

**ORDINANCE NO. 2124**

**AN ORDINANCE OF THE CITY OF EULESS, TEXAS, AMENDING CHAPTER 14 “BUILDINGS AND BUILDING REGULATIONS” OF THE CODE OF ORDINANCES OF THE CITY OF EULESS; ADOPTING THE 2015 EDITIONS OF THE INTERNATIONAL RESIDENTIAL CODE, INTERNATIONAL BUILDING CODE, INTERNATIONAL PLUMBING CODE, INTERNATIONAL FUEL GAS CODE, INTERNATIONAL MECHANICAL CODE, INTERNATIONAL ENERGY CONSERVATION CODE; ADOPTING THE 2014 NATIONAL ELECTRICAL CODE, ADOPTING LOCAL AMENDMENTS TO THE CODES; PROVIDING A PENALTY FOR VIOLATIONS; PROVIDING A SAVINGS CLAUSE; PROVIDING THAT THIS ORDINANCE SHALL BE CUMULATIVE OF ALL ORDINANCES AND REPEALING ALL CONFLICTING ORDINANCES; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR PUBLICATION IN THE OFFICIAL NEWSPAPER; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, the City of Euless, Texas is a home rule city acting under its charter adopted by the electorate pursuant to Article XI, Section 5 of the Texas Constitution and Chapter 9 of the Local Government Code; and

**WHEREAS**, the City wishes to adopt the 2015 Edition of the *International Energy Conservation Code* pursuant to Texas Local Government Code Ch. 54, Texas Local Government Code Sec. 214.901, and Texas Health and Safety Code Ch. 388; and

**WHEREAS**, the City wishes to adopt the 2014 Edition of the *National Electrical Code*, and the 2015 Editions of the *International Residential Code*, *International Building Code*, *International Plumbing Code*, *International Fuel Gas Code*, and *International Mechanical Code* pursuant to its home-rule authority and Texas Local Government Code Chapters 54 and 214; and

**WHEREAS**, the City Manager and staff have recommended certain amendments to the 2015 *International Codes* named herein and the 2014 *National Electrical Code*, and City Council has determined that the adoption of the codes with local amendments is in the public interest and is necessary for the protection of the health, safety and welfare of the citizens of Euless.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF EULESS, TEXAS, THAT:**

**SECTION I.**

Sections 14-21 through 14-25 of Article II, “International Residential Code Amendments/Administration” of Chapter 14, “Buildings and Building Regulations” of the

Code of Ordinances of the City of Euless, Texas, are hereby amended in their entirety to read as follows:

**“Sec. 14-21 Adoption; International Residential Code.**

The International Residential Code, 2015 Edition, as published by the International Code Council, including Appendix G, Section AG 101- AG 107, Appendix J, and Appendix O, is hereby adopted by reference as the residential code of the City. Unless deleted, amended, expanded or otherwise changed herein, all provisions of such code shall be fully applicable and binding.

**Sec. 14-22. Administration and Enforcement of Residential Code.**

The residential code of the city shall be administered and enforced by the office of the building official. All references to Code Official shall mean the Building Official.

**Sec. 14-23. Scope of requirements.**

- a) For the purpose of this code, every building or structure within aircraft exposure zone “B” as defined by section 74-114 of the City of Euless Code of Ordinances shall be subject to the following noise attenuation requirements.
- b) Noise level reduction standards for certain uses. The minimum outdoor-to-indoor noise level reduction for certain building uses within zone “B” shall be 25 decibels (A-weighted) as measured from the center of each room.

<b>Building Use</b>		<b>Minimum Decibel Reduction from Outdoors to Indoors</b>
Residential:	Residential within each unit including transient lodgings	25 dba
Public use:	Schools, hospitals, churches, nursing home	25 dba

- c) Certification of plans prior to issuance of building permits. No building permit for any listed building or structure shall be issued unless all plans and specifications accompanying the application for the permit are certified by a registered professional architect or engineer of the State of Texas as meeting the noise level reduction standards required. The following certification shall appear on every sheet of the building plans:

“(Name), a registered professional engineer or architect of the State of Texas, has examined the plans and specification and does hereby certify that when the structure is constructed in accordance with these plans and with quality

workmanship that the structure will provide a shell isolation rating (S.I.R.) of not less than 25 points.”

**Sec. 14-24. Excavation and Grading Guidelines for Development.**

Grading guidelines for development of lots and tracts, to maintain protection of adjoining properties and alleviate erosion problems encountered by improper drainage, shall be as follows:

- a) Excavations or fills made for purpose of development of a lot or tract shall grade permanent slopes no steeper than five feet horizontal to one foot vertical.
- b) Deviation from excavation or fill limitations for slopes shall be permitted only upon the presentation of a soil investigation report acceptable to the building official.
- c) Retaining walls used to comply with the foregoing requirement shall be constructed in accordance with accepted engineering practices and shall be installed in a good workman like manner satisfactory to the building official.
- d) Retaining walls four feet and greater in height from finished grade to the top of wall shall require a permit prior to construction. The contractor must make application to the building department and submit a detailed engineered drawing and calculations including adequate drainage provisions through the wall. All drawings must bear the legal descriptions of property, all boundaries, easements and rights-of-way, as well as the engineer’s seal and signature. All retaining walls one foot or taller shall be constructed of approved masonry materials only and provide for adequate drainage through the wall. (This is not intended to prohibit the use of non-masonry materials for landscaping.)
- e) Grading of slopes shall be done in such a manner as to ensure proper drainage. Where practical, 80 percent of the lot or tract shall be graded to the fronting street gutter. Drainage on the portion of a lot or tract below curb level shall not drain across more than one lot or tract before entering an approved drainage way. This drainage shall be accomplished in such a manner as not to cause erosion or damage to any property.
- f) Whenever the building official determines that any existing excavation or embankment or fill on private property has become a hazard to life and limb or endangers property or adversely affects the safety, use or stability of a public way or drainage channel, the owner of the property upon which the excavation or fill is located, or other person or agents in control of said property, upon receipt of notice in writing from the building official, shall within the period specified therein repair or eliminate the hazard and be in conformance with the requirements of this Code.

**Sec. 14-25. Amendments.**

The International Residential Code, 2015 edition, is amended as follows:

**Section R101.1, Title: change to read as follows:**

The provisions shall be known as the Residential Code for One and Two-Family Dwellings of the City of Euless and shall be cited as such and will be referred to herein as “this code”.

**Section R102.4 Referenced codes and standards: change to read as follows:**

The codes, when specifically adopted, and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference made to NFPA 70 shall mean the Electrical Code as adopted.

**Section R104.10.1 Flood Hazard areas; delete this section.**

**Section R105.3.1.1 & R106.1.4; delete these sections.**

**Section R110 (R110.1 through R110.5); delete this section.**

**Section R105.2, Building item: change to read as follows:**

- 1) One-story detached accessory structures provided the floor area does not exceed 120 square feet.
- 2) Masonry material is required for all components of a retaining wall 1 foot or taller. Retaining walls 4 foot or taller shall have engineered drawings submitted when applying for permit. All walls shall have drainage provisions through the wall. All drawings must bear the legal descriptions of property, all boundaries, easements and rights-of-way, as well as the engineer’s seal and signature.
- 3) Water tanks supported directly upon grade if the capacity does not exceed 5000 gallons (18927 L) and the ratio of height to diameter or width does not exceed 2 to 1.
- 4) Sidewalks and driveways outside of any right-of-way.
- 5) Painting, papering, tiling, carpeting, cabinets, countertops and similar finish work.

- 6) Prefabricated swimming pools that are less than 24 inches (610 mm) deep
- 7) Swings and other playground equipment.
- 8) 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.
- 9) Decks not exceeding 120 square feet in area, that are not more than 30 inches (762 mm) above grade at any point, are not attached to a dwelling, and do not serve the exit door required by Section R311.4. {Remainder of sections unchanged}.

**105.5.3.2 Time Limit of Application: change to read as follows:**

105.3.2 Time limit of application. An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, or after 30 days of inactivity, unless such application...{remainder of text unchanged}.

**Section R105.5, Expiration: change to read as follows:**

Work requiring a permit shall not be granted an extension or be renewed beyond a 24 month period from the time the permit was originally issued. Any incomplete work for which a permit has expired shall be caused by the Building Official to be demolished in accordance with Article XII - Abatement of Dangerous Buildings.

**Section R108.2, Schedule of permit fees: changed to add a second sentence to read as follows:**

See approved fee schedule (Code of Ordinances Chapter 30).

**Section R108.7 add to read as follows:**

108.7 Re-inspection fee. A fee as established by city council may be charged when:

- 1) The inspection called for is not ready when the inspector arrives;
- 2) No building address or permit card is clearly posted;
- 3) Approved plans are not on the jobsite available for inspection when called;
- 4) The jobsite is red-tagged twice for the same item;
- 5) The original red tag has been removed from the jobsite and/or,

- 6) Violations exist on the property including failure to maintain erosion control, trash control or tree protection.

108.7.1 Any re-inspection fees assessed shall be paid before any more inspections are made on that jobsite.

**Section R110, Certificate of Occupancy (R110.1 through R110.5): is deleted.**

**Sections R112.2.1 & R112.2.2: are deleted.**

**Section R202, Definitions: the definitions of “Jurisdiction”, “Townhouse”, “Wall, Retaining” and are changed to read as follows: The definition of “Municipality” is added as follows:**

JURISDICTION. The City of Eules

TOWNHOUSE. A single-family dwelling unit constructed in a group of three or more attached units separated by property lines in which each unit extends from foundation to roof and with a yard or public way on at least two sides.

WALL, RETAINING. A wall not laterally supported at the top that resists lateral soil load and other imposed loads. The purpose of a retaining wall is to stabilize slopes and provide useful areas at different elevations

MUNICIPALITY. The City of Eules.

**Table R301.2(1), Climatic and Geographic Design Criteria: change to read as follows:**

Ground Snow Load	Wind Design Speed <sup>d</sup> (mph)	Seismic Design Category <sup>h</sup>
5 lb/ft <sup>2</sup>	115 (3-sec-gust)/76 fastest mile	A

Subject to Damage From		
Weathering <sup>a</sup>	Frost line depth	Termite <sup>c</sup>
moderate	6"	very heavy

Winter Design Temp <sup>e</sup>	Ice Shield Underlayment Required <sup>h</sup>	Flood Hazards <sup>g</sup>	Air Freezing Index	Mean Annual Temp <sup>j</sup>

22°F	No	local code	69°F	64.9°F
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**Section R302.1, Exterior walls: change exception #4 and add exception #6 to read as follows:**

Exceptions:

- 4) Detached garages accessory to a dwelling located within 5 feet of a lot line may have roof projections not exceeding 12 inches.
- 6) Open metal carport structures may be constructed when also approved within other adopted ordinances.

**Section R302.3, Two-family dwellings: add Exception 3 to read as follows:**

Exceptions:

- 1) (existing text unchanged)
- 2) (existing text unchanged)
- 3) Two-family dwelling units that are also divided by a property line through the structure shall be separated as required for townhouses.

**Section R302.5.1; change to read as follows:**

R302.5.1 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8 (35mm) in thickness, solid or honeycomb core steel doors not less than 1 3/8 inches (35 mm) thick, or 20-minute fire-rated doors.

**Section 302.5.2, Duct penetration: change to read as follows:**

R302.5.2 Duct penetration. Ducts in the garage... (text unchanged) ... and shall have no openings into the garage and shall be protected as required by Section 302.11, item 4.

**Section 302.5.3, Other penetrations: change to read as follows:**

R302.5.3 Other penetrations. Penetrations through the separation required in Section R302.6 shall be protected as required by Section R302.11, item 4.

**Section R302.7, Under-stair protection: change to read as follows:**

R302.7 Under stair protection. All enclosed space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 5/8-inch (15.8 mm) fire-rated gypsum board or one-hour fire-resistive construction.

**Section R303.3, Bathrooms: change Exception to read as follows:**

Exception: The glazed areas shall not be required where artificial light and a local exhaust system, complying with one of the following, are provided.

- 1) The minimum ventilation rates shall be 50 cfm (24l/s) for intermittent ventilation or 20 cfm (10L/s) for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside (through the roof).
- 2) Bathrooms that contain only a water closet, a lavatory, or water closet and a lavatory may be ventilated with an approved mechanical re-circulating fan or similar designed to remove odors from the air.

**Section R308.1, Identification: change to read as follows:**

R308.1 Identification. Except as indicated in section R308.1.1 each pane of glazing installed in hazardous locations and defined in Section R308.4 shall be provided with a manufacturer's designation specifying who applied the designation, designating the type of glass and the safety glazing standard with which it complies, which is visible in the final installation. The designation shall be etched, sandblasted, ceramic-fired, laser etched, embossed, or be of a type that one applied cannot be removed without being destroyed.

Exceptions: {Remainder of text unchanged}.

**Section R309.2, Carports: delete exception.**

**Section R313 Automatic Fire Sprinkler Systems. Change to read as follows:**

R313.1 Townhouse automatic fire sprinkler systems. Refer to requirements in the International Fire Code

R313.2 One-and-two-family dwellings automatic fire systems. Refer to requirements in the International Fire Code

**R314.3 Locations, change wording to the following:**

- 1) In each sleeping room, media room, study, or similar room,

**Section R315.2, Where required in existing dwellings: is deleted.**

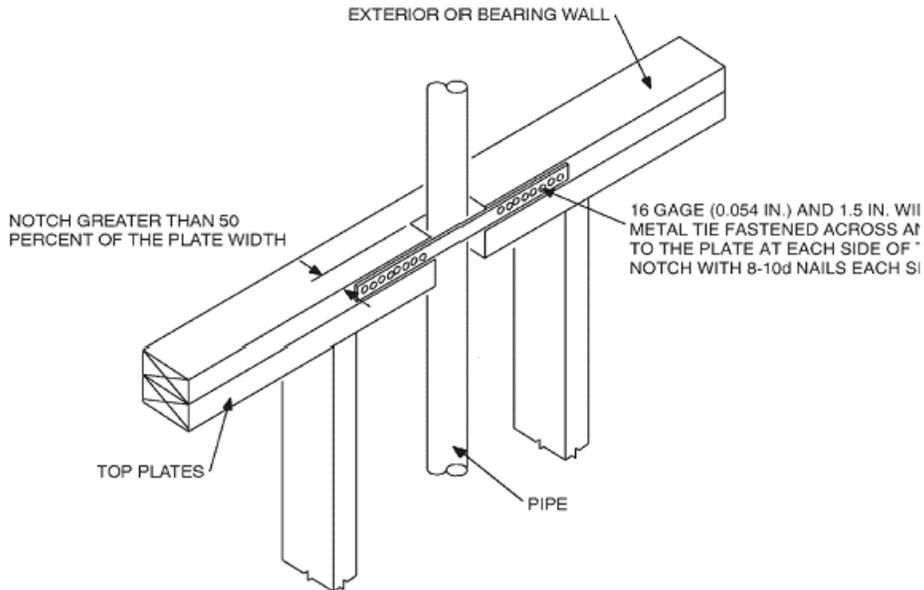
**Section R401.5. Add Section R401.5 as follows:**

Section R401.5 Engineering required: All foundations supporting a structure intended for human occupancy must be designed and sealed by a State of Texas Professional Engineer. Foundations must be inspected and approved by a State of Texas Professional Engineer, or his designee, prior to inspection by the Building Official. Concrete cylinders must be obtained at the time of concrete placement by the State of Texas Professional Engineer, or his designee with breaks occurring at 7, 14, and 28 days in accordance with American Concrete Institute standards. Sealed approval letters for the foundation design and inspection and concrete breakage tests must be submitted and approved prior to the final building inspection.

**Section R602.6.1, Drilling and notching of top plate: change to read as follows and delete the exception:**

R602.6.1 Drilling and notching of top plate. When piping or ductwork is placed in or partly in an exterior wall or interior load bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50 percent of its width, a galvanized metal tie not less than 0.054 inch thick (1.37 mm) (16 Ga) and 5 inches (127 mm) wide shall be fastened across and to the plate at each side of the opening with not less than eight 10d nails (0.148 inch diameter) having a minimum length of 1 1/2 inches (38 mm) at each side or equivalent. Fasteners will be offset to prevent splitting of top plate material. The metal tie must extend a minimum of 6 inches past the opening. See Figure R602.6.1. {Remainder unchanged}

FIGURE R602.6.1 TOP PLATE FRAMING TO ACCOMMODATE PIPING



For SI: 1 inch = 25.4 mm.

**Section R602.6.2, Plumbing in walls and top plates: add section to read as follows:**

Section R602.6.2. Plumbing in walls and top plates. Any plumbing 2 inches (51MM) or more in diameter shall be installed in a wall using minimum 2" x 6" nominal framing members or other approved methods.

**Section R602.10 change to read as follows:**

R602.10 Wall Bracing. Buildings shall be braced in accordance with this section or, when applicable, Section R602.12. Wall bracing plans complying with this section and sealed by a Texas licensed Professional Engineer shall be required on each new one-and two-family dwelling. An approved signed and sealed letter by a Texas licensed Professional Engineer to certify the wall bracing installed complies with the approved plans shall be required to be submitted for each new one-and-two-family dwelling. Wall bracing plans complying with this section and sealed by a Texas licensed Professional Engineer may be required on each alteration or remodel of a one-and two-family dwelling including accessory buildings. An approved signed and sealed letter by a Texas licensed Professional Engineer to certify the wall bracing installed complies with the approved plans may be required on each alteration or remodel of a one-and two-family dwelling including accessory buildings. {Remainder of section unchanged}

**Section R703.8.4.1, Size and spacing: add a second paragraph to read as follows:**

In stud framed exterior walls, all ties shall be anchored to studs as follows:

- 1) When studs are 16 in (407 mm) o.c., stud ties shall be spaced no further apart than 24 in (737 mm) vertically starting approximately 12 in (381 mm) from the foundation; or
- 2) When studs are 24 in (610 mm) o.c., stud ties shall be spaced no further apart than 16 in (483 mm) vertically starting approximately 8 in (254 mm) from the foundation.

**Section R806.3, Vent and insulation clearance: change sentence to read as follows:**

Where eave or cornice vents are installed, they shall be a minimum of 3 feet from all window and door openings.

**Section R807.1, Attic access: change to read as follows:**

R807.1 Buildings with combustible ceiling or roof construction shall have an attic access opening to attic areas that have a vertical height of 30 inches (762 mm) or greater over an area of not less than 30 square feet (2.8 m<sup>2</sup>). The vertical height shall be measured from the top of the ceiling framing members to the underside of the roof framing members. Attic access openings, walkway, and access shall be provided according to M1305.1.3. Attic access shall not be provided in attached garages.

**Section R902.1, Minimum Roof Class: change and add exception #3 to read as follows:**

R902.1 Minimum Roof Class. Roofs shall be covered with materials set forth in Sections R904 and R905. Class A, B, or C roofing shall be installed, however, individual replacement shingles shall be a minimum Class C.

Exceptions:

- 1) (text unchanged)
- 2) (text unchanged)
- 3) (text unchanged)
- 4) (text unchanged)
- 5) Non-classified roof coverings shall be permitted on one-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided floor area does not exceed 120 square feet.

**Sections R905.7 through 905.8.9 are deleted.**

**Section R907.1, General: add a sentence to read as follows:**

R907.1 General. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 9. All individual replacement shingles shall comply with Section R902.1. (exception unchanged)

**Chapter 11 [RE] –Energy Efficiency is deleted in its entirety and replaced with the following:**

**N1101.1 Scope.** This chapter regulates the energy efficiency for the design and construction of buildings regulated by this code.

**N1101.2 Compliance.** Compliance shall be demonstrated by meeting the requirements of the residential provisions of the 2015 International Energy Conservation Code.

**Section M1305.1.3, Appliances in attics: change to read as follows:**

M1305.1.3 Appliances in attics. Attics containing appliances requiring access shall be provided... {bulk of paragraph unchanged}...sides of the appliance where access is required. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger and large enough to allow removal of the largest

appliance. A walkway to an appliance shall be rated as a floor as approved by the building official. As a minimum, access to the attic space shall be provided by one of the following:

- 1) A permanent stair.
- 2) A pull down stair with a minimum 300 lbs (136 kg) capacity.
- 3) An access door from an upper floor level.
- 4) Access Panel may be used in lieu of items 1, 2, and 3 with prior approval of the Building Official due to building conditions.

Exception:

- 1) The passageway and level service space are not required where the appliance can be serviced and removed through the required opening.
- 2) Where the passageway is unobstructed... (remaining text unchanged).

**Section M1305.1.3.1, Electrical requirements: change to read as follows:**

M1305.1.3.1 Electrical requirements. A luminaire controlled by a switch located at the required passage-way opening and a receptacle outlet shall be installed at or near the appliance location in accordance with the Electrical Code. Low voltage wiring of 50 Volts or less shall be installed in a manner to prevent physical damage.

**Section M1305.1.4.1, Ground clearance: change to read as follows:**

M1305.1.4.1 Ground clearance. Appliances supported from the ground shall be level and firmly supported on a concrete slab or other approved material extending above the adjoining ground a minimum of 3 inches (76 mm). Appliances suspended from the floor shall have a clearance of not less than 6 inches (152 mm) above the ground.

**Section M1305.1.4.3, Electrical requirements: change to read as follows:**

M1305.1.4.3 Electrical requirements. A luminaire controlled by a switch located at the required passage-way opening and a receptacle outlet shall be installed at or near the appliance location in accordance with Chapter 39. Low voltage wiring of 50 Volts or less shall be installed in a manner to prevent physical damage.

**Section M1307.3.1, Protection from impact: is deleted.**

**Section M1411.3, Condensate disposal: change to read as follows:**

M1411.3 Condensate disposal. Condensate from all cooling coils or evaporators shall be conveyed from the drain pan outlet to a sanitary sewer through a trap, by means of a direct or indirect drain. {remaining text unchanged}

**Section M1411.3.1, Auxiliary and secondary drain systems: change items 3 and 4 to read as follows:**

M1411.3.1 Auxiliary and secondary drain systems. (bulk of paragraph unchanged)

- 1) (text unchanged)
- 2) (text unchanged)
- 3) An auxiliary drain pan... (bulk unchanged)... with item 1 of this section. A water level detection/shut off device may be installed with prior approval from the building official.
- 4) A water level detection device (bulk of text unchanged)...overflow rim of such pan. A water level detection/shut off device may be installed with prior approval of the Building Official.

