Development Services

From Concept to Construction

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APPEAL SUMMARY

Status: Mixed Decision. Item 1: Hold for Additional Information. Items 2 - 8: Decision Rendered

Appeal ID: 22150	**Project Address:** 2360 NW Quimby St
Hearing Date: 11/20/19	**Appellant Name:** Tom Jaleski
Case No.: B-014	**Appellant Phone:** 971-238-5266
Appeal Type: Building	**Plans Examiner/Inspector:** John Cooley, Corey Stanley, Thomas Ng
Project Type: commercial	**Stories:** 3 **Occupancy:** A-3, B, R-3 **Construction Type:** V-B
Building/Business Name: Bodecker Building	**Fire Sprinklers:** Yes - Throughout per NFPA 13
Appeal Involves: Alteration of an existing structure,occ Change from Single-family residence to Arts education center	**LUR or Permit Application No.:**
Plan Submitted Option: pdf [File 1] [File 2] [File 3] [File 4] [File 5] [File 6]	**Proposed use:** Arts education nonprofit center

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	OSSC §404.5 Smoke control
Requires	A smoke control system shall be installed in accordance with Section 909. EXCEPTION: Smoke control is not required for atriums that connect only two stories.
Proposed Design	The Bodecker Creative Foundation building is an existing building that was permitted as a single-family residence with a three-story open space from the ground floor through the third floor to the roof. The three-story atrium connects the kitchen area with the corridor to the bedrooms above. The connection between the second and third floors is just within the footprint of the open riser stairs. The atrium meets requirements of OSSC 404, except it does not have smoke control as required per 404.5. To provide equivalent protection, we are proposing the following protection measures: A new smoke detection system throughout the building, including inside and outside of sleeping rooms per OSSC 907.2.11.2 and 907.2.13.1 will be provided. A new manual fire alarm system per OSSC 907.2.9.1 with activation by sprinkler waterflow switch will be provided. Smoke and heat removal will be provided for the three-story space by a louvered vent at the top of the three-story space that will be activated by the fire/smoke alarm system and meet the intent of smoke and heat removal per OSSC 910.3.

Smoke and heat removal at the ground floor will be provided by automatic opening clerestory window vents at the top of the bow truss roof over the enclosed art instruction area.
See attached PDF "00_Bodecker Foundation Atrium Smoke Control Analysis"

Reason for alternative

The Bodecker Creative Foundation building is an existing building that was permitted as a single-family residence with a three-story open space from the ground floor through the third floor to the roof. The three-story atrium connects the former living and kitchen area on the first floor with the corridor to the bedrooms above. The connection between the second and third floors is just within the footprint of the open riser stairs.

This building is an artistically and culturally significant work of architecture. Its unique character is an important asset to the Bodecker Creative Foundation, which provides mentorship for artistically talented teens in Portland. This architectural character would be significantly damaged by closing off the three-story open space.

Equivalent protection will be provided by natural smoke venting at the top of the three-story open space, through automatic opening louvers, and at the top of the ground floor roof, through automatic opening clerestory windows. The clerestory windows and the louvers above the third floor will be opened upon activation of the fire alarm. The fire alarm will be activated upon detection of smoke anywhere in the building, which gives early warning to occupants and actuation of the smoke venting system, since the dual sensor smoke detectors can detect flame fires or smoldering fires the quickest at the top of these spaces. Additional protection is provided by having the ground floor assembly area separated from the three-story open space by walls and doors protected with a wall-wash sprinkler system providing an equivalent to a 1-hour rating per OSSC 404.6, exception 1.

The following rational analysis per OSSC 909.4 is conducted to determine if the natural ventilation systems will perform as intended. Parameters for the analysis for this building are outlined as follows.

The parameters for the building include:

The building is a fully insulated and conditioned space kept at between 70°F and 76°F.
Connection between the main ground floor space and the three-story open space is limited to doors at the ground floor.
A wall wash sprinkler system designed to completely wet the wall between the main ground floor space and the three-story atrium will provide 1-hour equivalent separation between the two spaces.
The rational analysis for the natural ventilation system is as follows:
• Stack Effect (§909.4.1) – Normal and reverse stack effects were taken into account. The Mean Extreme Annual Dry Bulb low and high temperatures for Portland are 20.8°F and 99.0°F, respectively, per the 2009 ASHRAE Fundamentals Handbook. A temperature of 72°F was assumed for the interior of the building. At 72°F any heated smoke from a flame or smoldering fire would activate the smoke detectors and open the louvers and clerestory windows. These are spring loaded and would activate even under the condition of a power failure. A reverse stack effect scenario where the exterior air temperature exceeds the interior air temperature would only be short term as these areas have decreasing area, concentrating the smoke and hot gases, producing higher than exterior air temperatures and higher pressure differentials than ambient air density.
• Temperature Effect on Fire (§909.4.2) – Buoyancy effects were taken into account. The Mean Extreme Annual Dry Bulb low and high temperatures for Portland are 20.8°F and 99.0°F, respectively, per the 2009 ASHRAE Fundamentals Handbook. A temperature of 72°F was assumed for the interior of the building. At 72°F any heated smoke from a flame or smoldering fire would activate the smoke detectors and open the louvers and clerestory windows. These are

spring loaded and would activate even under the condition of a power failure. A scenario where the sprinkler system activation would be in the area of the vents on the ground floor would not prevent smoke and heat from flowing to areas along the long clerestory window opening. At the third-floor louvered opening, the louvered vent is located at a lower elevation than the sprinkler head and would prevent the temperature in this area from exceeding the 155°F required to activate the sprinkler. The sprinkler head that would affect buoyancy is located directly over the only opening between the 2nd and 3rd floor, therefore the effect of buoyancy would prevent flow to the 3rd floor, therefore meeting the intent of the allowance for 2 story openings not requiring smoke control. In both situations, the sprinkler activation would be prevented due to the venting of heat near the head location and buoyancy would not be impacted enough to prevent smoke venting. Both of the vent locations have decreasing volume compared to the area below, concentrating the smoke and hot gases, producing higher higher pressure differentials than ambient air density.

• Wind Effect (§909.4.3) – Wind effect was taken into account. The wind was modeled as 65 mph from south-southwest per NOAA records for downtown Portland. Wind effect will be reduced for the clerestory windows by the mass of the tower structure of the upper 2 floors and by the windows facing east. The louvers above the third floor will face to the south-east and will be protected by a hood facing upward and slit opening at the bottom to prevent through-flow caused by exterior wind velocity and accentuate the upward movement of any wind pushed upwards along the building face.

• HVAC Effect (§909.4.4) – HVAC systems and building geometry were taken into account. Systems will be shut down and are not anticipated to have an effect of the performance of the smoke control systems.

• Climate Effects (§909.4.5) – Climate effects were taken into account. Building inlets and outlets will be protected against damage and blockage from snow and ice to prevent interruption of building functions.

• Duration of Operation (§909.4.6) – The smoke evacuation system is a non-mechanical system and capable of continuous operation until the clerestory windows and the louvers are manually closed and fire alarm system reset.

• Smoke Control System Interaction (§909.4.7) – The analysis assumes that all smoke control systems will activate using the same sequence of operation. As a result, one set of conditions is used for this analysis.

The building has two primary spaces: the large ground floor area that will be used for public activities, like children's art classes; and the three-story tower that will house two residences for visiting artists and office space for the Bodecker Trust staff. The public space has a high roof with the open bow-string truss roof area that acts as a smoke reservoir, with the venting clerestory windows at the top. This space is separated from the three-story tower area by a wall with fire rated doors and is protected by a line of sprinklers capable of washing the entire surface of the wall per OSSC 404.6, exception 1. The tower does have a three-story space, with the only opening between the second and third floors being the stair opening that is only the size of the horizontal projection of the stair. A smoke reservoir at the top of the three-story space will be able to collect smoke, build up pressure, and exhaust out of the automatic louver.

Through the small connection between the two areas, the vertical separation of the occupancies, the smoke detection system throughout the building, and smoke venting at the top of the bow truss area, the impact of a fire in one area will not impede egress from the other areas.

See attached PDF "00_Bodecker Foundation Atrium Smoke Control Analysis"

Appeal item 2

Code Section OSSC §1012.1 Ramps

Requires	The provisions of this section shall apply to ramps used as a component of a means of egress.
Proposed Design	One of the two exits from the site includes an existing ramp that does fully comply with §1012 requirements. The proposed design is to allow the existing ramp to remain. Handrails will be added to one side of the ramp. A new, prescriptively-compliant ramp is provided at the second entrance.
Reason for alternative	The existing building was built as a single-family residence under the 2014 ORSC. One of the two main entrances has an existing entry ramp that does not meet the OSSC §1012 criteria for slope (§1012.2), landings (§1012.6.3), or handrails (§1012.8). The slope of the ramp is 10.3%, exceeding the maximum allowed slope of 8%. A 60" long landing is not provided at the bottom of the ramp. Renovation of the existing ramp is technically infeasible due to space limitations imposed by existing elements. A handrail will be provided on one side of the ramp, however, a handrail extension cannot be provided at the bottom of the ramp without conflicting with the exit doorway. A new ramp complying with OSSC §1012.1 has been added to the second entry/exit. This condition is an existing, permitted condition which cannot be fully corrected due to technical infeasibility, therefore we request approval of this appeal.

Appeal item 3

Code Section	OSSC §1006.2.1 Common path of egress travel
Requires	The common path of egress travel shall not exceed the common path of egress travel distances in Table 1006.2. For Group R-3, the maximum common path is 125’ in sprinklered buildings. Per footnote (e), the common path of egress travel distance shall only apply in a Group R-3 occupancy located in a mixed occupancy building.
Proposed Design	The existing building was built as a single-family residence with a large ground floor living area and bedroom suites in a three-story tower. The common path travel distance from the third story most remote location in the residential units exceeds the maximum of 125 feet. Equivalent protection will be provided as follows: • A smoke detection system throughout the building per OSSC §907.2.10.2, including inside and outside of sleeping rooms, will be provided. • A new manual fire alarm system per OSSC §907.2.9.1, with activation by sprinkler waterflow switch, will be provided. • Total exit access travel distance is less than the 250-foot maximum for a fully sprinkled building per OSSC Table 1017.2.
Reason for alternative	The Bodecker Creative Foundation is an existing building originally permitted as a single-family residence. Per OSSC §1006.3.3 item (4), three-story Group R-3 occupancies are permitted to have access to one exit; however, they must still comply with the common path limit of 125 feet established in Table 1006.2. The R-3 areas on the second and third stories of the Bodecker Creative Foundation building are for use by adult visiting artists on an invite-only basis. There are two, two-story dwelling units where the common path from the private bathroom is approximately 138 feet, including travel down the open stair to the level of exit discharge. This exceeds the allowable common path by 13 feet. The 13 feet is to continue down the stairs and out the door immediately at the bottom of the stairs. The occupants who must travel along the extended common path are foundation staff

members familiar with the space, or the artists-in-residence. The remote residential area likely to be occupied is limited to two sleeping rooms.

