

University of Iowa Civil &
Environmental Engineering

Public Emergency Building



Maddie Donovan, Zach Kulisek, Colin Meehan, Taylor McCabe, Brynn Bailey, & Jacqueline Cabanas

May 8, 2026

IOWATM
CIVIL & ENVIRONMENTAL
ENGINEERING

OUR TEAM



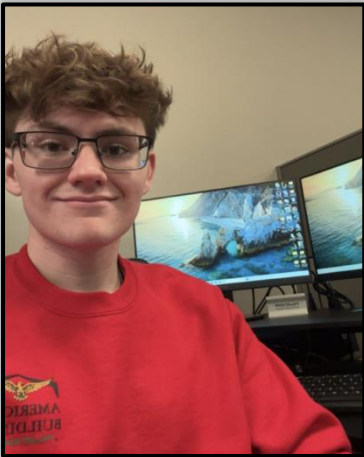
Maddie Donovan
Project Manager



**Zach
Kulisek**



**Jacqueline
Cabanas**



**Colin
Meehan**



**Taylor
McCabe**



**Brynn
Bailey**

OUTLINE

Site Location

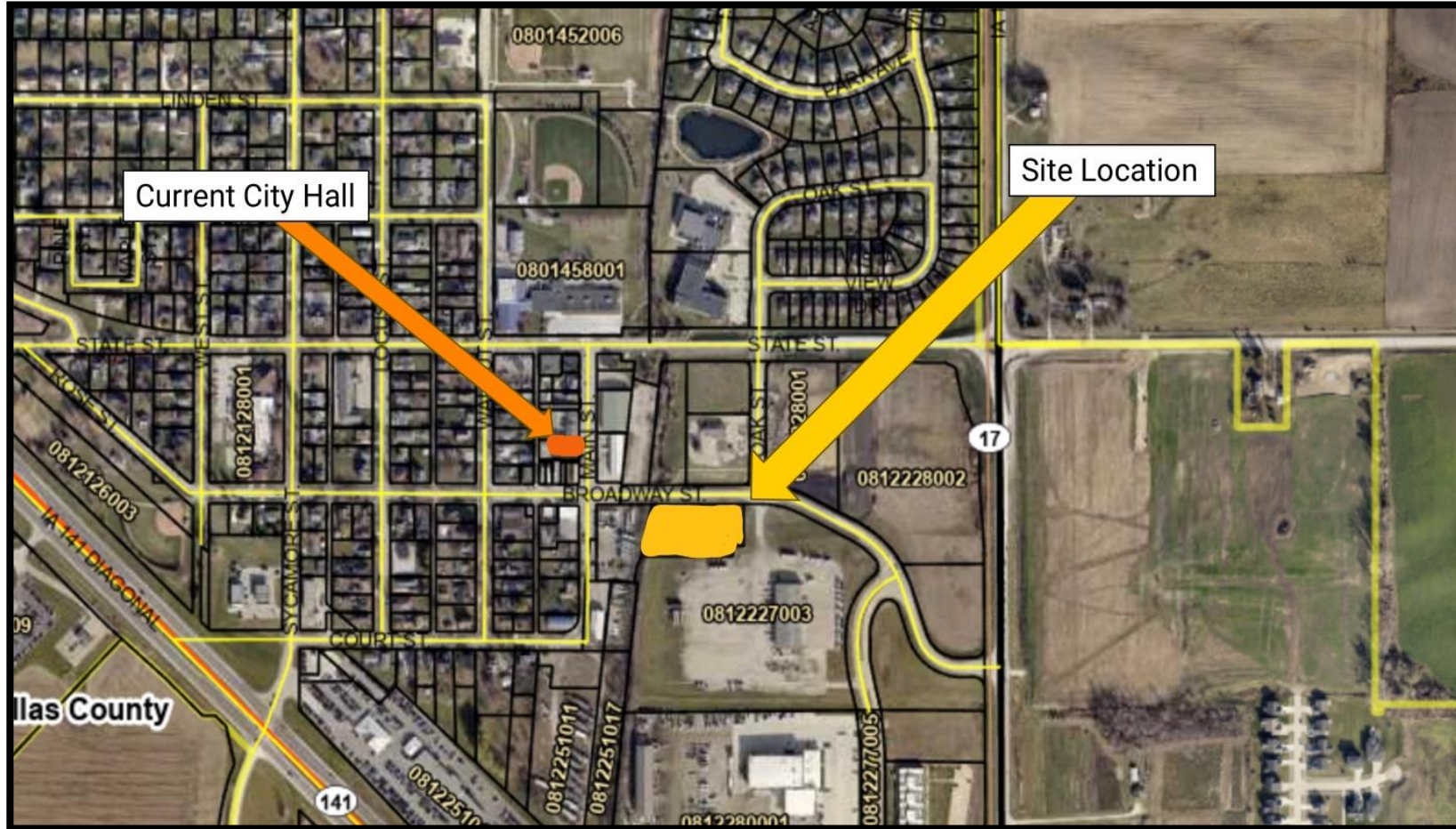
Project Description

Final Design

Cost Estimate and Questions



SITE LOCATION

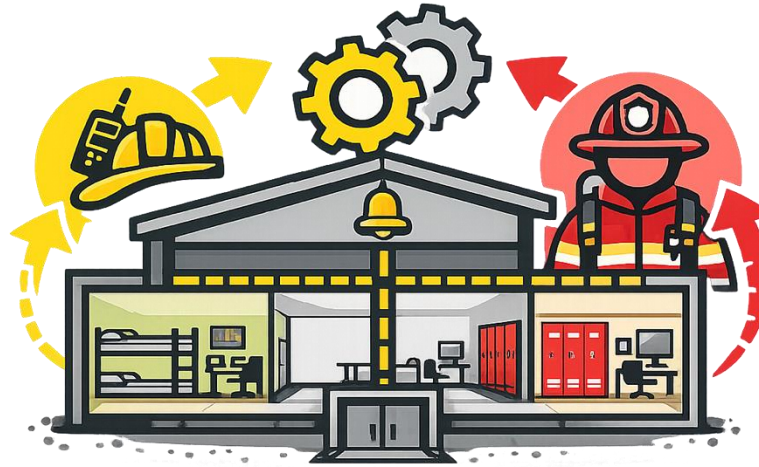


PROJECT GOALS



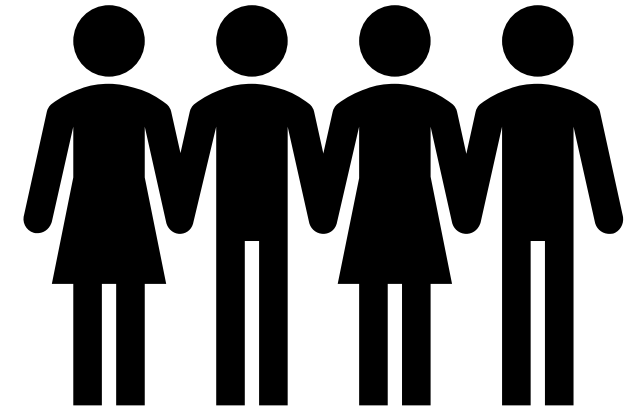
1

Strengthen emergency
response



2

