DOWN DRAIN. A device for collecting water from a swale or ditch located on or above a slope, and safely delivering it To an approved drainage facility.

EARTH MATERIAL. Any rock, natural soil or fill or any combination thereof.

ENGINEERING GEOLOGIST. A geologist experienced and knowledgeable in engineering geology.

ENGINEERING GEOLOGY. The application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

EROSION. The wearing away of the ground surface as a result of the movement of wind , water or ice.

EXCAVATION. The removal of earth material by artificial means, also referred to as a cut.

FILL. Deposition of earth materials by artificial means.

GEOTECHNICAL ENGINEER. See "soils engineer."

GRADE. The vertical location of the ground surface.

GRADE, EXISTING. The grade prior to grading.

GRADE, FINISHED. The grade of the site at the conclusion of grading efforts.

GRADING. An excavation or fill or combination thereof.

KEY. A compacted fill placed in a trench excavated in earth material beneath the toe of a slope.

SOIL. Naturally occurring superficial deposits overlying bedrock.

SOILS ENGINEER (GEOTECHNICAL ENGINEER). An engineer experienced and knowledgeable in the practice of soils engineering (geotechnical engineering).

SOILS ENGINEERING (GEOTECHNICAL ENGINEERING).

SLOPE. An inclined surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

SITE. Any lot or parcel of land or contiguous combination thereof, under the same ownership, where grading is performed or permitted.

TERRACE. A relatively level step constructed in the face of a graded slope for drainage and maintenance purposes.

SECTION J103

PERMITS REQUIRED

J103.1 Permits required. Except as exempted in Section J103.2, no grading shall be performed without first having obtained a *permit* therefor from the *building official*. A grading *permit* does not include the construction of retaining walls or other structures. A separate permit shall be obtained for each site and a single permit may cover both excavations and fills on one site.

J103.2 Exemptions. A grading *permit* shall not be required for the following:

1. Grading in an isolated , self-contained area , provided there is no danger to the public, and that such grading will not adversely affect adjoining properties.
2. Excavation for construction of a structure permitted under this code.
3. Cemetery graves.
4. Refuse disposal sites controlled by other regulations
5. Excavations for wells, or trenches for utilities.
6. Mining, quarrying, excavating, processing or stockpiling rock, sand, gravel, aggregate or clay controlled by other regulations, provided such operations do not affect the lateral support of, or significantly increase stresses in, soil on adjoining properties.
7. Exploratory excavations performed under the direction of a registered design professional.
8. An excavation that: (1) is less than 2 feet (610 mm) in depth or (2) does not create a cut slope greater than 5 feet (1524 mm) in height and steeper than 1 unit vertical in 1 ½ units horizontal (66.7% slope).
9. A fill less than 1 foot (305 mm) in depth and placed on natural terrain with a slope flatter than 1 unit vertical in 5 units horizontal (20% slope), or less than 3 feet (914 mm) in depth, not intended to support structures, that does not exceed 50 cubic yards (38.3 m³) on any one lot and does not obstruct a drainage course.

Exemption from the permit requirements of this appendix shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.

J103.3 State and federal requirements. This Appendix is cumulative of all state and federal laws and regulations, including, but not limited to, Chapter 756 of the Texas Health and Safety Code and regulations issued thereunder and the Occupational Safety and Health Administration standards. No provision of this Appendix nor any permit issued hereunder shall be construed to authorize any work to be performed in a manner inconsistent with state or federal requirements. It is the responsibility of the permit holder to ensure compliance therewith.

J104.2 Site plan requirements. In addition to the provisions of Section 107, a grading plan shall show the existing grade and finished grade in contour intervals of sufficient clarity to indicate the nature and extent of the work and show in detail that it complies with the requirements of this code. The plans shall show the existing grade on adjoining properties in sufficient detail to identify how grade changes will conform to the requirements of this code. The plans shall include the following information:

1. General vicinity of the proposed site.
2. Limiting dimensions, elevations, or finish contours to be achieved by the grading and proposed drainage channels and related construction.
3. Location of any buildings or structures on the site upon which the work is to be performed and the location of any buildings or structures or property adjacent to the site that are within 15 feet (4572 mm) of the property or that may be affected by the proposed grading operations.
4. For engineered grading, property limits and accurate contours of existing ground and details of terrain and area drainage.
5. For engineered grading, detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams and other protective devices to be constructed with, or as a part of, the proposed work, together with a map showing the drainage area and the estimated runoff of the area served by any drains.
6. For engineered grading, the dates of the soils engineering and geotechnical reports together with the names, addresses, and phone numbers of the firms or individuals who prepared the reports.
7. For engineered grading, recommendations included in the soils engineering report and the geotechnical report shall be incorporated in the grading plans or specifications. When approved by the building official, specific recommendations contained in the soils engineering report and the geotechnical report that are applicable to grading may be included by reference.

J104.3 Grading designation. Grading in excess of 5,000 cubic yards (3825 m³) shall be performed in accordance with the approved grading plan prepared by a civil engineer and shall be designated as "engineered grading." The plans and specifications shall be prepared and signed by an individual licensed by the State of Texas to prepare such plans or specifications

Grading involving less than 5,000 cubic yards (3825 m³) shall be designated "regular grading" unless the permittee chooses to have the grading performed as engineered grading or the building official determines that special conditions or unusual hazards exist, in which case grading shall conform to the requirements for engineered grading.

J104.3.1 Geotechnical report. A geotechnical report a *registered design professional* shall be provided. The report shall contain at least the following:

1. The nature and distribution of existing soils;
2. Conclusions and recommendations for grading procedures;
3. Soil design criteria for any structures or embankments required to accomplish the proposed grading; and
4. Where necessary, slope stability studies, and recommendations and conclusions regarding site geology.

Exception: A geotechnical report is not required where the building code official determines that the nature of the work applied for is such that a report is not necessary.

The geotechnical report shall include data regarding the nature, distribution, and strength of existing soils; conclusions and recommendations for grading procedures; design criteria for corrective measures, including buttress fills, when necessary; and opinion on adequacy for the intended use of sites to be developed by the proposed grading as affected by soils engineering factors, including the stability of slopes.

J104.4 Liquefaction study. For sites with mapped maximum considered earthquake spectral response accelerations a short periods (S_J greater than 0.5g as determined by Section 1613, a study of the liquefaction potential of the site shall be provided, and the recommendations incorporated in the plans. The building official may also require a geotechnical report when, during the course of an investigation shallow ground water within 50 feet (15 240 mm) of the ground surface is discovered.

