A Future for Housing

David Neil Prentice

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Master of Architecture
in
Architecture

William Galloway, Committee Chair

Scott Gartner

Edward Becker

May 7th, 2021
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Keywords: Housing / Mass Timber / Sustainability

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Academic Abstract

This project seeks to propose an ideal model for housing in a future where it is no longer feasible at a lower density. It identifies several characteristics of good housing, primarily: individual response to site, desirability, and sustainability, then applies them in the design of an apartment building on a specific site. The project also touches on questions of what makes a living space desirable, namely the preservation of the tenant's individuality and the fostering of community, each of which is examined and applied through the architecture. The project stresses that individuality is supported through a tenant's choice of living space and, therefore, that buildings following this model should not be identical copies, but rather unique responses to their own sites following the guiding principles of this project. It addition, as a secondary objective, the project explores the intricacies of mass timber construction and building code.

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General Audience Abstract

As the population rises and it becomes clearer that we can no longer afford to gobble up land for low density housing, our idea of what housing should be must also grow. It's inescapable that the future of housing involves refocusing on medium density apartments so that we can house more people on less land, but making that happen would involve a paradigm shift in what we consider the ideal housing condition. Convincing people to stay in apartment buildings instead of moving into a single-family house requires buildings that respond to their individual site, provide desirable apartments, respect the environment, and preserve the sense of community that is often found in low density developments. This project seeks to propose a model for the future of housing.

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David Prentice

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Columbus, OH
43215

Committee

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Scott Gartner

Edward Becker

UTOPIA?

Architects have always been fascinated with creating their own utopian visions for society and housing and haven't been shy about making various proposals. The question of how *should* we live is, and has always been, enticing.

I've always been intrigued by these ideas, but at the same time I don't believe that utopia can ever be achieved because people are unique and have different desires and attitudes. Rather, the best humanity can do is to constantly push for improvement.

We can never know a perfectly ideal living situation, we can only imagine a better one than what we have now. Therefore, in order to be achievable, utopian visions must be based in reality.

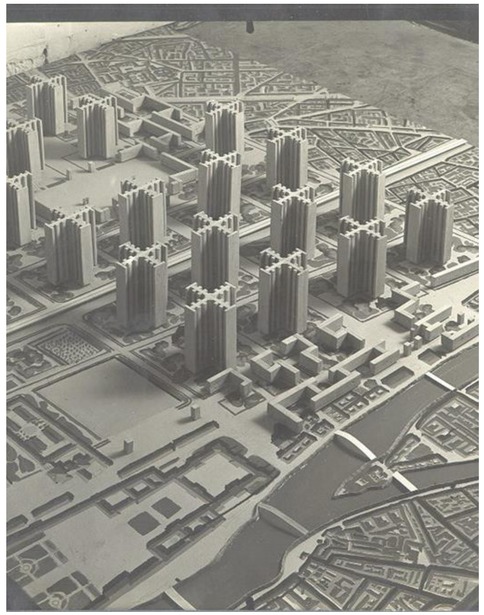
Most of these projects are on a scale so large that it's difficult to create a desirable living environment. That is much more achievable on the scale of a single building.

From there, the question becomes, what are the characteristics of good housing?



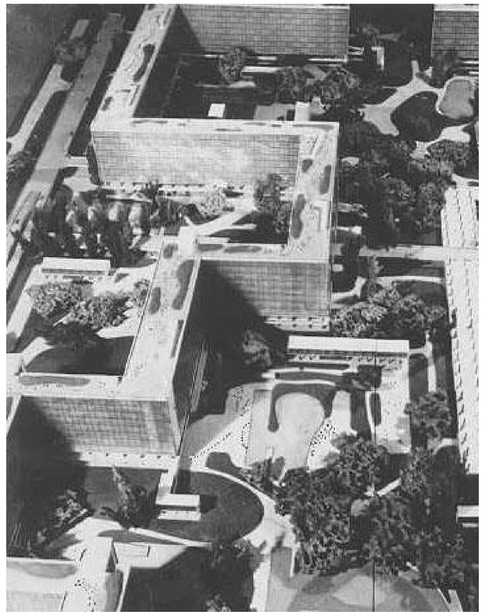
Ville Contemporaine - Le Corbusier - 1922

A standard tower in the park design, the buildings are too uniform, lack individuality, glorifies the car, and limits both human interaction and freedom of movement.



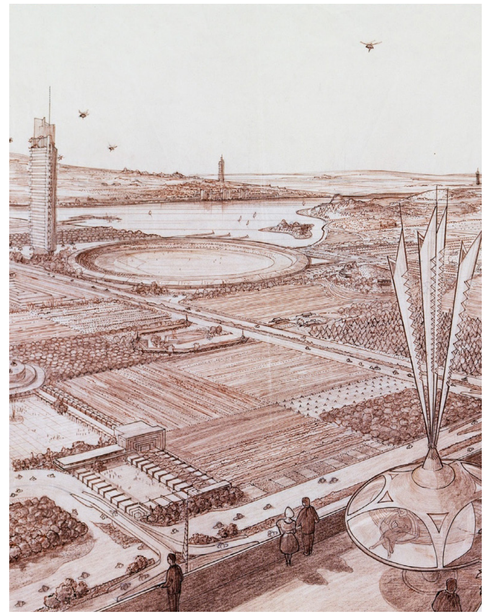
Plan Voisin, Paris - Le Corbusier - 1925

An attempt to apply the ideas from the Ville Contemporaine in a sort of neo-Haussmannien razing of Paris, but with all the same problems; the buildings are too uniform, lack individuality, and has no regard for its site.



Ville Radieuse - Le Corbusier - 1930

An improvement on his previous tower in the park ideas, somewhat less uniform and much more pedestrian friendly, but still very uniform and lacks individuality.



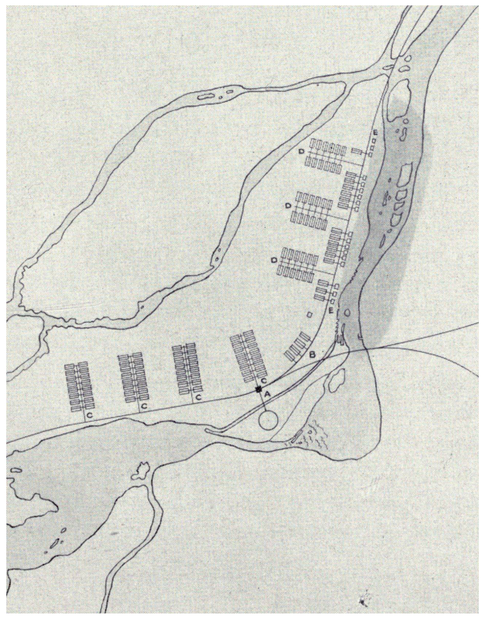
Broadacre City - Frank Lloyd Wright - 1935

A decentralized, entirely suburban, society full of single family homes each on at least one acre of land that uses way too much land to ever be practical in a modern context, especially in more densely populated countries.



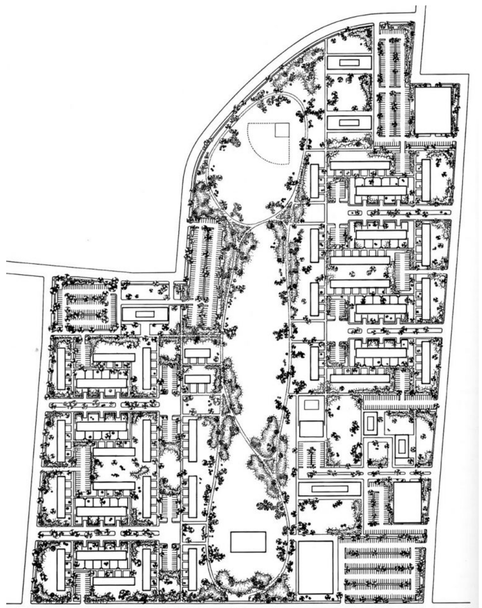
Vertical City - Ludwig Hilberseimer - 1924

Another tower in the park proposal, that would later be renounced, but in this case without the park, totally suppresses individuality and human interaction, has excessive conformity, and doesn't even entertain the possibility of responding to a site.



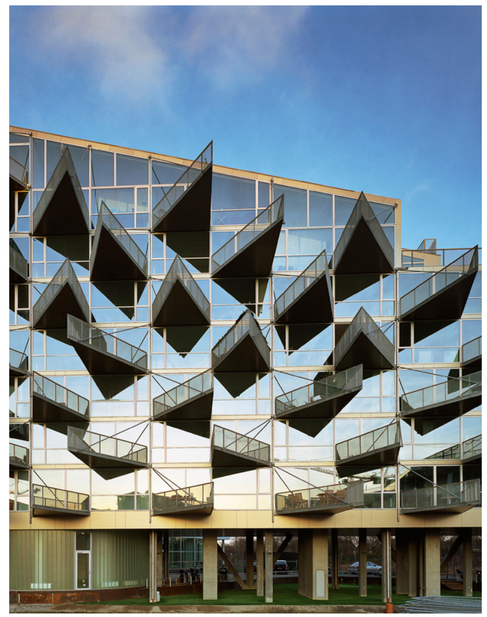
The New City - Ludwig Hilberseimer - 1944

Eventually learning from his mistakes, he proposes a much greener society with small scale housing and large office towers, yet still lacks individuality and is very willing to raze entire cities.



Lafayette Park, Detroit - Mies Van Der Rohe - 1958-63

Mixing the ideas of the tower in the park and low density communities with both towers and smaller condominiums, yet is still rather uniform, stifling individuality. Also, very successfully incorporates lower income units by adjusting the apartment widths.



VM Housing, Copenhagen - Bjarke Ingels Group - 2005

An exceptionally unique apartment complex with 80 different unit types that responds very well to its site, the building totally lacks uniformity and provides ample opportunity for its residents to express their individuality.

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Utopian Precedent

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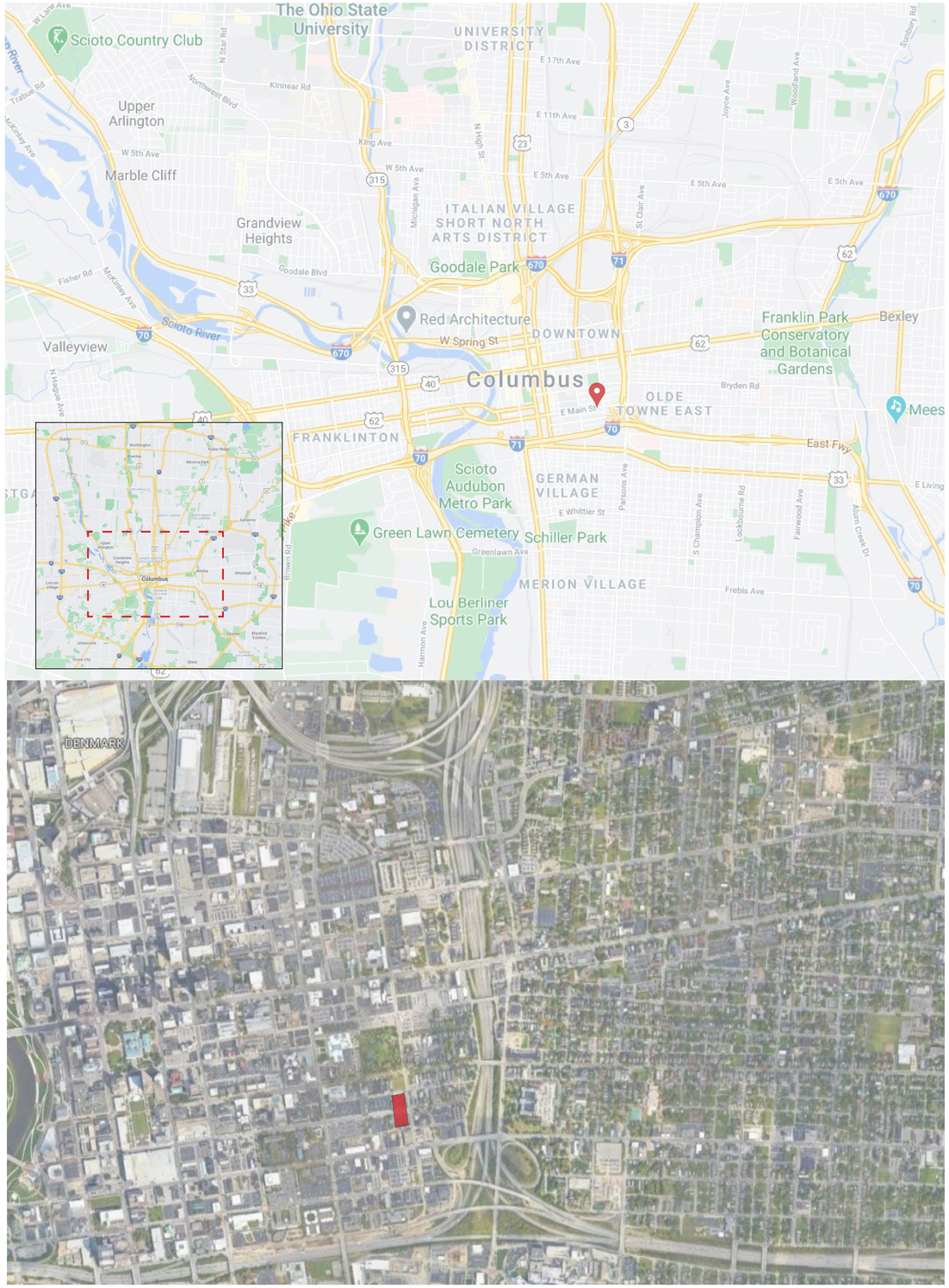
Scott Gartner

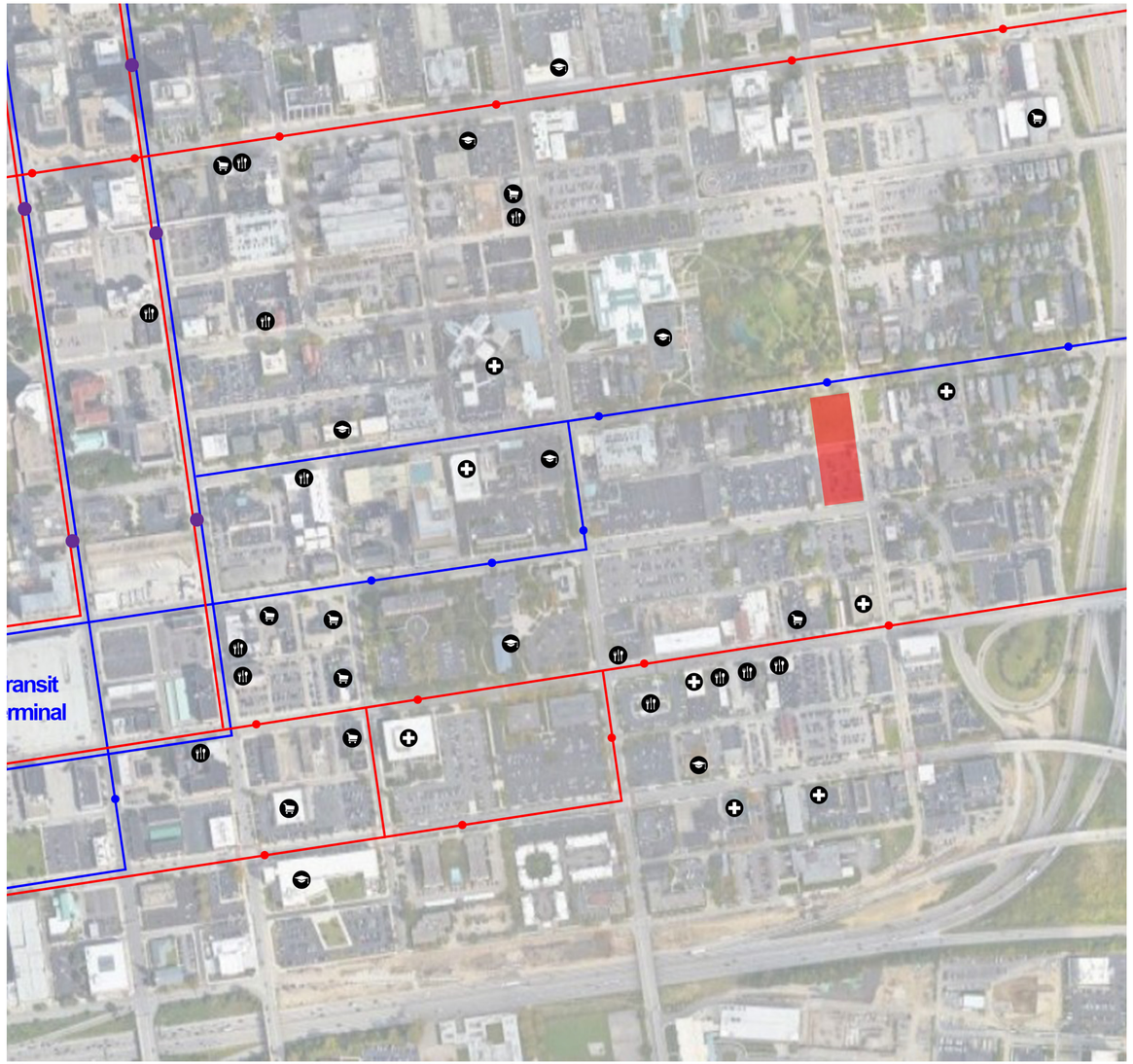
Edward Becker

D001

An Ideal Housing Condition MUST:

1. Respond to its individual site





Key

Restaurant | Education | Frequent Bus Stops | Mixed Bus Stops

Shopping | Medical | Standard Bus Stops | Site

The site is located in Columbus, Ohio, just east of downtown. The area is of medium density and forms a sort of transitional area between the tall buildings just a few blocks west and the single family houses on the other side of the highway to the east. In spite of being in a transitional area, it's part of the Downtown District zoning area, where there aren't any zoning codes beyond buildings having to be approved by a commission.

There are also various factors of this site to respond to. Beyond 2 or 3 stories there are very good views of downtown to the west, which should be exploited. There's a park to the north and ample parking in the area, but in this scenario surface lots shouldn't be relied on. Most of the buildings in the area are apartments to support the 3 small universities and the large hospital nearby, but there is very little retail or restaurant space nearby and the closest thing to a grocery store is a gas station. As a result, the neighborhood is largely barren throughout the day, only ever occupied by residents going to or from home.

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Response to Site

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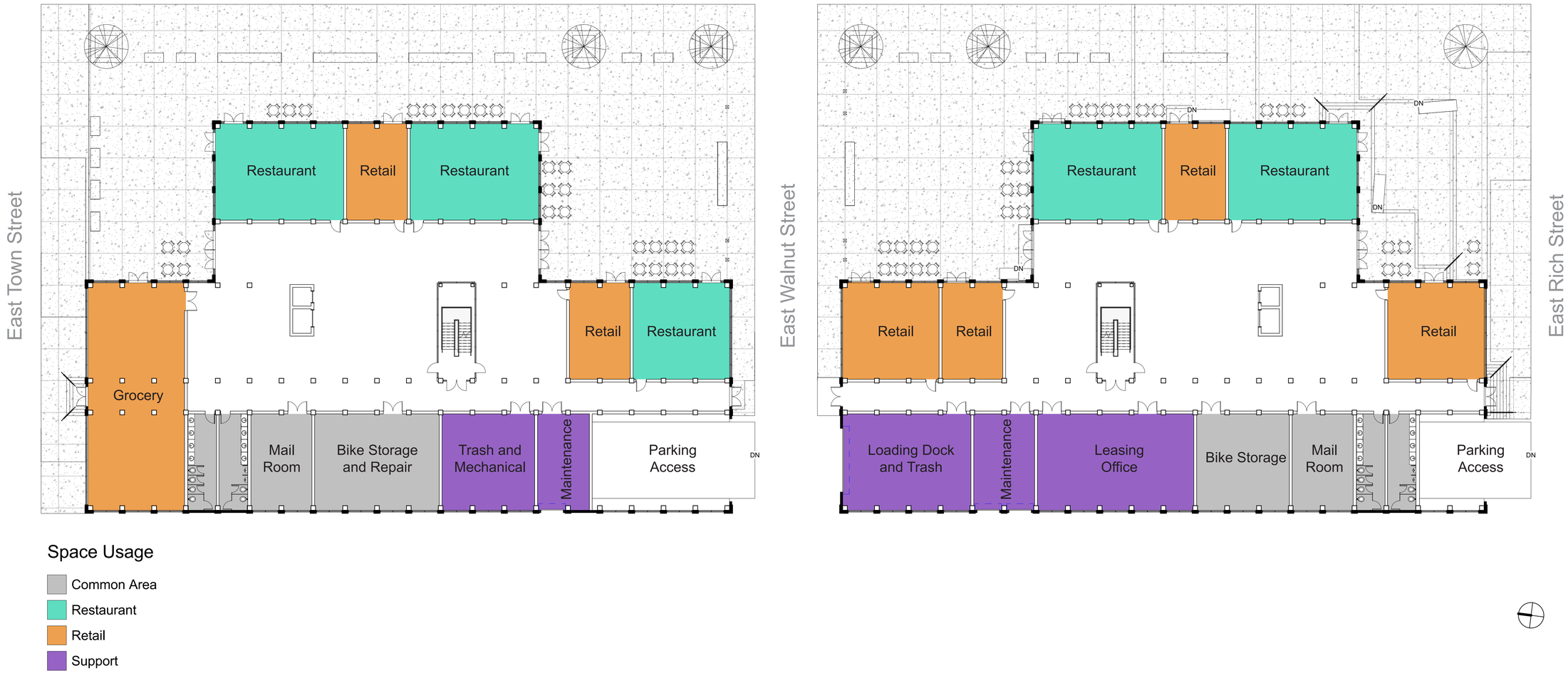
Committee

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Scott Gartner

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D002



In researching how to respond to these site conditions, I ended up watching part of a documentary by William Wythe called, *The Social Life of Urban Spaces,* in which he researches what makes some outdoor plazas in New York City more popular than others. Among his numerous recommendations was that there should be ample seating (1 linear foot per 30 ft² of open space) placed around an open center because people like to sit on the edges of spaces and people watch while still allowing circulation in all different directions to occur uninterrupted in the center.

I also read a segment of a book by Jan Gehl called *Soft Edges, Lively Cities*, in which he argues that ground floor façades should be designed to slow pedestrians down and encourage interaction with the street-front. He suggests doing this by designing façades that have a vertical emphasis, are generally open, and varied, among other recommendations because of how these conditions impact the speed and behavior of pedestrians.

In response to both these precedents and the individual site, I've created a series of exterior plazas with ample seating, all placed around the edges, and allotted most of the ground floor space to restaurants, retail, and a small grocery store. The spaces on the west side of the building don't face the street, so I've allotted those areas to administrative and support spaces for residents and staff. The core of the building will serve as vertical circulation for residents and rear access for all of the corporate tenants. The ground floor façade is largely open with solid protrusions at every column line, creating the vertical emphasis that encourages pedestrians to slow down and interact with the street. There is a parking lot underground, beneath the building.

Together, these interventions should help to establish the site as a small commercial and dining hub for the immediate vicinity. I expect that nearby students and workers would especially come here during lunch breaks, even if they don't live in the area, while it will give way to locals for dinner and shopping after work.

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D003

An Ideal Housing Condition MUST:

2. Be desirable to live in
    -Preserve the individuality of its residents
    -Foster community among residents



It should be obvious, but nothing can be ideal if people aren't willing to interact with it and housing is no exception. Desirability is a very broad term that can mean a lot of things in the context of housing, like safety or location, but I'm going to focus mainly on individuality and creating a sense of community.

The ultimate example of individuality in housing is the single family home. They're fully customizable and residents have near full control to do with their space what they want, and if individuality was the only criteria to determine the ideal housing condition, it would be single family homes.

However, that isn't the only factor. There's also the global context, which says that our population is going up dramatically and we can't keep clearing land to house 4 people to an acre. In a realistic modern context, the ideal housing condition must shift away from low density single family housing towards medium density apartments, but it must do so while maintaining as much individuality for its residents as possible. In doing so, we must be careful to not make a series of identical buildings. The biggest flaw in most of the large scale utopian visions architects have made in the past is that all the buildings are identical. Compensating for the inherent lack of individuality in apartments means that each building should be unique, that way people can guard some aspects of their individuality through their choice of apartment. It should also be noted, condominiums inherently offer more individuality than apartments, but less than houses, as their more permanent residents have more control of their space than in an apartment. As such, medium density condos would become the preferred long term housing option, with apartments available for those who aren't ready or able to commit to a long term housing option.

As such, I've designed one building on one site, that could be made up of condos, apartments, or some combination of both, whose guiding principles could be applied elsewhere without the buildings having to look identical.

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Edward Becker

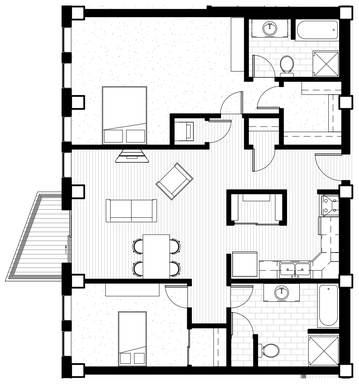
D004

Housing is more desirable if people feel like part of a community. This doesn't necessarily need to be totally accomplished through architecture; in fact, it shouldn't be. Architecture can't force people to interact in a certain way, but it certainly plays a part by creating the spaces where opportunities to interact exist. Most definitions of community suggest that people in a community must have something in common, whether it be interests, characteristics, history, sports, or whatever. Which makes sense; it's easiest to get along with people who you have things in common with, but that doesn't mean that members of a community should be alike in every way. It is possible to have differences and still have a strong community. Right now, everything feels very divided. Increasingly, people only surround themselves with others who look or think like them. In this situation, it's important to find common ground and understand people who aren't like you. My proposal to address this is to promote mixed tenure, the idea of putting people of different income levels together in the same space. Where this has been done before, it's usually accomplished with housing subsidies or by mandating that a certain percentage of units in a building be designed for low-income residents. However, I don't want to rely on external influences to make this happen. Governments and policies change, but a building is going to exist for quite a while, especially if done right. Therefore, I propose to achieve mixed tenure through the architecture itself.

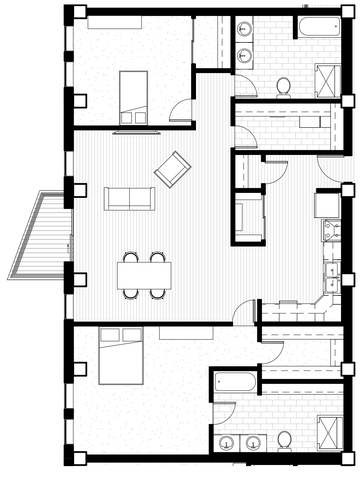
Achieving mixed tenure, as well as creating a space that's desirable to live in, starts in the individual apartments. To do this without relying on external forces, the units must be designed to inherently garner very different rents. As such, I've designed 3 levels of units with varying sizes and finishes, traits that inherently affect rent prices. Mies Van Der Rohe did this in Lafayette Park on a small scale by fluctuating the widths of the units behind a standard façade, a strategy I've largely incorporated between the level 1 and level 2 apartments. However, there are also minor differences in finishes and appliances to further differentiate the rates. The level 3 units, on the other hand, are radically different. Designed from the precedent of Le Corbusier's Unité d'Habitation, these units are designed to be multistory units with more than ample space and higher quality finishes.

	Level 1	Level 2	Level 3
Space	Small	Medium	Very large
Height	One story	One story	Two stories
Laundry*	Upright	Mid-range	High-end
Appliances*	Mid-range	Mid-range	High-end
Counter tops	Laminate	Engineered Quartz	Granite
Wood Flooring	LVT**	Plank Wood**	Attiro**
Tile Flooring	Vinyl**	Porcelain**	Slate+
Carpet Flooring	Cheaper tile***	Mid-range tile***	High-end tile***

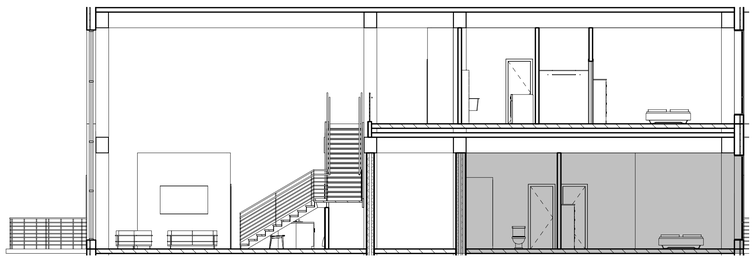
* All EnergyStar appliances
** Tate ConCore raised floor finish panels
*** Tate ConCore raised floor system with carpet by approved vendors
\+ Tate STONEWORKS raised floor finish panels



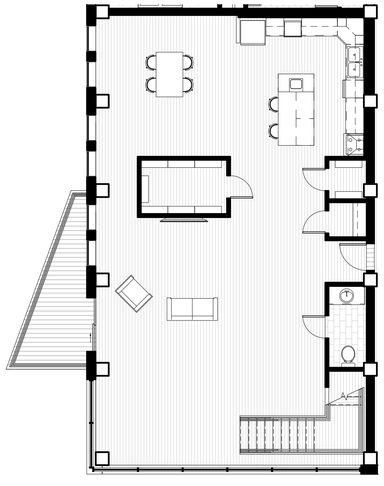
Level 1
2 Bedroom



Level 2
2 Bedroom







Level 3
2 Bedroom

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D005

Achieving mixed tenure requires more than just getting people into desirable apartments in the same building, though. It's also important to provide opportunities for them to interact and get to know each other. Again, this can't, and shouldn't, be solved through architecture alone, but it can certainly play a part.

Most large apartment buildings have a hotel style double loaded corridor, which leads to residents only really getting to know the people on their floor. If someone gets off the elevator on the floor below you, they could live directly below you or on the other side of the building and you'd never know. As such, I've created a very open central atrium surrounded with a mostly single loaded corridor. That way, residents can see their neighbors on other floors and will be slightly more likely to get to know each other. The few areas with double loaded corridors are relatively short and have windows on the ends to let in natural light. In addition, doors are deliberately placed closer to the atrium than they otherwise would be.

Another strategy to encourage interaction between residents is to provide amenities where residents can congregate and will have opportunities to interact. In this building, the entire east side of the building is devoted to amenities, creating ample opportunity for interaction, not just within the amenities but also in transit between them and the individual units.

These views give a good sense of what mixed tenure looks like and how the units fit on the different floor layouts.

Apartment Amenities

-Multistory fitness center
-Multistory lounge
-Several smaller lounges
-Game room
-Business Center
-Meeting rooms
-Makerspace
-Rooftop pool
-Rooftop community garden



Floors 2 and 5
No double-loaded corridors
No access to other half of building



Floors 3 and 4
Some double-loaded corridors
Access to other half of building

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D006

An Ideal Housing Condition MUST:

3. Account for its global context

-Land use

-Sustainability

As the population increases, we have had to allot more and more land for housing and agriculture to meet the demand, yet in doing so recklessly we are damaging our environment. As was alluded to earlier, we will not be able to house 4 people to an acre, a common lot size for single family homes, indefinitely. In order to preserve nature and the environment while still accommodating more people, housing and agriculture must shift to higher densities. In the near future, the ideal housing condition will have to be medium density and multi-family to preserve land.

In addition to simply conserving land, an ideal housing condition should be sustainable. Sustainability could mean many things; the building should be constructed with renewable materials and sustainable practices, or it could be operated sustainably day to day, both in terms of physical resources like water and electricity, but also economically. In this case the building's sustainability will be in an environmental context, minimizing the impact of its construction and operation on the environment.

The main sustainability strategy employed in this building is the use of mass timber for the primary structure. Wood is a completely renewable resource and when managed correctly we can use quite a bit of it without harming the environment. Wood also sequesters carbon that it releases when burned, and harvesting mature trees for construction while planting new ones maximizes the sequestration potential. This is in sharp contrast to steel and concrete construction which have considerable environmental impacts.

Fortunately, with the 2021 International Building Code (IBC), the US is finally starting to allow mass timber to reach its potential, allowing wood buildings up to 18 stories or 270 feet, where before mass timber couldn't go past 85 feet. There are 2 major factors that have led to mass timber becoming an acceptable structural material for larger buildings.

-Engineered wood products: code only permits light wood framing up to 5 stories because of the structural properties of standard dimension lumber. Solid timber could go higher, but is extremely expensive due to the necessity of finding trees as big as each required member. Engineered wood products such as glulam and cross laminated timber (CLT) changed that by attaching pieces of affordable dimension lumber together with glue to form a much larger, and stronger piece in sizes that aren't limited by the size of a tree. This has made it economically feasible to create larger wood structural members to support taller buildings. In addition, mass timber construction is quicker, quieter, and more precise than other construction types, and can be assembled with a smaller crew.

-Charring: research has shown that mass timber burns at a predictable rate of about 1.5 inches per hour before putting itself out, leaving a layer of solid char exposed. As a result of this research, extra wood can be added to a mass timber structural member to meet its required fire rating and it won't fail in a fire. This also means that a lot of the structural timber in a building can be exposed, depending on the building size, creating massive potential for beautiful finishes and economic savings by not having to apply another finish.

Between all the sustainability benefits and the obvious potential of the material, it was an easy decision to use mass timber for the main structure of the building.



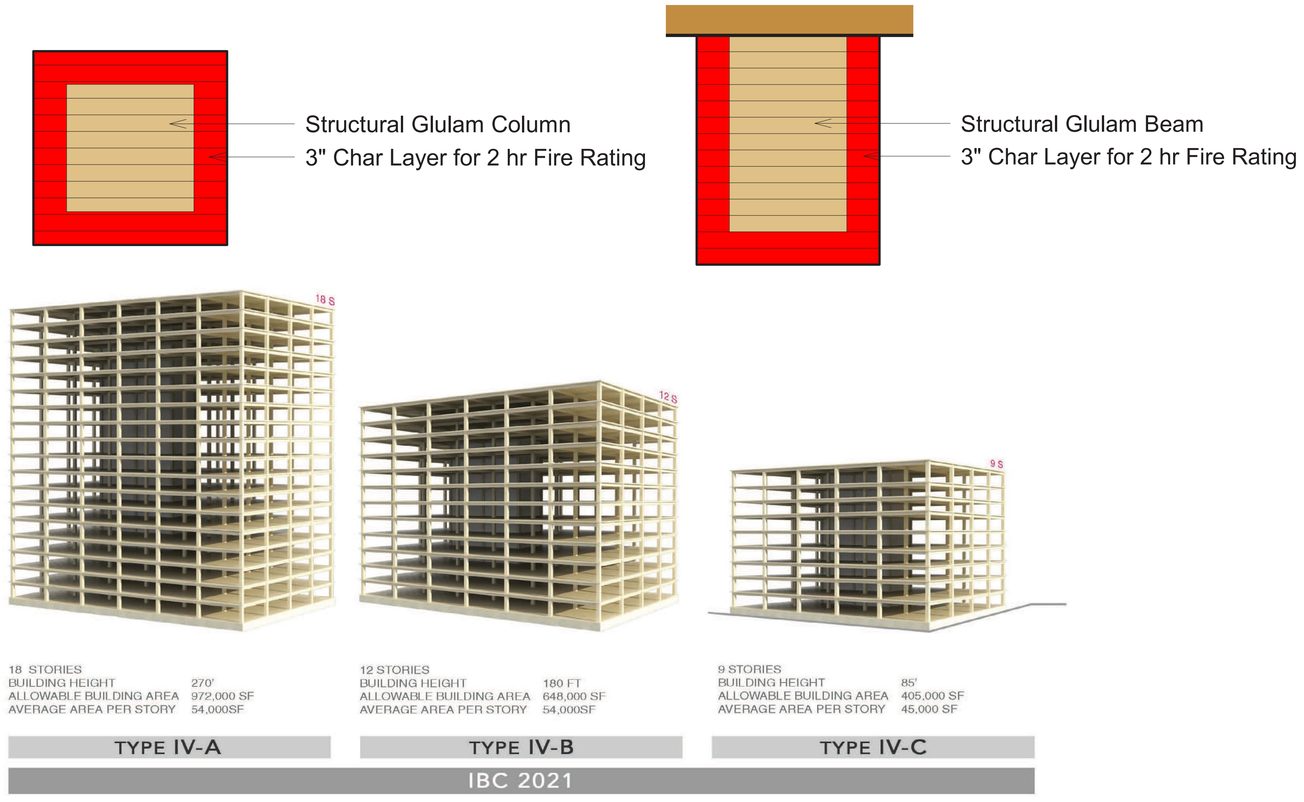


Image by Atelier Jones, from Breneman, Scott, et al. Tall Wood Buildings in the 2021 IBC: Up to 18 Stories of Mass Timber, WoodWorks, 2019.

David Prentice

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VIRGINIA TECH.

A Future for Housing

David Neil Prentice

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Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Global Context
Mass Timber

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

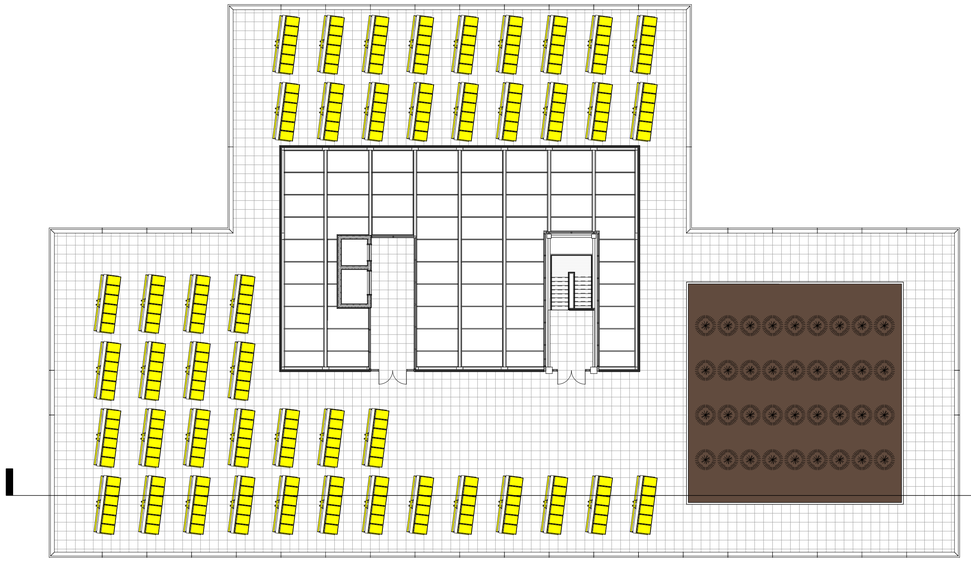
Edward Becker

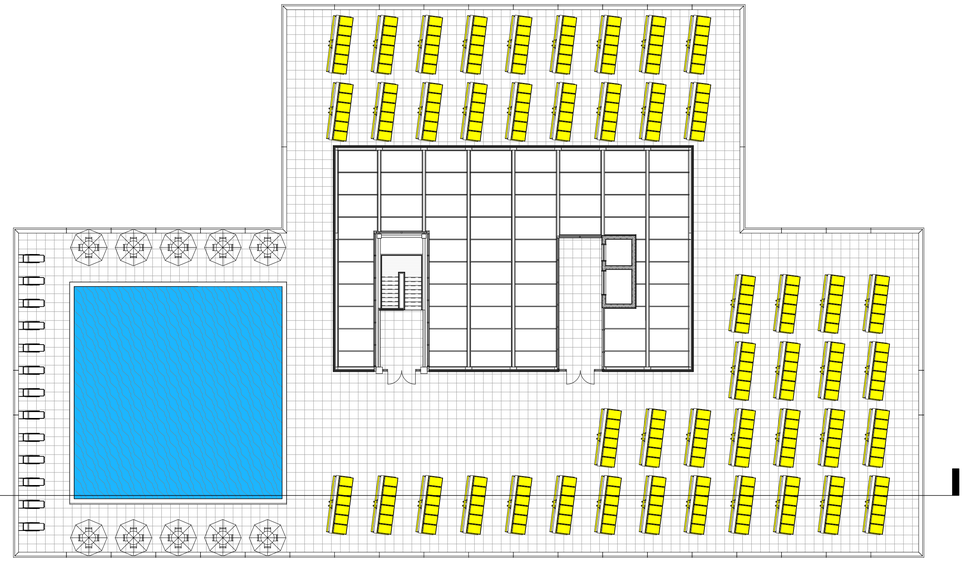
D007

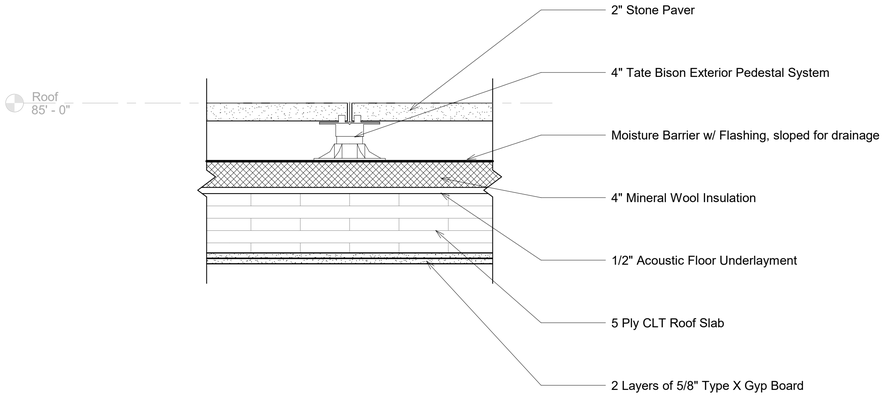
Another sustainability strategy incorporated into this building was on-site rainwater and solar energy collection from the roof of the building. The areas of the roof not used for the pool or the garden are covered with solar panels to help power the site. The roof deck is designed to allow rainwater to drain between stone pavers into collection tanks below where it is filtered and used throughout the building. Between the two tanks, one for filtered water and one for unfiltered water, the building should be able to store 2 months worth of rainwater at any given time. The building below will be fitted with appliances that are both energy efficient and conserve water, regardless of the finish level of the units.

