

Ordinance 2020-13

An Ordinance Amending the Northbrook Municipal Code (1988), As Amended, Regarding the Re-Adoption of Building and Construction Regulations

Passed by the Board of Trustees, 3/10/2020
Printed and Published 3/11/2020

Printed and Published in Pamphlet Form
by Authority of the
President and Board of Trustees
VILLAGE OF NORTHBROOK
COOK COUNTY, ILLINOIS

I hereby certify that this document
was properly published on the date
stated above.

/s/ Debra J. Ford
Village Clerk

Ordinance 2020-13

BE IT ORDAINED by the President and Board of Trustees of the Village of Northbrook, County of Cook and State of Illinois THAT:

An Ordinance Amending the Northbrook Municipal Code (1988), As Amended, Regarding the Re-Adoption of Building and Construction Regulations

shall be, and is hereby, adopted as follows:

Section 1. BACKGROUND.

The Village of Northbrook regulates building and construction within its boundaries pursuant to a number of internationally recognized codes and regulations, all of which are incorporated into the Village's ordinances in Chapter 6 of the Northbrook Municipal Code (1988), as amended ("*Municipal Code*"). The Village is currently utilizing the 2011 National Electrical Code and the 2012 series of building codes published by the International Code Council with a series of local amendments.

The Northbrook Electrical Commission and Architectural Control Commission have both reviewed the 2017 National Electrical Code and 2018 set of building codes published by the International Code Council and have recommended that these model codes be adopted by the Village with a series of local amendments.

The President and the Board of Trustees hereby find that it is in the best interest of the public and the Village to amend the Municipal Code as specifically provided in this Ordinance.

Section 2. BUILDING AND CONSTRUCTION REGULATIONS.

The following Articles of Chapter 6, entitled “Building and Construction Regulations,” of the Municipal Code are hereby amended as set forth herein:

A. Article II, entitled “Buildings,” is hereby amended in its entirety as set forth in ***Exhibit A*** attached to, and by this reference, made a part of this Ordinance.

B. Article III, entitled “One and Two Family Dwellings,” is hereby amended in its entirety as set forth in ***Exhibit B*** attached to, and by this reference, made a part of this Ordinance.

C. Article V, entitled “Mechanical,” is hereby amended in its entirety as set forth in ***Exhibit C*** attached to, and by this reference, made a part of this Ordinance.

E. Article VI, entitled “Electrical,” is hereby amended in its entirety as set forth in ***Exhibit D*** attached to, and by this reference, made a part of this Ordinance.

F. Article VII, entitled “Fire Prevention Code,” is hereby amended in its entirety as set forth in ***Exhibit E*** attached to, and by this reference, made a part of this Ordinance.

G. Article X, entitled “Swimming and Other Pools,” is hereby amended in its entirety as set forth in ***Exhibit F*** attached to, and by this reference, made a part of this Ordinance.

H. Article XII, entitled “Fuel Gas,” is hereby amended in its entirety as set forth in ***Exhibit G*** attached to, and by this reference, made a part of this Ordinance.

Section 3. SCOPE OF AMENDMENTS.

The repeal and replacement of certain articles of Chapter 6 of the Northbrook Municipal Code (1988), as amended, shall have no effect on the enforcement and validity of the remaining articles of Chapter 6, which shall be in continuing force and effect.

Section 4. APPLICATION OF THIS ORDINANCE.

The regulations set forth in this ordinance shall not apply to any matter for which a complete application for a building permit has been submitted to and received by the Village prior to May 1, 2020. For purposes of this section, a “complete” application shall mean an application that (1) has been fully executed by all appropriated parties and (2) includes all required and necessary supporting documentation.

Section 5. EFFECTIVE DATE.

This Ordinance shall be in full force and effect ten days after its passage, approval and publication in pamphlet form as provided by law.

Adopted: 3/10/2020

RESULT:	ADOPTED BY CONSENT VOTE [6 TO 0]
MOVER:	Bob Israel, Trustee
SECONDER:	Heather Ross, Trustee
AYES:	Ciesla, Israel, Collison, Ross, Hebl, Pepoon
ABSTAIN:	Sandra Frum

ATTEST:

/s/ Debra J. Ford
Village Clerk

/s/ Sandra E. Frum
Village President

EXHIBIT A
Chapter 6 - BUILDING AND CONSTRUCTION REGULATIONS
ARTICLE II. - BUILDINGS

Sec. 6-51. - Adoption of International Building Code.

There is hereby adopted by the Village the 2018 International Building Code, as hereinafter amended (hereinafter the "Building Code"). 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 thirty (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 International Building Code, 2018 edition, published by the International Code Council, are hereby adopted by this reference, subject only to the additions, deletions and modifications specifically set forth in 6-52 of this Code.

Sec. 6-52. - Additions, deletions and modifications of the International Building Code.

The following sections and subsections of the 2018 International Building Code are hereby added, amended, revised, and changed as follows:

1. Subsection 101.1 Title. Amend to read as follows:

Insert "the Village of Northbrook, Cook County, Illinois" for "[name of jurisdiction]".

2. Subsection 102.4.3 Illinois State Plumbing Code. Add a new subsection 102.4.3 to read as follows:

102.4.3 Illinois State Plumbing Code. Whenever a reference is made to the International Plumbing Code or Chapter 29 of this code, such reference shall be deemed to refer to the applicable section of the Illinois State Plumbing Code, as adopted by the Village of Northbrook.

3. Section 103. Department of Building Safety. Change only the title of this Section to delete reference to the Department of Building Safety and read as follows:

103 Department of Development and Planning Services.

4. Subsection 103.1 Creation of enforcement agency. Delete the sentence in its entirety and replace it with the following.

103.1 Creation of enforcement agency. The building official shall be a member of the Department of Development and Planning Services, as established by the Northbrook Municipal Code.

5. Subsection 104.10.1 Flood hazard areas. Delete this subsection in its entirety.

6. Subsection 105.2 Work exempt from permit. Change only the title of this section from "Work exempt from permit" to read as follows:

105.2. Work exempt from building permit.

7. Subsection 105.5 Expiration. Delete this Subsection in its entirety and replace it with the following:

105.5 Expiration and Time Extensions. Permits shall expire in accordance with the limits established in Sec. 6-6 of the Northbrook Municipal Code. Extensions may be granted for expired permits in accordance with the standards and procedures established in Sec. 6-6 of the Northbrook Municipal Code.

8. **105.6 Suspension or Revocation.** Amend this subsection by changing the title and adding an additional sentence at the end, so the subsection reads as follows:

105.6 Suspension, revocation or surrender. The building official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code. A permit may also be voluntarily surrendered in accordance with the standards and procedures of Sec. 6-7 of the Northbrook Municipal Code.

9. **Subsection 107.6 Minimum information provided on first page of drawings.** Add a new subsection to read as follows:

107.6 Minimum information provided on first page of drawings. Construction drawings shall include information to clearly convey the occupancies and uses of the structure, construction types and other the basic construction elements used in the design. All construction documents shall, at a minimum, include the following information on the first page:

- a. Use and Occupancy group(s) classification (indicate single use; or single use with incidental use / accessory use; or mixed use separated / non-separated);
- b. Type(s) of construction;
- c. Occupant load based on International Building Code;
- d. Occupant load based on State of Illinois Plumbing Code;
- e. Design Live and Dead Loads; and
- f. The name, address, signature and seal of the Design Professional responsible.

10. **Subsection 107.7 Cover sheet.** Add a new subsection 107.7 to read as follows:

107.7 Standard cover sheet. The building official may require that construction documents be accompanied by a standardized Village cover sheet that lists basic information regarding the proposed construction, including but not limited to the information required in 107.6. Such cover sheet shall be signed and sealed by the Design Professional responsible.

11. **Subsection 111.5 Additional requirements and standards for occupancy.** Add a new Subsection to read as follows:

111.5 Additional requirements and standards for occupancy. In addition to the standards and procedures established in this Code, occupancies shall also be governed by the requirements of Sec. 6-12, Certificate of occupancy, of the Northbrook Municipal Code.

12. **Subsection 113 Board of Appeals.** Delete the language of this entire Section and Subsections in their entirety and replace it with the following Section 113 and Subsection 113.1:

113. Appeals

113.1 General. Appeals of decisions involving the building official shall be heard by

the Northbrook Architectural Control Commission in accordance with the procedures established in the Northbrook Municipal Code.

13. Section 114.4 Violation Penalties. Add a sentence at the end of this subsection to read as follows:

114.4 Violation penalties. Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the approved construction documents or directive of the building official, or of a permit or certificate issued under the provisions of this code, shall be subject to penalties as prescribed by law. Fees and fines associated with such violations shall be assessed in accordance with the Village of Northbrook Fee Schedule.

14. Subsection 116.6 Additional Village Actions. Add a new Subsection to read as follows:

116.6 Additional Village Actions. In addition to the remedies specified in this Code, the building official may utilize all other enforcement measures available by law, including the provisions of Sec. 6-13, Unsafe and Uncompleted Buildings and Structures, of the Northbrook Municipal Code.

15. Chapter 9 Fire Protection Systems. Delete this Chapter in its entirety and replace it with the following:

Chapter 9 Fire Protection Systems. Refer to the International Fire Code, as adopted by the Village of Northbrook.

16. CHAPTER 29 PLUMBING SYSTEMS. Delete this chapter in its entirety.

17. Subsection 3001.6 Permits and Work. Add a new subsection to read as follows:

3001.6 Permits and Work. Equipment or devices subject to the provisions of this Code shall not be constructed, installed, relocated or altered unless a permit has been received from the AHJ (Authority Having Jurisdiction) before the work is commenced. A copy of such permit shall be kept at the construction site at all times while the work is in progress.

18. Subsection 3001.7 Installation and operation. Add a new subsection to read as follows:

3001.7 Installation and operation. Add a new subsection to read as follows: The operation of all equipment governed by the provisions of this chapter and hereafter installed, relocated or altered shall be unlawful by persons other than the installer until such equipment has been inspected and tested as herein required and a final certificate of compliance has been issued by the AHJ.

19. Subsection 3001.8 Posting certificates of compliance. Add a new subsection to read as follows:

3001.8 Posting certificates of compliance. The owner or lessee shall post the current certificate of compliance in a conspicuous place inside the elevator.

20. 3002.4 Elevator car to accommodate ambulance stretcher. Delete the language in this subsection in its entirety and replace it with the following:

3002.4 Elevator car to accommodate ambulance stretcher. Where elevators are provided in buildings that are: (1) three or more stories above grade plane; (2) three or more stories below grade plane; or (3) are use groups I, R-1 or R-2, at least one elevator shall be provided for fire department emergency access to all

floors. The power supply for these elevators shall be normally provided by the premises' electrical supply. In the event of a power supply failure, an emergency electrical system shall automatically provide power for a duration of not less than 24 hours, installed per section 604. Elevators designated as emergency access shall accommodate an 88" long and 26" wide stretcher within the elevator cab, accounting for handrails and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall not be less than 3 inches (76 mm) high and shall be placed inside on both sides of the hoist way door frame.

21. Subsection 3005.1 Access. Delete this subsection in its entirety and replace it to read as follows:

- 3005.1 Access. An approved means of access shall be provided to elevator machine rooms and overhead machinery equipment spaces. This means is not to be used as a passageway through the machine room to other areas of the building or roof.

