COMMUNITY DEVELOPMENT DEPARTMENT

DATE: December 29, 2016

FROM: Carl D. Hokenstad, AICP, Director of Community Development

ITEM: City of Bismarck Building Code – Building Regulations Ordinance Text Amendment

REQUEST

The City of Bismarck's Community Development Department – Building Inspections Division has initiated this building regulations ordinance text amendment in order to update the City of Bismarck Building Code.

Please place this item on the January 10 City Commission meeting and the January 24, 2017 City Commission meeting.

BACKGROUND INFORMATION

The International codes published by the International Code Council are nationally recognized codes that are updated every three years and establish the minimum acceptable standards necessary for protecting the public health, safety, and welfare in the built environment.

The proposed amendments will update the City of Bismarck Building code to the 2015 International Building Code (IBC), International Residential Code (IRC), International Mechanical Code (IMC), International Fuel Gas Code (IFGC), and International Energy Conservation Code (IECC). These are the same codes recognized and adopted by the State of North Dakota.

The North Dakota Department of Commerce, Division of Community Services (DCS) announced its intentions to update and amend the State Building Code in 2016.

Proposed amendments received by May 10th 2016 were reviewed and considered by the Building Code Advisory Committee (BCAC) and posted on the Division of Community Services website.

A public hearing of the Building Code Advisory Committee to receive comments and develop recommendations on the proposed amendments was held on July 7th 2016 and proposed amendments recommended by the BCAC were posted on the DCS website in August 2016.
A meeting of eligible voting jurisdictions and voting individuals was held on September 7th 2016.

The updated 2017 North Dakota State Building Code was posted on the DCS website in November 2016 with an effective date of January 1, 2017.

**RECOMMENDED CITY COMMISSION ACTION**

January 10th Meeting of the Board of City Commissioners – consider the request for the building ordinance text amendments as outlined in Ordinance 6243 and take final action on the proposed amendments.

January 24th Meeting of the Board of City Commissioners – hold a public hearing on the building ordinance text amendments as outlined in Ordinance 6243 and take final action on the proposed amendments.

**STAFF CONTACT INFORMATION**

Please contact Brady Blaskowski, CBCO, CFM, at 355-1467 or bblaskowski@bismarcknd.gov

Building Official Brady Blaskowski will also present this item at the meeting.
CITY OF BISMARCK
Ordinance No. 6243

First Reading
Second Reading
Final Passage and Adoption
Publication Date

AN ORDINANCE TO AMEND AND RE-ENACT SECTION 4-02-02 and 4-02-06 OF THE BISMARCK CODE OF ORDINANCES (REV.) RELATING TO ADOPTION OF THE CITY OF BISMARCK BUILDING CODE AND AMENDMENTS TO THE CODES.

BE IT ORDAINED BY THE BOARD OF CITY COMMISSIONERS OF THE CITY OF BISMARCK, NORTH DAKOTA:

Section 1. Amendment. Section 4-02-02 of the City of Bismarck Code of Ordinances (1986 Rev.) relating to Adoption of the City of Bismarck Building Code is hereby amended and re-enacted to read as follows:

4-02-02. Adoption of the City of Bismarck Building Code. There is hereby adopted by the City of Bismarck and incorporated by reference herein the City of Bismarck Building Code which shall consist of the following codes, except those portions hereinafter deleted, modified or amended; (appendix chapters are not adopted unless specified):

2012 2015 International Building Code (IBC)
2012 2015 International Residential Code (IRC) (including appendixes E & J)
2012 2015 International Mechanical Code (IMC)
2012 2015 International Fuel Gas Code (IFGC)
2015 International Energy Conservation Code (IECC)
Wiring Standards of North Dakota
North Dakota State Plumbing Code (including appendix H)
Section 2. Amendment. Section 4-02-06 relating to Amendments to the Codes is hereby amended and re-enacted as follows:

4-02-06. Amendments to the Codes. The codes adopted in Section 4-02-02 are hereby amended as follows:

1. General: Whenever reference is made to the National Electrical Code (NEC) it shall mean the Wiring Standards of North Dakota. Whenever reference is made to the International Plumbing Code (IPC) or the International Private Sewage Disposal Code (IPSDC) it shall mean the North Dakota State Plumbing Code. Whenever reference is made to flood hazard areas or flood-resistant construction requirements, the City of Bismarck Ordinance, Title 14, Chapter 14-04, Floodplain District regulations shall apply.

Whenever any work for which a permit is required has been commenced without first obtaining said permit the fee for said permit shall be double the normal fee.


Section 101.4.7 Existing Buildings. Add: Exception: 1. Existing buildings may use Chapter 34 of the IBC 2012 as an alternative to using the IEBC 2015.

Section 104.8 Liability. Add: This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building or structure for any damages to persons or property caused by defects, nor shall the code enforcement agency or city be held as assuming any such liability by reason of the inspection authorized by this code or any permits or certificates issued under this code.

Section 105.2 Work exempt from permit. Building: Amend items 6 and 11 to read:


11. Swings and other playground equipment.
Section 105.2 Work exempt from permit. Building: Add item 14:


Section 107.3.1 Approval of construction documents. Amend to read: When the Building Official issues a permit, the construction documents shall be approved. One set of construction drawings so reviewed shall be retained by the Building Official.

Section 109.2 Schedule of permit fees. Amend to read: Building permit valuation shall include total value of the work for which a permit is being issued, such as electrical, gas, mechanical, plumbing equipment and other permanent systems, including materials and labor. If, in the opinion of the building official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the building official. Final building permit valuation shall be set by the building official.

Section 110.1-4: Add: Occupying or permitting occupancy of any building or structure prior to the issuance of a Certificate of Occupancy shall constitute an infraction under the provisions of the Code of Ordinances of the City of Bismarck.

Section 112 Board of Appeals: Delete.

Section 202 DEFINITIONS, COMMERCIAL MOTOR VEHICLE. Amend to read: A motor vehicle used to transport passengers or property, or motorized equipment where the motor vehicle or equipment: Has a gross vehicle weight rating of 10,000 pounds or more; or have combined weights greater than 26,000 lbs; or is designed to transport 16 or more passengers, including the driver.

Section 305.2 Group E, Day care facilities. Amend to read: Group E Day care facilities. This group includes buildings and structures or portions thereof occupied by more than twelve
children older than 2½ years of age who receive educational supervision or personal care services for fewer than 24 hours per day.

Section 305.2.2 Twelve or fewer children. Amend to read: Twelve or fewer children. A facility having twelve or fewer children receiving such day care shall be classified as part of the primary occupancy.

Section 305.2.3 Twelve or fewer children in a dwelling unit. Amend to read: Twelve or fewer children in a single family dwelling and having twelve or fewer children receiving such day care shall be classified as a Group R-3 occupancy or shall comply with the Residential Code.

