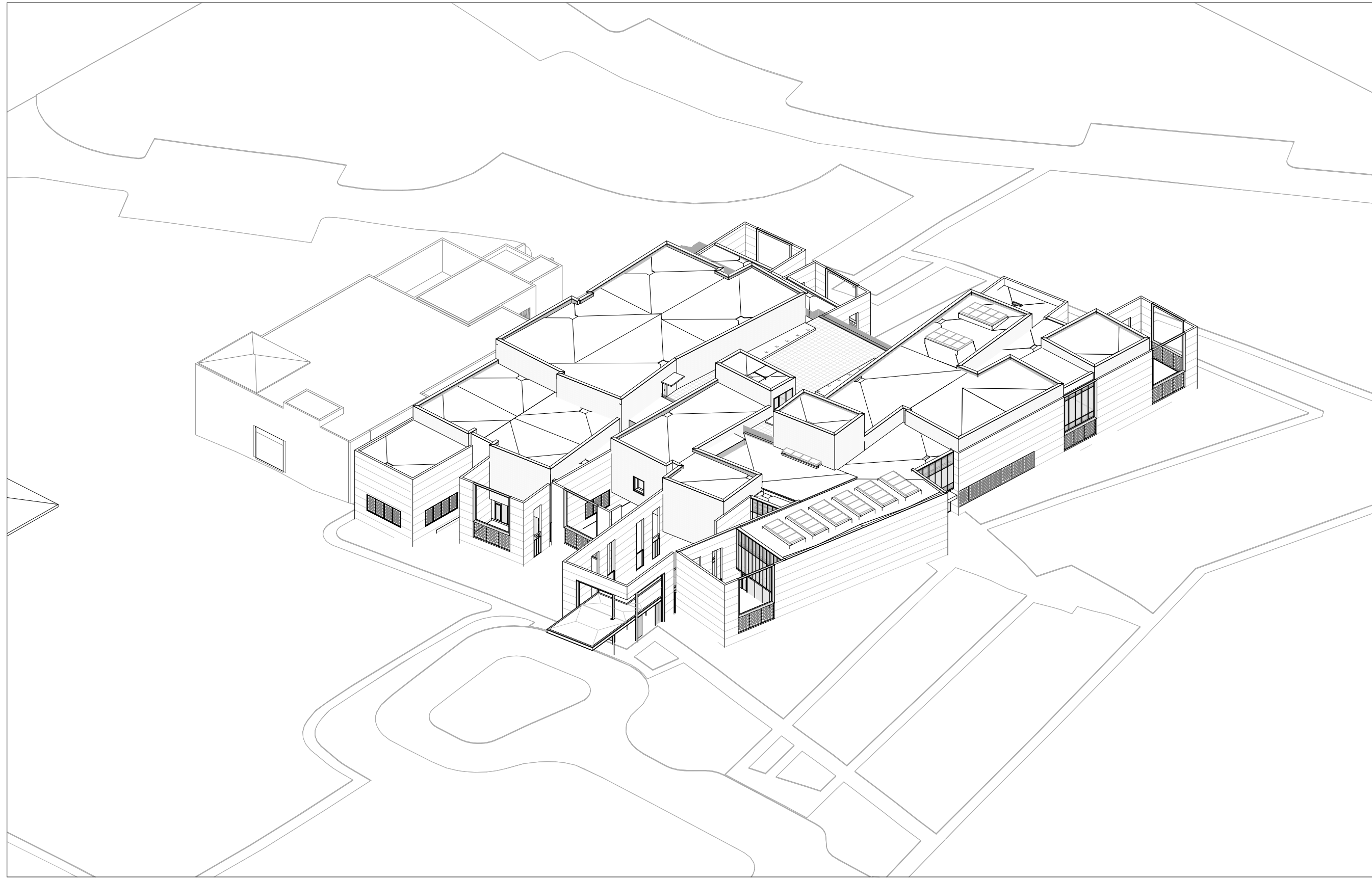


FLOOD MAP



VICINITY MAP



Building Axonometric NE - BOD

PROJECT CONTACTS

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Vero Beach Museum of Art
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Vero Beach, FL 32963

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email: tracy@jconsultants.com

PROJECT SUMMARY

PROJECT NAME
Vero Beach Museum of Art (VBMA)

LOCATION:
Vero Beach, Florida

PROJECT DESCRIPTION:
New 2 story museum building containing exhibition spaces, a museum store, offices, event and education spaces, and associated support spaces. Renovation of a portion of the existing building is included and to be connected to the building. The project also entails landscaping and sitework.

BUILDING CODES:
8th Edition (2022) of the Florida Building Code (FBC), based on the 2021 Edition of the International Building Code
8th Edition (2022) of the Florida Fire Prevention Code (FFPC), based on the 2021 Edition of the International Building Code
2023 Florida Building Code, Energy Conservation
International Energy Conservation Code 2021 (IECC 2021) as adopted and amended by Florida State

All code sections referenced are from the 2023 Florida Building Code (FBC), unless otherwise noted. Code references from the Florida Fire Prevention Code will be FFPC followed by either "1" for NFPA 1 - Fire Code or "101" for the NFPA 101 - Life Safety Code.

