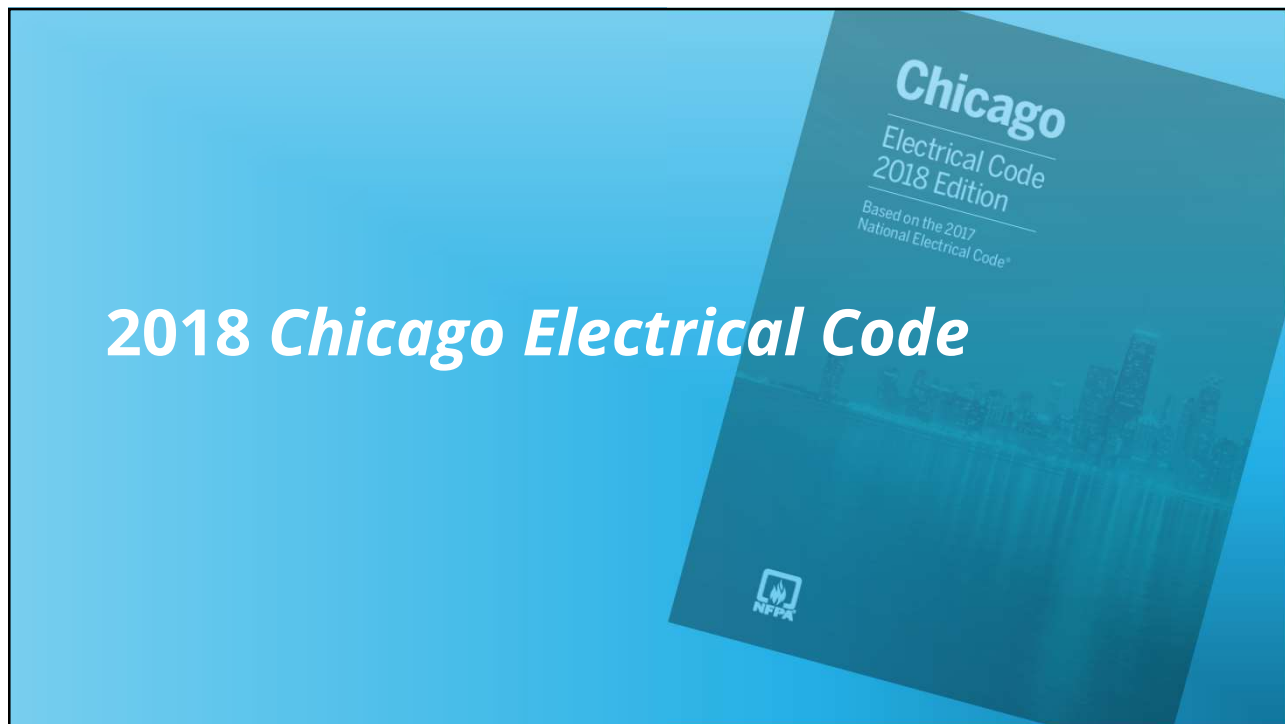




Overview

- 2018 Electrical Code
- Electrical Planning Basics
- When are Electrical Plans Required?
- Required Electrical Information
- Required Emergency Systems
- Sign Permits
- Electrical Application (required for now)

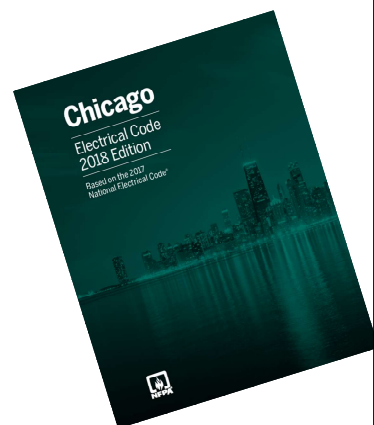




2018 *Chicago Electrical Code*

2018 Electrical Code

- 2018 Chicago Electrical Code (Title 14E) effective **March 1, 2018**
- Aligned with 2017 *National Electrical Code*
- Removed or reduced some Chicago-specific requirements
- Code modernization, Phase 1





