



**2024 Training Class**

**Self-Certified Permit Application Program**



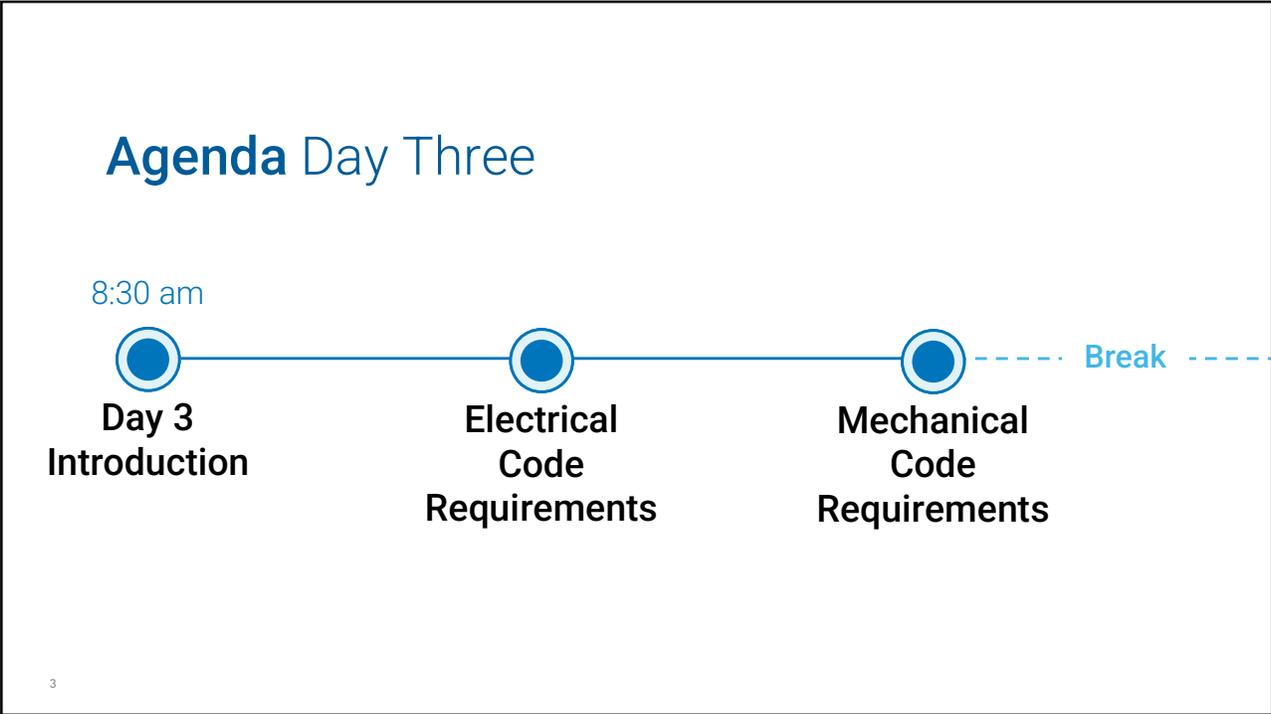
Brandon Johnson, Mayor  
Matthew Beaudet, Commissioner

