

Development Services

From Concept to Construction

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APPEAL SUMMARY

Status: Decision Rendered

Appeal ID: 21960	Project Address: 2211 SW 4th Ave
Hearing Date: 10/2/19	Appellant Name: Tom Jaleski
Case No.: B-019	Appellant Phone: 9712385266
Appeal Type: Building	Plans Examiner/Inspector: Gail Knoll, Corey Stanley
Project Type: commercial	Stories: 6 Occupancy: A-3, B, M, R-2, & S-2 Construction Type: Type III-A over Type I-A
Building/Business Name: SW 4th & Grant	Fire Sprinklers: Yes - Throughout
Appeal Involves: Erection of a new structure	LUR or Permit Application No.:
Plan Submitted Option: pdf [File 1] [File 2] [File 3] [File 4]	Proposed use: Residential, Mixed Use

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	§703.3, §704.2
Requires	<p>703.3 Alternative methods for determining fire resistance. The application of any of the alternative methods listed in this section shall be based on the fire exposure and acceptance criteria specified in ASTM E 119 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:</p> <p>Engineering analysis based on a comparison of building element, component or assemblies designs having</p> <p>fire-resistance ratings as determined by the test procedures set forth in ASTM E 119 or UL 263.</p> <p>704.2 Column Protection</p> <p>than columns. Where columns are required to have protection to be fire-resistance rated, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column length, including connections to other structural members, with materials having the required fire-resistance rating. Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.</p>
Proposed Design	The proposed design assemblies are steel HSS columns. Five (5) similar conditions are analyzed (see fig 1a-1e). The columns are to be protected equally with 1-hr fire resistance rated per 2014 OSSC §704.2.

As detailed in the attached EJ steel columns are protected with gypsum wallboard (GWB) and wood blocking (Column Conditions A, B, C, D and E). These assemblies are required to be 1-hour fire-resistance rated.

Reason for alternative The support members are not part of a UL listed as a fire rated assembly. Since they are part of primary structural members, they are required to be 1-hr fire resistance rated per 2014 OSSC §704.2.

The proposed fire proofing application uses an analysis from an Oregon registered Fire Protection Engineer in the attached EJ#1, to provide equivalent life safety and fire protection for the requirements of the assemblies.

In all 5 conditions, the protection scheme for the columns exceeds the minimum of 60 minutes. The proposed protection will meet the minimum 60-minute fire resistance rating per the OSSC for this application.

Therefore, after review of the attached documentation, we urge you to approve this appeal.

Appeal item 2

Code Section §703.3, §704.3

Requires 703.3 Alternative methods for determining fire resistance. The application of any of the alternative methods listed in this section shall be based on the fire exposure and acceptance criteria specified in ASTM E 119 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:

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 E 119 or UL 263.

704.3 Protection of the primary structural frame other than columns. Members of the primary structural frame other than columns that are required to have protection to achieve a fire-resistance rating and support more than two floors or one floor and roof, or support a load-bearing wall or a nonload-bearing wall more than two stories high, shall be provided individual encasement protection by protecting them on all sides for the full length, including connections to other structural members, with materials having the required fire-resistance rating.

Exception: Individual encasement protection on all sides shall be permitted on all exposed sides provided the extent of protection is in accordance with the required fire-resistance rating, as determined in Section 703.

Proposed Design The proposed design assemblies are steel beams supporting the floors above. Three (3) similar conditions are analyzed (see fig 1a-1c). The beams are to be protected equally with 1-hr fire resistance rated per 2014 OSSC §704.3.

Beams are protected with gypsum wallboard (GWB), wood blocking and SFRM (Beam Conditions A, B, C). These assemblies are required to be 1-hour fire-resistance rated per OSSC Table 601.

Reason for alternative The support members are not part of a UL listed as a fire rated assembly. Since they are part of primary structural members, they are required to be 1-hr fire resistance rated per 2014 OSSC §704.3.

The proposed fire proofing application uses an analysis from an Oregon registered Fire Protection Engineer in the attached EJ#2, to provide equivalent life safety and fire protection for the requirements of the assemblies.

In all 3 conditions, the protection scheme for the beams exceeds the minimum of 60 minutes. The proposed protection will meet the minimum 60-minute fire resistance rating per the OSSC for this application.