Key Chicago Amendments

- Metallic conduit requirements ([Chapter 3](#))
 - But AFCI tradeoff ([Sec. 210.12, exceptions](#))
- Limits on communication cable in plenums ([Chapter 8](#))
- Emergency lighting systems ([Art. 700](#))
- Consolidated requirements for residential buildings ([Art. 560](#))
- Special rules for low-rise residential remodeling ([Art. 570](#))



Key Chicago Amendments (continued)

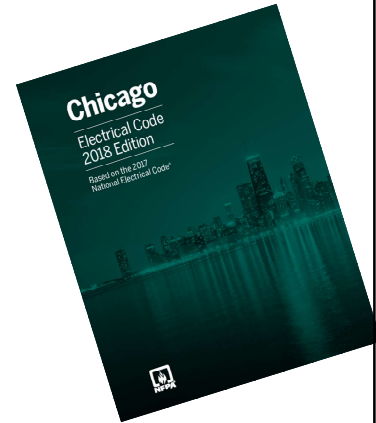
- Flexible metal conduit allowed for use in rehab work behind existing walls, floors, and hard-surface ceilings not being removed as part of work in lengths up to 25 feet – **all occupancies.** ([Arts. 320, 330, 348](#))





Key Chicago Amendments (continued)

- Requirement for light in closet increased from 5 ft² to **25 ft²**. (210.70(A); 560.7)
- No light required over sink in room or area **≤ 64 ft²** (powder rooms, small bathrooms, small laundry rooms, kitchenettes) (210.70(A); 560.7)



CODE BOOK



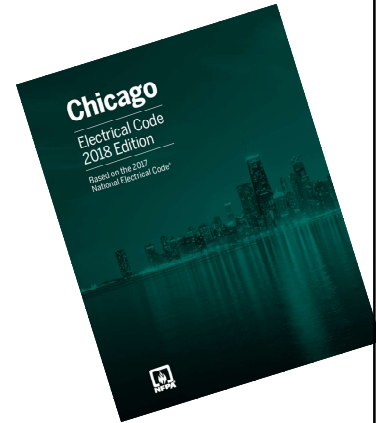
Direct from the NEC

- Accepts all load calculation methods from NEC (Art. 220)
- Adopts national standards for sustainable and renewable energy (Arts. 410, 411, 691, 692, 694, 706, 710, 712, 750)
- Allows reduction in required lighting load to coordinate with Energy Conservation Code (Sec. 220.12; CECC C405.4.2)



Direct from the NEC (almost)

- Spaces around electrical equipment now 95% consistent with NEC ([Art. 110](#))
- Service disconnecting means may now be located outdoors (except 1 and 2 family homes) ([230.70](#))

