ARTICLE VI. ELECTRICAL

Sec. 6-91. Definitions.

For the purposes of this article, the following words, terms and phrases shall have the following meanings:

Electrical contractor means any person engaged in the business of installing or altering, by contract, electrical equipment for the utilization of electricity for light, heat or power. However, it shall not include (1) the installing or altering of radio apparatus or equipment for wireless reception of sounds and signals, or (2) the installing or altering of apparatus, conductors or other equipment installed for or by public utilities, including common carriers, which are under the jurisdiction of the Illinois Commerce Commission, for use in their operation as public utilities, or (3) the employees employed by an electrical contractor to do or supervise the electrical contractor's work.

Electrical equipment means conductors and other equipment installed for the utilization of electricity for light, heat or power. However, it does not include radio apparatus or equipment for wireless reception of sounds and signals, or apparatus, conductors or other equipment installed for or by public utilities, including common carriers, which are under the jurisdiction of the Illinois Commerce Commission, for use in their operation as public utilities.

Sec. 6-92. Applicability.

The provisions of this article shall control the installation, alteration or use of electrical equipment.

Sec. 6-93. Adoption of National Electrical Code.

There is hereby adopted by the village National Electrical Code, 2023 Edition, published by the National Fire Protection Association. At least one copy of the International Building Code has been on file in the office of the

village clerk for a period of at least 30 days prior to the adoption of these provisions and now are and remain on file in the office of the village clerk, and the same are hereby adopted and incorporated as fully as if set out at length herein. The provisions of the National Electrical Code, 2023 Edition, published by the National Fire Protection Association, are hereby adopted by this reference, subject only to the additions, deletions and modifications specifically set forth in section 6-96 of this Code.

Sec. 6-94. Permit required.

(a) No electrical equipment shall be installed, altered, or used without first filing an application with the department of development and planning services and obtaining all required permits.

(b) All applications shall be accompanied by plans, specifications and schedules in sufficient detail to show the location and capacity of all lighting facilities, fire alarm systems, electrical equipment and light and power circuits required for all service equipment of the building or structure.

Sec. 6-95. Registration required.

No electrical contractor shall perform any work regulated by this article without the required business license. The electrical contractor's business license shall be submitted to the department of development and planning services on a form provided for such purpose, and shall be accompanied by a fee as established in the annual fee ordinance.

Sec. 6-96. Additions, deletions and modifications of the National Electrical Code, 2023 Edition.

The following sections of the National Electrical Code, 2023 Edition are hereby amended, deleted or modified as follows:

(1) *110.12(D) Mechanical Execution of Work.* Add a new Subsection (D) to Section 110.12 to read as follows:

(D) **Connection to Existing Services, Feeders, Circuits and Loads.** Any person and/or company that installs, alters, repairs or modifies electrical circuits, devices, fixtures, appliances, equipment and related electrical components, shall be responsible for assuring that the existing service, feeders, circuits and the like, are capable of supporting the new loads and that any work performed will not undermine, compromise or make unsafe any portion the electrical system.

1) The connection of any new or modified circuits to existing services, feeders, circuits and/or loads shall not cause those existing conditions to become compromised or overloaded. Correction, alteration, modification or other measures shall be performed to maintain the components of the existing electrical system in a reasonable condition. Depending on the amount of work involved, a separate permit may be necessary. It shall be the supervising electrician’s responsibility to ensure that existing conditions are capable of handling the electrical installation approved by the permit, including electrically, mechanically and structurally.

2) In the course of the installation, repair, or modification of the electrical work, existing electrical conditions found to be significantly deficient shall be corrected to a reasonable condition as determined by the Northbrook Electrical Inspector.

a) For the purposes of this section, the term significantly deficient shall mean: "As determined by the Northbrook Electrical Inspector, a condition observed to the wiring methods, materials and/or overall installation of any part of an existing

electrical installation that appears to be an increased fire, shock, overload and/or other safety hazard."

(2) *110.21(C) Identification, Labels & Markings.* Add a new Subsection (C) to Section 110.21 to read as follows.