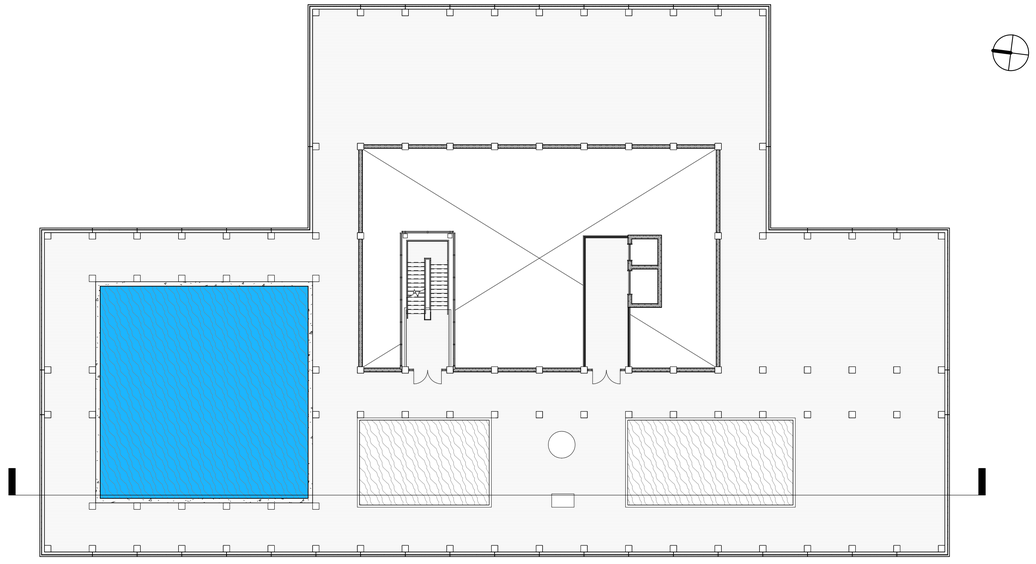
Below the roof is a purely mechanical level that will house the rainwater collection tanks and filters as well as all large mechanical equipment for the building.

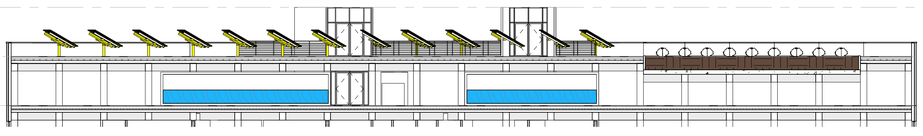
In the case of both energy and water, calculating the specific supply and demand was outside the scope of the project. Therefore, it's assumed that the building would still have to be connected to the municipal systems to meet demand.

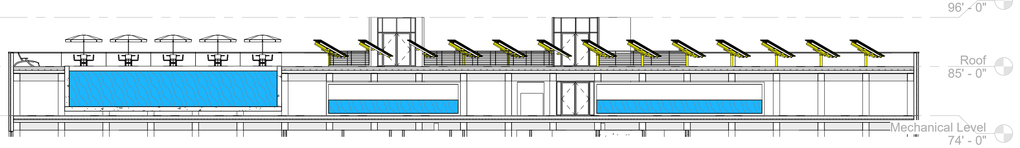












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Global Context
Energy and Water

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Committee

William Galloway - Chairman

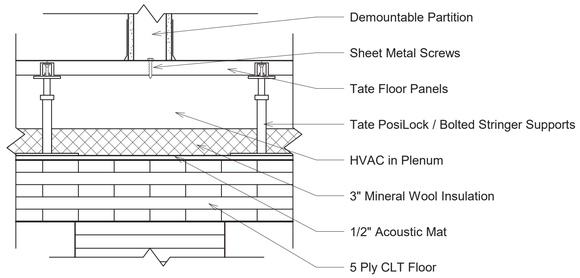
Scott Gartner

Edward Becker

D008

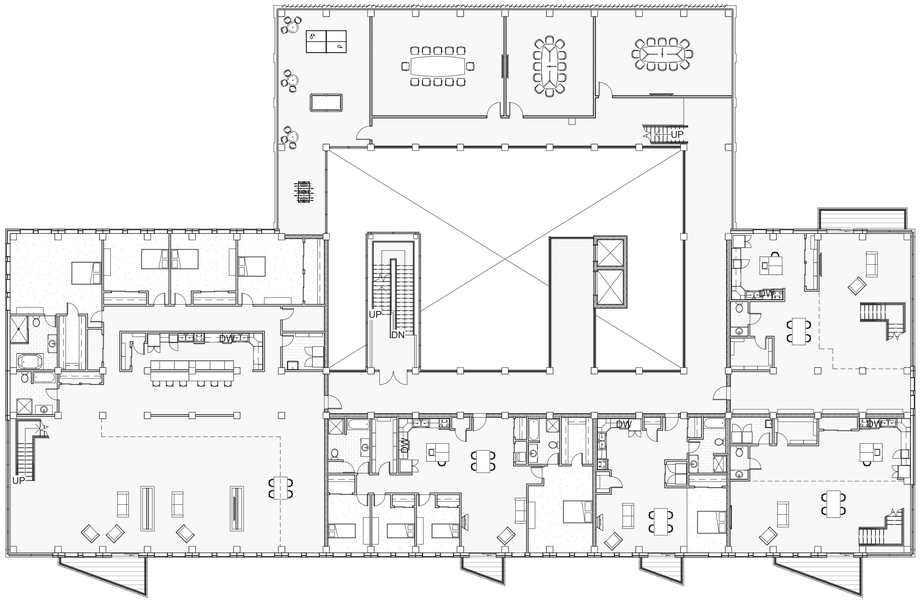
The final sustainability strategy that this project envisions is adaptability. The post and beam structural system theoretically allows for considerable flexibility in program. All of the interior partitions are demountable, expect those between units and the atrium and between units themselves. Thus, should the building ever be re-purposed, the partitions can simply be removed. Even the walls that aren't demountable aren't load bearing and simply attach to the base of the structural beams above, allowing them to be removed as well.

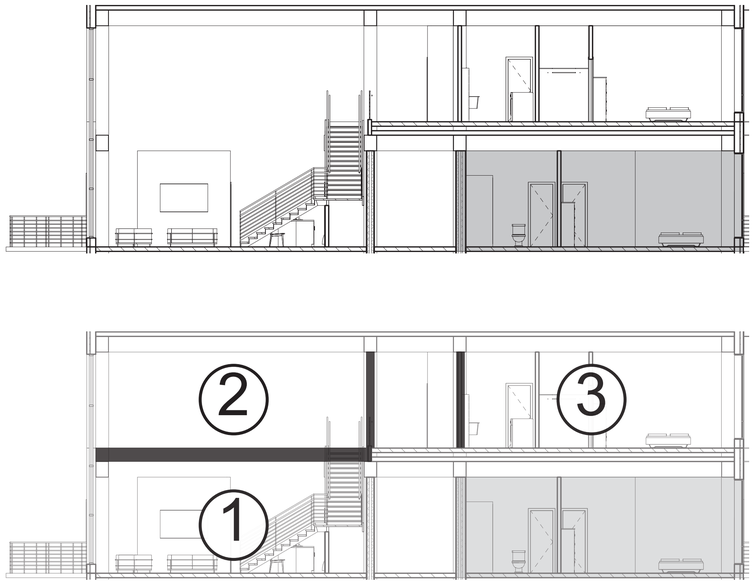
Furthermore, the specified raised floor system allows floor panels to be moved or replaced with ease, including those housing power and HVAC interfaces, those that the demountable walls were attached to, or those that aren't desirable for a new program. The scale of possible modifications could range from modifying individual units, subdividing larger units into multiple smaller ones, and even full or partial conversion to another program like offices.



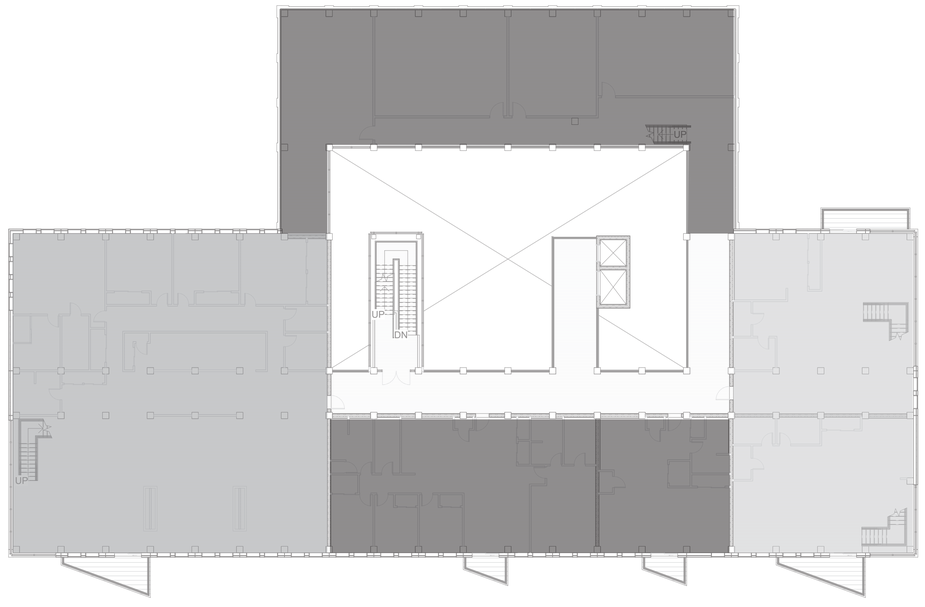


The Tate raised floor system allows considerable flexibility with its interchangeable panels and parts, numerous finishes, and the ability to attach demountable partitions.





Walls and floors can be added to turn larger apartments into 3 smaller ones.



By removing unnecessary partitions and changing floor panels, each floor could easily be re-purposed into one or several office spaces.

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Blacksburg, Virginia

Global Context
Adaptability

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

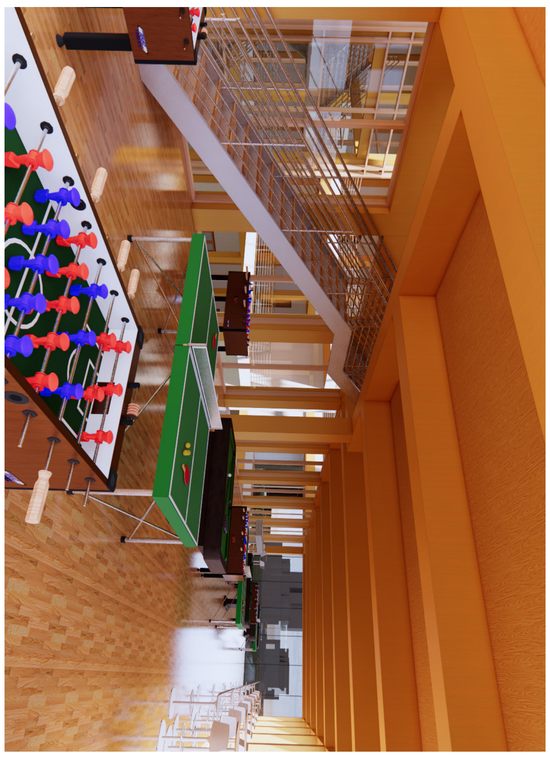
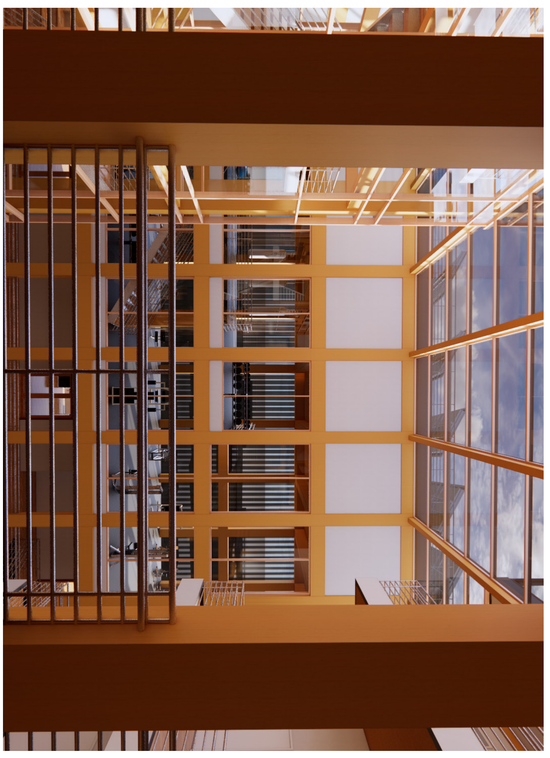
Committee

William Galloway - Chairman

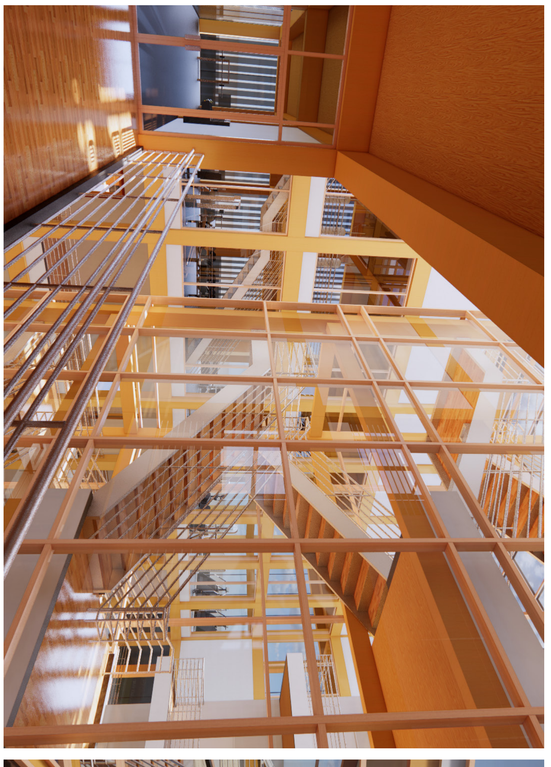
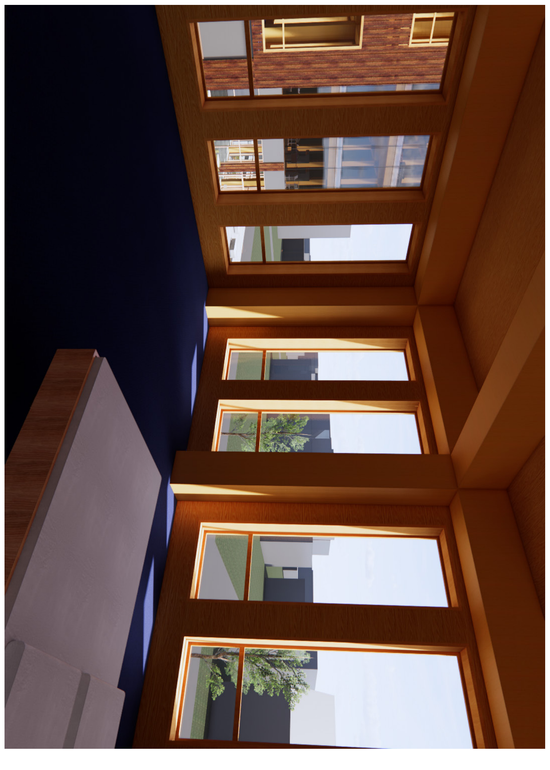
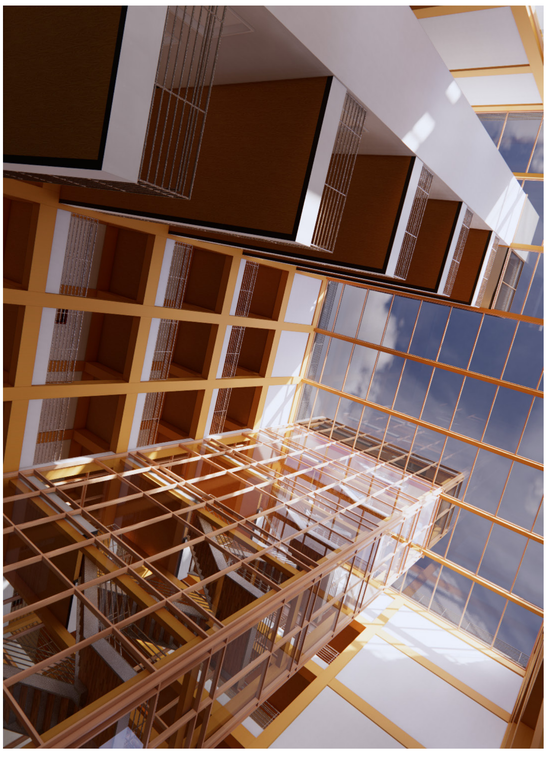
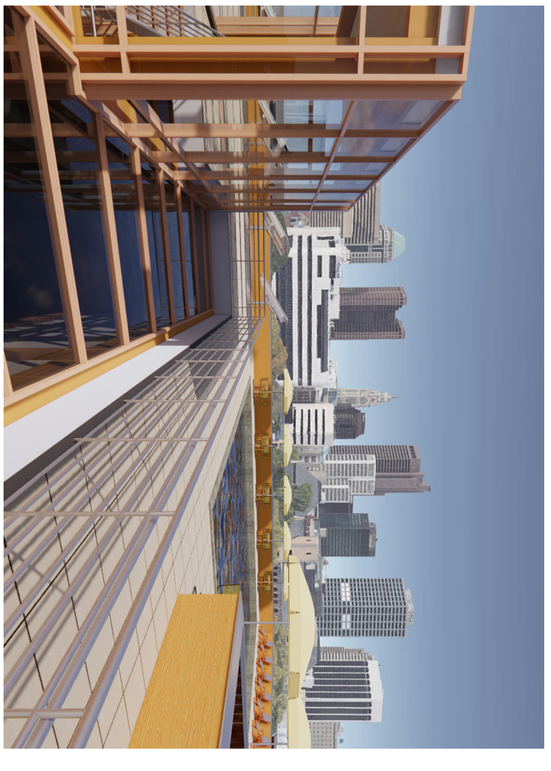
Scott Gartner

Edward Becker

D009



A Future for Housing

David Neil Prentice

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Master of Architecture

May 7th, 2021
Blacksburg, Virginia

COLLEGE OF ARCHITECTURE
AND URBAN STUDIES
VIRGINIA TECH

David Prentice

Renderings

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Columbus, OH
43215

Committee
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Scott Gartner
Edward Becker

D010

Part 2: Construction

mass timber Multifamily Housing

497 E. Town Street and 494 E. Rich Street
Columbus, OH
43215

General Notes

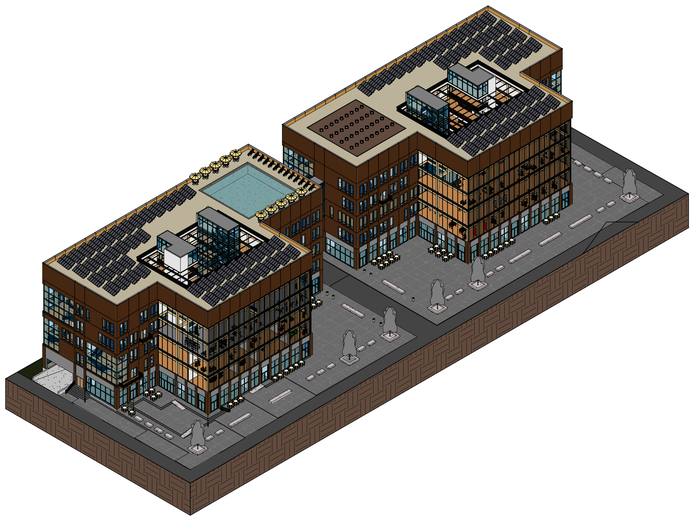
1. If a wall appears to be centered on a grid line and isn't marked otherwise, it's centered on the grid line.
2. If a wall appears to be aligned to another wall or grid line and isn't marked otherwise, it is.
3. If a door appears centered on a wall and isn't marked otherwise, it is.
4. The building will be equipped throughout with an automated sprinkler system.
5. While MEP equipment isn't modeled, the building is designed for a low-pressure, under floor, HVAC distribution system.

It should be noted, this set of drawings is very much incomplete. It's impossible for one person to do a full and complete set of construction drawings alone when the design was only finalized a couple weeks before the deadline.

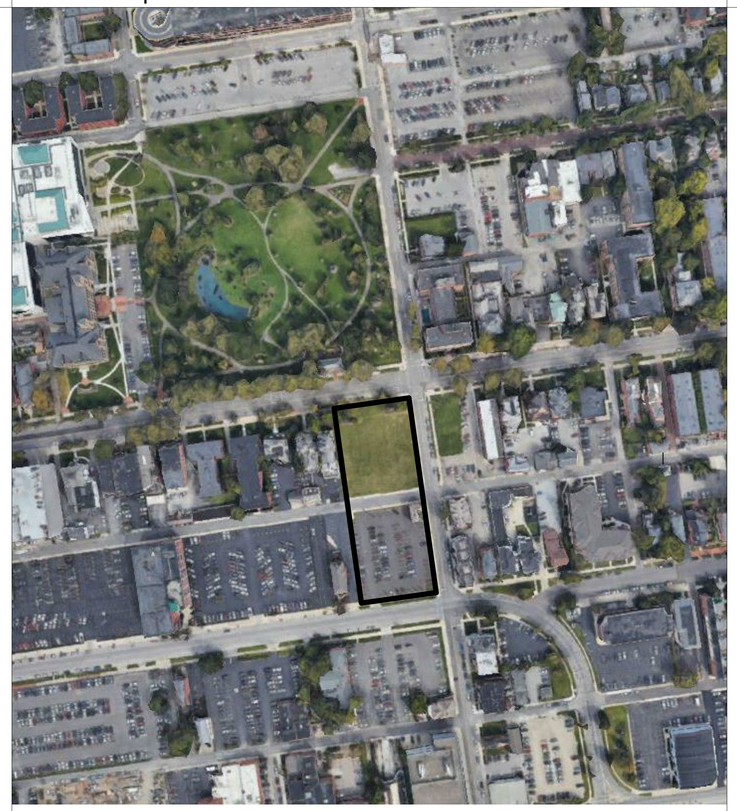
Therefore, I understand that there are things missing, like a room schedule, a detailed spec book with corresponding key notes, detailed interior elevations, millwork details, and a plethora of other things. I understand that there are probably missing dimensions and that the ones that do exist are too precise. There simply wasn't time to do everything; this is just what could be completed before the clock ran out.

A ton of thought went into small details that didn't make sense to include in Part 1. This part is largely to provide a space where I can document as many of those small decisions as possible.

Building Axon



Site Map



Typical Abbreviations

#	Pound OR Number
&	And
@	At
ACT	Acoustic Ceiling Tile
AD	Area Drain
AFF	Above Finished Floor
ALUM	Aluminum
ANOD	Anodized
BSMT	Basement
BYND	Beyond
BOT	Bottom
CIP	Cast In Place
CHNL	Channel
CJ	Control Joint
CL	Center Line
CLG	Ceiling
CLR	Clear
CMU	Concrete Masonry Unit
COL	Column
COMPR	Compressible
CONC	Concrete
CONT	Continuous
CPT	Carpet
CT	Ceramic Tile
CTYD	Courtyard
DBL	Double
DEMO	Demolish or Demolition
DIA	Diameter
DIM	Dimension
DIMS	Dimensions
DN	Down
DR	Door
DWG	Drawing
EA	Each
EJ	Expansion Joint
EL	Elevation
ELEC	Electrical
ELEV	Elevator or Elevation
EPDM	Ethylene Propylene Diene M-Class (Roofing)
EQ	Equal
EXIST	Existing
EXP JT	Expansion Joint
EXT	Exterior
FD	Floor Drain or Fire Department
FEC	Fire Extinguisher Cabinet
FF	Finished Face or Finished Floor
FFL	Finished Floor Level
FIXT	Fixture
FLR	Floor
FM	Filled Metal
FO	Face Of
FND	Foundation
GA	Gauge
GALV	Galvanized
GWB	Gypsum Wall Board
HC	Hollow Core
HI	High
HM	Hollow Metal
HP	High Point
HR	Hour
HVAC	Heating, Ventilating, And Air Conditioning
IRGWB	Impact Resistant Gypsum Wall Board
ILO	In Lieu Of
INSUL	Insulated or Insulation
INT	Interior
LO	Low
MAX	Maximum
MO	Masonry Opening
MECH	Mechanical
MEMBR	Membrane
MIN	Minimum
MRGWB	Moisture-Resistant Gypsum Wall Board
MTL	Metal
NIC	Not In Contract
NO	Number
NOM	Nominal
OC	On Center
OH	Overhang or Opposite Hand
OPP	Opposite or Opposite Hand
OZ	Ounce
PCC	Pre-Cast Concrete
PLUMB	Plumbing
PLYD	Plywood
PT	Pressure Treated
PNT	Paint or Painted
PVC	Polyvinyl Chloride
RBR	Rubber
RCP	Reflected Ceiling Plan
RD	Roof Drain
REQD	Required
RM	Room
SIM	Similar
SD	Smoke Detector
SPEC	Specified OR Specification
SPK	Sprinkler or Speaker
SSTL	Stainless Steel
STC	Sound Transmission Coefficient
STL	Steel
STRUCT	Structure or Structural
T&G	Tongue And Groove
TELE	Telephone
TLT	Toilet
TME	To Match Existing
T.O	Top Of
TOC	Top Of Concrete
TOS	Top Of Steel
TPD	Toilet Paper Dispenser
T/D	Telephone/Data
TYP	Typical
UNO	Unless Noted Otherwise
U/S	Underside
VIF	Verify In Field
VP	Vision Panel
W/	With
WD	Wood

David Prentice

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VIRGINIA TECH.

A Future for Housing

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May 7th, 2021
Blacksburg, Virginia

Cover

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

G001

1 North Landscaping Plan
1/8" = 1'-0"

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North Landscaping Plan

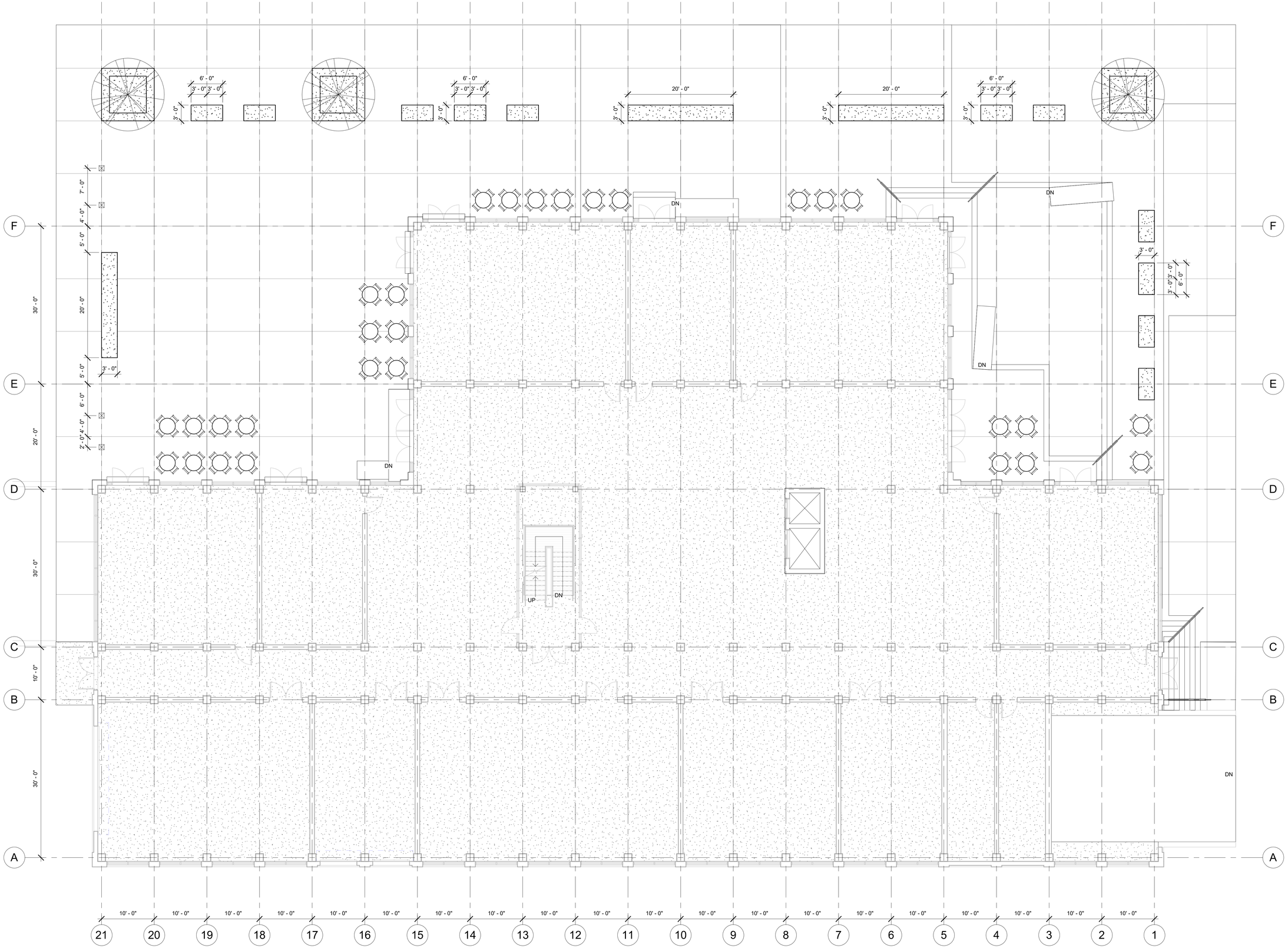
Project Address

497 E. Town St & 494 E. Rich St
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43215

Committee

William Galloway - Chairman
Scott Gartner
Edward Becker

L001



1 South Landscaping Plan
1/8" = 1'-0"

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South Landscaping Plan

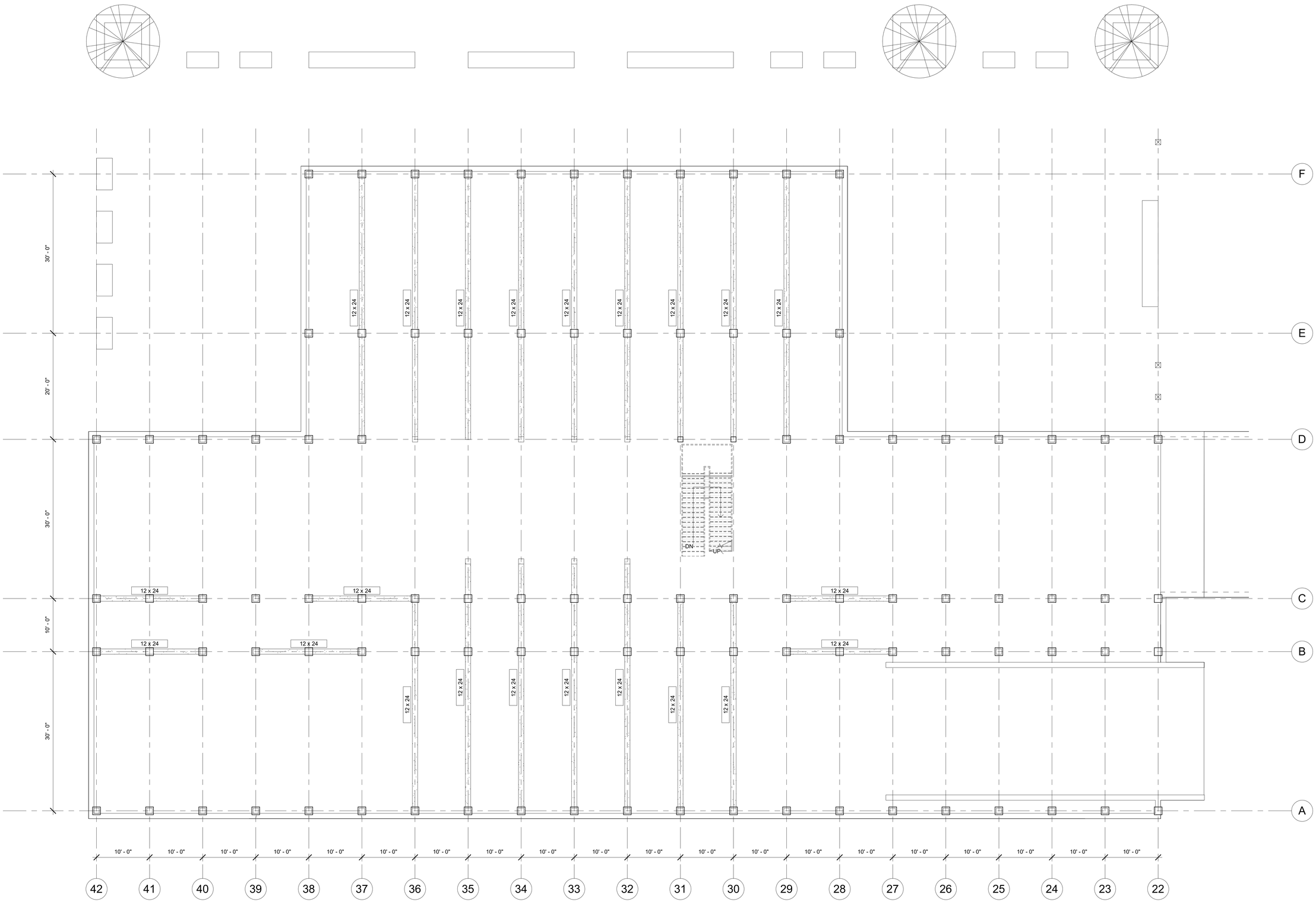
Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman
Scott Gartner
Edward Becker

L002



1 Level 1 North
1/8" = 1'-0"

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First Floor North Structural Plan

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S101

1 Level 1 South
1/8" = 1'-0"

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First Floor South Structural Plan

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S102

1 Level 2 North
1/8" = 1'-0"

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Second Floor North Structural Plan

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S103

1 Level 2 South
1/8" = 1'-0"

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Second Floor South Structural Plan

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43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S104

1 Level 3 North
1/8" = 1'-0"

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Third Floor North Structural Plan

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

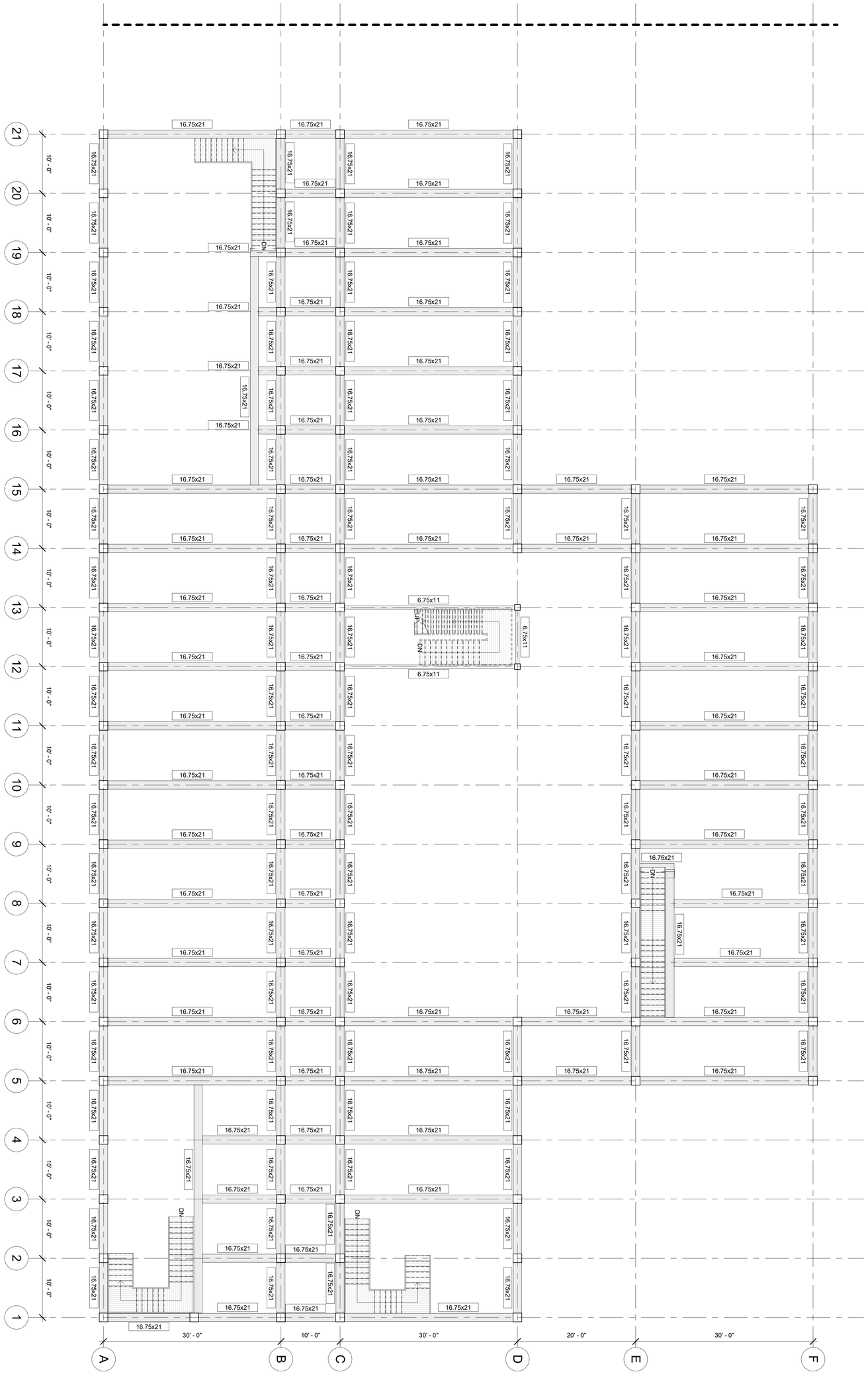
Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S105



S106

Third Floor South Structural Plan

Project Address
497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee
William Galloway - Chairman
Scott Gartner
Edward Becker

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David Prentice

1 Level 4 North
1/8" = 1'-0"

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Fourth Floor North Structural Plan

Project Address

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Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S107

1 Level 4 South
1/8" = 1'-0"

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VIRGINIA TECH.

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Fourth Floor South Structural Plan

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S108

1 Level 5 North
1/8" = 1'-0"

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VIRGINIA TECH.

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Fifth Floor North Structural Plan

Project Address

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Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S109

1 Level 5 South
1/8" = 1'-0"

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VIRGINIA TECH.

