

CITY OF STERLING

ORDINANCE NO. 2018-05-20

**ORDINANCE AMENDING THE STERLING CITY CODE BY AMENDING
CHAPTER 18, ARTICLE III, DIVISION 1, SECTIONS 18-66 and 18-68 TO ADOPT
THE NATIONAL ELECTRICAL CODE OF 2014**

ADOPTED BY THE

COUNCIL

OF THE

CITY OF STERLING

THIS 17th DAY OF May, 2018

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day of May, 2018.

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CHAPTER 18, ARTICLE III, DIVISION 1, SECTIONS 18-66 and 18-68 TO ADOPT
THE NATIONAL ELECTRICAL CODE OF 2014**

Be it Ordained by the City Council of the City of Sterling, Whiteside County, Illinois, as follows:

SECTION 1. That Chapter 18, Article III, Division 1, Sections 18-66 and 18-68 of the Sterling City Code, as amended, are hereby further amended to read in full as follows:

“Sec. 18-66. - Adoption of National Electrical Code.

That document published by the National Fire Protection Association and known as NFPA 70 National Electrical Code, 2014 Edition ("the code") and as otherwise modified by the terms and provisions of this article are hereby adopted as the code governing and controlling all requirements for installation and use, examination and approval, access to and spaces about electrical conductors and equipment within the city and within the service and franchise area of the electric utility department of the city. Two copies of the code shall be on file in the office of the building official of the city. Each of the regulations, provisions, conditions and terms of the code are hereby referred to, adopted and made a part hereof, as if fully set out in this article, except for the additions, insertions, deletions and changes described in section 18-68.

Sec. 18-68. - Amendments to National Electrical Code.

The following are amendments to the National Electrical Code adopted by section 18-66:

- (1) *Disconnecting means.*
 - a. Where the current of a single circuit or group of circuits is separately metered, each meter base shall include an approved main disconnect accessible from the ground level on an exterior wall.

Exception: Commercial service installation that exceed a rating of 200 amps.
 - b. In multiple-occupancy buildings, each occupant shall have access to his disconnection means and distribution panel.
- (2) *Main distribution panel boards.* A main distribution panel containing provisions for a minimum of 20 circuits with a main breaker service capacity of 100 amperes or greater shall be installed in all new one and two family residential construction, when improvements are made to existing electrical services, or when a residence is sold, transferred or changes ownership.

Exception: A residence containing an existing service panel that has a 12 circuit capacity or more may be sold, transferred, or conveyed with less than 20 circuits provided that 25% of the circuits are unused when all circuits are terminated on individual breakers.

(3) *Conduit wiring.*

- a. All electrical installations within or upon any commercial, industrial or public buildings shall be installed in approved rigid metal conduits, metal moldings, electric metallic tubing, metal-clad cable or flexible metallic and nonmetallic conduit, provided that flexible conduit may only be installed as concealed work in hollow spaces of walls and ceilings in finished buildings where the construction is such that the concealed lengths between outlets may be withdrawn and new lengths drawn in without injury to the branch circuit conductors. Flexible conduit shall not extend more than two feet into the basement, nor shall it be embedded in plaster or masonry walls.
- b. All service entrance conductors serving multi-family (three units or more) residential structures shall be installed in approved conduit from the point of attachment on the building to the distribution panel of each residential unit within the building.

(4) Maximum number of outlets per 20 amp circuit in residences. The maximum number of outlets permitted on each 20 amp circuit in residences shall be as follows:

Lighting outlets	10
Convenience outlets	7
Mixed lighting and (not to exceed) convenience outlets	9
Kitchen countertop outlets	2

(5) *Use of roof brackets.* Roof brackets for the attachment of electrical services are prohibited.

(6) Replacement of 30 and 60 amp services.

- a. A 100 amp electrical service or greater shall be installed whenever major remodeling is being performed on a residence (50 percent or more of fair market home value), whenever major fire repairs are being performed, or upon the installation of additional electrical appliances that would overload existing services.

