Development Services

From Concept to Construction

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APPEAL SUMMARY

Status: Mixed Decision. Items 1, 3,4: Decision Rendered. Items 2, 5: Hold for Additional Information.

Appeal ID: 24649	**Project Address:** 915 NE Schuyler St
Hearing Date: 2/24/21	**Appellant Name:** Hali Knight
Case No.: B-012	**Appellant Phone:** 9713523935
Appeal Type: Building	**Plans Examiner/Inspector:** Steven Mortensen
Project Type: commercial	**Stories:** 9 **Occupancy:** R-2 **Construction Type:** 1-A
Building/Business Name:	**Fire Sprinklers:** Yes - Throughout
Appeal Involves: Alteration of an existing structure	**LUR or Permit Application No.:** 20-185703-CO
Plan Submitted Option: pdf [File 1] [File 2] [File 3] [File 4] [File 5]	**Proposed use:** Residential

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	1010.1.9.12 Stairway Doors
Requires	Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort.
Code Modification or Alternate Requested	Exception to 1010.1.9.12 to allow for the exterior egress corridor doors on floors 2-9 to have exterior locking (non-egress side of door) for security to the building since these open onto exterior exit balconies. These egress corridor doors shall be openable from egress side without the use of a key or special knowledge or effort.
Proposed Design	The Dahlke Manor is an existing 9 story apartment building built in 1971. The proposed scope of work is to reconfigure the ground level spaces to better serve the residents, build a small (<750 sqft addition), replace finishes in the residential units, and convert six of the existing dwelling units to accessible Type A units. Full NFPA 13 sprinkler system will be provided throughout building along with fire detection and alarm system. G006 and G007 Code Analysis sheets attached for reference. The existing egress for the residential tower includes two stairwells that are reached from corridor doors by an exterior balcony. The existing corridor doors are exterior doors and locked from the exterior side to prevent entry from the exterior balconies, a necessary security measure for the building. The stairwell doors will remain operable from both directions, except the ground floor egress door which will remained locked from the exterior non-egress side. Since the doors will receive new hardware as a part of the scope of work, the corridor door does not meet 1010.1.9.12 and an exception is requested. A KnoxBox will be provided on the ground floor to provide building access to Portland Fire & Rescue, including access to the exterior corridor doors.
Reason for alternative	The corridor door is not part of the interior stairway and is separated by an exterior balcony. The existing corridor doors need to be locked from the exterior side to prevent entry from the exterior

	balconies, which is a necessary security measure for the building. All inhabitants exiting the building will be able to freely, without special knowledge or effort, access the stairway and will have a protected path to the exterior of the building. The stairway is emergency egress only and is protected by 3-HR fire-rated construction. Residents exiting in the stairway do not need to re-enter the building to exit the stairway tower and there are no locked doors on their egress path out of the building. A KnoxBox will be provided for Portland Fire & Rescue to enter the building from these corridor doors. See markups on attached plans G111 and G112 and door schedule on A600.

Appeal item 2

Code Section	703.3
Requires	703.3 Methods for determining fire resistance. The application of any of the methods listed in this section shall be based on the fire exposure and acceptance criteria specified in ASTM E119 or UL 263. The required fire resistance of a building element, component or assembly shall be permitted to be established by any of the following methods or procedures: Fire-resistance designs documented in approved sources. Prescriptive designs of fire-resistance-rated building elements, components or assemblies as prescribed in Section 721. Calculations in accordance with Section 722. Engineering analysis based on a comparison of building element, component or assemblies designs having fire-resistance ratings as determined by the test procedures set forth in ASTM E119 or UL 263. Alternative protection methods as allowed by Section 104.11. Fire-resistance designs certified by an approved agency.
Code Modification or Alternate Requested	This appeal demonstrates 3-hour protection of structural channels at the existing walls based on the attached engineering analysis.
Proposed Design	Dahlke is a 9-story residential apartment tower of Type IA construction with a 1-story lower story attached community space, located in Portland, Oregon serving low-income residents. It will be under the jurisdictional review of the City of Portland. The proposed scope of work is a 1-story 700 SF addition for a kitchen and break room associated with the Community Room and remodeling of the common spaces. Full NFPA 13 sprinkler system will be provided throughout building. The proposed C-Channel of C12x30 and C12x25 members located against the existing walls require 3-hour protection (see attached engineering judgment letter) For this study, only the C12x25 member will be examined in detail because it is the lightest member and therefore has the least inherent fire resistance. This member is considered as a primary structure. Per 2019 OSSC table 601, primary structural members are required to be minimum 3 hr. fire rated for the construction Type. It is assumed that the beam will be exposed to fire on the left side and the assembly will require continuous protection from three sides. The C-Channel will comply with the required 3-hr fire resistance requirement if protected by 2 layers of 5/8” Type X gypsum wallboard and mineral wool filling gaps. The proposed C-Channel

	has greater inherent fire-resistance with a larger W/D ratio; therefore, the thicker layers of protection will provide a greater fire resistance than the tested member. Additionally, the backside boarders a heat sink of concrete or CMU wall which will draw away heat from the member further estending the protection duration. Reference attached Engineering Judgement C-Channel EJ#1a for design details.
Reason for alternative	This appeal demonstrates that fire resistance equivalent to or exceeding that required by the code is provided by the proposed design based on the attached engineering judgment analysis stamped by an Oregon registered fire protection engineer.

Appeal item 3

Code Section	703.3
Requires	703.3 Methods for determining fire resistance. The application of any of the methods listed in this section shall be based on the fire exposure and acceptance criteria specified in ASTM E119 or UL 263. The required fire resistance of a building element, component or assembly shall be permitted to be established by any of the following methods or procedures: Fire-resistance designs documented in approved sources. Prescriptive designs of fire-resistance-rated building elements, components or assemblies as prescribed in Section 721. Calculations in accordance with Section 722. Engineering analysis based on a comparison of building element, component or assemblies designs having fire-resistance ratings as determined by the test procedures set forth in ASTM E119 or UL 263. Alternative protection methods as allowed by Section 104.11. Fire-resistance designs certified by an approved agency.
Code Modification or Alternate Requested	This appeal demonstrates 2-hour protection of new structural HSS beams installed in the lobby based on the attached engineering analysis.
Proposed Design	Dahlke is a 9-story residential apartment tower of Type IA construction with a 1-story lower story attached community space, located in Portland, Oregon serving low-income residents. It will be under the jurisdictional review of the City of Portland. The proposed scope of work is a 1-story 700 SF addition for a kitchen and break room associated with the Community Room and remodeling of the common spaces. Full NFPA 13 sprinkler system will be provided throughout building. The primary function of the HHS members is to support the existing roof of the lobby. Membrane protection will be provided. However, complete encapsulation will not be required as the members only support the roof and no floors per OSSC 704.3. The proposed member assembly consists of 6x6 x 3/8” HSS sections. The beam will be bolted with a flat steel plate to the exterior CMU wall with the connection and beam both being protected with a minimum of two layers of 5/8” Type X gypsum board installed on the exposed faces as shown in the attached engineering analysis. Compressed mineral wool will fill the cavity between the gypsum wallboard (GWB) and steel plate.

	Reference attached Engineering Judgement HHS Beam EJ #2 for design details.
Reason for alternative	This appeal demonstrates that fire resistance equivalent to or exceeding that required by the code is provided by the proposed design based on the attached engineering judgment analysis stamped by an Oregon registered fire protection engineer.

Appeal item 4

Code Section	703.3
Requires	703.3 Methods for determining fire resistance. The application of any of the methods listed in this section shall be based on the fire exposure and acceptance criteria specified in ASTM E119 or UL 263. The required fire resistance of a building element, component or assembly shall be permitted to be established by any of the following methods or procedures: Fire-resistance designs documented in approved sources. Prescriptive designs of fire-resistance-rated building elements, components or assemblies as prescribed in Section 721. Calculations in accordance with Section 722. Engineering analysis based on a comparison of building element, component or assemblies designs having fire-resistance ratings as determined by the test procedures set forth in ASTM E119 or UL 263. Alternative protection methods as allowed by Section 104.11. Fire-resistance designs certified by an approved agency.
Code Modification or Alternate Requested	This appeal demonstrates fire protection equivalent to or exceeding code requirements for makeup air inlet ducts that penetrate a 2-hour roof/ceiling assembly based on the attached engineering analysis.
Proposed Design	Dahlke is a 9-story residential apartment tower of Type IA construction with a 1-story lower story attached community space, located in Portland, Oregon serving low-income residents. It will be under the jurisdictional review of the City of Portland. The proposed scope of work is a 1-story 700 SF addition for a kitchen and break room associated with the Community Room and remodeling of the common spaces. Full NFPA 13 sprinkler system will be provided throughout building. The make-up air for the kitchen range will come from the break room via two 10-foot sections of ducting. The ducts will penetrate the roof assembly which has a 2-hour rating per OSSC T601. To maintain the required 2 hour rating it is proposed to encase the duct with three layers of 5/8 inch Type X Gypsum wallboard. Reference attached Engineering Judgement Kitchen Duct EJ #3 for design details.
Reason for alternative	This appeal demonstrates that fire resistance equivalent to or exceeding that required by the code is provided by the proposed design based on the attached engineering judgment analysis stamped by an Oregon registered fire protection engineer.

Appeal item 5

Code Section	703.3
Requires	703.3 Methods for determining fire resistance. The application of any of the methods listed in this section shall be based on the fire exposure and acceptance criteria specified in ASTM E119 or UL 263. The required fire resistance of a building element, component or assembly shall be permitted to be established by any of the following methods or procedures: Fire-resistance designs documented in approved sources. Prescriptive designs of fire-resistance-rated building elements, components or assemblies as prescribed in Section 721. Calculations in accordance with Section 722. Engineering analysis based on a comparison of building element, component or assemblies designs having fire-resistance ratings as determined by the test procedures set forth in ASTM E119 or UL 263. Alternative protection methods as allowed by Section 104.11. Fire-resistance designs certified by an approved agency.
Code Modification or Alternate Requested	This appeal demonstrates 3-hour protection of structural channels at the existing walls based on the attached engineering analysis.
Proposed Design	Dahlke is a 9-story residential apartment tower of Type IA construction with a 1-story lower story attached community space, located in Portland, Oregon serving low-income residents. It will be under the jurisdictional review of the City of Portland. The proposed scope of work is a 1-story 700 SF addition for a kitchen and break room associated with the Community Room and remodeling of the common spaces. Full NFPA 13 sprinkler system will be provided throughout building. The proposed C-Channel of C12x30 members located against the existing walls (see attached engineering judgment letter) Per 2019 OSSC table 601, primary structural members are required to be minimum 3 hr. fire rated for the construction type. It is assumed that the beam will be exposed to fire on the left side and the assembly will require continuous protection from three sides. During this evaluation, UL test N505 was considered, where the minimum required W/D ratio (0.704) is less than the proposed W/D ratio (1.26). The tested beam utilizes 3 layers of 5/8” minimum of Type X gypsum board protecting the beam to provide 3-hour fire-resistance (Figure 2). The proposed C-Channel has greater inherent fire-resistance and is additionally protected in the same thickness of Type X gypsum wallboard to provide greater or equivalent protection to the 3-hour fire rated UL N505 beam. Reference attached 3HR rated C-Channel EJ#1B for design details. This is an alternate assembly to 3HR rated C-Channel EJ#1A where conditions may require an alternate assembly.
Reason for alternative	This appeal demonstrates that fire resistance equivalent to or exceeding that required by the code is provided by the proposed design based on the attached engineering judgment analysis stamped by an Oregon registered fire protection engineer.

APPEAL DECISION

1. Corridor exit access doors on floors 2-9 with locking hardware on non-egress side: Granted provided door is unlocked upon activation of Fire alarm and provided door hardware is verified at time of plan review.

2. Alternate 3 hour fire rated structural channel assembly with engineering analysis: Hold for additional information. See note below regarding the process for submitting additional information.

3. Alternate 2 hour fire rated HSS beam assembly with engineering analysis: Denied. Proposal does not provide equivalent LIfe Safety protection.

4. Alternate 2 hour fire rated penetration of floor / ceiling assembly by breakroom range exhaust duct with engineering analysis: Granted as proposed for specific location addressed in E.J. letter.

5. Alternate 3 hour fire rated structural channel assembly with engineering analysis: Hold for additional information. See note below regarding the process for submitting additional information.

Appellant may contact John Butler (503 865-6427) or e-mail at John.Butler@portlandoregon.gov with questions.

For Items 1, 3, 4: 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.

For Items 2, 5: 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.

GENERAL INFORMATION

SUMMARY OF WORK

Dahlke is a 9-story residential apartment tower with 1-story lower story attached community space, located in Portland, Oregon serving low-income residents. The proposed scope of work is a one story 700 SF addition for a kitchen and break room associated with the Community Room. The existing kitchen and restrooms are being converted to a new laundry room and restrooms, and the existing office areas are being remodeled. Within the tower portion of the building, the existing laundry room is being converted to a new trash room, the existing trash room is being converted to recycling and bike storage. Corridors will receive new ACT ceilings, new light, and new exit signage. All dwelling units will receive new flooring, cabinets, counters, and plumbing fixtures. Six existing 1st floor dwelling units will be remodeled into Type A Dwelling Units. A new enclosed exterior patio area is being constructed outside the Community Room to the west, and a new parking area is being created at the north side of the site. A new generator being installed in an exterior enclosure and the existing generator room will create a bike storage room.
The building will remain occupied during construction in compliance with all applicable requirements of City of Portland Engineering Guide #1. 2

PROJECT ADDRESS

915 NE SCHUYLER ST, PORTLAND, OR 97212

BUILDING DESCRIPTION

MULTI-FAMILY - 115 UNITS
Building is part of the City of Portland Chapter 13 program per folder # 00-179658-SY. Appeal #24416 has granted removed from Chapter 13 status.

ZONING

BASE	RM3 - HIGH DENSITY RESIDENTIAL 2
OVERLAY	d - DESIGN
BASE OVERLAY COMBINATION	RM3d
COMP PLAN	MD-U - MULTI-DWELLING - URBAN CENTER
HISTORIC DISTRICT	IRVINGTON HISTORIC DISTRICT
CLASSIFICATION	NON-CONTRIBUTING
PLAN DISTRICT	n/a
URBAN RENEWAL DISTRICT	n/a
BUSINESS DISTRICT	n/a

APPLICABLE CODES (102.4)

DISCIPLINE	CODE TITLE	EDITION
BUILDING	OREGON STRUCTURAL SPECIALTY CODE (OSSC) BASED ON THE 2018 INTERNATIONAL BUILDING CODE (IBC)	2019
2	INTERNATIONAL EXISTING BUILDING CODE (IEBC) AS MODIFIED BY CHAPTER 34 OF THE 2019 OSSC - PERSCRIPTIVE COMPLIANCE METHOD (IEBC 301.3.1 & IEBC CHAPTER 5)	2018
MECHANICAL	OREGON MECHANICAL SPECIALTY CODE (OMSC) BASED ON THE 2018 INTERNATIONAL MECHANICAL CODE (IMC)	2019
PLUMBING	OREGON PLUMBING SPECIALTY CODE (OMSC) BASED ON THE 2015 UNIFORM PLUMBING CODE	2017
ELECTRICAL	OREGON ELECTRICAL SPECIALTY CODE (OESC) BASED ON THE 2017 NATIONAL ELECTRIC CODE (NEC) WITH STATE AMENDMENTS	2017
ENERGY	OREGON ZERO ENERGY READY COMMERCIAL CODE ANSI/ASHRAE/IES STANDARD 90.1	2019 2016
FIRE	PORTLAND FIRE CODE BASED ON THE 2012 INTERNATIONAL FIRE CODE AND THE 2014 OREGON FIRE CODE	2016
ACCESSIBILITY	OREGON STRUCTURAL SPECIALTY CODE (OSSC) ICC A117.1	2019 2009

LAND USE TYPE III REVIEW DECISION

UNANIMOUS APPROVAL FOR LU 20-125955 HRM AD WITH MODIFICATION AND ADJUSTMENT

Staff recommends approval.
A. As part of the building permit application submittal, the following development related conditions (B through C) must be noted on each of the 4 required site plans or included as a sheet in the numbered set of plans. The sheet on which this information appears must be labeled "ZONING COMPLIANCE PAGE - Case File LU 20-125955 HDZM AD". All requirements must be graphically represented on the site plan, landscape, or other required plan and must be labeled "REQUIRED."
B. At the time of building permit submittal, a signed Certificate of Compliance form (https://www.portlandoregon.gov/bds/article/623658) must be submitted to ensure the permit plans comply with the Historic Resource Review decision and approved exhibits.
C. NO FIELD CHANGES ALLOWED.

Adjustment to Portland Zoning Code (PZC) 33.266.110.B.1.a.(4) g
Granted to reduce the number of on-site parking spaces from the current 28 to 24.

Modification to 33.266.130.G.3, Interior Parking Lot Landscaping
Granted to provide less than the required 45 square feet of interior parking lot landscaping per each parking space. The proposal will be providing approximately 65% of the total interior parking lot landscaping that is required for the new parking lots.

DEFERRED SUBMITTALS / DELEGATED DESIGN

ITEM	DEFERRED SUBMITTAL	DELEGATED DESIGN	NOTES
PLUMBING	YES	YES	REQUIRES SEPARATE TRADE PERMIT.
ELECTRICAL	YES	YES	REQUIRES SEPARATE TRADE PERMIT.

DEFERRED SUBMITTALS ARE NOT INCLUDED IN BUILDING PERMIT. DRAWINGS AND CALCULATIONS ARE REQUIRED TO BE STAMPED BY ENGINEER REGISTERED IN THE STATE OF OREGON, AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO SUBMITTING TO THE BUREAU OF DEVELOPMENT SERVICES FOR REVIEW.

SEPARATE FIRE PROTECTION REQUIREMENTS

GENERAL CONTRACTOR SHALL OBTAIN PERMITS FOR THE FOLLOWING FIRE PROTECTION REQUIREMENTS FROM THE FIRE MARSHALL

FIRE PROTECTION/ FULL NFPA 13 SPRINKLER SYSTEM PROVIDED THROUGHOUT BUILDING
FIRE DETECTION AND ALARM SYSTEM
GENERATOR/ABOVE GROUND FUEL STORAGE
TYPE 1 HOOD FIXED FIRE EXTINGUISHING SYSTEM (PERMIT TO BE OBTAINED FROM FIRE MARSHAL'S OFFICE) 2

DETAILS CONTAINED WITHIN THIS BUILDING PERMIT DOCUMENTATIONS RELATED TO THE ABOVE SYSTEMS ARE FOR REFERENCE ONLY.

