Houston Amendments to the 2006 International Building Code

Second Printing
As revised by Ord. No. 2010-1016

Passed 11/03/2010

Effective 12/31/2010

CHAPTER 1
ADMINISTRATION

101.1 Title. These regulations shall be known as *the City of Houston Building Code ~~of [NAME OF JURISDICTION]~~*, hereinafter referred to as "this code."

The City of Houston Construction Code collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the Adopting Ordinance, which appears in the preamble of this code. A predecessor document to this code was known as the *City of Houston Building Code–General Provisions*, and any reference to the *City of Houston Building Code–General Provisions* in other jurisdiction ordinances shall be construed to mean this code. In certain instances, references to the building code will be found in ordinances, contracts, and other documents of the jurisdiction. In any instance in which that reference was intended to encompass the codes that collectively constitute the City of Houston Construction Code, then it shall be so construed.

101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures, except work located primarily in a public way, public utility towers and poles, mechanical equipment not specifically regulated in this code, and hydraulic flood control structures.

Exception: Except as noted in Section 101.4.1, ~~D~~detached one- and two-family dwellings and multiple single-family dwellings (town houses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the ~~*International*~~ *Residential Code*.

101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted. Appendices E, K, L, M, N, and R including any amendments thereto adopted by this jurisdiction, are hereby adopted and shall be incorporated into and made part of this code.

101.4.1 Electrical. The provisions of the ~~*ICC*~~ *Electrical Code* shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

Exception: Installation and maintenance of electrical wiring and related components in structures to which the *Residential Code* is applicable shall, as provided by Chapter 214 of the Texas Local Government Code, be governed by the *National Electrical Code* as it existed on May 1, 2001, and any amendments thereto adopted by the jurisdiction.

101.4.2 Gas. The provisions of the ~~*International Fuel Gas*~~ *Plumbing Code* shall apply to the installation of gas piping from the point of delivery, gas appliances and related accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to the inlet connections of appliances and the installation and operation of residential and commercial gas appliances and related accessories. This code includes numerous references to the *International Fuel Gas Code*. For the sake of convenience and cost savings to the public in the preparation of Houston Supplement pages to this code,

those references have not been revised unless the text of the provision in which they appear has otherwise been revised by this jurisdiction. Any such references shall be regarded as references to the corresponding code as adopted by this jurisdiction from time to time. This jurisdiction reserves the right to adopt codes based upon promulgations of organizations other than the International Code Council, including but not limited to the Uniform Series Codes, to the extent permitted by State law. Any reference to a specific chapter, section, or provision of a code that has not been adopted by this jurisdiction shall be construed to mean the corresponding provision of the corresponding code as adopted by this jurisdiction.

Exception: Work governed by the *Residential Code*.

101.4.3 Mechanical. The provisions of the ~~*International*~~ *City of Houston Mechanical Code* shall apply to the installation, alterations, repairs, and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators, and other energy-related systems. This code includes numerous references to the *International Mechanical Code*. For the sake of convenience and cost savings to the public in the preparation of Houston Supplement pages to this code, those references have not been revised unless the text of the provision in which they appear has otherwise been revised by this jurisdiction. Any such references shall be regarded as references to the corresponding code as adopted by this jurisdiction from time to time. This jurisdiction reserves the right to adopt codes based upon promulgations of organizations other than the International Code Council, including but not limited to the Uniform Series Codes, to the extent permitted by State law. Any reference to a specific chapter, section, or provision of a code that has not been adopted by this jurisdiction shall be construed to mean the corresponding provision of the corresponding code as adopted by this jurisdiction.

Exception: Work governed by the *Residential Code*.

101.4.4 Plumbing. The provisions of the ~~*International*~~ *City of Houston Plumbing Code* shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system. ~~The provisions of the *International Private Sewage Disposal Code* shall apply to private sewage disposal systems.~~ This code includes numerous references to the *International Plumbing Code*. For the sake of convenience and cost savings to the public in the preparation of Houston Supplement pages to this code, those references have not been revised unless the text of the provision in which they appear has otherwise been revised by this jurisdiction. Any such references shall be regarded as references to the corresponding code as adopted by this jurisdiction from time to time. This jurisdiction reserves the right to adopt codes based upon promulgations of organizations other than the International Code Council, including but not limited to the Uniform Series Codes, to the extent permitted by State law. Any reference to a specific chapter, section, or provision of a code that has not been adopted by this jurisdiction shall be construed to mean the corresponding provision of the corresponding code as adopted by this jurisdiction.

Exception: Work governed by the *Residential Code*.

101.4.5 Property maintenance. The provisions of ~~the *International Property Maintenance Code*~~ Chapter 10 of the *City Code* shall apply to existing structures and premises~~; equipment and facilities; light, ventilation, space heating, sanitation, life and fire safety hazards; responsibilities of owners, operators and occupants; and occupancy of existing premises and structures~~.

101.4.6 Fire prevention. The provisions of the ~~*International*~~ *City of Houston* *Fire Code* shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, repair, alteration or removal of fire suppression and alarm systems or fire hazards in the structure or on the premises from occupancy or operation. This code includes numerous references to the *International Fire Code*. For the sake of convenience and cost savings to the public in the preparation of Houston Supplement pages to this code, those references have not been revised unless the text of the provision in which they appear has otherwise been revised by this jurisdiction. Any such references shall be regarded as references to the corresponding code as adopted by this jurisdiction from time to time. This jurisdiction reserves the right to adopt codes based upon promulgations of organizations other than the International Code Council, including but not limited to the Uniform Series Codes, to the extent permitted by State law. Any reference to a specific chapter, section, or provision of a code that has not been adopted by this jurisdiction shall be construed to mean the corresponding provision of the corresponding code as adopted by this jurisdiction.

101.4.7 Energy. The provisions of the ~~*International*~~ *Residential* *Energy Conservation Code* and the *Commercial Energy Conservation Code,* as applicable shall apply to all matters governing the design and construction of buildings for energy efficiency.

102.1 General. Where, in any specific case, different ~~sections~~ provisions of the *Electrical Code*, the *Mechanical Code*, the *Plumbing Code*, and this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific instance, the applicable provisions of the *Building Code*, the *City Code*, the *Electrical Code*, the *Mechanical Code*, or the *Plumbing Code* specify different materials, methods of construction, or other requirements than the *Fire Code*, and the building official and the fire marshal are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under the *Building Code*, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to further appeal. Wherever in this code reference is made to the appendix, the provisions in the appendix shall not apply unless specifically adopted.

102.6 Existing and annexed structures. ~~The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the *International Property Maintenance Code* or the *International Fire Code,* or as is deemed necessary by the building official for the general safety and welfare of the occupants and the public.~~

102.6.1 Existing structures. A building in existence within the jurisdiction at the time of the adoption of this code may have its existing use or occupancy continued, if:

1. Such use or occupancy was legal at the time of the adoption of this code;
2. The building is in compliance with all applicable provisions of Appendix L; and
3. The continued use and occupancy is not unsafe pursuant to the provisions of Section 115.

102.6.2 Annexed structures. Any building in existence prior to the annexation into the jurisdiction of the land on which it is situated may have its use and occupancy continued if:

1. Such use or occupancy was legal under the building design and construction codes and related laws applicable in the jurisdiction in which the building was situated at the time immediately prior to its annexation;
2. The building is in compliance with all applicable provisions of Appendix L; and
3. The continued use and occupancy is not unsafe pursuant to the provisions of Section 115.

SECTION 103
~~DEPARTMENT OF BUILDING SAFETY~~ CODE ENFORCEMENT BRANCH

103.1 Creation of enforcement agency. The ~~Department of Building Safety~~ code enforcement branch is hereby created within the jurisdiction's Department of Public Works and Engineering, and the official in charge thereof shall be known as the building official.

103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the building official shall have the authority to appoint a deputy building official, the related technical officers, inspectors, plan examiners and other employees. Such employees shall have powers as delegated by the building official. ~~For the maintenance of existing properties, see the *International Property Maintenance Code.*~~

104.6 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the building official has reasonable cause to believe that there exists in a structure or upon a premises a condition which is contrary to or in violation of this code which makes the structure or premises unsafe, dangerous or hazardous, the building official ~~is authorized to~~ may enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the building official shall first make a reasonable effort to locate the owner or other person having charge or control of the structure or premises and request entry. If entry is refused, the building official shall have recourse to the remedies provided by law to secure entry.

When, due to an emergency, immediate entry is necessary to make an inspection to protect life or property, or when the building official has obtained a proper inspection warrant or other remedy provided by law to secure entry, no owner or occupant or any other person having charge, care or control of any building or premises shall fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the building official for the purpose of inspection and examination pursuant to this code.

104.8 Liability. ~~The building official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered liable personally and is hereby relieved from personal liability for any~~

~~damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties. Any suit instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representative of the jurisdiction until the final termination of the proceedings. The building official or any subordinate shall not be liable for cost in any action, suit, or proceeding that is instituted in pursuance of the provisions of this code.~~ Except as otherwise provided by law, the building official shall not personally be liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the building official shall not personally be liable in damages for any act or omission taken in the course and scope of employment. Where and to the extent consistent with the provisions of Article X of Chapter 2 of the *City Code*, this jurisdiction shall provide legal representation and indemnification for any suit brought against the building official because of acts or omissions performed in the enforcement of this code.

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building or structure for any damages to persons or property caused by defects, nor shall the code enforcement agency or its parent jurisdiction be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

104.12 Discontinuation of use; notice to vacate. Whenever any building or structure or equipment located therein is being used contrary to the provisions of this code or otherwise is in violation of this code, the building official may, by notice to the owner or the owner's representative and to all users of the structure, order that any or all uses of the structure be discontinued or that the structure, or portion thereof, be vacated within such time and for as long as the building official reasonably prescribes.

If the use or occupancy of the structure creates a serious and immediate hazard to human life or to property, the building official shall order the use discontinued immediately and may order the structure, or portion thereof, vacated immediately.

In the absence of a serious and immediate hazard to human life or to property, the building official shall not order a use discontinued and shall not issue an order to vacate until five business days after the building official has given the required notice of a right to a hearing pursuant to Section 104.12.1 and Section 116 of this code. For the purposes of this Section,

1. An "owner" of a structure is the record owner(s) of the structure, according to the official public records of real property maintained by the Clerk of the County in which the structure is located;
2. An "owner's representative" is a person whom the building official reasonably believes to be a representative of an owner;
3. A "use" of a structure includes its use as a residence or for any commercial purpose; and
4. The "users" of a structure include the structure's residential and commercial tenants but do not include customers of commercial tenants or other persons who have no independent right to enter the structure.

104.12.1 Right to hearing. Whenever pursuant to this code the building official orders the discontinuation of a use of a structure or equipment or orders the vacation of a structure, the building official shall give notice to the owner or the owner's representative and to all users of the structure of their right to a hearing pursuant to Section 116 of this code.

Upon the request of the owner, the owner's representative, or user of the structure, the building official shall schedule the hearing for a date no later than two weeks after the building official's receipt of the request. The hearing may be postponed once for good cause shown. If the owner, the owner's representative, or a user of the structure requests that the hearing be conducted within three business days of the request, the hearing shall be so conducted. If the building official does not receive a request for a hearing from the owner, the owner's representative, or a user of the structure within twenty days after the date of the building official's order to discontinue a use or to vacate, no hearing need be conducted.

104.12.2 Relocation assistance; right of entry. Upon the building official's issuance of an order to vacate all or a portion of a structure classified as an "R-2 residential occupancy" by Section 310.1 of this Code, the building official may designate in writing one or more persons to contact residents of the structure to offer the City's assistance in locating and otherwise making arrangements for alternative housing. The persons so designated are authorized to enter the structure and its grounds at reasonable times to contact residents personally for the purposes of this Section. The persons so designated may not require the residents to take any specific action; in particular, the said persons are not authorized to enforce an order to vacate.

105.1 Required. Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit, and no person shall cause, suffer or permit the same to be done unless a separate permit for each building or structure has first been obtained.

~~**105.1.1 Annual permit.** In lieu of an individual permit for each alteration to an already approved electrical, gas, mechanical or plumbing installation, the building official is authorized to issue an annual permit upon application therefor to any person, firm or corporation regularly employing one or more qualified tradepersons in the building, structure or on the premises owned or operated by the applicant for the permit.~~

~~**105.1.2 Annual permit records.** The person to whom an annual permit is issued shall keep a detailed record of alterations made under such annual permit. The building official shall have access to such records at all times or such records shall be filed with the building official as designated.~~

105.2 Work exempt from permit. Exemptions from permit requirements of this code 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. Permits shall not be required for the following:

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 120 square feet (11 m²).
2. Fences not over ~~6~~ 8 feet (~~1829~~ 2438.64 mm) high that are not constructed of masonry or concrete.
3. Oil derricks.

4. Retaining walls which are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or IIIA liquids.
5. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons (18 925 L) and the ratio of height to diameter or width does not exceed 2:1.
6. ~~Sidewalks~~ Uncovered wood decks, accessory to a one- or two-family dwelling, that are not more than 30 inches above grade.
7. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
8. Temporary motion picture, television and theater stage sets and scenery.
9. Prefabricated swimming pools accessory to a one- or two-family dwelling the walls of which pool are entirely above grade and the capacity of which pool does not exceed 5,000 gallons (18 297 L) ~~Group R-3 occupancy that are less than 24 inches (610 mm) deep, do not exceed 5,000 gallons (18 925 L) and are installed entirely above ground.~~
10. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems.
11. Swings and other playground equipment ~~accessory to detached one- and two-family dwellings~~ other than those regulated by Section 402.11 of this Code.
12. Window awnings supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support of Group R-3 and Group U occupancies.
13. Nonfixed and movable fixtures, cases, racks, counters, and partitions not over 5 feet 9 inches (1753 mm) in height.
14. Flagpoles that support an appurtenance that weighs less than 150 pounds (68 kg), provided it is not more than 75 feet (22 680 mm) tall if mounted on the ground or not more than 25 feet (7620 mm) taller than the building if mounted on a building.
15. A tower under 75 feet (22 680 mm) in height that meets the following conditions:

    15.1 Tower structures used primarily for the support of amateur and citizens' band radio or private television antennae;

    15.2 Tower structures on real property owned, leased, held or used, or dedicated for use by a public utility for rendering its service, such as tower structures used primarily for the transmission of electrical power by a public utility or the conveyance of communications over a telephone wire-line system operated by a public utility;

    15.3 High mast tower structures or antennas built on land on, along or adjacent to streets, roads, highways and bridges maintained by the state or a political subdivision of the state; and

    15.4 Tower structures constructed or placed on land or other structures owned, leased, held or dedicated for use by the state or federal government or any political subdivision thereof, which land or other structures are used by the governmental entity primarily for rendering fire, police or other public protection services or utility services, whether or not the tower structure is used jointly by the governmental entity and any other public or private person or entity for other and additional public or private purposes.

A building permit for any tower structure that is 60 feet (18 288 mm) or more in height and does not meet these exemptions shall not be issued unless a special permit has been obtained pursuant to Section 41-51 of the *City Code*.

16. A "work of art" as defined in Section 202.

~~**Electrical:**~~

~~**Repairs and maintenance:** Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.~~

~~**Radio and television transmitting stations:** The provisions of this code shall not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for a power supply, and the installations of towers and antennas.~~

~~**Temporary testing systems:** A permit shall not be required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.~~

~~**Gas:**~~

~~1. Portable heating appliance.~~

~~2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.~~

~~**Mechanical:**~~

~~1. Portable heating appliance.~~

~~2. Portable ventilation equipment.~~

~~3. Portable cooling unit.~~

~~4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.~~

~~5. Replacement of any part that does not alter its approval or make it unsafe.~~

~~6. Portable evaporative cooler.~~

~~7. Self-contained refrigeration system containing 10 pound (5 kg) or less of refrigerant and actuated by motors of 1 horsepower (746 W) or less.~~

~~**Plumbing:**~~

~~1. The stopping of leaks in drains, water, soil, waste or vent pipe, provided, however, that if any concealed trap, drain pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.~~

~~2 The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.~~

{**EDITORIAL NOTE:** 105.2.1 — **DELETE** IN ITS ENTIRETY.}

{**EDITORIAL NOTE:** 105.2.2 — **DELETE** IN ITS ENTIRETY.}

{**EDITORIAL NOTE:** 105.2.3 — **DELETE** IN ITS ENTIRETY.}

105.5 Expiration. ~~Every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within 180 days after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. The building official is authorized to grant, in writing, one or more extensions of time, for periods not more that 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.~~ For purposes of this section, the determination whether work has commenced under a permit or whether work has been abandoned under a permit shall be based upon whether the permit holder requests an inspection of the work performed under the permit by the building official. If work is not commenced under a permit within 180 days of the date of issuance or is abandoned at any time for a period of 180 consecutive days, the permit shall lapse. An elapsed permit shall expire 180 days following the date that it lapsed unless, before the 180th day following the date that the permit lapsed, the permit holder obtains reactivation of the permit by:

1. Requesting reactivation of the permit by the building official; and
2. Requesting an inspection of work performed under the permit by the building official.

A permit may be reactivated only one time, and it shall expire if the work is again abandoned for a period of 180 consecutive days. In order to recommence work under an expired permit, the permit holder shall pay the full permit fee applicable and submit plans that comply with this code for the previously uninspected portion of the work.

Exception: The building official may, upon request, perform a final inspection of work for which the permit has expired or reactivate a permit for the purpose of issuing a certificate of occupancy or a certificate of compliance.

105.6 Suspension or revocation. The building official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code. Prior to taking such action, the building official shall provide notice of a right to a hearing on the matter pursuant to Section 116.

106.5 Retention of construction documents. One set of approved construction documents ~~shall~~ may be retained by the building official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws.

107.3 Temporary power. The building official is authorized to give permission to temporarily supply and use power in part of an electric installation before such installation has been fully completed and the final certificate of completion has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat or power in the ~~ICC~~ *Electrical Code*.

108.2 Schedule of permit fees. On buildings, structures, electrical, gas, mechanical, and plumbing systems or alterations requiring a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by ~~the applicable governing authority~~ Section 117.

108.3 Building permit valuations. The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including

materials and labor, for which the permit is being issued, such as electrical, gas, mechanical, plumbing equipment and permanent systems. If, in the opinion of the building official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the building official. Final building permit valuation shall be set by the building official. The value to be used in computing the permit fee for alterations, remodeling or repairs shall be the total value of all construction work for which the permit is issued.

108.4 Work commencing before permit issuance. Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits shall be subject to a fee established by the building official that shall be in addition to the required permit fees. The investigation fee shall be equal to the amount of the permit fee required by this code.

108.6 Refunds. The building official ~~is authorized to establish a refund policy~~ may authorize refunding of any fee paid hereunder that was erroneously paid or collected due to an error by one or more city employees. This provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.

The building official may authorize the refunding of not more than 90 percent of the amount in excess of $25.00 of the permit fee paid when no work has been done under a permit issued in accordance with this code. If work has been done under the permit, no refund may be authorized. The plan review portion of the permit fee is nonrefundable.

The building official shall not authorize refunding of any fee paid except on written application filed by the original permittee not later than 180 days after the date of fee payment.

{**EDITORIAL NOTE:** 109.3.3 **DELETE** AND **RESERVE.**}

109.3.5 Lath ~~and gypsum board~~ inspection. Lath ~~and gypsum board~~ inspections shall be made after lathing ~~and gypsum board~~, interior and exterior, is in place, but before any plastering is applied ~~or gypsum board joints and fasteners are taped and finished.~~

~~**Exception:** Gypsum board that is not part of a fire-resistance rated assembly or a shear assembly.~~

{**EDITORIAL NOTE:** 109.3.7 **DELETE** AND **RESERVE.**}

109.3.8 Other inspections. In addition to the inspections specified above, the building official is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by the ~~department of building safety~~ Code Enforcement Branch.

109.3.11 Reinspection. A reinspection fee may be assessed for each inspection or reinspection when the portion of work for which inspection is called is not complete or when corrections called for are not made.

This section is not to be interpreted as requiring inspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

Reinspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, when the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the building official.

To obtain a reinspection, the applicant shall make a request and pay the reinspection fee in accordance with Section 117.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

110.1 Use and occupancy. No building or structure, or portion thereof such as an individual business lease space, shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the building official has issued a separate certificate of occupancy for each space therefor as provided herein. For purposes of this section, a space means a leasehold or tenancy held or occupied by an individual or entity for its sole use and may include one or more rooms. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction.

Exception: Group R, Division 3 and Group U occupancies, and individual dwelling units or sleeping units do not require a certificate of occupancy.

110.2 Certificate issued. After the building official inspects the building or structure and finds no violations of the provisions of this code or other laws that are enforced by the ~~department of building safety~~ code enforcement branch the building official shall issue a certificate of occupancy that contains the following:

1. The building permit number or project number.
2. The address of the structure.
3. ~~The name and address of the owner.~~

~~4.~~ A description of that portion of the structure for which the certificate is issued.

~~5~~ 4. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.

~~6~~ 5. The name of the building official.

~~7~~ 6. The edition of the code under which the permit was issued.

~~8~~ 7. The use and occupancy~~, in accordance with the provisions of Chapter 3.~~ of the building or portion thereof.

~~9~~ 8. The type of construction as defined in Chapter 6.

~~10~~ 9. The design occupant load.

~~11~~ 10. If an automatic sprinkler system is provided, whether the sprinkler system is required.

~~12~~ 11. Any special stipulations and conditions of the building permit.

110.4 Revocation. The building official is authorized to, in writing, suspend or revoke a certificate of occupancy ~~or completion~~ issued under the provisions of this code after notice of a right to a hearing on the matter pursuant to Section 116 wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

110.5 Posting. The certificate of occupancy shall be posted in a conspicuous place on the premises and shall not be removed except by the building official.

112.1 ~~General.~~ ~~In order to hear and decide appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business.~~ **Organization.** There is hereby created a General Appeals Board consisting of 10 members. Five members at a meeting shall constitute a quorum.

112.1.1 Membership. The positions shall be filled as follows:

Position 1 – By an architect registered as such under the laws of the State of Texas who shall be actively engaged in the practice of architecture of heavy construction works.

Position 2 – By an architect registered as such under the laws of the State of Texas who shall be actively engaged in the practice of architecture of residential works.

Position 3 – By a professional engineer registered as such under the laws of the State of Texas who shall be actively engaged in practice as a structural engineer.

Position 4 – By a professional engineer registered as such under the laws of the State of Texas who shall be actively engaged in practice as a mechanical engineer.

Position 5 – By a person who shall be actively engaged in the business of residential construction.

Position 6 – By a person who shall be actively engaged in the business of general contracting of heavy construction work.

Position 7 – By a well-respected citizen of the jurisdiction who shall be chairman of the board.

Position 8 – By the building official, who shall also serve as secretary of the board.

Position 9 – By the fire marshal.

Position 10 – By a professional engineer registered as such under the laws of the State of Texas who is actively engaged in practice as an electrical engineer.

The jurisdiction's Legal Department shall have an attorney present for each board meeting. The attorney shall advise the board on legal matters relative to topics under the board's authority.

112.1.2 Authorized representatives. The building official and the fire marshal, from time to time, may designate in writing a person under the said official's supervision to act as a duly authorized representative of the said official. Said representative shall enjoy all rights and

privileges of the position. A copy of such a designation, specifying the dates any such person shall act as representative of the building official or of the fire marshal, shall be filed with the minutes of the board.

112.1.3 Term of appointment. Other than the members in Positions 8 and 9, who shall serve ex officio, members of the board shall be appointed by the Mayor, with the approval of the City Council, and shall serve for a term of two years. The terms of office for the appointees to Positions 1, 3, 5 and 7 shall expire on the second day of January of each odd-numbered year, and terms of office for the appointees to Positions 2, 4, 6 and 10 shall expire on the second day of January of each even-numbered year; however, each member shall continue in office until the member's respective successor is appointed and qualified.

The adoption of this code shall not terminate the term of office of any person currently serving on the board, and any person who is currently serving on the board shall continue to serve in the position for which the person was appointed and confirmed until a successor is appointed and qualified.

112.1.4 Vacancies. Whenever any appointive position on the board becomes vacant by reason of death, resignation or removal, said vacancy shall be filled for the unexpired term of the member being replaced. Should a vacancy occur on the board, the Mayor shall appoint, subject to confirmation by the City Council, another qualified person to serve the remainder of the term of such vacancy.

112.1.5 Removal. Any member of the board may be removed at any time by the Mayor without consent of the City Council.

112.1.6 Compensation. Each member of the board shall be compensated at the rate of $50.00 per diem for each meeting the member attends at which a quorum is present; provided, however, no member shall be paid for more than three meetings in any one month. A jurisdiction employee member of the board shall be paid only for those meetings that the employee attends at which a quorum is present that are held outside of or continue beyond the employee's working hours.

112.1.7 Conflict of interest. In each instance where this code provides for a jurisdiction employee to serve as a voting member of any board created by the provisions of this code, such jurisdiction employee member shall not vote as a member of such board on any motion, resolution, decision, interpretation or recommendation by the board concerning a decision or interpretation or an appeal from a decision or interpretation of any provision of this code or related ordinances made by the jurisdiction employee member.

112.2 ~~**Limitations on authority.** An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The board shall have no authority to waive requirements of this code.~~ **Duties of the Board.** The duties of the board are to interpret the provisions of this code in appeals from decisions of the building official; to settle possible jurisdiction disputes among the Plumbing, Electrical, and Mechanical Review Boards; and to hear appeals from the building official as to the suitability of alternate materials or alternate methods of construction other than those relating to air-conditioning, plumbing, and electrical. The board also may make recommendations to the Mayor for amendments to this code.

112.3 ~~**Qualifications.** The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.~~ **Procedures.** The board shall adopt reasonable rules and regulations for conduct of its duties. Petitions for hearings before the board shall be made in

writing and filed with the building official and shall be heard by the board within 30 days after the date filed. A majority of the members of the board present shall determine matters presented to the board. All decisions and findings shall be reduced to writing by the secretary, with copies to the petitioner and all other parties to the hearing. Any interested person aggrieved by a decision of the board may appeal to the City Council, provided that written notice to the City Council for such appeal is delivered to the City Secretary within 10 days after the date that the written decision of the board is mailed to the appellant by the board secretary.

All appeals to the City Council are subject to the rules of the City Council, which are codified in Section 2-2 of the *City Code*, copies of which are available from the City Secretary. Parties wishing to preserve their right of appeal must comply with the rules of the City Council, including Rule 12.

112.4 Posting of agenda. The secretary of the board shall prepare and post an agenda for each meeting in the manner provided by Chapter 551 of the Texas Government Code.

113.1 Unlawful acts. It shall be unlawful for any person, firm or corporation to erect, construct, alter, extend, repair, move, remove, demolish or occupy any building, structure or equipment regulated by this code, or cause same to be done, in conflict with or in violation of any of the provisions of this code.

Where no specific penalty is otherwise provided in this code, the violation of any provision of this code shall constitute a misdemeanor punishable upon conviction by a fine of not less than $500 nor more than $2,000.00. Each day that any violation continues shall constitute and be punishable as a separate offense. Where any conduct in violation of this code also constitutes a violation of state penal law, the offense shall be punishable as provided in the applicable state law. In prosecutions under this code, the various provisions hereof that are designated as an “exception” or "exceptions" shall not be treated as exceptions within the meaning of Section 2.02 of the Texas Penal Code, and, instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the Texas Penal Code.

113.4 Violation penalties. Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the approved construction documents or directive of the building official, or of a permit or certificate issued under the provisions of this code, shall be subject to penalties as prescribed ~~by law~~ in Section 113.1.

114.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's agent, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work will be permitted to resume.

At the time such a stop work order is issued, the person performing the work and the permit holder shall be given notice of a right to a hearing on the matter by delivering to the persons performing the work if present at the site or otherwise shall be conspicuously posted at the site. Upon request, such a hearing shall be held within three business days unless the permit holder or person who was doing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the building official.

