



**IOWA**

Civil and Environmental  
Engineering



# YMCA Building Renovation and Reconstruction Clinton, IA







Trevor Thornburgh  
Project Manager



David Wu  
Graphic Design Report Production

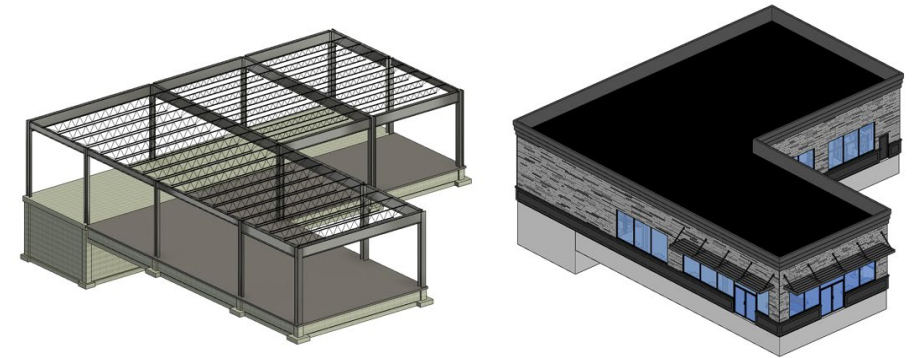
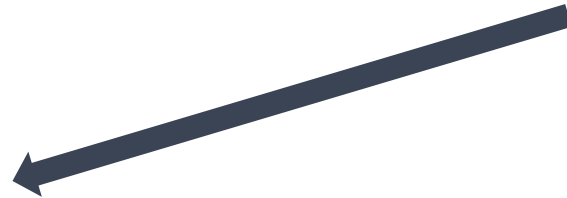
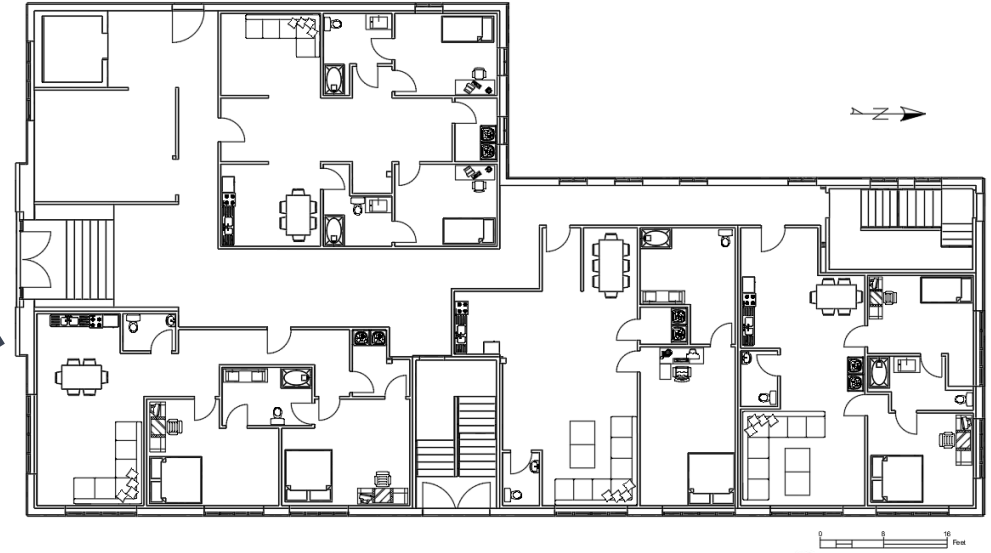
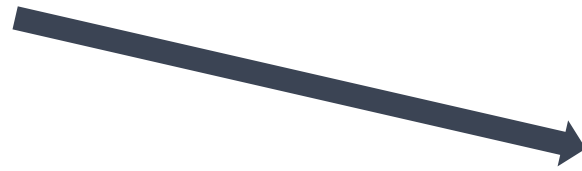


Steve Susmarski  
Written Report Production



Drew Hambly  
Technology Services

# Presentation Outline

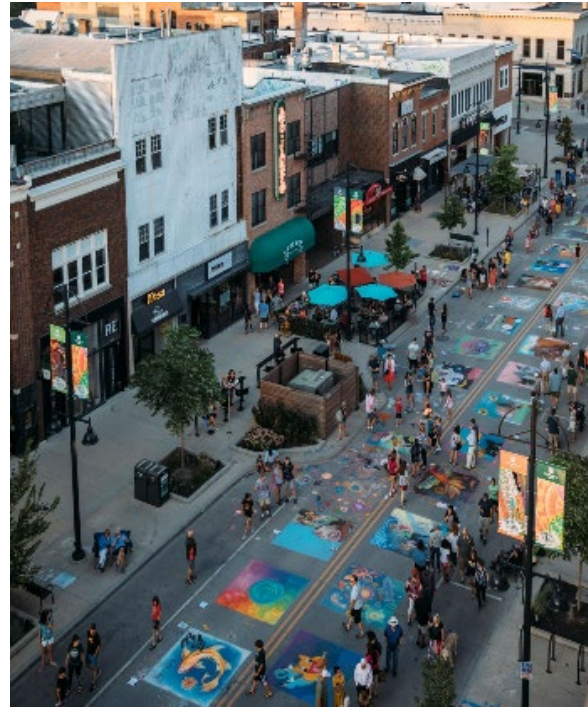




# Project Goals



Luxury Apartment Units

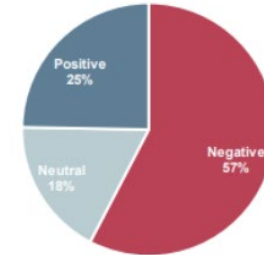


Commercial Gathering Space

## Community Survey

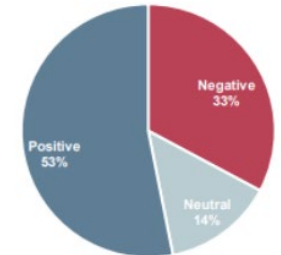
A short survey was created to gauge community sentiment, perceptions, and habits. The following is a summary of key findings from the nearly 100 surveys collected. Other key findings can be noted throughout the document.

Please offer a word or phrase that you use to describe downtown Clinton today.



**Negative words:** Dilapidated, empty, rundown, struggling, under-utilized, etc.  
**Neutral words:** Limited attraction, trying, underwhelming, stagnant, potential, etc.  
**Positive words:** Beautiful, progressive, reviving, eclectic, local, etc.

What will downtown Clinton look like about 25 years from now? Use your own word or phrase to describe what you envision for the area.



**Negative words:** Empty, same, abandoned, vacant, etc.  
**Neutral words:** "if" phrases, great IF we can bring in new companies, the same IF we don't we can modernize it, etc.  
**Positive words:** Funky cool urban zone, vibrant, lively, updated nostalgia, full of life, a meeting place, clean and well kept, full store fronts, etc.