Exception: A liquefaction study is not required where the building official determines from established local data that the liquefaction potential is low.

J104.5 Grading Fees. Fees shall be as set forth in the fee schedule adopted by the jurisdiction. Separate permits and fees shall apply to retaining walls or major drainage structures as required elsewhere in this code. There shall be no separate charge for standard terrace drains and similar facilities.

J105.1 General. Inspections shall be governed by Section 110 409 of this code.

J105.2 Special inspections. The special inspection requirements of Section 1705.6 1704.7 shall apply to work performed under a grading permit where required by the *building official*.

J105.3 Notification of completion. The permittee shall notify the building official when the grading operation is ready for final inspection. Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices, and all erosion-control measures have been completed in accordance with the final approved grading plan, and the required reports have been submitted.

J108.1 General. Cut and fill slopes shall be set back from the property lines in accordance with this section. Setback dimensions shall be measured perpendicular to the property line and shall be as shown in Figure J108.1, unless substantiating data is submitted justifying reduced setbacks. The building official may require an investigation and recommendation by a qualified civil engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

SECTION J111

HAZARDS

112.1 General. Whenever the building official determines that any existing excavation, embankment, or fill on private property has become a hazard to life and limb, endangers property, or adversely affects the safety, use, or stability of a public way or drainage channel, the owner or agent in control of the property upon which the excavation or fill is located, upon receipt of notice in writing from the building official, shall within the period specified therein repair or eliminate such excavation or embankment so as to eliminate the hazard and be in conformance with the requirements of this code.

SECTION J112 J114

REFERENCED STANDARDS

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APPENDIX K

*{EDITORIAL NOTE: DELETE ENTIRE APPENDIX AND REPLACE WITH THE FOLLOWING.}

CONVENTIONAL LIGHT-FRAME WOOD CONSTRUCTION FOR SINGLE FAMILY RESIDENTIAL CONSTRUCTION IN HIGH-WIND AREAS

SECTION K101

GENERAL

K101.1 Scope. This chapter applies to regular-shaped single family residential buildings that are not more than three stories in height and are of conventional light-frame construction.

Exception: Detached carports and garages not exceeding 700 square feet (65 m²) and accessory to Group R-3 Occupancies need only comply with the roof-member-to-wall-tie requirements of Section K103.8.

SECTION K102

DEFINITION

CORROSION RESISTANT or NONCORROSIVE. Refers to a material having a corrosion resistance equal to or greater than a hot-dipped galvanized coating of 1.5 ounces of zinc per square foot (4 g/m²) of surface area. When an element is required to be corrosion resistant or noncorrosive, all of its parts, such as screws, nails, wire, dowels, bolts, nuts, washers, shims, anchors, ties and attachments, shall also be corrosion resistant or noncorrosive.

SECTION K103

COMPLETE LOAD PATH AND UPLIFT TIES

K103.1 General. Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be installed to provide continuous ties from the roof to the foundation system. Tie straps shall be 1 $\frac{1}{8}$ -inch (28.6 mm) by 0.036-inch (0.91 mm) (No. 20 gage) sheet steel and shall be corrosion resistant as herein specified. All metal connectors and fasteners used in exposed locations or in areas otherwise subject to corrosion shall be of corrosion-resistant or noncorrosive material. The number of common nails specified is the total required and shall be equally divided on each side of the connection. Nails shall be spaced to avoid splitting of the wood.

Exception: Pre-manufactured connectors that provide equal or greater tie-down capacity may be used, provided that they are installed in compliance with all the manufacturer's specifications.

K103.2 Wall-to-foundation tie. Exterior walls shall be tied to a continuous foundation system or an elevated foundation system in accordance with Section K105.

K103.3 Sills and foundation tie. Foundation plates resting on concrete or masonry foundations shall be bolted to the foundation with not less than 1/2-inch-diameter (13 mm) anchor bolts with 7-inch-minimum (178 mm) embedment into the foundation and spaced not more than 4 feet (1219 mm) on center.

K103.4 Floor-to-foundation tie. The lowest-level exterior wall studs shall be connected to the foundation sill plate or an approved elevated foundation system with bent tie straps spaced not more than 32 inches (813 mm) on center. Tie straps shall be nailed with a minimum of 4 ten penny nails.

K103.5 Wall framing details. The spacing of studs in exterior walls shall be in accordance with Chapter 23. Mechanical fasteners complying with this chapter shall be installed at a maximum of 32 inches (813 mm) on center as required to connect studs to the sole plates, foundation sill plate and top plates of the wall. The fasteners shall be nailed with a minimum of 8 eight penny nails.

Where openings exceed 4 feet (1219 mm) in width, the required tie straps shall be at each edge of the opening and connected to a doubled full-height wall stud. When openings exceed 12 feet (3658 mm) in width, two ties at each connection or a manufactured fastener designed to prevent uplift shall be provided.

K103.6 Wall sheathing. All exterior walls and required interior main cross-stud partitions shall be sheathed in accordance with Chapter 23.

K103.7 Floor-to-floor tie. Upper-level exterior wall studs shall be aligned and connected to the wall studs below with tie straps placed a minimum of 32 inches (813 mm) on center and connected with a minimum of 6 eight penny nails per strap.

K103.8 Roof-members-to-wall tie. Tie straps shall be provided from the side of the roof-framing member to the supporting member below the roof. Tie straps shall be placed at every roof-framing member and connected with a minimum of 8 eight penny nails.

K103.9 Ridge ties. Opposing common rafters shall be aligned at the ridge and be connected at the rafters with tie straps spaced a maximum of 32 inches (813 mm) on center and connected with 8 eight penny nails.

K103.10 Gable-end walls. Gable-end wall studs shall be continuous between points of lateral support that are perpendicular to the plane of the wall. Gable-end wall studs shall be attached with approved mechanical fasteners at the top and bottom. Eight 8 penny nails shall be required for each fastener. Fasteners shall be spaced a maximum of 32 inches (813 mm) on center.

SECTION K104

ROOFS

K104.1 Roof sheathing. Solid roof sheathing shall be applied and shall consist of a minimum 1-inch-thick (25.4 mm) nominal lumber applied diagonally or a minimum 15/32-inch-thick (11.9 mm) wood structural panel or particle board (OSB) or other approved sheathing applied with the long dimension perpendicular to supporting rafters. Sheathing shall be nailed to roof framing in an approved manner. The end joints of wood structural panels or particle board shall be staggered and shall occur over blocking, rafters, or other supports.