Section 308.6 Institutional Group I-4, day care facilities. Amend to read: Institutional Group I-4 occupancy shall include buildings and structures occupied by more than twelve persons of any age who receive custodial care for fewer than 24 hours per day by persons other than parents or guardians, relatives by blood, marriage or adoption, and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

Adult day care
Child day care

Section 308.6.1 Classification as Group E. Amend to read: A child day care facility that provides care for more than twelve but not more than 100 children 2 ½ years of age, where the rooms in which children are cared for are located on a level of exit discharge serving such rooms and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

Section 308.6.3 Twelve or fewer persons receiving care. Amend to read: A facility having twelve or fewer persons receiving custodial care shall be classified as part of the primary occupancy.
Section 308.6.4 Five or fewer persons receiving care in a dwelling. Amend to read: A facility such as above within a dwelling unit having twelve or fewer persons receiving custodial care shall be classified as Group R-3 occupancy or shall comply with the International Residential Code.

Section 310.5.1 Amend to read: Care Facilities within a single-family dwelling. Care facilities for twelve or fewer persons receiving personal care that are within a single family dwelling are permitted to comply with the International Residential Code.

Section 406.3.4.1 Dwelling unit Separation. Amend to read: The private garage shall be separated from the dwelling unit and its attic area by means of gypsum board, not less than 5/8 inch in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a 5/8 inch type X gypsum board or equivalent and 5/8 inch gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the dwelling unit shall be either solid wood doors or solid or honeycomb core steel doors not less than 1 3/8 inch in thickness, or doors in compliance with section 716.5.3 with a fire protection rating of not less than 20 minutes.

Section 706.6 Vertical continuity. Exceptions. Add:

7. Fire walls installed within detached structures of group U or Group S-2 occupancies may terminate at the underside of the roof sheathing provided such walls are not required to be fire-resistance rated construction due to fire separation distance.

Section 902.1 Definitions. Add: COMMERCIAL MOTOR VEHICLE.
Section [F] 903.2.8 Group R: Amend to read: An automatic sprinkler system installed in Section 903.3 shall be provided throughout all buildings with a Group R fire area, except in one- and two-family dwellings and townhouses.

Exception: Single family dwelling or a residential building that contains no more than two dwelling units.

Section [F] 903.2.9 Group S-1: Amend item 4 to read: A group S-1 fire area used for storage of commercial trucks, buses, or other similar large vehicles where the fire area exceeds 5,000 square feet.

Section [F] 903.2.9 Group S-1. Add item 6:

6. A Group S-1 occupancy where the usage is not determined at time of permit application.

Section [F] 903.2.9.1 Repair garages: Amend item 4 to read: A group S-1 fire area used for repair of commercial trucks, buses, or other similar large vehicles where the fire area exceeds 5,000 square feet.

Section [F] 903.2.10.1 Commercial parking garages: Amend to read: An automatic sprinkler system shall be installed throughout buildings used for storage of commercial trucks, buses, or other similar large vehicles where the fire area exceeds 5,000 square feet.

Section [F] 903.2.11.3 Buildings 55 feet or more in height. Amend to read: Buildings 55 feet, or five stories or more in height. An automatic sprinkler system shall be installed throughout buildings that have one or more stories with an occupant load of 30 or more located 55 feet, or five stories or more above the lowest level of fire department vehicle access, measured to the finished floor.

Section 903.3.1 Automatic sprinkler systems. Amend to read: Sprinkler systems shall be
designed with a 5 psi safety margin and installed in accordance with Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3 and other chapters of this code, as applicable.

Section [F] 903.3.1.2.1 Balconies and decks: Amend to read: Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of dwelling units and sleeping units where the building is of Type V construction, provided there is a roof, overhang six (6) inches greater, or deck above. Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are within 1 inch (25 mm) to 6 inches (152 mm) below the structural members and a maximum distance of 14 inches (356 mm) below the deck of the exterior balconies and decks that are constructed of open wood joist construction.

Section 905, Standpipe Systems, is amended to read as follows:

Section [F] 905.1 General. Add: Class II and III standpipe systems are prohibited. Where required within this section, all standpipe systems shall meet the requirements of a Class 1 standpipe.

Section [F] 907.2.3 Group E. Amend to read: A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system. Where approved by the fire code official, a building's emergency communication system interfaced with the fire alarm system in accordance with NFPA 72 is acceptable.

Section [F] 907.2.11.1 Group R-1. Exceptions. Add:
In dwelling units where the ceiling height of a room open to the hallway serving the sleeping rooms exceeds that of the hallway by 24 inches or more, smoke detectors shall be installed in the hallway and in the adjacent room.

Section [F] 907.2.11.2 Group R-2, R-3, R-4, and I-1. Exceptions. Add:

In dwelling units where the ceiling height of a room open to the hallway serving the sleeping rooms exceeds that of the hallway by 24 inches or more, smoke detectors shall be installed in the hallway and in the adjacent room.

Section 1011.1 General. Exceptions. Add:

2. Stairways used only to attend equipment or private stairways serving an occupant load of 10 or fewer persons and which are not accessible to the public.

Section 1011.2 Width and capacity. Add:

Exception 4. Stairways used to attend equipment or private stairways serving an occupant load of 10 or fewer persons and which are not accessible to the public.

Section 1011.5.2 Riser height and tread depth. Amend item 3, and Add item 6 to read:

3. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 8 inches; the minimum tread depth shall be 9 inches; the minimum winder tread depth at the walkline shall be 10 inches; and the minimum winder tread depth shall be 6 inches. A nosing projection not less than 3/4 inch but not more than 11/4 inches shall be provided on stairways with solid risers where the tread depth is less than 11 inches.
In private stairways serving an occupant load of less than ten (10) and stairways to unoccupied roofs, the maximum riser height shall be 8 inches and the minimum tread depth shall be 9 inches.

Section 1011.11 Handrails. Exceptions. Add:

Stairways used only to attend equipment or private stairways serving an occupant load of 10 or fewer persons and which are not accessible to the public shall have a handrail on at least one side.

Vehicle service pit stairways are exempt from the rules for stairway railings and guards if they would prevent a vehicle from moving into place over the pit.

Section 1015.2 Where required. Amend to read: Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, stairs, ramps and landings, that are located more than 30 inches above the floor or grade below of if within 36 inches horizontally to the edge of the open side the vertical measurement to the floor or grade below is greater than 48 inches. Guards shall be adequate in strength and attachment in accordance with section 1607.8.

Section 1104.4 Multistory buildings and facilities. Exception 1. Amend to read:An accessible route is not required to stories, basements and mezzanines that have an area of not more than 3,000 square feet, are located above or below accessible levels and are below the third story.

Section 1203.1 General. Amend to read: Buildings shall be provided with natural ventilation in accordance with section 1203.4, or mechanical ventilation in accordance with the International Mechanical Code. Ambulatory care facilities and Group I-1 occupancies shall be ventilated by mechanical means in accordance with section 407 of the International Mechanical Code.
Section 1207 SOUND TRANSMISSION: Delete.

Chapter 13 Energy Efficiency: Amend to read: Buildings shall be designed and constructed in accordance with the 2009 International Energy Conservation Code.