{**EDITORIAL NOTE:** 115.1 — **DELETE** IN ITS ENTIRETY.}

{**EDITORIAL NOTE:** 115.2 — **DELETE** IN ITS ENTIRETY.}

{**EDITORIAL NOTE:** 115.3 — **DELETE** IN ITS ENTIRETY.}

{**EDITORIAL NOTE:** 115.4 — **DELETE** IN ITS ENTIRETY.}

{**EDITORIAL NOTE:** 115.5 — **DELETE** IN ITS ENTIRETY.}

115.1 Unsafe buildings or structures. All buildings or structures regulated by this code that are structurally unsafe or not provided with adequate egress, or that constitute a fire hazard, or are otherwise dangerous to human life are, for the purpose of this section, unsafe. Any use of buildings or structures constituting a hazard to safety, health or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster, damage or abandonment is, for the purpose of this section, an unsafe use. Parapet walls, cornices, spires, towers, tanks, statuary and other appendages or structural members that are supported by, attached to, or a part of a building and that are in deteriorated condition or otherwise unable to sustain the design loads that are specified in this code are hereby designated as unsafe building appendages.

All such unsafe buildings, structures or appendages shall be abated, repaired, rehabilitated, demolished or removed in accordance with the procedures set forth in Chapter 10, Articles VIII and IX of the *City Code*.

In matters of fire safety design and construction, including, but not limited to, egress (corridors, exit numbers, stairs, fire escapes and fire escape signs), wall and ceiling finish, enclosure of vertical shafts, basement access, standpipes and occupancy separation, a building shall not be deemed to be a fire hazard if it is in compliance with the most restrictive of:

1. The provisions of Appendix L, if applicable;
2. The building code that was applicable when the building was constructed; or
3. If the occupancy classification of the building or a portion thereof has changed since it was constructed, then the building code that was applicable when the occupancy classification was changed.

Any building not situated within the jurisdiction at the time of its construction or change of occupancy classification shall be governed by the design and construction code and related laws applicable in the jurisdiction in which it was constructed at the time of its construction or change of occupancy and by the provisions of Appendix L to this code. To the extent of any conflict among the requirements of any of the foregoing codes that are applicable to any building, the most restrictive will apply. However, compliance with the aforesaid provisions shall not be deemed to excuse life-threatening defects of maintenance, sanitation, repair of casualty damage, security from unauthorized entry, structural stability, electrical systems, gas systems, plumbing systems, heating or cooling systems or other building systems.

Exception: For a building under construction or contract at the time of its annexation by the jurisdiction, see the Annexation Ordinance (Ordinance No. 78-2672), which is published in the preamble of this volume.

SECTION 116
HEARING PROCEDURES

116.1 Hearing notices. Unless otherwise specifically provided, whenever notice is to be given to any person concerning the right to a hearing, the notice may be given by personal delivery or by certified mail, return receipt requested.

If notice is being given to a building owner or to a tenant therein and the building official is unable to determine the name or address of such person after checking the building and the applicable records of the jurisdiction's Department of Public Works and Engineering, the County Appraisal District, the electrical utility company, the gas utility company, and the water utility provider, notice shall be mailed to the billing addresses of the building as shown on the records of the electrical company and the gas company and shall be posted on or in view of each entrance to the building. Additionally, if any notice is mailed to a building owner or a building tenant and is returned without delivery, notice shall be effective if posted on or in view of each entrance to the building.

116.2 Hearings. Except where otherwise specifically provided, all hearings held pursuant to this code shall be conducted by the jurisdiction's Director of Public Works and Engineering or a representative, who shall hereinafter be referred to as the "hearing official." The director shall not designate any person to be a hearing official under this code who has taken any part in the investigation of the matter that is the subject of the hearing or any person who directly supervised the investigation. The hearing official shall consider only the evidence presented at the hearing in rendering a decision. The decision of the hearing official shall be set forth in writing and shall be served on each party in the same manner as a notice of a right to a hearing.

SECTION 117
PERMIT AND INSPECTION FEES

117.1.1 Permit or license. An administrative fee of $25.00 shall be charged upon the preparation of each permit or license issued by the building official. This fee shall apply regardless of whether the permit or license is issued pursuant to this code or the *City Code*, and it shall be payable in addition to all other applicable fees for the permit or license. The foregoing administrative fee shall not be applicable if no other fee is provided by law for the permit or license.

117.1.2 Receipt. An administrative fee of $25.00 shall be charged upon the preparation of each fee or deposit receipt issued by the building official. This fee shall apply regardless of whether the fee or deposit is payable pursuant to this code or the *City Code.* This fee shall be in addition to all other applicable fees or deposits. When paid for a deposit or fee receipt, this fee shall neither constitute nor be refundable as a part of the deposit.

117.1.3 Minimum permit fee. If the fee or fees imposed for any single permit that is issued by the building official, whether issued under this code or the *City Code*, do not total more than $70.00, then a minimum permit fee of $70.00 shall be charged for the permit. The foregoing minimum permit fee shall not be applicable if no other fee is provided by law for the permit. The administrative fee assessed pursuant to Section 117.1.1 above shall not be included in the foregoing minimum permit fee calculation, and it shall be payable in addition to the minimum permit fee.

117.1.4 Certificate of occupancy or compliance. A fee of $70.00 shall be charged for each certificate of occupancy or compliance issued for a building or structure or portion thereof such as an individual business lease space. A fee of $70.00 shall be charged for each temporary certificate of occupancy issued.

117.1.5 Reinspection fee. In case it becomes necessary to make a reinspection of any work because of faulty materials or workmanship or incomplete work, the permittee shall pay a fee of $70.00 for each reinspection, except where a greater fee is specifically required under this code.

117.1.6 Specially requested inspections during working hours. Whenever a person requests that an inspector be present at a site at a specific time, the jurisdiction shall provide such inspector upon payment of all applicable fees if doing so would not interfere with the regular duties of the inspector and would not cause a delay in the inspection of other work.

Fee for specially requested inspections in addition to all other fees required by this code:

Per day, regular working hours $240.00

A full day's fee must be paid unless the building official finds that the request was made as a result of an unforeseeable emergency.

117.1.7 Emergency inspections. Emergency inspections shall be defined as those requested inspections occasioned by virtue of an unforeseeable incident or occurrence that necessitates an immediate inspection. In situations where there is a dispute as to whether an actual emergency occurred, the decision of the building official shall be final.

Fees:

Minimum four hours..... $150.00

Each hour or portion thereof exceeding four hours $35.00

Total not to exceed $240.00 if inspection is made during regular working hours. This fee shall be in addition to all other fees required by this code.

117.1.8 Inspections and plan reviews outside regular working hours. Whenever a person requests that an inspector make an inspection or a plan analyst review plans at times other than during regular working hours, or on jurisdiction-observed holidays or weekends, the building official shall provide such plan analyst or inspector upon payment of all applicable fees if such would not interfere with the regular duties of the plan analyst or inspector or create an undue burden on such plan analyst or inspector.

Fees:

Minimum four hours..... $240.00

Each hour or portion thereof exceeding four hours $62.50

This fee shall be in addition to all other fees required by this code.

117.1.9 Inspections outside of jurisdiction. The fee for an inspection outside the jurisdiction shall be a minimum of $240.00 per person plus the current standard mileage rate as published by the Internal Revenue Service per vehicle mile. This fee shall not apply to inspections performed under Section 117.1.11.

117.1.10 Exemption from permits and fees. To the extent that the state and the federal governments are exempt as a matter of law from compliance with the Construction Code, neither the state nor the federal government shall be required to obtain a building permit for work undertaken for, by or on the premises of either of them. However, the fees set forth in this code shall be applicable to the extent that the state or the federal government elects to obtain any permit for exempt work.

Except for exempt work undertaken for, by or on the premises of the state or the federal

government, building permits shall be required for work undertaken for, by or on the premises of any political subdivision or unit of government (including, but not limited to, the jurisdiction) in the same manner and to the same extent as for work performed by or for other persons. The fees prescribed in this code shall be applicable to all permits issued to or for governmental agencies.

Counties are required to comply with the provisions of the Construction Code. Except as provided by Section 212.903 of the Texas Local Government Code, a county shall notify the building official of each work project that is undertaken. The building official shall, upon request and demonstration of capacity, allow a county to self-permit and self-inspect work that is performed by or for the county on county-owned buildings and facilities for which a permit is required. No fee shall be imposed hereunder for work that a county is authorized to self-permit and self-inspect.

117.1.11 Approved fabricators/certifying agent or agency. The following permit fees shall apply to an approved fabricator/certifying agent or agency:

1. Approved certifying agent or agency, as described in Chapter 17: A fee of $450.00 if an inspection is made for the purpose of approving the agent or agency. The agent or agency shall reimburse the Jurisdiction for travel expenses incurred in performing inspections outside Harris or a contiguous county.
2. Approved fabricator as defined in Chapter 2: A fee of $500.00 for each inspection made for the purpose of verifying and approving the fabricator's quality control program. The fabricator shall reimburse the jurisdiction for travel expenses incurred in performing inspections outside Harris or a contiguous county.

117.1.12 Commercial plan review fee. Plans submitted for a commercial building permit shall be charged a plan review fee. The fee shall be charged at a rate of 25 percent of the estimated building permit fee calculated as provided in section 117.2. This portion of the fee shall be paid upon submittal for the initial review of plans. The balance of the permit fee shall be collected when the permit is issued.

117.1.13 Quick start plan review service. Plan review meetings for certain types of construction projects shall be available when approved by the building official. The building official shall develop guidelines for proper use of this service, determination of qualified projects, and assessment of service fees not specifically noted in this code.

The fee for quick start plan review meetings shall be 65 percent of the building permit fee calculated as provided in Section 117.2. This fee shall be separate from, and in addition to, the structural permit fee.

Payment of the quick start plan review fee allows review of the plans in the form presented at the time the fee is paid and one additional review in the event the drawings must be corrected to comply with this code or other applicable laws. The payment shall not entitle the applicant to expedited review of any further revisions to the plans.

117.1.14 Name or address changes.

Name change, each $70.00

Address change, each $70.00

117.1.15 Request for special approval, alternate method, interpretation or modification due to practical difficulty. Requests submitted for review by the building official will be classified in one of the following categories for processing, and fees will be assessed according to the schedule below. Payment will be required prior to processing.

Standard request. Requests that require minimal amount of research or consultation to grant or deny the request. Typically, standard requests are submitted on a form promulgated by the building official $40.00

Moderate request. Requests that require a moderate amount of research or consultation to grant or deny the request, typically between 2 - 4 hours of time ... $100.00

Extensive request. Requests that require extensive research, documentation, and data collection and review to grant or deny the request.

..... $500.00. plus $125.00 an hour or faction thereof over 4 hours.

117.1.16 Investigation fee. An investigation fee shall be charged when work has commenced prior to the issuance of the proper permits. This fee shall include one follow-up trip; each additional follow-up trip thereafter shall be charged a separate investigation fee. All investigation fees shall be paid prior to the issuance of the required permits and in addition to any required permit fees.

Investigation fee $240.00

117.2 Structural.

117.2.1 Buildings. The following building permit fees shall be required by this code. All fees are subject to the minimum fees in Section 117.1.

New buildings, additions, alterations, remodels, conversions, and repairs:

Where the valuation (rounded to the nearest dollar) is from:

$0.01 to $7,000 ..... $35.00

$7,001 to $150.000 ..... $35.00 for the first $7000

..... plus $4.00 for every additional $1.000 valuation, or fraction thereof

$150,001 to $200,000 ..... $607.00 for the first $150,000

..... plus $3.75 for every additional $1.000 valuation, or fraction thereof

$200,001 to $300,000 ..... $794.50 for the first $200,000

..... plus $3.50 for every additional $1,000 valuation, or fraction thereof

$300,001 to $500,000 ..... $1,144.50 for the first $300,000

..... plus $3.25 for every additional $1.000 valuation, or fraction thereof

$500,001 to $1,000.000 ..... $1,794.50 for the first $500,000

..... plus $3.00 for every additional $1.000 valuation, or fraction thereof

$1,000,001 to $5,000,000 ..... $3,294.50 for the first $1,000,000

..... plus $2.75 for every additional $1,000 valuation, or fraction thereof

$5,000,001 to $50,000,000 ..... $14,294.50 for the first $5,000,000

..... plus $1.50 for every additional $1.000 valuation, or fraction thereof

$50,000,001 and up ..... $81,794.50 for the first $50,000,000

..... plus $1.00 for every additional $1,000 valuation, or fraction thereof

Notes:

1. New single family homes with a valuation of $115,000 or less shall receive a

50 percent discount on permit fees.

2. A historic building that has been designated by the jurisdiction as a landmark or that is located within a historic district designated by the jurisdiction, or for which designation as a landmark or part of a historic district is pending, shall receive a 50 percent discount on permit fees provided that a certificate of appropriateness approved by the Houston Archaeological and Historical Commission pursuant to Chapter 33 of the *City Code* is submitted with the construction documents.

3. Towers other than sign structures shall be charged in the same manner as new buildings, as set forth in Section 117.2.1.

Demolition of any building:

For the first story $70.00

For each additional story $35.00

Stationary and floating piers:

First 100 square feet of deck area $25.00

Each additional square foot $0.20

Incinerators (other than domestic outdoor type), each $75.00

Bulkheads:

For first 100 lineal feet or part thereof $50.00

Each additional 100 lineal feet or part thereof $15.00

Dredging $100.00

Prefabricated fireplaces $15.00

Sand blasting or water blasting $35.00

Grading permit $35.00

Loading docks (uncovered):

First 100 lineal feet or part thereof $35.00

Each additional lineal foot $0.08

Barricades:

First 100 lineal feet $55.00

Each additional 100 lineal feet or part thereof $15.00

Paint spray booth $35.00

Heliports and helistops (interdepartmental inspections--health, structure, fire and aviation safety) $700.00

Duplicate job card $70.00

117.2.2 Chemical plants. Permit fees for petroleum processing installations; nuclear reactor complexes and processing facilities; facilities manufacturing, processing, distributing or storing energy; other facilities processing, storing or manufacturing materials or energy, not otherwise covered by a construction permit shall be charged in the same manner as new buildings as set forth in Section 117.2.1.

117.2.3 Occupancy and inspection. The following permit fees apply to occupancy and inspection of existing buildings:

1. A certificate of occupancy or a life safety compliance inspection and certificate(s) (for compliance with Appendix L; includes initial compliance inspection, final inspection and issuance of certificate; does not include fees for permits where work is required):

   First story $400.00

   Each additional story $100.00

   Each additional square foot above 10,000 square feet, with a maximum of 200,000 square feet $0.01

   For residential multifamily buildings, per contiguous project:

   For one to thirty units $400.00

   Each additional unit $10.00

2. Duplicate life safety compliance certificate $70.00
3. Certificate name change only $70.00
4. Duplicate certificate of occupancy $70.00
5. Incinerator inspection $70.00
6. Revalidation inspection $70.00
7. Change of address request $70.00
8. Certificate for individual retail or office spaces of less than 3,000 square feet in multitenant buildings:

   If the certificate is requested in connection with and the inspection is performed at the same time as the inspection of the building core $70.00

   Otherwise $200.00

117.2.4 Fences. Permit fees for fences shall be as follows:

For the first 100 lineal feet or part thereof $55.00

For each additional 100 lineal feet or part thereof $8.50

117.2.5 Fire escapes. Permit fees for fire escapes shall be as follows:

For each fire escape four stories or less in height $30.00

For each additional story in height $15.00

117.2.6 Public sidewalks, driveway approaches, culverts, curbs and gutters located in the right-of-way. Permit fees for sidewalks, driveways, culverts, curbs and gutters covered by this code shall be as follows:

Sidewalks:

For the first 100 lineal feet or part thereof $35.00

For each additional 100 lineal feet or part thereof $8.50

Driveways $35.00

Culvert pipes (not used for driveways):

For the first 100 lineal feet or part thereof $35.00

For each additional 100 lineal feet or part thereof..... $8.50

Curb and Gutter:

For the first 100 lineal feet or part thereof $35.00

For each additional 100 lineal feet or part thereof $8.50

117.2.7 Parking lots and paved areas, not associated with a one- or-two family dwelling. Permit fees for parking lots (uncovered) and paved areas shall be as follows:

For the first 1,000 square feet or part thereof $70.00

For each additional 1,000 square feet or part thereof..... $2.50

117.2.8 Plan review fees. Plan review fees shall be as follows:

Manufactured home parks:

15 spaces or less $70.00

Each additional space $2.00

Residential Master Plans $70.00

Reexamination of plans or deferred submittal of plans:

Where deferred plans are submitted or previously approved plans are reexamined or revised, the plan review fee shall be $70.00, or 15 percent of the permit fee, whichever is greater. The fee for reexamination of partial plans shall be determined by the building official based on the review time involved.

Outside jurisdiction plan review fee:

Plan review for buildings located outside the jurisdiction shall be 65 percent of the building permit fee as calculated in Section 117.2. This service shall only be provided at the building owner's request and subject to the availability of personnel to render the service.

Paving plan review.

For paving other than that which is covered under Section 117.2.6 or 117.2.7 shall be required a plan review, and shall pay a plan review fee of $70.00. Paving under this section shall not require a permit or inspection.

Exception: A separate plan review and fee shall not be required when the paving is associated with a driveway approach or building permit.

117.3 HVAC Equipment.

117.3.1 General. Fees for permits and inspections for the installation, alteration and inspection of heating, ventilating, air-conditioning and refrigeration systems shall be as follows:

1. Ventilating systems or heating-only systems (other than boilers): 2.0 percent of valuation, plus $35.00. Toilet exhaust, outside air makeup, elevator ventilation, stair pressurization, smoke exhaust or residential ventilation fees shall be included in the air-conditioning tonnage fee. The minimum permit fee shall be $70.00. (See Section 117.3.3 for local vent fees.)

2. Repairs or alterations (including cooling tower replacement) to an existing heating,

ventilating, air-conditioning or refrigeration system: 2.0 percent of the valuation, plus $35.00.

Exception: Ducts and grilles in a lease space, where total valuation is less than $500.00: $35.00 for each lease space.

3. Air-handling and duct systems for air-conditioning in buildings that have heating and/or cooling fluid from an external source: $4.50 per ton [based on 400 cubic feet per minute (cfm) capacity per ton], plus $35.00.
4. Air-conditioning cooling equipment (chillers, compressors and/or absorption units with their auxiliaries) located in a building other than the one being cooled (for instance, a central plant to supply one or more buildings): $4.50 per ton (either new tonnage, added tonnage or standby tonnage), plus $35.00.
5. A complete air-conditioning system where the cooling equipment, the air-handling equipment and duct system are in the same building: $8.50 per ton of refrigeration or horsepower, whichever is greater, plus $35.00. For air-conditioning systems that include heating (except boilers), the fee shall be included in the tonnage or horsepower fee at no extra cost, provided such heating is included on the original permit application.
6. Commercial, manufacturing and industrial process refrigeration systems: $8.50 per ton of refrigeration or horsepower, whichever is greater, plus $35.00.

117.3.2 Temporary operation inspection. For inspection of a heating, ventilation, refrigeration or air-conditioning system to be used on a temporary basis, a fee of $35.00 shall be paid to the jurisdiction by a licensed air-conditioning contractor requesting such inspection. If the system is not approved for temporary operation on the first inspection, the usual reinspection fee will be charged for each subsequent inspection for such purpose.

117.3.3 Local vent permit. A fee of $70.00 will be charged for local vent permits, central vacuum system permits and permits for ventilation fans up to 2,000 cfm. When a licensed air-conditioning contractor includes local vents in a permit, no additional fee will be required.

117.3.4 Self-contained air-conditioning units. Except for Group R, Division 3 occupancies, buildings using self-contained air-conditioning units: $8.50 per ton or horsepower of all units combined, plus $35.00.

117.3.5 Manufactured home inspections. For a manufactured home inspection of heating and ductwork where no state inspection has been made: $70.00.

117.3.6 Certificate of approval. A fee of $20.00 in addition to the regular permit fee shall be charged for a certificate of approval of air-conditioning for each permit taken out to add heating and/or air-conditioning to an existing residence. This $20.00 fee shall be paid for at the time the regular permit fee is paid.

117.4 Boilers. Every person desiring to install, maintain or repair boilers shall file an application for a permit with the building official, stating the location and nature of work to be performed, and pay the following fees:

1. For boiler installation based on Btu input and/or HP: $35.00 plus $4.00 for each BHP or part thereof. The permit for installation of a single boiler in excess of 1,200 BHP shall not exceed $3,000.00.

   Note: For the purpose of this code, 1 BHP equals 33,000 Btu.

2. Annual fee: $50.00 for each boiler.

3. Repair permit: 2.0 percent of valuation of repairs to be made, plus $35.00

117.5 Plumbing.

117.5.1 General. Following is a schedule of fees required for permits, with a minimum fee of $75.00, where not otherwise specified:

Opening in street (street cut, for purpose of connection with utilities) $85.00

(See Chapter 40, *City Code,* for additional regulations and deposits required.)

Temporary gas inspection $70.00

Gas permit and inspection (up to 4 openings) $35.00

Additional gas openings, each $6.00

Manufactured home inspection fee (where no state inspection has been made) ... $70.00

Fire-protection fee (fire sprinkler system, separate permit required):

For a fire sprinkler system (any head or group of heads up to 25 that is regulated with a valve for any portion of a building), minimum fee $75.00

For each additional head $3.50

Standpipe system (1 to 25 hose connections) $55.00

Each additional hose connection..... $3.50

Irrigation System (1 to 200 heads) per head $1.50

Each additional head $1.00

117.5.2 Heating gas appliances.

Furnace (nonduct type) $25.50

Each additional furnace to be installed in same building under same permit..... $8.50

Floor furnace (nonduct type)..... $35.00

Incinerators (gas fired) (complete with two burners or more) $60.00

Infrared heaters (one or two)..... $25.50

Each additional infrared heater installed under the same permit $8.50

117.5.3 Yard lights or barbecue grills.

First opening $25.50

Each additional opening installed under same permit $8.50

117.5.4 Permanent appliances.

Wall heater (bath heaters exempt) $25.50

Each additional heater installed under same permit $8.50

Gas steam radiator $35.00

Each additional radiator installed under same permit $8.50

Commercial oven $40.00

Commercial dryer..... $35.00

Plumbing fixtures (one to three) $25.50

Each additional fixture installed under same permit $8.50

Warm-air circulators (nonduct), first three $35.00

Each additional to be installed under same permit $8.50

Tie to curb inlet-storm sewer $65.00

Manholes, each $65.00

Roof drain or outside downspout connection to drainage system, one or two $25.50

Each additional roof drain or downspout to be installed under the same permit .. $8.50

Catch basin or outside area drain, one or two $25.50

Each additional catch basin or outside area drain to be installed under same permit $8.50

Sewer connections, each $40.00

Ground in plumbing for shell building, 3,000 square feet or less floor area $35.00

For each additional 1,000 square feet or part thereof $16.00

Septic tanks or individual sewage treatment plants, each $40.00

Disconnect and plug main sewer connection $70.00

Tanks (not septic tanks). A permit separate from other permits required:

Tanks through 1,000 gallons capacity (including mechanical interceptors) $70.00

1,001 through 6,000 gallons $85.00

6,001 through 15,000 gallons $105.00

15,001 through 30,000 gallons $150.00

Over 30,000 gallons $170.00

117.6 Electrical. The following is a schedule of the permit and inspection fees as required by the *Electrical Code,* with a minimum fee of $70.00, where not otherwise specified:

117.6.1 Services.

Meter loop and service

Up to and including 50 kW $70.00

51 kW through 250 kW $75.00

Over 250 kW $80.00

Panels with eight or more circuits, each $7.00

Outlets, each $1.00

Note: All light switches and receptacle openings and bell-ringing transformers are classified as outlets.

Electrical vehicle charging outlets

Level 1 ..... $70.00

Level 2 ..... $75.00

Level 3 ..... $80.00

117.6.2 Fixtures and Appliances.

Fixtures, each $1.00

Note: Any current-consuming device permanently attached to an outlet for illumination purposes shall be classified as a fixture.

Electrical appliances-domestic

Range receptacle, each $3.50

Clothes dryer, each $3.50

Stove top, each $3.50

Oven, each $3.50

Garbage disposal, each $3.50

Dishwasher, each $3.50

Window air-conditioner receptacle, each $3.50

117.6.3 Motors.

Motors, permanently installed, each

Up to and including 1 horsepower $3.00

Over 1 horsepower through 10 horsepower $8.50

Over 10 horsepower, ... $6.00

. ..... plus $1.35 per each additional horsepower

Motor control equipment is included in the motor fees. Outlets for future motor installation shall be charged for at one-half of the regular motor rates applying. The other one-half shall be paid at the time the motors are installed.

Permanent connections of electrical appliances, equipment and transformers of any nature:

Unless another fee is specified in this section for the apparatus to be installed, the fee shall be based on the kW rating of the apparatus. Each kW shall be considered to be one horsepower, and the fees shall be the same as indicated for "motors, permanently installed", above.

117.6.4 Signs.

Shop inspection of incandescent electrical signs and gas or vacuum tube signs, each:

0 to 5 kVA..... $35.00

Additional for each kVA or fraction thereof exceeding 5 kVA $8.00

Installation inspection of incandescent electrical signs and gas or vacuum tube signs, each:

0 to 5 kVA $35.00

Additional for each kVA or fraction thereof exceeding 5 kVA $8.00

117.6.5 Outdoor and Temporary.

Streamers and festoon lighting per circuit, each $8.50

Ball park and parking lot light poles (no outlet or fixture charge), 1st pole each $70.00

Each additional pole over 1 ..... $35.00

Temporary installations, such as wood saws, floor surfacing machines, painting/spraying apparatus and the like, per installation $25.50

Temporary installation of commercial sound equipment $30.00

Temporary lighting installations $25.50

Temporary installations such as carnivals or similar installations for amusement show display or similar uses shall be charged for on a kVA basis. For the purpose of this classification 1 horsepower of motor load shall be considered as one kVA.

0 through 10 kVA $25.00

Additional for each kVA or fraction exceeding 10 kVA $2.00

Temporary saw poles (per installation) $70.00

Temporary cut-in made permanent $70.00

Additions to existing work shall be charged for at the same rate as new work.

Reconnection fee $70.00

117.7 Elevators.

117.7.1 General. Every person proposing to install an elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist or wheelchair lift shall file a written request for a construction permit with the building official and pay the following installation fees for each unit:

New installations and alterations:

Passenger or freight elevator, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist or wheelchair lift, where the equipment is to be installed in other than a private residence, each:

Up to and including $40,000 of valuation $70.00

For each additional $1,000.00 of valuation or fraction thereof $2.00

Personnel hoist-manufacturing design permit $500.00

(required in addition to above fee if the hoist is not already permitted)

Same equipment if installed in a private residence, each:

Up to and including $10,000.00 of valuation $25.50

For each additional $1,000.00 of valuation or fraction thereof $2.00

Installation fees for equipment other than personnel hoists include an operating permit for the first year of operation, where applicable.

Installation fees for personnel hoists include a limited permit for the first 90 days of operation.

117.7.2 Inspections. The building official shall not be obliged to perform the test or inspection if the building official does not then have qualified personnel to perform it. If the

jurisdiction provides the inspections, fees shall be payable to the building official as follows:

1. Each personnel hoist:

   Acceptance load test# (includes two monthly inspections) $150.00

   Periodic test, three months (includes two monthly inspections) $75.00

   Addition to tower plus any test fee, single-cage hoist $50.00

   Addition to tower plus any test fee, twin-cage hoist $75.00

2. Acceptance inspection for each elevator (new installation and alteration) $300.00

3. Acceptance inspection for each escalator, dumbwaiter, wheelchair lift, manlift or moving walk (new installation or alteration)..... $150.00

4. Annual inspection for each elevator except where lesser fee is provided below $125.00

   Reinspection fee..... $75.00

5. Escalator annual inspection, each $125.00

6. Moving walk annual inspection, each $125.00

7. Wheelchair lift annual inspection, each..... $125.00

8. Dumbwaiter annual inspection, each dumbwaiter:

   For 2 through 10 landings $100.00

   For each additional landing $6.00

9. Manlift or inclined stairway chairlift annual inspection, each $125.00

10. Traction elevator maintenance load test#

    Five-year maintenance load test $250.00

    Counter-weight safeties, add $75.00

    With reduced stroke buffer, add $20.00

    With spring buffer, add $125.00

11. Hydraulic elevator three-year load test# $125.00

12. Reschedule of test:

    Additional fee if owner or elevator company cancels, unless notice is given to the building official by at least 1:00 p.m. on the preceding working day $100.00

13. If an elevator test cannot be completed within eight hours because the elevator did not comply with the requirements of this code when the test was begun, there shall be an additional fee of $50.00 for each additional hour or portion thereof.