K104.2 Roof covering. Roof coverings shall be approved and shall be installed and fastened in accordance with Chapter 15 and with the manufacturer's instructions.

K104.3 Roof overhang. The roof eave overhang shall not exceed 3 feet (914 mm) unless an analysis is provided showing that the required resistance is provided to prevent uplift.

The roof overhang at gabled ends shall not exceed 2 feet (610 mm) unless an analysis showing that the required resistance to prevent uplift is provided.

SECTION K105

ELEVATED FOUNDATION

K105.1 General. When approved, elevated foundations supporting not more than one story and meeting the provisions of this section may be used. A foundation investigation may be required by the building official.

K105.2 Material. All exposed wood-framing members shall be treated wood. All metal connectors and fasteners used in exposed locations shall be corrosion-resistant or noncorrosive steel.

K105.3 Wood piles. The spacing of wood piles shall not exceed 8 feet (2438 mm) on center. Square piles shall not be less than 10 inches (254 mm) and tapered piles shall have a tip of not less than 8 inches (203 mm). Eight-inch-square (51613 mm²) piles shall have a minimum embedment length of 5 feet (1524 mm) and shall project not more than 8 feet (2438 mm) above undisturbed ground surface. Eight-inch (203 mm) taper piles shall have a minimum embedment length of 6 feet (1828 mm) and shall project not more than 7 feet (2134 mm) above undisturbed ground surface.

K105.4 Girders. Floor girders shall consist of solid sawn timber, built-up 2-inch-thick (51 mm) lumber, or trusses. Splices shall occur over wood piles. The floor girders shall span in the direction parallel to the potential floodwater and wave action.

K105.5 Connections. Wood piles may be notched to provide a shelf for supporting the floor girders. The total notching shall not exceed 50 percent of the pile cross section. Approved bolted connections with 1/4-inch (6.4 mm) corrosion-resistant or noncorrosive steel plates and 3/4-inch-diameter (19 mm) bolts shall be provided. Each end of the girder shall be connected to the piles using a minimum of two 3/4-inch-diameter (19 mm) bolts.

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APPENDIX L

*{EDITORIAL NOTE: DELETE ENTIRE APPENDIX AND REPLACE WITH THE FOLLOWING.}

LIFE SAFETY REQUIREMENTS FOR EXISTING BUILDINGS

SECTION L101

GENERAL

L101.1 Purpose. The purpose of this appendix chapter is to provide a reasonable degree of safety to persons occupying existing buildings by providing for alterations to such existing buildings that do not conform with the minimum requirements of this code. This appendix chapter shall apply to and the term "existing building" shall be construed to mean any building existing within the corporate limits of the city on January 1, 1986, and any building annexed into the corporate limits after that date.

Exception: Group U, R-3 Occupancies, and Group B, F, M, and S-1 or S-2 Occupancies (other than motor vehicle repair garages) that are single-story buildings without basements.

L101.2 Compliance program. The owners of existing buildings shall apply for inspection by December 31, 1991, or one year from the date of annexation of the building into the jurisdiction, whichever is later. The building official shall determine the relative hazard category of each application and shall schedule inspections starting with the highest hazard category.

In situations where the jurisdiction or any other regulatory authority requires a valid certificate of occupancy prior to licensing a use and no certificate of occupancy was issued at the time of construction, a Life Safety Compliance Certificate shall satisfy the requirements for an existing building. Inspections that are required for permitting or licensing shall be given priority over other inspections provided that the applicant advises the building official of the need. An application for inspection under this appendix chapter shall be regarded as an application for a certificate of occupancy for purpose of Section 10-3.1 of the City Code, and each application must be accompanied by the affidavit specified therein.

Hazard categories (from highest to lowest group):

1. Group A, Divisions 1 and 2; Group E; Group I; Group H, Divisions 1 and 2.
2. Group A, Divisions 3, 4, and 5
3. Group R, Divisions 1 and 2; Group B, dining and drinking establishments; Group H other than Divisions 1 and 2.
4. Group B other than dining and drinking establishments and Groups F, M, and S.

The building official shall notify the building owner or the owner's agent of the scheduled inspections at least 30 days in advance. Within 15 days following notification of the inspection date, the owner or agent shall pay the applicable fees established in Section 117.2.3. Following the inspection, the building official shall issue a Life Safety Compliance Certificate if there are no deficiencies. Where deficiencies are found, the owner or agent shall be advised in writing of the

nature of the observed deficiencies that require correction. Such written notice shall not be construed to excuse compliance with any defects that may not have been observed or noted by the inspectors, and it shall be the duty of the owner to determine and correct all violations of this appendix chapter. It shall be the duty of the owner or agent to bring the building into full compliance with this appendix chapter within six months from the date that notice is given of deficiencies of inspection except to the extent that an extension of time has been granted as provided in Section L109 of this appendix chapter.

Promptly after the building official's receipt of notice from the owner of the building is in full compliance with this appendix chapter, the building official shall inspect the building. Upon confirmation that the building is in full compliance with this appendix chapter, the building official shall issue a Life Safety Compliance Certificate to the building.

L101.3 Unsafe or hazardous conditions. Any condition in a building or building system, including, but not limited to, electrical, mechanical and plumbing systems, that is found to be unsafe, unsanitary or hazardous during a life safety compliance inspection shall be corrected as a part of the owner's compliance plan.

L101.4 Alternate materials and methods. Alternate materials and methods may be used, provided such materials or methods are found by the building official to be, for the purpose intended, at least the equivalent of that prescribed in this chapter in suitability, strength, effectiveness, fire resistance, durability and safety. The building official may permit alternates in conformance with Section 104.11 of this code.

L101.5 Dangerous buildings. The provisions of this appendix chapter shall not be construed to authorize the maintenance, use or keeping of any building in such condition that it constitutes a dangerous building under Article IX of Chapter 10 of the *City Code* or to excuse or extend the time given for compliance with any order issued thereunder by the hearing officer.

SECTION L102

EXITS

L102.1 Number of means of egress. Every floor above the first story used for human occupancy shall have at least two separate means of egress, one of which may be an exterior fire escape complying with Section L102.4. Subject to the approval of the official, an approved exit ladder device may be used in lieu of a fire escape when the construction feature or location of the building on the property makes the installation of a fire escape impracticable.

Exception: In all occupancies, second stories with an occupant load of 10 or less may have one means of egress.

An exit ladder device when used in lieu of a fire escape the use of an exit ladder device shall be permitted under the following conditions:

1. The device shall serve an occupant load of 10 or fewer, a single dwelling, or guest room.
2. The building does not exceed three stories in height.
3. Access to the device is adjacent to an opening as specified for emergency egress or rescue from a balcony.

