

# Development Services

## From Concept to Construction

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### APPEAL SUMMARY

**Status:** Decision Rendered

<b>Appeal ID:</b> 20211	<b>Project Address:</b> 3720 N Vancouver Ave
<b>Hearing Date:</b> 4/10/19	<b>Appellant Name:</b> Brannon Soens
<b>Case No.:</b> B-010	<b>Appellant Phone:</b> 503-360-1437
<b>Appeal Type:</b> Building	<b>Plans Examiner/Inspector:</b> Brian McCall
<b>Project Type:</b> commercial	<b>Stories:</b> 4 <b>Occupancy:</b> M & B <b>Construction Type:</b> III-B
<b>Building/Business Name:</b>	<b>Fire Sprinklers:</b> Yes - Fully-Sprinklered
<b>Appeal Involves:</b> Erection of a new structure	<b>LUR or Permit Application No.:</b> 18-258454-CO
<b>Plan Submitted Option:</b> pdf [File 1] [File 2] [File 3] [File 4]	<b>Proposed use:</b> Mercantile/Office

### APPEAL INFORMATION SHEET

#### Appeal item 1

**Code Section** OSSC 2014 Section 1007.2.1

**Requires** Elevators required. In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, at least one required accessible means of egress shall be an elevator complying with Section 1007.4.

**Proposed Design** The proposed design is a 4-story building on a flat site. We are proposing an occupied roof, with accessible means of egress from the occupied roof provided by two exit stairways complying with Sections 1007.3 and 1022.

The occupied roof will not be covered or enclosed, and will not have a roof or walls over 48" high. The building is equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13 and OSSC Section 903.3.1.1.

See attached roof plan (Exhibit 1) and building section (Exhibit 2).

**Reason for alternative** OSSC 2014 Section 1007.4 requiring an elevator as an accessible means of egress does not pertain a four-story building with an occupied roof. An occupied roof is not considered a "story" or a "floor."

The distinction between an occupied roof and a building "story" is clarified in the 2018 IBC. The approved language for the 2018 IBC Section 503.1.4 states that occupied roofs are not considered a story if the deck does not have a roof or walls over 48" high (and clarifies that it is not subject to building height limitations).

By definition, a "floor" is the lowest walking surface of a room, and a room is contained within a story. An occupied roof is not considered an accessible floor.

According to the 2012 IBC code commentary for this 1007.2.1 (Exhibit 3):

"On a flat site, "buildings with four or more stories above the level of exit discharge" would typically be a five-story building. The level of exit discharge is the first floor level, and the fifth floor is the fourth story above that. A story four stories below the level of exit discharge would be the fourth basement level. The verbiage is such that a building built on a sloped site can take into consideration that people may be exiting the building from different levels on different sides of the building (see Figure 1007.2.1)."

An elevator will be provided to the roof deck; however, it will not be on standby power as required by 1007.4 in order to be considered as the accessible means of egress. Providing standby power for the elevator would require the building to have a generator, which is prohibitively expensive for this project.

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## Appeal item 2

<b>Code Section</b>	OSSC 2014 Section 602.3
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<b>Requires</b>	Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted with exterior wall assemblies of a 2-hour rating or less.
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<b>Proposed Design</b>	<p>The proposed design is a 4-story, Type IIIB, building with ground level mercantile space and three levels of office above. The proposed floor and ceiling construction is exposed glulam beams and solid 4x wood decking supported by steel columns. Floors will receive a lightweight concrete topping slab over structural sheathing. Exterior walls are framed with 6" steel studs and sheathed with noncombustible gypsum sheathing. The building is fully-sprinklered per NFPA 13.</p> <p>The solid wood decking and sheathing extends into the exterior wall assembly at the floor and roof levels (Exhibit 4). All framing, sheathing and siding materials are noncombustible.</p>
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<b>Reason for alternative</b>	The wood decking is a primary design feature of the building and will be exposed in all interior locations. The floor structure and structural frame is not required to be rated per OSSC Table 601, Type IIIB.
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In addition, the 2015 and 2018 editions of the IBC provide language allowing cross-laminated timber to extend into exterior wall assemblies that are not less than 6 inches in thickness with a 2-hour rating or less. CLT is permitted within the exterior wall assemblies provided that the exterior surface is protected by 15/32" fire-retardant treated wood sheathing, 1/2" gypsum board, or a noncombustible material.