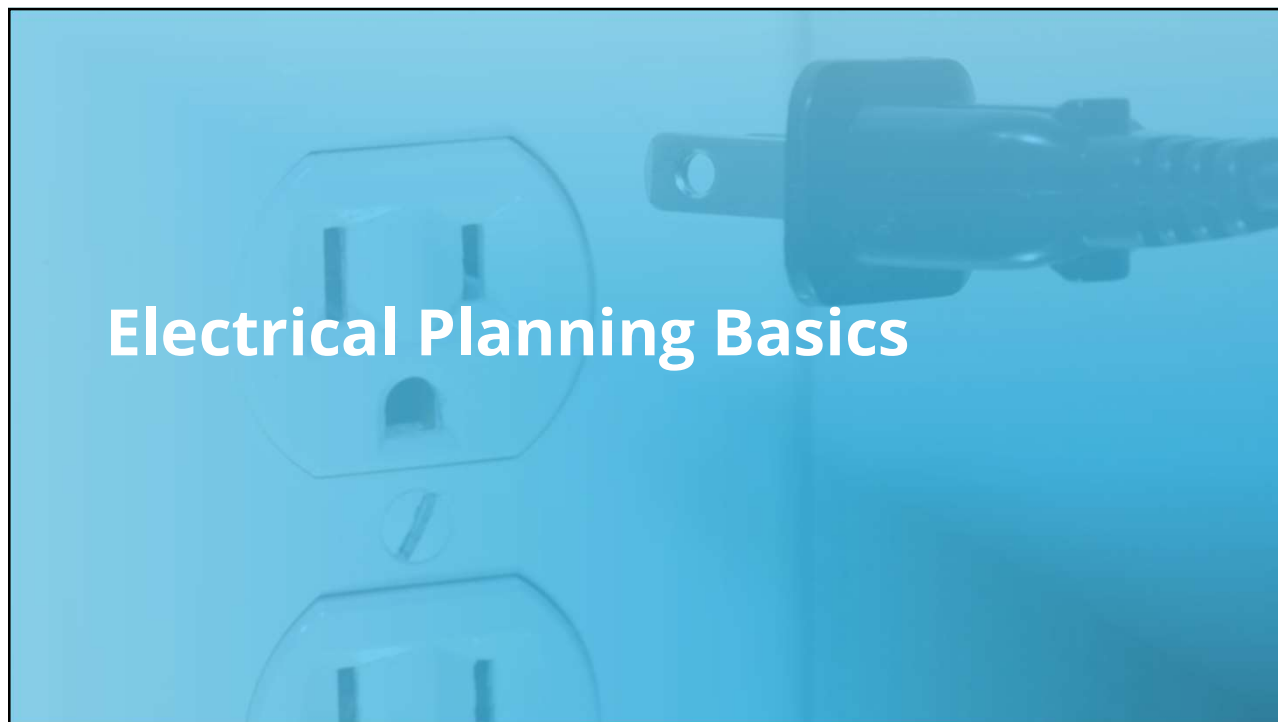


CODE BOOK



2019 Amendments

- Secondary source of power now only required for fire pumps in high-rise buildings and other buildings with Type I emergency systems (Group I-2, Condition 2; Group A with OL > 300 in multistory building; Group A-1 with OL > 300)
- Recognition that “standby power” loads may have 10 sec. delay (elevators, some exhaust systems); “emergency power” must still have 1 second delay, consistent with NEC



KEY CONCEPT



Checking Electrical Requirements

1. General electrical requirements
2. Specialized electrical requirements
3. Lighting requirements
4. Distribution



General Electrical Requirements

Receptacle Outlets

- Dwelling Units (210.52)
- Guest Rooms, Guest Suites, Dormitories, etc. (210.60)
- [Retail] Show Windows (210.62)
- HVAC Equipment Servicing (210.63)
- Electrical Service Areas (210.64)
- Meeting Rooms (210.71)



General Electrical Requirements (continued)

- Check receptacle outlet spacing requirements
 - Walls/partitions
 - Kitchen worksurfaces
 - Meeting rooms
- GFCI requirements
- AFCI requirements
 - But see Chicago exception for new/compliant installations
- Tamper-resistant receptacles



Specialized Electrical Requirements

- Specialized equipment may require:
 - Dedicated circuit(s)
 - Special grounding methods
- Specialized equipment can include:
 - Computer servers / network equipment
 - Photocopiers
 - Microwaves and breakroom appliances
 - Vending machines
 - Industrial equipment



Lighting Requirements

Lighting Outlets (210.70)

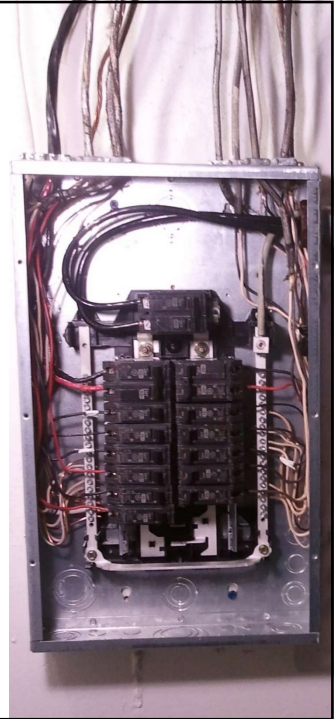
- Dwelling Units (210.70(A))
- Guest Rooms or Guest Suites (210.70(B))
- Storage/Utility Areas—All Occupancies (210.70(C))

Lighting also required for means of egress per *Building Code*.