4. The device, when operated, shall not pass in front of any building opening below the unit being served.
5. The means of activating the device for the ladder is accessible only from the opening or balcony served.
6. The device shall be installed so that it will not cause a person using it to be within 6 feet (1829 mm) of exposed electrical wiring.

L102.2 Stair construction. All required stairs shall have a minimum run of 9 inches (229 mm) and a maximum rise of 8 inches (203 mm) and shall have a minimum width of 30 inches (762 mm) exclusive of handrails. Every stairway shall have at least one handrail. A landing having a minimum 30-inch (762 mm) run in the direction of travel shall be provided at each point of access to the stairway.

Exception: Fire escapes as provided for in this section.

Exterior stairs shall be of noncombustible construction.

Exception: On buildings of Types III, IV and V construction, stairs shall be permitted to be constructed of wood of not less than 2-inch (51 mm) nominal thickness.

L102.3 Corridors. Corridors serving as an exit for an occupant load of 30 or more shall have walls and ceilings of not less than one-hour fire-resistive construction as required by this code. Existing walls surfaced with wood lath and plaster in good condition or ½-inch (12.7 mm) gypsum wallboard or openings with fixed wired glass set in metal frames are permitted for corridor walls and ceilings and occupancy separations when approved. Doors opening into such corridors shall be protected by 20-minute fire assemblies or solid wood doors not less than 1¾ inches (45 mm) thick. Where the existing frame will not accommodate a 1¾-inch-thick (45 mm) door, a 1⅝-inch-thick (35 mm) solid bonded wood-core door or equivalent insulated steel door shall be permitted. Except for Group I Occupancy patient rooms, treatment rooms and emergency rooms, doors shall be self-closing or automatic closing by smoke detection. Transoms and openings other than doors from corridors to rooms shall comply with Section 714 or be covered with a minimum of ½-inch (12.7 mm) gypsum wallboard or equivalent material on the room side.

Exception: Existing corridor walls, ceilings and opening protection not in compliance with the above may be continued when such buildings are protected with an approved automatic sprinkler system throughout the floor or when such existing corridors are at least 10 feet or more in width.

L102.4 Fire escapes.

L102.4.1 Use as required exit. Existing fire escapes that, in the opinion of the building official, comply with the intent of this section may be used as one of the required exits. The location and anchorage of fire escapes shall be of approved design and construction.

L102.4.2 General requirements. Fire escapes shall comply with the following:

1. Access from a corridor shall not be through an intervening room.

2. All openings within 10 feet (3048 mm) shall be protected by three-fourths hour fire assemblies. When located within a recess or vestibule, adjacent enclosure walls shall be of not less than one-hour fire-resistive construction.
3. Egress from the building shall be by a clear opening having a minimum dimension of not less than 29 inches (737 mm). Such openings shall be openable from the inside without the use of a key or special knowledge or effort. The sill of an opening giving access shall not be more than 30 inches (762 mm) above the floor of the building or balcony.
4. Fire escape stairways and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot (4.79 kN/m²) and shall be provided with a top and intermediate handrail on each side. The pitch of the stairway shall not exceed 60 degrees with a minimum width of 18 inches (457 mm). Treads shall be not less than 4 inches (102 mm) in width and the rise between treads shall not exceed 10 inches (254 mm). All stair and balcony railings shall support a horizontal force of not less than 50 pounds per lineal foot (729.5 N/m) of railing.
5. Balconies shall be not less than 44 inches (1118 mm) in width with no floor opening, other than the stairway opening, greater than 5/8 inch (16 mm) in width. Stairway openings in such balconies shall be not less than 22 inches by 44 inches (599 mm by 1118 mm). The balustrade of each balcony shall be not less than 36 inches (914 mm) high with not more than 9 inches (229 mm) between balusters.
6. Fire escapes shall extend to the roof or provide an approved gooseneck ladder between the top floor landing and the roof when serving buildings four or more stories in height having roofs with a slope of less than 4 units vertical in 12 units horizontal (33.3 % slope). Fire escape ladders shall be designed and connected to the building to withstand a horizontal force of 100 pounds per lineal foot (1459 N/m). Each rung shall support a concentrated load of 500 pounds (2224 N) placed anywhere on the rung. All ladders shall be at least 15 inches (381 mm) wide, located within 12 inches (305 mm) of the building and shall be placed flatwise relative to the face of the building. Ladder rungs shall be 3/4 inch (19 mm) in diameter and shall be located 12 inches (305 mm) on center. Openings for roof access ladders through cornices and similar projections shall have minimum dimensions of 30 inches by 33 inches (762 mm by 838 mm).
7. The lowest balcony shall be not more than 18 feet (5486 mm) from the ground. Fire escapes shall extend to the ground or be provided with counterbalanced stairs reaching to the ground.
8. Fire escapes shall not take the place of stairways required by the codes under which the building was constructed.
9. Fire escapes shall be kept clear and unobstructed at all times and maintained in good working order.

L102.5 Exit and fire escape signs. Exit signs shall be provided as required by this code.

Exception: The use of existing exit signs may be continued when found by the building official to provide adequate direction to the exits in emergency situations.

All doors or windows providing access to a fire escape shall be provided with fire escape signs.

L102.6 Exit illumination. Exits shall be illuminated as required by Section 1006 of this code.

SECTION L103

ENCLOSURE OF VERTICAL SHAFTS

L103.1 Enclosure of vertical shafts. Interior vertical shafts, including but not limited to stairways, elevator hoistways, and service and utility shafts, shall be enclosed by a minimum one-hour fire-resistive construction. All openings into such shafts shall be protected with one-hour fire assemblies that shall be maintained self-closing or be automatic closing by smoke detection. All other openings shall be fire protected in an approved manner. Existing fusible link-type automatic door closing devices may be permitted if the fusible link rating does not exceed 135F (57.2C).

Exceptions:

1. In other than Group I Occupancies, an enclosure will not be required for openings serving only one adjacent floor.
2. Stairways need not be enclosed in a continuous vertical shaft if each story is separated from other stories by one-hour fire resistive construction or approved wired-glass set in steel frames. In addition, all exit corridors shall be sprinklered. Each opening between the corridor and any occupant space shall have at least one sprinkler head above the opening on the tenant side. The sprinkler system may be supplied from the domestic water supply if of adequate volume and pressure.
3. Vertical openings need not be protected if the building is protected by an approved automatic sprinkler system.