**Section M1411.3.1.1, Water-level monitoring devices: change to read as follows:**

M1411.3.1.1 Water-level monitoring devices. On down-flow units ... (bulk of text unchanged) ...be installed only with prior approval of the Building Official.

**Section M1501.2, Material and size: add to read as follows:**

Section M1501.2 Material and size. Exhaust ducts shall have a smooth interior finish and shall be constructed of metal a minimum 0.016-inch (0.4 mm) thick. The exhaust duct size shall be 4 inches (102 mm) nominal in diameter. Duct size shall not be reduced along its developed length of at termination.

**Section M1501.3, Specified length: add to read as follows:**

M1501.3 Specified length. The maximum length of the exhaust duct shall be 35 feet (10668 mm) from the connection to the transition duct from the appliance to the outlet terminal. Where fittings are used, the maximum length of the exhaust duct shall be reduced in accordance with Table M1502.4.4.1.

**Section M1601.4.3 Support: change to read as follows:**

Metal ducts... (text unchanged)...or other approved means. Nonmetallic ducts shall be supported by 1-inch wide 18-gage solid metal straps with 6" metal saddles at intervals not exceeding 10 feet or in accordance with the manufacturer's installation instructions.

**Section M2005.2, Prohibited locations: change to read as follows:**

M2005.2 Prohibited locations. Fuel-fired water heaters shall not be installed in a room used as a storage closet. Water heaters located in a bedroom or bathroom shall be installed in a sealed enclosure so that combustion air will not be taken from the living space. Access to such enclosure may be from the bedroom or bathroom when through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the International Energy Conservation Code and equipped with an approved self-closing device. Installation of direct-vent water heaters within an enclosure is not required.

**Section G2408.3 (305.5), Private garages: is deleted.**

**Section G2412.5 (401.5), Indemnification: add a second paragraph to read as follows:**

Both ends of each section of medium pressure gas piping shall identify its operating gas pressure with an approved tag. The tags are to be composed of aluminum or stainless steel and the following wording shall be stamped into the tag:

"WARNING  
1/2 to 5 psi gas pressure  
Do Not Remove"

**Section G2413.3 (402.3), Sizing: add an exception to read as follows:**

Exception: Corrugated stainless steel tubing (CSST) shall be a minimum of 1/2". (18 EDH).

**Section G2414.5.3 change to read as follows:**

G2414.5.3 (403.6) Corrugated stainless steel tubing. Corrugated stainless steel tubing shall be *listed* in accordance with ANSI LC 1/CSA 6.26. Corrugated stainless steel tubing shall only be used to repair or replace existing corrugated stainless steel tubing as *approved*.

**Section G2415.9.1 (404.9.1), Prohibited use: is deleted.**

**Section G2415.10 (404.10), Minimum burial depth: change to read as follows:**

G2415.10 (404.10) Minimum burial depth. Underground piping systems shall be installed a minimum depth of 18 inches (457 mm) below grade, except as provided for in Section G2415.10.1.

**Section G2417.1 (406.1), General: change to read as follows:**

G2417.1 (406.1) General. Prior to acceptance and initial operation, all piping installations shall be inspected and pressure tested to determine that the materials, design, fabrication, and installation practices comply with the requirements of this code. The permit holder shall make the applicable tests prescribed in Sections 2417.1.1 through 2417.7.5 to determine compliance with the provisions of this code. The permit holder shall give reasonable advance notice to the code official when the piping system is ready for testing. The equipment, material, power and labor necessary for the inspections and test shall be furnished by the permit holder and the permit holder shall be responsible for determining that the work will withstand the test pressure prescribed in the following tests.

**Section G2417.4 (406.4), Test pressure measurement: change to read as follows:**

G2417.4 (406.4) Test pressure measurement. Test pressure shall be measured with a manometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made. Gauges used to measure...{remainder unchanged}.

**Section G2417.4.1 (406.4.1), Test pressure: change to read as follows:**

G2417.4.1 (406.4.1) Test pressure. The test pressure to be used shall be not less than 3 psig (20 kPa gauge), or at the discretion of the Building Official, the piping and valves may be tested at a pressure of at least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge. For tests requiring 3 psig gauges shall utilize a dial with a minimum diaphragm diameter of three and one half inches (3-1/2"), a set hand, 1/10 pound incrementation and pressure range not to exceed 6 psi for tests requiring a pressure of 3 psig. For tests requiring a pressure of 10 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one-half inches (3- 1/2") a set hand, a minimum of 2/10 pound incrementation and a pressure range not to exceed 20 psi.

For welded piping, and for piping carrying gas pressures in excess of fourteen (14) inches of water column pressure (4.48 kPa) (1/2 psi) and less than 200 inches of water column pressure (52.2 kPa) (7.5 psi), the test pressure shall not be less than ten (10) pounds per square inch (69.6 kPa). For piping carrying gas at a pressure that exceeds 200 inch of water column (52.2 kPa) (7.5 psi), the test pressure shall be not less than one and one-half times the proposed maximum working pressure.

Diaphragm gauges used for testing must display a current calibration and be in good working condition. The appropriate test must be applied to the diaphragm gauge used for testing.

**Section G2417.4.2 (406.4.2), Test duration: change to read as follows:**

G2417.4.2 (406.4.2) Test duration. Test duration shall be held for a length of time satisfactory to the Building Official, but in no case for less than fifteen (15) minutes. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa), the test duration shall be held for a length of time satisfactory to the Building Official, but in no case for less than thirty (30) minutes.

**Section G2420.1.4, Valves in CSST installations: add to read as follows:**

G2420.1.4 Valves in CSST installations. Shutoff valves installed with corrugated stainless steel (CSST) piping systems shall be supported with an approved termination fitting, or equivalent support, suitable for the size of the valves, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration but in no case greater than 12-inches from the center of the valve. Supports shall be installed so as not to interfere with the free expansion and contraction of the system's piping, fittings, and valves between anchors. All valves and supports shall be designed and installed so they will not be disengaged by movement of the supporting piping.

**Section G2420.5.1 (409.5.1), Located within same room: change to read as follows:**

G2420.5.1 (409.5.1) Located within the same room. The shutoff valve...(text unchanged)...in accordance with the appliance manufacturer's instructions. A secondary shutoff valve must be installed within 3 feet (914 mm) of the firebox if appliance shutoff is located in the firebox.

**Section G2421.1 (410.1), Pressure regulators: change to read as follows:**

G2421.1 (410.1) Pressure regulators. A line pressure regulator shall be...(bulk of paragraph unchanged)... approved for outdoor installation. Access to regulators shall comply with the requirements for access to appliances as specified in Section M1305.

Exception: A passageway or level service space is not required when the regulator is capable of being serviced and removed through the required attic opening.

**Section G2439.5 (614.6) Domestic clothes dryer exhaust ducts: change to read as follows:**

G2439.5 (614.6) Domestic clothes dryer exhaust ducts. Exhaust ducts for domestic clothes dryers shall conform to the requirements of Sections G2439.5.1 through

G2439.5.7. The size of duct shall not be reduced along its developed length nor at the point of termination.

**Section G2445.2 (621.2), Prohibited use: change to read as follows:**

G2445.2 (621.2) Prohibited use. One or more unvented room heaters shall not be used as the sole source of comfort heating in a dwelling unit.

Exception: Existing approved unvented heaters may continue to be used in dwelling units, in accordance with the code provisions in effect when installed, when approved by the Building Official unless an unsafe condition is determined to exist as described in International Fuel Gas Code Section 108.7 of the Fuel Gas Code.

**Section G2448.1.1 (624.1.1) Installation requirements: change to read as follows:**

G2448.1.1 (624.1.1) Installation requirements. The requirements for water heaters relative to access, sizing, relief valves, drain pans and scald protection shall be in accordance with this code.

**Section P2503.6, Shower liner test: change to read as follows:**

P2503.6 Shower liner test. Where shower floors and receptors are made watertight by the application of materials required by section P2709.2, the completed liner installation shall be tested. The pipe from the shower drain shall be plugged watertight for the test. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.

**Section P2603.6.1, Sewer depth: change to read as follows:**

P2603.6.1 Sewer depth. Building sewers shall be a minimum of 12 inches (304 mm) below grade.

**Section P2608.5.1: add to read as follows:**

Water service pipe shall be seamless copper type L or pex piping.

Water distribution pipe shall be copper or copper alloy, or pex piping.

**Section P2709.2, Lining required: add an Exception to read as follows:**

Exception: Showers designed to comply with ICC/ANSI A117.1.

**Section P2718.1, Waste connection: add a second sentence to read as follows:**

All clothes washing machines on a second floor or above shall have a pan.

**Section P2801.4, Prohibited locations: add second sentence to read as follows:**

Water heaters shall not be installed in attics, except to replace water heaters in an already installed system.

**Section P2801.6, Water heaters installed in garages: add an exception to read as follows:**

Exception: Elevation of the ignition source is not required for water heaters that are listed as flammable vapor resistant and for installation without elevation.

**Section P2804.6.1; change to read as follows:**

Section P2804.6.1 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

- 1) Not be directly connected to the drainage system.
- 2) Discharge through an air gap.
- 3) Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
- 4) Serve a single relief device and shall not connect to piping serving any other relief device or equipment.

Exception: Multiple relief devices may be installed to a single T&P discharge piping system when approved by the administrative authority and permitted by the manufacturer's installation instructions and installed with those instructions.

- 1) Discharge to an indirect waste receptor or to the outdoors. {remainder of text unchanged}

**Section P2902.5.3, Lawn irrigation systems: change to read as follows:**

P2902.5.3 Lawn Irrigation Systems. The potable water supply system to lawn irrigation systems shall be protected against backflow by a pressure type vacuum breaker, a double-check assembly or a reduced pressure principle backflow preventer . . . {remainder of section unchanged}. All irrigation systems shall have rain and freeze protection installed.

P2902.5.3.1 Lawn Irrigation systems rules and law compliance with State Law and TCEQ requirements.

Landscape irrigation rules promulgated by the Texas Commission on Environmental Quality and contained in Chapter 344, Subchapters E and F, sections 344.50–344.65, Texas Administrative Code, are hereby adopted by reference as the landscape irrigation rules of the city.

**Table P2905.4, Water Service Pipe: shall be either copper or pex only.**

**Table P2905.5 Water Distribution Pipe: shall be either copper or pex only.**

**Section P3005.2.6, Upper terminal: delete current section and change to read as follows:**

P3005.2.6 Upper terminal. Each horizontal drain shall be provided with a cleanout at its upper terminal.

Exception: Cleanouts may be omitted on a horizontal drain less than five (5) feet (1524 mm) in length unless such line is serving sinks or urinals.

**Section P3111, Combination Waste and Vent System: is deleted.**

**Section P3112.2, Vent connection: is deleted and replaced with the following:**

P3112.2 Installation. Traps for island sinks and similar equipment shall be roughed in above the floor and may be vented by extending the vent as high as possible, but not less than the drain board height and then returning it downward and connecting it to the horizontal sink drain immediately downstream from the vertical fixture drain. The return vent shall be connected to the horizontal drain through a wye-branch fitting and shall, in addition, be provided with a foot vent taken off the vertical fixture vent by means of a wye-branch immediately below the floor and extending to the nearest partition and then through the roof to the open air or may be connected to other vents at a point not less than six (6) inches (152 mm) above the flood level rim of the fixtures served. Drainage fittings shall be used on all parts of the vent below the floor level and a minimum slope of one-quarter (1/4) inch per foot (20.9 mm/m) back to the drain shall be maintained. The return bend used under the drain board shall be a one (1) piece fitting or an assembly of a forty-five (45) degree (0.79 radius), a ninety (90) degree (1.6 radius) and a forty-five (45) degree (0.79 radius) elbow in the order named. Pipe sizing shall be as elsewhere required in this Code. The island sink drain, upstream of the return vent, shall serve no other fixtures. An accessible cleanout shall be installed in the vertical portion of the foot vent.

**Section P 3114, Air Admittance Valves: is deleted.**

**Chapters 33 through 42: are deleted and replaced with the electrical code as adopted.**

**Appendix G Section 105.2, Outdoor swimming pool: change items 1, 2 and 8 to read as follows and delete items 4, 5, 6 and 7:**

- 1) Barrier shall be at least 72" inches measured on the side of the barrier which faces away from the swimming pool.
- 2) Barrier shall be constructed of wood with steel post. Spacing between fence slats shall not exceed 4 inches. Other materials may be used as approved by the Building Official.
- 8) Access gates shall be equipped to accommodate a locking device. Pedestrian...(remainder of text unchanged)..... shall comply with the following."

**SECTION II.**

Sections 14-41 through 14-44 of Article III, "International Building Code Amendments/Administration" of Chapter 14, "Buildings and Building Regulations" of the Code of Ordinances of the City of Euless, Texas, are hereby amended in their entirety to read as follows:

**"Sec. 14-41. Adoption; International Building Code.**

The International Building Code, 2015 edition, as published by the International Code Council is hereby adopted by reference as the building code of the City. Unless deleted, amended, expanded or otherwise changed herein, all provisions of such code shall be fully applicable and binding.

**Sec. 14-42. Administration and Enforcement of Building Code.**

The building code of the City shall be administered and enforced by the office of the building official. All references to Code Official shall mean the Building Official.

**Sec. 14-43. Scope of Requirements.**

- a) For the purpose of this code, every building or structure within aircraft exposure zone "B" as defined by section 74-114 of the City of Euless Code of Ordinances shall be subject to the following noise attenuation requirements.
- b) Noise level reduction standards for certain uses. The minimum outdoor-to-indoor noise level reduction for certain building uses within zone "B" shall be 25 decibels (A-weighted) as measured from the center of each room.

<b>Building Use</b>	<b>Minimum Decibel Reduction from Outdoors to Indoors</b>
Residential: Residential within each unit including transient lodgings	25 dba
Public use: Schools, hospitals, churches, nursing home	25 dba

- c) Certification of plans prior to issuance of building permits. No building permit for any building or structure designated shall be issued unless all plans and specifications accompanying the application for the permit are certified by a registered professional architect or engineer of the State of Texas as meeting the noise level reduction standards required. The following certification shall appear on every sheet of the building plans:

“(Name), a registered professional engineer or architect of the State of Texas, has examined the plans and specifications and does hereby certify that when the structure is constructed in accordance with these plans and with quality workmanship that the structure will provide a shell isolation rating (S.I.R.) of not less than 25 points.”

**Sec. 14-44. Amendments.**

The International Building Code, 2015 edition, is amended as follows:

**(A) Section 101.4 is amended to read as follows:**

101.4 Referenced codes. The other codes listed in Sections 101.4.1 through 101.4.6 and referenced elsewhere in this code, when specifically adopted, shall be considered part of the requirements of this code to the prescribed extent of each such reference. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference to NFPA 70 or the ICC Electrical Code shall mean the Electrical Code as adopted.

**(B) Section 101.4.7 is amended to read as follows:**

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

**(C) Sections 103 and 103.1 are amended as follows:**

SECTION 103  
OFFICIAL BUILDING DEPARTMENT

103.1 Creation of enforcement agency. The Department of Building Safety for The City of Eules is hereby created and the Official in charge shall be known as the Building Official.

**(D) Section 105.5.3.2 is amended to read as follows:**

105.3.2 Time limit of application. An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, or after 30 days of inactivity, unless such application...{remainder of text unchanged}.

**(E) Section 105.5.1 is amended to read as follows:**

105.5.1 Permit extensions. Work requiring a permit shall not be granted an extension or be renewed beyond a 24 month period from the time the permit was originally issued. Any incomplete work for which a permit has expired shall be caused by the Building Official to be demolished in accordance with ARTICLE XII - abatement of dangerous buildings.

**(F) Section 109.2.1 is amended to read as follows:**

109.2.1 Plan review fees: When submittal documents are required by section 107.1, a plan review fee shall be paid at the time of submitting the submittal documents for plan review. Said plan review fee shall be as set forth in section 30-13 of the Code of Ordinances of the City of Eules.

The Plan review fees are in addition to the permit fees. When submittal documents are incomplete or changed so as to require additional plan review or when the project involves submittal items as defined in section 106.3.4.2, an additional plan review fee shall be charged at the rate as set forth in section 30-13.

**(G) Section 109.2 is amended by adding a second sentence to read as follows:**  
See approved fee schedule (Eules Code of Ordinances Chapter 30).

**(H) Section 109.7 is added to read as follows:**

109.7 Re-Inspection fee. A fee is established by city council may be charged when:

- 1) The inspection requested is not ready when the inspector arrives.
- 2) No building address or permit is clearly posted.

- 3) City approved plans are not on the jobsite available to the inspector.
- 4) The building is locked or work is otherwise not available for inspection when requested.
- 5) The jobsite inspection is disapproved twice for the same item.
- 6) The original inspection tag has been removed from the jobsite; and/or
- 7) Violations exist on the property including failure to maintain erosion control, trash control or tree protection,

Any re-inspection fees assessed shall be paid before any more inspections are made on that jobsite.

**(I) Sections 109.8, 109.8.1, and 109.8.2, are amended to read as follows:**

109.8 Work without permit.

109.8.1 Investigation. Whenever work for which a permit is required by this code has been commenced without first obtaining a permit, a special investigation shall be made before a permit may be issued for such work.

109.8.2 Fee. An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is subsequently issued. The investigation fee shall be equal to the amount of the permit fee required by this code or the city fee schedule Chapter 30 as applicable, the payment of such investigation fee shall not exempt the applicant from compliance with all other provisions of either this code or the technical codes nor from the penalty described by law.

**(J) Section 110.3.5 is deleted.**

**(K) Section 116.5 Restoration is amended to read as follows:**

116.5 Restoration. The structure or equipment determined to be unsafe by the *building official* is permitted to be restored to a safe condition. To the extent that repairs, *alterations* or *additions* are made or a change of occupancy occurs during the restoration of the structure, such repairs, *alterations*, *additions* or change of occupancy shall comply with the requirements of Section 105.2.2 and Chapter 34.

**(L) Section 116.5.1 is added to read as follows:**

116.5.1 Damage or Renovations to Existing Structures. When a structure is renovated or is damaged to 51% or more of the gross floor area or if the value of the damage or renovation exceeds 51% of the value of the structure at the time of damage or renovation all requirements of this code shall be complied with in any such repair, reconstruction, or renovation.

**(M) Section 202 the definition of “Ambulatory Health Care Facility” is amended to read as follows:**

Ambulatory Health Care Facility. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation. This group may include but not be limited to the following:

- Dialysis centers
- Sedation dentistry
- Surgery centers
- Colonic centers
- Psychiatric centers

**Option B**

**Section 202, the following definitions are amended or added to read as follows:**

HIGH-RISE BUILDING. A building having any floor used for human occupancy located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access.

EQUIPMENT ROOM. Equipment room is a room in which is contained mechanical, heating equipment, electrical equipment and distribution centers, boilers, central heating plant, hot water supply boiler, or any other equipment essential to the operation of the building or preservation of the occupants.

ASSISTED LIVING FACILITIES. A building or part thereof housing persons, on a 24 hour basis, who because of age, mental disability or other reasons live in a supervised residential environment which provides personal care services, as provided in Texas Human Resources Code Ch. 247. The occupants may or may not be capable of responding to an emergency situation without physical assistance from staff.

ATRIUM: An opening connecting three or more stories. {Balance remains unchanged}.

REPAIR GARAGE: A building, structure or portion thereof used for servicing or repairing motor vehicles. This occupancy shall also include garages involved in minor repair, modification and servicing of motor vehicles for items such as lube

changes, inspections, windshield repair or replacement, shocks, minor part replacement and other such minor repairs.

**SPECIAL INSPECTOR:** A qualified person employed or retained by an approved agency who shall prove to the satisfaction of the registered design professional in responsible charge and the Building Official as having the competence necessary to inspect a particular type of construction requiring special inspection.

**Section 304.1, Business Group B is amended to add the following to the list of occupancies:**

Fire stations  
Police stations with detention facilities for 5 or less

**Section 307.1, High-hazard Group H is amended by revising Exception 4 to read as follows:**

4. Cleaning establishments... (text unchanged) ... with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 711, or both. See also IFC chapter 21, Dry Cleaning Plant provisions.

**Section 310.1, Residential Group R is amended by changing second paragraph under R-3 to read as follows:**

Adult care and child care facilities with 5 or fewer unrelated persons that are within a single-family home are permitted to comply with the International Residential Code.

**Section 403.1, Exception 3 is amended to read as follows:**

3. Open air portions of buildings with a Group A-5 occupancy in accordance with Section 303.1.

**Section 403.3, Automatic sprinkler system: Exception 2 is deleted.**

**Section 404.5, Smoke control: Exception is deleted.**

**Section 406.3.5.1 is amended by adding the following sentence:**

A separation is not required between a Group R-2 and U carport provided that the carport is entirely open on all sides and that the distance between the two is at least 10 feet (3048 mm).

**Section 506.2.2, Open space limits, is amended to read as follows:**

506.2.2 Open space limits. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane. In order to be considered as accessible, if not in direct contact with a street or fire lane, a minimum 10-foot wide pathway from the street or approved fire lane shall be provided.

**Section 508.2.5, Separation of incidental accessory occupations, is amended to read as follows:**

508.2.5 Separation of incidental accessory occupancies. The incidental accessory occupancies listed in Table 508.2.5 shall be separated from the remainder of the building or equipped with an automatic fire-extinguishing system, or both, in accordance with Table 508.2.5. An incidental accessory occupancy shall be classified in accordance with the occupancy of that portion of the building in which it is located.

**Section 708.2, Shaft enclosure required: Items 7.2, 7.3 are amended to read as follows, items 7.4 and 7.5 are deleted and 7.6 and 7.7 are renumbered as 7.4 and 7.5, respectively:**

7.2. Is not part of the required means of egress system except as permitted in Section 1022.1.

7.3. Is not concealed within the building construction of a wall or a floor/ceiling assemble.

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

7.5. Is limited to the same smoke compartment.

**Section 903.1.1, Alternative protection, is amended to read as follows:**

[F] 903.1.1 Alternative protection. Alternative automatic fire-extinguishing systems complying with Section 904 shall be permitted in addition to automatic sprinkler protection where recognized by the applicable standard, or as approved by the fire code official.