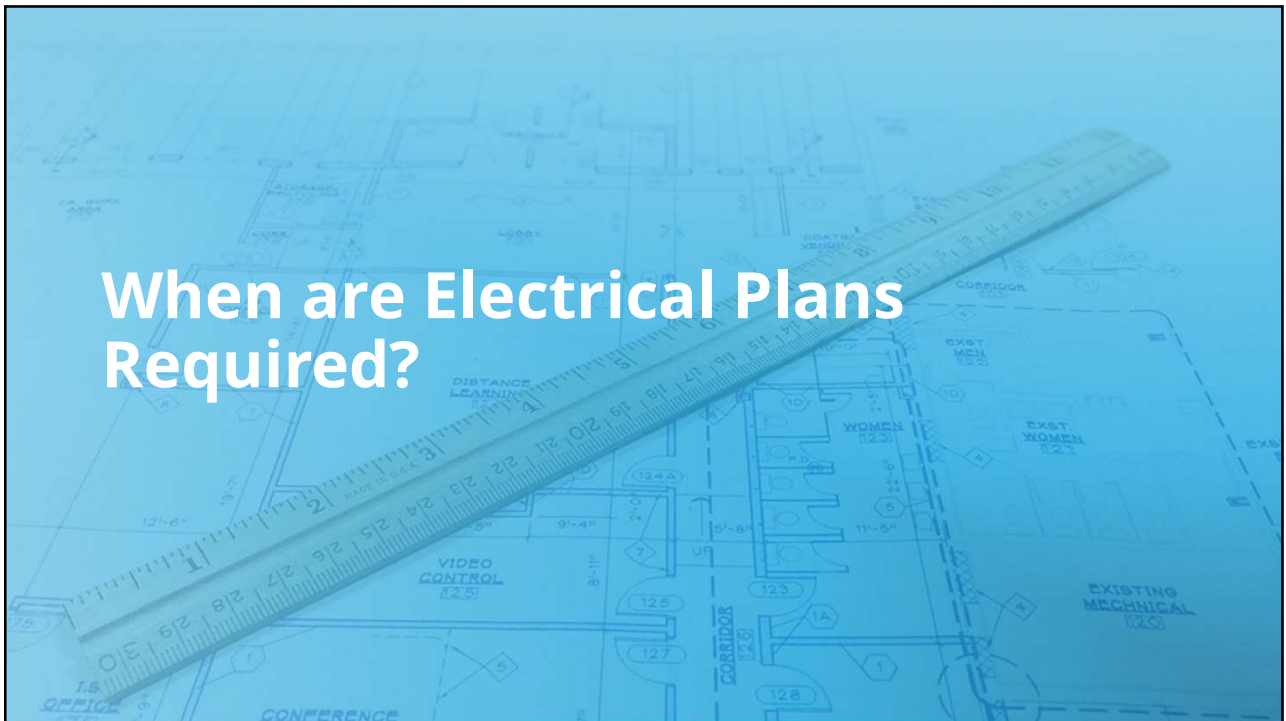


Distribution

- Ensure adequate space/working room for distribution equipment
- Dedicated electrical closet/room where required
- Technology equipment areas
- As of 2019, in other than single-family dwellings, service disconnecting means may be outside