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**Day 3 Introduction**

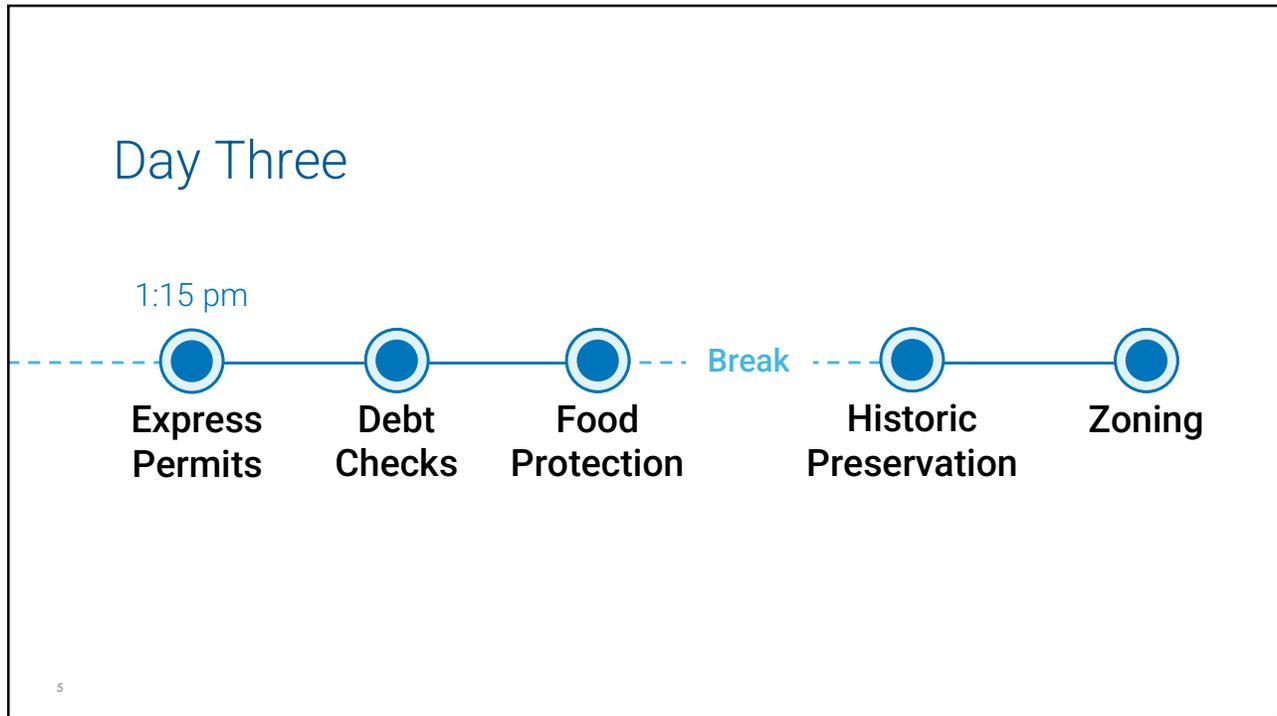
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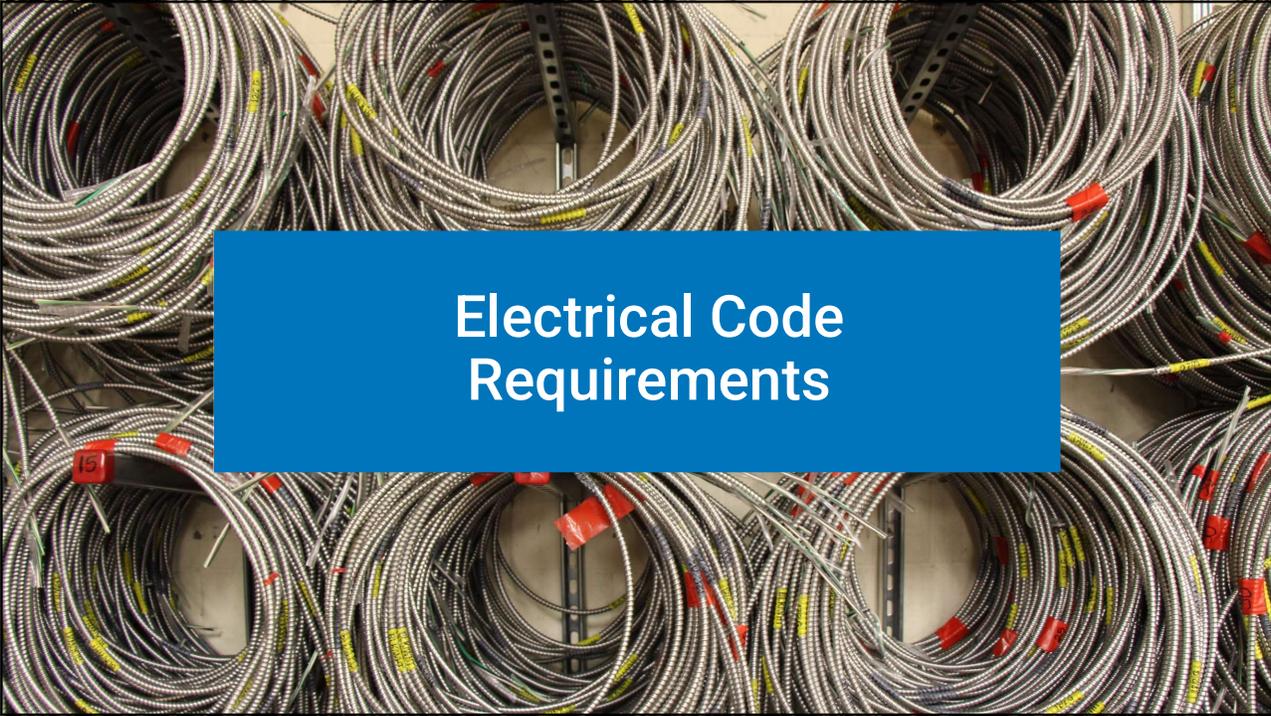
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## Learning Objectives Day Three