117.7.3 Reinspection fee. In the event it becomes necessary to make a reinspection of any

Load test shall be performed by an elevator maintenance/installation company, and the test shall be witnessed by the building official or an approved agency.

Load test shall be performed by an elevator maintenance/installation company, and the test shall be witnessed by the building official or an approved agency.

work or equipment due to deficiencies in order to issue an approved inspection report, the applicant shall pay to the building official for each reinspection a fee of $70.00.

117.7.4 Operating permit or limited permit. An operating permit or limited permit shall be required for each elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist or wheelchair lift. An operating permit shall be valid for one year, and a limited permit shall be valid for 90 days. The fees for operating permits and limited permits shall be:

Each elevator $50.00

Each escalator or moving walk $50.00

Each dumbwaiter $50.00

Each personnel hoist $50.00

Each wheelchair lift $50.00

Each manlift $50.00

Each inclined stairway chairlift $50.00

Each escalator or moving walk unit powered by one motor shall be considered as a separate unit.

117.8 Signs. Fees for all signs covered by the *Sign Code* shall be as follows:

1. **Site inspections** $70.00
2. **Electrical inspections** - install and final $70.00
3. **Reinspection fee**:

   Site, hole and electrical, (all) $70.00
4. **Construction or reconstruction permit**

   For the first 32 square feet of one sign face or fraction thereof $70.00

   Each square foot or fraction thereof of one sign face exceeding 32 square feet . $0.40
5. **Operating permit--on-premises signs.** An operating permit for on-premises shall be issued as a renewable permit on an annual basis upon payment of the following fees:

   For the first 32 square feet of sign face or fraction thereof $50.00

   Each square foot of sign face or fraction thereof exceeding 32 square feet $0.40
6. **Operating permit.** Off-premise signs that advertise the sale or rental of real property or direct persons to the location of real property for sale or rent, which signs are limited to 40 square feet in sign face area for a nonrenewable one year permit as authorized in Section 4612 (b) of the *Sign Code* $100.00
7. **Operating permit.** Off-premise operating permits for signs other than as provided above, shall be issued as a renewable permit on an annual basis upon payment of $50.00
8. **New registration for changeable message signs/high technology signs (per face)** $70.00
9. **Replacement of lost or damaged operating tag** $70.00

10. Plan examination fee $70.00

11. Plan reexamination due to alteration of approved plan $70.00

12. Ground sign exceeding 14' - ..... $2.00 per foot over 14 feet

13. Seized fees. As per Section 4608(c) (2) of the *Sign Code* all unlawful signs placed in the right-of-way shall be seized and charged a hauling fee $70.00

14. Storage fee. In addition to the hauling fee above, a storage fee of $10.00 day shall be incurred.

In addition to the above fees, all other fees required by Section 117 shall be paid.

117.9 Medical gas permits.

$6.00 per each gas outlet, with a minimum fee of $70.00

117.10 Alarms, detectors, central station security and testing. Fees for alarms, detectors, central station security and testing shall be as follows:

1. Smoke- or heat-actuated detectors, 1 to 10 ..... $35.00

   Each additional detector $3.50

2. Each emergency central alarm system/station $35.00

3. Emergency public address system, 1 to 9 floors $50.00

   Each additional floor $5.00

4. Security system, minimum $50.00

   Each floor in excess of two $15.00

5. Retest entire emergency system $75.00

6. Retest any single-type system $35.00

SECTION 118
PRIVATE PLAN REVIEW AND INSPECTION SERVICES

118.1 Applicability. The application of this section is limited to those Group R, Division 3 occupancy structures that constitute dwellings within the definitions of this Code and to those Group U occupancies, such as garages, carports, fences and other structures, that are associated with dwellings.

118.2 Scope. This section applies to any permit required under this Code, the *Electrical Code*, *Plumbing Code*, or the *Mechanical Code* for the construction, repair, or renovation of a structure to which this section applies.

118.3 Program established. The building official may establish a private plan review and inspection program under which qualified persons who are not city employees may review plans, conduct certain building inspections, and provide related services for structures to which this section applies to assure compliance with all applicable construction codes. The program shall be conducted in accordance with the regulations and forms promulgated by the building official, which shall, without limitation, address the following:

1. Qualifications of the firms and individuals authorized to perform plan reviews, conduct inspections, and provide other related permit services. The qualifications shall include

licensing in accordance with any applicable laws and regulations and certification in accordance with state or federally recognized standards.

2. Requirement of appropriate liability coverages in an amount of not less than $1,000,000, per occurrence, with indemnity agreements and coverage of the jurisdiction, as an additional insured, for the protection of the jurisdiction and other persons who may be affected by the performance of the any services under the program.

3. Provisions to ensure that the firms and individuals participating in the program will act independently of building owners, contractors, and others so as to avoid conflicts of interest.

4. Provisions for any non building code related review of plans and issuance of permits to applicants who utilize plan review, inspection, and other related services under the program.

5. Provisions regarding the keeping of records and filing of reports with the building official.

6. Administrative provisions for the acceptance, suspension, and revocation of the right of a firm or individual to participate in the program, which shall include elements of due process, including a right of appeal to a hearing officer designated by the director of public works and engineering, whose decision, notwithstanding any other provision of this Code, shall be final and not appealable to the General Appeals Board or City Council.

7. Provisions to ensure that no firm or individual may be certified to participate in the program unless qualified to conduct plan reviews and inspections under the Codes currently enforced by the jurisdiction and/or a nationally recognized uniform or international code.

8. Provisions relating to fees charged by any firm or individual for services rendered under the program, including any fees required by law to be paid directly to the jurisdiction and remitted by the building official to a firm or individual.

9. Provisions prohibiting any private developer, builder, or contractor from employing any firm or individual, including subcontractors, to perform more than 25% of that developer's, builder's or contractor's services under the program in any one calendar year unless a greater amount is approved by the building official.

10. Provisions requiring any private developer, builder or contractor utilizing any services under the program and the building official to file a report as set forth below:

    a. Each private developer, builder or contractor utilizing any services under the program shall file a report with the building official, supported by affidavit, containing the following information:

        (1) The total number of permits received during the preceding calendar year for the construction of any residential structure in connection with which services under the program were rendered;

        (2) The name of each firm or individual utilized under the program on each residential structure during the reporting period; and

        (3) A statement certifying that the developer, builder or contractor has fully complied with all rules and regulations under the program during the reporting period, including but not limited to, all rules governing the maximum number of plan reviews and inspections permitted to be performed by any

firm or individual, including subcontractors, rendering any services under the program.

The report shall be filed with the building official not later than the last day of January and July in each calendar year and shall cover the preceding 6 month period ending on the last day of December and June, respectively, in each year.

b. The building official shall file a report with the Mayor and City Council containing the following information:

(1) A listing of the names of all companies or contractors that utilized individuals or firms for services under the program and the name of each firm or individual so utilized;

(2) Names of all firms and individuals approved to perform services under the program;

(3) Total number of plan reviews and inspections performed by firms and individuals for each private developer, builder or contractor operating under the program;

(4) Number of plan rechecks and oversight inspections conducted by the jurisdiction for each firm or individual utilized under the program and the percentage of that firm or individual's work, including subcontractors, so inspected;

(5) The number of Code violations found through plan rechecks and oversight inspections, including the name of the firm or individual, including subcontractors, who performed such services;

(6) A list of any firms or individuals removed from the program by the building official; and

(7) An assessment of program effectiveness as demonstrated by available data, including comments and complaints received by the jurisdiction regarding the program pertaining to work performed by a participating developer, builder or contractor, or any firm or individual, including subcontractors, providing private plan review or inspection services under the program.

The building official's report shall be filed with the Mayor and City Council not later than the last day of August and February in each calendar year and shall cover the preceding 6 month period ending on the last day of July and January, respectively, in each year and may include such additional information relating to the program as he may deem appropriate.

11. Provisions prohibiting any private plan reviewer or inspector from being related to building owners, contractors, and other similarly situated individuals or entities within the third degree of consanguinity or within the second degree of affinity.

118.4 Oversight inspections. The provisions of this section do not affect the jurisdiction of the building official over any work or preclude oversight inspections by the building official of structures that are subject to the provision of services under the program. For purposes of quality assurance, the building official shall be authorized to recheck plans, perform inspections or reinspections, issue stop work orders, and take any and all actions that are authorized to be taken under this Code, the *Electrical Code*, the *Plumbing Code*, or the *Mechanical Code*. No prior notice need be provided to any program firm or individual, contractor, or owner, unless otherwise required by law.

118.5. Fees. To cover administrative costs, including registration of firms and individuals, management of the program, and oversight inspections, the building official shall assess fees equal to 25 percent of the amount otherwise payable under this code for any permit, but not less than the minimum fee as required in Section 117 of the *Building Code.* In addition to the reduced permit fees charged in connection with the program, an additional fee of $25.00 per payment voucher issued shall be assessed to cover the jurisdiction's costs in connection with any fee required to be paid to and remitted by the jurisdiction. If any contractor or owner requests an inspection by the building official of any structure that is subject to private inspection under this section, then the building official may perform the same for a fee of $150.00. The administrative fee that is payable under Section 117.1.2 of the *Building Code* shall be collected in addition to the fees otherwise provided under this section.

CHAPTER 2
DEFINITIONS

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the ~~*International Fuel Gas Code, International*~~ *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

~~**ACCESSIBLE.** See Section 1102.1.~~

~~**ACCESSIBLE MEANS OF EGRESS.** See Section 1002.1~~

~~**ACCESSIBLE UNIT.** See Section 1102.1.~~

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 or representatives.

~~**CIRCULATION PATH.** See Section 1102.1.~~

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

~~**COMMON USE.** See Section 1102.1.~~

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

~~**DETECTABLE WARNING.** See Section 1102.1.~~

~~**DWELLING UNIT OR SLEEPING UNIT, MULTISTORY.** See Section 1102.1.~~

~~**DWELLING UNIT OR SLEEPING UNIT, TYPE A.** See Section 1102.1.~~

~~**DWELLING UNIT OR SLEEPING UNIT, TYPE B.** See Section 1102.1.~~

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 101.4.1.

~~**EMPLOYEE WORK AREA.** See Section 1102.1.~~

EXISTING STRUCTURE. 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. ~~See also Section 1612.2~~.

FAMILY. See Section 310.2.

FIRE CODE. *The City of Houston Fire Code*, as adopted by this jurisdiction. See Section 101.4.6.

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

ICC 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 101.4.1.

~~**INTENDED TO BE OCCUPIED AS A RESIDENCE.** See Section 1102.~~

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 101.4.7.

INTERNATIONAL FIRE CODE. *The City of Houston Fire Code*, as adopted by this jurisdiction. See Section 101.4.6.

INTERNATIONAL FUEL GAS CODE. *The City of Houston Plumbing Code*, as adopted by this jurisdiction. See Section 101.4.2.

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

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

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.

LOT LINE. A line dividing one ~~lot~~ portion or parcel of land considered as a unit from another, or from a street or any public place, sometimes referred to as a property line.

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

~~**MULTILEVEL ASSEMBLY SEATING.** See Section 1102.1.~~

~~**MULTISTORY UNITS.** See Section 1102.1.~~

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

~~**PUBLIC ENTRANCE.** See Section 1102.1.~~

~~**PUBLIC-USE AREAS.** See Section 1102.1.~~

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.

~~**RESTRICTED ENTRANCE.** See Section 1102.1.~~

~~**SERVICE ENTRANCE.** See Section 1102.1.~~

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

~~**SITE.** See Section 1102.1.~~

[F] STANDPIPE, TYPES OF. See Section 902.1.

~~**Automatic dry.** See Section 902.1.~~

Automatic wet. See Section 902.1.

~~**Manual dry.** See Section 902.1.~~

~~**Manual wet.** See Section 902.1.~~

~~**Semiautomatic dry.** See Section 902.1.~~

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.

~~**WHEELCHAIR SPACE.** See Section 1102.1.~~

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 *2006 INTERNATIONAL BUILDING CODE*.}

CHAPTER 3
USE AND OCCUPANCY CLASSIFICATION

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers
Animal hospitals, kennels and pounds
Banks
Barber and beauty shops
Car wash
Civic administration
Clinic—outpatient
Dry cleaning and laundries; pick-up and delivery stations and self-service
Educational occupancies above the 12th grade
Electronic data processing
Laboratories; testing and research
Motor vehicle showrooms
Post offices
Print shops
Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
Radio and television stations
Telephone exchanges
Training and skill development not within a school ~~or academic program~~

[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.*

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 that contain not more than the maximum allowable quantities per control area of hazardous materials as shown in Tables 307.7(1) and 307.7(2), provided that such buildings are maintained in accordance with the ~~*International*~~ *Fire Code*.
2. Buildings utilizing control areas in accordance with Section 414.2 that contain not more than the maximum allowable quantities per control area of hazardous materials as shown in Tables 307.7(1) and 307.7(2).
3. 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*.

4. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the ~~*International*~~ *Fire Code*.
5. Closed piping containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
6. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140EF (60EC) 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 or 1-hour horizontal assemblies or both.
7. Cleaning establishments which utilize a liquid solvent having a flash point at or above 200EF (93EC).
8. Liquor stores and distributors without bulk storage.
9. Refrigeration systems.
10. The storage or utilization of materials for agricultural purposes on the premises.
11. Stationary batteries utilized for facility emergency power, uninterrupted power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with the *Fire Code* and ~~*International*~~ *Mechanical Code*.
12. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building materials.
13. 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*.
14. 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.
15. 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*.
16. 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.

308.3 Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis of more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

Hospitals
Nursing homes (both intermediate-care facilities and skilled nursing facilities)
Mental hospitals
Detoxification facilities

~~A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2.~~

308.5.2 Child care facility. A facility that provides supervision and personal care on less than a 24-hour basis for more than five children 2½ years of age or less shall be classified as Group I-4.

Exception: A child day care facility that provides care for more than five but no more than 100 children 2 ½ years of age or less ~~of age~~, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior or the fire area is sprinklered, shall be classified as Group E.

309.1 Mercantile Group M. Mercantile Group M occupancy includes, among others, buildings and structures or a portion thereof, for the display and sale of merchandise, and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following:

Department stores
Drug stores
Markets
Motor fuel-dispensing facilities
Oil change facilities
Retail or wholesale stores
Sales rooms

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the ~~*International*~~ *Residential Code* in accordance with Section 101.2. Residential occupancies shall include the following:

R-1 Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

Boarding houses (transient)
Hotels (transient)
Motels (transient)

R-2 Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

Apartment houses
Boarding houses (not transient)
Congregate living facilities with more than 16 persons
~~Convents~~
~~Dormitories~~
~~Fraternities and sororities~~
Hotels (nontransient)
~~Monasteries~~
Motels (nontransient)
Vacation timeshare properties

Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two dwelling units.

Adult facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.

Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.

Congregate living facilities with 16 or fewer persons.

Adult and child care facilities that are within a single-family home are permitted to comply with the ~~*International*~~ *Residential Code.*

R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code, or shall comply with the ~~*International*~~ *Residential Code.*

***310.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

CONGREGATE LIVING FACILITIES. A building or part thereof that contains ~~sleeping units where residents share bathroom and/or kitchen~~ facilities for living, sleeping and sanitation, as required by this code, and may include facilities for eating and cooking, for occupancy by other

than a family. A congregate living facility may be a shelter, convent, monastery, dormitory, fraternity house, or sorority house, but does not include jails, hospitals, nursing homes, hotels or boarding houses.

FAMILY. An individual or two or more persons related by blood or marriage or a group of not more than 10 persons (excluding servants) who need not be related by blood or marriage living together in a dwelling unit.

*{**EDITORIAL NOTE:** ALL OTHER PORTIONS OF **SECTION 310.2** TO REMAIN AS SET FORTH IN THE *2006 INTERNATIONAL BUILDING CODE*.}

312.1 General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings
Aircraft hangars, accessory to a one- or two-family residence (see Section 412.3)
Barns
Carports
Fences ~~more than 6 feet (1829 mm) high~~
Grain silos, accessory to a residential occupancy
Greenhouses
Livestock shelters
Private garages
Retaining walls
Sheds
Stables
Tanks
Towers

312.2 Tower structures. Tower structures shall be designed and constructed to sustain, with the stress limitations specified in this code, all loads specified in Chapter 16 and all other anticipated loads based on the use of the tower.

312.3 Fences.

312.3.1 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.

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

312.3.3 Electric. Electrically charged fences shall be allowed in accordance with Section 28-10 of the *City Code*.

312.3.4 Design. Design of fences shall be in accordance with Chapter 16 with loading as required for signs.

CHAPTER 4

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

402.9 Smoke control. A smoke control system shall be provided where required for atriums in Section 404.

Exception: Smoke control is not required for malls that connect only two stories.

403.1 Applicability. The provisions of this section shall apply to buildings with an occupied floor located more than 75 feet (22 860 mm) above ~~the lowest level of fire department vehicle access~~ grade plane.

Exception: The provisions of this section shall not apply to the following buildings and structures.

1. Airport traffic control towers in accordance with Section 412.
2. Open parking garages in accordance with Section 406.3.
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1.
4. Low-hazard special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with an occupancy in Group H ~~-1, H-2 or H-3~~ in accordance with Section 415.

[F] 403.2 Automatic sprinkler system. Buildings and structures shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 903.3.5.2. The sprinkler system shall also be designed in accordance with the following:

1. Shutoff valves and a water-flow device shall be provided for each floor. In addition to activating a local alarm on the floor upon which the water flow is detected, such valves shall be continuously monitored at the buildings' central control station room.
2. The sprinkler riser may be combined with the standpipe riser.
3. Automatic sprinkler system piping on adjacent floors shall be connected to different fire risers.

Exception: An automatic sprinkler system shall not be required in spaces or areas of:

1. Open parking garages in accordance with Section 406.3.
2. Telecommunications equipment buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided that those spaces or areas are equipped throughout with an automatic fire detection system in accordance with Section 907.2 and are separated from the remainder of the building by fire barriers consisting of not less than 1-hour fire-resistance-rated walls and 2-hour fire-resistance-rated floor/ceiling assemblies.

403.3 Reduction in fire-resistance rating. ~~The fire-resistance-rating reductions listed in Sections 403.3.1 and 403.3.2 shall be allowed in buildings that have sprinkler control valves equipped with supervisory initiating devices and water-flow initiating devices for each floor.~~ Reduction will be allowed as set forth in Table 601 and Section 707.4.

~~**403.3.1 Type of construction.** The following reductions in the minimum construction type allowed in Table 601 shall be allowed as provided in Section 403.3:~~

~~1. For buildings not greater than 420 feet (128 m) in height, Type IA construction shall be allowed to be reduced to Type IB.~~

~~**Exception:** The required fire-resistance rating of columns supporting floors shall not be allowed to be reduced~~

~~2. In other than Groups F-1, M and S-1, Type IB construction shall be allowed to be reduced to Type IIA.~~

~~3. The height and area limitations of the reduced construction type shall be allowed to be the same as for the original construction type.~~

~~**403.3.2 Shaft enclosures.** For buildings not greater than 420 feet (128 m) in height, the required fire-resistance rating of the fire barriers enclosing vertical shafts, other than exit enclosures and elevator hoistway enclosures, shall be reduced to 1 hour where automatic sprinklers are installed within the shafts at the top and at alternate floor levels.~~

403.12.2 Stairway re-entry doors. Stairway re-entry doors in exit enclosures shall be provided on at least every fifth floor level. Re-entry stairway doors that are locked from the stairway side shall be capable of being unlocked simultaneously without unlatching upon a signal from the fire command center and be subordinate to the fire alarm.

404.1.1 Definition. The following word and term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning shown herein.

ATRIUM. An opening connecting ~~two~~ three or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505.

[F] 404.3 Automatic sprinkler protection. An approved automatic sprinkler system shall be installed throughout the entire building.

Exceptions:

1. That area of a building adjacent to or above the atrium need not be sprinklered, provided that portion of the building is separated from the atrium portion by not less than a 2-hour ~~fire-resistance-rated~~ fire barrier ~~or horizontal assembly, or both~~.
2. Where the ceiling of the atrium is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the atrium is not required.

404.4 Smoke control. A smoke control system shall be installed in accordance with Section 909.

~~**Exception:** Smoke control is not required for atriums that connect only two stories.~~

404.5 Enclosure of atriums. Atrium spaces shall be separated from adjacent spaces by a 1-hour fire barrier constructed in accordance with Section 706 or a horizontal assembly constructed in accordance with Section 711, or both.

Exceptions:

1. A glass wall forming a smoke partition where automatic sprinklers are spaced 6 feet (1829 mm) or less along both sides of the separation wall, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction. The glass shall be installed in a gasketed frame so that the framing system deflects without breaking (loading) the glass before the sprinkler system operates.
2. A glass-block wall assembly in accordance with Section 2110 and having a 3/4-hour fire-protection rating.
3. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are included in the design of the smoke control system.
4. Open exit-access balconies, unenclosed elevators or escalators and unrequired stairs are permitted within the atrium.
5. When existing atrium buildings are being remodeled or built-out for leasing, the proposed work shall meet the accepted guidelines that were in effect at the time the building was built or the original permit was issued.

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 m^2), 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 m^2) Group U occupancy shall be permitted to be in the same building, provided each 3,000 square-foot (279 m^2) 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 715.4.3. 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 ½ 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.

See also Section 1209.2.

406.2.10 Enclosure of vertical openings. Enclosure shall not be required for vertical openings except as specified in Sections 406.2.8 and 1020.

406.3.4 Uses. Mixed uses shall be allowed in the same building as an open parking garage subject to the provisions of Sections 508.3, 402.7.1, 406.3.13, 509.3, 509.4 and 509.7.

Exception: Generator rooms shall be considered as an accessory use.

406.3.7 Fire separation distance. Exterior walls and openings in exterior walls shall comply with Tables 601 and 602. The distance to an adjacent ~~lot~~ property line shall be determined in accordance with Table 602 and Section 704.

406.4.2 Ventilation. A mechanical ventilation system shall be provided in accordance with the ~~*International*~~ *Mechanical Code*.

Exception: Garages that provide openings as required in Section 406.3.3.1.

406.6.1 General. A repair garage is a building or structure, or a portion thereof, utilized for servicing or repairing motor vehicles. Repair garages shall be constructed in accordance with the ~~*International*~~ *Fire Code* and this section. This occupancy shall not include motor fuel-dispensing facilities, as regulated in Section 406.5.

412.5 Heliports and helistops. Heliports and helistops shall not ~~be permitted to~~ be erected on buildings or other locations unless ~~where~~ they are constructed in accordance with this section and all other applicable laws and ordinances.

412.5.4 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 ~~L~~landing areas 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 m^2) in area, the second means of egress may be a fire escape or ladder leading to the floor below.

SECTION 421
DAY CARE OCCUPANCIES

421.1 Classification. Adult and child day care occupancies shall be classified in accordance with Table 421.1 and Sections 305, 308 and 310, as applicable.

TABLE 421.1
CLASSIFICATION OF DAYCARE OCCUPANCIES

24-HOUR CARE			
Age and capability of residents	**1-5 occupants**	**6-16 occupants**	**Over 16 occupants**
2 ½ years of age or less	R-3	I-2	I-2
Over 2 ½ years or safe and capable of self-preservation	R-3	I-2	I-2
Over 2 ½ years of age and not capable of self-preservation	R-3	I-2	I-2

LESS THAN 24-HOUR CARE-DAY CARE		
Age and capability of residents	**1-5 occupants**	**Over 5 Occupants**
2 ½ years of age or less	R-3	I-4 (Exception permits E)
Over 2 ½ years of age through 12th grade and capable or self-preservation	R-3	E
Over 12th grade and capable of self-preservation	R-3	A-3
Over 2 ½ years or age and not capable or self-preservation	R-3	I-4

421.2 Additional 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 422
REUSE OF BUILDING MATERIALS

422.1 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 Premises Identification Address numbers. Buildings under construction shall have approved addresses or numbers, ~~building numbers or approved building identification~~ placed in a position that is plainly legible and visible from the street or roadway fronting the property. These letters or numbers shall contrast with their background. ~~Address numbers shall be Arabic numerals or alphabetical letters.~~ Letters or ~~N~~numbers shall be a minimum of ~~4~~ 3 inches (~~102~~ 76 mm) ~~high~~ in height with a minimum stroke width of 0.5 inch (12.7 mm). All new and existing buildings are required to be numbered as provided in Article V of Chapter 10 of the *City Code*.

504.1 General. The height permitted by Table 503 shall be increased in accordance with this section.

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

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

Exceptions:

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

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

Exceptions:

1. The aggregate area of mezzanines in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall not exceed two-thirds of the area of the room.
2. The aggregate area of mezzanines in buildings and structures of Type I or II construction shall not exceed one-half of the area of the room in buildings and structures equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 and an approved emergency voice/alarm communication system in accordance with Section 907.2.12.2.
3. In dwelling units of Group R occupancies, the enclosed portions of the dwelling unit in the level below the mezzanine shall be permitted to be included in determining of the floor area in which the mezzanine is located. The mezzanine shall not exceed one-third of the floor area.

505.3 Egress. Each occupant of a mezzanine shall have access to at least two independent means of egress when required by Section 1015.1. ~~where the common path of egress travel exceeds the limitations of Section 1014.3.~~ Where a stairway provides a means of exit access from a mezzanine, the maximum travel distance includes the distance traveled on the stairway measured in the plane of the tread nosing. Accessible means of egress shall be provided in accordance with Section 1007.

~~**Exception:**~~

~~1. A single means of egress shall be permitted in accordance with Section 1015.1.~~

506.3 Automatic sprinkler system increase. Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 as applicable, the area limitation in Table 503 is permitted to be increased by an additional 200 percent (I_s = 2) for buildings with more than one story above grade plane and an additional 300 percent (I_s = 3) for buildings with no more than one story above grade plane. These increases are permitted in addition to the height and story increases in accordance with Section 504.2.

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

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

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

Exceptions:

1. Accessory assembly areas having a floor area less than 750 square feet (69.7 m^2) are not considered separate occupancies.
2. Assembly areas that are accessory to Group E occupancies are not considered separate occupancies. ~~except when applying the assembly occupancy requirements of Chapter 11.~~
3. Accessory religious educational rooms and religious auditoriums with occupant loads of less than 100 are not considered separate occupancies.

508.3.3.4.1 Construction. Required separations shall be fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both, so as to completely separate adjacent occupancies.

Exceptions:

1. The private garage shall be separated from the dwelling unit and its attic area by means of minimum ½-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 the garage and the residence shall be equipped with either solid wood doors not less than 1-3/8 inches (35 mm) thick, solid or honeycomb core steel doors not less than 1-3/8 inches (35 mm) thick or doors in compliance with Section 714.2.3. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted.
2. Ducts in the garage and ducts penetrating the walls or ceilings separating the dwelling from its garage shall be constructed of a minimum No. 26 gage (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 a Group U noncombustible carport provided the carport is entirely open on two or more sides and there are not enclosed uses above. The area of the carport shall be considered as a separate building for determining the allowable area.

