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First Reading _____ Second Reading _____

COUNCIL BILL 2018- _____ GENERAL ORDINANCE _____

AN ORDINANCE

AMENDING Chapter 36, Article III of the Springfield City Code, known as the 'Land Development Code,' by repealing Sub-Article XIII, 'Residential Building Code,' in its entirety, and enacting in lieu thereof a new Sub-Article XIII, 'Residential Building Code.'

_____

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF SPRINGFIELD, MISSOURI, as follows, that:

Section 1 – General Ordinance No. 5632 and 6261 hereby repealed. All other general ordinances designated as Chapter 36, Article III, Sub-Article IX, 'Residential Building Code,' and any amendments thereto are hereby repealed.

Section 2 – Adoption of 2018 International Residential Building Code. City Council hereby adopts the 2018 International Residential Code, as published by the International Code Council, and all referenced standards therein as if spelled out in this Ordinance, save and except such portions thereof as are hereinafter deleted, modified, or amended. This code shall be designated as Article XIII, 'Residential Building Code,' of Chapter 36, known as the 'Land Development Code.' One (1) copy of said code is on file in the office of the City Clerk, Busch Municipal Building, 840 Boonville Avenue, Springfield, Missouri.

Section 3 – Deletions, modifications, amendments and additions.

NOTE: Language to be added appears as underlined. Language to be deleted appears as ~~stricken~~.

The 2018 International Residential Building Code, as adopted, is hereby amended and changed as follows:

A. Amend all adopted chapters and appendices in accordance with all errata hereafter identified and published by the International Code Council after the date of the first printing of the 2018 International Residential Building Code.

B. Amend Section R101.1, ‘Title,’ as follows:

These provisions shall be known as the Residential Code for One- and Two-family Dwelling Building Code of the City of Springfield, Missouri, and shall be cited as such and will be referred to herein as “this Code.”

B1. Amend Section R101, ‘General,’ subsection R101.2, by adding the following subsection R101.2.1, ‘Electric fences.’

R101.2.1, ‘Electric fences.’ The installation or use of an electric fence is not permitted.

B2. Amend Section 103, ‘Department of Building ~~Safety~~’ to ‘Department of Building Development Services.’

B3. Amend Section R103, ‘Department of Building Development Services,’ subsection R103.1, ‘Creation of enforcement agency,’ to read as follows:

R103.1, ‘Creation of enforcement agency.’ The Department of Building ~~Safety~~ Development Services is hereby created, and the official in charge thereof shall be known as the Building Official.

B4. Amend Section R104, ‘Duties and Powers of Code Official,’ subsection R104.8, ‘Liability,’ as follows:

Section R104.8, ‘Liability.’ The code official, ~~member of the Board of Appeals~~, or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved of personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

B6. Amend Section R105, ‘Permits’, subsection R015.2 as follows:

R105.2 Work exempt from permit. Exemption from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. Permits shall not be required for the following:

Building:

1. One-*story* detached *accessory structures*, provided that the floor area does not exceed 200 square feet (18.58 m^2).
~~2. Fences not over 7 feet (2134 mm) high.~~

~~3~~ 2. Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge.

~~4~~ 3. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons (18 927 L) and the ratio of height to diameter or Width does not exceed 2 to 1.

~~5~~ 4. Sidewalks and driveways.

~~6~~ 5. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

~~7~~ 6. Prefabricated swimming pools that are less than 24 inches (610 mm) deep.

~~8~~ 7. Swings and other playground equipment.

~~9~~ 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.

~~10~~ 9. Decks not exceeding 200 square feet (18.58 m2) 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.

Electrical:

1. *Listed* cord-and-plug connected temporary decorative lighting.
2. Reinstallation of attachment plug receptacles but not the outlets therefor.
3. Replacement of branch circuit overcurrent devices of the required capacity in the same location.
4. Electrical wiring, devices, *appliances*, apparatus or *equipment* operating at less than 25 volts and not capable of supplying more than 50 watts of energy.
5. Minor repair work, including the replacement of lamps or the connection of approved portable electrical *equipment* to *approved* permanently installed receptacles.
6. <u>The repair or replacement of existing receptacles, devices and fixtures, provided the load on the circuit is not increased. Installation of new branch circuits requires a permit.</u>

Gas:

1. Portable heating, cooking or clothes drying *appliances*.
2. Replacement of any minor part that does not alter approval of *equipment* or make such *equipment* unsafe.
3. Portable-fuel-cell *appliances* that are not connected to a fixed piping system and are not interconnected to a power grid.

Mechanical:

1. Portable heating *appliances*.
2. Portable ventilation *appliances*.
3. Portable cooling units.

4. Steam, hot- or chilled-water piping within any heating or cooling *equipment* regulated by this code.
5. Replacement of any minor part that does not alter approval of *equipment* or make such *equipment* unsafe.
6. Portable evaporative coolers.
7. Self-contained refrigeration systems containing 10 pounds (4.54 kg) or less of refrigerant or that are actuated by motors of 1 horsepower (7 46 W) or less.
8. Portable-fuel-cell *appliances* that are not connected to a fixed piping system and are not interconnected to a power grid.