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Fifth Floor South Structural Plan

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S110

1 Mechanical Level North
1/8" = 1'-0"

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Mechanical Level North Structural Plan

Project Address

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Committee

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Scott Gartner

Edward Becker

S111

1 Mechanical Level South
1/8" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE
AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

David Neil Prentice

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Mechanical Level South Structural Plan

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

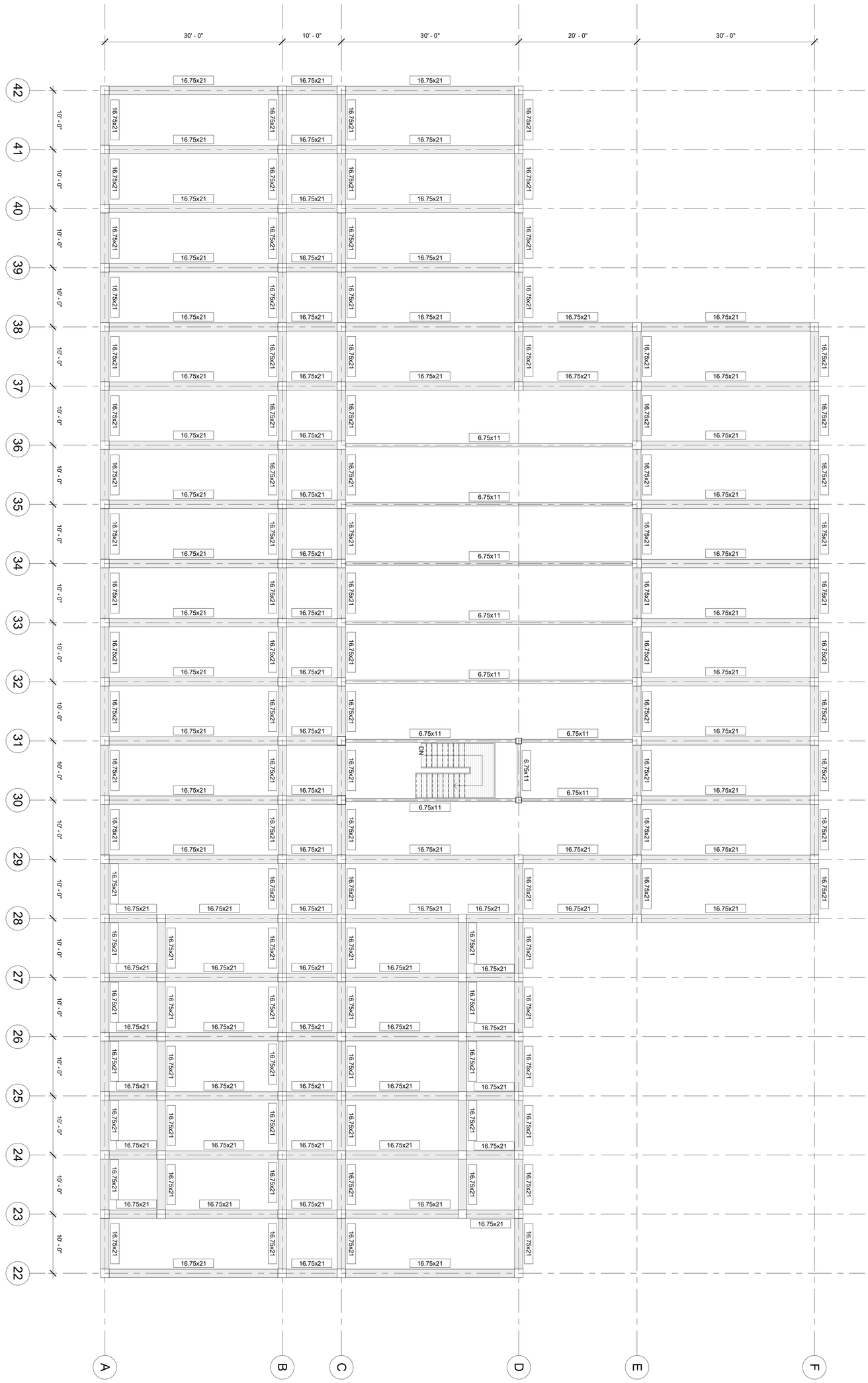
Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

S112



Roof North Structural Plan

S113

Project Address
497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee
William Galloway - Chairman
Scott Gartner
Edward Becker

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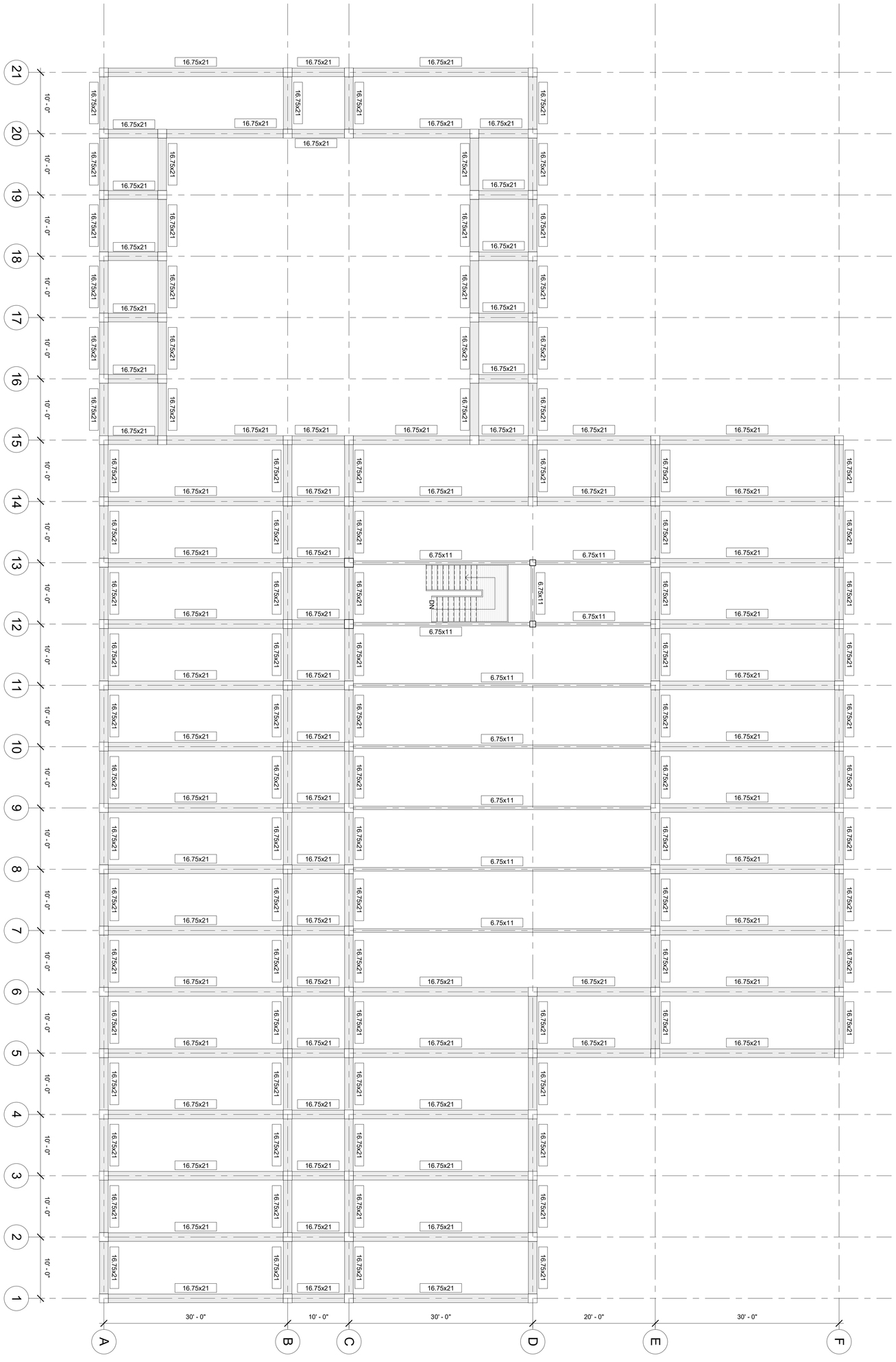
Master of Architecture

May 7th, 2021
Blacksburg, Virginia

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH

David Prentice

1 Roof South
1/8" = 1'-0"



Roof South Structural Plan

S114

Project Address
497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee
William Galloway - Chairman
Scott Gartner
Edward Becker

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Code Analysis (2021 International Building Code)

Construction Type	IV-C	
Occupancy Classification	R2	
Building Height	85 ft to roof deck, 96 ft to highest point	85 ft allowed (504.3)
Number of Floors	6 (not counting roof access)	8 allowed (504.4)
Building Area	178,400 ft² total (not counting roof)	358,750 ft² allowed per 506.2 [(At + (NS x if)) x 4) = (76,875 + (25,625 x 0.5)) x 4]
	36,900 ft² largest floor	89,679 ft² allowed per 506.2.1 [At + (NS x if) = 76,875 + (25,625 x 0.5)]

Zoning

Zoning Classification	DD (Downtown District)
Height Limit	Unlimited
Notes:	Downtown Commission would have to issue a Certificate of Appropriateness for the design
	Downtown Commission would also have to approve the encroachment into the public right of way from the connector
	Underground parking is permitted, existing curb cuts are utilised as much as possible.
	Building doesn't conform to the design guidelines material preferences

Fire Ratings (601)

All Structural Members	2 hrs (char included)
Walls Between Units	1 hr
Stair Enclosure:	2 hrs (1023.2)
Elevator Enclosure	2 hrs (no mass timber permitted, all gyp)
Floors	2 hrs
Roof	1 hr
Notes:	Light wood framing ins't permitted at all. Steel is used for demountable partitions and CLT is used between units. (602.4)
	No combustible materials are permitted exterior of the air / vapor barrier on the exterior walls. The finish material can be noncombustible hardiboard. (602.4.3.1)
	No combustible insulation, noncombustible mineral wool is used throughout (602.4.3.1)

Egress

Occupant Load Factor	200 gross (1004.5)
Max Floor Occupant Load	160
Required Exit Stairs	2 (1006.3.3)
Common Path of Egress	125 ft (1006.2.1)
Maximum Travel Distance	250 ft (1017.2)
	Cannot travel more than 200 ft through upper levels of atrium (1017.3.2.3)
Required Stairway Width	48 inches (1005.3.1)
Mimimum Corridor Width	44 inches (1020.3)
Dead-end Corridor Length	50 ft (1020.5)

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Code Analysis

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A001

1 Site
1/32" = 1'-0"

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Site Plan

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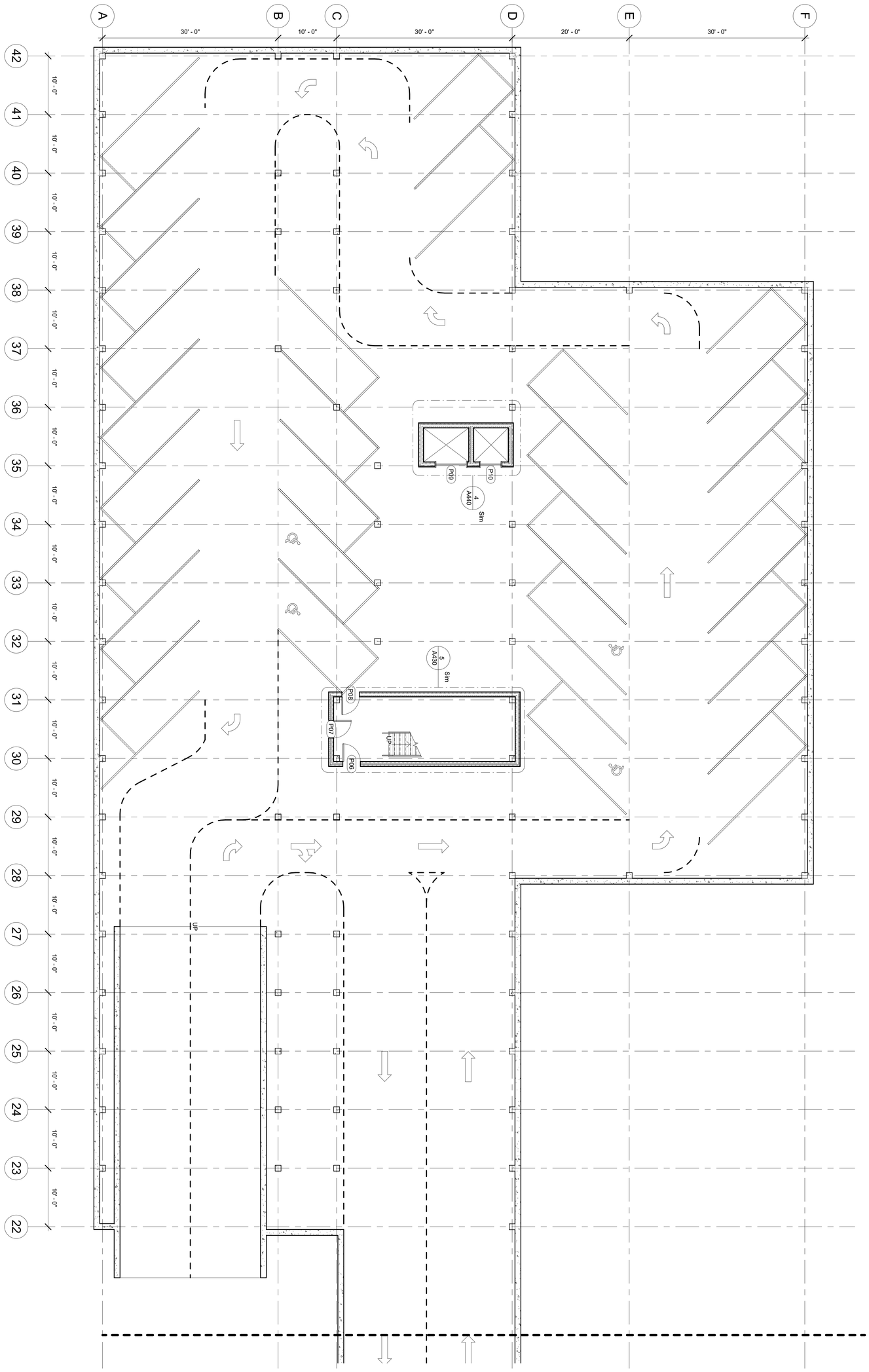
Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A101



1 Parking Level North Plan
1/8" = 1'-0"

A102

Parking Level North Plan

Project Address
497 E. Town St & 494 E. Rich St
Columbus, OH
43215

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William Galloway - Chairman
Scott Gartner
Edward Becker

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AND URBAN STUDIES
VIRGINIA TECH

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1 Parking Level South Plan
1/8" = 1'-0"

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Parking Level South Plan

Project Address

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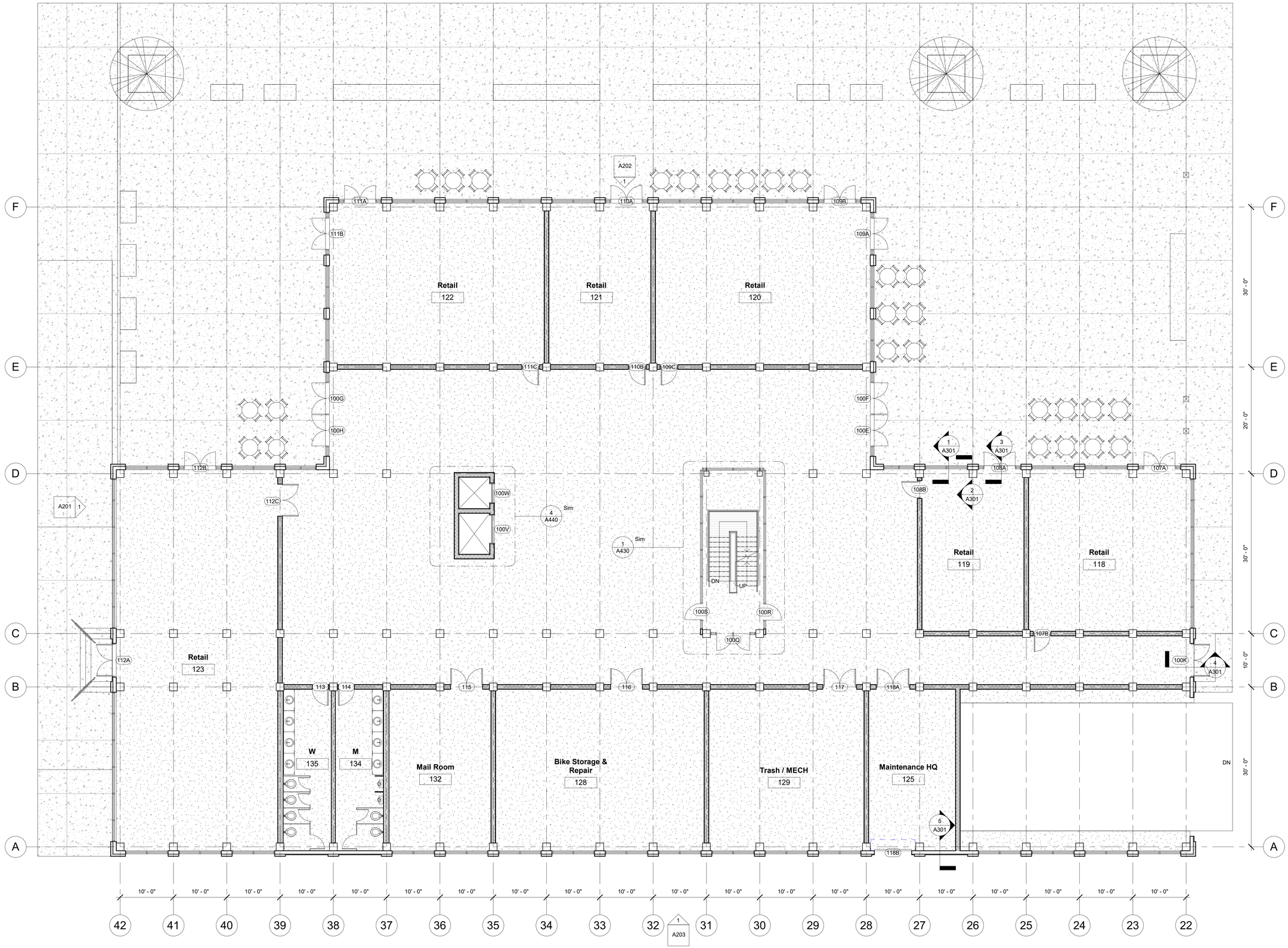
Committee

William Galloway - Chairman

Scott Gartner

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A103



1 First Floor North Plan
1/8" = 1'-0"

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First Floor North Plan

Project Address

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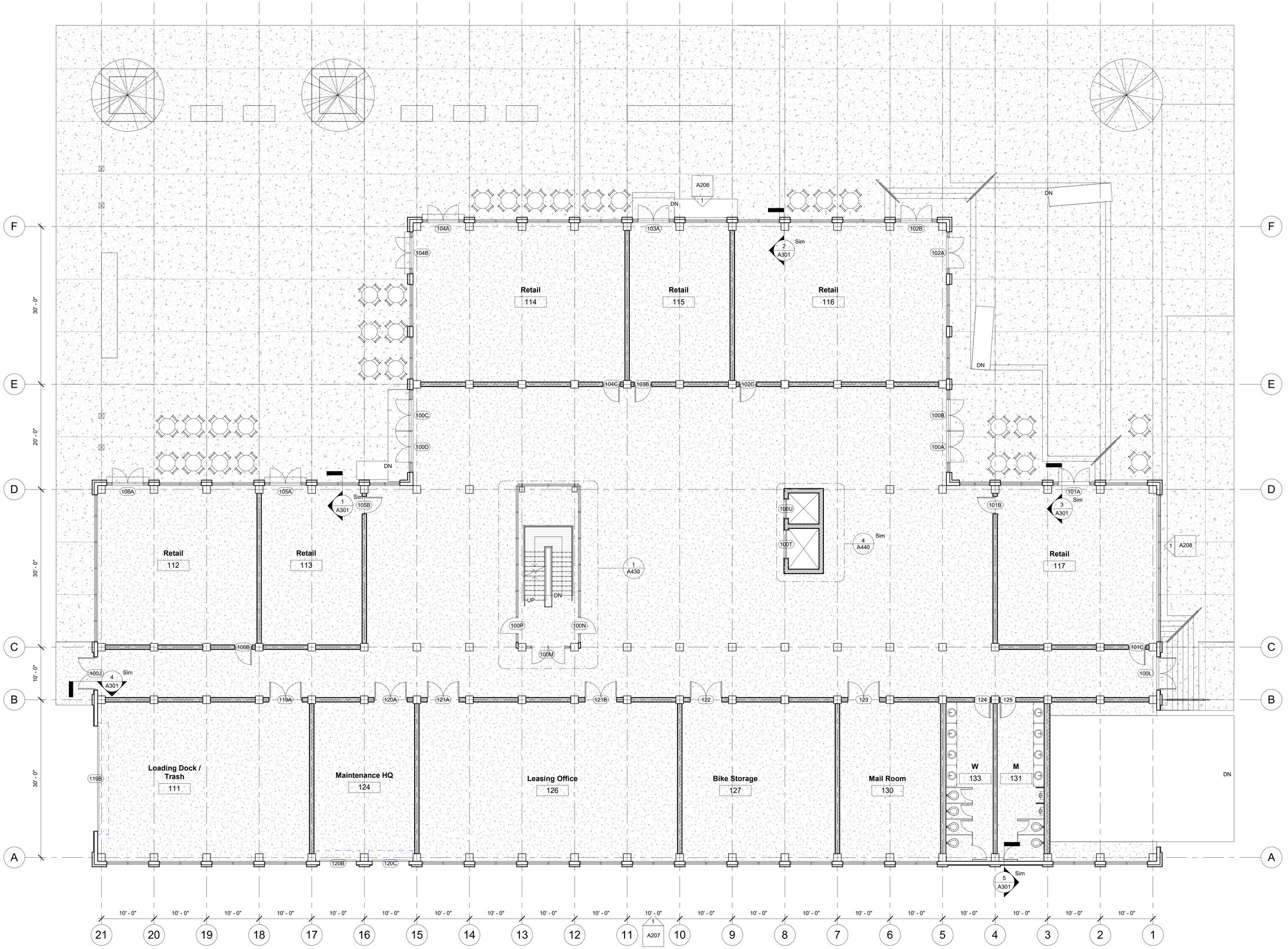
Committee

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Scott Gartner

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A104



1 First Floor South Plan
1/8" = 1'-0"

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First Floor South Plan

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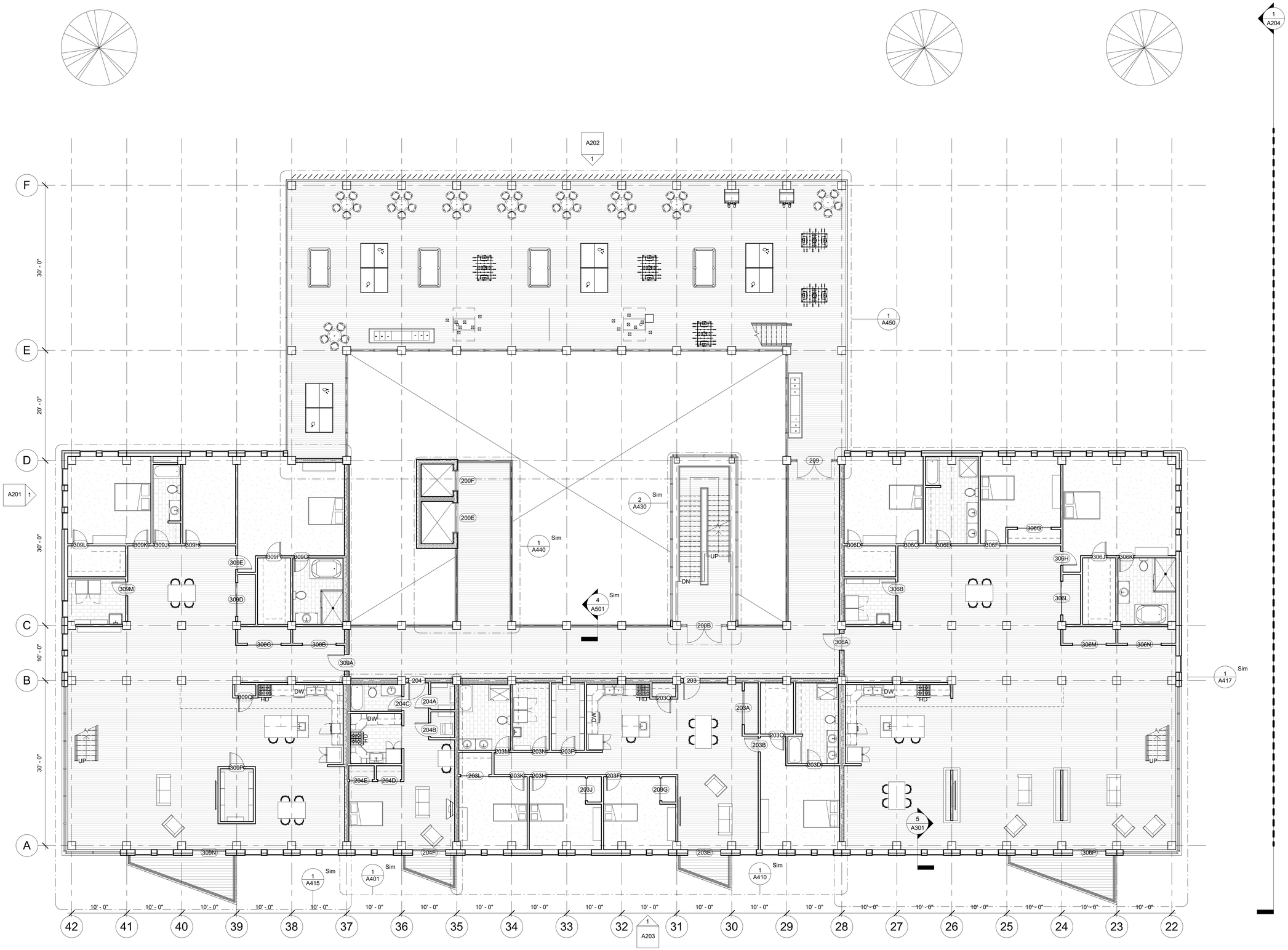
Committee

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A105



1 Second Floor North Plan
1/8" = 1'-0"

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Second Floor North Plan

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43215

Committee

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Scott Gartner
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A106

1 Second Floor South Plan
1/8" = 1'-0"

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Second Floor South Plan

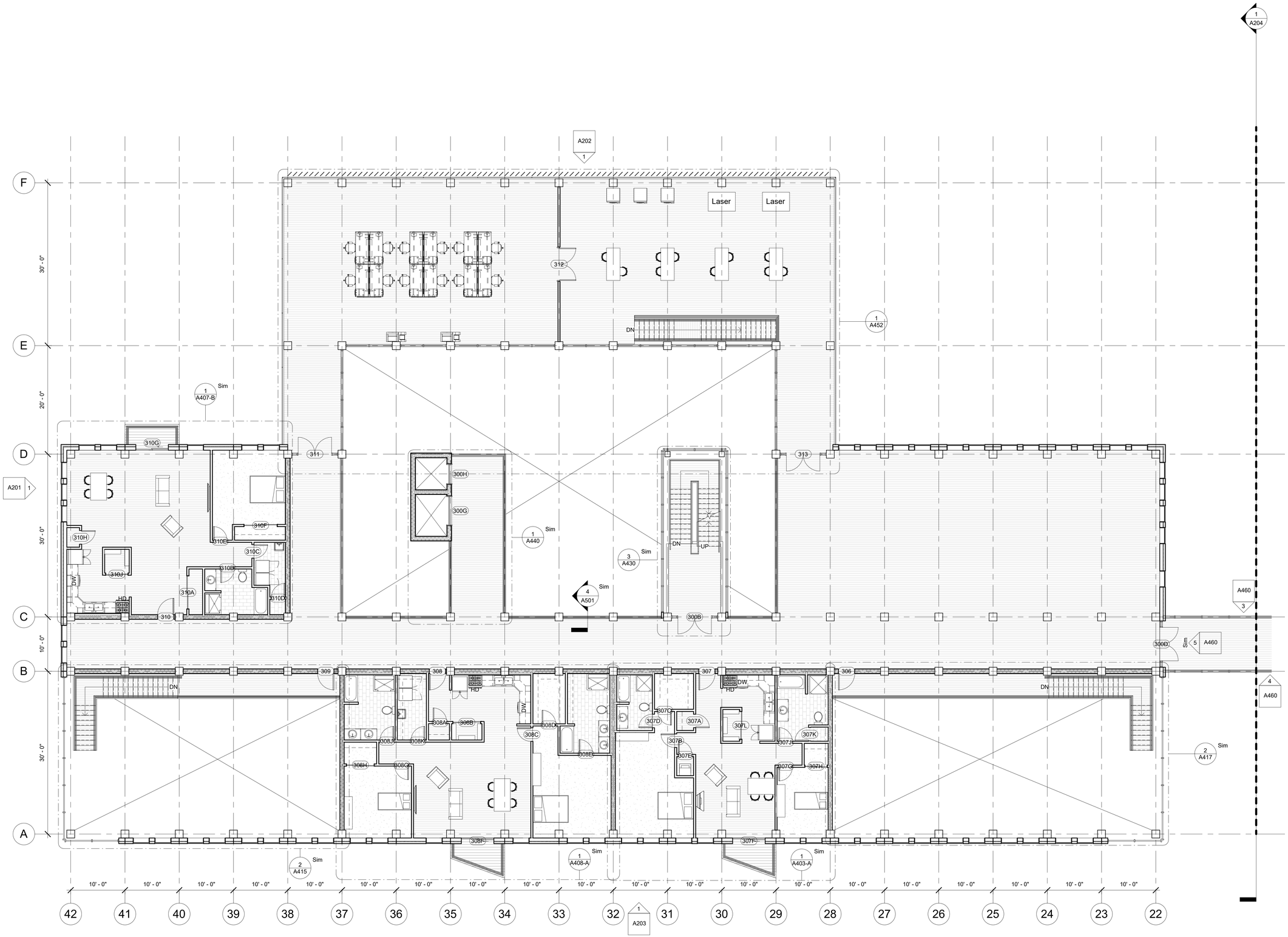
Project Address

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Committee

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Scott Gartner
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A107



1 Third Floor North Plan
1/8" = 1'-0"

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Third Floor North Plan

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A108

1 Third Floor South Plan
1/8" = 1'-0"

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Third Floor South Plan

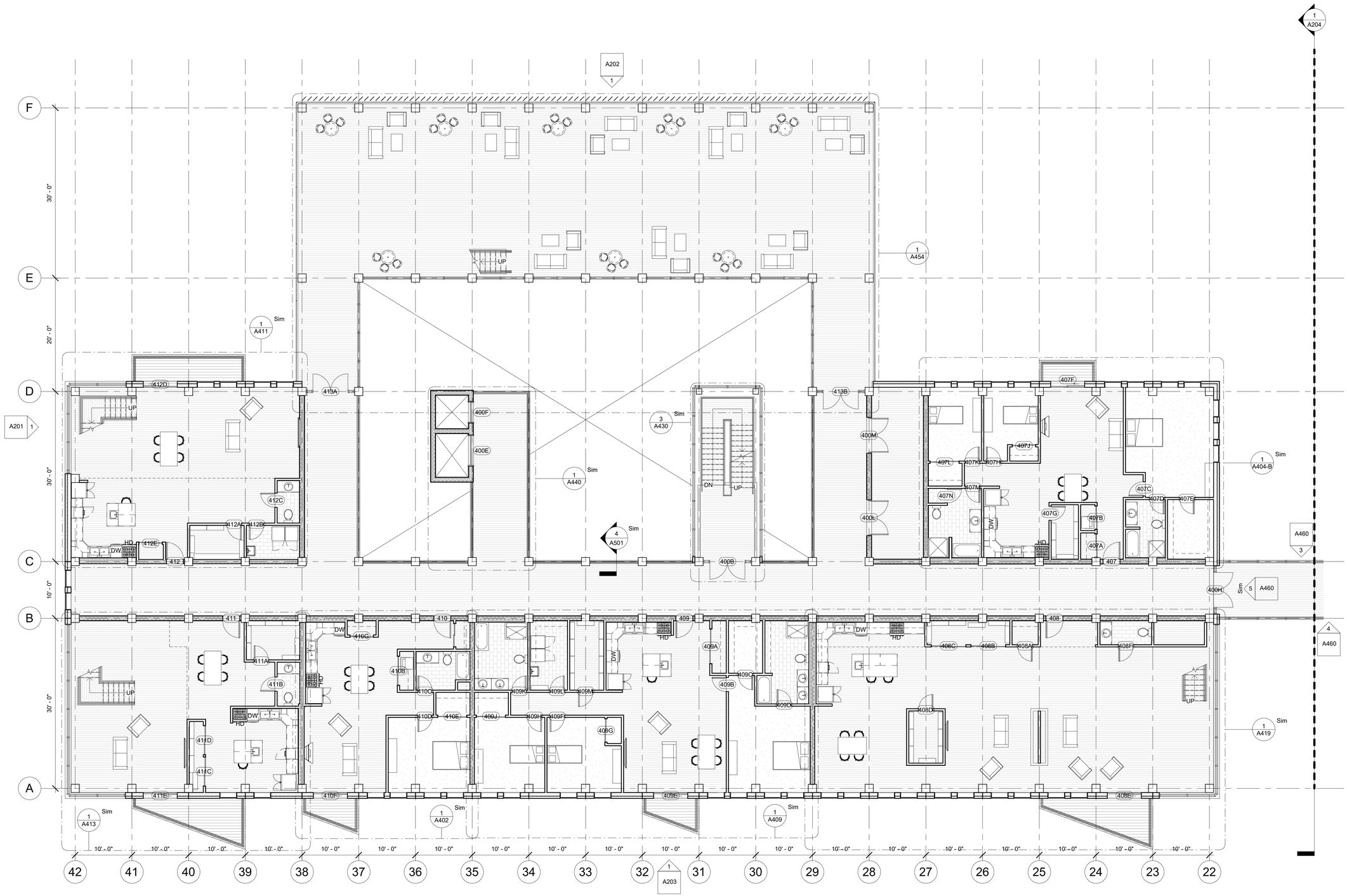
Project Address

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A109



1 Fourth Floor Plan North
1/8" = 1'-0"

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Fourth Floor North Plan

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A110

1 Fourth Floor Plan South
1/8" = 1'-0"

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Fourth Floor South Plan

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Scott Gartner
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A111

1 Fifth Floor North Plan
1/8" = 1'-0"

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Fifth Floor North Plan

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A112

1 Fifth Floor South Plan
1/8" = 1'-0"

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Fifth Floor South Plan

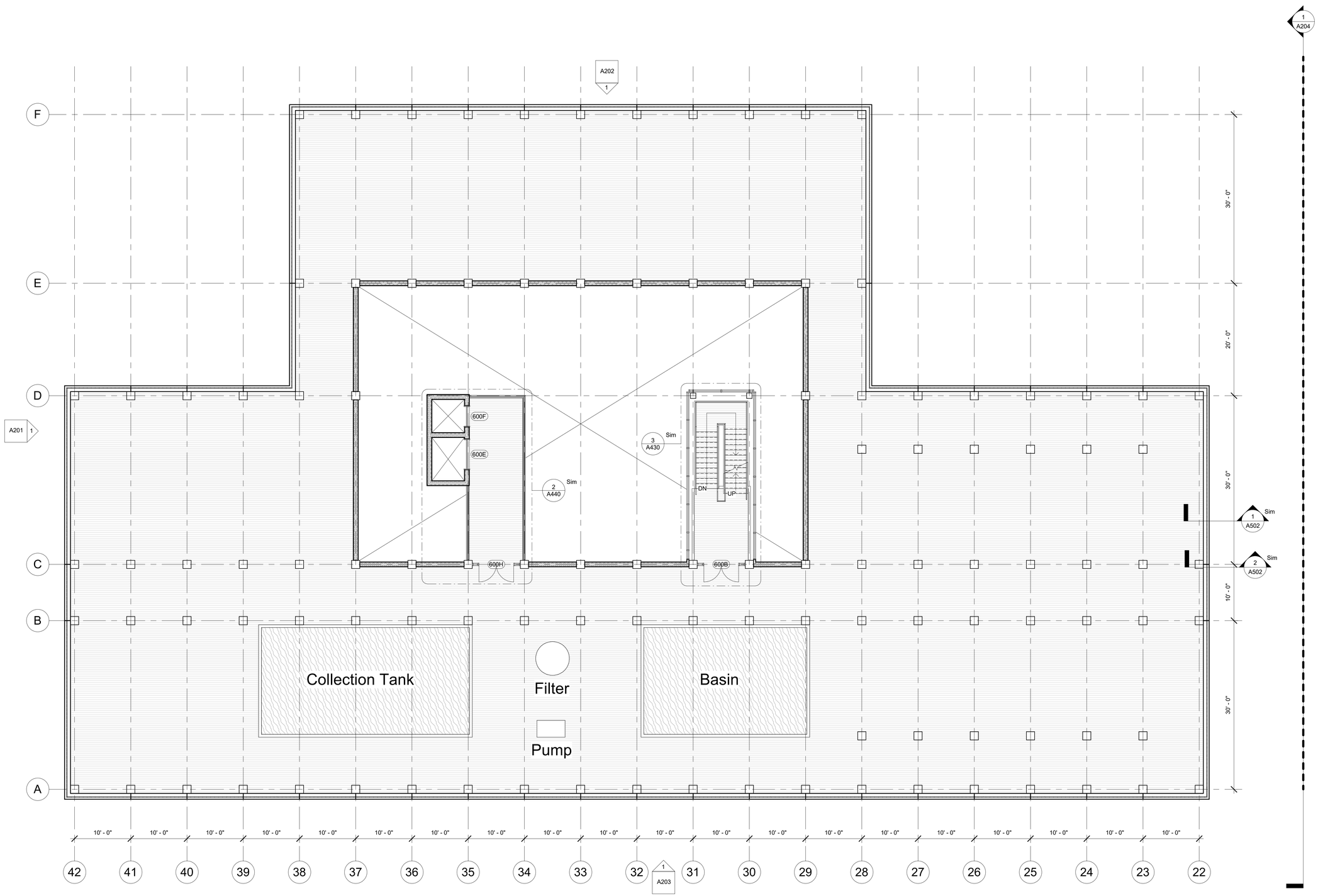
Project Address

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Scott Gartner
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A113



1 Mechanical Level North Plan
1/8" = 1'-0"

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Mechanical Level North Plan

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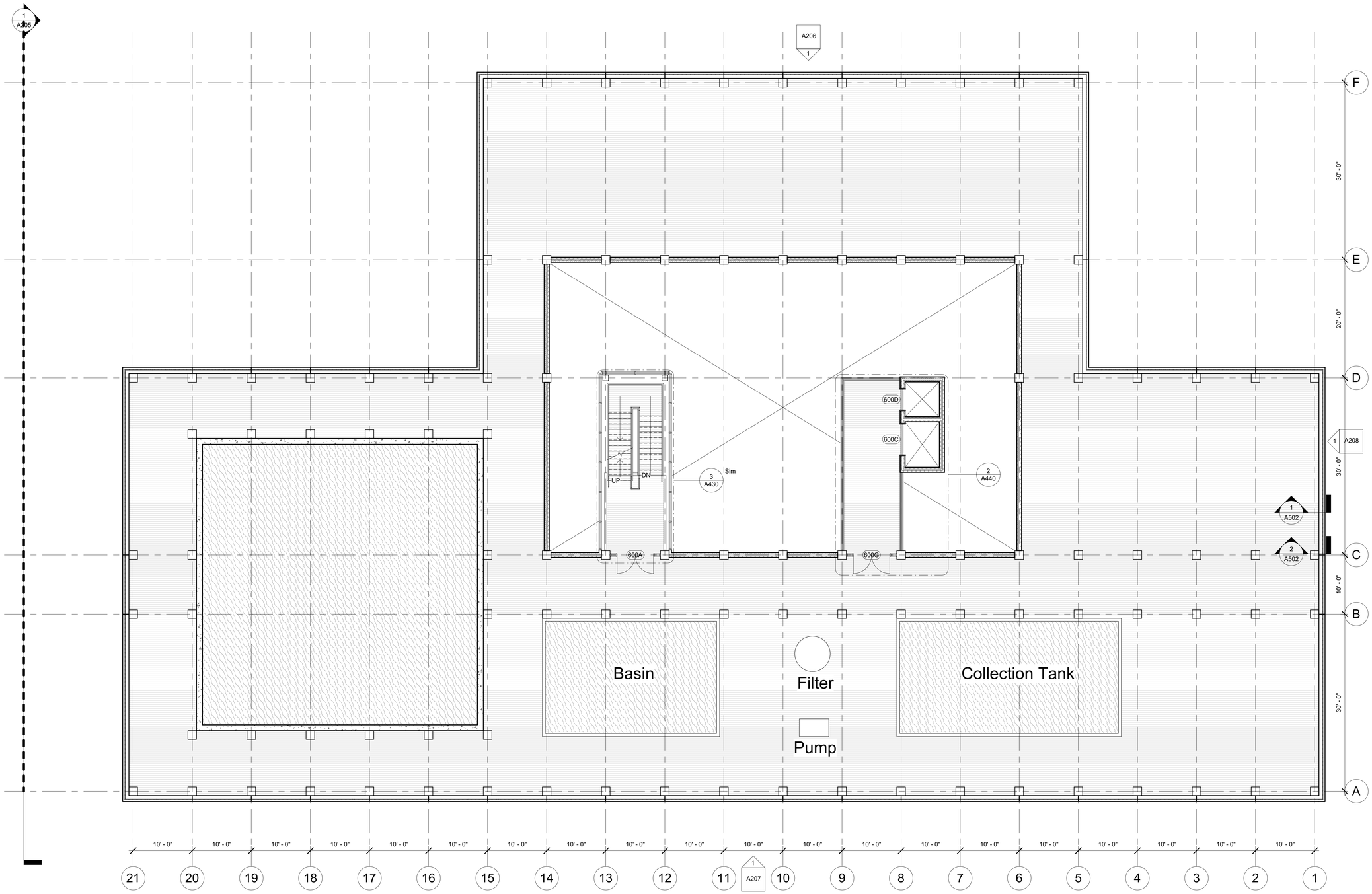
Committee

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A114



1 Mechanical Level South Plan
1/8" = 1'-0"

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Mechanical Level South Plan

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A115

1 Roof North Plan
1/8" = 1'-0"

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Roof Plan North

Project Address

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43215

Committee

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Scott Gartner
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A116

1 Roof South Plan
1/8" = 1'-0"

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Roof Plan South

Project Address

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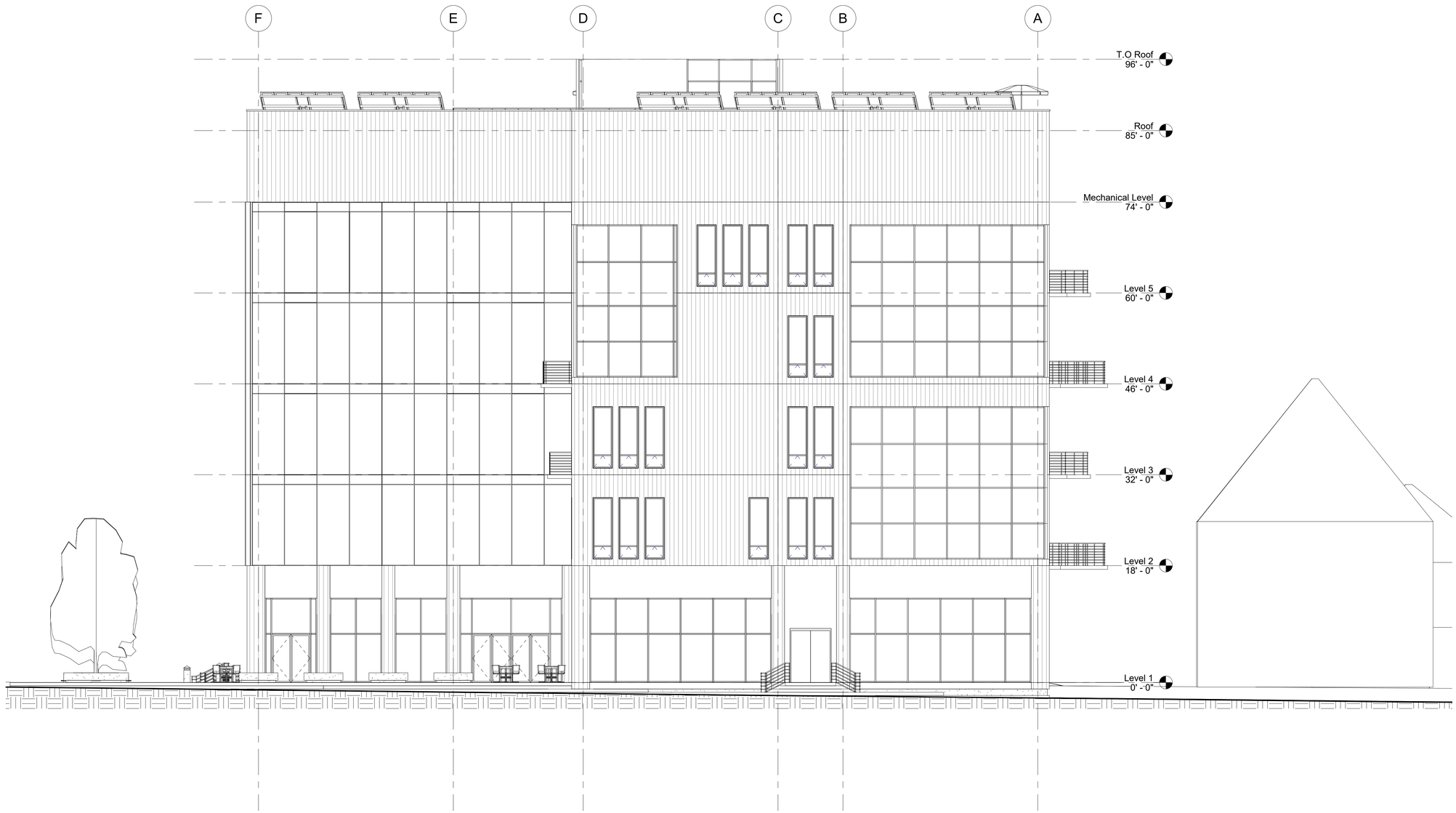
Committee

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Scott Gartner

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A117



1 North Building North Elevation
1/8" = 1'-0"

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VIRGINIA TECH.