TABLE 508.3.3
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A[e], E[f]		I		R[d]		F-2, S-2[c,d], U[d]		B[b], F-1, M[b,g], S-1		H-1		H-2		H-3, H-4, H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A[e], E[e]	N	N	1	2	1	2	N	1	1	2	NP	NP	3	4	2	3[a]
I			N	N	1	NP	1	2	1	2	NP	NP	3	NP	2	NP
R[d]					N	N	1	2	1	2	NP	NP	3	NP	2	NP
F2, S-2[cd], U[d]							N	N	1	2	NP	NP	3	4	2	3[a]
B[b], F-1, M[b,g], S-1									N	N	NP	NP	2	3	1	2[a]
H-1											N	NP	NP	NP	NP	NP
H-2													N	NP	1	NP
H-3, H-4, H-5															N	NP

For SI: 1 square foot = 0.0929 m^2

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1
N = No separation requirement.
NP = Not permitted.
a. For Group H-5 occupancies, See Section 903.2.4.2.
b. Occupancy separation need not be provided for storage areas within Groups B and M if the:
   1. Area is less than 10 percent of the floor area.
   2. Area is equipped with an automatic fire-extinguishing system and is less than 3,000 square feet; or
   3. Area is less than 1,000 square feet.
c. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.
d. See Section 406.1.4.
e. Commercial kitchens need not be separated from the ~~restaurant seating~~ dining areas that they serve.
f. Day care facilities shall be separated from assembly areas where alcohol is served.
g. Stock areas are not required to be separated from retail areas within auto parts stores, shoe stores or similar retail stores, where employees are required to access the stock area in order to serve the customers.

509.9 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.

509.10 Transit sheds. 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 510
FOUNDATION ELEVATION

510.1 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, 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.

510.2 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 or crown of the street, whichever is applicable.

510.3 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.

510.4 Existing structures. Existing structures required to be connected with a public or private sewer shall have the finished floor a minimum of 12 inches above the nearest manhole.

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.

CHAPTER 6
TYPES OF CONSTRUCTION

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

BUILDING ELEMENT [h]	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A[e]	B	A[e]	B	HT	A[e]	B
Structural Frame[a]	3[b]	2[b]	1	0	1	0	HT	1	0
Bearing walls Exterior [g] Interior	 3 3[b]	 2 2[b]	 1 1	 0 0	 2 1	 2 0	 2 1/HT	 1 1	 0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[f]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction Including supporting beams and joists	2	2	1	0	1	0	HT	1	0
Roof construction Including supporting beams and joists	1½[c]	1[c,d]	1[c,d]	0[c,d]	1[c,d]	0[c,d]	HT	1[c,d]	0

For SI: 1 foot = 304.8 mm.

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

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE [a,e]

FIRE SEPARATION DISTANCE =X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H	OCCUPANCY GROUP F-1, M, S-1	OCCUPANCY GROUP A, B, E, F-2, I, R[g,h] S-2, U[b,h]	OCCUPANCY GROUP S-2 OPEN PARKING GARAGES
X < 5[c]	IIB, VB ~~All~~ Others	3 3	1 2	1 1	1 1
5 ≤ X < 10	IA IIB, IIIB, VB Others	3 2 2	2 0 1	1 0[f] 1	1 1 1
10 ≤ X < 30	IA, IB IIB, IIIB, VB Others	2 1 1	1 0 1	1[d] 0 1[d]	0[d] 0 0[d]
X ≥ 30	All	0	0	0	0

For SI: 1 foot = 304.8 mm.

a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.
b. For special requirements for Group U occupancies see Section 406.1.2.
c. See Section 705.1.1 for party walls.
d. Open parking garages complying with Section 406 shall not be required to have a fire-resistance rating.
e. The fire-resistance rating of an exterior wall is determined based upon the fire separation distance of the exterior wall and the story in which the wall is located.
f. A, E, and I occupancies shall have a fire resistance rating of not less than 1 hour.
g. When Group R-3 single family homes are restricted by recorded plats and deed restrictions as to location on the property (i.e. patio homes), the structure may be constructed on the property line without a fire resistive wall provided the following conditions are met:
   i. The adjacent structures are a minimum of 6 feet apart and;
   ii. The adjacent roof projections are not less than 4 feet apart.
h. Group R-3 and Group U when used as accessory to Group R-3, as applicable in Section 101.2 shall not be required to have a fire-resistance rating where fire separation distance is 3 feet or more.

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 no fire rating is required.

   1.3. Roof construction, including girders, trusses, framing and decking.

   Exception: In buildings of Type I construction exceeding two stories in height, fire-retardant-treated wood is not permitted in roof construction when 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.

2. Thermal and acoustical insulation, other than foam plastics, having a flame spread index of not more than 25.

Exceptions:

1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall ~~be allowed to~~ have a flame spread index of not more than 100.
2. Insulation installed between a finished floor and solid decking without intervening airspace shall ~~be allowed to~~ have a flame spread index of not more than 200.

3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. Interior floor finish and interior finish, trim and millwork such as doors, door frames, window sashes and frames.
6. Where not installed over 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
7. Finish~~ed~~ flooring ~~applied directly to the floor slab or to wood sleepers that are fireblocked in accordance with Section 717.2.7~~installed in accordance with Section 804.
8. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a corridor serving an occupant load of 30 or more shall be permitted to be constructed of fire-retardant- treated wood, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
9. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
10. Combustible exterior wall coverings, balconies, and similar projections and bay or oriel windows in accordance with Chapter 14.
11. Blocking such as for handrails, millwork, cabinets, and window and door frames.
12. Light-transmitting plastics as permitted by Chapter 26.
13. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction.
14. Exterior plastic veneer installed in accordance with Section 2605.2.
15. Nailing or furring strips as permitted by Section 803.4.
16. Heavy timber as permitted by Note d to Table 601 and Sections 602.4.7 and 1406.3.
17. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
18. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings determined on the basis of fire-resistance tests in accordance with Section 703.2 and installed in accordance with Section 1704.10 and 1704.11, respectively.
19. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 712.
20. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 713.

21. Materials allowed in the concealed spaces of buildings of Type I and II construction in accordance with Section 717.5.
22. Materials exposed within plenums complying with Section 602 of the ~~*International*~~ *Mechanical Code*.
23. Concrete treads, risers and landings may be painted or finished with vinyl, rubber or asbestos tile.
24. Stairways not required to be enclosed may have treads, risers and landings finished as required for floor coverings.
25. An enclosed corridor on the ground floor leading from the stairway to the exterior of the building may be finished as required for corridors provided an approved fire rated door separates the stairway enclosure from the corridor.

CHAPTER 7
FIRE-RESISTANCE-RATED CONSTRUCTION

703.2.1 Nonsymmetrical wall construction. Interior walls and partitions of nonsymmetrical construction shall be tested with both faces exposed to the furnace, and the assigned fire-resistance rating shall be the shortest duration obtained from the two tests conducted in compliance with ASTM E 119. When evidence is furnished to show that the wall was tested with the least fire-resistant side exposed to the furnace, subject to acceptance of the building official, the wall need not be subjected to tests from the opposite side (see Section 704.5 for exterior walls).

Exception: A one-hour rated wall obtained by cementitious material sprayed on steel siding and complying with a listed design shall be rated for exposure to fire from the cementitious side only.

704.5 Fire-resistance ratings. Exterior walls shall be fire-resistance rated in accordance with Tables 601 and 602. The fire-resistance rating of exterior walls with a fire separation distance of greater than 5 feet (1524 mm) shall be rated for exposure to fire from the inside. The fire-resistance rating of exterior walls with a fire separation distance of 5 feet (1524 mm) or less shall be rated for exposure to fire from both sides.

Exception: A one-hour rated wall obtained by cementitious material sprayed on steel siding and complying with a listed design shall be rated for exposure to fire from the cementitious side only.

TABLE 704.8
MAXIMUM AREA OF EXTERIOR WALL OPENINGS[a]

CLASSIFICATION OF OPENING	FIRE SEPARATION DISTANCE (feet)							
	Less than ~~0 to~~ 3[f,j]	~~Greater than~~ 3 but less than ~~to~~ 5[c,g]	~~Greater than~~ 5 but less than ~~to~~ 10[c,e,g,h]	~~Greater than~~ 10 but less than ~~to~~ 15[d,e,g]	~~Greater than~~ 15 but less than ~~to~~ 20[d,g]	~~Greater than~~ 20 but less than ~~to~~ 25[d,g]	~~Greater than~~ 25 but less than ~~to~~ 30[d,g]	~~Greater than~~ 30 or more
Unprotected	Not Permitted	Not Permitted[c]	10%[i]	15%[i]	25%[i]	45%[i]	70%[i]	No Limit[b]
Protected	Not Permitted	15 %	25 %	45%	75%	No Limit[b]	No Limit[b]	No Limit[b]

For SI: 1 foot = 304.8 mm.

a. Values given are percentage of the area of the exterior wall in any story.
b. See Section 704.7 for unexposed surface temperature.
c. For occupancies in Group R-3 the maximum percentage of unprotected and protected exterior wall openings shall be 25 percent.
d. The area of openings in an open parking structure with a fire separation distance of ~~greater than~~ 10 feet or greater shall not be limited.
e. For occupancies in Group H-2 or H-3, unprotected openings shall not be permitted for openings with fire separation distance of ~~15 feet or~~ less than 15 feet.
f. For requirements for fire walls for buildings with differing roof heights, see Section 705.6.1.
g. The area of unprotected and protected openings is not limited for occupancies in Group R-3, with a fire separation distance ~~greater than~~ 5 feet or greater.
h. For special requirement for Group U occupancies, see Section 406.1.2.

i. Buildings whose exterior bearing wall, exterior nonbearing wall and exterior structural frame are not required to be fire-resistance rated by Table 601 or Table 602 shall be permitted to have unlimited unprotected openings.
j. Includes accessory buildings to Group R-3.

704.8.1 Automatic sprinkler system. In buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and 903.3.1.2, the maximum allowable area of unprotected openings in occupancies other than Groups H-1, H-2, and H-3 shall be the same as the tabulated limitations for protected openings.

704.11 Parapets. Parapets shall be provided on exterior walls of buildings.

Exceptions: A parapet need not be provided on an exterior wall where any of the following conditions exist:

1. The wall is not required to be fire-resistance rated in accordance with Table 602 because of fire separation distance.
2. The building has an area of not more than ~~1,000~~ 2,000 square feet (~~93~~ 185.81 m^2) on any floor.
3. Walls that terminate at roofs of not less than 2-hour fire-resistance-rated construction or where the roof, including the deck or slab and supporting construction, is constructed entirely of noncombustible materials.
4. One-hour fire-resistance-rated exterior walls that terminate at the underside of the roof sheathing, deck or slab, provided:
   - 4.1. Where the roof/ceiling framing elements are parallel to the walls, such framing and elements supporting such framing shall not be of less than 1-hour fire-resistance-rated construction for a width of 4 feet (1220 mm) for Groups R and U and 10 feet (3048 mm) for other occupancies, measured from the interior side of the wall.
   - 4.2. Where roof/ceiling framing elements are not parallel to the wall, the entire span of such framing and elements supporting such framing shall not be of less than 1-hour fire-resistance-rated construction.
   - 4.3. Openings in the roof shall not be located within 5 feet (1524 mm) of the 1-hour fire-resistance- rated exterior wall for Groups R and U and 10 feet (3048 mm) for other occupancies, measured from the interior side of the wall. In townhomes a chimney shall be permitted within 5 feet of the party wall, when the chimney extends at least 5 feet above the roof deck and is built of one-hour construction.
   - 4.4. The entire building shall be provided with not less than a Class B roof covering.
5. In Groups R-2 and R-3 where the entire building is provided with a Class C roof covering, the exterior wall shall be permitted to terminate at the underside of the roof sheathing or deck in Type III, IV and V construction, provided:
   - 5.1. The roof sheathing or deck is constructed of approved noncombustible materials or fire-retardant-treated wood for a distance of 4 feet (1220 mm); or
   - 5.2. The roof is protected with 0.625-inch (16 mm) Type X gypsum board directly beneath the underside of the roof sheathing or deck, supported by

a minimum of nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing members for a minimum distance of 4 feet (1220 mm).

6. Where the wall is permitted to have at least 25 percent of the exterior wall areas containing unprotected openings based on fire separation distance as determined in accordance with Section 704.8.

707.2 Shaft enclosure required. Openings through a floor/ceiling assembly shall be protected by a shaft enclosure complying with this Section.

Exceptions:

1. A shaft enclosure is not required for openings totally within an individual residential dwelling unit and connecting four stories or less.
2. A shaft enclosure is not required in a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 for an escalator opening or stairway that is not a portion of the means of egress protected according to Item 2.1 or 2.2:
   - 2.1. Where the area of the floor opening between stories does not exceed twice the horizontal projected area of the escalator or stairway and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Groups B and M, this application is limited to openings that do not connect more than four stories.
   - 2.2. Where the opening is protected by approved power-operated automatic shutters at every penetrated floor. The shutters shall be of noncombustible construction and have a fire-resistance rating of not less than 1.5 hours. The shutter shall be so constructed as to close immediately upon the actuation of a smoke detector installed in accordance with Section 907.11 and shall completely shut off the well opening. Escalators shall cease operation when the shutter begins to close. The shutter shall operate at a speed of not more than 30 feet per minute (152.4 mm/s) and shall be equipped with a sensitive leading edge to arrest its progress where in contact with any obstacle, and to continue its progress on release therefrom.
3. A shaft enclosure is not required for penetrations by pipe, tube, conduit, wire, cable and vents protected in accordance with Section 712.4.
4. A shaft enclosure is not required for penetrations by ducts protected in accordance with Section 712.4. Grease ducts shall be protected in accordance with the ~~*International*~~ *Mechanical Code*.
5. In other than Group H occupancies, a shaft enclosure is not required for floor openings complying with the provisions for atriums in Section 404.
6. A shaft enclosure is not required for approved masonry chimneys where annular space protection is provided at each floor level in accordance with Section 717.2.5.
7. In other than Group~~s I-2 and~~ I-3, a shaft enclosure is not required for a floor opening or an air transfer opening that complies with the following:
   - 7.1. Does not connect more than two stories.

7.2. Is not part of the required means of egress system, except as permitted in Section 1020.1.

7.3. Is not concealed within the building construction.

7.4. Is not open to a corridor in Group I and R occupancies.

7.5. Is not open to a corridor on nonsprinklered floors in any occupancy.

7.6. Is separated from floor openings and air transfer openings serving other floors by construction conforming to required shaft enclosures.

7.7. Is limited to the same smoke compartment.

8. A shaft enclosure is not required for automobile ramps in open and enclosed parking garages constructed in accordance with Sections 406.3 and 406.4, respectively.
9. A shaft enclosure is not required for floor openings between a mezzanine and the floor below.
10. A shaft enclosure is not required for joints protected by a fire-resistant joint system in accordance with Section 713.
11. A shaft enclosure shall not be required for floor openings created by unenclosed stairs or ramps in accordance with Exception 8 or 9 in Section 1020.1.
12. Floor openings protected by floor fire doors in accordance with Section 711.8.
13. Where permitted by other sections of this code.

707.14.1 Elevator lobby. An enclosed elevator lobby shall be provided at each floor where an elevator shaft enclosure connects more than three stories. The lobby shall separate the elevator shaft enclosure doors from each floor by fire partitions equal to the fire-resistance rating of the corridor and the required opening protection. Elevator lobbies shall have at least one means of egress complying with Chapter 10 and other provisions within this code.

Exceptions:

1. ~~Enclosed elevator lobbies~~ Separations are not required at the street floor elevator lobby~~, provided the entire street floor is equipped with an automatic sprinkler system in accordance with Section 903.3.1.1~~.
2. Elevators not required to be located in a shaft in accordance with Section 707.2 are not required to have enclosed elevator lobbies.
3. Where additional doors are provided at the hoistway opening in accordance with Section 3002.6. Such doors shall be tested in accordance with UL 1784 without an artificial bottom seal.
4. ~~In other than Group I-3, and buildings having occupied floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access, enclosed elevator lobbies are not required where the building is protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.~~ In all occupancies, separation need not be provided when the building is protected throughout with an automatic sprinkler system.
5. Smoke partitions shall be permitted in lieu of fire partitions to separate the elevator lobby at each floor where the building is equipped throughout with an

automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

6. Enclosed elevator lobbies are not required where the elevator hoistway is pressurized in accordance with Section 707.14.2

7. Existing buildings that were permitted before January 2, 1997.

710.5.2 ~~**Smoke and draft-control doors.** Where required elsewhere in the code, doors in smoke partitions shall be tested in accordance with UL 1784 with an artificial bottom seal installed across the full width of the bottom of the door assembly during the test. The air leakage rate of the door assembly shall not exceed 3 cubic feet per minute per square foot [$ft^3/(min \cdot ft^2)$] ($0.015424\ m^3/s \cdot m^2$) of door opening at 0.10 inch (24.9Pa) of water for both the ambient temperature test and the elevated temperature exposure test.~~

~~**710.5.3**~~ **Self-closing or automatic-closing doors.** Where required elsewhere in the code, doors in smoke partitions shall be self- or automatic-closing by smoke detection in accordance with Section 715.4.7.3.

712.3.3 Ducts and air transfer openings. Penetrations of fire-resistance-rated walls by ducts that are not protected with dampers shall comply with Sections 712.2 through 712.3.1. Ducts and air transfer openings that are protected with fire dampers shall comply with Section 716.

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.

712.4.1.1.2 Through-penetration firestop system. Through penetrations shall be protected by an approved through-penetration firestop system installed and tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F-rating and a T-rating of not less than 1 hour but not less than the required rating of the floor penetrated.

Exceptions:

1. Floor penetrations contained and located within the cavity of a wall do not require a T-rating.
2. Floor penetrations consisting of either a pipe, tube, conduit or electrical conductor that are not in direct contact with combustible material do not require a T rating.

712.4.3 Ducts and air transfer openings. Penetrations of horizontal assemblies by ducts that are not protected with dampers shall comply with Section 712.2 and Sections 712.4 through 712.4.2.2. Ducts and air transfer openings that are protected with dampers shall comply with Section 716.

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.

714.4 Impact protection. Where the fire protective covering of a structural member is subject to impact damage from moving vehicles, the handling of merchandise or other activity, the fire protective covering shall be protected by corner guards or by a substantial jacket of metal or other noncombustible material to a height adequate to provide full protection, but not less than 5 feet (1524 mm) from the finished floor.

Exception: Concrete columns.

715.4.3.1 Smoke and draft control. Fire door assemblies shall also meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784. Louvers shall be prohibited, unless the louvers are tested in the assembly. Installation of smoke doors shall be in accordance with NFPA 105.

715.4.4.1 Glazing in doors. Fire-protection-rated glazing in excess of 100 square inches (0.065 m^2) shall be permitted in fire door assemblies when tested in accordance with NFPA 252 as components of the door assemblies and not as glass lights, and shall have a maximum transmitted temperature rise of 450°F (250°C) in accordance with Section 715.4.4.

Exception: The maximum transmitted temperature ~~end point~~ rise is not ~~required~~ limited in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

715.5 Fire-protection-rated glazing. Glazing in fire window assemblies shall be fire-protection rated in accordance with this section and Table 715.5. Glazing in fire door assemblies shall comply with Section 715.4.6. Fire-protection-rated glazing shall be tested in accordance with and shall meet the acceptance criteria of NFPA 257. Fire-protection-rated glazing shall also comply with NFPA 80. Openings in nonfire-resistance-rated exterior wall assemblies that require protection in accordance with Section 704.3, 704.8, 704.9 or 704.10 shall have a fire-protection rating of not less than ¾ hour.

Exceptions:

1. Wired glass in accordance with Section 715.5.3.

2. Fire-protection-rated glazing in 0.5-hour fire-resistance-rated partitions is permitted to have an 0.33-hour fire-protection rating.
3. Fire-protection rated glazing in corridors may use regular glass when all of the following conditions are met:

   3.1 Both sides of the glass shall be protected by a sprinkler system equipped with listed quick response sprinklers. The sprinklers shall be spaced 6 feet or less along both sides of the glass, not more than 1 foot from the glass and located so that the entire surface of the glass is wet upon operation.

   3.2 The glass shall meet the safety and design requirements of Chapter 24.

   3.3 Obstructions such as curtain rods, curtains, drapes, or similar materials shall not be installed between the sprinkler and the glass.

TABLE 715.5
FIRE WINDOW ASSEMBLY FIRE PROTECTION RATINGS

TYPE OF ASSEMBLY	REQUIRED ASSEMBLY RATING(hours)	MINIMUM FIRE WINDOW ASSEMBLY RATING (hours)
Interior walls:		
Fire walls	All	NP[a]
Fire barriers	~~>1~~	~~NP[a]~~
	4	3
	3	3
	2	1 ½
Smoke barriers	1	¾
and fire partitions	1	¾
Exterior walls	>1	1 ½
	1	¾
Party walls	All	NP

NP = Not Permitted

a. Not permitted except as specified in Section 715.2.

715.5.3 Wired glass. ~~Steel~~ Metal window frame assemblies of 0.125-inch (3.2 mm) minimum solid section or of not less than nominal 0.048-inch-thick (1.2 mm) formed sheet steel members fabricated by pressing, mitering, riveting, interlocking or welding and having provision for glazing with 1/4 -inch (6.4 mm) wired glass where securely installed in the building construction and glazed with 1/4-inch (6.4 mm) labeled wired glass shall be deemed to meet the requirements for a 3/4-hour fire window assembly. Wired glass panels shall conform to the size limitations set forth in Table 715.5.3.

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~~ 1.0 inch (~~12.7~~ 25.4 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.

716.5 Where required. Fire dampers, smoke dampers, combination fire/smoke dampers and ceiling radiation dampers shall be provided at the locations prescribed in Sections 716.5.1 through 716.5.5 and in Table 716.5. Where an assembly is required to have both fire dampers and smoke dampers, combination fire/smoke dampers or a fire damper and a smoke damper shall be required.

TABLE 716.5
FIRE AND SMOKE DAMPER LOCATIONS

Location		**Fire Dampers**	**Smoke Dampers**
Fire Walls		Required	
Fire Barriers - *separated uses, incidental use areas, horizontal exits, atrium enclosures, exit passageways, and elevator lobbies, etc.*		Required[1,2,3]	
Shaft enclosures		Required[1,2,3,4,5]	Required[4,17,18]
Fire Partitions - *R-1/R-2 unit separations, and mall tenant separations, etc.*		Required[6,7]	
Corridors - *when required to be rated by Table 1017.1*		Required [6,7,19]	Required[8,16,19]
Smoke barriers			Required[9]
Horizontal assemblies[10]	Through penetrations	Required[11]	
	Membrane penetrations	Required[12]	
	Nonfire-resistance-rated assemblies	Required[13,14,15]	

1. Not required for penetrations tested in accordance with ASTM E 119 as part of the rated assembly.
2. Not required for ducts used as a part of an approved smoke control system in accordance with Section 909.
3. Not required in sprinklered building of other than Group H penetrated by ducted HVAC systems.
4. Not required for steel exhaust subducts extending at least 22 inches vertically in exhaust shafts having continuous airflow upward to the outside.
5. Not required in parking garage supply or exhaust shafts that are separated form other building shafts by a minimum of 2-hour fire-resistance-rated construction.
6. Not required in sprinklered buildings of other than Group H for tenant separations and corridor walls.
7. Not required in buildings of other than Group H where duct penetration is limited to 100 square inches; is of minimum 0.0217-inch steel; does not have communicating openings between a corridor and adjacent spaces; is installed above a ceiling ; and does not terminate at a wall register of the fire-resistance-rated wall.
8. Not required for corridor penetrations of minimum 0.019-inch steel ducts with no openings into corridor.
9. Not required where openings in steel ducts are limited to a single smoke compartment.
10. General requirement mandates shaft enclosures for openings in floor and roof systems.
11. In other than Group I-2 and Group I-3, fire dampers are permitted in lieu of shaft enclosures for penetration of fire-resistance-rated horizontal assembly that connects two floors.
12. Where shaft enclosure is not provided, an approved ceiling damper is required at the ceiling line of a fire-resistance-rated floor/ceiling assembly.
13. Not required, provided that the shaft enclosure does not connect more than two stories and the annular space around the duct is filled with noncombustible material.
14. Limited to three connected stories without shaft enclosures, provided fire dampers are installed at each floor line and annular space is filled.
15. Not required in ducts within individual dwelling units.
16. Not required in building with a smoke control system if not necessary for operation and control of system.
17. Shafts with openings on only one floor in buildings three stories or less.
18. Not required where openings have a maximum size of 36 square inches and the building is fully sprinklered.
19. Not required where smoke and draft control doors are not required.

716.5.2 Fire barriers. Ducts and air transfer openings ~~that penetrate~~ of fire barriers shall be protected with approved fire dampers installed in accordance with their listing. Ducts and air

transfer openings shall not penetrate exit enclosures and exit passageways except as permitted by Sections 1020.1.2 and 1021.5, respectively.

Exception: Fire dampers are not required at penetrations of fire barriers where any of the following apply:

1. Penetrations are tested in accordance with ASTM E 119 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an approved smoke control system in accordance with Section 909 and where the fire damper would interfere with the operation of the smoke control system.
3. Such walls are penetrated by ducted HVAC systems, ~~have a required fire-resistance rating of 1 hour or less,~~ are in areas of other than Group H and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.

716.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with listed fire and smoke dampers installed in accordance with their listing.

Exceptions:

1. Fire dampers are not required at penetrations of shafts where:
   - 1.1. Steel exhaust subducts are extended at least 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside; or
   - 1.2. Penetrations are tested in accordance with ASTM E 119 as part of the fire-resistance-rated assembly; or
   - 1.3. Ducts are used as part of an approved smoke control system in accordance with Section 909 and where the fire damper will interfere with the operation of the smoke control system; or
   - 1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction; or
   - 1.5. Buildings are equipped with automatic sprinkler systems.
2. In Group B and R occupancies, equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, smoke dampers are not required at penetrations of shafts where:
   - 2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a wall thickness of at least 0.019 inch~~es~~ (0.48 mm); and
   - 2.2. That extend at least 22 inches (559 mm) vertically; and

2.3. An exhaust fan is installed at the upper terminus of the shaft that is~~,~~ powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.

3. Smoke dampers are not required at penetrations of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.

4. Smoke dampers are not required at penetrations of shafts where ducts are used as part of an approved mechanical smoke control system designed in accordance with Section 909 and where the smoke damper will interfere with the operation of the smoke control system.

5. Smoke dampers are not required at penetrations of shafts where:

5.1. Shafts with openings on only one floor in buildings three stories or less.

5.2. Exhaust only openings serving domestic clothes dryers and environmental air ducts equipped with individual backdraft dampers where shaft protection is provided by the use of steel exhaust air subducts extending vertically upward at least 22 inches above the top of the opening in a shaft served by a continuously operating fan where the airflow is upward.

5.3. Openings that have a maximum size of 36 square inches and the building is equipped throughout with a sprinkler system.

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. No building or structure requiring a fire-extinguishing system shall be permanently occupied without first obtaining the fire marshal's approval.

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 Section 907.2 of the *International Fire Code*~~ shall be monitored by an approved supervising station in accordance with Section 907.14.

Exceptions:

1. Single- and multiple-station smoke alarms required by Section 907.2.10.
2. Smoke detectors in Group I-3 occupancies.
3. Supervisory service is not required for automatic sprinkler systems in one- and two-family dwellings.

901.8 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.

901.9 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.

901.10 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.

901.11 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.

***902.1 Definitions.** The following words and terms shall, for the purposes of this chapter, and as used elsewhere in this code, have the meanings shown herein.

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

OPEN BUILDING. A building having each wall at least 80 percent open.

[F] STANDPIPE, TYPE~~S~~ OF. ~~Standpipe types are as follows:~~

~~**Automatic dry.** A dry standpipe system, normally filled with pressurized air, that is arranged through the use of a device, such as dry pipe valve, to admit water into the system piping automatically upon the opening of a hose valve. The water supply for an automatic dry standpipe system shall be capable of supplying the system demand.~~

Automatic wet. A wet standpipe system that has a water supply that is capable of supplying the system demand automatically.