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material greater than 24 inches in length inside a structure, or greater than 10 feet in length outside a structure, such work shall be considered as new work and a *permit* shall be obtained and inspection made as provided in this Code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of ~~water closets~~ plumbing fixtures with like fixtures, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

B6. Amend Section R106, Construction documents, subsections R106.1, R016.1.1, R016.3 and R106.3.1 as follows:

R106.1 Submittal documents. Submittal documents consisting of *construction documents*, special inspection and structural observation programs, investigation and evaluation reports, and other data shall be submitted ~~in two or more sets~~ with each application for a permit as prescribed the *building official* by Administrative Ruling. The construction documents shall be prepared by a registered *design professional* where required by the *building official* ~~statutes of the jurisdiction in which the project is to be constructed~~. Where special conditions exist, the *building official* is authorized to require additional construction documents to be prepared by a registered *design professional*.

B7. Repeal Section R106.1.1, 'Information on construction documents,' in its entirety, and provide a new subsection R106.1.1 as follows:

R106.1.1 Information on construction documents. Information on construction documents shall be as prescribed by the *building official* by Administrative Ruling. Construction documents shall be drawn upon suitable material. Electronic medial documents are permitted to be submitted where approved by the building official, *Construction documents* shall be of sufficient clarity to

indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the *building official.*

R106.3 Examination of documents

The *building official* shall examine or cause to be examined *construction documents* ~~for code compliance~~*. Construction documents* will not be examined comprehensively for compliance with all code requirements prior to issuance of a permit, but to detect limited discrepancies known to have occurred and historically to have been significantly problematic. Additional evaluation for code compliance will be performed by inspectors during construction and will focus on structural and life safety elements of the project, this because resources available are not adequate for a comprehensive evaluation for conformance with all code requirements in the time allotted.

R106.3.1 Approval of construction documents.

Where the *building official* issues a *permit*, the *construction documents* shall be approved in writing or by a stamp that states "~~REVIEWED FOR CODE COMPLIANCE~~CONSTRUCTION DOCUMENTS ARE FOR REFERENCE ONLY AND HAVE NOT BEEN EXAMINED COMPREHENSIVELY FOR COMPLIANCE WITH ALL CODE AND ORDINANCE REQUIREMENTS. THEY HAVE BEEN GIVEN A CURSORY REVIEW PRIMARILY TO DETECT LIMITED DISCREPANCIES KNOWN TO HAVE OCCURRED AND HISTORICALLY TO HAVE BEEN SIGNIFICANTLY PROBLEMATIC. ADDITIONAL EVALUATION FOR CODE COMPLIANCE WILL BE PERFORMED BY INSPECTORS DURING CONSTRUCTION AND WILL FOCUS ON STRUCTURAL AND LIFE SAFETY ELEMENTS OF THE CODES AND ORDINANCES". One set of construction documents so reviewed shall be retained by the building official. The other set shall be returned to the applicant, shall be kept at the site of work and shall be open to inspection by the *building official* or a duly authorized representative.

B8. Repeal Section R108, 'Fees,' subsection 108.6, 'Fee refunds,' in its entirety, and provide a new subsection 108.6 as follows:

R108.6 Refunds. Fee refunds shall be made in accordance with the fee refund policy prescribed by the City of Springfield.

Amend Section R109 Inspections, Subsections R109.1.1 Foundation Inspection, and R109.1.4 Frame and masonry inspection, as follows:

R109.1.1 Foundation inspection. Inspection of the foundation shall be made after poles or piers are set or trenches or basement areas are excavated and any required forms erected and any required reinforcing steel is in place and supported prior to the placing of concrete. The foundation inspection shall include excavations for thickened slabs intended for the support of bearing

walls, partitions. structural supports, or equipment and special requirements for wood foundations. For structures with framed floors over crawlspaces, a final inspection of the foundations will be made when the floor framing is inspected.

R109.1.4 Frame and masonry inspection. Inspection of frame and masonry construction, with the exception of first floor framing where the floor is over a crawlspace, shall be made after the roof, masonry, framing, firestopping, draftstopping and bracing are in place and after the plumbing, mechanical and electrical inspections are *approved*. Inspection of first floor framing over crawlspaces and final inspection of completed foundations shall be made prior to installation or placement of flooring or subflooring and after rough inspection of plumbing, mechanical and electrical work under the floor are *approved.*

B10. Repeal Section R112, 'Board of appeal,' subsections R112.1 through R112.4 in its entirety and provide a new subsection R112.1, 'Application for appeal,' as follows:

R112.1, 'Application for appeal.' A person shall have the right to appeal a decision of the code official to the Greene County Circuit Court under 536 RSMO.