**Section 903.2, is amended to read as follows:**

[F] 903.2 Where required. Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Section 903.2.1 through 903.2.12. Automatic sprinklers shall not be installed in elevator machine rooms, elevator machine spaces, and elevator hoist ways. Storage shall not be allowed with the elevator machine room. Signage shall be provided at the entry doors to the elevator machine room indicating "ELEVATOR MACHINERY - NO STORAGE ALLOWED".

**Section 903.2 is amended by deleting the exception.**

**Section 903.2.9.3 is added to read as follows:**

[F] 903.2.9.3 Self-service storage facility. An automatic sprinkler system shall be installed throughout all self-service storage facilities.

Exception: One-story self-service storage facilities that have no interior corridors, with a one-hour fire barrier separation wall installed between every storage compartment.

**Section 903.2.11.3 is amended to read as follows:**

903.2.11.3 Buildings over 35 feet in height. An automatic sprinkler system shall be installed throughout buildings with a floor level, other than penthouses in compliance with Section 1510 of the International Building Code, that is located 35 feet ( 10 668 mm) or more above the lowest level of fire department vehicle access.

Exceptions:

- 1) Airport control towers
- 2) Open parking structures in compliance with Section 406.3 of the International Building Code.
- 3) Occupancies in Group F-2

**Sections 903.2.11.7, High-Piled Combustible Storage; 903.2.11.8 Spray Booths and Rooms; and 903.2.11.9 Buildings Over 6,000 sq. ft.: are added to read as follows:**

[F] 903.2.11.7 High-Piled Combustible Storage. For any building with a clear height exceeding 12 feet (4572 mm). see Chapter 23 to determine if those provisions apply.

[F] 903.2.11.8 Spray Booths and Rooms. New and existing spray booths and spraying rooms shall be protected by an approved automatic fire-extinguishing system in compliance with section 1504.

[F] 903.2.11.9 Buildings Over 6,000 sq. ft. An automatic sprinkler system shall be installed throughout all buildings with a building area over 6,000 sq. ft. For the purpose of this provision, fire walls shall not define separate buildings. If a conflict exists among the sprinkler requirements of this code, the more restrictive provision shall apply.

Exceptions:

- 1) Open parking garages in compliance with Section 406.3 of the International Building Code when approved by the code authority.

**Section 903.3.1.1.1 is amended to read as follows:**

903.3.1.1.1 Exempt locations. When approved by the fire code official, automatic sprinklers shall not be required in the following rooms or areas where such... {bulk of section unchanged}...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 code official.
- 3) Generator and transformer rooms, under the direct control of a public utility, 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) Elevator machine rooms, machinery spaces and hoist ways.

**Section 903.3.1.2, NFAP 13R is amended to read as follows:**

[F] 903.3.1.2 NFPA 13R sprinkler systems. Where allowed, automatic sprinkler systems installed in townhouses and multifamily shall be installed throughout in accordance with NFPA 13R as amended by the Fire Department or in accordance with state law.

**Section 903.3.1.3, NFPA 13D is amended to read as follows:**

[F] 903.3.1.3 NFPA 13D sprinkler systems. Where allowed, automatic sprinkler systems installed in one-and two-family dwellings shall be installed throughout in accordance with NFPA 13D or in accordance with state law.

**Section 903.3.5 is amended to read as follows:**

[F] 903.5 Water supplies. Water supplies for automatic sprinkler systems shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with the requirements of this section and the International Plumbing Code.

Water supply as required for such systems shall be provided in conformance with the supply requirements of the respective standards; however, every fire protection system shall be designed with a 10 psi safety factor.

**Section 903.4 is amended by adding a second paragraph to read as follows:**

Sprinkler and standpipe system water-flow detectors shall be provided for each floor tap to the sprinkler system and shall cause an alarm upon detection of water flow for more than 45 seconds. All control valves in the sprinkler and standpipe systems except for fire department hose connection valves shall be electrically supervised to initiate a supervisory signal at the central station upon tampering.

**Section 903.4.2, Alarms, is amended by adding a second paragraph to read as follows:**

The alarm device required on the exterior of the building shall be weatherproof horn/strobe notification appliance with a minimum 75 candela strobe rating, installed at an approved location.

**Section 903.6 is added to read as follows:**

[F] 903.6.3 Spray booths and rooms. New and existing spray booths and spray rooms shall be protected by an approved automatic fire-extinguishing system in accordance with Section 1504.

**Section 905.2, Installation standard: change to read as follows:**

[F] 905.2 Installation standard. Standpipe systems shall be installed in accordance with this section and NFPA 14. Manual dry standpipe systems shall be supervised with a minimum of 10 psig and a maximum of 40 psig air pressure with a high/low alarm.

**Section 905.3.8 is added to read as follows:**

[F] 905.3.8 Building area. In buildings exceeding 10,000 square feet in area per story, Class I automatic wet or manual wet standpipes shall be provided where any portion of the building's interior area is more than 200 feet (60960 mm) of travel, vertically and horizontally, from the nearest point of fire department vehicle access.

Exception: Automatic dry and semi-automatic standpipes are allowed as provided for in NFPA 14.

**Section 905.4, Location of Class I standpipe hose connections: change item 5 to read as follows:**

- 5) Where the roof has a slope less than 4 units vertical in 12 units horizontal (33.3-percent slope), each standpipe shall be provided with a two-way hose connection located either... {remainder of paragraph unchanged}

**Section 905.4, Location of Class I standpipe hose connections: add the following to read as follows:**

- 7) When required by this Chapter, standpipe connections shall be placed adjacent to all required exits to the structure and at two hundred (200') intervals along major corridors thereafter or as indicated by the fire code official.

Section 905.9, Valve supervision: add a second paragraph after the exceptions to read as follows:

Sprinkler and standpipe system water-flow detectors shall be provided for each floor tap to the sprinkler system and shall cause an alarm upon detection of water flow for more than 45 seconds. All control valves in the sprinkler and standpipe systems except for fire department hose connection valves shall be electrically supervised to initiate a supervisory signal at the central station upon tampering.

**Section 906.1, Where required: change Exception to item 1 to read as follows:**

Exception. In R-2 occupancies, portable fire extinguishers shall be required only in locations specified in items 2 through 6, where each dwelling unit is provided with a portable fire extinguisher having a minimum rating of 1-A: 10-B:C.

**Section 907.1.4, Design standards: add to read as follows:**

907.1.4 Design Standards. All alarm systems new or replacement shall be addressable. Alarm systems serving more than 20 smoke detectors shall be analog addressable.

Exception: Existing systems need not comply unless the total building remodel or expansion initiated after the effective date of this code, as adopted, exceeds 30% of the building. When cumulative building remodel or expansion exceeds 50% of the building, compliance is required within 18 months of permit application.

**Section 907.2.1, Group A: change to read as follows:**

907.2.1 Group A. A manual fire alarm system that activates the occupant notification system in accordance with new Section 907.6 shall be installed in Group A occupancies having an occupant load of 300 or more persons than 100 persons above or below the lowest level of exit discharge. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy. Activation of fire alarm notification appliances shall:

- 1) Cause illumination of the means of egress with light of not less than 1 foot-candle (11 lux) at the walking surface level, and,
- 2) Stop any conflicting or confusing sounds and visual distractions.

**Section 907.2.3, Group E: change to read as follows:**

907.2.3 Group E. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group E educational occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system. An approved smoke detection system shall be installed in Group E day care occupancies. Unless separated by a minimum of 100' open space, all buildings, whether portable buildings or the main building, will be considered one building for alarm occupant load consideration and interconnection of alarm systems.

**Section 907.2.3, Group E: change Exception 1 and add exception 1.1 to read as follows:**

- 1) A manual fire alarm system is not required in Group E educational and day care occupancies with an occupant load of less than 50 when provided with an approved automatic sprinkler system.

1.1 Residential In-Home day care with not more than 12 children may use interconnected single station detectors in all habitable rooms. (For care of more than five children 2-1/2 or less years of age, see Section 907.2.6.)

**Section 907.2.11.1, Group R-1: change to read as follows:**

Section 907.2.11.1 Group R-1. Single-or multiple-station smoke alarms and carbon monoxide alarms shall be installed and maintained in all the following locations in Group R-1:

- 1) Text unchanged
- 2) Text unchanged
- 3) Text unchanged
- 4) For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units that have an attached garage or gas fired appliance.
- 5) Where work requiring a permit occurs in existing dwellings that have attached garages or gas fired appliances carbon monoxide alarms shall be provided.

**Section 907.2.11.2, Groups R-2, R-3, R-4 and I-1: change to read as follows:**

Section 907.2.11.2 Groups R-2, R-3, R-4 and I-1. Single-or multiple-station smoke alarms and carbon monoxide alarms shall be installed and maintained in Groups R2, R-3, R-4 and I-1 regardless of occupant load at all the following locations:

- 1) Text unchanged
- 2) Text unchanged
- 3) Text unchanged
- 4) For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units that have an attached garage or gas fired appliances.
- 5) Where work requiring a permit occurs in existing dwellings that have attached garages or gas fired appliances carbon monoxide alarms shall be provided.

**Section 907.2.13 is amended to read as follows:**

907.2.13 High-rise buildings. Buildings having any floor used for human occupancy located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access shall be provided with an automatic smoke detection system in accordance with Section 907.2.13.1 a fire department communications system in accordance with Section 907.2.13.2 and an emergency voice/alarm communication system in accordance with Section 907.6.2.2.

**Section 907.2.13, High-rise buildings: Exception 3 is amended to read as follows:**

- 3) Buildings with an occupancy in Group A-5 in accordance with Section 303.1, when used for open air seating; however, this exception does not apply to accessory uses including but not limited to sky boxes, restaurants and similarly enclosed areas.

**Section 907.5.2.6, Type: added to read as follows:**

907.5.2.6 Type. Manual alarm initiating devices shall be an approved double action type.

**Section 907.7.1, Installation: added to read as follows:**

907.7.1.1 Installation. All fire alarm systems shall be installed in such a manner that the failure of any single initiating device or single open in an initiating circuit conductor will not interfere with the normal operation of other such devices. All initiating circuit conductors shall be Class "A" wired with a minimum of six feet separation between supply and return circuit conductors. IDC - Class "A" style - D - SLC Class "A" Style 6 - NAC - Class "B" Style Y. The IDC from an addressable device used to monitor the status of a suppression system may be wired Class "B". Style B provided the distance from the addressable device is within 10 feet of the suppression system device.

**Section 907.7.5, Communication Requirements: added to read as follows:**

[F] 907.7.5.2 Communication Requirements. All alarm systems, new or replacement, shall transmit alarm, supervisory and trouble signals descriptively to the approved central station, remote supervisory station or proprietary supervising station as defined in NFPA 72. Alarms shall not be permitted to be transmitted as a General Alarm or Zone condition.

**Section 910.1, General: Exception 2 is amended to read as follows:**

- 2) Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, only manual smoke and heat vents shall be required within these areas. Automatic smoke and heat vents are prohibited.

**Section 910.2.3, Group H and Section 910.2.4 Exit access travel distance increase: added to read as follows:**

910.2.3 Group H. Buildings and portions thereof used as a Group H occupancy as follows:

- 1) In occupancies classified as Group H-2 or H-3, any of which are more than 15,000 square feet (1394 m<sup>2</sup>) in single floor area.

Exceptions:

- 1) Buildings of noncombustible construction containing only noncombustible materials.
- 2) In areas of buildings in Group H used for storing Class 2, 3 and 4 liquid and solid oxidizers, Class 1 and unclassified detonable organic peroxides, Class 3 and 4 unstable (reactive) materials, or Class 2 or 3 water reactive materials as required for a high-hazard commodity classification.

910.2.4 Exit access travel distance increase: Buildings and portions thereof used as a Group F-1 or S-1 occupancy where the maximum exit access travel distance is increased in accordance with Section 1016.3.

**Table 910.3, Requirements for Draft Curtains and Smoke and Heat Vents: change the title of the first row of the table from “Group F-1 and S-1” to include “Group H” and to read as follows:**

The automatic operating mechanism of the smoke and heat vents shall operate at a temperature rating at least 100 degrees F (approximately 38 degrees Celsius) greater than the temperature rating of the sprinklers installed.

**Section 912.2.3, Hydrant distance: added to read as follows:**

[F] 912.2.3 Hydrant distance. An approved fire hydrant shall be located within 100 feet of the fire department connection as the fire hose lays.

Exception: The distance described herein may be increased by the fire code official for cause.

**Section 913.1, General: add second paragraph and exception to read as follows:**

When located on the ground level at an exterior wall, the fire pump room shall be provided with an exterior fire department access door that is not less than 3 ft. in width and 6 ft. 8 in. in height, regardless of any interior doors that are provided. Key box shall be provided at this door, as required by Section 506.1.

Exception: When it is necessary to locate the fire pump room on other levels or not at an exterior wall, the corridor leading to the fire pump room access from the exterior of the building shall be provided with the equivalent fire resistance as that required for the pump room, or as approved by the fire code official. Access keys shall be provided in the key box as required by Section 506.1.

**Section 1004.1.1, Areas without fixed seating: exception is deleted.**

**Section 1004.2, Increased occupant load: is amended to read as follows:**

1004.2 Increased occupant load - When approved by the code official's, the occupant load permitted in any building.... {Remainder of section is unchanged}."

**Section 1007.1, Accessible means of egress required: add exception 4 to read as follows:**

- 4) Buildings regulated under State Law and built in accordance with State registered plans, including any variances or waivers granted by the State, shall be deemed to be in compliance with the requirements of Section 1007.

**Section 1008.1.4.4, Access-controlled egress doors: add a sentence at the end of item 3 and add items 7 and 8 to read as follows:**

- 3) Is amended to add the following to the end of the paragraph. "A push to exit button is not permitted on an exit door requiring panic hardware which is installed after the effective date of this code. A touch bar or other approved method to provide a direct interruption of power to the lock is required.
- 7) If a full building smoke detection system is not provided, approved smoke detectors shall be provided on both the access and egress sides of doors and at a location approved by the fire code official in accordance with NFPA 72. Actuation of a smoke detector shall automatically unlock the door.

- 8) When required by the fire code official, a Knox gate key switch or an approved toggle switch located inside a Knox key box must be installed at an approved location to permit an emergency override of any magnetic locking device system.

**Section 1008.1.9.3, Locks and latches: add item 3.1 to read as follows:**

3.1 Where egress doors are used in pairs and positive latching is required, approved automatic flush bolts shall be permitted to be used, provided that both leaves achieve positive latching regardless of the closing sequence and the door leaf having the automatic flush bolts has no doorknobs or surface mounted hardware.

**Section 1008.1.9.4, Bolt locks: change exceptions 3 and 4 to read as follows:**

Exceptions:

- 3) Where a pair of doors serves an occupant load of less than 50 persons in a Group B, F, M or S occupancy, ... {remainder of section unchanged}.
- 4) Where a pair of doors serves a Group B, F, M or S occupancy. (remainder text unchanged)

Section 1008.1.9.8, Electromagnetically locked egress doors: change to read as follows:

1008.1.9.8 Electromagnetically locked egress doors. Doors in the means of egress that are not otherwise required to have panic hardware in buildings with an occupancy in Group A, B, E, I-1, I-2, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, I-1, M, R-1 or R-2 shall be permitted to be electromagnetically locked if equipped with listing hardware that incorporates a built-in switch and meet the requirements below: (remaining text unchanged).

**Section 1008.1.9.10, Stairway doors: change exception 3 to read as follows:**

- 3) In stairways serving not more than four (4) stories, 50% of the doors are permitted to be locked from the side opposite the egress side, provided they are operable from the egress side...{remainder of paragraph unchanged}. The use of this exception is permitted only upon approval of the fire code official.

**Section 1011.1.1 is added to read as follows:**

Where exit signs are required by section 1011.1, additional approved exit signs that are internally or externally laminated, photo-luminescent or self-luminous shall be required in all corridors serving guestrooms of R-1 and R-2 occupancies. The bottom of each sign shall be placed not less than six (6) inches nor more than eight (8) inches above the floor level and shall indicate the path of exit and exit access doors, the sign shall be on the

door or adjacent to the door with the closest edge of the sign within four (4) inches of the door frame.

**Section 1006.2.2.6, Electrical Rooms is added to read as follows:**

1006.2.2.6 Electrical Rooms. For electrical rooms, special exiting requirements may apply. Reference the electrical code as adopted.

**Section 1011.5.2 Riser height and tread depth: change exception 4 to read as follows:**

- 4) See 3404.1 for the replacement of existing *stairways*.

**Section 1016.3, Roof Vent Increase is added to read as follows:**

1016.3 Roof Vent Increase. In buildings that are one story in height, equipped with automatic heat and smoke vents complying with section 910 and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the maximum exit access travel distance shall be 400 feet for occupancies in Group F-1 or S-1.

**Section 1018.1, Construction: is amended by adding the following to the end of the first paragraph:**

Corridors shall be fire-resistance rated in accordance with table 1018.1. The corridor walls required to be fire-resistance rated shall comply with Section 709 for fire partitions. "An approved smoke detection system is required in any corridor or common atmosphere within the corridor if any of the corridor provisions of Table 1018.1 referencing a rated corridor of less than one hour is used. The actuation of any detector shall activate alarms audible in all areas served by the corridor."

**Section 1018.6, Corridor Continuity: is amended to read as follows:**

1018.6, Corridor Continuity. All corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms.

**Section 1022.1, Enclosures required: add exceptions 8 and 9 to read as follows:**

- 8) In other than occupancy Groups H and I, a maximum of 50 percent of egress stairways serving one adjacent floor are not required to be enclosed, provided at least two means of egress are provided from both floors served by the unenclosed stairways. Any two such interconnected floors shall not be open to other floors.
- 9) In other than occupancy Groups H and I, interior egress stairways serving only the first and second stories of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 are not required to be

enclosed, provided at least two means of egress are provided from both floors served by the unenclosed stairways. Such interconnected stories shall not be open to other stories.

**Section 1022.9, Smoke proof enclosures and pressurized enclosures: is amended to read as follows:**

1022.9 Smoke proof enclosures and pressurized enclosures. In buildings required to comply with Section 403 or 405, each of the exit enclosures serving a story with a floor service not more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access or more than 30 feet (9 144 mm) below...{remainder of section unchanged}.

**Section 1024.1, General: is amended to read as follows:**

1024.1: General. Approved luminous egress path markings delineating the exit path shall be provided in buildings of Groups A, B, E, I, M and R-1 having occupied floors located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access in accordance with...{remaining text unchanged}.

**Section 1026.6, Exterior ramps and stairway protection: Exception 4 is amended to read as follows:**

Exceptions:

- 4) Separation from the open-ended corridors of the building ... (remaining text unchanged)

**Section 1101.2, Design: add an exception to read as follows:**

Exception: Buildings regulated under State Law and built in accordance with State certified plans, including any variances or waivers granted by the State, shall be deemed to be in compliance with the requirements of this Chapter.

**Section 1101.1 Scope: add an exception to read as follows:**

Exception: Buildings regulated under State Law and built in accordance with State registered plans, including and variances or waivers granted by the State, shall be deemed to be in compliance with the requirements of the Chapter.

**Table 1505.1, Minimum Roof Covering Classification for Types of Construction: change footnotes b to read as follows and delete footnote c:**

- b) All individual replacement shingles shall be in compliance with the rating required by this table.

**Section 1505.6, Fire-retardant-treated wood shingles and shakes and 1505.7, Special purpose roofs: are deleted.**

**Sections 1507.8, Roof Insulation; 1507.9, Rooftop Structures; and 1507.10, Reroofing: are deleted.**

**Section 2308.4.3 Application to engineered design is added to read as follows:**

2308.4.3 Application to engineered design. When accepted by the Building Official, any portion of this section is permitted to apply to buildings that are otherwise outside the limitations of this section provided that:

- 1) The resulting design will comply with the requirements specified in Chapter 16;
- 2) The load limitations of various elements of this section are not exceeded; and
- 3) The portions of this section which will apply are identified by an engineer in the construction documents.

**Section 2901.1, Scope: is amended by adding a sentence to read as follows:**

The provisions of this Chapter are meant to work in coordination with the provisions of Chapter 4 of the International Plumbing Code. Should any conflicts arise between the two chapters, the Building Official shall determine which provision applies.

**Section 2902.1, Minimum number of fixtures: is amended to read as follows:**

2902.1 Minimum number of fixtures. Plumbing fixtures shall be provided for the type of occupancy and in the minimum number as follows:

- 1) Assembly Occupancies: At least one drinking fountain shall be provided at each floor level in an approved location.

Exception: A drinking fountain need not be provided in a drinking or dining establishment.

- 2) Groups A, B, F, H, I, M and S Occupancies: Buildings or portions thereof where persons are employed shall be provided with at least one water closet for each sex except as provided for in Section 2902.2.
- 3) Group E Occupancies: Shall be provided with fixtures as shown in Table 2902.1.
- 4) Group R Occupancies: Shall be provided with fixtures as shown in Table 2902.1.

It is recommended, but not required, that the minimum number of fixtures provided also comply with the number shown in Table 2902.1. Types of occupancies not shown in Table 2902.1 shall be considered individually by the building official. The number of occupants shall be determined by this code. Occupancy classification shall be determined in accordance with Chapter 3.

**Section 2902.2, Separate facilities: Exception 3 is amended to read as follows:**

- 3) Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or less.

**Section 3006.1, General: add to read as follows and renumber remaining sections:**

3006.1, General. Elevator machine rooms shall be provided.

**Section 3006.5 (formerly Section 3006.4), Machine rooms and machinery spaces: change to read as follows and delete exceptions 1 and 2:**

3006.5. Machine Rooms. (text unchanged)... Storage shall not be allowed within the elevator machine room. Provide approved signage at each entry door to the elevator machine room stating "Elevator Machinery-No Storage Allowed."

**Section 3109.1 is amended to read as follows:**

3109.1 General. Swimming pools shall comply with the requirements of this section, the International Swimming Pool and Spa Code, and other applicable sections of this code as well as also complying with applicable state laws.