SECTION L104

BUILDING ACCESS OR SPRINKLER PROTECTION

L104.1 Building access or sprinkler protection. An approved automatic sprinkler system shall be provided throughout a basement or a story that:

1. Exceeds 1,500 square feet (139.3 m²) in area; and
2. Does not have a minimum of 20 square feet (1.86 m²) of opening entirely above the adjoining ground level in each 50 lineal feet (15 240 mm), or fraction thereof, of exterior wall on at least one side of the building. Openings shall have a minimum clear dimension of 30 inches (762 mm).

Additionally, and notwithstanding the application of the foregoing criteria, if any portion of a basement is located more than 75 feet (22 860 mm) from required openings, the basement shall be provided with an approved automatic sprinkler system throughout. The distance of 75 feet shall be as measured in a straight line without regard to intervening walls or other objects.

Exception: Existing parking garages with no other occupancies may substitute an automatic fire alarm system utilizing "rate-of-rise" detectors when coupled with a smoke-removal system capable of six air changes per hour.

SECTION L105

STANDPIPES

L105.1 Standpipes. Any building over four stories in height shall be provided with an approved Class I or Class III standpipe system.

SECTION L106

SMOKE DETECTORS

L106.1 General. Day-care centers, dwelling units, and guest rooms in hotels or lodging houses that are used for sleeping purposes shall be provided with smoke detectors installed in accordance with the requirements of the *Fire Code*.

L106.2 Power source. Smoke detectors may be battery operated or may receive their primary power from the building wiring when such wiring is served from a commercial source. Wiring shall be permanent and without disconnecting switches other than those required for over current protection.

L106.3 Location with dwelling units. In dwelling units, detectors shall be mounted on the ceiling or wall at a point centrally located in the corridor or area giving access to each separate sleeping area. Where sleeping units are on an upper level, the detector shall be placed at the center of the ceiling directly above the stairway. Detectors shall also be installed in the basements of dwelling units having stairways that open from the basement into the dwelling. Detectors shall sound an alarm audible in all sleeping areas of the dwelling unit in which they are located.

L106.4 Location in efficiency dwelling units and hotels. In efficiency dwelling units, hotel suites and in hotel sleeping units, detectors shall be located on the ceiling or wall of the main room or hotel sleeping unit. When sleeping units within an efficiency dwelling unit or hotel suite are on an upper level, the detector shall be placed at the center of the ceiling directly above the stairway. When actuated, the detector shall sound an alarm audible within the sleeping area of the dwelling unit, hotel suite, or sleeping unit in which it is located.

SECTION L107

SEPARATION OF OCCUPANCIES

L107.1 General. Occupancy separations shall be provided as specified in Section 508 of this code. When approved by the building official, existing wood lath and plaster in good condition or ½ inch (12.7 mm) gypsum wallboard may be acceptable where one-hour occupancy separations are required.

SECTION L108

FIRE ALARMS

L108.1 General. High-rise buildings as defined in Section 403 of this code shall be equipped with an approved manual fire alarm system that will provide an audible signal at a constantly attended location within the building.

Exception: Systems that are connected to a central, proprietary, or remote station service.

SECTION L109

EXTENSION OF TIME

L109.1 Application. The owner of a building may apply to the building official for an extension of time to comply with any requirement of this appendix chapter. The owner of the building shall set forth the following information on such an application:

1. The specific requirements of this chapter for which the owner is seeking an extension of time;
2. The period of time the owner believes is necessary to meet the requirements; and
3. The reasons why the owner believes such an extension of time is necessary.

The application shall be accompanied by documents (examples of which include affidavits, photographs, receipts, loan applications, and contracts with third parties) demonstrating that the owner has made substantial and timely attempts to bring the building into full compliance with this appendix chapter.

The owner of the building shall swear to the accuracy of all facts stated in the application.

L109.2 Approval. No request for an extension of time shall be granted unless the building official finds that such an extension of time is reasonably necessary to perform the work and that granting such an extension of time will not result in an unreasonable risk to the safety of the occupants of the building or to others.

L109.3 Denial. If the building official denies any request for an extension of time under this section, the owner of the building may appeal such a decision to the General Appeals Board. If the General Appeals Board upholds the decision of the building official on the matter, the board's decision may be appealed to City Council, if notice of appeal, addressed to City Council, is delivered to the office of the City Secretary within 10 days of the date of the board's decision. Appeals shall be subject to City Council Rule 12 (see Section 2-2 of the *City Code*).

SECTION L110

EXCEPTIONS

L110.1 Application. The owner of a building may apply to the General Appeals Board for an exception from any requirement of this appendix chapter. The owner of the building shall set forth the following information on such application:

1. The specific requirements for which the owner is seeking an exception; and
2. The reasons the owner believes that an exception should be granted., and
3. An application shall be sworn to by the owner of the building.

L110.2 Approval. No request for an exception shall be granted under this section unless the General Appeals Board finds that:

1. The application of certain requirements of this chapter is not reasonably necessary to protect the safety of the occupants of the building or other persons; or
2. Literal application of certain requirements of this chapter would have an unduly harsh impact so as to substantially destroy the value of the property to its owner after considering the totality of the circumstances.

L110.3 Denial. If the General Appeals Board denies any request for an exception under this section, the owner of the building may appeal such a decision to the City Council, if notice of the appeal, addressed to City Council, is delivered to the office of the City Secretary within 10 days of the date of the board's decision. Appeals shall be subject to City Council Rule 12 (see Section 2-2 of the City Code).

DRAFT

APPENDIX M

*{EDITORIAL NOTE: DELETE ENTIRE APPENDIX AND REPLACE WITH THE FOLLOWING.}

MINIMUM PROVISIONS FOR CHANGE OF OCCUPANCY

SECTION M101

GENERAL

M101.1 Change of occupancy. The character of the occupancy of existing buildings and structures may be changed, provided the building or structure meets the requirements of this appendix and the requirements of this code for new construction.

Every change of occupancy to one classified in a different group or a different division of the same group shall require a new certificate of occupancy, regardless of whether any alterations to the building are required by this appendix.

If the building or portion thereof does not conform to the requirements of this appendix for the proposed occupancy group or division, the building or portion thereof shall be made to conform to all requirements of this code as for new construction.

M101.2 Special uses or occupancies. Where the character or use of an existing building or part of an existing building is changed to one of the following special use or occupancy categories, the building or structure shall comply with all requirements of this code as for new construction.

1. Covered mall buildings.
2. Atriums.
3. Motor-vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
9. Hazardous materials.
10. Underground buildings.