The condition we are proposing, where the solid 4x wood decking and sheathing intersects the noncombustible exterior wall is very similar to the CLT condition allowed by the 2015 & 2018 code language. The exterior surface of the decking/sheathing is protected by gypsum interior wall finish and gypsum exterior sheathing. All surrounding framing and finish materials are noncombustible. Fiberglass insulation is provided between studs. The sprinkler system will provide an additional level of protection.

We believe that the proposed design meets the intent of the code and will provide equivalent protection as outlined above.

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## APPEAL DECISION

**1. Omission of elevator back up power to occupied roof level deck: Granted as proposed.**

**2. Combustible material within Type III exterior walls: Granted provided the intersection between the floor assembly and the interior face of the exterior wall is detailed as part of a listed, tested assembly.**

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

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 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to [www.portlandoregon.gov/bds/appealsinfo](http://www.portlandoregon.gov/bds/appealsinfo), call (503) 823-7300 or come in to the Development Services Center.

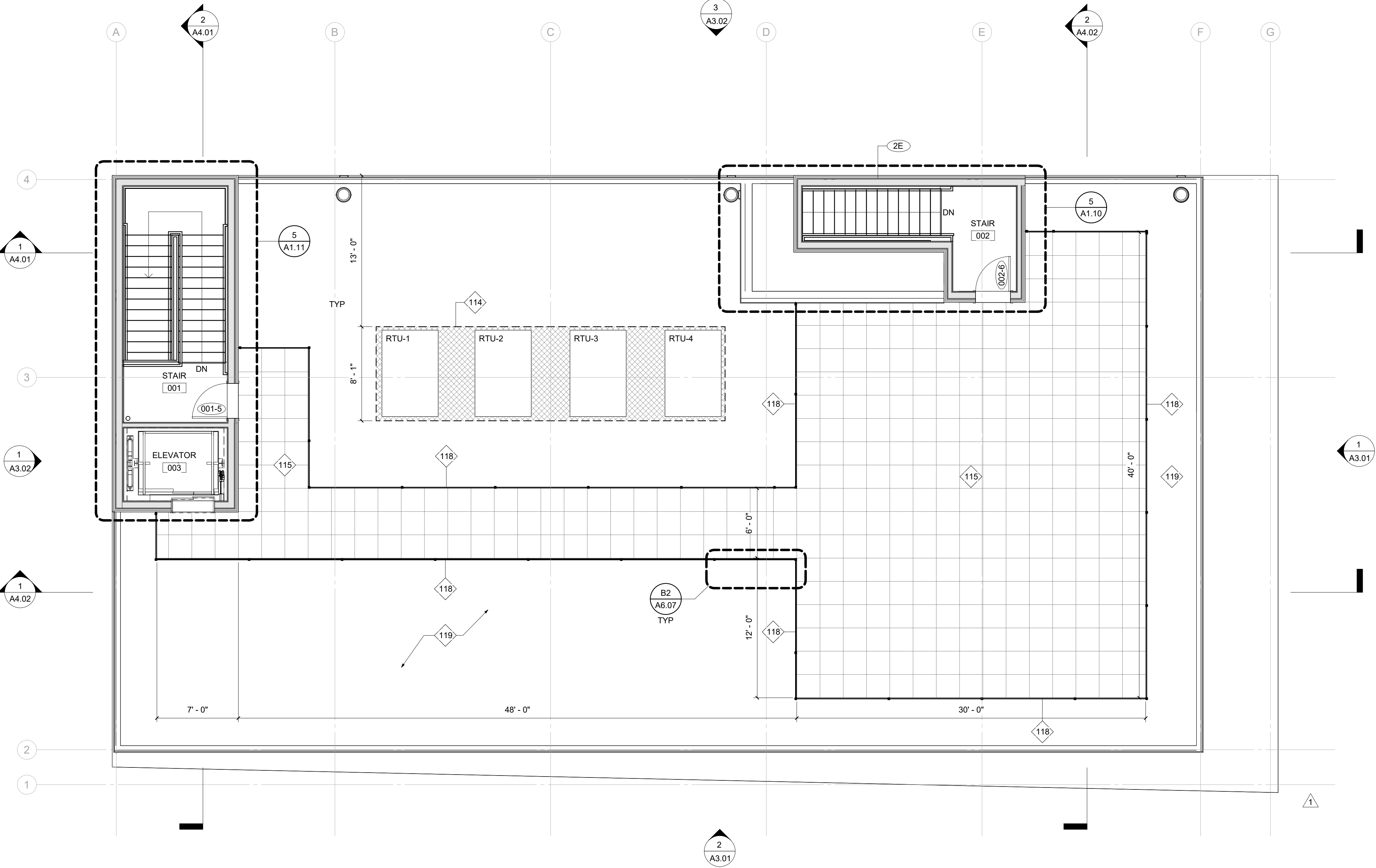
EXHIBIT 1 - ROOF PLAN

GENERAL NOTES - FLOOR PLAN

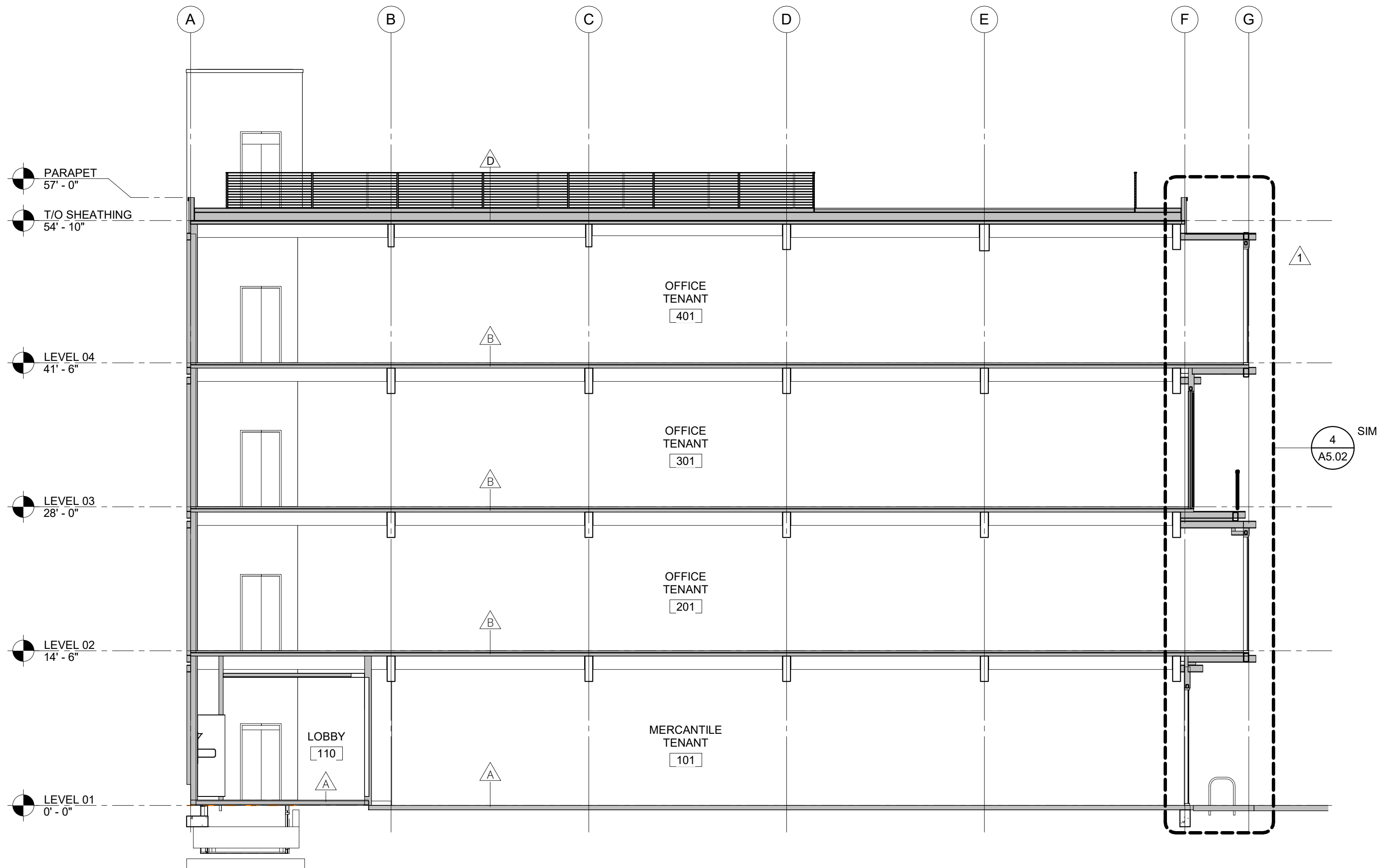
- A. CONTRACTOR IS RESPONSIBLE FOR ALL CODE REQUIRED WORK NOT SHOWN ON THIS DRAWING.
- B. PARTITION DIMENSIONS RE GIVEN TO FACE OF FRAMING UNLESS OTHERWISE NOTED. CLEAR DIMENSIONS (NOTED 'CLR') AND ALIGNMENT NOTES ARE FACE OF FINISH TO FACE OF FINISH.
- C. DIMENSIONS FOR ACCESSIBLE FIXTURES AND ACCESS TO FIXTURES SHALL BE MEASURED FROM FACE OF WALL FINISH
- D. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO BEGINNING WORK.
- E. ALL INTERIOR WALLS, PARTITIONS AND COLUMNS TO RECEIVE FINISH- SEE INTERIOR ELEVATIONS AND FINISH SCHEDULE.