22. Subsection 3009 Add a new Section and related subsections to read as follows:

- 3009 Maintenance and accident reporting.
- 3009.1 Owner responsibility. The owner or the owner's legal agent for the building in which the equipment is located shall be responsible for the care, maintenance and safe operation of all equipment covered by this article after the installation thereof and acceptance by such owner or agent. The owner or legal agent shall make or cause to be made all periodic tests and inspections, and shall maintain all equipment in a safe operating condition, as required by this article.
- 3009.2 Contractor responsibility. The person installing any device covered by this article shall make all acceptance tests and shall be responsible for the care and safe operation of such equipment during its construction and until temporarily or finally accepted by the AHJ (Authority Having Jurisdiction) elevator inspector.
- 3009.3 Maintenance items. All operating and electrical parts and accessory equipment or devices subject to this article shall be maintained in a safe operating condition. The maintenance of elevators, dumbwaiters and escalators shall conform to ASME A17.1 S 2005 Code. State law.
- 3009.4 Unsafe conditions. If, upon inspection, any equipment covered in this article is found to be in an unsafe condition, or not in accordance with the provisions of this Code, the AHJ shall thereupon serve a written notice of such finding upon the building owner or lessee, stating the time when recommended repairs or changes shall be completed. After the service of such notice, it shall be the duty of the owner to proceed within the time allowed to make such repairs or changes as are necessary to place the equipment after the date stated in the notice unless such recommended repairs or changes have been made and the equipment has been approved, or unless an extension of time has been secured from the AHJ in writing. Time duration to be twenty-four (24) hours, seven (7) days, fifteen (15) days or maximum thirty (30) days.
- 3009.4.1 Power to seal equipment. Add new sub: In cases or emergency, the AHJ, in addition to any other penalties herein provided, shall have the power to seal out of service any device or equipment covered by this article when, in the opinion

of the AHJ, the condition of the device is such that the device is rendered unsafe for operation or for willful failure to comply with recommendations and orders.

- 3009.4.2 Notice of sealing out of service. Add new sub: "Before sealing any device out of service, the AHJ, except in case of emergency, shall service written notice upon the building owner or lessee stating intention to seal the equipment out of service and the reasons therefore.
- 3009.4.3 Unlawful to remove seal. Any device sealed out of service by the AHJ shall be plainly marked with a sign or tag indicating the reason for such sealing. Any tampering with, defacing or removal of the sign, tag or seal without approval shall constitute a violation of this article.
- 3009.5 Accidents reported and recorded. The owner of the building shall immediately notify the AHJ of every accident involving personal injury or damage to apparatus on, about or in connection with any equipment covered by this article, and shall afford the AHJ every facility for investigating such accident. When an accident involves the failure, breakage, damage or destruction of any part of the apparatus or mechanism, it shall be unlawful to use such device until after an examination by the AHJ is made and approval of the equipment for continued use is granted. It shall be the duty of the AHJ to make a prompt examination into the cause of the accident and to enter a full and complete report thereof in the records of the building department. Such records shall be open for public inspection at all reasonable hours.
- 3009.6 Removal of damaged parts. It shall be unlawful to remove from the premises any part of the damaged construction or operating mechanism of elevators, or other equipment subject to the provisions of this article, until permission to do so has been granted by the AHJ.

23. Section 3010 Add a new subsection to read as follows:

3010. Tests and inspections.
- 3010.1 General. All equipment and devices covered by the provisions of this Code shall be subjected to acceptance and maintenance tests and periodic inspections as required herein.
- 3010.2 Acceptance tests. Acceptance tests and inspections shall be required on all new, relocated and altered equipment subject to the provisions of this chapter. Tests and inspections shall be of such a nature as to determine whether the entire installation is designed, constructed and installed in compliance with this Code, and shall include all parts of the equipment and machinery. In addition, full load tests to be done on all equipment. All such tests shall be made in compliance with the requirements of Section 8.10 and in the presence of the AHJ, or by an approved agency for the AHJ and by the person installing such equipment.
- 3010.3 Periodic tests and periodic inspections. Periodic tests shall be required on all new and existing power elevators, and periodic inspections shall be made of all new and existing equipment subject to the provisions of this chapter.
- 3010.3.1 Periodic tests. Periodic tests shall be made by the AHJ, or by an approved agency, and shall be made at the expense and responsibility of the owner.

Where such tests are not made by the AHJ, the approved agency shall submit a detailed report of the tests to the AHJ on approved forms not more than thirty (30) days after the completion of the tests.

3010.3.2 Periodic inspections. Periodic inspections shall be made by the AHJ or by an approved agency. Where such inspections are not made by the AHJ, the approved agency shall submit a detailed report of the inspection to the AHJ on approved forms not more than thirty (30) days after completion of the inspection.

3010.3.3 Frequency of tests and inspections. Add new sub: "Tests and inspections shall be conducted at intervals of not more than those set forth in ASME A17.1 listed in chapter 35 for elevators, escalators, dumbwaiters and moving walks.

24. Section 3011 Add a new subsection to read as follows:

3011 Hoisting and elevating equipment.

3011.1 Miscellaneous hoisting and elevating equipment. All miscellaneous hoisting and elevating equipment shall be subjected to tests and inspections as required by the AHJ to ensure safe operation.

3011.2 Conveyors. Conveyors and related equipment shall be inspected and tested in accordance with ASME B20.1 listed in chapter 35.

Sec. 6-53. - Adoption of state elevator safety rules.

The provisions of the Illinois Elevator Safety Act, 225 ILCS 312/1 et seq. and Part 1000, Chapter II, Title 41 of the Illinois Administrative Code, entitled "Illinois Elevator Safety Rules," are hereby adopted into this Code by this reference.

EXHIBIT B

Chapter 6 - BUILDING AND CONSTRUCTION REGULATIONS

ARTICLE III. ONE AND TWO-FAMILY DWELLINGS

Sec. 6-61. INTERNATIONAL RESIDENTIAL CODE ADOPTED:

There is hereby adopted by the Village the 2018 International Residential Code for one- and two-family dwellings, as hereinafter amended (hereinafter the "Residential Code"). At least one copy of the International Residential Code has been on file in the office of the village clerk for a period of at least thirty (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.

Sec. 6-62. APPLICABILITY

The 2018 International Residential Code shall apply to all single-family detached dwellings, two-family dwellings, and all buildings and structures accessory thereto that are expressly regulated by the International Residential Code.

SEC. 6-63. DELETIONS, ADDITIONS, AND MODIFICATIONS TO THE INTERNATIONAL RESIDENTIAL CODE:

The following sections and subsections of the 2018 International Residential Code are hereby added, amended, revised, and changed as follows:

1. **R101.1 Title. Amend to read as follows:**

Insert "the Village of Northbrook, Cook County, Illinois" for "[name of jurisdiction]".

2. **R101.2 Scope. Delete Exceptions 2, 3, 4 and 5 from the list.**

3. **R102.4.3 State Plumbing Code. Add a new subsection to read as follows:**

R102.4.3 Illinois State Plumbing Code. Whenever a reference is made to the International Plumbing Code or Chapters 25 through 33 of this Code, such reference shall be deemed to refer to the applicable section of the Illinois State Plumbing Code, as adopted by the Village of Northbrook.

4. **R102.4.4 Electrical Code. Add a new subsection to read as follows:**

R102.4.4 Electrical Code. Whenever a reference is made to Chapters 34 through 43 of this Code, such reference shall be deemed to refer to the applicable section of the National Electrical Code, as adopted by the Village of Northbrook.

5. **R103. Department of Building Safety.** Change only the title of this Section to delete reference to the Department of Building Safety and read as follows:

R103 Department of Development and Planning Services.

6. **R103.1 Creation of enforcement agency.** Delete the sentence in its entirety and replace it with the following.

R103.1 Creation of enforcement agency. The building official shall be a member of the Department of Development and Planning Services, as established by the Northbrook Municipal Code.

7. **Subsection R104.10.1 Flood hazard areas.** Delete this subsection in its entirety.

8. **R105.2 Work exempt from permit.** Change only the title of this section from "Work exempt from permit" to read as follows:

R105.2. Work exempt from building permit.

9. **Subsection R105.3.1.1 Determination of substantially improved or substantially damaged existing buildings in flood hazard areas.** Delete this subsection in its entirety.

10. **R105.5 Expiration.** Delete this Subsection in its entirety and replace it with the following:

R105.5 Expiration and Time Extensions. Permits shall expire in accordance with the limits established in Sec. 6-6 of the Northbrook Municipal Code. Extensions may be granted for expired permits in accordance with the standards and procedures established in Sec. 6-6 of the Northbrook Municipal Code.

11. **R105.6 Suspension or Revocation.** Amend this subsection by changing the title and adding an additional sentence at the end, so the subsection reads as follows:

R105.6 Suspension, revocation or surrender. The building official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code. A permit may also be voluntarily surrendered in accordance with the standards and procedures of Sec. 6-7 of the Northbrook Municipal Code.

12. **R106.1 Submittal documents.** Delete the second sentence of this subsection so that the new subsection reads as follows:

R106.1 Submittal documents. Submittal documents consisting of construction documents, and other data shall be submitted in two or more sets with each application for a permit. Construction documents for all new one-family and two-family residences, additions and alterations shall be prepared by a design professional licensed with the State of Illinois. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.

13. **Subsection 106.1.5 Cover sheet.** Add a new subsection to read as follows:

R106.1.5 Village Cover sheet. The building official may require that construction drawings include a Village of Northbrook Cover Sheet that includes standardized construction information. The building official shall prepare and update such cover sheets from time to time and make them available for use by design professionals.

14. **R109.1.3 Floodplain inspections.** Delete this subsection in its entirety and replace it with the following:

R109.1.3 Floodplain inspections. For construction in flood hazard areas as established by Table R301.2(1), upon placement of the lowest floor, including basement, and prior to further vertical construction, the building official shall require submission of all documentation required in Section R322, and all applicable requirements of the Northbrook Zoning Code.

15. **R109.1.5.1 Fire-resistance-rated construction inspection.** Add a new sentence at the end of this subsection so it reads as follows:

R109.1.5.1 Fire-resistance-rated construction inspection. Where fire-resistance-rated construction is required between dwelling units or due to location on property, the building official shall require an inspection of such construction after all lathing and/or wallboard is in place, but before any plaster is applied, or before wallboard joints and fasteners are taped and finished. In the event the fire-rated assembly is constructed in phases, the construction must allow the

inspection that takes place to identify the layer of construction and its attachment.

16. **R109.2 Inspection agencies.** Add a new second sentence to make the subsection read as follows:

R109.2 Inspection agencies. The building official is authorized to accept reports of approved agencies, provided such agencies satisfy the requirements as to qualifications and reliability. Prefabricated construction will be permitted for structural framing only. A certificate of approval by an approved agency shall be furnished with all engineered systems.

17. **R109.3.1 Condition of property and available equipment.** Add a new Subsection to read as follows:

R109.3.1 Condition of property and available equipment. It shall be the duty of the permit holder to ensure the property and structure being inspected is maintained in a safe and orderly condition during the course of the requested inspection. Furthermore, it shall be responsibility of the permit holder to ensure that ladders, hand tools and other equipment is readily available for the use of those performing inspections.