M101.3 Hazard category classification tables. The relative degree of hazard between different occupancy groups or between divisions of the same group is set forth in the hazard category classifications in Tables M103 through M105. An existing building may have its occupancy changed to an occupancy within the same hazard group or to an occupancy in a lesser hazard group without complying with all the provisions of this code regarding Heights and Areas in Table M103, Life Safety in Table M104, and Exterior Walls in Table M105.

SECTION M102
STRUCTURAL SAFETY

M102 Vertical loads. Buildings and structures shall comply with the requirements for vertical load for new construction.

Exceptions:

1. Analysis and test methods for evaluation of existing materials may be conducted using the methods specified in the code under which the building was constructed, or other standards as approved by the building official.
2. Existing roofs may be retained, provided that:
 - 2.1. Any unsafe or overloaded conditions are corrected; and
 - 2.2. The roof dead load is not increased by use, reroofing or added equipment.

SECTION M103
HEIGHTS AND AREAS

M103.1 Heights and areas of buildings and structures shall meet all the requirements of this code for the new occupancy as for new construction.

Exception: Existing buildings exceeding the maximum allowable heights and areas permitted for new buildings may undergo a change of occupancy if the hazard level of the new occupancy is equal to or less than the existing hazard group as shown in Table M 103.

TABLE M103

HAZARD CATEGORIES AND CLASSIFICATIONS, HEIGHTS AND AREAS

<u>RELATIVE HAZARD</u>	<u>OCCUPANCY CLASSIFICATION</u>
1	<u>H (highest hazard group)</u>
2	<u>A-1, A-2, A-3, A-4, I, R-1, R-2, R-4</u>
3	<u>E, F-1, S-1, M</u>
4	<u>B, F-2, S-2, A-5, R-3, U (lowest hazard group)</u>

SECTION M104
LIFE SAFETY AND EXITS

M104.1 General. When a change of occupancy is made to a higher hazard group as shown in Table M104, all elements of the exit system shall comply with all of the requirements of this code as for new construction.

Exception: Existing corridors and stairways meeting all of the requirements of Appendix L may be used.

M104.2 Existing means of egress systems. Existing means of egress systems complying with Appendix L shall be accepted if the occupancy change is to an equal or lesser hazard group when evaluated in accordance with Table M104.

M104.3 Separation of occupancies. When approved by the building official, existing wood lath and plaster in good condition or 1/2-inch-thick (12.7 mm) gypsum wallboard may be accepted where a one-hour fire barrier is required.

M104.4 Vertical shafts.

M104.4.1 Enclosure of shafts. Vertical shafts may be designed to meet either the requirements of atria as required by this code for new construction or the requirements of this section.

M104.4.2 Stairways. Interior stairways shall be enclosed as required by this code for new construction when a change of occupancy is made to a higher hazard group as shown in Table M104.

Exceptions:

1. In other than Group I Occupancies, an enclosure will not be required for openings serving only one adjacent floor and not connected with corridors or stairways serving other floors.
2. Existing stairways not enclosed need not be enclosed in a continuous vertical shaft if each story is separated from other stories by one-hour fire-resistive construction or approved wired glass set in steel frames and all exit corridors are sprinklered. The openings between the corridor and occupant space shall have at least one sprinkler head above the openings on the tenant side. The sprinkler system may be supplied from the domestic water-supply system, provided the system is of adequate pressure, capacity and sizing for the combined domestic and sprinkler requirements.

M104.4.3 Other vertical shafts. Interior vertical shafts, including, but not limited to, elevator hoistways and service and utility shafts, shall be enclosed with a minimum of one-hour fire-resistive construction.

Exceptions:

1. Vertical openings other than stairways need not be enclosed if the entire building is provided with an approved automatic sprinkler system.
2. Where one-hour fire-resistive floor construction is required, vertical shafts need not be enclosed when such shafts are blocked at every floor level by the installation of not less than 2 full inches (51 mm) of solid wood or equivalent construction.

M104.4.4 Openings into vertical enclosures. All openings into vertical shafts shall be protected by fire assemblies having a fire-protection rating of not less than one hour and shall be maintained self-closing or shall be automatic closing by actuation of a smoke detector. All other openings shall be fire protected in an approved manner. Existing fusible link-type automatic door-closing devices may be permitted if the fusible link rating does not exceed 135°F (57°C).

TABLE M104

HAZARD CATEGORIES AND CLASSIFICATIONS, LIFE SAFETY AND EXITS

<u>RELATIVE HAZARD</u>	<u>OCCUPANCY CLASSIFICATION</u>
<u>1</u>	<u>H (highest hazard group)</u>
<u>2</u>	<u>I-2, I-3, I-4</u>
<u>3</u>	<u>A, E, I-1, M, R-1, R-2, R-4</u>
<u>4</u>	<u>B, F-1, R-3, S-1</u>
<u>5</u>	<u>F-2, S-2,</u>
<u>6</u>	<u>U (lowest hazard group)</u>

SECTION M105

EXTERIOR WALLS AND STAIRWAY ENCLOSURES

M105.1 Fire resistance of walls. Exterior walls shall have fire resistance and opening protection as set forth in this code for new construction. This provision shall not apply to walls at right angles to the property line.

Exceptions:

1. Where a fire-resistive rating greater than two hours is required for a building of any type of construction, existing noncombustible exterior walls having a fire-resistive rating equivalent to two hours, as determined by Section 721 of this code, may be accepted, provided:
 - 1.1. The building is classified as Group A, B, F, M or S; and
 - 1.2. The building does not exceed three stories in height.
2. Existing exterior walls shall be accepted if the occupancy is changed to a hazard group, which is equal to or less than the existing occupancy as defined in Table M105.

M105.2 Opening protection. Openings in exterior walls shall be protected as required for new construction. When openings in the exterior walls are required to be protected due to distance from the property line, the sum of the area of such openings shall not exceed 50 percent of the total area of the wall in each story.

Exceptions:

1. Protected openings shall not be required for Group R-1 occupancies that do not exceed three stories in height and are located not less than 3 feet (914 mm) from the property line.
2. Where opening protection is required, an automatic fire-extinguishing system throughout may be substituted for opening protection.
3. Opening protection may be omitted when the change of occupancy is to an equal or lower hazard classification in accordance with Table M105.