# Existing Site

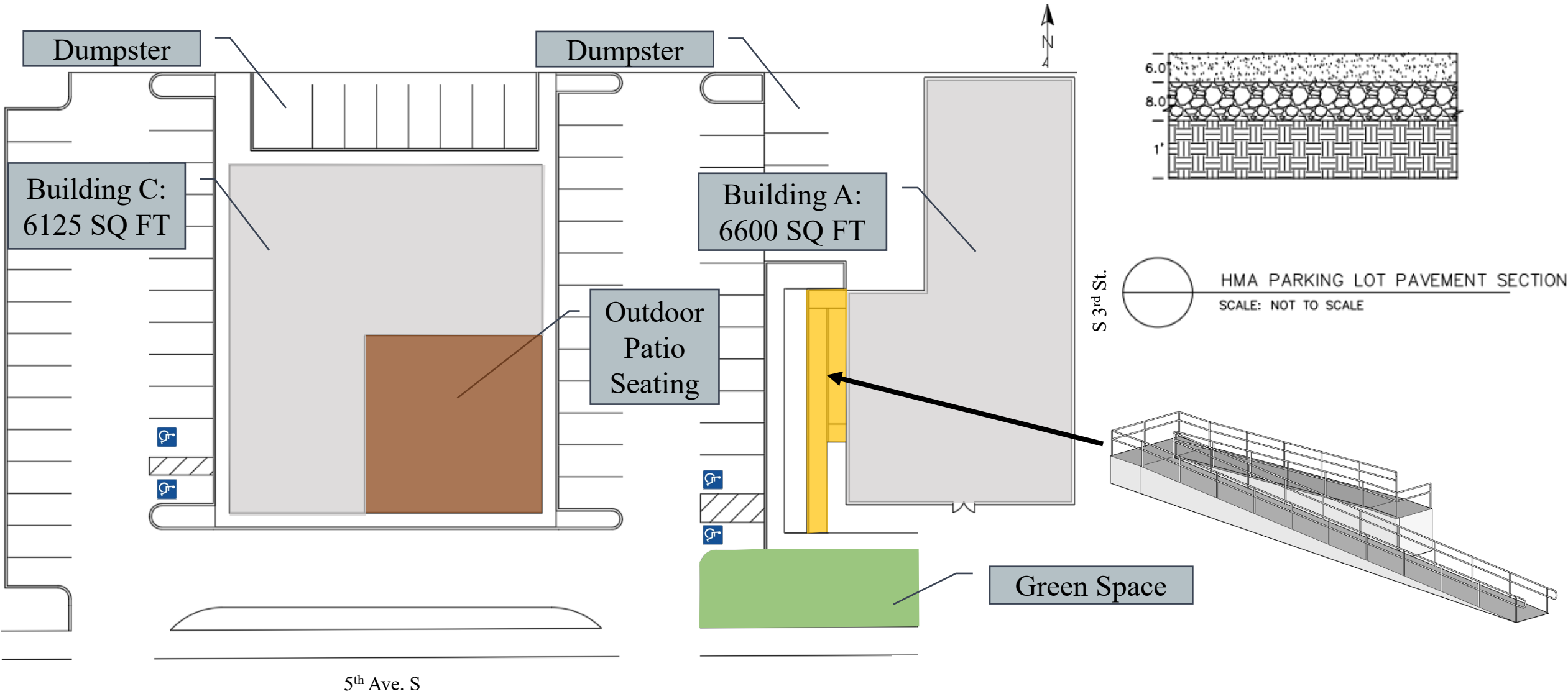


# Designed Layout

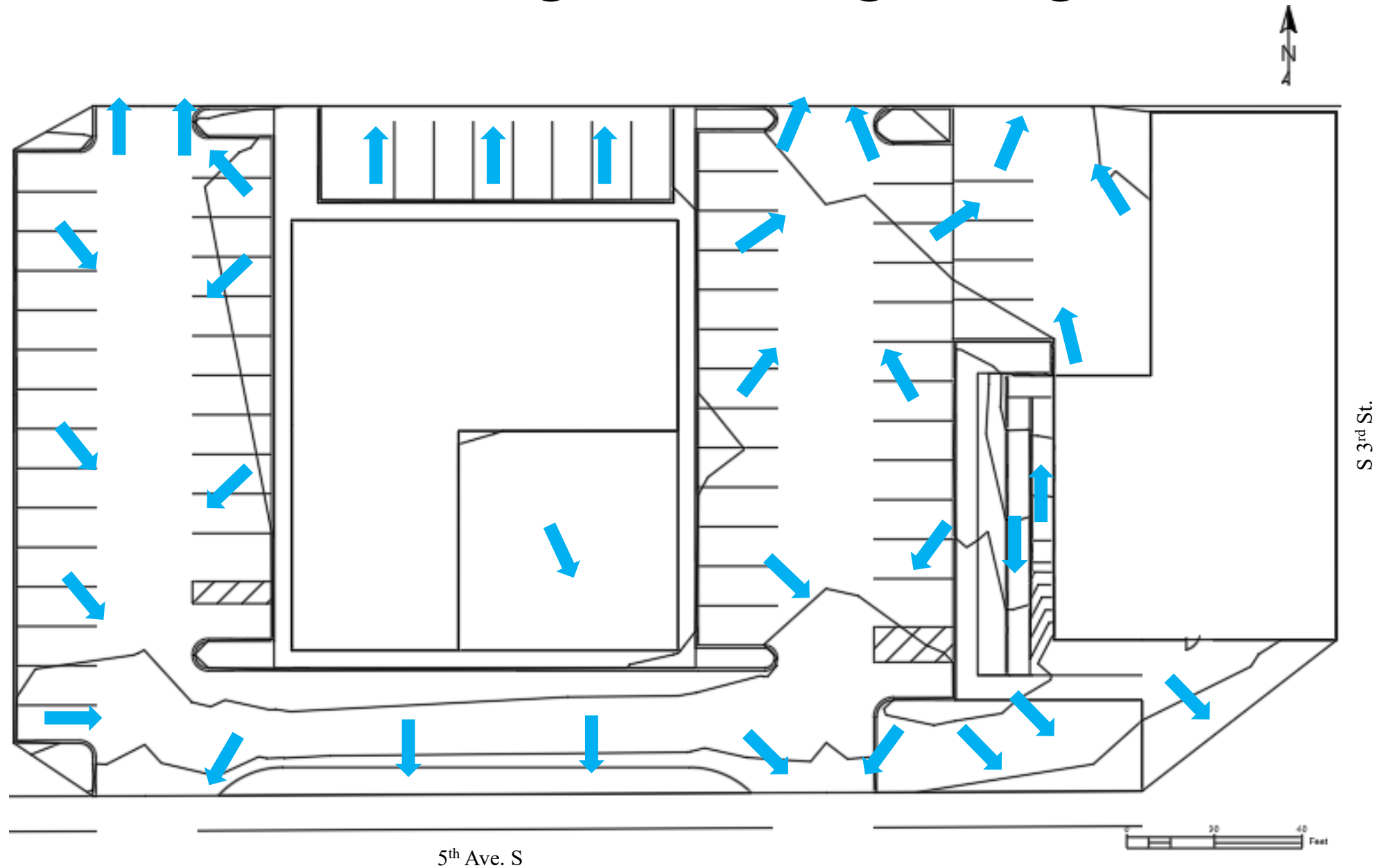




# Civil Design: Site Design



# Civil Design: Grading Design





# Architectural Rendering of Building A





# Architectural Design: Building A Basement





# Architectural Design: Building A 1<sup>st</sup> Floor



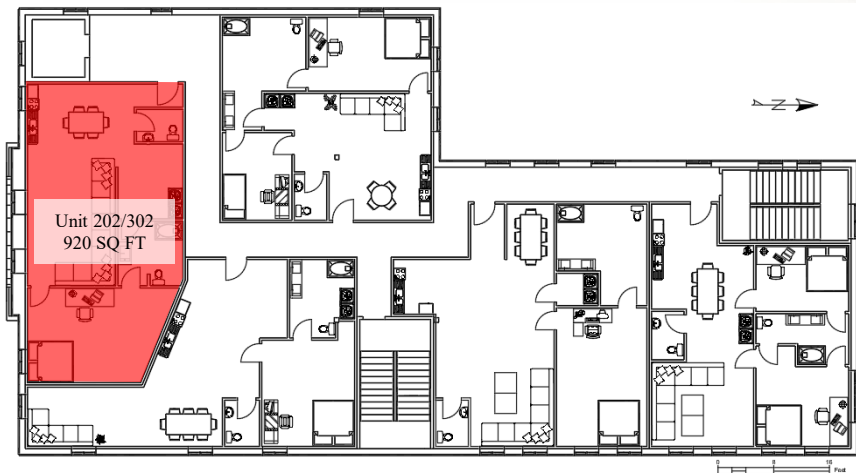


# Architectural Design: Building A 2<sup>nd</sup> and 3<sup>rd</sup> Floor

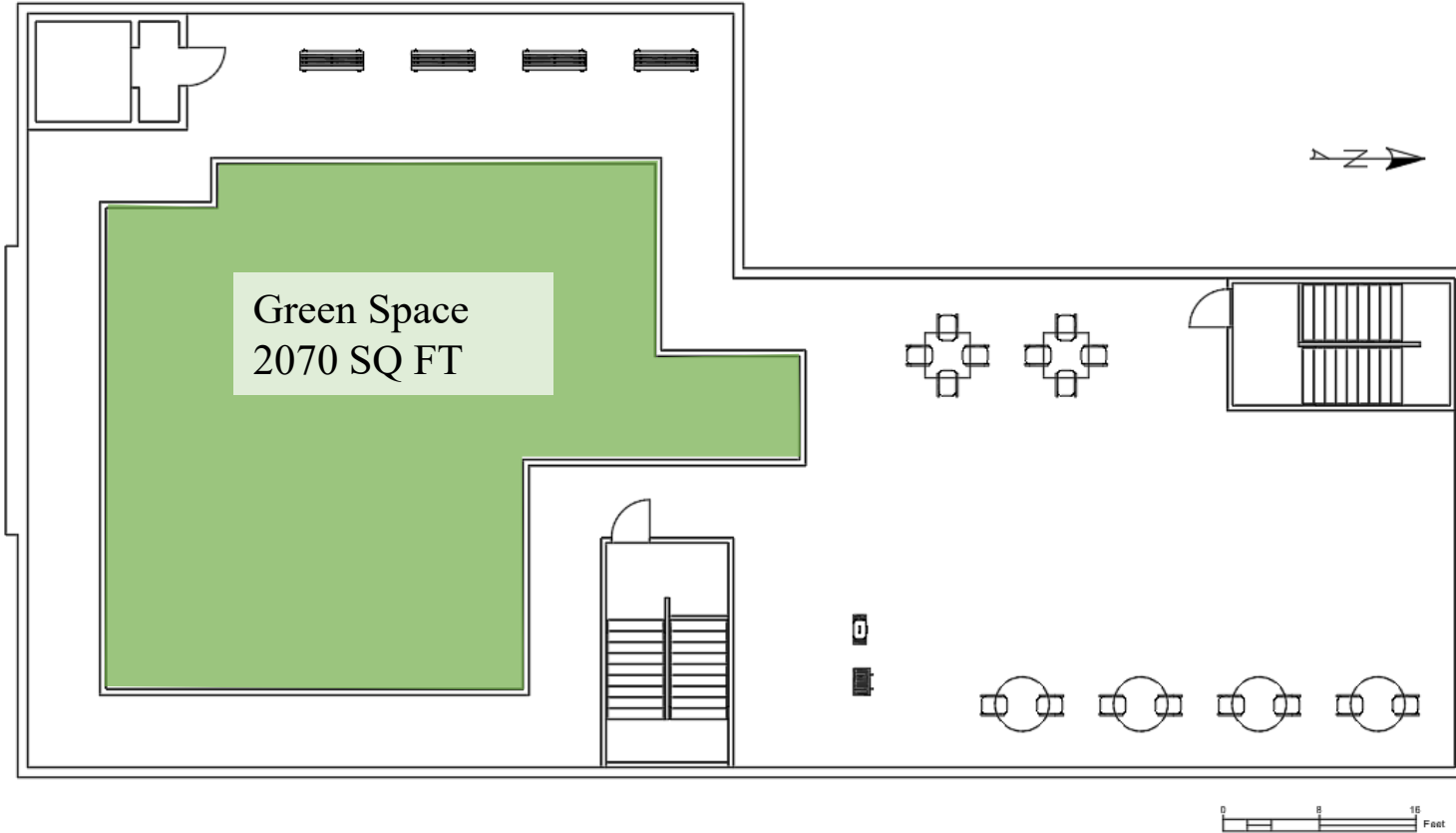