**Chapter 34; Insert Chapter 34 as follows:**

**SECTION 3401 GENERAL**

**3401.1 Scope.** The provisions of this chapter shall control the *alteration*, repair, *addition* and change of occupancy of existing buildings and structures.

Exception: Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

**3401.2 Maintenance.** Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices or safeguards which are required by this code shall be maintained in conformance with the code edition under which installed. The owner or the owner's designated agent shall be responsible for the maintenance of buildings and structures. To determine compliance with this subsection, the *building official* shall have the authority to require a building or structure to be re-inspected. The requirements of this chapter shall not provide the basis for removal or abrogation of fire protection and safety

systems and devices in existing buildings and structures.

**3401.3 Compliance.** Alterations, repairs, additions and changes of occupancy to existing buildings and structures shall comply with the provisions for alterations, repairs, buildings and additions and changes of occupancy in the *International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Residential Code* and the Electrical Code.

**3401.4 Building materials.** Building materials shall comply with the requirements of this section.

**3401.4.1 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *building official* to be dangerous to life, health or safety. Where such conditions are determined to be dangerous to life, health or safety, they shall be mitigated or made safe.

**3401.4.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not *permit* their use in buildings of similar occupancy, purpose and location.

**3401.5 Alternative compliance.** When *approved* prior to the start of work, work performed in accordance with the *International Existing Building Code* shall be deemed to comply with the provisions of this chapter.

## SECTION

## 3402

## DEFINITIONS

**3402.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in the code, have the meanings shown herein.

**DANGEROUS.** Any building or structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

- 1) The building or structure has collapsed, partially collapsed, moved off its foundation or lacks the support of ground necessary to support it.
- 2) There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the building or structure under service loads.

**EXISTING STRUCTURE.** A structure erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

**PRIMARY FUNCTION.** A *primary function* is a major activity for which the facility is intended. Areas that contain a *primary function* include, but are not limited to, the customer service lobby of a bank, the dining area of a cafeteria, the meeting rooms in a conference center, as well as offices and other work areas in which the activities of the public accommodation or other private entity using the facility are carried out. Mechanical rooms, boiler rooms, supply storage rooms, employee lounges or locker rooms, janitorial closets, entrances, corridors and restrooms are not areas containing a *primary function*.

**SUBSTANTIAL STRUCTURAL DAMAGE.** A condition where:

- 1) In any *story*, the vertical elements of the lateral force-resisting system have suffered damage such that the lateral load-carrying capacity of the structure in any horizontal direction has been reduced by more than 20 percent from its pre-damage condition; or
- 2) The capacity of any vertical gravity load-carrying component, or any group of such components, that supports more than 30 percent of the total area of the structure's floor(s) and roof(s) has been reduced more than 20 percent from its pre-damage condition and the remaining capacity of such affected elements, with respect to all dead and live loads, is less than 75 percent of that required by this code for new buildings of similar structure, purpose and location.

**TECHNICALLY INFEASIBLE.** An *alteration* of a building or a facility that has little likelihood of being accomplished because the existing structural conditions require the removal or *alteration* of a load-bearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features which are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility.

## SECTION 3403 ADDITIONS

**3403.1 General.** Additions to any building or structure shall comply with the requirements of this code for new construction. Alterations to the existing building or structure shall be made to ensure that the existing building or structure together with the *addition* are no less conforming with the provisions of this code than the existing building or structure was prior to the *addition*. An existing building together with its additions shall comply with the height and area provisions of Chapter 5.

**3403.2 Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1612, any *addition* that constitutes substantial improvement of the *existing structure*, as defined in this code, shall comply with the flood design

requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612, any additions that do not constitute substantial improvement or substantial damage of the *existing structure*, as defined in this code, are not required to comply with the flood design requirements for new construction.

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

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

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

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

**3403.4.1 Seismic.** Seismic requirements for additions shall be in accordance with this section. Where the existing seismic force-resisting system is a type that can be designated ordinary, values of  $R$ ,  $\Omega_0$  and  $C_d$  for the existing seismic force-resisting

system shall be those specified by this code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.

## SECTION 3404 ALTERATIONS

**3404.1 General.** Except as provided by Section 3401.4 or this section, alterations to any building or structure shall comply with the requirements of the code for new construction. Alterations shall be such that the existing building or structure is no less complying with the provisions of this code than the existing building or structure was prior to the *alteration*.

### Exceptions:

- 1) An existing *stairway* shall not be required to comply with the requirements of Section 1011 where the existing space and construction does not allow a reduction in pitch or slope.
- 2) Handrails otherwise required to comply with Section 1011.11 shall not be required to comply with the requirements of Section 1014.6 regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.

**3404.2 Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1612, any *alteration* that constitutes substantial improvement of the existing structure, as defined in this code, shall comply with the flood design requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612, any alterations that do not constitute substantial improvement or substantial damage of the existing structure, as defined in this code, are not required to comply with the flood design requirements for new construction.

**3404.3 Existing structural elements carrying gravity load.** Any existing gravity load-carrying structural element for which an *alteration* causes an increase in design gravity load of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by this code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the *alteration* shall be shown to have the capacity to resist the applicable design gravity loads required by this code for new structures.

**3404.3.1 Design live load.** Where the *alteration* does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated

and designed for live loads *approved* prior to the *alteration*. If the *approved* live load is less than that required by Section 1607, the area designed for the nonconforming live load shall be posted with placards of *approved* design indicating the *approved* live load. Where the *alteration* does result in increased design live load, the live load required by Section 1607 shall be used.

**3404.4 Existing structural elements carrying lateral load.** Except as permitted by Section 3404.5, where the *alteration* increases design lateral loads in accordance with Section 1609 or 1613, or where the *alteration* results in a structural irregularity as defined in ASCE 7, or where the *alteration* decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall be shown to meet the requirements of Sections 1609 and 1613.

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

**3404.4.1 Seismic.** Seismic requirements for alterations shall be in accordance with this section. Where the existing seismic force-resisting system is a type that can be designated ordinary, values of  $R$ ,  $\Omega_0$  and  $C_d$  for the existing seismic force-resisting system shall be those specified by this code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.

**3404.5 Voluntary seismic improvements.** Alterations to existing structural elements or additions of new structural elements that are not otherwise required by this chapter and are initiated for the purpose of improving the performance of the seismic force-resisting system of an *existing structure* or the performance of seismic bracing or anchorage of existing nonstructural elements shall be permitted, provided that an engineering analysis is submitted demonstrating the following:

- 1) The altered structure and the altered nonstructural elements are no less in compliance with the provisions of this code with respect to earthquake design than they were prior to the *alteration*.
- 2) New structural elements are detailed and connected to the existing structural elements as required by Chapter 16.
- 3) New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by Chapter 16.

- 4) The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

**3404.6 Means of egress capacity factors.** Alterations to any existing building or structure shall not be affected by the egress width factors in Section 1005.3 for new construction in determining the minimum egress widths or the minimum number of exits in an existing building or structure. The minimum egress widths for the components of the *means of egress* shall be based on the *means of egress* width factors in the building code under which the building was constructed, and shall be considered as complying *means of egress* for any *alteration* if, in the opinion of the *building official*, they do not constitute a distinct hazard to life.

## SECTION 3405 REPAIRS

**3405.1 General.** Buildings and structures, and parts thereof, shall be repaired in compliance with this section and Section 3401.2. Work on non-damaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the requirements for alterations in this chapter. Routine maintenance required by Section 3401.2, ordinary repairs exempt from *permit* in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

**3405.1.1 Dangerous conditions.** Regardless of the extent of structural or nonstructural damage, the *building official* shall have the authority to require the elimination of conditions deemed dangerous.

**3405.2 Substantial structural damage to vertical elements of the lateral-force-resisting system.** A building that has sustained substantial structural damage to the vertical elements of its lateral-force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 3405.2.1 through 3405.2.3.

**3405.2.1 Evaluation.** The building shall be evaluated by a *registered design professional*, and the evaluation findings shall be submitted to the *building official*. The evaluation shall establish whether the damaged building, if repaired to its pre-damage state, would comply with the provisions of this code for wind and earthquake loads. Evaluation for earthquake loads shall be required if the substantial structural damage was caused by earthquake effects or if the building is in Seismic Design Category C, D, E or F.

Wind loads for this evaluation shall be those prescribed in Section 1609. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613. Values of  $R$ ,  $\Omega_0$  and  $C_d$  for the existing seismic force-resisting system shall be those specified by this code for an ordinary system unless it is

demonstrated that the existing system will provide performance equivalent to that of an intermediate or special system.

**3405.2.2 Extent of repair for compliant buildings.** If the evaluation establishes compliance of the pre-damage building in accordance with Section 3405.2.1, then repairs shall be permitted that restore the building to its pre-damage state using materials and strengths that existed prior to the damage.

**3405.2.3 Extent of repair for noncompliant buildings.** If the evaluation does not establish compliance of the pre-damage building in accordance with Section 3405.2.1, then the building shall be rehabilitated to comply with applicable provisions of this code for load combinations, which include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by the code in effect at the time of original construction or as required by this code, whichever are greater. Earthquake loads for this rehabilitation design shall be those required for the design of the pre-damage building, but not less than 75 percent of those prescribed in Section 1613. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

**3405.3 Substantial structural damage to gravity load-carrying components.** Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions of this code for dead and live loads. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Existing gravity load-carrying structural elements shall be permitted to be designed for live loads *approved* prior to the damage. Non-damaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated or shown to have the capacity to carry the design loads of the rehabilitation design. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

**3405.3.1 Lateral force-resisting elements.** Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 3405.2.1 and, if noncompliant, rehabilitated in accordance with Section 3405.2.3.

**3405.4 Less than substantial structural damage.** For damage less than substantial structural damage, repairs shall be allowed that restore the building to its pre-damage state using materials and strengths that existed prior to the damage. New structural members and connections used for this repair shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

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

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

## SECTION 3406 FIRE ESCAPES

**3406.1 Where permitted.** Fire escapes shall be permitted only as provided for in Sections 3406.1.1 through 3406.1.4.

**3406.1.1 New buildings.** Fire escapes shall not constitute any part of the required *means of egress* in new buildings.

**3406.1.2 Existing fire escapes.** Existing fire escapes shall be continued to be accepted as a component in the *means of egress* in existing buildings only.

**3406.1.3 New fire escapes.** New fire escapes for existing buildings shall be permitted only where exterior *stairs* cannot be utilized due to lot lines limiting *stair* size or due to the sidewalks, alleys or roads at grade level. New fire escapes shall not incorporate ladders or access by windows.

**3406.1.4 Limitations.** Fire escapes shall comply with this section and shall not constitute more than 50 percent of the required number of exits nor more than 50 percent of the required *exit* capacity.

**3406.2 Location.** Where located on the front of the building and where projecting beyond the building line, the lowest landing shall not be less than 7 feet (2134 mm) or more than 12 feet (3658 mm) above grade, and shall be equipped with a counterbalanced stairway to the street. In alleyways and thoroughfares less than 30 feet (9144 mm) wide, the clearance under the lowest landing shall not be less than 12 feet (3658 mm).

**3406.3 Construction.** The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other *approved* noncombustible materials. Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Type III and IV construction are permitted to be of wood not less than nominal 2 inches (51

mm)thick.

**3406.4 Dimensions.** Stairs shall be at least 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm) and landings at the foot of stairs not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long, located not more than 8 inches (203 mm) below the door.

**3406.5 Opening protectives.** Doors and windows along the fire escape shall be protected with <sup>3</sup>/<sub>4</sub>-hour opening protectives.

## SECTION 3407 GLASS REPLACEMENT

**3407.1 Conformance.** The installation or replacement of glass shall be as required for new installations.

## SECTION 3408 CHANGE OF OCCUPANCY

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

**3408.2 Certificate of occupancy.** A certificate of occupancy shall be issued where it has been determined that the requirements for the new occupancy classification have been met.

**3408.3 Stairways.** An existing stairway shall not be required to comply with the requirements of Section 1011 where the existing space and construction does not allow a reduction in pitch or slope.

**3408.4 Seismic.** When a change of occupancy results in a structure being reclassified to a higher occupancy category, the structure shall conform to the seismic requirements for a new structure of the higher occupancy category. Where the existing seismic force-resisting system is a type that can be designated ordinary, values of  $R$ ,  $\Omega_0$  and  $C_d$  for the existing seismic force-resisting system shall be those specified by this code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.

### **Exceptions:**

- 1) Specific seismic detailing requirements of Section 1613 for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, over strength, redundancy and ductility of the structure.
- 2) When a change of use results in a structure being reclassified from Occupancy Category I or II to Occupancy Category III and the structure is located where the seismic coefficient  $S_{DS}$  is less than 0.33, compliance with the seismic requirements of Section 1613 is not required.

## **SECTION 3409 HISTORIC BUILDINGS**

**3409.1 Historic buildings.** The provisions of this code relating to the construction, repair, *alteration*, *addition*, restoration and movement of structures, and change of occupancy shall not be mandatory for *historic buildings* where such buildings are judged by the *building official* to not constitute a distinct life safety hazard.

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

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

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

## **SECTION 3410 MOVED STRUCTURES**

**3410.1 Conformance.** Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

## **SECTION 3411 ACCESSIBILITY FOR EXISTING BUILDINGS**

**3411.1 Scope.** The provisions of Sections 3411.1 through 3411.9 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as *historic buildings*.

**Exception:** Type B *dwelling* or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities being altered or undergoing a change of occupancy.

**3411.2 Maintenance of facilities.** A building, facility or element that is constructed or altered to be *accessible* shall be maintained *accessible* during occupancy.

**3411.3 Extent of application.** An *alteration* of an existing element, space or area of a building or facility shall not impose a requirement for greater accessibility than that which would be required for new construction.

Alterations shall not reduce or have the effect of reducing accessibility of a building, portion of a building or facility.

**3411.4 Change of occupancy.** Existing buildings that undergo a change of group or occupancy shall comply with this section.

**3411.4.1 Partial change in occupancy.** Where a portion of the building is changed to a new occupancy classification, any alterations shall comply with Sections 3411.6, 3411.7 and 3411.8.

**3411.4.2 Complete change of occupancy.** Where an entire building undergoes a change of occupancy, it shall comply with Section 3411.4.1 and shall have all of the following *accessible* features:

- 1) At least one *accessible* building entrance.
- 2) At least one *accessible* route from an *accessible* building entrance to *primary function* areas.
- 3) Signage complying with Section 1111.
- 4) Accessible parking, where parking is being provided.
- 5) At least one *accessible* passenger loading zone, when loading zones are provided.
- 6) At least one *accessible* route connecting *accessible* parking and *accessible* passenger loading zones to an *accessible* entrance.

Where it is *technically infeasible* to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

**3411.5 Additions.** Provisions for new construction shall apply to additions. An *addition* that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in Section 3411.7.

**3411.6 Alterations.** A building, facility or element that is altered shall comply with the applicable provisions in Chapter 11 of this code and ICC A117.1, unless *technically infeasible*. Where compliance with this section is *technically infeasible*, the *alteration* shall provide access to the maximum extent technically feasible. Texas Accessibility Standards shall have precedence as required by state law.

**Exceptions:**

- 1) The altered element or space is not required to be on an *accessible* route, unless required by Section 3411.7.
- 2) *Accessible means of egress* required by Chapter 10 are not required to be provided in existing buildings and facilities.
- 3) The *alteration* to Type A individually owned *dwelling* units within a Group R-2 occupancy shall meet the provision for a Type B *dwelling* unit and shall comply with the applicable provisions in Chapter 11 and ICC A117.1.

**3411.7 Alterations affecting an area containing a primary function.** Where an *alteration* affects the accessibility to, or contains an area of *primary function*, the route to the *primary function* area shall be *accessible*. The *accessible* route to the *primary function* area shall include toilet facilities or drinking fountains serving the area of *primary function*.

**Exceptions:**

- 1) The costs of providing the *accessible* route are not required to exceed 20 percent of the costs of the *alterations* affecting the area of *primary function*.
- 2) This provision does not apply to *alterations* limited solely to windows, hardware, operating controls, electrical outlets and signs.
- 3) This provision does not apply to *alterations* limited solely to mechanical systems, electrical systems, installation or *alteration* of fire protection systems and abatement of hazardous materials.

4) This provision does not apply to *alterations* undertaken for the primary purpose of increasing the accessibility of an existing building, facility or element.

**3411.8 Scoping for alterations.** The provisions of Sections 3411.8.1 through 3411.8.14 shall apply to alterations to existing buildings and facilities.

**3411.8.1 Entrances.** Accessible entrances shall be provided in accordance with Section 1105.

**Exception:** Where an *alteration* includes alterations to an entrance, and the building or facility has an *accessible* entrance, the altered entrance is not required to be *accessible*, unless required by Section 3411.7. Signs complying with Section 1110 shall be provided.

**3411.8.2 Elevators.** Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

**3411.8.3 Platform lifts.** Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an *accessible* route.

**3411.8.4 Stairs and escalators in existing buildings.** In *alterations*, change of occupancy or *additions* where an escalator or *stair* is added where none existed previously and major structural modifications are necessary for installation, an *accessible* route shall be provided between the levels served by the escalator or *stairs* in accordance with Sections 1104.4 and 1104.5.

**3411.8.5 Ramps.** Where slopes steeper than allowed by Section 1012.2 are necessitated by space limitations, the slope of ramps in or providing access to existing buildings or facilities shall comply with Table 3411.8.5.

**TABLE 3411.8.5 RAMPS**

<b>SLOPE</b>	<b>MAXIMUM RISE</b>
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches

For SI: 1 inch = 25.4 mm.

**3411.8.6 Performance areas.** Where it is *technically infeasible* to alter performance areas to be on an *accessible* route, at least one of each type of performance area shall be made *accessible*.

**3411.8.7 Accessible dwelling or sleeping units.** Where Group I-1, I-2, I-3, R-1, R-2 or R-4 *dwelling or sleeping units* are being altered or added, the requirements of Section 1107 for *Accessible* units apply only to the quantity of spaces being altered or added.

**3411.8.8 Type A dwelling or sleeping units.** Where more than 20 Group R-2 *dwelling or sleeping units* are being added, the requirements of Section 1107 for *Type A* units apply only to the quantity of the spaces being added.

**3411.8.9 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 *dwelling or sleeping units* are being added, the requirements of Section 1107 for *Type B* units apply only to the quantity of the spaces being added.

**3411.8.10 Jury boxes and witness stands.** In *alterations*, *accessible* wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the *means of egress*.

**3411.8.11 Toilet rooms.** Where it is *technically infeasible* to alter existing toilet and bathing facilities to be *accessible*, an *accessible* family or assisted-use toilet or bathing facility constructed in accordance with Section 1109.2.1 is permitted. The family or assisted-use facility shall be located on the same floor and in the same area as the existing facilities.

**3411.8.12 Dressing, fitting and locker rooms.** Where it is *technically infeasible* to provide *accessible* dressing, fitting or locker rooms at the same location as similar types of rooms, one *accessible* room on the same level shall be provided. Where separate-sex facilities are provided, *accessible* rooms for each sex shall be provided. Separate-sex facilities are not required where only unisex rooms are provided.

**3411.8.13 Fuel dispensers.** Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

**3411.8.14 Thresholds.** The maximum height of thresholds at doorways shall be  $\frac{3}{4}$  inch (19.1 mm). Such thresholds shall have beveled edges on each side.

**3411.9 Historic buildings.** These provisions shall apply to buildings and facilities designated as historic structures that undergo alterations or a change of occupancy, unless *technically infeasible*. Where compliance with the requirements for *accessible* routes, entrances or toilet facilities would threaten or destroy the historic significance of the building or facility, as determined by the applicable governing authority, the alternative requirements of Sections 3411.9.1 through 3411.9.4 for that element shall be permitted.

**3411.9.1 Site arrival points.** At least one *accessible* route from a site arrival point to an *accessible* entrance shall be provided.

**3411.9.2 Multilevel buildings and facilities.** An *accessible* route from an *accessible* entrance to public spaces on the level of the *accessible* entrance shall be provided.

**3411.9.3 Entrances.** At least one main entrance shall be *accessible*.

**Exceptions:**

- 1) If a main entrance cannot be made *accessible*, an *accessible* nonpublic entrance that is unlocked while the building is occupied shall be provided; or
- 2) If a main entrance cannot be made *accessible*, a locked *accessible* entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1111 shall be provided at the primary entrance and the *accessible* entrance.

**3411.9.4 Toilet and bathing facilities.** Where toilet rooms are provided, at least one *accessible* family or assisted-use toilet room complying with Section 1109.2.1 shall be provided.

## **SECTION 3412 COMPLIANCE ALTERNATIVES**

**3412.1 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 3409, except where compliance with other provisions of this code is specifically required in this section.

**3412.2 Applicability.** Structures existing prior to January 1, 1953 in which there is work involving additions, alterations or changes of occupancy shall be made to comply with the requirements of this section or the provisions of Sections 3403 through 3409. The provisions in Sections 3412.2.1 through 3412.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, S and U. These provisions shall not apply to buildings with occupancies in Group H or I.

**3412.2.1 Change in occupancy.** Where an existing building is changed to a new occupancy classification and this section is applicable, the provisions of this section for the new occupancy shall be used to determine compliance with this code.

**3412.2.2 Partial change in occupancy.** Where a portion of the building is changed to a new occupancy classification, and that portion is separated from the remainder of the building with fire barriers or horizontal assemblies having a *fire-resistance rating* as required by Table 508.4 for the separate occupancies, or with *approved* compliance alternatives, the portion changed shall be made to comply with the provisions of this section.

Where a portion of the building is changed to a new occupancy classification, and that portion is not separated from the remainder of the building with *fire barriers* or *horizontal assemblies* having a *fire-resistance rating* as required by Table 508.4 for the separate occupancies, or with *approved* compliance alternatives, the provisions of this section which apply to each occupancy shall apply to the entire building. Where there are conflicting provisions, those requirements which secure the greater public safety shall apply to the entire building or structure.

**3412.2.3 Additions.** *Additions* to existing buildings shall comply with the requirements of this code for new construction. The combined height and area of the existing building and the new *addition* shall not exceed the height and area allowed by Chapter 5. Where a *fire wall* that complies with Section 706 is provided between the *addition* and the existing building, the *addition* shall be considered a separate building.