B11. Repeal Section R113, 'Violations,' subsection R113.2 through R113.4 in its entirety and amend subsection R113.1, 'Unlawful acts,' as follows:

R113.1, 'Unlawful acts.' It shall be unlawful for a person, firm or corporation to erect, construct, alter, repair, remove, demolish or utilize a mechanical system, or cause same to be done, in conflict with or in violation of any of the provisions of this code. Failure to comply with the provisions of this code may result in further legal actions prescribed in the City Code, Article III, Dangerous, Blighted and Nuisance Code.

C. Repeal all language referencing flood hazard areas in sections and replace with the following:

All structures located within a designated flood hazard area shall comply with Chapter 36 Land Development Code, Article XVII.

D. Amend Section R202, 'Definitions,' by adding the following definition:

Sleeping Room. A sleeping room is any space, whether finished or not, meeting the minimum room area requirements of Section R304 of the 2018 International Residential Building Code designed for, or intended for, the purpose of a bedroom.

E. Amend Section R301, 'Design criteria,' subsection R301.2, 'Climatic and geographic design criteria,' by establishing the following data for Table

R301.2(1):

Ground Snow Load……20 psf
Wind Speed (mph)……..115 mph
Seismic Design Category……B
Weathering……Severe
Frost line depth……24 inches
Termite……..Moderate to Heavy
Decay……Slight to Moderate
Winter Design Temperature……..9 degrees F
Ice Shield Underlayment Required……..Yes
Flood Hazard……...General Ordinance 5907
Air Freezing Index……..659
Mean Annual Temperature……56.1 F

F. Amend Section R302, 'Fire-resistant construction,' by adding new subsection R302.14, as follows:

R302.15 Patio Home Dwelling Unit Separation. The common wall separating the two dwelling units shall be constructed as a 2-hour rated, 8-inch masonry block firewall with the following design criteria, unless otherwise approved by the Building Official:

1. The wall shall be continuous from the foundation to the underside and tight to the roof deck. The small void (no greater than ½ inch) between the top of the block to the underside of the deck shall be sealed solid with a listed and *approved* firestopping system. On the underside of the rafter and extending a minimum of four (4) feet back from the face of the firewall, one layer of 5/8-inch Type "X" gypsum board shall be installed.
2. The wall shall be constructed such that it is totally independent of the adjacent construction and shall resist collapse. It shall not be used as a structural element for the adjoining framing.
3. The wall shall extend tight to a noncombustible exterior wall finish material.
4. In the case where the roof overhang extends beyond the face of the block wall, both rafters and ceiling joist, located next to and on either side of the firewall shall be covered on both sides with two (2) layers of 5/8-inch Type "X" gypsum board from the fascia board to the firewall.
5. No penetrations of any kind will be allowed in or through the block wall.

G. Amend Section R319, 'Site address,' subsection R319.1, 'Address identification,' as follows:

R319.1, 'Address identification.' Buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. ~~Address~~

~~numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) in height with a stroke width of not less than 0.5 inch (12.7mm).~~ Where required by the fire code official, address identification shall be provided in additional approved locations too facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained. The assigned address number shall be clearly posted on the site as soon as work commences and shall remain in place until the building is removed from that site. Letters and numbers shall be in conformance with Chapter 26, Section 26-3, Numbering of businesses and dwellings units, of the Springfield City Code.

H. Amend Section R322, 'Flood-resistant construction,' subsection R322.1.5, 'Lowest floor,' as follows:

R322.1.5, 'Lowest floor.' The lowest floor shall be the lowest floor of the lowest enclosed area, including basement or bottom of crawl space, and excluding any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the building or structure in violation of this section.

I. Amend Section R403, 'Footings', subsections R403.1 and R403.1.1 as follows:

R403.1 General. All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete footings, crushed stone footings *if approved*, wood foundations *if approved*, or other *approved* structural systems that shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character of the soil. Footings shall be supported on undisturbed natural soils or engineered fill. Concrete fooling shall be designed and constructed in accordance with the provisions of Section R403 or in accordance With ACI 332.

R403.1.1 Minimum size. The minimum width, W, and thickness, T, for concrete footings shall be in accordance with Tables R403.1(1) through R403.1(3) and Figure R403.1(1) or R403.1.3, as applicable, with the exception that thickness T shall not be less than 8 inches. The footing width shall be based on the load-bearing value of the soil in accordance with Table R401.4.1. Footing projections, P, shall be not less than 2 inches (51 mm) and shall not exceed the thickness of the footing. Footing thickness and projection for fireplaces shall be in accordance with Section R1001.2. The size of footings supporting piers and columns shall be based on the tributary load and allowable soil pressure in accordance with Table R401.4.1 and shall not be less than 24 inches in diameter or 22 inches square. Footings for wood foundations shall be in accordance with the details set forth in Section R403.2, and Figures R403.1(2) and R403.1(3). Footings for precast foundations shall be in accordance with the details set forth

in Section R403.4, Table R403.4. and Figures R403.4(1) and R403.4(2).