# Architectural Design: Interior Rendering



# Architectural Design: Building A Roof

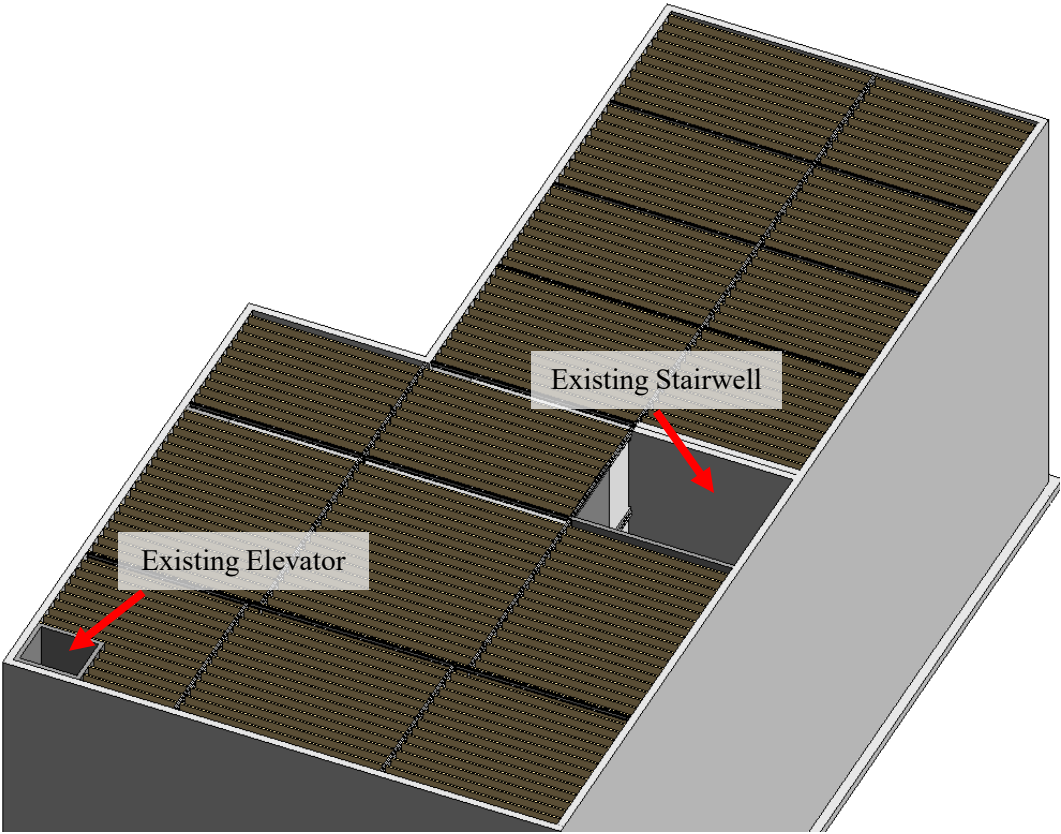


Rooftop Patio Schematic

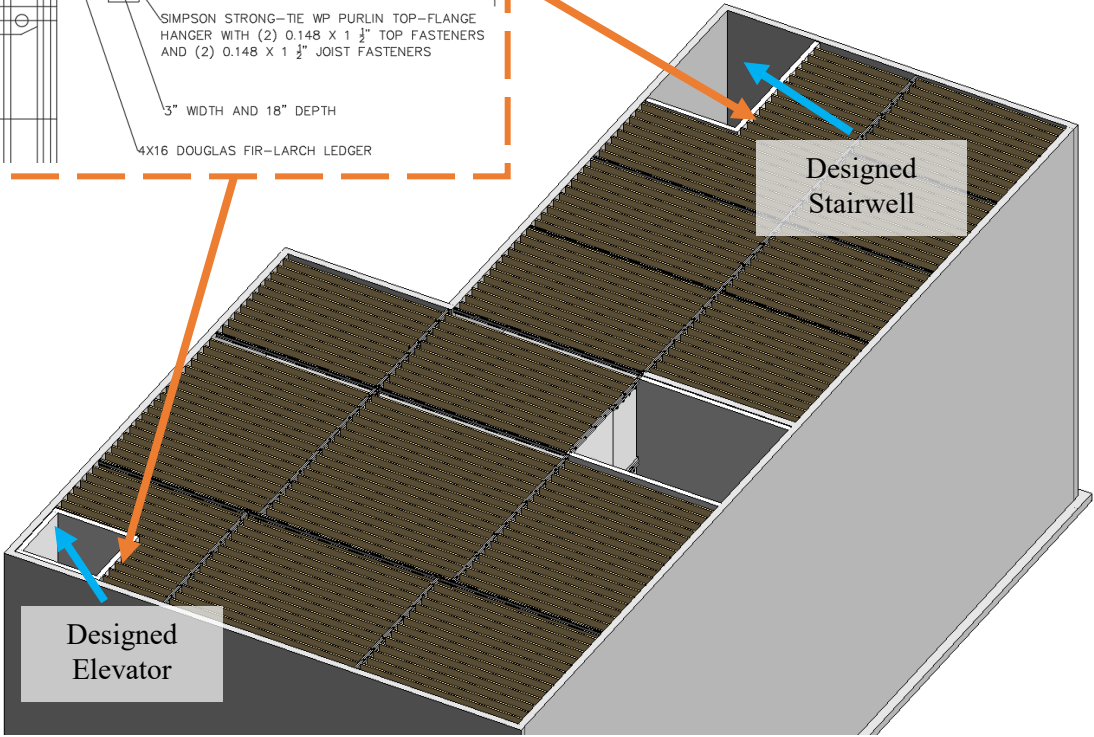
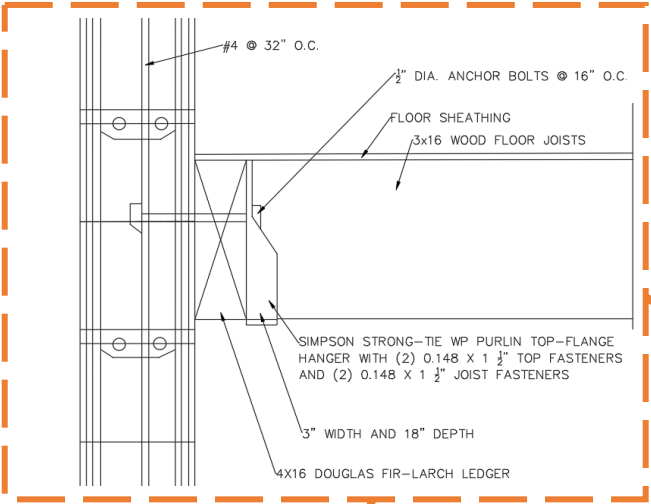




# Structural Design: Building A Roof Framing

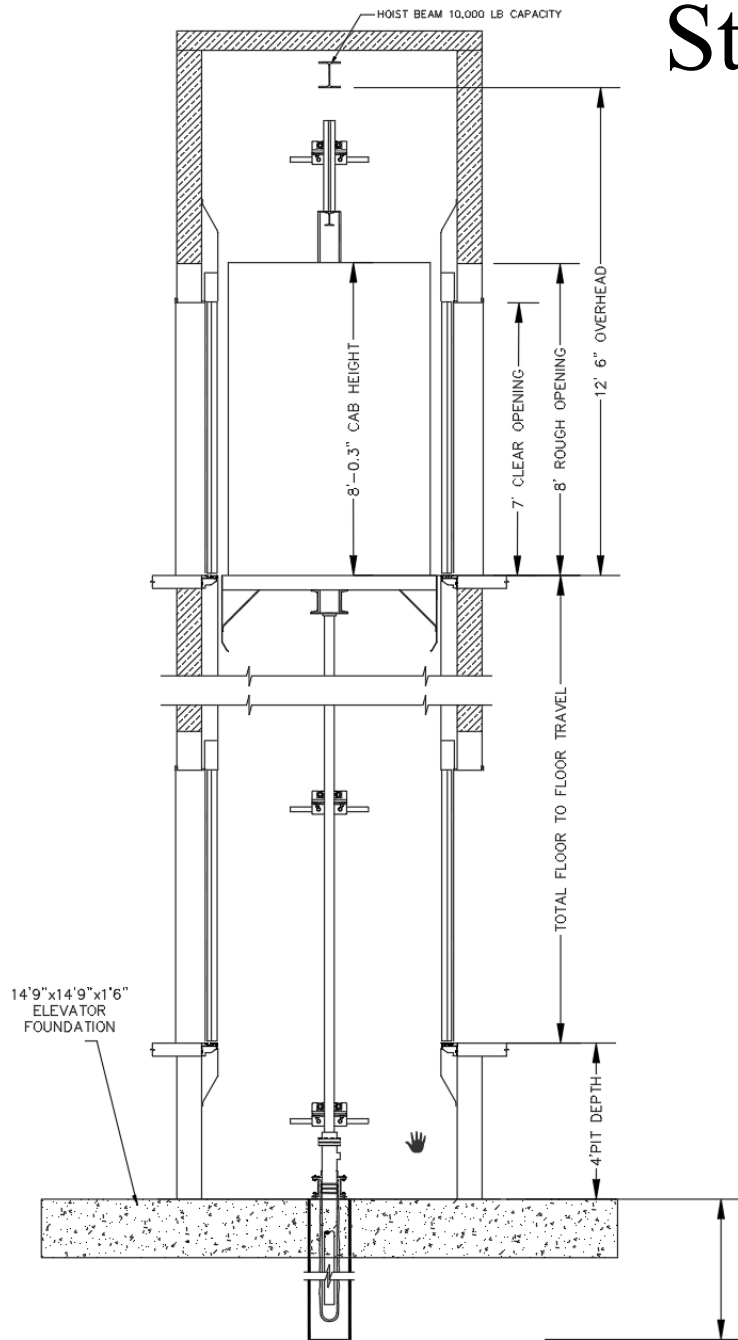


Existing Roof Framing

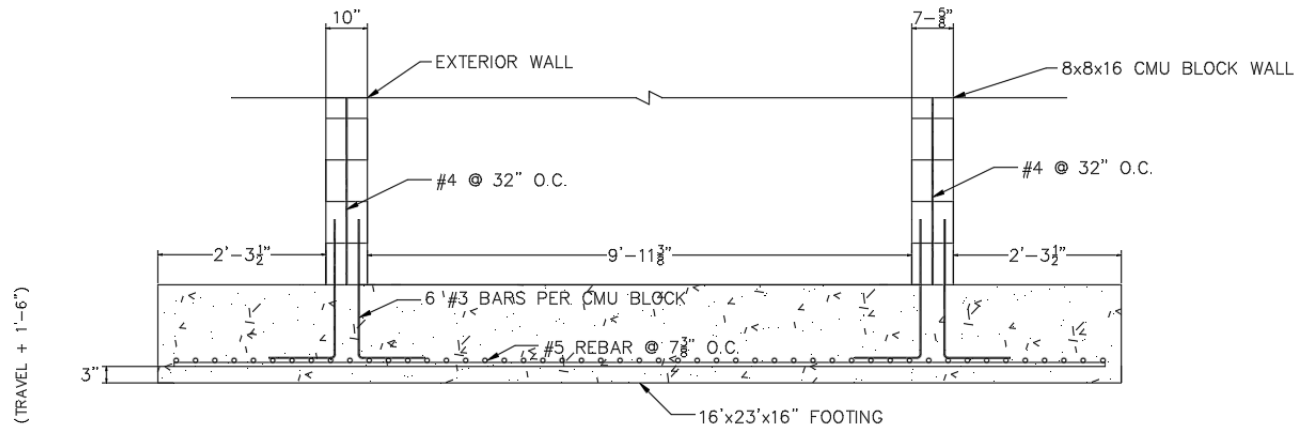
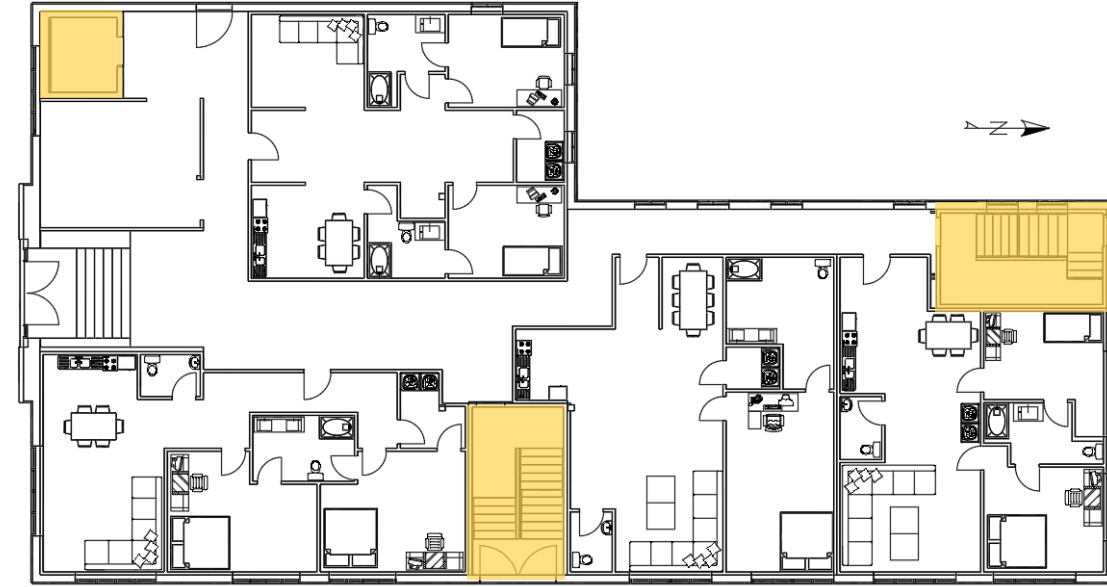