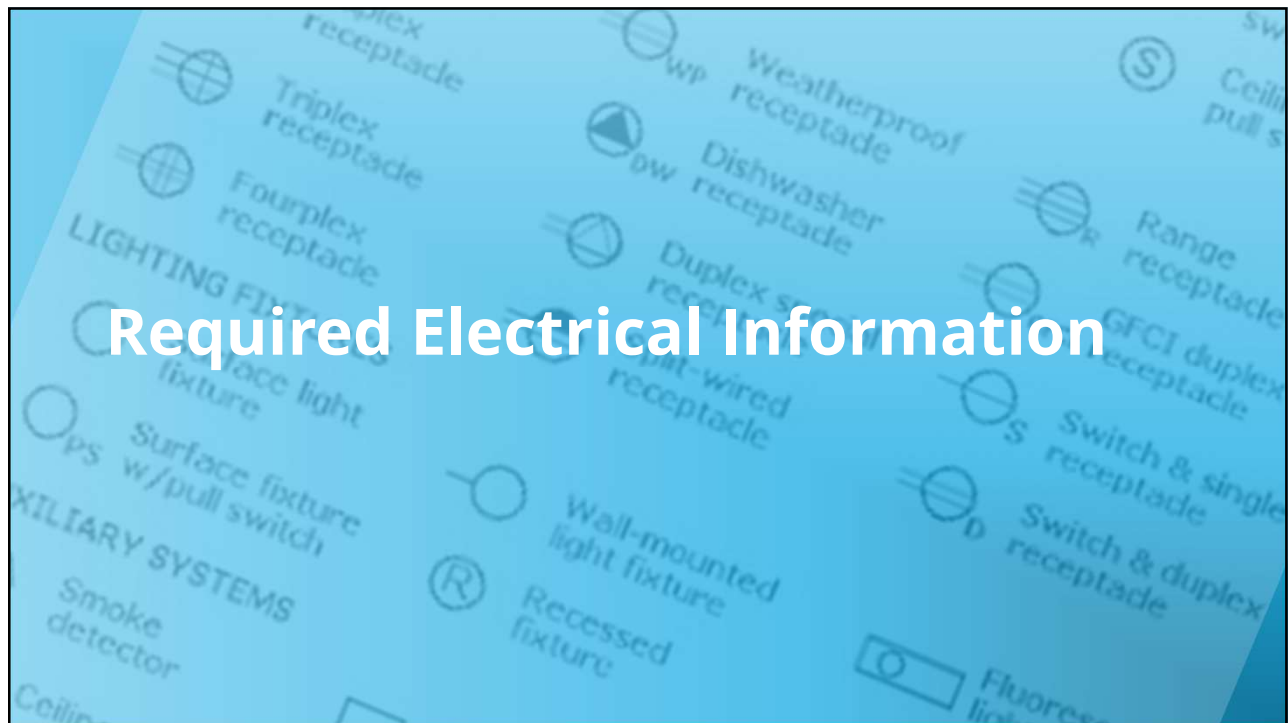
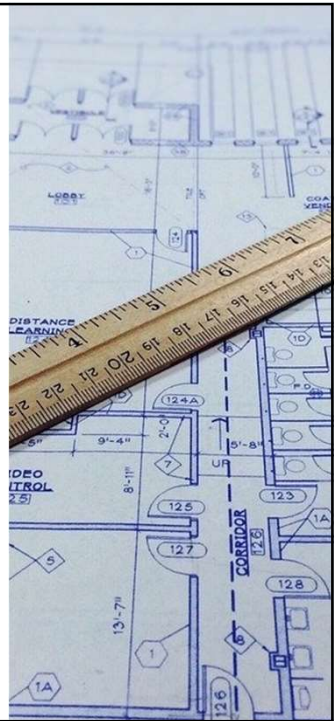


When are Electrical Plans Required?



Electrical Plans Required

- Dwelling occupancies in buildings greater than two stories in height.
- Non-dwelling occupancies in buildings greater than one story in height or greater than 10,000 ft².
- New or replacement services or feeders rated 400 Amps or greater.
- Service switchboards and motor control centers rated in excess of 1,200 amperes or 600 volts.