~~**Manual dry.** A dry standpipe system that does not have a permanent water supply attached to the system. Manual dry standpipe systems require water from a fire department pumper to be pumped into the system through the fire department connection in order to meet the system demand.~~

~~**Manual wet.** A wet standpipe system connected to a water supply for the purpose of maintaining water within the system but does not have a water supply capable of delivering the system demand attached to the system. Manual wet standpipe systems require water from a fire department pumper (or the like) to be pumped into the system in order to meet the system demand.~~

~~**Semiautomatic dry.** A dry standpipe system that is arranged through the use of a device, such as a deluge valve, to admit water into the system piping upon activation of a remote control device located at a hose connection. A remote control activation device shall be provided at each hose connection. The water supply for a semiautomatic dry standpipe system shall be capable of supplying the system demand.~~

*{**EDITORIAL NOTE:** ALL OTHER PORTIONS OF **SECTION 902.1** TO REMAIN AS SET FORTH IN THE *2006 INTERNATIONAL BUILDING CODE*.}

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

Exceptions:

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

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

1. The fire area exceeds 5,000 square feet (465 m2);
2. The fire area has an occupant load of 100 or more where alcohol is served; ~~or~~
3. The fire area has an occupant load of 300 or more; or
4. The fire area is located on a floor other than the level of exit discharge.

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

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

Exceptions:

1. Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.
2. 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] 903.2.2 Group E. An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than 20,000 square feet (1858 m^2) in area.
2. ~~Throughout every portion of educational buildings below~~ Where the fire area is located on a floor other than the level of exit discharge.

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

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

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

Where the Group F-1 occupancy is located above the level of exit discharge, the sprinklers shall be provided in all floors between the Group F-1 occupancy and the level of exit discharge.

[F] 903.2.6 Group M. An automatic sprinkler system shall be provided throughout ~~buildings~~ floor areas containing a Group M occupancy where one of the following conditions exists:

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

Where the Group M occupancy is located above the level of exit discharge, the sprinklers shall be provided in all floors between the Group M occupancy and the level of exit discharge.

[F] 903.2.7 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.

Where the Group R occupancy is located above the level of exit discharge, the sprinklers shall be provided in all floors between the Group R occupancy and the level of exit discharge.

Exception: Group R-3 occupancies, unless otherwise required by this code.

[F] 903.2.8 Group S-1. An automatic sprinkler system shall be provided throughout all ~~buildings~~ floor areas containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m^2);
2. A Group S-1 fire area is located more than three stories above grade plane; or
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).

Where the Group S-1 occupancy is located above the level of exit discharge, the sprinklers shall be provided in all floors between the Group S-1 occupancy and the level of exit discharge.

[F] 903.2.11 Reserved. ~~**During construction.** Automatic sprinkler systems required during construction, alteration and demolition operations shall be provided in accordance with the *International Fire Code*.~~

[F] 903.3.1 Standards. Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3. Where listed for such use, fire sprinklers that have been tested and/or approved by a nationally recognized testing laboratory shall be accepted as equivalent.

[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. In rooms or areas that are of noncombustible construction with wholly noncombustible contents.
5. Elevator machine rooms where all of the following apply:
   - 5.1. The elevator machine room is separated from the remainder of the building by a fire barrier at least equal to that required for the hoistway enclosure with a minimum of one hour.
   - 5.2. The machine room shall be used exclusively for machines and equipment required for the operation of the elevator.
   - 5.3. Smoke detectors are provided as required by the Elevator Safety Code.

903.3.7 Fire department connections. The location of fire department connections shall be approved by the fire marshal. Fire department connections shall be located 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 marshal.

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

[F] 905.3.1 Building 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 the fire department vehicle access~~ grade plane, 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~~ grade plane.

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 Section 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) above the lowest level of fire department vehicle access.~~
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.

~~5~~3. In determining the lowest level of fire department vehicle access, it shall not be required to consider:

~~5~~3.1. Recessed loading docks for four vehicles or less; and

~~5~~3.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

[F] 905.3.2 Group A. Class I automatic wet standpipes shall be provided in nonsprinklered Group A buildings having an occupant load exceeding 1,000 persons.

Exceptions:

~~1.~~ Open-air-seating spaces without enclosed spaces.

2. ~~Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings where the highest floor surface used for human occupancy is 75 feet (22 860 mm) or less above the lowest level of fire department vehicle access.~~

[F] 905.3.4 Stages. Stages greater than 1,000 square feet in area (93m^2) 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 for 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] 905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required stairway, a hose connection shall be provided for each floor level above or below grade. Hose connections shall be located at ~~an intermediate~~ each floor level landing ~~between floors~~, unless otherwise approved by the fire ~~code official~~ marshal.
2. On each side of the wall adjacent to the exit opening of a horizontal exit.

   Exception: Where floor areas adjacent to a horizontal exit are reachable from exit stairway hose connections by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the horizontal exit.
3. In every exit passageway at the entrance from the exit passageway to other areas of a building.
4. In covered mall buildings, adjacent to each exterior public entrance to the mall and adjacent to each entrance from an exit passageway or exit corridor to the mall.
5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), each standpipe shall be provided with a hose connection located either on the roof or at the highest landing of stairways with stair access to the roof. An additional hose connection shall be provided at the top of the most hydraulically remote standpipe for testing purposes.
6. Where the most remote portion of a nonsprinklered floor or story is more than 150 feet (45 720 mm) from a hose connection or the most remote portion of a sprinklered floor or story is more than 200 feet (60 960 mm) from a hose connection, the fire ~~code official~~ marshal is authorized to require that additional hose connections be provided in approved locations.

[F] 905.5 Location of Class II standpipe hose connections. Class II standpipe hose connections shall be accessible and located so that all portions of the building are within 30 feet (9144 mm) of a variable nozzle attached to 100 feet (30 480 mm) of hose.

[F] 905.8 ~~Dry standpipes.~~ ~~Dry standpipes shall not be installed~~ **Design pressure.** Design pressure at the uppermost valve for a Class II standpipe system shall be 35 psi.

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

[F] 907.2 Where required. An approved manual, automatic or manual and automatic fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.9, unless other requirements are provided by another section of this code. Where automatic sprinkler protection installed in accordance with Section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

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

Exception: In other than Group H occupancies, a fire alarm system shall not be required in open buildings.

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

Exceptions:

1. Group E occupancies with an occupant load of less than 50.
2. Manual fire alarm boxes are not required in Group E occupancies where the building is protected throughout by an approved supervised automatic sprinkler system and has a local alarm to notify all occupants. ~~all the following apply:~~

   ~~2.1. Interior corridors are protected by smoke detectors with alarm verification.~~

   ~~2.2. Auditoriums, cafeterias, gymnasiums and the like are protected by heat detectors or other approved detection devices.~~

   ~~2.3. Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.~~

   ~~2.4. Off-premises monitoring is provided.~~

   ~~2.5. The capability to activate the evacuation signal from a central point is provided.~~

   ~~2.6. In buildings where normally occupied spaces are provided with a two-way communication system between such spaces and a constantly attended receiving station from where a general evacuation alarm can be sounded, except in locations specifically designated by the fire code official.~~
3. Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an approved automatic sprinkler system, the notification appliances will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

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 50 or more. Smoke detectors shall be installed in corridors, in common areas and in each room or area that exceeds 20 square feet in floor area.

907.2.3.3 Group E child care with an occupant load of less than 50. 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 shall be installed in Group I occupancies. An electrically supervised, automatic smoke detection system shall be provided in accordance with Sections 907.2.6.1 and 907.2.6.2.

~~**Exception:** Manual fire alarm boxes in resident or patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at all nurses' 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.~~

~~**[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.~~

[F] 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.

[F] 907.2.9 Group R-2. A manual fire alarm system shall be installed in Group R-2 occupancies where:

1. Any dwelling unit or sleeping unit is located three or more stories above the lowest level of exit discharge;

2. Any dwelling unit or sleeping unit is located more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit; or
3. The building contains more than 16 dwelling units or sleeping units.

Exceptions:

1. A fire alarm system is not required in buildings not over two stories in height where all dwelling units or sleeping units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least 1-hour fire partitions and each dwelling unit or sleeping unit has an exit directly to a public way, exit court or yard.
2. Manual fire alarm boxes are not required throughout the building when the following conditions are met:
   - 2.1. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2; and.
   - 2.2. The notification appliances will activate upon sprinkler flow.
3. ~~A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors designed in accordance with Section 1023.6, Exception 4.~~

907.2.10.1.4 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 50. 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.

907.2.12.1 Automatic fire detection. Smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system in accordance with NFPA 72-1996. The activation of any detector required by this section shall operate the emergency voice/alarm communication system and shall place into operation all stair pressurization and atria fans to restrict the recirculation of smoke. Activation of any detector or any flow detector shall initiate the designed function of smoke dampers, fans and other components of the smoke-control system, unless the smoke-control system is designed or required to be manually activated only.

Rate of rise detectors may be used in lieu of smoke detectors in parking garages.

Smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment, central control station, or similar room which is not provided with sprinkler protection, elevator machine rooms and in elevator lobbies.
2. ~~In the main return air and exhaust air plenum of each air-conditioning system having a capacity greater than 2,000 cubic feet per minute (cfm) (0.94 m³/s). Such detectors shall be located in a serviceable area downstream of the last duct~~

~~inlet.~~ In either the return-air plenum or main supply air duct of every air-conditioning and mechanical ventilating system with fans having a rated capacity of 2200 cfm or greater. Activation of the products of combustion detector shall cut off electric current to the fan and shall operate the voice alarm signaling system of the required automatic fire alarm system.

Exception: If air movement provided by the air-conditioning system or mechanical ventilating system is a designed component of the smoke-control system, the smoke detector need not shut off electric current to the fan.

3. ~~At each connection to a vertical duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system. In Group R-1 and R-2 occupancies a listed smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cfm (2.4 m³/s) and serving not more than 10 air-inlet openings.~~ At each connection to a duct or riser serving two or more stories from a return-air duct or plenum of an air-conditioning system having an air volume of 2200 cfm or greater.
4. In each exit corridor within 3 feet of each exit-access door to a stair. When exit corridors are not clearly defined, they shall be assumed to be 8 feet wide connecting exit stairways.
5. In commercial kitchens.

Exception: Rate of rise detectors may be installed in lieu of smoke detectors, with spacing every 500 square feet.

907.2.12.2 Emergency voice/alarm communication system. 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 ~~on a minimum~~ of the alarming floor, the floor above and the floor below in accordance with the building's fire safety and evacuation plans required by Section 404 of the ~~*International*~~ *Fire Code*. 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] 907.2.12.2.2 Live voice messages. The emergency voice/alarm communication system shall also have the capability to broadcast live voice messages through ~~paging zones on a selective and all-call basis~~ speakers located in elevators, exit stairways and throughout a selected floor or floors.

907.2.12.3 Fire department communication system. An approved two-way, fire department communication system designed and installed in accordance with NFPA 72 shall be provided for fire department use. It shall operate between a fire command center complying with Section 911 and elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, areas of refuge and inside enclosed exit stairways. The fire department communication device shall be provided at each floor level within the enclosed stairway.

~~**Exception:** Fire department radio systems where approved by the fire department.~~

[F] 907.14 Monitoring. Fire alarm systems ~~required by this chapter or the *International Fire Code*~~ shall be monitored by an approved supervising station in accordance with NFPA 72.

Exception: Supervisory service is not required for:

1. Single- and multiple-station smoke alarms required by Section 907.2.10.
2. Smoke detectors in Group I-3 occupancies.
3. Automatic sprinkler systems in one- and two-family dwellings.

909.10.4 Automatic dampers. Automatic dampers~~, regardless of the purpose for which they are~~ installed within the smoke control system~~,~~ shall be tested and listed in accordance with ~~and conform to~~ the requirements of ~~approved,~~ recognized standards as follows: UL 555, UL 555C, UL 555S, and AMCA 511.

909.12.1 Wiring. In addition to meeting requirements of the ~~ICC~~ *Electrical Code*, ~~all~~ mechanical smoke control 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 1020.1.7, 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 1020.1 and an open exterior balcony or ventilated vestibule meeting the requirements of this section. Where access to the roof is required by Section 1003.3.3.12 ~~the *International Fire Code*~~, such access shall be from the smokeproof enclosure where a smokeproof enclosure is required.

909.20.4 ~~**Mechanical ventilation alternative.** The provisions of Sections 909.20.4.1 through 909.20.4.4 shall apply to ventilation of smokeproof enclosures by mechanical means.~~ **Stair pressurization alternative.** As an alternative method, stairways may be pressurized. If this option is elected, stairway enclosures shall be pressurized by mechanical means, and vestibules are not required. The stairway enclosure, including exit doors, shall be designed and constructed to limit air leakage to 300 cfm per floor when under a minimum pressure differential of 0.3 inches of water across the door.

909.20.4.1 ~~**Vestibule doors.** The door assembly from the building into the vestibule~~

~~shall be a fire door complying with Section 715.4.3. The door assembly from the vestibule to the stairway shall have not less than a 20-minute fire protection rating and meet the requirements for a smoke door assembly in accordance with Section 715.4.3. The door shall be installed in accordance with NFPA 105.~~ **Doors.** The maximum degree of pressurization shall be such that the opening of the stairway doors can be accomplished with a force not to exceed 30 pounds measured at the door latch for new buildings and 35 pounds for existing buildings. Maximum door height shall be 84 inches.

909.20.4.2 ~~**Vestibule ventilation.** The vestibule shall be supplied with not less than one air change per minute and the exhaust shall not be less than 150 percent of supply. Supply air shall enter and exhaust air shall discharge from the vestibule through separate, tightly constructed ducts used only for that purpose. Supply air shall enter the vestibule within 6 inches (152 mm) of the floor level. The top of the exhaust register shall be located at the top of the smoke trap but not more than 6 inches (152 mm) down from the top of the trap, and shall be entirely within the smoke trap area. Doors in the open position shall not obstruct duct openings. Duct openings with controlling dampers are permitted where necessary to meet the design requirements, but dampers are not otherwise required.~~ **Pressurization system.** The pressurization system shall be designed to provide 0.15 inch of water column minimum differential pressure across any enclosed stairway door with all doors closed.

The pressurization system shall also be designed with the assumption that during a fire situation the following four doors are fully open: the fire floor, adjacent doors above and below the fire floor and the door of exit discharge from the enclosure. The average velocity at each open door with both fans operating shall be no less than 300 feet per minute. Acceptance test shall be based on a pitot tube traverse to prove the design fan capacity. The traverse shall be in accordance with ASHRAE Standard 111, 2008. For purposes of the fan test, each stair shall be tested independently with the outside door open to let the air out of the building.

Each stairway enclosure shall have a separate pressurization system independent of all other mechanical systems.

909.20.4.2.1 ~~**Engineered ventilation system.** Where a specially engineered system is used, the system shall exhaust a quantity of air equal to not less than 90 air changes per hour from any vestibule in the emergency operation mode and shall be sized to handle three vestibules simultaneously. Smoke detectors shall be located at the floor-side entrance to each vestibule and shall activate the system for the affected vestibule. Smoke detectors shall be installed in accordance with Section 907.10.~~ **Supply fans.** The associated air-distribution system serving the stairway pressurization system shall be enclosed within the two-hour fire-rated enclosure within the stair. All ductwork shall be sheetmetal constructed to a 2 inch pressure class in accordance with the *Mechanical Code* and shall be sealed in accordance with the *Mechanical Code*.

Exceptions:

1. Exposed roof-mounted fans.
2. Duct work and fans located within the stairway enclosure.

909.20.4.3 ~~**Smoke trap.** The vestibule ceiling shall be at least 20 inches (508 mm) higher than the door opening into the vestibule to serve as a smoke and heat trap and to provide an upward-moving air column. The height shall not be decreased unless approved and justified by design and test.~~ **Supply air.** The supply air for each

pressurization system shall be drawn directly from outside the building from at least two points, one located within 25 feet of ground level and the other(s) located with at least a 50-foot separation vertically, each served by a separate fan or fans sized for a portion of the total air. Each intake point shall be equipped with a product of combustion type smoke detector located upstream or downstream of each fan to deactivate the fan and close isolation dampers associated with that intake point so as to prevent smoke from being drawn in through the intake. Each system shall be ducted separately. Not less than one point of injection of air for every three floors or portion thereof shall be provided.

909.20.4.4 ~~**Stair shaft air movement system.** The stair shaft shall be provided with a dampered relief opening and supplied with sufficient air to maintain a minimum positive pressure of 0.10 inch of water (25 Pa) in the shaft relative to the vestibule with all doors closed.~~ **Operation of equipment.** The activation of the pressurization equipment shall be initiated by a smoke detector installed outside the enclosure door in an approved location. The activation of the closing device on any door shall activate the closing devices on all floors of the smoke-control enclosure at all levels. When the closing device for the stair shaft door is activated by a smoke detector or power failure, the pressurization system shall go into operation.

909.20.6 ~~**Ventilating equipment.** The activation of ventilating equipment required by the alternatives in Sections 909.20.4 and 909.20.5 shall be by smoke detectors installed at each floor level at an approved location at the entrance to the smokeproof enclosure. When the closing device for the stair shaft and vestibule doors is activated by smoke detection or power failure, the mechanical equipment shall activate and operate at the required performance levels. Smoke detectors shall be installed in accordance with Section 907.10.~~ **Acceptance testing.** Each installation shall be tested prior to occupancy. Tests shall be scheduled to allow for observation by the building official and/or the fire marshal prior to issuance of a temporary or permanent certificate of occupancy. The following tests shall be performed to verify the function of each item and the complete system:

1. Smoke detectors, fire alarms, voice communication and intercommunication systems.
2. Static pressure test at all floor locations.
3. Door opening force test at all floor locations.
4. Acceptance test shall be based on a traverse to prove the design fan capacity. The traverse shall be in accordance with ASHRAE Standard 111- 2008. When conducting the fan test, test each stair independently and open the outside door to let the air out of the building.

909.20.6.1 Ventilation systems. Smokeproof enclosure ventilation systems shall be independent of other building ventilation systems. All ductwork shall be sheetmetal constructed to a 2 inch pressure class in accordance with the *Mechanical Code* and shall be sealed in accordance with the *Mechanical Code*. The equipment and ductwork shall comply with one of the following:

1. Equipment and ductwork shall be located exterior to the building and directly connected to the smokeproof enclosure or connected to the smokeproof enclosure by ductwork enclosed by 2-hour fire barriers.
2. Equipment and ductwork shall be located within the smokeproof enclosure with

intake or exhaust directly from and to the outside or through ductwork enclosed by 2-hour fire barriers.

3. Equipment and ductwork shall be located within the building if separated from the remainder of the building, including other mechanical equipment, by 2-hour fire barriers.

{**EDITORIAL NOTE: DELETE** 909.20.6.2 IN ITS ENTIRETY.}

{**EDITORIAL NOTE: DELETE** 909.20.6.3 IN ITS ENTIRETY.}

[F] 911.1 Features. Where required by other sections of this code, a fire command center for fire department operations shall be provided. The location and accessibility of the fire command center room shall be ~~approved by the fire department. The fire command center~~ on the building floor having street access. Access to the room shall be either directly from the exterior, through an entrance lobby or through a two-hour rated corridor leading directly to the exterior. The room shall be separated from the remainder of the building by not less than a ~~1~~ 2-hour fire barrier constructed in accordance with Section 706 or horizontal assembly constructed in accordance with Section 711, or both. The room shall be a minimum of 96 square feet (9 m^2) with a minimum dimension of 8 feet (2438 mm). A layout of the fire command center and all features required by the section to be contained therein shall be submitted for approval prior to installation. The fire command center shall comply with NFPA72 and shall contain the following features:

1. The emergency voice/alarm communication system unit.
2. The fire department communications unit.
3. Fire detection and alarm system annunciator unit.
4. Annunciator unit visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air-handling systems.
6. The fire-fighter's control panel required by Section 909.16 for smoke control systems installed in the building.
7. Controls for unlocking stairway doors simultaneously.
8. Sprinkler valve and water-flow detector display panels.
9. Emergency and standby power status indicators.
10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.
12. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access.
13. Work table.
14. Generator supervision devices, manual start and transfer features.
15. Public address system, where specifically required by other sections of this code.

16. Battery power pack to provide continuous power for fire detection and alarm systems during normal/standby power switchover.
17. A means to automatically switch an alarm signal to an approved central station.
18. Two handsets per each 10 stories in building height.

CHAPTER 10
MEANS OF EGRESS

***1002.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

~~**ACCESSIBLE MEANS OF EGRESS.** A continuous and unobstructed way of egress travel from any accessible point in a building or facility to a public way.~~

~~**AREA OF REFUGE**. An area where persons unable to use stairways can remain temporarily to await instructions or assistance during emergency evacuation.~~

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.

*{**EDITORIAL NOTE:** ALL OTHER PORTIONS OF **SECTION 1002.1** TO REMAIN AS SET FORTH IN THE *2006 INTERNATIONAL BUILDING CODE*.}

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 serving stairs and ramps.~~

~~**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 serving stairs and ramps 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.~~

TABLE 1004.1.1
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT[a]

FUNCTION OF THE SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal Baggage claim Baggage handling Concourse Waiting Areas	 20 gross 300 gross 100 gross 15 gross
Assembly Gaming floors (keno, slots, etc.) Arcade/Game rooms	 11 gross 15 gross
Assembly with fixed seats	See Section 1004.7
Assembly without fixed seats Concentrated (chairs only– not fixed) auditoriums, churches and chapels, dance floors, lobbies accessory to assembly occupancies, lodge rooms, reviewing stands, stadiums, waiting areas Standing space Unconcentrated (tables and chairs) conference rooms, dining rooms, drinking establishments, multi-use gymnasiums, lounges, and stages	 7 net 5 net 15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas.	7 net
Business areas	100 gross
Children's homes and homes for the aged	80 net
Courtrooms–other than fixed seating areas	40 net

Day care (for children or the aged)	35 net
Dormitories	50 gross
Educational Classroom area Shops and other vocational room areas	 20 net 50 net
Exercise rooms (aerobics, gymnasiums)	50 gross
H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas Inpatient treatment areas Outpatient areas Sleeping areas	 240 gross 100 gross 120 gross
Kitchens, commercial	200 gross
Library Reading rooms Stack area	 50 net 100 gross
Locker rooms	50 gross
Mercantile Areas on other floors Basement and grade floor areas Storage, stock, shipping areas	 60 gross 30 gross 300 gross
Parking garages	200 gross
Residential R-1, R-2, R-4 R-3	 200 gross 300 gross
Skating rinks, swimming pools Rink and pool Decks	 50 gross 15 gross
Stages and platforms	15 net
Accessory storage areas, mechanical equipment room	300 gross
Warehouses	500 gross

~~For SI: 1 square foot = 0.0929 m²~~

a. Where an occupancy or use is not specifically listed, the building official shall determine the occupant load using the occupancy or use it most nearly resembles.

{EDITORIAL NOTE: REPLACE TABLE 1005.1 with the following.}

OCCUPANCY	STAIRWAYS (inches per occupant)	OTHER EGRESS COMPONENTS (inches per occupant)
All occupancies	0.3	0.2

SECTION 1007
~~ACCESSIBLE MEANS OF EGRESS~~

{**EDITORIAL NOTE: DELETE** AND **RESERVE** ENTIRE SECTION.}

1008.1.2 Door swing. Egress doors shall be of the pivoted or side-hinged swinging type.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Critical or intensive care patient rooms within suites of health care facilities.
4. Doors within or serving a single dwelling unit in Groups R-2 and R-3.
5. In other than Group H occupancies, revolving doors complying with Section 1008.1.3.1.
6. In other than Group H occupancies, horizontal sliding doors complying with Section 1008.1.3.3 are permitted in a means of egress.
7. Power-operated doors in accordance with Section 1008.1.3.2.
8. Doors serving a bathroom within an individual sleeping unit in Group R-1.
9. In other than Group H occupancies, manually operated horizontal sliding doors are permitted in a means of egress from spaces with an occupant load of 10 or less.

Doors shall swing in the direction of egress travel where serving an occupant load of 50 or more persons or a Group H occupancy.

The opening force for interior side-swinging doors without closers shall not exceed a 5-pound (22 N) force. For other side-swinging, sliding and folding doors, the door latch shall release when subjected to a 15-pound (67 N) force. The door shall be set in motion when subjected to a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a 15-pound (67 N) force. Forces shall be applied to the latch side.

1008.1.3.4 Electronic locks. ~~**Access-controlled egress doors.** The entrance doors in a means of egress in buildings with an occupancy in Group A, B, E, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Groups A, B, E, M, R-1 and R-2 are permitted to be equipped with an approved entrance and egress access control system which shall be installed in accordance with all of the following criteria:~~

~~1. A sensor shall be provided on the egress side arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.~~

~~2. Loss of power to that part of the access control system which locks the doors shall automatically unlock the doors.~~

~~3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and~~

~~within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the lock—independent of the access control system electronics—and the doors shall remain unlocked for a minimum of 30 seconds.~~

~~4. Activation of the building fire alarm system, if provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.~~

~~5. Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.~~

~~6. Entrance doors in buildings with an occupancy in Group A, B, E or M shall not be secured from the egress side during periods that the building is open to the general public.~~

1008.1.3.4.1 Definitions. For the purpose of this section, the following definitions apply:

FAIL SAFE. Shall mean that the loss of power to the part of the system that locks the door shall automatically unlock the door.

FAIL SECURE. Shall mean that the loss of power to the locking system will allow the doors to remain locked.

1008.1.3.4.2 Requirements. Except as specified in other parts of this code, electronic locks shall meet the following requirements:

1. Electronic locks that are electronically locked from the ingress side and can be mechanically unlocked from the egress side, can be fail secure from the ingress side.

   Exception: Stairway enclosure re-entry doors required by Section 403 shall be fail safe.

2. Electronic locks that unlock electronically from the egress side shall be fail safe and must be unlocked by a listed direct power-interrupting device without time-delay. If a motion sensor is used, a secondary in-line releasing device in the form of a button conspicuously located near the door shall be installed. If the lock is controlled by a relay, removal of power from the relay shall also cause the lock to fail open.

   Exception: Egress-control devices meeting the requirement of Section 1008.1.8.6 may be of the time-delay type.

3. Doors in excess of the number required for exits may be electronically controlled, provided there is a push button deactivating device (minimum of 1½ inch in size) conspicuously located near the door along with a sign stating: PUSH TO OPEN DOOR.

4. An exit door from an elevator lobby may be controlled by an electronic lock with an emergency release device (direct inline power interrupting switch) on the lobby side, provided the building has an automatic fire alarm system, including smoke detectors, located in the lobby and corridors and/or a complete sprinkler system that is interconnected to the fire alarm system.

The release device may be either a manual fire alarm pull station or a push button (minimum of 1½ inch in size) located near the door with a sign stating: PUSH/PULL TO RELEASE DOOR IN AN EMERGENCY. The locking device must release upon activation of the fire alarm or the sprinkler system and must be manually reset after being released.

1008.1.6 Thresholds. Thresholds at doorways shall not exceed 0.75 inch (19.1 mm) in height for sliding doors serving dwelling units or 0.5 inch (12.7 mm) for other doors. Raised thresholds and floor level changes greater than 0.25 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: The threshold height shall be limited to 7.75 inches (197 mm) where the occupancy is Group R-2 or R-3; the door is an exterior door that is not a component of the required means of egress; and the door, other than an exterior storm or screen door, does not swing over the landing or step~~; and the doorway is not on an accessible route as required by Chapter 11 and is not part of an Accessible unit, Type A unit or B unit~~.

1008.1.7 Door arrangement. Space between two doors in series shall be 48 inches (1219 mm) minimum plus the width of a door swinging into the space. Doors in 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~~.

1008.1.8 Door operations. Whenever a building or space is occupied, ~~E~~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.

1008.1.8.3 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 Groups 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~~2. The use of the ~~key-operated~~ locking device is revo~~k~~cable by the building official for ~~due cause~~ failure to conform to any applicable requirement of this code or other laws.

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. 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.

1008.1.8.4 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~~. When one active leaf of a pair of doors provides the required exit width, manually operated edge- or surface-mounted bolts may be used on the inactive leaf and a door closer need not be provided on the inactive leaf.

3. 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.

1008.1.8.6 Delayed egress locks. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy except Group ~~A, E and~~ H occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 6 below. A building occupant shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit.

1. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.

