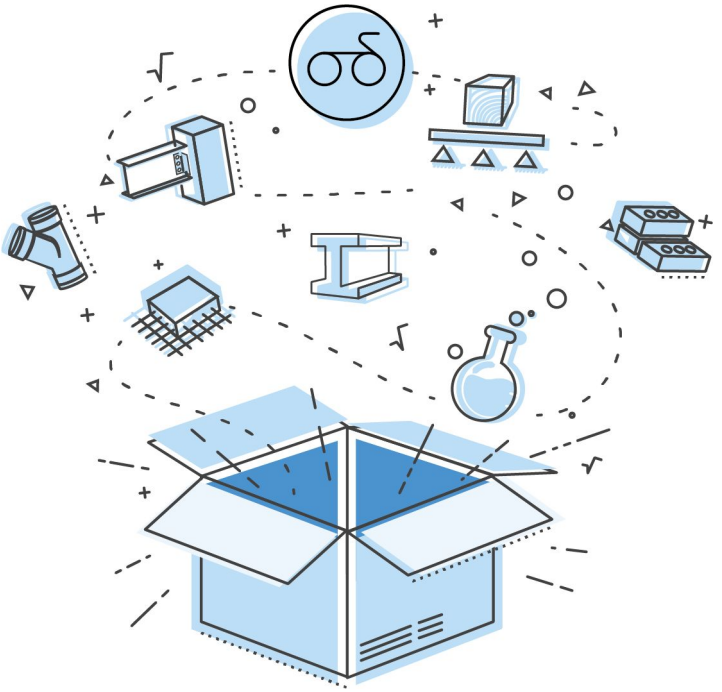
ClearCalcs

Structural Design Basics

Designing Columns in the Real World



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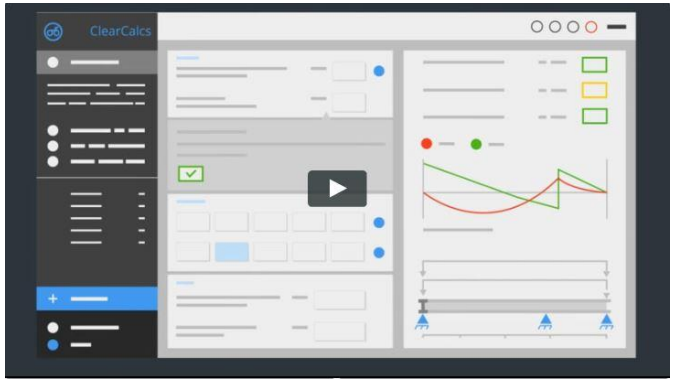
Say hello in the chat box 👋

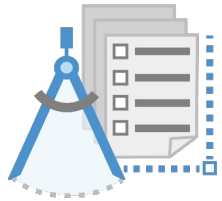
About ClearCalcs.com

ClearCalcs helps engineers design without compromise by bringing together powerful FEA analysis with easy to use design tools for concrete, steel, cold-formed steel and timber.

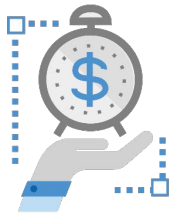
Explore our range at clearcalcs.com



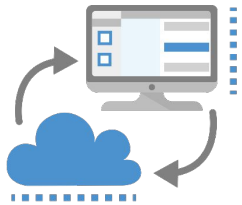
Intro Video Hyperlink



More Accurate
Design more accurately with unrestricted and accessible FEA analysis



Eliminates Wasted Time
Eliminate time wasted using clunky methods or waiting for software licenses to free up



Available Everywhere
Empower engineers to work effectively from office, home, or site

