



# Elevator Association of Minnesota

April 2, 2019

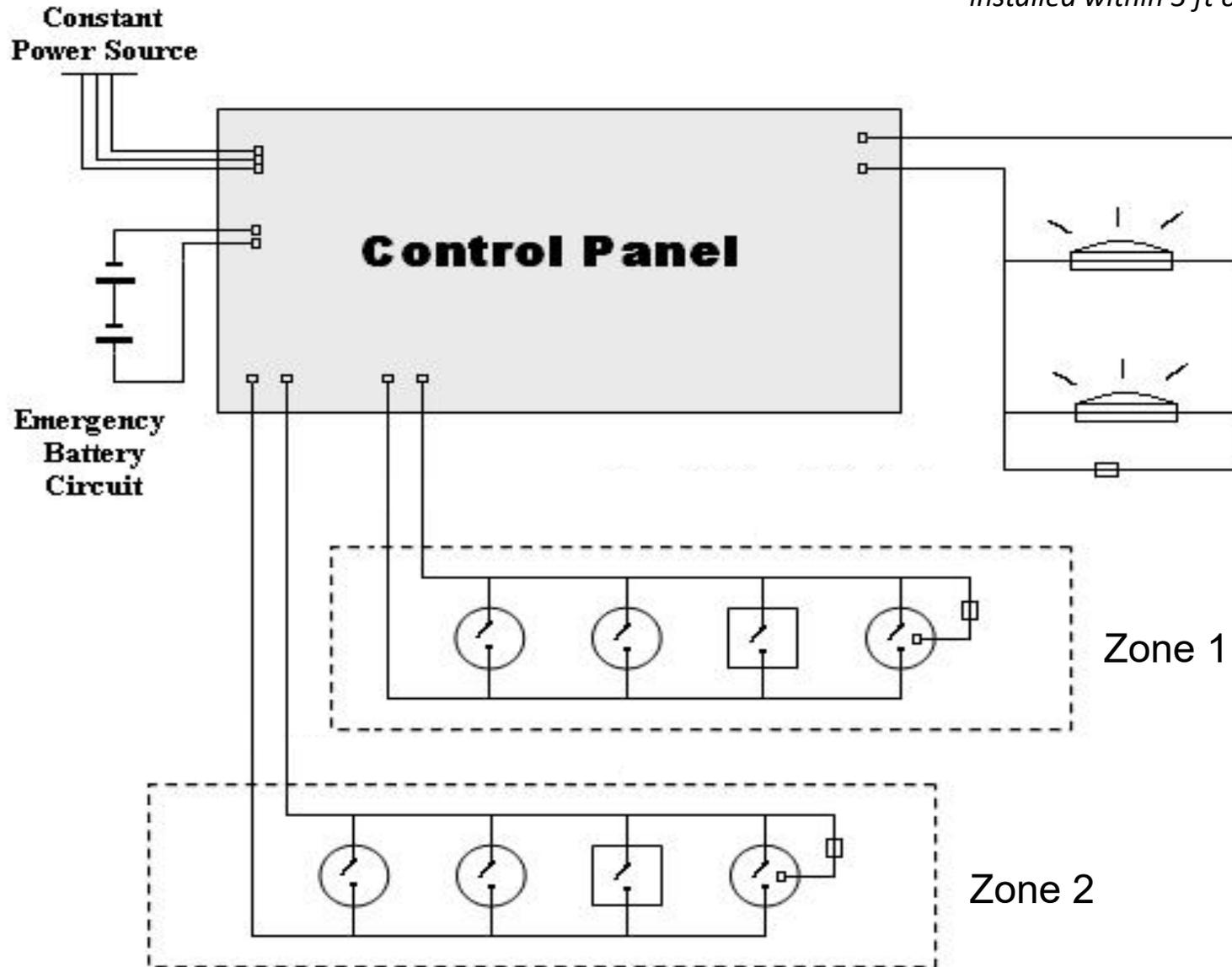


- NPFA 72 2013 Edition

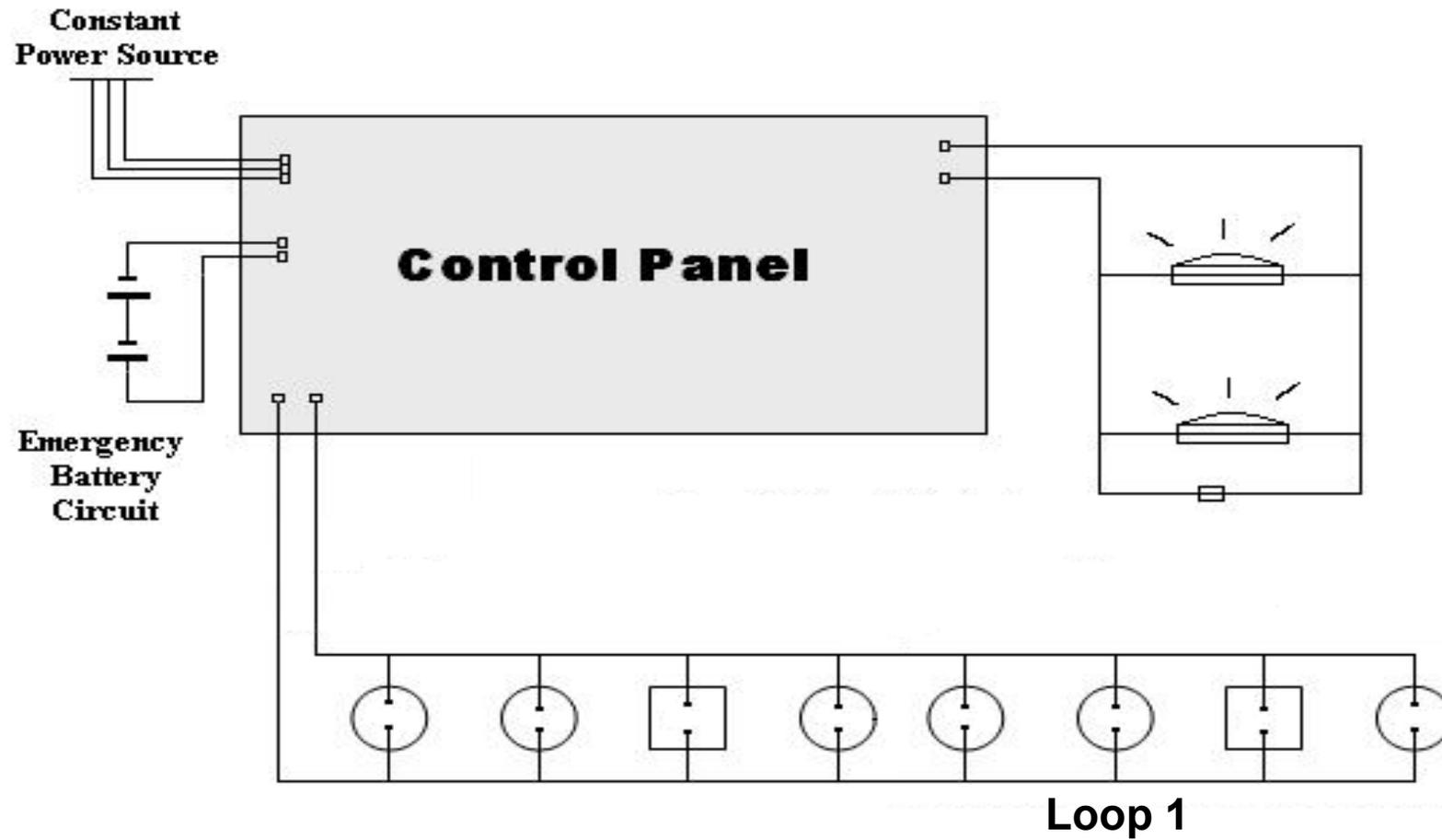
- **21.3.1** All initiating devices used to initiate fire fighters' service recall shall be connected to the building fire alarm system
- **21.3.2** In facilities without a building fire alarm system, initiating devices used to initiate fire fighters' service recall shall be connected to a dedicated function fire alarm control unit that shall be designated as "elevator recall control and supervisory control unit," permanently identified on the dedicated function fire alarm control unit and on the record drawings.
- *Is there a fire alarm control panel or does one need to be provided?*
- *If one exists.....what type of FACP is it? Addressable or conventional?*