Designed Roof Framing

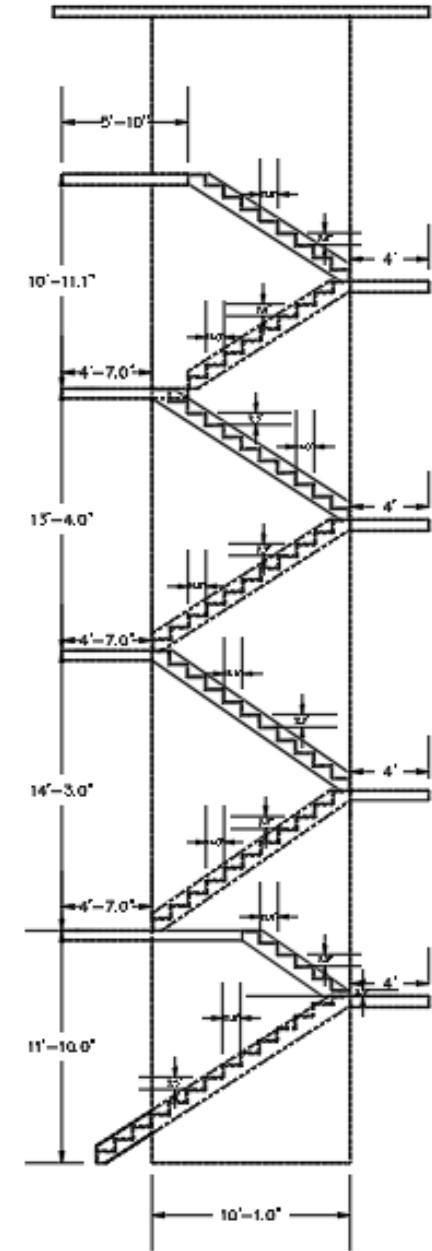
# Structural Design: Building A Stair and Elevator Shaft