Therefore, after review of the attached documentation, we urge you to approve this appeal.

APPEAL DECISION

1. Alternate 1 hour fire rated HSS column assemblies with engineering analysis: Granted as proposed.

2. Alternate 1 hour fire rated beam assemblies with engineering analysis: Granted as proposed.

The Administrative Appeal Board finds 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.

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Engineering Judgement Letter

SW 4th & Grant - EJ #1

Fire Protection-Steel Column

Client Name: Koz Development

Client Address: 1830 Bickford Ave, Suite 201 Snohomish, WA 98290

Date: 9/30/2019

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1 PROJECT OVERVIEW

The SW 4th & Grant project is a new podium style apartment building being developed in Portland, Oregon by KOZ Development. Some of the proposed building systems do not meet a tested fire resistive assembly requirement. Code Unlimited has been asked to provide an analysis and engineering judgement letter for these conditions. The building is 6 stories with approximately 108 studio apartments units. The building is arranged in an “L” shape opening to the I-405 freeway. A retail space will be located at the corner of 4th and Grant.

The proposed 6 story building of III-A over I-A construction contains groups A-3, B, M, R-2, & S-2 occupancies. The building is protected by automatic fire sprinkler and fire alarm systems throughout. The support members are not part of a UL listed as a fire rated assembly. Since they are part of primary structural members, they are required to be 1-hr fire resistance rated per 2014 OSSC §704.2.

2 APPLICABLE CODES, STANDARDS, AND GUIDES

- 2014 Oregon Structural Specialty Code
- 2015 National Design Standard (NDS) Technical Report NO. 10 (TR-10)– Fire Resistance of Exposed Wood Members - American Wood Council

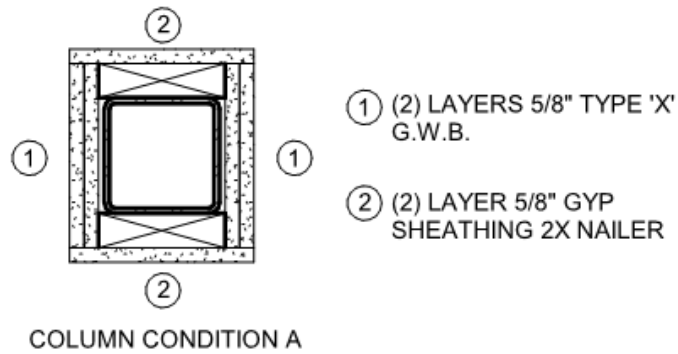
3 APPROACH

- The proposed assembly has been analyzed in accordance with 2014 OSSC §703.3 **Alternative Methods for Determining Fire Resistance**.
- 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.
- NDS TR-10 is utilized to calculate wood char protection.
- The proposed design has been evaluated by an Oregon Licensed Fire Protection Engineer.

4 PROPOSED DESIGN

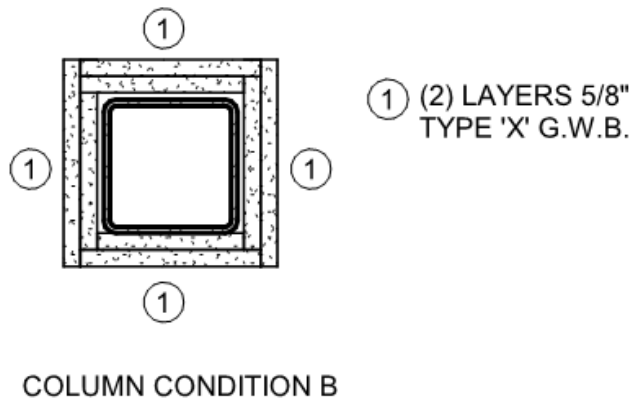
The proposed design assemblies are steel HSS columns. Five (5) similar conditions are analyzed (see fig 1a-1e). The columns are to be protected equally with 1-hr fire resistance rated per 2014 OSSC §704.2.

As shown on Detail 1 (a-e), steel columns are protected with gypsum wallboard (GWB) and wood blocking (Column Conditions A, B, C, D and E). These assemblies are required to be 1-hour fire-resistance rated.