**3412.2.4 Alterations and repairs.** An existing building or portion thereof, which does not comply with the requirements of this code for new construction, shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. If, in the *alteration* or repair, the current level of safety or sanitation is to be reduced, the portion altered or repaired shall conform to the requirements of Chapters 2 through 12 and Chapters 14 through 33.

**3412.2.4.1 Flood hazard areas.** For existing buildings located in flood hazard areas established in Section 1612.3, if the *alterations* and repairs constitute substantial improvement of the existing building, the existing building shall be brought into compliance with the requirements for new construction for flood design.

**3412.2.5 Accessibility requirements.** All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of Section 3411.

**3412.3 Acceptance.** For repairs, alterations, additions and changes of occupancy to existing buildings that are evaluated in accordance with this section, compliance with this section shall be accepted by the *building official*.

**3412.3.1 Hazards.** Where the *building official* determines that an unsafe condition exists, as provided for in Section 116, such unsafe condition shall be abated in accordance with Section 116.

**3412.3.2 Compliance with other codes.** Buildings that are evaluated in accordance with this section shall comply with the *International Fire Code* and the *International Property Maintenance Code*.

**3412.4 Investigation and evaluation.** For proposed work covered by this section, the building owner shall cause the existing building to be investigated and evaluated in accordance with the provisions of this section.

**3412.4.1 Structural analysis.** The owner shall have a structural analysis of the existing building made to determine adequacy of structural systems for the proposed *alteration*, *addition* or change of occupancy. The analysis shall demonstrate that the building with the work completed is capable of resisting the loads specified in Chapter 16.

**3412.4.2 Submittal.** The results of the investigation and evaluation as required in Section 3412.4, along with proposed compliance alternatives, shall be submitted to the *building official*.

**3412.4.3 Determination of compliance.** The *building official* shall determine whether the existing building, with the proposed *addition*, *alteration* or change of occupancy, complies with the provisions of this section in accordance with the evaluation process in Sections 3412.5 through 3412.9.

**3412.5 Evaluation.** The evaluation shall be comprised of three categories: fire safety, means of egress and general safety, as defined in Sections 3412.5.1 through 3412.5.3.

**3412.5.1 Fire safety.** Included within the fire safety category are the structural *fire resistance*, automatic fire detection, fire alarm and fire suppression system features of the facility.

**3412.5.2 Means of egress.** Included within the means of egress category are the configuration, characteristics and support features for *means of egress* in the facility.

**3412.5.3 General safety.** Included within the general safety category are the fire safety parameters and the means of egress parameters.

**3412.6 Evaluation process.** The evaluation process specified herein shall be followed in its entirety to evaluate existing buildings. Table 3412.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 3412.6.16, the score for each occupancy shall be determined and the lower score determined for each section of the evaluation process shall apply to the entire building.

Where the separation between mixed occupancies qualifies for any category indicated in Section 3412.6.16, the score for each occupancy shall apply to each portion of the building based on the occupancy of the space.

**3412.6.1 Building height.** The value for building height shall be the lesser value determined by the formula in Section 3412.6.1.1. Chapter 5 shall be used to determine the allowable height of the building, including allowable increases due to automatic sprinklers if applicable. Subtract the actual *building height* in feet (mm) from the allowable height and divide by 12<sup>1/2</sup> feet (3810 mm). Enter the height value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.1, Building Height, for fire safety, means of egress and general safety. The maximum score for a building shall be 10.

**3412.6.1.1 Height formula.** The following formulas shall be used in computing the building height value.

$$\text{Height value, feet} = \frac{(AH) - (EBH)}{12.5} \times CF \quad \text{(Equation 34-1)}$$

$$\text{Height value, stories} = (AS - EBS) \times CF \quad \text{(Equation 34-2)}$$

where:

*AH* = Allowable height in feet (mm) from Table 503.

*EBH* = Existing *building height* in feet (mm).

*AS* = Allowable height in stories from Table 503.

*EBS* = Existing building height in stories.

*CF* = 1 if (*AH*) - (*EBH*) is positive.

*CF* = Construction-type factor shown in Table 3412.6.6(2) if (*AH*) - (*EBH*) is negative.

**Note:** Where mixed occupancies are separated and individually evaluated as indicated in Section 3412.6, the values *AH*, *AS*, *EBH* and *EBS* shall be based on the height of the occupancy being evaluated.

**3412.6.2 Building area.** The value for building area shall be determined by the formula in Section 3412.6.2.2. Section 503 and the formula in Section 3412.6.2.1 shall be used to determine the allowable area of the building. This shall include any allowable increases due to frontage and automatic sprinklers as provided for in Section 506. Subtract the

actual *building area* in square feet (m<sup>2</sup>) from the allowable area and divide by 1,200 square feet (111.5 m<sup>2</sup>). Enter the area value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.2, Building Area, for fire safety, means of egress and general safety. In determining the area value, the maximum permitted positive value for area is 50 percent of the fire safety score as *listed* in Table 3412.8, Mandatory Safety Scores.

**3412.6.2.1 Allowable area formula.** The following formula shall be used in computing allowable area:

$$A_a = (1 + I_f + I_s) \times A_t \quad \text{(Equation 34-3)}$$

where:

$A_a$  = Allowable area.

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

$I_s$  = Area increase factor for sprinklers (Section 506.3).

$I_f$  = Area increase factor for frontage (Section 506.2).

**3412.6.2.2 Area formula.** The following formula shall be used in computing the area value. Determine the area value for each occupancy floor area on a floor-by-floor basis. For each occupancy, choose the minimum area value of the set of values obtained for the particular occupancy.

$$\text{Area value } i = \frac{\text{Allowable area } i}{1,200 \text{ square feet}} \left[ 1 - \left( \frac{\text{Actual area } i}{\text{Allowable area } i} + \dots + \frac{\text{Actual area } n}{\text{Allowable area } n} \right) \right] \quad \text{(Equation 34-4)}$$

where:

$i$  = Value for an individual separated occupancy on a floor.

$n$  = Number of separated occupancies on a floor.

**3412.6.3 Compartmentation.** Evaluate the compartments created by *fire barriers or horizontal assemblies* that comply with Sections 3412.6.3.1 and 3412.6.3.2 and are exclusive of the wall elements considered under Sections 3412.6.4 and 3412.6.5. Conforming compartments shall be figured as the net area and do not include shafts, chases, stairways, walls or columns. Using Table 3412.6.3, determine the appropriate compartmentation value (CV) and enter that value

into Table 3412.7 under Safety Parameter 3412.6.3, Compartmentation, for fire safety, means of egress and general safety.

**TABLE 3412.6.3 COMPARTMENTATION VALUES**

OCCUPANCY	CATEGORIES <sup>a</sup>				
	a Compartment size equal to or greater than 15,000 square feet	b Compartment size of 10,000 square feet	c Compartment size of 7,500 square feet	d Compartment size of 5,000 square feet	e Compartment size of 2,500 square feet or less
A-1, A-3	0	6	10	14	18
A-2	0	4	10	14	18
A-4, B, E, S-2	0	5	10	15	20
F, M, R, S-1	0	4	10	16	22

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

a. For areas between categories, the compartmentation value shall be obtained by linear interpolation.

**3412.6.3.1 Wall construction.** A wall used to create separate compartments shall be a *fire barrier* conforming to Section 707 with a *fire-resistance rating* of not less than 2 hours. Where the building is not divided into more than one compartment, the compartment size shall be taken as the total floor area on all floors. Where there is more than one compartment within a *story*, each compartmented area on such *story* shall be provided with a horizontal *exit* conforming to Section 1025. The *fire door* serving as the horizontal *exit* between compartments shall be so installed, fitted and gasketed that such *fire door* will provide a substantial barrier to the passage of smoke.

**3412.6.3.2 Floor/ceiling construction.** A floor/ceiling assembly used to create compartments shall conform to Section 712 and shall have a *fire-resistance rating* of not less than 2 hours.

**3412.6.4 Tenant and dwelling unit separations.** Evaluate the *fire-resistance rating* of floors and walls separating tenants, including *dwelling* units, and not evaluated under Sections 3412.6.3 and 3412.6.5. Under the categories and occupancies in Table 3412.6.4, determine the appropriate value and enter that value in Table 3412.7 under Safety Parameter 3412.6.4, Tenant and Dwelling Unit Separations, for fire safety, means of egress and general safety.

**TABLE 3412.6.4 SEPARATION VALUES**

OCCUPANCY	CATEGORIES				
	a	b	c	d	e
A-1	0	0	0	0	1
A-2	-5	-3	0	1	3
A-3, A-4, B, E, F, M, S-1	-4	-3	0	2	4
R	-4	-2	0	2	4
S-2	-5	-2	0	2	4

**3412.6.4.1 Categories.** The categories for tenant and *dwelling* unit separations are:

- 1) Category a-No *fire partitions*; incomplete *fire partitions*; no doors; doors not self-closing or automatic-closing.
- 2) Category b-*Fire partitions* or floor assemblies with less than a 1-hour *fire-resistance rating* or not constructed in accordance with Sections 709 and 712, respectively.
- 3) Category c-*Fire partitions* with a 1-hour or greater *fire-resistance rating* constructed in accordance with Section 709 and floor assemblies with a 1-hour but less than 2-hour *fire-resistance rating* constructed in accordance with Section 712, or with only one tenant within the floor area.
- 4) Category d-*Fire barriers* with a 1-hour but less than 2-hour *fire-resistance rating* constructed in accordance with Section 707 and floor assemblies with a 2-hour or greater *fire-resistance rating* constructed in accordance with Section 712.
- 5) Category e-*Fire barriers* and floor assemblies with a 2-hour or greater *fire-resistance rating* and constructed in accordance with Sections 707 and 712, respectively.

**3412.6.5 Corridor walls.** Evaluate the *fire-resistance rating* and degree of completeness of walls which create corridors serving the floor, and constructed in accordance with Section 1018. This evaluation shall not include the wall elements considered under Sections 3412.6.3 and 3412.6.4. Under the categories and groups in Table 3412.6.5, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.5, Corridor Walls, for fire safety, means of egress and general safety.

**TABLE 3412.6.5 CORRIDOR WALL VALUES**

OCCUPANCY	CATEGORIES			
	a	b	c <sup>a</sup>	d <sup>a</sup>
A-1	-10	-4	0	2
A-2	-30	-12	0	2
A-3, F, M, R, S-1	-7	-3	0	2
A-4, B, E, S-2	-5	-2	0	5

a. Corridors not providing at least one-half the travel distance for all occupants on a floor shall use Category b.

**3412.6.5.1 Categories.** The categories for Corridor Walls are:

- 1) Category a-No fire partitions; incomplete fire partitions; no doors; or doors not self-closing.
- 2) Category b-Less than 1-hour *fire-resistance rating* or not constructed in accordance with Section 709.4.
- 3) Category c-1-hour to less than 2-hour *fire-resistance rating*, with doors conforming to Section 715 or without corridors as permitted by Section 1018.
- 4) Category d-2-hour or greater *fire-resistance rating*, with doors conforming to Section 715.

**3412.6.6 Vertical openings.** Evaluate the *fire-resistance rating* of exit enclosures, hoist ways, escalator openings and other shaft enclosures within the building, and openings between two or more floors. Table 3412.6.6(1) contains the appropriate protection values. Multiply that value by the construction type factor found in Table 3412.6.6(2). Enter the vertical opening value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.6, Vertical Openings, for fire safety, means of egress, and general safety. If the structure is a one-story building or if all the unenclosed vertical openings within the building conform to the requirements of Section 708, enter a value of 2. The maximum positive value for this requirement shall be 2.

**3412.6.6.1 Vertical opening formula.** The following formula shall be used in computing vertical opening value.

$$VO = PV \times CF \quad \text{(Equation 34-5)}$$

where:

VO = Vertical opening value.

PV = Protection value [Table 3412.6.6(1)].

CF = Construction type factor [Table 3412.6.6(2)].

**TABLE 3412.6.6(1) VERTICAL OPENING PROTECTION VALUE**

PROTECTION	VALUE
None (unprotected opening)	-2 times number floors connected
Less than 1 hour	-1 times number floors connected
1 to less than 2 hours	1
2 hours or more	2

**TABLE 3412.6.6(2) CONSTRUCTION-TYPE FACTOR**

	TYPE OF CONSTRUCTION								
	IA	IB	IIA	IIIB	IIIA	IIIB	IV	VA	VB
<b>FACTOR</b>	1.2	1.5	2.2	3.5	2.5	3.5	2.3	3.3	7

**3412.6.7 HVAC systems.** Evaluate the ability of the HVAC system to resist the movement of smoke and fire beyond the point of origin. Under the categories in Section 3412.6.7.1, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.7, HVAC Systems, for fire safety, means of egress and general safety.

**3412.6.7.1 Categories.** The categories for HVAC systems are:

- 1) Category a-Plenums not in accordance with Section 602 of the *International Mechanical Code*. -10 points.
- 2) Category b-Air movement in egress elements not in accordance with Section 1018.5. -5 points.
- 3) Category c-Both categories a and b are applicable. -15 points.

- 4) Category d-Compliance of the HVAC system with Section 1018.5 and Section 602 of the *International Mechanical Code*. 0 points.
- 5) Category e-Systems serving one *story*; or a central boiler/chiller system without ductwork connecting two or more stories. 5 points.

**3412.6.8 Automatic fire detection.** Evaluate the smoke detection capability based on the location and operation of automatic fire detectors in accordance with Section 907 and the *International Mechanical Code*. Under the categories and occupancies in Table 3412.6.8, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.8, Automatic Fire Detection, for fire safety, means of egress and general safety.

**TABLE 3412.6.8 AUTOMATIC FIRE DETECTION VALUES**

OCCUPANCY	CATEGORIES				
	A	b	c	d	E
A-1, A-3, F, M, R, S-1	-10	-5	0	2	6
A-2	-25	-5	0	5	9
A-4, B, E, S-2	-4	-2	0	4	8

**3412.6.8.1 Categories.** The categories for automatic fire detection are:

- 1) Category a-None.
- 2) Category b-Existing smoke detectors in HVAC systems and maintained in accordance with the *International Fire Code*.
- 3) Category c-Smoke detectors in HVAC systems. The detectors are installed in accordance with the requirements for new buildings in the *International Mechanical Code*.
- 4) Category d-Smoke detectors throughout all floor areas other than individual sleeping units, tenant spaces and *dwelling* units.
- 5) Category e-Smoke detectors installed throughout the floor area.

**3412.6.9 Fire alarm systems.** Evaluate the capability of the fire alarm system in accordance with Section 907. Under the categories and occupancies in Table 3412.6.9, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.9, Fire Alarm Systems, for fire safety, means of egress and general safety.

**TABLE 3412.6.9 FIRE ALARM SYSTEM VALUES**

OCCUPANCY	CATEGORIES			
	a	b <sup>a</sup>	C	D
A-1, A-2, A-3, A-4, B, E, R	-10	-5	0	5
F, M, S	0	5	10	15

a. For buildings equipped throughout with an automatic sprinkler system, add 2 points for activation by a sprinkler water-flow device.

**3412.6.9.1 Categories.** The categories for fire alarm systems are:

- 1) Category a-None.
- 2) Category b-Fire alarm system with manual fire alarm boxes in accordance with Section 907.3 and alarm notification appliances in accordance with Section 907.5.2.
- 3) Category c-Fire alarm system in accordance with Section 907.
- 4) Category d-Category c plus a required emergency voice/alarm communications system and a fire command center that conforms to Section 403.4.5 and contains the emergency voice/alarm communications system controls, fire department communication system controls and any other controls specified in Section 911 where those systems are provided.

**3412.6.10 Smoke control.** Evaluate the ability of a natural or mechanical venting, exhaust or pressurization system to control the movement of smoke from a fire. Under the categories and occupancies in Table 3412.6.10, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.10, Smoke Control, for means of egress and general safety.

**TABLE 3412.6.10 SMOKE CONTROL VALUES**

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	F
A-1, A-2, A-3	0	1	2	3	6	6
A-4, E	0	0	0	1	3	5
B, M, R	0	2 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>	4 <sup>a</sup>
F, S	0	2 <sup>a</sup>	2 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>

a. This value shall be 0 if compliance with Category d or e in Section 3412.6.8.1 has not been obtained.

**3412.6.10.1 Categories.** The categories for smoke control are:

- 1) Category a-None.
- 2) Category b-The building is equipped throughout with an *automatic sprinkler system*. Openings are provided in exterior walls at the rate of 20 square feet (1.86 m<sup>2</sup>) per 50 linear feet (15 240 mm) of *exterior wall* in each *story* and distributed around the building perimeter at intervals not exceeding 50 feet (15 240 mm). Such openings shall be readily openable from the inside without a key or separate tool and shall be provided with ready access thereto. In lieu of operable openings, clearly and permanently marked tempered glass panels shall be used.
- 3) Category c-One enclosed *exit stairway*, with ready access thereto, from each occupied floor of the building. The *stairway* has operable exterior windows and the building has openings in accordance with Category b.
- 4) Category d-One smoke-proof enclosure and the building has openings in accordance with Category b.
- 5) Category e-The building is equipped throughout with an *automatic sprinkler system*. Each floor area is provided with a mechanical air-handling system designed to accomplish smoke containment. Return and exhaust air shall be moved directly to the outside without recirculation to other floor areas of the building under fire conditions. The system shall exhaust not less than six air changes per hour from the floor area. Supply air by mechanical means to the floor area is not required. Containment of smoke shall be considered as confining smoke to the *fire area* involved without migration to other floor areas. Any other tested and *approved* design which will adequately accomplish smoke containment is permitted.
- 6) Category f-Each *stairway* shall be one of the following: a smoke-proof enclosure in accordance with Section 1022.9; pressurized in accordance with Section 909.20.5 or shall have operable exterior windows.

**3412.6.11 Means of egress capacity and number.** Evaluate the *means of egress* capacity and the number of exits available to the building occupants. In applying this section, the *means of egress* are required to conform to the following sections of this code: 1003.7, 1004, 1005.1, 1014.2, 1014.3, 1015.2, 1021, 1025.1, 1027.2, 1027.6, 1028.2, 1028.3, 1028.4 and 1029 [except that the minimum width required by this section shall be determined solely by the width for the required capacity in accordance with Table 3412.6.11(1)]. The number of exits credited is the number that is available to each

occupant of the area being evaluated. Existing fire escapes shall be accepted as a component in the *means of egress* when conforming to Section 3406. Under the categories and occupancies in Table 3412.6.11(2), determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.11, Means of Egress Capacity, for means of egress and general safety.

**TABLE 3412.6.11(1) EGRESS WIDTH PER OCCUPANT SERVED**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM		WITH SPRINKLER SYSTEM <sup>a</sup>	
	Stairways (inches per occupant)	Other egress components (inches per occupant)	Stairways (inches per occupant)	Other egress components (inches per occupant)
Occupancies other than those listed below	0.3	0.2	0.2	0.15
Hazardous: H-1, H-2, H-3 and H-4	Not Permitted	Not Permitted	0.3	0.2
Institutional: I-2	Not Permitted	Not Permitted	0.3	0.2

For SI: 1 inch = 25.4 mm.

a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

**TABLE 3412.6.11(2) MEANS OF EGRESS VALUES**

OCCUPANCY	CATEGORIES				
	a <sup>a</sup>	b	c	d	e
A-1, A-2, A-3, A-4, E	-10	0	2	8	10
B, F, S	-1	0	0	0	0
M	-3	0	1	2	4
R	-3	0	0	0	0

a. The values indicated are for buildings six stories or less in height. For buildings over six stories above grade plane, add an additional -10 points.

**3412.6.11.1 Categories.** The categories for Means of Egress Capacity and number of exits are:

- 1) Category a-Compliance with the minimum required *means of egress* capacity or number of exits is achieved through the use of a fire escape in accordance with Section 3406.
- 2) Category b-Capacity of the *means of egress* complies with Section 1004 and the number of exits complies with the minimum number required by Section 1021.
- 3) Category c-Capacity of the *means of egress* is equal to or exceeds 125 percent of the required *means of egress* capacity, the *means of egress* complies with the minimum required width dimensions specified in the code and the number of exits complies with the minimum number required by Section 1021.
- 4) Category d-The number of exits provided exceeds the number of exits required by Section 1021. Exits shall be located a distance apart from each other equal to not less than that specified in Section 1015.2.
- 5) Category e-The area being evaluated meets both Categories c and d.

**3412.6.12 Dead ends.** In spaces required to be served by more than one *means of egress*, evaluate the length of the *exit* access travel path in which the building occupants are confined to a single path of travel. Under the categories and occupancies in Table 3412.6.12, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.12, Dead Ends, for means of egress and general safety.

**TABLE 3412.6.12 DEAD-END VALUES**

OCCUPANCY	CATEGORIES <sup>a</sup>		
	A	b	c
A-1, A-3, A-4, B, E, F, M, R, S	-2	0	2
A-2, E	-2	0	2

a. For dead-end distances between categories, the dead-end value shall be obtained by linear interpolation.

**3412.6.12.1 Categories.** The categories for dead ends are:

- 1) Category a-Dead end of 35 feet (10 670 mm) in non-sprinklered buildings or 70 feet (21 340 mm) in sprinklered buildings.

- 2) Category b-Dead end of 20 feet (6096 mm); or 50 feet (15 240 mm) in Group B in accordance with Section 1018.4, Exception 2.
- 3) Category c - No dead ends; or ratio of length to width (l/w) is less than 2.5:1.

**3412.6.13 Maximum exit access travel distance.** Evaluate the length of *exit* access travel to an *approved exit*. Determine the appropriate points in accordance with the following equation and enter that value into Table 3412.7 under Safety Parameter 3412.6.13, Maximum *Exit* Access Travel Distance, for means of egress and general safety. The maximum allowable *exit* access travel distance shall be determined in accordance with Section 1016.1.

$$\text{Points} = 20 \times \frac{\text{Maximum allowable travel distance} - \text{Maximum actual travel distance}}{\text{Max. allowable travel distance}} \quad \text{(Equation 34-6)}$$

**3412.6.14 Elevator control.** Evaluate the passenger elevator equipment and controls that are available to the fire department to reach all occupied floors. Elevator recall controls shall be provided in accordance with the *International Fire Code*. Under the categories and occupancies in Table 3412.6.14, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.14, Elevator Control, for fire safety, means of egress and general safety. The values shall be zero for a single-story building.