- F. CONTRACTOR TO PROVIDE SOLID WALL BLOCKING BEHIND ALL BATHROOM ACCESSORIES, CABINETRY/CASEWORK, FIRE EXTIGUISHER CABINETS, FIXTURES, EQUIPMENT, ETC...
- G. ALL INTERIOR FLOOR DRAINS TO HAVE A MINIMUM OF 1/8" PER FOOT SLOPE TO THE DRAINS. REVIEW ALL DRAIN ELEVATIONS WITH ARCHITECT PRIOR TO SETTING DRAINS AND POURING CONCRETE

SHEET KEYNOTES

Key Value	Keynote Text
114	AREA OF ROOFTOP MECHANICAL EQUIPMENT PER MECHANICAL DESIGN/BUILD. (4) RTU'S TO BE LOCATED IN AREA INDICATED.
115	24"x24" WOOD PAVER TILES ON ADJUSTABLE PEDESTAL SYSTEM
118	42" TALL METAL GUARDRAIL- VIA DEFERRED SUBMITAL
119	GRAVEL BALLAST OVER ROOFING SYSTEM. PROVIDE PERFORATED METAL EDGING AS REQ'D PER ROOFING MANUFACTURER



# EXHIBIT 2 - BUILDING SECTION



## MEANS OF EGRESS

for spaces with one means of egress (see Section 1015.1), the exit access stairway must meet the provisions of Section 1007.3.

3. If a mezzanine is required to be accessible (see Section 1104.4) and is required to have two means of egress, at least one of the means of egress stairways must meet the provisions of Section 1007.3.