PLUMBING FIXTURE COUNTS

	W.C. Male	W.C. Female	L.V. Male	L.V. Female	JO
A-3 Occupancy (17482)-874	1 per 125 (8.99)	1 per 65 (13.44)	1 per 200 (4.38)	1 per 200 (4.37)	1 per 500 (3.49)
B Occupancy (2237)-26	x+50 1 per 25 (0.20)	x+50 1 per 40 (0.14)	x+50 1 per 40 (0.65)	1 per 40 (1.60)	1 per 100 (0.20)
S Occupancy (372)-19	1 per 100 (1.19)	1 per 100 (1.19)	1 per 100 (1.19)	1 per 100 (0.019)	1 per 1,000 (0.019)
E Occupancy (820)-48	1 per 50 (1)	1 per 50 (1)	1 per 100 (48)	1 per 100 (48)	1 per 100 (48)
(Resume)	(8.22)	(15.67)	(8.25)	(6.5)	(1.26)
Provided	12	17	9	10	6

*Total required includes the requirements for the Roof Deck Alternate occupant load

CODE SUMMARY

BASIC FIRE PROTECTION AND LIFE SAFETY FEATURES

FLOOR OPENINGS (Two story opening with depressed floor)
IBC
2-Story Floor Opening and Exit Access Stair Permitted by FFPC.
In accordance with FFPC Section 12.3.1(3) permits unenclosed vertical openings in sprinklered assembly occupancies between any two (2) adjacent floors.
This FFPC provision would therefore allow an open stair within this 2-story floor opening.
IBC
In accordance with FBC Section 712.1.8, two (2) story floor openings are permitted to be unenclosed.
Further FBC Section 712.1.2 permits exit access stairways to be unenclosed when complying with 1019.3.
FBC Section 1019.3(1) permits exit access stairs to be unenclosed provided they only atmospherically communicate between two (2) stories.

EXIT CAPACITY, NUMBER OF EXITS, AND TRAVEL DISTANCE
IBC 10.6.4.1.1
This egress analysis has used the more restrictive requirement between the two codes for ease. Should challenges be presented, then a detailed FBC and FFPC analysis can be completed.
Egress factors in the FBC are less stringent than the FFPC.
Egress elements are designed to accommodate the occupant load of the spaces using the following factors from FBC 1006.2.1 and 1006.3.2, Exceptions:
Stairways - 0.2 inches/person
Other Egress Components - 0.2 inches/person
FFPC Exit Capacity Factors:
The egress analysis has used the more restrictive requirement between the two codes for ease. Should challenges be presented, then a detailed FBC and FFPC analysis can be completed.
Egress factors in the FBC are less stringent than the FFPC.
FFPC Table 7.3.3.1:
Stairways - 0.3 inches/person
Other Egress Components - 0.2 inches/person

ALLOWABLE AREA - TYPE IIB
Per FFPC Section 8.2.1.2, the FBC shall be used to determine construction type classification.
Group A-2/A-3 - 28,500 SF (FBC 506.2)
Frontage Increase Factor (FBC Table 506.3.3) 0.75
Frontage Area Increase 8,800 sf x (0.75) = 7,125 sf
Total Allowable Area As = 35,625 SF

ACTUAL AREA PER STORY
New Bulk (Type IIB)
Level 1: 34,296 SF
Level 2: 22,867 SF + 6,718 SF MECH PENTHOUSE
Level 3: 1,343 SF
Total: 65,304 SF
Note: 1-HR fire wall per FBC Table 705.4 footnote (a) and 705.2 which references NFPA 221. Per NFPA 221, Table 4.6, 1-HR double walls will laterally supported by the attached building frame is equivalent to a single 2-HR wall.
Existing Building to Remain (Type IIB)
Level 1: 10,991 SF + 1,292 SF (New connector, see diagram below)
Level 2: 10,991 SF

Penthouse
Per FBC Section 1510.2.2, the aggregate area of penthouses and other enclosed rooftop structures must not exceed one-third the area of the supporting roof deck.
6,718 / (21.624 + 6.718) = 21.67% of roof area is covered by the Mechanical Penthouse
See G032 for areas and calculation.