Repeal Section R403, subsection R403.1.2, ‘Continuous footing in Seismic Design Categories D_0, D_1, and D_2,’ in its entirety, and provide a new subsection R403.1.2, as follows:

R403.1.2 Stem walls. Stem walls shall be constructed of reinforced concrete or reinforced Concrete Masonry Units (CMU), or other *approved* structural systems. Minimum thickness of concrete stem walls shall be 6 inches (203 mm). Minimum thickness of CMU stem walls shall be 8 inches. CMU stem walls shall be solid grouted.

Repeal Section R403, subsection R403.1.3, ‘Footing and stem wall reinforcing in Seismic Design Categories D_0, D_1, and D_2,’ in its entirety, and provide a new subsection R403.1.3, as follows:

R402.1.3 Reinforcement. Footing and stem wall reinforcement shall comply With Sections R403.1.3.1 through R403.1.3.5.

R403.1.3.1 Steel reinforcement. Steel reinforcement shall comply with the requirements of ASTM A615, A706 or A996. ASTM A996 bars produced from rail steel shall be Type R. The minimum yield strength of reinforcing steel shall be 40,000 psi (Grade 40) (276 MPa).

R403.1.3.2 Location of reinforcement in wall. The center of vertical reinforcement in stem walls shall be located at the centerline of the wall. Horizontal and vertical reinforcement shall be located in footings and stem walls to provide the minimum cover required by Section R403.1.3.4.

R403.1.3.3 Minimum reinforcement. Continuous footings, including slab-on-ground with turned-down footings and thickened slab-on ground footings, shall have not less than two No. 4 horizontal bars spaced at not less than 6 inches. Additional No. 4 horizontal bars shall be added as needed such that bar spacing across footing width W does not exceed 8 inches. Footings supporting piers shall have at least one No. 4 vertical bar centered on the footing and pier. Stem walls shall have not fewer than one No. 4 vertical bar installed at not more than 4 feet (1219 mm) on center. Vertical bars shall have a standard hook and extend to the bottom of the footing and shall have support and cover as specified in Section R403.1.3.5.3 and extend to not less than 3 inches (76 mm) from the top of the stem wall or pier. Vertical bars may be spliced at the footing. Standard hooks shall comply with Section R608.5.4.5. Not fewer than one No. 4 horizontal bar shall be installed not more than 6 inches (152 mm) of the top of the stem wall and one No. 4 horizontal bar shall be located 3 to 4 inches (76 mm to 102 mm) from the bottom of the footing. Additional No. 4 horizontal bars shall be placed such that horizontal bars are spaced not more than 18 inches (467 mm) on center. Lap splices shall conform to Section R403.1.3.5.

R403.1.3.4 Support and cover. Reinforcement shall be secured in the proper location in the forms with tie wire or other bar support system to prevent displacement during the concrete placement operation. Steel reinforcement in concrete cast against the earth shall have a minimum cover of 3 inches (75 mm). Minimum cover for reinforcement in concrete cast in removable forms that Will be exposed to the earth or weather shall be 11/2 inches (38 mm) for No. 5 bars and smaller, and 2 inches (50 mm) for No. 6 bars and larger. For concrete cast in removable forms that will not be exposed to the earth or weather, and for concrete cast in stay-in-place forms, minimum cover shall be 3/4 inch (19 mm).

R403.1.3.5 Lap splices. Vertical and horizontal reinforcement shall be the longest lengths practical. Where splices are necessary in reinforcement, the length of lap splice shall be in accordance with Table R608.5.4(1) and Figure R608.5.4(1). The maximum gap between noncontact parallel bars at a lap splice shall not exceed the smaller of one-fifth the required lap length and 6 inches (152 mm) [see Figure R608.5.4(1)].

R403.1.3.6 Isolated concrete footings. In detached one- and two-family dwellings that are three stories or less in height and constructed with stud bearing walls, isolated plain concrete footings supporting columns or pedestals are permitted. Footings, piers, columns, girders and beams shall be placed such that structural loads bear through the center of the footings and piers.

J. Amend R404 Foundation and retaining walls, subsection R404.1.2.1 Masonry foundation walls, as follows:

R404.1.2.1 Masonry foundation walls. Concrete masonry and clay masonry foundation walls shall be constructed as set forth in Table ~~R404.1.1(1),~~ R404.1.1(2), R404.1.1(3) or R404.1.1(4) and shall comply with applicable provisions of Section R606. ~~In buildings assigned to Seismic Design Categories D_0, D_1 and D_2, concrete masonry and clay masonry foundation walls shall also comply with Section R404.1.4.1.~~ Rubble stone masonry foundation walls shall be constructed only with prior *approval* and in accordance with Sections R404.1.8 and R606.4.2. ~~Rubble stone masonry walls shall not be used in Seismic Design Categories 00, D, and 02.~~ Table R404.1.1(1) and all references thereto are deleted from this code.

K. Amend Section R802 'Wood Roof Framing', subsection R802.11.1, R802.11.1.1 and R802.11.1.2, as follows:

R802.11.1 Uplift resistance. Roof assemblies shall have uplift resistance in accordance with Sections R802.11.1.1 and R802.11.1.2. Ties, tiedowns, anchors or screws manufactured specifically to resist uplift, as indicated in the manufacturer's literature, are required.