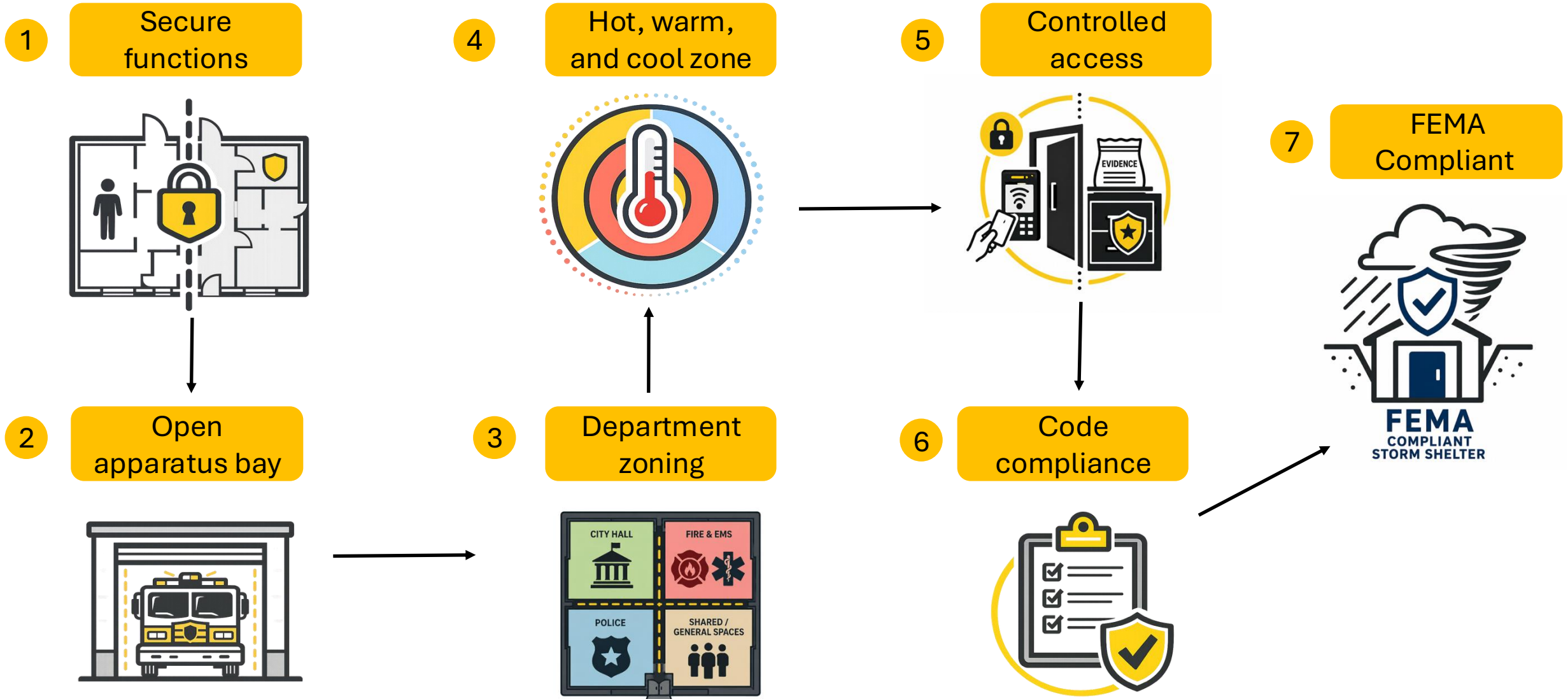
Flexible facility



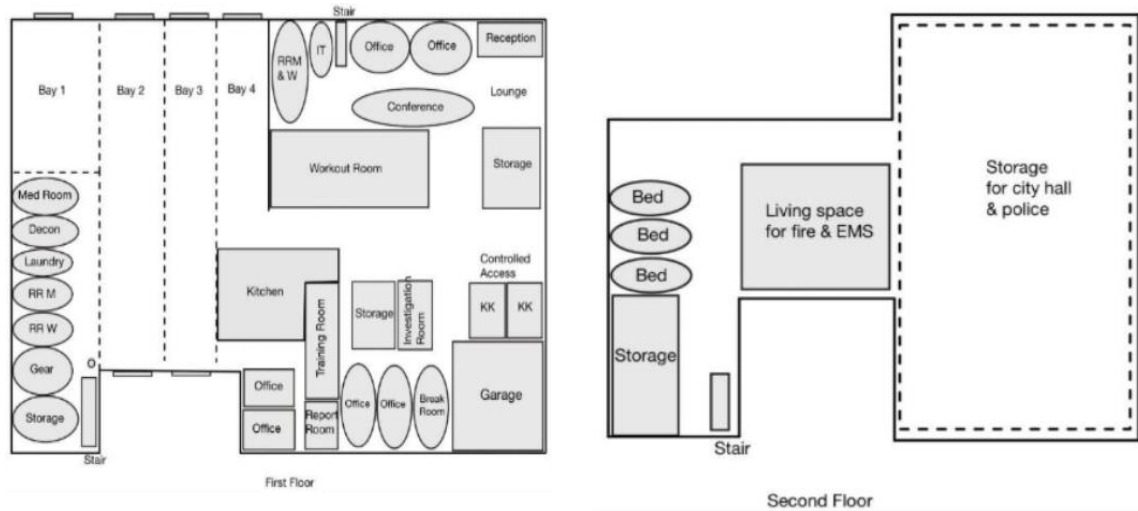
3

Strengthen community
interaction

PROJECT REQUIREMENTS



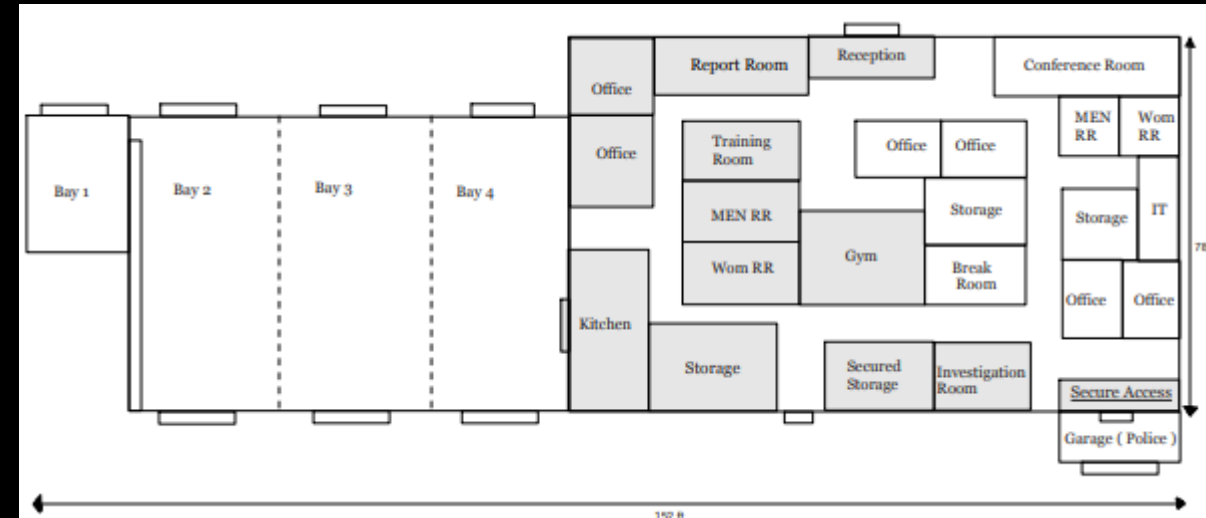
DESIGN ALTERNATIVES



Alternative #1

Pros: Maximized space

Cons: Reduced response efficiency, higher construction cost

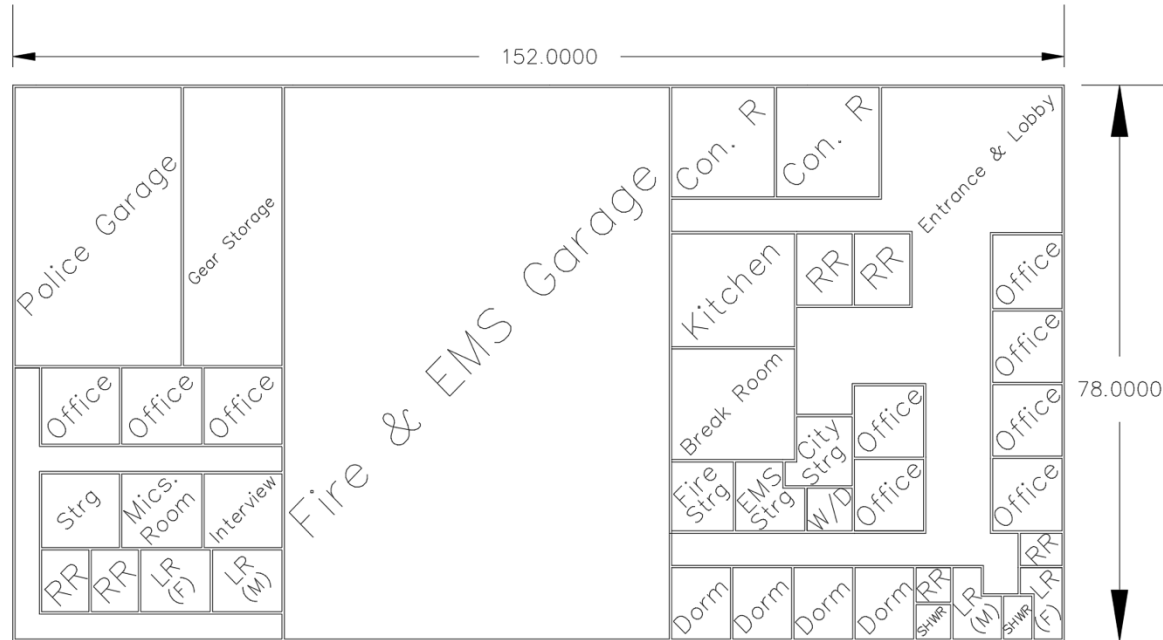


Alternative #2

Pros: Accessibility and compact design

Cons: Poor emergency circulation & privacy issues

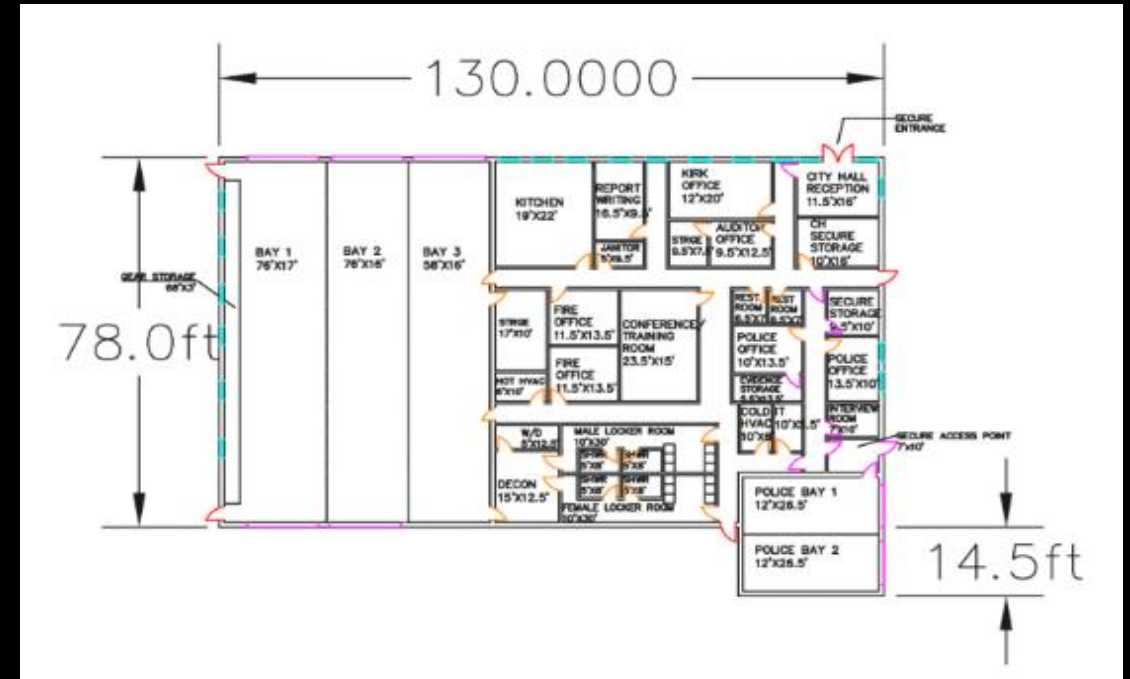
DESIGN ALTERNATIVES



Alternative #3

Pros: Strong safety and zoning

Cons: Mechanical complexity and limited expansion



Alternative #4

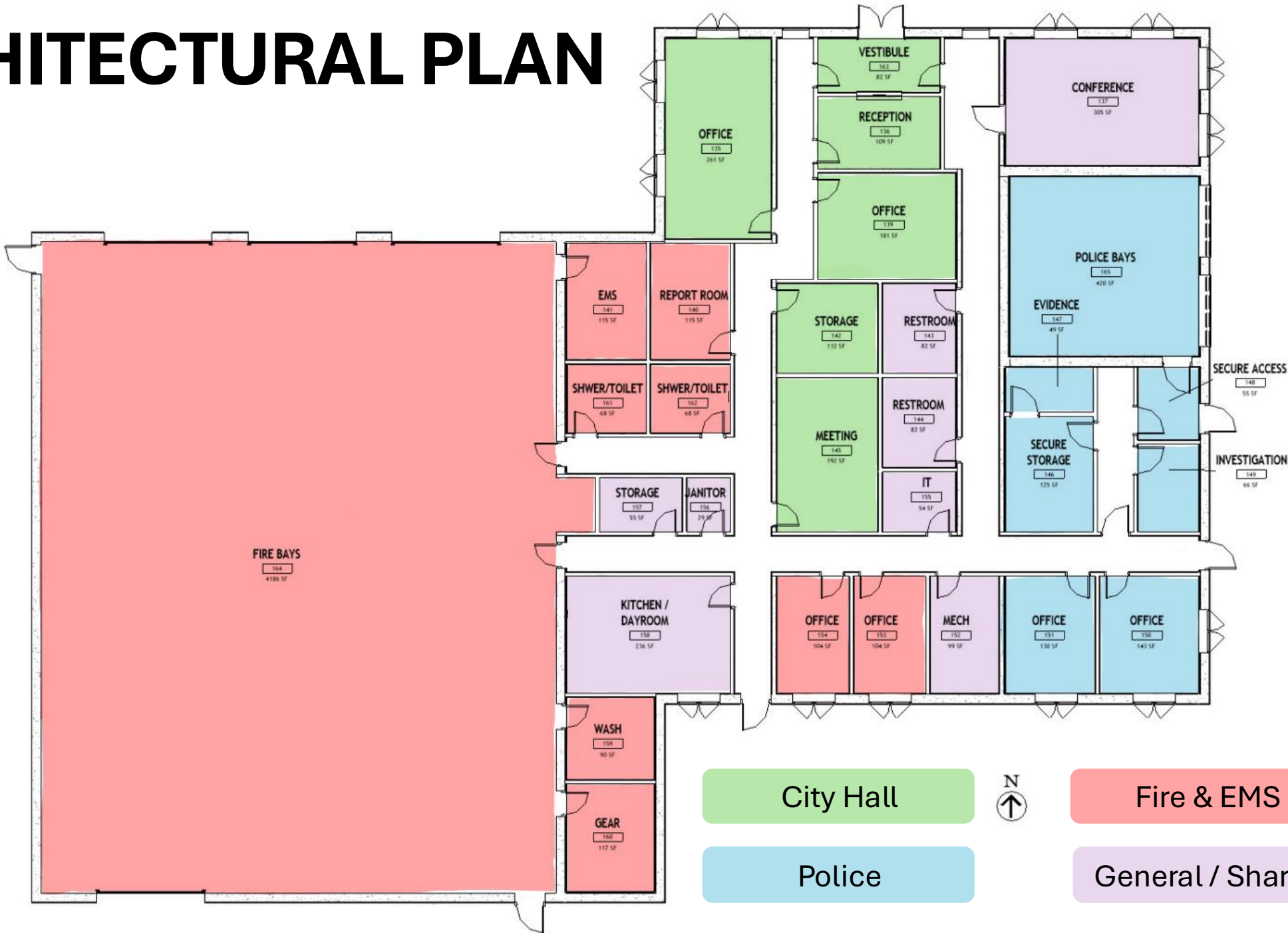
Pros: Efficient, compact design, affordable