18. **R110.6 Additional requirements and standards for occupancy.** Add a new Subsection to read as follows:

R110.6 Additional requirements and standards for occupancy. In addition to the standards and procedures established in this Code, occupancies shall also be governed by the requirements of Sec. 6-12, Certificate of occupancy, of the Northbrook Municipal Code.

19. **Section R112 Board of Appeals.** Delete this Section in its entirety and replace it with a new Section R112 and Subsection R112.1 to read as follows:

R112 Appeals

R112.1 General. Appeals of decisions involving the building official and this Code shall be heard by the Architectural Control Commission in accordance with the procedures established in the Northbrook Municipal Code.

20. **Section R113.4 Violation Penalties.** Add a sentence at the end of this subsection to read as follows:

R113.4 Violation penalties. Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the approved construction documents or directive of the building official, or of a permit or certificate issued under the provisions of this code, shall be subject to penalties as prescribed by law. Fees and fines associated with such violations shall be assessed in accordance with the Village of Northbrook Fee Schedule.

21. **Table R301.2(1).** Insert the following information into Table R301.2(1):

Climatic and Geographic Design Criteria	
Ground Snow Load	<u>30</u>
Wind Speed (mph)	<u>115 mph</u>
Topographic Effects	<u>No</u>
Special Wind Region	<u>Not Applicable</u>
Windborne Debris Zone	<u>Not Applicable</u>
Seismic Design Category	<u>A</u>
Subject Damage From Weathering	<u>Severe</u>
Subject to Damage From Frost line depth	<u>42 inches</u>
Subject to Damage From Termite	<u>Moderate to heavy</u>
Winter Design Temperature	<u>2 degrees</u>
Ice Shield Underlayment	<u>Yes</u>
Flood Hazard	<u>Yes. See Northbrook Zoning Code; Flood Hazard Overlay District</u>
Air Freezing Index	<u>2000</u>
Mean Annual Temperature	<u>50 degrees</u>
Manual J Design Criteria	
Elevation	<u>653</u>
Latitude	<u>42 degrees North</u>
Winter Heating	<u>4 degrees</u>
Summer Cooling	<u>89 degrees</u>
Altitude Correction Factor	<u>None</u>
Indoor Design Temperature	<u>70 degrees</u>
Design Temperature Cooling	<u>75 degrees</u>
Heating Temperature Difference	<u>66 degrees</u>
Cooling Temperature Difference	<u>14 degrees</u>

Wind Velocity Heating	<u>None</u>
Wind Velocity Cooling	<u>None</u>
Coincident Wet Bulb	<u>73 degrees</u>
Daily Range	<u>Medium</u>
Winter Humidity	<u>30%</u>
Summer Humidity	<u>50%</u>

22. **R301.2.4 Floodplain Construction.** Delete this subsection in its entirety.

Table R302.6 Dwelling/Garage separation. Revise Table R302.6 to specify the material used for garages as specified below:

TABLE R302.6 DWELLING/GARAGE SEPARATION

SEPARATION	MATERIAL
From the residence and attics	<u>Not less than 5/8-inch Type X gypsum board or equivalent</u>
From all habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	<u>Not less than 5/8-inch Type X gypsum board or equivalent</u>
Garages located less than 3 feet from a dwelling unit on the same lot	<u>Not less than 5/8-inch Type X gypsum board or equivalent</u>

23. **R306 Sanitation.** Delete all of the language in the entire subsection and replace with the following:

R306 Sanitation. Refer to the Illinois Plumbing Code, as adopted by the Village of Northbrook.

24. **R310.2.3.3 Window well covers required.** Add a new Subsection to read as follows:

R310.2.3.3 Window well coverings required.

1. Sides. Any window well of dwelling facing the side lot line shall be protected by a window well cover designed to support a 200-pound load or have a 3-foot tall railing installed to prevent a falling hazard while still allowing the window to function as an escape.

2. Front and rear. Any window well located on the front of a dwelling, the side of a dwelling facing a street (corner side yard), or the rear of a dwelling that is located within thirty-six (36) inches of a finished walking surface shall be protected by a window well cover or a three-foot railing.
3. Waiver. The building official may waive the above requirements upon demonstration that the protection is unnecessary to prevent a hazardous condition.

25. **R313.1.1 Automatic Fire Sprinkler Systems. (Code Reference).** Amend Section to read as follows:

R313.1.1 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section P2904 or NFPA 13D.
R313.2 Automatic Fire Sprinkler Systems Required for Major Renovations. Amend the exception in Section R313.2 to read as follows:

R313.2 One- and two-family dwellings automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system unless the amount of added habitable floor area (excluding basement area) exceeds 115 percent of the habitable floor area (excluding basement area) of the existing dwelling, in which case an automatic residential sprinkler system shall be required. Such permits shall be classified as Major Renovation Permits.

26. **R322.1.4 Establishing the design flood elevation.** Delete the subsection in its entirety.

27. **R322.1.5 Lowest floor.** Delete the subsection in its entirety.

28. **R322.1.9 Manufactured homes.** Delete the subsection in its entirety.

29. **R322.1.10 As-built elevation documentation.** Delete the subsection in its entirety.

30. **R322.2 Flood hazard areas (including A Zones).** Delete the subsection in its entirety.

31. **R322.3 Coastal high-hazard areas (including V Zones).** Delete the subsection in its entirety.

32. **R328 Private residence elevators.** Add a new Section R328 and associated subsections R328.1 and R328.2 to read as follows:

R328 Private residence elevators

R328.1 Machine/Control room: Private residences with elevators shall have a separate elevator machine or control room with the following minimum specifications:

- 1) The room shall have walls having a minimum one-hour fire rating.
- 2) The room shall have clear headroom of at least 84 inches.

- 3) The door shall be a minimum 36" wide by 80" tall and capable of being locked.
- 4) The main line disc switch shall be located on the lock side of the door and shall be fused and heavy duty.
- 5) The car light disconnect switch shall be located on the lock side of the door and shall be fused and heavy duty.
- 6) The light switch for the room shall be located on the lock side of the door.
- 7) The room shall be illuminated to a minimum level of 5 foot-candles.
- 8) The room shall have a 110V GFI Duplex outlet located below the light switch.
- 9) The room shall be equipped with a minimum 5lb ABC Fire Extinguisher, located on the lock side of the door.

R328.2 Emergency light and alarm in car. Emergency lighting and an alarm with battery backup shall be installed in elevator cars per ASME A17.1 Section 2.14.7.1.3.

33. **R506.1 General.** Add a sentence at the end of the subsection to read as follows:

R506.1 General. Concrete slab-on-ground floors shall be designed and constructed in accordance with the provisions of this section or ACI 332. Floors shall be a minimum 3.5 inches (89 mm) thick (for expansive soils, see Section R403.1.8). The specified compressive strength of concrete shall be as set forth in Section R402.2. Install a 6"x 6" – 10/10 w.w.f. (welded wire fabric) mesh in all basements and attached garages.

34. **R506.2.2 Base.** Delete the exception in this subsection.

35. **M1601.1.1 Above Ground Duct Systems.** Delete system options "5" and "7" in this subsection, resulting in this subsection reading as follows:

M1601.1.1 Above-ground duct systems. Above-ground duct systems shall conform to the following:

- 1) Equipment connected to duct systems shall be designed to limit discharge air temperature to a maximum of 250°F (121°C).
- 2) Factory-made air ducts shall be constructed of Class 0 or Class 1 materials as designated in Table M1601.1.1(1).
- 3) Fibrous duct construction shall conform to the SMACNA Fibrous Glass Duct Construction Standards or NAIMA Fibrous Glass Duct Construction Standards.
- 4) Minimum thickness of metal duct material shall be as listed in Table M1601.1.1(2). Galvanized steel shall conform to ASTM A 653. Metallic ducts shall be fabricated in accordance with SMACNA Duct Construction Standards Metal and Flexible.

- 5) Duct systems shall be constructed of materials having a flame spread index not greater than 200.
 - 6) Volume dampers, equipment and other means of supply, return and exhaust air adjustment used in system balancing shall be provided with access.
36. **M1801.6 Direct-vent appliances.** Add a new second sentence to this subsection so it reads as follows:
37. **M1801.6 Direct-vent appliances.** Direct-vent appliances shall be installed in accordance with the manufacturer's installation instructions. When the termination of a vent system is required by this Code or the manufacturer's specifications to be above the average anticipated snow level shall be 24 inches.
38. **P2904: Dwelling Unit Sprinkler Systems.** Delete this Section in its entirety.
39. **Chapters 25 through 43.** Delete these Chapters in their entirety.
40. **Chapter 44 Referenced Standards.**
 - 1) Delete International Plumbing Code (IPC).
 - 2) Add the Illinois State Plumbing Code, as adopted by the Village of Northbrook.
41. **Appendix A: Sizing and Capacities of Gas Piping.** Adopt this Appendix in its entirety.
42. **Appendix B: Sizing of Venting Systems Serving Appliances Equipped with Draft Hoods, Category I Appliances, and Appliances Listed for Use with Type B Vents.** Adopt this Appendix in its entirety.
43. **Appendix C: Exit Terminals of Mechanical Draft and Direct-Vent Venting Systems.** Adopt this Appendix in its entirety.
44. **Appendix D: Recommended Procedure for Safety Inspection of an Existing Appliance Installation.** Adopt this Appendix in its entirety.
45. **Appendix E: Manufactured Housing Used as Dwellings.** This Appendix is NOT adopted.
46. **Appendix F: Radon Control Methods.** Adopt this Appendix in its entirety. *(Commentary: 420 ILCS 52, "The Illinois Radon Resistant Construction Act", requires that all new residential construction in this State shall include passive radon resistant construction.)*
47. **Appendix G: Piping Standards for Various Applications.** This Appendix is NOT adopted.
48. **Appendix H: Patio Covers.** Adopt this Appendix in its entirety.
49. **Appendix I: Private Sewage Disposal.** This Appendix is NOT adopted

50. **Appendix J: Existing Buildings and Structures.** Adopt this Appendix with the following modifications:

- 1) Delete Subsection AJ301.1.2 Plumbing materials and supplies in its entirety.
- 2) Delete Subsection AJ301.2 Water closets in its entirety.
- 3) Delete Subsection AJ301.3 Electrical in its entirety.
- 4) Delete Subsection AJ501.5 Electrical equipment and wiring in its entirety.

51. **Appendix K: Sound Transmission.** Adopt this Appendix in its entirety.

52. **Appendix L: Permit Fees.** This Appendix is NOT Adopted

53. **Appendix M: Home Day Care – R-3 Occupancy.** This Appendix is NOT Adopted

54. **Appendix N: Venting Methods.** This Appendix is NOT Adopted

55. **Appendix O: Automatic Vehicular Gates.** Adopt this Appendix in its entirety.

56. **Appendix P: Sizing of Water Pipe Systems.** This Appendix is NOT Adopted

57. **Appendix Q: Tiny Houses.** This Appendix is NOT Adopted

58. **Appendix R: Light Straw-Clay Construction.** This Appendix is NOT Adopted

59. **Appendix S: Strawbale Construction.** This Appendix is NOT Adopted

60. **Appendix T: Solar Ready Provisions – Detached One- and Two-Family Dwellings and Townhouses.** Adopt this Appendix in its entirety.