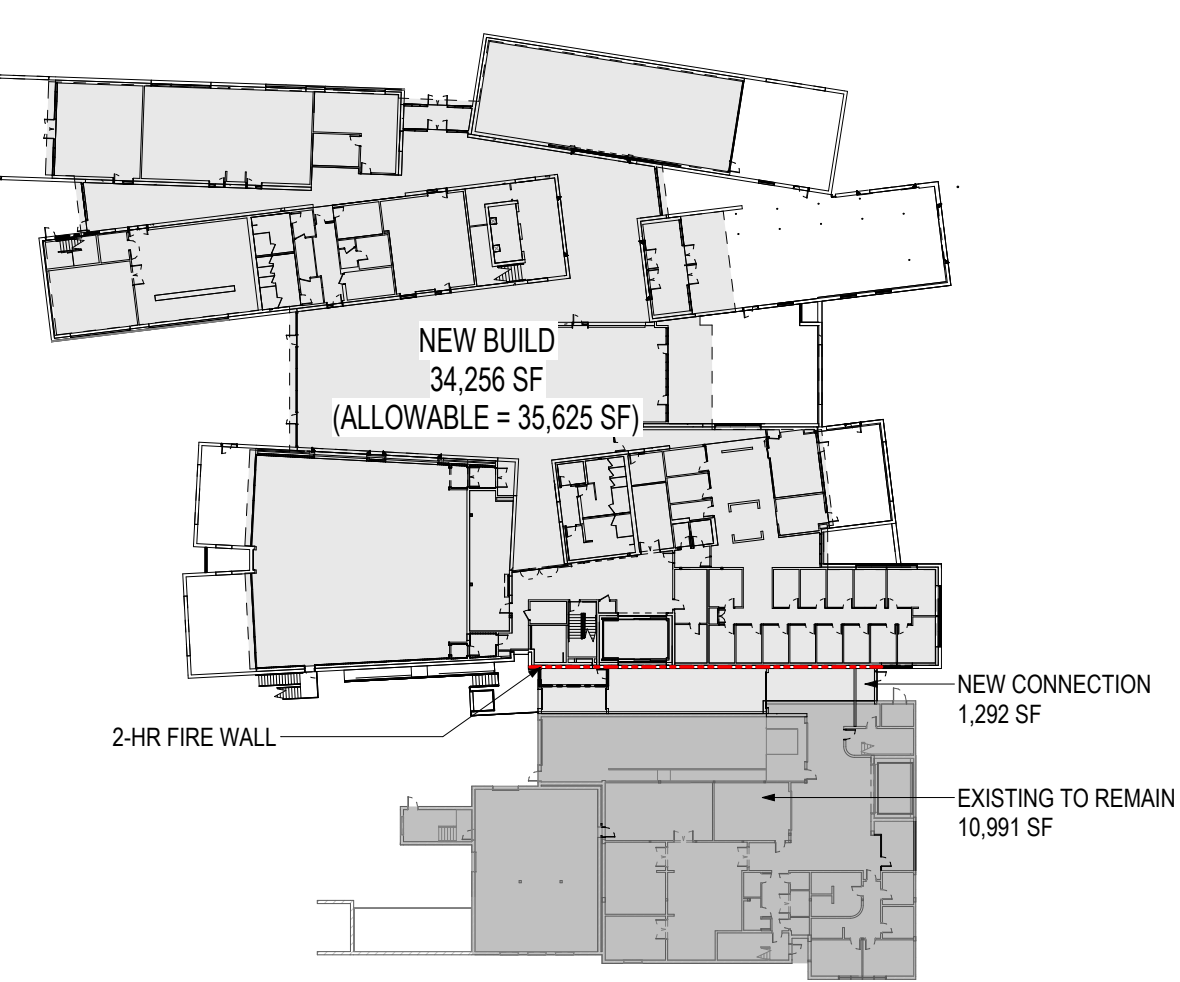
Allowable stories / HT: 3 stories / 75'
Actual stories / HT: 3 stories / 45'-0"
Non-separated occupancies per FBC Section 508.3 and FFPC-101 Section 6.1.14.3
"Chapter 2 of the Florida Building Code (FBC) defines 'Building Area' as the area included within the exterior walls, excluding courts and shafts. Per FBC Chapter 2, a 'court' is defined as an open, uncovered space, unobstructed to the sky, bounded on three or more sides by exterior building walls or other enclosing devices.

CONSTRUCTION AND FIRE SEPARATIONS
Fire resistive rating requirements for building elements:
Structural Frame 0-hour
Structural Frame - Supporting fire walls and shafts 1-hour
Bearing Walls - Exterior 0-hour
Bearing Walls - Interior 0-hour
Non-bearing Walls - Exterior (FBC Table 705.5) 0-hour
Non-bearing Walls - Interior 0-hour
Floor construction & associated secondary members 0-hour
Roof construction & associated secondary members 0-hour
Fire resistive rating requirements for exterior walls, (ref. FBC Table 705.5 and Table 705.6, Footnote (j))
Fire Separation Distance < 5 feet 1-hour
Fire Separation Distance 5-10 feet 1-hour
Fire Separation Distance 10-20 feet 0-hour
Fire Separation Distance >20 feet 0-hour
Separation of occupancies:
Non-separated occupancies per FBC 508.3 0-hour
Fire resistive rating requirements for elevator hoist ways and other shafts 1-hour
Fire resistive rating requirements for exit stair enclosures 1-hour

OCCUPANT LOAD
Occupant Load Factors (FBC Table 1004.5)
This egress analysis has used the more restrictive requirement between the two codes for ease. Should challenges be presented, then a detailed FBC and FFPC analysis can be completed.
Egress factors in the FBC are less stringent than the FFPC.
Assembly (fixed seats) 1 person per 24" of both length
Assembly (Exhibit Gallery and Museum) 15 net
Assembly (unconcentrated, tables and chairs) 15 net
Assembly (chairs only) 7 net
Offices 150 gross
Retail 60 gross
Shops/Vocational 50 net
Accessory Storage/ MEP Rooms 300 gross

Occupant Load Factors (FFPC-101 Table 7.3.1.2)
This egress analysis has used the more restrictive requirement between the two codes for ease. Should challenges be presented, then a detailed FBC and FFPC analysis can be completed.
Egress factors in the FBC are less stringent than the FFPC.
Assembly (table and chair seating) 15 net
Assembly (chairs only) 7 net
Business use (other than below) 150 gross
a. Collaboration Rooms less than 400 sf 30 gross
b. Collaboration Rooms greater than 400 sf 15 gross
Retail on street floor 30 gross
Retail on two or more street floors 40 gross
Educational (shops and vocational) 50 net
Storage (in other than storage and merchandise occupancies) 300 gross