Cons: Building Dimension Constraints

FINAL DESIGN



ARCHITECTURAL PLAN



HOT, WARM, AND COOL ZONES



VESTIBULE / RECEPTION



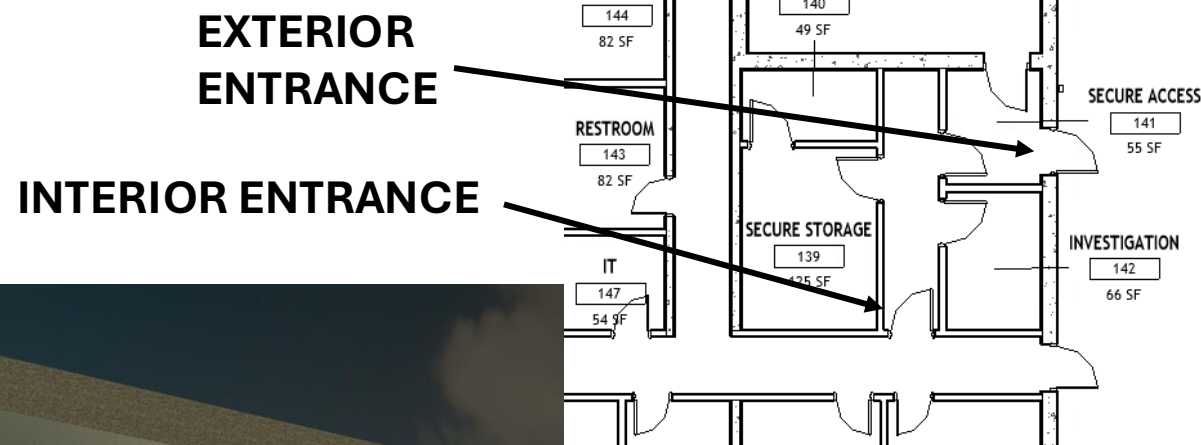
CONFERENCE ROOM / MEETING ROOM



POLICE BAYS



SECURE ACCESS





KITCHEN / DAY ROOM

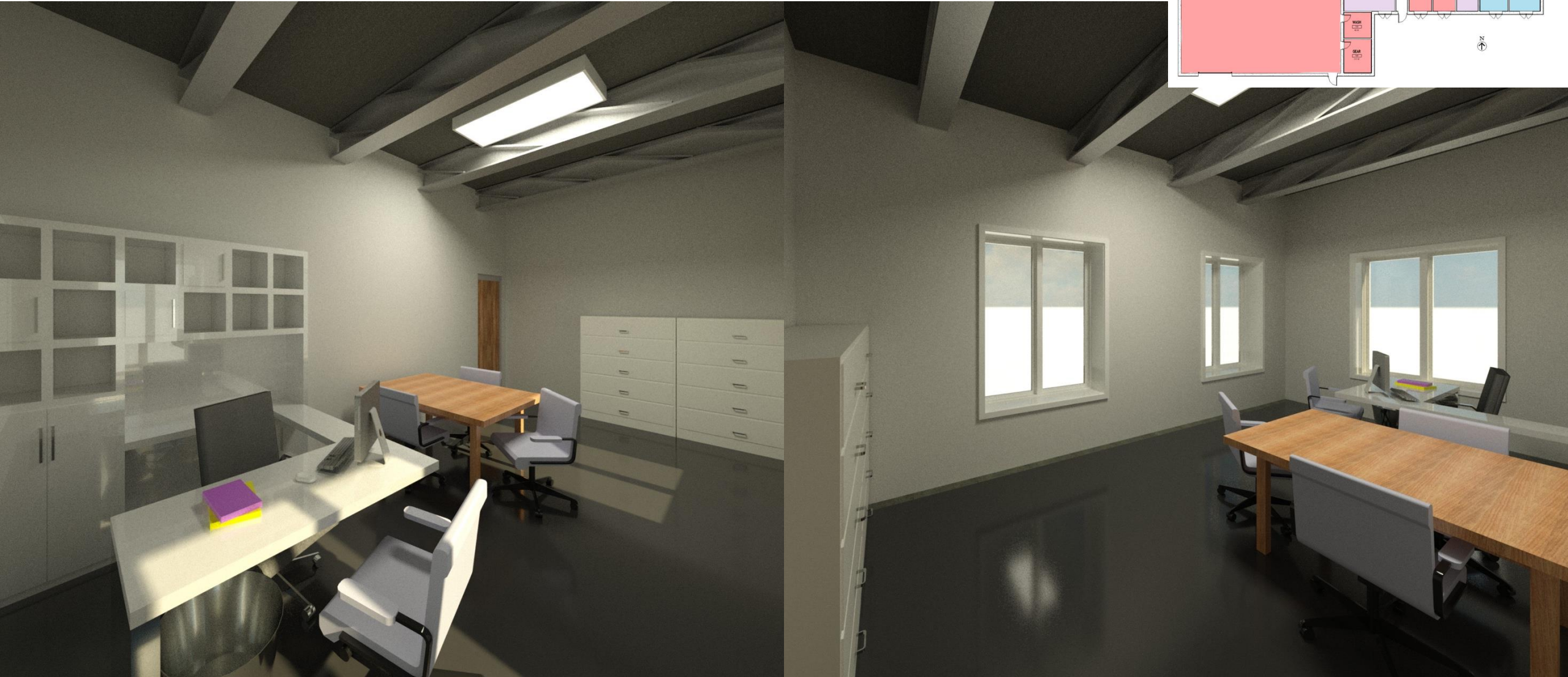


WASHROOM / GEAR / BAYS