EXHIBIT C
Chapter 6 - BUILDING AND CONSTRUCTION REGULATIONS
ARTICLE V. - MECHANICAL

Sec. 6-81. - Adoption of the International Mechanical Code.

There is hereby adopted by the Village the 2018 International Mechanical Code, as hereinafter amended (hereinafter the "Mechanical Code"). At least one copy of the International Mechanical Code has been on file in the office of the village clerk for a period of at least thirty (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 International Mechanical Code, 2018 edition, published by the International Code Council, Inc., are hereby adopted by this reference, subject only to the additions, deletions and modifications specifically set forth in section 6-82 of this Code.

Sec. 6-82. - Additions, deletions and modifications of the International Mechanical Code.

The following sections of the aforesaid International Mechanical Code, 2018 edition, are hereby amended, deleted, or modified as hereinafter set forth:

1. Subsection 101.1 Title.

Insert "the Village of Northbrook, Cook County, Illinois" for "[name of jurisdiction]".

2. Section 103. Department of Mechanical Inspection. Delete this subsection in its entirety.

3. Subsection 106.2 Permits not required. Add a new number 9 to the list so the subsection reads as follows:

- | | |
|-------|--|
| 106.2 | <u>Permits not required.</u> Permits shall not be required for the following: <ol style="list-style-type: none">1. Portable heating appliances;2. Portable ventilation appliances and equipment;3. Portable cooling units;4. Steam, hot water or chilled water piping within any heating or cooling equipment or appliances regulated by this code;5. The replacement of any minor part that does not alter the approval of equipment or an appliance or make such equipment or appliance unsafe;6. Portable evaporative coolers; |
|-------|--|

7. Self-contained refrigeration systems that contain 10 pounds (4.5 kg) or less of refrigerant, or that are actuated by motors of 1 horsepower (0.75 kW) or less; and
8. Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.
9. Any replacement furnace of the same type and general efficiency rating which utilizes only existing flues, ducts and pipes.

Exemption from the permit requirements of this code shall not be deemed to grant authorization for work to be done in violation of the provisions of this code or other laws or ordinances of this jurisdiction.

4. **Subsection 106.4.4 Expiration.** Delete this Subsection in its entirety and replace it with the following:

106.4.4 Expiration and Time Extensions. Permits shall expire in accordance with the limits established in Sec. 6-6 of the Northbrook Municipal Code. Extensions may be granted for expired permits in accordance with the standards and procedures established in Sec. 6-6 of the Northbrook Municipal Code.

5. **Subsection 106.4.5 Suspension or Revocation of permit.** Delete this Subsection in its entirety and replace it with the following:

106.4.5 Suspension, revocation or surrender. The code official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code. A permit may also be voluntarily surrendered in accordance with the standards and procedures of Sec. 6-7 of the Northbrook Municipal Code.

6. **Subsection 106.5 Fees.** Delete this subsection and the related subsections in their entirety.
7. **Section 108. Violations.** Delete this section in its entirety.
8. **Section 109. Means of Appeals.** Delete this section in its entirety.
9. **Subsection 309.1 Space-heating systems.** Delete the first sentence of this subsection and replace it with new language so it reads as follows:

309.1 Space-heating systems. All interior spaces intended for human occupancy shall be provided with heating equipment capable of maintaining a room temperature of sixty-eight (68) degrees Fahrenheit in all habitable rooms, with an outside temperature of negative ten (-10) degrees Fahrenheit, fifty (50) percent relative humidity, as measured at a point three (3) feet above the floor and three (3) feet from an exterior wall. The installation of portable space heaters shall not be used to achieve compliance with this section.

Exception: Interior spaces where the primary purpose is not associated with human comfort.

10. **Subsection 507.7 Cleaning schedule. Add a new subsection to read as follows:**

507.7 Cleaning schedule. A cleaning schedule for every commercial kitchen exhaust system shall be kept available to the code official. The schedule shall indicate methods of cleaning and the time interval between cleanings.

11. **Subsection 507.8 Inspection and cleaning.** Add a new subsection to read as follows:

507.8 Inspection and cleaning. Kitchen exhaust systems shall be periodically cleaned as needed to remove deposits of residue and grease in the system. Thorough cleaning of ducts, hoods and fans shall require scraping, brushing or other positive cleaning methods.

12. **Subsection 602.2 Construction.** Delete the subsection in its entirety and add new language so it reads as follows:

602.2 Construction. In buildings of Type 1, 2, 3, 4 or 5 construction, all plenums shall be noncombustible and shall comply with section 603.3.

Subsection 804.1 Direct-vent terminations. Insert new language at the end of the subsection so it reads as follows

804.1 Direct-vent terminations. Vent terminals for direct-vent appliances shall be installed in accordance with the manufacturer's installation instructions. When the termination of a vent system is required by this Code or the manufacturer's specifications to be above the average snow level, the anticipated snow level within the Village of Northbrook shall be 24 inches.

Secs. 6-83—6-90. - Reserved.

EXHIBIT D
Chapter 6 - BUILDING AND CONSTRUCTION REGULATIONS
ARTICLE VI. - ELECTRICAL

- A.** Section 6-93, entitled "Adoption of the National Electrical Code," of Article VI, entitled "Electrical," of Chapter 6, entitled "Building and Construction Regulations," of the Municipal Code, shall be, and is hereby, amended as follows [Added text bold and double-underlined; deleted text struck through]:

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

There is hereby adopted by the Village National Electrical Code, 2017 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 thirty (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, 2017 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 6-96 of this Code.

The provisions of the are hereby adopted by this reference, subject only to the additions, deletions and modifications specifically set forth in Section 6-96 of this Code.

- B.** Section 6-96, entitled " Additions, deletions and modifications of the National Electrical Code, 2011 Edition." of Chapter 6, entitled "Building and Construction Regulations," of the Municipal Code, shall be, amended in its entirety and shall hereafter be and read as follows:

Sec. 6-96. Additions, deletions and modifications of the National Electrical Code, 2017 Edition.

The following sections of the National Electrical Code, 2017 Edition are hereby amended, deleted or modified as follows:

1. **110.12(C) Mechanical Execution of Work.** Add a new Subsection (C) to Section 110.12 to read as follows:
 - (C) 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 installers' responsibility to ensure that existing conditions are capable of handling the electrical installation approved by the permit, including electrically, mechanically and structurally.
 - 2) During the course of the installers' 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.
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.
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 closets, switchgear rooms, fire sprinkler rooms and generator rooms.

5. **210.11(C)(5) Radon Receptacle & Circuit.** Add new Paragraph (5) and subparagraphs A and B in Section 210.11(C) 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. **210.52(G)(1) Garages** Add a new paragraph 210.52(G)(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.

7. **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."

8. **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.
- 1) Mini breakers shall not be permitted in new construction.

- 2) Up to two mini breakers shall be permitted for remodeling work provided the existing panel(s) does not already contain any mini breakers.
 - (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.
9. **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.
10. **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

11. **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 and 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.

12. **230.44 Cable Trays** Delete Section 230.44 in its entirety.

13. **230.70(A)(1) Readily Accessible Location** Add an exception to Paragraph (a) in Subsection 230.70(A)(1) to read as follows:

- (a) **Exception:** Services for one and two-family dwellings (new and service upgrades and/or revisions) shall have the service disconnect(s) located outside (exterior of the building) in the meter enclosure and/or an approved disconnect located immediately adjacent to the meter.

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. **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.

16. **250.52(5) Rod and Pipe Electrodes.** Delete subparagraphs (a) and (b) in Section 250.52 and replace them with the following:

- (a) All electrodes shall be copper or copper clad.
- (b) All services shall have a minimum eight (8) foot by 5/8-inch nonferrous or copper clad ground rod installed at the meter fitting and be connected to utility company's neutral bus as well as bonded to the meter enclosure.

17. **250.68(C) Metallic Water Pipe and Structural Metal.** Delete Paragraph (2) within Section 250.68 (C) in its entirety.

18. **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

19. **310.15(B)(7) Single-Phase Dwelling Services and Feeders.** Delete subsection 310.15(B)(7) in its entirety.

20. **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"

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

22. **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.

23. **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. 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. **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. 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.

25. **334 Nonmetallic-Sheathed Cable.** Delete Article 334 in its entirety.

26. **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.

27. **338 Service Entrance Cable – Types and Use.** Delete Article 338 in its entirety.
28. **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.
29. **352.10 RNC - Uses Permitted.** Delete Section 352.0 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 & 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 wiring, 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. **376.10 Metal Wireways - Uses Permitted.** Delete Subsection 376.10 in its entirety and replace with the following:
 - 376.10 Metal Wireways - Uses Permitted The use of wireways shall be permitted as follows:
 - (1) For exposed work;
 - (2) In concealed spaces only in accordance with Section 640.24; and
 - (3) In wet locations, where listed for the purpose.
38. **376.12 Wireways - Uses Not Permitted.** Delete subsection 376.12 in its entirety and replace it with the following:
 - 376.12 Wireways - Uses Not Permitted. Metal Wireways shall not be permitted under the following conditions:
 - (1) Where potentially subject to severe physical damage or corrosive vapors;
 - (2) For service entrance conductors;
 - (3) In suspended ceiling spaces; and
 - (4) In hazardous (classified) locations.

39. **378 Nonmetallic Wireways.** Delete Article 378 in its entirety.
40. **382 Nonmetallic Extensions.** Delete Article 382 in its entirety.
41. **388 Surface Nonmetallic Raceways.** Delete Article 388 in its entirety.
42. **394 Concealed Knob-and-Tube Wiring.** Delete Article 394 in its entirety.
43. **396 Messenger Supported Wiring.** Delete Article 396 in its entirety.
44. **398 Open Wiring on Insulators.** Delete Article 398 in its entirety.
45. **410.16(D) 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.
46. **410.44(A) Methods of Grounding.** Add a new subsection (A) to Section 410.44 to read as follows:
- (A) Flexible Fixture Whips. All flexible fixture whips for 277 volt lighting applications shall have an equipment grounding conductor to be sized no smaller than #16 AWG. Terminated ends shall be securely attached to fixtures and junction boxes with an approved attachment device.
47. **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."
48. **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
48. **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.
- 49. **680.11 Underground Wiring Location.** Delete the following phrase in the first sentence of Section 680.11:
“or type MC cable”
- 50. **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.
- 51. **680.25(B) Aluminum Conduit.** Delete the entire paragraph 680.25(B) and replace it with the following:
 - 680.25(B) Aluminum and Stainless Steel Conduit. Aluminum and stainless steel conduit shall not be permitted in the pool area where subject to corrosion.
- 52. **690.4(C)(1) Qualified Personnel.** Add a new subsection (1) to Section 690.4(C) to read as follows:
 - (1) Qualifications. The installation, servicing or otherwise working on photovoltaic systems shall be performed by qualified persons as required by 690.4(C) who shall provide documentation that any such work performed was done under the on- site supervision of an individual qualified to work on photovoltaic systems, as evidenced by credentials from a recognized photovoltaic training provider.
- 53. **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.

54. **720.1 Scope.** 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 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.
 - Exceptions 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.
- (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.

EXHIBIT E

Chapter 6 - BUILDING AND CONSTRUCTION REGULATIONS

ARTICLE VII. FIRE PREVENTION CODE

Sec. 6-101 Adoption of the International Fire Code.