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North Building North Elevation

Project Address

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Columbus, OH
43215

Committee

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Scott Gartner

Edward Becker

A201



1 North Building East Elevation
1/8" = 1'-0"

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North Building East Elevation

Project Address

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Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A202



1 North Building West Elevation
1/8" = 1'-0"

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VIRGINIA TECH.

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North Building West Elevation

Project Address

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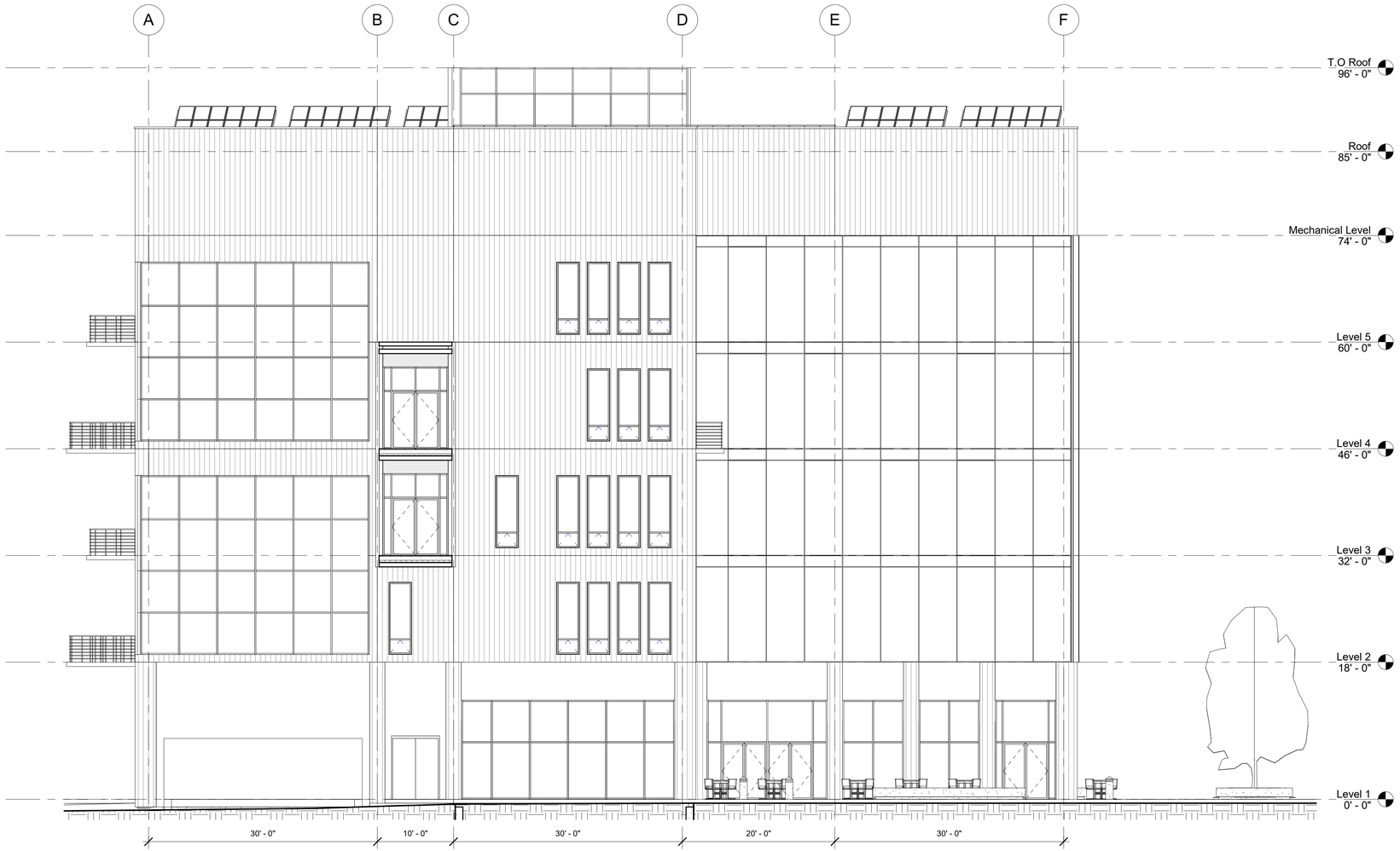
Committee

William Galloway - Chairman

Scott Gartner

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A203



1 North Building South Elevation
1/8" = 1'-0"

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VIRGINIA TECH.

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North Building South Elevation

Project Address

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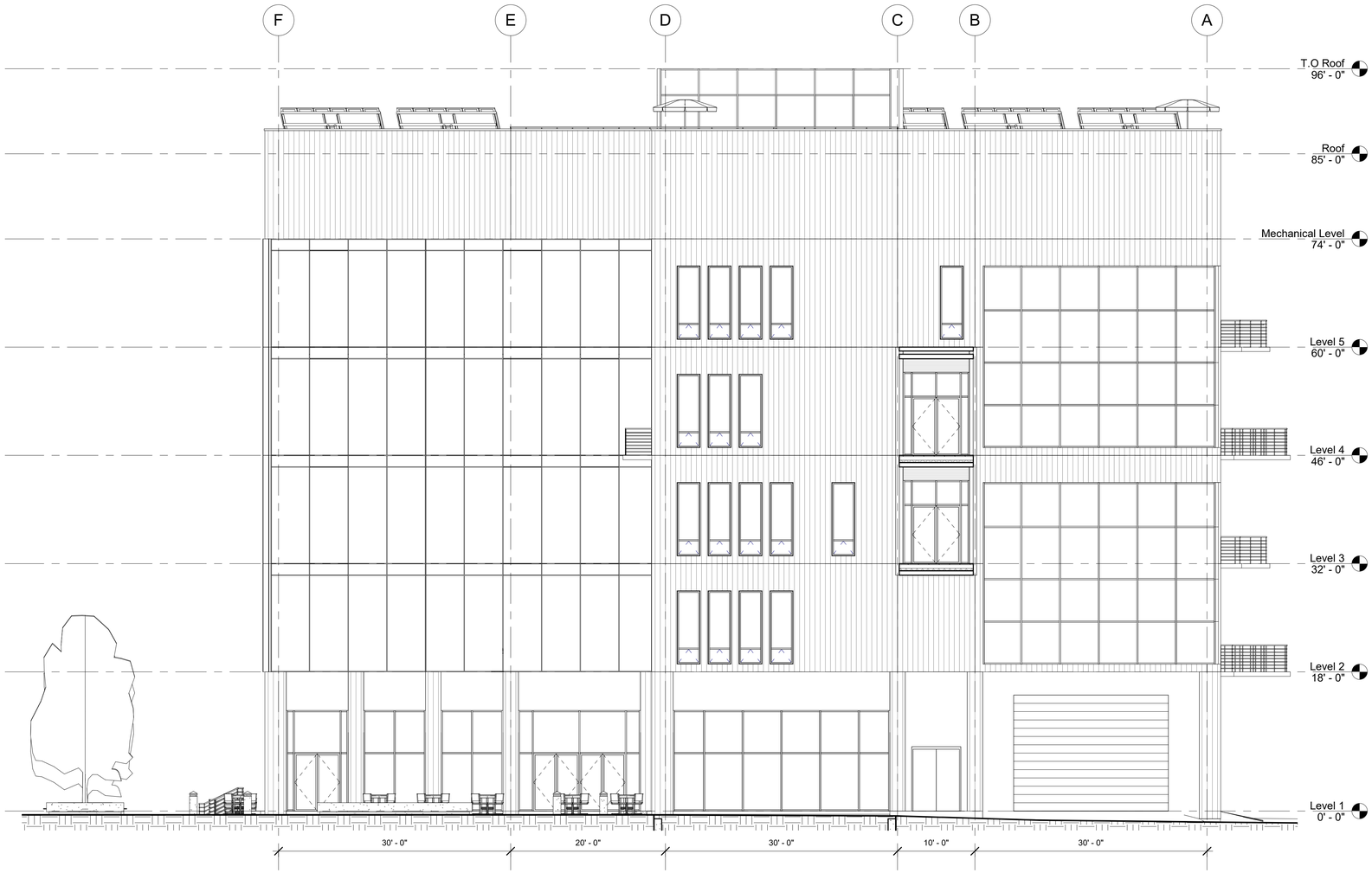
Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A204



1 South Building North Elevation
1/8" = 1'-0"

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South Building North Elevation

Project Address

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43215

Committee

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Scott Gartner

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A205



1 South Building East Elevation
1/8" = 1'-0"

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VIRGINIA TECH.

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South Building East Elevation

Project Address

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43215

Committee

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Scott Gartner

Edward Becker

A206



1 South Building West Elevation
1/8" = 1'-0"

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South Building West Elevation

Project Address

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Columbus, OH
43215

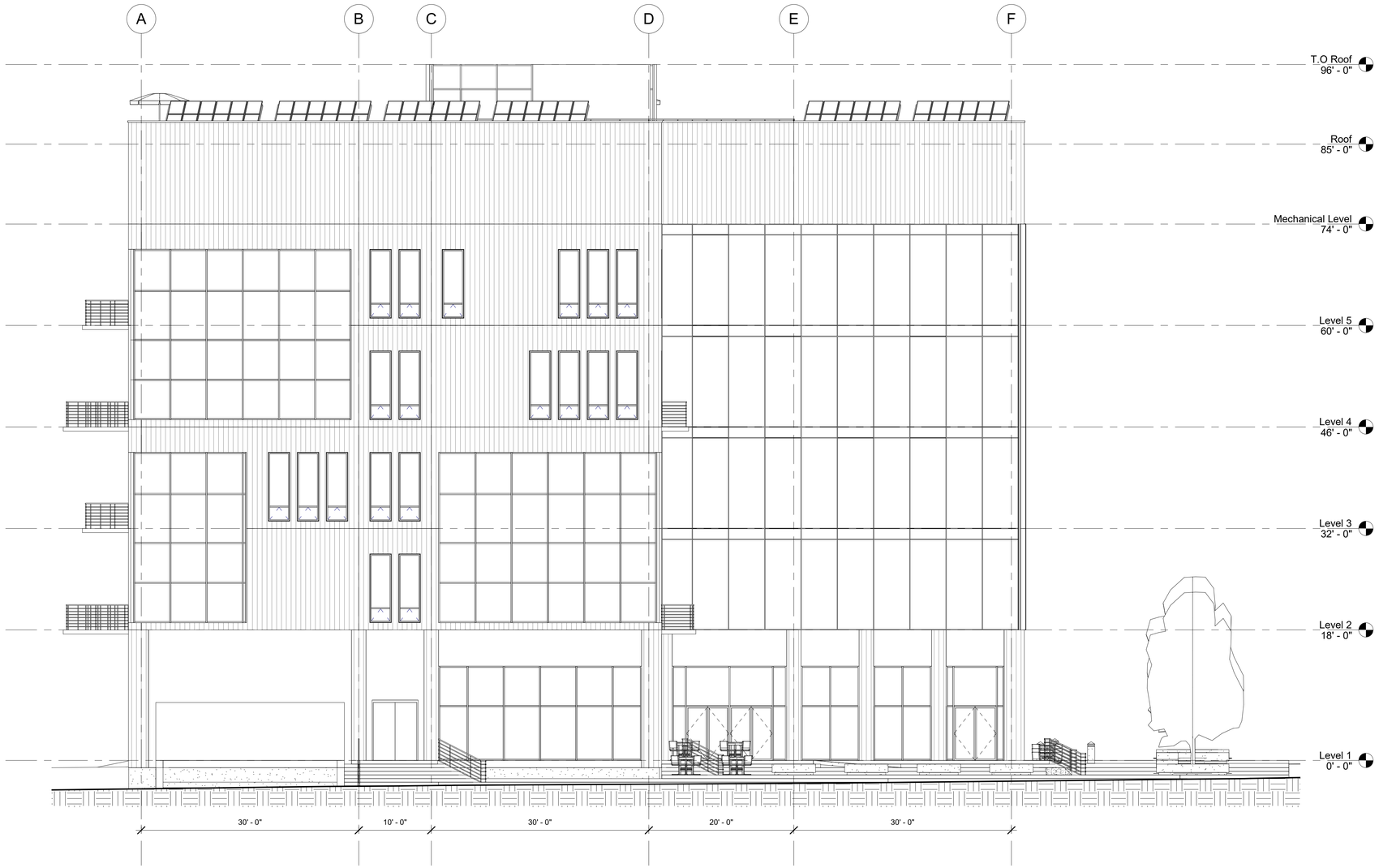
Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A207



1 South Building South Elevation
1/8" = 1'-0"

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South Building South Elevation

Project Address

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Columbus, OH
43215

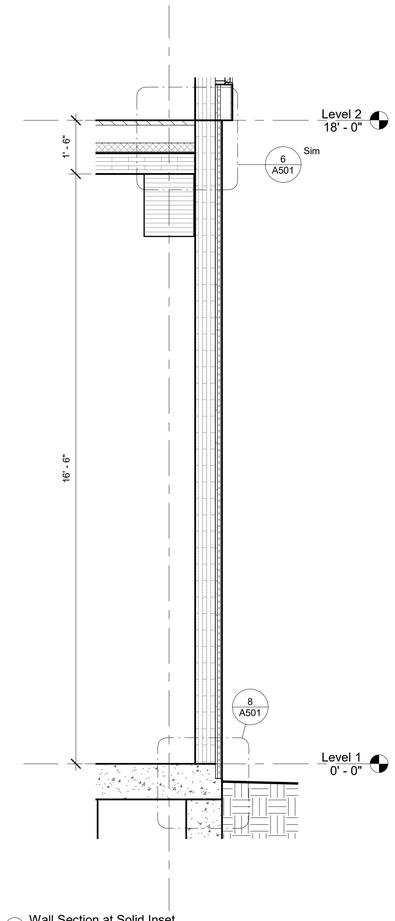
Committee

William Galloway - Chairman

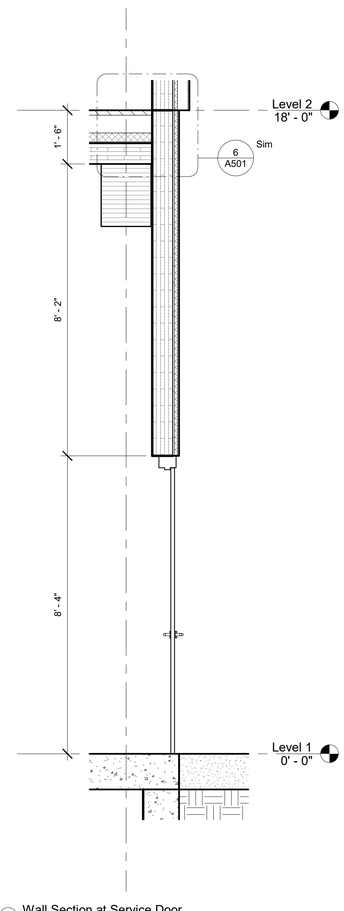
Scott Gartner

Edward Becker

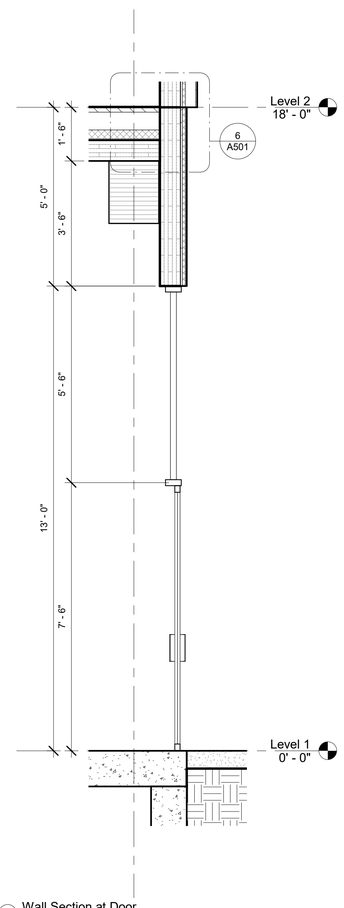
A208



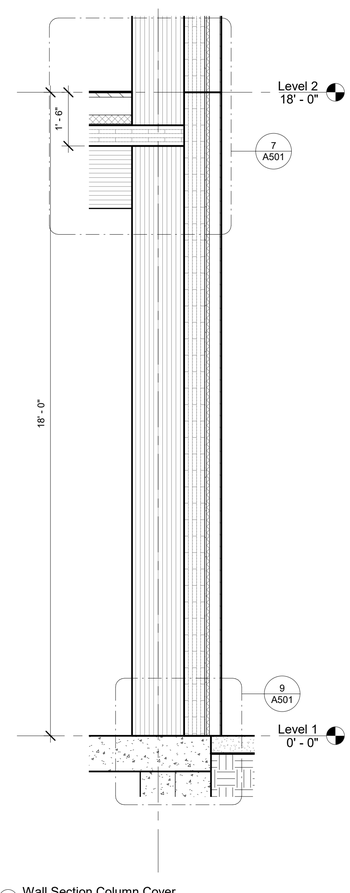
5 Wall Section at Solid Inset
1/2" = 1'-0"



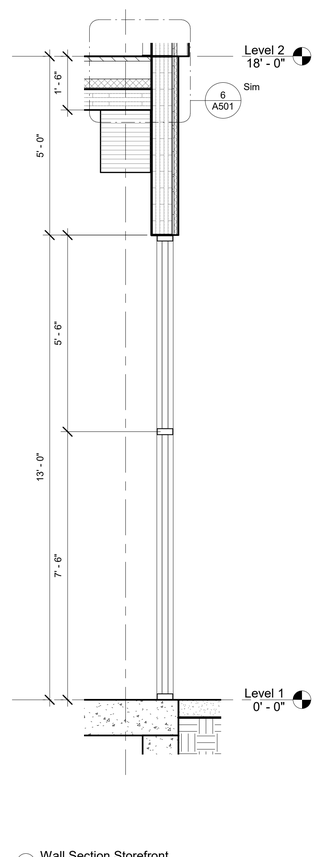
4 Wall Section at Service Door
1/2" = 1'-0"



3 Wall Section at Door
1/2" = 1'-0"



2 Wall Section Column Cover
1/2" = 1'-0"



1 Wall Section Storefront
1/2" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE
AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

David Neil Prentice

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Wall Sections

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A301

1 Level 1 - Studio Enlarged Plan
1/4" = 1'-0"

David Prentice

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Blacksburg, Virginia

Level 1 - Studio Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A401

1 Level 1 - 1 BR Enlarged Plan
1/4" = 1'-0"

David Prentice

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Level 1 - 1 BR Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A402

1 Level 1 - 2 BR East Enlarged Plan
1/4" = 1'-0"

David Prentice

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VIRGINIA TECH.

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Blacksburg, Virginia

Level 1 - 2 BR West Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A403-A

1 Level 1 - 2 BR West Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH.

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Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Level 1 - 2 BR East Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

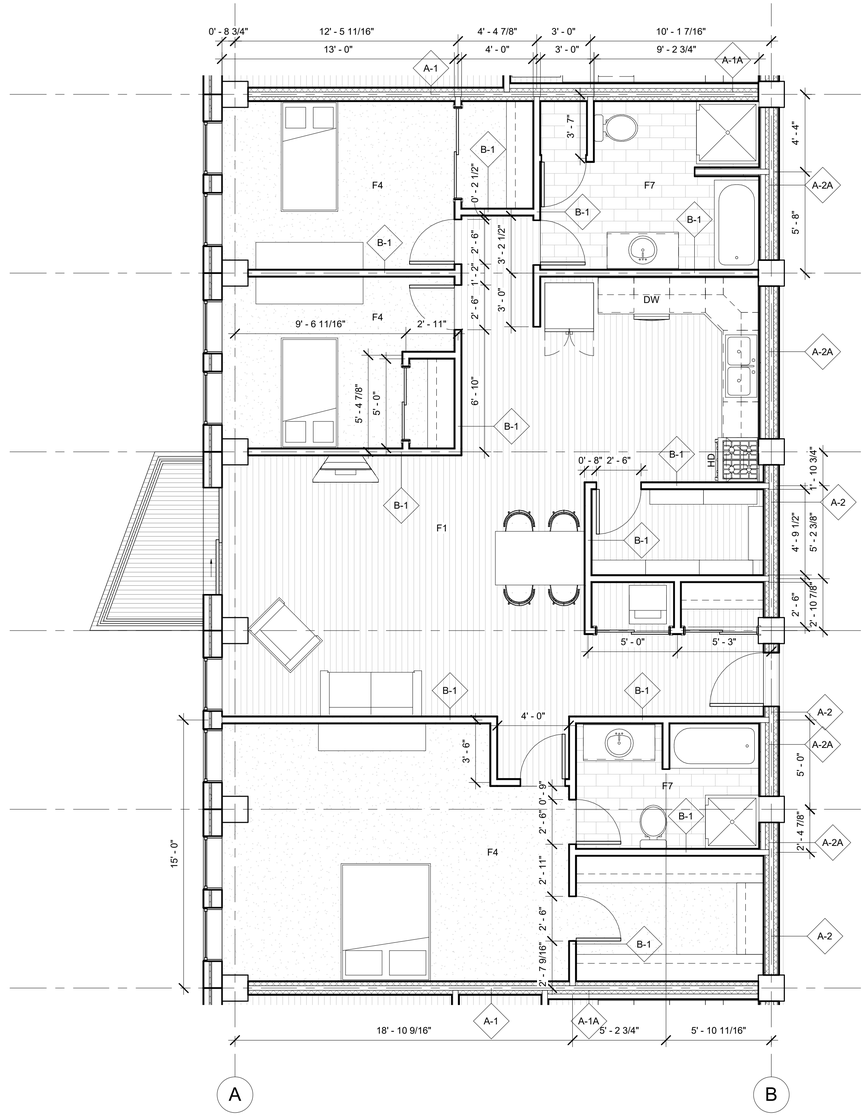
Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A403-B



1 Level 1 - 3 BR West Enlarged Plan
1/4" = 1'-0"

David Prentice

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VIRGINIA TECH.

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Blacksburg, Virginia

Level 1 - 3 BR West Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

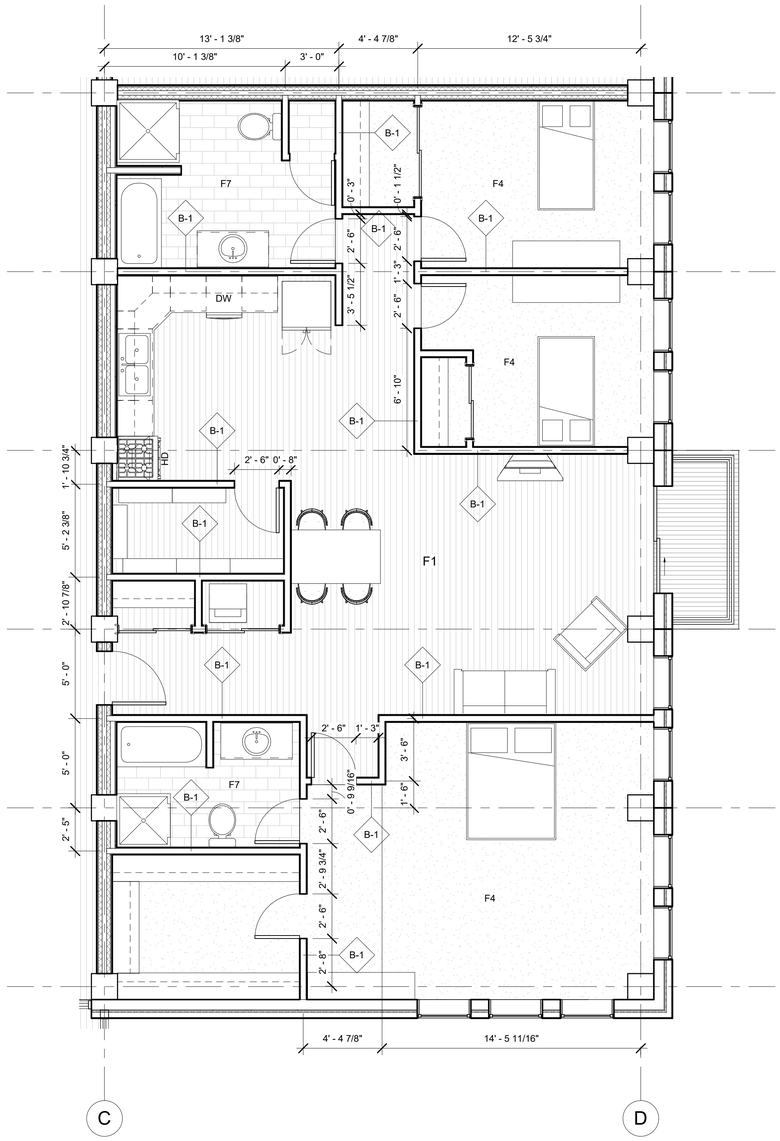
Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A404-A



1 Level 1 - 3 BR East Enlarged Plan
1/4" = 1'-0"

David Prentice

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Blacksburg, Virginia

Level 1 - 3 BR East Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A404-B

1 Level 1 - 4 BR Enlarged Plan
1/4" = 1'-0"

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Blacksburg, Virginia

Level 1 - 4 BR Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A405

1 Level 2 - Studio Enlarged Plan
1/4" = 1'-0"

David Prentice

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Blacksburg, Virginia

Level 2 - Studio Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A406

1 Level 2 - 1 BR West Enlarged Plan
1/4" = 1'-0"

David Prentice

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VIRGINIA TECH.

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Blacksburg, Virginia

Level 2 - 1 BR West Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A407-A

1 Level 2 - 1 BR East Enlarged Plan
1/4" = 1'-0"

David Prentice

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VIRGINIA TECH.

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Level 2 - 1 BR East Enlarged Plans

Project Address

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Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A407-B

1 Level 2 - 2 BR West Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
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Level 2 - 2 BR West Enlarged Plans

Project Address

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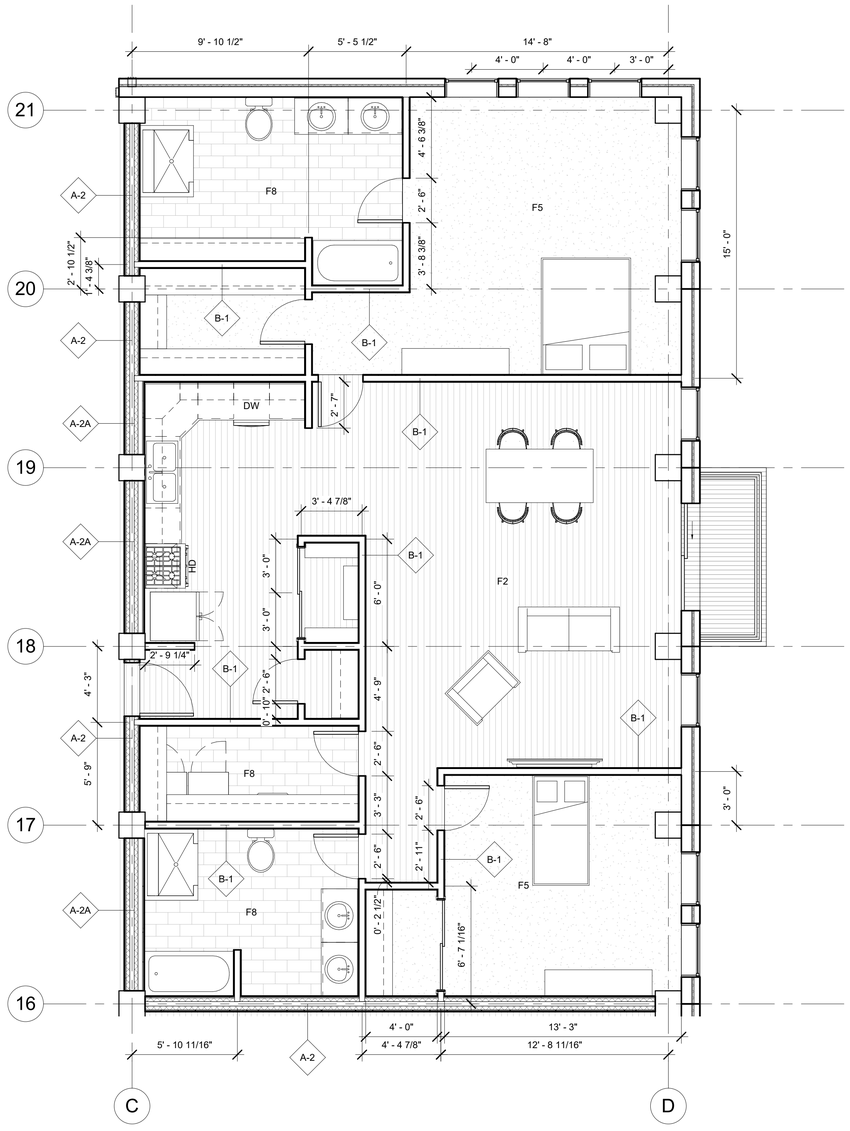
Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A408-A



1 Level 2 - 2 BR East Enlarged Plan
1/4" = 1'-0"

David Prentice

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VIRGINIA TECH.

A Future for Housing

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Level 2 - 2 BR East Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A408-B

1 Level 2 - 3 BR Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
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Blacksburg, Virginia

Level 2 - 3 BR Enlarged Plans

Project Address

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43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A409

1 Level 2 - 4 BR Enlarged Plan
1/4" = 1'-0"

David Prentice

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Level 2 - 4 BR Enlarged Plans

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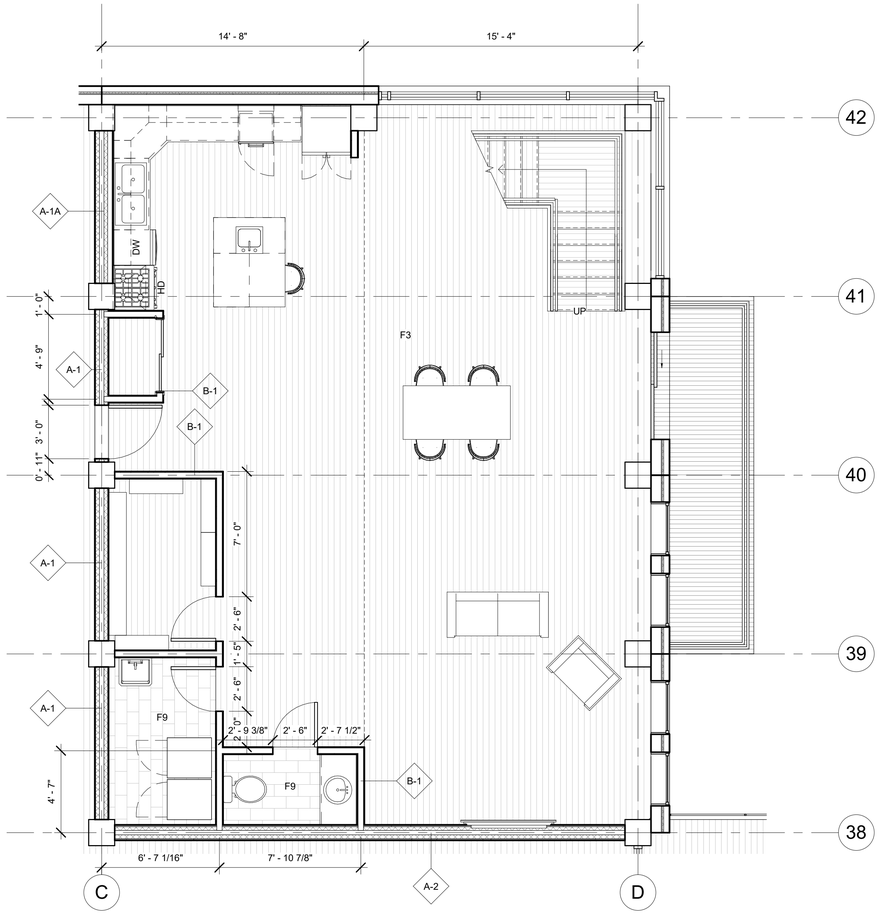
Committee

William Galloway - Chairman

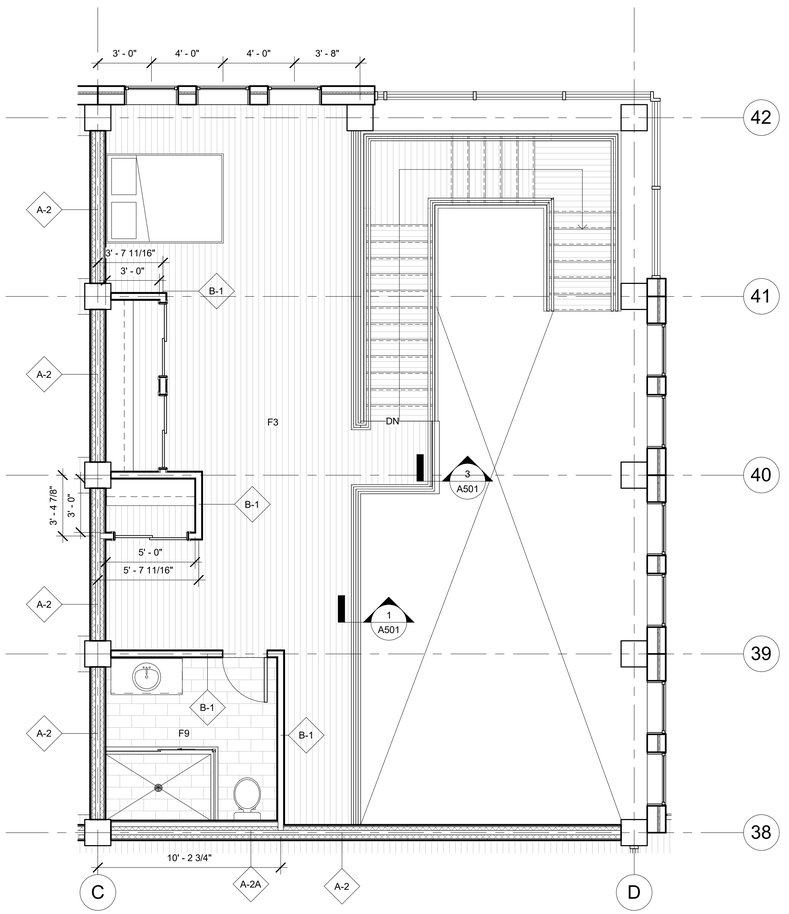
Scott Gartner

Edward Becker

A410



1 First Floor Enlarged Plan
1/4" = 1'-0"



2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

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VIRGINIA TECH.