~~Where the uplift force does not exceed 200 pounds (90.8 Kg), rafters and trusses spaced not more than 24 inches (610 mm) on center shall be permitted to be attached to their supporting wall assemblies in accordance with Table R602.3(1).~~

~~Where the basic wind speed does not exceed 115 mph, the wind exposure category is B, the roof pitch is 5: 12 (42-percent slope) or greater, and the roof span is 32 feet (9754 mm) or less, rafters and trusses spaced not more than 24 inches (610 mm) on center shall be permitted to be attached to their supporting wall assemblies in accordance with Table R602.3(1)~~

R802.11.1.1 Truss uplift resistance. Trusses shall be attached to supporting wall assemblies by connections capable of resisting uplift forces as specified on the truss design drawings for the ultimate design wind speed as determined by Figure R301.2 (5)A and listed in Table R301.2(1) or as shown on the construction documents. Uplift forces shall be permitted to be determined as specified by Table R802.11, if applicable, or as determined by accepted engineering practice.

R802.11.1.2 Rafter uplift resistance. Individual rafters shall be attached to supporting wall assemblies by connections capable of resisting uplift forces as determined by Table R802.11 or as determined by accepted engineering practice. Connections for beams used in a roof system shall be designed in accordance with accepted engineering practice.

L. Amend Section M1411, 'Heating and cooling equipment,' subsection M1411.3, 'Condensate disposal,' as follows:

M1411.3, 'Condensate disposal.' Condensate from cooling coils and evaporators shall be conveyed from the drain pan outlet to an *approved* place of disposal. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1 percent slope). Condensate shall not discharge into a street, alley, <u>crawl-space</u> or other area where it would cause a nuisance.

M. Amend Section M1501, 'General,' subsection M1504.3, 'Exhaust openings,' by adding the following exception:

<u>Exception: Toilet room exhaust fans shall be permitted to exhaust through the soffit provided that:</u>

1. <u>The duct shall terminate at the soffit panel to an approved mechanical louver or vent; and</u>
2. <u>The adjoining soffit space, for a distance of four (4) feet on either side of the exhaust duct penetration, shall be of a solid non-vented material.</u>

N. Amend Section G2413 (402), 'Pipe sizing,' subsection G2413.7, (402.7), 'Maximum design operating pressure,' as follows:

G2413.7 (402.7) Maximum operating pressure. ~~The maximum design operating pressure for piping systems located inside buildings shall not exceed 5 pounds per square inch gauge (psig) (34 kPa gauge) except where one or more of the following conditions are met:~~

~~1. The piping joints are welded or brazed.~~

~~2. The piping joints are flanged and pipe-to-flange connections are made by welding or brazing.~~

~~3. The piping is located in a ventilated chase or otherwise enclosed for protection against accidental gas accumulation.~~

~~4. The piping is a temporary installation for buildings under construction.~~

Typical design operating pressure shall be 0.25 psig. Design operating pressures from 0.5 psig through 2 psig shall only be allowed in areas where the gas supplier has sufficient main-line delivery pressure to assure adequate supply. The installer shall be responsible for verifying the availability of elevated pressure.

G2413.7.1 (402.7) For design operating pressures of 2 psig or less, piping materials shall be in conformance with Section 403 of the 2018 International Fuel Gas Code as amended herein.

G2413.7.2 (402.7) Design operating pressures greater than 2 psig and less than 5 psig shall only be allowed if the pipe material is welded steel pipe or Corrugated Stainless Steel Tubing.

G2413.7.3 (402.7) Design operating pressures of 5 psig or greater shall only be allowed if all the following conditions are met:

1. The connected load is 1000 CFH or greater and the facility has connected equipment that requires higher pressures for proper operation.
2. The installation is approved by the Code Official and the gas supplier.
3. The piping system is welded steel pipe.
4. Adequate pressure is available from the gas supplier.
5. All connected equipment is provided with regulators rated for the pressure provided.

G2413.7.1 (402.7.1) Operation below-5°F (·21°C). LP-gas systems designed to operate below -5°F (-21°C} or with butane or a propane-butane mix shall be designed to either accommodate liquid LP-gas or prevent LP-gas vapor from condensing into a liquid.

O. Amend Section G2414 (403) Piping Materials, subsection G2414.5.3 (403.5.3) Copper or copper-alloy tubing, as follows:

G2414.5.3 (403.5.3) Copper or copper-alloy tubing. ~~Copper tubing shall comply with Standard Type K or L of ASTM B88 or ASTM B280.~~ Copper or copper-alloy tubing is not approved and shall not be used.

~~Copper and copper-alloy tubing shall not be used if the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 standard cubic feet of gas (0.7 milligrams per 100 liters).~~

Amend Section G2415 (404) Piping System Installation, subsection G2415.2 (404.2) CSST, as follows:

G2415.2 (404.2) CSST. CSST piping systems shall be installed in accordance with the terms of their approval, the conditions of listing, the manufacturer's instructions, requirements stipulated by administrative ruling, and this code.