Additional protection is provided by each sleeping room having a separate, in-unit stair to the second floor before egressing to the ground floor down a single stair. From the third story there are stairs within each of the residential units as well as a shared stair, giving occupants multiple options for how to reach the second story. Smoke detection is not required but will be provided throughout the building as an additional protection measure.

The additional 13 feet of travel distance requires 2.8 seconds of travel time at 4.62 feet/second per SFPE standards to the door and under the exterior covered area. The travel distance to the exit discharge door is only another 54 feet.

The route to the exit discharge includes a covered portion, which is not fully enclosed. This is a separate structure removed from the former house by more than 10', so fire migration will not occur between the structures. In the unlikely event that the exit becomes compromised, a second means of egress from the site is provided.

The smoke detection and alarm systems provided throughout the building will ensure that occupants will have early notification of an emergency and the additional length is short and in a direct and clear line of travel to the door where there are two paths of travel to an exit, therefore we request approval of this appeal.

Appeal item 4

Code Section	OSSC §420.2 Separation walls.
Requires	Walls separating dwelling units in the same building, walls separating sleeping units in the same building and walls separating dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 708.
Proposed Design	The existing building has sleeping suites for a single-family residence on the second and third floors. The two-story suites were not built to meet commercial code requirements for separation from B occupancies. To provide equivalent protection, the project will provide the following: • A new, NFPA-13 sprinkler system throughout, per OSSC 903.3.1.1. • Doors between adjacent R-occupancies and mixed R- and B-occupancies will be provided with closers • Walls will be protected with closely spaced sprinklers at 6 feet on center, spaced 4 to 12 inches from the wall on the outside of the unit per OSSC 404.6, exception 1. • The separation between the ground floor and the second-floor units will be provided by the existing floor/ceiling assembly. Separation for mixed occupancy groups per OSSC 508.4 will be addressed in a separate appeal item.
Reason for alternative	The Bodecker Creative Foundation building is an existing building that was permitted as a single-family residence. The building has two, two-story dwelling units on Levels 02 and 03 that will be used by artists-in-residence invited by the Bodecker Foundation. These dwelling units are classified as Group R-3. The landing spaces between the units have a lounge, library, and reading nooks that will be shared by Foundation staff and artists-in-residence, and two built-in desks that foundation staff will use as administrative office areas. The landing spaces on Levels 02 and 03 are classified as mixed nonseparated Group B and Group R-3 spaces. The former sleeping areas are now dwelling units that require ½ hour separation from adjacent spaces and occupancies per OSSC §420.2 and OSSC 708.3 Exception 2.

The Bodecker Creative Foundation building is an artistically and culturally significant work of architecture. Its unique character is an important asset to the Bodecker Creative Foundation, which provides mentorship for artistically talented teens in Portland. Because the dwelling unit walls include multiple bespoke, built-in elements and finishes, providing a fire-resistance rating for the wall is not technically feasible without damaging the architectural character of the building.

The sleeping units and the rest of the building will be sprinkled with a new NFPA-13 sprinkler system throughout. The requirement for dwelling unit separations is intended to slow fire spread from adjacent areas into dwelling units where occupants may be sleeping. In the Bodecker Foundation building, the landing side of the sleeping unit walls will be protected with closely spaced sprinklers per OSSC 404.6, exception 1, with sprinkler heads 6 feet on center, spaced 4 to 12 inches from the walls at each level of the dwelling units. Doors will be provided with closers and washed with closely spaced sprinklers.

Separation of the dwelling units from Level 01 below is provided by the existing noncombustible floor/ceiling assembly, which includes concrete floors on metal decking supported by wide flange steel structural members and with gypsum board ceilings below.

The fire protection features of sprinklered walls and doors provides equivalent fire separation between the occupancy types; therefore, we request approval of this appeal.

Appeal item 5

Code Section	OSSC §508.4.4.1 Separation Construction
Requires	Required separations shall be fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, so as to completely separate adjacent occupancies.
Proposed Design	The existing building will meet the requirements for a mixed-use occupancy building with separated occupancies. The Type V-B, sprinklered building will have a separated A-3 occupancy on the Level 01 only, and mixed nonseparated B and R-3 occupancies on Levels 01, 02, and 03. The proposed design is to provide 1-hour fire separations between mixed Groups R/B areas and Group A areas as follows: • Wall washing sprinklers heads, placed 6 feet on center, 4 to 12 inches from the wall, at the top of the Group A side of the wall to provide separation. • Doors on closers between the separated occupancies. Residential unit separation required by OSSC Section 420.2 will be addressed in separate appeal.
Reason for alternative	The existing building was built as a single-family residence with a large ground floor living area and bedrooms in a three-story tower. The primary functions of the Foundation will occur within the former living area, which will host arts education functions. The existing kitchen will only be used as a break room by foundation staff and as a warming kitchen when a catered activity or event is planned. The Group A areas in the former skate park will be used for occasional events hosted by the Bodecker Foundation. Separation of the occupancy groups by fire barriers is not possible without significant demolition and reconstruction of a large proportion of the existing walls. The walls indicated on the plans are solid walls that have no projections from the roof to the floor. The primary risk to occupants is for migration of fire from the Group A areas into the vertically interconnected portion of the building, which includes Group R-3 areas where people might be sleeping. A system of draft curtains and closely-spaced wall washing sprinklers is considered to be an effective alternative to 1-hour fire barriers per OSSC §404.6, exception 1 for atrium enclosures. In this case providing sprinkler wash

on the Group A side of the separation wall slows heat or fire migration from transferring inside to the more vulnerable occupants. In addition, because the former skate park is a largely empty, concrete space, the fire load is minimal, making fire transfer across the separation wall at Level 01 unlikely.

Where there are doors in the separation wall, the doors will be on closers and washed with the wall-wash sprinklers. The tall floor-to-floor heights leave over 18” of wall above the doors, which act as a draft curtain; thus washing of the openings with closely-spaced sprinklers is similar to the provision for escalator opening separation in OSSC §712.1.3.1 with the doors themselves serving as an additional barrier to smoke and heat.

The active separation system will effectively slow potential fires from transferring into the areas of the building where sleeping persons may be more vulnerable, giving occupants more time to evacuate in response to smoke and fire alarm signals; therefore we request approval of this appeal.

Appeal item 6

Code Section	OSSC §1105.1 Public Entrances.
Requires	At least 60% of all public entrances shall be accessible.
Proposed Design	The existing main entry to the existing building does not meet the requirements of an accessible entrance. The proposed design is to create a new accessible entrance to provide 50% of the entrances being accessible. Equivalent access is provided as follows: • A new, compliant accessible entry ramp will be provided at the one of two entrances. The new entrance ramp is on the same building face and can be seen from the other entrance. • 50% of the public entrances will be accessible. • Directional signage will be provided at the inaccessible entrance directing visitors to the accessible entrance in accordance with OSSC §1110.2.
Reason for alternative	One of the two main entrances has an existing entry ramp that does not meet the 2009-A117.1 criteria for slope, landing dimensions, or handrails. Renovation of the existing ramp is technically infeasible due to space limitations imposed by existing elements. A new accessible entrance, and signage at the existing entrance, will be provided. The proposed design provides equivalent access as follows: • The proposed design meets the intent of providing equivalent access to the facilities for persons with mobility impairments • The two entrances are within 50 feet of each other, so the path of travel to the accessible entrance will not be significantly longer for visitors requiring accommodation. • The proposed design coordinates with OSSC §3411.8.1 for alterations to existing buildings. Signage and close proximity of the two entrances provides equivalent access to the building, therefore we request approval of this appeal.

Appeal item 7

Code Section	OSSC §1011.1 Stairways
Requires	Stairways serving occupied portions of a building shall comply with the requirements of Sections 1011.2 through 1011.13.
Proposed Design	The existing stairs between the second floor and the ground floor meet the requirements of a means of egress stair under the Oregon Residential Structural Code.

	The second and third floors are not available to the public and the stair will only be used by foundation staff and artists-in-residence.
Reason for alternative	The Bodecker Creative Foundation building is an existing building that was permitted as a single-family residence. The building has two, two-story dwelling units on Levels 02 and 03 that will be used by artists-in-residence invited by the Bodecker Foundation, as well as small desk areas that foundation staff will use as administrative offices. These areas are accessed by an open stairway designed as a residential stair. This existing stair will serve only the two residential units and the small foundation staff areas. Levels 02 and 03 of the building are designated as Group R-3 with mixed nonseparated Group B. The stairway differs from commercial code requirements of OSSC §1011 in that some of its guards are less than 42” in height, it has open risers, and it lacks handrail extensions. The guards provided are solid materials greater than 34’ in height, the open risers do not permit passage of a 4” sphere, and handrail extensions cannot be provided without intruding on the egress path. Because the upper levels of the facility are off-limits to the public and will be used by a select few persons, the risk posed to building occupants is minimal. The function of the stair is the same as it’s original permitted condition as a means of egress stair in a residence with a home office; therefore, we request approval of this appeal.

Appeal item 8

Code Section	OSSC §1004.1.2 Occupant Load Factors
Requires	For areas without fixed seating, the occupant load shall not be less than the number determined by dividing the floor area under consideration by the occupant load factor assigned to the function of the space as set forth in Table 1004.1.2. Where an intended function is not listed in Table 1004.1.2, the building official shall establish a function based on a listed function that most nearly resembles the intended function. EXCEPTION: Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.
Proposed Design	The existing building will meet the requirements for a mixed-use occupancy building with separated occupancies. The Type V-B, sprinklered building will have A-3 occupancy on the ground floor only and B and R-2 occupancies on the second and third floors. The proposed design is to provide an occupant load limit through institutional control by the non-profit foundation as follows: • An occupant load of 250 persons maximum assigned to Level 01. • Events limited to ticketed events monitored by foundation staff. • Wall-wash sprinklers separating between mixed Groups R/B areas and Group A areas.
Reason for alternative	The existing building was built as a single-family residence with a large ground floor living area and two sleeping suites on Levels 02 and 03. The building is being converted for use by the Bodecker Foundation to provide arts education and mentorship for teens, in memory of the former homeowner. Arts education programs are limited to the ground floor (Level 01) only and will primarily occur within the large former family room. Occasional Foundation events will be limited to those directly related to the function of the foundation and will be ticketed for admission. The total occupant count will be monitored by foundation staff. The Bodecker Creative Foundation building is an artistically and culturally significant work of architecture with a one-of-a-kind design. The former residence included many unique areas that

don't readily convert to functions listed in Table 1004.1.2, such as a mini-golf course and a private skate park. Assigning commercial occupant load factors to these spaces yields an artificially inflated occupant total that does not reflect the way the building will be used. The reasoning for a 250-person maximum occupant load is as follows:

• Arts education programs and classes will have an enrollment controlled by the Bodecker Foundation. The facility is only available to young people currently enrolled in the program, Bodecker Foundation staff, and artists-in-residence.