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Blacksburg, Virginia

Level 3 - Studio North Enlarged Plans

Project Address

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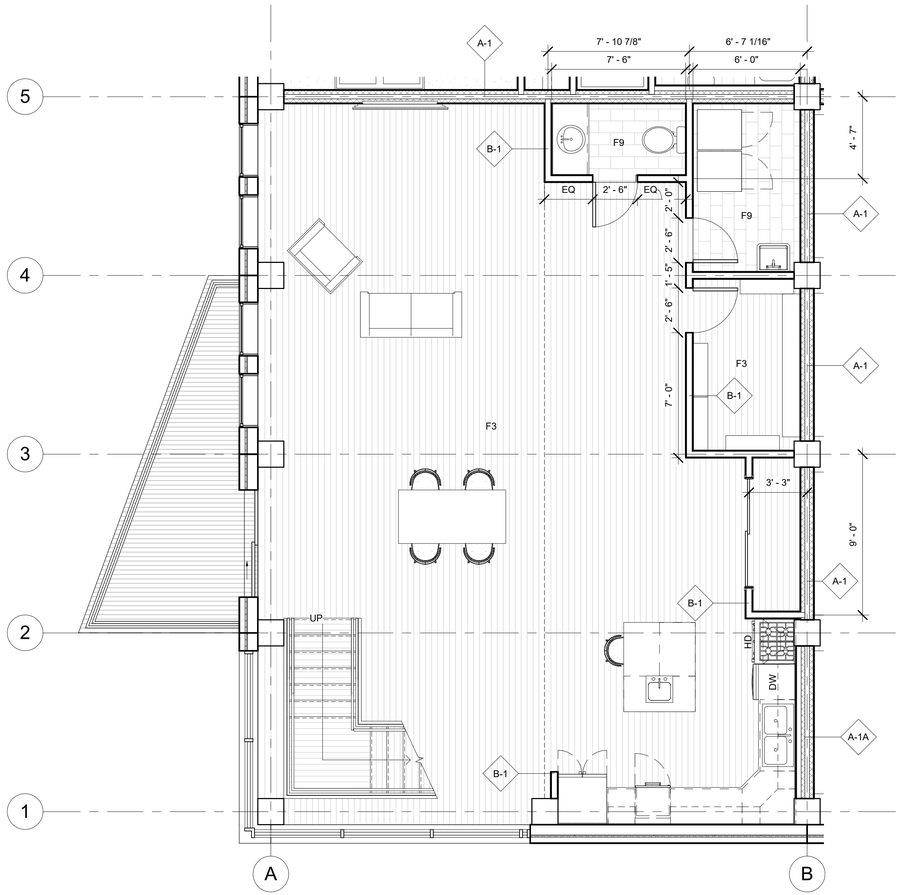
Committee

William Galloway - Chairman

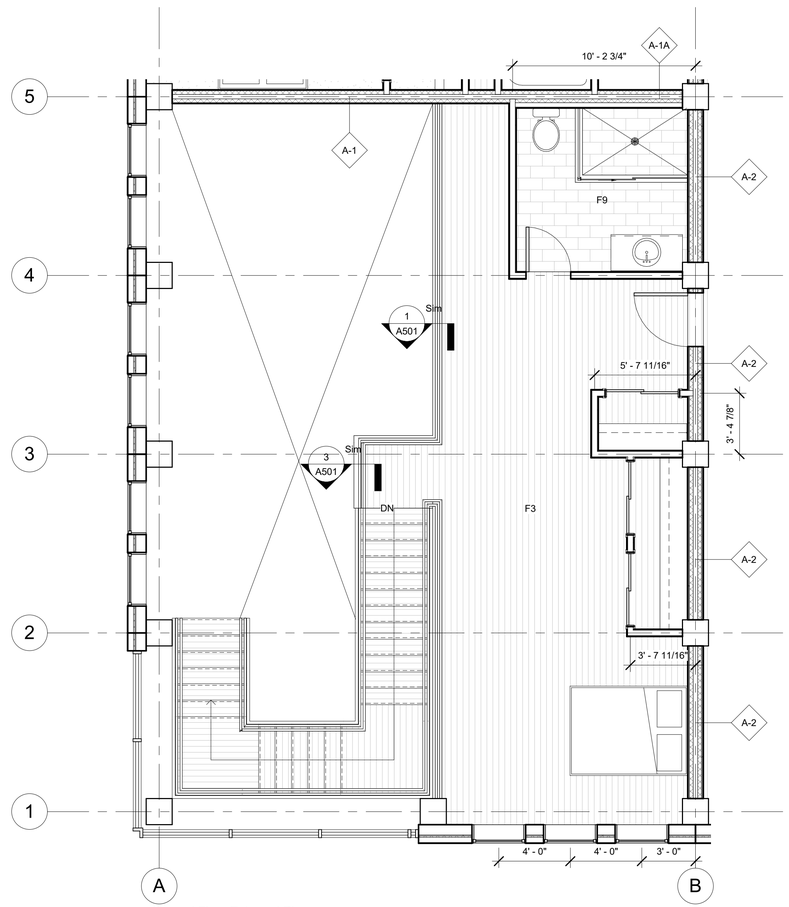
Scott Gartner

Edward Becker

A411



1 First Floor Enlarged Plan
1/4" = 1'-0"



2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

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Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Level 3 - Studio South Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

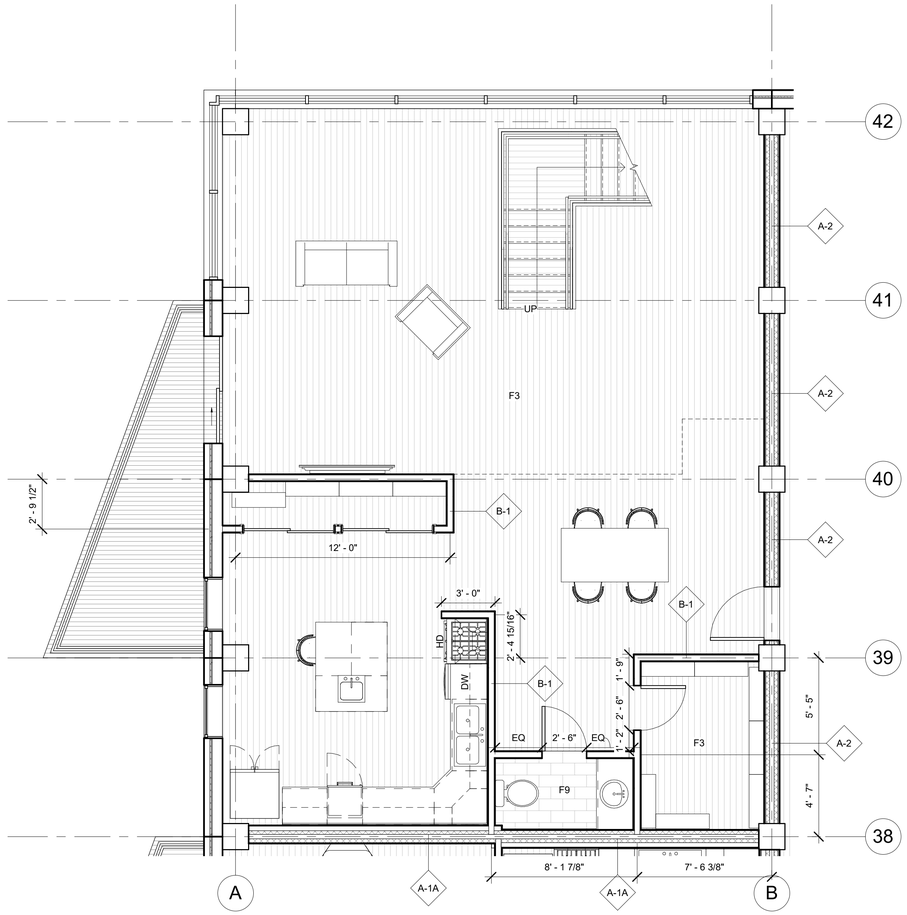
Committee

William Galloway - Chairman

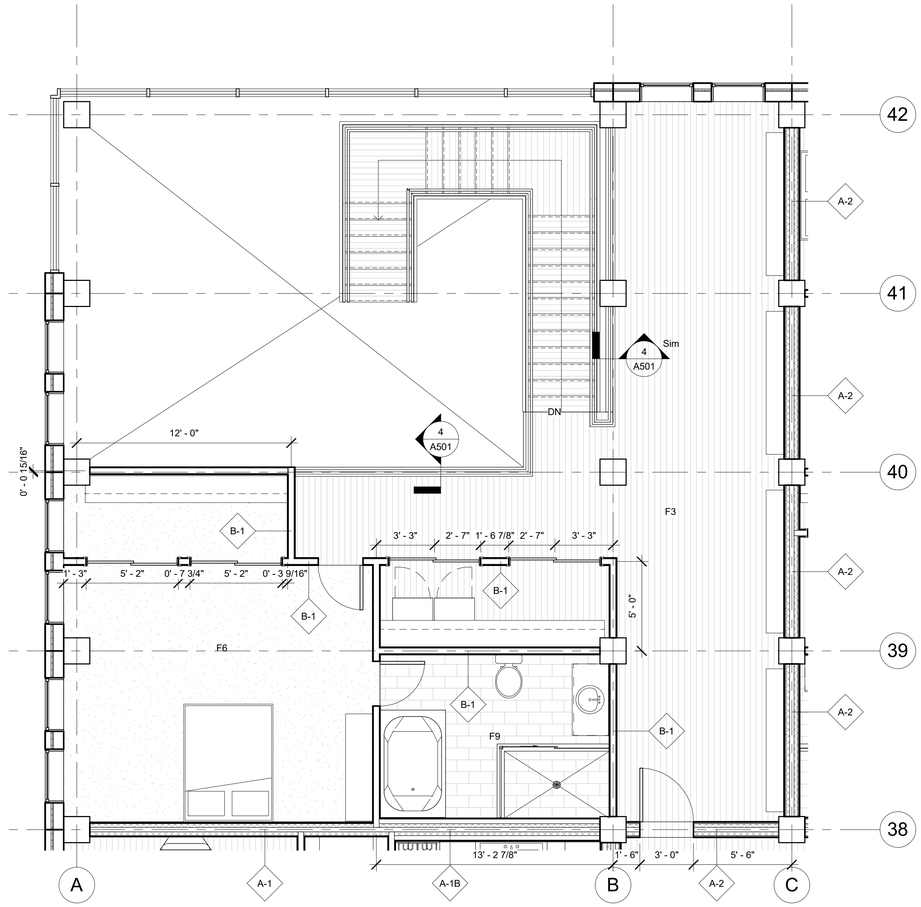
Scott Gartner

Edward Becker

A412



1 First Floor Enlarged Plan
1/4" = 1'-0"



2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

David Neil Prentice

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Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Level 3 - 1 BR North Enlarged Plans

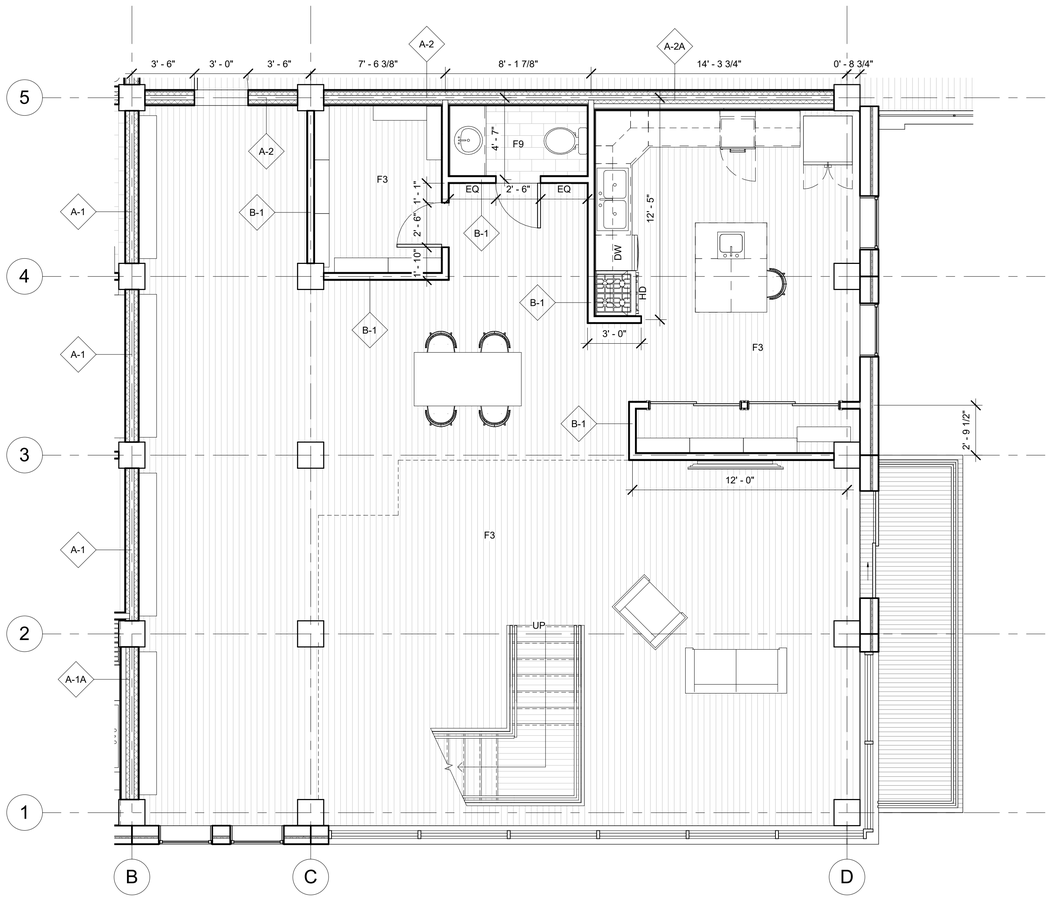
Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

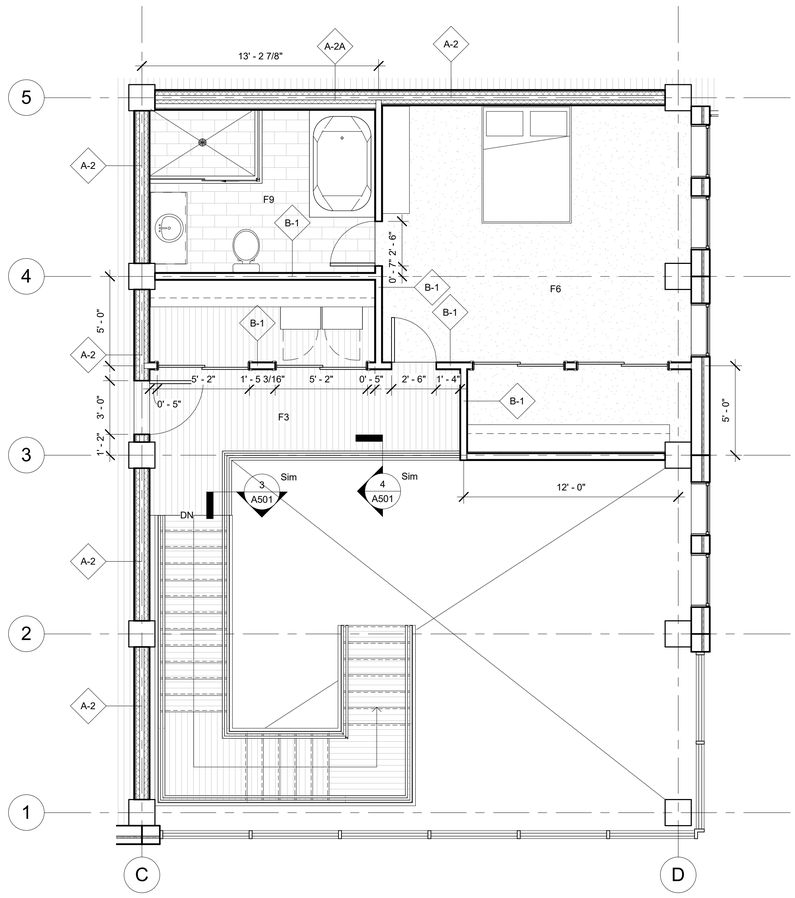
Committee

William Galloway - Chairman
Scott Gartner
Edward Becker

A413



1 First Floor Enlarged Plan
1/4" = 1'-0"



2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

David Neil Prentice

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Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Level 3 - 1 BR South Enlarged Plans

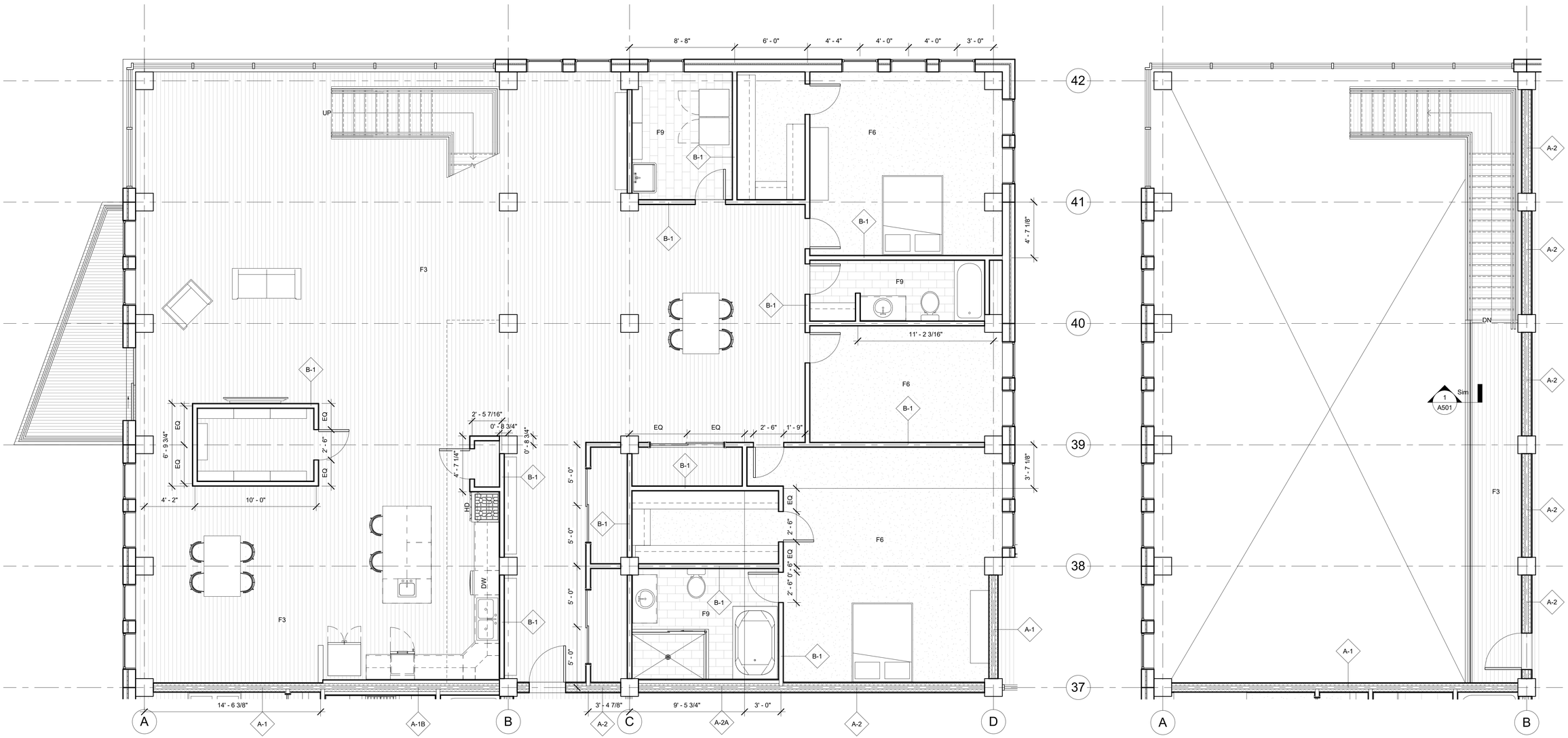
Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman
Scott Gartner
Edward Becker

A414



1 First Floor Enlarged Plan
1/4" = 1'-0"

2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

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Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Level 3 - 2 BR North Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

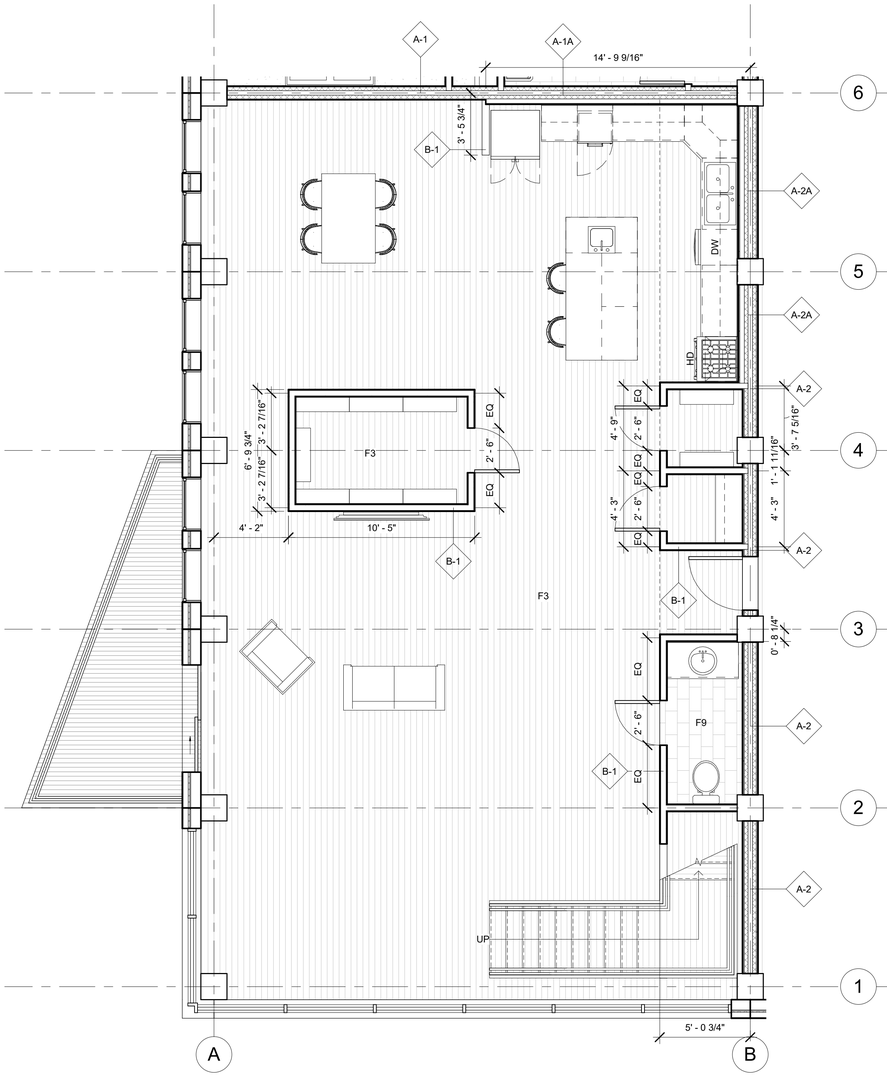
Committee

William Galloway - Chairman

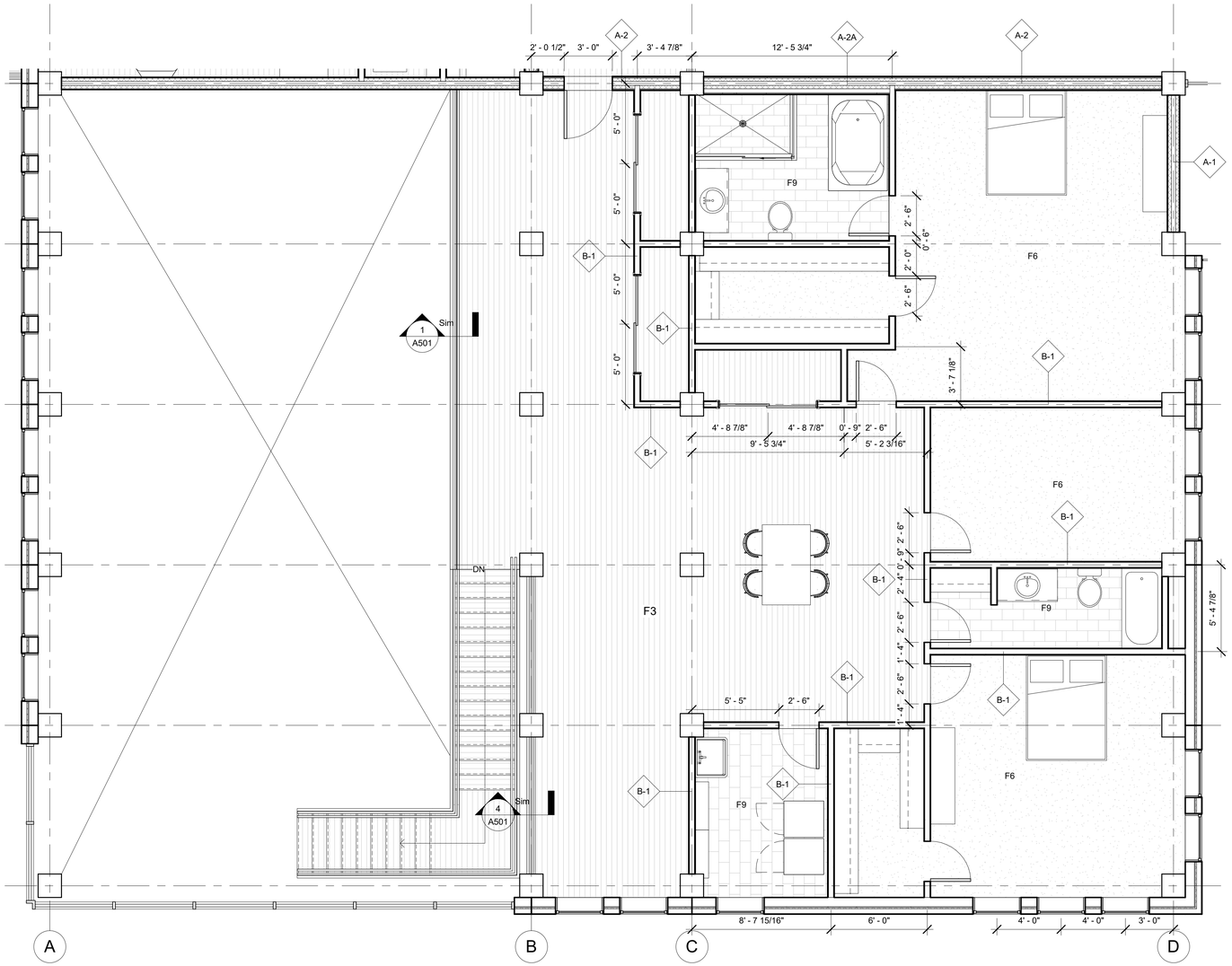
Scott Gartner

Edward Becker

A415



1 First Floor Enlarged Plan
1/4" = 1'-0"



2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

David Neil Prentice

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Master of Architecture

May 7th, 2021

Blacksburg, Virginia

Level 3 - 2 BR South Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

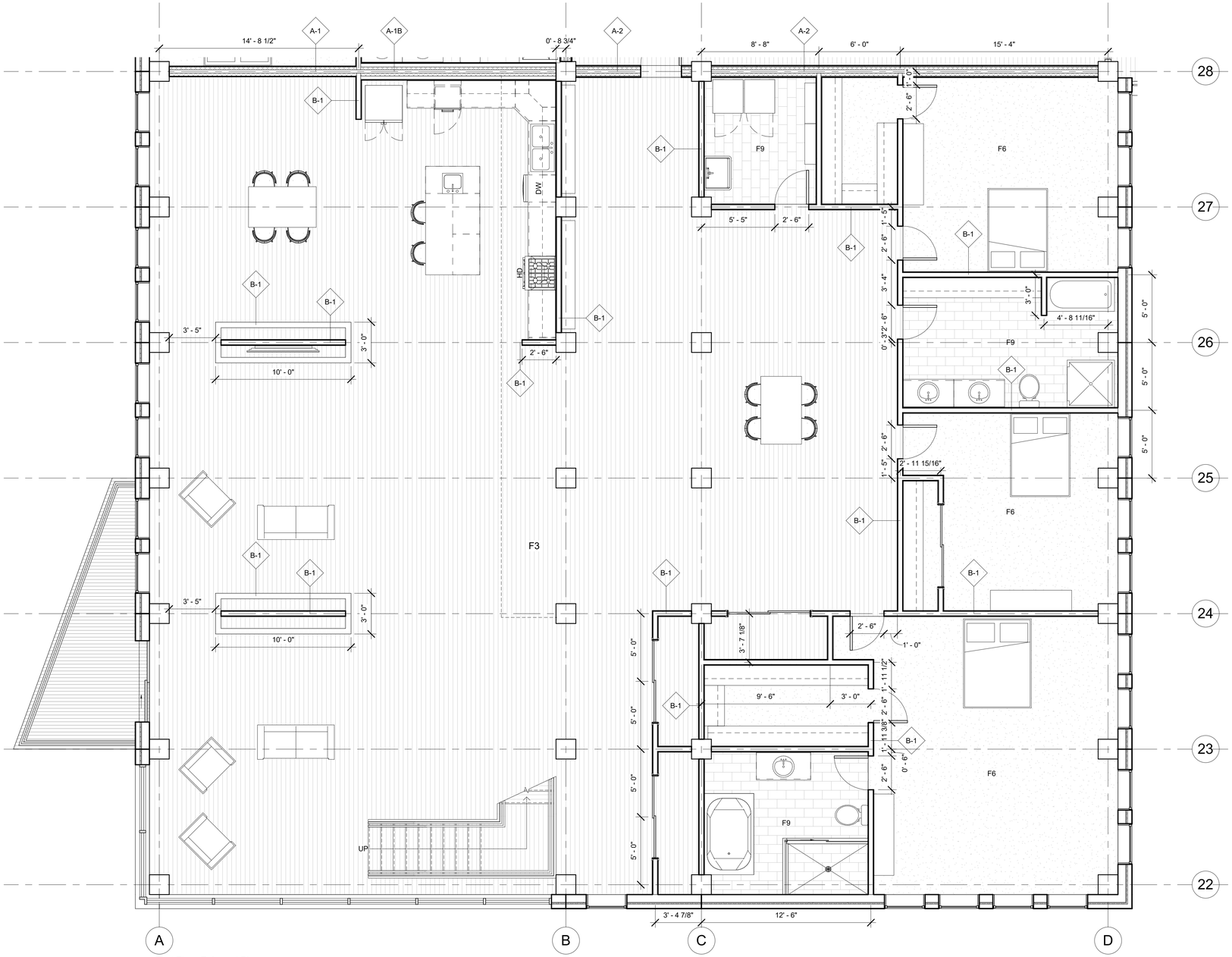
Committee

William Galloway - Chairman

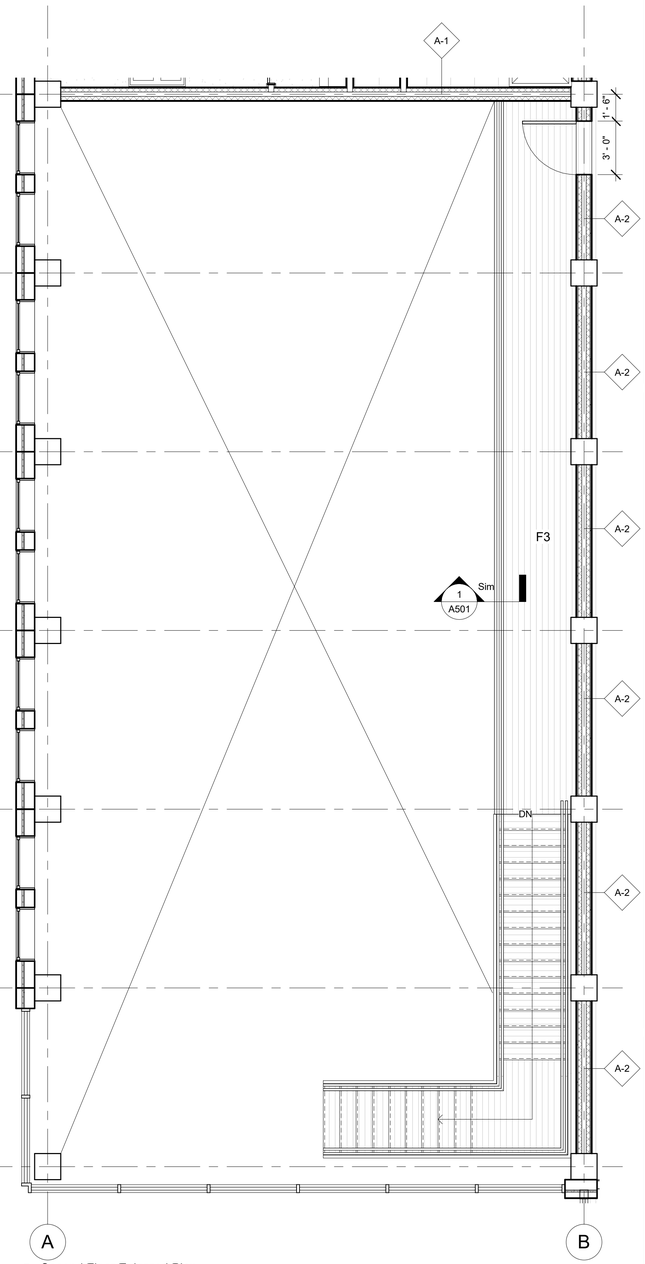
Scott Gartner

Edward Becker

A416



1 First Floor Enlarged Plan
1/4" = 1'-0"



2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

David Neil Prentice

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University
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Master of Architecture

May 7th, 2021
Blacksburg, Virginia

Level 3 - 3 BR North Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A417

1 First Floor Enlarged Plan
1/4" = 1'-0"

2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE
AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

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May 7th, 2021
Blacksburg, Virginia

Level 3 - 3 BR South Enlarged Plans

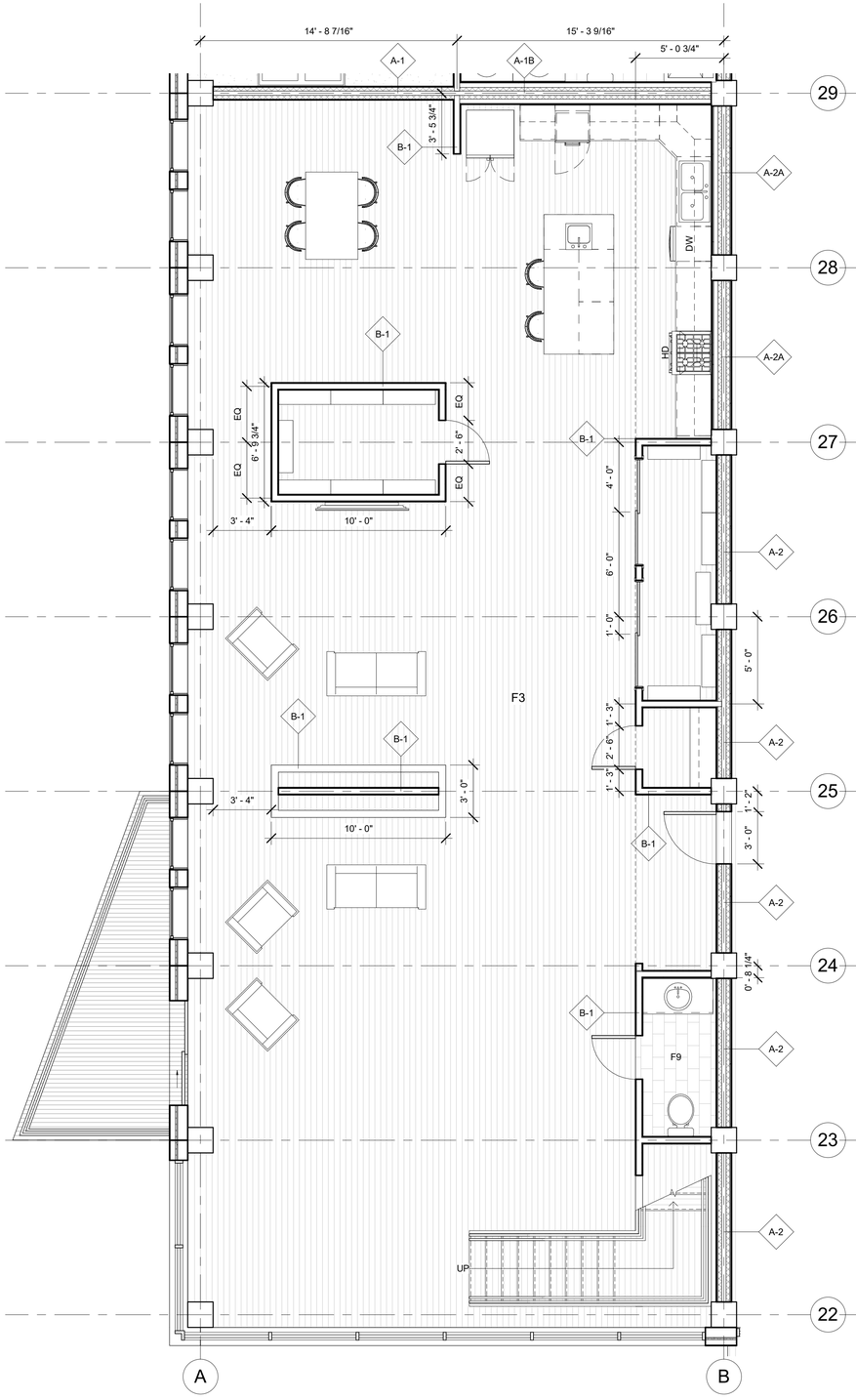
Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

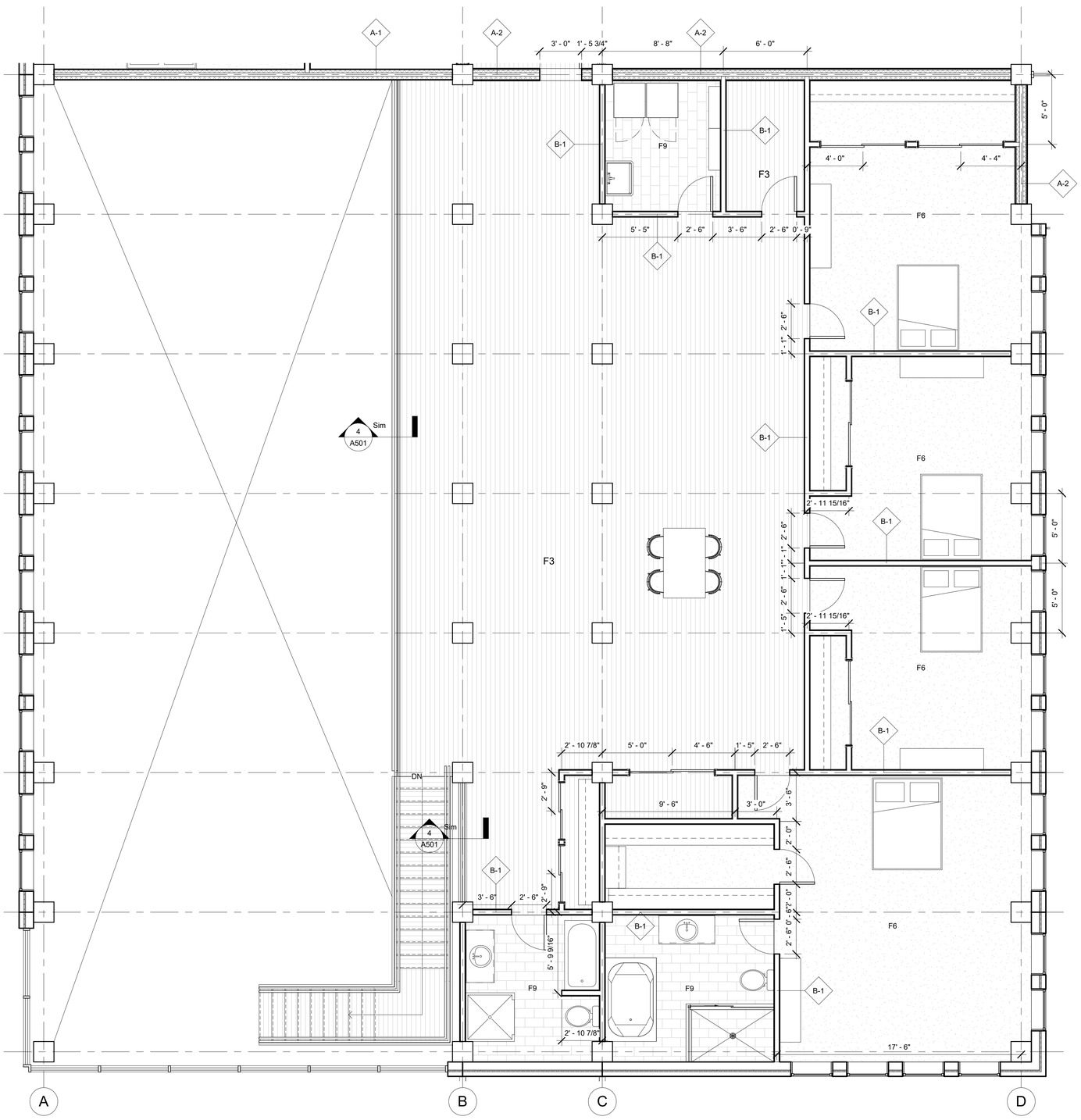
Committee

William Galloway - Chairman
Scott Gartner
Edward Becker

A418



1 First Floor Enlarged Plan
1/4" = 1'-0"



2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

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VIRGINIA TECH.