2. The doors unlock upon loss of power controlling the lock or lock mechanism.

3. The door locks shall have the capability of being unlocked by a signal from the fire command center.

4. The initiation of an irreversible process which will release the latch in not more than 15 seconds when a force of not more than 15 pounds (67 N) is applied for 1 second to the release device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the door lock has been

released by the application of force to the releasing device, relocking shall be by manual means only.

Exception: Where approved, a delay of not more than 30 seconds is permitted.

5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the release device reading: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
6. Emergency lighting shall be provided at the door.

1008.1.9 Panic and fire exit hardware. Where panic and fire exit hardware is installed, it shall comply with the following:

1. The actuating portion of the releasing device shall extend at least one-half of the door leaf width.
2. The maximum unlatching force shall not exceed 15 pounds (67 N) applied in the direction of travel.

Each door in a means of egress from a Group A or E occupancy having an occupant load of 50 or more and any Group H occupancy shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.

Exception: A main exit of a Group A occupancy in compliance with Section 1008.1.8.3, Item 2.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide that contain overcurrent devices, switching devices or control devices with exit access doors must be equipped with panic hardware and doors must swing in the direction of egress.

If balanced doors are used and panic hardware is required, the panic hardware shall be the push-pad type and the pad shall not extend more then one-half the width of the door measured from the latch side.

1008.2.2 Security gates. In locations other than on doors where panic hardware is required, security gates may be installed provided they remain open when the premises is occupied by anyone other than security personnel.

1009.3 Stair treads and risers. Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. Stair tread depths shall be 11 inches (279 mm) minimum. The riser height shall be measured vertically between the leading edges of adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. Winder treads shall have a minimum tread depth of 11 inches (279 mm) measured at a right angle to the tread's leading edge at a point 12 inches (305 mm) from the side where the treads are narrower and a minimum tread depth of 10 inches (254 mm).

Exceptions:

1. Alternating tread devices in accordance with Section 1009.9.

2. Spiral stairways in accordance with Section 1009.8.
3. Aisle stairs in assembly seating areas where the stair pitch or slope is set, for sightline reasons, by the slope of the adjacent seating area in accordance with Section 1025.11.2.
4. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 7.75 inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the minimum winder tread depth at the walk line shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing not less than 0.75 inch (19.1 mm) but not more than 1.25 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).
5. See the Section 3403.4 for the replacement of existing stairways.
6. Private steps and stairways serving an occupant load of less than 10 and stairways to unoccupied roofs may be constructed with an 8-inch maximum (203 mm) rise and a 9-inch minimum (229 mm) run.

1009.5 Stairway construction. All stairways shall be built of materials consistent with the types permitted for the type of construction of the building, as permitted by Section 603.1, except that wood handrails shall be permitted for all types of construction.

1009.10 Handrails. Stairways shall have handrails on each side and shall comply with Section 1012. Where glass is used to provide the handrail, the handrail shall also comply with Section 2407.

Exceptions:

1. Aisle stairs complying with Section 1025 provided with a center handrail need not have additional handrails.
2. Stairways within dwelling units, spiral stairways and aisle stairs serving seating only on one side are permitted to have a handrail on one side only.
3. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require handrails.
4. ~~In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails.~~ Stairways having less than four risers and serving one individual dwelling unit in Group R-2, R-3, or Group U occupancies need not have handrails.
5. ~~Changes in room elevations of only one riser within dwelling units and sleeping units in Group R-2 and R-3 occupancies do not require handrails.~~

1011.2 Illumination. Exit signs shall be internally or externally illuminated.

~~**Exception:** Tactile signs required by Section 1011.3 need not be provided with illumination.~~

1011.3 Reserved. ~~**Tactile exit signs.** A tactile sign stating EXIT and complying with ICC A117.1 shall be provided adjacent to each door to an egress stairway, an exit passageway and the exit discharge.~~

1017.1 Construction. Corridors shall be fire-resistance rated in accordance with Table 1017.1. The corridor walls required to be fire-resistance rated shall comply with Section 708 for fire partitions.

Exceptions:

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has at least one door directly to the exterior and rooms for assembly purposes have at least one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A fire-resistance rating is not required for corridors contained within a dwelling or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1015.1.
5. A fire-resistance rating is not required for corridors in one-story buildings housing Groups B, F, M, and S occupancies.
6. A fire-resistance rating is not required for corridors 30 feet (9144 mm) or more in width.
7. In other than Type I or II construction, exterior exit balcony roof assemblies may be of heavy timber construction without concealed spaces.
8. A fire-resistance rating is not required for corridors in Groups B, F, M and S occupancies where exits are available from an open floor area.
9. In Groups B, F, M and S occupancies within a single tenant suite or space, corridors need not be separated.
10. In Groups B, F, M and S occupancies where one-hour fire-resistant corridors are required, walls shall be permitted to terminate at a noncombustible ceiling.

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

Exceptions:

1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B, ~~and~~ F, M and S where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of dead-end corridors shall not exceed 50 feet (15 240 mm).
3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

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

Exceptions:

1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, sleeping units, dormitory rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.
2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of 1,000 square feet (93 m^2) or less in area, utilization of corridors for conveying return air is permitted.
4. Air induced from the corridor into rooms required to be maintained under negative pressure with respect to the corridor by this code, other regulatory authorities, or standards, shall be limited to the quantity required to maintain the required room pressure.
5. Air leakage into the corridor from rooms required to be maintained under positive pressure with respect to the corridor by this code, other regulatory authorities, or standards, shall be limited to the quantity required to maintain the required room pressure.

1020.1.6 Stairway identification. ~~**Stairway floor number signs.** A sign shall be provided at each floor landing in interior exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the stair enclosure and the identification of the stair. The signage shall also state the story of, and the direction to the exit discharge and the availability of roof access from the stairway for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions.~~ Stairway identification signs shall be located at each floor level in all enclosed stairways in buildings four or more stories in height. Such signs shall indicate whether or not there is roof access and identify the stairway, the floor level, and the upper and lower termini of the stairway. The sign shall be located approximately 5 feet (1524 mm) above the landing floor in a position that is readily visible when the door is in either the open or closed position. Signs shall comply with the requirements of the *Fire Code*, Appendix H. For stairway reentry requirements see Section 403.

In addition to the signs required above, approved stairway identification signs shall be located at each floor level on the occupancy side of each enclosed stairway. Identification signs shall be posted on or adjacent to the door with lettering at least 2 inches in height on a background of contrasting color so that the lettering is clearly visible.

Where stair doors can be locked to prohibit reentry to a floor, an approved sign shall be posted that reads “NO REENTRY” with lettering not less than 1 inch in height on a background of contrasting color so that the lettering is clearly visible.

1025.2 Assembly main exit. Group A occupancies that have an occupant load of greater than 300 shall be provided with a main exit. The main exit shall be of sufficient width to

accommodate not less than one-half of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. Where the ~~building~~ assembly area is classified as a Group A occupancy, the main exit shall front on at least one street or an unoccupied space of not less than 10 feet (3048 mm) in width that adjoins a street or public way.

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the ~~building~~ assembly area provided that the total width of egress is not less than 100 percent of the required width.

1025.3 Assembly other exits. In addition to having access to a main exit, each level in a Group A occupancy having an occupant load of greater than 300 shall be provided with additional means of egress that shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1015.2.

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the ~~building~~ assembly area, provided that the total width of egress is not less than 100 percent of the required width.

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 m^2) 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~~.

1203.4.2 Reserved. ~~**Contaminants exhausted.** Contaminant sources in naturally ventilated spaces shall be removed in accordance with the *International Mechanical Code* and the *International Fire Code*.~~

~~**1203.4.2.1 Bathrooms.** Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated in accordance with the *International Mechanical Code*.~~

1207.1 General. When required by the airport land use ordinance sound attenuation shall be provided as specified in Appendix N of this code. ~~**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.~~

~~**1207.2 Air-borne sound.** Walls, partitions and floor/ceiling assemblies separating dwelling units from each other or from public or service areas shall have a sound transmission class (STC) of not less than 50 (45 if field tested) for air-borne noise when tested in accordance with ASTM E 90. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not~~

~~apply to dwelling unit entrance doors; however, such doors shall be tight fitting to the frame and sill.~~

~~**1207.3 Structure-borne sound.** Floor/ceiling assemblies between dwelling units or between a dwelling unit and a public or service area within the structure shall have an impact insulation class (IIC) rating of not less than 50 (45 if field tested) when tested in accordance with ASTM E 492.~~

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). A 30-inch (762 mm) minimum clear headroom in the attic space shall be provided 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 Energy Conservation Code*~~ *Houston Commercial Energy Conservation Code* or *Houston Residential Energy Conservation Code*, as applicable.

CHAPTER 14
EXTERIOR WALLS

~~**1403.5 Flood resistance.** For buildings in flood hazard areas as established in Section 1612.3, exterior walls extending below the design flood elevation shall be resistant to water damage. Wood shall be pressure-preservative treated in accordance with AWPA U1 for the species, product and end use using a preservative listed in Section 4 of AWPAU1 or decay-resistant heartwood of redwood, black locust or cedar.~~

~~**1403.6 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.~~

CHAPTER 15

ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

1504.8 Gravel and stone. Gravel or stone shall not be used on the roof of a building. ~~located in a hurricane-prone region as defined in Section 1609.2, 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.~~

~~TABLE 1504.8~~
~~MAXIMUM ALLOWABLE MEAN ROOF HEIGHT PERMITTED FOR BUILDINGS WITH GRAVEL OR STONE ON THE ROOF IN AREAS OUTSIDE A HURRICANE-PRONE REGION~~

~~BASIC WIND SPEED FROM FIGURE 1609 (mph)[b]~~	~~MAXIMUM MEAN ROOF HEIGHT (ft)[a,c]~~		
	~~Exposure category~~		
	~~A~~	~~B~~	~~C~~
~~5~~	~~170~~	~~60~~	~~30~~
~~90~~	~~110~~	~~35~~	~~15~~
~~95~~	~~75~~	~~20~~	~~NP~~
~~100~~	~~55~~	~~15~~	~~NP~~
~~105~~	~~40~~	~~NP~~	~~NP~~
~~110~~	~~30~~	~~NP~~	~~NP~~
~~115~~	~~20~~	~~NP~~	~~NP~~
~~120~~	~~15~~	~~NP~~	~~NP~~
~~Greater than 120~~	~~NP~~	~~NP~~	~~NP~~

~~For SI: 1 foot = 304.8 mm; 1 mile per hour = 0.447 m/s.~~

~~a. Mean roof height in accordance with Section 1609.2~~
~~b. For intermediate values of basic wind speed, the height associated with the next higher value of wind speed shall be used, or direct interpolation is permitted.~~
~~c. NP = gravel and stone not permitted for any roof height.~~

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.

1510.8 Final inspection. A final inspection and approval shall be obtained from the building official when the reroofing is complete.

CHAPTER 16
STRUCTURAL DESIGN

1603.1.6 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.~~

~~3. 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.~~

~~**1603.3 Live loads posted.** Where the live loads for which each floor or portion thereof of a commercial or industrial building is or has been designed to exceed 50 psf (2.40 kN/m^2), such design live loads shall be conspicuously posted by the owner in that part of each story in which they apply, using durable signs. It shall be unlawful to remove or deface such notices.~~

~~**1603.4 Occupancy permits for changed loads.** Occupancy permits for buildings hereafter erected shall not be issued until the floor load signs, required by Section 1603.3, have been installed.~~

1609.3 Basic wind speed. The basic wind speed, in mph, for the determination of the wind loads shall be 110 mph (3 second gust). ~~determined by Figure 1609. Basic wind speed for the special wind regions indicated, near mountainous terrain and near gorges shall be in accordance with local jurisdiction requirements. Basic wind speeds determined by the local jurisdiction shall be in accordance with Section 6.5.4 of ASCE 7.~~

~~In nonhurricane-prone regions, when the basic wind speed is estimated from regional climatic data, the basic wind speed shall be not less than the wind speed associated with an annual probability of 0.02 (50-year mean recurrence interval), and the estimate shall be adjusted for equivalence to a 3-second gust wind speed at 33 feet (10 m) above ground in exposure Category C. The data analysis shall be performed in accordance with Section 6.5.4 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. ~~Occupancy Category I, II or III structures 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. Occupancy Category IV structures located where the mapped spectral response acceleration parameter at 1-second period, $S1$, 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 occupancy category and the design spectral response acceleration coefficients, S_{DS} and S_{D1}, determined in accordance with Section 1613.5.4 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 1613.5.6(1) or 1613.5.6(2), irrespective of the fundamental period of vibration of the structure, T.~~

CHAPTER 17

STRUCTURAL TESTS AND SPECIAL INSPECTIONS

~~**1704.1.1 Statement of special inspections.** The permit applicant shall submit a statement of special inspections prepared by the registered design professional in responsible charge in accordance with Section 106.1 as a condition for permit issuance. This statement shall be in accordance with Section 1705.~~

~~**Exceptions:**~~

~~1. A statement of special inspections is not required for structures designed and constructed in accordance with the conventional construction provisions of Section 2308.~~

~~2. The statement of special inspections is permitted to be prepared by a qualified person approved by the building official for construction not designed by a registered design professional~~

~~**1704.1.2 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 done in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies 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 by the permit applicant and the building official prior to the start of work.~~ **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 plans and specifications and the applicable workmanship provisions of this code.

1704.14.2 Qualifications. Special ~~inspection agencies~~ inspectors for smoke control other than stair pressurization shall be licensed engineers in the State of Texas and shall have expertise in fire protection engineering and mechanical engineering and shall utilize the services of a NEBB or AABC certified ~~certification as~~ air ~~balancers~~ balancing agency.

CHAPTER 18
SOILS AND FOUNDATIONS

1802.1 General. ~~Foundation and soils investigations shall be conducted in conformance with Sections 1802.2 through 1802.6. Where required by the building official, the classification and investigation of the soil shall be made by a registered design professional.~~ The classification of the soil at each building shall be determined when required by the building official. The building official may require that this determination be made by an engineer or architect licensed by the state to practice as such.

1802.2 ~~Where required.~~ ~~The owner or applicant shall submit a foundation and soils investigation to the building official where required in Sections 1802.2.1 through 1802.2.7.~~ **Investigation.** The classification shall be based on observation and any necessary tests of the materials disclosed by borings or excavations made in appropriate locations. Additional studies may be necessary to evaluate soil strength, the effect of moisture variation on soil-bearing capacity, compressibility, liquefaction and expansiveness.

> ~~**Exception:** The building official need not require a foundation or soils investigation where satisfactory data from adjacent areas is available that demonstrates an investigation is not necessary for any of the conditions in Sections 1802.2.1 through 1802.2.6.~~
>
> **Exceptions:**
>
> 1. The building official may waive this evaluation upon receipt of written opinion of a qualified geotechnical engineer or geologist that liquefaction is not probable.
> 2. A Group R-3, detached single-story dwelling unit, with or without attached garages.
> 3. Group U occupancies.
> 4. Fences.

~~**1802.2.1 Questionable soil.** Where the classification, strength or compressibility of the soil are in doubt or where a load-bearing value superior to that specified in this code is claimed, the building official shall require that the necessary investigation be made. Such investigation shall comply with the provisions of Sections 1802.4 through 1802.6.~~

~~**1802.2.2 Expansive soils.** In areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist.~~

~~**1802.2.3 Ground-water table.** A subsurface soil investigation shall be performed to determine whether the existing ground-water table is above or within 5 feet (1524 mm) below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation.~~

> ~~**Exception:** A subsurface soil investigation shall not be required where waterproofing is provided in accordance with Section 1807.~~

~~**1802.2.4 Pile and pier foundations.** Pile and pier foundations shall be designed and installed on the basis of a foundation investigation and report as specified in Sections 1802.4 through 1802.6 and Section 1808.2.1.~~

~~**1802.2.5 Rock strata.** Where subsurface explorations at the project site indicate variations or doubtful characteristics in the structure of the rock upon which foundations are to be~~

~~constructed, a sufficient number of borings shall be made to a depth of not less than 10 feet (3048 mm) below the level of the foundations to provide assurance of the soundness of the foundation bed and its load-bearing capacity.~~

~~**1802.2.6 Seismic Design Category C.** Where a structure is determined to be in Seismic Design Category C in accordance with Section 1613, an investigation shall be conducted and shall include an evaluation of the following potential hazards resulting from earthquake motions: slope instability, liquefaction and surface rupture due to faulting or lateral spreading.~~

~~**1802.2.7 Seismic Design Category D, E or F.** Where the structure is determined to be in Seismic Design Category D, E or F, in accordance with Section 1613, the soils investigation requirements for Seismic Design Category C, given in Section 1802.2.6, shall be met, in addition to the following. The investigation shall include:~~

1. ~~A determination of lateral pressures on basement and retaining walls due to earthquake motions.~~
2. ~~An assessment of potential consequences of any liquefaction and soil strength loss, including estimation of differential settlement, lateral movement or reduction in foundation soil-bearing capacity, and shall address mitigation measures. Such measures shall be given consideration in the design of the structure and can include but are not limited to, ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements or any combination of these measures. The potential for liquefaction and soil strength loss shall be evaluated for site peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions. Peak ground acceleration shall be determined from a site- specific study taking into account soil amplification effects, as specified in Chapter 21 of ASCE 7.~~

   ~~**Exception:** A site-specific study need not be performed provided that peak ground acceleration equal to S_{DS}/2.5 is used, where S_{DS} is determined in accordance with Section 21.2.1 of ASCE 7.~~

CHAPTER 23
WOOD

2308.2.1 Basic wind speed greater than 100 mph (3-second gust). Where the basic wind speed exceeds 100 mph (3-second gust), the provisions of either the AF&PA WFCM, or the SBCCI SSTD 10, or Appendix K of this code are permitted to be used.

CHAPTER 27
ELECTRICAL

[F] 2702.2.5 Reserved. ~~**Accessible means of egress elevators.** Standby power shall be provided for elevators that are part of an accessible means of egress in accordance with Section 1007.4.~~

[F] 2702.2.6 Reserved. ~~**Accessible means of egress platform lifts.** Standby power in accordance with this section or ASME A18.1 shall be provided for platform lifts that are part of an accessible means of egress in accordance with Section 1007.5.~~

CHAPTER 28
MECHANICAL SYSTEMS

SECTION 2802
FACTORY BUILT CHIMNEYS AND FIREPLACES

2802.1 Factory built chimneys and fireplaces. Factory built chimneys and factory built fireplaces shall be listed and shall be installed in accordance with the terms of their listings and the manufacturers' instructions as specified in the *Mechanical Code*.

CHAPTER 29
PLUMBING SYSTEMS

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

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS[e] ~~(URINALS SEE SECTION 419.2 OF THE *INTERNATIONAL PLUMBING CODE*~~		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS[f] ~~(SEE SECTION 410.1 OF THE *INTERNATIONAL PLUMBING CODE*~~	OTHER
				Male	Female	Male	Female			
1	Assembly (see Sections 2902.2, 2902.4 and 2902.4.1)	A-1[d]	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per ~~65~~ 60	1 per 200		C	1 per 500	1 service sink
		A-2[d]	Nightclubs, bars, taverns, dance halls and buildings for similar purpose	1 per 40	1 per 40	1 per 75		C	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		C	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~~ 60	1 per 200		C	1 per 500	1 service sink
			Passenger terminals and transport facilities[e]	1 per 500	1 per 500	1 per 750		C	1 per 1,000	1 service sink
			Places of worship and other religious services	1 per 150	1 per 75	1 per 200		C	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~~ 35 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	C	1 per 1,000	1 service sink
		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~~ 35 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	C	1 per 1,000	1 service sink

(continued)

[P] Table 2902.1 – continued
MINIUMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS[e] ~~(URINALS SEE SECTION 419.2 OF THE *INTERNATIONAL PLUMBING CODE*)~~		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS [f] ~~(SEE SECTION 410.1 OF THE *INTERNATIONAL PLUMBING CODE*)~~	OTHER
				Male	Female	Male	Female			
2	Business (see Sections 2902.2, 2902.4 and 2902.4.1)	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		C	1 per 100	1 service sink
3	Educational	E	Educational facilities	1 per 50		1 per 50		C	1 per 100	1 service sink
			Daycares	1 per 17		1 per 17		C	1 per 100	1 service sink
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 patients[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		C	1 per 100	C
			Visitors, other than residential care	1 per 75		1 per 100		C	1 per 500	C
		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		C	1 per 100	1 service sink
6	Mercantile (see Section 2902.2, 2902.4, 2902.4.1 and 2902.4.2)	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		C	1 per 1,000	1 service sink
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	C	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	C	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS[e] ~~(URINALS SEE SECTION 419.2 OF THE *INTERNATIONAL PLUMBING CODE*)~~		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS[f] ~~(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 dwelling unit		1 per dwelling unit	C	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		R-4	Residential care/assisted living facilities	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage (see Sections 2902.2, 2902.4 and 2902.4.1)	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 patients.
c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient rooms shall be permitted where such room is provided with direct access from each patient room and with provision 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. 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.
f. Buildings where water is served from bottled water coolers or buildings having an occupant load of less than 30 shall not be required to provided drinking fountains.
g. 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.
h. 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 50 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.

~~**2902.4.3 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.~~

[P] 2902.5 ~~**Signage.** A legible sign designating the sex shall be provided in a readily visible location near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with ICC A117.1.~~ **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 provisions of this chapter shall apply to the design, construction, installation, operation, alteration and repair of elevators, dumbwaiters, escalators, manlifts, moving walks, inclined stairway chairlifts, wheelchair lifts, vertical reciprocating conveyors and personnel hoists.

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 ASME A17.1, 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.

3001.3 ~~**Accessibility.** Passenger elevators required to be accessible by Chapter 11 shall conform to ICC ANSI A117.1.~~ **Definitions.** For purposes of this chapter, certain terms are defined in the Elevator Safety Code and read as follows:

ANSI 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.

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.

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 Part XII of ASME A17.1.~~

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 FIRE EMERGENCY, DO NOT USE ELEVATOR. 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. ~~The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with Section 1007.4.~~

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.

3004.1 ~~**Vents required.** Hoistways of elevators and dumbwaiters penetrating more than three stories shall be provided with a means for venting smoke and hot gases to the outer air in case of fire.~~ **Hoistway venting.** When provided, the venting of each individual hoistway shall be independent from any other hoistway venting, and the interconnection of separate hoistways for the purpose of venting prohibited.

~~**Exceptions:**~~

1. ~~In occupancies of other than Groups R-1, R-2, I-1, I-2 and similar occupancies with overnight sleeping quarters, venting of hoistways is not required where the building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.~~
2. ~~Sidewalk elevator hoistways are not required to be vented.~~

~~**3004.2 Location of vents.** Vents shall be located at the top of the hoistway and shall open either directly to the outer air or through noncombustible ducts to the outer air. Noncombustible ducts shall be permitted to pass through the elevator machine room, provided that portions of the ducts located outside the hoistway or machine room are enclosed by construction having not less than the fire protection rating required for the hoistway. Holes in the machine room floors for the passage of ropes, cables or other moving elevator equipment shall be limited so as not to provide greater than 2 inches (51 mm) of clearance on all sides.~~

~~**3004.3 Area of vents.** Except as provided for in Section 3004.3.1, the area of the vents shall not be less than 3 1/2 percent of the area of the hoistway nor less than 3 square feet (0.28 m²) for each elevator car, and not less than 3 1/2 percent nor less than 0.5 square foot (0.047 m²) for each dumbwaiter car in the hoistway, whichever is greater. Of the total required vent area, not less than one-third shall be of the permanently open. Closed portions of the required vent area shall consist of openings glazed with annealed glass not greater than 0.125 inch (3.2mm) in thickness.~~

~~**Exception:** The total required vent area shall not be required to be permanently open where all the vent openings automatically open upon detection of smoke in the elevator lobbies or hoistway, upon power failure and upon activation of a manual override control.~~

~~**3004.3.1 Reduced vent area.** Where mechanical ventilation conforming to the *International Mechanical Code* is provided, a reduction in the required vent area is allowed provided that all of the following conditions are met:~~

~~1. The occupancy is not in Group R-1, R-2, I-1 or I-2 or of a similar occupancy with overnight sleeping quarters.~~

~~2. The vents required by Section 3004.2 do not have outside exposure.~~

~~3. The hoistway does not extend to the top of the building.~~

~~4. The hoistway and machine room exhaust fan is automatically reactivated by thermostatic means.~~

~~5. Equivalent venting of the hoistway is accomplished.~~

~~**3004.4 Plumbing and mechanical systems.** Plumbing and mechanical systems shall not be located in an elevator shaft.~~

~~**Exception:** Floor drains, sumps and sump pumps shall be permitted at the base of the shaft provided they are indirectly connected to the plumbing system.~~

3005.1 General. Escalators, moving walks, vertical reciprocating personnel hoists and material hoists shall comply with the provisions of this section.

3005.3 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. ~~**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 707.~~

~~**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~~.

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 ~~independent~~ approved 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.

3006.5 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 3-9.4,~~ 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 3007
ELEVATORS FOR HIGH RISE BUILDINGS

3007.1 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 “fireman’s bypass 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 3008
PERMITS,

CERTIFICATES OF INSPECTION

3008.1 Construction permits.

3008.1.1 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.

3008.1.2 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.

3008.1.3 Acceptance inspections. All acceptance inspections shall be performed by the building official or an approved agency.

3008.2 Operating permits.

3008.2.1 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.

3008.2.2 Annual operating permit. Permits will show the location, type, and number of units permitted.

3008.2.3 Posting of permits. Permits shall be posted in conspicuous locations that are readily accessible to the building official.

3008.2.4 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.

3008.2.5 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.

3008.2.6 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.

3008.2.7 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.

3008.2.8 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.

3008.3 Approval of personnel hoists.

3008.3.1 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.

3008.3.2 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.

3008.3.3 Penalties for violation.

3008.3.3.1. 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.

3008.3.3.2. 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.

3008.3.4 Manlifts. Nothing in this code or in the Personnel Hoist Safety Code shall be construed to prohibit the use of a manlift during construction.

3008.3.5 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.

3008.3.6 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.

3008.4 Tests, inspections.

3008.4.1 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.

3008.4.2 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.

3008.4.3 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.

3008.4.4 Inspection costs. All costs of such inspections and tests shall be paid by the owner or owner's representative.

3008.4.5 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 10 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.

3008.4.6 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.

3008.4.7 Registration. Each authorized inspector shall meet the qualification requirements of the ASME QEI-1. All authorized inspectors and inspection supervisors shall be certified by an organization accredited by ASME in accordance with requirements of ASME QEI-1 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.

3008.4.8 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.

3008.4.9 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.

3008.5 Fees for tests and inspections. Fees shall be required as scheduled in Section 117 of this code.

3008.6 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 in excess of 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.

3103.2 Construction documents. A permit application and construction documents shall be submitted for each installation of a temporary structure. The construction documents shall include a site plan indicating the location of the temporary structure and information delineating the means of egress and the occupant load. Such buildings or structures need not comply with the type of construction or fire-resistive time periods required by this code.

3104.3 Construction. The pedestrian walkway shall be of noncombustible construction.

Exceptions:

1. ~~Combustible construction shall be permitted where connected buildings are of combustible construction.~~ Pedestrian walkways connecting buildings of Type III, IV or V construction may be constructed of one-hour fire resistive construction or of heavy-timber construction.
2. ~~Fire-retardant-treated wood, in accordance with Table 601, Note c, shall be permitted for the roof construction of the pedestrian walkway where connected buildings are a minimum of Type I or II construction.~~ Pedestrian walkways located on grade having both sides open by at least 50 percent and connecting buildings of Type III, IV or V construction may be constructed with any materials allowed by this code.

3104.4 ~~**Contents.** Only materials and decorations approved by the building official shall be located in the pedestrian walkway.~~ **Multiple pedestrian walkways.** The distance between any two pedestrian walkways on the same horizontal plane shall not be less than 40 feet.