• Foundation events will also be by invitation only and under strict institutional controls.

• If a gathering is planned that anticipates more than 250 occupants, an event permit will be secured from the city.

• The occupant load presumes a worst-case scenario where the skate bowl is covered, and the floor area included as part of the occupied area.

• Egress capacity totals 360 occupants by using two (2) 36" wide doors.

• The building is protected by automatic sprinkler system and smoke detection. Smoke detection throughout the building is an additional protection measure.

Due to the nature of the non-profit foundation purpose, and its liability for the safety of guests, the foundation has a vested interest in maintaining occupant load limits. Egress capacity and life safety protections are provided above and beyond that required by the maximum occupant load, therefore we request the approval of this appeal.

APPEAL DECISION

1. Omission of smoke control in atrium: Hold for additional information.

2. Increase in maximum common path of egress travel to 138 feet: Denied. Proposal does not provide equivalent Life Safety protection.

3. Alternate 1 hour vertical and horizontal occupancy separation: Denied. Proposal does not provide equivalent Life Safety protection.

4. Alternate 1 hour vertical occupancy separation: Denied. Proposal does not provide equivalent Life Safety protection.

5. Omission of one accessible main entry: Granted as proposed.

6a. Existing stairs with reduction in minimum required guard height to 34 inches: Denied. Proposal does not provide equivalent Life Safety protection.
6b. Existing stairs with omission of extensions: Granted provided extensions are provided to the extent possible where space allows.

7. Reduction in occupant load: Denied. Proposal does not provide equivalent Life Safety protection.

8. Existing non-accessible ramp to remain: Granted provided 2nd handrail is installed with extensions on both sides to the extent possible where space allows.
Note: This decision does not waive any federal requirements for accessibility that are enforced by Department of Justice.

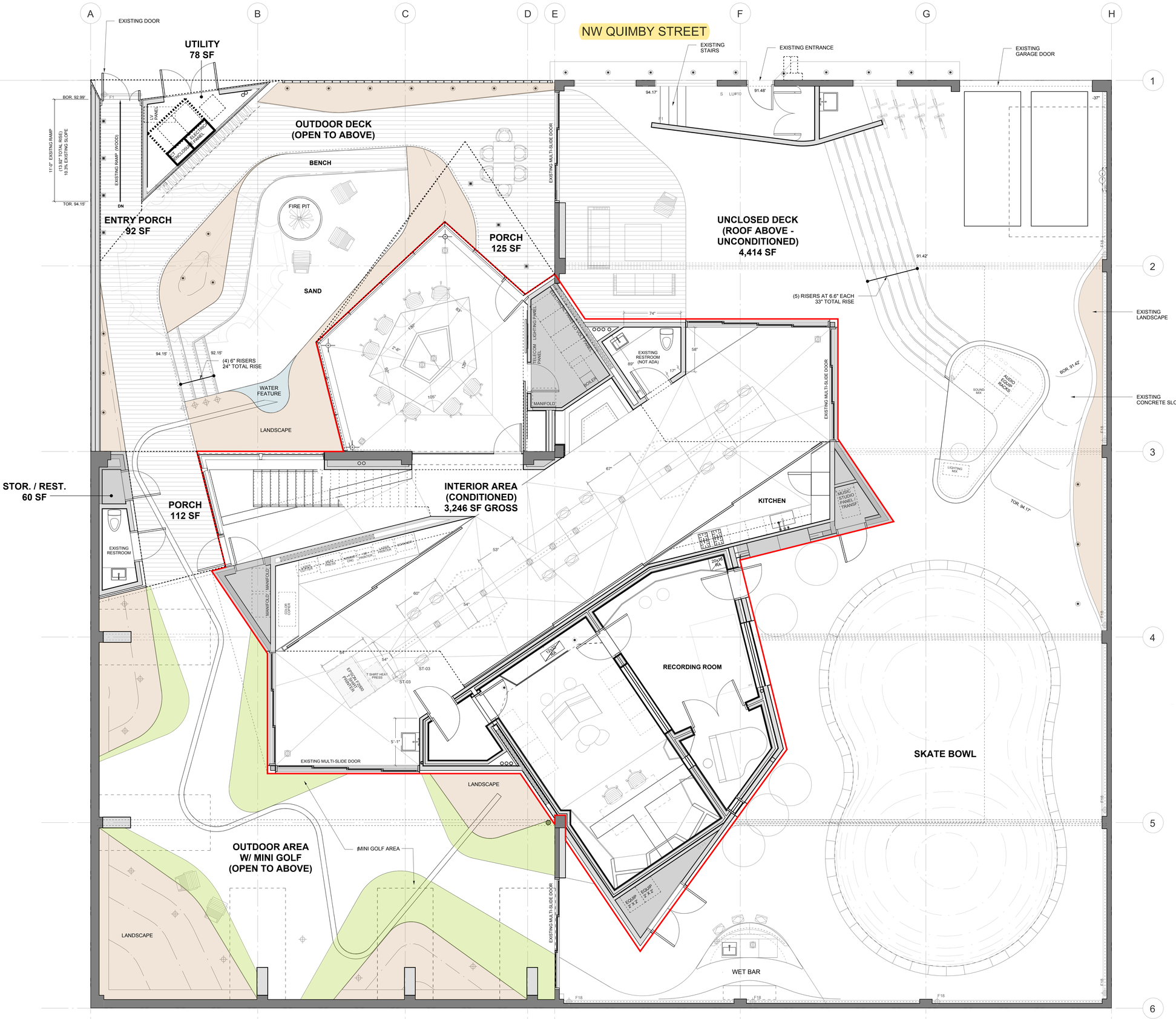
Appellant may contact John Butler (503 823-7339) with questions.

For Item 1: Additional information is submitted as a no fee reconsideration, following the same submittal process and using the same appeals form as the original appeal. Indicate at the beginning of the appeal form that you are filing a reconsideration and include the original assigned Appeal ID number. The reconsideration will receive a

new appeal number.
Include the original attachments and appeal language. Provide new text with only that information that is specific to the reconsideration in a separate paragraph(s) clearly identified as "Reconsideration Text" with any new attachments also referenced. No additional fee is required.

For Items 2 - 8: The Administrative Appeal Board finds with the conditions noted, that the information submitted by the appellant demonstrates that the approved modifications or alternate methods are consistent with the intent of the code; do not lessen health, safety, accessibility, life, fire safety or structural requirements; and that special conditions unique to this project make strict application of those code sections impractical.

Pursuant to City Code Chapter 24.10, you may appeal this decision to the Building Code Board of Appeal within 90 calendar days of the date this decision is published. For information on the appeals process, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.



SITE INFORMATION

Project Address:	2360 NW Quimby Portland OR 97210
Property (Tax) ID:	R171366 & R171367 (same ownership)
Tax Lot Description:	GOLDSMITH ADD, Block 5, Lot 5, E 50' of Lot 6
County:	Multnomah
City:	Portland
State:	Oregon
State ID:	1N1E33BB 8900 & 1N1E33BB 9000
Alt Account #:	R331300820
Lot Area:	11,000 sf (0.25 acres)
Zoning:	CM2 - Commercial Mixed Use 2
Zoning Map:	2927

EXISTING BUILDING

Existing building originally permitted under the 2011 Oregon Residential Specialty Code.

Scope of work included partial demolition / renovation of two existing masonry & timber buildings and the construction of a new, 3-story single family residence. Existing east building enclosed as unconditioned activity space. Existing parking lot to be restored to landscape.

Construction completed: mid 2017
Permit Issued: 01/09/2015

EXISTING BUILDING AREA:

LEVEL 1 - Gross Building Area (conditioned):	3,246 SF
LEVEL 1 - Un-conditioned Enclosed Area:	4,414 SF
LEVEL 1 - Enclosed Storage Areas:	138 SF
TOTAL COVERED PORCH AREA:	329 SF
TOTAL SITE AREA:	11,000 SF
TOTAL LOT COVERAGE:	8,128 SF (73.6%)
LEVEL 2 - Gross Building Area:	3,323 SF
LEVEL 3 - Gross Building Area:	2,133 SF
EXTERIOR DECK AREA:	662 SF
TOTAL OUTDOOR YARDS:	2,851 SF

ENERGY CODE SUMMARY

REFERENCED FROM THE 2015 BUILDING PERMIT
(PER 2011 ORSC, CH. 11 - TABLE 1101.1)

BUILDING COMPONENT	REQUIRED PERFORMANCE	PROVIDED
Wall Insulation - above grade	R-21	R-27.5
Wall Insulation - Below Grade	R-15	R-15
Flat Ceilings	R-38	R-38
Vaulted Ceilings	R-30	N/A
Underfloor	R-30	R-30
Slab Edge Perimeter	R-15	R-15
Heated Slab Interior	R-10	R-10
Windows	U-0.35	U-0.35
Skylights	U-0.60	U-0.60
Exterior Doors	U-0.20	U-0.20
Exterior Doors w/glazing	U-0.40	U-0.40
Fored Air Duct Insulation	R-8	N/A

ADDITIONAL MEASURES TABLE N1101.1(2)

Envelope Enhancement Measure:
Measure 6 - Ducted HVAC systems within conditioned space:
All ducts and air handler are within building envelope

Conservation Measure
Measure A - Air Source heat pump with minimum HSPF of 8.5

NOTES

Slab insulation should extend downward from top of slab a minimum 24" and must be min r-15

Installation of vapor barrier on warm side of the wall and roof assemblies must achieve at least 1.0 perm dry cup for walls and 0.5 for roof.