There is hereby adopted by the Village the 2018 International Fire Code, as hereinafter amended (hereinafter the "Fire Code"). At least one copy of the International Fire Code has been on file in the office of the village clerk for a period of at least thirty (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 International Fire Code, 2012 edition, published by the International Code Council, Inc. are hereby adopted by this reference, subject only to the additions, deletions and modifications specifically set forth in section 6-102 of this code.

Sec. 6-102 Additions, deletions and modifications of the International Fire Code.

The following sections of the aforesaid International Fire Code 2018 edition are hereby amended, deleted or modified as hereinafter set forth:

1 Subsection 101.1 Title.

Insert "the Village of Northbrook, Cook County, Illinois" for [name of jurisdiction]."

- 2 **Subsection 102.7.1 Conflicts.** Delete the entire subsection and replace with the following:

102.7.1 Conflicts. Where differences occur between the provisions of this code and the referenced standards, the most stringent provision shall apply.

- 3 **Subsection 102.7.3 Adopted Standards.** Add a new subsection to read as follows:

102.7.3 Adopted Standards. The following NFPA Standards are to be adopted in their entirety. The appendixes of all adopted NFPA standards are to be considered as a part of each standard and are considered a 'shall' requirement and not 'should' information". This will require all system installations to be installed per NFPA requirements and NFPA recommendations for good engineering practices and installations.

- a) NFPA 10 Portable Fire Extinguishers, 2018 edition
- b) NFPA 13 Automatic Sprinkler Systems, 2016 edition
- c) NFPA 13R Sprinkler Systems in Residential Occupancies, 2016 edition
- d) NFPA 13D Installation of Sprinklers in One and Two-Family Dwellings, 2016 edition
- e) NFPA 14 Standpipe and Hose Systems, 2016 edition
- f) NFPA 15 Water Spray Fixed Systems, 2017 edition
- g) NFPA 16 Installation of Foam Water Sprinkler and Foam Water Spray Systems, 2015 edition
- h) NFPA 20 Installation of Centrifugal Pumps, 2016 edition
- i) NFPA 24 Installation of Private Fire Service Mains and their Maintenance, 2016 edition
- j) NFPA 25 Inspection, Testing and Maintenance of Water Based Fire Protection Systems, 2017 edition
- k) NFPA 70 National Electrical Code, 2017 edition
- l) NFPA 72 National Fire Alarm Code, 2016 edition
- m) NFPA 96 Installation of Equipment for the Removal of Smoke and Grease Laden Vapors for Commercial Cooking Equipment, 2017 edition
- n) NFPA 101 The Life Safety Code, as adopted by the OSFM
- o) NFPA 1123 Fireworks Display, 2018 edition
- p) NFPA 1124 Manufacture, Transportation, Storage and retail sales of fireworks and pyrotechnics, 2017 edition

- 4 **Section 109 Board of appeals.** Delete this section in its entirety.

- 5 **Subsection 110.4 Violation penalties.** Delete this section in its entirety.

- 6 **Subsection 112.4 Failure to comply.** Modify the last sentence so the subsection reads as follows:

112.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine, as established in this Code.

7. **Subsection 505.3 Wood truss warning sign.** Add a new subsection to read as follows:

505.3_ Wood truss warning sign. The owner of any commercial, industrial structure which has a wooden truss roof assembly shall be required to mount warning signs meeting the following minimum requirements:

- a) Size and Construction: A four (4") red metallic letter 'T' sign located on the front and rear entrances (preferably under the building address), or in a location to be determined by the fire code official.
- b) Property owner responsibility: It shall be the responsibility of each property owner to mount, maintain, and prevent obstruction of any warning signs required to be mounted on the building or structure.

8. **Subsection 506.3 Electric shunt switch.** Add a new subsection to read as follows:

506.3 Electric shunt switch. An electric Knox shunt/shut off switch shall be required in buildings of all use groups with multiple electric services. The switch will be mounted next to main Knox box or at a location specified by the fire code official.

- a) Switch should be mounted at a height of 6 (six) feet from the finished floor.
- b) The Knox box shall be clearly identified as EMERGENCY ELECTRICAL SHUT OFF.
- c) A sign indicating the address range the emergency electrical shut off powers down shall be affixed near the box with a permanent weather proof sign.

9. **Subsection 507.5.1.1 Hydrant for Fire Department connections.** Delete this subsection in its entirety and insert a new title and language so it reads as follows:

507.5.1.1 Hydrant for Fire Department connections. Hydrants shall be located within 100 feet to any fire department sprinkler or standpipe connection as determined by the fire code official.

10. **Subsection 509.2.1 Access to fire equipment.** Add a new subsection to read as follows:

509.2.1 Access to fire equipment. In other than 13D sprinkler systems, where there is no common area, fire alarm panels and sprinkler system valves shall be located in a room accessible only to fire personnel from the exterior of the building. The fire department shall have access at any time to such equipment without entering an individual dwelling unit or private space. **Rooms shall be designed in accordance with IFC Section 913.6.**

11. **Subsection 606.1.1 Automatic elevators for Fire Department use.** Add new subsection as follows:

606.1.1 Automatic elevators for Fire Department use. Where elevators are provided in buildings that are: (1) three or more stories above grade plane; (2) three or more stories below grade plane; or (3) are use groups I, R-1 or R-2, at least one elevator shall be provided for fire department emergency access to all floors. The power supply for these elevators shall be normally provided by

the premises' electrical supply. In the event of a power supply failure, an emergency electrical system shall automatically provide power for a duration of not less than 24 hours, installed per section 604. Elevators designated as emergency access shall accommodate an 88" long and 26" wide stretcher within the elevator cab, accounting for handrails and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall not be less than 3 inches (76 mm) high and shall be placed inside on both sides of the hoist way door frame.

12. Subsection 901.4.6.5 Sprinkler-Fire pump room. Add new subsection as follows:

901.4.6.5 Sprinkler-Fire pump room. Provide a minimum 2 hour rated enclosure with an automatic fire suppression system with both an outside door at grade and an interior door access". When below grade, the room shall be accessed by a two-hour rated corridor immediate adjacent to a rated stairwell enclosure.

13. Subsection 903.2.1.1 Group A-1. Delete the entire subsection and replace with the following:

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided throughout all Group A-1 occupancies.

14. Subsection 903.2.1.2. Group A-2. Delete the entire subsection and replace with the following:

903.2.1.2. Group A-2. An automatic sprinkler system shall be provided throughout all Group A-2 occupancies.

15. Subsection 903.2.1.3. Group A-3. Delete the entire subsection and replace with the following:

903.2.1.3. Group A-3. An automatic sprinkler system shall be provided throughout all Group A-3 occupancies.

16. Subsection 903.2.1.4. Group A-4. Delete the entire subsection and replace with the following:

903.2.1.4. Group A-4. An automatic sprinkler system shall be provided throughout all Group A-4 occupancies.

17. Subsection 903.2.1.5. Group A-5. Delete the entire subsection and replace with the following:

903.2.1.5. Group A-5. An automatic sprinkler system shall be provided throughout all Group A-5 occupancies.

18. Subsection 903.2.1.8. Group B. Add a new subsection as follows:

903.2.1.8. Group B. An automatic sprinkler system shall be provided throughout all Group B occupancies.

19. Subsection 903.2.2. Ambulatory care facilities. Delete the entire subsection and replace with the following:

903.2.2 Ambulatory care facilities. An automatic sprinkler system shall be installed throughout the entire floor containing an ambulatory care facility.

20. Subsection 903.2.3 Group E. Delete the entire subsection and replace with the following:

903.2.3. Group E. An automatic sprinkler system shall be provided throughout all Group E occupancies.

21. Subsection 903.2.4 and 903.2.4.1 Group F-1. Delete the language in this subsection and the related subsection 903.2.4.1 within it and replace it with the following:

903.2.4. Group F-1. An automatic sprinkler system shall be provided throughout all Group F-1 occupancies.

22. Subsection 903.2.5. Group H. Delete the entire subsection and replace with the following:

903.2.5. Group H. An automatic sprinkler system shall be installed in all Group H occupancies.

23. Subsection 903.2.6. Group I. Delete the entire subsection and replace with the following:

903.2.6. Group I. An automatic sprinkler system shall be installed in all Group I occupancies.

24. Subsection 903.2.7. Group M. Delete the entire subsection and replace with the following:

903.2.7. Group M. An automatic sprinkler system shall be installed in all Group M occupancies.

25. Subsection 903.2.8. Group R. Delete the language in this subsection and the related subsections within it and replace it with the following:

903.2.8. Group R. An automatic fire sprinkler system shall be installed in all Group R occupancies.

26. Subsection 903.2.9. Group S-1. Delete the entire subsection and replace with the following:

903.2.9. Group S-1. An automatic sprinkler system shall be installed in all Group S-1 occupancies.

27. Subsection 903.2.9.1. Repair garages. Delete the entire subsection and replace with the following:

903.2.9.1. Repair garages. An automatic sprinkler system shall be installed in all buildings used as repair garages.

28. Subsection 903.2.9.2. Bulk storage of tires. Delete the entire subsection and replace with the following:

903.2.9.2. Bulk storage of tires. An automatic sprinkler system shall be installed in all buildings used for the bulk storage of tires.

29. Subsection 903.2.10. Group S-2. Delete the entire subsection and replace with the following:

903.2.10. Group S-2. An automatic sprinkler system shall be provided throughout all buildings classified as an enclosed parking garage.

30. Subsection 903.2.10.1. Commercial parking garages. Delete the entire subsection and replace with the following:

- 903.2.10.1. Commercial parking garages. An automatic sprinkler system shall be provided throughout all buildings used for storage of commercial trucks, trailers, transport container units or buses.

31. Subsection 903.2.11.1. Stories without openings. Delete the exception in this subsection:

32. Subsection 903.2.11.1.2. Openings on one side only. Delete the entire subsection and replace with the following:

- 903.2.11.1.2. Openings on one side only. Where openings in a story are provided on only one side and the opposite wall of such story, the story shall be equipped throughout with an automatic sprinkler system.

33. Subsection 903.2.11.1.3. Basements. Delete the entire subsection and replace with the following:

- 903.2.11.1.3. Basements. All basements shall be equipped throughout with an approved automatic sprinkler system.

34. Subsection 903.3.1.1.1. Exempt locations. Delete this section in its entirety.

35. Subsection 903.3.5.1.1. Limited area sprinkler systems. Add language at the end of the first sentence of this subsection so it reads as follows:

- 903.3.5.1.1 Limited area sprinkler systems. Limited area sprinkler systems serving fewer than 20 sprinklers on any single connection are permitted to be connected to the domestic service where a wet automatic standpipe is not available for commercial buildings seven hundred fifty (750) square feet or less per the discretion of the Northbrook Fire Department. Limited area sprinkler systems connected to domestic water supplies shall comply with each of the following requirements:

1. Valves shall not be installed between the domestic water riser control valve and the sprinklers.

Exception: An approved indicating control valve supervised in the open position in accordance with Section 903.4.

2. The domestic service shall be capable of supplying the simultaneous domestic demand and the sprinkler demand required to be hydraulically calculated by NFPA 13, NFPA 13D or NFPA 13R.