ELEVATOR SHAFT: PROFILE VIEW  
SCALE: NOT TO SCALE



ELEVATOR FOOTING N-S SECTION VIEW  
SCALE: NOT TO SCALE



APARTMENT STAIRWELL CROSS SECTION  
SCALE: NOT TO SCALE



# Architectural Rendering of Building C





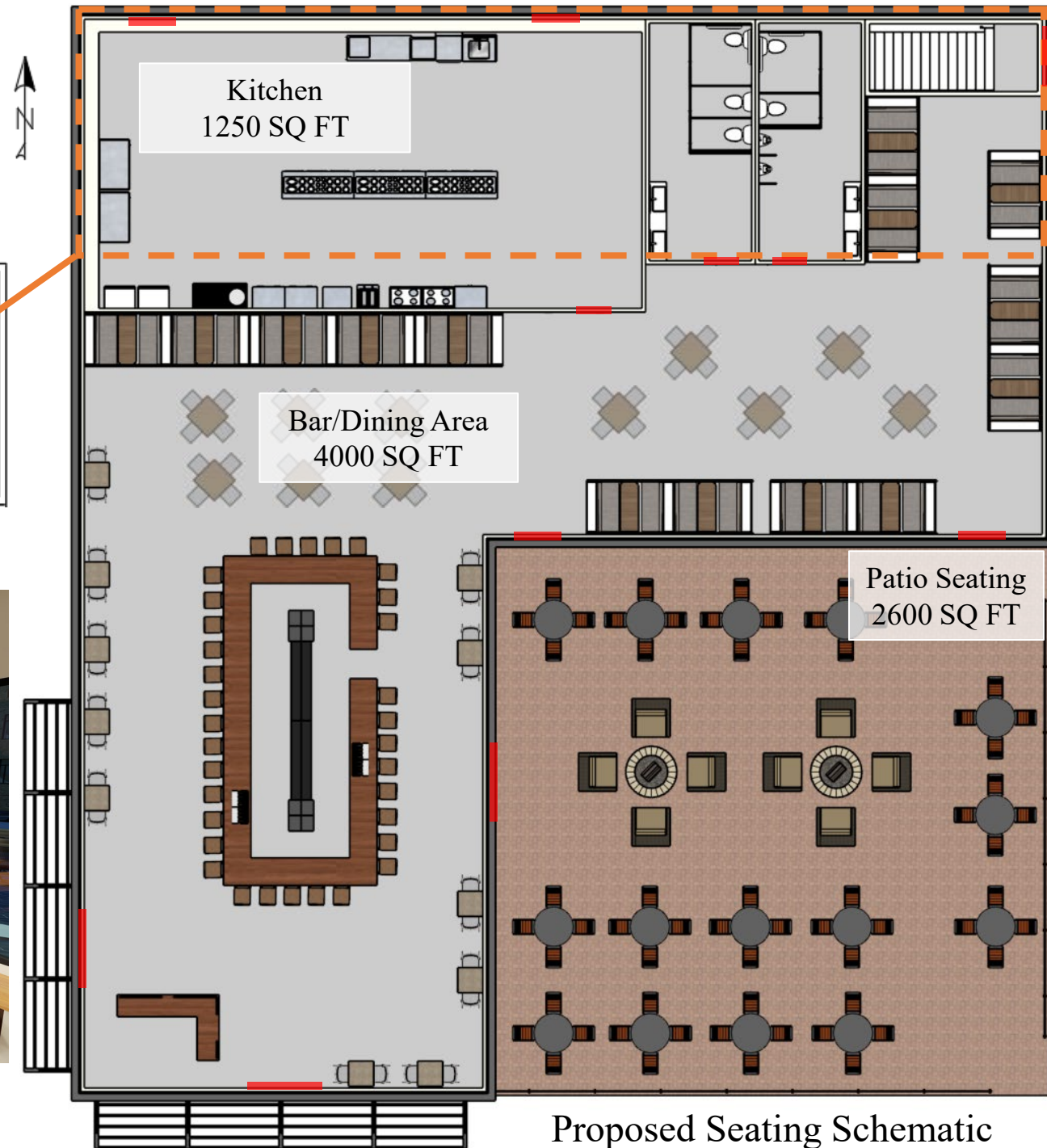
# Architectural Design: Building C



Basement Floor Plan



Interior Rendering

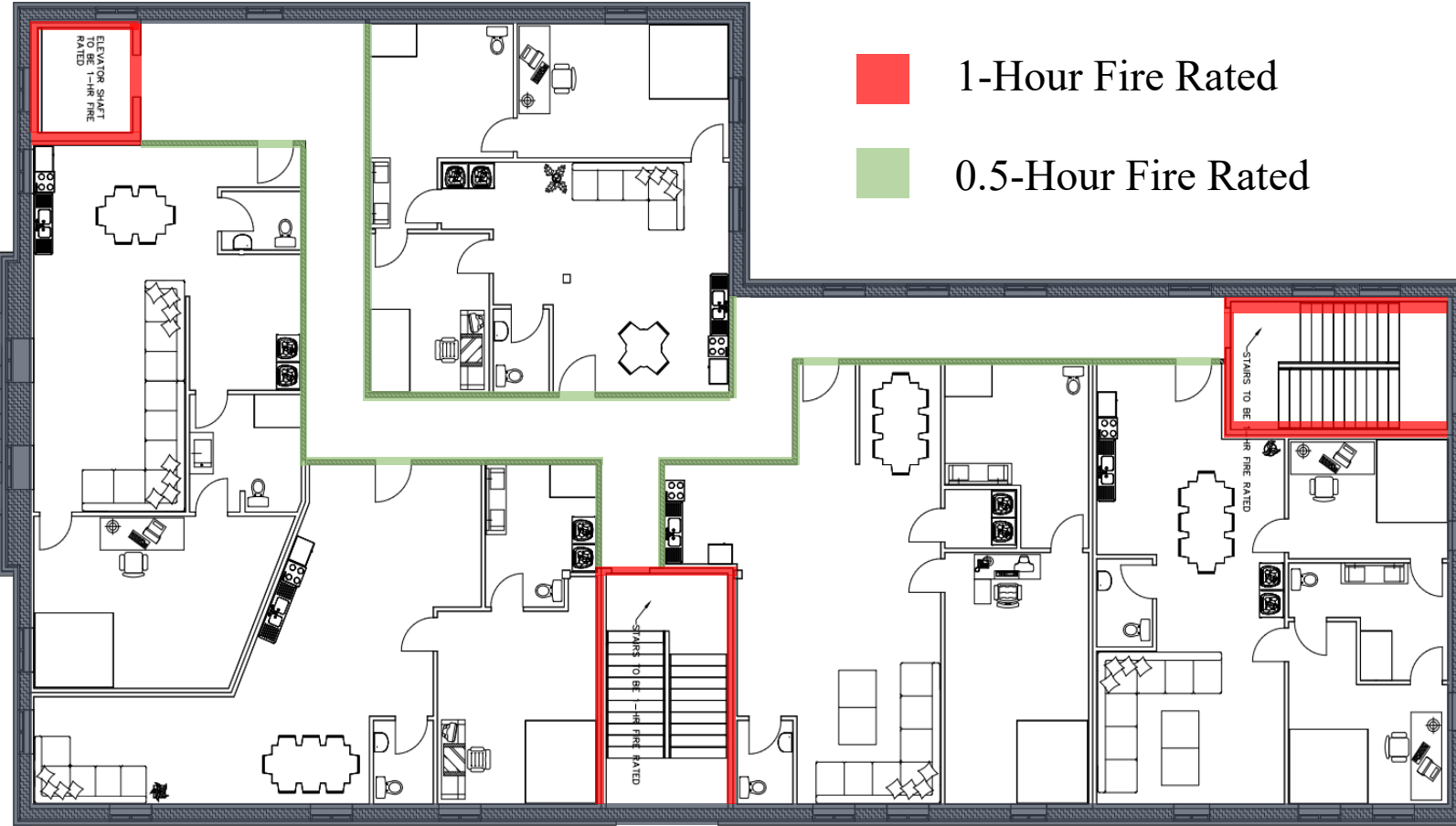


Proposed Seating Schematic

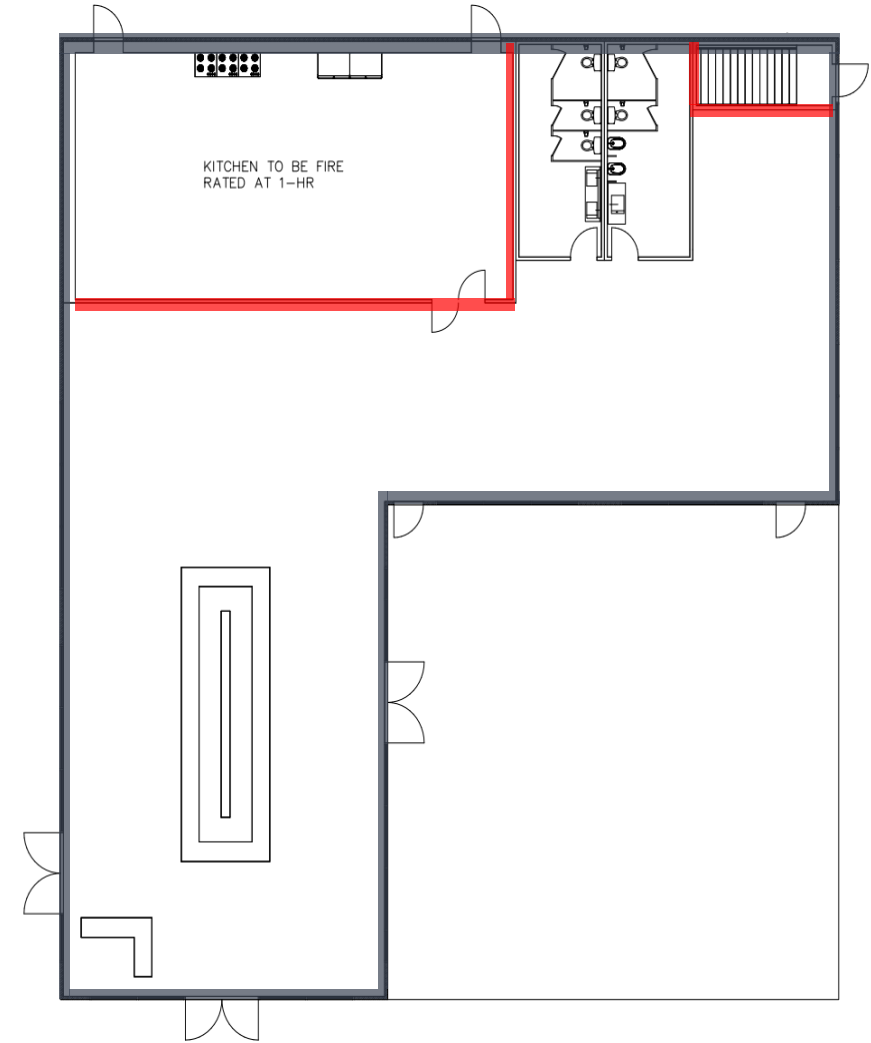