(C) **Identification, Labels & Markings.** For clarity or safety purposes when required by the electrical inspector, an approved label, sticker, placard or other similar method of identifying conductors, boxes, locations, circuits, ground connections or similar shall be provided. The method of identification shall be suitable for the environment. This shall apply to any component of the electrical system or attached/connected to the electrical system.

(3) *110.24(C) Available Fault Current.* Add a new Subsection (C) to Section 110.24 to read as follows:

(C) **Calculations.** A stamped/sealed letter from a Professional Engineer shall be provided attesting to the accuracy of the calculations performed personally or under his/her supervision. The available fault current information shall be provided under the authority of the electrical engineer P.E. and may be a separate letter or included on the approved stamped drawings.

(4) *110.26(D)(1) Illumination.* Add a new Paragraph (1) to Subsection 110.26(D) to read as follows:

(1) **Illumination.** In other than dwelling units, at least one self-contained battery operated emergency light, connected to the local lighting circuit, ahead of any switching, shall be required in all electrical rooms, switchgear rooms, fire sprinkler rooms and generator rooms.

(5) **210.11(K)(5) Radon Receptacle & Circuit.** Add new Paragraph (5) and Subparagraphs A and B in Section 210.11(K) to read as follows:

(5) A. When a dwelling unit is equipped with a passive radon pipe as part of new construction or remodeling, a 125 volt 15 or 20 amp circuit and single receptacle shall be provided in the attic within two feet of vertical section the PVC radon pipe that is penetrating the roof. The receptacle cover shall be marked "For Radon System" and shall indicate what circuit breaker number is for this receptacle. The receptacle shall be at least 12 inches higher than the insulation level (if applicable) near the radon pipe and shall not be installed at a height requiring a ladder within the attic. The receptacle shall be a single receptacle. The circuit shall be a dedicated circuit and shall not be part of a multi-wire branch circuit (network) and shall not be AFCI or GFCI protected. The receptacle shall not be required to be TR type.

B. On existing dwellings when a radon mitigation system is installed, an electrical permit shall be obtained prior to any work and applicable inspections are required. All work shall be installed in accordance to the National Electrical Code and amendments in effect. Note, the permit and inspections are not for the radon system or its installation and is only for the electrical work. This provision is not intended to regulate radon mitigation system installations or supersede any state, federal or other governmental Radon licensing and/or installations requirements by such agencies having jurisdiction.

(6) *210.12 Arc-Fault Circuit Interrupter Protection.* Delete Section 210.12 in its entirety.

(7) *210.52(J)(1) Garages.* Add a new Paragraph 210.52(J)(1)(a) to read as follows:

(a) **Conduit for EV Charging Equipment.** In new construction governed by the International Residential Code (IRC), a minimum of one ¾" (nominal trade size) metallic rigid, IMC or EMT conduit shall be installed from the electrical panel to a 4-11/16" deep electrical junction box located on the side wall of the garage in a location that will accommodate future electrical vehicle charging equipment. A blank cover shall be installed on the 4-11/16" junction box. The electrical panel from which conduit originates shall have provisions for adding the future 2 pole breaker and the availability to add at least a 60 amp load to the electrical panel.

(8) *210.70(A)(2)(1) Additional Locations.* In Subparagraph 210.70(A)(2)(1) add the following phrase at the end of the sentence:

"and closets over 36 inches deep or 24 square feet in area."

(9) *230.11 Additional Service Standards.* Insert a new Section 230.11 to read as follows:

230.11 Additional Service Standards

(A) **Service Entrance Conductors.** Overhead service entrance conductors shall be installed in rigid metal conduit or intermediate metal conduit with a panelboard containing not less than twenty (20) circuits. Mini breakers shall not be permitted in new construction.

(B) **Residential Sub-panels.** Sub-panels shall be permitted with no load calculation and without special permission, provided the sub panel is protected by a circuit breaker and/or fuse no larger than 60 amps located in the distribution panel from which the sub-panel is to be fed.

(C) **Residential Occupancies.** Those conductors which supply all the current consumed by an individual apartment or dwelling unit shall have a rating not less than the load required, but in no event less than the following:

1) Dwelling units of any size shall have a 100 ampere minimum rating; except that dwelling units in excess of 2,000 square feet shall have a 200 ampere minimum rating and dwelling units over 4,000 square feet shall have a 400 ampere minimum rating.

a) For the purposes of this section, the measurement of square footage shall be measured from outside wall to outside wall and shall include basements (finished or unfinished), crawl spaces, and garages.