Section 1507.2 Fasteners. Amend to read: Fasteners for asphalt shingles shall be galvanized, stainless steel, aluminum, or copper roofing nails, minimum 12 gage 0.105 inch with a minimum 0.375 inch-diameter head, of a length to penetrate through the roofing materials and a minimum of 0.75 into the roof sheathing or other fasteners as approved by the building official and shingle manufacturer. Where the roof sheathing is less than 0.75 inch thick, the nails shall penetrate through the sheathing. Fasteners shall comply with ASTM F 1667.

Section 16043.1. Add: It shall not be the responsibility of the building official to determine engineering requirements of this code. Exclusive of the conventional light-frame wood construction provisions referenced in Section 2308, the method to resist loads as referenced in this chapter is the responsibility of a structural engineer or other qualified design professional.

Section 1608.1 General. Amend to read: Design snow loads shall be determined in accordance with section 7 of ASCE 7, but the design roof load shall not be less than that determined by Section 1607 nor less than 30psf (0.96 kN/m²).

Section 1610.1 General. Exception: Amend to read: Foundation walls extending not more than 9 feet below grade and laterally supported at the top by flexible diaphragms shall be permitted to be designed for active pressure.

Section 1612 Flood loads. Delete entire section; refer to Chapter 14-04-19 of the Code of Ordinances of the City of Bismarck.
Section 1804.4 Site Grading. Amend to read: Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection. Lots shall be graded to drain surface water away from foundation walls. The procedure used to establish the final ground level adjacent to the foundation shall account for additional settlement of the backfill.

Section 1809.5 Frost Protection. Add: Exception

4. Free-standing buildings used as Group U occupancies for the storage of private or pleasure-type motor vehicles constructed in accordance with section 406.3.1.

Section 2902.2 Separate Facilities. Add: Exception 4. Separate facilities shall not be required in business occupancies with a floor area of fifteen-hundred (1,500) square feet or less.


Section R104.8.1 Legal Defense. Amend to read: any suit or criminal complaint instituted against an officer or employee because of an act or omission performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be afforded all the immunities and defenses provided by other applicable local, state, or federal laws. The building official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

Section R104.10.1 Flood Hazard areas. Delete:

Section R105.2: Amend to read Section 105.2 Work exempt from permit. Building: Amend item 1 to read:

Building:

One-story detached accessory structures used as tool and storage sheds, playhouses, and similar
uses, provided the floor area does not exceed 120 square feet.

Section R108.3 Building permit valuations. Amend to Read: Building permit valuation shall include total value of the work for which a permit is being issued, such as electrical, gas, mechanical, plumbing equipment and other permanent systems, including materials and labor. If, in the opinion of the building official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the building official. Final building permit valuation shall be set by the building official.

Section R110.1.1: Add: Occupying or permitting occupancy of any building or structure prior to the issuance of a Certificate of Occupancy shall constitute an infraction under the provisions of the Code of Ordinances of the City of Bismarck.

Section R112 Board of Appeals: Delete.

Table R301.2 CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA (1). Add:

| Ground snow load: 35 psf |
| Wind Design speed: 115 mph |
| Wind Design topographic effects: NO |
| Wind Design special wind region: NO |
| Wind Design wind-borne debris zone: NO |
| Seismic Design Criteria: Zone A |
| Subject to Damage From weathering: Severe |
| Subject to Damage from frost depth: 4 feet |
| Subject to Damage from termite: NO |
| Winter Design Temp: -19 |
| Ice Barrier Underlayment Required: YES |
| Flood Hazards: (a)First FIRM adopted in 1985, (b) current/revised FIRM adopted 2014. |
| Air Freezing Index: 4000 |
| Mean Annual Temp: 42 degrees (F) |

Table R302.1 (1) Exterior walls. Add; foot note c. for the first column in walls to read: A common 2-hour fire-resistance-rated wall is permitted for two or more family dwellings where
the common wall is on a property line provided such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. Electrical installations shall be installed in accordance with chapters 34 through 43. Penetrations of electrical outlet boxes shall be in accordance with section 302.4.

Section R302.2 Townhouses: Exception 2. Amend to read: Where a sprinkler system is not provided, the common wall shall be not less than a 2-hour fire-resistance-rated wall assembly or two 1-hour fire-resistance-rated wall assemblies tested in accordance with ASTM E 119 or UL 263. Exception: A common 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E 119 or UL 263 is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts, or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Penetrations of electrical outlet boxes must be in accordance with section R302.4.

Section R302.5.1 Opening protection. Amend to read: 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 1¾ inches in thickness, solid or honeycomb-core steel doors not less than 1¾ inches thick, or 20-minute fire-rated doors.

Section R303.4 Mechanical ventilation. Delete:

Section R307.1 Space required. Amend to read: Fixtures shall be spaced in accordance with the requirements of North Dakota State Plumbing Code and per Figure R307.1, with the exception of the clearance in front of water closets and bidets which shall be at least 24 inches.

Section R310.2.3.1 Ladder and Steps. Amend to read: Window wells with a vertical depth greater than 44 inches shall be equipped with a
permanently affixed ladder or steps usable with the window in the fully open position, or shall be equipped with a permanently-attached platform at least 30 inches by 16 inches. The maximum distance between the top of the window well and a platform shall be 42 inches and shall not impede the operation of the window. Ladders or steps required by this section shall not be required to comply with Sections R311.7 and R311.8. Ladders or rungs shall have an inside width of at least 12 inches, shall project at least 3 inches from the wall and shall be spaced not more than 18 inches on center vertically for the full height of the window well.

Exception: Terraced window wells with a maximum of 24 inches per vertical rise and minimum of 12 inches per horizontal projection on each level shall also be allowed.

Section R311.3 Floors and landings at exterior doors. Add: Exception 2. A landing is not required on the outside of exterior doors other than the required egress door, where a stairway with a total rise of less than 30 inches is located on the exterior side of the door, provided the door does not swing over the stairway.

Section R311.3.1 Floor elevations at the required egress door. Exception: Amend to read: The landing or floor on the exterior side shall not be more than 8 inches below the top of the threshold provided the door does not swing over the landing or floor.

Where exterior landings or floors serving the required egress door are not at grade, they shall be provided with access to grade by means of a ramp in accordance with Section R311.8 or a stairway in accordance with Section R311.7.

Section R311.3.2 Floor elevations for other exterior doors. Amend to read: Floor elevations for other exterior doors. Doors other than the required egress door shall be provided with
landings or floors not more than 8 inches below the top of the threshold.

Exception: A landing is not required where a stairway with a total rise of less than 30 inches is located on the exterior side of the door, provided the door does not swing over the stairway.

Section R311.7.5.1 Risers. Amend to Read: The riser height shall not be more than 8 inches. The riser shall be measured vertically between landing edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees from the vertical. Open risers are permitted provided that the openings located more than 30 inches, as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter sphere.

Exceptions:

1. The opening between adjacent treads is not limited on spiral stairways.

2. The riser height of spiral stairways shall be in accordance with Section R311.7.10.1.

Section R311.7.5.2 Tread depth. Amend to read: The minimum tread depth shall be 9 inches. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread’s leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch.