3104.5 ~~**Fire barriers between pedestrian walkways and buildings.** Walkways shall be separated from the interior of the building by fire barrier walls with a fire-resistance rating of not less than 2 hours. This protection shall extend vertically from a point 10 feet (3048 mm) above the walkway roof surface or the connected building roof line, whichever is lower, down to a point 10 feet (3048 mm) below the walkway and horizontally 10 feet (3048 mm) from each side of the pedestrian walkway. Openings within the 10-foot (3048 mm) horizontal extension of the protected walls beyond the walkway shall be equipped with devices providing a 3/4-hour fire protection rating in accordance with Section 715.~~

~~**Exception:** The walls separating the pedestrian walkway from a connected building are not required to have a fire-resistance rating by this section where any of the following conditions exist:~~

~~1. The distance between the connected buildings is more than 10 feet (3048 mm), the pedestrian walkway and connected buildings, except for open parking garages, are equipped throughout with an automatic sprinkler system in accordance with NFPA 13 and the wall is constructed of a tempered, wired or laminated glass wall and doors subject to the following:~~

~~1.1. The glass shall be protected by an automatic sprinkler system in accordance with NFPA 13 and the sprinkler system shall completely wet the entire surface of interior sides of the glass wall when actuated.~~

~~1.2. The glass shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler operates.~~

~~1.3. Obstructions shall not be installed between the sprinkler heads and the glass.~~

~~2. The distance between the connected buildings is more than 10 feet (3048 mm) and both sidewalls of the pedestrian walkway are at least 50 percent open with the open area uniformly distributed to prevent the accumulation of smoke and toxic gases.~~

~~3. Buildings are on the same lot in accordance with Section 503.1.2.~~

~~4. Where exterior walls of connected buildings are required by Section 704 to have a fire-resistance rating greater than 2 hours, the walkway shall be equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.~~

Openings between pedestrian walkways and buildings. Openings from buildings to pedestrian walkways shall conform to the requirements of Chapters 5 and 6. In addition, pedestrian walkways connecting buildings shall either be provided with opening protection at connections to buildings in accordance with Section 715.3.3 or be constructed with both sides of the pedestrian walkway at least 50 percent open and have the open area distributed so as to prevent the accumulation of smoke and toxic gas.

Exception: When not required due to location between buildings, a pedestrian walkway opening need not be protected when the connection occurs at either a sprinklered building or an open parking garage.

3104.6 Public way. Pedestrian walkways over a public way shall ~~also comply with Chapter 32~~ be subject to the approval of the jurisdiction.

3104.10 Tunneled walkway. ~~Separation between the tunneled walkway and the building to which it is connected shall not be less than 2-hour fire-resistant construction and openings therein shall be protected in accordance with Table 715.4.~~ Tunneled walkways shall be sprinklered in accordance with NFPA 13.

3104.11 Ventilation. Ventilation shall be provided for enclosed walkways and tunneled walkways in accordance with the *Mechanical Code*.

3107.1 General. Signs shall be designed, constructed and maintained in accordance with Chapter 46 of this code.

SECTION 3108

{**EDITORIAL NOTE: DELETE SECTION 3108** IN ITS ENTIRETY **AND RESERVE.**}

SECTION 3109
SWIMMING POOL ENCLOSURES AND SAFETY DEVICES

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 3110
DRIVEWAYS, SIDEWALKS, PARKING LOTS AND ALLEYS

3110.1 Purpose. This section establishes minimum regulations governing the design and construction of driveways, sidewalks, parking lots, alleys, and paving.

3110.2 Definitions. The following words and phases, 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 3110.9 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.

3110.3 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.

3110.3.1 Driveways. Driveways shall comply with the provisions of Section 3110.3.2 and shall connect to a driveway approach as provided in Section 3110.4.3.

3110.3.2 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 3110.6 .

3110.3.3 Parking lots. The construction of parking lots shall be as required this section and Drawings 31-01 and 31-02 of Section 3110.4.5. 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.

3110.3.3.1 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.

3110.3.3.2 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.

3110.3.3.3 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.

3110.4 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, curb or gutter shall comply with this section and Chapter 40, Article III, of the *City Code,* and the IDM.

3110.4.1 Jurisdiction approval of plans and specifications. No person shall construct or cause to be constructed any driveway, sidewalk, private street, parking lot or alley connecting private property with a public street without prior approval of the jurisdiction's Department of Public Works and Engineering.

3110.4.2 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, 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 poles, fire hydrants, trees, etc. If median islands exist, the next median opening on each side of the property.
4. If open ditches exist, the diameter size 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, shown in detail.
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.

3110.4.3 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

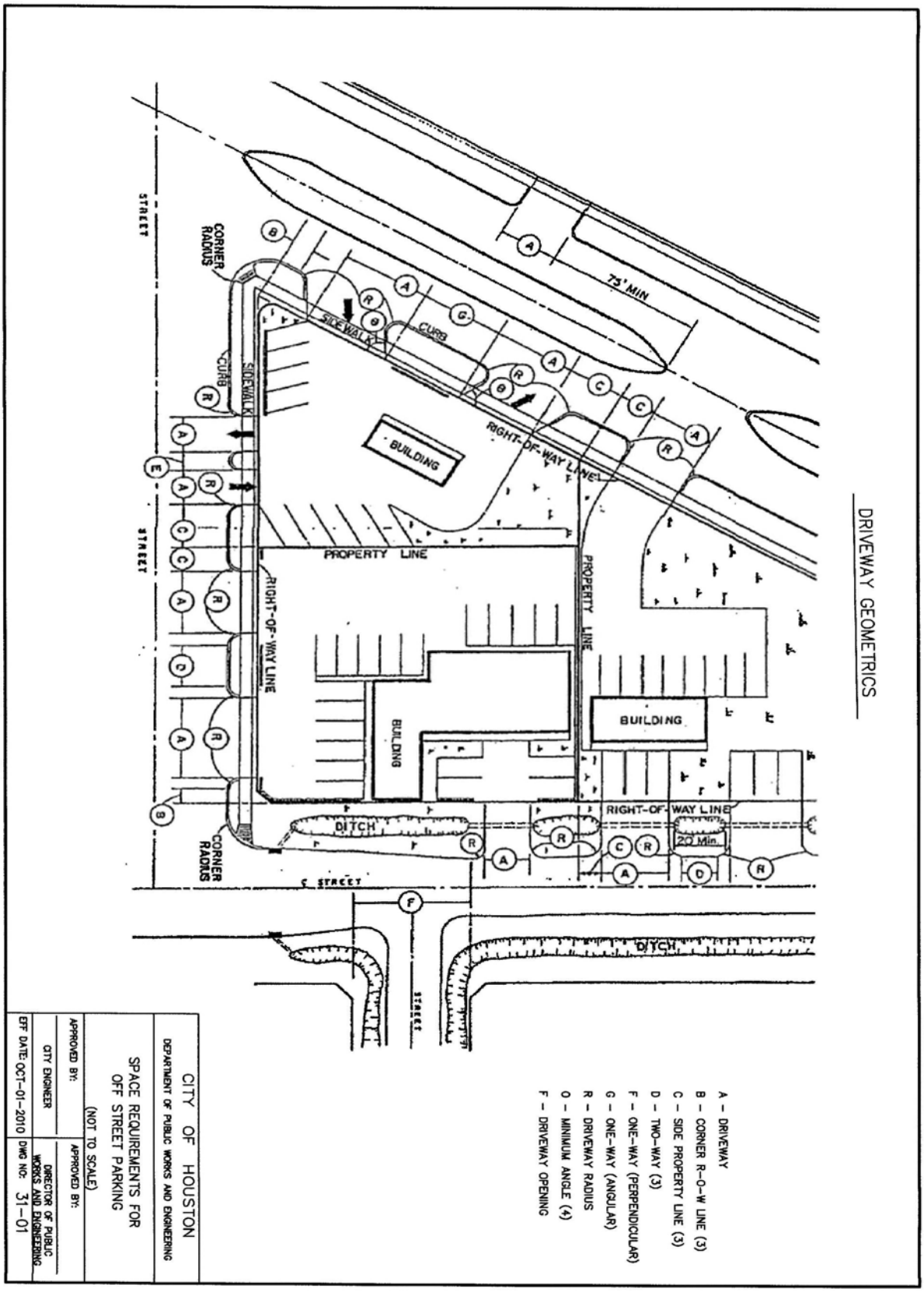
Works and Engineering shall make a determination, pursuant to the guidelines set out in Section 40-86 of the *City Code*, as to whether the driveway approach applied for is necessary to provide reasonable access to the private property consistent with the safety and convenience of the public.

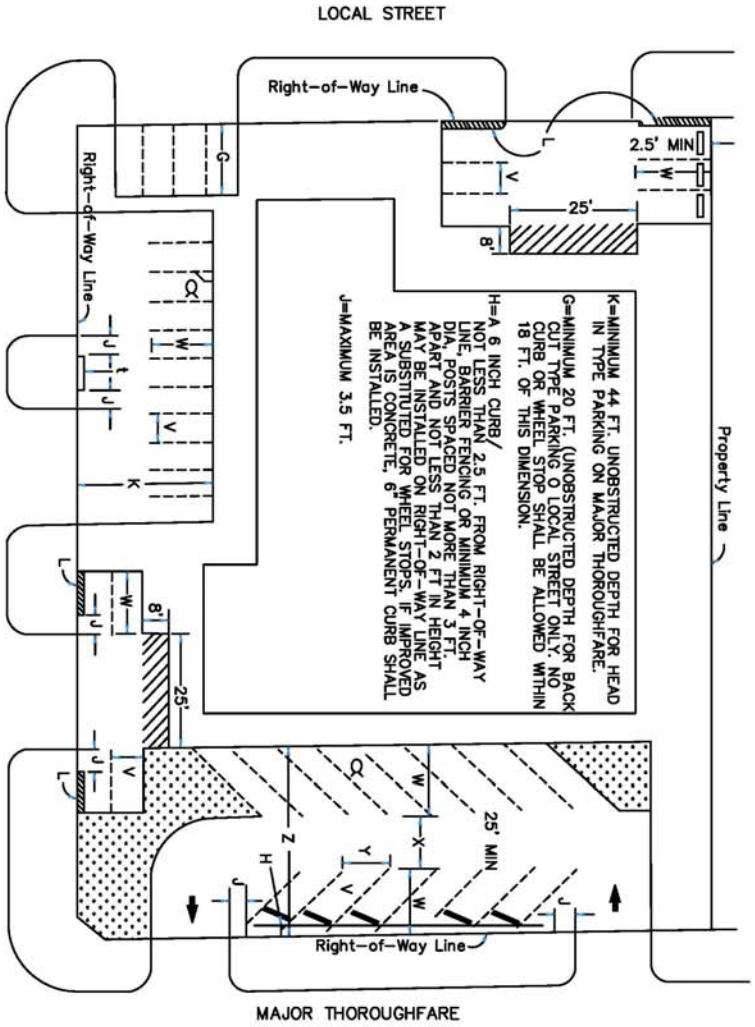
If after review the jurisdiction's Office of the City Engineer in the Department of Public Works and Engineering finds that the plans comply with all applicable codes and ordinances, the Office of City Engineer shall approve the plans.

3110.4.4 Sidewalks. When required by Section 10.06D of the IDM, public sidewalks shall be constructed in accordance the applicable Public Works drawing number, for the specified location and site conditions.

3110.4.5 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).


DRIVEWAY GEOMETRICS
A – DRIVEWAY
B – CORNER R–O–W LINE (3)
C – SIDE PROPERTY LINE (3)
D – TWO–WAY (3)
F – ONE–WAY (PERPENDICULAR)
G – ONE–WAY (ANGULAR)
R – DRIVEWAY RADIUS
O – MINIMUM ANGLE (4)
F – DRIVEWAY OPENING
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
SPACE REQUIREMENTS FOR
OFF STREET PARKING
(NOT TO SCALE)
APPROVED BY:
CITY ENGINEER
APPROVED BY:
DIRECTOR OF PUBLIC
WORKS AND ENGINEERING
EFF DATE: OCT–01–2010
DWG NO: 31–01
73' MIN
SIDEWALK
CURB
BUILDING
RIGHT-OF-WAY LINE
PROPERTY LINE
CORNER RADIUS
STREET
DITCH
20' Min.
S. STREET



SPACE REQUIREMENTS FOR OFF STREET PARKING

α	V	W	X	Y	Z
Angle of Parking	Width of Stall	Depth of Stall 90° to Aisle	Width of Aisle	Width of Stall Parallel to Aisle	Width for 2 Rows & Aisle
45°	8.5	19.4	13.5	12.0	52.4
60°	8.5	20.7	18.5	9.8	59.9
75°	8.5	20.6	20.8	8.8	61.9
90°	8.5	19.0	25.0	8.5	63.0
45°	9.0	19.8	13.0	12.7	526
60°	9.0	21.0	18.0	10.4	59.9
75°	9.0	20.7	20.0	9.3	61.4
90°	9.0	19.0	24.0	9.0	62.0
45°	9.5	20.2	13.0	13.4	53.3
60°	9.5	21.2	18.0	11.0	60.4
75°	9.5	20.8	20.0	9.8	61.6
90°	9.5	19.0	24.0	9.5	62.0

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

SPACE REQUIREMENTS FOR OFF STREET PARKING
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER
APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2010
DWG NO: 31-02

3110.4.6 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.

3110.4.7 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 ~~the~~all other applicable requirements in this section ~~in Section 3110.7~~, the following shall be shown on the plans:

1. A continuous profile plotted to a scale of 1 inch equals 2 feet horizontally, containing all the existing and proposed profiles necessary for reviewing.

   The proposed gutter grade shall meet the following minimum design criteria:

   1.1. Minimum gutter grade, except at corner curb returns, shall be 0.25 percent (3-inch fall per 100 feet).

   1.2. Minimum gutter grade around corner curb returns shall be 1.00 percent (example: 0.22-foot fall around 14-foot radius).

   1.3. A vertical curve with elevations given every 10 feet will be required where the algebraic difference of the proposed gutter grades exceeds 1.00 percent other than at corner curb radius grades.

2. Construction details for replacing curb and gutter and/or base shall be provided when it is necessary to remove same for realignment of curb and gutter horizontally or vertically. Method of the tie of proposed curb and gutter and/or base to existing pavement, with or without reinforcing steel, shall be given in detail. In order to provide adequate cross-slope drainage on asphalt streets, Type F asphalt must be feathered toward the crown of the street. A minimum 1/4 inch per foot slope will be required when raising proposed gutter above existing gutter line. Refer to P.W. Drawing No. 02771-01 of the IDM.

3. Curb cuts and curb penetrations are prohibited except when specifically approved by the jurisdiction's Office of the City Engineer in the Department of Public Works and Engineering.

3110.4.8 Alley paving. The requirements for paving a public alley are identical to those for paving a public street. Plan-profile type of drawings prepared by a licensed professional engineer in the State of Texas and approved by all appropriate jurisdiction departments are required. Figure 10.06-10 and 10.06-11 of the IDM will govern the design and construction of alleys. A separate paving permit issued by the jurisdiction's Department of Public Works and Engineering and a separate paving bond will be required prior to any construction.

3110.4.9 Driveway approach drainage. In the event an existing curb-type storm sewer inlet falls within the proposed driveway approach area, a new curb-type storm sewer inlet will be required to be constructed on the nearest remaining straight curb line. The existing

inlet will be converted to a flat grate-type inlet and connected to the new inlet by a concrete pipe lead of a diameter not less than the existing lead. Failure to show the existing inlets on the plot plan in no way excuses compliance with the above requirement, even though the permit may have been issued. Refer to Public Works Drawings Nos. 02632-03 and 02632-05 of the IDM (relocation of Type B and B-B inlets).

3110.4.10 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.

3110.4.11 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*.

3110.4.12 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 .

3110.5 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*.

3110.6 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. 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.

CHAPTER 32

ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY

3202.1.1 Structural support. A part of a building erected below grade that is necessary for structural support of the building or structure shall not project beyond the lot lines, except that the footings of street walls or their supports which are located at least 8 feet (2438 mm) below grade shall not project more than ~~12~~ 24 inches (~~305~~ 610 mm) beyond the street lot line.

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.

3202.3.1 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, and 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 local authority having jurisdiction. ~~The vertical clearance from the public right-of-way to the lowest part of a pedestrian walkway shall be 15 feet (4572 mm) minimum.~~

~~**3202.4 Temporary encroachments.** Where allowed by the local authority having jurisdiction, vestibules and storm enclosures shall not be erected for a period of time exceeding 7 months in any one 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 minimum clearance of 7 feet (2134 mm) to the lowest portion of the hood or awning where supported on removable steel or other approved noncombustible support.~~

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.

3303.7 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 ~~**Excavation and fill.** Excavation and fill for buildings and structures shall be constructed or protected so as not to endanger life or property. Stumps and roots shall be removed from the soil to a depth of at least 12 inches (305 mm) below the surface of the ground in the area to be occupied by the building. Wood forms which have been used in placing concrete, if within the ground or between foundation sills and the ground, shall be removed before a building is occupied or used for any purpose. Before completion, loose or casual wood shall be removed from direct contact with the ground under the building.~~ **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.

3304.1.1 ~~**Slope limits.** Slopes for permanent fill shall not be steeper than one unit vertical in two units horizontal (50-percent slope). Cut slopes for permanent excavations shall not be steeper than one unit vertical in two units horizontal (50-percent slope). Deviation from the foregoing limitations for cut slopes shall be permitted only upon the presentation of a soil investigation report acceptable to the building official.~~ **Grading of filling.** 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 or overflow of water.

3304.1.2 ~~**Surcharge.** No fill or other surcharge loads shall be placed adjacent to any building or structure unless such building or structure is capable of withstanding the additional loads caused by the fill or surcharge. Existing footings or foundations which can be affected by any excavation shall be underpinned adequately or otherwise protected against settlement and shall be protected against later movement.~~ **Notification of adjoining property owners.** When the safety of adjoining buildings or other structures may be affected by a proposed excavation, the owners of such adjoining buildings or other structures shall be notified by the person proposing to do such excavating not less than 10

days before such excavation is commenced. Such notice shall be in writing and shall state the depth and location of the proposed excavation.

3304.1.3 ~~**Footings on adjacent slopes.** For footings on adjacent slopes, see Chapter 18.~~ **Access to adjoining property.** When any proposed excavation may, because of location, site, conditions or method of excavation, affect the existing conditions of adjoining buildings or other structures, the owners of such adjoining buildings or structures may grant the person proposing to do such excavating permission to enter their properties for the purpose of physical examination of their properties prior to the commencement of excavating, and at reasonable times thereafter during the progress of the excavating work. If the person causing an excavation to be made is granted permission to enter adjoining premises for the purpose of supporting adjoining property, or for the purpose of supporting or protecting adjoining buildings or other structures, he/she shall provide adequate protection for such adjoining premises, building or other structures against damage resulting from his/her operation. If such permission is not granted, the owner of such adjoining premises, building or other structure shall be responsible for its maintenance, support, or protection at his/her own expense, and for that purpose he/she shall be granted permission to enter the premises where the excavation is to be, or is, made. In either case, the person granted the right of entry upon adjacent property shall perform the necessary work within a reasonable time and without injury to the person or persons permitting such entry.

3304.1.4 ~~**Fill supporting foundations.** Fill to be used to support the foundations of any building or structure shall comply with Section 1803.5. Special inspections of compacted fill shall be in accordance with Section 1704.7.~~ **Failure to comply.** If the person whose duty it is under the provisions of this code to make safe an excavation, to prevent the movement of adjoining earth, or to maintain, support, or protect adjoining buildings or other structures shall neglect or fail to do so, the building official shall notify such person in writing of his/her duties under the provisions of this code. If such person shall fail to perform the duty required by this code within such reasonable time after receipt of such notice as allowed by the building official, the building official may cause such work to be stopped until such person complies with this code.

3304.1.5 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.

3304.1.6 Sandblasting. Dry sandblasting shall be prohibited except in enclosed areas. Wet sandblasting may be permitted, provided that measures are taken to prevent sand and other residue from falling or drifting onto public property or property of others.

3304.1.7 Tree and Shrub Ordinance compliance. See *City Code* Chapter 33, Article V, for requirements regarding grading and construction within the dripline area of protected trees.

SECTION 3305
~~SANITARY~~
PREPARATION OF BUILDING SITE, ETC.

3305.1 ~~Facilities required.~~ ~~Sanitary facilities shall be provided during construction, remodeling or demotion activities in accordance with the *International Plumbing Code*.~~ **Removal of stumps, roots, and lumber.** All stumps and roots shall be removed from the soil to a depth of at least 12 inches (305 mm) below the surface of the ground in the area to be occupied by the building.

All wood forms that have been used in placing concrete, if within the ground or between foundation sills and the ground, shall be removed before a building is occupied or used for any purpose. Before completion, loose or casual wood shall be removed from direct contact with the ground under the building.

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 that the adjoining buildings should be protected. Said notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation.

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.

~~[F]~~ 3309.1 Reserved. ~~**Where required.** All structures under construction, alteration or demolition shall be provided with not less than one approved portable fire extinguisher in accordance with Section 906 and sized for not less than ordinary hazard as follows:~~

~~1. At each stairway on all floor levels where combustible materials have accumulated.~~

~~2. In every storage and construction shed.~~

~~3. Additional portable fire extinguishers shall be provided where special hazards exist, such as the storage and use of flammable and combustible liquids.~~

~~**3309.2 Fire hazards.** The provisions of this code and the *International Fire Code* shall be strictly observed to safeguard against all fire hazards attendant upon construction operations.~~

3310.1 ~~Stairways required.~~ ~~Where a building has been constructed to a height greater than 50 feet (15 240 mm) or four stories, or where an existing building exceeding 50 feet (15 240 mm) in~~

~~height is altered, at least one temporary lighted stairway shall be provided unless one or more of the permanent stairways are erected as the construction progresses.~~

~~**3310.2**~~ **Maintenance of exits.** Required means of egress shall be maintained at all times during construction, demolition, remodeling or alterations and additions to any building.

Exception: Approved temporary means of egress systems and facilities.

3311.4 ~~**Water supply.** Water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material accumulates.~~ **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.

~~**3312.2 Operation of valves.** Operation of sprinkler control valves shall be permitted only by properly authorized personnel and shall be accompanied by notification of duly designated parties. When the sprinkler protection is being regularly turned off and on to facilitate connection of newly completed segments, the sprinkler control valves shall be checked at the end of each work period to ascertain that protection is in service.~~

SECTION 3313
TRENCH SAFETY

3313.1 Requirements. See Subchapter C of Chapter 756 of the Texas Health and Safety Code for requirements applicable to trench safety. It is the responsibility of the owner to assure compliance with applicable state and federal laws, and no provision of this code shall be deemed to excuse compliance with applicable state and federal requirements for trench safety.

CHAPTER 34
EXISTING STRUCTURES

3401.3 Compliance with other codes. Alterations, repairs, additions and changes of occupancy to existing structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy in the *City of Houston Construction Code* and the ~~*International*~~ *Fire Code*~~, *International Fuel Gas Code*, *International Plumbing Code*, *International Property Maintenance Code*, *International Private Sewage Disposal Code*, *International Mechanical Code*, *International Residential Code*~~ and ICC ~~*Electrical Code*~~.

[EB] SECTION 3402
{**EDITORIAL NOTE: DELETE SECTION 3402** IN ITS ENTIRETY **AND RESERVE.**}

3403.1 ~~**Existing buildings or structures.** Additions or alterations to any building or structure shall comply with the requirements of the code for new construction. Additions or alterations shall not be made to an existing building or structure that will cause the existing building or structure to be in violation of any provisions of this code. An existing building plus additions shall comply with the height and area provisions of Chapter 5. Portions of the structure not altered and not affected by the alteration are not required to comply with the code requirements for a new structure.~~ **General.** Buildings and structures to which additions, alterations or repairs are made shall comply with all the requirements of this code for new facilities except as specifically provided in this section. See Section 907 for provisions requiring installation of smoke detectors in existing Group R-3 occupancies.

~~**3403.1.1 Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1612.3, any additions, alterations or repairs that constitute 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.~~

3403.2 ~~**Structural.** Additions or alterations to an existing structure shall not increase the force in any structural element by more than 5 percent, unless the increased forces on the element are still in compliance with the code for new structures, nor shall the strength of any structural element be decreased to less than that required by this code for new structures. Where repairs are made to structural elements of an existing building, and uncovered structural elements are found to be unsound or otherwise structurally deficient, such elements shall be made to conform to the requirements for new structures.~~ **When allowed.** Additions, alterations or 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 or alterations 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 or alterations 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 or alteration will result in the existing building or structure being no more hazardous based on life safety, fire safety and sanitation, than before such additions or alterations are undertaken. (See also Section 415.8 for Group H-5 occupancies.)

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.

3406.1 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 occupancy 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 occupancy. 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.

3407.1 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.

~~**3407.2 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 conformance 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; or~~
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 3409

{**EDITORIAL NOTE: DELETE SECTION 3409** IN ITS ENTIRETY **AND RESERVE.**}

SECTION 3410
~~COMPLIANCE ALTERNATIVES~~
BUILDING CONSERVATION

~~**3410.1 Compliance.** The provisions of this section are intended to maintain or increase the current degree of public safety, health and general welfare in existing buildings while permitting repair, alteration, addition and change of occupancy without requiring full compliance with Chapters 2 through 33, or Sections 3401.3, and 3403 through 3407, except where compliance with other provisions of this code is specifically required in this section.~~ **Applicable references.** For existing buildings, see Appendix L. See also Section 102.6 of this code. For a comprehensive code and guidelines on the treatment of existing buildings, see Appendix M.

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

CHAPTER 35*

REFERENCED STANDARDS

This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title, and the section or sections of this document that reference the standard. The application of the referenced standards shall be as specified in Section 102.4.