2) Services up to 200 amperes shall have one disconnecting means. Two separate disconnecting means for a 400 ampere service will be permitted to allow a 400 amp residential service with two, 200 amp main disconnects with each connecting to its own 200 amp panel. Three separate disconnecting means for a 600 ampere service will be permitted to allow a 600 amp residential service with three, 200 amp main disconnects with each connecting to its own 200 amp panel.

(D) **Shunt Trip.** 230.70(A)(3) shall apply.

(E) **Reduced Neutrals.** Reduced neutrals are permitted only by special permission of the Northbrook Electrical Commission.

(F) **Copper Conductors.** Copper conductors shall be used on the load side of all services.

(10) *230.12 Underground Service Conductors Required.* Add a new Section 230.12, entitled "Underground Service Conductors Required" to read as follows:

230.12 Underground Service Conductors Required. All new residential construction shall have underground service conductors.

Exception: The Director of Development and Planning Services may waive this requirement in the event this would necessitate burying a service conductor beneath a public or private street.

(11) *230.43 Wiring Methods for 1000 Volts, Nominal or Less.* Amend Section 230.43 to delete the following as authorized wiring methods:

(1) Open wiring on insulators

(2) Type IGS cable

(5) Electrical Metallic Tubing

(6) Electrical nonmetallic tubing (ENT)

(7) Service entrance cables

(12) Cablebus

(13) Type MC cable

(14) Mineral-insulated, metal-sheathed cable

(15) Flexible metal conduit not over 6 ft. (1.83m) long between raceways, or between raceway and service equipment, with equipment bonding jumper routed with the flexible metal conduit or the liquid tight flexible metal conduit according to the provisions of Section 250-102(a), (b)

(16) Liquid tight flexible nonmetallic conduit

(12) *230.43(11) Rigid polyvinyl chloride conduit (PVC).* Delete Paragraph 230.43(11) in its entirety and replace it with the following:

230.43(11) Rigid polyvinyl chloride conduit (PVC)

(A) Rigid nonmetallic (PVC) electrical conduit schedule 40 or 80 shall be permitted to be used underground only.

(B) Elbows and nipples extending above grade shall be RMC, IMC, aluminum rigid or PVC where permitted by 352.10 as amended.

(C) Elbows or nipples extending into a ground level Commonwealth Edison or privately owned transformer, PVC with a PVC connector and bushing shall be permitted.

(D) Rigid nonmetallic (PVC) electrical conduit schedule 80 shall be permitted to be used above or below ground for temporary construction power, temporary services, temporary extensions to devices such as receptacles and lights during construction activities but shall be removed once construction activities have ended and the permanent wiring methods have been installed and commissioned.

(13) *230.44 Cable Trays.* Delete Section 230.44 in its entirety.

(14) *230.70(A)(3) Remote Control—Shunt Trip.* Add new Subparagraph (a) to Subsection 230.73(A)(3) to read as follows:

(a) In other than one- and two-family dwellings, the need for installation of and location of a Knox-Box shunt trip switch that shall deactivate the main disconnects of all electrical services shall be determined by the Northbrook Fire Marshal when any of the following conditions apply:

1. When an additional electrical service is added to a building and/or an existing electrical service is modified and the service disconnects are not grouped together.

2. New construction and/or renovation where more than one service supplies the same occupant and/or address and the service disconnects are not grouped together.

3. New construction and/or renovation when the main disconnects are not grouped together and/or there are more than 6 disconnects.

4. New construction and/or renovation where there is a complicated or unusual building and/or occupant space and/or electrical room layout as determined by the Northbrook Fire Marshal.

Exception: Electrical services supplying fire pump systems.

(15) *230.85(C) Emergency Disconnects.* Modify the language within the exception to read as follows:

Exception: Where only the circuit breaker panel, service entrance conductors, and/or related raceways and fittings are replaced, the requirements of this section shall not apply.