# Conventional

*\*\*Supervision of elevator controls are required and the control devices shall be installed within 3 ft of the connected device.*



# Addressable





# Initiating Device Layout



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- **21.3.5** A lobby smoke detector shall be located on the ceiling within 21 ft of the centerline of each elevator door within the elevator bank under control of the detector
- **21.3.6** Smoke detectors shall not be installed in unsprinklered elevator hoistways unless they are installed to activate the elevator hoistway smoke relief equipment



Figure A.5.6.5.1 (g)  
 Example of detector spacing,  
 rectangular areas (pg. 72-136)  
*NFPA 72*® 2007

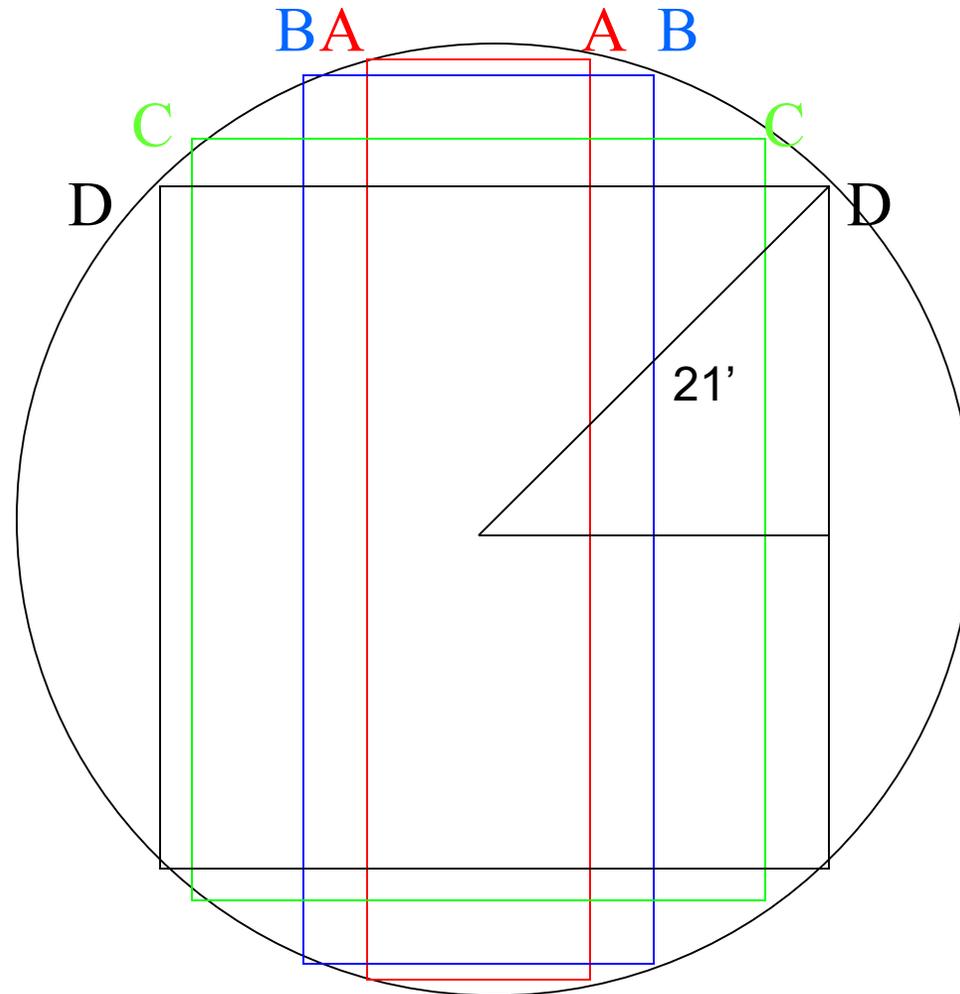
**Rectangles**

**A=10 ft. x 41 ft.**

**B=15 ft. x 39 ft.**

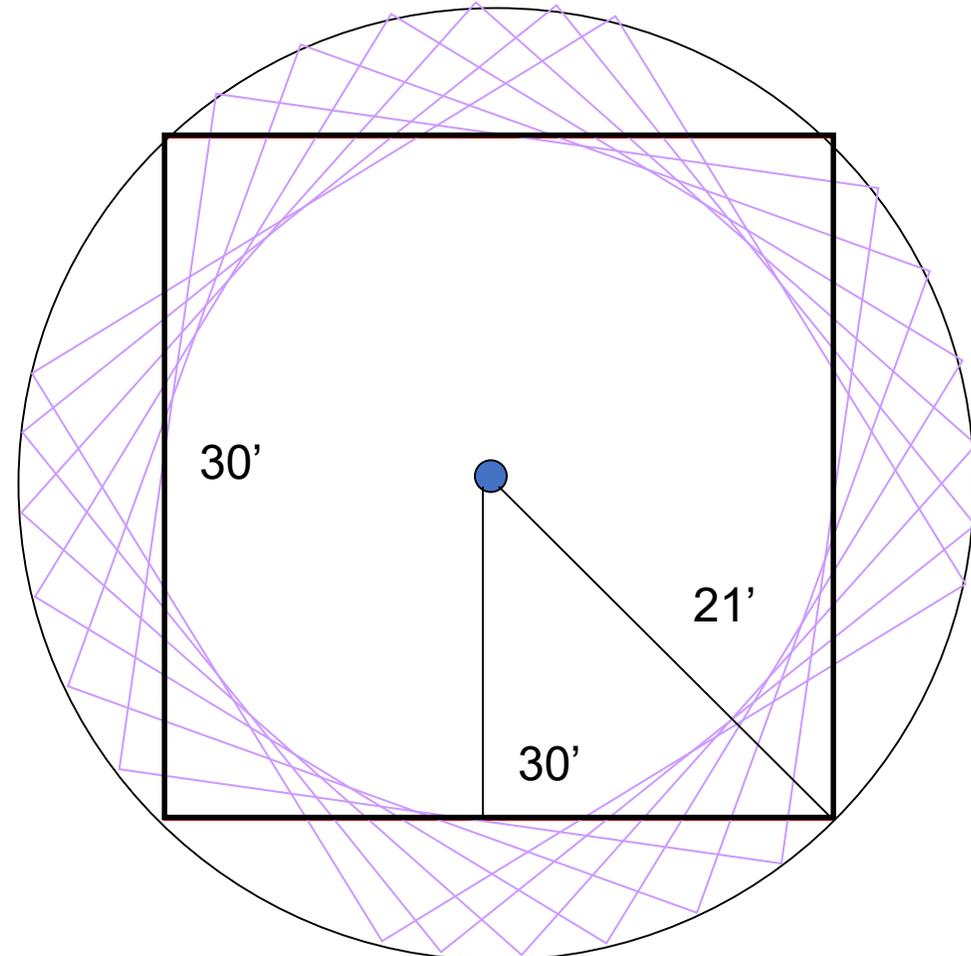
**C=20 ft. x 37 ft.**

**D=30 ft. x 30 ft.**



## .7 Rule

Each detector is listed for a different spacing, *NFPA 72® 2007* uses 30ft x 30ft for there examples. This is a very common spacing, however if you are using a detector listed for different spacing adjustments will need to be made.