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Not for Construction

BODECKER
Foundation
Location:
2360 NW Quimby Street
Portland OR 97210
Project No.:
19001
Issue:
APPEAL DOCUMENT
Date:
11.11.2019
Revision:

CODE REVIEW
Nov. 11th, 2019

CODE PLANS
L1

Existing Conditions: Level 01
1/4"=1'-0"
01

TOTAL MAX. EGRESS LENGTH: 194.5'
(L3 NORTH UNIT TO SIDEWALK)

NW QUIMBY STREET

A B C D E F G H

1 2 3 4 5 6

DOOR SWINGS OUT - ADD PANIC HARDWARE
NO CHANGE TO EXISTING RAMP OR DECK

NEW PAIR OF 3'-6" EGRESS DOORS W/ PANIC HARDWARE (ONE IN EACH DIRECTION) AT EXIST. MULTI-SLIDE OPENING

REPLACE EXISTING STAIR W/ ACCESSIBLE RAMP

NEW DOOR W/ PANIC HARDWARE SET BACK FROM SIDEWALK

RECESS BLDG. AT EXIST. GARAGE OPENING TO ALLOW FOR OUT-SWINGING EGRESS DOOR

NEW HANDRAIL ONE SIDE

ACCESSORY EQUIP. / STORAGE
@ 300 GROSS
TOTAL: 359 SF / 300 =
(2) OCCUPANTS

EXT. DECK @ 15 GROSS
645 SF / 15 = 44 OCCUPANTS

HANDRAILS BOTH SIDES

A3 - ASSEMBLY
DECK / STUDIO @ 7 GROSS
1645 SF / 7 = 235 OCCUPANTS

NEW ADA RESTROOM

NEW RESTROOM

NEW EGRESS DOOR AT EXISTING MULTI-SLIDE

(5) RISERS AT 6.6" EACH
33" TOTAL RISE

(4) 6" RISERS
24" TOTAL RISE

B - BUSINESS
CONFERENCE @ 15 NET
405 SF / 15 = 27 OCCUPANTS

B - BUSINESS
@ 150 GROSS
1617 SF / 150 = 11 OCCUPANTS

B - BUSINESS
RECORDING & MUSIC EQUIPMENT ROOMS @ 150 GROSS
748SF / 150 = 5 OCCUPANTS

MUSIC EQUIP.
@ 50 NET
36 SF = (1) OCC.

Appeal 4
SPRINKLER PROTECTION FOR 1HR OCC. SEPARATION

(47) OCCUPANTS FROM L2/L3 RESIDENCE ABOVE

MAX. COMMON PATH OF TRAVEL
138 FT - NORTH L3 UNIT

A3 - ASSEMBLY
COVERED DECK @ 7 GROSS
1050 SF / 7 = 150 OCCUPANTS

COVERED SKATE BOWL
SEMI- PERMANENT PLATFORM DECK AS NEW ACTIVITY AREA

INSTALL SEMI-PERMANENT PLATFORM DECK FLUSH W/ EXISTING T.O. FF. AT EXISTING SKATE BOWL

MINI GOLF @ 50 GROSS
1077 SF / 50 = 22 OCCUPANTS

NEW PAIR OF 3'-6" EGRESS DOORS W/ PANIC HARDWARE (ONE IN EACH DIRECTION) AT EXIST. MULTI-SLIDE OPENING

REMOVE EXISTING BAR AND REPLACE W/ NEW ACCESSIBLE RESTROOM IN SAME FOOTPRINT

EXISTING CONCRETE SLOPE TO REMAIN

NEW FIRE SEPARATION
PER APPEAL #4

SCOPE OF PROPOSED WORK

Modification of the existing building to accommodate limited commercial use.

Proposed use to include separated B and A-3 occupancy (studio, gallery, event space) on Level 1 with R-3 (artist residence) and B (Foundation Office area) on Levels 2 and 3. Public access would be limited to the ground floor and closely controlled by the Foundation staff.

Not for Construction

Skylab Architecture
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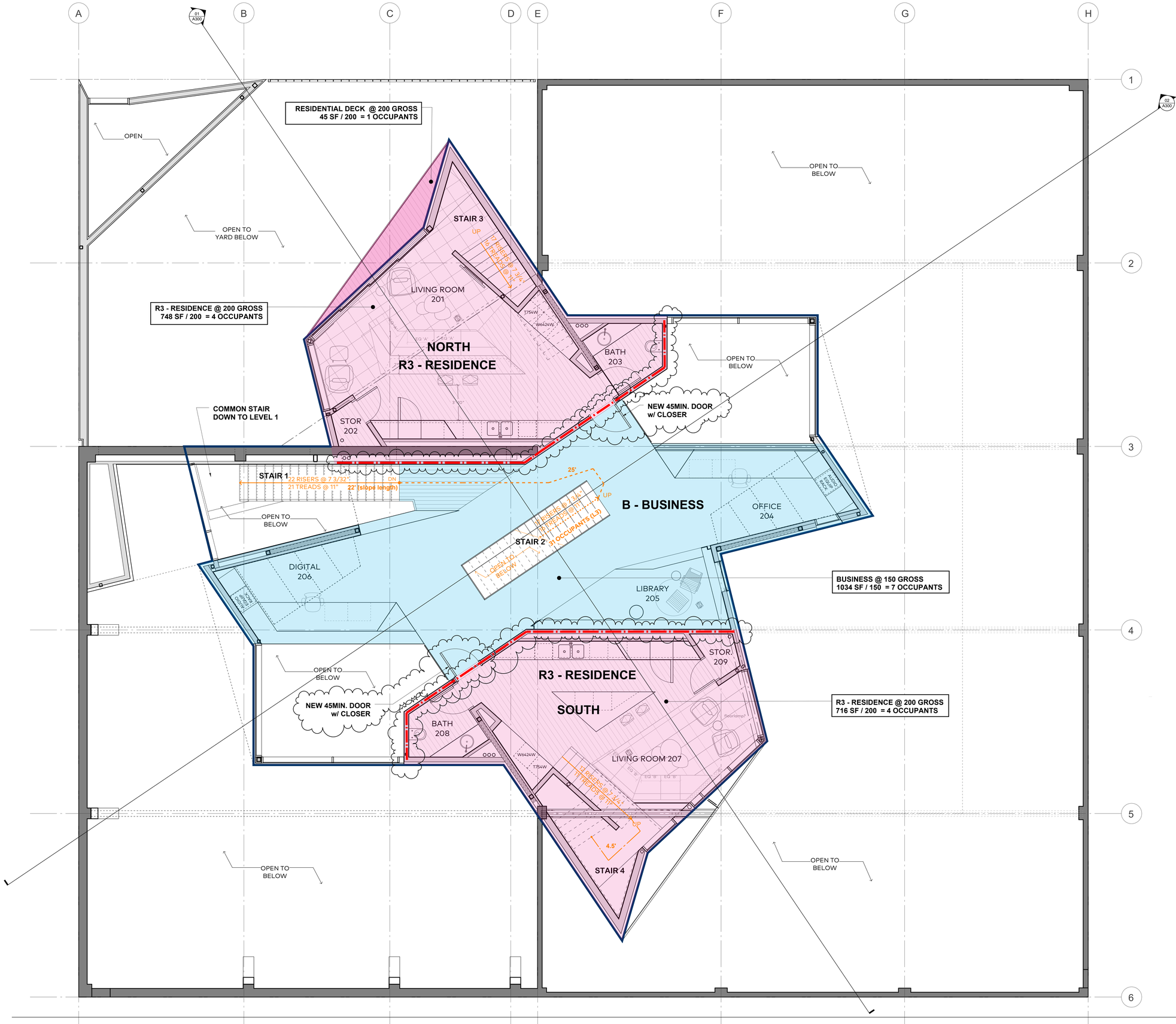
BODECKER Foundation
Location:
2360 NW Quimby Street
Portland OR 97210
Project No.:
19001
Issue:
APPEAL DOCUMENT
Date:
11.11.2019
Revision:

CODE REVIEW
Nov. 11th, 2019

CODE PLANS
L1

Code / Occupancy Plan: Level 01 01
1/4"=1'-0"



LEVEL 2 - OCCUPANCY

NORTH RESIDENCE	4
EXT. RES. DECK	1
SOUTH RESIDENCE	4
BUSINESS	7
TOTAL:	**16 OCCUPANTS**

NEW FIRE SEPARATION
PER APPEAL #3

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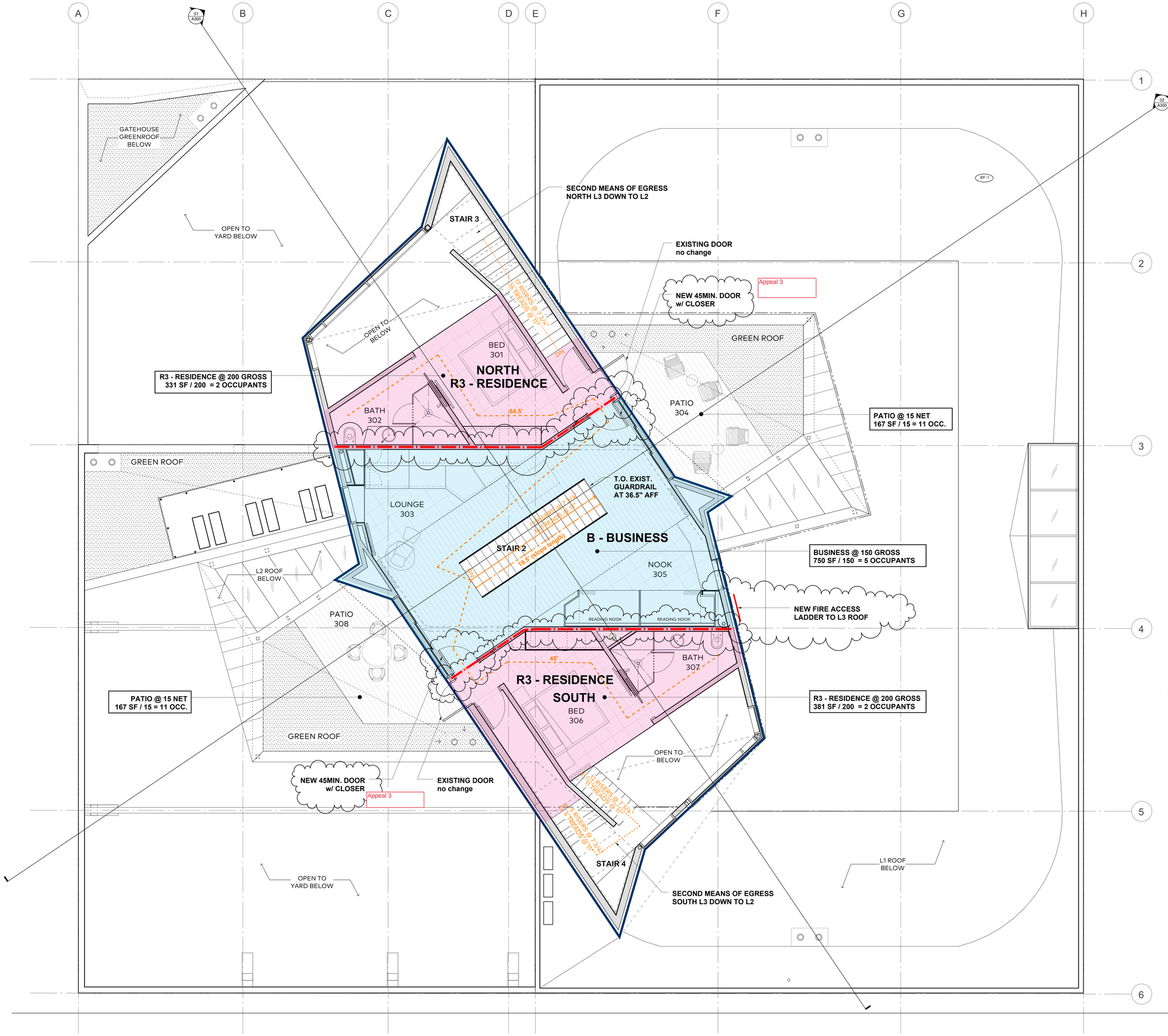
CODE PLANS
L2