ADMINISTRATIVE REQUIREMENTS

CONSTRUCTION DOCUMENTS	LOCATION IN CONSTRUCTION DOCS
MEANS OF EGRESS: INDICATE LOCATION, CONSTRUCTION, SIZE AND CHARACTER OF ALL PORTIONS OF MEANS OF EGRESS.	G110 - G112
EXTERIOR WALL ENVELOPE: DESCRIBE THE WALL ENVELOPE IN SUFFICIENT DETAIL TO DETERMINE COMPLIANCE WITH THE CODE	A010
SITE PLAN: INDICATE BUILDING LOCATION RELATIVE TO LOT LINES, STREET GRADES, FINISHED GRADES AND, IF APPLICABLE, FLOOD PLANES OR ZONES. INCLUDE EXCAVATION AND FILL AS WELL AS DRAINAGE.	A102

INSPECTIONS:	LOCATION IN CONSTRUCTION DOCS
INSPECTIONS ARE REQUIRED AT VARIOUS STAGES OF CONSTRUCTION AND WORK MAY NOT BE COVERED UNTIL APPROVED. REFER TO SECTIONS 110.3.9 AND CHAPTER 17 FOR SPECIAL INSPECTIONS.	S002

ALLOWABLE AND PROPOSED BUILDING HEIGHTS AND AREAS

CHAPTER 5

CONSTRUCTION TYPE: IA, SPRINKLERED NONSEPARATED
OCCUPANCIES BASED ON R-2 **OCCUPANCY: R-2, A-3, B**

BLDG HEIGHT / AREA TABLE (503)	OCCUPANCY	ALLOWABLE	EXISTING	PROPOSED
BUILDING HEIGHT	R-2	UL	100 FT [a]	100 FT [a]
	A-3	UL	10 FT [a]	10 FT [a]
	B	UL	10 FT [a]	10 FT [a]
	S-1	UL	100 FT [a]	100 FT [a]
NUMBER OF STORIES		UL	9	9
BUILDING AREA		2 UL	77,865 SQFT	78,626 SQFT

BUILDING AREA	ALLOWABLE	EXISTING	PROPOSED
LEVEL 1	UL	11,990 SQFT	12,748 SQFT
LEVEL 2	UL	8,234 SQFT	8,234 SQFT
LEVEL 3	UL	8,234 SQFT	8,234 SQFT
LEVEL 4	UL	8,234 SQFT	8,234 SQFT
LEVEL 5	UL	8,234 SQFT	8,234 SQFT
LEVEL 6	UL	8,234 SQFT	8,234 SQFT
LEVEL 7	UL	8,234 SQFT	8,234 SQFT
LEVEL 8	UL	8,234 SQFT	8,234 SQFT
LEVEL 9	UL	8,234 SQFT	8,234 SQFT
TOTAL	UL	77,862 SQFT	78,626 SQFT

[a] EXISTING CONDITION TO REMAIN, NO INCREASES IN BUILDING HEIGHT PROPOSED.

USE/OCCUPANCY(S)

CHAPTER 3

RESIDENTIAL: PRIMARY OCCUPANCY R-2, OTHER OCCUPANCIES A-3, B, AND S-1

CONSTRUCTION TYPE(S)

CHAPTER 6

CONSTRUCTION CLASSIFICATION	IA
SPECIAL PROVISIONS	NONE
SPRINKLERED	YES - FULLY SPRINKLERED THROUGHOUT ENTIRE BUILDING
SYSTEM	THE ENTIRE BUILDING WILL BE SPRINKLED THROUGHOUT WITH A FULL NFPA 13 SPRINKLER SYSTEM. 3

CONSTRUCTION TYPE, HEIGHT, + EXTERIOR WALL FIRE RESISTANCE REQ

CHAPTERS 6 & 7

FIRE RESISTIVE REQUIREMENTS BASED ON CONSTRUCTION TYPE (TABLE 601)

CONSTRUCTION TYPE: 1A	REQUIRED	PROPOSED
PRIMARY STRUCTURAL FRAME	3	3
BEARING WALLS - EXTERIOR	3	3
BEARING WALLS - INTERIOR	3	3
NONBEARING WALLS AND PARTITIONS - EXTERIOR	PER TABLE 602	PER TABLE 602
NONBEARING WALLS AND PARTITIONS - INTERIOR	0	0
FLOOR CONSTRUCTION	2	2
ROOF CONSTRUCTION	1 1/2	1 1/2, 2 2

FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE (TABLE 602)

FIRE SEPARATION DISTANCE = X (FEET)	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2, S-3, U
X < 5	1
5 ≤ X < 10	1
10 ≤ X < 30	1
X ≥ 30	0

ALLOWABLE AREA OF OPENINGS PER STORY (705.8)

WALL LOCATION	NORTH	SOUTH	EAST	WEST	EAST COURT	WEST COURT
FIRE SEPARATION DISTANCE PROVIDED[a]	40 FEET	44 FEET	40 FEET	75 FEET	24 FEET	24 FEET
MAXIMUM AREA OF UNPROTECTED OPENINGS[b]	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT	45%	45%
MAXIMUM AREA OF PROTECTED OPENINGS[c]	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT
EXISTING AREA OF OPENINGS	403 SF	616 SF	3,768 SF	0SF	20 SF (3%)	3,403 SF (25%)
PROPOSED AREA OF OPENINGS	338 SF	NO CHANGES	NO CHANGES	171 SF	81 SF (11%)	3,420 SF (25%)

[a] DISTANCES ARE MEASURED TO CENTER OF RIGHT-OF-WAY OR PROPERTY LINE
[b] BASED ON VALUES IN TABLE 705.8 FOR UNPROTECTED, SPRINKLERED BUILDINGS
[c] NEW OPENINGS PROPOSED ON THE NORTH ELEVATION WILL BE PROTECTED ACCORDING TO SECTION 705.8.2

OPENING PROTECTION AND REQUIRED FIRE-RESISTIVE RATINGS

CHAPTER 7

FIRE DOOR AND SHUTTER FIRE PROTECTION RATINGS (TABLE 716.1(2))

TYPE OF ASSEMBLY	REQUIRED ASSEMBLY RATING (HOURS)	MIN. DOOR / SHUTTER RATING (HOURS)	DOOR /... RATING PROVIDED[a]
FIRE WALLS & BARRIERS GREATER THAN 1-HOUR	4	3	N/A
	3	3	N/A
	2	1.5	N/A
	1.5	1.5	N/A
FIRE BARRIERS:			
SHAFT, EXIT ENCLOSURES, EXIT PASSAGEWAYS	2	1.5	1.5
OTHER FIRE BARRIERS	1	0.75	N/A
FIRE PARTITIONS:			
CORRIDOR WALLS	1	0.33	N/A
	0.5	0.33	0.33
OTHER FIRE PARTITIONS	1	0.75	N/A
	0.5	0.33	N/A
EXTERIOR WALLS:	3	1.5	N/A
	2	1.5	N/A
	1	0.75	N/A
SMOKE BARRIERS	1	0.33	N/A

FIRE WINDOW FIRE PROTECTION RATINGS (TABLE 716.1(3))

TYPE OF ASSEMBLY	REQUIRED ASSEMBLY RATING (HOURS)	MIN. FIRE WINDOW RATING (HOURS)	FIRE WINDOW RATING PROVIDED[a]
INTERIOR WALLS:			
FIRE WALLS	ALL	NOT PERMITTED	N/A
FIRE BARRIERS	> 1	NOT PERMITTED	N/A
	1	NOT PERMITTED	N/A
SMOKE BARRIERS	1	0.75	N/A
FIRE PARTITIONS	0.5	.33	N/A
EXTERIOR WALLS	> 1	1.5	N/A
	1	0.75	N/A
	0.5	.33	
PARTY WALLS	ALL	NOT PERMITTED	N/A

FIRE WALLS FIRE-RESISTIVE RATINGS (TABLE 706.4

OCCUPANCY GROUP	REQUIRED RATING	RATING PROVIDED[a]
A, B, E, H-4, I, R-1, R-2, U	3a	3
F-1, H-3, H-5, M, S-1	3	N/A
H-1, H-2	4b	N/A
F-2, S-2, R-3, R-4	2	N/A

a. In Type II or V construction, walls shall be permitted to have a 2-hour fire-resistance rating.
b. For Group H-1, H-2 or H-3 buildings, also see Sections 415.7 and 415.8.

FIRE BARRIER FIRE-RESISTIVE RATINGS (707.3)

LOCATION	REQUIRED RATING	RATING PROVIDED[a]
SHAFT ENCLOSURES (713.4)	2-HR	3-HR
INTERIOR EXIT STAIRS/RAMPS (1022.2)	2-HR	3-HR
INTERIOR ACCESS STAIRWAYS	2-HR	3-HR
EXIT PASSAGEWAY (1023.3)	2-HR	3-HR
HORIZONTAL EXIT (1025.2)	2-HR	3-HR
SEPARATED OCCUPANCIES (TABLE 508.4)	SEE TABLE	N/A
FIRE AREAS (TABLE 707.3.10)	SEE TABLE	N/A

FIRE PARTITIONS FIRE-RESISTIVE RATINGS...

LOCATION	REQUIRED RATING	RATING PROVIDED[a]
WALLS SEPARATING DWELLING UNITS (420.2)	1-HR	2-HR
CORRIDOR WALLS (1020.1)	0.5 HR	1-HR MIN
ELEVATOR LOBBY WALLS (713)	2-HR	3-HR

HORIZONTAL ASSEMBLIES FIRE-RESISTIVE RATINGS (711.3)

REQUIREMENT	REQUIRED RATING	RATING PROVIDED[a]
ROOF CONSTRUCTION & ASSOCIATED SECONDARY MEMBERS	1.5 HR @ TYPE IA	1.5 HR MIN
SEPARATING OCCUPANCIES (508.4)	N/A	N/A
SEPARATING FIRE AREAS (707.3.10)	N/A	N/A
DWELLING OR SLEEPING UNITS (420.3)	1-HR	1.5 HR

[a] EXISTING CONDITIONS NOT ALTERED 2

ENVELOPE REQUIREMENTS

CHAPTERS 13 AND 15

ENERGY CONSERVATIONS

PROVIDED PER CHAPTERS 13 AND 34 OF THE OSSC AND ASHRAE STANDARD 90.1-2016
AT EXISTING - NO CHANGES PROPOSED
AT NEW - ASSEMBLIES PROVIDED PER TABLES SECTION 5.5 of ASHRAE 90.1
COMPLIANCE PATH FOLLOWED: ASHRAE 90.1-2016 SECTION 5, 6, 7, 8, 9, AND 10
BUILDING ENVELOPE COMCHECK FORMS PROVIDED 2

PER TABLE 5.5-4	REQUIRED NON-RES/RES	PROVIDED NON-RES/RES
ROOFS		
INSULATION ENTIRELY ABOVE DECK	R-30ci	MIN R-30ci
WALLS		
ABOVE GRADE, MASS	R-9.5ci/R-11.4ci	MIN R-9.5ci/R-11.4ci
ABOVE GRADE, STEEL FRAMED	R-13 + R-7.5ci	MIN R-13 + R-7.5 ci
BELOW GRADE	R-7.5ci/ R-10ci	MIN R-7.5ci/ R-10ci
FLOORS		
SLAB-ON-GRADE, UNHEATED	R-15 FOR 24in	MIN R-15 FOR 24in
FENESTRATION		
METAL FRAMING, FIXED		
MAX U	0.38	MAX 0.38
MAX SHGC	0.36	MAX 0.36
MIN VT/SHGC	1.10	MIN 1.10
METAL FRAMING, OPERABLE		
MAX U	0.46	MAX 0.46
MAX SHGC	0.36	MAX 0.36
MIN VT/SHGC	1.10	MIN 1.10
METAL FRAMING, DOOR		
MAX U	0.68	MAX 0.68
MAX SHGC	0.36	MAX 0.36
MIN VT/SHGC	1.10	MIN 1.10

ROOFING REQUIREMENTS

FIRE CLASSIFICATION (TABLE 1505.1)	B
WIND EXPOSURE	B
BASIC WIND SPEED	120 MPH

INTERIOR ENVIRONMENT

CHAPTER 12

VENTILATION
OCCUPIED ROOMS
PROVIDED PER 1202.5 NATURAL VENTILATION

TOILET & BATHROOMS
MECHANICALLY VENTED PER SECTION 1202.5.2.1

LIGHTING
NATURAL LIGHTING
PROVIDED PER SECTION 1204.2 (NO CHANGES PROPOSED)

SOUND TRANSMISSION (1206.2 AND 1206.3)

	REQUIRED	PROPOSED[a]
STC: DWELLING UNIT SEPARATIONS (WALLS, PARTITIONS, FLOOR/CEILING ASSEMBLIES)	50 (45 FIELD)	50
IIC: DWELLING UNIT SEPARATIONS (FLOOR/CEILING ASSEMBLIES)	50 (45 FIELD)	50

[a]NO CHANGES PROPOSED AT EXISTING

STANDBY AND EMERGENCY POWER SYSTEMS

CHAPTER 4

ONSITE GENERATOR LOCATED IN EXTERIOR ENCLOSURE PROVIDED FOR EMERGENCY AND STANDBY POWER OF THE FOLLOWING SYSTEMS AS REQUIRED BY SECTION 403.4.8.
ELEVATORS
FIRE ALARMS, EGRESS LIGHTS (CORRIDOR, LOBBY, ELEVATOR, STAIRS, EXIT LIGHTS), ELECTRONIC ENTRY DOORS
2

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DAHLKE MANOR RENOVATION

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Owner:
Home Forward
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Revisions:

No.	Description	Date
2	CHECKSHEET REVISIONS	11/20/2020
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MEANS OF EGRESS

CHAPTER 10

MAX FLOOR AREA ALLOWANCE PER OCCUPANT FUNCTION OF SPACE	*TABLE 1004.5* OCCUPANT LOAD FACTOR	DEAD ENDS (MAXIMUM)	*SECTION 1020.4*
ACCESSORY STORAGE, MECHANICAL, EQUIPMENT	300 GROSS	WITH SPRINKLER SYSTEM GROUPS B, R-2, AND S GROUP A	 50 FT 20 FT
ASSEMBLY WITHOUT FIXED SEATS - UNCONCENTRATED	15 NET	WITHOUT SPRINKLER SYSTEM GROUPS A, B, R-2, AND S	 20 FT
BUSINESS	150 GROSS	**LENGTH PROVIDED**	**SEE G111 TO G112**
RESIDENTIAL	200 GROSS		

EXIT ACCESS TRAVEL DISTANCE (MAXIMUM)	*TABLE 1017.2*	COMMON PATH OF EGRESS TRAVEL (MAXIMUM)	*TABLE 1006.2.1*
WITH SPRINKLER SYSTEM GROUP B GROUPS A-3, R-2, AND S	 300 FT 250 FT	WITH SPRINKLER SYSTEM GROUP A-3 GROUP B GROUP R-2 GROUP S	 75 FT 100 FT 125 FT 100 FT
WITHOUT SPRINKLER SYSTEM GROUPS A-3, B, R-2, AND S	 200 FT	WITHOUT SPRINKLER SYSTEM GROUP A-2 GROUP B GROUP R-2 GROUP S	 75 FT / 75 FT 100 FT / 75 FT NP / NP 100 FT / 75 FT
EXIT ACCESS DISTANCE PROVIDED	**SEE G111 TO G112**	**COMMON PATH OF TRAVEL PROVIDED**	**SEE G111 TO G112**

CORRIDOR C107 IS NOTE USED AS A RETURN AIR PLENUM 2

FIRESTOPPING

CHAPTER 7

(SECTION 718.2) THE GENERAL CONTRACTOR SHALL SCHEDULE A FIRESTOPPING MEETING WITH THE BUILDING INSPECTOR AND ALL SUBCONTRACTORS THAT WILL BE INSTALLING FIRESTOPPING MATERIALS. EACH SUBCONTRACTOR WILL PROVIDE A LIST OF FIRESTOP MATERIALS/ASSEMBLIES WHICH WILL BE USED, THE TYPE OF PENETRATIONS WHERE EACH MATERIAL/ASSEMBLY WILL BE USED; AND THE LISTING AND APPROVAL INFORMATION (I.E. UL, ICC OR OTHER APPROVED REPORT/LISTING NUMBERS.) THIS INFORMATION MUST BE SUBMITTED TO, AND APPROVED BY, THE BUILDING INSPECTOR PRIOR TO ANY INSTALLATION.