While under Scenarios 2 and 3 it is optional to have the elevator meet the requirements of Section 1007.4, the provisions for standby power at elevators are based on fire department assisted rescue. This is an expensive option that would likely never be used during a fire event. Where platform lifts can be used in new construction (see Section 1109.8), they are so limited that it is not likely that they will provide the accessible route to a mezzanine. If they do, Section 1007.5 does allow for platform lifts to serve as part of the accessible route for accessible means of egress when they have standby power.

Exception 3 is in consideration of the practical difficulties of providing accessible routes in assembly areas with sloped floors and stepped aisles. Rooms with more than 50 persons are required to have two means of egress; therefore, each accessible seating location is required to have access to two accessible means of egress. Depending on the slope of the seating arrangement, providing an accessible route to both distinct exits can be difficult to achieve, especially in small theaters. A maximum travel distance of 30 feet (9144 mm) for ambulatory persons moving from the last seat in dead-end aisles or from box-type seating arrangements to where they have access to a choice of means of egress routes has been established in Section 1028.8. In accordance with Exception 3, persons using wheelchair seating spaces have the same maximum 30-foot (9144 mm) travel distance from the accessible seating locations to a cross aisle or out of the room to an adjacent corridor or space where two choices for accessible means of egress are provided. Note that there are increases in travel distance for smoke-protected seating and small spaces, such as boxes, galleries or balconies. For additional information, see Section 1028.8.

**1007.2 Continuity and components.** Each required *accessible means of egress* shall be continuous to a *public way* and shall consist of one or more of the following components:

1. *Accessible routes* complying with Section 1104.
2. *Interior exit stairways* complying with Sections 1007.3 and 1022.
3. *Interior exit access stairways* complying with Sections 1007.3 and 1009.3.
4. *Exterior exit stairways* complying with Sections 1007.3 and 1026 and serving levels other than the *level of exit discharge*.
5. Elevators complying with Section 1007.4.
6. Platform lifts complying with Section 1007.5.

7. *Horizontal exits* complying with Section 1025.

8. *Ramps* complying with Section 1010.

9. *Areas of refuge* complying with Section 1007.6.

10. Exterior area for assisted rescue complying with Section 1007.7.

❖ This section identifies the various building features that can serve as elements of an accessible means of egress. Accessible routes are readily recognizable as to how they can provide accessible means of egress; however, some nontraditional principles have been established for the total concept of accessible means of egress. This is evident in that stairways and elevators are also identified as elements that can comprise part of an accessible means of egress. For example, elevators are generally not available for egress during a fire, while stairways are not independently usable by a person using a wheelchair. The concept of accessible means of egress includes the idea that evacuating people with a mobility impairment may require the assistance of others. In some situations, provisions are also included for creating an area of refuge or exterior areas of rescue assistance wherein people can safely await either further instructions or evacuation assistance. Larger refuge areas can also be established by utilizing horizontal exits. All of these elements can be arranged in the manner prescribed in this section to provide accessible means of egress.

**1007.2.1 Elevators required.** In buildings where a required *accessible floor* is four or more stories above or below a *level of exit discharge*, at least one required *accessible means of egress* shall be an elevator complying with Section 1007.4.

**Exceptions:**

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *ramp* conforming to the provisions of Section 1010.

❖ Elevators are the most common and convenient means of providing access to the upper floors in multistory buildings. As such, elevators represent a prime candidate for accessible means of egress from such buildings, especially in light of the difficulties involved in carrying a person up or down a stairway for multiple levels. The primary consideration for elevators as an accessible means of egress is that the elevator will be available and protected during a fire event to allow for fire department assisted rescue. Typically it is not the intent that people use the elevator for self-evacuation due to the hazards associated with smoke in the elevator shaft or the elevator taking people to the floor with a direct fire hazard. There are some



new technological advances for “fire service access elevators” and “occupant evacuation elevators” that are discussed in Sections 403, 3007 and 3008.