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Master of Architecture

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Blacksburg, Virginia

Level 3 - 4 BR North Enlarged Plans

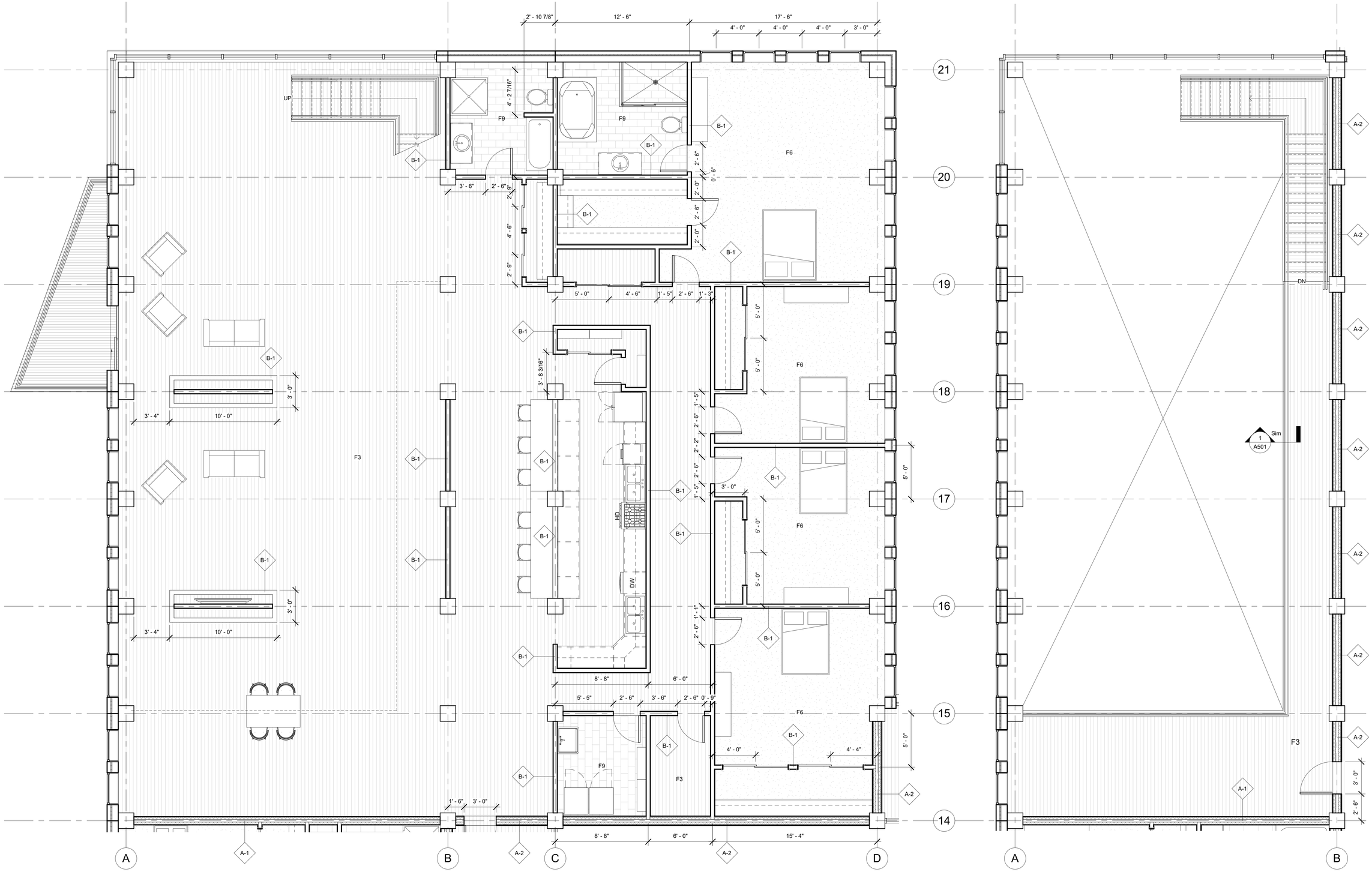
Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

William Galloway - Chairman
Scott Gartner
Edward Becker

A419



1 First Floor Enlarged Plan
1/4" = 1'-0"

2 Second Floor Enlarged Plan
1/4" = 1'-0"

David Prentice

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Level 3 - 4 BR South Enlarged Plans

Project Address

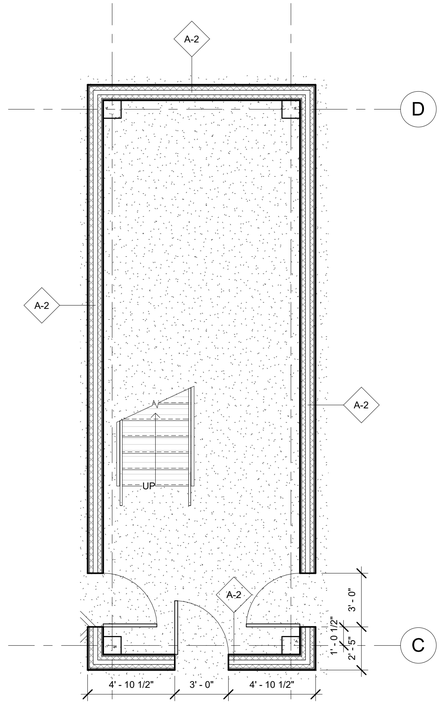
497 E. Town St & 494 E. Rich St
Columbus, OH
43215

Committee

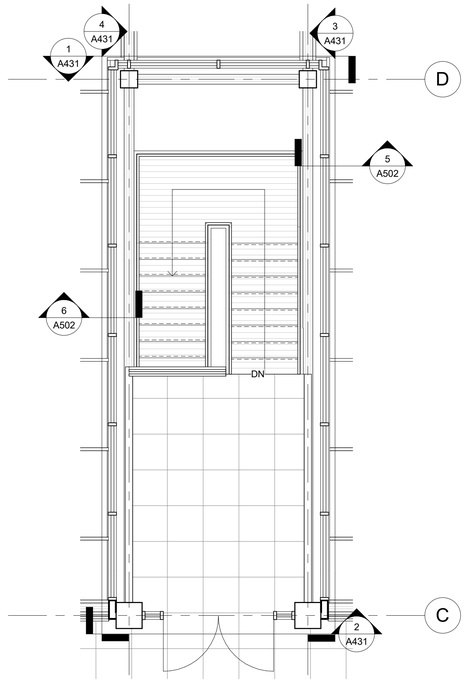
William Galloway - Chairman
Scott Gartner
Edward Becker

A420

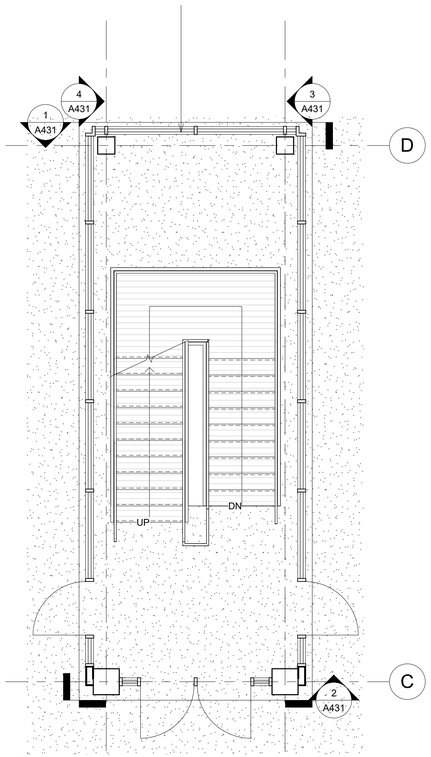
Curtain Wall (TYP): Pilkington Pyrostop Fireglass, Timberline Series
1 hr fire rating



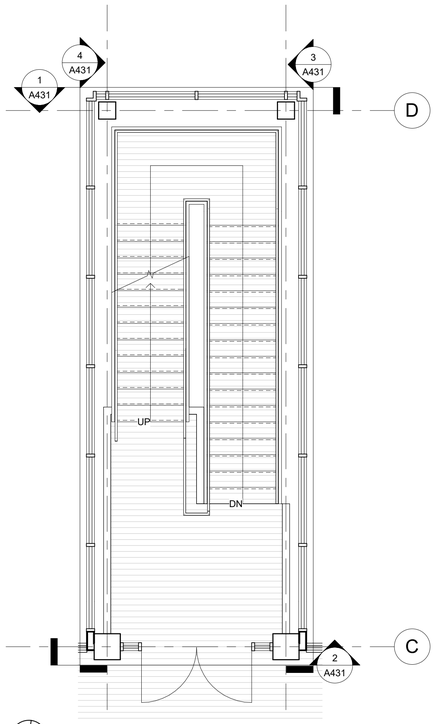
5 Parking Level Stair Enlarged Plan
1/4" = 1'-0"



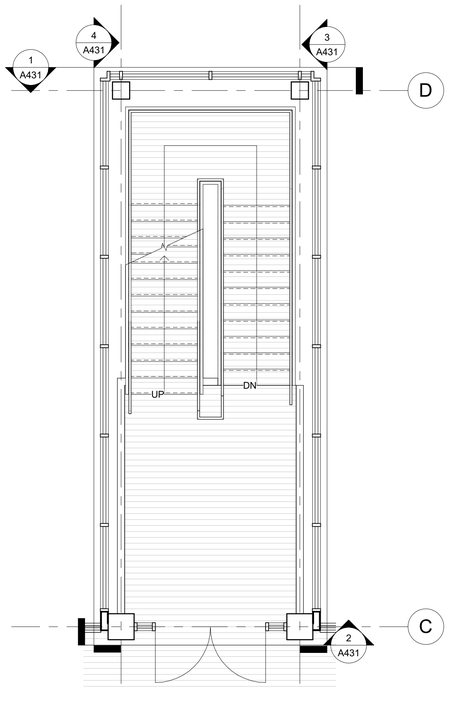
4 Roof Stair Enlarged Plan
1/4" = 1'-0"



1 Ground Floor Stair Enlarged Plan
1/4" = 1'-0"



2 Second Floor Stair Enlarged Plan
1/4" = 1'-0"



3 Typical Floor Stair Plan
1/4" = 1'-0"

David Prentice

COLLEGE OF ARCHITECTURE AND URBAN STUDIES
VIRGINIA TECH.

A Future for Housing

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May 7th, 2021
Blacksburg, Virginia

Stair Enlarged Plans

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

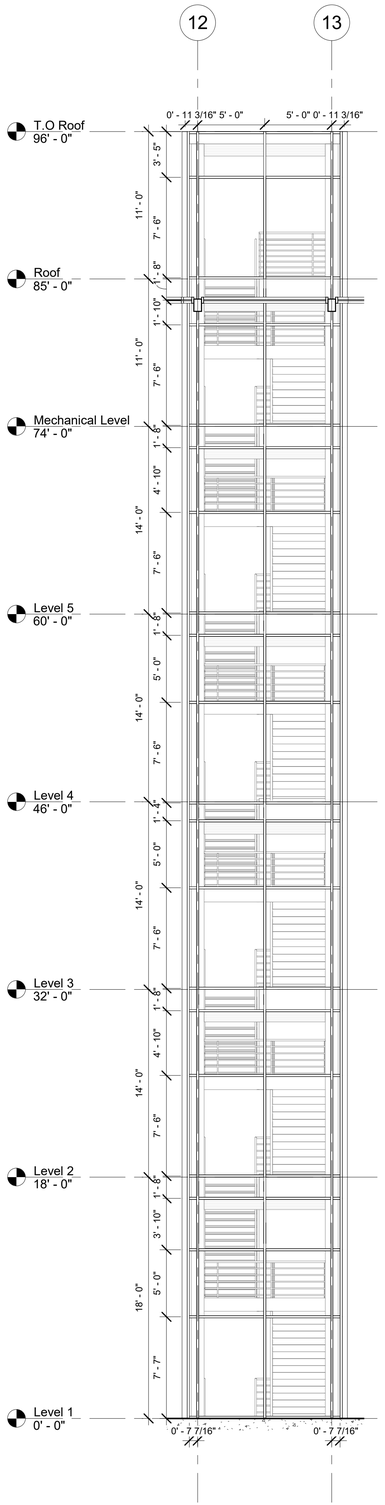
Committee

William Galloway - Chairman

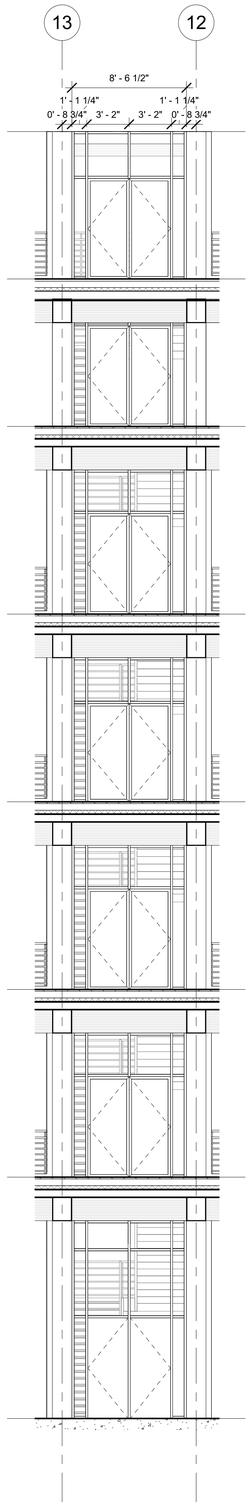
Scott Gartner

Edward Becker

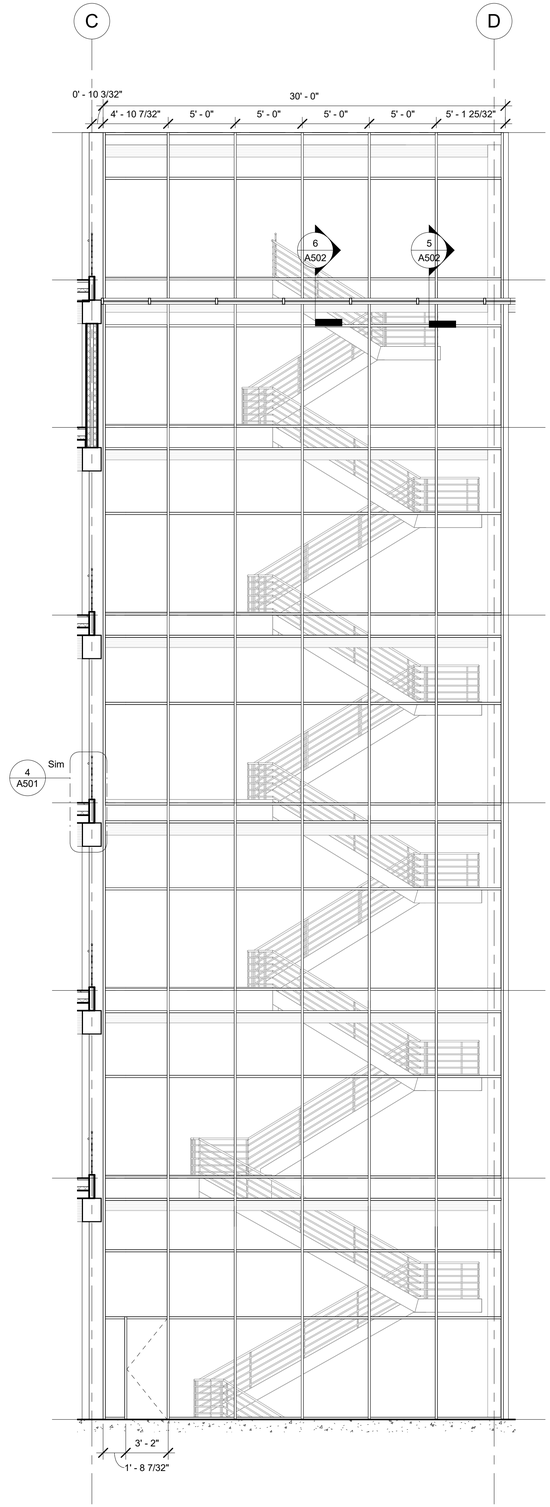
A430



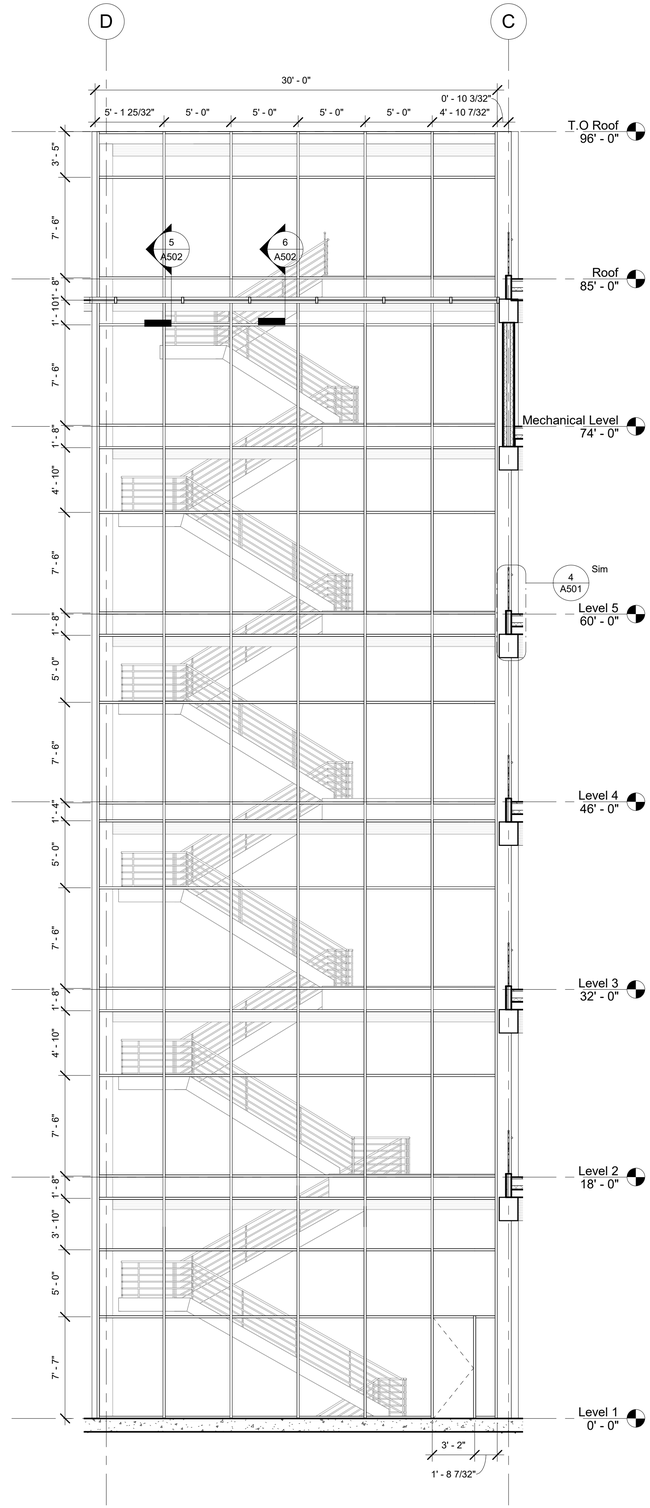
1 Stair East Elevation
3/16" = 1'-0"



2 Stair West Elevation
3/16" = 1'-0"



3 Stair South Elevation
3/16" = 1'-0"



4 Stair North Elevation
3/16" = 1'-0"

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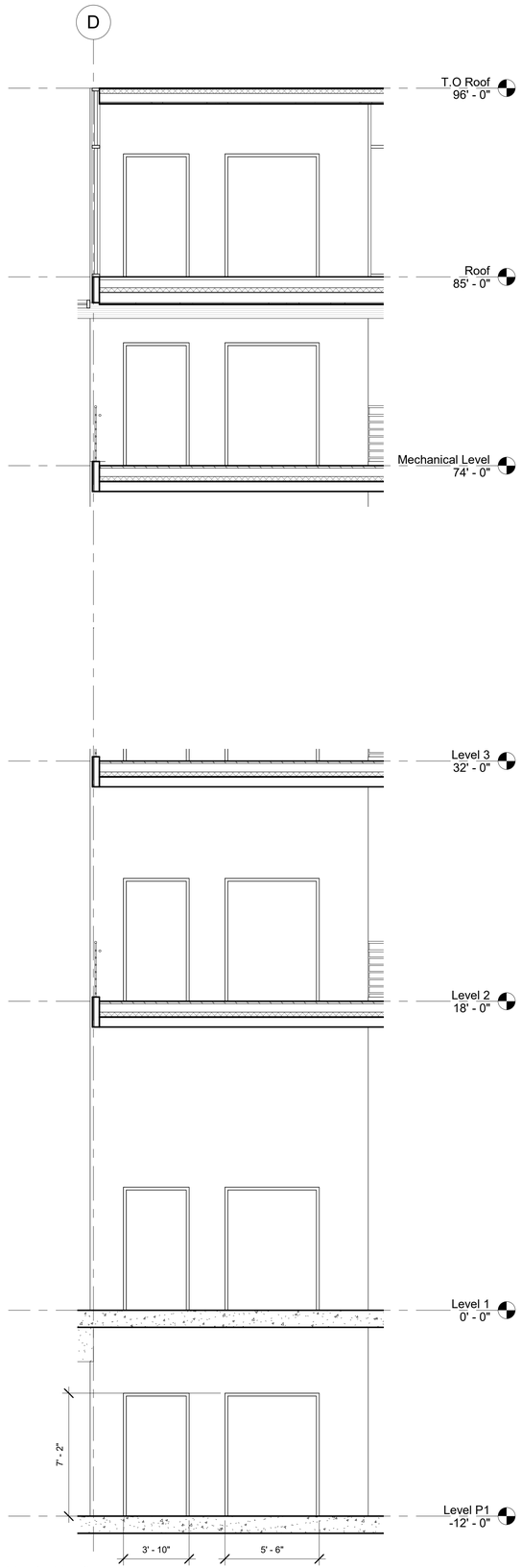
Committee

William Galloway - Chairman

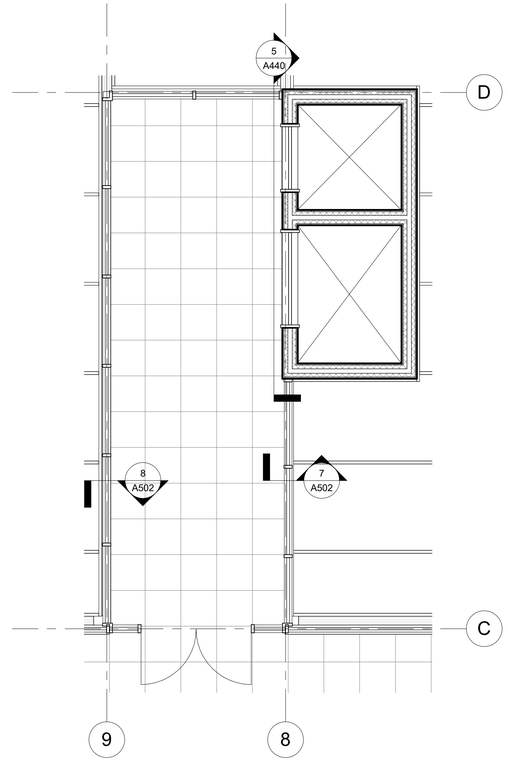
Scott Gartner

Edward Becker

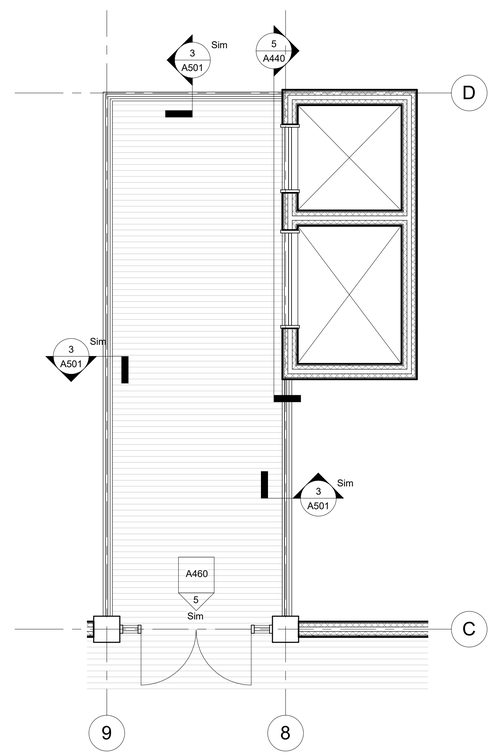
A431



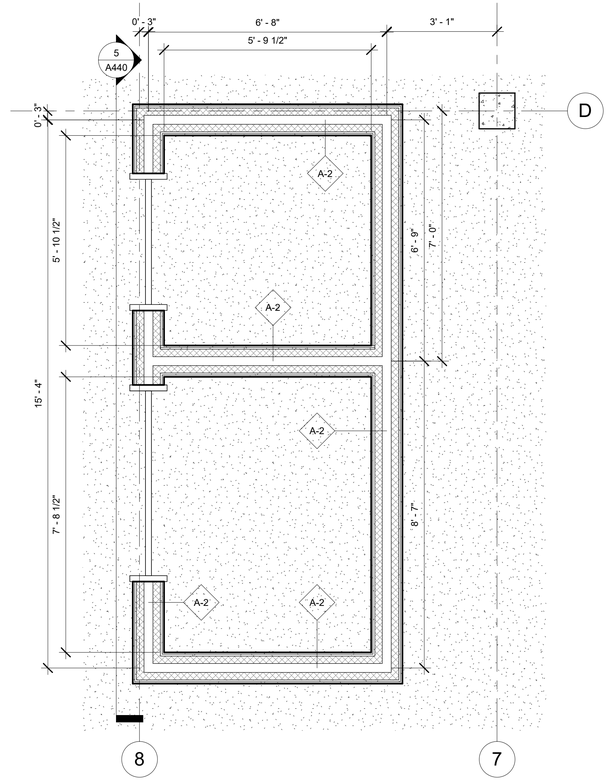
5 Elevator Elevation
1/4" = 1'-0"



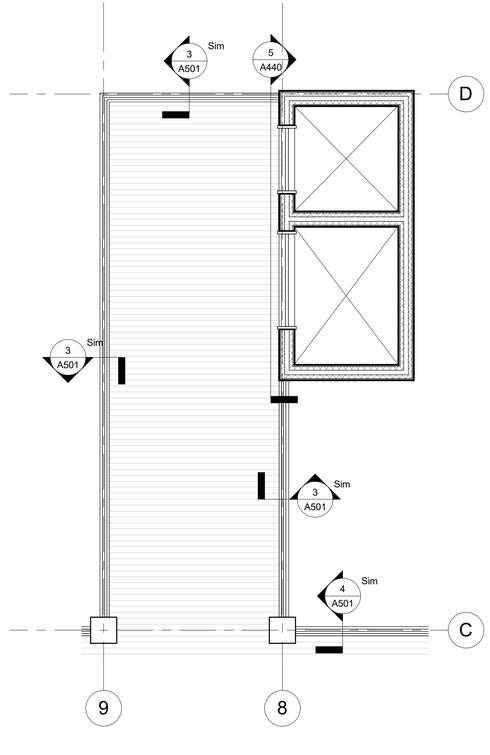
3 Roof Elevator Enlarged Plan
1/4" = 1'-0"



2 Mechanical Level Elevator Enlarged Plan
1/4" = 1'-0"



4 Parking Level Elevator Enlarged Plan
1/2" = 1'-0"



1 Typical Elevator Enlarged Plan
1/4" = 1'-0"

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Elevator Enlarged Drawings

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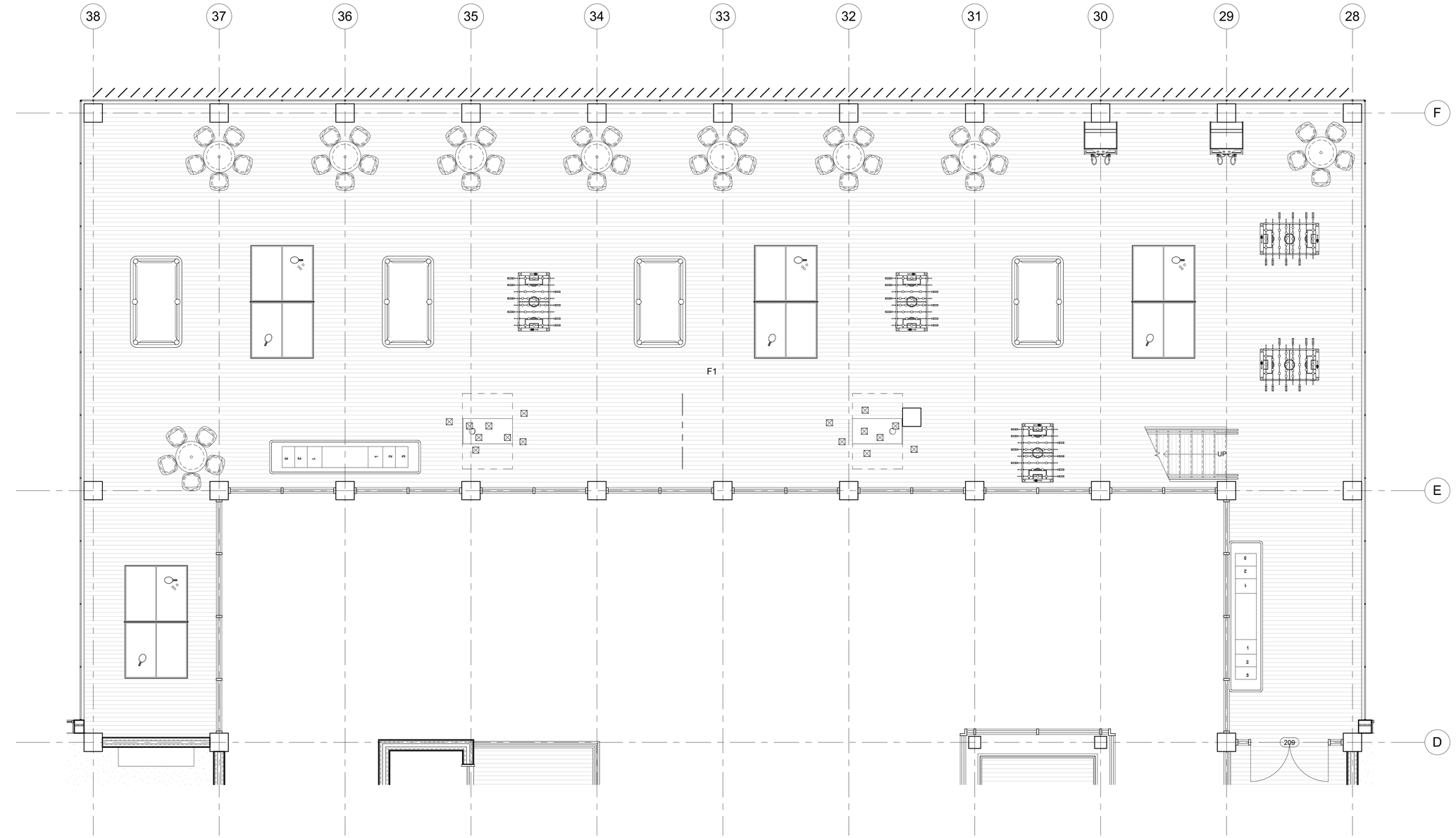
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A440



1 Game Room
1/4" = 1'-0"

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Second Floor North Amenity Enlarged Plan

Project Address

497 E. Town St & 494 E. Rich St
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43215

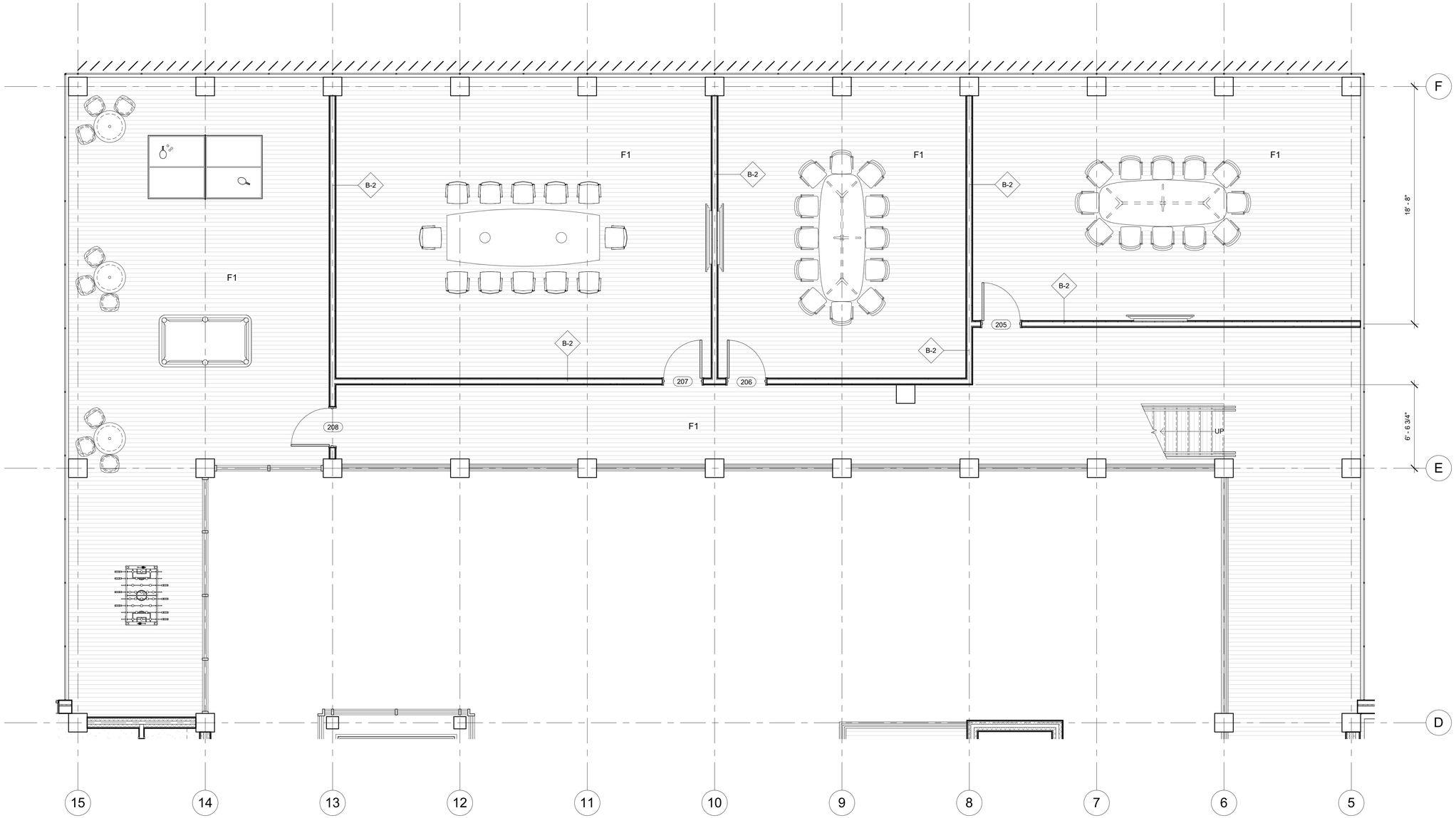
Committee

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A450



1 Meeting Rooms and Game Room
1/4" = 1'-0"

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Second Floor South Amenity Enlarged Plan

Project Address

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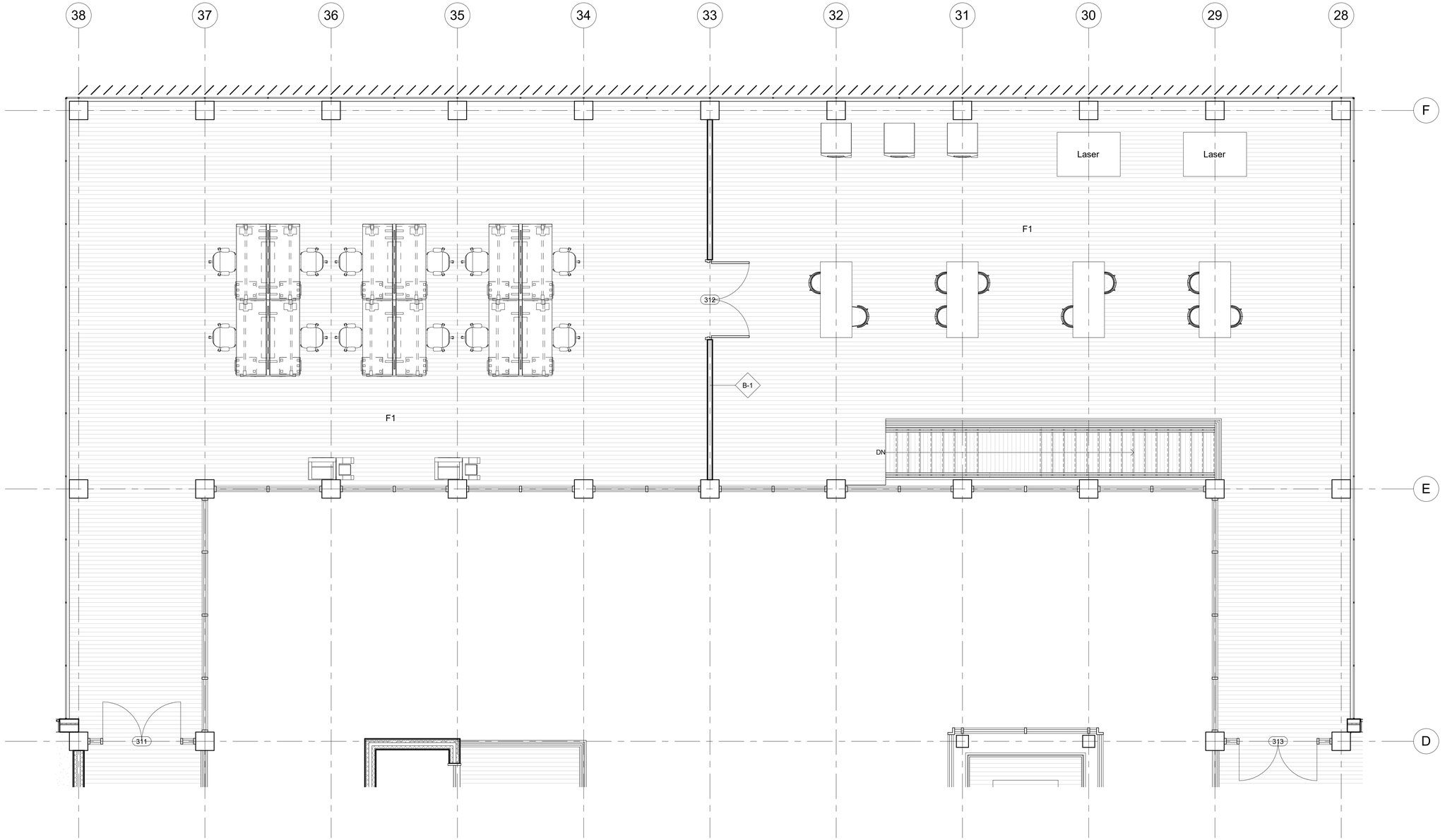
Committee

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A451



1 Business Center and Makerspace
1/4" = 1'-0"

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Third Floor North Amenity Enlarged Plan