PARKING REQUIREMENTS

CHAPTER 33 (PORTLAND ZONING CODE)

BICYCLE PARKING (TABLE 266-6)			VEHICLE PARKING (SECTION 33.266.110B)	
	SPACES REQUIRED	SPACES PROVIDED	SPACES REQUIRED	SPACES PROVIDED
SHORT TERM	1 PER 20 UNITS (6 TOTAL)	6	0.33 SPACES PER DWELLING UNIT (38 TOTAL)	24 (APPROVED PER 2020-125955-LU)
LONG TERM	1 PER 8 UNITS (15 TOTAL)	15		

PLUMBING FIXTURE REQUIREMENTS

CHAPTER 29 AND PLUMBING CODE

REQUIREMENTS PER TABLE 2902.1	WATER CLOSETS			LAVATORIES		BATHTUBS/SHOWERS		DRINKING FOUNTAINS	
	MALE	FEMALE	MALE	FEMALE						
	REQUIRED		PROVIDED		REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
LEVELS 1-9										
R-2: UNITS/CIRC (461 OCCUPANTS)	1/DWELLING		1/DWELLING		1/DWELLING	1/DWELLING	1/DWELLING	1/DWELLING		
LEVELS 1-9										
A-3 (234 OCCUPANTS)	1 PER 125 = .94	1 PER 65 = 1.8			1 PER 200 = 1.17		-		1 PER FLOOR	1
R-2: LOBBY (16 OCCUPANTS)	1 PER 125 = .06	1 PER 65 = .12			1 PER 200 = .08					
B (10 OCCUPANTS)	1 PER 25 = .2	1 PER 25 = .2			1 PER 40 = .25					
S-1 (18 OCCUPANTS)	1 PER 100 = .09	1 PER 100 = .09			1 PER 100 = .18					
TOTAL	**1.29 (2 ROUNDED)**	**2.11 (3 ROUNDED)**	**2 WATER CLOSETS**		**1.68 (2 ROUNDED)**	**2 LAVATORIES**		**1 SHOWER**		**1 DRINKING FOUNTAIN**

DUCTS AND TRANSFER OPENINGS

CHAPTER 7

REQUIRED FIRE DAMPER RATINGS (TABLE 717.3.2.1)

TYPE OF PENETRATION	MINIMUM RATING (HOURS)
LESS THAN 3-HOUR FIRE-RESISTANCE-RATED ASSEMBLIES	1.5
3-HOUR OR GREATER FIRE-RESISTANCE-RATED ASSEMBLIES	3

THROUGH-PENETRATIONS OF HORIZONTAL ASSEMBLIES (717.6.1, EXCEPTION)

A DUCT IS PERMITTED TO PENETRATE THREE FLOORS OR LESS WITHOUT A FIRE DAMPER AT EACH FLOOR PROVIDED SUCH DUCT MEETS ALL OF THE FOLLOWING REQUIREMENTS

1	THE DUCT SHALL BE CONTAINED AND LOCATED WITHIN THE CAVITY OF A WALL AND SHALL BE CONSTRUCTED OF STEEL HAVING A MINIMUM WALL THICKNESS OF 0.187 INCHES (NO. 26 GAGE)
2	THE DUCT SHALL OPEN INTO ONLY ONE DWELLING UNIT OR SLEEPING UNIT AND THE DUCT SYSTEM SHALL BE CONTINUOUS FROM THE UNIT TO THE EXTERIOR OF THE BUILDING.
3	THE DUCT SHALL NOT EXCEED 4-INCH NOMINAL DIAMETER AND THE TOTAL AREA OF SUCH DUCTS SHALL NOT EXCEED 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF GROSS FLOOR AREA.
4	THE ANNULAR SPACE AROUND THE DUCT IS PROTECTED WITH MATERIALS THAT PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTM E 119 OR UL 263 TIME-TEMPERATURE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 Pa) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE CONSTRUCTION PENETRATED.
5	GRILLE OPENINGS LOCATED IN A CEILING OF A FIRE-RESISTANCE-RATED FLOOR/CEILING ASSEMBLY SHALL BE PROTECTED WITH A LISTED CEILING RADIATION DAMPER INSTALLED IN ACCORDANCE WITH SECTION 717.6.2.1

ACCESSIBILITY IMPROVEMENTS

CHAPTERS 11 AND 34 AND ANSI 117.1

AN ACCESSIBLE ROUTE WILL BE PROVIDED TO ALL PRIMARY FUNCTION SPACES IN ACCORDANCE WITH CHAPTERS 11 AND 34 AND ANSI 117.1

ACCESSIBLE UNITS PROVIDED IN ACCORDANCE WITH CHAPTERS 11 AND 34 AND ANSI 117.1

TYPE A UNITS: 2% OF 115 = 3 TOTAL REQUIRED PER § 3411.8.8 AND § 1107.6.2.1.1., 6 PROVIDED.

ACCESSIBLE UPGRADES (ORS 447.241)

PARKING	2 ACCESSIBLE PARKING SPACES PROPOSED TO REPLACE 2 EXISTING ACCESSIBLE SPACES
ENTRANCE	EXISTING ENTRANCE IS FULLY ACCESSIBLE, PROPOSED NEW ENTRY DOORS WILL MEET ACCESSIBILITY REQUIREMENTS.
ROUTE TO ALTERED AREA	ACCESSIBLE ROUTE TO ALTERED AREAS PROVIDED.
RESTROOM	TWO ACCESSIBLE UNISEX RESTROOMS PROVIDED AT LEVEL 1
TELEPHONE	NO CHANGES PROPOSED
DRINKING FOUNTAIN	1 ACCESSIBLE FOUNTAIN PROVIDED AT LEVEL 1
STORAGE/ALARMS	NO CHANGES PROPOSED

APPEALS

APPEAL ID	ITEM NO.	APPROVED	DECISION
23934	1	YES	Roof replacement with reduction in minimum required R value for 1,565 SF to meet drainage requirements....
	2	YES	Reduction in minimum required headroom from 6 feet 8 inches to 6 feet 2 inches at an access door to an unoccupied roof: Granted as proposed.
24228	1	YES	Reduction in minimum required number of plumbing fixtures; Granted as proposed for this use and configuration.
24416	1	YES	Alterations to Chapter 13 building: Granted provided Life Safety check sheet items are satisfactorily addressed prior to approval of life safety plan review.
	2	YES	Use of combined subduct exhaust system to serve both kitchen and bathroom exhaust: Granted provided the subduct riser shown on Detail 11 of sheet M3.1 is of minimum 26 gage steel...
	3	YES	Removal of building from Chapter 13 status: Granted provided Life Safety check sheet items are satisfactorily addressed prior to approval of life safety plan review.

APPEAL 23934 / ITEM 1:
Code provisions: ANSI/ASHRAE/IES Standard 90.1 Building envelope requirements. Roof insulation entirely above deck to be R-30 continuous insulation.

Proposed design:
This appeal applies to the 9-story tower of Dahlke Manor that requires re-roofing and is 7500 SF. The proposed re-roof will remove existing roof membrane and insulation and replace it with continuous tapered polyiso insulation and SBS roofing. The existing roof structure is a concrete deck with approximately slope to 1/8" slope.
In order to meet Section 1502 Roof Drainage minimum slope of ¼"per foot and avoid impacting roof access doors, the insulation will not meet R-30 across the entire roof. The design proposes reduced R-values on the north portion of the roof in order to decrease impact on the existing roof doors. The insulation will need to taper from 1.5" at the drains to 11.5" at its highest ridge. This will result in an approximate 1,565 SF of the roof that will have under R-30 roof insulation. However, the total area of the new insulation that will exceed R-30 will be approximately 80% of the roof area and will be as much as R-60 at the highest points. This proposed design will still impact the south roof access door at the elevator penthouse which will need to be decrease in height to a 74" tall door – see appeal to 1010.1.1 door height.

Reason for alternate:
The roof replacement at Dahlke Manor cannot meet the prescriptive measures of the Energy Code's minimum R-30 in all areas due to existing roof access door sill heights, constraints to move these doors, and necessary increase in slope to ¼"per foot from the existing condition of approximately 1/8"per foot. The result is 20% of the roof area around the north drain of the tower will be less than R-30, however the average R-value exceeds what is required by code. Therefore, the applicant is requesting an exception to ANSI/ASHRAE/IES Standard 90.1 as proposed above and shown in attached drawing set. In addition to exceeded overall average continuous R-value, 3404.1 states "Alterations shall be such that the existing building or structure is no less complying that with the provision of this code than the existing building or structure was prior to the alteration" and the proposed design exceeds the existing condition. Additionally, this portion of the existing building is the concrete residential tower with limited ¾" rigid insulation on exterior walls that is original to the building. The additional insulation will have little impact on the overall building's energy usage. The lower story building will be meeting R-30.

APPEAL 23934 / ITEM 2:
Code provisions: 1010.1.1 Size of Doors. The minimum clear opening height of doors shall be not less than 80 inches (2032 mm).

Proposed design:
The sill of the south roof access door at the elevator penthouse will need to be increased in order to provide roof insulation and allow for increase in roof slope to meet code of ¼" / 12" slope. This will result in decrease in the height of the door to a 74" tall door. See related appeal to the energy code that also reduces overall R-value of the roof in order to decrease greater impacts on this door.

Reason for alternate:
In order to meet minimum slope of ¼"per foot and meet R-30 across the entire roof, the south roof access door at the elevator penthouse will need to be decrease in size to a 74" tall door. The door cannot be moved up in elevation due to the structure of the penthouse mechanical roof floor that is located above the head of this door. The roof is unoccupied and this door will only be used by few occupants, such as maintenance workers.

APPEAL 24228/ ITEM 1:
Code Section
Table 2902.1, 2902.2 Separate facilities., 2902.3 Employee and public toilet facilities. Table 2902.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES. R-2 (apartment house) occupancies are required to have at least one water closet, lavatory and bathtub/shower per dwelling unit.)

Proposed design:
The proposed project is a renovation and addition to a 9-story multifamily building. The building consists of a 9-story tower with dwelling units, and a connected 1-story structure with resident amenities/services. A small < 750 sqft addition is proposed in order to expand the community room and kitchen.
Spaces on the first floor include a community room (A-3 occupancy), an outdoor patio adjacent to the community rooms (A-3 occupancy), offices for property management/resident services (B occupancy), a kitchen (B occupancy), a maintenance room (S-1).
In the R-2 spaces, residential plumbing and bathing facilities for dwelling units will be provided as required in table 29.02.1, with a minimum of 1 per dwelling unit. It is assumed that residents of the building will use the facilities in their own dwelling units.
Areas that accommodate use by non-residents include the property manager/resident services offices, the maintenance room, the kitchen, and the break room. These spaces require public facilities. A single staff unisex toilet is provided on Level 1 and provides the required fixture count for the occupants served.
The community room, and community patio are not open to the public – and intended only for use by residents (and their guests). A single unisex toilet is provided adjacent to the community room for the convenience of the residents. Both new proposed facilities meet accessibility requirements and are an improvement to the existing condition. Reference A110A Plumbing Plan for more information regarding the proposed design.

Reason for Alternate:
It is assumed that residents will use the toilet facilities in their dwelling units. The community room, patio, and other resident amenities (bike storage, lobby, laundry room, etc.) are only for use by residents (and their guests). Therefore, these spaces are not considered separate occupancies and additional facilities should not be required. A staff unisex toilet will be provided to meet the fixture requirements for the B and S-1 occupancies. Additionally, a unisex toilet is provided to residents for their convenience adjacent to the community room. The existing building has limited space on the ground floor and additional fixtures would be infeasible given the current constraints, programmatic needs, and the space requirements necessary for accessible plumbing fixtures. Given that the staff have their own facility meeting 2902.2, and the residents will typically use the facilities provided in their units, we believe the proposed design of a single unisex toilet adjacent to the community room meets the intent of the code and there is no need to provide additional facilities.
Please see granted precedent appeals 24035, 18880, and 15856.

APPEALS CON'T

APPEAL 24416 / ITEM 1:
Code Section:
Chapter 13 Systematic Inspection Program: Section 1313 of Chapter 13 of the Appendix of the 1973 Edition of the Uniform Building Code

Proposed Design:
Dahlke Manor is a 9 story apartment building in Portland, Oregon serving low-income residents. The proposed scope of work is to reconfigure the ground level spaces to better serve the residents, build a small (<750 sqft addition), replace finishes in the residential units, and convert six of the existing dwelling units to accessible Type A units. The proposed scope of work includes reconfiguration of spaces only on Level 1. The changes are described by level below and illustrated on sheet G111A Proposed 1st FLS , as well as existing conditions shown on G110A Existing 1st Floor FLS and G112 Proposed/Existing 2-9 FLS.

Level 1 and Site:
Site: The existing community patio is being relocated from the north of the building to the west and expanded.
A-3 (Patio): + 93 Occupants
Level 1: Reconfiguration of the ground level to better meet residents needs. One of the existing egress doors across from the main entry is proposed to be removed. Occupants currently have the option of exiting the building to the north or the south. In order to accommodate accessible mail boxes – the mail area has been expanded to infill the existing door. All of the occupants exiting in this area will be redirected to the south door. The changes in occupancies on Level 1 are as follows:
A-3 (Community Room): - 6 Occupants
B (Offices/Kitchen): + 4 Occupants
S-1 (Maintenance, Storage, Etc): +3 Occupants
R-2 (Dwelling Units, Circulation, Lobby, Support): -1 Occupant
Total Level 1 Occupancy Change: No Changes (Existing: 175 | Proposed: 175)
Total Site + Level 1: +93 (Existing: 225 | Proposed: 318)

Levels 2 – 9:
No spatial or occupancy changes proposed.
Levels 2 – 5 Occupancy Change: No Changes (Existing: 52/Floor | Proposed: 52/Floor)

All of the added occupants are located at the outdoor patio, which will be served by two exits.
Reconsideration Text: Reference submitted sheets A150 and A151 RCP Plans that show the existing and proposed location of sprinkler heads throughout the building. Previously submitted drawings did not show all locations of existing sprinkler heads throughout the building, only those in scope for new work. The scope of work will replace existing sprinkler heads and add new sprinklers in common areas and the new addition. The building will be fully sprinklered throughout and meets NFPA 13.

Reason for Alternate:
The proposed design will improve the common spaces for the residents while maintaining code compliant egress. The existing building is fully sprinklered per NFPA 13 as will be all new work. Per Section 3404 all alterations described shall comply with the requirements of the code for new construction. Sufficient egress is provided from all spaces – reference sheet G111A Proposed 1st FLS. The only added occupants are located on the exterior of the building at the patio, which is provided with two code compliant egress gates equipped with panic hardware.

The removal of the existing egress door directly to the north of the main entry will have a minimal impact on exiting. Overall path of travel remains the same and the only change will be to the number of occupants exiting through the main entry. Sufficient width to accommodate the additional occupants is provided – and panic hardware will be provided as required by code at this exit. The existing stair towers will remain the means of egress for the majority of the residents.

Reconsideration text: See attached Chapter 13 inspection documents on file 00-179658-SY that documented all life safety items were 'OK' and the summary stated "no deficiencies noted" (see reference documents). Refer to related appeal below (Item 3) requesting to remove Dahlke Manor from the Chapter 13 list because the building provides code compliant egress, is fully sprinklered, and provides the required fire protection at all assemblies.

APPEAL 24416 / ITEM 2:
Code Section
2019 OSMC 505.5 Common Exhaust System for Domestic Kitchens Located in Multistory Structures

Requires
Where a common multistory duct system is designed and installed to convey exhaust from multiple domestic kitchen exhaust systems, the construction of the system shall be in accordance with all of the following: 12. The common multistory duct system shall serve only kitchen exhaust and shall be independent of other exhaust systems.

Proposed Design:
As allowed by 2019 OSMC 102.6 Additions, Alterations, or Repairs, the existing subduct is being altered. The proposed design meets the requirement of Section 102.6, and Table 403.3.1.1.

New continuous exhaust fans, which are tied to backup power, are being installed on the roof, at existing locations that serve existing subducts. The existing subduct shafts are routed down to from the roof, through the 9th floor down to the 2nd floor. Existing bath fans in residences that are served by the existing subduct shafts are being replaced with new bath fans, with exhaust duct routed to subduct shaft. New exhaust grilles are being installed in the kitchen side of the existing subduct. The exhaust grilles are subducted into the common subduct that also serves bath exhaust.

See attached mechanical plans and subduct detail M3.1.

Reconsideration Text: Reference submitted sheets A150 and A151 RCP Plans that show the existing and proposed location of sprinkler heads throughout the building. Previously submitted drawings did not show all locations of existing sprinkler heads throughout the building, only those in scope for new work. The scope of work will replace existing sprinkler heads and add new sprinklers in common areas and the new addition. The building will be fully sprinklered throughout and meets NFPA 13.

Reason for alternative:
The addition of an exhaust grille to the kitchen area as part of the building remodel/alteration in order to provide kitchen exhaust ventilation in accordance with the Table 403.3.1.1 requirement for 25 cfm (continuous exhaust) for Private dwellings, single and multiple. The exhaust grille is not associated with any cooking appliance.

There is only one existing shaft (2HR fire-rated) located within each dwelling units which this proposed design utilizes to allow for required exhaust of the unit kitchens.

Reconsideration Text: Reference submitted sheets A150 and A151 RCP Plans that show the existing and proposed location of sprinkler heads throughout the building. Each unit is fully sprinklered with 6-7 sprinkler heads and meets NFPA 13.

APPEAL 24416 / ITEM 3:
Code Section
Chapter 13 Systematic Inspection Program: Section 1313 of Chapter 13 of the Appendix of the 1973 Edition of the Uniform Building Code

Code Modification or Alternate Requested
Existing building meets all current life safety requirement, we request the building be removed from the Chapter 13 Building List.

Proposed Design:
Dahlke Manor was built in 1971 and was inspected in 1973 per Chapter 13. The Chapter 13 inspection documents on file 00-179658-SY documented that all life safety items were 'OK' and the summary stated "no deficiencies noted" (see reference documents).

The building is a concrete block high rise, Type 1A construction in accordance with current code OSSC 2019. Reference code analysis sheet G006 and G007 for the building's compliance to current code requirements. The building meets the life safety requirements of two enclosed fire protected egress stairs, has no dead-end corridors, and is fully sprinklered throughout in accordance with NFPA 13. Exit separation distance, exit access travel distance, egress doors, sizing of corridors, and fire protection requirements all meet current code requirements.

The scope of work also includes updating the building's lighting, HVAC systems, common area kitchen, and new backup generator for emergency systems, all to meet current requirements.

The one deficiency noted is that the elevator lobby does not meet the requirements of section 3006.2. Per section 3006.2, because the building is over 75-feet tall, hoistway opening protection is required. The lack opening protection is mitigated by the following: 1) the majority of the building's roof is located at an elevation of 80-feet, just 5-feet below the threshold for requiring opening protection. Additionally, the elevator lobby is located in the center of the building well separated from the egress stairs at either end. See attached building elevation sheets A200-A204 for reference to the building's height.

Reason for alternative
The building meets all life safety requirements with the exception of section 3006. It provides code compliant egress, is fully sprinklered, and provides the required fire protection at all assemblies. Given these factors it should no longer listed as a Chapter 13 building.