FIRE WALL DIAGRAM



FOR REFERENCE ONLY - NOT FOR CONSTRUCTION

Allied Works

FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

VBMA

Vero Beach Museum of Art

Project Site Address:
3001 RIVERSIDE PARK DR
VERO BEACH, FL 32963

revision #	issue description	issue date
1	75% DD	12/22/23
2	50% CD	10/11/24
3	CD PROGRESS PRINT	04/25/25

CD PROGRESS PRINT
25 APRIL, 2025

SCALE: As indicated

PROJECT INFORMATION

sheet 001

sheet 001

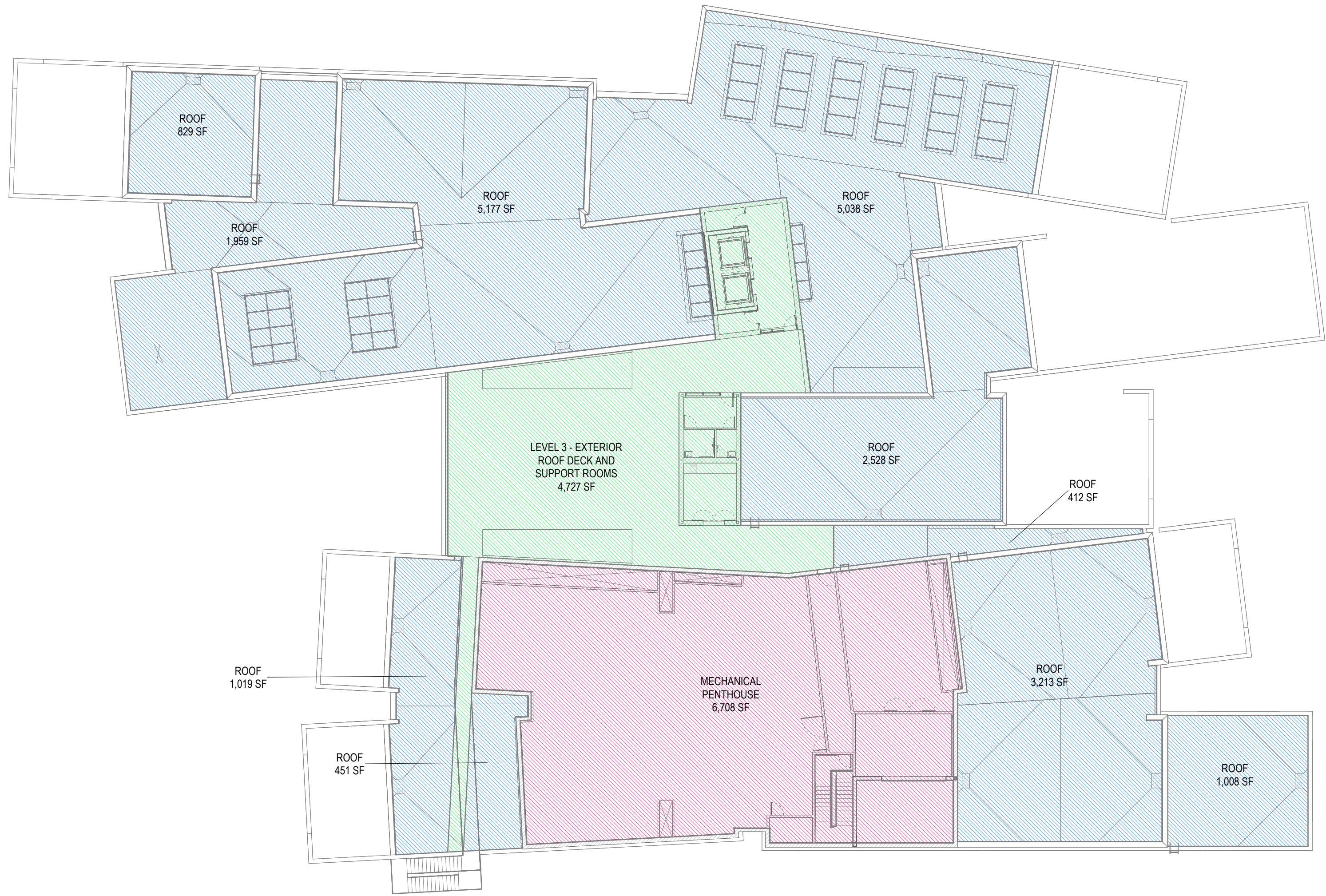
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1 LEVEL 3 F.F. (MECH)
1" = 20'-0"