Code / Occupancy Plan: Level 02 01
1/4"=1'-0"



LEVEL 3 - OCCUPANCY

NORTH RESIDENCE	2
SOUTH RESIDENCE	2
BUSINESS	5
EXTERIOR DECKS	22
TOTAL:	**31 OCCUPANTS**

R-3 TOTAL EGRESS LENGTH

NORTH UNIT:

L3 - (BATH TO STAIR 2)	64.5'
STAIR 2	19.5'
L2 - (STAIR 2 TO 1)	22'
STAIR 1	25'
L1 - (STAIR 1 TO FRONT DOOR)	9.5'
TOTAL LENGTH:	**140.5'**

SOUTH UNIT:

L3 - (BATH TO STAIR 2)	45'
STAIR 2	19.5'
L2 - (STAIR 2 TO 1)	22'
STAIR 1	25'
L1 - (STAIR 1 TO FRONT DOOR)	9.5'
TOTAL LENGTH:	**121'**

EXTERIOR EGRESS COURT TRAVEL DISTANCE: **54'**
(AT LEVEL 1: FRONT DOOR TO PUBLIC SIDEWALK)

TOTAL MAX. EGRESS LENGTH: 194.5'
(L3 NORTH UNIT TO SIDEWALK)

MAX. COMMON PATH OF TRAVEL: 138'
(L3 NORTH UNIT TO L1 STAIR LANDING)

NEW FIRE SEPARATION
PER APPEAL #3

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CODE PLANS
L3

Code / Occupancy Plan: Level 03 01
1/4"=1'-0"

NW QUIMBY STREET

SIDEWALK BELOW

12'-2" (TO CURB)

37'-11" (TO CURB)

A B C D E F G H

1 2 3 4 5 6

01 A300

02 A300

L1 PARAPET

L2 PARAPET

L3 PARAPET

GATEHOUSE PARAPET

ROOF BELOW

OPEN TO YARD BELOW

GREEN ROOF

R.D.

ROOF ACCESS LOCKED

ROOF ACCESS

LOUVER VENT PER APPEAL #01

ARTIFICIAL TURF

ATTIC LADDER ACCESS HATCH

MECHANICAL BULKHEAD

WH

OPEN TO BELOW

6' HEAD ROOM STARTS

NEW FIRE ACCESS LADDER TO L3 ROOF PER APPEAL #9

UNOCCUPIED ROOF NO GUEST ACCESS

OPEN TO YARD BELOW

Floor Plan: Mechanical Bulkhead 01

1/4"=1'-0"

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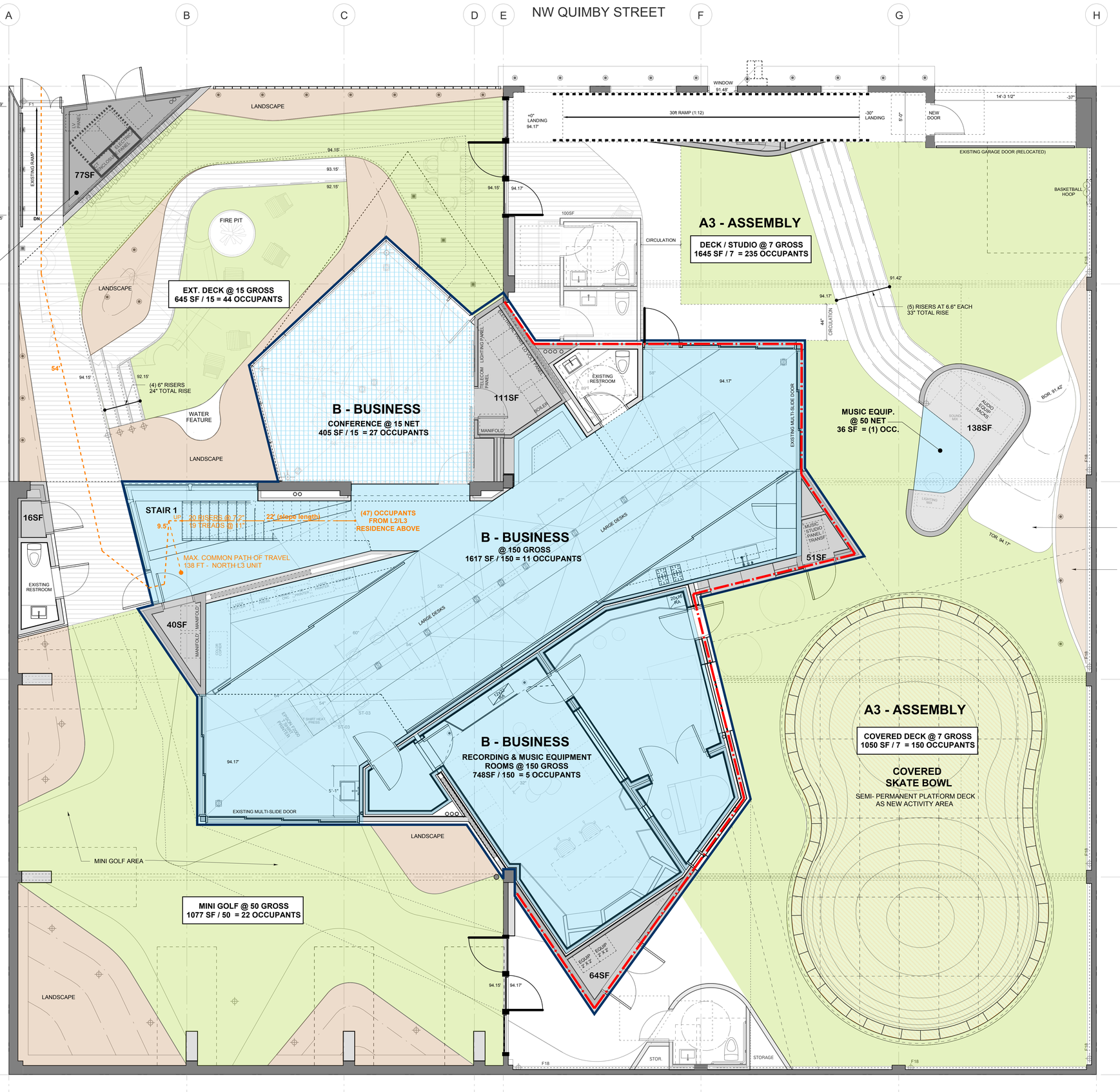
Floor Plans:
A214

TOTAL MAX. EGRESS LENGTH: 194.5'
(L3 NORTH UNIT TO SIDEWALL)



LEVEL 1 - OCCUPANCY

CALCULATED PER 2019 OSSC TABLE 1004.5

INT. DECK / STUDIO	235
SKATE DECK	150
CONFERENCE	27
BUSINESS / STUDIO ROOM	11
MUSIC RECORD./ EQUIP.	5
ASSESSORY EQUIP./STOR.	2

TOTAL: 430 OCCUPANTS

EXTERIOR DECK	44
MINI GOLF	22

TOTAL: 496 OCCUPANTS

BUILDING OWNER / OPERATOR REQUESTS TO DESIGNATE ENTIRE FIRST FLOOR LEVEL WITH A **MAX. OCCUPANCY OF 250 PEOPLE.**

THE CALCULATED OCCUPANCIES ABOVE DO NOT ACCURATELY REPRESENT HOW THIS SPACE IS ACTUALLY INTENDED TO BE USED.

REFERENCE BUILDING CODE APPEAL #8

LEVEL 1 - RESTROOMS

CALCULATED PER 2019 OSSC TABLE 2902.1

250 OCCUPANTS / 2 = 125 EA. M/F

WC: (M 1/125) (F 1/65)
125/125 = 1
12565 = 1.93 = 2

TOTAL WC = 3

LAV: (M/F 1/200)
125/200 = 0.63 = 1 EA. M/F = 2

(1) DRINKING FOUNTAIN REQUIRED

NEW FIRE SEPARATION
PER APPEAL #4

SCOPE OF PROPOSED WORK

Modification of the existing building to accommodate limited commercial use.

Proposed use to include separated B and A-3 occupancy (studio, gallery, event space) on Level 1 with R-3 (artist residence) and B (Foundation Office area) on Levels 2 and 3. Public access would be limited to the ground floor and closely controlled by the Foundation staff.