(16) *250.50 Grounding Electrode System.* Add new language at the end of the existing Section 250.50 to read as follows:

All grounding electrode conductors shall be:

1. Enclosed in metal raceway or metal conduit.

Exception 1: PVC conduit shall be permitted when installed in accordance with Article 352, as modified by local amendments.

Exception 2: Concealed grounding electrode conductors from an underground meter enclosure to a ground rod and jumper between ground rods shall not be required to be in conduit provided the conductor is buried below grade by at least 12".

2. A proper sized bonding jumper shall also be installed across the water meter with slack to allow for the removal of the water meter without disconnecting the jumper.

(17) *250.68(D) Grounding Electrode Conductors; Steel Grounding.* Add a new Subsection D to Section 250.68 to read as follows:

(D) **Grounding Electrode Conductors; Steel Grounding.** Grounding electrode conductors that utilize building steel as the grounding electrode shall:

1. Have an irreversible connection between:
    a. conductor and attachment lug
    b. lug to building steel
    c. conductor to building steel if directly attached.
2. Irreversible connections can include:
    a. exothermic welding
    b. high-press compression
    c. listed bolt on connections with break off/shear pin features
    d. other listed components

(18) *310.15(B)(7) Single-Phase Dwelling Services and Feeders.* Delete Subsection 310.15(B)(7) in its entirety.

(19) *310.106(B) Conductor Material.* Delete Section 310.106(B) in the entirety and replace it with the following:

310.106(B) Conductor Material. Conductors in this Article shall be copper unless otherwise approved by the Northbrook Electrical Commission.

(20) *Table 310.106(A).* Delete the column in Table 310.106(A) referencing Aluminum or Copper-Clad Aluminum.

(21) *314.27(C)(1) Requirements for Paddle Fan Outlets & Supports.* Add a new Subsection (C)(1) to Section 314.27 to read as follows:

(1) **Requirements for Paddle Fan Outlets & Supports.** In dwelling units when a ceiling outlet box is supplied in the center or near center of a ceiling footprint (where a paddle fan can be installed) outlet boxes suitable for supporting fans as required by 314.27(c) shall be installed in the following locations:

a. sleeping rooms,

b. family rooms,

c. studies,

d. dining rooms,

e. great rooms,

f. living rooms, foyers, and

g. other similar rooms.

Exception: When an electrical and/or mechanical lift or hoisting device is installed that is manufactured for the purpose of raising and/or lowering a luminaire and/or paddle fan, no additional boxes shall be required other than what is specified by the manufacturer of the lift or hoist. Any such lift or hoist shall be listed for the purpose.

(22) *320.10 Armored Cable—Uses Permitted.* Delete Paragraph 320.10 in its entirety and replace it with the following:

320.10 Armored Cable—Uses Permitted

1. For remodeling work where fished through finished wall, floors and ceilings. The maximum exposed run of armored cable that feeds into the finished section shall not exceed 6 feet.

2. For remodeling work in dwelling units where lighting (such as recessed cans) or junction boxes for luminaires are installed in ceilings where there is an accessible or inaccessible attic above the ceiling and ceilings below upper floors where there is no access.

3. For new construction or remodeling; as a whip, not exceeding 6 feet:

a. From junction boxes to luminaire (such as lay-in fixtures and recessed cans).

b. As a daisy chain whip, no longer than 6 feet, from luminaire to luminaire, when the luminaire is listed for pass through wiring and when it will be concealed above a finished ceiling.

c. Connection to appliances, equipment, pumps, motors and similar apparatus.

(23) *330.10 MC Cable—Uses Permitted.* Delete Paragraph 330.10 in its entirety and replace it with the following:

330.10 MC Cable—Uses Permitted

1. For remodeling work where fished through finished wall, floors and ceilings. The maximum exposed run of armored cable that feeds into the finished section shall not exceed 6 feet.

2. For remodeling work in dwelling units where lighting (such as recessed cans) or junction boxes for luminaires are installed in ceilings where there is an accessible or inaccessible attic above the ceiling and ceilings below upper floors where there is no access.