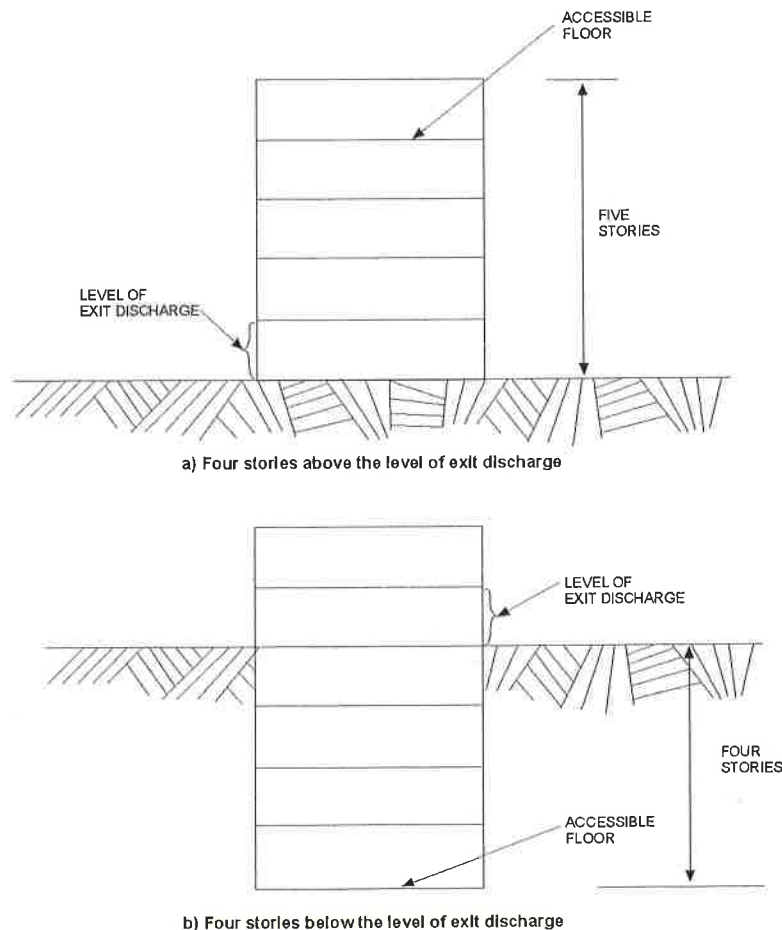
This section addresses where an elevator must serve as part of an accessible means of egress. See Section 1104 for when elevators are required for the accessible route into a building. By a reference to Section 1007.4, both an area of refuge and a standby source of power for the elevator is required. The standby power requirement establishes a higher degree of reliability that the elevator will be available and usable by reducing the likelihood of power loss caused by fire or other conditions of power failure.

The code defines “Exit Discharge, Level of” as the story at which an exit terminates. In buildings having four or more stories above or below the level of exit discharge, it is unreasonable to rely solely on exit stairways for all of the required accessible means of egress. This is the point at which complete reliance on assisted evacuation down the stairs will not be effective or adequate because of the limited availability of either experienced personnel who are trained to carry people safely (i.e., fire fighters) or the availability of special devices (i.e., self-braking stairway

descent equipment or evacuation chairs). In this case, the code requires that at least one elevator, serving all floors of the building, is to serve as one of the required accessible means of egress. This should not represent a hardship, since elevators are typically provided in such buildings for the convenience of the occupants.

On a flat site, “buildings with four or more stories above the level of exit discharge” would typically be a five-story building. The level of exit discharge is the entire first story level (not merely the plane or level of the first floor); therefore, the fifth floor is the fourth story above the level of exit discharge. In a building with multiple basements, a story four stories below the level of exit discharge would be the fourth basement level. The actual vertical distance is the same from the fifth floor above grade down to discharge, as it is from the fourth floor below grade up to discharge. The verbiage is such that a building built on a sloped site can take into consideration that people may be exiting the building from different levels on different sides of the building (see Figure 1007.2.1).