- Explain the Structural Peer Review program
- Determine which structural requirements of the Chicago Construction Codes are applicable to a project
- Review structural drawings and calculations for conformance with code requirements
- Describe the three compliance methods available in the Chicago Building Rehabilitation Code
- Apply the work area method to determine code requirements for various scopes of rehabilitation work
- Describe new requirements in the 2022 Chicago Energy Transformation Code
- Explain key requirements of the Chicago Energy Transformation Code for work in existing buildings

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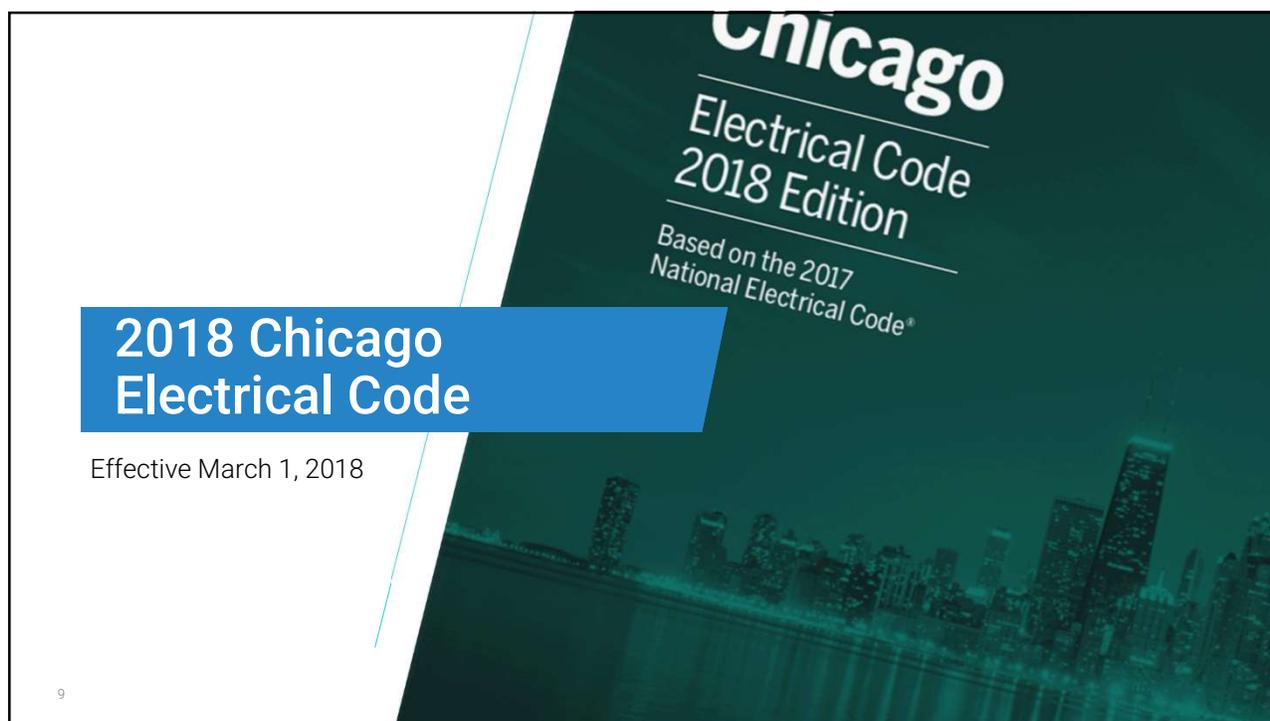
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## Overview

- 2018 Electrical Code
- Electrical Planning Basics
- When are Electrical Plans Required?
- Required Electrical Information
- Required Emergency Systems
- Sign Permits



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**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

**Chicago**  
Electrical Code  
2018 Edition  
Based on the 2017  
National Electrical Code®



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## 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)

## Chicago

Electrical Code  
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## Key Chicago Amendments

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)



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## Key Chicago Amendments

Requirement for light in closet increased from 5 ft<sup>2</sup> to **25 ft<sup>2</sup>**. (210.70(A); 560.7)

No light required over sink in room or area  $\leq$  **64 ft<sup>2</sup>** (powder rooms, small bathrooms, small laundry rooms, kitchenettes) (210.70(A); 560.7)

## Chicago

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## 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)

## Chicago

Electrical Code  
2018 Edition

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## 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](#))

# Chicago

## Electrical Code 2018 Edition

Based on the 2017  
National Electrical Code\*



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## 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

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Audience Q&A Session

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## Checking Electrical Requirements

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



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## 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)



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## General Electrical Requirements

- 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



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## 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



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## 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*.