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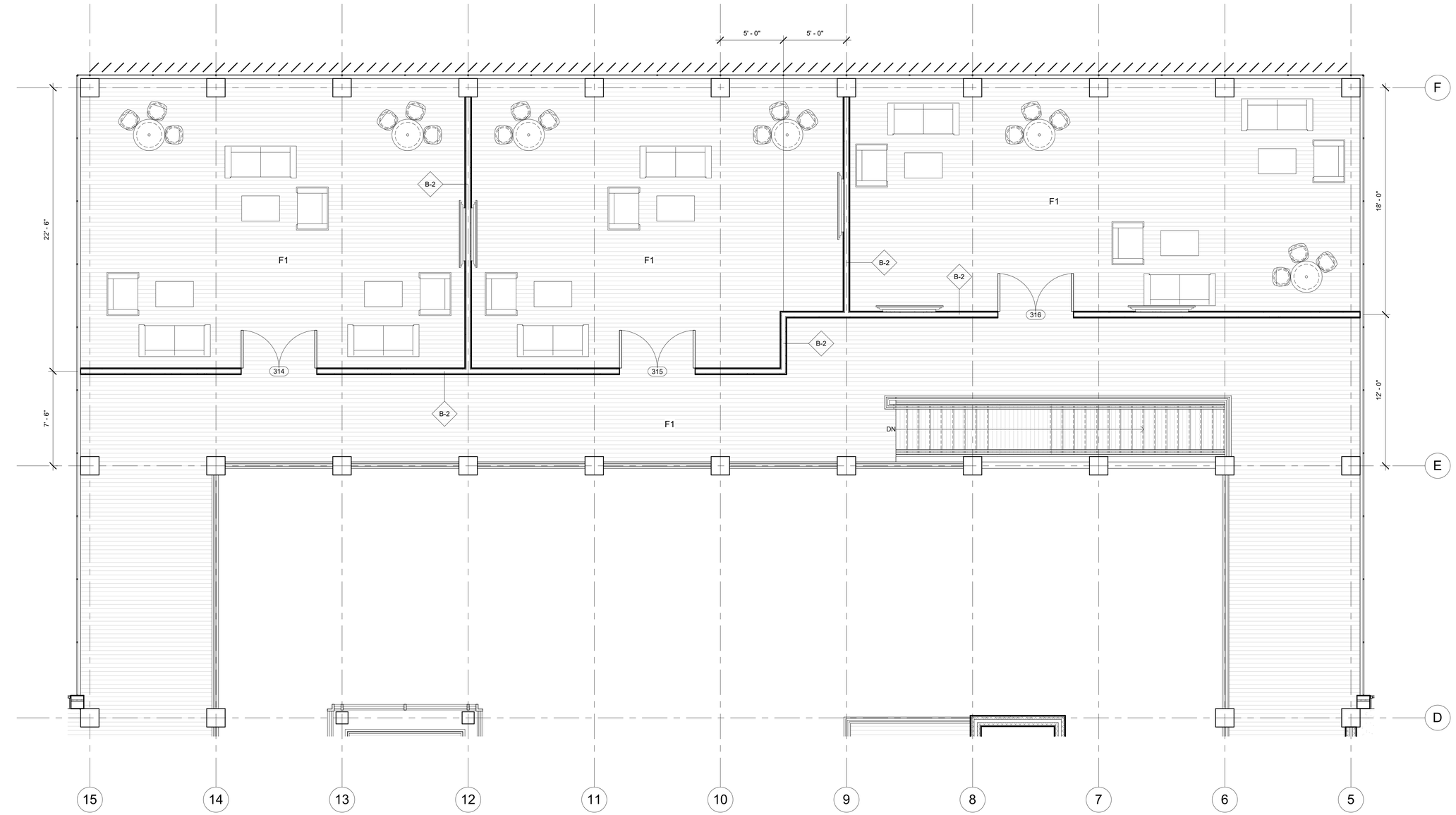
Committee

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A452



1 Lounges
1/4" = 1'-0"

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Third Floor South Amenity Enlarged Plan

Project Address

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A453



1 Lounge Main Floor
1/4" = 1'-0"

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Fourth Floor North Amenity Enlarged Plan

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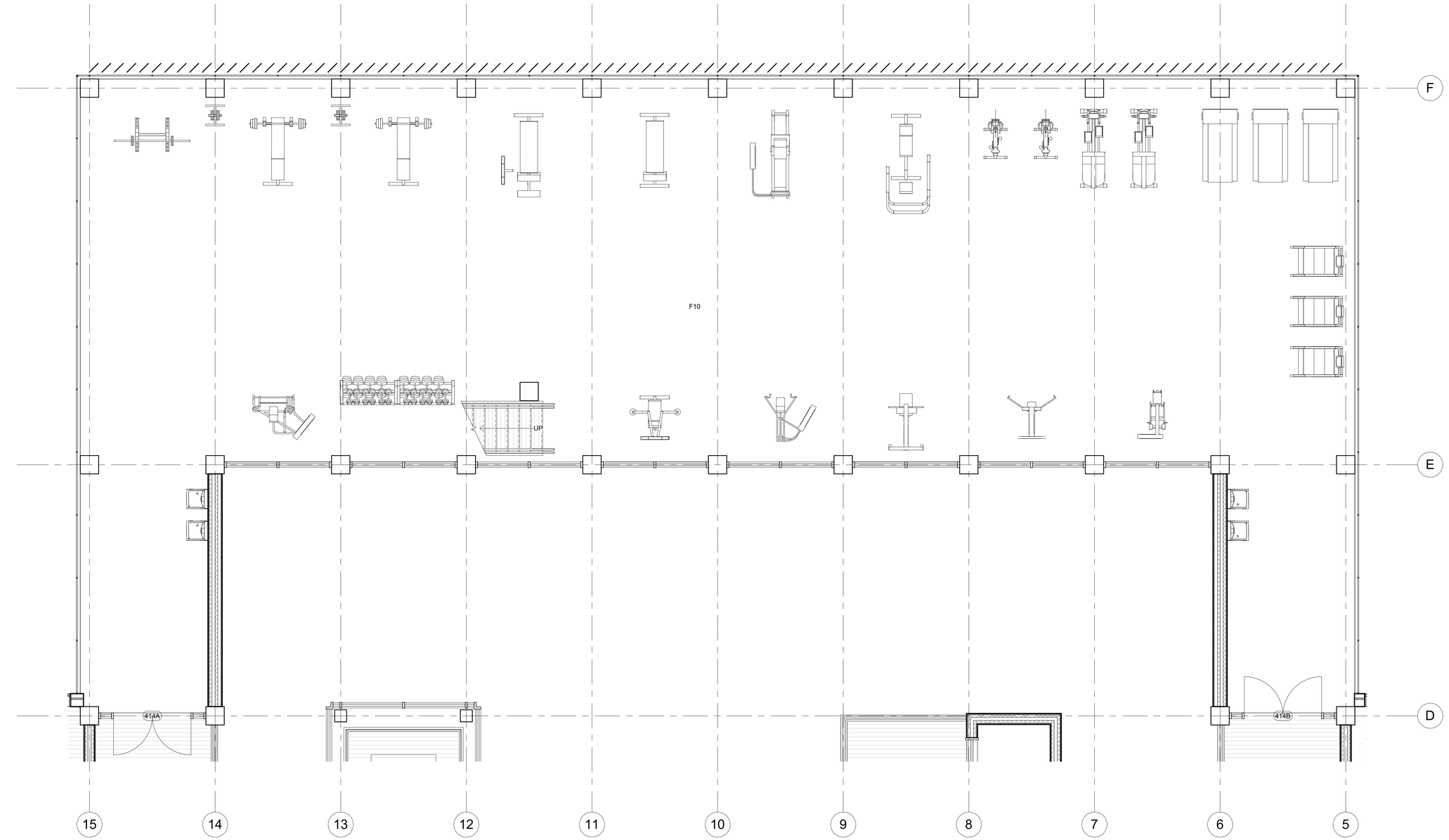
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A454



1 Fitness Center Main Floor
1/4" = 1'-0"

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Fourth Floor South Amenity Enlarged Plan

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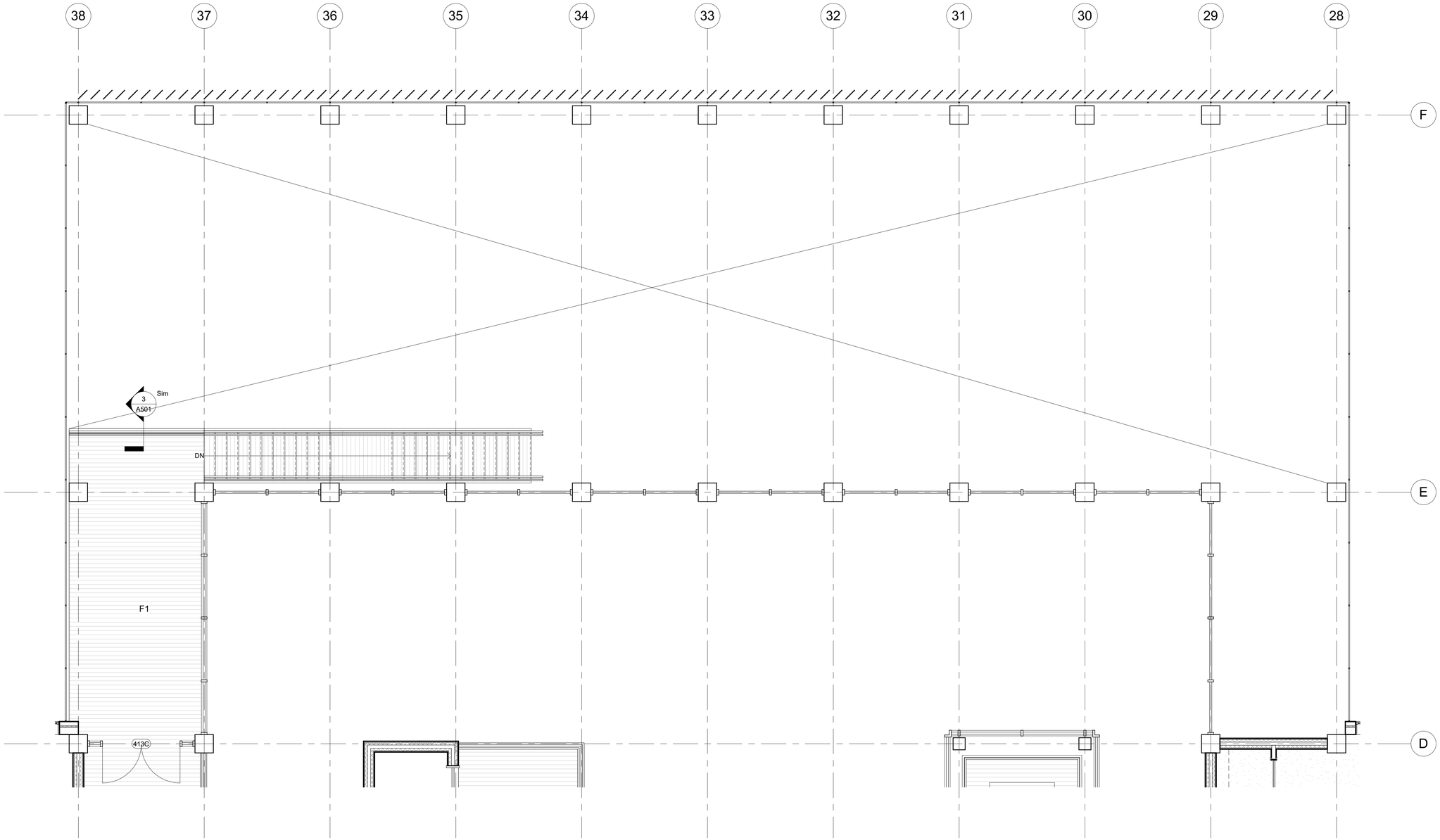
Committee

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A455



1 Lounge Upper Level Access
1/4" = 1'-0"

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Fifth Floor North Amenity Enlarged Plan

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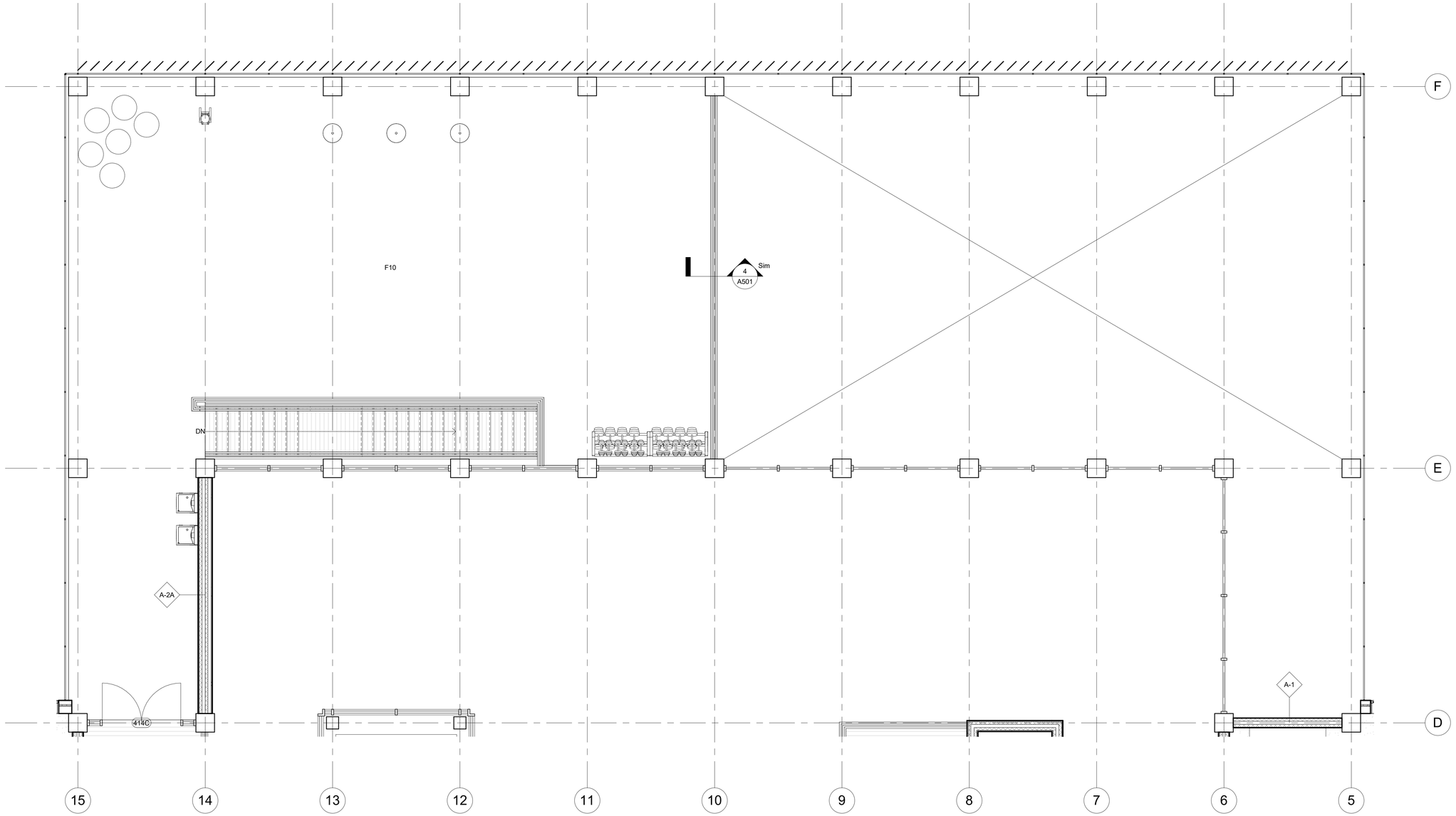
Committee

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Scott Gartner

Edward Becker

A456



1 Fitness Center Second Floor
1/4" = 1'-0"

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Fifth Floor South Amenity Enlarged Plan

Project Address

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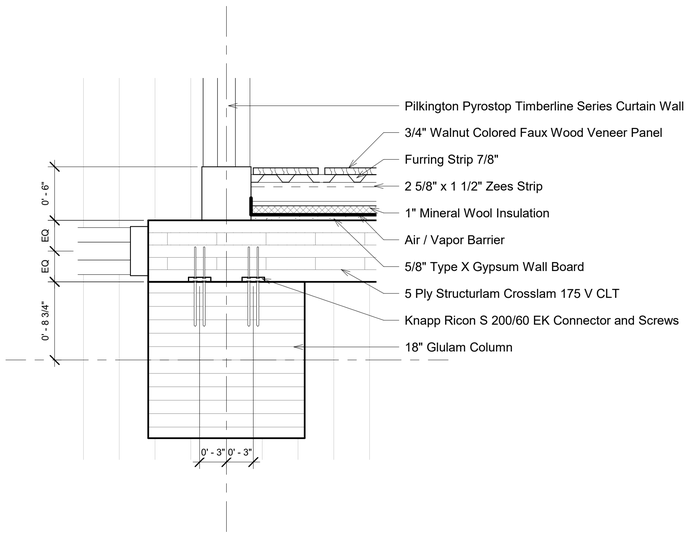
Committee

William Galloway - Chairman

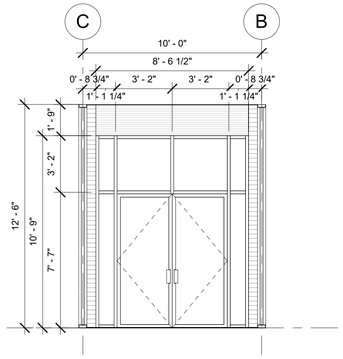
Scott Gartner

Edward Becker

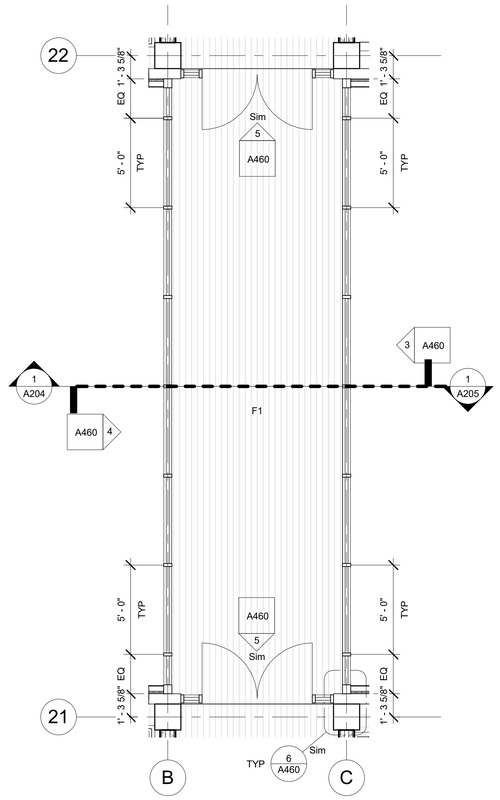
A457



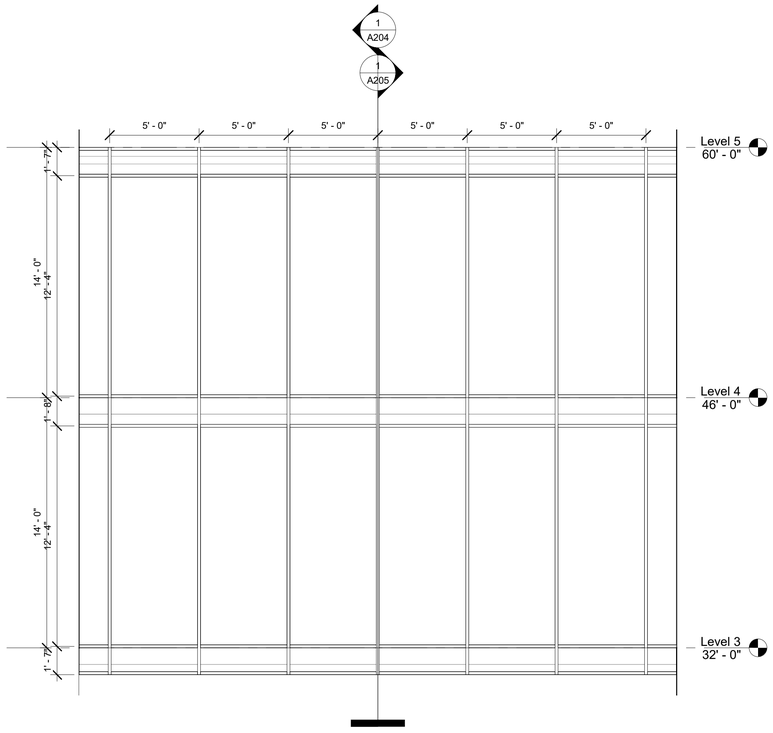
6 Connector Wall Detail
1 1/2" = 1'-0"



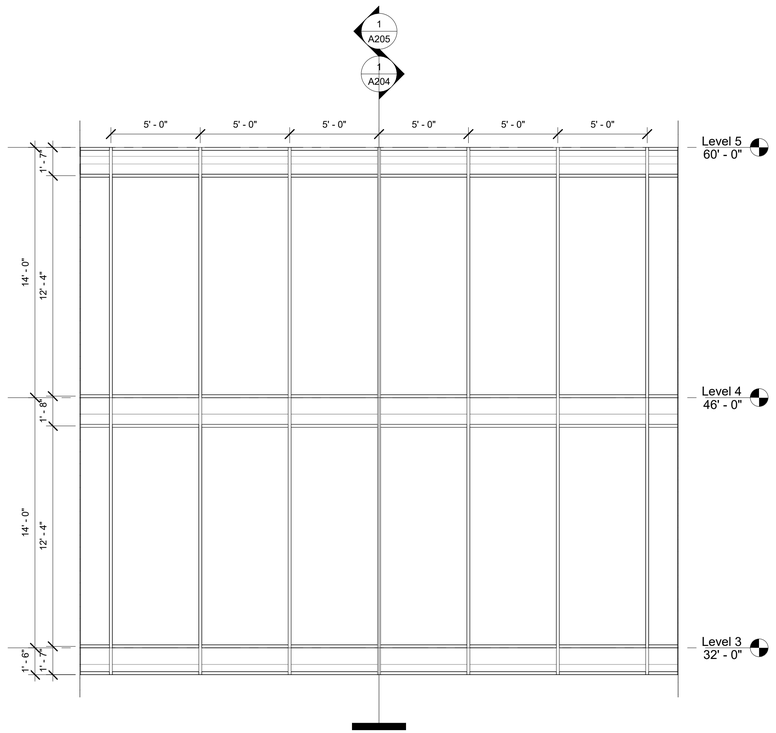
5 Connector Door Elevation
1/4" = 1'-0"



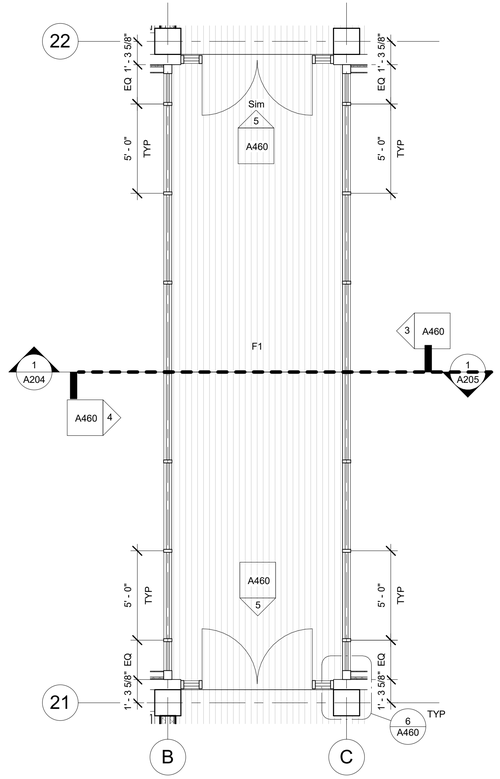
2 Connector Fourth Floor Enlarged Plan
1/4" = 1'-0"



4 Connector West Elevation
1/4" = 1'-0"



3 Connector East Elevation
1/4" = 1'-0"



1 Connector Third Floor Enlarged Plan
1/4" = 1'-0"

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Connector Plans and Elevations

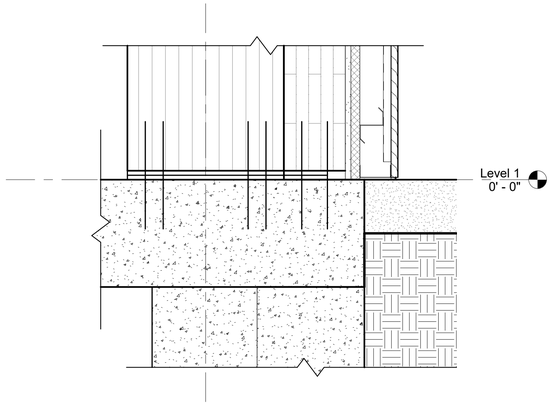
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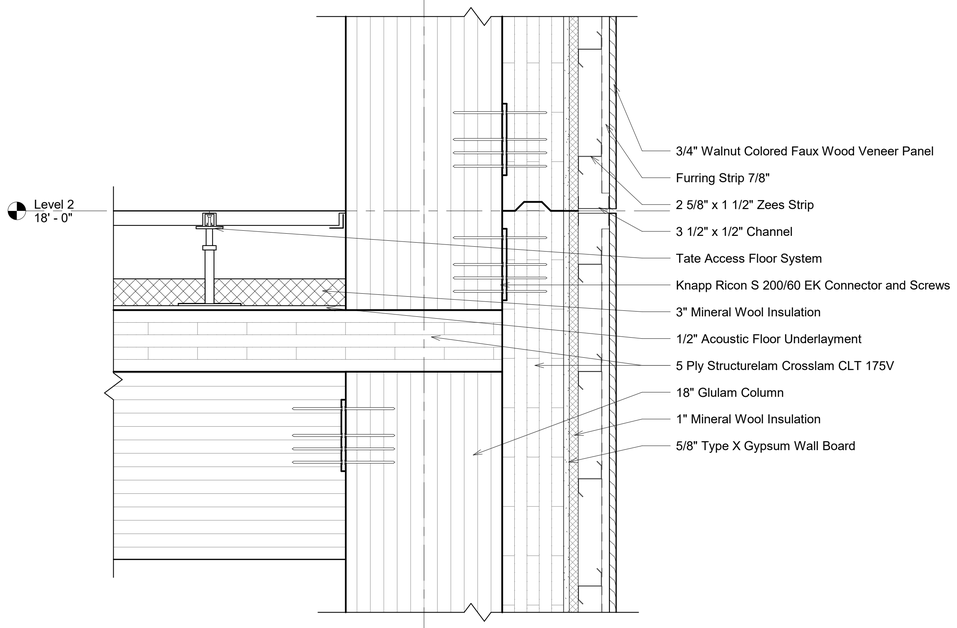
Committee

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Scott Gartner
Edward Becker

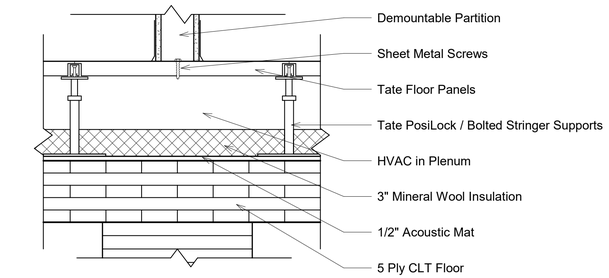
A460



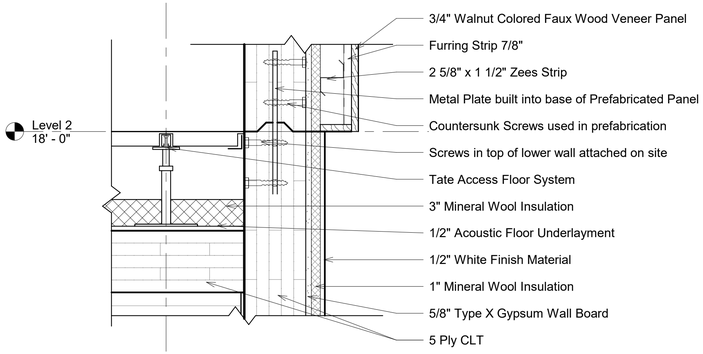
9 Wood Column and Wall to Ground
1 1/2" = 1'-0"



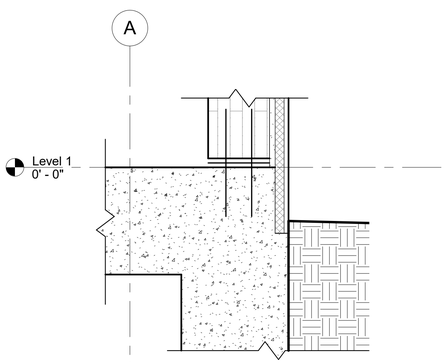
7 Ground Floor to Prefab Column Cover Connection
1 1/2" = 1'-0"



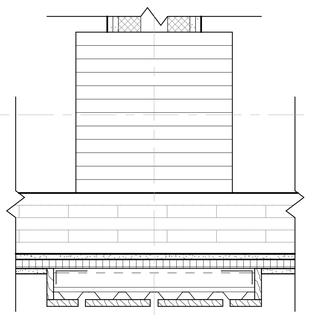
2 Demountable at Floor Detail
1 1/2" = 1'-0"



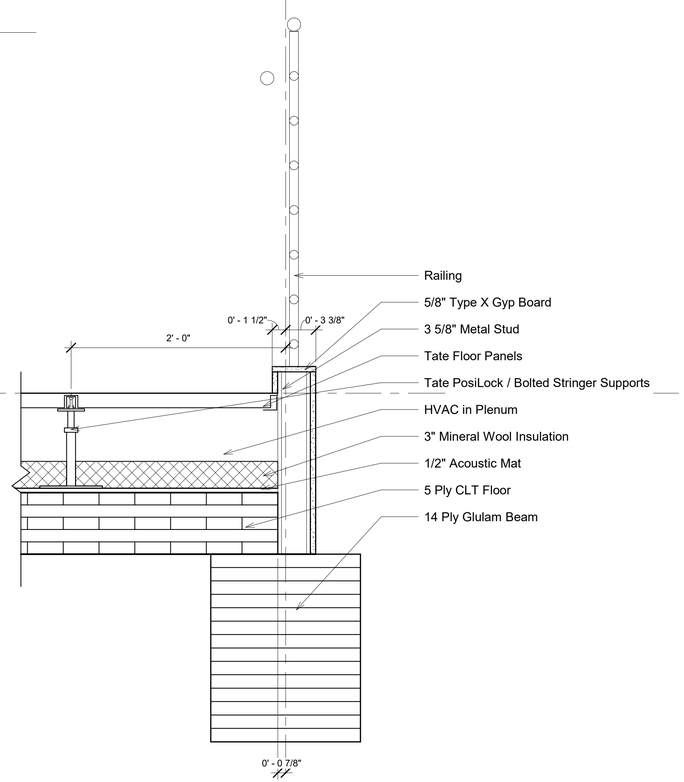
6 Ground Floor to Prefab Panel Base
1 1/2" = 1'-0"



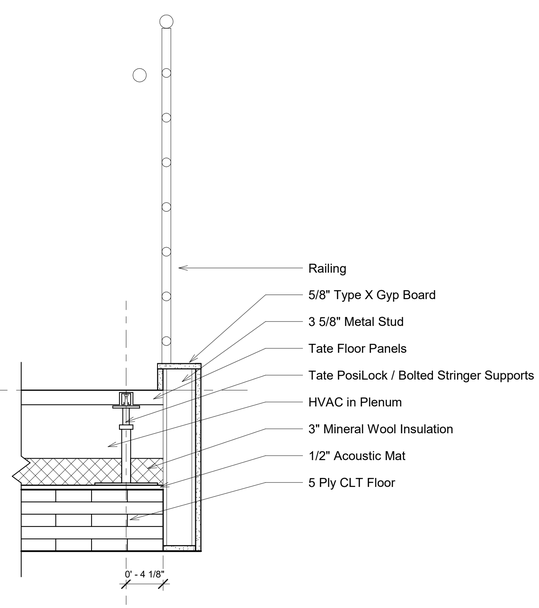
8 CLT Ground Connection
1 1/2" = 1'-0"



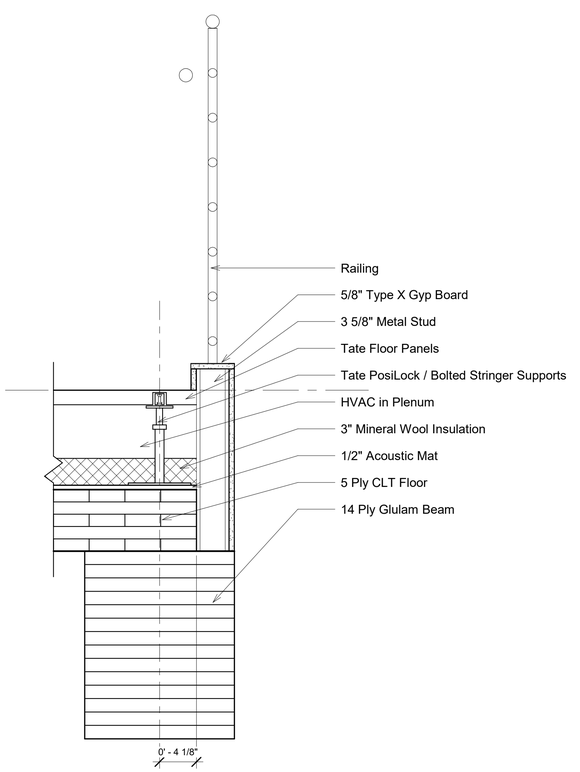
5 Ground Floor Column Cover Detail
1 1/2" = 1'-0"



4 Railing Centered on Beam
1 1/2" = 1'-0"



3 Elevated Railing Detail No Beam
1 1/2" = 1'-0"



1 Railing Detail Flush w/ Beam
1 1/2" = 1'-0"

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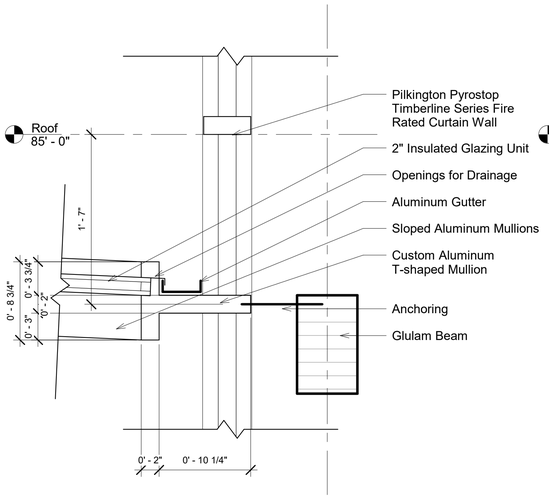
Committee

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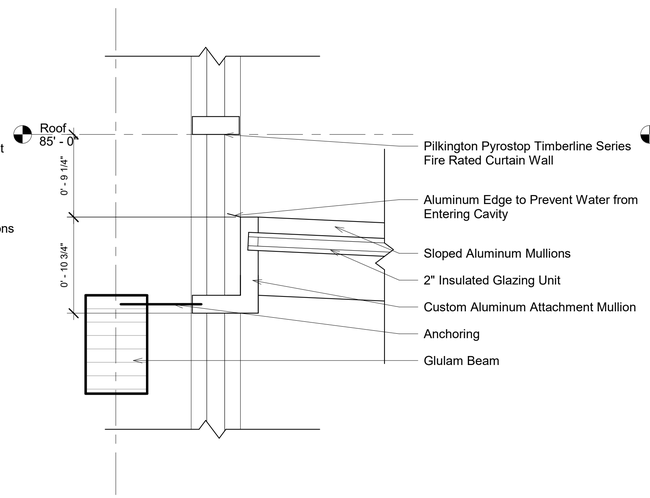
Scott Gartner

Edward Becker

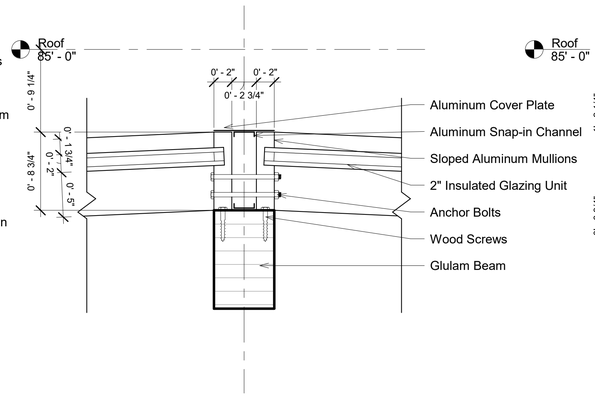
A501



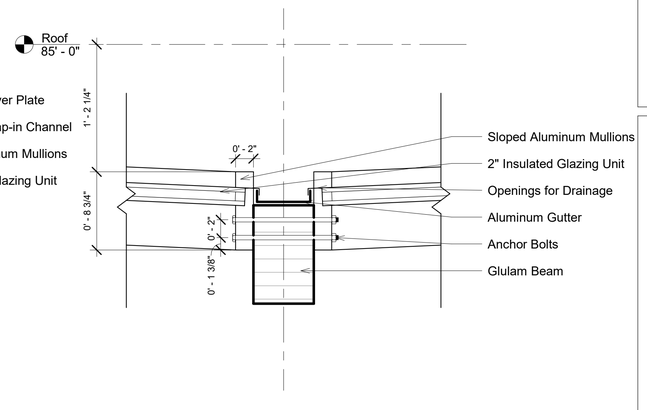
6 Glass Roof at Stair Drain Detail
1 1/2" = 1'-0"



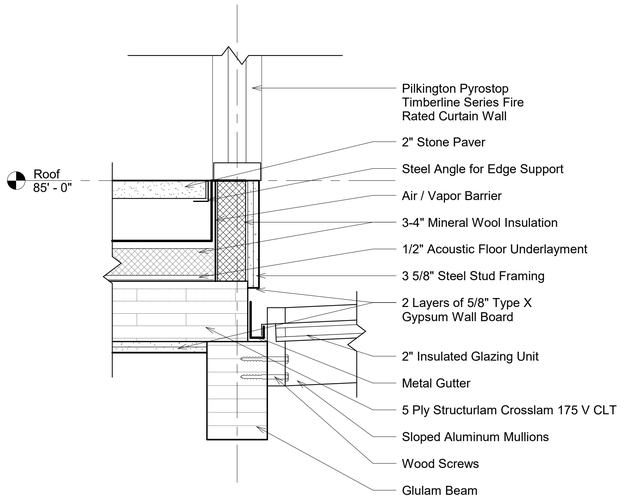
5 Glass Roof at Stair High Point Detail
1 1/2" = 1'-0"



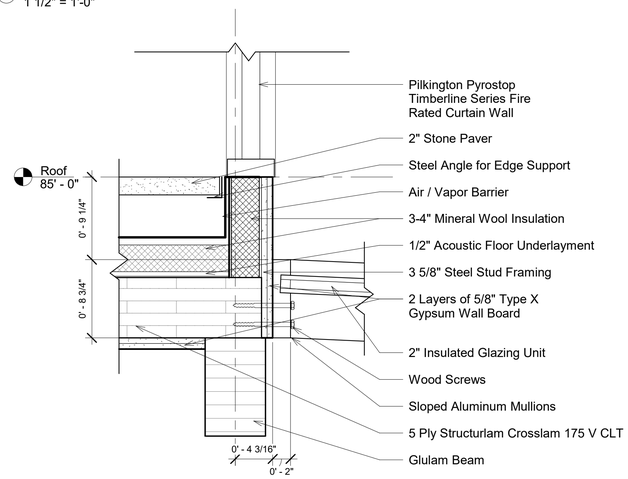
4 Glass Roof High Point Detail
1 1/2" = 1'-0"