NFPA

National Fire Protection Association
Batterymarch Park
Quincy, MA 02269

Standard reference number	Title	Referenced in code section number
11-~~02~~ 07	Low-. Medium-, or High-Expansion Foam	904.7
12-~~00~~ 05	Carbon Dioxide Extinguishing Systems	904.8, 904.11
12A-04	Halon 1301 Fire Extinguishing Systems	904.9
13-~~02~~ 07	Installation of Sprinkler Systems	707.2, 903.3.1.1, 903.3.2, 903.3.5.1.1, 903.3.5.2, 904.11, 905.3.4, 907.8, 3104.5, 3104.9
13D-~~02~~ 07	Installation of Sprinkler Systems in One and Two-family Dwellings and Manufactured Homes	903.3.1.3, 903.3.5.1.1
13R-~~02~~ 07	Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height	903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4
14-~~03~~ 07	Installation of Standpipe and Hose System	905.2, 905.3.4, 905.4.2, 905.8
16-~~03~~ 07	Installation Foam-Water Sprinkler and Foam-Water Spray Systems	904.7, 904.11
17-02	Dry Chemical Extinguishing Systems	904.6, 904.11
17A-02	Wet Chemical Extinguishing Systems	904.5, 904.11
30-~~03~~ 08	Flammable and Combustible Liquids Code	415.3
31-~~01~~ 06	Installation of Oil-burning Equipment	2113.15
32-~~00~~ 07	Dry Cleaning Plants	415.6.4
40-~~01~~ 07	Storage and Handling of Cellulose Nitrate Film	409.1
61-~~99~~ 08	Prevention of Fires and Dust Explosion in Agricultural and Food Product Facilities	415.6.1
72-~~02~~ 07	National Fire Alarm and Signaling Code	901.6, 903.4.1, 904.3.5, 907.2, 907.2.1.1, 907.2.10, 907.2.10.4, 907.2.11.2, 907.2.11.3, 907.2.12.2.3, 907.2.12.3, 907.4, 907.5, 907.9.2, 907.10, 907.14, 907.16, 907.14, 907.17, 911.1, 3006.5
80-~~99~~ 07	Fire Doors and ~~Fire Windows~~ Other Opening Protectives	508.2.2.1, 715.4, 715.4.5, 715.4.6.1, 715.4.7.2, 715.5, 1008.1.3.3
85-~~04~~ 07	Boiler and Combustion System Hazards Code (Note: NFPA 8503 has been incorporated into NFPA 85)	415.6.1
92B-05	Smoke Management Systems in Malls, Atria and Large Spaces	909.8
101-~~03~~ 06	Life Safety Code	1025.6.2

105-03	Standard for the Installation of Smoke Door Assemblies	405.4.2, 715.4.3.1, 909.20.4.1
110-~~02~~ 05	Emergency and Standby Power Systems	2702.1
111-~~01~~ 05	Stored Electrical Energy Emergency and Standby Power Systems	2702.1
120-~~99~~ 04	Fire Prevention and Control in Coal ~~Preparation Plants~~ Mines	415.6.1
211-~~03~~ 06	Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances	2112.5
230-03	Standard for the Fire Protection of Storage	507.3
252-03	Standard Methods of Fire Test of Door Assemblies	715.3, 715.4.1, 715.4.2, 715.4.3, 715.4.4.1
253-00	Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source	402.11.1, 406.6.4, 804.2, 804.3
257-00	Standard for Fire Test for Window and Glass Block Assemblies	715.3, 715.4.3.2, 715.5, 715.5.1, 715.5.2, 715.5.8.1
259-04	Test Method for Potential Heat of Building Materials	2603.4.1.10, 2603.5.3
265-02	Method of Fire Test for Evaluating Room Fire Growth Contribution of Textile Wall Coverings on Full Height Panels and Walls	803.6.2, 803.6.2.1
268-01	Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source	1406.2.1, 1406.2.1.1, 1406.2.1.2, 2603.5.7
285-98	Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components	1407.10.4, 2603.5.5
286-~~00~~ 06	Standard Method of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth	402.15.4, 803.2, 803.2.1, 803.5, 803.6.3, 2603.4, 2603.9
288-01	Standard Methods of Fire Test of Floor Fire Door Assemblies Installed Horizontally in Fire-resistance –rated Floor Systems	711.8, 712.4.1.5
303-~~00~~ 06	Fire Protection Standards for Marinas and Boatyards	905.3.7
409-~~01~~ 04	Aircraft Hangars	412.2.6, 412.4.5
418-01	Standard for Heliports	412.5.5
654-~~00~~ 06	Prevention of Fire & Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids	415.6.1
655-~~01~~ 07	Prevention of Sulfur Fires and Explosions	415.6.1
664-~~02~~ 07	Prevention of Fires Explosions in Wood Processing and Woodworking Facilities	415.6.1
701-~~99~~ 04	Standard Methods of Fire Tests for Flame-propagation of Textiles and Films	402.11.1, 410.3.6, 801.1.2, 806.1, 806.1.2, 806.2, 3102.3, 3102.3.1, 3102.6.1.1, 3105.4
704-~~01~~ 07	Standard System for the Identification of the Hazards of Materials For Emergency Response	414.7.2, 415.2
1124-~~03~~ 07	Manufacture, Transportation, and Storage, and Retail Sales of Fireworks and Pyrotechnic Articles	415.3.1
2001-~~04~~ 08	Clean Agent Fire Extinguishing Systems	904.10

*{**EDITORIAL NOTE:** ALL OTHER PORTIONS OF **CHAPTER 35** TO REMAIN AS SET FORTH IN THE *2006 INTERNATIONAL BUILDING CODE*.}

CHAPTER 46
HOUSTON SIGN CODE

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

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. One or more piers, any part of which is used for any of the following:

1. Commercial boat livery.
2. Commercial fishing camp.
3. Public pier.
4. Private club.
5. A pier used by the owner(s) of two or more residential lots for access to the lake.
6 A pier at which access to the lake may be provided for the payment of an admission or membership fee.
7. A pier at which vessels are moored for money or other valuable consideration.
8. A pier at which two or more vessels that have a cab, a toilet or a sewage holding tank are moored.

JETTY. A permanent structure built into a body of water to direct the current or protect a harbor.

PIER. Any pier, wharf, boat dock, boat shed, gangway or other 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.

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 angle), in which the point of application is assumed to be at 3/8*h*; P=wave pressure, in pounds per linear foot of wave or per square foot of pier area at 3/8*h*; *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. Jetties may be built wherever a need is determined by and with the written authorization of the Director of Public Works and Engineering. Jetties must be constructed utilizing one of the approved types of bulkheads listed in Section 6204 of this code.

APPENDIX E

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

EXCAVATION AND GRADING

SECTION E101
PURPOSE

E101.1 General. The purpose of this appendix is to safeguard life, limb, property, and the public welfare by regulating grading on private property.

SECTION E102
SCOPE

E102.1 General. This appendix sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction.

SECTION E103
PERMITS REQUIRED

E103.1 Permits required. Except as specified in Section E103.2 of this section, no person shall do any grading without first having obtained a grading permit from the building official.

E103.2 Exempted work. A grading permit is not required for the following:

1. When approved by the building official, grading in an isolated, self-contained area where there is no danger to private or public property.
2. An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. This shall not exempt any fill made with the material from such excavation or exempt any excavation having an unsupported height greater than 5 feet (1524 mm) after the completion of such structure.
3. Cemetery graves.
4. Refuse disposal sites controlled by other regulations.
5. Excavations for wells, tunnels, or utilities.
6. Mining, quarrying, excavating, processing or stockpiling of rock, sand, gravel, aggregate or clay where established and provided for by law, provided such operations do not affect the lateral support or increase the stresses in or pressure upon any adjacent or contiguous property.
7. Exploratory excavations under the direction of soil engineers or engineering geologists.

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 chapter shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this chapter or any other laws or ordinances.

E103.3 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.

SECTION E104
HAZARDS

E104.1 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 E105
DEFINITIONS

E105.1 General. For the purposes of this appendix, the definitions listed hereunder shall be construed as specified in this section.

APPROVAL. Official acknowledgment from the building official that the proposed work or completed work conforms to this chapter.

AS-GRADED. The extent of surface conditions on completion of grading.

BEDROCK. In-place solid rock.

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

BORROW. Earth material acquired from an off-site location for use in grading on a site.

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

CIVIL ENGINEERING. The application of the knowledge of the forces of nature, principles of mechanics and the properties of materials to the evaluation, design and construction of civil works.

COMPACTION. The densification of a fill by mechanical means.

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 mechanical removal of earth material.

FILL. A deposit of earth material placed by artificial means.

GEOTECHNICAL ENGINEER. See "soils engineer."

GRADE. The vertical location of the ground surface.

Existing Grade. The grade prior to grading

Finish Grade. The final grade of the site that conforms to the approved plan.

Rough Grade. The stage at which the grade approximately conforms to the approved plan.

GRADING. Any excavating or filling or combination thereof.

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

PROFESSIONAL INSPECTION. The inspection required by this code to be performed by the civil engineer, soils engineer or engineering geologist. Such inspections include those performed by persons supervised by such engineers or geologists and shall be sufficient to form an opinion relating to the conduct of the work.

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

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

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). The application of the principles of soils mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and the inspection or testing of the construction thereof.

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

SECTION E106
GRADING PERMIT REQUIREMENTS

E106.1 Permits required. Except as exempted in Section E103, no person shall do any grading without first obtaining a grading permit from the building official. A separate permit shall be obtained for each site and a single permit may cover both excavations and fills on one site.

E106.2 Application. The provisions of Section 105.3 of this code are applicable to grading. Additionally, the application shall state the estimated quantities of work involved.

E106.3 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." 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.

E106.4 Engineered grading requirements. Application for a grading permit shall be accompanied by two sets of plans and specifications, as well as supporting data consisting of a soils engineering report and engineering geology report. The plans and specifications shall be prepared and signed by an individual licensed by the State of Texas to prepare such plans or specifications when required by the building official.

Specifications shall contain information covering construction and material requirements.

Plans shall be drawn to scale upon substantial paper or cloth and shall be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that they will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall display the location of the work, the name and address of the owner, and the name of the person who prepared them.

The plans shall include the following information:

1. General vicinity of the proposed site.
2. Property limits and accurate contours of existing ground and details of terrain and area drainage.
3. Limiting dimensions, elevations, or finish contours to be achieved by the grading and proposed drainage channels and related construction.
4. 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.
5. 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.
6. The dates of the soils engineering and engineering geology reports together with the names, addresses, and phone numbers of the firms or individuals who prepared the reports.

7. Recommendations included in the soils engineering report and the engineering geology 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 engineering geology report that are applicable to grading may be included by reference.

E106.5 Soils engineering report. The soils engineering report required by Section E106.4 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.

E106.6 Engineering geology report. The engineering geology report required by Section E106.4 shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and opinion on the adequacy for the intended use of sites to be developed by the proposed grading, as affected by geologic factors.

E106.7 Liquefaction study. The building official may require a geotechnical investigation in accordance with Section 1802.4 when, during the course of an investigation, all of the following conditions are discovered:

1. Shallow ground water, 50 feet (15 240 mm) or less.
2. Unconsolidated sandy alluvium.
3. Seismic Zones C and D.

The report of the investigation shall address the potential for liquefaction.

E106.8 Regular grading requirements. Each application for a grading permit shall be accompanied by a plan in sufficient clarity to indicate the nature and extent of the work. The plans shall give the location of the work, the name of the owner, and the name of the person who prepared the plan. The plan shall include the following information:

1. General vicinity of the proposed site.
2. Limiting dimensions and depth of cut and fill.
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 within 15 feet (4572 mm) of the proposed grading.

E106.9 Issuance. The provisions of Section 105.3 are applicable to grading permits. The building official may require that grading operations and project designs be modified if delays occur which incur weather-generated problems not considered at the time the permit was issued.

The building official may require professional inspection and testing by a soils engineer. When the building official has cause to believe that geologic factors may be involved, the grading will be required to conform to the requirements for engineered grading.

SECTION E107
GRADING FEES

E107.1 General. Fees shall be assessed in accordance with the provisions of this section or shall be as set forth in the fee schedule adopted by the jurisdiction.

E107.2 Grading permit fees. A fee for each grading permit shall be paid to the building official as set forth in Section 117.2.1 of this code. 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.

SECTION E108
BONDS

E108.1 Bond required. The building official may require bonds in such form and amounts as may be deemed necessary to ensure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions.

In lieu of a surety bond, the applicant may file a cash bond or instrument of credit with the building official in an amount equal to that which would be required in the surety bond.

SECTION E109
CUTS

E109.1 General. Unless otherwise recommended in the approved soils engineering or engineering geology report, cuts shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor cuts not intended to support structures.

E109.2 Slope. The slope of cut surfaces shall be no steeper than is safe for the intended use and shall be no steeper than 1 unit vertical in 2 units horizontal (50% slope) unless the permittee furnishes a soils engineering or an engineering geology report, or both, stating that the site has been investigated and giving an opinion that a cut at a steeper slope will be stable and not create a hazard to public or private property.

SECTION E110
FILLS

E110.1 General. Unless otherwise recommended in the approved soils engineering report, fills shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor fills not intended to support structures.

E110.2 Preparation of ground. Fill slopes shall not be constructed on natural slopes steeper than 1 unit vertical in 2 units horizontal (50% slope). The ground surface shall be prepared to receive fill by removing vegetation, noncomplying fill, topsoil and other unsuitable materials; scarifying to provide a bond with the new fill; and where slopes are steeper than 1 unit vertical in 5 units horizontal (20% slope) and the height is greater than 5 feet (1524 mm), by benching into sound bedrock or other competent material as determined by the soils engineer. The bench under the toe of a fill on a slope steeper than 1 unit vertical in 5 units horizontal (20% slope)

shall be at least 10 feet (3048 mm) wide. The area beyond the toe of fill shall be sloped for sheet overflow or a paved drain shall be provided. When fill is to be placed over a cut, the bench under the toe of fill shall be at least 10 feet (3048 mm) wide, but the cut shall be made before acceptance by the soils engineer or engineering geologist, or both, as a suitable foundation for fill and placement of the fill.

E110.3 Fill material. Detrimental amounts of organic material shall not be permitted in fills. Except as permitted by the building official, no rock or similar irreducible material with a maximum dimension greater than 12 inches (305 mm) shall be buried or placed in fills.

Exception: The building official may permit placement of larger rock when the soils engineer properly devises a method of placement and continuously inspects its placement and approves the fill stability. The following conditions shall also apply:

1. Prior to issuance of the grading permit, potential rock disposal areas shall be delineated on the grading plan.
2. Rocks of a size greater than 12 inches (305 mm) in maximum dimension shall be placed 10 feet (3048 mm) or more below grade, measured vertically.
3. Rocks shall be placed so as to assure filling of all voids with well-graded soil.

E110.4 Compaction. All fills shall be compacted to a minimum of 90 percent of maximum density.

E110.5 Slope. The slope of fill surfaces shall be no steeper than is safe for the intended use. Fill slopes shall be no steeper than 1 unit vertical in 2 units horizontal (50% slope).

SECTION E111
SETBACKS

E111.1 General. Cut and fill slopes shall be set back from site boundaries in accordance with this section. Setback dimensions shall be horizontal distances measured perpendicular to the site boundary. Setback dimensions shall be as shown in Figure E111.1

E111.2 Top of cut slope. The top of cut slopes shall not be made nearer to a site boundary line than one fifth of the vertical height of cut with a minimum of 2 feet (610 mm) and a maximum of 10 feet (3048 mm). The setback may need to be increased for any required interceptor drains.

E111.3 Toe of fill slope. The toe of fill slope shall be made not nearer to the site boundary line than one half the height of the slope with a minimum of 2 feet (610 mm) and a maximum of 20 feet (6096 mm). Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated in the work as the building official deems necessary to protect the adjoining property from damage as a result of such grading. These precautions may include, but are not limited to:

1. Additional setbacks.
2. Provision for retaining or slough walls.
3. Mechanical or chemical treatment of the fill slope surface to minimize erosion.
4. Provisions for the control of surface waters.

E111.4 Modification of slope location. The building official may approve alternate setbacks. The building official may require an investigation and recommendation by a qualified engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

SECTION E112
DRAINAGE AND TERRACING

E112.1 General. Unless otherwise indicated on the approved grading plan, drainage facilities and terracing shall conform to the provisions of this section for cut or fill slopes steeper than 1 unit vertical in 3 units horizontal (33.3% slope).

E112.2 Terrace. Terraces at least 6 feet (1829 mm) in width shall be established at not more than 30-foot (9144 mm) vertical intervals on all cut or fill slopes to control surface drainage and debris, except that where only one terrace is required, it shall be at midheight. For cut or fill slopes greater than 60 feet (18 288 mm) and up to 120 feet (36 576 mm) in vertical height, one terrace at approximately midheight shall be 12 feet (3658 mm) in width. Terrace widths and spacing for cut and fill slopes greater than 120 feet (36 576 mm) in height shall be designed by a civil engineer and approved by the building official. Suitable access shall be provided to permit proper cleaning and maintenance.

Swales or ditches on terraces shall have a minimum gradient of 5 percent and must be paved with reinforced concrete not less than 3 inches (76 mm) in thickness or an approved equal paving. They shall have a minimum depth at the deepest point of 1 foot (305 mm) and a minimum paved width of 5 feet (1524 mm).

A single run of swale or ditch shall not collect runoff from a tributary area exceeding 13,500 square feet (1254.2 m²) (projected) without discharging into a down drain.

E112.3 Subsurface drainage. Cut and fill slopes shall be provided with subsurface drainage as necessary for stability.

E112.4 Disposal. All drainage facilities shall be designed to carry waters to the nearest practicable drainage way approved by the building official or other appropriate jurisdiction as a safe place to deposit such waters. Erosion of ground in the area of discharge shall be prevented by installation of nonerosive downdrains or other devices.

Building pads shall have a drainage gradient of 2 percent toward approved drainage facilities, unless waived by the building official.

Exception: The gradient from the building pad may be 1 percent if all of the following conditions exist throughout the permit area:

1. No proposed fills are greater than 10 feet (3048 mm) in maximum depth.
2. No proposed finish cut or fill slope faces have a vertical height in excess of 10 feet (3048 mm).
3. No existing slope faces steeper than 1 unit vertical in 10 units horizontal (10% slope) have a vertical height in excess of 10 feet (3048 mm).

E112.5 Interceptor drains. Paved interceptor drains shall be installed along the top of all cut slopes where the tributary drainage area above slopes toward the cut and has a drainage path greater than 40 feet (12 192 mm) measured horizontally. Interceptor drains shall be paved with a minimum of 3 inches (76 mm) of concrete or gunite and reinforced. They shall have a minimum depth of 12 inches (305 mm) and a minimum paved width of 30 inches (762 mm)

measured horizontally across the drain. The slope of the drain shall be approved by the building official.

SECTION E113
EROSION CONTROL

E113.1 Slopes. The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

E113.2 Other devices. Where necessary, check dams, cribbing, riprap, or other devices or methods shall be employed to control erosion and provide safety.

SECTION E114
GRADING INSPECTION

E114.1 General. Grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations shall be provided by the civil engineer, soils engineer and the engineering geologist retained to provide such services in accordance with Section E114.5 for engineered grading and as required by the building official for regular grading.

E114.2 Civil engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.

E114.3 Soils engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official, and the civil engineer.

E114.4 Engineering geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

E114.5 Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this code. The permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator among the consultants, the contractor, and the building official. In the event of changed conditions, the permittee shall

be responsible for informing the building official of such change and shall provide revised plans for approval.

E114.6 Building official. The building official shall inspect the project at the various stages of work requiring approval to determine that adequate control is being exercised by the professional consultants.

E114.7 Notification of noncompliance. If, in the course of fulfilling their respective duties under this chapter, the civil engineer, the soils engineer or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official.

E114.8 Transfer of responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during grading, the work shall be stopped until the replacement has agreed in writing to accept their responsibility within the area of technical competence for approval upon completion of the work. It shall be the duty of the permittee to notify the building official in writing of such change prior to the recommencement of such grading.

SECTION E115
COMPLETION OF WORK

E115.1 Final reports. Upon completion of the rough grading work and at the final completion of the work, the following reports and drawings and supplements thereto are required for engineered grading or when professional inspection is performed for regular grading, as applicable.

1. An as-built grading plan prepared by the civil engineer retained to provide such services in accordance with Section E114.5 showing original ground surface elevations, as-graded ground surface elevations, lot drainage patterns, and the locations and elevations of surface drainage facilities and of the outlets of subsurface drains. As-constructed locations, elevations and details of subsurface drains shall be shown as reported by the soils engineer. Civil engineers shall state that to the best of their knowledge the work within their area of responsibility was done in accordance with the final approved grading plan.

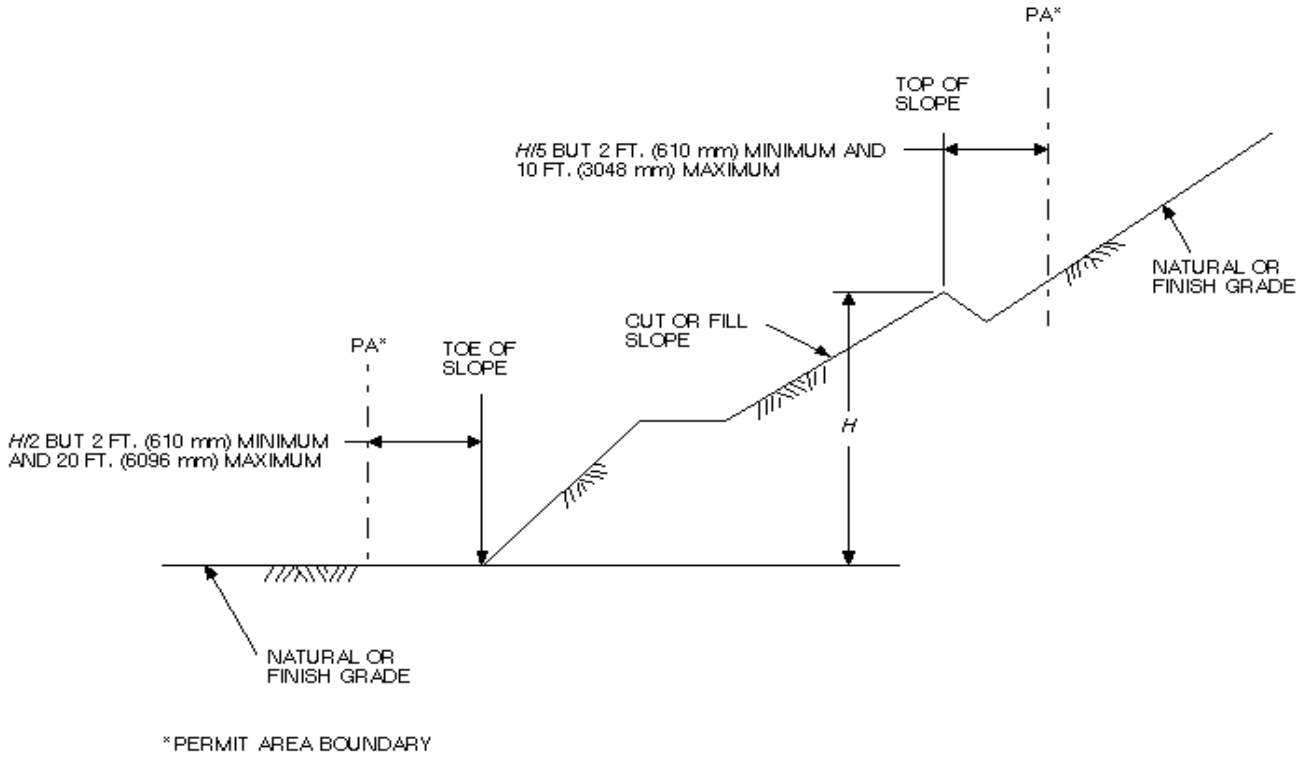
2. A report prepared by the soils engineer retained to provide such services in accordance with Section E114.5, including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved soils engineering investigation report.

   Soils engineers shall submit a statement that, to the best of their knowledge, the work within their area of responsibilities is in accordance with the approved soils engineering report and applicable provisions of this chapter.

3. A report prepared by the engineering geologist retained to provide such services in accordance with Section E114.5, including a final description of the geology of the site and any new information disclosed during the grading and the effect of same on recommendations incorporated in the approved grading plan. Engineering geologists shall submit a statement that, to the best of their knowledge, the work within their area of responsibility is in accordance with the approved engineering geologist report and applicable provisions of this chapter.

E115.2 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.

Figure E111.1 – Setback Dimensions



APPENDIX K
CONVENTIONAL LIGHT-FRAME WOOD CONSTRUCTION FOR HIGH-WIND AREAS

SECTION K101
GENERAL

K101.1 Scope. This chapter applies to regular-shaped 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 1⅛-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 6 feet (1829 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 48 inches (1219 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 48 inches (1219 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 4 feet (1219 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 no further apart than every other 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 4 feet (1219 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 4 feet (1219 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.

APPENDIX L
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 shall conform with UBC Standard 10-3. 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, provided the exterior stairs are 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 1⅜-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. Fires 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 1003.2.11 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 135°F (57.2°C).

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, and 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 m^2) in area; and
2. Does not have a minimum of 20 square feet (1.86 m^2) 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.

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*).

APPENDIX M

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

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

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

RELATIVE HAZARD	OCCUPANCY CLASSIFICATION
1	H (highest hazard group)

2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5	F-2, S-2,
6	U (lowest hazard group)

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 720.1 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

RELATIVE HAZARD	OCCUPANCY CLASSIFICATION

1	H (highest hazard group)
2	F-1, M, S-1
3	A, B, E, I, R
4	F-2, S-2, U (lowest hazard group)

APPENDIX N
AIRPORT SOUND ATTENUATION REQUIREMENTS

SECTION AN101
GENERAL

AN101.1 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.

AN101.2 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.

AN101.3 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 AN201
DEFINITIONS

AN201.1 Definitions. For purposes of these provisions, the following words shall have the meanings 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 AN301
WALLS

AN301.1 General. The specific exterior wall assemblies set forth in AN301.2 and AN301.3 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.

AN301.2 Brick veneer. When exterior walls are constructed using brick veneer, a minimum of ½ inch gypsum drywall shall be applied as the interior finish.

AN301.3 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.

AN301.4 Other assemblies and materials. All other exterior wall assemblies or materials shall have a tested or listed minimum STC rating of 40.

SECTION AN401
WINDOWS

AN401.1 Windows. All windows shall have a minimum STC rating of 40 when tested in accordance with ASTM E 90.

AN401.2 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 AN501
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 AN601
ROOF/CEILING ASSEMBLIES

AN601.1 General. Roof/ceiling assemblies shall be constructed in accordance with the requirements of AN601.2 or AN601.3.

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

AN601.2 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.

AN601.3 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 of when materials are to be considered allowable for reuse while not 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 flourescent 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. The reused materials are allowed as identified in Table R301.1.

REUSED MATERIALS - ACCEPTABLE APPLICATIONS FOR USED MATERIALS				
Code Section	**Material- original use**	**Typical allowed application for reuse**	**Comments**	**General Exclusions**
CONCRETE, ASPHALT				
Section 3110	Asphalt	reuse for driveways and sidewalks or roadbase	-	1,7
-	Concrete	as fill or aggregate for concrete mix, garden borders, driveways (as gravel), road base	-	1,7
-	Pilings	see concrete	-	3
MASONRY AND STONE				
-	Brick and stone veneer	horizontal surfaces on site and interior floors, non-structural walls, veneer	-	3
-	Pavers	Non structural paving or floors and veneer	-	3
-	Concrete blocks and products	finishes, interior walls, low fences, base for porous paving.	Reused in original structural capacity if certified by Engineer, re note 3.	3
-	Stone- Sandstone, Slate, granite and marble	finishes, roofing (slate)	-	3
2103.6- New exception	Glass Block	original use	no larger than 25 sf, supported on at least 3 sides. Not allowed in structural walls	5

METALS				
-	Cold Formed Metal Framing- Studs, joists, rafters, perlins, girts	repetitive members in original capacity, structural if identifiable	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.	4
-	Metal joists	if identifiable can be used for structure		4
Ch. 17- Special Inspection	Structural steel- Columns, pillars, and posts	reuse in structural capacity with special inspection.		4
WOOD, AGRI-FIBER, AND PLASTIC MATERIALS				
-	Columns, pillars, and posts	Reuse in original capacity	-	-
-	Dimensional Lumber, min. 4 ft long, unstamped (includes rough hewn)	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)	for species not easily recognized, may need Special Inspection 4	-
-	Dimensional Lumber (stud capacity), with original stamp (includes rough hewn)	Reused in original capacity 1.Studs (cripple, trim, and jack), joists, rafters 2.Wind-bracing	-	8
-	Glu-lam beams, I-joists, laminated veneer lumber, parallel strand lumber, oriented strand lumber (unstamped)	Install as per dimensional lumber	-	-
-	Trusses	-	Trusses to be inspected by Structural Engineer as installed	4
-	Utility Poles (untreated)	-	-	3
-	Oriented strand board (OSB) and Plywood	reuse in original capacity	-	8
-	Plastic lumber	reuse in original capacity	-	-
-	Masonite and chipboard	reuse in original capacity	-	8

WINDOWS, DOORS, INSULATION, SIDING, AND ROOFING				
Chapter 7	Insulation- Batt, gently used	Reuse in horizontal capacities only, such as attics or sound attenuation in cavities.	25% reduction in R-Value to be assumed.	2
Chapter 7	Insulation- Board, gently used	reuse in original capacity	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).	2
-	Windows	reuse in original capacity or as décor	-	2
-	Doors and Door assemblies	reuse in original capacity	-	2, 5
-	Glass, sheet and Plexiglas	reuse in original capacity or as décor	-	2
-	Stained glass	reuse in original capacity	-	2
-	Siding- cement board, wood, vinyl, metal panels	reuse in original capacity	-	5
-	Soffits- cement board, wood, perforated metal panels, aluminum panels	reuse in original capacity	-	5
-	Roof tiles	reuse in original capacity, fencing, ornament	-	-
-	metal roof panels	reuse in original capacity	-	-
FINISHES				
-	Acoustical ceiling tiles	reuse in original capacity	-	5
-	Carpet and carpet pad	reuse in original capacity	-	-
-	Drywall	reuse in original capacity	-	-
-	Flooring—wood	reuse in original capacity	-	-
-	Cement Board	reuse in original capacity	-	-
-	Hinges and other hardware	reuse in original capacity	-	1, 5

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.