- b. All 30 and 60 amp services shall be removed from all residences within the city that are sold, transferred or conveyed or replaced with electrical services in accordance with the National Electrical Code of 2014 before electrical serve will be re-energized.
- (7) *Aluminum wire.* Aluminum wire is allowed and must be greater than eight AWG in size.
- (8) *Grounding system.* Number 4 copper wire (minimum) shall be used at the grounding electrode conductor on 100 or 200 amp services and shall be connected to the ground electrode by an approved means. All ground wires to outside grounding electrodes (ground rods) above grade shall be enclosed in conduit.
- (9) A concrete encased electrode shall be required to be installed in the footings of all commercial and industrial buildings.
- (10) *Article 210.12. Arc-Fault Circuit-Interrupter Protection.* All 120-volt, single phase, 15 – and 20 – ampere branch circuits supplying outlets installed in dwelling unit bedrooms, closets, and any potential sleeping quarters shall be protected by a listed arc-fault circuit interrupter, combination-type, installed to provide protection of the branch circuit.
- (11) *Article 210.19 Conductors (A) (5)* shall be added as follows: Minimum Ampacity and Size. (A) Branch Circuits Not More Than 600 Volts. (5) Microwave Circuits. The wiring used to supply power to a permanently installed microwave oven shall consist of a dedicated circuit installed with 12 AWG or larger conductors.
- (12) *Article 210.70 Lighting Outlets Required (A) (1)* shall be amended as follows: (A) Dwelling Units. (1) Habitable rooms. At least one wall switch-controlled lighting outlet shall be installed in every habitable room and bathroom. The switch shall be installed at a point of entry to the room. The main lighting outlet in each room may not be fed from the load side of a GFCI device. Unless 210.70(A)(1) Exception No. 1 is applied, provision shall be made in the wiring of each ceiling box of all habitable rooms (excluding dining rooms) for a luminaire to operate independently from a fan.
- (13) *Article 210.70 Lighting Outlets Required (A) (3)* shall be deleted and replaced as follows: (A) Dwelling Units. (3) Storage or Equipment Spaces. For accessible attics, underfloor spaces, utility rooms, each area of an unfinished basement, and equipment spaces, at least one lighting outlet containing a switch or controlled by a wall switch shall be installed in such spaces. At least one point of control shall be at the usual point of entry to these spaces. A lighting outlet shall be provided within six feet of any equipment requiring servicing.

- (14) *Article 210.70 Lighting Outlets Required (C)* shall be amended as follows: (C) Other Than Dwelling Units. For accessible attics and underfloor spaces, at least one lighting outlet containing a switch or controlled by a wall switch shall be installed in such spaces. At least one point of control shall be at the usual point of entry to these spaces. A lighting outlet shall be provided within six feet of any equipment requiring servicing.
- (15) *Article 230.11 Service Modifications* shall be added as follows: When any part of the service entrance equipment, branch circuit panel, or service conductor is replaced, modified, or required to be repaired, the service in its entirety must be installed to comply with the current codes. The main branch circuit panel shall be at least 20 spaces.
- Exception: Replacement or addition of a branch-circuit overcurrent protective device.
- (16) *Article 230.43 Wiring Methods for 1000 Volts, Nominal, or Less* shall be amended as follows: (6) Electrical nonmetallic tubing shall be prohibited for other than communications circuits.
- (17) *Article 230.70 General (A) (1)* shall be deleted and replaced as follows: (A) Location. (1) Readily Accessible Location. The service disconnecting means shall be installed at a readily accessible location outside of a residential building or structure 200 AMPs or lower.
- (18) *Article 250.52 Grounding electrodes* shall be amended as follows: A concrete-encased electrode that complies with 250.52(A) (3) will be required in all new construction. (Remainder of article unchanged).
- (19) *Grounded (Neutral) Conductor*: The grounded conductor on all residential services shall be of equal size to the ungrounded conductors.
- (20) *Connection of wires to switches and receptacles*. All branch circuit wires to electrical switches and receptacles shall be securely fastened or connected to the switches or receptacles by binding screws or stud and nut. Push-type connections shall not be used on switches or duplex outlets.
- (21) *Article 250-53(a) (2). Resistance of made electrodes*. A single electrode consisting of a rod, pipe or plate that does not have a resistance to ground of 25 ohms, or less, shall be augmented by one additional electrode of any of the types specified by Sections 250-52(a)(2) through (a)(8). Where multiple rod, pipe or plate electrodes are installed to meet the requirements of this section, they shall not be less than six feet (1.83m) apart. All electrical contractors shall verify in writing that all new or updated service grounding systems comply with the resistance to ground provisions of this section.

- (22) *Article 300.1 Scope* (D) shall be added as follows: (D) Mixed Use and Occupancy Buildings. The entire mixed use and occupancy building shall be wired by the most restrictive code.
- (23) *Article 300.5 Underground Installations* (D) (3) shall be amended as follows: (D) Protection from Damage (3) Service Conductors. Underground service conductors shall be installed in galvanized or stainless steel rigid metal conduit (RMC) or intermediate metal conduit (IMC). Underground service conductors that are not subject to physical damage may be installed in Schedule 80 rigid electrical nonmetallic conduit (PVC), protected by galvanized or stainless steel rigid conduit (RMC) or intermediate metal conduit (IMC) to a minimum of 450 mm (18 inches) below grade. No exposed nonmetallic conduit shall be allowed. Underground service conductors that are not encased in concrete and that are buried 450 mm (18 inches) or more below grade shall have their location identified by a warning ribbon that is placed in the trench at least 300 mm (12 inches) above the underground installation.
- (24) *Article 300.11 Securing and Supporting* (A) (3) shall be added as follows: (A) Secured in Place. (3) Tie Wire. Tie wire shall not be allowed as a sole means of supporting or securing conduit or cable in above ground applications.
- (25) *Article 300.13 Mechanical and Electrical Continuity--Conductors*. (C) shall be added as follows: (C) Multiple Conductors. A device designed to be used for switching or as a receptacle may not be used to provide electrical continuity to any circuit conductor.
- (26) *Article 300.13 Mechanical and Electrical Continuity-Conductors* (D) shall be added as follows: (D) Push-Type Clamping Devices. No push-type or clamp-type connections for splices or for terminating to devices will be allowed unless the wire connection is secured with a screw or crimping tool.