# Fire Rating Design and Specifications

- 2-Hour Fire Rated
- 1-Hour Fire Rated
- 0.5-Hour Fire Rated

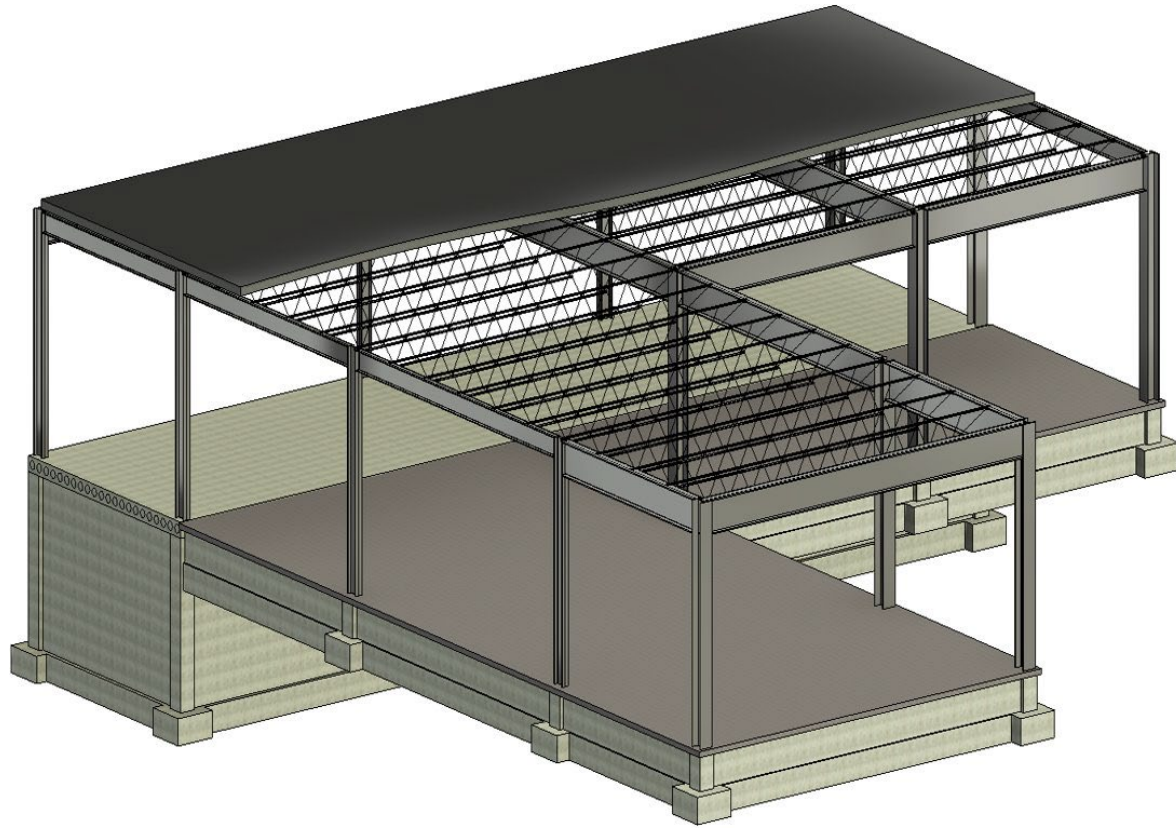


Building A: 2<sup>nd</sup> and 3<sup>rd</sup> Floor Fire Proofing Plan

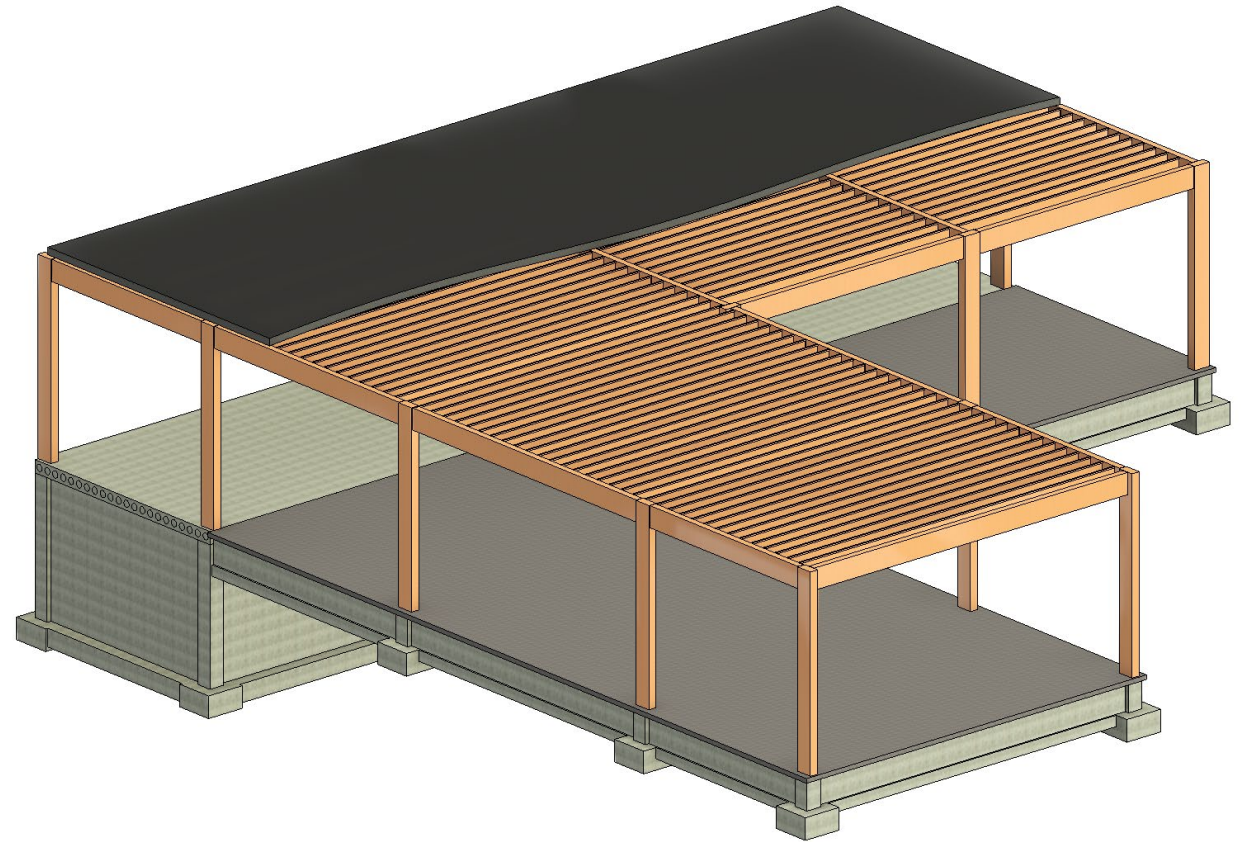


Building C: Fire Proofing Plan

# Selection of Structural Materials: Building C



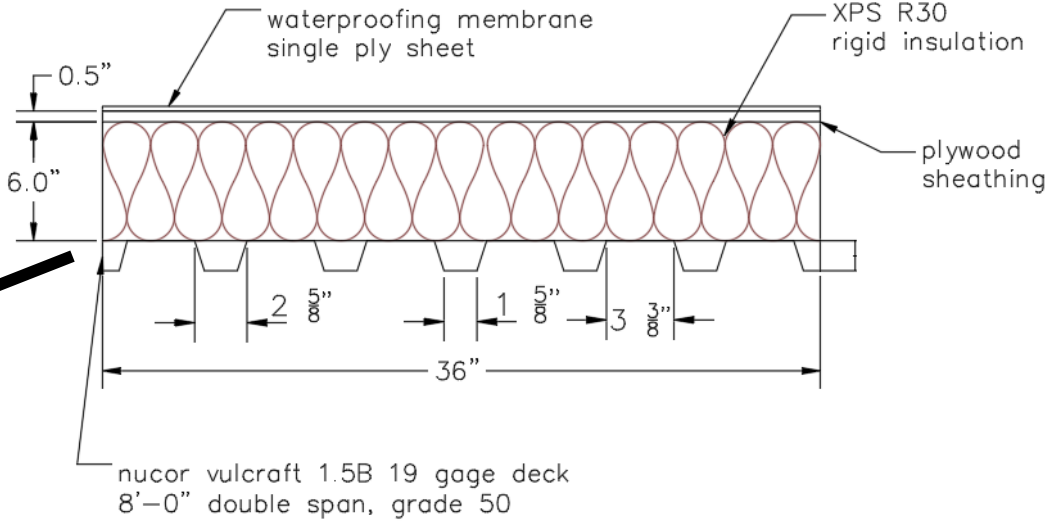
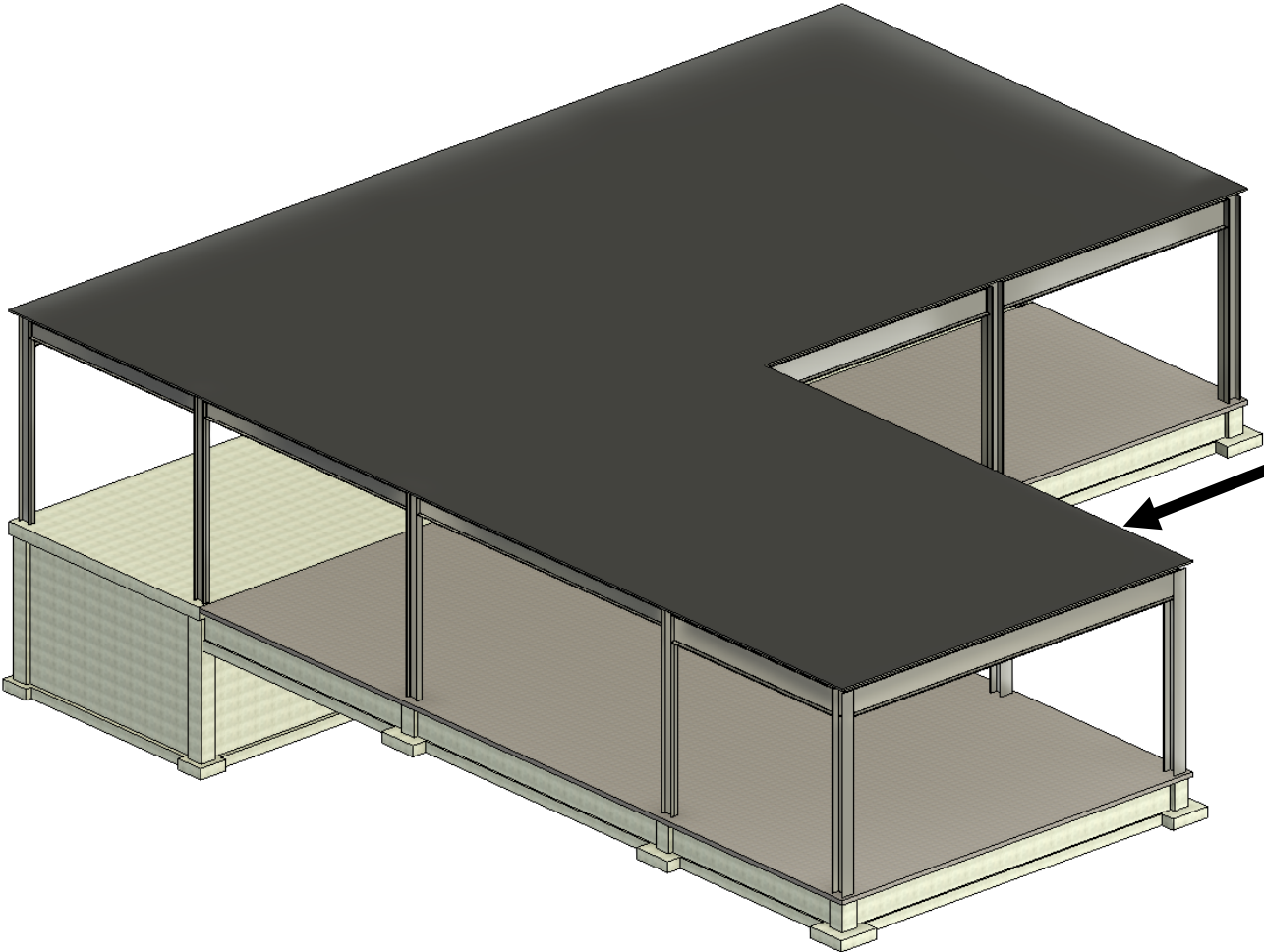
Steel Framing