CITY HALL OFFICE / FLEX SPACE

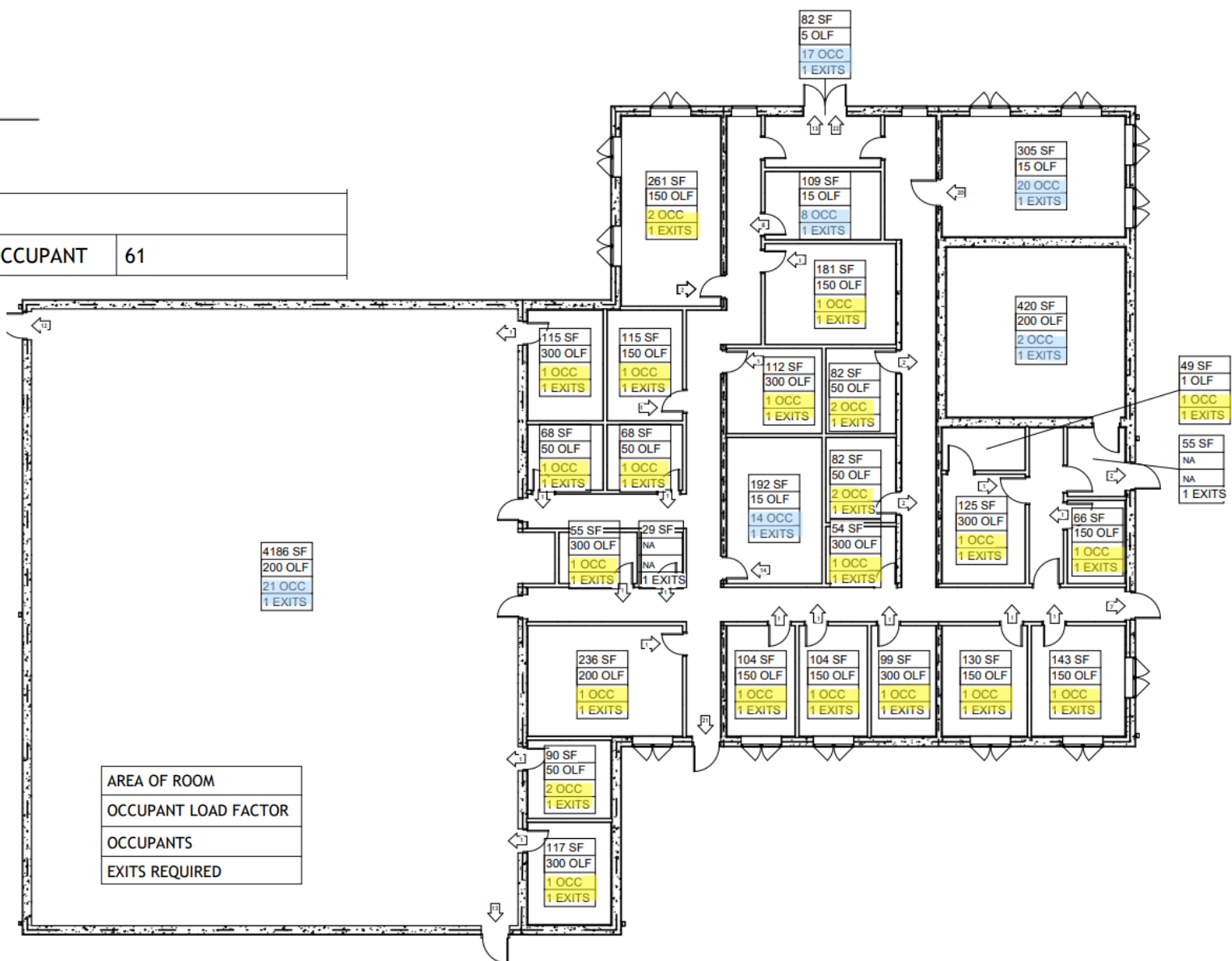


MAXIMUM OCCUPANCY

OCCUPANCY

GROUP "B"

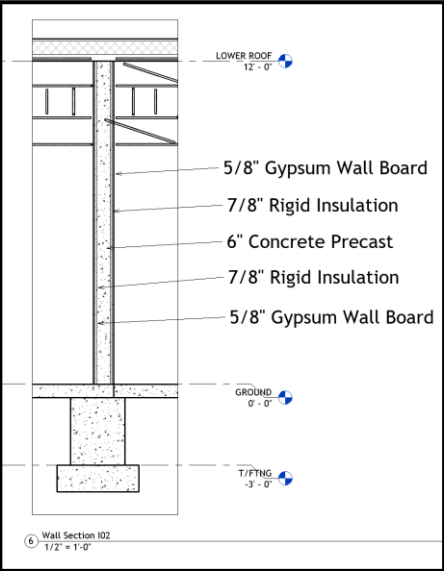
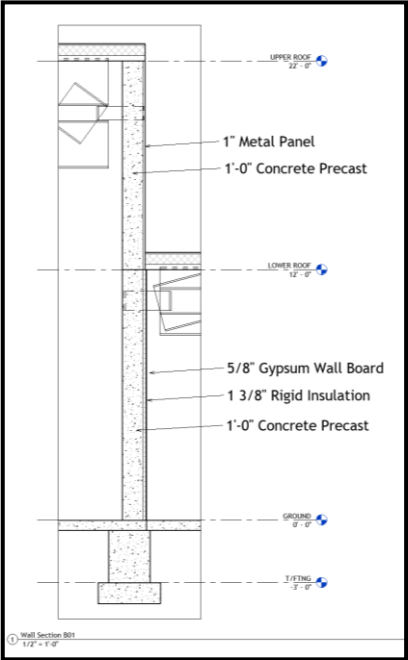
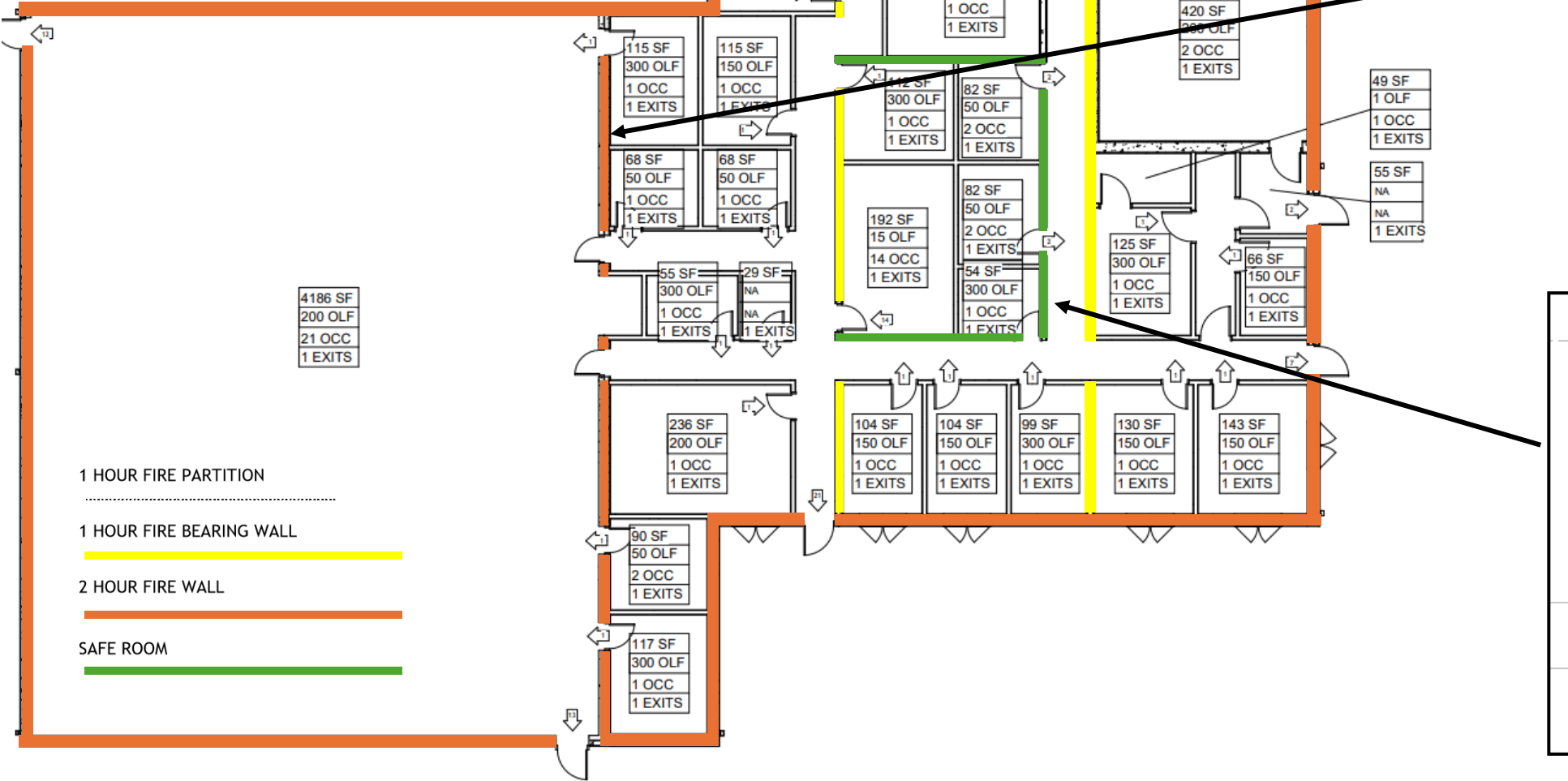
OCCUPANT LOAD			
TOTAL OCCUPANT LOAD	9,166 GSF	150 GSF/OCCUPANT	61