Amend Section G2415 (404), 'Piping system installation,' subsection G2415.9 (404.9), Above-ground outdoor piping, by adding new subsection G2415.9.1 (404.9.1) Gas meter set connections.

G2415.9.1 (404.9.1) Gas meter set connections. The gas meter set shall be located within 5 feet of the building or facility being served. Gas piping shall remain above grade between the meter and the building point of entry nearest the meter. The gas meter set shall not be within 3 feet of any electrical device or fixture, generator, building or equipment intake or ventilation, door, operating window, hose bib, fire connection or other obstruction. All residential gas meter sets shall be located along a side wall, within 10 feet of the front corner of the building, or along the front of the building. Gas meter set locations other than those specified shall be approved by the Code Official and the gas supplier.

P. Amend Section G2417 (406), Inspection, Testing and Purging, subsection G2417.1.3 (406.1.3) New branches, as follows:

G2417.1.3 (406.1.3) New branches, where new branches are installed to new appliances, ~~only the newly installed branches shall be required to~~ the new branch and existing system shall be pressure tested. ~~Connections between the new piping and the existing piping shall be tested with a noncorrosive leak-detecting fluid or other approved leak-detecting methods.~~

Exceptions:

1. Where a new branch is installed to a new appliance with a connection made by removing a fitting (and elbow, for example) between the gas meter and where the gas piping enters the structure, and is replaced with another fitting (a tee, for example), to which the branch is connected, only the newly installed branches shall be required to be pressure tested. Connections between the new piping and the existing piping shall be tested with a noncorrosive leak-detecting fluid or other approved leak-detecting methods.

2. Where otherwise approved by the Code Official's duly authorized representative.

Q. Amend Section G2417 (406), 'Inspection, testing and purging,' subsection G2417.4.1, 'Test pressure,' as follows:

G2417.4.1 (406.4.1) Test pressure and duration. ~~The test pressure to be used shall be no less than one and one-half times the proposed maximum working pressure, but not less than 3 psig (20 kPa guage), 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.~~ The test on all gas piping designated as a 2 psig or less system shall be 20 psig with a 15-minute duration. The test on all gas piping designate above 2 psig shall be 20 psig with a 120-minute duration.

R. Amend Section G2422 (411), 'Appliance connections,' subsection G2422.1 (411.1), as follows:

G2422.1 (411.1), 'Connecting appliances.' Appliances shall be connected to the piping system by one of the following:

1. Rigid metallic pipe and fittings.
2. Corrugated Stainless Steel Tubing (CSST") with approval prior to design or installation. Installations with prior approval are listed and installation requirements are stipulated by administrative ruling.
3. Listed and labeled appliance connectors in compliance with ANSI Z21.24 with approval prior to design or installation. Installations with prior approval are listed and installation requirements are stipulated by administrative ruling.
4. Listed and labeled quick-disconnect devices used in conjunction with listed and labeled appliance connectors.
5. Listed and labeled convenience outlets used in conjunction with listed and labeled appliance connectors.
6. Listed and labeled outdoor appliance connectors in compliance with ANSI Z21.75/CSA 6.27 and installed in accordance with the manufacturer's installation instructions.
7. Listed outdoor gas hose connectors in compliance with ANSI Z21.54 used to connect portable outdoor appliances. The gas hose connection shall be made only in the outdoor area where the appliance is used, and shall be to the gas piping supply at an appliance shutoff valve, a listed quick-disconnect device or listed gas convenience outlet.

S. Amend Section P2801, 'General' by amending subsection P2801.6, 'Required pan,' as follows:"

P280.6, 'Required pan.'

Exception:

1. A pan will not be required if the floor is concrete and a floor drain is adjacent to the device or the floor is defined as a slab on grade concrete floor.
2. A pan will not be required on a water heater changeout if the pre-existing conditions did not contain a pan.

T. Repeal Section P2902, 'Protection of potable water supply,' subsection P2902.5.3, 'Lawn irrigation systems,' in its entirety and provide a new subsection P2902.5.3, as follows:

P2902.5.3, 'Lawn irrigation systems.' The potable water supply to lawn irrigation systems shall be protected against backflow in accordance with the City Utilities Backflow Prevention Requirements for Lawn Irrigation Systems, latest edition thereto.

U. Delete Section P2903, 'Water-supply system,' subsection P2903.3.1, 'Maximum pressure,' and add a new subsection P2903.3.1, 'Maximum pressure,' as follows:

P2903.3.1, 'Maximum pressure.' An approved water-pressure reducing valve conforming to ASSE 1003 with strainer shall be installed on the domestic water branch main or riser at the connection to the water-service pipe to reduce the pressure in the building water distribution piping to 80 psi (552 kPa) static or less.

V. Amend Section P3005, 'Drainage system,' by adding a new subsection P3005.2.12, 'Building Sewer and public sewer junction,' as follows:

P3005.12.12, 'Building Sewer and public sewer junction.' Connections to a public sewer shall conform to Public Works Standard Drawing Details for Public improvements, including Standard Drawing Details SAN- 24 and SAN-25.