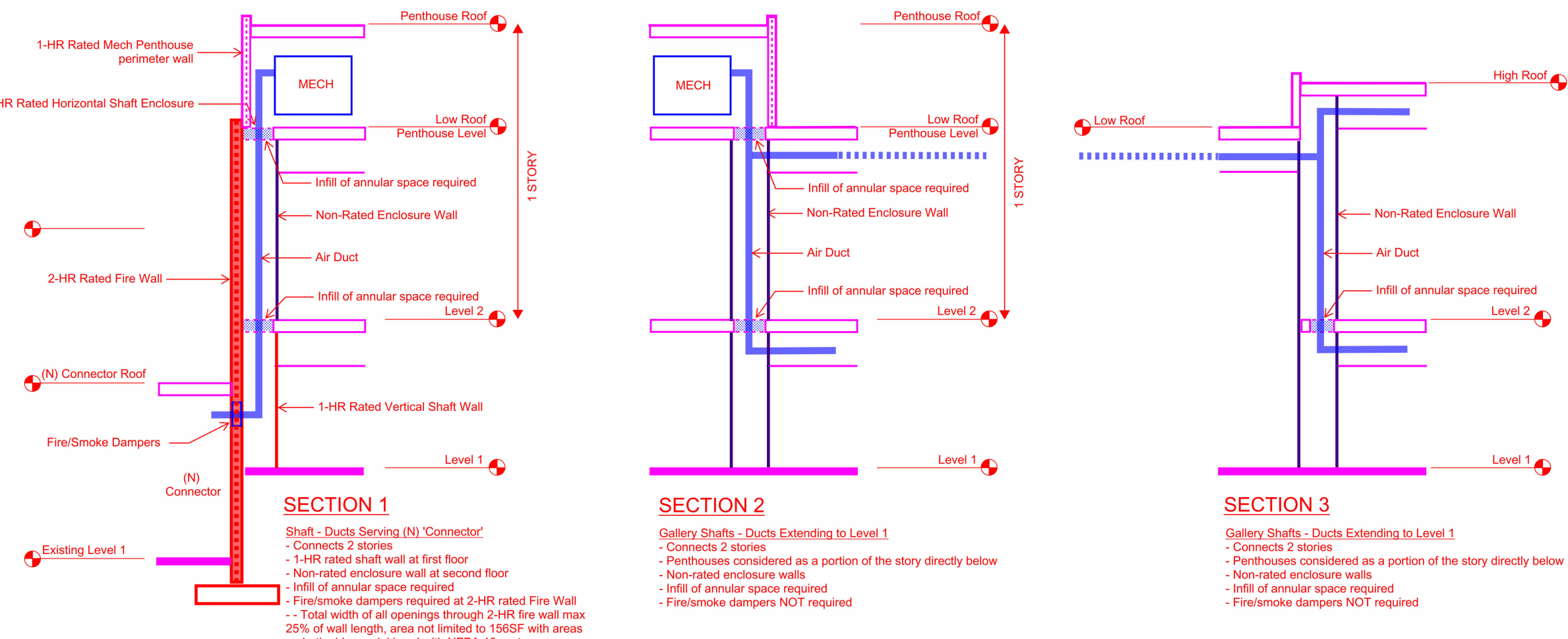
MECHANICAL PENTHOUSE AREA CALCULATION

PER FBC SECTION 1510.2.2, THE AGGREGATE AREA OF PENTHOUSES AND OTHER ENCLOSED ROOFTOP STRUCTURES MUST NOT EXCEED ONE-THIRD THE AREA OF THE SUPPORTING ROOF DECK.

LEVEL 3 - EXTERIOR ROOF DECK AND SUPPORT ROOMS 4,727 SF (EXCLUDED FROM CALCULATION)
MECHANICAL PENTHOUSE* 6,708 SF
ROOF 21,634 SF

6,708 / (21,634 + 6,708) = 23.67% OF ROOF AREA IS COVERED BY THE MECHANICAL PENTHOUSE

* THE MECHANICAL PENTHOUSE INCLUDES MECHANICAL EQUIPMENT THAT SERVES THE ENTIRE MUSEUM BUILDING BELOW. THE MUSEUM HAS VARYING ROOF HEIGHTS DUE TO THE AESTHETIC, ACOUSTIC, AND DISPLAY NEEDS OF THE MUSEUM. THE MECHANICAL EQUIPMENT IN THIS PENTHOUSE DOES NOT SERVE ANY OF THE ENCLOSED SPACES ABOVE THE ROOF, LABELED AS LEVEL 3. IT IS THEREFORE CLARIFIED THAT THE MECHANICAL PENTHOUSE CAN BE CLASSIFIED AS A PENTHOUSE IF THE FLOOR AREA OF THE MECHANICAL PENTHOUSE DOES NOT EXCEED ONE-THIRD THE AREA OF THE SUPPORTING ROOF DECK (NOT INCLUDING THE ROOF DECK THAT SUPPORTS LEVEL 3.