# Smooth Ceiling

## Things to consider:

### 1.) Ceiling Characteristics

**Smooth, Sloped, Peaked,  
Suspended, Beams, Joists, etc**

### 2.) Diffuser locations

**Minimum of 36" from air diffusers  
(NFPA 72® 2007 A.5.7.4.1)**

### 3.) Fluorescent Light locations

**Mounted at least 6" from florescent  
lights**

### 4.) Mounting Support

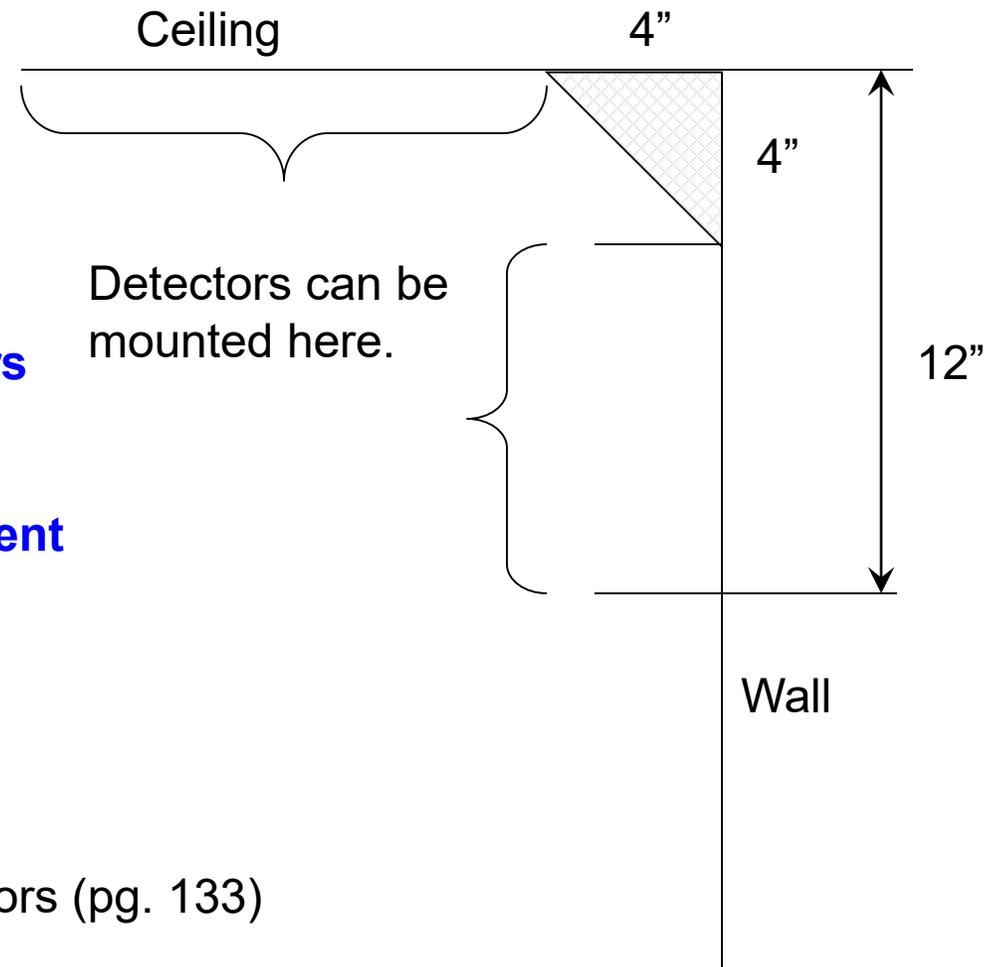


Figure A.5.6.3.1 (NFPA 72® 2007)