TABLE M105

HAZARD CATEGORIES AND CLASSIFICATIONS OF EXTERIOR WALLS AND STAIRWAY ENCLOSURES

<u>RELATIVE HAZARD</u>	<u>OCCUPANCY CLASSIFICATION</u>
<u>1</u>	<u>H (highest hazard group)</u>
<u>2</u>	<u>F-1, M, S-1</u>
<u>3</u>	<u>A, B, E, I, R</u>
<u>4</u>	<u>F-2, S-2, U (lowest hazard group)</u>

APPENDIX N

AIRPORT SOUND ATTENUATION REQUIREMENTS

SECTION N101

GENERAL

N101.1 Purpose. The purpose of this appendix is to set forth sound attenuation specifications for buildings when such sound attenuation is required by Article VI, Chapter 9 of the *City Code* to achieve an interior sound level of 45 dBA.

N101.2 Applicability. These provisions shall apply under circumstances where an airport land use permit is required under Section 9-381(a)(2) and (3) of the *City Code* and are in addition to other applicable building standards set forth elsewhere in this code.

N101.3 Alternate compliance. Alternative means or methods which equal or exceed the standards set forth in these provisions may be used when approved by the building official in accordance with section 104.11 of this code.

SECTION N201

DEFINITIONS

N201.1 Definitions. For purposes of these provisions, the following words shall have the meaning shown herein.

SOUND TRANSMISSION CLASS (STC). An integer rating relating to the quality of sound attenuation for building partitions such as walls, ceilings, doors, and windows.

SECTION N301

WALLS

N301.1 General. The specific exterior wall assemblies set forth in N301.2 and N301.3 shall include the interior finishes set forth therein.

Exception: Exterior wall assemblies or materials that have been tested or listed with a minimum STC rating of 40.

N301.2 Brick veneer. When exterior walls are constructed using brick veneer, a minimum of ½ inch gypsum drywall shall be applied as the interior finish.

N301.3 Vinyl or cement sidings. When exterior walls are constructed using vinyl or cement sidings, a minimum of 5/8 inch gypsum drywall shall be applied as the interior finish.

N301.4 Other assemblies and materials. All other exterior wall assemblies or materials shall have a tested or listed minimum STC rating of 40.

SECTION N401

WINDOWS

N401.1 Windows. All windows shall have a minimum STC rating of 40 when tested in accordance with ASTM E 90.

N401.2 Insulation at windows. The cavity between the framing and the window frame shall be insulated with fiberglass or foam insulation to the depth of the window frame.

SECTION N501

DOORS

AN501.1 Doors. All exterior doors shall be provided with a minimum STC Rating of 40 when tested in accordance with ASTM E 90.

Exception: An exterior door may have a tested or listed STC rating of less than 40 when installed with a storm door which when combined, achieve a minimum tested or listed STC rating of 40.

SECTION N601

ROOF/CEILING ASSEMBLIES

N601.1 General. Roof/ceiling assemblies shall be constructed in accordance with the requirements of N601.2 or N601.3.

Exception: Roof/ceiling assemblies or materials that have been tested or listed with a minimum STC rating of 40.

N601.2 Ceilings with unconditioned attic space above. Ceilings with unconditioned attic space above shall be insulated with a minimum of ½ inch gypsum drywall on the interior ceiling side covered with a minimum of 12 inches of blown in fiberglass insulation.

N601.3 Ceilings without attic space above. Ceilings without attic space above shall be insulated with a minimum of 5/8 inch gypsum drywall on the interior side filled with a minimum of 9 inches of fiberglass batt insulation with a 1 inch air space between the roof sheathing and the fiberglass.*

APPENDIX R

REUSE OF MATERIALS

SECTION R101

GENERAL

R101.1 Scope. The reuse of materials shall be allowed in accordance with the provisions of this section.

R101.2 Intent. This appendix is intended to encourage the reuse of materials when possible and divert construction debris from landfills. This appendix is not mandatory, but specifies parameters for the reuse of materials without compromising the integrity of the materials.

R101.3 General notice. The user should be vigilant regarding lead, asbestos, radon, PCB's, and other potentially harmful substances that are no longer allowed in buildings. Buildings built before 1978 may have used lead paint. Asbestos may be found in the insulation, fireproofing, floors, walls or roof. Newer buildings may have asbestos in the floors or roof. Any fluorescent light fixtures manufactured prior to 1979 may contain PCBs; new capacitors should be labeled: No PCBs.

SECTION R201

DEFINITIONS

R201.1 General. The following words and terms shall, for the purposes of this appendix, have the meaning shown herein.

DOWN CYCLED MATERIALS. The use of a material more than once, but cannot be used for the same purpose for which it was originally intended. This material would require some special processing. For example, re-using crushed concrete as an aggregate for more concrete.

GOOD CONDITION. Materials that have been visually inspected by the code official and that are determined to be fit for installation. Materials shall be in sufficient condition to reuse without potential harm to the health, safety, and welfare of the public. Materials shall not have any mold or water damage. Wood products shall not contain any holes other than wire or nail holes. Wood products shall not contain rot, splits, buckling, warpage or other deterioration that would prevent the material from functioning in its intended use. The condition shall be determined by the code official.

IRREGULAR MATERIALS. Irregular materials are materials that have been made by a manufacturer, but do not meet the exact specifications of the product and cannot be sold for their specific purpose. These materials can be down cycled, for example, an irregular paver meant for commercial use could be used for residential purposes.

RECOVERABLE RESOURCES. Materials that have useful physical or chemical properties after serving their original purposes. Recoverable resources can be re-used or recycled for the same or for other purposes.

RECYCLABLE MATERIALS. Materials that normally have been or would be discarded (such as scrap and waste) and materials that may be reused after undergoing some kind of physical or chemical processing. Recyclable materials may include materials that have been used and deformed prior to demolition or deconstruction. Recyclable materials do not include those items that may be used again for their original purposes or functions without any special processing.

RECYCLING. The result of a series of activities by which materials that would become or otherwise remain waste, are diverted from the solid waste stream by collection, separation, and processing and are used as raw materials in the manufacture of goods sold or distributed in commerce or the reuse of such materials as substitutes for goods made of virgin materials.

RECYCLED MATERIALS. materials that contain post-industrial or post-consumer waste as defined by the Federal Trade Commission.

REUSED MATERIALS. Materials that are reused more than once in its original form for its original purpose or for another purpose without any special processing.

SECTION R301
ACCEPTABLE APPLICATIONS

R301.1 Acceptable applications. Reused materials are allowed as identified in Table R301.1.