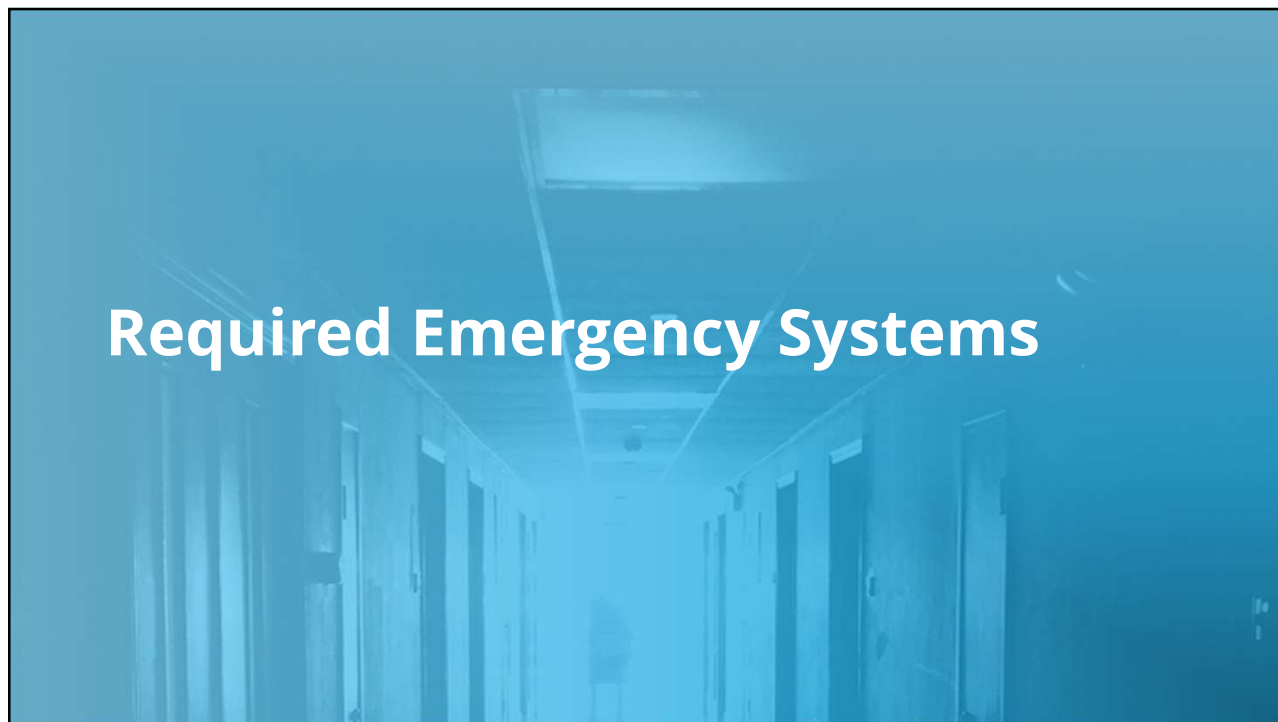
Electrical Information Required on Plans

- Single line drawing of the service and distribution.
- Schedule of conduits, wire, switches, circuit breakers, over current devices, transformers, motors and luminaires.
- Load calculations to verify sizes of services, feeders and panel boards indicating available fault-current and withstand ratings.
- Grounding detail, including grounding electrode conductor or common grounding electrode conductor system.
- Equipment layout in switchboard rooms and electrical closets indicating the working space required by 110.26.

Electrical Information Required on Plans (continued)

Special Services Switchboard

- Switchboard with a single disconnecting means having a frame rating in excess of 1,200 amperes or a sequence service switchboard where the sum of the frame size exceeds 1,200 amperes.
- Drawing submittal requirements.
- Review and approval.