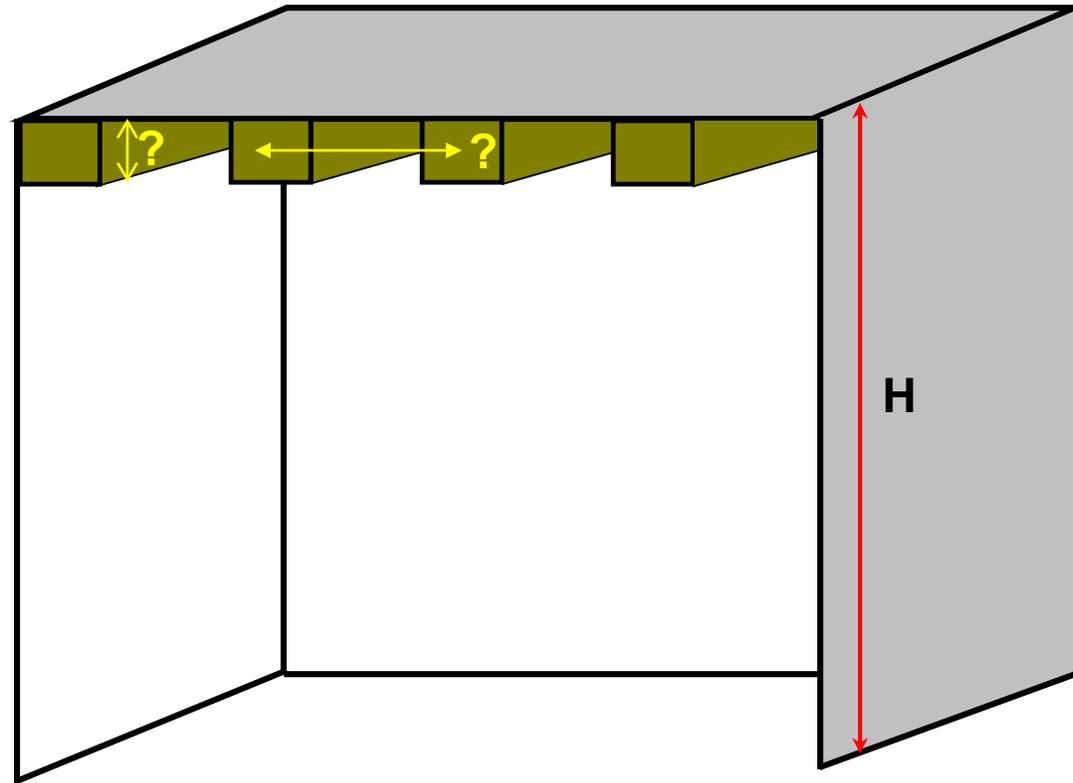
Example of proper mounting for detectors (pg. 133)