Exception 1: Disconnecting means for ballasts.

Exception 2: Factory installed terminations in luminaires.

- (27) *Article 310.106 Conductors* (B) shall be deleted and replaced as follows: (B) Conductor Material. Conductors in this article shall be aluminum, copper-clad aluminum, or copper unless otherwise specified. Aluminum and copper-clad aluminum conductors shall be prohibited to be installed in sizes smaller than 4 AWG. Stranded aluminum conductors 4 AWG through 1000 kcmil marked as Type RHH, RHW, XHHW, THW, THHW, THWN, THHN, service-entrance Type SE Style U and SE Style R shall be made of an AA-8000 series electrical grade aluminum alloy conductor material.
- (28) *Article 314.27 Outlet Boxes* (A) (2) shall be amended as follows: (A) Boxes at Luminaire or Lampholder Outlets. (2) Ceiling Outlets. At every outlet used

exclusively for lighting, the box shall be designed or installed so that a luminaire or lampholder may be attached. Boxes shall be required to support a luminaire weighing a minimum of 23 kg (50lb). A luminaire that weighs more than 23 kg (50lb) shall be supported independently of the outlet box, unless the outlet box is listed and marked on the interior of the box to indicate the maximum weight the box shall be permitted to support. In all habitable rooms with a ceiling fixture (other than recessed fixtures) in a location acceptable for a ceiling-suspended (paddle) fan in single-family, two-family or multi-family dwellings, a box rated for ceiling fan support shall be installed.

- (29) *Article 334.10 Uses Permitted* including (1) through (5) shall be deleted and replaced as follows: 334.10 Uses Permitted. Type NM, Type NMC, and Type NMS cables shall be permitted to be used only in the following: R-2, R-3, and R-4 structures (as defined by the International Building Code) not exceeding three floors above grade.
- (30) *Article 334.15 Exposed Work (D)* shall be added as follows: (D) All Unfinished Areas. Any exposed cable 7 feet (213.36cm) or closer to the floor must be protected with a durable building material or sleeved in an approved manner.
- (31) *Article 334.40 Boxes and Fittings (B)* shall be deleted in part: (B) Devices of Insulating Material. Delete “and for repair wiring in existing buildings where the cable is concealed.”
- (32) *Article 410.36 Means of Support (B)* shall be amended as follows: (B) Suspended Ceilings. Framing members of suspended ceiling systems used to support luminaires shall be securely fastened to each other and shall be securely attached to the building structure at appropriate intervals. Luminaires smaller than 610 mm by 610 mm (24 inches by 24 inches) shall be securely fastened to the ceiling framing member by mechanical means such as bolts, screws, or rivets. Listed clips identified for the use with the type of ceiling framing member(s) and luminaire(s) shall also be permitted. Fluorescent fixtures 610 mm by 610 mm (24 inches by 24 inches) or larger shall be supported independently of the ceiling grid by at least two wires on opposite corners of the fixture. The same size (or larger) wire used to support the ceiling system shall be used to support the fixture, but in no case shall the wire size be smaller than size No. 12 AWG steel.”

SECTION 2. In all other respects, Chapter 18, Article III, Division 1, specifically including Section 18-68, shall remain in full force and effect.

SECTION 3. The provisions and sections of this ordinance shall be deemed to be separable, and the invalidity of any portion of this ordinance shall not affect the validity of the remainder.

SECTION 4. All ordinances and parts of ordinances in conflict herewith are, to the extent of such conflict, hereby repealed.

SECTION 5. The City Clerk is hereby directed to publish this ordinance in pamphlet form.

SECTION 6. This ordinance shall be in full force and effect on and after the 7th day of May, 2018, following its passage, approval, and publication as required by law.

Passed by the Mayor and the City Council of the City of Sterling on the 7th day of May, 2018.

Charles R. "Stij" Lee
Mayor

Marie Bombouts
ATTEST: City Clerk