Exception: Where a landing is not provided or required by section R311.3, R311.3.2 or R311.7.6, the top tread of a stair serving exterior doors other than the required exit door, and in-swinging doors opening into an attached garage, shall be permitted to exceed the smallest tread.
by more than 3/8 inch. Such a tread shall be at least 18 inches measured in the direction of travel.

Section R311.7.5.2.1 Winder treads. Amend to read: Winder treads shall have a minimum tread depth of 9 inches measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline. Winder treads shall have a tread depth of not less than 6 inches at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walkline shall not exceed the smallest winder tread by more than 3/8 inch). Consistently shaped winders at the walkline shall be allowed within the same flight of stairs as rectangular treads and do not have to be within 3/8 inch of the rectangular tread depth.

Exception: The tread depth at spiral stairways shall be in accordance with Section R311.7.10.1.

Section R311.7.6 Landings for stairways. Exception: Amend to read: Exceptions:

A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs.

A landing is not required at the top of an interior flight of stairs with a total rise of less than 30 inches, provided the door does not swing over the stairway.

Section R312.1.1 Where Required. Amend to read: Guards shall be located along open-sided walking surfaces, stairs, ramps and landings that are located more than 30 inches measured vertically to the floor or grade below. Insect screening shall not be considered as a guard.

Section R313 Delete in its entirety.

Section 313.1 Townhouse automatic fire systems. Amend to read: Townhouse automatic fire systems.
An automatic residential fire sprinkler system may be installed in townhouses.

Section 313.2 One- and two-family dwellings automatic fire systems. One- and two-family dwellings automatic fire systems. An automatic residential fire sprinkler system may be installed in one- and two-family dwellings.

Section R314.3 Location. Add: 5. In dwelling units where the ceiling height of a room open to the hallway serving the bedrooms exceeds that of the hallway by 24 inches or more, smoke detectors shall be installed in the hallway and in the adjacent room.

Section R325.5 Openness. Amend to read: Mezzanines shall be open and unobstructed to the room in which they are located except for walls not more than 36 inches in height., columns and posts.

Section 326.1 General. Amend to read: The design and construction of pools and spas shall comply with the City of Bismarck Ordinance, Title 4, Chapter 4-06, Swimming Pools.

Section R322 Flood-Resistant Construction. Delete: entire section; refer to Chapter 14-04-19 of the Code of Ordinances of the City of Bismarck.

Section R403.1.4.1 Frost Protection. Exceptions: Amend to Read:

Protection of freestanding accessory structures of light framed construction shall not be required.

Protection of freestanding accessory structures with an area of 400 square feet or less, of other than light-framed construction shall not be required.

Decks not supported by a dwelling need not be provided with footings that extend below the frost line.
Non-frost protected Foundations supporting detached accessory structures of light frame construction greater than 200 sf must be constructed of monolithic slab-on-grade construction with turned-down footings. Perimeter turned-down footings must be a minimum of 12-inches in depth and eight-inches wide. Perimeter turned-down footings shall have a minimum of one no. 4 bar at the top and at the bottom of the footing. Footings shall not bear on frozen soil.

Section R403.3 - R403.3.4 Frost Protected Shallow Foundations. Delete:


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<tr>
<th>Story and Type of structure</th>
<th>Footing Width (inches)</th>
<th>Footing Depth (inches)</th>
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<td>8</td>
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<tr>
<td>1 story with crawl space</td>
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<td>8</td>
</tr>
<tr>
<td>1 story plus basement</td>
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</tr>
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<td>2 story slab-on-grade</td>
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<tr>
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<td>8</td>
</tr>
<tr>
<td>3 story plus basement</td>
<td>26</td>
<td>8</td>
</tr>
</tbody>
</table>

Notes:

Chart is based on a soil load-bearing value of 1500 psf.
Chart is based on a snow load or roof live load of 30 psf.
Interpolation allowed. Extrapolation is not allowed.
Based on 32-foot-wide house with load-bearing center wall that carries half of the tributary attic, and floor framing. For every 2 feet of adjustment to the width of the house, add or
subtract 2 inches of footing width and 1 inch of footing thickness (but not less than 6 inches thick).

Table R404.1.2 (10). Alternate Vertical Reinforcement for 8 inch Concrete Foundation Walls. Add: Effective, July 1st, 2017.

<table>
<thead>
<tr>
<th>Wall Height (feet)</th>
<th>Unbalanced Backfill Height (feet)</th>
<th>Wall Thickness (inches)</th>
<th>On Center Spacing of Vertical Reinforcement</th>
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<td>&gt;6</td>
<td>8</td>
<td>#4 at 24”</td>
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<td>10</td>
<td>&gt;6</td>
<td>8</td>
<td>#4 at 15”</td>
</tr>
</tbody>
</table>

Notes:

Chart is based on an active soil pressure of 45 pounds per cubic foot (pcf) and soil classes GM, GC, SM, SM-CL and ML.

Reinforcing steel shall be ASTM A615 Fy = 60,000 pounds per square inch (psi).

The vertical reinforcing bars are to be located on the inside face.

Minimum concrete strength Fc1 = 3,000 pounds per square inch (psi).

Backfill shall not be placed until first floor framing and sheathing is installed and fastened or adequately braced and the concrete floor slab is in place or the wall is adequately braced.

Horizontal reinforcement must be installed in accordance with Table 404.1.2 (1).

Design is required for wall heights greater than 10 feet.


<table>
<thead>
<tr>
<th>Wall Height (feet)</th>
<th>Unbalanced Backfill Height (feet)</th>
<th>Wall Thickness (inches)</th>
<th>On Center Spacing of Vertical Reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>&gt;5</td>
<td>8</td>
<td>#4 at 18”</td>
</tr>
<tr>
<td>9</td>
<td>&gt;5</td>
<td>8</td>
<td>#4 at 12”</td>
</tr>
<tr>
<td>10</td>
<td>&gt;5</td>
<td>8</td>
<td>#4 at 10”</td>
</tr>
</tbody>
</table>
Notes:

Chart is based on an active soil pressure of 60 pounds per cubic foot (pcf) and soil classes SC, ML-CL and inorganic CL. Reinforcing steel shall be ASTM A615 Fy = 60,000 pounds per square inch (psi). The vertical reinforcing bars are to be located on the inside face. Minimum concrete strength Fc1 = 3,000 pounds per square inch (psi). Backfill shall not be placed until first floor framing and sheathing is installed and fastened or adequately braced and the concrete floor slab is in place or the wall is adequately braced. Horizontal reinforcement must be installed in accordance with Table 404.1.2 (1). Design is required for wall heights greater than 10 feet.