**TABLE 3412.6.14 ELEVATOR CONTROL VALUES**

ELEVATOR TRAVEL	CATEGORIES			
	a	b	c	d
Less than 25 feet of travel above or below the primary level of elevator access for emergency fire-fighting or rescue personnel	-2	0	0	+2
Travel of 25 feet or more above or below the primary level of elevator access for emergency fire-fighting or rescue personnel	-4	NP	0	+4

For SI: 1 foot = 304.8 mm.

**3412.6.14.1 Categories.** The categories for elevator controls are:

- 1) Category a-No elevator.
- 2) Category b-Any elevator without Phase I and II recall.
- 3) Category c-All elevators with Phase I and II recall as required by the *International Fire Code*.
- 4) Category d-All meet Category c; or Category b where permitted to be without recall; and at least one elevator that complies with new construction requirements serves all occupied floors.

**3412.6.15 Means of egress emergency lighting.** Evaluate the presence of and reliability of means of egress emergency lighting. Under the categories and occupancies in Table 3412.6.15, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.15, Means of Egress Emergency Lighting, for means of egress and general safety.

**TABLE 3412.6.15 MEANS OF EGRESS EMERGENCY LIGHTING VALUES**

NUMBER OF EXITS REQUIRED BY SECTION 1015	CATEGORIES		
	A	b	c
Two or more exits	NP	0	4
Minimum of one exit	0	1	1

**3412.6.15.1 Categories.** The categories for means of egress emergency lighting are:

- 1) Category a-*Means of egress* lighting and *exit* signs not provided with emergency power in accordance with Chapter 27.
- 2) Category b-*Means of egress* lighting and *exit* signs provided with emergency power in accordance with Chapter 27.
- 3) Category c-Emergency power provided to *means of egress* lighting and *exit* signs which provides protection in the event of power failure to the site or building.

**3412.6.16 Mixed occupancies.** Where a building has two or more occupancies that are not in the same occupancy classification, the separation between the mixed occupancies shall be evaluated in accordance with this section. Where there is no separation between the mixed occupancies or the separation between mixed occupancies does not qualify for any of the categories indicated in Section 3412.6.16.1, the building shall be evaluated as indicated in Section 3412.6 and the value for mixed occupancies shall be zero. Under the categories and occupancies in Table 3412.6.16, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.16, Mixed Occupancies, for fire safety and general safety. For buildings without mixed occupancies, the value shall be zero.

**TABLE 3412.6.16 MIXED OCCUPANCY VALUES<sup>a</sup>**

OCCUPANCY	CATEGORIES		
	A	b	c
A-1, A-2, R	-10	0	10
A-3, A-4, B, E, F, M, S	-5	0	5

a. For fire-resistance ratings between categories, the value shall be obtained by linear interpolation.

**3412.6.16.1 Categories.** The categories for mixed occupancies are:

- 1) Category a—Occupancies separated by minimum 1-hour fire barriers or minimum 1-hour horizontal assemblies, or both.
- 2) Category b—Separations between occupancies in accordance with Section 508.4.
- 3) Category c—Separations between occupancies having a *fire-resistance rating* of not less than twice that required by Section 508.4.

**3412.6.17 Automatic sprinklers.** Evaluate the ability to suppress a fire based on the installation of an *automatic sprinkler system* in accordance with Section 903.3.1.1. "Required sprinklers" shall be based on the requirements of this code. Under the categories and occupancies in Table 3412.6.17, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.17, Automatic Sprinklers, for fire safety, *means of egress* divided by 2 and general safety.

**TABLE 3412.6.17 SPRINKLER SYSTEM VALUES**

OCCUPANCY	CATEGORIES					
	A	b	c	d	E	f

A-1, A-3, F, M, R, S-1	-6	-3	0	2	4	6
A-2	-4	-2	0	1	2	4
A-4, B, E, S-2	-12	-6	0	3	6	12

**3412.6.17.1 Categories.** The categories for automatic sprinkler system protection are:

- 1) Category a-Sprinklers are required throughout; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903.
- 2) Category b-Sprinklers are required in a portion of the building; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903.
- 3) Category c-Sprinklers are not required; none are provided.
- 4) Category d-Sprinklers are required in a portion of the building; sprinklers are provided in such portion; the system is one which complied with the code at the time of installation and is maintained and supervised in accordance with Section 903.
- 5) Category e-Sprinklers are required throughout; sprinklers are provided throughout in accordance with Chapter 9.
- 6) Category f-Sprinklers are not required throughout; sprinklers are provided throughout in accordance with Chapter 9.

**3412.6.18 Standpipes.** Evaluate the ability to initiate attack on a fire by making a supply of water available readily through the installation of standpipes in accordance with Section 905. Required standpipes shall be based on the requirements of this code. Under the categories and occupancies in Table 3412.6.18, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.18, Standpipes, for fire safety, means of egress and general safety.

**TABLE 3412.6.18 STANDPIPE SYSTEM VALUES**

OCCUPANCY	CATEGORIES			
	a <sup>a</sup>	b	c	d
A-1, A-3, F, M, R, S-1	-6	0	4	6
A-2	-4	0	2	4
A-4, B, E, S-2	-12	0	6	12

a. This option cannot be taken if Category a or b in Section 3412.6.17 is used.

**3412.6.18.1 Standpipe.** The categories for standpipe systems are:

- 1) Category a-Standpipes are required; standpipe is not provided or the standpipe system design is not in compliance with Section 905.3.
- 2) Category b-Standpipes are not required; none are provided.
- 3) Category c-Standpipes are required; standpipes are provided in accordance with Section 905.
- 4) Category d-Standpipes are not required; standpipes are provided in accordance with Section 905.

**3412.6.19 Incidental accessory occupancy.** Evaluate the protection of incidental accessory occupancies in accordance with Section 508.2.5. Do not include those where this code requires suppression throughout the buildings, including covered mall buildings, high-rise buildings, public garages and unlimited area buildings. Assign the lowest score from Table 3412.6.19 for the building or floor area being evaluated and enter that value into Table 3412.7 under Safety Parameter 3412.6.19, Incidental Accessory Occupancy, for fire safety, *means of egress* and general safety. If there are no specific occupancy areas in the building or floor area being evaluated, the value shall be zero.

**TABLE 3412.6.19 INCIDENTAL ACCESSORY OCCUPANCY VALUES<sup>a</sup>**

PROTECTION REQUIRED BY TABLE 508.2.5	PROTECTION PROVIDED						
	None	1 Hour	AFSS	AFSS with SP	1 Hour and AFSS	2 Hours	2 Hours and AFSS
2 Hours and AFSS	-4	-3	-2	-2	-1	-2	0
2 Hours, or 1 Hour and AFSS	-3	-2	-1	-1	0	0	0
1 Hour and AFSS	-3	-2	-1	-1	0	-1	0
1 Hour	-1	0	-1	0	0	0	0
1 Hour, or AFSS with SP	-1	0	-1	0	0	0	0

AFSS with SP	-1	-1	-1	0	0	-1	0
1 Hour or AFSS	-1	0	0	0	0	0	0

a. AFSS = Automatic fire suppression system; SP = Smoke partitions (See Section 508.2.5).

**Note:** For Table 3412.7, see next page.

**3412.7 Building score.** After determining the appropriate data from Section 3412.6, enter those data in Table 3412.7 and total the building score.

**TABLE 3412.7 SUMMARY SHEET - BUILDING CODE**

Existing occupancy: _____		Proposed occupancy: _____	
Year building was constructed: _____		Number of stories: _____ Height in feet: _____	
Type of construction: _____		Area per floor: _____	
Percentage of open perimeter increase: _____%			
Completely suppressed: Yes _____ No _____	Corridor wall rating: _____		
Compartmentation: Yes _____ No _____	Required door closers: Yes _____ No _____		
Fire-resistance rating of vertical opening enclosures: _____			
Type of HVAC system: _____, serving number of floors: _____			
Automatic fire detection: Yes _____ No _____	Type and location: _____		
Fire alarm system: Yes _____ No _____	Type: _____		
Smoke control: Yes _____ No _____	Type: _____		
Adequate exit routes: Yes _____ No _____	Dead ends: _____ Yes _____ No _____		

Maximum exit access travel distance: \_\_\_\_\_ Elevator controls: Yes \_\_\_\_\_ No \_\_\_\_\_

Means of egress emergency lighting: Yes \_\_\_\_\_ No \_\_\_\_\_ Mixed occupancies: Yes \_\_\_\_\_ No \_\_\_\_\_

SAFETY PARAMETERS	FIRE SAFETY (FS)	MEANS OF EGRESS (ME)	GENERAL SAFETY (GS)
3412.6.1 Building Height 3412.6.2 Building Area 3412.6.3 Compartmentation			
3412.6.4 Tenant and Dwelling Unit Separations 3412.6.5 Corridor Walls 3412.6.6 Vertical Openings			
3412.6.7 HVAC Systems 3412.6.8 Automatic Fire Detection 3412.6.9 Fire Alarm Systems			
3412.6.10 Smoke Control 3412.6.11 Means of Egress Capacity 3412.6.12 Dead Ends	* * * * * * * * * * * *		
3412.6.13 Maximum Exit Access Travel Distance 3412.6.14 Elevator Control 3412.6.15 Means of Egress Emergency Lighting	* * * * * * * *		
3412.6.16 Mixed Occupancies 3412.6.17 Automatic Sprinklers		* * * * ÷2 =	

3412.6.18 Standpipes 3412.6.19 Incidental Accessory Occupancy			
<b>Building score - total value</b>			

\* \* \* \*No applicable value to be inserted.

**3412.8 Safety scores.** The values in Table 3412.8 are the required mandatory safety scores for the evaluation process *listed* in Section 3412.6.

**TABLE 3412.8 MANDATORY SAFETY SCORES<sup>a</sup>**

<b>OCCUPANCY</b>	<b>FIRE SAFETY (MFS)</b>	<b>MEANS OF EGRESS (MME)</b>	<b>GENERAL SAFETY (MGS)</b>
A-1	16	27	27
A-2	19	30	30
A-3	18	29	29
A-4, E	23	34	34
B	24	34	34
F	20	30	30
M	19	36	36
R	17	34	34
S-1	15	25	25
S-2	23	33	33

a. MFS = Mandatory Fire Safety;

MME = Mandatory Means of Egress;

MGS = Mandatory General Safety.

**3412.9 Evaluation of building safety.** The mandatory safety score in Table 3412.8 shall be subtracted from the building score in Table 3412.7 for each category. Where the final score for any category equals zero or more, the building is in compliance with the requirements of this section for that category. Where the final score for any category is

less than zero, the building is not in compliance with the requirements of this section.

**TABLE 3412.9 EVALUATION FORMULAS<sup>a</sup>**

FORMULA	T.3410.7	T.3410.8	SCORE	PASS	FAIL
FS-MFS ≥ 0	$\frac{\quad}{(FS)}$	-	$\frac{\quad}{(MFS)} =$	$\frac{\quad}{\quad}$	$\frac{\quad}{\quad}$
ME-MME ≥ 0	$\frac{\quad}{(ME)}$	-	$\frac{\quad}{(MME)} =$	$\frac{\quad}{\quad}$	$\frac{\quad}{\quad}$
GS-MGS ≥ 0	$\frac{\quad}{(GS)}$	-	$\frac{\quad}{(MGS)} =$	$\frac{\quad}{\quad}$	$\frac{\quad}{\quad}$

- a. FS = Fire Safety                      MFS = Mandatory Fire Safety
- ME = Means of Egress                  MME = Mandatory Means of Egress
- GS = General Safety                    MGS = Mandatory General Safety

**3412.9.1 Mixed occupancies.** For mixed occupancies, the following provisions shall apply:

- 1) Where the separation between mixed occupancies does not qualify for any category indicated in Section 3412.6.16, the mandatory safety scores for the occupancy with the lowest general safety score in Table 3412.8 shall be utilized (see Section 3412.6.)
- 2) Where the separation between mixed occupancies qualifies for any category indicated in Section 3412.6.16, the mandatory safety scores for each occupancy shall be placed against the evaluation scores for the appropriate occupancy.”

**SECTION III.**

Sections 14-61 through 14-63 of Article IV, “International Plumbing Code Amendments/Administration” of Chapter 14, “Buildings and Building Regulations” of the Code of Ordinances of the City of Euless, Texas, are hereby amended in their entirety to read as follows:

**“Sec. 14.61. Adoption; International Plumbing Code.**

The International Plumbing Code, 2015 Edition, as published by the International Code Council is hereby adopted by reference as the plumbing code of the City. Unless deleted,

amended, expanded or otherwise changed herein, all provisions of such Code shall be fully applicable and binding.

**Sec. 14-62. Administration of Plumbing Code.**

The plumbing code of the city shall be administered and enforced by the office of the Building Official. All references to Code Official shall mean the Building Official.

**Sec. 14-63. Amendments.**

The International Plumbing Code, 2015 Edition, is amended as follows:

**(A) Table of Contents, Chapter 7, Section 714 is amended to read as follows:**

Section 714 Engineered Drainage Design . . . . . 69

**(B) Section 102.8 is amended to read as follows:**

102.8 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 15 and such codes, when specifically adopted, and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where the differences occur between provisions of this code and the referenced standards, the provisions of this code shall be the minimum. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference to NFPA 70 or the ICC *Electrical Code* shall mean the Electrical Code as adopted by the City.

**(C) Sections 106.6.2 and 106.6.3 are amended to read as follows:**

106.6.2 Fee schedule. The fees for all plumbing work shall be as adopted by resolution of the governing body of the City.

See approved fees schedule (Eules Code of Ordinances Chapter 30).

106.6.3 Fee Refunds. The building official shall establish a policy for authorizing the refunding of fees. *{The remainder of the section is deleted}*.

**(D) Section 109 is deleted in its entirety and replaced with the following section:**

SECTION 109  
MEANS OF APPEAL

109.1 Application for appeal. Any person shall have the right to appeal a decision of the code official to the board of appeals established by ordinance. The board shall be governed by the enabling ordinance. See Eules Code Sec. 84-27 (Zoning Board of Adjustment).

**(E) Section 2 “Definitions” is amended by adding the following definitions:**

Water Distribution. In a building or premises, a pipe that conveys potable water from the Water Service pipe to the plumbing fixtures and other water outlets.

Water Service. The pipe carrying potable water from the water meter or other source of water supply to a building or other point of use or distribution on the lot.

**(F) Section 305.4.1 is amended to read as follows:**

305.4.1 Sewer depth. Building sewers shall be a minimum of 12 inches (304 mm) below grade.

**(G) Section 305.7 is amended to read as follows:**

305.7 Protection of components of plumbing system. Components of a plumbing system installed within 3 feet along alleyways, driveways, parking garages or other locations in a manner in which they would be exposed to damage shall be recessed into the wall or otherwise protected in an approved manner.

**(H) Sections 312.10.1 and 312.10.2 are amended to read as follows:**

312.10.1 Inspections. Annual inspections shall be made of all backflow prevention assemblies and air gaps to determine whether they are operable. In the absence of local provisions, the owner is responsible to ensure that testing is performed.

312.10.2 Testing. Reduced pressure principle backflow preventer assemblies, double check-valve assemblies, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, double check detector fire protection backflow prevention assembly, hose connection backflow preventers, and spill-proof vacuum breakers shall be tested at the time of installation, immediately after repairs or relocation and at least annually. The testing procedure shall be performed in accordance with applicable local provisions. In the absence of local provisions, the owner is responsible to ensure that testing is done in accordance with one of the following standards: *{list of standards unchanged}*.

**(I) Section 314.2.1 is amended to read as follows:**

314.2.1 Condensate disposal. Condensate from all cooling coils and evaporators shall be conveyed from the drain pan outlet to an *approved* place of disposal .... (text unchanged) ... Condensate shall not discharge into a street, alley, sidewalk, rooftop, or other areas so as to cause a nuisance.

**(J) Section 314.2.2 is amended to read as follows:**

314.2.2 Drain pipe materials. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, polyethylene, ABS, CPVC, or schedule 80 PVC pipe or tubing when exposed to ultra violet light. All components shall be selected for the pressure, temperature and exposure rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 relative to the material type. Condensate waste and drain line size shall not be less than ¾-inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate drainage, the pipe or tubing shall be sized in accordance with Table 314.2.2. All horizontal sections of drain piping shall be installed in uniform alignment at a uniform slope. All roof top drain lines shall be supported by appropriate intervals and approved support materials.

**(K) Section 401.1 is amended by adding the following sentence:**

401.1 Scope. The Chapter shall govern the materials, design and installation of plumbing fixtures, faucets and fixture fittings in accordance with the type of occupancy, and shall provide for the minimum number of fixtures for various types of occupancies. The provisions of this Chapter are meant to work in coordination with the provisions of the Building Code. Should any conflicts arise between the two chapters, the Building Official shall determine which provision applies.

**(L) Section 409.2 is amended to read as follows:**

409.2 Water connection. The water supply to a commercial dishwashing machine shall be protected against backflow by an air gap or backflow preventer in accordance with Section 608. {Remainder of section unchanged}.

**(M) Section 410.4 is amended to read as follows:**

401.4 Substitution. Where restaurants or bars provide drinking water in a container free of charge drinking fountains shall not be required in those restaurants or bars. {Remainder of section unchanged}.

**(N) Section 412.4 is amended to read as follows:**

412.4 Required location for floor drains... Floor drains shall be installed in the following areas with trap primers as required:

- 1) In public coin-operated laundries and in the central washing facilities of multiple family dwellings, the rooms containing the automatic clothes washers shall be provided with floor drains located to readily drain the entire floor area. Such drains shall have a minimum outlet of not less than 3 inches (76 mm) in diameter.
- 2) Commercial kitchens. In lieu of floor drains in commercial kitchens, the Building Official may accept floor sinks.
- 3) Public Restrooms intended for use by more than one occupant simultaneously.

**(O) Section 417.5 is amended to read as follows:**

417.5 Shower floors or receptors. Floor surfaces shall be constructed of impervious, noncorrosive, nonabsorbent and waterproof materials.

Thresholds shall be a minimum of 2 inches (51 mm) and a maximum of 9 inches (229 mm), measured from top of the drain to top of threshold or dam. Thresholds shall be of sufficient width to accommodate a minimum twenty-two (22) inch (559 mm) door.

Exception: Showers designed to comply with ICC/ANSI A117.1.

**(P) Section 417.5.2 is amended to read as follows:**

417.5.2 Shower lining. Floors under shower compartments, except where prefabricated receptors have been provided, shall be lined and made water tight utilizing material complying with Sections 417.5.2.1 through 417.5.2.5. Such liners shall turn up on all sides at least 3 inches (51 mm) above the finished threshold level and shall extend outward over the threshold and fastened to the outside of the threshold jamb. Liners shall be recessed and fastened to an *approved* backing so as not to occupy the space required for wall covering, and shall not be nailed or perforated at any point less than 1 inch (25 mm) above the finished threshold. Liners shall be pitched one-fourth unit vertical in 12 units horizontal (2-percent slope) and shall be sloped toward the fixture drains and be securely fastened to the waste outlet at the seepage entrance, making a water tight-joint between the liner and the outlet. The

complete liner shall be tested in accordance with Section 312.9 and Section 417.7.

**(Q) Section 417.7 is added to read as follows:**

417.7 Test for shower receptors. Shower receptors shall be tested for water tightness by filling with water to the level of the rough threshold. The drain shall be plugged in a manner so that both sides of pans shall be subjected to the test at the point where it is clamped to the drain.

**(R) Section 419.3 is amended to read as follows:**

419.3 Surrounding material. Wall and floor space to a point 2 feet (610 mm) in front of a urinal lip and 4 feet (1219 mm) above the floor and at least 2 feet (610 mm) to each side of the urinal shall be waterproofed with a smooth, readily cleanable, hard, nonabsorbent material.

**(S) Section 502.3 is amended to read as follows:**

502.3 Water heaters installed in attics. Attics containing a water heater shall be provided {bulk of paragraph unchanged} ...side of the water heater. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger where such dimensions are large enough to allow for removal of the water heater. A walkway to an appliance shall be rated as a floor as approved by the building official. As a minimum for access to the attic space, provide one of the following: As a minimum, for access to the attic space, provide one of the following:

- 1) A permanent stair.
- 2) A pull down stair with a maximum 300 lb. (136kg) capacity.
- 3) An access door from an upper floor level.
- 4) Access Panel may be used in lieu of items 1, 2, and 3 with prior approval of the code official due to building conditions.

Exceptions:

- 1) The passageway and level service space are not required where the *appliance* is capable of being serviced and removed through the required opening.

- 2) Where the passageway is not less than 6 feet (1829 mm) high for its entire length, the passageway shall be not greater than 50 feet (15250 mm) in length.

A receptacle outlet shall be provided at or near the equipment and appliance location within 25 feet and in accordance with the Electrical Code.

**(T) Section 502.6 is added to read as follows:**

502.6 Water heaters above ground floor. When the attic, roof, mezzanine or platform on which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.

Exceptions:

- 1) An approved water heater which is capable of being serviced and removed by removing tiles only in a lay-in ceiling and may be serviced while standing on a portable ladder.
- 2) An approved water heater installed not more than ten (10) feet (3048 mm) above the ground or floor level and may be serviced while standing on a portable ladder.

502.6.1 Illumination and convenience outlet. Whenever the mezzanine or platform is not adequately lighted or access to a receptacle outlet is not obtainable from the main level, lighting and a receptacle outlet shall be provided in accordance with Section 306.3.1.

**(U) Section 504.6 is amended to read as follows:**

504.6 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

- 1) Not be directly connected to the drainage system.
- 2) Discharge through an air gap.
- 3) Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
- 4) Serve a single relief device and shall not connect to piping serving any other relief device or equipment.

Exception: Multiple relief devices may be installed to a single T&P discharge piping system when approved by the administrative authority and permitted by the manufacturer's installation instructions and installed with those instructions.