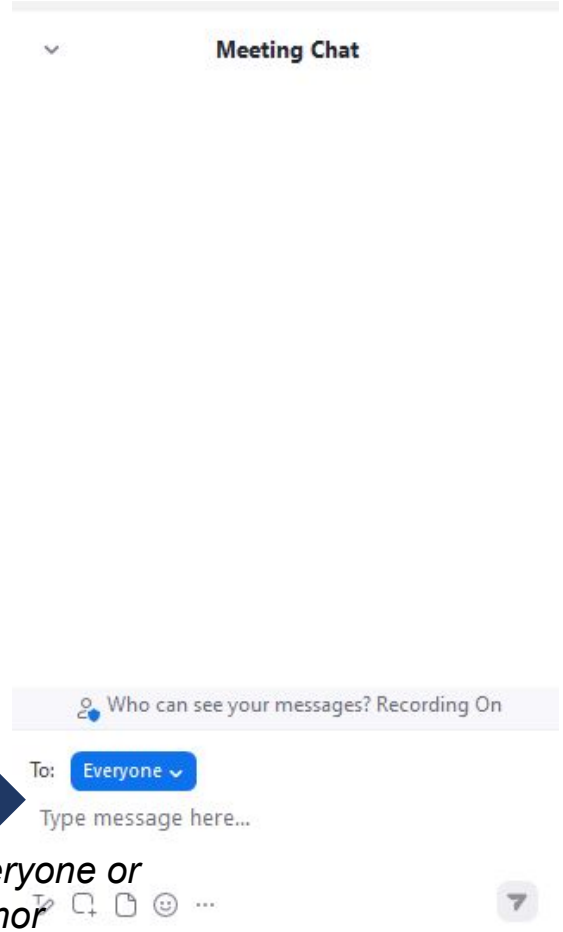
Meet the Presenters

- **Connor Conzelman, MBA – Dir. of Customer Success**
  - Here to make sure you're successful in ClearCalcs!

- **Ati Aziz – Head Growth Marketer**
  - Here to make sure webinars (and all other help content) is effectively planned

How to Ask Questions

- **Type your questions in the Chat tab on your Zoom control panel and click Send**
  - You can send your questions to everyone or directly to Connor
  - We will address all questions in the second half of the webinar during the 15-minute Q&A session
  - We might invite you to unmute yourself to ask your question live!



Ask your questions here

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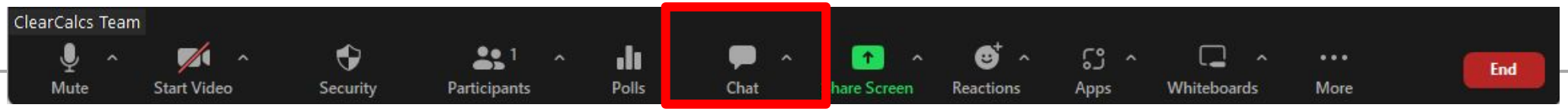

What we'll be talking about today

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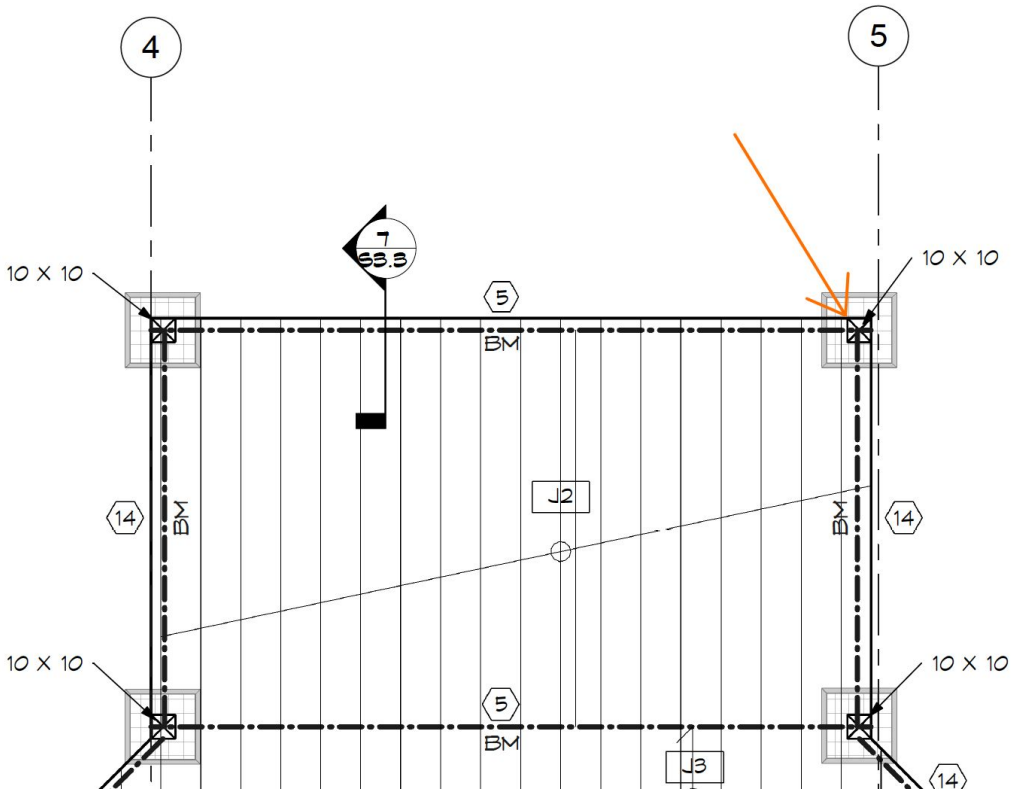
- Column Design in the Real World
  - Wood focused today
  - Other materials would follow same procedure
- Today's Examples
  - Gravity Loads
  - Wind Loads
  - Seismic Loads