Add: Table R404.1.2(10) Alternative concrete foundation wall reinforcement for light frame construction. Add:

<table>
<thead>
<tr>
<th>Number of stories</th>
<th>Width of Foundation wall (inches)</th>
<th>Width of Footings (inches)</th>
<th>Thickness of Footing (inches)</th>
<th>Depth of Footing Below Finish Grade (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>16</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>16</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>18</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Attached Garage</td>
<td>6</td>
<td>12</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

Additional Notes:
Eight-foot foundation walls must be reinforced as follows: Horizontal bars—two number 4 bars within 12 inches of top of foundation, two number 4 bars in the lower 12 inches of the wall, one number 4 bar in the middle one-third of the wall height, one additional horizontal number 4 bar shall be required for each additional four feet of wall height or fraction thereof, two number 4 bars below each window opening extending 18 inches beyond each side of opening, two number 4 bars vertical on each side of an opening extending 18 inches beyond the opening. A four-foot foundation shall require a minimum of four number 4 bars arranged as required for eight-foot walls.

Detached residential garage foundations may use concrete slab construction providing such slabs are thickened to at least 12 inches at their edges, and such thickness have a horizontal width of at least eight inches at their bottom. Two number 4 bars must be provided in the thickened area of the slab with one located in the top and one located in the bottom of the footing. Reinforcement and must be continuous in the wider portion of the slab and a six-inch by six-inch, ten-gauge reinforcing mesh or shall be installed throughout the slab area in addition to the perimeter reinforcement. Detached garage slabs constructed on fill must be provided with reinforcement conforming to the requirements of specifications of the latest edition of "Concrete Steel Institute Design Handbook". Detached garages that do not utilize on grade slab construction shall have the exterior foundation walls not less than 8 inches thick extending 16 inches below finished grade and be reinforced with not less than two number 4 bars.

Support for open porches, steps, terraces and decks shall consist of frost-protected foundations—perimeter foundations as required for attached garages in Table R404.1.2, or not less than six (6) inch diameter piers, properly spaced designed to support the imposed loads., which extend to undisturbed soil but not less than four (4) feet below finished grade.
Section R404.1.3.2 Reinforcement for foundation walls. Amend to read: Concrete foundation walls shall be laterally supported at the top and bottom. Horizontal reinforcement shall be provided in accordance with Table R404.1.2(1). Vertical reinforcement shall be provided in accordance with Table R404.1.2(2), R404.1.2(3), R404.1.2(4), R404.1.2(5), R404.1.2(6), R404.1.2(7), or R404.1.2(8), or Table R404.1.2(10). Vertical reinforcement for flat basement walls retaining 4 feet or more of unbalanced backfill is permitted to be determined in accordance with Table R404.1.2(9). For basement walls supporting above-grade concrete walls, vertical reinforcement shall be the greater of that required by Tables R404.1.2(2) through R404.1.2(8) or by Section R611.6 for the above-grade wall. In Buildings assigned to Seismic Design Category D0, D1, or D2, concrete foundation walls shall also comply with Section R404.1.4.2.

Section R405 Foundation Drainage. Delete exception to Section R405.1.


Section R602.7.2 Rim board headers. Revise to read: Rim board header size, material and span shall be in accordance with Table R602.7(1). Rim board headers shall be constructed in accordance with Figure R602.7.2 and shall be supported at each end by full-height studs. Rim board headers supporting concentrated loads shall be designed in accordance with accepted engineering practice.

Section R602.7.5 Supports for headers. Amend to read: Headers shall be supported on each end with one or more jack studs or with approved framing anchors in accordance with Table R602.7(1) or R602.7(2). The full-height stud adjacent to each end of the header shall be end nailed to each end of the header with four-16d nails (3.5 inches × 0.135 inches).
Table R602.7.5 Minimum number of full height studs at each end of headers in exterior walls. Delete:

Section R602.10 Wall Bracing. Add: Exception: The wall bracing requirements of section R602.10 of the 2006 International Residential Code may be used as an alternative to this section.

Section R703.7.2 – Plaster. Add: Approved decorative coatings applied to a concrete or masonry surface shall be installed in accordance with the manufacturer’s installation instructions.

Section R905.2.5 Fasteners. Amend to read: Fasteners for asphalt shingles shall be galvanized steel, stainless steel, aluminum or copper roofing nails, minimum 12 gage [0.105 inch (3 mm)] shank with a minimum 3/8 inch (10 mm) diameter head, ASTM F 1667, of a length to penetrate through the roofing materials and a minimum of 3/4 inch (19 mm) into the roof sheathing or other fasteners as approved by the building official and shingle manufacturer. Where the roof sheathing is less than 3/4 inch (19 mm) thick, the fasteners shall penetrate through the sheathing.

Chapter 11 Energy Efficiency. Delete and replace with Chapter 11 of the 2009 International Residential Code.

Table N1102.1.2 (R402.1.2) Insulation and Fenestration Requirements By Component. Climate zone 6, Wood Frame Wall R-Value. Amend to read: 20 or 13+5h,i.

Table N1102.1.2 (R402.1.2) Insulation and Fenestration Requirements By Component. Climate zone 6, Basement Wall R-Value. Amend to read: 10/13.

Table N1102.1.2 (R402.1.2) Insulation and Fenestration Requirements By Component. Climate zone 6, Crawlspace R-Value. Amend to read: 10/13.
Table N1102.1.4 (R402.1.4) Equivalent U-Factors. Climate zone 6, Frame Wall Factor. Amend to Read: 0.057.

Table N1102.1.4 (R402.1.4) Equivalent U-Factors. Climate zone 6, Basement Wall U-Factor. Amend to Read: 0.059.

Table N1102.1.4 (R402.1.4) Equivalent U-Factors. Climate zone 6, Crawl Space Wall U-Factor. Amend to Read: 0.059.

Section N1102.4 (R402.4) Air leakage (Mandatory). Add: Exception: Dwelling units of R-2 Occupancies and multiple single family dwellings shall be permitted to comply with IECC Section C402.5.

Section N1102.4.1.2 (R402.4.1.2) Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding five air changes per hour in Climate Zones 1 through 8. Testing shall be conducted in accordance with ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

Section N1102.4.1.3 (R402.4.1.3) Visual Inspection Option. Add: Visual Inspection Option. Building envelope tightness and insulation shall be considered acceptable when installed in accordance with Table N1102.4.1.1 (R402.4.1.1) - "Air Barrier and Insulation" and has been field verified.

Section 1103.1.1 Programmable Thermostat. Delete:

Section N1103.3.2 (R403.3.2) Sealing (Mandatory). Exception 2. Amend to read: For ducts having a static pressure classification of less than 2 inches of water column (500 Pa), additional
closure systems shall not be required for continuously welded joints and seams, and locking-type joints and seams.

Section N1103.3.5 (R403.3.5) Building Cavities (Mandatory). Amend to read: Building framing cavities shall not be used as supply ducts.