- 1) Discharge to an indirect waste receptor or to the outdoors.
- 2) Discharge in a manner that does not cause personal injury or structural damage.
- 3) Discharge to a termination point that is already observable by the building occupants.
- 4) Not be trapped.
- 5) Be installed so as to flow by gravity.
- 6) Terminate not more than 6 inches above and not less than two times the discharge pipe diameter above the floor or flood level rim of the waste receptor.
- 7) Not have a threaded connection at the end of such piping.
- 8) Not have valve or tee fittings.
- 9) Be constructed of those materials listed in Section 605.4 or materials tested, rated and approved for such use in accordance with ASME A112.4.1.

**(V) Section 504.7.1 is amended to read as follows:**

Section 504.7.1 Pan size and drain. The pan drain shall not be less than 1 ½ inches (38 mm) in depth and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe having a diameter of not less than ¾ inch (19mm). Piping for safety pan drains shall be of those materials listed in Table 605.4. Valves shall not be installed in the pain drain. Multiple drains may terminate to a single discharge piping system when approved by the administrative authority and permitted by the manufacturer's installation instructions and installed with those instructions.

**(W) Section 604.4.1 is added to read as follows:**

604.4.1 State maximum flow rate. Where the State mandated maximum flow rate is more restrictive than those of this section, the State flow rate shall take precedence.

(X) **Table 605.3 is amended to read as follows:**

<b>MATERIAL</b>	<b>STANDARD</b>
Copper or copper-allow pipe	ASTM B 42;ASTM B 302
Copper or copper allow tubing (Type K, WK, L, WL, or WM)	ASTM B75, ASTM B88, ASTM B251; ASTM B 447
Cross-linked polyethylene (PEX) plastic pipe and tubing	ASTM F876, ASTM F877, AWWA C901, CSA B137.11
Cross-linked polyethylene/aluminum/cross linked polyethylene (PEX-AL-PEX) pipe	ASTM F 1281, ASTM F 2262, CSA B 137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F 1986
Polyethylene (PE) plastic pipe	ASTM D 2239, ASTM D 3035, AWWA C901, CSA B137.11
Polyethylene (PE) plastic tubing	ASTM D 2737, AWWA C901, CSA B137.1

(Y) **Table 605.4 is amended by adding a heading to read as follows:**

<b>MATERIAL</b>	<b>STANDARD</b>
Chlorinated polyvinyl chloride (CPVC) plastic pipe and tubing [for discharge piping serving a pressure relief valve, temperature relief valve, or combination only]	ASTM D 2846; ASTM F441; ASTM F442; CSA B137.6
Copper or copper-allow pipe	ASTM B 42;ASTM B 302
Copper or copper allow tubing (Type K, WK, L, WL, or WM)	ASTM B75, ASTM B88, ASTM B251; ASTM B 447
Cross-linked polyethylene (PEX) plastic pipe and tubing	ASTM F876, ASTM F877, AWWA C901, CSA B137.11
Cross-linked polyethylene/aluminum/cross linked polyethylene (PEX-AL-PEX) pipe	ASTM F 1281, ASTM F 2262, CSA B 137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F 1986


**(Z) Section 606.1 is amended by deleting items #4 and #5.**

**(AA) Section 606.2 is amended to read as follows:**

606.2 Location of shutoff valve. Shutoff valves shall be installed in the following locations:

- 1) On the fixture supply to each plumbing fixture other than bathtubs and showers in one-and two family residential occupancies, and other than in individual sleeping units that are provided with unit shutoff valves in hotels, motels, boarding houses and similar occupancies.
- 2) On the water supply pipe to each appliance or mechanical equipment.

**(BB) Section 608.1 is amended to read as follows:**

608.1 General. A potable water supply system shall be designed, installed and maintained in such a manner so as to prevent contamination from nonpotable liquids, solids or gases being introduced into the potable water supply through cross-connections or any other piping connections to the system. Backflow preventer applications shall conform to applicable local regulations, Table 608.1, and as specifically stated in Sections 608.2 through 608.16.10.

**(CC) Section 608.16.5 is amended and Section 608.16.5.1 is added to read as follows:**

608.16.5 Connections to lawn irrigation systems. The potable water supply system to lawn irrigation systems shall be protected against backflow by an atmospheric-type vacuum breaker, a pressure-type vacuum breaker, a double-check assembly or a reduced pressure principle backflow preventer. A valve shall not be installed downstream from an atmospheric vacuum breaker. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer. All irrigation systems shall have rain and freeze protection installed.

Section 608.16.5.1. Lawn Irrigation systems rules and law compliant with State Law and TCEQ requirements.

**(DD) Section 608.17 is amended to read as follows:**

608.17 Protection of individual water supplies. An individual water supply shall be located and constructed so as to be safeguarded against contamination in

accordance with applicable local regulations. In the absence of other local regulations, installation shall be in accordance with Sections 608.17.1 through 608.17.8.

**(EE) Section 610.1 is amended by adding an exception to read as follows:**

610.1 General. New or repaired potable water systems shall be purged of deleterious matter and disinfected prior to utilization. The method to be followed shall be that prescribed by the health authority or water purveyor having jurisdiction or, in the absence of a prescribed method, the procedure described in either AWWA C651 or AWWA C652, or as described in this section. This requirement shall apply to “on-site” or “in-plant” fabrication of a system or to a modular portion of a system.

- 1) The pipe system shall be flushed with clean, potable water until dirty water does not appear at the points of outlet.
- 2) The system or part thereof shall be filled with a water/chlorine solution containing at least 50 parts per million (50 mg/L) of chlorine, and the system or part thereof shall be valved off and allowed to stand for 24 hours; or the system or part thereof shall be filled with a water/chlorine solution containing at least 200 parts per million (200 mg/L) of chlorine and allowed to stand for 3 hours.
- 3) Following the required standing time, the system shall be flushed with clean potable water until the chlorine is purged from the system.
- 4) The procedure shall be repeated where shown by a bacteriological examination that contamination remains present in the system.

Exception: With prior approval the Code Official may wave this requirement when deemed unnecessary.

**(FF) Section 712.5 is added to read as follows:**

712.5 Dual Pump System. All sumps shall be automatically discharged and, when in any “public use” occupancy where the sump serves more than 10 fixture units, shall be provided with dual pumps or ejectors arranged to function independently in case of overload or mechanical failure. For storm drainage sumps and pumping systems, see Section 1113.

**(GG) Sections 714 and 714.1 are amended to read as follows:**

SECTION 714

## ENGINEERED DRAINAGE DESIGN

714.1 Design of drainage system. The sizing requirements for plumbing drainage systems shall be determined by approved design methods.

**(HH) Section 802.4 is amended by adding a sentence to the end of the paragraph to read as follows:**

802.4 Standpipes. Standpipes shall be ... (text unchanged) ... drains for rodding. No standpipe shall be installed below the ground.

**(II) Section 904.1 is amended to read as follows:**

904.1 Roof extension. All open vent pipes that extend through a roof shall be terminated at least six (6) inches (152 mm) above the roof, except that where a roof is to be used for any purpose other than weather protection, the vent extensions shall be run at least 7 feet (2134 mm) above the roof.

**(JJ) Section 906.1 is amended to read as follows:**

906.1 Distance of trap from vent. Each fixture trap shall have a protecting vent located so that the slope and the developed length in the fixture drain from the trap weir to the vent fitting are with the requirements set forth in Table 906.1.

**(KK) Section 912.1 is amended to read as follows:**

912.1 Type of fixture. A combination drain and vent system shall not serve fixtures other than floor drains, standpipes, and indirect waste receptors. Combination drain and vent systems shall not receive the discharge from a food waste grinder or clinical sink.

**(LL) Section 1002.10 is deleted.**

**(MM) Section 1003 is amended by replacing Table 1003.3.4.1 to read as follows:**

All food establishments having a food disposal or discharge of more than 50 gallons per minute shall discharge into an oil & grease interceptor. Each establishment must have its own grease interceptor. Sharing of grease interceptors is prohibited.

Establishments with a discharge of 50 gallons per minute or less shall discharge into at least a 100-pound size grease trap. An approved-type grease interceptor or grease trap complying with the provisions of this subsection shall be installed in the waste line leading from sinks, drains, and other fixtures or

equipment in establishments such as restaurants, cafes, lunch counters, cafeterias, bars and clubs, hotels, hospitals, sanitarium, factory or school kitchens, or other establishments where grease may be introduced into the drainage or sewage system in quantities that can affect line stoppage or hinder sewage treatment or private sewage disposal when grease interceptors are required. All grease traps shall be located outside the building. A grease trap is not required for individual dwelling units or for any private living quarters.

*Grease Interceptors*

Concrete -Shall be composed of one part Portland cement and five parts aggregate or other material as approved by the Building Official.  
-Reinforcement bars deformed number four bars on 18-inch centers.

Manholes -Cast iron frame with 20-inch cover.

Vents -Four-inch sanitary vent may be reduced to two inches if interceptor is connected to a properly vented sewer or waste line within 25 feet.  
-Relief vents shall be two inches between compartments and to atmosphere above roof, and inside building.

Capacity -500 gallons *retention* capacity or engineered with Table 1003.3.4.1 or other method approved by the Building Official

Clean out -Should be two-way located as near as possible to the interceptor on outflow line above seal.

**(NN) Section 1101.2 is amended to read as follows:**

1101.2 Disposal. Rainwater and storm water from roofs shall drain in to an approved storm sewer system, or, when approved by the Code Official, 5 feet from the structure. Rainwater and storm water from paved areas, yards, courts and courtyards shall drain... {Remainder of text unchanged}.

**(OO) Section 1101.8 is amended to read as follows:**

1101.8 Cleanouts required. Cleanouts shall be installed in the building storm drainage system and shall comply with the provisions of this code for sanitary drainage pipe cleanouts.

Exception: Subsurface drainage system.

**(PP) Section 1106.1 is amended to read as follows:**

1106.1 General. The size of the vertical conductors and leaders, building storm drains, building storm sewers, and any horizontal branches of such drains or sewers shall be based on six (6) inches per hour rainfall rate.

**(QQ) Section 1107.3 is amended to read as follows:**

1107.3 Sizing of secondary drains. Secondary (emergency) roof drain system shall be sized in accordance with Section 1106. Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1101.7. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when sizing the secondary roof drainage system.

**(RR) Section 1202.1 is amended by deleting Exception #2.**

**(SS) Appendix B, C, D, E, F and G are adopted.”**

#### **SECTION IV.**

Sections 14-81 through 14-83 of Article V, “International Fuel Gas Code Amendments/Administration” of Chapter 14, “Buildings and Building Regulations” of the Code of Ordinances of the City of Euless, Texas, are hereby amended in their entirety to read as follows:

**“Sec. 14-81. Adoption; International Fuel Gas Code:**

The International Fuel Gas Code, 2015 Edition, as published by the International Code Council is hereby adopted by reference as the fuel gas code of the City. Unless deleted, amended, expanded or otherwise changed herein, all provisions of such Code shall be fully applicable and binding.

**Sec. 14-82. Administration of Fuel Gas Code.**

The fuel gas code of the city shall be administered and enforced by the office of the Building Official. All references to the Code Official shall mean the Building Official.

**Sec. 14-83. Amendments.**

The International Fuel Gas Code, 2015 Edition, is amended as follows:

**(A) Section 102.2 is amended by adding an exception to read as follows:**

Exception: Existing dwelling units shall comply with Section 621.2.

**(B) Section 102.8 is amended to read as follows:**

102.8 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 8 and such codes, when specifically adopted, and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the provisions of this code shall apply. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference to NFPA 70 shall mean the Electrical Code as adopted.

**(C) Sections 106.6.2 and 106.6.3 are amended to read as follows:**

106.6.2 Fees. See approved fees schedule (Eules Code of Ordinances Chapter 30).

106.6.3 Fee refunds. The Building Official shall establish a policy for authorizing the refunding of fees. (Delete balance of section).

**(D) Section 109 is deleted in its entirety and the following section is added:**

Section 109  
MEANS OF APPEAL

109.1 Application for appeal. Any person shall have the right to appeal a decision of the building official to the board of appeals established by ordinance. See Eules Code Sec. 84-27(ZBA Board).

**(E) Section 305.5 is deleted.**

**(F) Section 306.3 is amended to read as follows:**

[M] 306.3 Appliances in attics. Attics containing appliances requiring access shall be provided . . . *{bulk of paragraph unchanged}* . . . side of the *appliance*. The clear *access* opening shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger where such dimensions are not large enough to allow removal of the largest *appliance*. A walkway to an appliance shall be rated as a floor as approved by the Building Official. As a minimum, for *access* to the attic space, provide one of the following:

- 1) A permanent stair.
- 2) A pull down stair with a maximum 300 lb (136kg) capacity.

- 3) An access door from an upper floor level.
- 4) Access Panel may be used in lieu of items 1, 2, and 3 with prior approval of the code official due to building conditions.

Exceptions:

- 1) The passageway and level service space are not required where the *appliance* is capable of being serviced and removed through the required opening.
- 2) Where the passageway is not less than ... (bulk of section to read the same).

A receptacle outlet shall be provided at or near the equipment and appliance location within 25 feet and in accordance with the Electrical Code.

**(G) Section 306.5 is amended to read as follows:**

[M] 306.5 Equipment and appliances on roofs or elevated structures. Where *equipment* requiring *access* or appliances are located on an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm) above grade to access, a permanent interior or exterior means of access shall be provided. Permanent exterior ladders providing roof access need not extend closer than 12 feet (2438 mm) to the finish grade or floor level below and shall extend to the equipment and appliances' level service space. Such access shall ... (bulk of section unchanged)... on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope) ... (bulk of section to read the same).

A receptacle outlet shall be provided at or near the equipment and appliance location within 25 feet and in accordance with the Electrical Code.

**(H) Section 306.5.1 is amended to read as follows:**

[M] 306.5.1 Slopped roofs. Where appliances, equipment, fans or other components that require service are installed on a roof having slopes greater than 3 units vertical in 12 units horizontal (25-percent slope) and having an edge more than 30 inches (762 mm) above grade at such edge, a catwalk at least 16 inches in width with substantial cleats spaced not more than 16 inches apart shall be provided from the roof access to a level platform at the appliance. The level platform shall be provided on each side of the appliance to which access is required for service, repair or maintenance. The platform shall be not less than 30 inches (762 mm) in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches (1067 mm) above the

platform, shall be constructed so as to prevent the passage of a 21 inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*.

**(I) Section 306.7 and 306.7.1 are added to read as follows:**

306.7 Water heaters above ground floor. When the attic, roof, mezzanine or platform on which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.

Exceptions:

- 1) An approved water heater which is capable of being serviced and removed by removing tiles only in a lay-in ceiling and may be serviced while standing on a portable ladder.
- 2) An approved water heater installed not more than ten (10) feet (3048 mm) above the ground or floor level and may be serviced while standing on a portable ladder.

306.7.1 Illumination and convenience outlet. Whenever the mezzanine or platform is not adequately lighted or access to a receptacle outlet is not obtainable from the main level, lighting and a receptacle outlet shall be provided in accordance with Section 306.3.1.

**(J) Section 401.5 is amended by adding a second paragraph to read as follows:**

Both ends of each section of medium pressure corrugated stainless steel tubing (CSST) shall identify its operating gas pressure with an *approved* tag. The tags are to be composed of aluminum or stainless steel and the following wording shall be stamped into the tag:

"WARNING  
1/2 to 5 psi gas pressure  
Do Not Remove"

**(K) Section 402.3 is amended by adding an exception to read as follows:**

Exception: Corrugated stainless steel tubing (CSST) shall be a minimum of 1/2" (18 EHD).

**(L) Section 403.5.4 is amended to read as follows:**

403.5.4 Corrugated stainless steel tubing. Corrugated stainless steel tubing shall be *listed* in accordance with ANSI LC 1/CSA 6.26. Corrugated stainless steel tubing shall only be used to repair or replace existing corrugated stainless steel tubing as *approved*.

**(M) Section 404.12 is amended to read as follows:**

404.12 Minimum burial depth. Underground piping systems shall be installed a minimum depth of 18 inches (458 mm) top of pipe below grade.

**(N) Section 404.12.1 is deleted.**

**(O) Section 406.1 is amended to read as follows:**

406.1 General. Prior to acceptance and initial operation, all piping installations shall be inspected and pressure tested to determine that the materials, design, fabrication, and installation practices comply with the requirements of this code. The permit holder shall make the applicable tests prescribed in Sections 406.1.1 through 406.1.5 to determine compliance with the provisions of this code. The permit holder shall give reasonable advance notice to the code official when the piping system is ready for testing. The equipment, material, power and labor necessary for the inspections and test shall be furnished by the permit holder and the permit holder shall be responsible for determining that the work will withstand the test pressure prescribed in the following tests.

**(P) Section 406.4 is amended to read as follows:**

406.4 Test pressure measurement. Test pressure shall be measured with a manometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made.

**(Q) Section 406.4.1 is amended to read as follows:**

406.4.1 Test pressure. The test pressure to be used shall be not less than 3 psig (20 kPa gauge), or at the discretion of the Code Official, the piping and valves may be tested at a pressure of at least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge. For tests requiring a pressure of 3 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one half inches (3 ½ “), a set hand, 1/10 pound incrimination and pressure range not to exceed 6 psi for tests requiring a pressure of 3 psig. For tests requiring a pressure of 10 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one-half inches (3 ½”), a set hand, a minimum of 2/10 pound incrimination and a pressure range not

to exceed 20 psi. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa) (1/2 psi) and less than 200 inches of water column pressure (52.2 kPa) (7.5 psi) the test pressure shall not be less than ten (10) pounds per square inch (69.6 kPa). For piping carrying gas at a pressure that exceed 200 inches of water column (52.2 kPa) (7.5 psi) the test pressure shall be not less than one and one-half times the proposed maximum working pressure.

Diaphragm gauges used for testing must display a current calibration and be in good working condition. The appropriate test must be applied to the diaphragm gauge used for testing.

**(R) Section 406.4.2 is amended to read as follows:**

406.4.2 Test duration. Test duration shall be held for a length of time satisfactory to the Code Official, but in no case for less than fifteen (15) minutes. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa), the test duration shall be held for a length of time satisfactory to the Code Official, but in no case for less than thirty (30) minutes. {The remainder of the section is deleted.}

**(S) Section 409.1.4 is added to read as follows:**

409.1.4 Valves in CSST installations. Shutoff valves installed with corrugated stainless steel (CSST) piping systems shall be supported with an *approved* termination fitting, or equivalent support, suitable for the size of the valves, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration but in no case greater than 12-inches from the center of the valve. Supports shall be installed so as not to interfere with the free expansion and contraction of the system's piping, fittings, and valves between anchors. All valves and supports shall be designed and installed so they will not be disengaged by movement of the supporting piping.

**(T) Section 409.5 is amended to read as follows:**

409.5. Appliance shutoff valve. Each *appliance* shall be provided with ready access to a shutoff valve in accordance with Section 409.5.1, 409.5.2, or 409.5.3

Exception: Valves located within approved cabinets.

**(U) Section 410.1 is amended by adding a second paragraph and exception to read as follows:**

Access to regulators shall comply with the requirements for access to appliances as specified in Section 306.

Exception: A passageway or level service space is not required when the regulator is capable of being serviced and removed through the required attic opening.

**(V) Section 503.4.1 is amended to read as follows:**

503.4.1 Plastic Piping. Where plastic piping is used to vent an appliance, the appliance shall be listed for use with such venting materials and the appliance manufacturer's installation instructions shall identify specific plastic piping material. Plastic material shall be painted or coated with an *approved* material to prevent damage from sunlight.

**(W) Section 614.8 is amended by adding a sentence to read as follows:**

[M] 614.8 Domestic clothes dryer exhaust ducts. Exhaust ducts for domestic clothes dryers shall conform to the requirements of Sections 614.8.1 through 614.8.6. The size of duct shall not be reduced along its developed length nor at the point of termination.

**(X) Section 621.2 is amended by adding an exception to read as follows:**

621.2 Prohibited use. One or more unvented room heaters shall not be used as the sole source of comfort heating in a dwelling unit.

Exception: Existing *approved* unvented heaters may continue to be used in dwelling units, in accordance with the code provisions in effect when installed, when *approved* by the Code Official unless an unsafe condition is determined to exist as described in Section 108.7.

**(Y) Section 624.1.1 is amended to read as follows:**

624.1.1 Installation requirements. The requirements for water heaters relative to access, sizing, relief valves, drain pans and scald protection shall be in accordance with the *International Plumbing Code*."

**SECTION V.**

Sections 14-101 through 14-103 of Article VI, "International Mechanical Code Amendments/Administration" of Chapter 14, "Buildings and Building Regulations" of the Code of Ordinances of the City of Euless, Texas, are hereby amended in their entirety to read as follows:

**“Sec. 14-101. Adoption; International Mechanical Code.**

The International Mechanical Code, 2015 Edition, as published by the International Code Council is hereby adopted by reference as the mechanical code of the City. Unless deleted, amended, expanded or otherwise changed herein, all provisions of such Code shall be fully applicable and binding.

**Sec. 14-102. Administration of Mechanical Code.**

The mechanical code of the City shall be administered and enforced by the office of the Building Official. All references to Code Official shall mean the Building Official.

**Sec. 14-103. Amendments.**

The International Mechanical Code, 2015 Edition, is amended as follows:

**(N) Section 102.8 is amended to read as follows:**

102.8 Referenced codes and standards. The codes and standards referenced herein shall be those that are listed in Chapter 15 and such codes, when specifically adopted, and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the provisions of this code shall apply. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference to NFPA 70 shall mean the Electrical Code as adopted.

**(O) Sections 106.5.2 and 106.5.3 are amended to read as follows:**

106.5.2 Fee schedule. See approved fee schedule (Eules Code of Ordinances Chapter 30).

106.5.3 Fee refunds. The building official shall establish a policy for authorizing the refunding of fees. {Remainder of section is deleted}.

**(P) Section 304.6 is deleted.**

**(Q) Section 306.3 is amended to read as follows:**

306.3. Appliances in attics. Attics containing appliances requiring *access* shall be provided . . . *{bulk of paragraph unchanged}* . . . *side* of the appliance. The clear *access* opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger where such dimensions are not large enough to allow removal of the largest appliance. A walkway to an appliance shall be

rated as a floor as approved by the building official. As a minimum, for *access* to the attic space shall be provided by one of the following:

- 1) A permanent stair.
- 2) A pull down stair with a minimum 300 lb. (136) kg capacity.
- 3) An access door from an upper floor level.
- 4) Access Panel may be used in lieu of items 1, 2 and 3 with prior approval of the code official due to building conditions.