2

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DAHLKE MANOR RENOVATION

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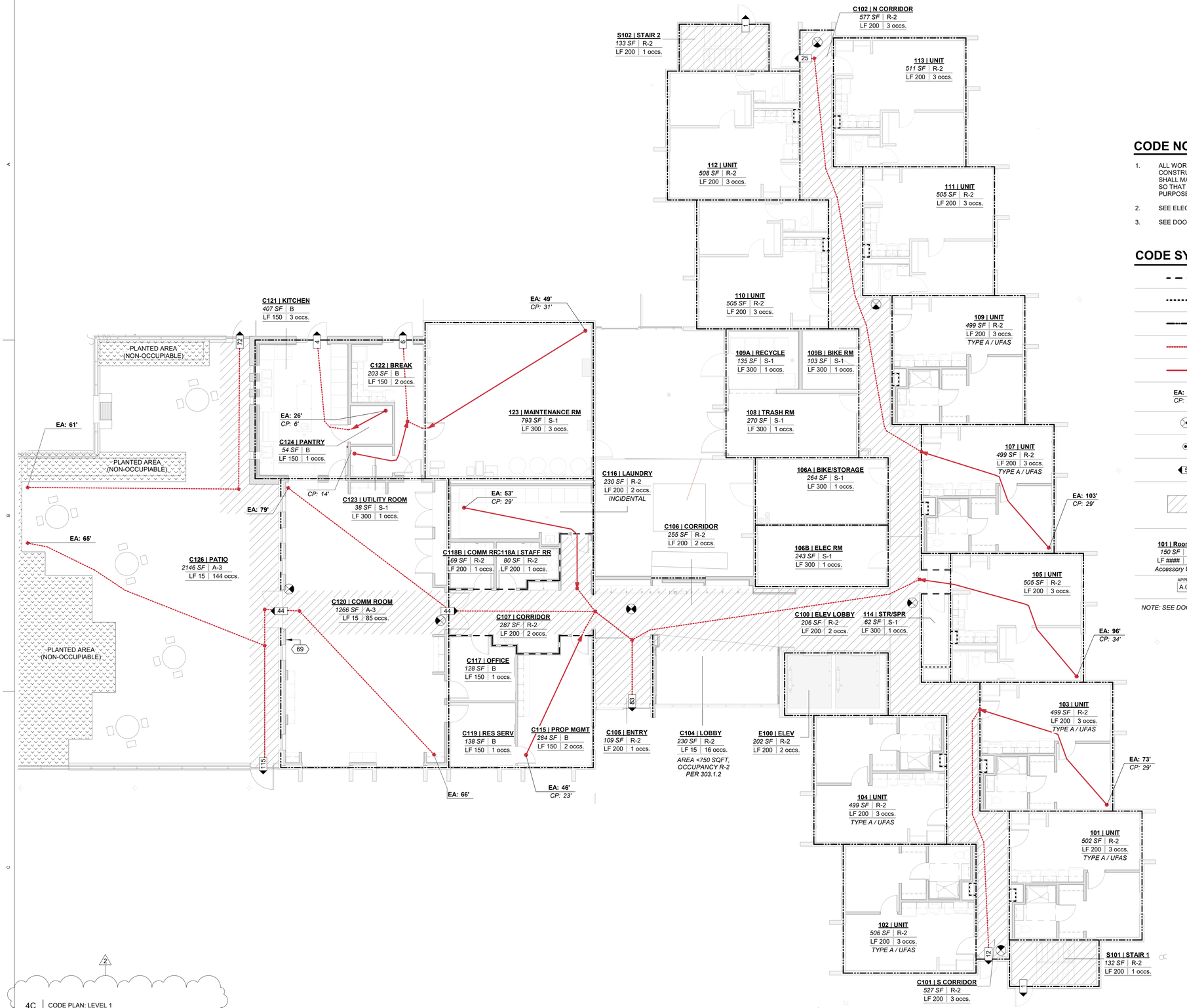

CODE NOTES

1. ALL WORK SHOWN ON THIS SHEET IS INCLUDED IN THE CONTRACT FOR CONSTRUCTION WHETHER SHOWN ELSEWHERE OR NOT. CONTRACTOR SHALL MAKE ALLOWANCES FOR CONNECTION, HOOK UP, ETC. AS REQUIRED SO THAT ITEMS, EQUIPMENT, SIGNAGE, ETC ARE FIT FOR INTENDED PURPOSE.
2. SEE ELECTRICAL PLANS FOR SMOKE DETECTION SYSTEM.
3. SEE DOOR SCHEDULE FOR FIRE RATED DOORS

CODE SYMBOL LEGEND

- 1/2 HOUR FIRE PARTITION REQUIRED/ 1 HOUR FIRE PARTITION PROVIDED (3)
- 2 HOUR FIRE SEPARATION - EXTERIOR AND INTERIOR BEARING WALLS
- 3 HOUR FIRE SEPARATION - EXTERIOR AND INTERIOR BEARING WALLS
- EXIT ACCESS (EA)
- COMMON PATH (CP)
- EA: XX' — TOTAL EXIT ACCESS TRAVEL DISTANCE
  CP: XX' — COMMON PATH OF TRAVEL DISTANCE
- EXIT SIGN
- SMOKE DETECTOR
- 50 — OCCUPANT COUNT
- EGRESS ILLUMINATION - 1FC AT WALKING SURFACE, 44" WIDTH - 90 MIN EMERGENCY POWER SUPPLY

101 | Room Name — ROOM NUMBER | ROOM NAME
150 SF | R-2 — ROOM AREA | OCCUPANCY GROUP
LF #### | 000 occs. — OCCUPANT FACTOR | OCCUPANTS
Accessory Unit-Type — ACCESSORY | INCIDENTAL

APPEAL A.00 — APPEAL ID

NOTE: SEE DOOR SCHEDULE FOR FIRE RATED DOORS

2
4C | CODE PLAN: LEVEL 1
G111 | 0' 6' 12' 18' | (1/8" = 1'-0")

TRUE NORTH

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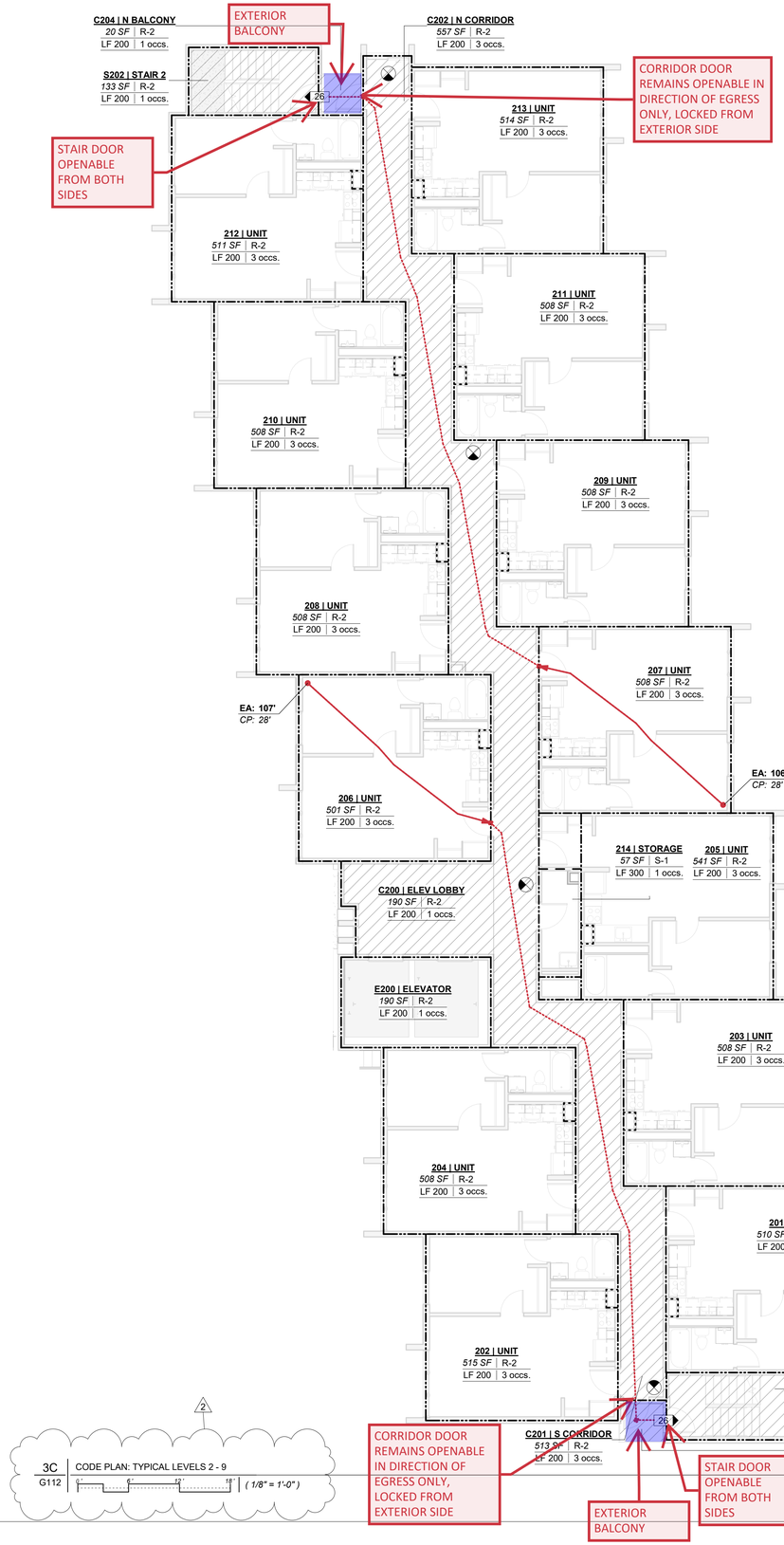
FIRE & LIFE SAFETY PLANS

Sheet Number:
G111



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2. SEE ELECTRICAL PLANS FOR SMOKE DETECTION SYSTEM.
3. SEE DOOR SCHEDULE FOR FIRE RATED DOORS

CODE SYMBOL LEGEND

- - - -	1/2 HOUR FIRE PARTITION REQUIRED/ 1 HOUR FIRE PARTITION PROVIDED
----------	2 HOUR FIRE SEPARATION - EXTERIOR AND INTERIOR BEARING WALLS
————	3 HOUR FIRE SEPARATION - EXTERIOR AND INTERIOR BEARING WALLS
----------	EXIT ACCESS (EA)
————	COMMON PATH (CP)
EA: XX' / CP: XX'	TOTAL EXIT ACCESS TRAVEL DISTANCE / COMMON PATH OF TRAVEL DISTANCE
	EXIT SIGN
	SMOKE DETECTOR
50	OCCUPANT COUNT
	EGRESS ILLUMINATION - 1FC AT WALKING SURFACE, 44" WIDTH - 90 MIN EMERGENCY POWER SUPPLY
101 | Room Name / 150 SF | R-2 / LF ##### | 000 occs. / Accessory Unit-Type	ROOM NUMBER | ROOM NAME / ROOM AREA | OCCUPANCY GROUP / OCCUPANT FACTOR | OCCUPANTS / ACCESSORY | INCIDENTAL
APPEAL A.00	APPEAL ID

NOTE: SEE DOOR SCHEDULE FOR FIRE RATED DOORS

TRUE NORTH

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REGISTERED ARCHITECT 3619 PETER R. MEIJER PORTLAND, OR STATE OF OREGON

DAHLKE MANOR RENOVATION

915 NE SCHUYLER ST, PORTLAND, OR 97212

Owner:
Home Forward
135 SW Ash St Portland, OR 97204

Revisions:

No.	Description	Date
2	CHECKSHEET REVISIONS	11/20/2020

Project Number:
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Sheet Title:
FIRE & LIFE SAFETY PLAN CONT

Sheet Number:
G112

COMMON DOORS

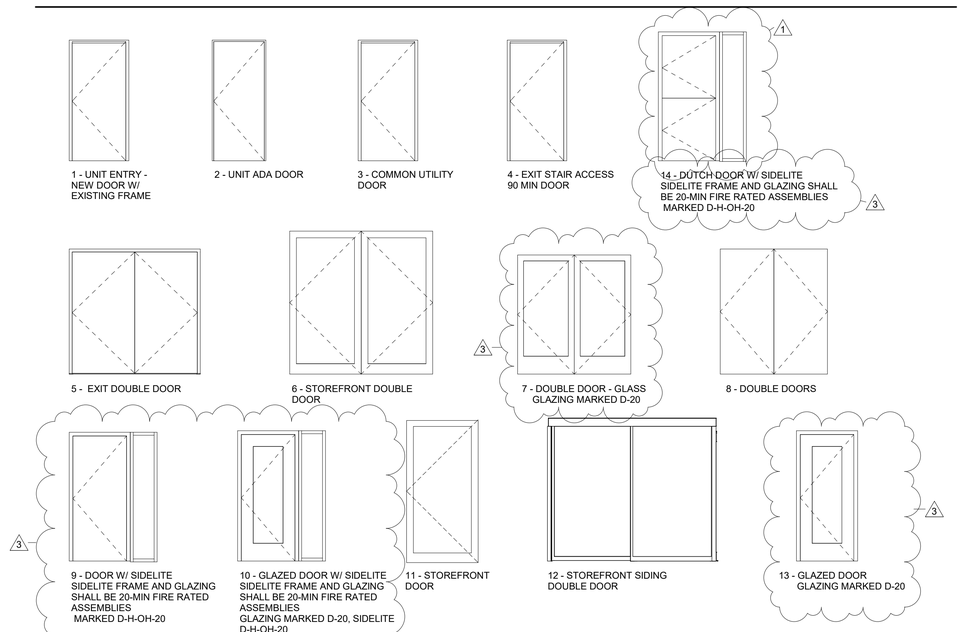
MARK	NO.	ROOM	COMMENTS	WIDTH	HEIGHT	RATING	DOOR PROFILE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	HARDWARE GROUP	NOTES
LEVEL 1													
106A	106A	BIKE/STORAGE	(E) EXT.	4' - 0"	6' - 8"	90 MIN	3	MTL	(E) PAINT	(E) MTL	(E) PAINT	12	
106A-1	106A	BIKE/STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	4	
106B-1	106B	ELEC RM	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	4	
108-1	108	TRASH RM	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	9	
108-2	108	TRASH RM	(N) EXT.	7' - 0"	6' - 8"	NR	5	MTL	P-14	MTL	P-14	12	
109A	109A	RECYCLE	(E) EXT.	4' - 0"	6' - 8"	90 MIN	3	MTL	(E) PAINT	(E) MTL	(E) PAINT	12	
109B	109B	BIKE RM	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	4	
114-1	114	STR/SPR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
114-2	C101	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
120-4	C120	COMM ROOM	(N) EXT.	6' - 3"	7' - 9 1/2"	NR	6	ALUM	ASF-2	ALUM	ASF-2	6	TEMPERED GLASS
123-1	123	MAINTENANCE RM	(N) EXT.	3' - 0"	6' - 8"	NR	4	MTL	P-14	(E)MTL	P-14	12	
C101-1	C101	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C101-2	C102	N CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C105-1	C105	ENTRY	(N) STOREFRONT	9' - 0"	8' - 0"	NR	12	ALUM	ASF-3	ALUM	ASF-3	7	TEMPERED GLASS
C106-1	C105	ENTRY	(N) STOREFRONT	9' - 0"	8' - 0"	NR	12	ALUM	ASF-3	ALUM	ASF-3	15	TEMPERED GLASS
C115-1	C115	PROP MGMT	(N) INT	3' - 0"	7' - 0"	20-MIN	14	WD	ROTARY NATURAL BIRCH	WD	ROTARY NATURAL BIRCH	4	TEMPERED GLASS /DEADBOLT / ELECTRO-MAGNETIC HOLD OPEN (LOW OVER-RIDE SWITCH), SHELF
C116-1	C116	LAUNDRY	(N) INT	3' - 0"	7' - 0"	20-MIN	10	WD	ROTARY NATURAL BIRCH	MTL	P-7	9	TEMPERED GLASS
C117-1	C117	OFFICE	(N) INT	3' - 0"	7' - 0"	20-MIN	13	WD	ROTARY NATURAL BIRCH	MTL	P-7	4	TEMPERED GLASS/ NO CLOSURE
C117-2	C117	OFFICE	(N) INT	3' - 0"	7' - 0"	20-MIN	9	WD	ROTARY NATURAL BIRCH	MTL	P-7	4	TEMPERED GLASS / WALL SPRING STOP
C118A-1	C118A	STAFF RR	(N) INT	3' - 0"	7' - 0"	20-MIN	3	WD	ROTARY NATURAL BIRCH	MTL	P-7	18	
C118B-1	C118B	COMM RR	(N) INT	3' - 0"	7' - 0"	20-MIN	3	WD	ROTARY NATURAL BIRCH	MTL	P-7	18	
C119-1	C119	RES SERV	(N) INT	3' - 0"	7' - 0"	20-MIN	7	WD	ROTARY NATURAL BIRCH	MTL	P-7	4	TEMPERED GLASS/ DEADBOLT
C119-2	C119	RES SERV	(N) INT	3' - 0"	7' - 0"	20-MIN	3	WD	ROTARY NATURAL BIRCH	MTL	P-7	8	
C120-1	C120	COMM ROOM	(N) INT	6' - 4"	6' - 8"	20-MIN	7	WD	ROTARY NATURAL BIRCH	MTL	P-7	13	TEMPERED GLASS
C120-2	C120	COMM ROOM	(N) INT	6' - 0"	7' - 0"	NR	8	WD	ROTARY NATURAL BIRCH	MTL	P-7	10	
C120-3	C120	COMM ROOM	(N) INT	6' - 0"	7' - 0"	NR	8	WD	ROTARY NATURAL BIRCH	MTL	P-7	10	
C121-1	C121	KITCHEN	(N) INT	3' - 0"	7' - 0"	NR	3	WD	ROTARY NATURAL BIRCH	MTL	P-7	4	NO CLOSER/ NO THRESHOLD/ NO ACOUSTICAL SEAL OR SMOKE GASKETS / DROP U
C121-2	C121	KITCHEN	(N) STOREFRONT	3' - 2 1/4"	7' - 2"	NR	11	ALUM	ASF-4	ALUM	ASF-4	11	TEMPERED GLASS
C121-3	C121	KITCHEN	(N) INT	3' - 0"	7' - 0"	NR	12	WD	ROTARY NATURAL BIRCH	MTL	P-7	4	DROP DOWN FOOT / NO CLOSURE
C122-1	C122	BREAK	(N) INT	3' - 0"	7' - 0"	NR	3	WD	ROTARY NATURAL BIRCH	MTL	P-7	4	NO CLOSURE
C122-2	C122	BREAK	(N) STOREFRONT	3' - 2 1/4"	7' - 2"	NR	11	ALUM	ASF-4	ALUM	ASF-4	11	TEMPERED GLASS
G123-1	C122	BREAK	(N) INT	3' - 0"	7' - 0"	NR	3	WD	ROTARY NATURAL BIRCH	MTL	P-7	4	
GEN-1	917	GENERATOR	(N) EXT.	12' - 0"	7' - 0"	NR	5	MTL	P-14	MTL	P-14	16	
S101	S101	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	PANIC HARDWARE
S102	S102	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	1	PANIC HARDWARE
Level 2													
214	214	STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
C201	C201	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C202	C202	N CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
S201	S201	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
S202	S202	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
Level 3													
314	314	STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
C301	C301	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C302	C302	N CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
S301	S301	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
S302	S302	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
Level 4													
414	414	STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
C401	C401	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C402	C402	N CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
S401	S401	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
S402	S402	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
Level 5													
514	514	STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
C501	C501	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C502	C502	N CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
S501	S501	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
S502	S502	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
Level 6													
614	614	STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
C601	C601	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C602	C602	N CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
S601	S601	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
S602	S602	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
Level 7													
714	714	STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
C701	C701	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C702	C702	CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
S701	S701	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
S702	S702	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
Level 8													
814	814	STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
C801	C801	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C802	C802	N CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
S801	S801	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
S802	S802	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
Level 9													
914	914	STORAGE	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	3	MTL	P-9	(E) MTL	P-11	17	
C901	C901	S CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
C902	C902	N CORRIDOR	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	5	
S901	S901	STAIR 1	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
S902	S902	STAIR 2	(N) INT PANEL / (E) FRAME	3' - 0"	6' - 8"	90 MIN	4	MTL	P-14	(E) MTL	P-14	19	
ROOF													
R01	915	PENTHOUSE	(N) EXT.	3' - 0"	6' - 2"	90 MIN	4	MTL	P-10	(E) MTL	P-10	5	
R02			(E) EXT.	4' - 0"	6' - 8"	90 MIN	3	MTL	(E) PAINT	(E) MTL	(E) PAINT	5	

