

# STEEL STRUCTURES PROJECT

A 4-story Steel Building is shown in Figure 1. You are required to do an analysis and design of the FRAME A shown in Figure 2.

## STEEL BUILDING

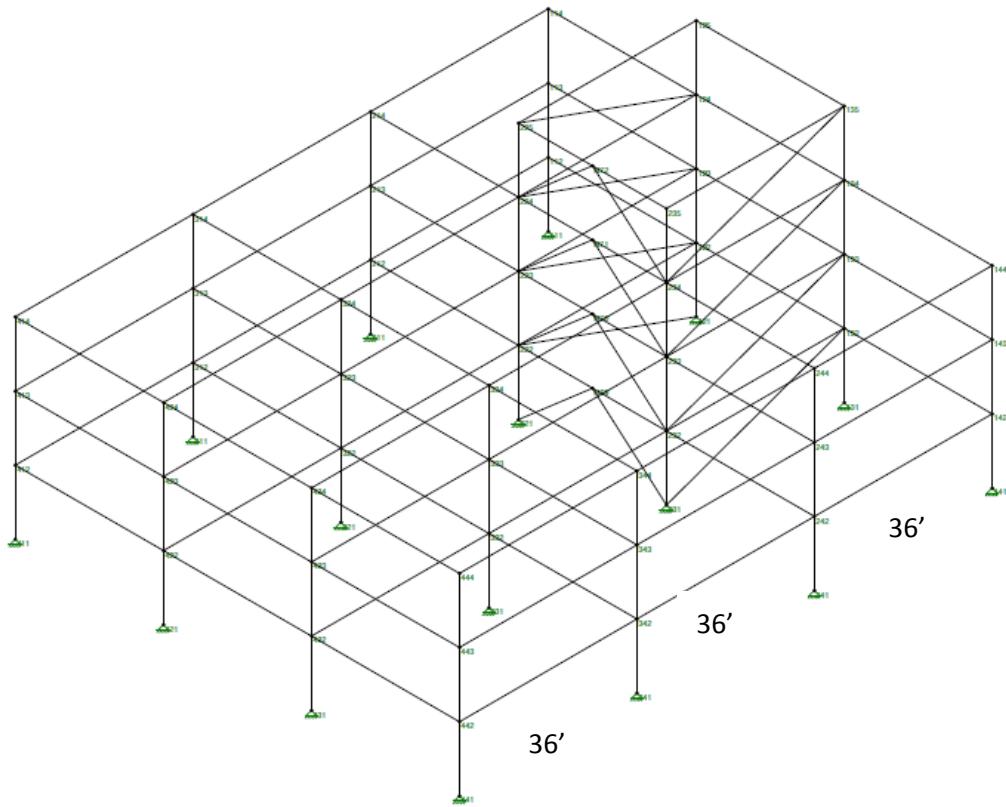


FIG. 1

## STEEL FRAME A

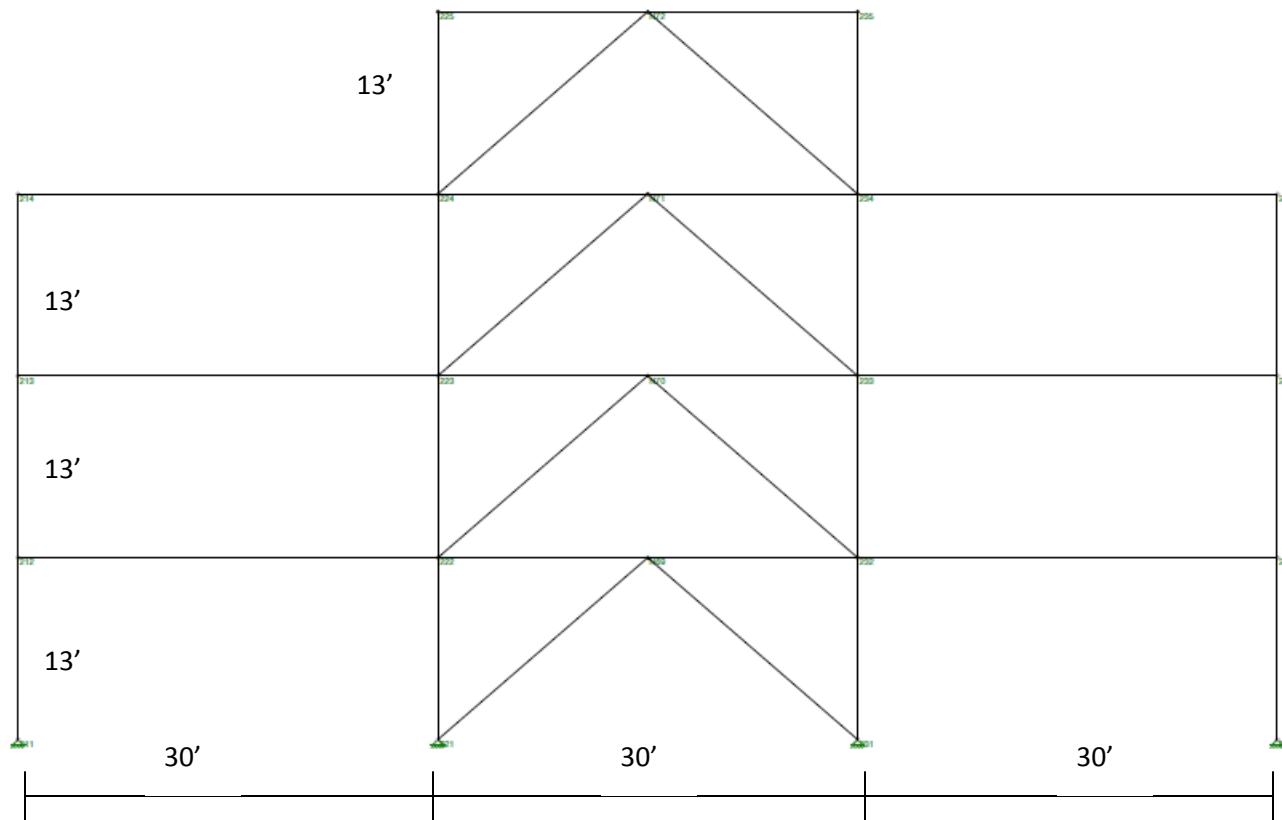


FIG. 2

## **DESIGN INFORMATION:**

Dead Load = 90 psf.

Live Load = 100 psf.

Roof Live Load = 20 psf.

Wind Load = 40 psf.

*Assumptions for analysis:*

*All Loads are one-way AREA LOADS.*

Steps:

- Do a preliminary design for members based on hand calculations.
- Create model of FRAME A using RISA2D.
- Input Loads and Preliminary Members in Model.
- Run the analysis for Load Combinations as discussed in class.
- Complete Final Design of Members based on Results from RISA2D.
- Prepare a Report to show all your Design Work.
- Prepare a Presentation for Final Day of Class on December 19<sup>th</sup>.

*Notes:*

*Show all calculations and assumptions. Failure to complete assignment will result in an INCOMPLETE GRADE.*