3. For new construction or remodeling, as a whip, not exceeding 6 feet:

a. From junction boxes to luminaire (such as lay-in fixtures and recessed cans).

b. As a daisy chain whip, no longer than 6 feet, from luminaire to luminaire, when the luminaire is listed for pass through wiring and when it will be concealed above a finished ceiling.

c. Connection to appliances, equipment, pumps, motors and similar apparatus.

(24) *334 Nonmetallic-Sheathed Cable.* Delete Article 334 in its entirety.

(25) *334.10 Non-Metallic Cable—Uses Permitted.* Delete Article 334.10 in its entirety and replace it with the following:

334.10 Non-Metallic Cable—Uses Permitted. Non-Metallic Cable (NM) cable shall be permitted to be used for temporary wiring of a construction site when installed in accordance with Article 590.

(26) *338 Service Entrance Cable—Types and Use.* Delete Article 338 in its entirety.

(27) *348.10 FMC Use Permitted.* Delete Section 348.10 in its entirety and replace it with the following:

348.10 FMC Use Permitted. The use of flexible metallic conduit and fittings shall be permitted as specified in (A) through (G).

(A) In lengths not exceeding six (6) feet except where fished.

(B) Exposed or concealed where needed for flexibility (including for vibration) to utilization equipment, appliances and transformers.

(C) Fixture whips not exceeding 6 feet.

(D) In remodeling work where, in the opinion of the Northbrook Electrical Inspector, the installation of electrical metallic tubing presents a hardship. The maximum exposed run of FMC shall not exceed three (3) feet.

(E) Applications when in the opinion of the Northbrook Electrical Inspector other methods are not practical or appropriate.

(F) When part of a listed assembly or equipment and attached by the manufacturer such as a generator ATS controller. Unnecessary lengths shall be shorted to length needed to allow for the installation unless shortening the length violates the listing.

(G) Ground conductors (EGC) shall be provided in all FMC installation and shall be sized and installed in accordance with article 250.

(28) *350.60 Grounding & Bonding (LFMC).* Delete Section 350.60 in its entirety and replace it with the following:

350.60 Grounding & Bonding (LFMC). All LFMC regardless of size, length, conductors and/or size of circuit shall have an equipment grounding conductor (EGC) installed and sized in accordance with article 250.134 and 250.102 for bonding jumpers.

(29) *352.10 RNC Uses Permitted.* Delete Section 352.10 in its entirety and replace it with the following:

352.10 RNC Uses Permitted. PVC conduit, schedule 40 or 80, shall be permitted for use in the following applications.

(A) **Exterior and Underground:**

(1) Underground or below slabs and with voltages of less than 600 volts for:

(a) Service entrance conductors

(b) Feeders

(c) Branch Circuits.

(d) Control circuits.

(2) Underground installations shall be permitted under typical surface areas including:

(a) Grass, gravel, asphalt, pavers, concrete.

(b) Walkways, patios, driveways, parking lots, yards.

(c) For nominal voltage systems of 120 through 480 volts, PVC shall not be permitted above grade.

Exceptions for Exterior and Underground Use:

a. Stub-ups: Underground PVC shall be permitted to be stubbed-up above grade where it transitions to EMT, rigid metallic steel conduit, aluminum rigid conduit or IMC. PVC stub-ups shall not exceed 12 inches. Where necessary, PVC stub-ups shall be protected from damage by appropriate barriers. Stub ups not exceeding 12" shall be permitted to enter other than one- and two-family dwellings to connect into enclosures, boxes, switchboards and similar.

b. PVC shall be permitted above and below grade for low voltage systems. For the purpose of this article, low voltage shall mean 50 volts or less (ac or dc) and/or up to 70 volts for audio/paging systems. Uses can include:

1. Swimming pool lights.
2. Swimming pool controls.
3. Landscape lighting.
4. Signal, coax, fiber optic, phone, computer, data, communication wire.
5. HVAC controls (i.e.: thermostat wiring).
6. Building automation wiring.
7. Alarm, CCTV, security systems, access control systems.
8. Audio/sound systems.
9. Low voltage lighting systems.
10. Sleeves for future low voltage wiring.

(B) **Interior:**

(1) In dwelling and non-dwelling applications, unless prohibited elsewhere in code, PVC conduit shall be permitted for low voltage applications exposed and concealed. Uses can include:

(2) Swimming pool lights.