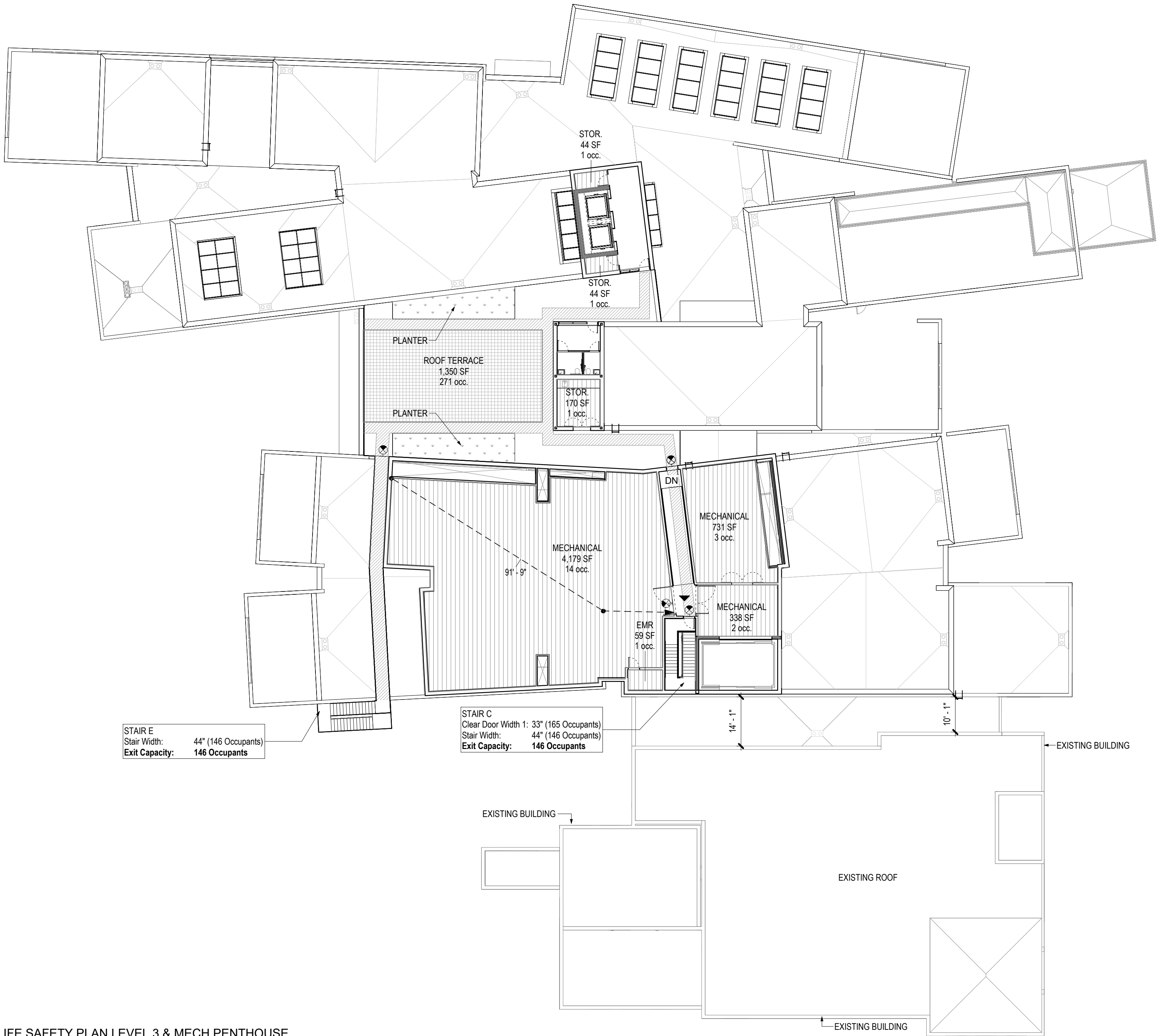


The penthouse is considered as a portion of the story directly below per FBC 1510.2.
The ducts that connect the Penthouse to Level 1 (Duct System) will comply with FBC 2021 Section 711.2.1.2 and 2021 FBC Section 711.2.1.2.1.
In accordance with these sections, the annular space around the duct will be protected with an approved noncombustible material that resists the passage of flame and products of combustion.

Florida Life Safety Code 2021
12.5.1 Protection of Vertical Openings
Any vertical opening shall be enclosed or protected in accordance with Section 8.6, unless otherwise permitted by one of the following:
(1) Where a ramp shall be permitted to be unenclosed between balconies or mezzanines and main assembly areas located below, provided that the balcony or mezzanine is open to the main assembly area.
(2) Exit access stairs from lighting and access cabarets, galleries, and gridrooms shall not be required to be enclosed.
(3) Assembly occupancies protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 shall be permitted to have unprotected vertical openings between any two adjacent floors, provided that such openings are supported from unprotected vertical openings serving other floors by a barrier complying with 8.6.3.
(4) Assembly occupancies protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 shall be permitted to have convenience stair openings in accordance with 8.6.3.2.

VBMA SHAFT SECTION DIAGRAMS 7.01.24

2023 FBC - Building, 8th edition
711.2.1 Non-Resistor-Based Fire Assemblies
Duct systems constructed of approved materials in accordance with the Florida Building Code, Mechanical that penetrate non-fire-resistance rated floor assemblies shall be protected by any of the following methods:
1. A shaft enclosure in accordance with Section 713.
2. The duct connects not more than two stories, and the annular space around the penetrating duct is protected with an approved noncombustible material that resists the free passage of flame and the products of combustion.
3. In floor assemblies composed of noncombustible materials, a shaft shall not be required where the duct connects not more than three stories. The annular space around the penetrating duct is protected with an approved noncombustible material that resists the free passage of flame and the products of combustion and a fire damper is installed at each floor line.