Section N1103.3.5 (R403.3.5) Mechanical Ventilation (Mandatory). Amend title to read: Ventilation (Mandatory)

Table N1105.5.2(1) [R405.5.2(1)] Specifications for the Standard Reference and Proposed Design. Air exchange rate. Amend to read:

<table>
<thead>
<tr>
<th>Building Component</th>
<th>Standard Reference Design</th>
<th>Proposed Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air exchange rate</td>
<td>Air leakage rate of 5 air changes per hour in Climate Zones 1 through 8 at a pressure of 0.2 inches w.g. (50 Pa). (Balance is unchanged.)</td>
<td>For residences that are not tested, the same air leakage rate as the standard reference design. For tested residences, the measured air exchange rate. The mechanical ventilation rated shall be in addition to the air leakage rate and shall be as proposed.</td>
</tr>
</tbody>
</table>

Section M1503.4 Makeup Air Required. Amend to read: Exhaust hood systems capable of exhausting in excess of 400 cubic feet per minute (0.19m
3/S) shall be mechanically or naturally provided with makeup air at a rate in excess of 400 cfm. Such makeup air systems shall be equipped with not less than one damper. Each damper shall be a gravity damper or an electrically operated damper that automatically opens when the exhaust system operates. Dampers shall be accessible for inspection, service, repair and replacement without removing permanent construction or any other ducts not connected to the damper being inspected, serviced, repaired or replaced.

Section 1506.1.1 Required Condensation Provisions. Amend to read: Air exhaust openings shall terminate not less than 3 feet (914 mm) from property lines; 3 feet (914 mm) from operable into the building and 10 feet (3048 mm) from mechanical air intakes except where the opening is located 3 feet (914 mm) above the air intake. Openings shall comply with Sections R303.5.2 and R303.6.

Add—Section M1701.2.1 Prohibited Sources. Add: Attic spaces shall not be used as a source of combustion air.

M1801.1 Venting required. Amend to read: Fuel-burning appliances shall be vented to the outside in accordance with their manufacturer’s installation instructions. Venting systems shall consist of approved chimneys or vents, or venting assemblies that are integral parts of labeled appliances. Gas-fired appliances shall be vented in accordance with Chapter 24.

Section M2101.3 Protection of potable water. Amend to read: The potable water system shall be protected from backflow in accordance with the provisions listed in the North Dakota State Plumbing Code.

Section M2101.10 Tests. Amend to read: New hydronic piping shall be isolated and tested hydrostatically at a pressure of not less than 100-pounds per square inch (psi) (689 kPa). The duration of each test shall be not less than 15 minutes and not more than 20 minutes.
Section M2103.3 Piping Joints. Item 2. Amend to read: Copper tubing shall be joined by brazing complying with the North Dakota State Plumbing Code.

Section G2406.2 Prohibited locations. Exceptions 3 and 4. Delete:

Section G2406.4 Indoor Locations. Add: Any room within a building that contains a condensing appliance must be equipped with a floor drain or other approved means of condensate/liquid waste disposal.

Figure G2407.6.1 (1) All air from indoors-inlet air from ventilated crawl space and outlet air to ventilated attic. Delete:

Figure G2407.6.1 (2) All air from outdoors through ventilated attic. Delete:

Section G2407.11 (304.11) Combustion air ducts. Item 5. Amend to read: Ducts shall not terminate in an attic space.

Section G2413.5 (402.5) Allowable pressure drop. Amend to read: The design pressure loss in any piping system under maximum probable flow conditions, from the point of delivery to the inlet connection of the appliance, shall be such that the supply pressure at the appliance is greater than or equal to the minimum pressure required by the appliance but such pressure loss shall not be greater than .5 inch water column for gas pipe systems operating at less than 2 psi.

Section G2417.4.1 (406.4.3) Test pressure. Amend to read: The test pressure to be used shall not be less than one and one half times the proposed maximum working pressure, but not less than 25 psig, irrespective of design pressure. Where the test pressure exceeds 125 psig the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.
Section G2425.8 (501.8) Appliances not required to be vented. Item 7. Delete:

Section G2425.12 (501.12) Residential and low-heat appliances flue lining systems. Amend to read: Flue lining systems for use with residential-type and low-heat appliances shall be limited to the following:

Clay flue lining complying with the requirements of ASTM C 315 or equivalent when each appliance connected into the masonry chimney has a minimum input rating greater than 400,000 Btu/h. Clay flue lining shall be installed in accordance with Chapter 10.

Listed chimney liner systems complying with UL 1777.

Other approved materials that will resist, without cracking, softening, or corrosion, flue gases and condensate at temperatures up to 1800 F (982 C).

Aluminum (1100 or 3003 alloy or equivalent) not less than 0.032 inches thick up to 8 inches in diameter.

Stainless steel (304 or 430 alloy or equivalent) not less than 26 gauge (0.018 inches thick) to 8 inches in diameter or not less than 24 gauge (0.024 inches thick) 8 inches in diameter and larger.

When a metal liner is used other than a listed chimney liner a condensation drip tee shall be installed and supported in an approved manner.

Section G2427.5.2 (503.5.3) Masonry chimneys. Amend to read: Masonry chimneys shall be built and installed in accordance with NFPA211 and shall be lined as per G2425.12.

Section G2442.5 (618.5) Screen. Amend to read: Required outdoor air inlets shall be covered with a screen having \(\frac{1}{4}\) inch (6.4 mm) openings.
Required outdoor air inlets serving a nonresidential portion of a building shall be covered with screen having openings larger than \( \frac{1}{4} \) inch (6.4 mm) and not larger than \( \frac{1}{2} \) inch.

Section G2445 UNVENTED ROOM HEATERS. Delete:

Chapters 25 through 43. Delete:

Chapter 25 PLUMBING ADMINISTRATION. Delete:

Chapter 26 GENERAL PLUMBING REQUIREMENTS. Delete:

Chapter 27 PLUMBING FIXTURES. Delete:

Chapter 29 WATER SUPPLY AND DISTRIBUTION. Delete:

Chapter 30 SANITARY DRAINAGE. Delete:

Chapter 31 VENTS. Delete:

Chapter 32 TRAPS. Delete:

Chapter 34 GENERAL REQUIREMENTS. Delete:

Chapter 35 ELECTRICAL DEFINITIONS. Delete:

Chapter 36 SERVICES. Delete:

Chapter 37 BRANCH CIRCUIT AND FEEDER REQUIREMENTS. Delete:

Chapter 38 WIRING METHODS. Delete:

Chapter 39 POWER AND LIGHTING DISTRIBUTION. Delete:

Chapter 40 DEVICES AND LUMINAIRES. Delete:

Chapter 41 APPLIANCE INSTALLATION. Delete:

Chapter 42 SWIMMING POOLS. Delete:

Chapter 43 CLASS 2 REMOTE-CONTROL, SIGNALING AND POWER-LIMITED CIRCUITS. Delete:
Appendix E Section AE101.1. Amend to read: These provisions shall be applicable only to a manufactured home used as a single dwelling unit installed on non-privately owned (rental) lots.

4. 2012 2015 International Mechanical Code (IMC)

Section 109 Means of appeal. Delete.

Section 108.8 Equipment submerged under water. Add: Equipment submerged under water constitutes a fire and health hazard and is considered unsafe equipment. All residential and light commercial furnaces, boiler, and water heaters shall be replaced when any of the following components are submerged under water: gas control valve, burner assembly, electrical control panel, heat exchanger. The following components may be replaced without replacing the furnace or water heater when they are the only items submerged: furnace blower motor or insulation.