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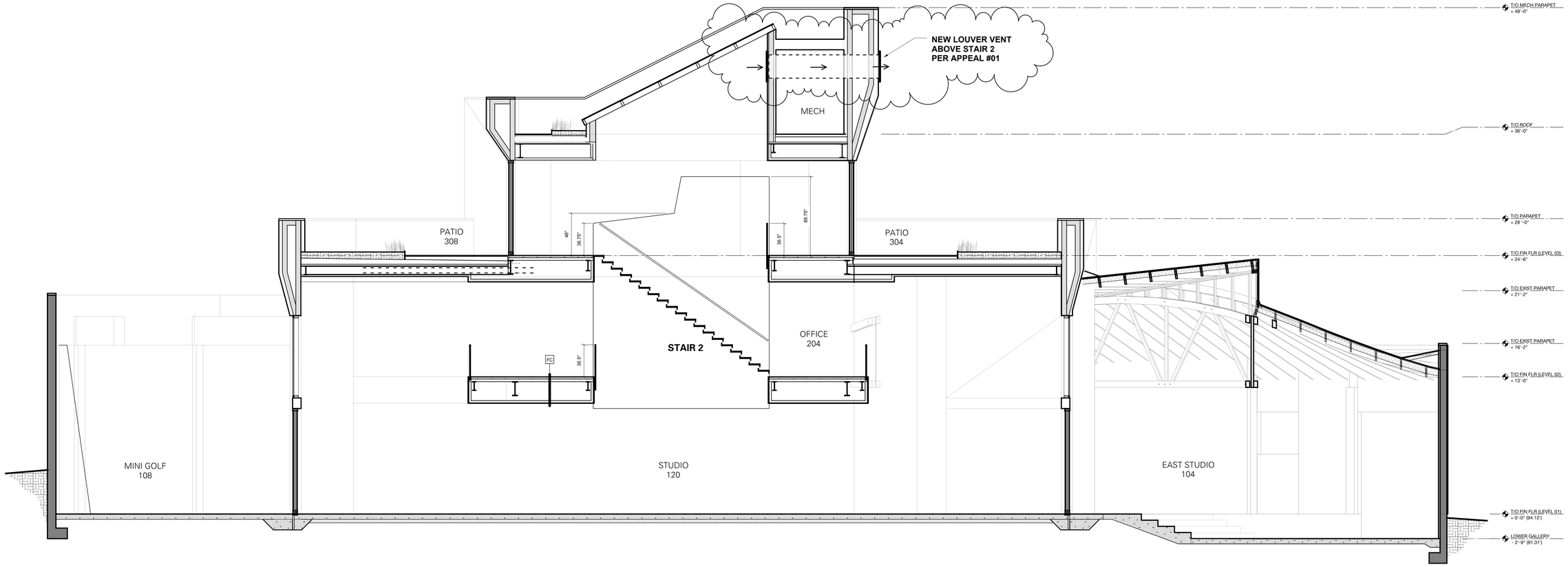
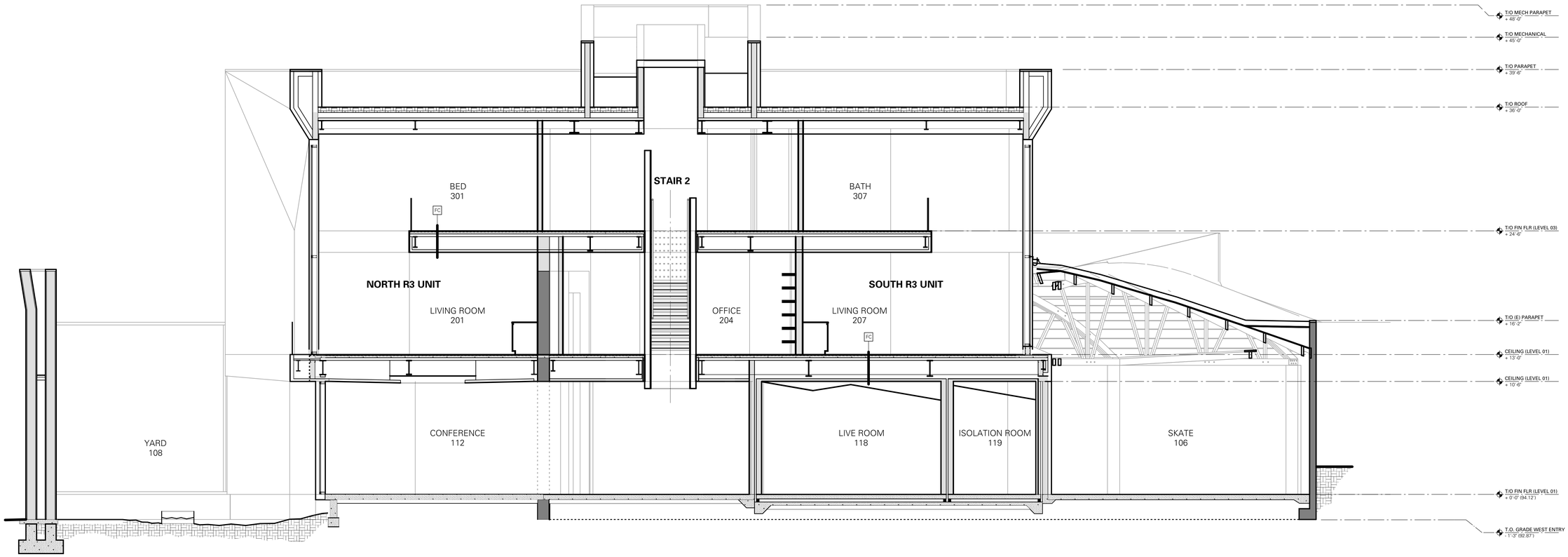
CODE PLANS
L1

Code / Occupancy Plan - OCCUPANCY CALC.: Level 01
1/4"=1'-0" 01



Building Section: NW/SE
1/4"=1'-0" 02



Building Section: NE/SW
1/4"=1'-0" 01

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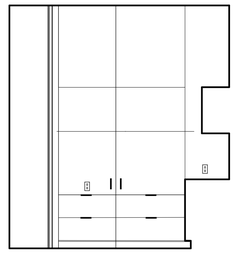
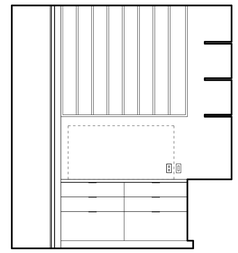
Sections:
A300



F.2



C.2

Interior Elevations - STUDIO
3/8"=1'-0"

03

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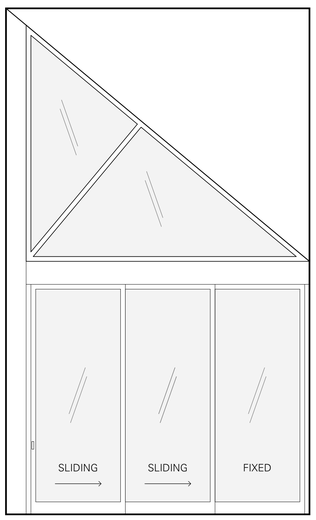
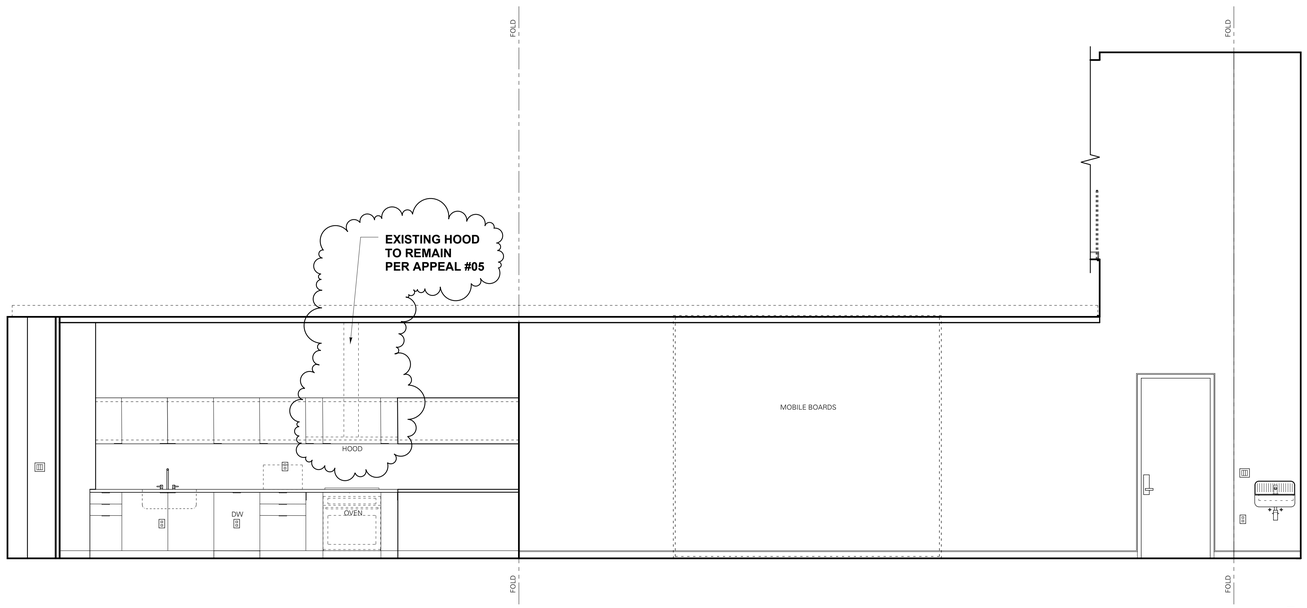
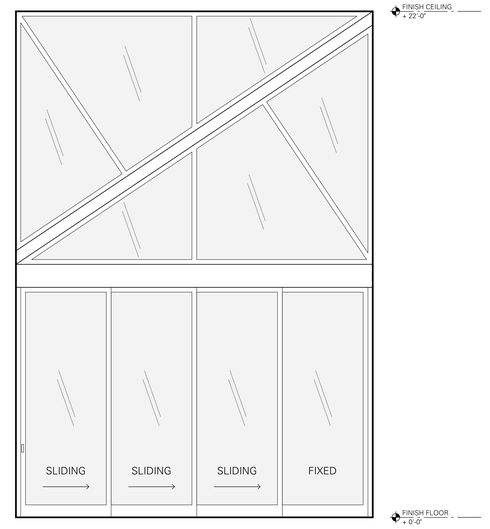