# Ceiling Characteristics

**How do solid joists or beams effect smoke detector spacing?**

Example:  
Height of ceiling = 12 feet



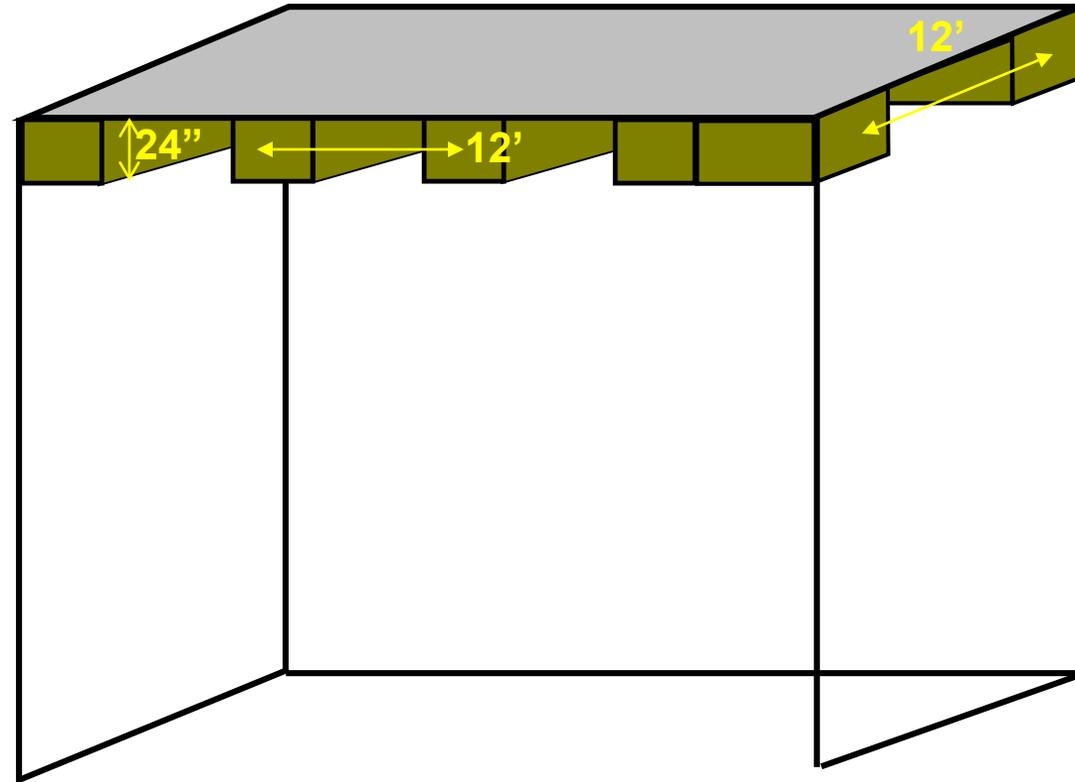
If the beam is  $< 10\% \times 12 \text{ ft} = 14.4 \text{ inches}$  = Smooth ceiling spacing

If the beam is  $\geq 10\% \times 12 \text{ ft} = 14.4 \text{ inches}$  **and** the beam spacing is  $\geq 40\% \times 12 \text{ ft} = 4.8 \text{ ft}$  = Detectors located on ceiling in each beam pocket.



# Ceiling Characteristics

How do beams running across the room and along its length effect detector spacing?



If the beam is  $\leq 24$  inches and the beam spacing is  $\leq 12$  ft center-to-center =  
**Smooth ceiling spacing**



# Elevator Control Devices



- NPFA 72 2013 Edition

- **21.3.14** Separate outputs for the fire alarm systems to the elevator controller(s) shall be provided to implement elevator Phase 1 Emergency Recall Operation in accordance with Section 2.27 of ANSI/ASME A17.1/CSA B44 Safety Code of Elevators and Escalators
- **21.3.14.1 Designated Level Recall** For each elevator or group of elevators, an output shall be provided to signal elevator recall to the designated level in response to the following:
  - **(1)** Activation of smoke detectors located at any elevator lobby served by the elevator(s) other than the lobby at the designated level
  - **(2)** Activation of smoke detectors located at any elevator machine room, elevator machinery space, elevator control space, or elevator control room serving the elevator(s) except where such rooms or spaces are located at the designated level
  - **(3)** Activation of smoke detectors located in the elevator hoistway serving the elevator where sprinklers are located in the hoistways.
- **21.3.14.2 Alternate Level Recall** For each elevator or group of elevators, an output shall be provided to signal elevator recall to the alternate level in response to the following:
  - **(1)** Activation of smoke detectors located at the designated level lobby served by the elevator
  - **(2)** Activation of smoke detectors located in the in the elevator machine room, elevator machinery space, elevator control space, or elevator control room serving the elevators if such rooms or spaces are located at the designated level
  - **(3)** Activation of the initiating devices identified if they are installed at or below the lowest level of recall in the elevator hoistway and the alternate level is located above the designated level.



- Pre-Testing Coordination
- Final Testing
- Annual Testing
- Changes in the industry



THANK YOU