FIRE CODE

CONSTRUCTION TYPE

TYPE IIIB (TABLE 601 IBC)
SPRINKLED



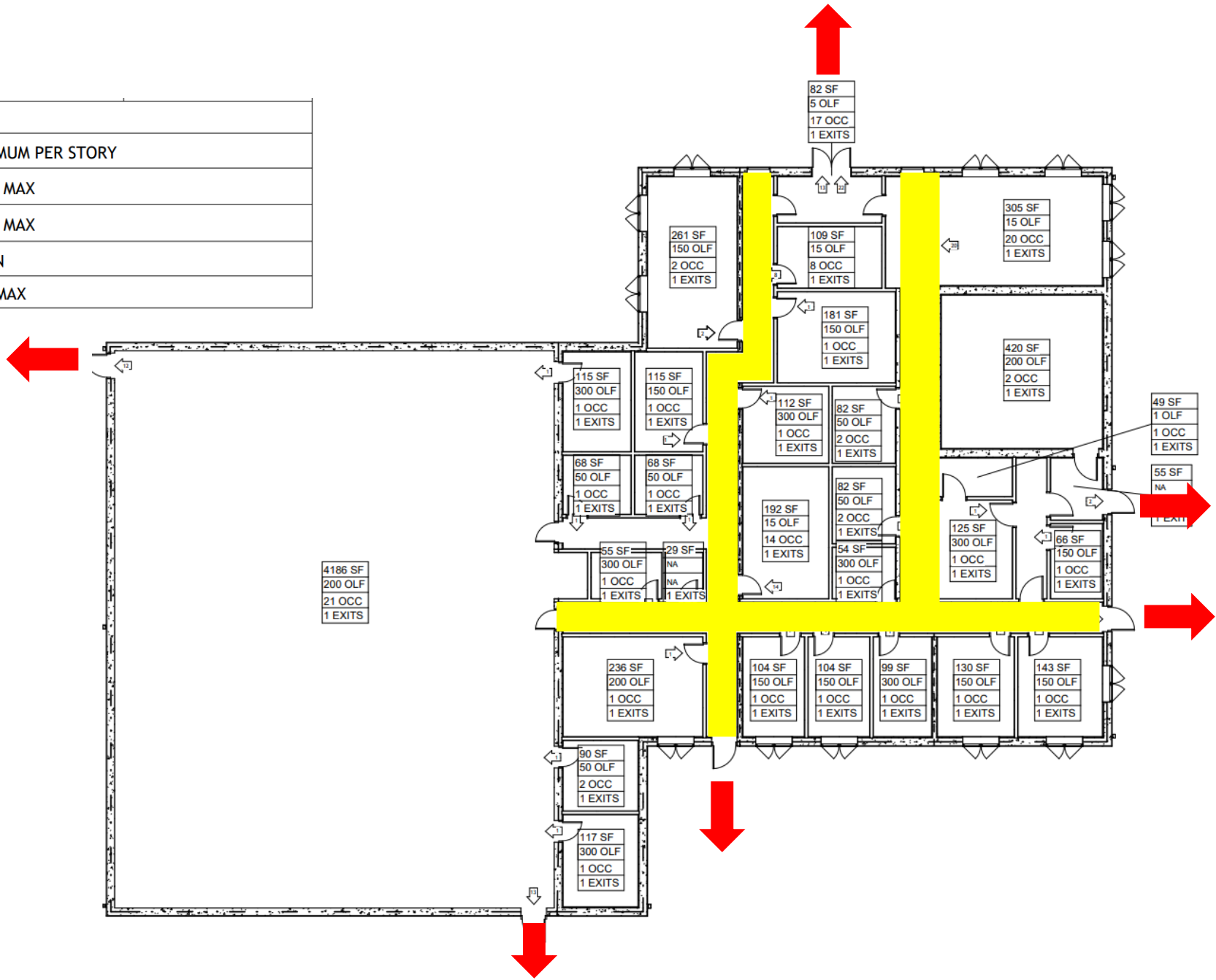
EGRESS

MEANS OF EGRESS		
NUMBER OF EXITS	TABLE 1006.3.3	2 MINIMUM PER STORY
COMMON PATH OF TRAVEL	TABLE 1006.2.1	100'-0" MAX
TRAVEL DISTANCE LIMIT	TABLE 1017.2	300'-0" MAX
CORRIDOR WIDTH	TABLE 1020.3	44" MIN
DEAD END CORRIDOR	1020.5	50'-0" MAX

TOTAL EGRESS CAPACITY

EXIT WIDTH: 216"

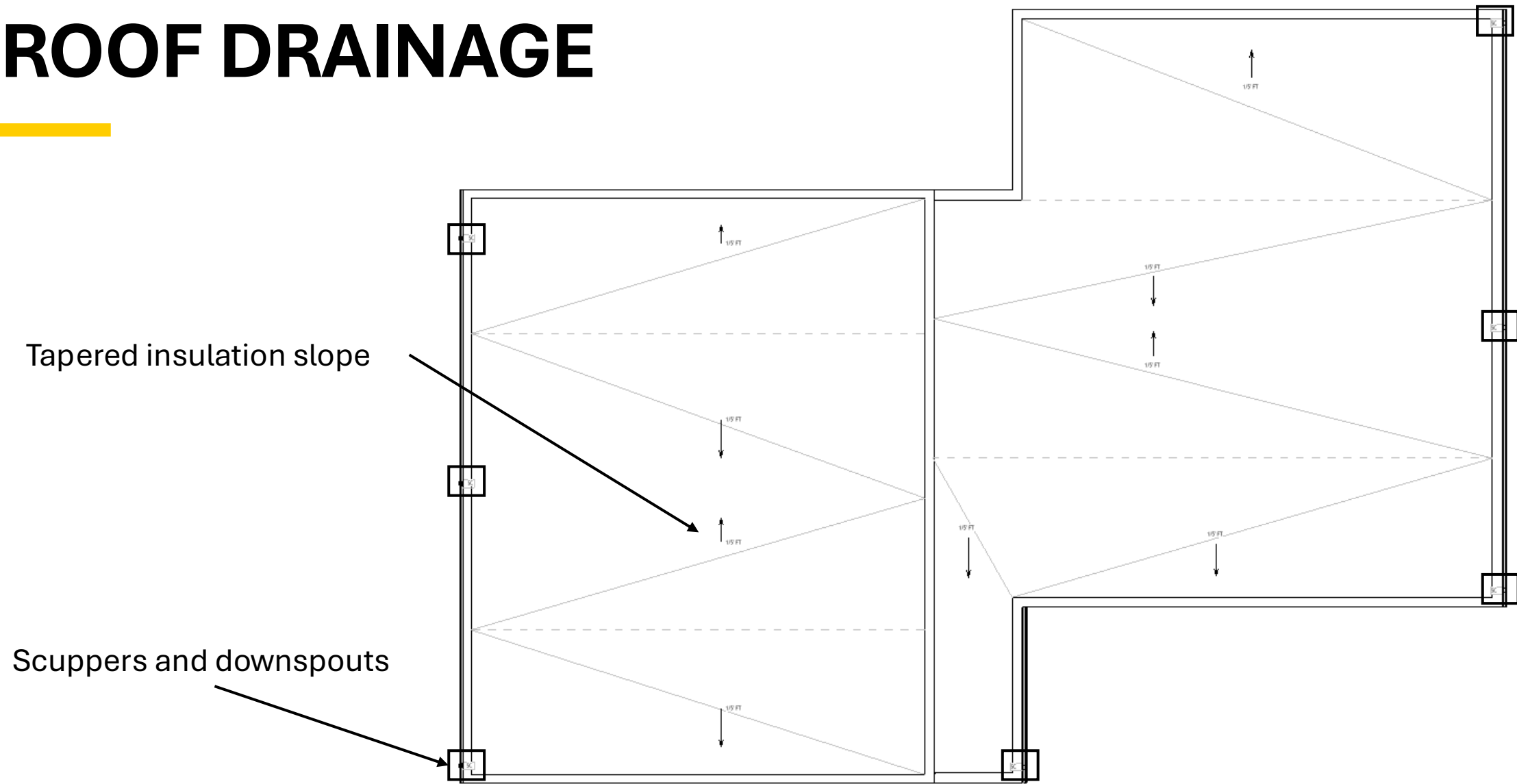
EXIT CAPACITY: $216" / 0.2 = 1,080$ OCCUPANTS



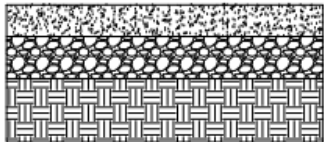
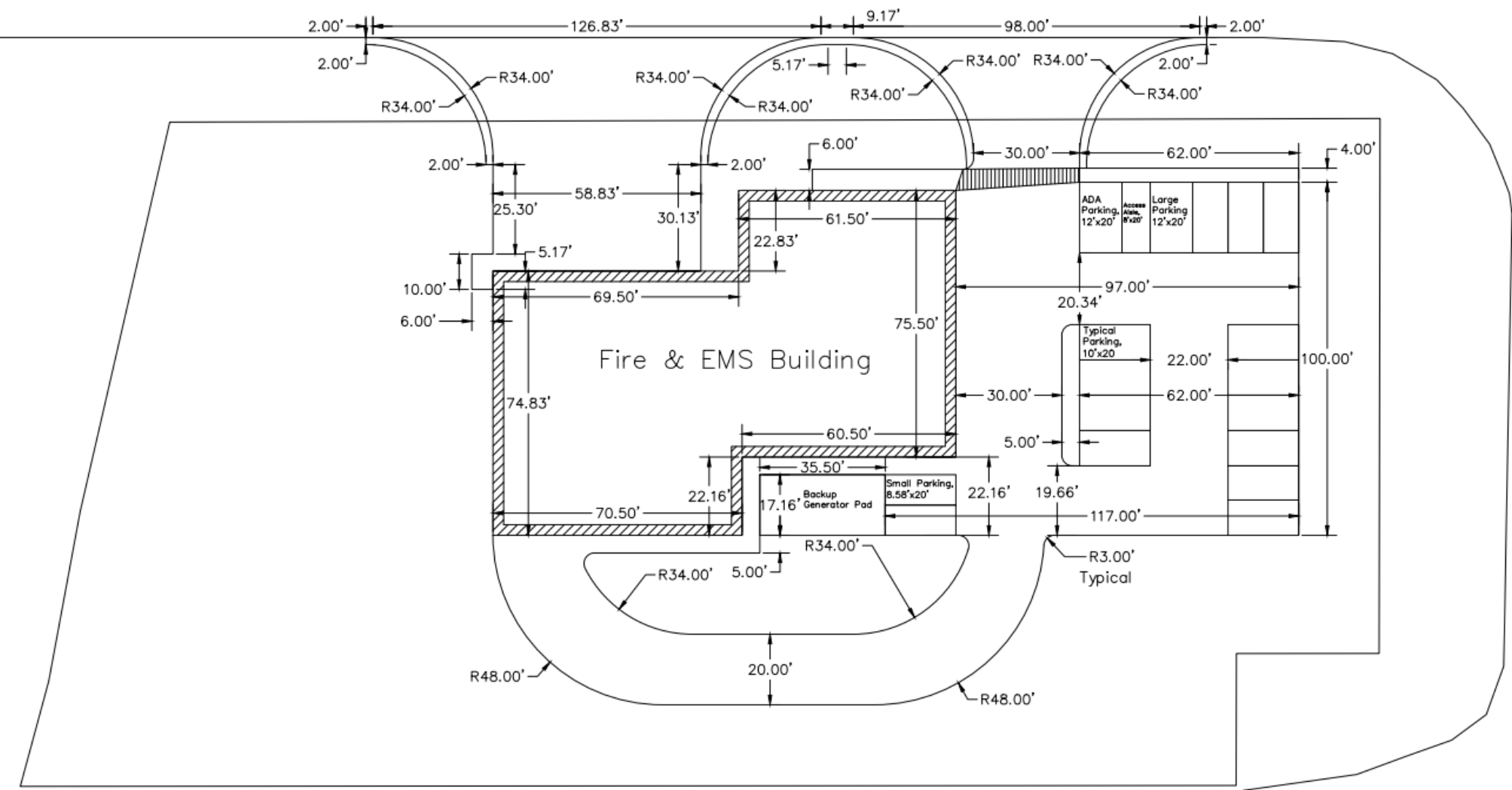
EXTERIOR FINISHES