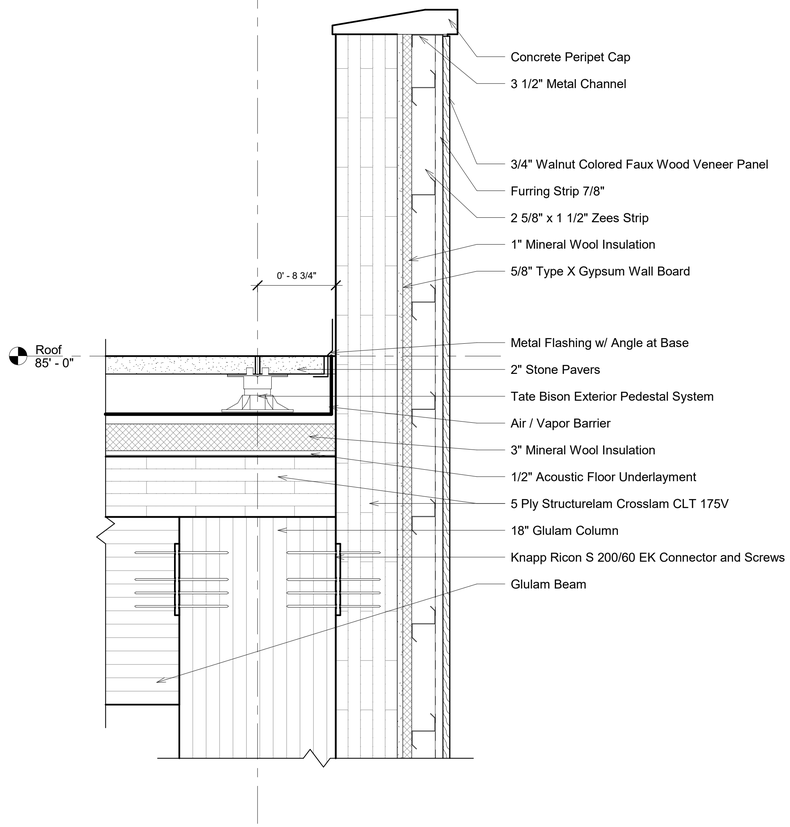
3 Glass Roof Center Drain Detail
1 1/2" = 1'-0"



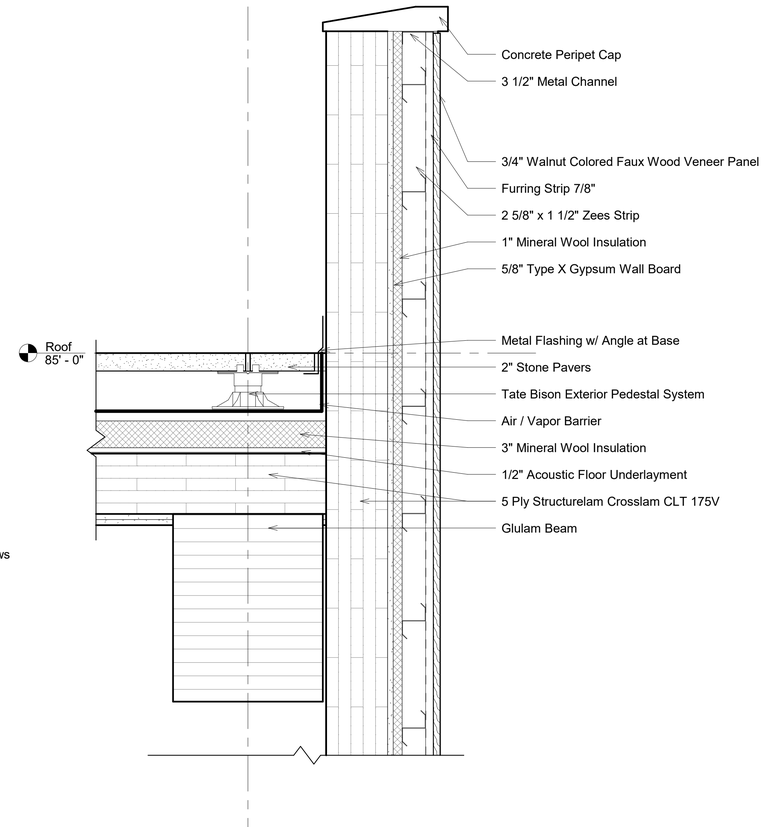
8 Glass Roof at Elevator Low Point
1 1/2" = 1'-0"



7 Glass Roof at Elevator High Point
1 1/2" = 1'-0"



2 Roof Peripet Detail at Column
1 1/2" = 1'-0"



1 Roof Peripet Detail
1 1/2" = 1'-0"

David Prentice

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May 7th, 2021
Blacksburg, Virginia

Details

Project Address

497 E. Town St & 494 E. Rich St
Columbus, OH
43215

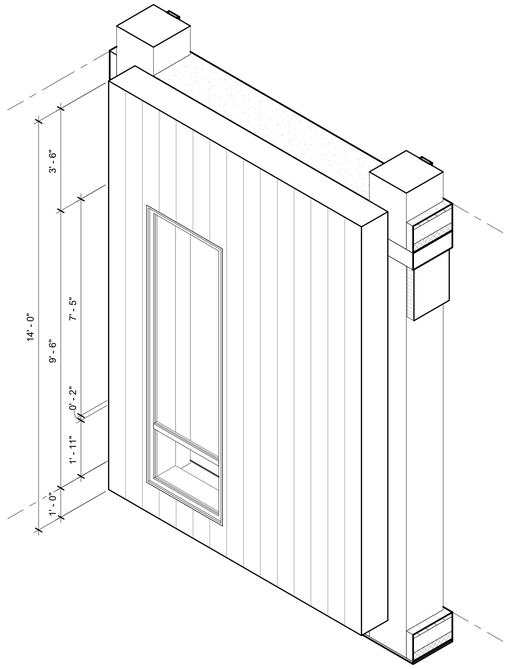
Committee

William Galloway - Chairman

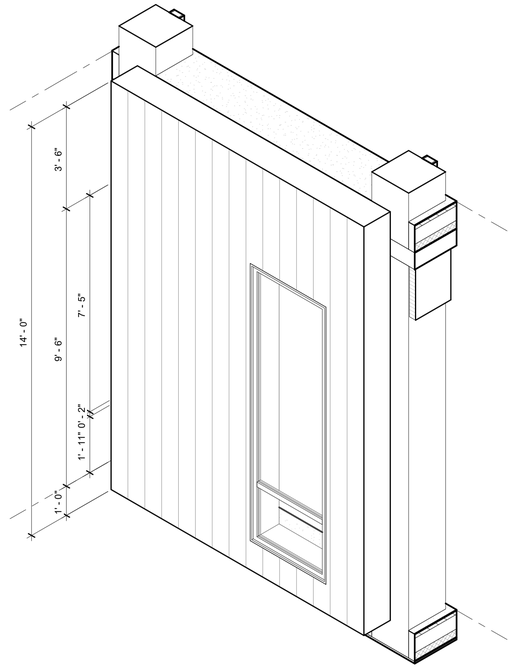
Scott Gartner

Edward Becker

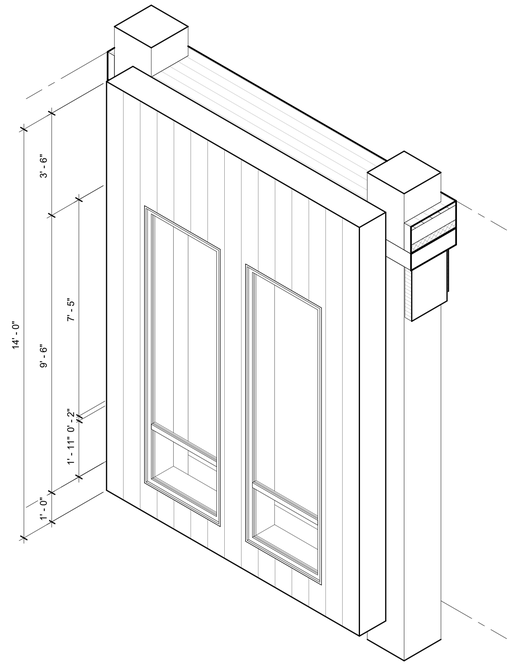
A502



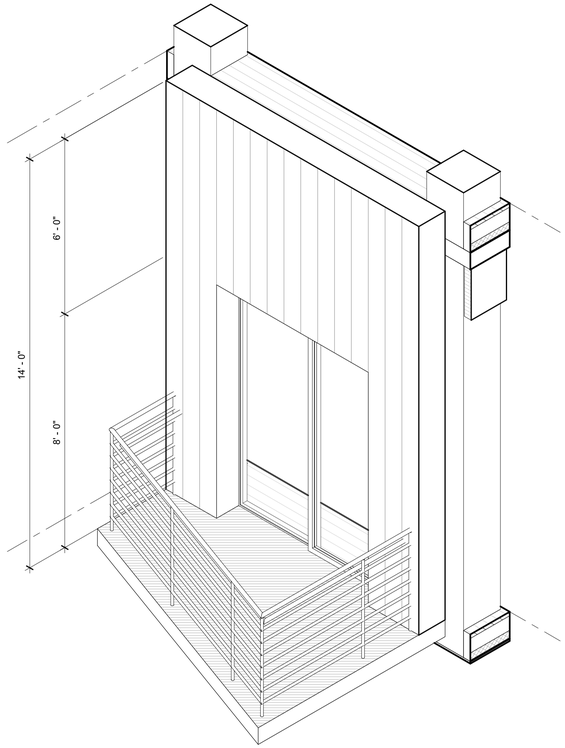
1 Panel - 1 Window Left



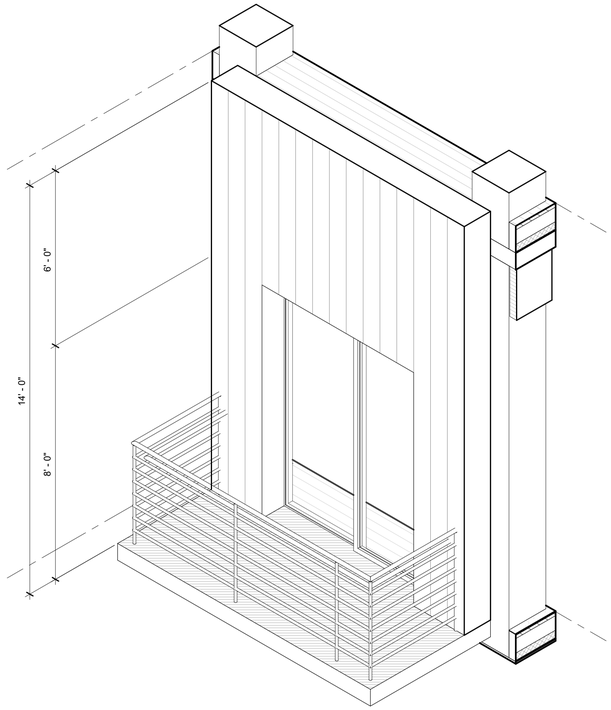
2 Panel - 1 Window Right



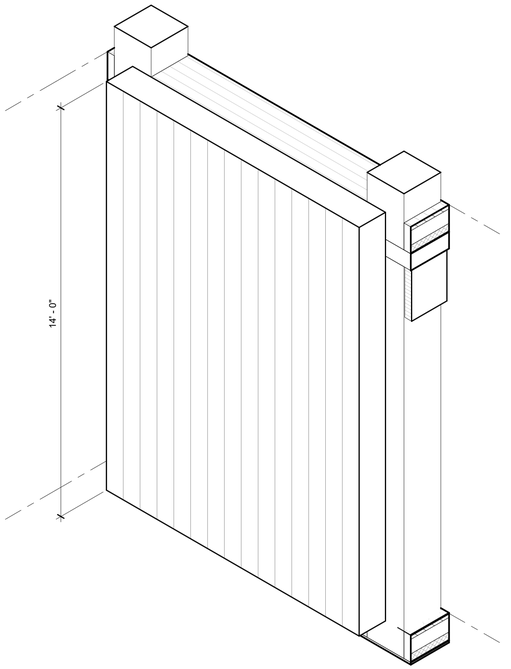
3 Panel - 2 Windows



4 Panel - Door w/ Balcony



5 Panel - Door w/ Rectangular Balcony



6 Panel - Solid

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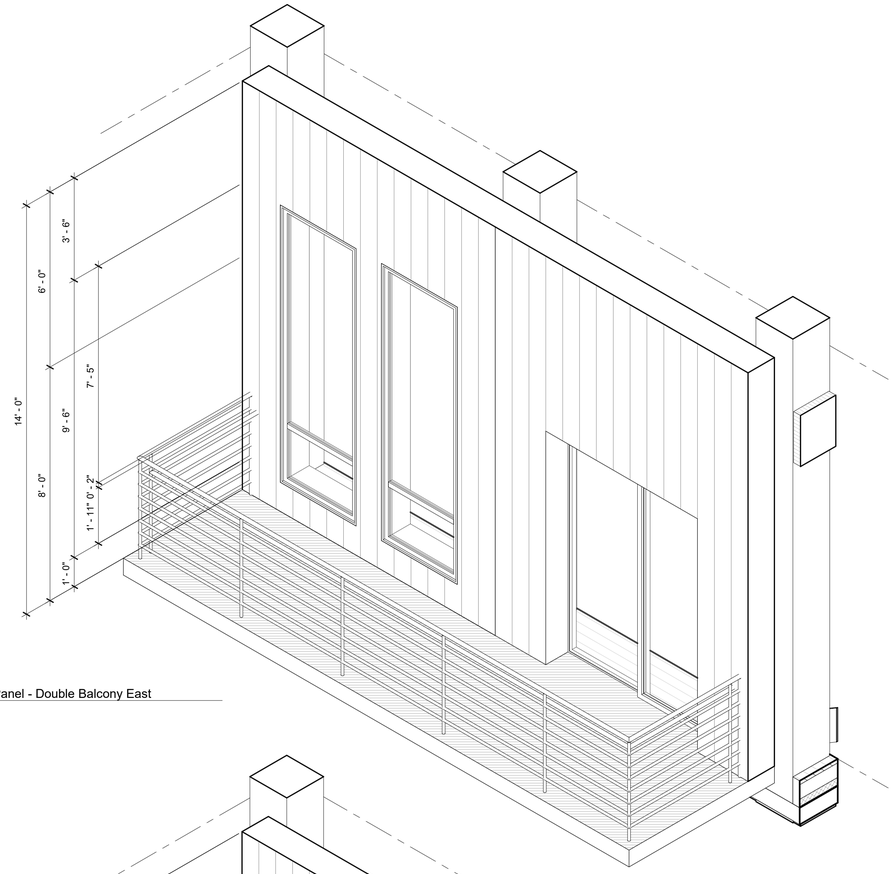
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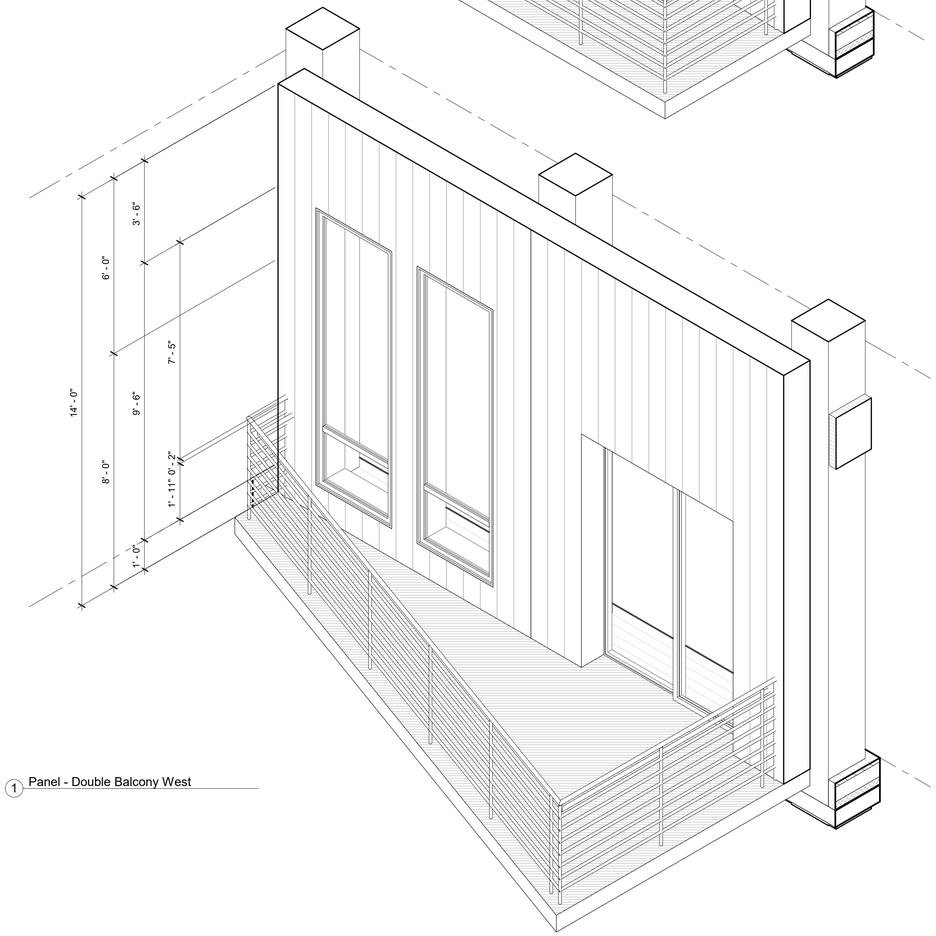
Scott Gartner

Edward Becker

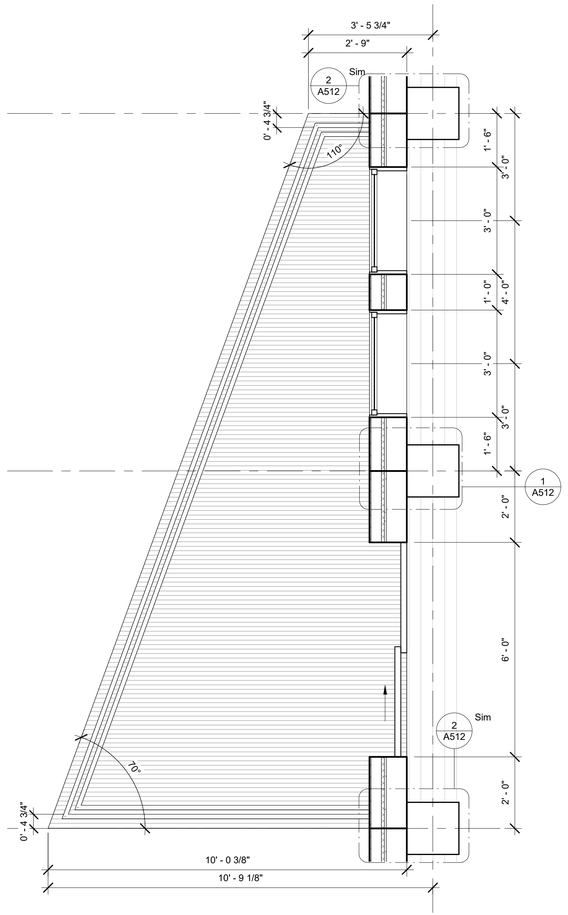
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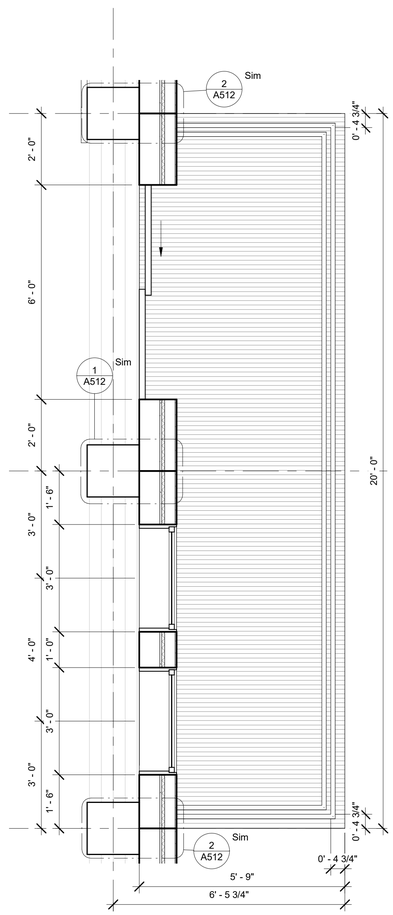
2 Panel - Double Balcony East



1 Panel - Double Balcony West



4 Panel Enlarged Plan - Double Balcony West
1/2" = 1'-0"



3 Panel Enlarged Plan - Double Balcony East
1/2" = 1'-0"

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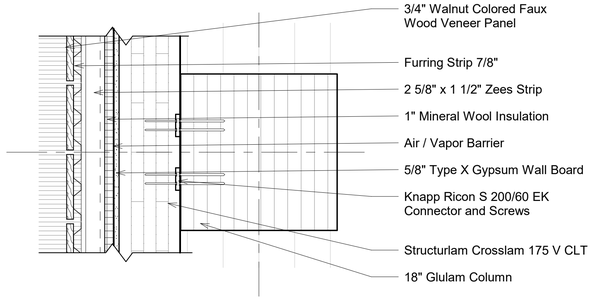
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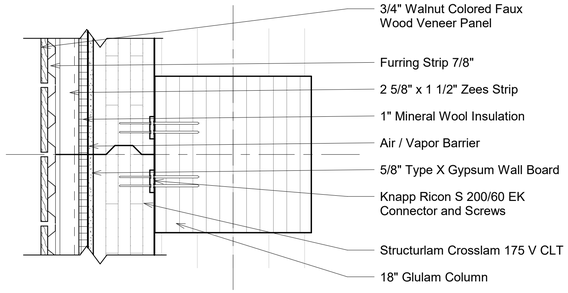
Scott Gartner

Edward Becker

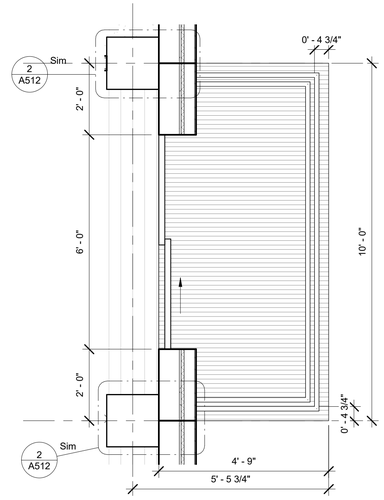
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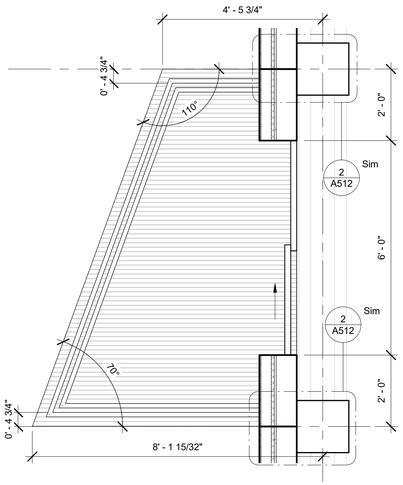
1 Panel Connection Detail Double
1 1/2" = 1'-0"



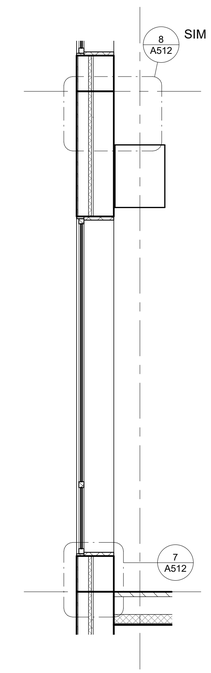
2 Panel Connection Detail TYP
1 1/2" = 1'-0"



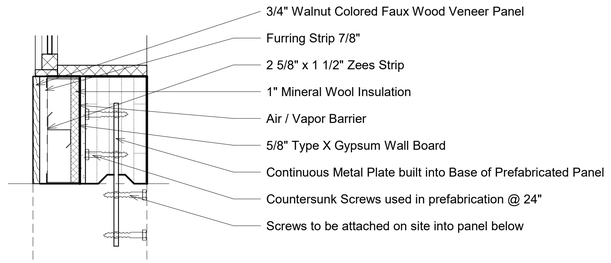
5 Panel Enlarged Plan - Door East
1/2" = 1'-0"



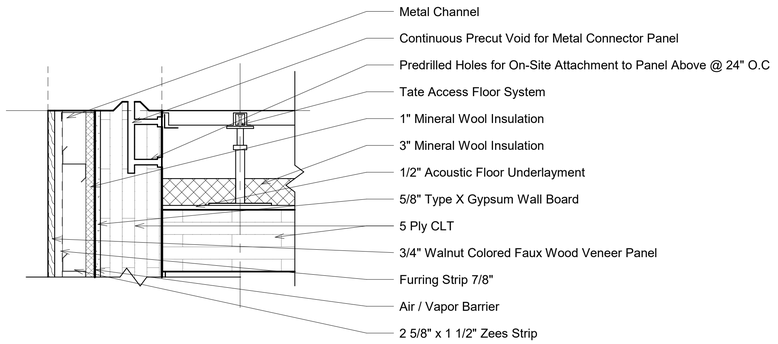
4 Panel Enlarged Plan - Door West
1/2" = 1'-0"



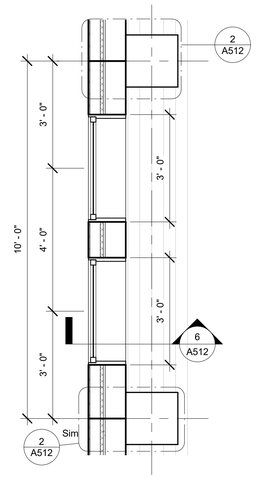
6 Panel Section
1/2" = 1'-0"



7 Panel Section - Base Detail
1 1/2" = 1'-0"



8 Panel Section - Top Detail
1 1/2" = 1'-0"



3 Panel Enlarged Plan - Windows
1/2" = 1'-0"

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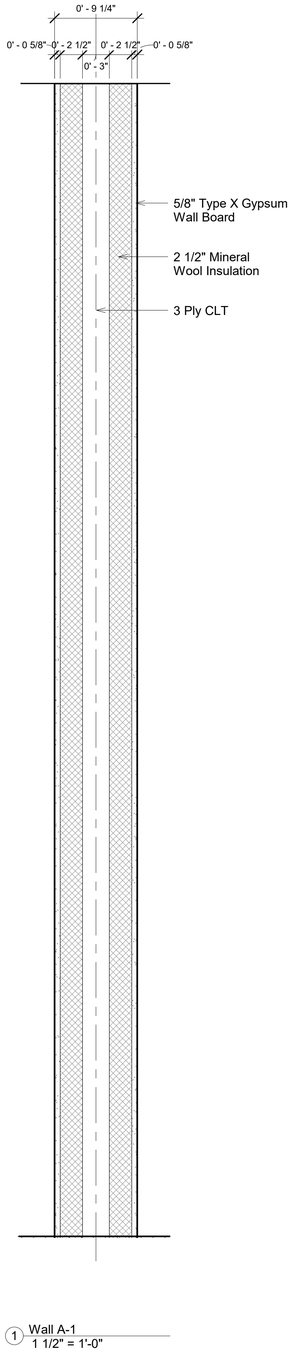
Committee

William Galloway - Chairman
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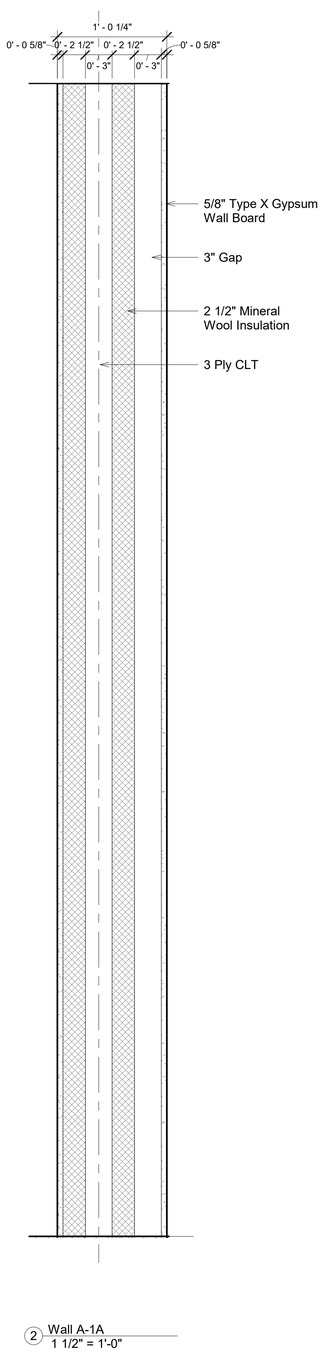
A512

Interior Wall Types		
Type Mark	Type	Width
A-1	Interior, separation, 1hr	0' - 9 1/4"
A-1A	Interior, chase, separation, 1hr	1' - 0 1/4"
A-1B	Interior, double chase, separation, 1hr	1' - 3 1/4"
A-2	Interior, separation, 2 hr	0' - 10 1/2"
A-2A	Interior, chase, separation, 2hr	1' - 1 1/2"
B-1	Interior - 4 7/8" Partition (1-hr)	0' - 4 7/8"
B-2	Interior - 6 1/8" Partition (2-hr)	0' - 6 1/8"

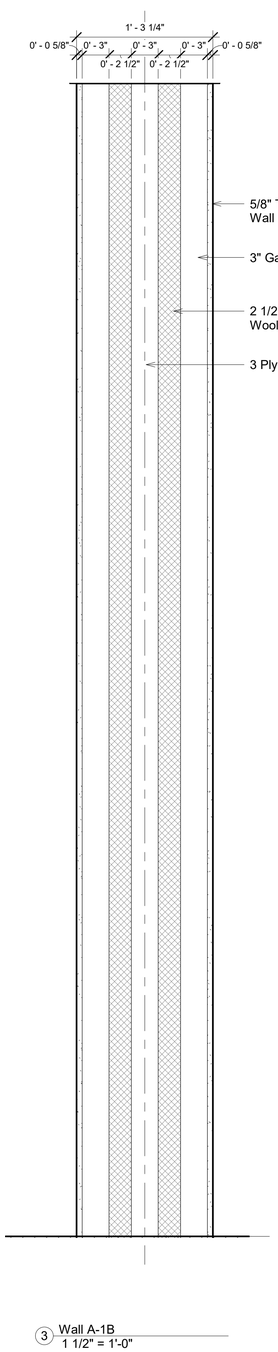
Floor Types						
Type Mark	Type	Description	Manufacturer	Model	Support	Type Comments
F1	Wood 1	Wood Laminate	Tate	ConCore - LVT	PosiLock	Walnut finish
F2	Wood 2	Paneled Wood Planks	Tate	ConCore - Plank Wood	Bolted Stringer	Red Oak finish
F3	Wood 3	Free-laid Wood Planks	Tate	Classic Concrete - Attiro	Heavy duty Bolted Stringer	Walnut finish
F4	Carpet 1	Carpet Tile	Tate	ConCore - PosiTile	PosiLock	Cheaper Shaw finish
F5	Carpet 2	Carpet Tile	Tate	ConCore - PosiTile	PosiLock	Moderate price Shaw finish
F6	Carpet 3	Carpet Tile	Tate	ConCore - PosiTile	PosiLock	High-end Shaw finish
F7	Tile 1	Vinyl to look like Stone	Tate	ConCore - Vinyl	PosiLock	N/A
F8	Tile 2	Porcelain Laminate	Tate	ConCore - LVT	PosiLock	Multi-piece, natural stone finish
F9	Tile 3	Slate	Tate	STONEWORKS	Heavy duty Bolted Stringer	Limestone finish
F10	Rubber	Rubber Mat	TBD	TBD	N/A	N/A



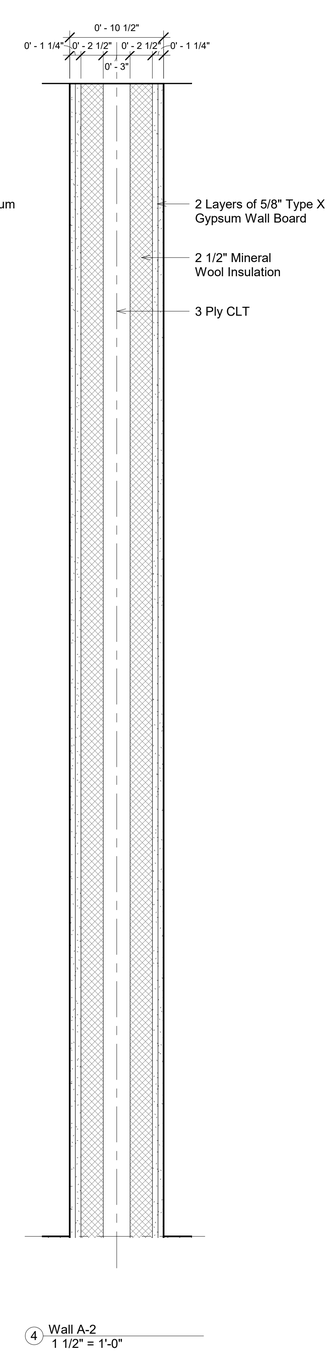
1 Wall A-1
1 1/2" = 1'-0"



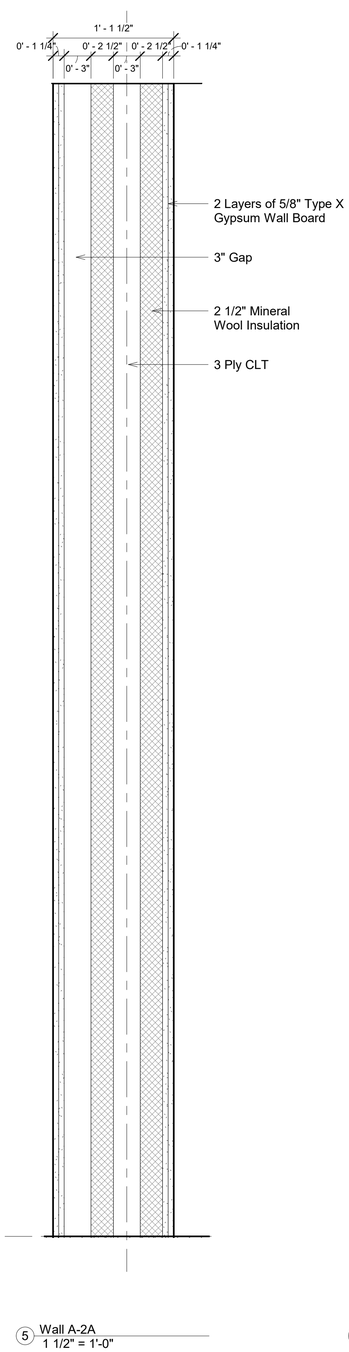
2 Wall A-1A
1 1/2" = 1'-0"



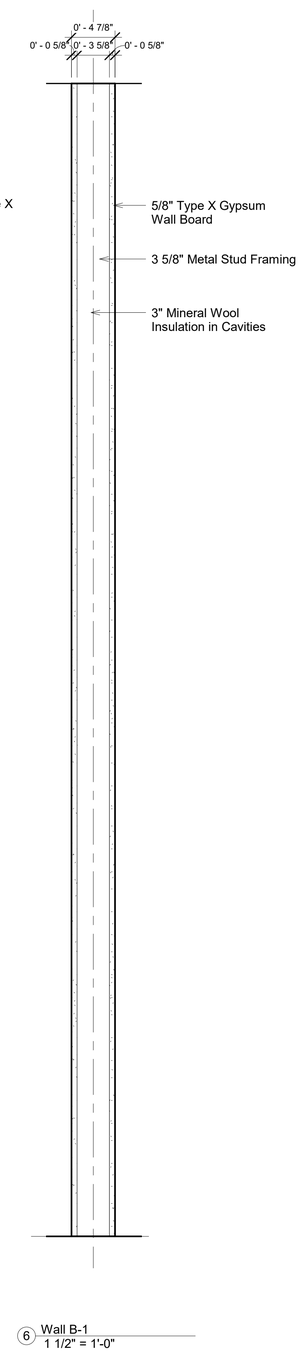
3 Wall A-1B
1 1/2" = 1'-0"



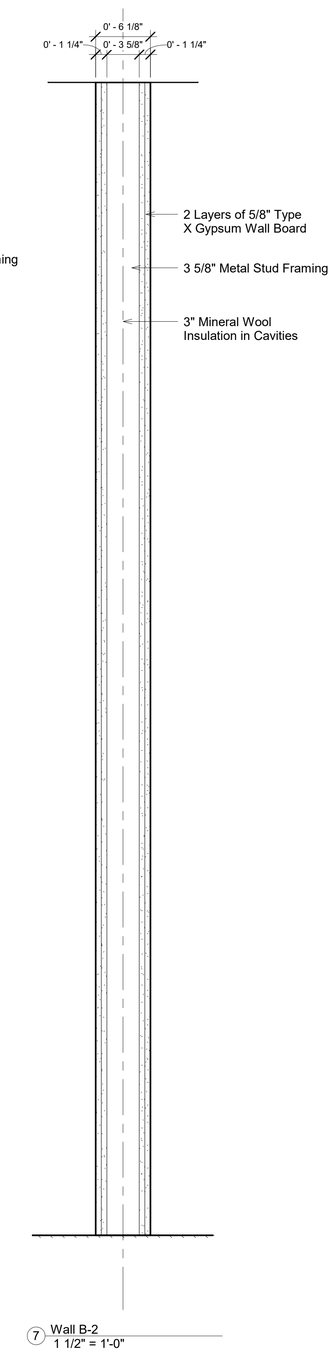
4 Wall A-2
1 1/2" = 1'-0"



5 Wall A-2A
1 1/2" = 1'-0"



6 Wall B-1
1 1/2" = 1'-0"



7 Wall B-2
1 1/2" = 1'-0"

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Wall / Floor Types

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43215

Committee

William Galloway - Chairman

Scott Gartner

Edward Becker

A601

References

Part 1 - Design

Ville Contemporaine: http://www.fondationlecorbusier.fr/corbuweb/morpheus.aspx?sysId=13&IrisObjectId=6426&sysLanguage=en-en&itemPos=24&itemCount=215&sysParentId=65&sysParentName=
Plan Voisin: http://www.fondationlecorbusier.fr/corbuweb/morpheus.aspx?sysId=13&IrisObjectId=6159&sysLanguage=en-en&itemPos=2&itemCount=2&sysParentName=Home&sysParentId=65
Ville Radieuse: http://www.fondationlecorbusier.fr/corbuweb/morpheus.aspx?sysId=13&IrisObjectId=6437&sysLanguage=en-en&itemPos=79&itemCount=215&sysParentId=65&sysParentName=

Broadacre City: https://franklloydwright.org/reading-broadacre/

Vertical City: https://www.artic.edu/artworks/101044/highrise-city-hochhausstadt-perspective-view-north-south-street
https://www.artic.edu/artworks/101043/highrise-city-hochhausstadt-perspective-view
The New City: https://archive.org/details/newcityprinciple00hilbrich/page/94/mode/2up

Layayette Park: https://www.archdaily.com/455524/ad-classics-lafayette-park-mies-van-der-rohe
https://www.moma.org/collection/works/87413
https://en.wikiarquitectura.com/building/lafayette-park/#

VM Housing: https://big.dk/#projects-vm
https://www.archdaily.com/970/vm-houses-plot-big-jds

Map Backgrounds: google maps
Diagram Icons: favpng

Site Precedent: Whyte, William H. *The Social Life of Small Urban Spaces.* Washington, D.C: Conservation Foundation, 1980.
Gehl, Jan. *Cities for People.* Island Press, 2010, pp. 74–88.

Mass timber Building: Photo by author of project by William McDonough + Partners
Code Diagram: Image by Atelier Jones, from Breneman, Scott, et al. Tall Wood Buildings in the 2021 IBC: Up to 18 Stories of Mass Timber, WoodWorks, 2019.

Raised Floor System: Tate Access Floors, https://www.tateinc.com/en-us/access-floor

Part 2 - Construction

Raised Floor System:
Tate https://www.tateinc.com/en-us/access-floor
(Various Products)

Cross Laminated Timber:
Structurlam
Crosslam 175 V CLT https://www.structurlam.com/wp-content/uploads/2017/04/Structurlam-US-Design-Guide-April-LR.pdf
Glulam Plus https://www.structurlam.com/construction/products/d/glulam-plus/

Timber Connections:
Knapp-Verbinder
Ricon S 200/60 EK https://www.knapp-verbinder.com/wp-content/uploads/2013-10-10_KNAPP-Brochure_structural_engineer_1-2013_en_web.pdf

Curtain Wall Details:
Pilkington
Pyrostop Fireglass https://www.fireglass.com/products/glass/pilkington-pyrostop/
Timberline Series https://www.fireglass.com/resources/product-downloads/fact-sheets/doc/fireframes-timberline-fact-sheet.pdf

Formatting:
Typical Abbreviations https://www.archtoolbox.com/representation/abbreviations/archabbrev.html
Page Numbering https://www.archtoolbox.com/practice/contract-documents/condocsheetorder.html

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