W. Amend Section P3114, 'Air admittance valves,' by adding a new subsection P3114.3.1, as follows:

P3114.3.1, 'Limited Usage.' The use of air admittance valves shall be permitted only in the remodel of existing buildings and shall not be permitted in new buildings and building additions, except for island fixtures, unless prior approval is granted by the authority having jurisdiction.

X. Amend Section P3302, 'Subsoil drains,' by adding a new subsection P3302.2, as follows:

P3302.2, 'Subsoil drains.' All subsoil drains, sumps and pumping shall not be connected to the building drain or building sewer.

Y. Amend Section E3405, 'Equipment Location and clearances,' by adding subsection E3405.1.1, 'Clearance requirements,' as follows:

E3405.1.1, 'Clearance Requirements.' All buildings and structures are required to meet clearance requirements from all wires, conductors, cables and rigid live

parts as stipulated in the National Electric Safety Code ("NESC"), latest edition, or as dictated by the utility service provider. In case of a conflict between the two agencies, the more stringent shall apply.

Z. Amend Section E3601, 'General services,' by adding new subsection E3601.8, 'Residential Service Upgrades,' as follows:

E3601.8, 'Residential Service Upgrades.'

1. All structures used for residential purposes, requiring a service upgrade or modification shall mandate the following electrical system improvements.
   a. GFI receptacles in the kitchen(s) and bathroom(s) shall be installed if outlets are in existence at the time of the service upgrade.
   b. Approved hard-wired dual powered, interconnected smoke detectors shall be installed and located as per the adopted building code.
   c. The kitchen shall be provided with a minimum of two (2) 20 Amp grounded small appliance branch circuits.
   d. Carbon monoxide detectors shall be installed in accordance with R315.1 where the structure has an attached garage or fuel fired appliances.
   e. All apparent hazards shall be corrected.
2. If a fire occurs, or other similar incident that damages any part of the electrical system within a residential structure, in addition to all damaged systems being repaired, it is mandated that all apparent hazards within the structure be corrected. Hard-wired, dual powered, interconnected smoke detectors and a carbon monoxide detector if required shall be installed and located as per the adopted building codes. If the service portion of the electrical system is damaged or upgraded as a result of a fire or other incident, it shall require that all items listed in paragraph E (1) of this section shall be provided.
3. A total or partial upgrade of the electrical system may be required, if in the opinion of the Code Official, or his designee, the condition of the existing electrical system constitutes a potential threat to the safety and welfare of current or future occupants.

AA. Amend Section E3901, 'Receptacle Outlets,' by adding new subsection E3901.13, as follows:

3901.13, Basement finish requirement.' Where a portion of the basement is finished into one or more habitable rooms, each separate unfinished portion shall have a receptacle outlet installed in accordance with this section. When interior walls for separate rooms are framed, these areas shall be considered as finished areas and shall be provided with the required branch circuits as required by Article 210, and any required smoke detectors. All wiring shall be protected from physical damage by the wall framing or the wall shall be covered with sheetrock on at least one side.

BB. The following Appendices shall, by adoption of the 2019 International

Residential Building Code, be considered as part of this Code.

Appendix A, Sizing and Capacities of Gas Piping;
Appendix B, Sizing of Venting Systems Serving Appliances Equipped with Draft Hoods, Category-I Appliances, and Appliances Listed for use with Type B Vents;
Appendix C, Exit Terminals of Mechanical Draft and Direct-Vent Venting Systems; and
Appendix D, Recommended Procedure for Safety Inspection of an Existing Appliance Installation;
Appendix G, Piping Standards for Various Applications;
Appendix I, Private Sewage Disposal;
Appendix J, Existing Buildings and Structures;
Appendix P, Sizing of Water Piping System; and
Appendix Q, Tiny Houses.

Section 4 – Savings Clause. Nothing in this Ordinance shall be construed to affect any suit or proceeding now pending in any court or any rights acquired or liability incurred nor any cause or causes of action accrued or existing, under any act or ordinance repealed hereby, or shall any right or remedy of any character be lost, impaired, or affected by this Ordinance.

Section 5 – Severability Clause. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. Council hereby declares that it would have adopted the Ordinance and each section, subsection, sentence, clause, or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid.

Section 6 – Penalty Clause. Any person violating any of the provisions of this Ordinance, or failing to comply with any order issued pursuant to any section thereof; or who shall erect, construct, alter or repair a building, structure or system in violation of an approved plan or directive of the Code Official or of a permit or certificate issued under the provisions of these Codes, shall be guilty of a violation of a municipal ordinance and upon conviction thereof shall be punished as provided for in Section 1-7 of the City Code, except that any fine imposed shall not be less than $200, for the first offense, $400, for the second offense, and $500, for every offense thereafter. Each day that a violation continues, after a service of notice as provided for in these Codes, shall be deemed a separate offense. Notice as set forth in Section 108 shall not be required in order to prosecute a person for a violation of any provision of this Article or these Codes, except such notice shall be required to prosecute a person for failure to comply with an order.