(3) Swimming pool controls.

(4) Landscape lighting.

(5) Signal, coax, fiber optic, phone, computer, data, communication wire.

(6) HVAC controls (i.e.: thermostat wiring).

(7) Building automation wiring.

(8) Alarm, CCTV, security systems, access control systems.

(9) Audio/sound systems.

(10) Low voltage lighting systems such as; under cabinet lights.

(11) Sleeves for future low voltage wiring.

(12) PVC shall not be permitted in plenum ceilings.

(C) **Temporary wiring and services.**

(1) RNC shall be permitted for temporary wiring associated with construction sites and special events.

(2) RNC shall be permitted for temporary wiring associated with temporary services for construction sites and feeders to construction trailers.

(3) When used for temporary wring, RNC shall be permitted above and below grade, interior and exterior, on or beneath finished surfaces.

(D) **Grounding:**

(1) In one and two unit dwellings, RNC shall be permitted as a conduit to be used with a Grounding Electrode Conductor (GEC) or its jumpers, inside or outside, above or below grade, concealed or on finished surfaces.

(2) When used underground or underslab (inside or outside) and then extending above grade or floor, no transition is required to RMC.

Uses can include:

a. Between service panel and grounding electrode(s).

b. Between meter enclosure containing a main disconnect and grounding electrode(s).

c. Between multiple grounding electrodes.

(E) **Special Conditions.** RNC shall not be installed where exposed without special permission except as permitted in this amendment. RNC may be considered for special circumstances and approved by written request for special permission. Possible uses could be wet locations, exposure to chemicals or special corrosive environments (interior and/or exterior of a structure).

(30) *354 Nonmetallic Underground Conduit.* Delete Article 354 in its entirety.

(31) *355.10 Reinforced Thermal Resin (RTRC)—Uses Permitted.* Delete language in Section 355.10 in its entirety and replace it with the following:

355.10 Reinforced Thermal Resin (RTRC)—Use Permitted. RTRC shall be permitted in accordance with amendment pertaining to PVC in Section 352.10.

(32) *358.12 EMT—Uses Not Permitted.* Add the following to the list of conditions in Section 358.12 specifying when EMT shall not be used:

(3) For enclosing service entrance conductors.

(4) In ground level floor slab that is in contact with the earth.

(33) *360 Flexible Metal Tubing (FMT).* Delete Article 360 in its entirety and replace it with the following:

360 Flexible Metal Tubing (FMT). FMT shall be permitted to remain where already installed. FMT shall not be reused once removed or when still attached to a light fixture and the light fixture is relocated.

(34) *362 Electrical Nonmetallic Tubing.* Delete Article 362 in its entirety.

(35) *366.10(B) Nonmetallic Auxiliary Gutters—Uses Permitted.* Delete paragraph 366.10(B) in its entirety.

(36) *370 Cablebus.* Delete Article 370 in its entirety.

(37) *382 Nonmetallic Extensions.* Delete Article 382 in its entirety.

(38) *394 Concealed Knob-and-Tube Wiring.* Delete Article 394 in its entirety.

(39) *396 Messenger Supported Wiring.* Delete Article 396 in its entirety.

(40) *398 Open Wiring on Insulators.* Delete Article 398 in its entirety.

(41) *410.16(E) Luminaire Requirements in Clothes Closets.* Add a new Subsection D to Section 410.16 to read as follows:

D. **Luminaire Requirements in Clothes Closets.** A luminaire (fixture) shall be installed in all closets over 36" deep or 24 square feet in area.

(42) *410.117(C) Tap conductors.* Delete the second sentence in Section 410.117(C) and replace it with the following:

"Such tap conductors shall be in metallic raceway of at least four (4) feet (1.22m) but not more than six (6) feet (1.83m) in length."