UNIT DOORS

"U" REPRESENTS UNIT ROOM NUMBER. REFERENCE ENLARGED UNIT PLANS

TYPE	ROOM	DESCRIPTION	WIDTH	HEIGHT	RATING	DOOR PROFILE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	HARDWARE GROUP	SIGNAGE
UC	UNIT	(N) INT DOOR	2' - 10"	6' - 8"	NR	2	WD	ROTARY NATURAL BIRCH	WD	P-11	3	
(N) ADA 34" x 80" BATH: 6												
UD	UNIT	(E) INT DOOR	2' - 10"	6' - 8"	NR	2	WD	ROTARY NATURAL BIRCH	WD	P-11	2	
(N) ADA 34" x 80" BDRM: 6												
UB	UNIT	(E) INT DOOR	2' - 8"	6' - 8"	NR	(E)	(E) WD	(E) CLR	(E) WD	P-9		
32" x 80" EXISTING: 218												
UA	UNIT	(N) DOOR PANEL / (E) FRAME	3' - 0"	6' - 8"	20-MIN	1	WD	ROTARY NATURAL BIRCH	(E) METL	P-9	1	
36" x 80" UNIT ENTRY: 115												

DOOR PROFILES



HARDWARE GROUPS

1 UNIT ENTRY
- INTERCONNECTED LOCK- REUSE (E)CORE
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKET
- VIEWER
- WALL STOP
- KICKPLATE

2 UNIT ADA BDRM
- PASSAGE LOCK CYLINDER
- HINGES
- SILENCERS
- WALL STOP

3 UNIT ADA BATH
- PRIVACY LOCK
- HINGES
- THRESHOLD
- SILENCERS
- HINGE STOP

4 COMMON / UTILITY
- CLASSROOM LOCK
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKETS
- WALL STOP
- KICKPLATE

5 CORRIDOR EXIT
- STOREROOM LOCK
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKET
- DOOR SHOE
- KICKPLATE
- WALL STOP

6 EXTERIOR AUTOMATIC DOOR & ELECTRONIC ACCESS
- FIRE EXIT HARDWARE
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKET
- DOOR SHOE
- ADA PUSH BUTTON / AUTO OPENER
- NO EXTERIOR ACCESS

7 EXTERIOR AUTOMATIC SLIDING DOOR (BHMA A156.10 COMPLIANT)
- FIRE EXIT HARDWARE
- THRESHOLD
- SLIDING TRACK
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKET
- AUTOMATED ENTRY

8 OFFICE DOOR
- PASSAGE LOCK
- HINGES
- SILENCERS
- ACOUSTIC SEAL
- WALL STOP
- KICKPLATE

9 INTERIOR ELECTRONIC ACCESS
- STOREROOM LOCK
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKETS
- WALL STOP
- KICKPLATE
- ELECTRONIC ACCESS
- ADA BUTTON/ AUTO OPENER

10 CLOSET DOOR
- CLASSROOM LOCK
- HINGES

11 EXTERIOR STOREFRONT
- STOREROOM LOCK
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKET
- DOOR SHOE

12 EXTERIOR UTILITY
- STORE ROOM LOCK
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKET
- HOLD OPEN
- DOOR SHOE

13 COMMUNITY ROOM DOOR
- FIRE EXIT HARDWARE
- HINGES
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKETS
- OVERHEAD DOOR STOPPER
- ADA PUSH BUTTON/ AUTO OPENER
- ELECTRONIC ACCESS
- SURFACE CLOSERS

14A GATE HARDWARE
- PANIC HARDWARE
- STOREROOM LOCK
- HINGES
- SURFACE CLOSER
- ELECTRONIC ACCESS

14B GATE HARDWARE
- STOREROOM LOCK
- HINGES
- SURFACE CLOSER

15 ELECTRONIC ACCESS SLIDING DOOR (BHMA A156.10 COMPLIANT)
- PANIC HARDWARE
- THRESHOLD
- SLIDING TRACK
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKET
- AUTOMATED ENTRY
- ELECTRONIC ACCESS

16 OUT BUILDING
- FLUSH BOLT
- DUST PROOF STRIKE
- CYLINDRICAL LOCK
- HINGES - FULL MORTISE
- SURFACE CLOSER

17 STORAGE
- STOREROOM LOCK
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKETS
- WALL STOP
- KICKPLATE

18 RESTROOMS
- LOCKSET W/ INDICATOR
- CLASSROOM LOCK
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKETS
- WALL STOP
- KICKPLATE

19 STAIRWAY EXIT
- PASSAGE LOCK
- THRESHOLD
- HINGES
- SURFACE CLOSER
- SILENCERS
- ACOUSTIC SEAL
- SMOKE GASKET
- DOOR SHOE
- KICKPLATE
- WALL STOP

NOTES:
1. *ALL THRESHOLDS IN ALL HARDWARE GROUPS ON SHEET A600 TO BE ½" MAX HEIGHT WITH BEVELED EDGES AS REQUIRED BY ICC A117.1 SECTIONS 404.2.3 AND 303.*
2. ALL EGRESS DOORS EQUIPPED WITH ELECTRONIC ACCESS SHALL BE OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT AS REQUIRED BY OSSC 1010.1.9

OPERABLE CURTAIN WALL WINDOWS

MARK	COUNT	HEIGHT	WIDTH	DESCRIPTION	TYPE
A	2	1' - 8 1/4"	4' - 7"	AFS-1	Curtain Wall-Awning
K	8	4' - 11"	2' - 4 1/4"	AFS-1	Curtain Wall-Awning

CURTAIN WALL WINDOWS - FIXED

Mark	Count	Height	Width	Description	Comments
B	4	4' - 11"	2' - 5 1/2"	AFS-1	
C	4	4' - 0 1/4"	0' - 11"	AFS-1	
D	5	6' - 11"	2' - 3"	AFS-1	TEMPERED GLASS
E	2	2' - 4 1/4"	4' - 7"	AFS-1	
F	1	4' - 3"	3' - 7"	AFS-1	
G	2	6' - 4"	1' - 6 1/4"	AFS-1	TEMPERED GLASS
H	3	1' - 7"		AFS-1	
J	3	1' - 7"		AFS-1	

SITE GATE SCHEDULE

TYPE		COUNT	HEIGHTxWIDTH	HARDWARE	NOTES
G-1	COMMUNITY	2	60" 48"	14A	REF LANDSCAPE
G-2	COURTYARD	1	60" 60"	14B	REF LANDSCAPE
G-3	DOG RUN	1	60" 48"	14B	REF LANDSCAPE

PETER MEIJER ARCHITECT, PC

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SCHEDULES

Sheet Number:

A600

Dahlke Manor

Engineering Judgment Report

Fire Rating of 3-HR rated C-Channel EJ#1

Client Name: Peter Meijer

Client Address: 605 NE 21st Avenue Portland, OR

Date: 2/17/2021

Table of Contents

1 PROJECT OVERVIEW

Dahlke is a 9-story residential apartment tower of Type IA construction with a 1-story lower story attached community space, located in Portland, Oregon serving low-income residents. It will be under the jurisdictional review of the City of Portland. The proposed scope of work is a 1-story 700 SF addition for a kitchen and break room associated with the Community Room. Structural channels are part of the existing walls currently and do not meet the code requirements for 3-hour protection. Code Unlimited has been asked to provide Engineering Judgment (EJ) letter for the 3-hour protection of structural channels at the existing walls.

2 APPLICABLE CODES, STANDARDS, AND GUIDES

- 2019 Oregon Structural Specialty Code (OSSC)
- 2019 Oregon Fire Code (OFC)

3 DISCUSSION

3.1 Approach

- The proposed beam assembly has been analyzed in accordance with 2014 OSSC §703.3 **Alternative Methods for Determining Fire Resistance**.
- The proposed design is compared to the 3-hour fire rated beam per GA-Manual No. BM-3310.
- Portions of the tested assembly are modified to suit the unique design condition. The modification is analyzed for equivalency using published fire test data and acceptable fire science principles.

4 PROPOSED DESIGN

The proposed C-Channel of C12x30 and C12x25 members located against the existing walls (see Fig 1, 2, and 3). For this EJ, only the C12x25 member will be examined in detail because it is the lightest member and therefore the least inherent fire resistance. This member is considered as a primary structure. Per 2019 OSSC Table 601, primary structural members are required to be minimum 3 hr. fire rated for the construction Type. It is assumed that the beam will be exposed to fire on the left side and the assembly will require continuous protection from three sides with protection on the concealed side.

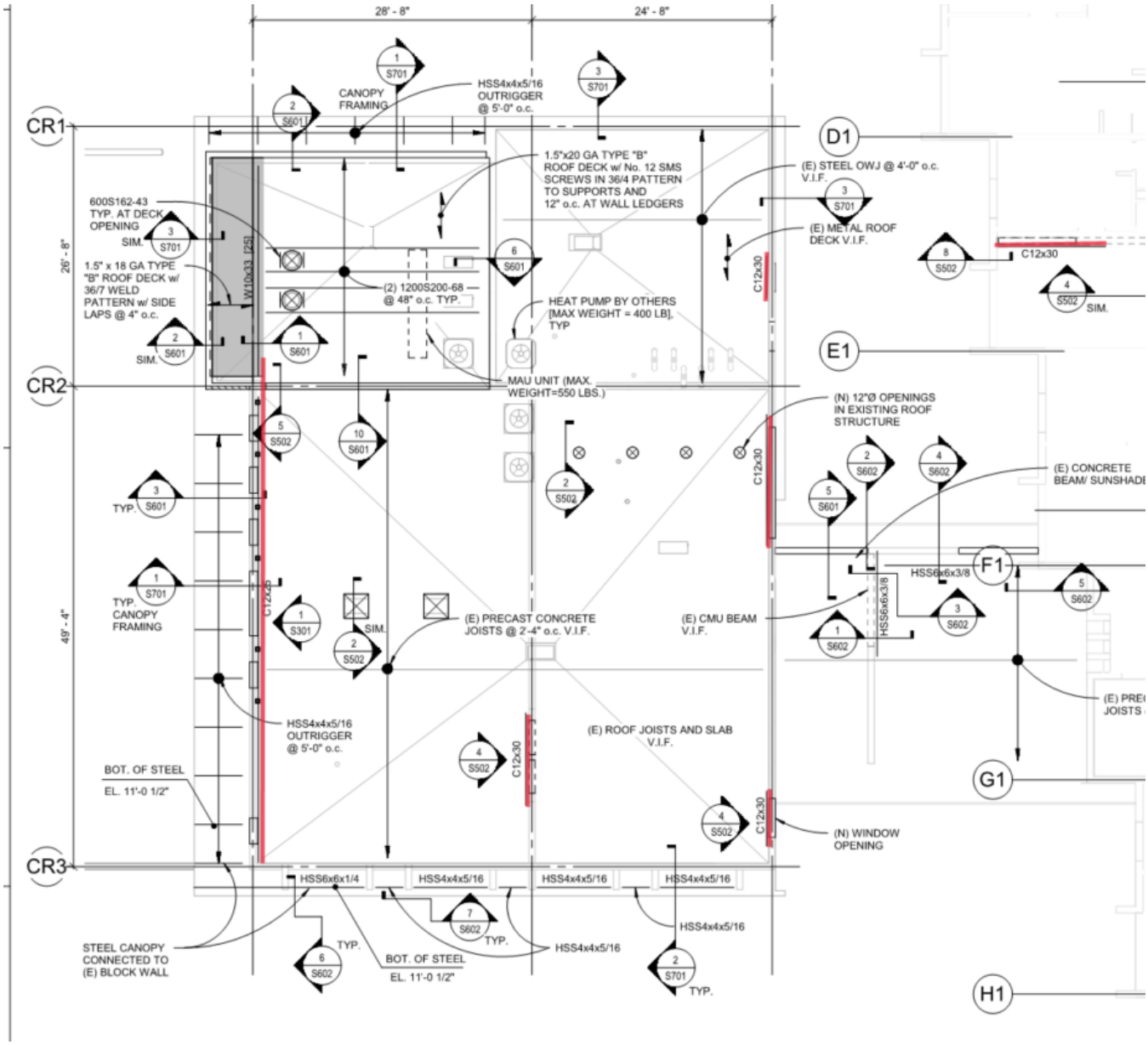


Fig 1: C-Channel Locations.

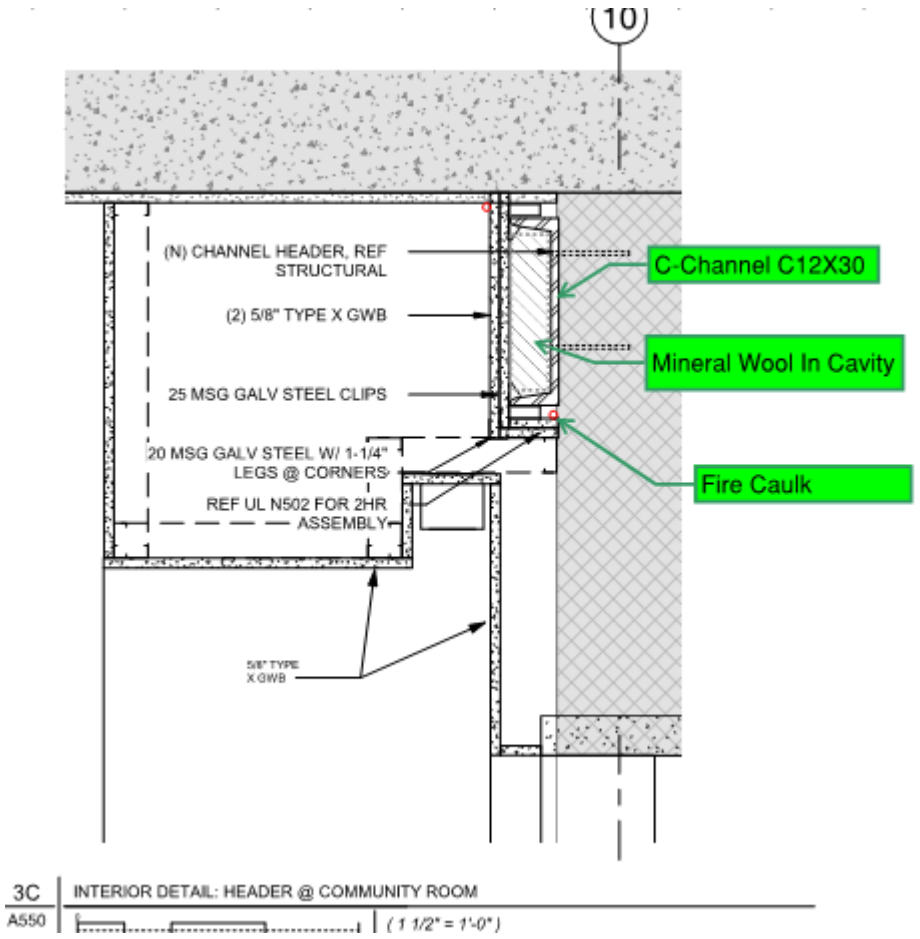


Fig 2: C-Channel Location at community room.

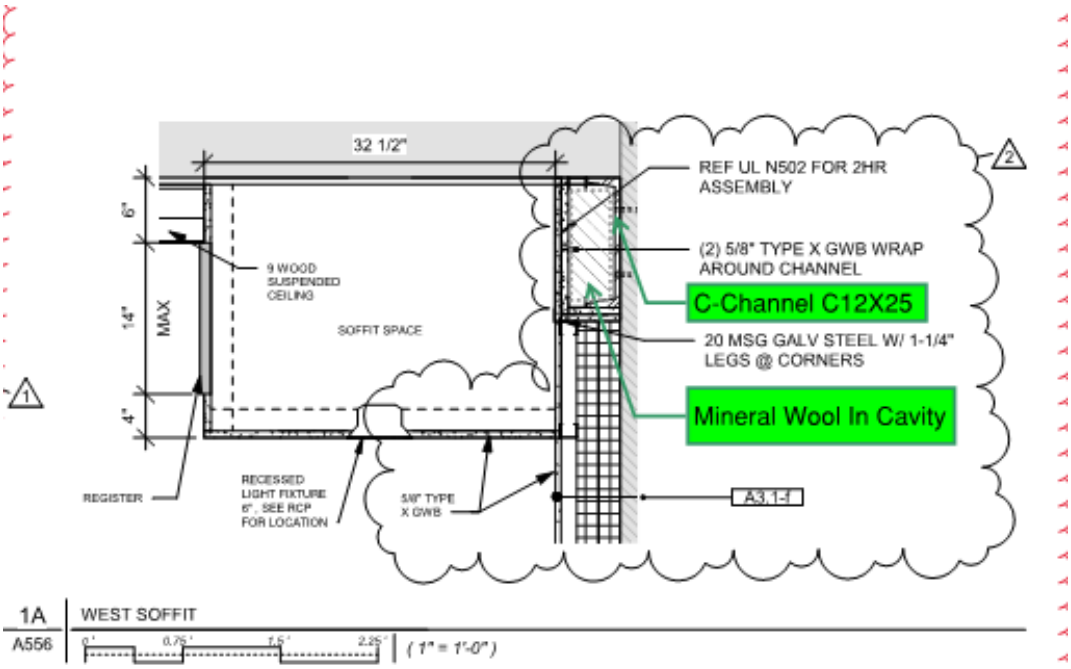


Fig 3: C-Channel Location at west soffit.