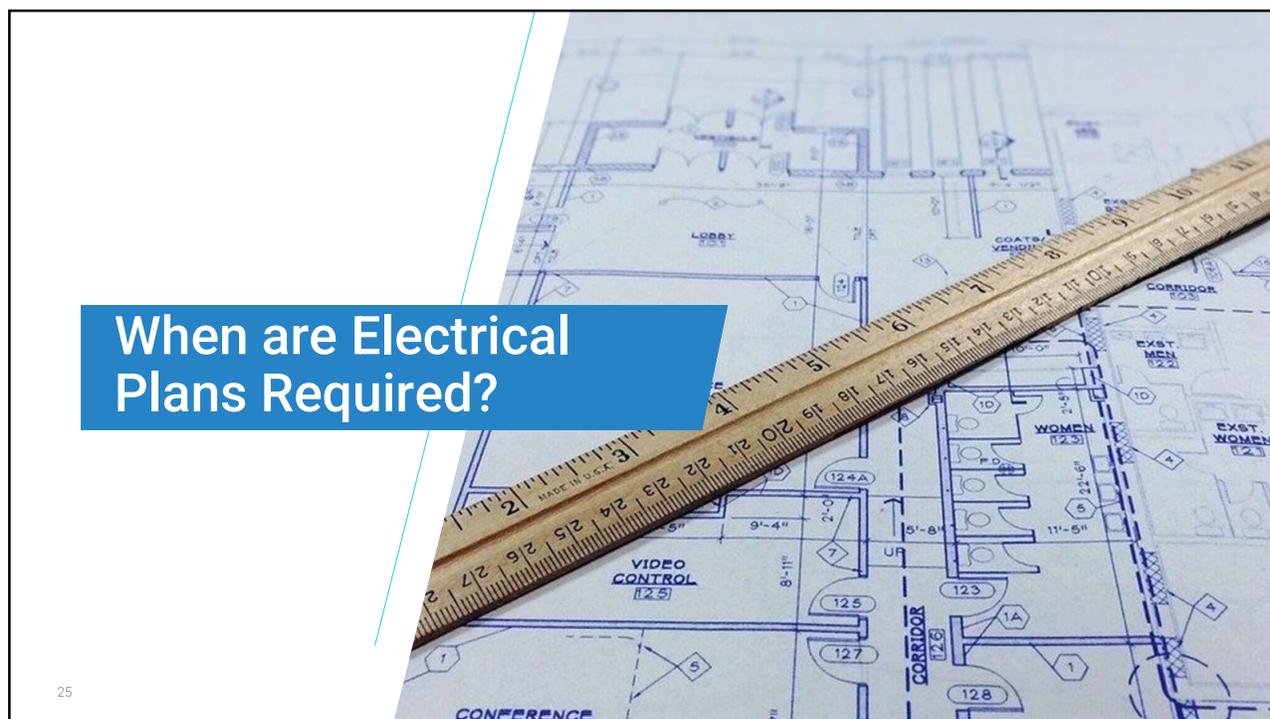
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## Distribution