Exception 1 establishes that accessible egress elevator service to floor levels at or above the level of



**Figure 1007.2.1**

**ELEVATOR REQUIRED FOR ACCESSIBLE MEANS OF EGRESS**

exit discharge is not necessary under specified conditions. The conditions are that the building is equipped throughout with an automatic sprinkler system in accordance with NFPA 13 or NFPA 13R (see Section 903.3.1.1 or 903.3.1.2) and that floors not serviced by an accessible egress elevator are provided with a horizontal exit. The presence of an automatic sprinkler system significantly reduces the potential fire hazard and provides for increased evacuation time. The combination of automatic sprinklers and a horizontal exit provides adequate protection for the occupants despite their distance to the level of exit discharge. This exception does not apply to floor levels below the level of exit discharge, since such levels are typically below grade and do not have the added advantage of exterior openings that are available for fire-fighting or rescue purposes. This option is most often utilized when a defend-in-place approach to occupant protection is utilized, such as in a hospital, nursing home or jail. Keep in mind that the horizontal exit (see Section 1025) creates large refuge areas that have separation requirements and capacity requirements that exceed area of refuge requirements.

Exception 2 specifies that a building sprinklered throughout in accordance with NFPA 13 or NFPA 13R (see Section 903.3.1.1 or 903.3.1.2), with ramp access to each level, such as in a sports stadium, is not required to also have an elevator for accessible means of egress. The reasoning behind this is that the issue of carrying people down stairways does not occur because the ramps may be utilized instead.

**1007.3 Stairways.** In order to be considered part of an *accessible means of egress*, a stairway between stories shall have a clear width of 48 inches (1219 mm) minimum between *handrails* and shall either incorporate an *area of refuge* within an enlarged floor-level landing or shall be accessed from either an *area of refuge* complying with Section 1007.6 or a *horizontal exit*. *Exit access stairways* that connect levels in the same story are not permitted as part an *accessible means of egress*.

#### Exceptions:

1. The clear width of 48 inches (1219 mm) between *handrails* is not required in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. *Areas of refuge* are not required at *stairways* in buildings equipped throughout by an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. The clear width of 48 inches (1219 mm) between *handrails* is not required for *stairways* accessed from a *horizontal exit*.
4. *Areas of refuge* are not required at *stairways* serving *open parking garages*.
5. *Areas of refuge* are not required for smoke protected seating areas complying with Section 1028.6.2.

6. The *areas of refuge* are not required in Group R-2 occupancies.

❖ This section addresses stairways between floor levels or to a mezzanine level. The last sentence indicates that steps that connect raised areas are not permitted to be part of an accessible means of egress. People with mobility impairments cannot be asked to wait at the top of steps that may be anywhere in the building; they must be able to get to the stairways where the fire department will be coming into the building.

Stairways (exit or exit access) between floor levels, while not part of an accessible route, can serve as part of the accessible means of egress when they are used as part of an assisted evacuation route. The starting point for these requirements is that the stairways must be 48 inches (1219 mm) clear width between handrails; and either include or be accessed directly by a location where people can wait for assisted evacuation. This place to wait can be either an "area of refuge" (see Section 1007.6) or a "refuge area" created by a horizontal exit (see Section 1025).

There are many mobility impairments that can limit or negate a person's ability to walk up and down the stairs. The taller the building, the higher the percentage of the population that will be affected. For example, an elderly person or a person with a broken foot may be able to get down a couple of flights, but not from an upper floor in a high-rise.