5 ASSEMBLY ANALYSIS

The proposed assembly of C-Channel C12X25 is intended as a primary structural member. Compared to the W8x31 beam member in the GA assembly as shown in figure 4.

BEAMS, GIRDERS, AND TRUSSES, NONCOMBUSTIBLE

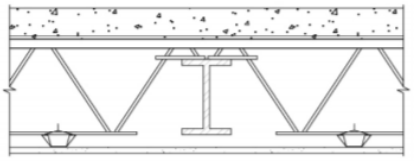
GA FILE NO. BM 3310	GENERIC	3 HOUR FIRE	

CEILING MEMBRANE FIREPROOFING, METAL CHANNELS, GYPSUM WALLBOARD

Fire Design:

One layer 1/2" type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 24" o.c. with 1" Type S screws 12" o.c. Gypsum board end joints located midway between continuous channels and attached to additional pieces of channel 54" long with screws 12" o.c. Furring channels 24" o.c. attached with 18 ga. wire ties 48" o.c. to open web steel joists 24" o.c. supporting 3/8" rib metal lath or 9/16" deep 28 ga. corrugated steel and 2-1/2" concrete slab measured from top of flute. Furring channels may be attached to 1-1/2" cold rolled carrying channels 48" o.c. suspended from joists by 8 ga. wire hangers not over 48" o.c. Minimum beam size W8x31. (Three-hour unrestrained beam.)

(See GA File No. FC 2030)



Fire Test: UL R3501, 66K3415, 7-22-66, UL Design G514

Figure 4: GA-BM 3310 Assembly

IMPERIAL				
	Column		Beam	
SIZE (in. x lb./ft.)	W/D	Heated Perimeter (in.)	W/D	Heated Perimeter (in.)
W 8 x 67	1.37	48.9	1.65	40.7
x 58	1.20	48.5	1.44	40.2
x 48	1.00	47.8	1.21	39.7
x 40	0.849	47.1	1.03	39.0
x 35	0.749	46.7	0.907	38.6
x 31	0.665	46.6	0.803	38.6

Fig.5. W/D for Beam W8x31

Table 1: Comparison between Tested and Proposed beam assembly

Element	GA-MANUAL BM-3310	Proposed Assembly
1. Structural Material	Steel Beam; W8x24 (W/D = 0.803 - Beam) (see Fig 5)	C-Channel C12x25 (W/D=1.22), (see calc below) **(Higher Inherent Fire Resistance)**
2. Gypsum Board	1/2 in. thick. Nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. Wallboard installed with long dimensions at right angles to the furring channels. Wallboard at end joints secured to an additional furring channel, wire-tied or clipped to the joists and placed over the joint and extending 3 in. beyond each end of the joint. End joints staggered with spacing between joints on adjacent boards not less than 4 ft OC.	Base layer 5/8 in. thick. Outer layer attached with 2-1/4 in. long, 0.150 in. diam screws spaced 8 in. OC. At least one screw at mid depth of brackets in each layer. Screws are self-drilling and self-tapping. Phillips head made of case-hardened steel.
3. Insulation	None	Mineral Wool added to cavity to increase fire resistance.
Fire-Resistance Rating	**3-Hour**	**3-Hour (minimum)**

5.1 W/D Comparison of C-Channel and W-Beam

The C-Channel beam has an inherent fire resistance greater than the tested beam, W/D comparison: 1.26>0.803. We have compared the beam as proposed along with the test configuration. See Fig. 7 below.

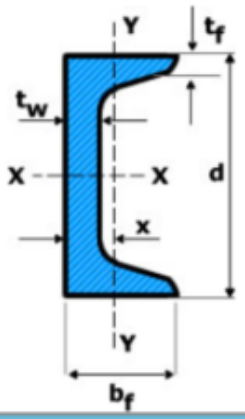
W8x31 (8” Deep, 8” Wide, 31 lbs/ft) AISC

Heated Perimeter of C12x25

C-Channel = 12”+2*(3.047”-0.387”)+2*3.047” = 20.36”

Total Heated Perimeter = **20.36”**

CalcGA-Manualated W/D Ratio = **1.22**



American Standard Steel C Channel Sizes

Desig-nation	Area, A, in^2	Depth, d, in	Weight lb/ft	Flange		Web Thickness t_w, in	Axis X-X			Axis Y-Y			x, in
				Width, b_f, in	Thickness, t_f, in		I, in^4	S, in^3	r, in	I, in^4	S, in^3	r, in	
C15 x 50	14.7	15.00	50	3.716	0.650	0.716	404	53.8	5.24	11.0	3.78	0.867	0.798
C15 x 40	11.8	15.00	40	3.520	0.650	0.520	349	46.5	5.44	9.23	3.37	0.886	0.777
C15 x 33.9	9.96	15.00	33.9	3.400	0.650	0.400	315	42.0	5.62	8.13	3.11	0.904	0.787
C12 x 30	8.82	12.00	30	3.170	0.501	0.510	162	27.0	4.29	5.14	2.06	0.763	0.674
C12 x 25	7.35	12.00	25	3.047	0.501	0.387	144	24.1	4.43	4.47	1.88	0.780	0.674

Fig.6. C12X25 Dimensions

Beam	Weight(lb/ft)	Perimeter D (in)	W/D
W 8 x 31	31	38.6 (3 Sides)	0.803
C12x25	25	20.36 (3 Sides)	1.22

Fig.7. W/D ratios

When evaluated against the tested configuration. The C-Channel beam has a larger W/D ratio than the beam in the tested configuration.

6 SUMMARY

While evaluating fire resistance requirement of members, different sized beams are compared against each other through a factor referred to as the W/D Ratio. The weight per unit length of a member is divided by the length of exposed heated perimeter area to determine the inherent fire resistance of a member. Lower W/D ratios correspond with thinner steel members that will be subject to earlier failure when heated.

During this evaluation, GA-BM-3310 was considered, where the minimum required W/D ratio (0.803) of the beam in the assembly is less than the proposed beam W/D ratio (1.22). The tested beam requires 1 layer of 1/2” minimum of Type X gypsum board with an air gap protecting the beam to provide 3-hour fire-resistance (Figure 4). The proposed C-Channel has greater inherent fire-resistance and is additionally protected with thicker Type X gypsum wallboard and a cavity filled with Mineral Wool to provide equivalent protection or better to the 3-hour fire rated GA-BM 3310 beam.

7 CONCLUSION

I have reviewed the proposed member against a beam member GA-BM3310 as listed above. The evaluation from BM-3310 (beam) requires 1 layer of 1/2” Type X gypsum wallboard for fireproofing the Beam in a cavity with a W/D Ratio of 0.803. The C-Channel will comply with the required 3-hr fire resistance requirement if protected by 2 layers of 5/8” Type X gypsum wallboard and mineral wool filling gaps. The proposed C-Channel has greater inherent fire-resistance with a larger W/D ratio; therefore, the thicker layers of protection will provide a greater fire resistance than the tested member. Additionally, the backside boarders a heat sink of concrete or CMU wall which will draw away heat from the member further estending the protection duration.

With this detailed review, it is concluded that the protection of 2 layers of Type X GWB and mineral wool (minimum 2 PCF density) will provide 3-hour fire-resistance as required by the OSSC.

Franklin Callfas
Principal/Fire Protection Engineer
Code Unlimited

DAHLKE MANOR (EJ #2)

Engineering Judgment Report

Fire Rating of 6" x 6" x 3/8" HSS Member

Client Name: Peter Meijer Architect

Client Address: 605 NE 21st Avenue, Portland, OR 97232

Date: 2/17/2021

Table of Contents

1 PROJECT OVERVIEW

Dahlke Manor is an existing 9-story residential apartment building located at 915 NE Schuyler St, Portland. The building has approximately 115 apartments and is of Type IA construction. There is also a 1-story portion on the west side of the building including the main lobby, maintenance room(s), and amenity space. Planned renovation work includes a small extension, upgrading of the finishes, and the installation of new HSS 6x6x3/8 structural beams in the lobby **[Figure 1].** These beams will support the existing roof structure. Code Unlimited has been asked to provide an Engineering Judgment (EJ) letter for this condition.

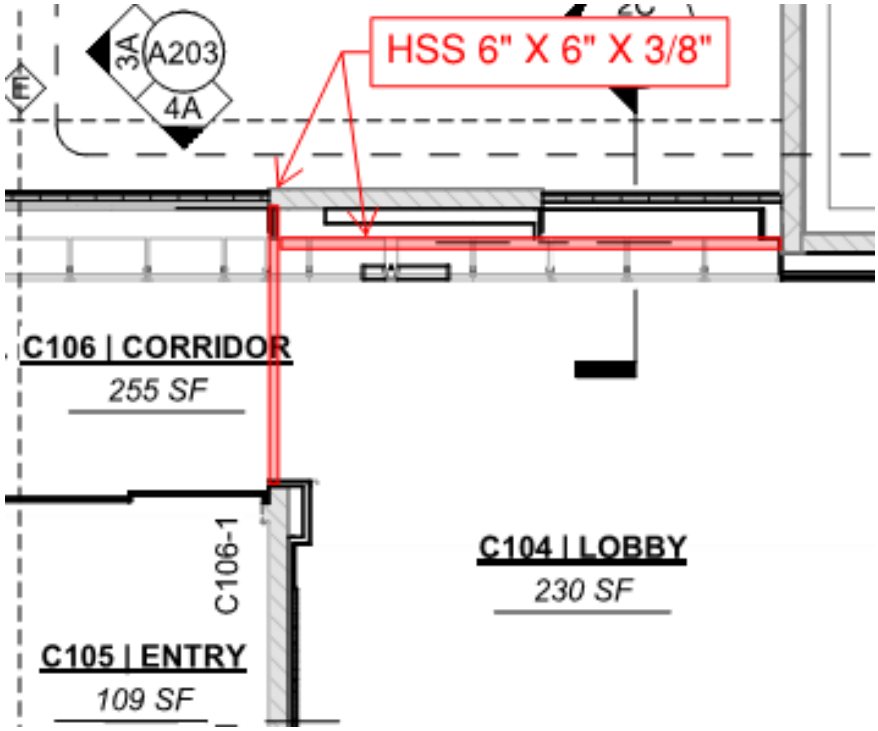


Figure 1: Proposed location of new HSS 6” X 6” X /8” beams

2 APPLICABLE CODES, STANDARDS, AND GUIDES

- 2019 Oregon Structural Specialty Code (OSSC)
- 2019 Oregon Fire Code (OFC)

3 APPROACH

- The proposed assembly has been analyzed in accordance with 2019 OSSC §703.3 **Alternative Methods for Determining Fire Resistance**.
- We have evaluated the proposed beam assemblies against a fire rated beam assembly tested by Underwriters Laboratories (UL N502).

4 PROPOSED DESIGN

The primary function of the HHS members is to support the existing roof of the lobby. Membrane protection will be provided. However, complete encapsulation will not be required as the members only support the roof and no floors per OSSC 704.3. The proposed member assembly consists of 6x6 x 3/8" HSS sections. The beam will be bolted with a flat steel plate to the exterior CMU wall with the connection and beam both being protected with a minimum of two layers of 5/8" Type X gypsum board installed on the exposed faces as shown in Figure 2. Compressed mineral wool will fill the cavity between the gypsum wallboard (GWB) and steel plate.

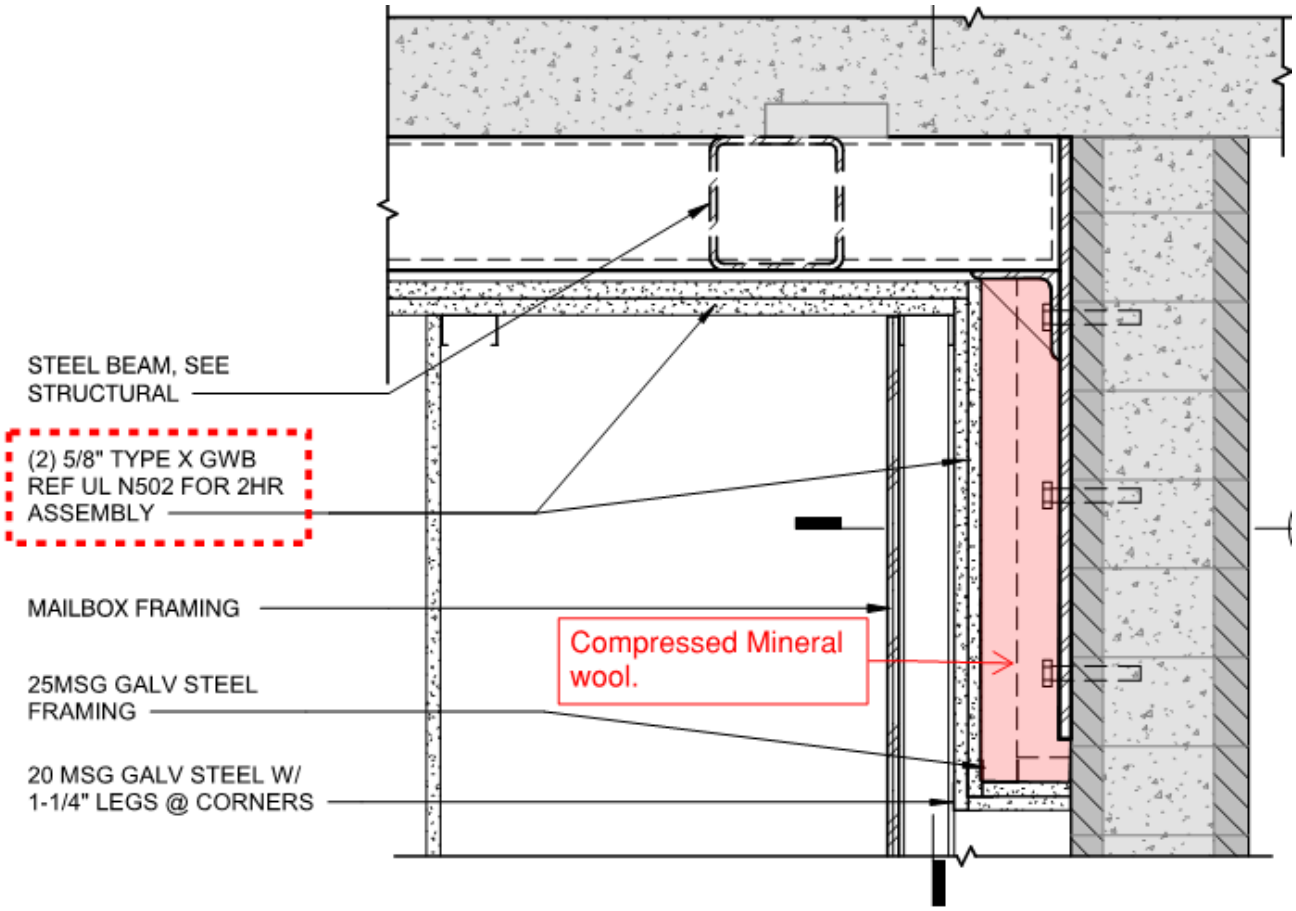


Figure 2: Proposed vertical assembly of 3" x 3" x 3/8" HSS sectional view.

5 ASSEMBLY ANALYSIS

The proposed assembly of HSS 6” x 6” x 3/8” is an alternate to the W8 x 24 used in the test assembly N502 as shown in Figure 3. The proposed design and UL N502 are compared in Table 1.

Design No. N502

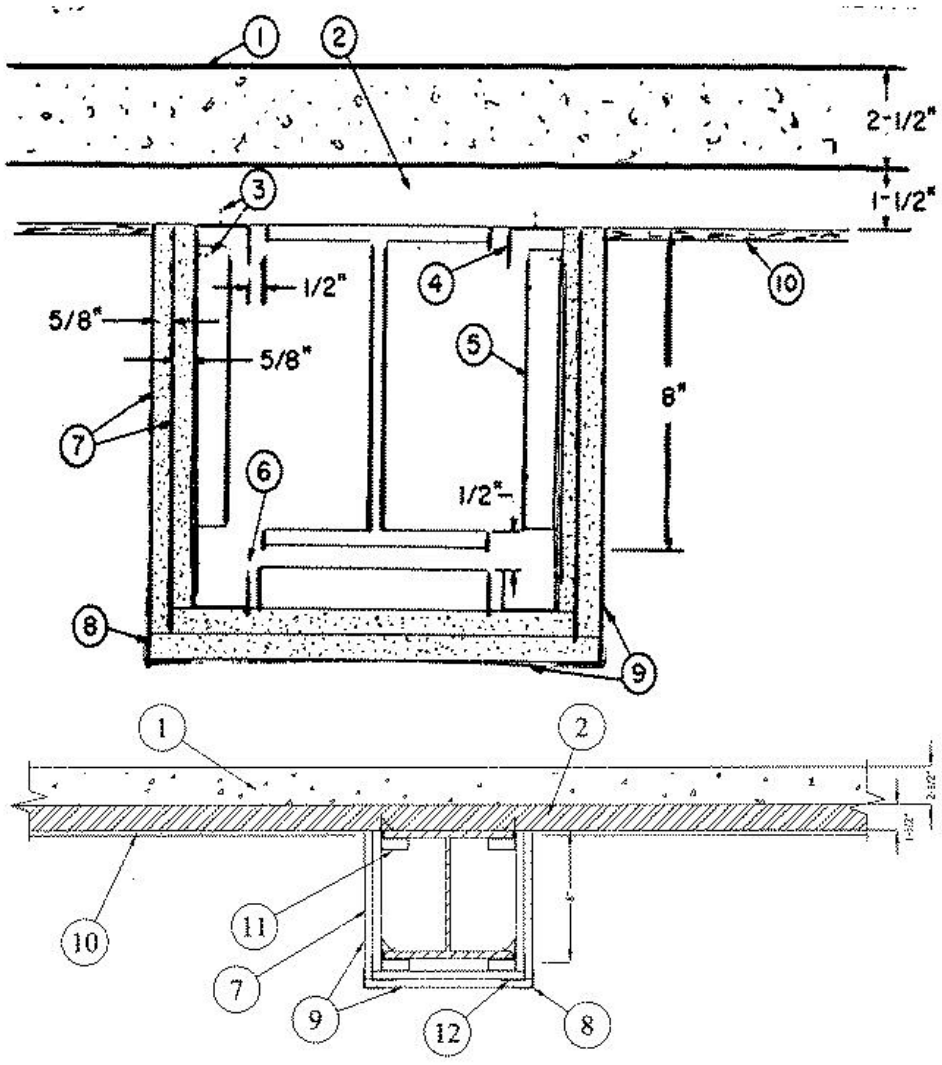
July 06, 2018

Restrained Beam Rating — 2 Hr.