Exception: The passageway and level service space are not required where the appliance is capable of being serviced and removed...{Remainder of section unchanged}.

A receptacle outlet shall be provided at or near the equipment and appliance location within 25 feet and in accordance with the Electrical Code.

**(R) Section 306.5 is amended to read as follows:**

306.5 Equipment and appliances on roofs or elevated structures. Where *equipment* requiring *access* or appliances are located on an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm) above grade to access, a permanent interior or exterior means of access shall be provided. Permanent exterior ladders providing roof access need not extend closer than 12 feet (2438 mm) to the finish grade or floor level below and shall extend to the equipment and appliances' level service space. Such access shall ... (*bulk of section unchanged*)... on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope) ... (*bulk of section to read the same*).

A receptacle outlet shall be provided at or near the equipment and appliance location within 25 feet and in accordance with the Electrical Code.

**(S) Section 306.5.1 is amended to read as follows:**

306.5.1 Sloped roofs. Where appliances, equipment, fans or other components that require service are installed on a roof having slopes greater than 3 units vertical in 12 units horizontal (25-percent slope) and having an edge more than 30 inches (762 mm) above grade at such edge, a catwalk at least 16 inches in width with substantial cleats spaced not more than 16 inches apart shall be provided from the roof access to a level platform at the appliance. The level platform shall be provided on each side of the appliance to which access is required for service, repair or maintenance. The platform shall be not less than

30 inches (762 mm) in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches (1067 mm) above the platform, shall be constructed so as to prevent the passage of a 21 inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*.

**(T) Sections 306.6 and 306.6.1 are added to read as follows:**

306.6 Water heaters above ground floor. When the attic, roof, mezzanine or platform on which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.

- Exceptions:
1. An approved water heater which is capable of being serviced and removed by removing tiles only in a lay-in ceiling and may be serviced while standing on a portable ladder.
  2. An approved water heater installed not more than ten (10) feet (3048 mm) above the ground or floor level and may be serviced while standing on a portable ladder.

306.6.1 Illumination and convenience outlet. Whenever the mezzanine or platform is not adequately lighted or access to a receptacle outlet is not obtainable from the main level, lighting and a receptacle outlet shall be provided in accordance with Section 306.3.1.

**(U) Section 307.2.2 is amended to read as follows:**

307.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, polyethylene, ABS, CPVC, PVC, or polypropylene pipe or tubing. Plastic material shall be painted or coated with an *approved* material to prevent damage from sunlight. All components shall be selected for the pressure, temperature, and exposure rating of the installation. *{Remainder unchanged}*

**(V) Section 307.2.3 is amended by changing item #2 to read as follows:**

- 2) A separate overflow drain line shall be connected to the drain pan provided with the equipment. Such overflow drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The overflow drain line shall connect to the drain pan at a higher level than the primary drain connection. However, the conspicuous point shall not create a hazard such as dripping over a walking surface or other areas so as to create a nuisance.

**(W) Section 403.2.1 is amended by adding item #5 to read as follows:**

- 5) Toilet rooms within private dwellings that contain only a water closet, lavatory or combination thereof may be ventilated with an *approved* mechanical recirculating fan or similar device designed to remove odors from the air.

**(X) Section 501.3 is amended by adding an exception to read as follows:**

501.3 Exhaust discharge. The air removed by every mechanical exhaust system shall be discharged outdoors to a point where it will not cause a public nuisance and not less than the distances specified in Section 501.3.1. The air shall be discharged to a location from which it cannot be readily drawn in by a ventilating system. Air shall not be exhausted into an attic or crawl space or soffit.

Exceptions:

- 1) Whole house ventilation-type attic fans shall be permitted to discharge into the attic space of dwelling units having private attics.
- 2) Commercial cooking recirculating systems.
- 3) Where installed in accordance with the manufacturer's instructions and where mechanical or natural ventilation is otherwise provided in accordance with Chapter 4, listed and labeled domestic ductless range hoods shall not be required to discharge to the outdoors.
- 4) Toilet room exhaust ducts may terminate in a warehouse or shop area when infiltration of outside air is present.

**(Y) Section 504.8 is amended to read as follows:**

504.8 Domestic clothes dryer ducts. Exhaust ducts for domestic clothes dryers shall conform to the requirements of Sections 504.8.1 through 504.8.6. The size of the duct shall not be reduced along its developed length or at the point of termination.

**(Z) Section 607.5.1 is amended to read as follows:**

607.5.1 Fire Walls. Ducts and transfer openings permitted in fire walls in accordance with Section 705.11 of the *International Building Code* shall be protected with listed fire dampers installed in accordance with their listing. For hazardous exhaust systems see Section 510.1-510.9 IMC."

## **SECTION VI.**

Sections 14-121 through 14-123 of Article VII, "International Energy Conservation Code Amendments/Administration" of Chapter 14, "Buildings and Building Regulations" of the Code of Ordinances of the City of Euless, Texas, are hereby amended in their entirety to read as follows:

### **"Sec. 14-121. Adoption; International Energy Conservation Code.**

The International Energy Conservation Code, 2015 Edition, as published by the International Code Council is hereby adopted by reference as the energy conservation code of the City. Unless deleted, amended, expanded or otherwise changed herein, all provisions of such code shall be fully applicable and binding.

### **Sec. 14-122. Administration of Energy Conservation Code.**

The energy conservation code of the City shall be administered and enforced by the office of the Building Official. All references to the Code Official shall mean the Building Official.

### **Sec. 14-123. Amendments.**

The International Energy Conservation Code, 2015 Edition, is amended as follows:

#### **(A) Sections C101.4.2 and R101.4.2 are added to read as follows:**

C101.4.2 Historic buildings. Any building or structure listed in the State or National Register of Historic Places; designated as historic property under local or state designation law or survey; certified as a contributing resource with a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer of the Keeper of the National Register of Historic Places, shall comply with all of the provisions of this code.

Exception: Whenever a provision or provisions shall invalidate or jeopardize the historical designation or listing, that provision or provisions may be exempted.

R101.4.2 Historic buildings. Any building or structure listed in the State or National Register of Historic Places; designated as historic property under local or state designation law or survey; certified as a contributing resource with a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State

Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer of the Keeper of the National Register of Historic Places, shall comply with all of the provisions of this code.

Exception: Whenever a provision or provisions shall invalidate or jeopardize the historical designation or listing, that provision or provisions may be exempted.

**(B) Sections C102.1.2 and R102.1.2 are added to read as follows:**

**C102.1.2 Alternative compliance.** A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance.

**R102.1.2 Alternative compliance.** A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance. Regardless of the program or the path to compliance, each 1- and 2-family dwelling shall be tested for air and duct leakage as prescribed in Section R402.4 and R403.3.3 respectively.

**(C) Sections C104.2 and R104.2 are amended to read as follows:**

C104.2 Required Inspections. The code official or his or her designated agent, or an approved third-party inspection company, upon notification, shall make the inspections set forth in Sections C101.4.2.1 through C104.2.5.

R104.2 Required Inspections. The code official or his or her designated agent, or an approved third-party inspection company, upon notification, shall make the inspections set forth in Sections R101.4.2.1 through R104.2.5.

**(D) Sections C104.4 and R104.4 are amended to read as follows:**

C104.4 Approved inspection agencies. The code official is authorized to accept and require at the expense of the applicant reports of third-party inspection agencies not affiliated with the building design ...{Remainder of the text unchanged}

R104.4 Approved inspection agencies. The code official is authorized to accept and require at the expense of the applicant reports of third-party inspection agencies not affiliated with the building design ...{Remainder of the text unchanged}

**(E) The following definition is added to Sections C202 and R202:**

**PROJECTION FACTOR.** The ratio of the horizontal depth of the overhang, eave or permanently attached shading device, divided by the distance measured vertically from the bottom of the fenestration glazing to the underside of the overhang, eave or permanently attached shading device.

**(F) The following definition is added to Section R202:**

**DYNAMIC GLAZING.** Any fenestration product that has the fully reversible ability to change its performance properties, including *U*-factor, solar heat gain coefficient (SHGC), or visible transmittance (VT).

**(G) Section R303.2.2 is added to read as follows:**

R303.2.2 Insulation installed in walls. Insulation batts installed in walls shall be totally surrounded by an enclosure on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing or other equivalent material approved by the Building Official.

**(H) Section R402.3.2 is amended by adding a paragraph and table following the exception to read as follows:**

Where vertical fenestration is shaded by an overhang, eave, or permanently attached shading device, the SHGC required in Table R402.1.2 shall be reduced by using the multipliers in Table R402.3.2 SHGC Multipliers for Permanent Projections.

**Table R402.3.2 SHGC Multipliers for Permanent Projections<sup>a</sup>**

Projection Factor	SHGC Multiplier (all Other Orientation)	SHGC Multiplier (North Oriented)
0 - 0.10	1.00	1.00
>0.10 – 0.20	0.91	0.95
>0.20 – 0.30	0.82	0.91
>0.30 – 0.40	0.74	0.87
>0.40 – 0.50	0.67	0.84
>0.50 – 0.60	0.61	0.81
>0.60 – 0.70	0.56	0.78

>0.70 – 0.80	0.51	0.76
>0.80 – 0.90	0.47	0.75
>0.90 – 1.00	0.44	0.73

<sup>a</sup> North oriented means within 45 degrees of true north.

**(I) Section R402.4.1.2 is amended by adding a last paragraph to read as follows:**

Mandatory testing shall only be performed by individuals that are certified to perform air infiltration testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity, and may not be employed; or have any financial interest in the company that constructs the structure.

**(J) Section R403.3.3 is amended by adding a last paragraph to read as follows:**

Mandatory testing shall only be performed by individuals that are certified to perform duct testing leakage testing certified by national or state organizations as approved by the Building Official. The certified individuals must be an independent third-party entity and must not be employed or have any financial interest in the company that constructs the structure.

**(K) Sections C402.2.7 and R402.2.14 are amended to read as follows:**

C402.2.7 and R402.2.14 Insulation installed in walls. To insure that insulation remains in place, insulation installed in walls shall be totally enclosed on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing, netting or other equivalent material approved by the Building Official.

**(L) Section R405.6.2 is amended by adding the following sentence to the end of the paragraph:**

Acceptable performance software simulation tools may include, but are not limited to, REM Rate<sup>TM</sup>, Energy Gauge and IC3. Other performance software programs accredited by RESNET BESTEST and having the ability to provide a report as outlined in R405.4.2 may also be deemed acceptable performance simulation programs and may be considered by the Building Official.

**(M) TABLE R406.4 MAXIMUM ENERGY RATING INDEX is amended to read as follows:**

**TABLE R406.4**

<b>MAXIMUM ENERGY RATING INDEX CLIMATE ZONE</b>	<b>ENERGY RATING INDEX</b>
3	65

**SECTION VII.**

Sections 14-141 through 14-160 of Article VIII, “National Electrical Code Amendments/Administration” of Chapter 14, “Buildings and Building Regulations” of the Code of Ordinances of the City of Euless, Texas, are hereby amended in their entirety to read as follows:

**“Sec. 14-141. Adoption; National Electrical Code.**

The National Electrical Code, 2014 Edition, as published by the NFPA is hereby adopted by reference as the electrical code of the City. Unless deleted, amended, expanded or otherwise changed herein, all provisions of such Code shall be fully applicable and binding.

**Sec. 14-142. Administration and Enforcement of the Electrical Code.**

The electrical code of the City shall be administered and enforced by the office of the Building Official. All references to Code Official shall mean the Building Official.

**Sec. 14-143. Amendments.**

The National Electrical Code, 2014 Edition, is amended as follows:

**(A) Section 90-4.1 is added to read as follows:**

Article 90-4.1 Administration and Enforcement. The fees to be charged for any electrical work in the city shall be in accordance with Euless Code of Ordinances Chapter 30. There shall be a reinspection fee, as set forth in Chapter 30, where it is necessary for the electrical inspector to reinspect any phase of an electrical job.

**(B) The following definition in Article 100, Part I is amended to read as follows:**

Intersystem Bonding Termination. A device that provides a means for connecting bonding conductors for communication systems and other systems such as metallic gas piping systems to the grounding electrode system.

**(C) Article 110.2 is amended to read as follows:**

110.2 Approval. The conductors and equipment required or permitted by this *Code* shall be acceptable only if approved. Approval of equipment may be evident by

listing and labeling of equipment by a Nationally Recognized Testing Lab (NRTL) with a certification mark of that laboratory or a qualified third-party inspection agency approved by the AHJ.

Exception: Unlisted equipment that is relocated to another location within a jurisdiction or is field modified is subject to the approval by the AHJ. This approval may be by a field evaluation by a NRTL or qualified third party inspection agency approved by the AHJ.

**(D) Article 230.2(A) is amended by adding a sixth special condition to read as follows:**

(6) In supplying electrical service to multifamily dwellings, two or more laterals or overhead service drops shall be permitted to a building when both of the following conditions are met:

- a. The building has six or more individual gang meters and all meters are grouped at the same location; and
- b. Each lateral or overhead service drop originates from the same point of service.

**(E) Article 230.70 (A) (1) is amended to read as follows:**

The service disconnecting means shall be installed at a readily accessible location outside the building or structure within a maximum of 5 feet of the service conductors.

**(F) Article 230.71(A) is amended by adding the following exception:**

230.71 Maximum Number of Disconnects.

*Exception: Multi-occupant Buildings. Individual service disconnecting means is limited to six for each occupant. The number of individual disconnects at one location may exceed six.*

**(G) Article 240.91 is deleted.**

**(H) Article 250.52 is amended by adding the following paragraph.**

250.52 Grounding Electrodes. (A) Electrodes Permitted for Grounding. Where a metal underground water pipe, as described in item (1), is not present, a method of grounding as specified in (2) through (4) below shall be used.

**(I) Article 300.1 is amended by adding the following:**

(D)(1) Electric wiring installed within the city shall be no less than nonmetallic cable. Aluminum wiring shall not be used in any installation except for the service entrance conductors and to the service main control cutoff equipment to the premises wiring system.

(2) No electrical panels or plastic electrical boxes shall be mounted on the opposite sides of the walls around bath tubs and shower enclosures, and NMC or similar cables in such locations shall be enclosed in metal conduit around bath areas.

(3) Smoke detectors (alarms), carbon monoxide alarms, GFCI and AFI protection shall be updated at time of service upgrade or remodel.

**(J) Article 300.11(A) (1) is amended by adding the following exception:**

Exception: Ceiling grid support wires may be used for structural supports when the associated wiring is located in that area, not more than two raceways or cables supported per wire, with a maximum nominal metric designation.

**(K) Article 310.15(B) (7) is amended to read as follows:**

(6) 120/240-Volt, 3-Wire, Single-Phase Dwelling Services and Feeders. For dwelling units, conductors, as listed in Table 310.15(B)(7), shall be...{text unchanged}...provided the requirements of 215.2, 220.61, and 230.42 are met. This Article shall not be used in conjunction with 220.82.

**(L) Article 330.1 is amended by adding a second sentence as follows:**

All metal clad cable installations shall install insulated bushings.

**(M) Article 334.12 is amended by adding another use not permitted to read as follows:**

(11) In metal frame structures.

**(N) Article 500.8 (A) (3) is amended to read as follows:**

500.8 Equipment. Articles 500 through 504 require equipment construction and installation standards that ensure safe performance under conditions of proper use and maintenance.

(A) Suitability. Suitability of identified equipment shall be determined by one of the following:

- 1) Equipment listing or labeled.

- 2) Evidence of equipment evaluation from a qualified testing laboratory or inspection agency concerned with product evaluation.
- 3) Evidence acceptable to the authority having jurisdiction such as a manufacturer's self-evidence or an engineering judgment signed and sealed by a qualified Licensed Professional Engineer.

**(O) Article 505.7 (A) is amended to read as follows:**

505.7 Special Precaution. Article 505 requires equipment construction and installation that ensures safe performance under conditions of proper use and maintenance.

(A) Implementation of Zone Classification System. Classification of areas, engineering and design, selection of equipment and wiring methods, installation, and inspection shall be performed by a qualified Licensed Professional Engineer.

**(P) Article 700.17.1 is added to read as follows:**

Wiring of Emergency Light Fixtures.

- A. Battery pack fixtures must be wired to the normal lighting circuit where they are installed.

The battery pack shall be tied onto the hot leg of the room switch. Where room switches are not provided and lights are turned off at the breaker switch, it shall be necessary to provide a light switch at the breaker control panel, wiring the fixtures as previously described. Permanent identification of a RED circular mark at the breaker located in the electrical panel box.

- B. Where battery pack florescent fixtures are installed on a security light circuit which remains on at all times, it is not necessary to wire through a control switch provided the breaker is locked in the on position. All other installations shall be wired in the same manner as battery pack incandescent fixtures.
- C. Where large open areas are lighted with two or more circuits, it shall be necessary to wire each emergency light fixture to the nearest lighting circuit.

**(Q) Article 680.25 (A) is amended to read as follows:**

680.25 Feeders. These provisions shall apply to any feeder on the supply side of panelboards supplying branch circuits for pool equipment covered in Part II of this article on the load side of the service equipment or the source of a separately derived system.

#### A. Wiring Methods.

Feeders. Feeders shall be installed in rigid metal conduit or intermediate conduit. The following wiring methods shall be permitted if not subject to physical damage.

- 1) Liquid tight flexible nonmetallic conduit
- 2) Rigid polyvinyl chloride conduit
- 3) Reinforced thermosetting resin conduit
- 4) Electrical nonmetallic tubing where installed on or within a building
- 5) Electrical nonmetallic tubing where installed within a building
- 6) Type MC cable where installed within a building and if not subject to corrosive environment
- 7) Nonmetallic-sheathed cable
- 8) Type SE cable.

#### **Sec. 14-144. Right of entry.**

The city electrical inspector shall have the power to lawfully enter any building, structure, alley, lot, manhole or subway during reasonable hours and, when necessary, obtain an administrative search warrant authorizing the same, and while in the actual performance of his regular duties he shall have the power to call upon a peace officer to cause the arrest of any person violating any provisions of this article.

#### **Sec. 14-145. Hindering inspectors prohibited.**

No person shall hinder or prevent the Building Official or his designee from making any electrical inspection.

#### **Sec. 14-146. Power to disconnect service.**

The Building Official is hereby empowered to disconnect or order the public utility company serving electrical energy to sever the electrical service to such wiring, device and/or materials found to be defectively installed until the installation of such wiring, device and material has been made safe as directed by the electrical inspector. Any person ordered and notified in writing to discontinue any electrical service shall do so within 24 hours; where the Building Official has determined such conditions to be an immediate threat to life safety, service shall be terminated immediately, and such person shall not reconnect electrical service or allow it to be reconnected until notified by the city

electrical inspector.

**Sec. 14-147. Approval of inspector required before reconnecting service; exception.**

When service is disconnected to any building used for commercial or mercantile purposes, theaters, gasoline stations and garages, approval must be obtained from the Building Official before reconnecting to the electrical energy. Provided, however, where service is terminated for nonpayment of bill, it shall not be necessary to obtain city approval for reconnecting.

**Sec. 14-148 through 14-160. Reserved.”**

**SECTION VIII.**

**SEVERABILITY CLAUSE.** It is hereby declared to be the intention of the City Council of the City of Euless that the sections, paragraphs, sentences, clauses, and phrases of this ordinance are severable and if any phrase, clause, sentence, paragraph, or section of this ordinance shall be declared invalid or unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such invalidity or unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, or sections of this ordinance, since the same would have been enacted by the City Council without the incorporation in this ordinance of any such invalid or unconstitutional phrase.

**SECTION IX.**

**PENALTY FOR VIOLATION.** Any person, firm, or corporation violating any of the terms and provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in accordance with Section 1-12 “General Penalty”, Euless Code of Ordinances. Each such violation shall be deemed a separate offense and shall be punishable as such hereunder for violation of an ordinance governing building regulations.

**SECTION X.**

**CUMULATIVE CLAUSE.** This ordinance shall be cumulative of all provisions of ordinances of the City of Euless, Texas, except where the provisions of this ordinance are in direct conflict with the provisions of such ordinances, in which event the conflicting provisions of such ordinances are hereby repealed. The *2009 International Codes* named in this Ordinance adopted on January 24, 2012, are repealed except to the extent any provision herein is readopted as a part of the *2015 International Codes* named herein. The *2011 National Electrical Code* adopted on January 24, 2012, is repealed except to the extent any provision herein is readopted as a part of the *2014 National Electrical Code*.

**SECTION XI.**

**SAVINGS CLAUSE.** All rights and remedies of the City of Euless are expressly saved as to any and all violations of the provisions of the City Code or any other ordinances governing buildings and building regulations that have accrued at the time of the effective date of this ordinance; and, as to such accrued violations and all pending litigation, both civil and criminal, whether pending in court or not, under such ordinances, same shall not be affected by this ordinance but may be prosecuted until final disposition by the courts. To the extent any use is deemed to be grandfathered or vested under the *2009 International Codes* or the *2011 National Electrical Code*, such Code shall remain in full force and effect as to such use.

**SECTION XII.**

**PUBLICATION CLAUSE.** The City Secretary of the City of Euless is hereby directed to publish in the official newspaper of the City of Euless, as required by Section 12 of Article II of the Charter of the City of Euless.

**SECTION XIII.**

**EFFECTIVE DATE.** This ordinance shall be in full force and effect from and after its passage and publication, as provided by the Euless City Charter and the laws of the State of Texas.

**PRESENTED AND PASSED ON FIRST AND FINAL READING** at regular meeting of the Euless City Council on June 28, 2016, by a vote of \_\_\_\_\_ ayes, \_\_\_\_\_ nays, and \_\_\_\_\_ abstentions.

**APPROVED:**

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Linda Martin, Mayor

\_\_\_\_\_  
Wayne Olson, City Attorney

**ATTEST:**

\_\_\_\_\_  
Kim Sutter, TRMC, City Secretary