Section 201.3 Terms defined in other codes. Amend to read: Section 201.3 Where terms are not defined in this code and are defined in the International Building Code, International Fire Code, International Fuel Gas Code, National Electrical Code and North Dakota State Wiring Standards or the North Dakota State Plumbing Code, such terms shall have meanings ascribed to them as in those codes.

Section 304.10 Clearance from grade. Amend to read: Equipment and appliances installed at grade level shall be supported on a level concrete slab or other approved material extending not less than 2" above adjoining grade or shall be suspended not less than 6" above adjoining grade. Such support shall be in accordance with the manufacturers installation instructions.

Section 305.4 Interval of support. Amend to read: Piping shall be supported at distances not exceeding the spacing specified in Table 305.4, or in accordance with MSS SP-69. In addition to the requirements of Table 305.4, piping and
tubing shall be supported within 2 feet of every bend or angle.

Section 307.2.2 Drain pipe materials and sizes. Amend to read: Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, polybutylene, polyethylene, ABS, CPVC or PVC pipe or tubing. All components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of the North Dakota State Plumbing Code relative to the material type. Condensate waste and drain line size shall be not less than 3/4- inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with Table 307.2.2.

Section 401.2 Natural ventilation. Amend to read: Ventilation. Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical ventilation in accordance with Section 403.

Section 403.1 Ventilation system. Amend to read: Mechanical ventilation shall be provided by a method of supply air and return or exhaust air. The amount of supply air shall be approximately equal to the amount of return and exhaust air. The system shall not be prohibited from producing negative or positive pressure. The system to convey ventilation air shall be designed and installed in accordance with Chapter 6.

Exception: The latest version of ASHRAE 62.1 (Ventilation for acceptable indoor air quality) shall be considered to be an acceptable alternative to this section.

Section 505.2 Makeup air required. Amend to read: Exhaust hood systems capable of exhausting in excess of 400 cfm shall be provided with makeup air at a rate in excess of 400 cfm. Such makeup
air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

Section 508.1.1 Makeup air temperature. Add: Exception: Makeup air shall not be required to be cooled when supplied directly into the kitchen space.

Section 508.2 Compensating hoods. Amend to read: Manufacturers of compensating hoods shall provide a label indicating minimum exhaust flow and/or maximum makeup airflow that provides capture and containment of the exhaust effluent. Short circuit compensating hoods are prohibited.

Add: Section 508.2.1 Compensating Hood Make-up Air. Compensating hoods shall extract at least 40% of the required exhaust air flow from the kitchen area.

Section 509.2 Exhaust fan operation. Add: A hood exhaust fan(s) shall continue to operate after the extinguishing system has been activated unless fan shutdown is required by a listed component of the ventilation system or by the design of the extinguishing system. When the fire-extinguishing system discharges makeup air shall be shut off.

Add: Section 603.12.1 Required Condensation Provisions. All exhaust ducts, such as bathroom fans and dryer vents, if in a conditioned space, must be insulated at the last 5 feet before exiting building to no less than R-4.2. All exhaust ducts, such as bathroom fans and dryer vents, if in an unconditioned space must be insulated to no less than R-6.

Add: Section 701.3 Attic space. Attic space shall not be used for combustion air.

Section 1104.2 Machinery room. Add: Exception 3. If an existing refrigerating system is replaced or if an existing refrigeration plant is increased by not more than 50% of its original
capacity, but not more than 100 tons per system using a non-flammable class A1 or B1 refrigerant and the refrigeration machinery room was not provided in the original installation prior to 1994, a refrigeration machinery room shall not be required. If the existing refrigeration is not located in general machinery room separated from occupied spaces, a refrigeration machinery room shall be provided. The space containing the refrigeration machinery shall meet the requirement of Section 1104.3.4, protection room refrigerant decomposition, and Section 1105.3 requiring refrigerant detection. If the requirements of 1104.3.4 and 1105.3 cannot be met, a refrigeration machinery room shall be provided.


Add: Section 108.8 Equipment submerged under water. Equipment submerged under water constitutes a fire and health hazard and is considered unsafe equipment. All residential and light commercial furnaces, boilers, and water heaters shall be replaced when any of the following components are submerged under water: gas control valve, burner assembly, electrical control panel, heat exchanger. The following components may be replaced without replacing the furnace or water heater when they are the only things submerged: furnace blower or insulation.

Section 109 Means of appeal. Delete.

Section 303.3 Prohibited locations. Delete: Exceptions 3 and 4.

Section 304 Combustion, ventilation, and dilution air. Delete all references to attic space.

Section 304.6.1 Two permanent openings method. Amend to read: Two permanent openings, one commencing within 12 inches (305 mm) of the top and one commencing within 12 inches (305 mm) of the bottom of the enclosure, shall be provided. The openings shall communicate directly, or by
ducts, with the outdoors or spaces that freely communicate with the outdoors.

Where directly communicating with the outdoors, or where communicating with the outdoors through vertical ducts, each opening shall have a minimum free area of 1 square inch per 4,000 Btu/h (550 mm²/kW) of total input rating of all appliances in the enclosure.

Where communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of not less than 1 square inch per 2,000 Btu/h (1,100 mm²/kW) of total input rating of all appliances in the enclosure [see Figure 304.6.1(3)].

Figures 304.6.1(1) and 304.6.1(2). Delete:

Section 304.6.2 One permanent opening method. Amend to Read: One permanent opening, commencing within 12 inches (305 mm) of the top of the enclosure, shall be provided. The appliance shall have clearances of at least 1 inch (25 mm) from the sides and back and 6 inches (152 mm) from the front of the appliance. The opening shall directly communicate with the outdoors or through a vertical or horizontal duct to the outdoors and shall have a minimum free area of 1 square inch per 3,000 Btu/h (734 mm²/kW) of the total input rating of all appliances located in the enclosure and not less than the sum of the areas of all vent connectors in the space.

Section 304.11(5) Combustion air ducts. Items 5. Amend to read:

Section 304.11(5) Combustion air ducts. Add: Ducts shall not terminate in an attic space.

Exception. High efficient sealed combustion appliances may obtain combustion air from a well-ventilated attic space provided the installation complies with the manufacturers installation instructions.
Section 305.7 Clearance from grade. Amend to read: Equipment and appliances installed at grade level shall be supported on a level concrete slab or other approved material extending not less than 2 inches (76 mm) above adjoining grade or shall be suspended not less than 6 inches (152 mm) above adjoining grade. Such supports shall be installed in accordance with the manufacturer's instructions.

Section 310.1 Pipe and tubing other than CSST. Amend to read: Each above ground portion of a gas piping that is likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path. Gas piping shall be considered to be bonded where it is connected to appliances that are connected to the equipment grounding conductor of the circuit supplying that appliance. Corrugated stainless steel tubing (CSST) piping systems listed with an arc resistant jacket or coating system in accordance with ANSI LC-1 shall comply with this section. Where any CSST segments of a piping system are not listed with an arc resistant jacket or coating system in accordance with ANSI LC-1, Section 310.1.1 shall apply.