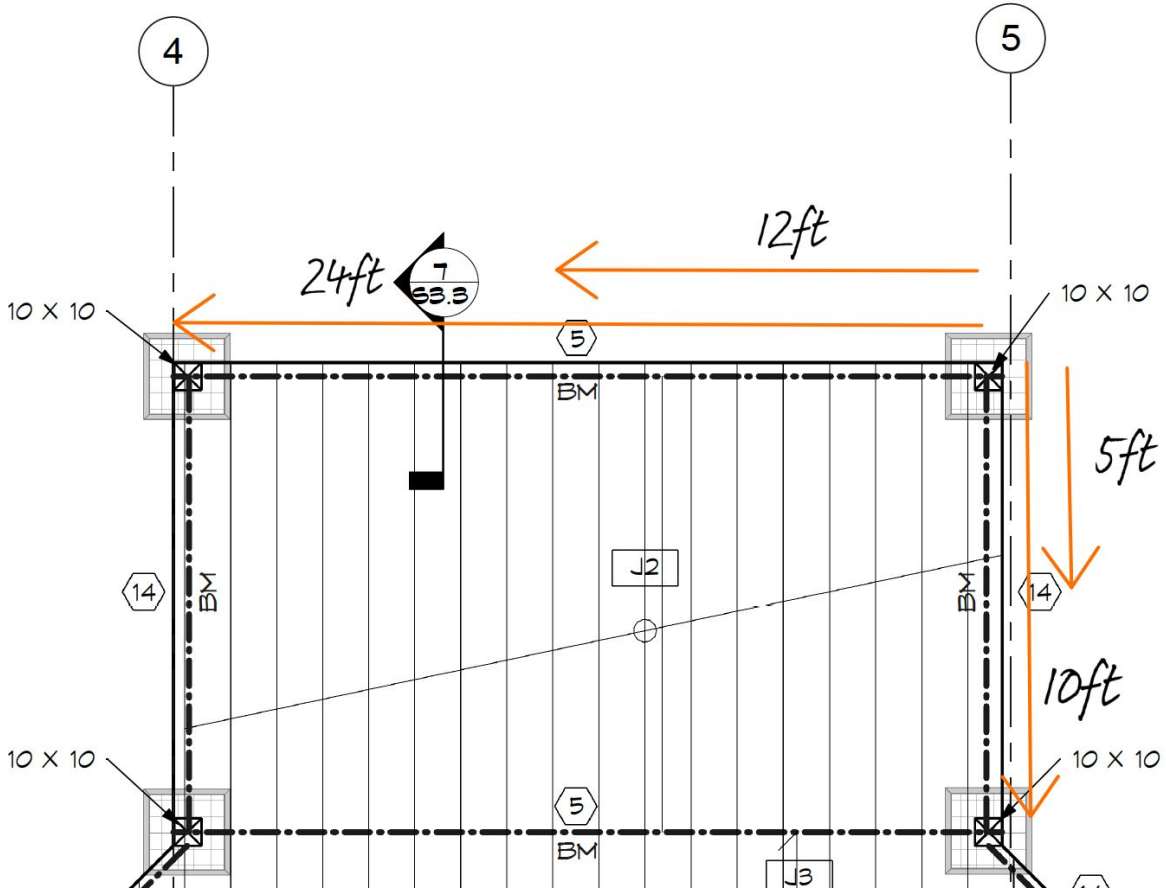
Example 1: Deck Post - Gravity Loads

- Wood Column
  - Exposed Outdoor Preset



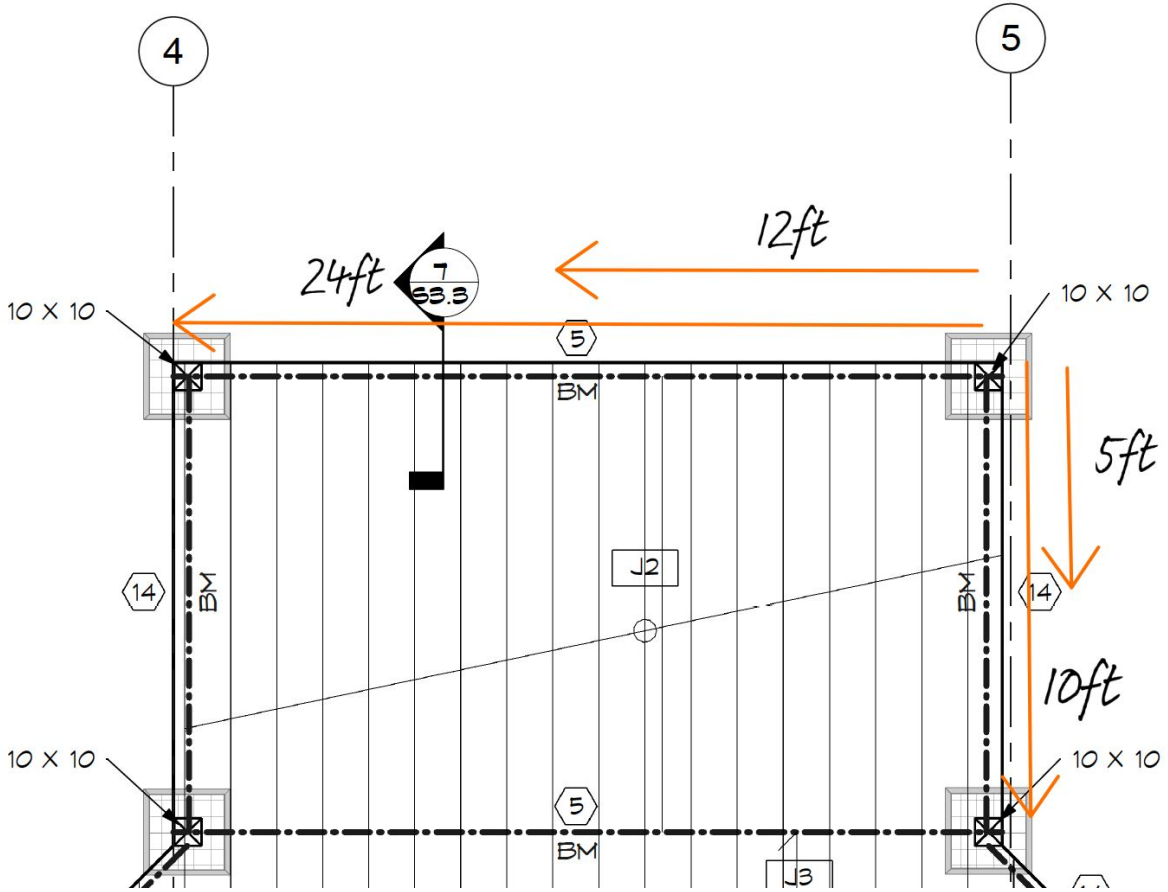
Example 1: Deck Post - Gravity Loads

- Given
  - Column Height = 10ft (assumption)
  - Column is continuously braced
  - Support Locations
    - Support #1 @ 0ft (bottom)
    - Support #2 @ 10ft (top)
  - Assume eccentricity of 1/6th depth of member
  - Loads
    - Dead Load = 20psf
    - Snow Load = 40psf
    - Min. Deck Live Load = 60psf
      - (per code)