(43) *645.5(E)(1)(b) Installation Requirements for Branch Circuit Supply Conductors Under a Raised Floor.* Delete the following as permitted wiring methods in Subsection 645.5(E)(1)(b):

(2) rigid nonmetallic conduit

(5) electrical nonmetallic tubing

(7) nonmetallic wireway

(9) surface nonmetallic raceway

(12) Liquidtight flexible non-metallic conduit

(13) MI cable

(14) MC cable

(15) AC cable

(44) *645.5(E)(1)(b) Installation Requirements for Branch Circuit Supply Conductors Under a Raised Floor.* In addition to the amendment above, modify Subsection 645.5(E)(1)(b) to specify the following wiring methods:

(10) Flexible metal conduit permitted in lengths not exceeding 6 feet and with a green equipment grounding conductor (EGC) sized in accordance for the circuit per article 250.

(11) Liquidtight flexible metal conduit permitted in lengths not exceeding 6 feet and with a green equipment grounding conductor (EGC) sized in accordance for the circuit per article 250.

(16) Associated metallic boxes, enclosures, straps, fittings and related hardware.

(45) *680.23(A)(4) Voltage Limitation.* Amend Section 680.23, "Underwater Luminaires" by deleting the language in Subsection (A)(4) in its entirety and replacing it with the following:

4. Voltage Limitation . All underwater luminaires (pool lights located in the pool) shall be listed by a recognized testing laboratory such as UL, ETL, CSA and with a rating of not more than 24 volts

between conductors. All under water luminaires shall be connected to a transformer that is listed for use with swimming pools. The line side of the transformer shall be connected to the load side of a Class-A GFCI protective device.

(46) *700.10(A)(3) Wiring, Emergency Systems.* Add the following Paragraph (3) to Section 700.10(A) to read as follows:

(3) In addition to the requirements stated in 700.10(A)(1) and (2), the following shall apply.

In other than dwelling units where the building and/or tenant space emergency lighting and/or exit signs are supplied by circuits from a permanently installed backup generator, the junction box at the point of connection to the luminaire shall be identified on the outside of the box and cover plated by a distinctive fluorescent yellow paint or by other approved means. Paint shall not be required when the junction boxes are exposed and would conflict with the building cosmetics (in those situations other approved identification will be required).

Exception: If colored conduits, boxes or cover plates are part of the design and/or specifications, other approved methods shall be used so as not to interfere or cause confusion of boxes, plates or conduits identified by color for other purposes.

(47) *720.1 Scope (Circuits/Equipment Operating at Less Than 50 Volts).* Add new Subsections (A), (B) and (C) to Section 720.1 to read as follows:

(A) **Low Voltage Definition:** For the purposes of this amendment, "low voltage" shall mean wiring systems, and/or circuits, that operate at 50 volts (or less) ac and/or dc, signal and/or communication wiring, temperature control, building automation and structured wiring. Common wiring that falls under this category include: phone, data, internet, communications, alarm (all types), CCTV, coax, antennae (and dish), thermostat, lighting systems and similar.

(B) **Permit and Inspection Required:** Low voltage wiring system installation and extensions shall be required to obtain permits and be inspected. This includes but is not limited to low voltage systems inside commercial, industrial, shopping centers, and/or any building where children may be expected to enter and or remain for a period of time. This also includes buildings where the public may be expected to assemble and homes engaging in the business of childcare services, hair salons, and other undertakings where children may be expected to be present.

Exception 1. One and two-family dwellings.

Exception 2. Non-common individual dwelling units within a larger building such as a condominium building.

Exception 3. Extensions within an area that does not require low voltage wiring to extend above ceilings or through walls if such wiring does not terminate in open sockets or other open source of voltage that may be contacted by the public.

Exception 4. Fire alarm systems requiring permits and inspections from the Northbrook Fire Prevention Bureau.

Exception 5. Low voltage wiring associated with swimming pools, fountains, spas and similar.

(C) **Contractor Provisions:** Low voltage wiring system installation shall be permitted to be installed by:

1) Licensed Electrical Contractor.

2) Licensed Low Voltage Electrical Contractor.

3) State of Illinois Licensed Alarm Contractor.

4) General Contractor.

5) HVAC Contractor.

6) In house IT, maintenance or other authorized personnel by the tenant, owner or management agency provided the tenant, owner or management agency obtains a general contractors license.

Exception: This shall not be construed as superseding any State or Federal laws requiring specific licenses for alarm (or related) work, or other specialty work requiring special licensing from other agencies for specific work performed.

Secs. 6-97—6-100. Reserved.