2 LIFE SAFETY PLAN LEVEL 3 & MECH PENTHOUSE
1" = 20'-0"

LEVEL 3 & MECHANICAL PENTHOUSE SUMMARY

Total No. of Exits Required: 2
Total No. of Exits Provided: 2
Total Egress Width Required: 294 x 0.2 = 59'
Total Egress Width Provided: 60'
Total Star Width Required: 294 occupants x 0.3 = 87'
Total Star Width Provided: 88'
Total Occupant Load: 294 occupants
Total Exit Capacity: 294 occupants

LEVEL 3 - OCCUPANT LOAD - ROOF TERRACE ALT				
NAME	FUNCTION OF SPACE	OCC. LOAD FACTOR	AREA	OCCUPANT LOAD
STOR.	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 SF	170 SF	1
MECHANICAL	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 SF	4,179 SF	14
MECHANICAL	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 SF	731 SF	3
MECHANICAL	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 SF	338 SF	2
EMR	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 SF	59 SF	1
STOR.	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 SF	44 SF	1
STOR.	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 SF	44 SF	1
ROOF TERRACE	ASSEMBLY (CONCENTRATED)	5 SF	1,350 SF	271
TOTAL OCCUPANT LOAD				294

ROOF TERRACE ALT - EGRESS STAIRS			
NAME	WIDTH	EGRESS FACTOR	CAPACITY
ST-C	44"	0.30	147
ST-E	44"	0.30	147
Total Egress Stairs Capacity Provided:			294

NOTES:
1. THIS EGRESS ANALYSIS HAS USED THE MORE RESTRICTIVE REQUIREMENT BETWEEN THE TWO CODES FOR EASE. SHOULD CHALLENGES BE PRESENTED, THEN A DETAILED FBC AND FPPC ANALYSIS CAN BE COMPLETED. EGRESS FACTORS IN THE FBC ARE LESS STRINGENT THAN THE FPPC.
2. WHERE STAIRS ARE WIDER THAN 44 INCHES, THEY ARE PERMITTED TO APPLY THE EQUATION PROVIDED IN FPPC 101 SECTION 7.3.3.2. THE EQUATION IS:
 $C = 1462 \times (0.01 + 46) \times (0.25)$
WHERE:
C = CAPACITY IN PERSONS
Wn = NOMINAL WIDTH OF STAIR
THEREFORE, THE EQUATION ABOVE MUST BE CONDUCTED TO PROVIDE THE EXIT CAPACITY OF THE STAIRWAY.
3. THIS OCCUPABLE ROOF TERRACE ALTERNATE QUALIFIES AS A 3RD LEVEL.

LIFE SAFETY LEGEND

ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM
ASSEMBLY (CONCENTRATED)

FOR REFERENCE ONLY - NOT FOR CONSTRUCTION

Allied Works

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VBMA

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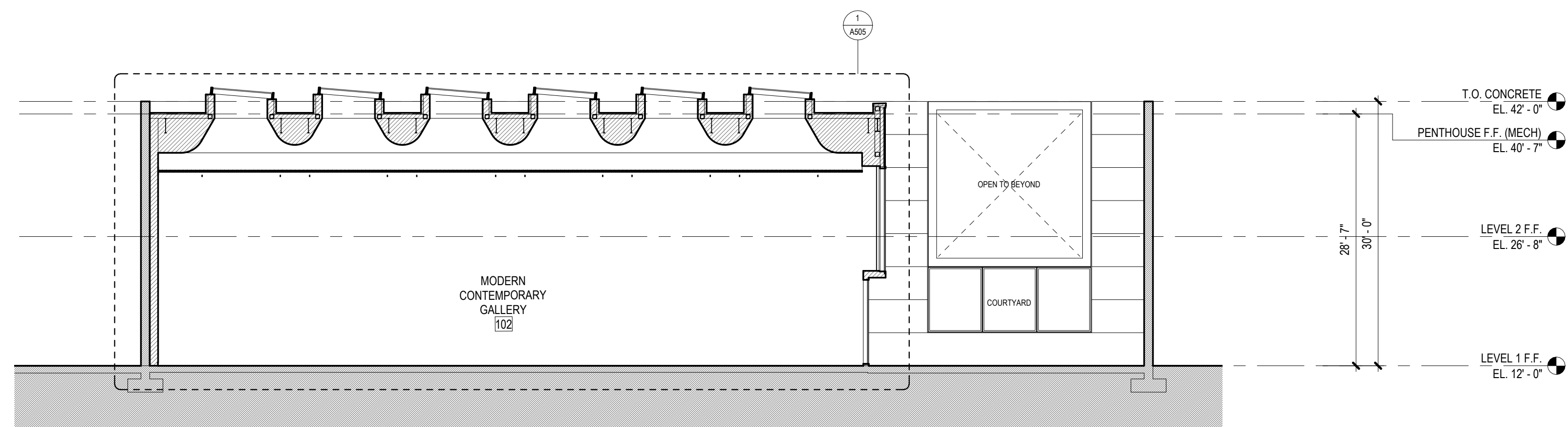
revision #	issue description	issue date
2	50% CD	10/11/24
3	CD PROGRESS PRINT	04/25/25