36. Subsection 903.3.5.3. Safety factor. Add new subsection as follows:

- 903.3.5.3. Safety factor. Hydraulically calculated sprinkler systems shall maintain a minimum of 10% or five (5) pounds per square inch cushion (whichever is greater) between the seasonal low water supply and the total sprinkler demand. The total sprinkler demand shall include the sprinkler demand and the hose stream demand.

37. Subsection 903.3.5.4. Multi-tenant occupancy. Add new subsection as follows:

- 903.3.5.4. Multi-tenant occupancy. When an automatic fire suppression system is installed in a new multi-tenant building, each tenant shall have its own sprinkler supply line off the main or riser with its own water flow switch and control valve. A strobe light shall be mounted on the exterior front of that tenant space and as indicated in Section 903.4. The strobe light shall activate upon water flow and/or fire alarm activation within the individual unit

38. Subsection 903.4.2. Alarms. Add language after the second sentence of this subsection so it reads as follows:

- 903.4.2 Alarms. An approved audible device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. An exterior audio/visual device shall be located over the fire department connection in addition to the alarm bell. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

39. Subsection 903.4.3. Floor control valves. Delete the entire subsection and replace with the following:

- 903.4.3. Floor control valves. Approved supervised indicating control valves and waterflow devices shall be provided at the point of connection to the riser on each floor in any buildings over two stores above or below grade.

40. Subsection 903.4.4 Where required. Add new subsection as follows:

- 903.4.4 Where required: automatic fire suppression sprinkler systems shall be installed where required by this Code throughout existing commercial buildings and structures when there is a 2,000 square foot or greater aggregate increase in the footprint of the building or structure, or a change in use group classification which increases the recognized fire hazard for the building or structure. However, in no case shall the increase cause an un-sprinkled building to be greater than 4,000 square feet gross floor area.

41. Subsection 905.3.1. Building height. Delete the entire subsection, including the list of exceptions and replace with the following:

- 905.3.1 Height. Class I standpipe systems shall be installed throughout buildings where the floor level is greater than two stories in height or more than one story below grade. These standpipes shall have 2 ½-inch to 1 ½-inch reducer hose valves.

43. Subsection 905.5 Location of Class II standpipe hose connections. Delete the entire subsection and replace with the following:

905.5 Location of Class II standpipe hose connections. Class II systems are not permitted. Any requirement for standpipes shall be achieved by Class I or III systems.

44. Subsection 907.1.2.1 Fire alarm design credentials. Add a new subsection as follows:

907.1.2.1 Fire alarm design credentials. Fire alarm designers must be either NICET Level III certified or a State certified Professional Engineer (PE).

45. Subsection 907.1.3.1 Addressable systems. Add new subsection as follows:

907.1.3.1 Addressable systems. All fire alarm systems shall be of point addressable type.

46. Subsection 907.2 Where required in new buildings and structures. Delete subsection and substitute:

907.2 Where required in new buildings and structures. An approved fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23, including buildings with a fire alarm control unit required to monitor a required sprinkler system and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.

A minimum of one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or water-flow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.

47. Subsection 907.6.5.1. Automatic Telephone-Dialing Devices Add new subsection as follows:

907.21. Radio transmission. All fire protective signaling systems required by this Code or voluntarily installed by the owner of the building or structure shall be equipped with a wireless system operating on radio transmissions and shall be fully compatible with the receiving equipment at the owner's selected private central station or the fire department's emergency signal receiving equipment at its central answering point, as applicable. Any such system shall comply with the requirements of this Section 917 and such other technical standards as are necessary and required by the code official. The requirements of this section shall apply only to new fire protective signaling systems for which a building permit is issued after August 25, 2001, unless otherwise provided by this Code.

48. Subsection 916.10.1 Fan shut down. Add new subsection as follows:

916.10.1 Fan shut down. In a garage setting in which a carbon monoxide detection controls the activation of an exhaust system the exhaust system must shut down upon the activation the fire detection and/or suppression systems. There

shall be a manual override control device installed at the direction of the Fire Code Official.

49. Subsection 912.3. Fire Hose Threads. Delete entire subsection and replace with the following:

912.3. Fire Hose Threads. The fire department connection shall be located on the front of the building or at a location approved by the fire code official. The fire department connection shall consist of one four-inch Storz coupling on a 30-degree elbow mounted between 36 inches and 48 inches above the finished floor.

50. Subsection 913.4 Valve supervision. Delete subparagraphs 3 and 4 of this subsection so it reads as follows:

913.4 Valve supervision. Where provided, the fire pump suction, discharge and bypass valves, and the isolation valves on the backflow prevention device or assembly shall be supervised open by one of the following methods.

1. Central-station, proprietary or remote-station signaling service.
2. Local signaling service that will cause the sounding of an audible signal at a constantly attended location.

51. Subsection 5608.8.1. Fire department supervision of displays. Add new subsection as follows:

5608.8.1. Fire department supervision of displays. All outside public fireworks displays are required to have a fire department standby, to be determined by the fire chief or his/her designee. Fire department expenses incurred by this standby will be billed to the host of the display. Local governmental agencies may be exempt from this fee.

52. Subsection 5704.2.9. Above-ground tanks. Delete the language in this subsection in its entirety and replace it so it reads as follows:

5704.2.9 Above-ground tanks. Above-ground storage of combustible liquids in tanks shall comply with Section 5704.2 and Sections 5704.2.9.1 through 5704.2.9.7.10. Above-ground storage of flammable and Class I liquid in tanks is prohibited. Above-ground storage of combustible and Class II or IIIA liquids in tanks is permitted only if the above-ground tank is located in compliance with Section 5704.2.9.6.1. The use of above-ground tanks to dispense fuel is prohibited, except that:

1. An above-ground tank may be used for the purpose of storing and dispensing Class II or IIIA liquids used to fuel the operation of an emergency generator system, provided that:
 - a. the above-ground tank has a fuel storage capacity of not more than 2,000 gallons;

- b. the above-ground tank is located in compliance with Section 5704.2.9.6.1 and is located not less than 100 feet from any adjoining property line and not less than 25 feet from any building or structure; and
 - c. the above-ground tank is equipped with secondary containment in accordance with Section 5704.2 and Section 5704.2.9.6.4 that provides capacity in the amount of no less than 150 percent of the capacity of the above-ground tank; and
2. An above-ground tank may be used for the purpose of temporarily storing and dispensing Class II or IIIA liquids used to fuel the operation of equipment at an active construction site, provided that:
- a. the above-ground tank has a fuel storage of capacity of not more than 500 gallons;
 - b. the above-ground tank is located in compliance with Section 5704.2.9.6.1 and is located not less than 100 feet from any adjoining property line and not less than 25 feet from any existing or partially-constructed building or structure;
 - c. the above-ground tank is a portable tank and is not permanently installed at the site; and
 - d. the above-ground tank is present at the construction site for no more than 365 days.

53. Subsection 5704.2.9.2.1. Required foam fire protection systems. In subparagraph 1, delete reference to Class I liquids so the subsection now reads as follows:

5704.2.9.2.1 Required foam fire protection systems. When required by the fire code official, foam fire protection shall be provided for above-ground tanks, other than pressure tanks operating at or above 1 pound per square inch gauge (psig) (6.89 kPa) when such tank, or group of tanks spaced less than 50 feet (15 240 mm) apart measured shell to shell, has a liquid surface area in excess of 1,500 square feet (139 m²), and is in accordance with one of the following:

- 1. Used for the storage of Class II liquids.
- 2. Used for the storage of crude oil.
- 3. Used for in-process products and is located within 100 feet (30 480 mm) of a fired still, heater, related fractioning or processing apparatus or similar device at a processing plant or petroleum refinery as herein defined.

4. Considered by the fire code official as posing an unusual exposure hazard because of topographical conditions; nature of occupancy, proximity on the same or adjoining property, and height and character of liquids to be stored; degree of private fire protection to be provided; and facilities of the fire department to cope with flammable liquid fires.

54. Subsection 5704.2.9.2.3. Fire protection of supports. In first sentence, delete reference to Class I liquids so the subsection now reads as follows:

5704.2.9.2.3 Fire protection of supports. Supports or pilings for above-ground tanks storing Class II or IIIA liquids elevated more than 12 inches (305 mm) above grade shall have a fire-resistance rating of not less than 2 hours in accordance with the fire exposure criteria specified in ASTM E 1529.

Exceptions:

1. Structural supports tested as part of a protected above-ground tank in accordance with UL 2085.
2. Stationary tanks located outside of buildings when protected by an approved water-spray system designed in accordance with Chapter 9 and NFPA 15.
3. Stationary tanks located inside of buildings equipped throughout with an approved automatic sprinkler system designed in accordance with Section 903.3.1.1.

55. Subsection 5704.2.9.5.1 Overfill prevention. In first sentence, delete reference to Class I liquids so the subsection now reads as follows:

5704.2.9.5.1 Overfill prevention Above-ground tanks storing II and IIIA liquids inside buildings shall be equipped with a device or other means to prevent overflow into the building including, but not limited to: a float valve; a preset meter on the fill line; a valve actuated by the weight of the tank's contents; a low-head pump that is incapable of producing overflow; or a liquid-tight overflow pipe at least one pipe size larger than the fill pipe and discharging by gravity back to the outside source of liquid or to an approved location. Tanks containing Class IIIB liquids and connected to fuel-burning equipment shall be provided with a means to prevent overflow into buildings in accordance with Section 5704.2.7.5.8.

56. Subsection 5704.2.9.5.2 Fill pipe connections. Delete reference to Class I liquids so the subsection now reads as follows:

5704.2.9.5.2 Fill pipe connections. Fill pipe connections for tanks storing II and IIIA liquids and Class IIIB liquids connected to fuel-burning equipment shall be in accordance with Section 5704.2.9.7.7.

57. Subsection 5704.2.9.6.1 Locations where above-ground tanks are prohibited. Delete entire subsection and substitute:

5704.2.9.6.1 Locations where above-ground tanks are prohibited. Storage of Class I liquids in above-ground tanks is prohibited in all locations within the Village. Storage of Class II and IIIA liquids in above-ground tanks is prohibited in all residential zoning districts within the Village and within 300 feet of any residential zoning district within the Village. Storage of Class II and IIIA liquids in above-ground tanks for the purpose of dispensing fuel is prohibited except in zoning districts not zoned for residential uses and in the locations specified in Exceptions 1.b and 2.b to Section 5704.2.9, provided that the above-ground tanks fulfill all other requirements of Exceptions 1 and 2 to Section 5704.2.9.

58. Subsection 5704.2.9.6.1.1. Location of tanks with pressures 2.5 psig or less. Delete all references to Class I liquids and add language at the end of exception 1 and 3 so the subsection reads as follows:

5704.2.9.6.1.1 Location of tanks with pressures 2.5 psig or less. Above-ground tanks operating at pressures not exceeding 2.5 psig (17.2 kPa) for storage of Class II or IIIA liquids, which are designed with a floating roof, a weak roof-to-shell seam or equipped with emergency venting devices limiting pressure to 2.5 psig (17.2 kPa), shall be located in accordance with Table 22.4.1.1(a) of NFPA 30.