Unrestrained Beam Rating — 2 Hr.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



Steel Beam — Min size, a W8 x 24 with outside dimensions of 7-7/8 x 6-1/2 in. with a flange thickness of 3/8 in., a web thickness of 1/4 in., and a cross-sectional area of 7.06 sq in.

1. **Normal Weight Concrete —** 148 pcf.

2. **Steel Floor and Form Units*** **—** 1-1/2 in. fluted type, welded to beam.

3. **Drill Screw —** No. 8-18 by 1/2 in. long Phillips panhead drill screws, self-drilling and self-tapping, made of case-hardened steel.

4. **Runner Channel —** Fabricated from 25 MSG galv steel, 1-11/16 in. deep with 1-in. legs. Fastened to steel deck with Item 3, 12 in. OC.

5. **Channel Bracket —** Same material as Item 4 and fastened to runner channels with Item 3. Bracket spaced 24 in. OC.

6. **Corner Channel —** Same material as Item 4. Placed in cutouts of channel brackets without attachment.

7. **Gypsum Board*** **—** 5/8 in. thick. First layer fastened with 1-1/4 in. long, 0.150-in. diam screws and spaced 16 in. OC. Second layer attached with 1-3/4 in. long, 0.150-in. diam screws spaced 8 in. OC. Screws are self-drilling and self-tapping Phillips head made of case-hardened steel.

8. **Corner Bead —** Fabricated from 20 MSG galv steel to form an angle with 1-1/4 in. legs. Legs perforated with 1/4 in. diam holes approx. 1 in. OC. Attached to wallboard with special crimping tool approx. 6 in. OC. As an alternate, the bead may be nailed to the wallboard.

9. **Joint Compound —** 1/32 in. thick on bottom and sides of wallboard from corner beads and feathered out. Paper tape embedded in joint compound over joints with edges of compound feathered out. Nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.

10. **Protective Material — Spray-Applied Fire Resistive Materials*** **—** Spray applied to the underside of the steel floor units, filling the flutes of the units and providing a smooth ceiling which was 1/4 in. thick as measured from the bottom plane of the floor units.
See Spray-Applied Fire Resistive Materials (CHPX) category for names of manufacturers .

11. **Alternate Construction — Steel Framing Members —** As an alternate to items 3, 4, 5 and 6, steel clips attached to both sides of beam flanges 2 ft OC and at ends of beam. First layer of gypsum board fastened to steel clips with 1-1/4 in. long Type S drywall screws. 2 in. by 2 in. 25 MSG angle fastened to clips on bottom portion of assembly with 2 in. long Type S drywall screws. Second layer of gypsum board fastened to angle and clips with 2 in. long Type S drywall screws spaced 2 ft OC. Screws are self-drilling and self-tapping Phillips head made of case-hardened steel.
JOHN WAGNER ASSOCIATES INC, DBA GRABBER — Type CBClip.

Figure 3: UL N502 Assembly

Table 1: Comparison between Tested and Proposed beam assembly

Element	UL Assembly Design No. N502	Proposed Assembly
Steel Member	• W8 x 24 (W/D=0.704)	• HSS 6x6 x 3/8” (W/D=1.42) Exceeds minimum requirement
1. Normal Weight Concrete	• 148 pcf	• Existing roof construction
2. Steel Floor and Form Units	• 1-1/2 in. fluted type, welded to beam.	• N/A to review
3. Drill Screw	• No. 8-18 by 1/2" long Phillips panhead drill screws, self-drilling and self-tapping, made of case-hardened steel.	• No. 8-18 by 1/2" long Phillips panhead drill screws, self-drilling and self-tapping, made of case-hardened steel.

Element	UL Assembly Design No. N502	Proposed Assembly
4. Runner Channel	• Fabricated from 25 MSG galv steel, 1-11/16" deep with 1-in. legs. • Fastened to steel deck with drill screws (Item 3), 12" O.C	• GWB is attached using 20MSG galvanized steel framing.
5. Channel Bracket	• Same material as runner channel (Item 4) and fastened to runner channels with drill screws (Item 3). • Bracket spaced 24" O.C.	• GWB is attached using 25MSG galvanized steel framing.
6. Corner Angle	• Same material as runner channel (Item 4). Placed in cutouts of channel brackets without attachment.	• 20 MSG galvanized steel W/ 1-1/4" legs @ corners
7. Gypsum Board*	• 5/8" thick. First layer fastened with 1-1/4" long, 0.150" diam screws and spaced 16" OC. • Second layer attached with 1-3/4" long, 0.150" diam screws spaced 8" OC. • Screws are self-drilling and self-tapping Phillips head made of case-hardened steel.	• Base layer 5/8" type X wallboard to be attached to 20MSG galvanized steel framing. • Second layer 5/8" type X wallboard applied directly to First layer.
8. Corner Bead	• Fabricated from 20 MSG galv steel to form an angle with 1-1/4" legs. • Legs perforated with 1/4" diam holes approx. 1" OC. • Attached to wallboard with special crimping tool approx. 6" OC.	• Fabricated from 20 MSG galv steel to form an angle with 1-1/4" legs. • Legs perforated with 1/4" diam holes approx. 1" OC. • Attached to wallboard with special crimping tool approx. 6" OC.
9. Joint Compound	• 1/32" thick on bottom and sides of wallboard from corner beads and feathered out. • Paper tape embedded in joint compound over joints with edges of compound feathered out. • Nom 3/32" thick gypsum veneer plastic may be applied to the entire surface of Classified veneer baseboard. • Joints reinforced.	• Paper tape embedded in joint compound over joints with edges of compound feathered out. • Face Layer Screw holes shall be filled with Joint compound.

Element	UL Assembly Design No. N502	Proposed Assembly
10. Protective Material – SFRM*	• Spray applied to the underside of the steel floor units, filling the flutes of the units and providing a smooth ceiling 1/4" thick as measured from the bottom plane of the floor units.	• N/A to design
11. Additional Protection	• None	• Compressed Mineral Wool (6” wide Compression 50%) (Standard Weight MW-2 PCF)
Fire-Resistance Rating	**2-Hour**	**2-Hour (minimum)**

5.1 W/D Comparison of HSS and W-Beam

W/D ratios provide a means of evaluating different structural members for the purpose of fire protection rated resistance. Larger W/D Ratios intuitively provide a longer resistance to temperature rise and failure through excessive heating per SFPE Handbook. The larger the W/D ratio (or A/P with HSS member), the fewer fire protection layers need to be added to achieve the required fire resistance rating.

5.2 Evaluation

The listed wide flange structural steel beam with ASTM designation W8 x 24 used in the E119 test (Heated on 3 sides), has a W/D ratio of 0.704, with 2-hour fire rating as shown in Figure 4. The proposed assembly of HSS 6” x 6” x 3/8” has W/D ratio of 1.42, as shown in figure 5.

IMPERIAL				
	Column		Beam	
SIZE (in. x lb./ft.)	W/D	Heated Perimeter (in.)	W/D	Heated Perimeter (in.)
W 8 x 28	0.688	40.7	0.819	34.2
x 24	0.591	40.6	0.704	34.1

Figure 4: W/D ratio for W8 x 24

IMPERIAL						
	COLUMN			BEAM		
SIZE (in. x in. x in.)	A/P	W/D	Heated Perimeter (in.)	A/P	W/D	Heated Perimeter (in.)
6 x 6 x 01.625	0.533	1.81	22.0	0.640	2.17	18.3
x 0.500	0.435	1.48	22.4	0.533	1.81	18.3
x 0.375	0.332	1.13	22.8	0.416	1.42	18.2
x 0.313	0.279	0.95	23.0	0.354	1.20	18.2
x 0.250	0.226	0.77	23.2	0.289	0.98	18.1
x 0.188	0.170	0.58	23.4	0.220	0.75	18.1

Figure 5: W/D ratio for HSS 6” x 6” x 3/8”

The HSS member has an inherent fire resistance greater than the tested W beam. W/D comparison: **1.42 > 0.704.**

6 CONCLUSION

When evaluated the proposed steel tube beam is thicker and provides greater heat resistance than the UL tested beam. Two layers of 5/8” type X GWB provide protection for the beam, while compressed Mineral Wool ensures heat will not be transferred through the cavity to the wall connection. Therefore, the proposed design for the HSS members in the lobby will maintain the required 2-hour rating as compared and detailed in this letter against the UL fire assembly, while maintaining a minimum 2-hour rating.

Franklin Callfas
Principal/Fire Protection Engineer
Code Unlimited

DAHLKE MANOR (EJ #3)

Engineering Judgment Report

Fire Rating of Kitchen Duct

Client Name: Peter Meijer Architect

Client Address: 605 NE 21st Avenue, Portland, OR 97232

Date: 2/17/2021

Table of Contents

1 PROJECT OVERVIEW

Dahlke Manor is an existing 9-story residential apartment building located at 915 NE Schuyler St, Portland. The building has 115 apartments and is Type IA construction. There is a 1-story portion of the building to the west which includes the main lobby and community room. Planned renovation work includes a new 700SF break room and kitchen which connects to the community room. The new kitchen will include the installation of a commercial range and exhaust ducting. Make up air will be provided to the range exhaust system from the breakroom via galvanized steel duct **[Figure 1].** These two sections of duct will penetrate the roof/ceiling assembly which is constructed as a 2-hour rating. Code Unlimited has been asked to provide an Engineering Judgment (EJ) letter for this condition.

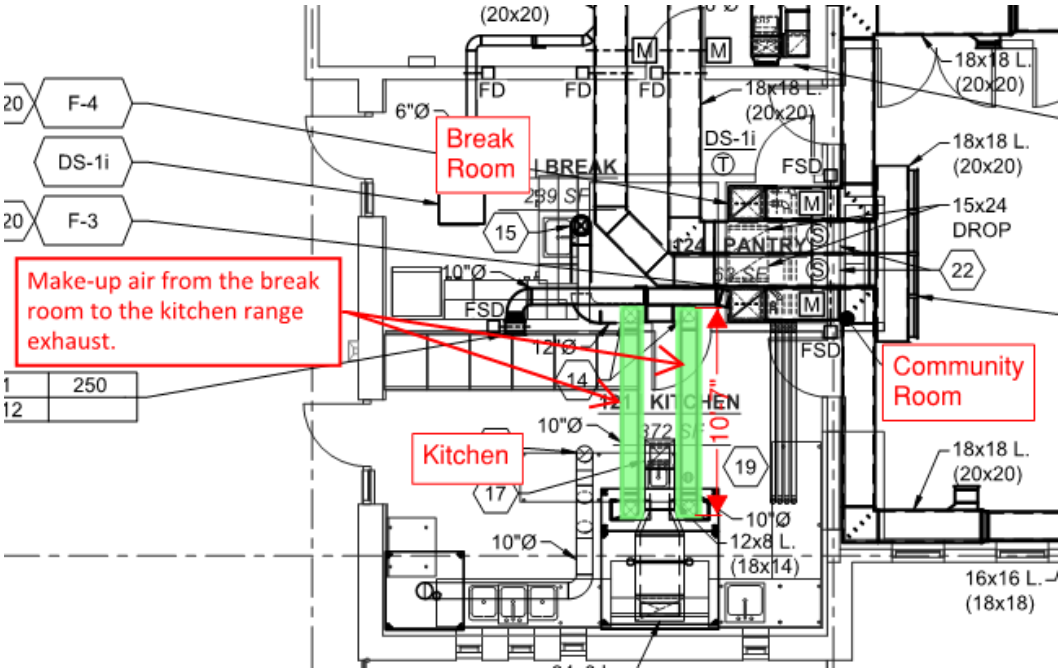


Figure 1: Proposed location of make-up air ducting.

2 APPLICABLE CODES, STANDARDS, AND GUIDES

- 2019 Oregon Structural Specialty Code (OSSC)
- 2019 Oregon Fire Code (OFC)

3 APPROACH

- The proposed assembly has been analyzed in accordance with 2019 OSSC §703.3 **Alternative Methods for Determining Fire Resistance**.
- The proposed design has been evaluated by an Oregon registered Licensed Fire Protection Engineer.

4 PROPOSED DESIGN

The make-up air for the kitchen range will come from the break room via two 10-foot sections of ducting. The ducts will penetrate the roof/ceiling assembly which has a 2-hour rating. To maintain the required 2 hour rating it is proposed to encase the ductwork with three layers of 5/8 inch Type X Gypsum wallboard **[Figure 2]**.

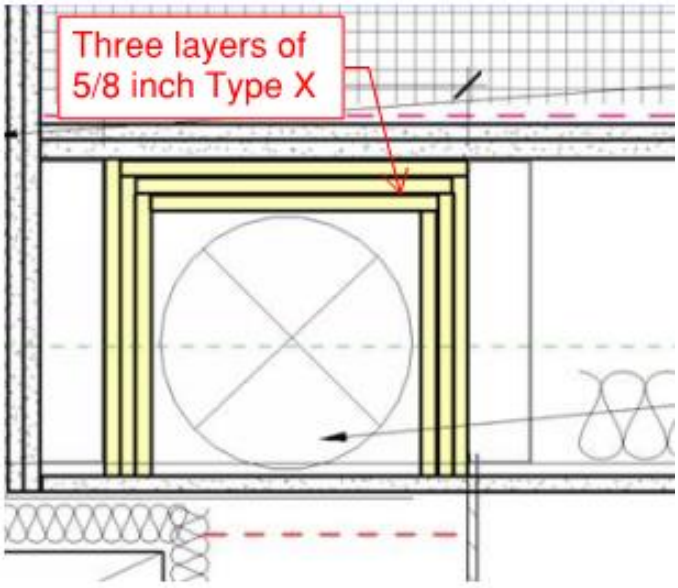


Figure 2: Proposed section of make-up air duct protection

5 ASSEMBLY ANALYSIS

The make-up air will carry free air supply to the kitchen. Code Unlimited has evaluated the proposed assembly, including the additional three layers of 5/8" Type X **[Table 1]**. Our analysis has demonstrated that the additional layers will more than provide a minimum of 2 hours of Fire resistance for this section of roof/ceiling assembly.

Table 1: ***Evaluation of the Proposed assembly***

Element	Proposed Assembly	Evaluation
Inner layer	• (3) Layers of 5/8" Type X GWB	• **40 minutes per layer, OSSC T722.6.2.(1).** • **40 x 3 = 120 minutes.**
Fire-Resistance Rating		**2-Hour (added rating)**

6 CONCLUSION

In lieu of adding rated ceiling dampers, the project proposes to utilize the roof/ceiling assembly above. The added membrane protection, with the addition of three layers of 5/8 inch Type X gypsum board will maintain the required 2-hour rated roof assembly throughout the ceiling area. I have evaluated this proposed assembly using universally accepted Fire Protection Engineering principles and membrane protection ratings from the OSSC.

As reviewed and detailed above, the proposed protection around the duct with three layers of 5/8 inch Type X GWB will meet or exceed the 2-hour fire-rating requirement.

Franklin Callfas
Principal/Fire Protection Engineer
Code Unlimited

Dahlke Manor

Engineering Judgment Report

Fire Rating of 3-HR rated C-Channel EJ#1B

Client Name: Peter Meijer

Client Address: 605 NE 21st Avenue Portland, OR

Date: 2/17/2021

Table of Contents

1 PROJECT OVERVIEW

Dahlke is a 9-story residential apartment tower of Type IA construction with a 1-story lower story attached community space, located in Portland, Oregon serving low-income residents. It will be under the jurisdictional review of the City of Portland. The proposed scope of work is a 1-story 700 SF addition for a kitchen and break room associated with the Community Room. Structural channels part of the existing walls currently do not meet the code requirements for 3-hour protection. Code Unlimited has been asked to provide Engineering Judgment (EJ) letter for the 3-hour protection of structural channels at the existing walls.

2 APPLICABLE CODES, STANDARDS, AND GUIDES

- 2019 Oregon Structural Specialty Code (OSSC)
- 2019 Oregon Fire Code (OFC)

3 DISCUSSION

3.1 Approach

- The proposed beam assembly has been analyzed in accordance with 2014 OSSC §703.3 **Alternative Methods for Determining Fire Resistance**.
- The proposed design is compared to the 3-hour fire rated beam per UL Design No. N505.
- Portions of the tested assembly are modified to suit the unique design condition. The modification is analyzed for equivalency using published fire test data and acceptable fire science principles.

4 PROPOSED DESIGN

The proposed C-Channel of C12x30 members located against the existing walls (see Fig 1 and 2). This member is considered as a primary structure. Per 2019 OSSC table 601, primary structural members are required to be minimum 3 hr. fire rated for the construction Type. It is assumed that the beam will be exposed to fire on the left side and below, the assembly will require continuous protection from three sides.