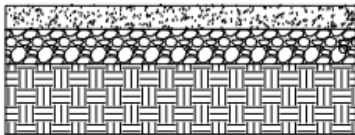
ROOF DRAINAGE



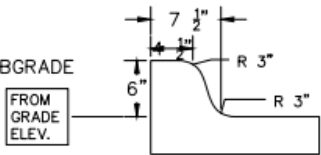
SITE LAYOUT



PAVEMENT CROSS-SECTION DETAILS

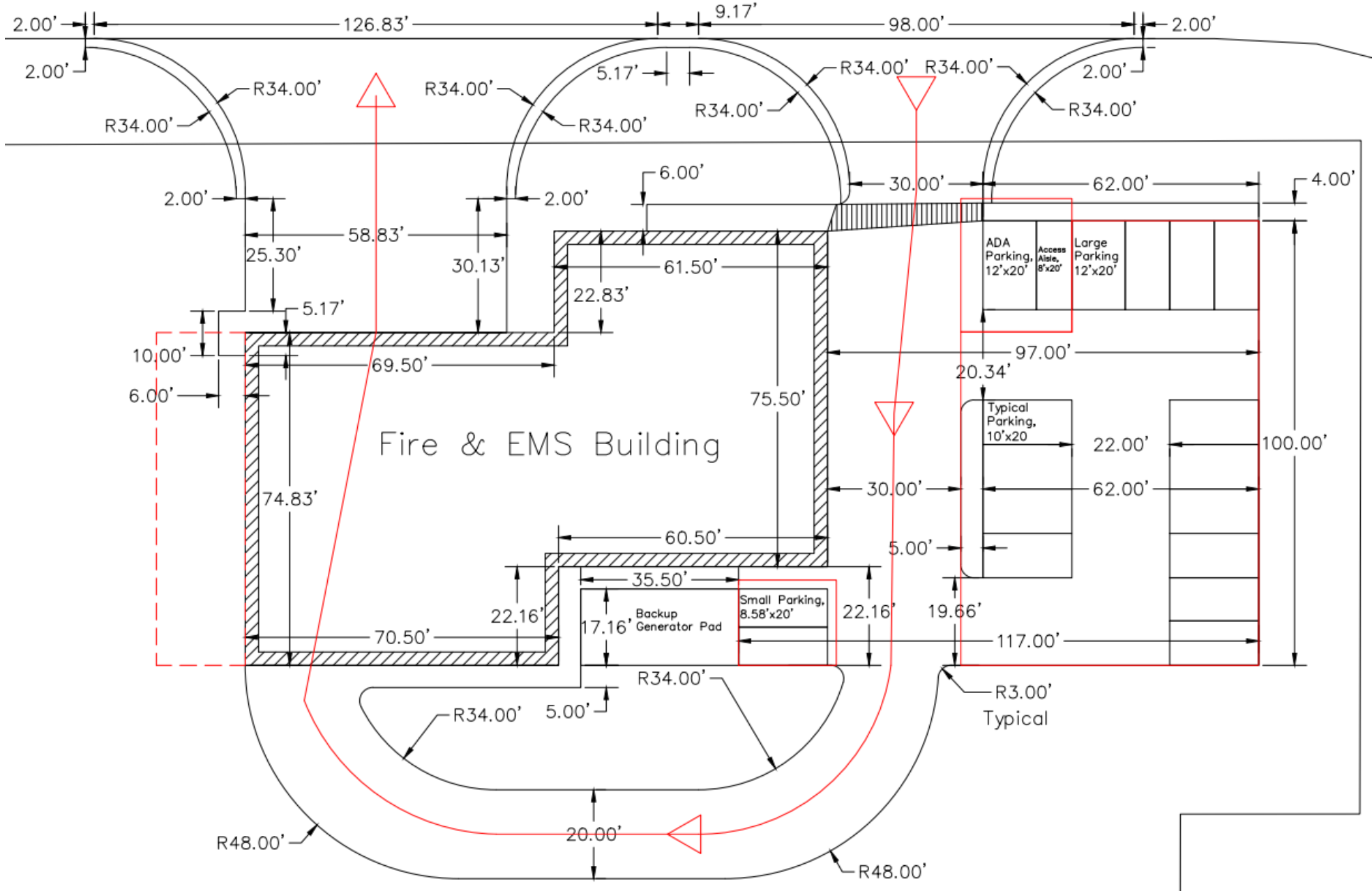


SIDEWALK CROSS-SECTION DETAILS



FROM GRADE ELEV.