Required Emergency Systems (14E-7-700)

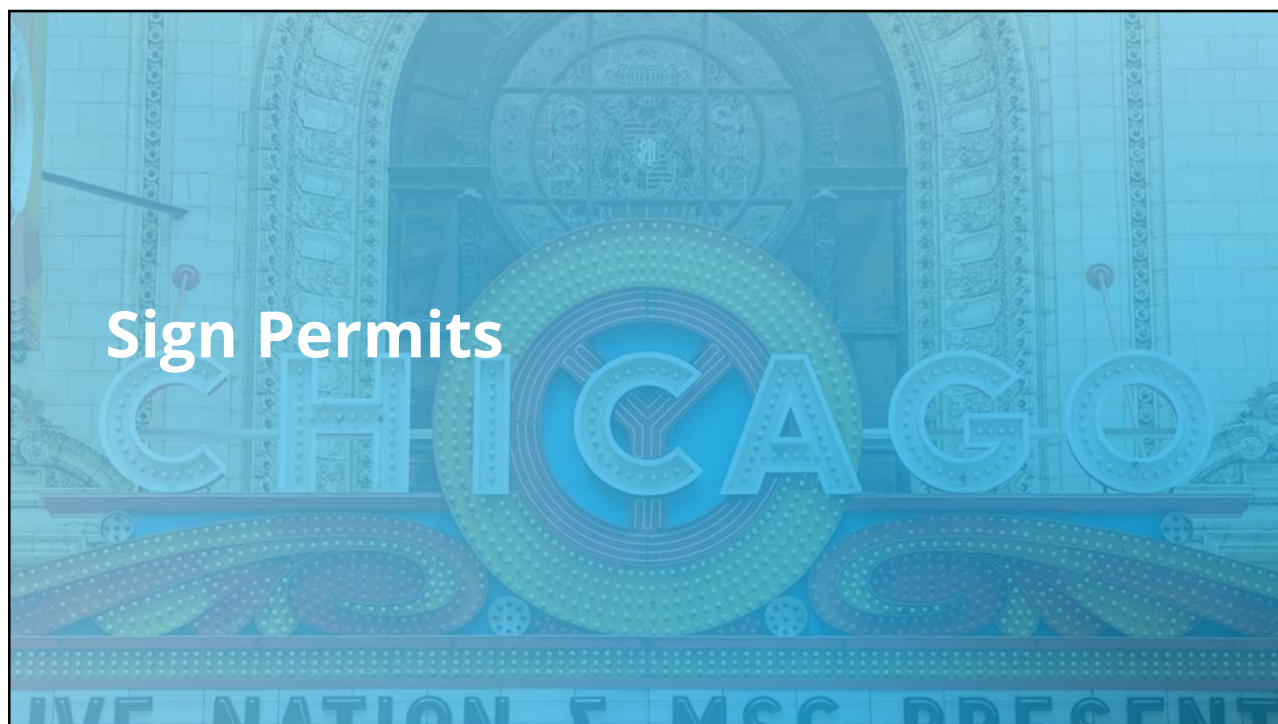
- Location of all exit and emergency lights on scaled floor plans.
- Review of single line drawing of emergency service and distribution showing sizes of conduit, conductors, switches and over current devices.
- Detail all loads and locations of emergency lighting equipment.
- If applicable, generators must comply with Article 701, Section 18-27-701.6.

Fire Alarm Systems

- This is a separate submittal of shop drawings by the FA contractor AFTER the building permit has been issued.
- Two complete raceway diagrams showing all horizontal and lateral sections and two corresponding circuit diagrams.
- Show the circuits of the control panel, alarm sending stations, automatic detectors, alarm sounding devices, supervisory test switches, trouble sounding device, trouble sounding device test switch, pilot light and switch.

Fire Alarm Systems (continued)

- Submit two one-line wiring diagrams showing the service entrance conductors, equipment and fire alarm supply source.
- Full load calculations for all initiating and signaling circuits.



Sign Permits

A separate sign permit is required for:

- Building-mounted flat and projecting signs as well as billboard signs, free-standing signs, printed awnings, and monument signs.
 - Includes electric and non-electric signs
 - Sign permit application must be started online by the contractor
 - Zoning review is required
 - Site plan and construction details required
 - May require structural calculations
 - Use of public way is required for signs located in or projecting into the public way

Sign Permits (continued)

For more information, see *Business Owner's Guide to On-Premise Signs*, available on DOB's web site.