Exceptions:

1. Vertical tanks having a weak roof-to-shell seam and storing Class IIIA liquids are allowed to be located at one-half the distances specified in Table 22.4.1.1(a) of NFPA 30, provided the tanks are not within a diked area or drainage path for a tank storing Class II liquids and are not in a location prohibited under Section 5704.2.9.6.1.
2. Liquids with boilover characteristics and unstable liquids in accordance with Sections 5704.2.9.6.1.3 and 5704.2.9.6.1.4.
3. For protected above-ground tanks in accordance with Section 5704.2.9.7 and tanks in at-grade or above-grade vaults in accordance with Section 5704.2.8, the distances in Table 22.4.1.1(b) of NFPA 30 shall apply and shall be reduced by one-half, but not to less than 5 feet (1524 mm) provided that no above-ground tank may be located in a location prohibited under Section 5704.2.9.6.1.

59. Subsection 5704.2.9.6.1.2. Location of tanks with pressures exceeding 2.5 psig. Delete all references to Class I liquids and add language at the end of first sentence so the subsection reads as follows:

5704.2.9.6.1.2 Location of tanks with pressures exceeding 2.5 psig. Above-ground tanks for the storage of Class II or IIIA liquids operating at pressures exceeding 2.5 psig (17.2

kPa) or equipped with emergency venting allowing pressures to exceed 2.5 psig (17.2 kPa) shall be located in accordance with Table 22.4.1.3 of NFPA 30 and Section 5704.2.9.6.1.

Exception: Liquids with boilover characteristics and unstable liquids in accordance with Sections 5704.2.9.6.1.4 and 5704.2.9.6.1.5.

60. Subsection 5704.2.9.6.1.3. Location of tanks for boil over liquids. Add language at the end of first sentence so the subsection reads as follows:

5704.2.9.6.1.3 Location of tanks storing boilover liquids. Above-ground tanks for storage of liquids with boilover characteristics shall be located in accordance with Table 22.4.1.4 of NFPA 30 and Section 5704.2.9.6.1.

61. Subsection 5704.2.9.6.1.4. Location of tanks for unstable liquids. Add language at the end of first sentence so the subsection reads as follows:

5704.2.9.6.1.4 Location of tanks storing unstable liquids. Above-ground tanks for the storage of unstable liquids shall be located in accordance with Table 22.4.1.5 of NFPA 30 and Section 5704.2.9.6.1.

62. Subsection 5704.2.6.1.5. Location of tanks for Class IIIB liquids. Delete the language in this section in its entirety and replace it with new language so it reads as follows:

5704.2.9.6.1.5 Location of tanks storing Class IIIB liquids. Above-ground tanks for the storage of Class IIIB liquids, excluding unstable liquids, shall be located in accordance with Table 22.4.1.6 of NFPA 30 and Section 5704.2.9.6.1, except when located within a diked area or drainage path for a tank or tanks storing Class II liquids. Where a Class IIIB liquid storage tank is within the diked area or drainage path for a Class II liquid, distances required by Section 5704.2.9.6.1.1 shall apply.

63. Subsection 5704.2.9.6.2. Separation between adjacent stable or unstable liquid tanks. Delete all references to Class I liquids and add language at the end of the first sentence so the subsection reads as follows:

5704.2.9.6.2 Separation between adjacent stable or unstable liquid tanks. The separation between tanks containing stable liquids shall be in accordance with Table 22.4.2.1 of NFPA 30 and Section 5704.2.9.6.1. Where tanks are in a diked area containing Class II liquids, or in the drainage path of Class II liquids, and are compacted in three or more rows or in an irregular pattern, the fire code official is authorized to require greater separation than specified in Table 22.4.2.1 of NFPA 30 or other means to make tanks in the interior of the pattern accessible for fire-fighting purposes.

Exception: Tanks used for storing Class IIIB liquids are allowed to be spaced 3 feet (914 mm) apart unless within a diked area or drainage path for a tank storing Class II liquids.

The separation between tanks containing unstable liquids shall not be less than one-half the sum of their diameters.

64. Subsection 5704.2.9.6.3. Separation between adjacent tanks containing flammable or combustible liquids and LP-gas. Delete all references to Class I liquids and modify the third sentence to delete “flammable or” so the subsection reads as follows:

5704.2.9.6.3 Separation between adjacent tanks containing flammable or combustible liquids and LP-gas. The minimum horizontal separation between an LP-gas container and a Class II or IIIA liquid storage tank shall be 20 feet (6096 mm) except in the case of Class II or IIIA liquid tanks operating at pressures exceeding 2.5 psig (17.2 kPa) or equipped with emergency venting allowing pressures to exceed 2.5 psig (17.2 kPa), in which case the provisions of Section 5704.2.9.6.2 shall apply. An approved means shall be provided to prevent the accumulation of Class I, II or IIIA liquids under adjacent LP-gas containers such as by dikes, diversion curbs or grading. When combustible liquid storage tanks are within a diked area, the LP-gas containers shall be outside the diked area and at least 10 feet (3048 mm) away from the centerline of the wall of the diked area.

Exceptions:

1. Liquefied petroleum gas containers of 125 gallons (473 L) or less in capacity installed adjacent to fuel-oil supply tanks of 660 gallons (2498 L) or less in capacity.
2. Horizontal separation is not required between above-ground LP-gas containers and underground flammable and combustible liquid tanks.

65. Subsection 5704.3. Container and portable tank storage. Delete the language in this subsection in its entirety and replace it with new language so it reads as follows

5704.3 Container and portable tank storage. Storage of flammable and combustible liquids in closed containers that do not exceed 60 gallons (227 L) in individual capacity and *the storage of combustible liquids in portable tanks that do not exceed 500 gallons (1892L) in individual capacity, and limited transfers incidental thereto, shall comply with Sections 5704.3.1 through 5704.3.8.5.*

66. Subsection 5704.4. Outdoor storage of containers and portable tanks. Delete all of the code references cited in this subsection and replace them so it reads as follows:

5704.4 Outdoor storage of containers and portable tanks. Storage of flammable and combustible liquids in closed containers and portable tanks outside of buildings shall be in accordance with *Section 5703, Section 5704.2.9, and Sections 5704.1 through 5704.4.8.* Capacity limits for containers and portable tanks shall be in accordance with *Section 5704.2.9 and Section 5704.3.*

67. Subsection 5706.2. Storage and dispensing of flammable and combustible liquids on farms and construction sites. Delete all references to Class I liquids so the subsection reads as follows:

5706.2 Storage and dispensing of flammable and combustible liquids on farms and construction sites. Permanent and temporary storage and dispensing of Class II

liquids for private use on farms and rural areas and at construction sites, earth-moving projects, gravel pits or borrow pits shall be in accordance with Sections 5706.2.1 through 5706.2.8.1.

Exception: Storage and use of fuel oil and containers connected with oil-burning equipment regulated by Section 603 and the International Mechanical Code.

68. Subsection 5706.2.4. Permanent and temporary tanks. Delete all references to Class I liquids and replace the reference to 10,000 gallons with 500 gallons so the subsection reads as follows:

5706.2.4 Permanent and temporary tanks. The capacity of permanent above-ground tanks containing Class II liquids shall not exceed 1,100 gallons (4164 L). The capacity of temporary above-ground tanks containing Class II liquids shall not exceed 500 gallons (1892L). Tanks shall be of the single-compartment design.

Exception: Permanent above-ground tanks of greater capacity which meet the requirements of Section 5704.2.

69. Subsection 5706.2.4.3. Location. Delete all references to Class I liquids and add language at the end of the subsection so it reads as follows:

5706.2.4.3 Location. Tanks containing Class II liquids shall be kept outside and at least 50 feet (15 240 mm) from buildings and combustible storage. Additional distance shall be provided when necessary to ensure that vehicles, equipment and containers being filled directly from such tanks will not be less than 50 feet (15 240 mm) from structures, haystacks or other combustible storage. *An above-ground tank may be used for the purpose of temporarily storing and dispensing Class II or IIIA liquids used to fuel the operation of equipment at an active construction site, provided that:*

1. The above-ground tank is located in compliance with Section 5704.2.9.6.1 and is located not less than 100 feet from any adjoining property line and not less than 25 feet from any existing or partially-constructed building or structure;

*2. The above-ground tank is a portable tank and is not permanently installed at the site; and**3. The above-ground tank is present at the construction site for no more than 365 days*

70. Subsection 5706.2.4.4. Locations where above-ground tanks are prohibited. Delete the subsection and replace it with the following:

5706.2.4.4. Locations where above-ground tanks are prohibited. Storage of Class I liquids in above-ground tanks is prohibited in all locations within the Village. Storage of Class II and IIIA liquids in above-ground tanks is prohibited in all residential zoning districts within the Village and within 300 feet of any residential zoning district within the Village. Storage of Class II and IIIA liquids in above-ground tanks for the purpose of dispensing fuel at active construction sites is prohibited

except in zoning districts not zoned for residential uses and in the locations specified in Section 5706.2.4.3, provided that the above-ground tanks fulfill all other requirements of Section 5706.2.4.3.

71. Subsection 5903.3. Building Construction Requirements. Add a new subsection as follows:

5903.3. Building Construction Requirements. All areas containing magnesium shall be equipped with automatic actuating roof vents equal to not less than five (5) percent of the ceiling area of the fire containment area.

72. Subsection 5906.3.1. Indoor storage. Delete the subsection in its entirety and replace it with the following:

5906.3.1. Indoor storage. Indoor storage of magnesium shall be in accordance with the following:

1. Storage of raw material shall be limited to no more than 30,000 pounds of magnesium per fire containment area;
2. Storage of finished goods shall be limited to no more than 20,000 pounds of magnesium per fire containment area;
3. Storage of scrap magnesium shall be limited to no more than 20,000 pounds of magnesium per fire containment area;
4. All magnesium raw material storage, scrap storage and processing must be contained within a fire containment area with a fire resistance rating of not less than four (4) hours;
5. All magnesium storage and processing shall be in building of resistive or non-combustible construction; and
6. Storage of raw material, finished goods and scrap shall be in separate and distinct fire containment areas.

73. Subsection 5906.4.4. Mixed storage. Add a new subsection as follows:

5906.4.4. Mixed storage. Raw material storage areas shall contain only unprocessed (raw) materials stored on pallets. Scrap material storage areas shall contain clean scrap magnesium only, which shall be held in approved storage containers.

74. Subsection 5906.5.5.1. Emergency Disconnects. Add a new subsection as follows:

5906.5.5.1. Emergency Disconnects. Emergency electrical disconnects for all electrical equipment, apparatus and fixtures shall be provided at the principle exit from the die casting room.

75. Subsection 5906.5.9. Signage. Add a new subsection as follows:

5906.5.9. Signage. All entrances to any area containing magnesium must be provided with a signage to alert plant and emergency service personnel to the presence of magnesium in the area. Such signage shall consist of contracting letter not less than three (3) feet in height, with a stroke width not less than $\frac{3}{4}$ inch, containing essentially the following message: Danger! Magnesium is stored or processed in this area. In the event of a fire "DO NOT USE WATER".

EXHIBIT F
Chapter 6 - BUILDING AND CONSTRUCTION REGULATIONS
ARTICLE X. - SWIMMING AND OTHER POOLS

Sec. 6-151. - Adoption of the International Swimming Pool and Spa Code.