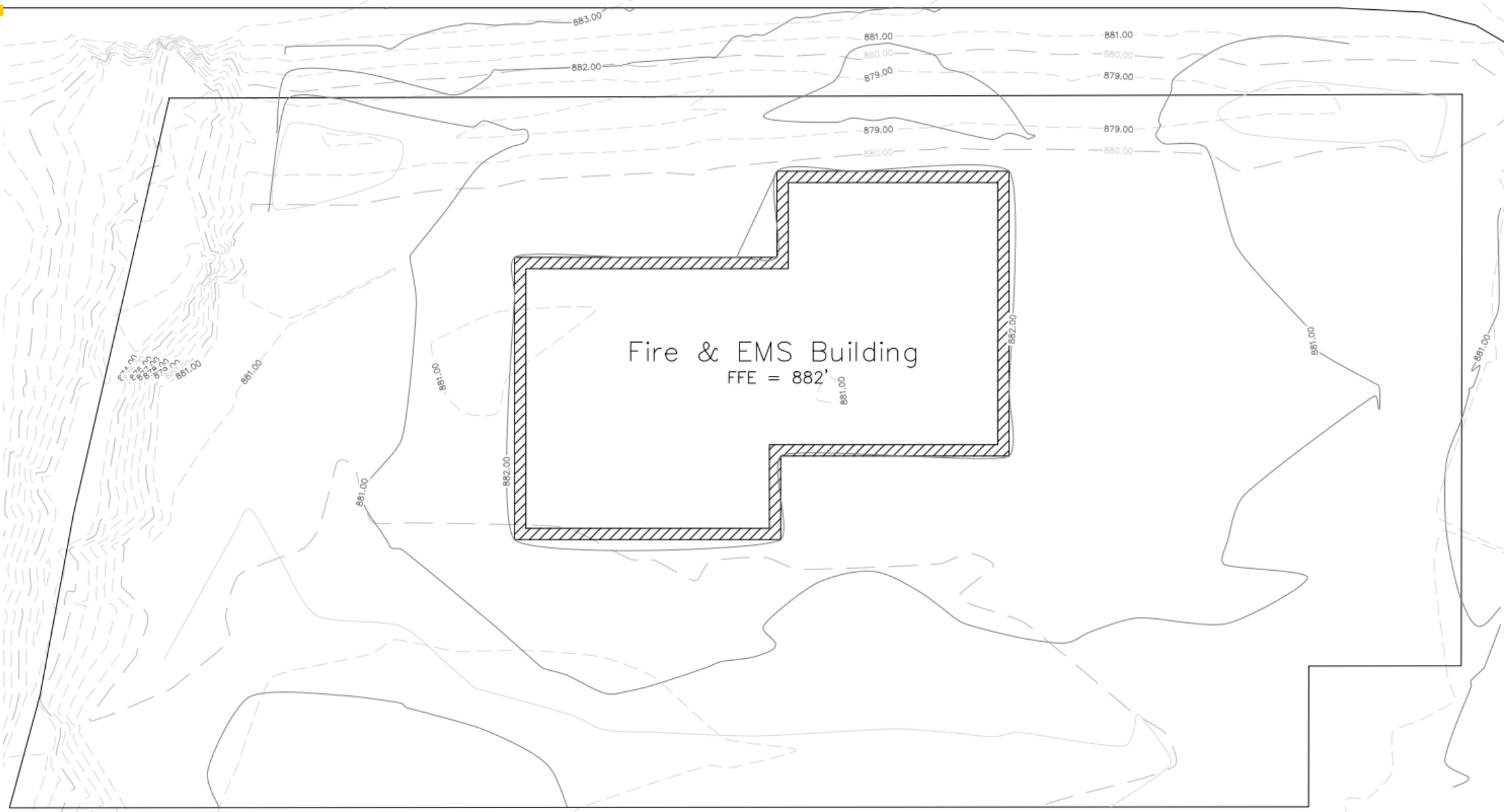
SITE LAYOUT



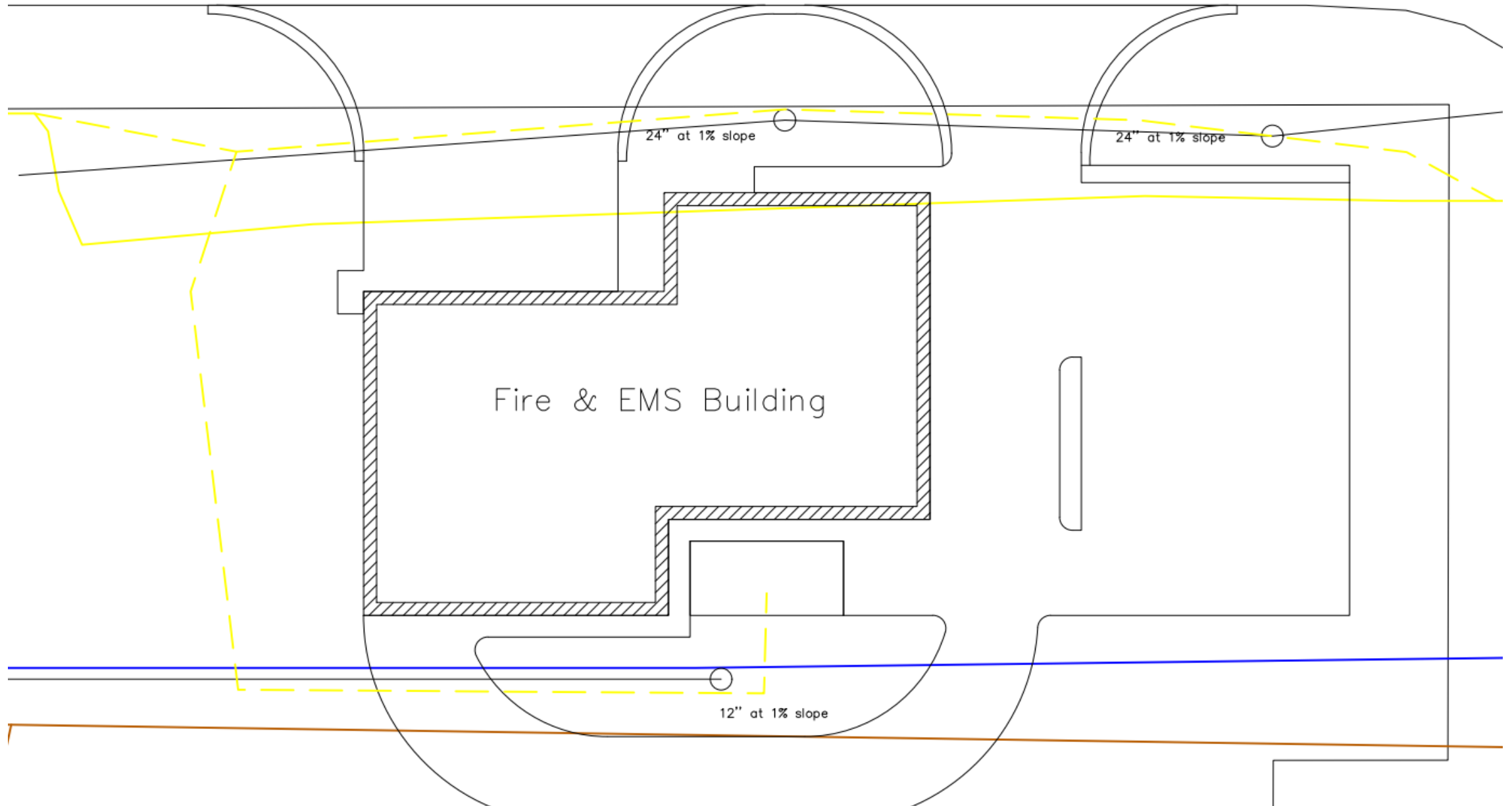
SITE LAYOUT



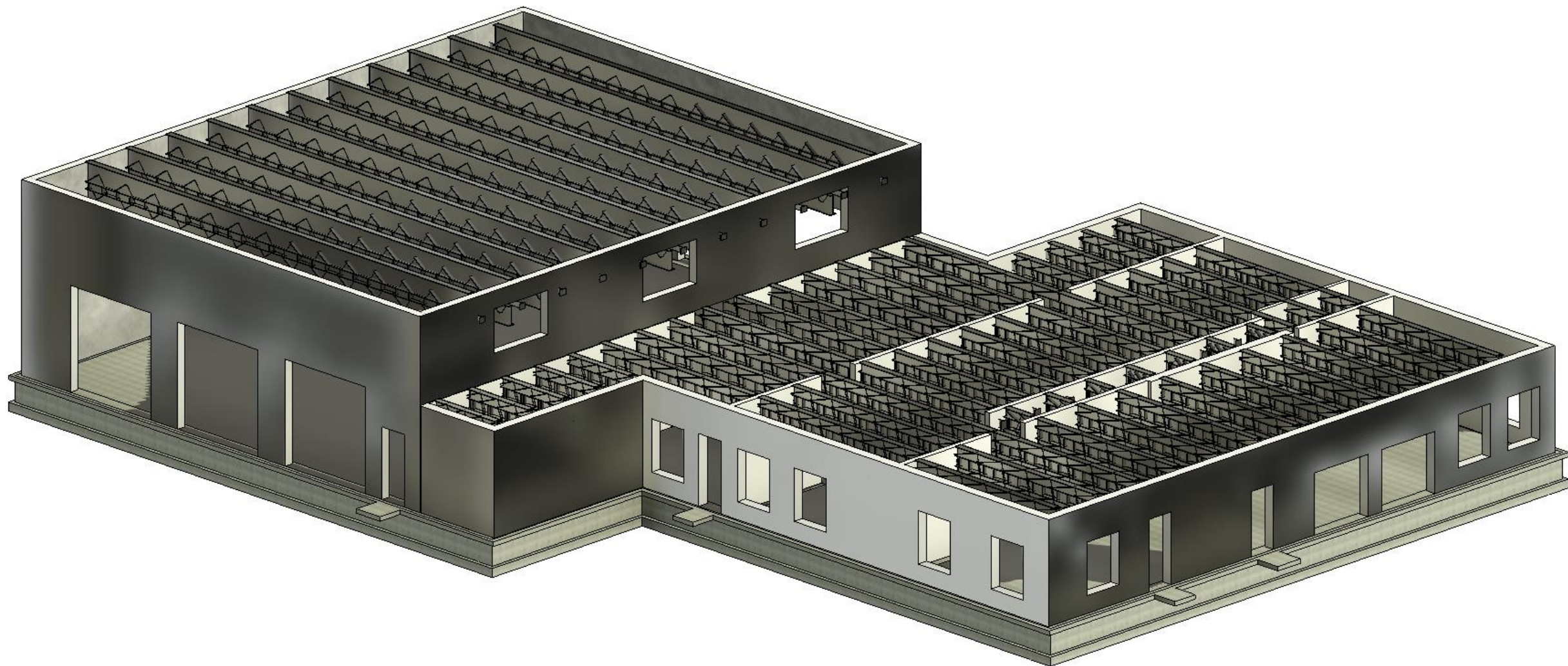
GRADING



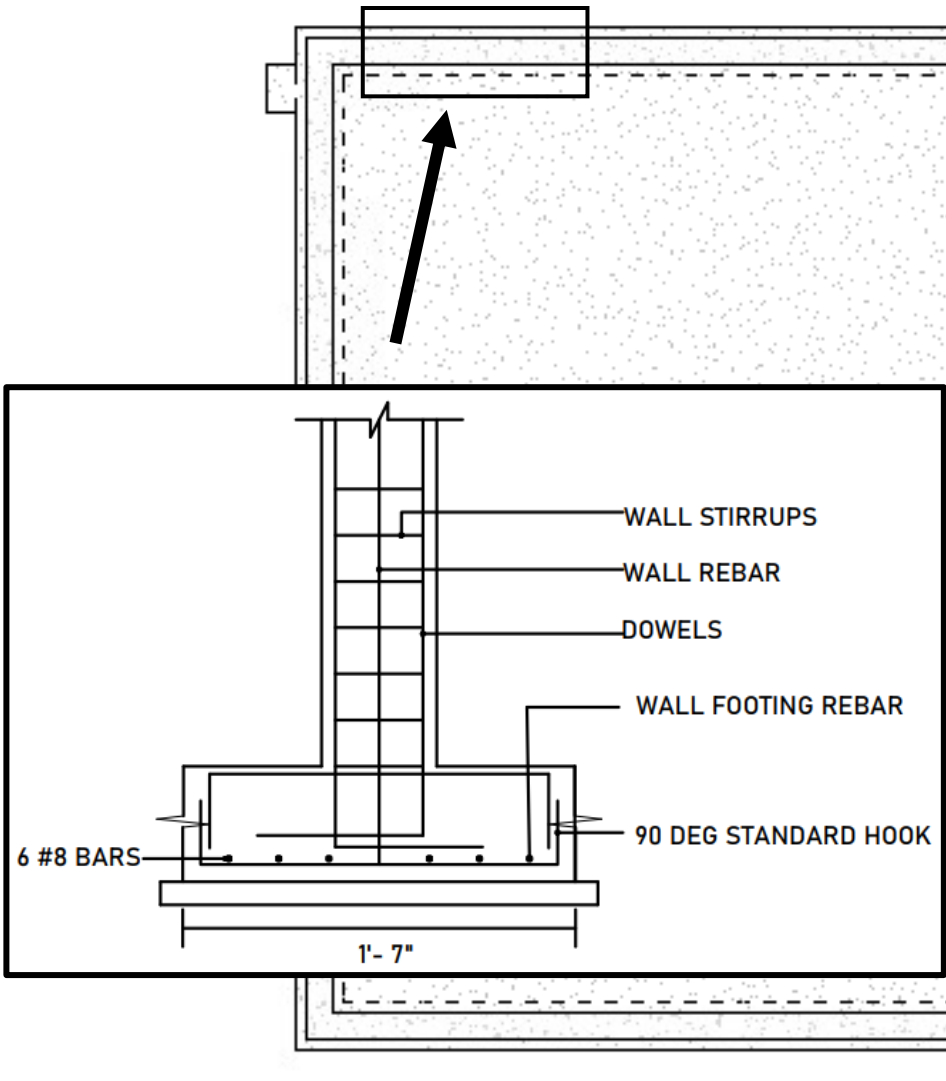
UTILITY AND DRAINAGE



STRUCTURAL SYSTEM SELECTION

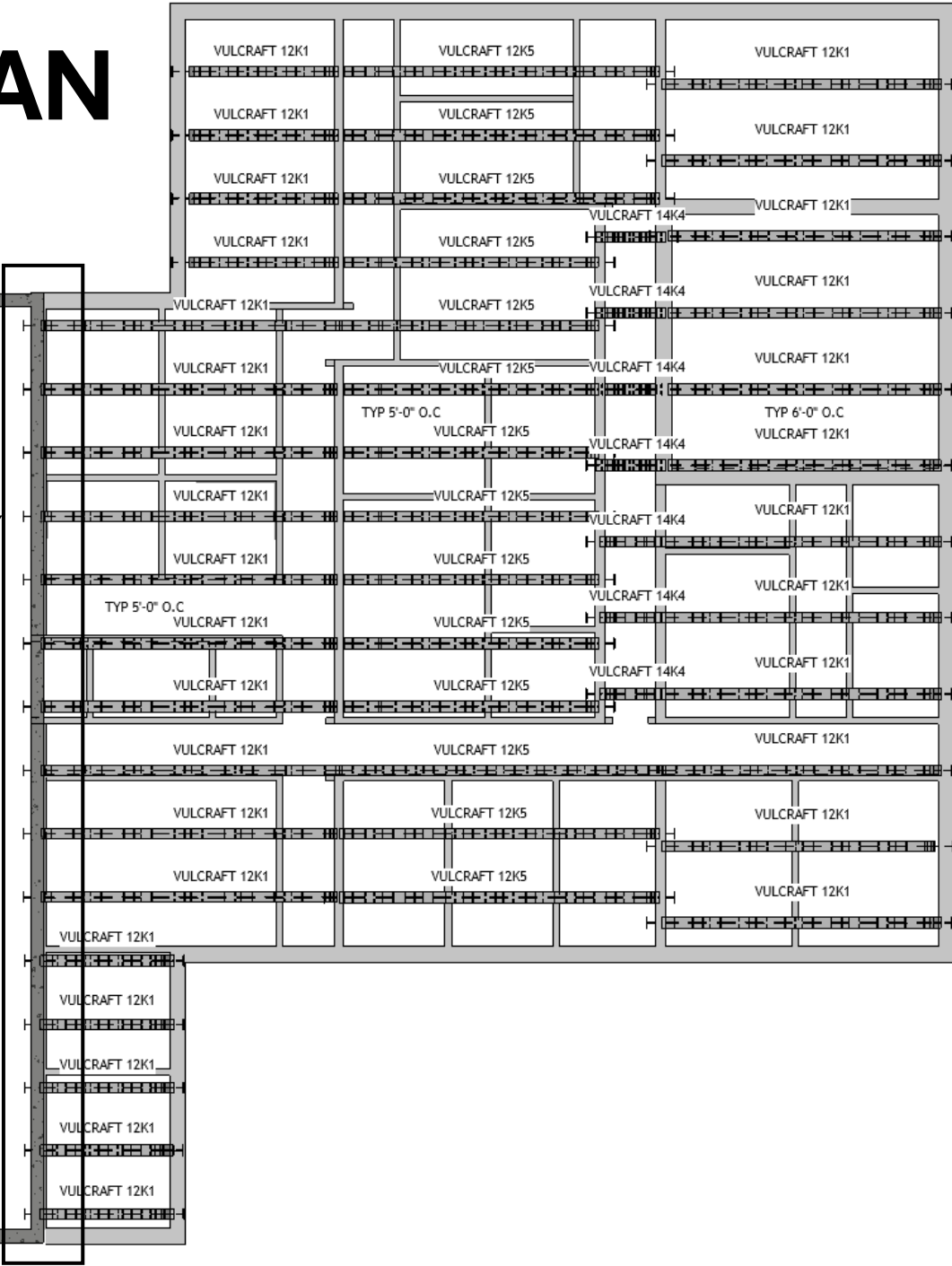
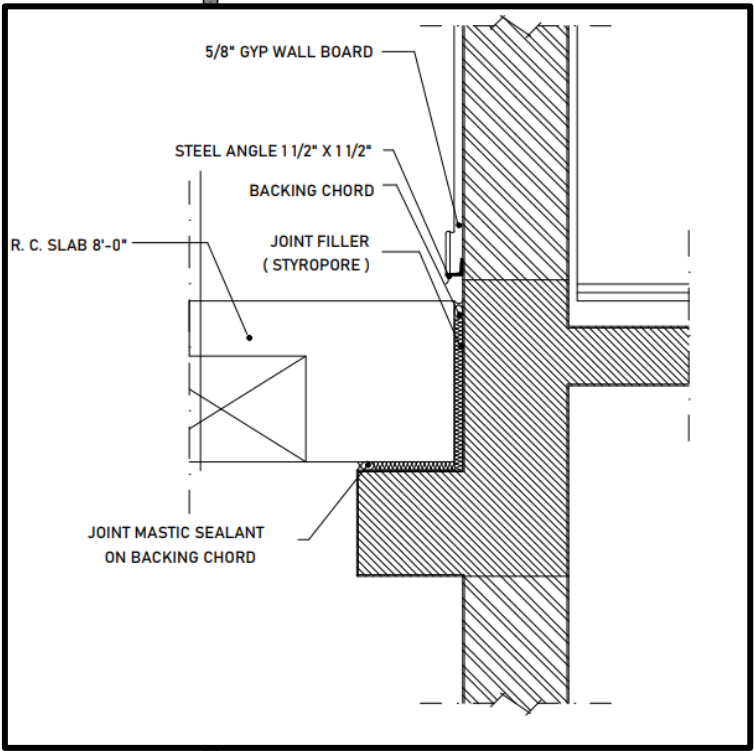


FOUNDATION PLAN