- Some window signs do not require a permit
- New fast-track business signs program, run by BACP, will allow up to 16 ft² inside window signs as part of business license



DEPARTMENT OF BUILDINGS
Electrical Permit Application

DO NOT WRITE IN SHADED AREA

1. BUILDING PERMIT APPLICATION NO. (If applicable)

2. DATE:

3. ADDRESS OF INSTALLATION:

Street _____ Unit No. _____
 Zip _____ Floor No. _____

4. NUMBER OF STORIES:

5. ELECTRICAL CONTRACTOR:

Co. Name _____ Supervisor _____
 License No. _____ City _____
 Phone _____ E-mail _____

6. BUILDING OWNER:

Name _____ State _____
 Address _____ City _____ Zip _____
 Phone _____ E-mail _____

7. CLASSIFICATION BY OCCUPANCY:

A. Residential
 B. Institutional
 C. Assembly
 D. Open Air Assembly
 E. Business

10. DESCRIPTION OF WORK:

11. VIOLATION TICKET NOTICE:

12. BRANCH CIRCUITS:

Amperes	1 Phase	3 Phase	FEE
15 A			
20 A			
Over 20A			

13. LIGHT/RECEPTACLE OUTLETS ON EXISTING:

Lighting	Receptacle	Type	Number	FEE

14. SERVICES:

Svc 1	Svc 2	Svc 3	Svc 4	Volt	Phase	Wire	Number	FEE

Electrical Permit Application

- For now, an electrical permit application is still required (upload to ProjectDox) when scope of work includes electrical
- Must be signed by supervising electrician employed by electrical contractor

WARNING TO PROPERTY OWNER/TENANT AND CONTRACTORS
I, as property owner/tenant, understand that if I accept, or allow anyone else to accept, the scope of this permit, I can have my permit revoked, be ordered to stop all work on the project, be fined up to \$5,000 per day, imprisoned for up to six months, required to do up to 100 hours of community service, required to bear all of my own expense of completed work, and, in addition to any other penalties provided by law, required to reimburse the City up to the damages incurred for providing any false or inaccurate information in this building permit application.

Supervising Electrician Sign: _____ Date: _____
Owner Signature: _____
or
Tenant Signature (if app): _____

CERTIFICATION BY
I, _____, application are by identified in this of the Chicago under this prop is necessary? Application if statement of any prior fees, and interest?

Contractor: _____
City: _____
Dip: _____
W: _____
F: _____

BUILDING PERMIT APPLICATION NO. _____
ADDRESS OF INITIAL WORK _____
ELECTRICAL CONTRACTOR _____
BUILDING OWNER _____

TYPE OF CONSTRUCTION
Type: _____
Description: _____

TYPE OF ELECTRICAL WORK
Type: _____
Description: _____

INSULATION/FIBER NOTICE
Type: _____
Description: _____

WIRING METHODS
Type: _____
Description: _____

LIGHTING/RECEPTACLE OUTLETS AND EXPOSING
Type: _____
Description: _____

SERVICES
Type: _____
Description: _____

POWER AND EQUIPMENT
Type: _____
Description: _____

CONSUMER DISCRETIONARY VOLTAGE LEVEL
Type: _____
Description: _____

APPROVED BY: _____
DATE: _____

TOTAL FEE: _____



Summary

KEY CONCEPT



Summary

- Make sure to complete both the DOB Permit Application and the Electrical Application.
- Provide for required receptacle and lighting outlets.
- Follow the requirements for providing single line drawings, load calculations, grounding detail, and equipment layouts.



KEY CONCEPT



Contact Information

- For Electrical questions contact:
dcapelectr@cityofchicago.org
- For Electrical Plan Review or Sign Permit Questions contact:
312-744-7955
312-744-3472
- To schedule an inspection visit
www.chicago.gov/buildings and select "Request Inspection"