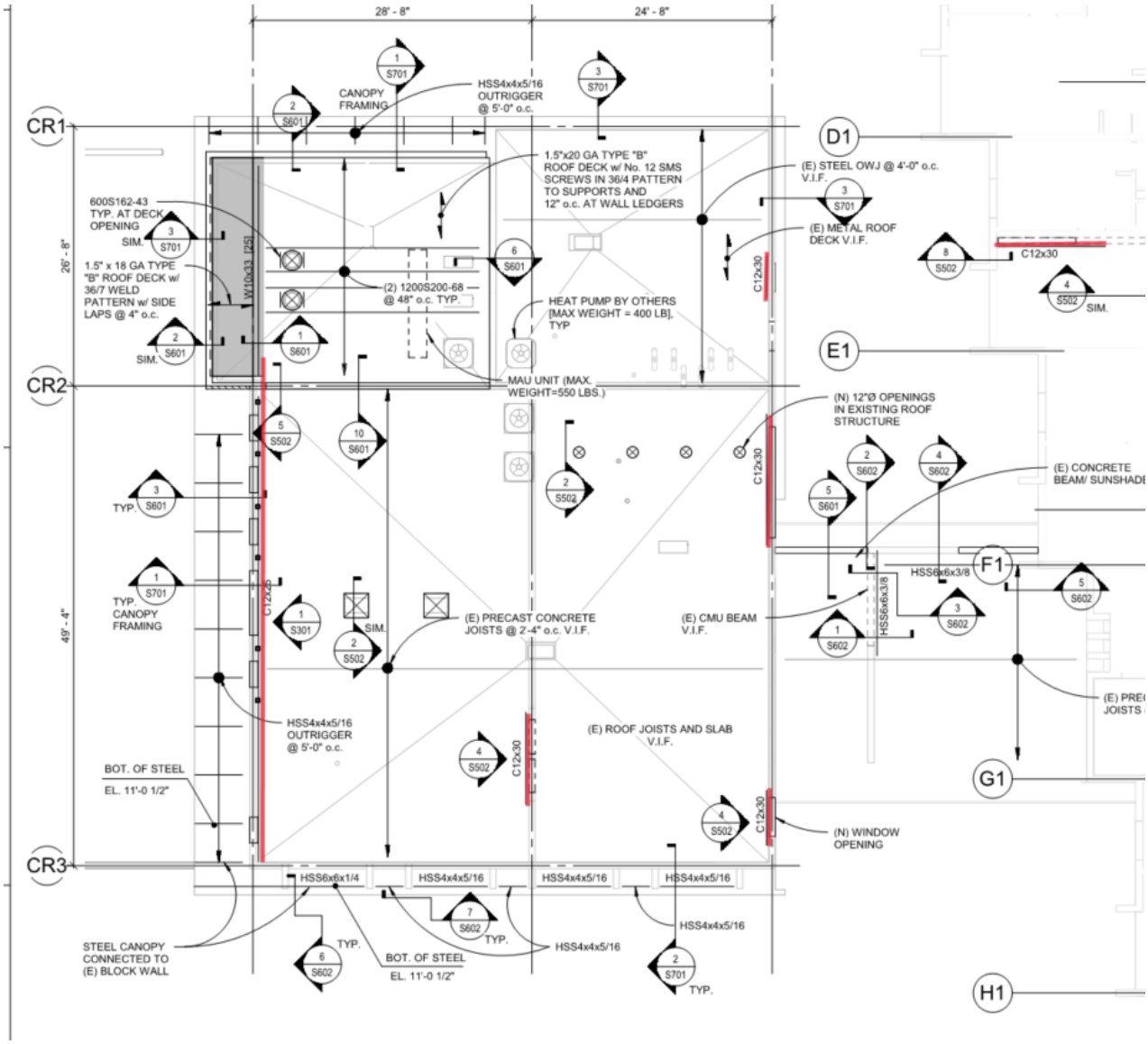


Fig 1: C-Channel Locations.

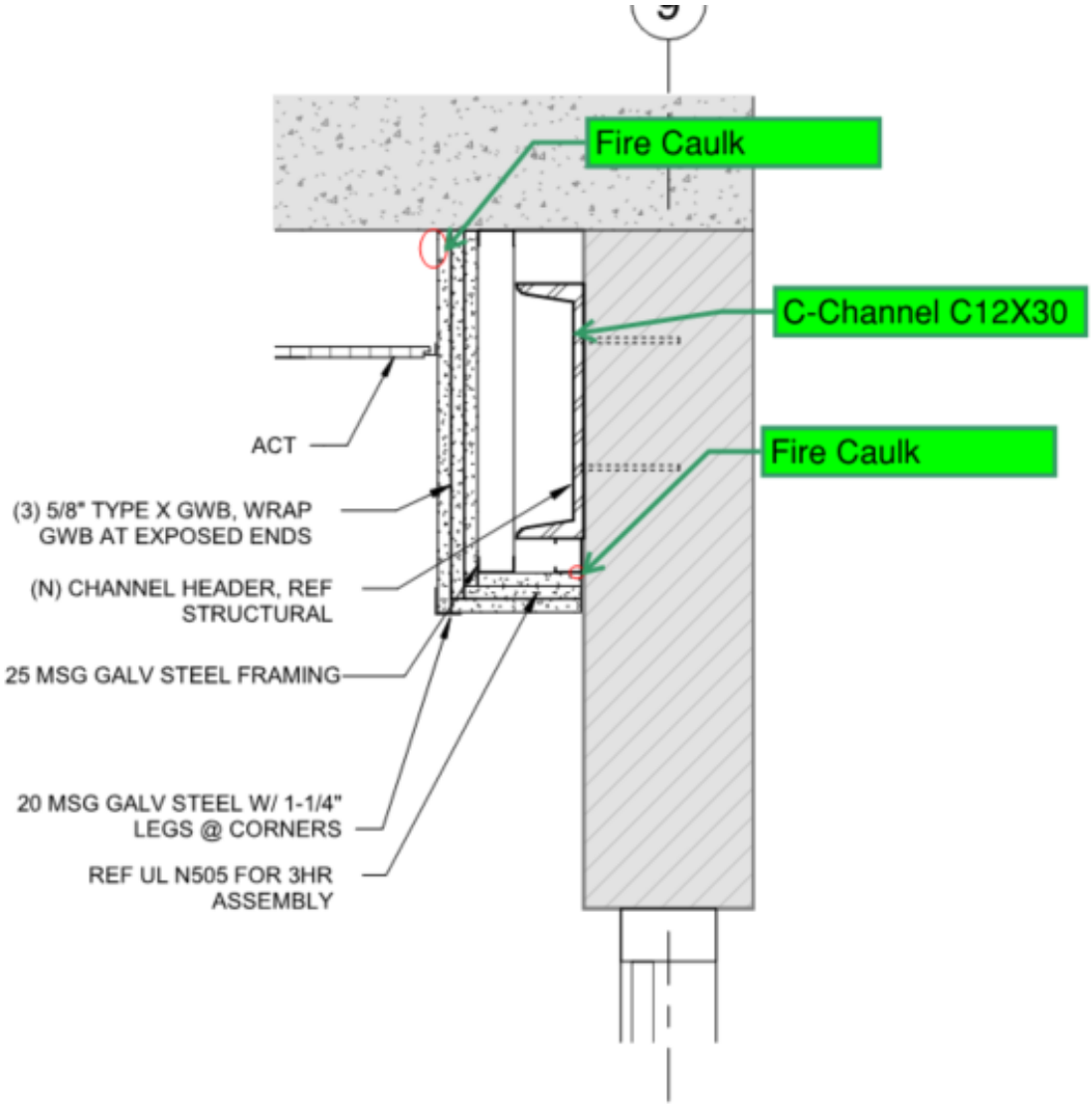


Fig 2: C-Channel Location at office.

5 ASSEMBLY ANALYSIS

The proposed assembly of C-Channel C12X30 is intended as a primary structural member. Compared to the W8x24 beam member in the test assembly N505 as shown in figure 3.

Design No. N505

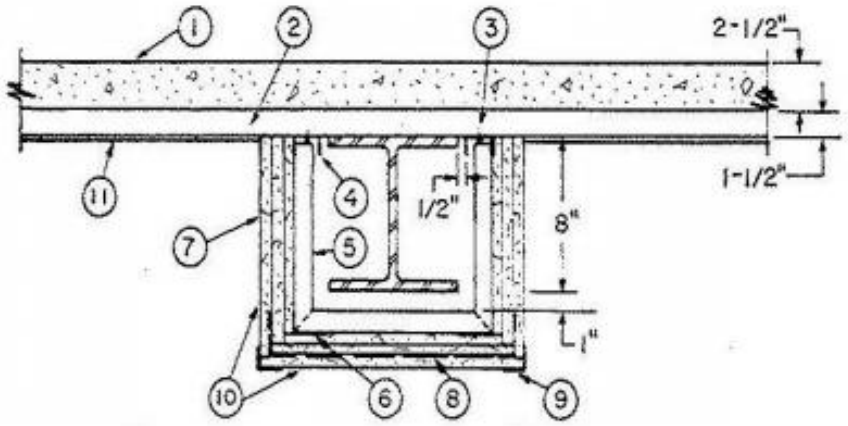
August 27, 2015

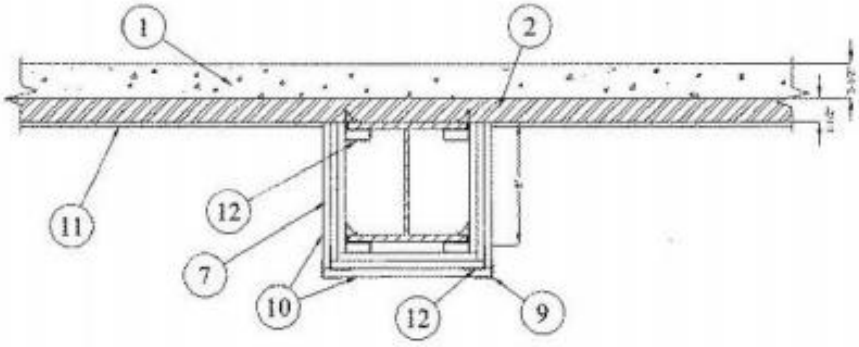
Restrained Beam Rating — 3 Hr.

Unrestrained Beam Rating — 2 Hr.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**





Steel Beam — Min size, a W8 x 24 with outside dimensions of 7 -7/8 x 6-1/2 in. with a flange thickness of 3/8 in., a web thickness of 1/4 in., and a cross-sectional area of 7.06 sq in.

1. **Normal Weight Concrete** — 151 pcf.

2. **Steel Floor and Form Units*** — 1-1/2 in. fluted type, welded to beam.

3. **Drill Screw** — No. 8-18 by 1/2 in. long Phillips panhead drill screws, self-drilling and tapping, made of case-hardened steel.

4. **Runner Channel** — Fabricated from 25 MSG galv steel, 1-11/16 in. deep with 1-in. legs. Fastened to steel deck with drill screws, 12 in. O.C.

5. **Bracket** — Same material as runner channel or 24 MSG galv steel angle with 1 and 2-in. legs, and fastened to runner channels with drill screws (Item 3). Brackets spaced 24 in. O.C.

6. **Corner Angle** — No. 24 MSG galv steel with 1 and 2-in. legs, fastened to brackets with drill screws (Items 3).

7. **Gypsum Board*** — 5/8 in. thick. Inner layer fastened with 1 in. long 0.150 in. diam screws and spaced 16 in. OC. Middle layer attached with 1-5/8 in. long 0.150 in. diam screws spaced 12 in. OC. Outer layer attached with 2-1/4 in. long, 0.150 in. diam screws spaced 8 in. OC. At least one screw at mid-depth of brackets in each layer. Screws are self-drilling and self-tapping Phillips head made of case-hardened steel.

8. **Wire Netting** — No. 20 SWG hexagonal mesh with 20 SWG longitudinal stiffener at third points of 3-ft wide roll. Installed on bottom, bent up approx 1-1/2 in. on each side, and secured to sides with same screws used to hold middle layer or wallboard.

9. **Corner Bead** — Fabricated from 20 MSG galv steel to form an angle with 1-1/4 in. legs. Legs perforated with 1/4 in. diam holes approx 1 in. OC. Attached to wallboard with 4d nails approx 12 in. OC in both legs.

10. **Joint Compound** — 1/32 in. thick on bottom and sides of wallboard from corner beads and feathered out. Paper tape embedded in joint compound over joints with edges of compound feathered out. Nom 3/32 in. thick gypsum veneer plastic may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.

11. **Protective Material — Spray-Applied Fire Resistive Materials*** — Spray applied contour of the units to a thickness of 7/8 in.

See Spray-Applied Fire Resistive Materials (CHPX) category for names of manufacturers.

12. **Alternate Construction - Steel Framing Members-*** — As an alternate to Items 3, 4, 5, 6 and 8 steel clips attached to both sides of beam flanges 2 ft OC and at ends of beam. Inner layer of gypsum board fastened to steel clips with 1-1/4 in. long Type S drywall screws. Middle layer fastened to steel clips with 2 in. long Type S drywall screws. 2 in. by 2 in. 25 MSG angle fastened to clips on bottom portion of assembly with 2 in. long Type S drywall screws. Outer layer of gypsum board fastened to angle and clips with 2-1/4 in. long Type S drywall screws, spaced 2 ft OC. Screws are self-drilling and self-tapping Phillips head made of case-hardened steel.

Figure 3: UL N505 Assembly

METRIC					IMPERIAL				
	Column		Beam			Column		Beam	
SIZE (mm x kg/m)	M/D	Heated Perimeter (m)	M/D	Heated Perimeter (m)	SIZE (in. x lb./ft.)	W/D	Heated Perimeter (in.)	W/D	Heated Perimeter (in.)
W 200 x 42	40.0	1.06	47.6	0.894	W 8 x 28	0.688	40.7	0.819	34.2
x 36	34.8	1.05	41.4	0.885	x 24	0.591	40.6	0.704	34.1

Fig.4. W/D for Beam W8x24

Table 1: Comparison between Tested and Proposed beam assembly

Element	UL Assembly Design No. N505	Proposed Assembly
1. Structural Material	Steel Beam; W8x24 (W/D = 0.704 - Beam) (see Fig 4)	C-Channel C12x30 (W/D=1.26), (see calculation below) **(Higher Inherent Fire Resistance)**
2. Gypsum Board	5/8 in. thick. Inner layer fastened with 1 in. long 0.150 in. diam screws and spaced 16 in. OC. Middle layer attached with 1-5/8 in. long 0.150 in. diam screws spaced 12 in. OC. Outer layer attached with 2-1/4 in. long, 0.150 in. diam screws spaced 8 in. OC. At least one screw at mid depth of brackets in each layer. Screws are self-drilling and self-tapping. Phillips head made of case-hardened steel.	Base layer 5/8 in. thick. Inner layer fastened with 1 in. long 0.150 in. dia screws spaced 16 in. OC to steel standoffs. Middle layer attached with 1-5/8 in. long 0.150 in. diam screws spaced 12 in. OC. 1.5" Outer layer attached with 2-1/4 in. long, 0.150 in. diam screws spaced 8 in. OC. At least one screw at mid depth of brackets in each layer. Screws are self-drilling and self-tapping. Phillips head made of case-hardened steel.
Fire-Resistance Rating	**3-Hour**	**3-Hour (minimum)**

5.1 W/D Comparison of C-Channel and W-Beam

The C-Channel beam has an inherent fire resistance greater than the tested W beam, W/D comparison: 1.26>0.704. We have compared the beam as proposed along with the UL tested configuration. See Fig. 5 below.

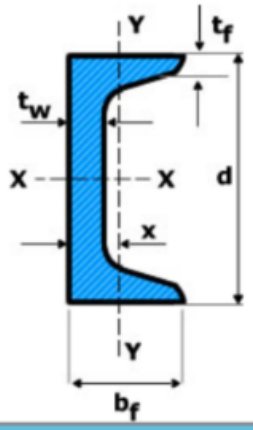
W8x24 (8" Deep, 6.5" Wide, 24 lbs/ft) AISC

Heated Perimeter of C12x30

C-Channel = 12"+2*(3.170"-0.510")+2*3.170" = 23.66"

Total Heated Perimeter = **23.66"**

Calculated W/D Ratio = **1.26**



American Standard Steel C Channel Sizes

Desig-nation	Area, A, in^2	Depth, d, in	Weight lb/ft	Flange		Web Thickness t_w, in	Axis X-X			Axis Y-Y			x, in
				Width, b_f, in	Thickness, t_f, in		I, in^4	S, in^3	r, in	I, in^4	S, in^3	r, in	
C15 x 50	14.7	15.00	50	3.716	0.650	0.716	404	53.8	5.24	11.0	3.78	0.867	0.798
C15 x 40	11.8	15.00	40	3.520	0.650	0.520	349	46.5	5.44	9.23	3.37	0.886	0.777
C15 x 33.9	9.96	15.00	33.9	3.400	0.650	0.400	315	42.0	5.62	8.13	3.11	0.904	0.787
C12 x 30	8.82	12.00	30	3.170	0.501	0.510	162	27.0	4.29	5.14	2.06	0.763	0.674
C12 x 25	7.35	12.00	25	3.047	0.501	0.387	144	24.1	4.43	4.47	1.88	0.780	0.674

Fig.5. C12X30 Dimensions

Beam	Weight(lb/ft)	Perimeter D (in)	W/D
W 8 x 24	24	22.5 (3 Sides)	0.704
C12x30	30	23.66 (3 Sides)	1.26

Fig.6. W/D ratios

When evaluated against the tested configuration. The C-Channel beam has a larger W/D ratio than the tested beam.

6 SUMMARY

While evaluating fire resistance requirement of members, different sized beam and members are compared against each other through a factor referred to as the W/D Ratio. The weight per unit length of a member is divided by the length of exposed heated perimeter area to determine the inherent fire resistance of a member. Lower W/D ratios correspond with thinner steel members that will be subject to earlier failure when heated.

During this evaluation, UL test N505 was considered, where the minimum required W/D ratio (0.704) is less than the proposed W/D ratio (1.26). The tested beam utilizes 3 layers of 5/8” minimum of Type X gypsum board protecting the beam to provide 3-hour fire-resistance (Figure 2). The proposed C-Channel has greater inherent fire-resistance and is additionally protected in the same thickness of Type X gypsum wallboard to provide greater or equivalent protection to the 3-hour fire rated UL N505 beam.

7 CONCLUSION

I have reviewed the proposed member against a beam member UL test. As listed above. The evaluation from N505 (beam) would require 3 layers of 5/8" Type X gypsum wallboard for fireproofing the Beam with the W/D Ratio of 0.704. The C-Channel will comply with the required 3-hr fire resistance requirement if protected by 3 layers of 5/8" Type X gypsum wallboard. The proposed C-Channel has greater inherent fire-resistance with a larger W/D ratio; therefore, the equivalent layers of protection will provide a greater fire resistance than the tested member.

With this detailed review, it is concluded that the protection of 3 layers of Type X GWB—5/8" thickness—will provide 3-hour fire-resistance as required by Table 601 of the OSSC.

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Code Unlimited