There is hereby adopted by the Village the 2018 International Swimming Pool and Spa Code, as hereinafter amended (hereinafter the "Swimming Pool and Spa Code"). At least one copy of the International Swimming Pool and Spa Code has been on file in the office of the village clerk for a period of at least thirty (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 International Swimming Pool and Spa Code, 2018 edition, published by the International Code Council, Inc., are hereby adopted by this reference, subject only to the additions, deletions and modifications specifically set forth in section 6-152 of this Code.

Sec. 6-152. - Additions, deletions and modifications of the International Swimming Pool and Spa Code.

The following sections of the aforesaid International Swimming Pool and Spa Code, 2018 edition are hereby amended, deleted or modified as hereinafter set forth:

1. Subsection 101.1 Title.

Insert "the Village of Northbrook, Cook County, Illinois" for [name of jurisdiction].

2. Subsection 102.7.2 Illinois State Plumbing Code. Add a new subsection 102.7.2 to read as follows:

102.7.2 Illinois State Plumbing Code. Whenever a reference is made to the International Plumbing Code or Chapter 29 of this code, such reference shall be deemed to refer to the applicable section of the Illinois State Plumbing Code, as adopted by the Village of Northbrook.

3. Section 103. Department of Building Safety. Change only the title of this Section to delete reference to the Department of Building Safety and read as follows:

Section 103 Department of Development and Planning Services.

4. Subsection 103.1 Creation of enforcement agency. Delete the sentence in its entirety and replace it with the following.

103.1 Creation of enforcement agency. The code official shall be a member of the Department of Development and Planning Services, as established by the Northbrook Municipal Code.

5. Subsection 105.5.3 Expiration. Delete this Subsection in its entirety and replace it with the following:

105.5.3 Expiration and Time Extensions. Permits shall expire in accordance with the limits established in Sec. 6-6 of the Northbrook Municipal Code. Extensions may be granted for expired permits in accordance with the standards and procedures established in Sec. 6-6 of the Northbrook Municipal Code.

6. Subsection 105.5.5 Suspension or Revocation of permit. Delete this Subsection in its entirety and replace it with the following:

105.5.5 Suspension, revocation or surrender. The code official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code. A permit may also be voluntarily surrendered in accordance with the standards and procedures of Sec. 6-7 of the Northbrook Municipal Code.

7. **Subsection 105.6 Fees.** Delete this subsection and the related subsections in their entirety.
8. **Section 107. Violations.** Delete this section in its entirety.
9. **Section 108. Appeals.** Delete this section in its entirety.
10. **Subsection 305.1 General.**
11. **305.1 General (Fencing).** Amend the language in Section 305.1 to delete the last sentence and remove references to spas, so it reads as follows:

305.1 General. The provisions of this section shall apply to the design of barriers for pools. ~~and spas. These design controls are intended to provide protection against the potential drowning and near drowning by restricting access to such pools or spas. These requirements provide an integrated level of protection against potential drowning through the use of physical barriers and warning devices restricting entry into areas having pools and spas. Where spas or hot tubs are equipped with a lockable safety cover complying with ASTM F1346 and swimming pools are equipped with a powered safety cover that complies with ASTM F1346, the areas where those spas, hot tubs or pools are located shall not be required to comply with Sections 305.2 through 305.7~~

12. **Subsection 305.2.1 Barrier height and clearance.** Change the title of this subsection to insert the fence in parentheses and increase the minimum height from 48 inches to 60 inches, and add subparagraphs 5 through 8, so the subsection reads as follows:

305.2.1 Barrier (fence) height and clearances. Barrier heights and clearances shall be in accordance with all of the following:

1. The top of the barrier shall be not less than 60 inches above grade where measured on the side of the barrier that faces away from the aquatic vessel. Such height shall exist around the entire perimeter of the vessel and for a distance of 3 feet (914 mm) where measured horizontally from the required barrier.
2. The vertical clearance between grade and the bottom of the barrier shall not exceed 2 inches (51 mm) for grade surfaces that are not solid, such as grass or gravel, where measured on the side of the barrier that faces away from the vessel.
3. The vertical clearance between a surface below the barrier to a solid surface, such as concrete, and the bottom of the required barrier shall not exceed 4 inches (102 mm) where measured on the side of the required barrier that faces away from the vessel.
4. Where the top of the vessel structure is above grade, the barrier shall be installed on grade or shall be mounted on top of the vessel structure. Where the barrier is mounted on the top of the vessel, the vertical clearance between the top of the vessel and the bottom of the barrier shall not exceed 4 inches (102 mm).
5. A fence on adjoining property or a building or existing wall complying with the requirements specified in this section may be used as part of the

enclosure, with the approval of the director of building and development, if the resultant enclosure is sufficient to make the pool inaccessible to small children. If at any time said existing fence or wall being used as part of the enclosure is removed, the enclosure of the pool shall immediately be made to meet the requirements of the section at the pool owner's expense.

6. All gates shall be kept locked when the pool is not attended by a responsible swimmer.
7. Indoor pools need not be fenced when enclosed by other means so as to make the pool inaccessible to small children.
8. Prior to pool filling it shall be the pool contractor's responsibility to secure the pool area in accordance with this section.

13. **Subsection 305.4 Structure wall as a barrier.** Increase the minimum height from 48 inches to 60 inches in the first sentence so the subsection reads as follows:

305.4 Structure wall as a barrier. Where a wall of a dwelling or structure serves as part of the barrier, doors and operable windows with a sill height of less than 60 inches that provide direct access to the aquatic vessel through the wall, shall be equipped with one or more of the following:

1. An alarm that produces an audible warning when the door or its screen or window, is opened. The alarm shall be listed and labeled as a water hazard entrance alarm in accordance with UL 2017. In dwellings or structures not required to be Accessible units, Type A units or Type B units, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwellings or structures required to be Accessible units, Type A units or Type B units, the deactivation switch shall be located not greater than 54 inches (1372 mm) and not less than 48 inches (1219 mm) above the threshold of the door.
2. A safety cover that is listed and labeled in accordance with ASTM F 1346.
3. An approved means of protection, such as self-closing doors with self-latching devices, provided that the degree of protection afforded is not less than the protection afforded by Items 1 or 2.

14. **Subsection 305.5 Pool structure as a barrier.** Increase the minimum height from 48 inches to 60 inches in subparagraph 1 so the subsection reads as follows:

305.5 Pool structure as a barrier. Where an on-ground residential pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, the following shall apply:

1. An on-ground pool wall, itself, shall be permitted to be the barrier where the pool structure is on grade and the wall is at least 60 inches above grade for the entire perimeter of the pool and complies with the requirements of Section 305.2.

2. Where the means of access is a ladder or steps, the ladder or steps shall be capable of being secured, locked or removed to prevent access or the ladder or steps shall be surrounded by a barrier that meets the requirements of this section.
3. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4 inch (102 mm) diameter sphere.
4. The barrier shall be installed in accordance with the manufacturer's instructions.

15. **Subsection 902.2 Fence or cover requirements. Add a new subsection to read as follows:**

902.2 Fence or cover requirements. Permanent residential spas and permanent residential exercise spas shall either meet the barrier (fence) requirements of Subsection 305 or have a securely fitting, tightly locking cover.

Secs. 6-153 – 6-180. - Reserved.

EXHIBIT G

Chapter 6 - BUILDING AND CONSTRUCTION REGULATIONS

ARTICLE XII. FUEL GAS

Sec. 6-91. Adoption of the International Fuel Gas Code

There is hereby adopted by the Village the 2018 International Fuel Gas Code, as hereinafter amended (hereinafter the "Fuel Gas Code"). At least one copy of the International Fuel Gas Code has been on file in the office of the village clerk for a period of at least thirty (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 International Fuel Gas Code, 2018 Edition, published by the International Code Council is hereby adopted by this reference, subject only to the additions, deletions and modifications specifically set forth in Section 6-92 of this Code.

Sec. 6-92. Additions, Deletions and Modifications of the International Fuel Gas Code,

The following sections of the aforesaid International Fuel Gas Code, 2018 edition, are hereby amended, deleted, or modified as hereinafter set forth:

13. Subsection 101.1 Title.

Insert "the Village of Northbrook, Cook County, Illinois" for "[name of jurisdiction]".

14. Section 103. Department of Inspection. Delete this subsection in its entirety.

15. Subsection 106.5.3 Expiration. Delete this Subsection in its entirety and replace it with the following:

106.5.3 Expiration and Time Extensions. Permits shall expire in accordance with the limits established in Sec. 6-6 of the Northbrook Municipal Code. Extensions may be granted for expired permits in accordance with the standards and procedures established in Sec. 6-6 of the Northbrook Municipal Code.

16. Subsection 106.5.5 Suspension or Revocation of permit. Delete this Subsection in its entirety and replace it with the following:

106.5.5 Suspension, revocation or surrender. The code official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code. A permit may also be voluntarily surrendered in accordance with the standards and procedures of Sec. 6-7 of the Northbrook Municipal Code.

17. Subsection 106.6 Fees. Delete this subsection and the related subsections in their entirety.

18. Section 108. Violations. Delete this section in its entirety.

19. Section 109 Means of appeal. Delete the entire section.

20. Section 310.2 CSST. Delete the entire section.

21. Section 310.3 Arc-resistant CSST. Delete the entire section.

22. Subsection 403.4 Metallic pipe. Add a new first sentence to this subsection so it reads as follows:

403.4 Metallic pipe. Metallic pipe shall not be used underground. Metallic pipe shall comply with Sections 403.4.1 through 403.4.4.

23. Subsection 403.4.2. Steel. Add a new sentence to this subsection so it reads as follows:

403.4.2 Steel, stainless steel and wrought-iron pipe shall not be used underground.
Steel, stainless steel and wrought-iron pipe shall be at least of standard weight (Schedule 40) and shall comply with one of the following standards:

1. ASME A53M;
2. ASTM A106; or
3. ASTM A 312.

24. **Subsection 403.5. Corrugated stainless steel tubing.** Add a new first sentence to this subsection so it reads as follows:

403.5.4 Corrugated stainless steel tubing. Corrugated stainless steel tubing shall not be permitted.

25. **Subsection 403.5.5 Corrugated Stainless Steel Tubing.** Delete the language in this subsection in its entirety and replace with the following:

403.5.5 Corrugated Stainless Steel Tubing. Corrugated stainless steel tubing shall not be permitted.

26. **Subsection 406.1 General.** Add new language at the end of this subsection so it reads as follows:

406.1 General. Prior to acceptance and initial operation, all piping installations shall be visually inspected and pressure tested to determine that the materials, design, fabrication and installation practices comply with the requirements of this code. The gas piping system shall be tested with air or inert gas. The system shall be tested to a pressure of not less than 20 psi. Gas piping systems shall maintain the full test pressure for a period of not less than 10 minutes.

27. **Subsection 410.1 High pressure regulator.** Add a new subsection to read as follows:

410.1.1 High pressure regulator. Where a high gas pressure regulator is required to decrease upstream gas pressure and the upstream gas pressure exceeds the maximum allowable working pressure of any downstream gas component such as a low pressure gas regulator and/or gas valve, the high gas pressure regulator shall be of a locking type.

Exception: The gas operating equipment always consumes a gas flow rate sufficient to allow a non-locking regulator to retain the correct downstream pressure, or the gas flow is never shut off, stopped or closed off by a component that is rated less than the gas pressure upstream of the high pressure regulator, than a non-locking regulator may be used in place of a locking regulator.

Secs. 6-93 – 6-99 – Reserved.