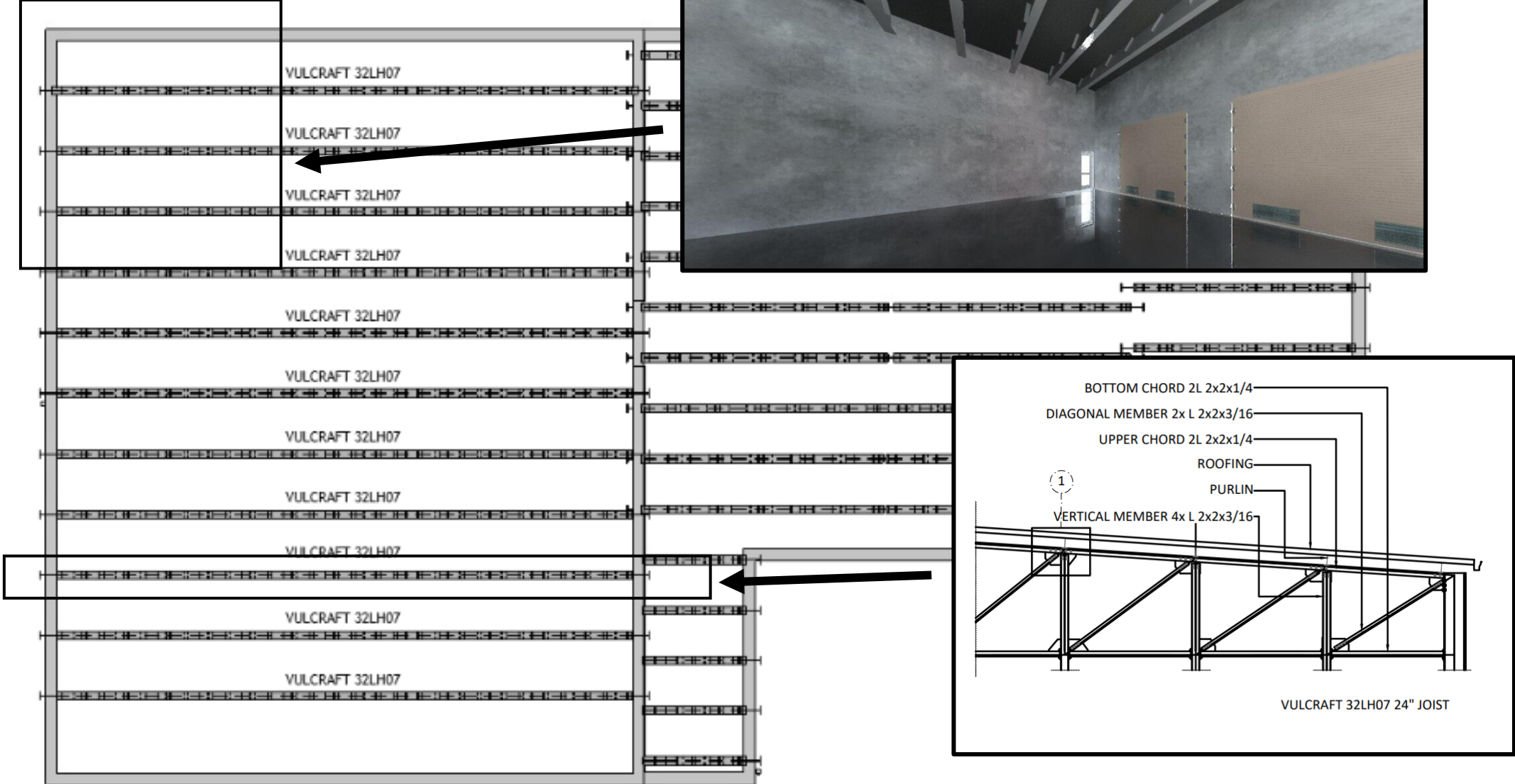


FOOTING SCHEDULE		
NUMBER	WIDTH	THICKNESS
F1	1'-8"	24"

LOWER FRAMING PLAN



APPARATUS BAY / UPPER FRAMING PLAN



COST ESTIMATION

CATEGORY	COST
CIVIL	146,500
STRUCTURAL	822,500
ARCHITECTURAL	407,000
MEP	919,500
FFE	133,500
TOTAL	2,429,000

Construction Cost:
2.4 Million

Contingency: 5%

Total Cost:
\$2.5 Million



Public Emergency Building

QUESTIONS