F

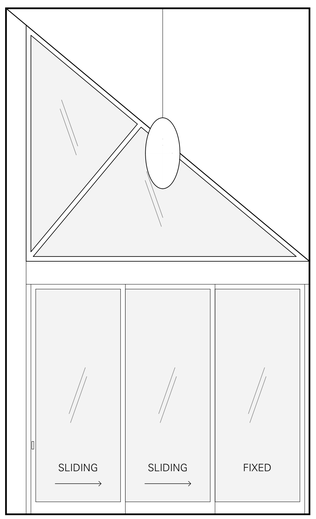
E

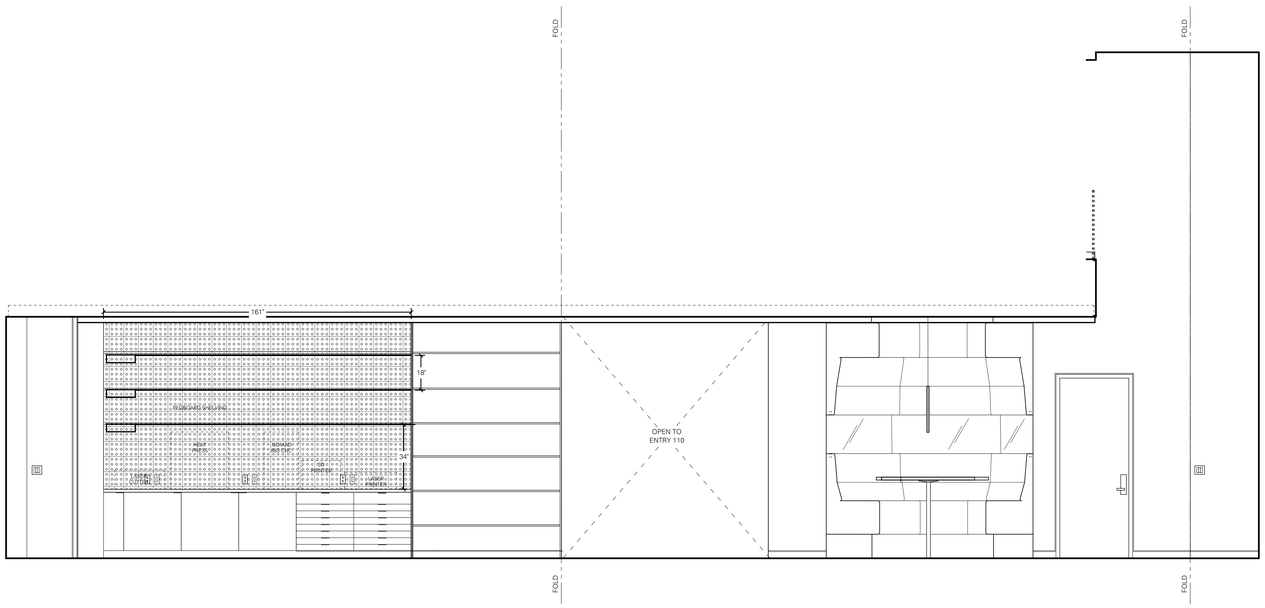
D

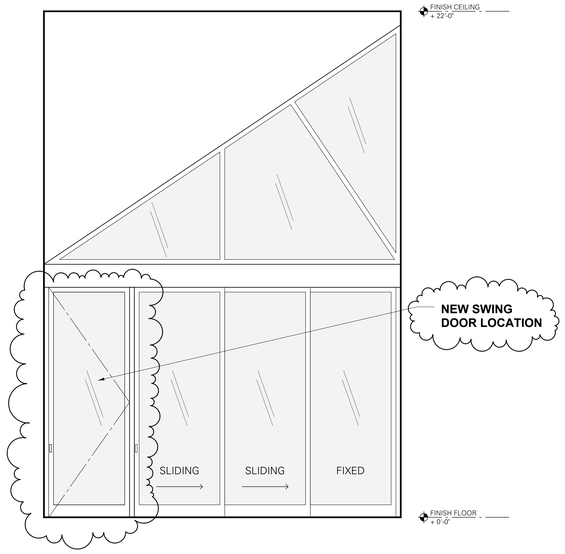
Interior Elevations - KITCHEN
3/8"=1'-0"

Interior Elevations - STUDIO
3/8"=1'-0"

02







C

B

A

Interior Elevations - STUDIO
3/8"=1'-0"

01

Not for Construction

BODECKER
Foundation
Location:
2360 NW Quimby Street
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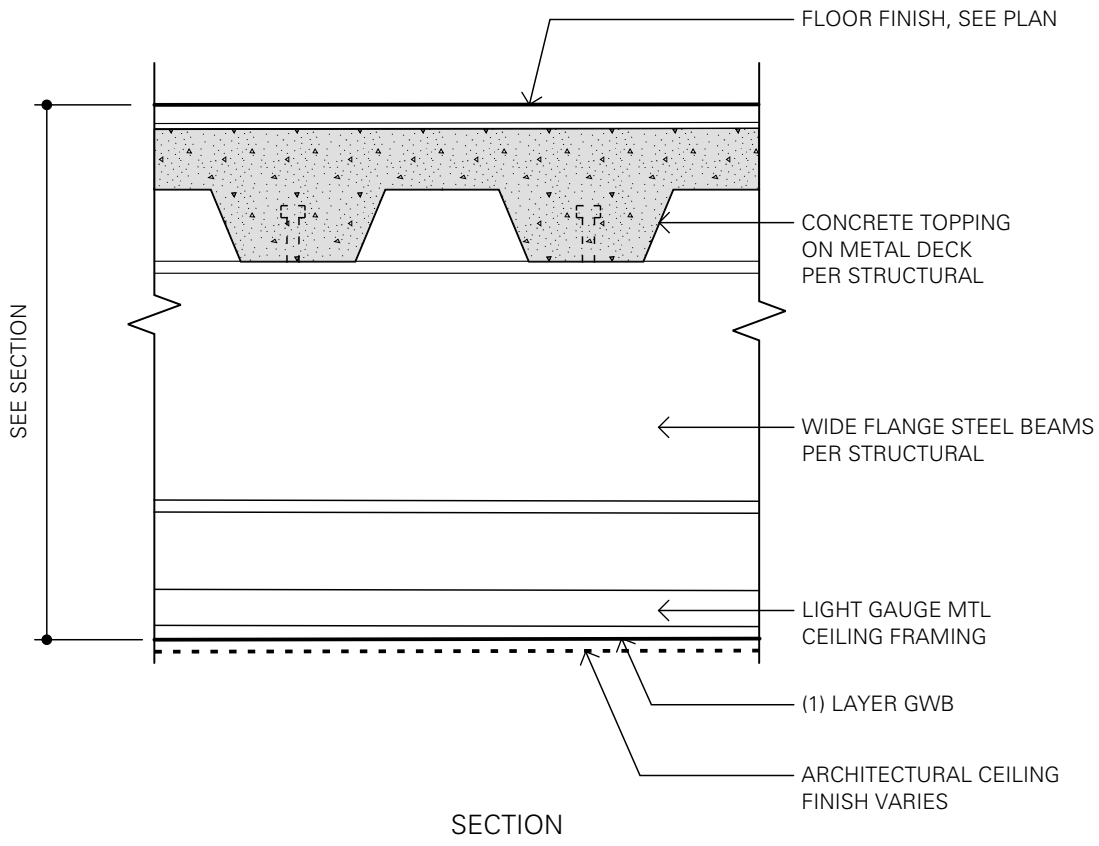
Interior Elevations:
A705



SECTION

Floor - Concrete on Metal Deck FC

Not for Construction

BODECKER
Foundation

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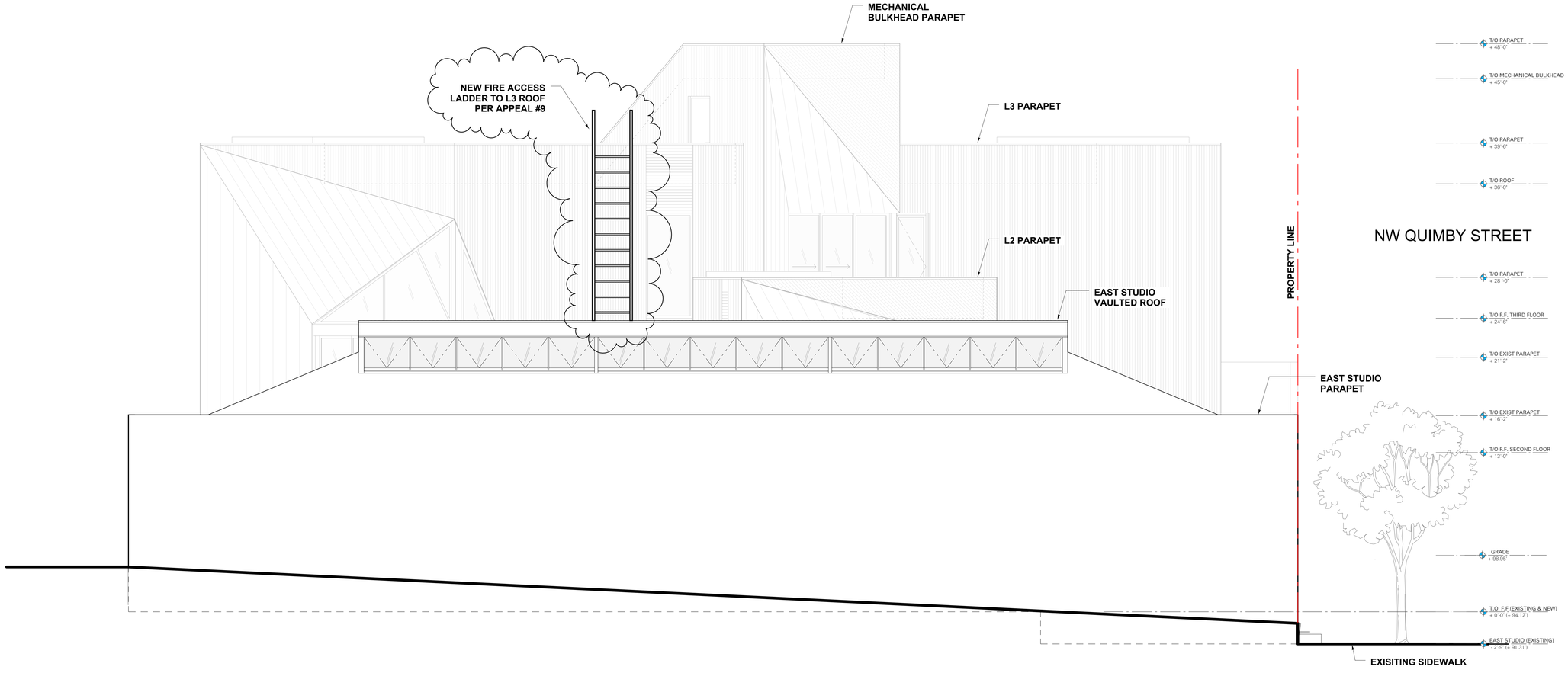
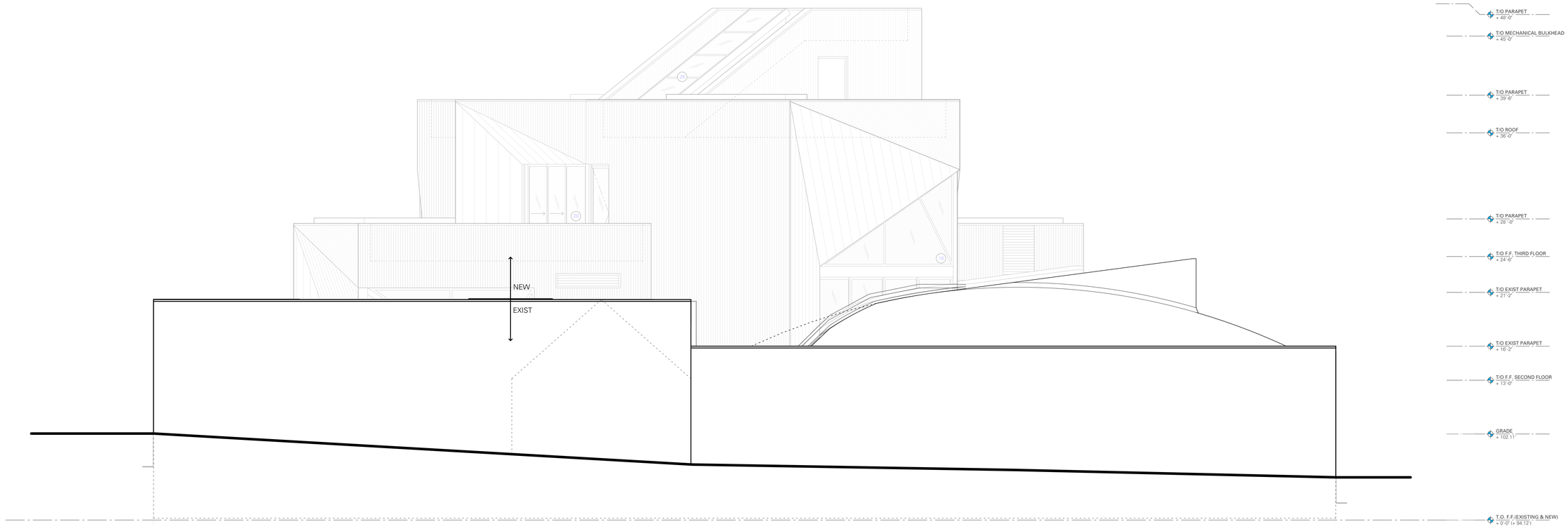
Assembly Type