<u>TABLE R 301.1 REUSED MATERIALS - ACCEPTABLE APPLICATIONS FOR USED MATERIALS</u>				
<u>Code Section</u>	<u>Material- original use</u>	<u>Typical allowed application for reuse</u>	<u>Comments</u>	<u>General Exclusions</u>
<u>CONCRETE, ASPHALT</u>				
<u>Section 3112</u>	<u>Asphalt</u>	<u>reuse for driveways and sidewalks or roadbase</u>	-	<u>1,7</u>
-	<u>Concrete</u>	<u>as fill or aggregate for concrete mix, garden borders, driveways (as gravel), road base</u>	-	<u>1,7</u>
-	<u>Pilings</u>	<u>see concrete</u>	-	<u>3</u>
<u>MASONRY AND STONE</u>				
-	<u>Brick and stone veneer</u>	<u>horizontal surfaces on site and interior floors, non-structural walls, veneer</u>	-	<u>3</u>
-	<u>Pavers</u>	<u>Non structural paving or floors and veneer</u>	-	<u>3</u>
-	<u>Concrete blocks and products</u>	<u>finishes, interior walls, low fences, base for porous paving.</u>	<u>Reused in original structural capacity if certified by Engineer, re note 3.</u>	<u>3</u>
-	<u>Stone- Sandstone, Slate, granite and marble</u>	<u>finishes, roofing (slate)</u>	-	<u>3</u>
<u>2103.6- New exception</u>	<u>Glass Block</u>	<u>original use</u>	<u>no larger than 25 sf, supported on at least 3 sides. Not allowed in structural walls</u>	<u>5</u>

METALS				
-	<u>Cold Formed Metal Framing- Studs, joists, rafters, perlins, girts</u>	<u>repetitive members in original capacity, structural if identifiable</u>	<u>Steel with Mill test certificates may be reused in original capacity. Steel design values for materials manufactured after 1910 can be found in Design Guide 15: AISC Rehabilitation and Retrofit Guide. Weldability for sections produced prior to the 1950's need testing.</u>	<u>4</u>
-	<u>Metal joists</u>	<u>if identifiable can be used for structure</u>		<u>4</u>
<u>Ch. 17- Special Inspection</u>	<u>Structural steel- Columns, pillars, and posts</u>	<u>reuse in structural capacity with special inspection.</u>		<u>4</u>
WOOD, AGRI-FIBER, AND PLASTIC MATERIALS				
-	<u>Columns, pillars, and posts</u>	<u>Reuse in original capacity</u>	-	-
-	<u>Dimensional Lumber, min. 4 ft long, unstamped (includes rough hewn)</u>	<u>Install as one dimension higher than required OR 1.Floor plates 2.Second top-plates 3.Fillers, fire-blocking, and nailers 4.Strut-bracing, bridging, and ledgers (if ledger is one dimension larger than what otherwise might be used)</u>	<u>for species not easily recognized, may need Special Inspection 4</u>	-
-	<u>Dimensional Lumber (stud capacity), with original stamp (includes rough hewn)</u>	<u>Reused in original capacity 1.Studs (cripple, trim, and jack), joists, rafters 2.Wind-bracing</u>	-	<u>8</u>
-	<u>Glu-lam beams, I-joists, laminated veneer lumber, parallel strand lumber, oriented strand lumber (unstamped)</u>	<u>Install as per dimensional lumber</u>	-	-
-	<u>Trusses</u>	-	<u>Trusses to be inspected by Structural Engineer as installed</u>	<u>4</u>
-	<u>Utility Poles (untreated)</u>	-	-	<u>3</u>
-	<u>Oriented strand board (OSB) and Plywood</u>	<u>reuse in original capacity</u>	-	<u>8</u>
-	<u>Plastic lumber</u>	<u>reuse in original capacity</u>	-	-
-	<u>Masonite and chipboard</u>	<u>reuse in original capacity</u>	-	<u>8</u>
WINDOWS, DOORS, INSULATION, SIDING, AND ROOFING				
<u>Chapter 7</u>	<u>Insulation- Batt, gently used</u>	<u>Reuse in horizontal capacities only, such as attics or sound attenuation in cavities.</u>	<u>25% reduction in R-Value to be assumed.</u>	<u>2</u>

<u>Chapter 7</u>	<u>Insulation- Board, gently used</u>	<u>reuse in original capacity</u>	<u>Polyisocyanurte to be reduced by R-2 per board. Extruded and/or expanded polystrene to remain the same R-value and reused in the same orientation (horizontal or vertical).</u>	<u>2</u>
-	<u>Windows</u>	<u>reuse in original capacity or as décor</u>	-	<u>2</u>
-	<u>Doors and Door assemblies</u>	<u>reuse in original capacity</u>	-	<u>2, 5</u>
-	<u>Glass, sheet and Plexiglas</u>	<u>reuse in original capacity or as décor</u>	-	<u>2</u>
-	<u>Stained glass</u>	<u>reuse in original capacity</u>	-	<u>2</u>
-	<u>Siding- cement board, wood, vinyl, metal panels</u>	<u>reuse in original capacity</u>	-	<u>5</u>
-	<u>Soffits- cement board, wood, perforated metal panels, aluminum panels</u>	<u>reuse in original capacity</u>	-	<u>5</u>
-	<u>Roof tiles</u>	<u>reuse in original capacity, fencing, ornament</u>	-	-
-	<u>metal roof panels</u>	<u>reuse in original capacity</u>	-	-
FINISHES				
<u>Section 803</u>	<u>Acoustical ceiling tiles</u>	<u>reuse in original capacity</u>	-	<u>5</u>
<u>Section 804</u>	<u>Carpet and carpet pad</u>	<u>reuse in original capacity</u>	-	-
<u>Section 803</u>	<u>Drywall</u>	<u>reuse in original capacity</u>	-	-
<u>Chapter 8</u>	<u>Flooring—wood</u>	<u>reuse in original capacity</u>	-	-
-	<u>Cement Board</u>	<u>reuse in original capacity</u>	-	-
-	<u>Hinges and other hardware</u>	<u>reuse in original capacity</u>	-	<u>1, 5</u>

General Exclusions:

1. TAS- Texas Accessibility Standards
2. Must comply with Houston Energy Code
3. For structural reuse applications, review and stamp of plans by an Engineer.
4. For structural reuse of material, the material and its new application must be inspected and certified by an Engineer.
5. Not allowed in fire assemblies unless tested or marked
6. EPA Act of 1995 (water flush/ flow rates)
7. Per City planning requirements, do not use in Driveways and sidewalks in the Right Of Way
8. Material should be stamped. For structural steel, the material should be identifiable.