Section 310.1.1 CSST

Section 310.1.1 CSST. Amend to read: CSST without arc resistant jacket or coating system. CSST gas piping systems and piping systems containing one or more segments of CSST not listed with an arc resistant jacket or coating system in accordance with ANSI LC-1 shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system and shall comply with Sections 310.1.1.1 through 310.1.1.5.

Section 403.3 Other materials. Amend to read: Material not covered by the standards specifications listed herein shall be investigated and tested to determine that it is safe and suitable for the proposed service, and, in addition, shall be recommended for that service by the manufacturer and shall be approved by the code official.
Listed LPG hose may be used with natural gas when used for temporary heating at a maximum length of 50 feet.

Add: Section 403.10.1.1 Pipe joints. Gas supply systems with pressures 5 psig or greater and gas pipe joints 2 1/2 inches or larger, regardless of pressure, shall be welded.

Section 403.10.4 Metallic fittings. Item 1. Amend to read: Threaded fittings in sizes 2 1/2 inches or larger shall not be used except where approved.

Section 406.4 Test pressure measurement. Amend to read: 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. Dial gauges used to measure test pressures shall be performed with gauges of 2 psi increments or less and have a range not exceeding 100 psi unless otherwise approved.

Section 406.4.1 Test pressure. Amend to read: The test pressure to be used shall be no less than 1 1/2 times the proposed maximum working pressure, but not less than 20 psig irrespective of design pressure. Where the test pressure exceeds 125 psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.

Section 411.1 Connecting appliances. Item 3. Delete:

Section 411.2 Manufactured home connections. Amend to read: Manufactured homes shall be connected to the distribution piping system by listed and labeled connectors in compliance with ANSI Z21.75/CSA 6.27 and installed in accordance with the manufacturer’s installation instructions.
Section 415.1 Interval of support. Amend to read:
Piping shall be supported at intervals not exceeding the spacing specified in Table 415.1. Spacing of supports for CSST shall be in accordance with the CSST manufacturer’s instructions. In addition to the requirements of Table 415.1, piping and tubing shall be supported within 2 feet of every bend or angle.

Section 501.8 Appliances not required to be vented. Item 8. Delete:

Section 501.12 Residential and low-heat appliances flue lining systems. Amend to read:
Flue lining systems for use with residential-type and low-heat appliances shall be limited to the following:

Clay flue lining complying with the requirements of ASTM C 315 or equivalent when each appliance connected into the masonry chimney has a minimum input rating greater than 400,000 Btu/h. Clay flue lining shall be installed in accordance with the International Building Code.

Listed chimney lining systems complying with UL1777.

Other approved materials that will resist, without cracking, softening or corrosion, flue gases and condensate at temperatures up to 1,800°F (982°C).

Aluminum (1100 or 3003 alloy or equivalent) not less than 0.032 inches thick to 8 inches diameter.

Stainless steel (304 or 430 alloy or equivalent) not less than 26 gauge (0.018 inches thick) to 8 inches diameter or not less than 24 gauge (0.024 inches thick) 8 inches diameter and larger.

When a metal liner is used other than a listed chimney liner a condensation drip tee shall be installed and supported in an approved manner.
Section 503.5.3 Masonry chimneys. Amend to read: Masonry chimneys shall be built and installed in accordance with NFPA 211 and shall be lined as per Section 501.12.

Section 503.5.6.1 Chimney lining. Amend to read: Chimneys shall be lined in accordance with NFPA 211 and Section 501.12.

Exception: Where an existing chimney complies with Sections 503.5.6 through 503.5.6.3 and its sizing is in accordance with Section 503.5.5, its continued use shall be allowed when, in more than one appliance venting system the secondary appliance, such as a water heater, is replaced and the primary heating appliance remains.

Delete: Section 621 Unvented room heaters


Table (R402.1.2) Insulation and Fenestration Requirements By Component. Climate zone 6, Wood Frame Wall R-Value. Amend to read: 20 or 13+5h,i.

Table (R402.1.2) Insulation and Fenestration Requirements By Component. Climate zone 6, Basement Wall R-Value. Amend to read: 10/13.

Table (R402.1.2) Insulation and Fenestration Requirements By Component. Climate zone 6, Crawlspace R-Value. Amend to read: 10/13.

Table (R402.1.4) Equivalent U-Factors. Climate zone 6, Frame Wall Factor. Amend to Read: 0.057.

Table (R402.1.4) Equivalent U-Factors. Climate zone 6, Basement Wall U-Factor. Amend to Read: 0.059.

Table (R402.1.4) Equivalent U-Factors. Climate zone 6, Crawl Space U-Factor. Amend to Read: 0.059.

Section R402.4 Air leakage (Mandatory) Add: Exception. Dwelling units of R-2 occupancies and
multiple single family dwellings shall be permitted to comply with IECC Section C402.5.

Section R402.4.1.2 Testing. Amend to read: The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding five air changes per hour in Climate Zones 1 through 8.

Add: Section R402.4.1.3 Visual Inspection Option. Building envelope tightness and insulation shall be considered acceptable when installed in accordance with Table R402.4.1.1 - "Air Barrier and Insulation" and has been field verified.

Section R403.3.2 Sealing (Mandatory). Exception 2. Amend to read: For ducts having a static pressure classification of less than 2 inches of water column (500 Pa), additional closure systems shall not be required for continuously welded joints and seams, and locking-type joints and seams.

Section R403.3.5 Building cavities (Mandatory). Amend to read: Building framing cavities shall not be used as supply ducts.

Section R403.6 Mechanical ventilation (Mandatory). Amend to read: Ventilation (Mandatory)

Table R405.5.2(1) Specifications for the Standard Reference and Design: Amend to read:

<table>
<thead>
<tr>
<th>Building Component</th>
<th>Standard Reference Design</th>
<th>Proposed Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air exchange rate</td>
<td>Air leakage rate of 5 air changes per hour in Climate Zones 1 through 8 at a pressure of 0.2 inches w.g. (50 Pa). (Balance is</td>
<td>For residences that are not tested, the same air leakage rate as the standard reference design. For</td>
</tr>
</tbody>
</table>

Article 24-02-01-03 General requirements. Add paragraph 9. All occupancies shall be wired in an approved raceway system.

Exception: R-2, R-3 and R-4 occupancies may be wired in any method permitted.

(Ord. 4281, 8-23-89; Ord. 4314, 2-06-90; Ord. 4452, 07-21-92; Ord. 4688, 05-23-95; Ord. 4776, 07-23-96; Ord. 4911, 03-26-98; Ord. 4958, 12-21-98; Ord. 5316, 05-25-04; Ord. 5578, 02-26-08; Ord. 5802, 02-22-11; Ord. 6035, 04-08-14; Ord. 6035, 04-08-14)

Section 3. Severability. If any section, sentence, clause or phrase of this ordinance is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance.

Section 4. Effective Date. This ordinance shall take effect following final passage, adoption and publication.