FC



Exterior Elevations: East 01
1/4"=1'-0"



1/4"=1'-0" 01

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REGISTERED ARCHITECT
JEFFREY S. KOVEL
PORTLAND, OREGON
STATE OF OREGON

Not for Construction

BODECKER
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Elevations:

NW QUIMBY STREET

SIDEWALK BELOW

12'-2" (TO CURB)

37'-11" (TO CURB)

01 A300

02 A300

L1 PARAPET

L3 PARAPET

L2 PARAPET

GATEHOUSE PARAPET

ROOF BELOW

OPEN TO YARD BELOW

GREEN ROOF

ROOF ACCESS LOCKED

NEW FIRE ACCESS LADDER TO L3 ROOF PER APPEAL #9

UNOCCUPIED ROOF NO GUEST ACCESS

R.D.

A B C D E F G H

1 2 3 4 5 6

Roof Plan 01
1/4" = 1'-0"

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Roof Plan:
A215

BUILDING CODE | ACCESSIBILITY | FIRE EXPERTS
A Minority-Owned Business
Office Locations: OR | WA | NY | TN | CO
Main Phone Attendant: 503-488-5651

Client Name:	**N M Bodecker Foundation**		
Project Number:	C15-007A.3	**Date:**	11/13/2019
Distribution:	City of Portland Administrative Appeals Board		
Subject:	Atrium Smoke Control Appeal		
Referenced Codes and Standards:	2019 Oregon Structural Specialty Code (OSSC)		
Building Name:	Bodecker Creative Foundation		
Room Area Affected:	Whole Building		

Overview

Bodecker Creative Foundation at 2360 NW Quimby Street is an existing, unsprinklered single-family residence of Type V-B construction built per 2014 Oregon Residential Specialty Code (ORSC). The inheritors of the building propose a change of use for the building to convert it into the headquarters for the Bodecker Creative Foundation, a nonprofit organization providing instruction and mentorship in the arts for teens. Code Unlimited has been asked to provide an appeal to the City of Portland for alternate protection strategies for elements of the building that do not conform to the requirements of the 2019 Oregon Structural Specialty Code (OSSC).

Code Section Being Appealed

OSSC §404.5 Smoke control.

Requirement

A smoke control system shall be installed in accordance with Section 909.

EXCEPTION: Smoke control is not required for atriums that connect only two stories.

Proposed Design

The Bodecker Creative Foundation building is an existing building that was permitted as a single-family residence with a three-story open space from the ground floor through the third floor to the roof. The three-story atrium connects the kitchen area with the corridor to the bedrooms above. The connection between the second and third floors is just within the footprint of the open riser stairs.

The atrium meets requirements of OSSC 404, except it does not have smoke control as required per 404.5. To provide equivalent protection, we are proposing the following protection measures:

1. A new smoke detection system throughout the building, including inside and outside of sleeping rooms per OSSC 907.2.11.2 and 907.2.13.1 will be provided.
2. A new manual fire alarm system per OSSC 907.2.9.1 with activation by sprinkler waterflow switch will be provided.
3. Smoke and heat removal will be provided for the three-story space by a louvered vent at the top of the three-story space that will be activated by the fire/smoke alarm system and meet the intent of smoke and heat removal per OSSC 910.3.
4. Smoke and heat removal at the ground floor will be provided by automatic opening clerestory window vents at the top of the bow truss roof over the enclosed art instruction area.

Reason for Alternate

The Bodecker Creative Foundation building is an existing building that was permitted as a single-family residence with a three-story open space from the ground floor through the third floor to the roof. The three-story atrium connects the former living and kitchen area on the first floor with the corridor to the bedrooms above. The connection between the second and third floors is just within the footprint of the open riser stairs.

This building is an artistically and culturally significant work of architecture. Its unique character is an important asset to the Bodecker Creative Foundation, which provides mentorship for artistically talented teens in Portland. This architectural character would be significantly damaged by closing off the three-story open space.

Equivalent protection will be provided by natural smoke venting at the top of the three-story open space, through automatic opening louvers, and at the top of the ground floor roof, through automatic opening clerestory windows. The clerestory windows and the louvers above the third floor will be opened upon activation of the fire alarm. The fire alarm will be activated upon detection of smoke anywhere in the building, which gives early warning to occupants and actuation of the smoke venting system, since the dual sensor smoke detectors can detect flame fires or smoldering fires the quickest at the top of these spaces. Additional protection is provided by having the ground floor assembly area separated from the three-story open space by walls and doors protected with a wall-wash sprinkler system providing an equivalent to a 1-hour rating per OSSC 404.6, exception 1.

The following rational analysis per OSSC 909.4 is conducted to determine if the natural ventilation systems will perform as intended. Parameters for the analysis for this building are outlined as follows.

The parameters for the building include:

1. The building is a fully insulated and conditioned space kept at between 70°F and 76°F.
2. Connection between the main ground floor space and the three-story open space is limited to doors at the ground floor.
3. A wall wash sprinkler system designed to completely wet the wall between the main ground floor space and the three-story atrium will provide 1-hour equivalent separation between the two spaces.

The rational analysis for the natural ventilation system is as follows:

- Stack Effect (§909.4.1) – Normal and reverse stack effects were taken into account. The Mean Extreme Annual Dry Bulb low and high temperatures for Portland are 20.8°F and 99.0°F, respectively, per the 2009 ASHRAE Fundamentals Handbook. A temperature of 72°F was assumed for the interior of the building. At 72°F any heated smoke from a flame or smoldering fire would activate the smoke detectors and open the louvers and clerestory windows. These are spring loaded and would activate even under the condition of a power failure. A reverse stack effect scenario where the exterior air temperature exceeds the interior air temperature would only be short term as these areas have decreasing area, concentrating the smoke and hot gases, producing higher than exterior air temperatures and higher pressure differentials than ambient air density.
- Temperature Effect on Fire (§909.4.2) – Buoyancy effects were taken into account. The Mean Extreme Annual Dry Bulb low and high temperatures for Portland are 20.8°F and 99.0°F, respectively, per the 2009 ASHRAE Fundamentals Handbook. A temperature of 72°F was assumed for the interior of the building. At 72°F any heated smoke from a flame or smoldering fire would activate the smoke detectors and open the louvers and clerestory windows. These are spring loaded and would activate even under the condition of a power failure. A scenario where the sprinkler system activation would be in the area of the vents on the ground floor would not prevent smoke and heat from flowing to areas along the long clerestory window opening. At the third-floor louvered opening, the louvered vent is located at a lower elevation than the sprinkler head and would prevent the temperature in this area from exceeding the 155°F required to activate the sprinkler. The sprinkler head that would affect buoyancy is located directly over the only opening between the 2nd and 3rd floor, therefore the effect of buoyancy would prevent flow to the 3rd floor, therefore meeting the intent of the allowance for 2 story openings not requiring smoke control. In both situations, the sprinkler activation would be prevented due to the venting of heat near the head location and buoyancy would not be impacted enough to prevent smoke venting. Both of the vent locations have decreasing volume compared to the area below, concentrating the smoke and hot gases, producing higher higher pressure differentials than ambient air density.

- Wind Effect (§909.4.3) – Wind effect was taken into account. The wind was modeled as 65 mph from south-southwest per NOAA records for downtown Portland. Wind effect will be reduced for the clerestory windows by the mass of the tower structure of the upper 2 floors and by the windows facing east. The louvers above the third floor will face to the south-east and will be protected by a hood facing upward and slit opening at the bottom to prevent through-flow caused by exterior wind velocity and accentuate the upward movement of any wind pushed upwards along the building face.
- HVAC Effect (§909.4.4) – HVAC systems and building geometry were taken into account. Systems will be shut down and are not anticipated to have an effect of the performance of the smoke control systems.
- Climate Effects (§909.4.5) – Climate effects were taken into account. Building inlets and outlets will be protected against damage and blockage from snow and ice to prevent interruption of building functions.
- Duration of Operation (§909.4.6) – The smoke evacuation system is a non-mechanical system and capable of continuous operation until the clerestory windows and the louvers are manually closed and fire alarm system reset.
- Smoke Control System Interaction (§909.4.7) – The analysis assumes that all smoke control systems will activate using the same sequence of operation. As a result, one set of conditions is used for this analysis.

The building has two primary spaces: the large ground floor area that will be used for public activities, like children's art classes; and the three-story tower that will house two residences for visiting artists and office space for the Bodecker Trust staff. The public space has a high roof with the open bow-string truss roof area that acts as a smoke reservoir, with the venting clerestory windows at the top. This space is separated from the three-story tower area by a wall with fire rated doors and is protected by a line of sprinklers capable of washing the entire surface of the wall per OSSC 404.6, exception 1. The tower does have a three-story space, with the only opening between the second and third floors being the stair opening that is only the size of the horizontal projection of the stair. A smoke reservoir at the top of the three-story space will be able to collect smoke, build up pressure, and exhaust out of the automatic louver.

Through the small connection between the two areas, the vertical separation of the occupancies, the smoke detection system throughout the building, and smoke venting at the top of the bow truss area, the impact of a fire in one area will not impede egress from the other areas.