Wood Framing

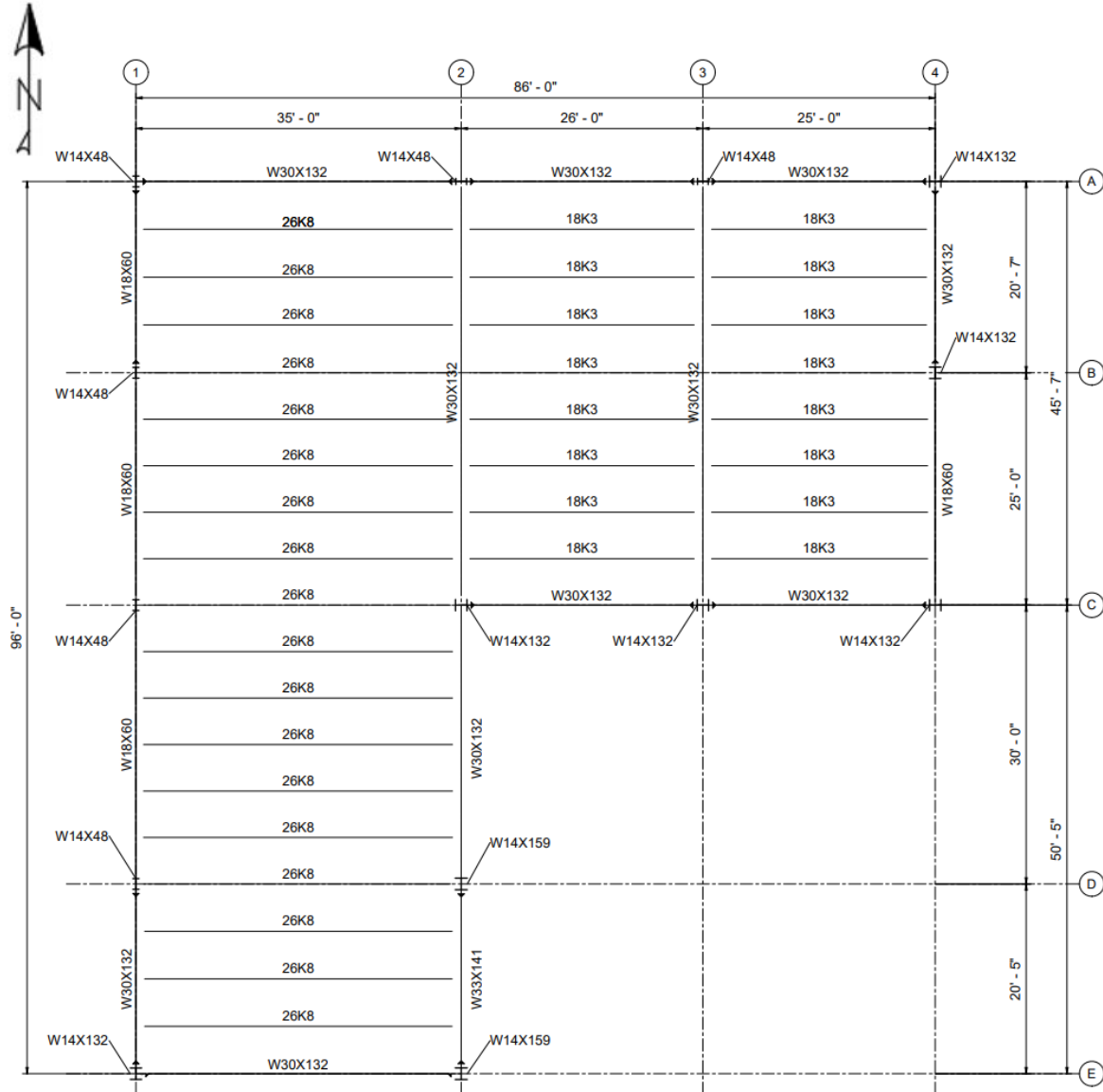


# Design of Roof Structure: Building C

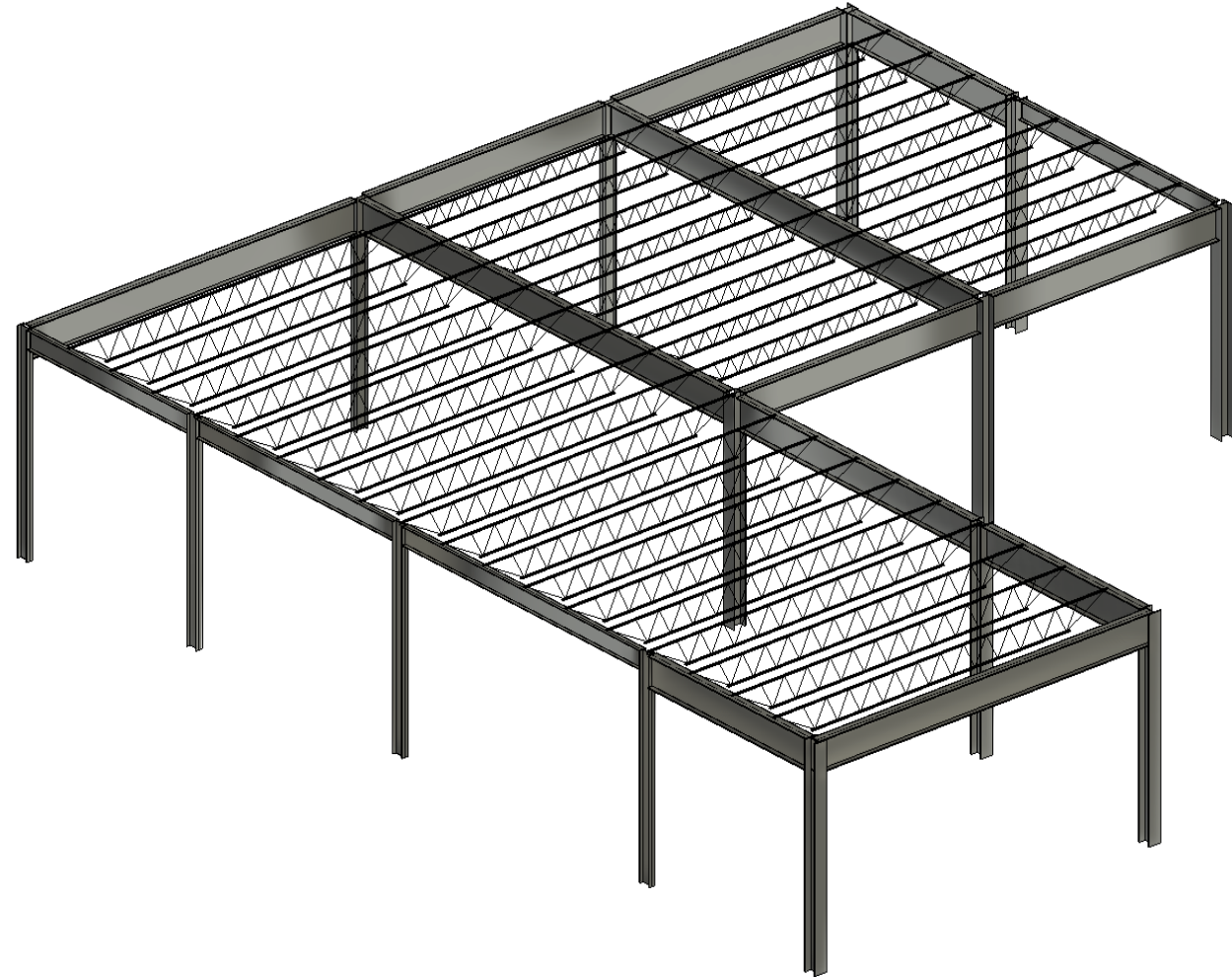


DECK AND ROOF: PROFILE VIEW  
SCALE: NOT TO SCALE

# Framing Plan: Building C

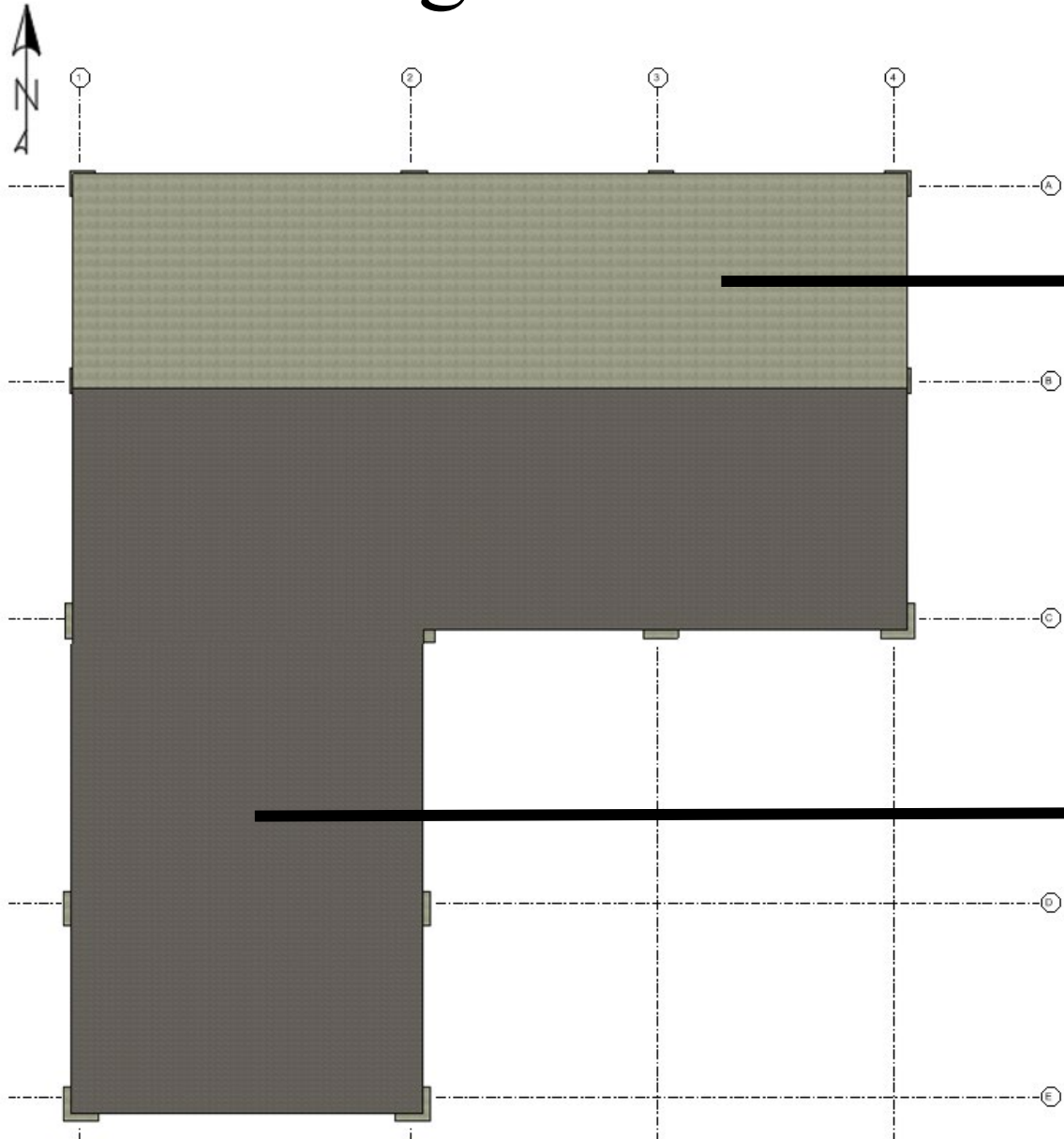


Level 1 Framing Plan





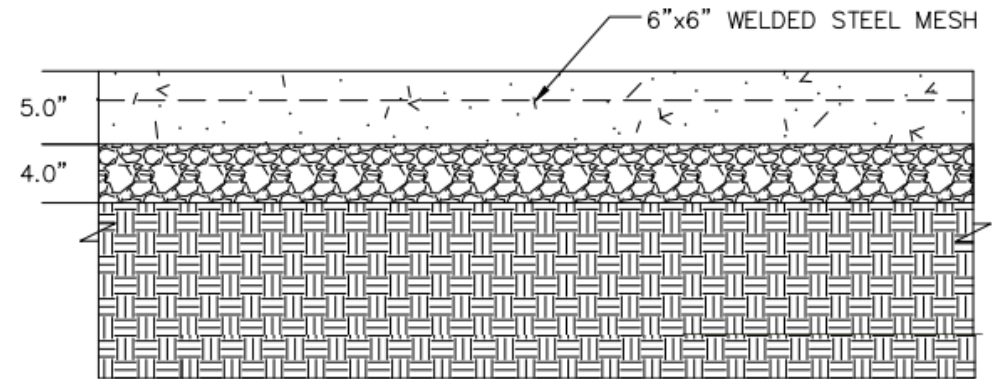
# Design of First Floor Structure: Building C



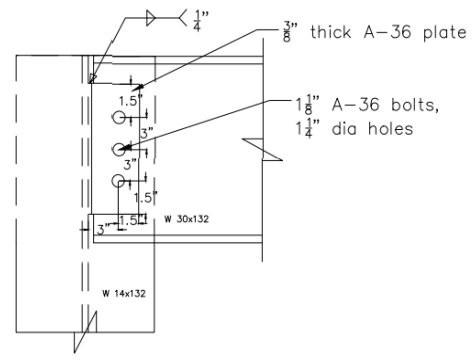
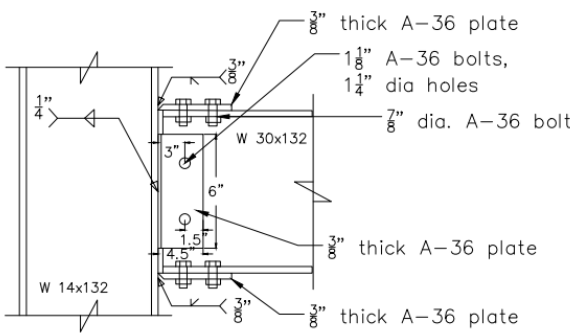
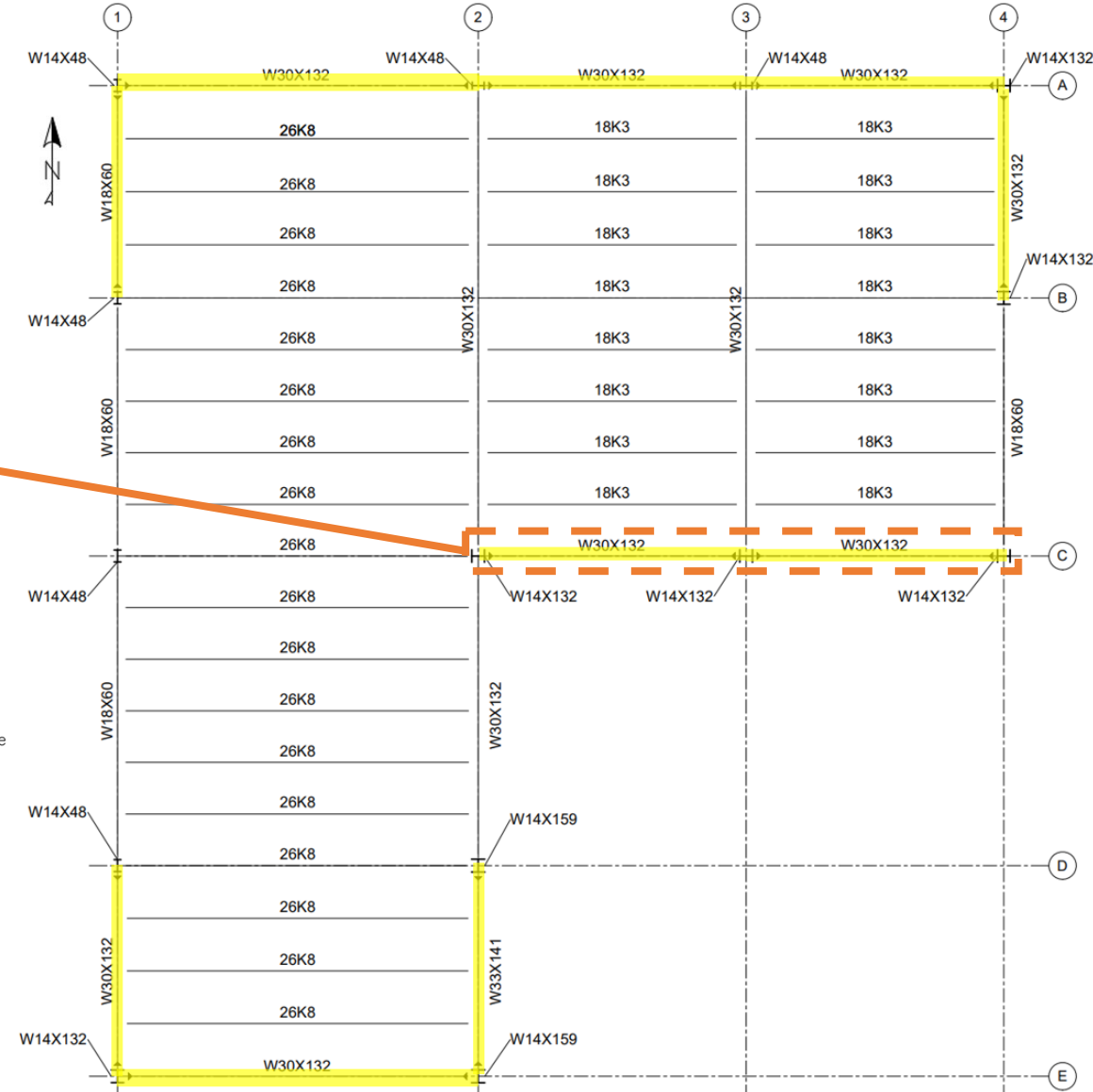
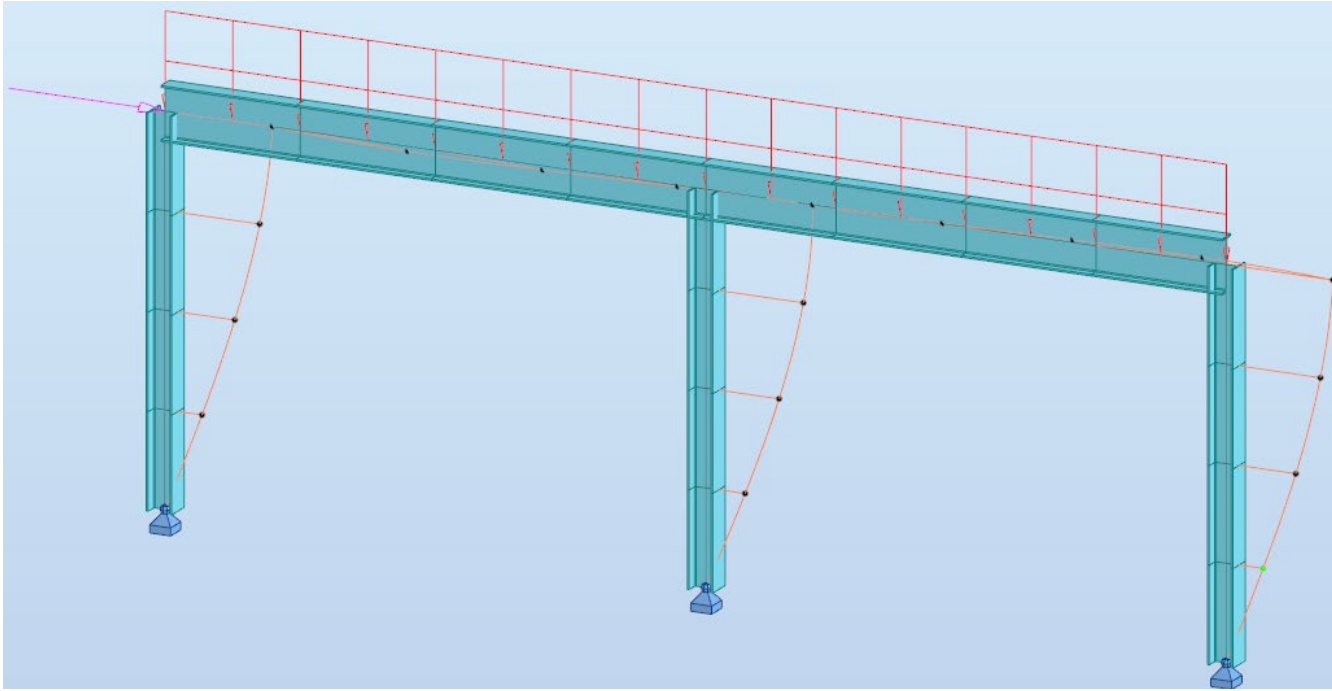
First Floor Slab and Structure Plan