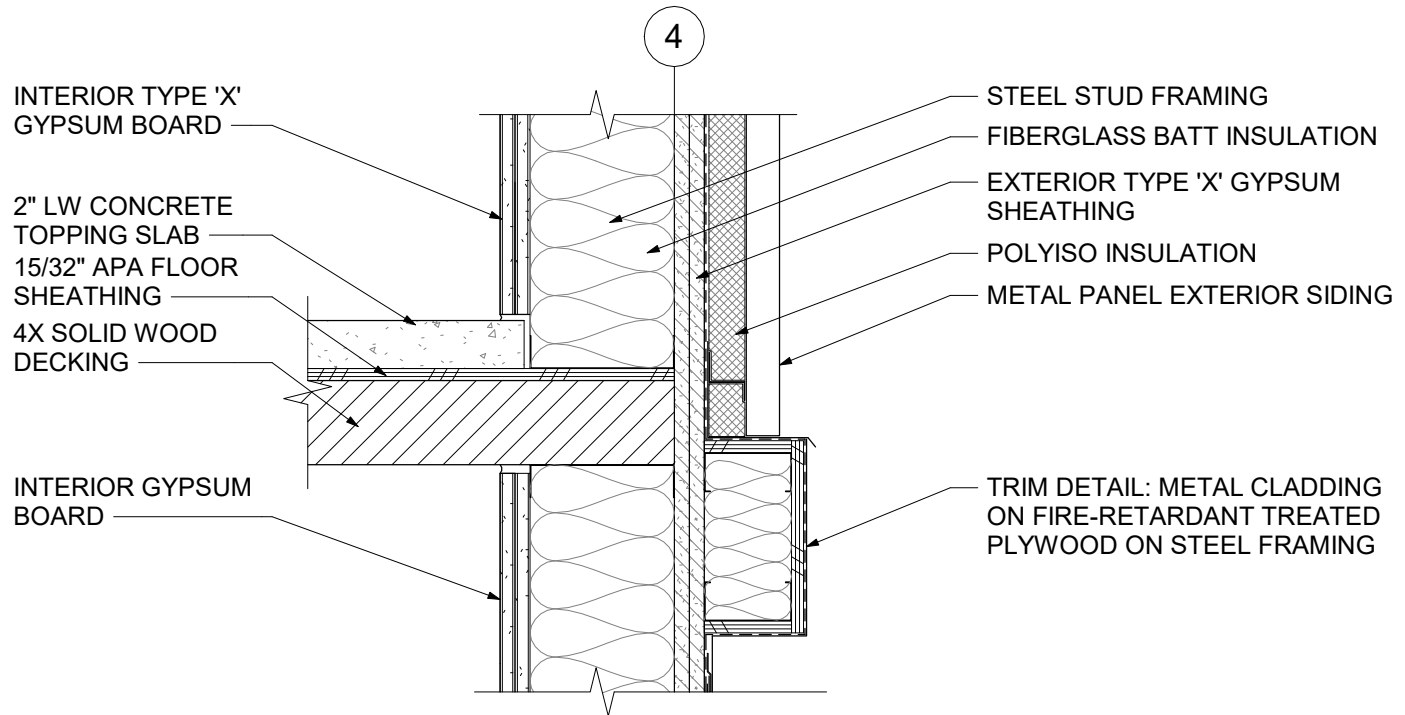
Note that this section is for exit stairways as addressed in Sections 1022 and 1026 and exit access stairways as addressed in Section 1009. Therefore, exit access stairways between stories could be considered part of an accessible means of egress, but not exit access steps within the same level, such as steps in a corridor or room leading to an exit or exit access doorway. Interior exit stairways are enclosed; however, there are allowances in Section 1009 for exit access stairways and Section 1026 for exterior exit stairways to be permitted to be open in certain circumstances.

The dimension of 48 inches (1219 mm) clear width between handrails is sufficient to enable two or three persons to carry a person up or down to the level of exit discharge where access to a public way is afforded.

The enclosed exit stairway, in combination with an area of refuge, can provide for safety from fire in one of two ways. One approach is for the fire-resistance rated stairway enclosure to afford the necessary safety. To accomplish this, the landing within the stairway enclosure must be able to contain the wheelchair. The concept is that the person in the wheelchair will remain on the stairway landing for a period of time awaiting further instructions or evacuation assistance; therefore, the stairway landing must be able to accommodate the wheelchair without obstructing the use of the stairway by other egressing occupants. An enlarged, story-level landing is required within the stairway enclosure and must be of



**EXHIBIT 4 - SECTION DETAIL**



**FLOOR ASSEMBLY AT EXTERIOR WALL**

SCALE: 1-1/2" = 1'-0"