- 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



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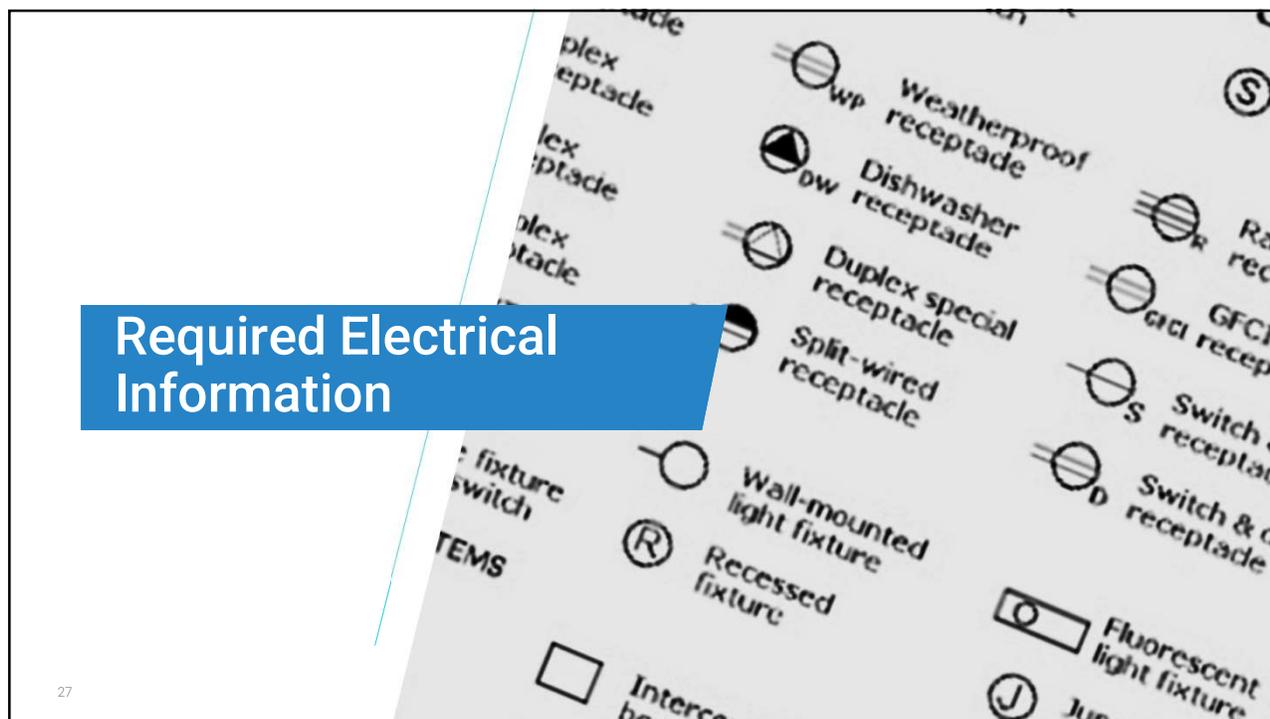
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## Electrical Plans Required

- 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 ft<sup>2</sup>.
- 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.

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## 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.

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## Electrical Information Required on Plans

### 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.

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## Emergency Systems

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## 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.



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## Fire Alarm Systems

- This is a separate submittal of shop drawings by the fire alarm 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.

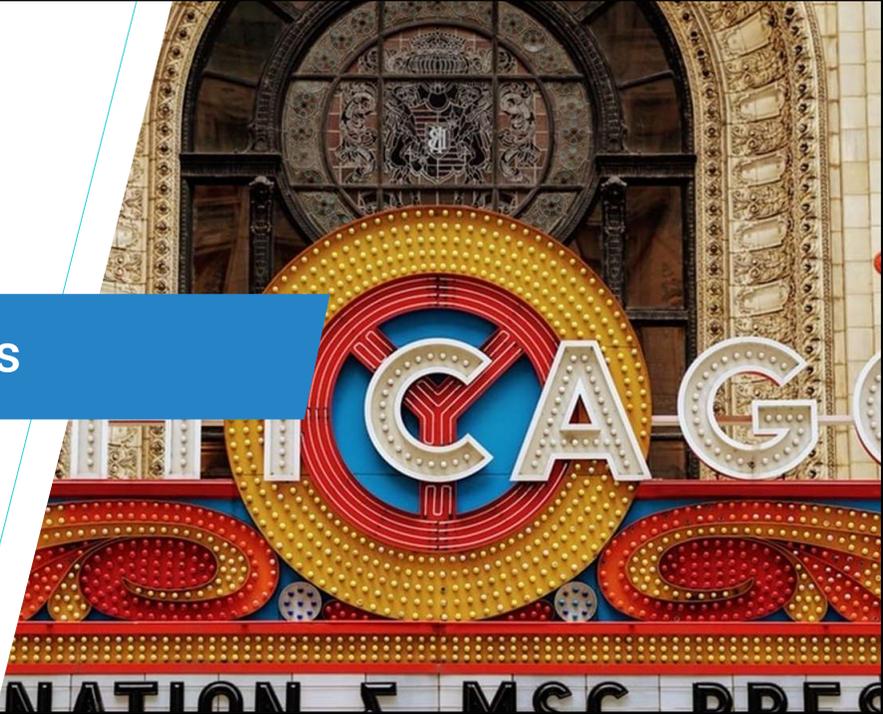


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## Fire Alarm Systems

- 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.

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## Sign Permits

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## 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

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## Sign Permits

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 ft<sup>2</sup> inside window signs as part of business license



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KEY CONCEPT



## Summary

- Provide for required receptacle and lighting outlets.
- Follow the requirements for providing single line drawings, load calculations, grounding detail, and equipment layouts.

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KEY CONCEPT



## Contact Information

- For Electrical questions contact:  
[dcapelectr@cityofchicago.org](mailto: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](http://www.chicago.gov/buildings) and  
select "Request a Permit Inspection"



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## Audience Q&A Session

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