① Slab  
1/4" = 1'-0"

4HC10 + 2" NORMAL-WEIGHT TOPPING  
(STRAND PATTERN 58-S)



# Structural Design: Building C Moment Frame and Story Drift Analysis

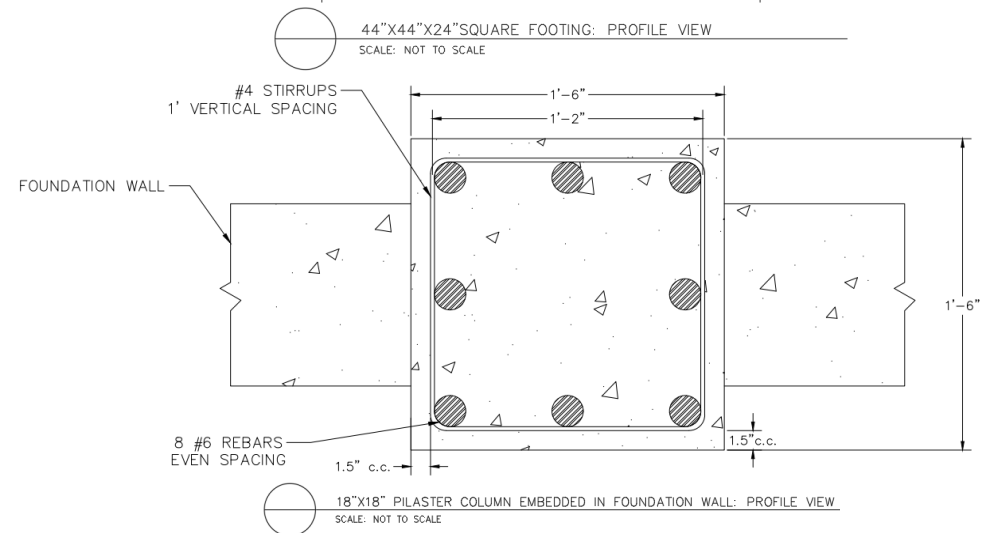
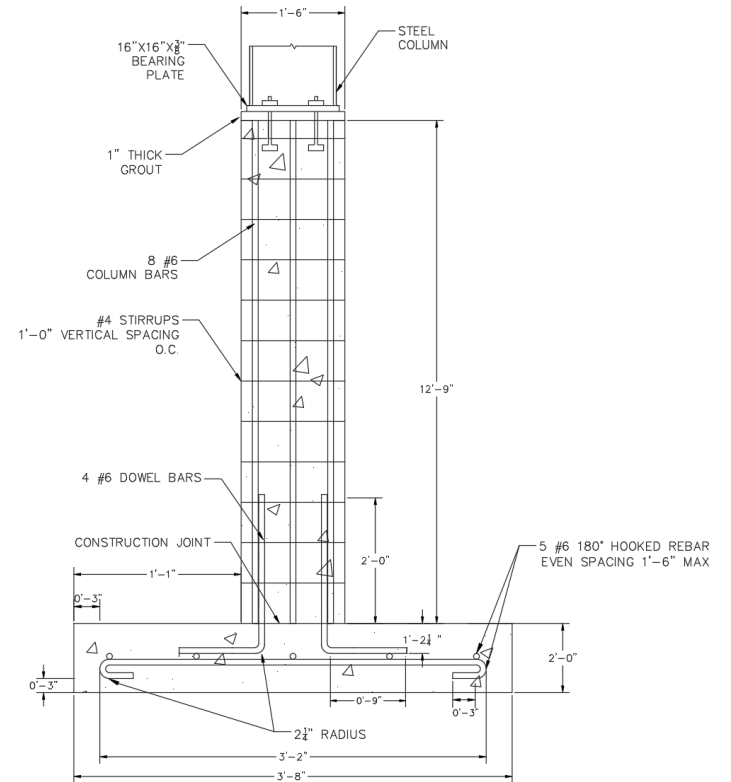
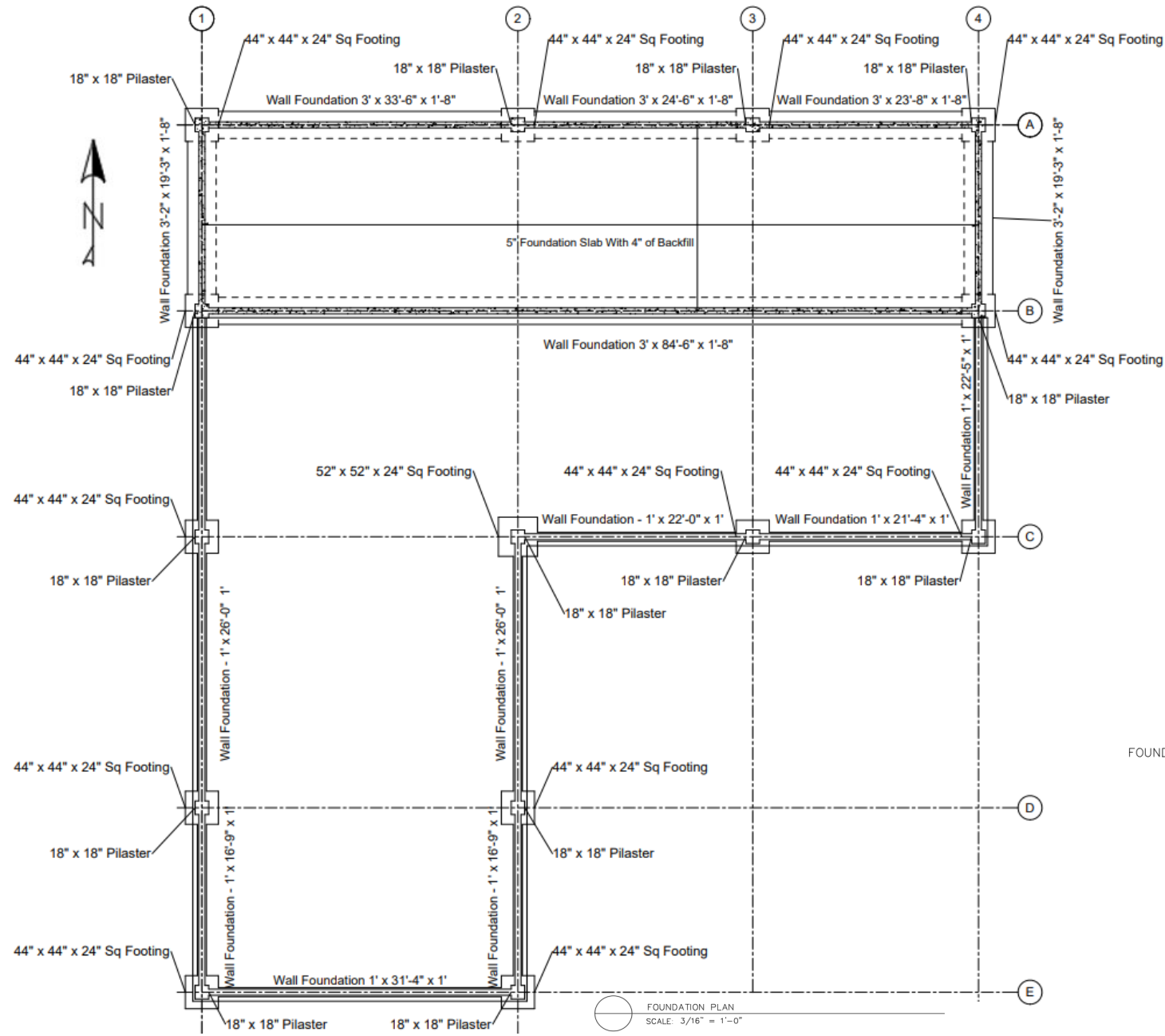


MOMENT FRAME CONNECTION : PROFILE VIEW  
SCALE: NOT TO SCALE

SHEAR CONNECTION : PROFILE VIEW  
SCALE: NOT TO SCALE



# Structural Design: Building C Foundation



# Construction Cost Estimate

Discipline	Cost (USD)
Demolition	\$ 671,874
Site	\$ 554,221
Structural	\$ 2,252,547
Architectural	\$ 2,169,650
MEP	\$ 4,017,530
Materials and Labor Subtotal	\$ 9,665,822

Construction Administration (20%) \$ 1,933,165

Contingency (15%) \$ 1,739,849

**Total Construction \$ 13,339,000**