Section 7 – This Ordinance shall be in full force and effect 90 days from and after passage.

Passed at meeting: _____

_____
Mayor

Attest: _____, City Clerk

Filed as Ordinance: _____

Approved as to form: _____, Assistant City Attorney

Approved for Council action: _____, City Manager

ADMIN RULING DRAFT; RESIDENTIAL DRAWING REQUIREMENTS

The following shall be submitted with an application for a permit to build a residence to be constructed in accordance with the prescriptive requirements of the adopted residential code (IRC).

A site plan, foundation plan, floor framing plan(s), architectural floor plan(s), elevations (showing front, rear and each side), and roof plan, shall be submitted. Submit one set of paper drawings drawn to scale and one set of drawing copies printed on 11 inch by 17 inch sheets. Plans on 11 inch by 17 inch sheets must overlay each other accurately, such that walls and other building elements align from sheet to sheet. Drawings drawn to scale will be reviewed, stamped and returned to permittee. 11 inch by 17 inch sheets will be retained for City records and inspector use.

Where engineered trusses are to be used, or structural glued laminated timbers, structural log members, structural composite lumber or cross-laminated timber are to be used as beams, girders or headers to span a distance greater than shown in the adopted code Tables R602.7(1), R602.7(2) or R602.7(3) are to be used, drawings and design data sealed by a Missouri registered design professional shall be submitted.

Site plans shall be drawn to 1 inch = 20 feet scale.

Foundation plans, floor framing plans, architectural floor plans, roof plans and elevations shall all be drawn to the same architectural scale, not less than 1/8 inch = 1 foot.

Foundation plans and architectural floor plans shall be dimensioned.

Foundation plans shall indicate location and dimensions of continuous and isolated footings and details of reinforcement.

Floor framing plans shall show girders, beams and doubled joists. Built up girders and beams shall be specified (for example: 3-2x10 BUIILT UP WOOD GIRDERS-#2 SOUTHERN PINE). Joist size, spacing, species and grade, and span direction shall be indicated.

Foundation and floor framing plans may be combined where all of the required information can be presented clearly.

Architectural floor plans shall show floor mounted cabinets, fixtures and "islands". Load bearing walls shall be delineated and girders and beams spanning a distance greater than a standard door or window opening shall be shown and specified as on floor framing plans.

Roof plans shall show location of ridge, valley and hip rafters and shall overlay a floor "ghosted" or shown with dashed lines, with ridge, valley and hip rafters shown with a heavier line weight than the underlying floor plan.

ADMIN RULING DRAFT; CSST & APPLIANCE CONNECTORS

Use of Corrugated Stainless-Steel Tubing (CSST) is approved where installed in accordance with the Residential Code (where applicable), the Fuel Gas Code (where applicable), the Electrical Code requirements for bonding, manufacturer's recommendations and instructions for design and installation, and this administrative ruling.

Where CSST will be used, metallic pipe will be run from the customer side of the gas meter into an accessible location within the structure, where a shutoff valve and an excess flow valve (EFV) will be installed, to which the CSST will be connected.

CSST shall be run parallel or perpendicular to framing member and shall be cut to length in a workmanlike manner such that excess tubing is not part of the finished installation.

CSST located within a wall, roof or floor cavity shall be protected by installing the tubing within a metal sleeve made of schedule 40 steel pipe, "Strip Wound" metal hose, or metallic conduit manufactured for the purpose by the CSST manufacturer.

The absolute minimum bend radius of CSST shall be:

TUBING SIZE	ABSOLUTE MINIMUM BEND RADIUS (R)
3/8, 1/2, and 3/4 inch	3 inch
1, 1-1/4, 1-1/2 inch	5 inch
2 inch	6 inch

CSST greater than 16 inches in length and run horizontally shall be continuously supported and shall be attached to the continuous support member at intervals not to exceed four feet on center.

Shutoff valves shall be supported in such a manner as to prevent movement of the valve body when the valve is operated. Connection of the valve to a section of iron pipe either immediately upstream or downstream of the valve shall be considered an acceptable support.

Where CSST, semirigid metallic tubing and metallic fittings, or listed and labeled appliance connectors are approved for connection of an appliance, an EFV shall be installed between the shutoff valve and the CSST, semirigid metallic tubing and metallic fittings, or listed and labeled appliance connector.

CSST, semirigid metallic tubing and metallic fittings, or listed and labeled appliance connectors are approved for connection of:

1. Moveable appliances such as ranges or dryers that cannot be connected with a "hard piped" connection.

2. Appliances where the manufacturer requires or specifically recommends use of CSST, semirigid metallic tubing and metallic fittings, or listed and labeled appliance connectors to connect the appliance, or provides the CSST, semirigid metallic tubing and metallic fittings, or listed and labeled appliance connector with the appliance.

CSST, semirigid metallic tubing and metallic fittings, or listed and labeled appliance connectors shall not be used to connect water heaters or furnaces (including roof top units) without prior approval.