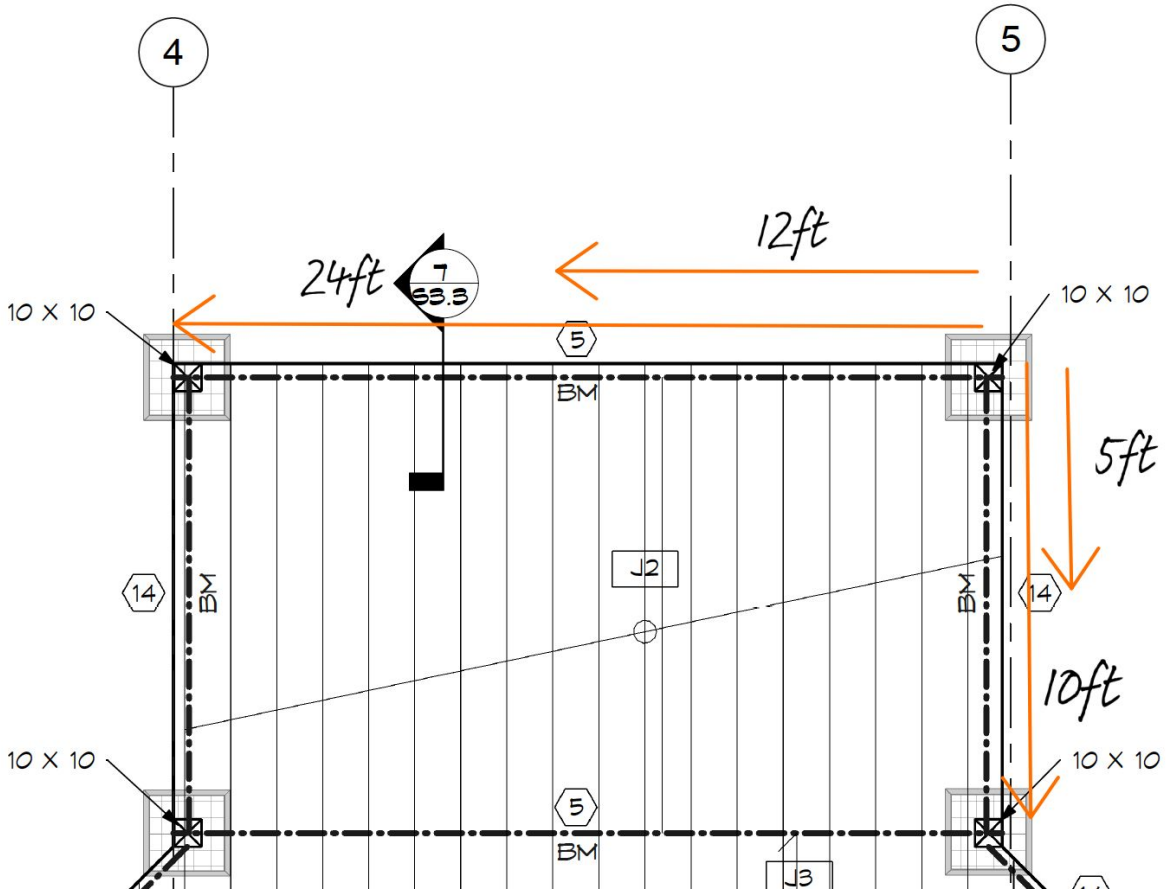
Example 2: Deck Post - Gravity & Wind

- Given
  - Geometry and Gravity Loads same as previous example
  - Wind Data
    - Wind Speed = 115mph
    - Exposure Category = C



Example 3: Deck Post - Seismic

- Given
  - Assume we're designing as a free-standing seismic resisting frame
  - Leg Height = 10ft (assumption)
  - Frame Width = 24ft
  - Seismic Data
    - Site Class = D
    - Short-Period Spectral Acceleration = 0.368 g
    - Long-Period Spectral Acceleration = 0.107 g
    - Long-Period Transition Period = 6
    - Risk Category = II
    - Effective Seismic Weight = 50kips



What's New in ClearCalcs

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As of Last Webinar

- IBC 2021 w/ all ACI 318-19 updates available
- California Building Code 2022
- Florida Building Code 2020

Since Last Webinar

- Wood Truss Design
- MWFRS
- Snow Load Analysis
- Shear Keys in Retaining Walls

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Questions?

THANK YOU!

- We will send you a recording of the webinar by email.
- There will be a survey at the end of this webinar, we would appreciate your feedback on how we can improve.
- If you have further questions, send an email to help@clearcalcs.com or use the Help button in ClearCalcs