CD PROGRESS PRINT
25 APRIL, 2025

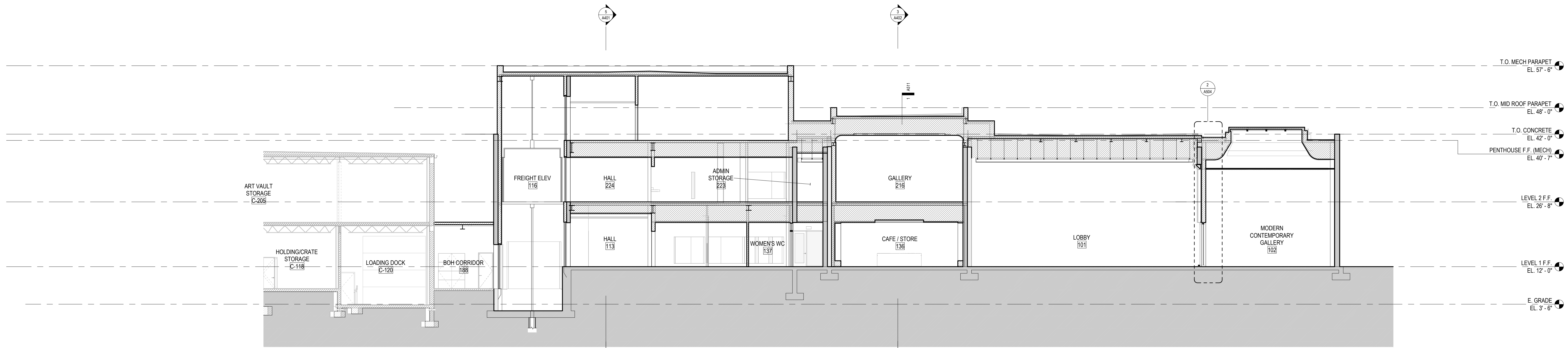
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LIFE SAFETY PLANS

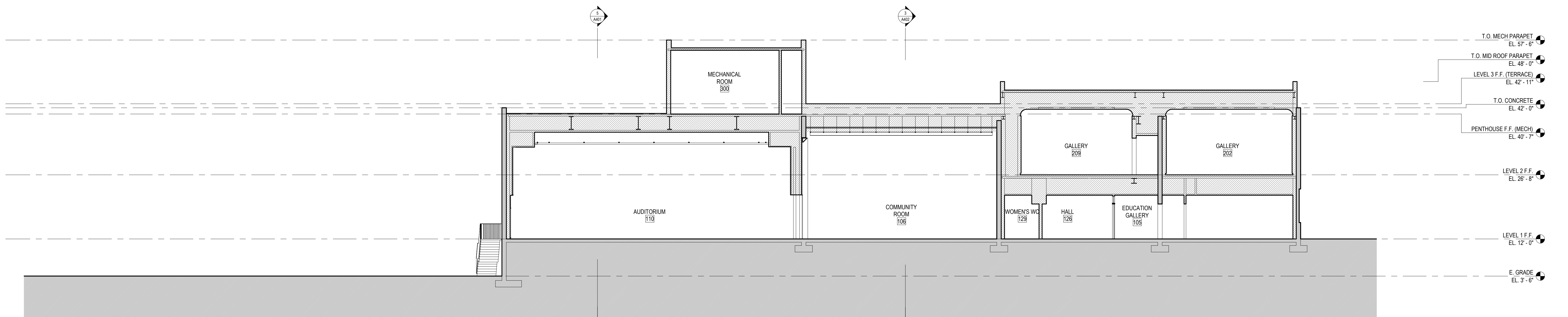
G032



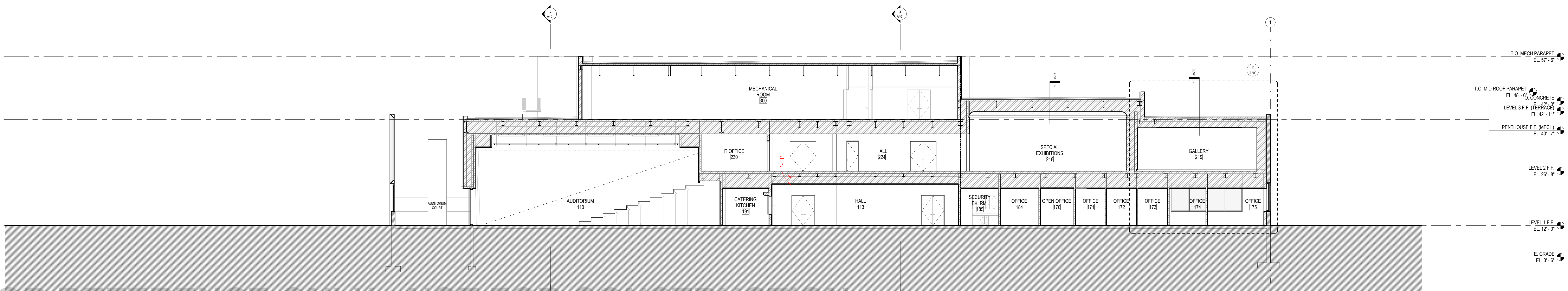
1 BUILDING SECTION - EW - MODERN CONTEMPORARY GALLERY
3/32" = 1'-0"



2 BUILDING SECTION - NS - EXISTING BUILDING, CAFE, LOBBY, AND MODERN CONTEMPORARY
3/32" = 1'-0"



3 BUILDING SECTION - NS - AUDITORIUM, COMMUNITY ROOM, AND EDUCATION
3/32" = 1'-0"



5 BUILDING SECTION - EW - AUDITORIUM AND SPECIAL EXHIBITIONS
3/32" = 1'-0"

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CD PROGRESS PRINT
25 APRIL, 2025

SCALE: 3/32" = 1'-0"

BUILDING SECTIONS

A401