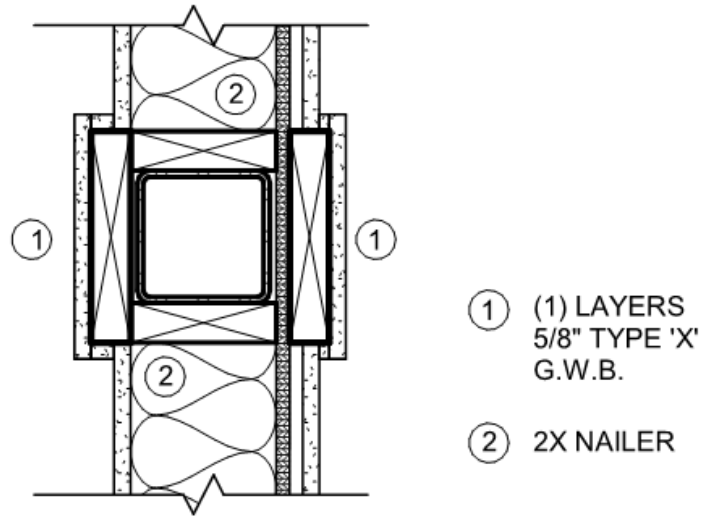
HSS 5x5x1/4" COLUMN SUPPORTING
2 OR MORE FLOORS
1 HOUR INDIVIDUAL ENCASEMENT REQUIRED

Figure 1a: HSS Column Protection (Condition A)



HSS 5x5x1/4" COLUMN SUPPORTING
2 OR MORE FLOORS
1 HOUR INDIVIDUAL ENCASEMENT REQUIRED

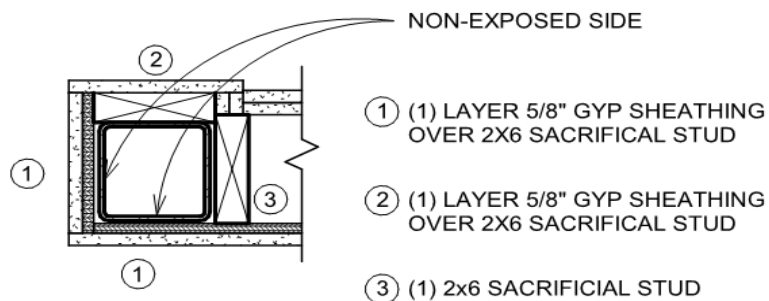
Figure 1b: HSS Column Protection (Condition B)



COLUMN CONDITION C

HSS 5x5x1/4" COLUMN SUPPORTING
2 OR MORE FLOORS
1 HOUR INDIVIDUAL ENCASEMENT REQUIRED

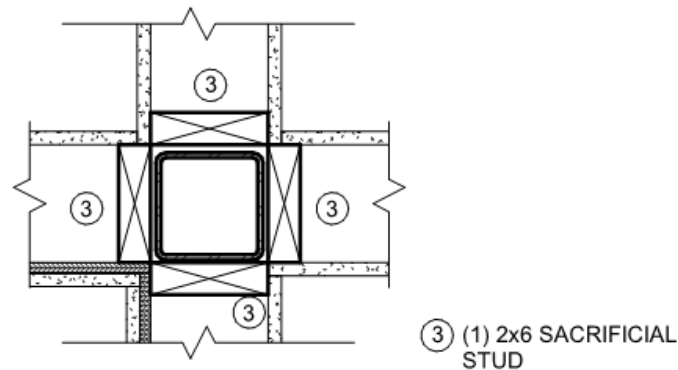
Figure 1c: HSS Column Protection (Condition C)



COLUMN CONDITION D

HSS 5x5x1/4" COLUMN SUPPORTING
2 OR MORE FLOORS
1 HOUR INDIVIDUAL ENCASEMENT REQUIRED

Figure 1d: HSS Column Protection (Condition D)



COLUMN CONDITION E

HSS 5x5x1/4" COLUMN SUPPORTING
 2 OR MORE FLOORS
1 HOUR INDIVIDUAL ENCASEMENT REQUIRED

Figure 1e: HSS Column Protection (Condition E)

5 ASSEMBLY ANALYSIS

The proposed structural columns supporting the floors above in the Type IIIA portion of the building and are required to be protected for a 1-hr rating per OSSC, Table 601.

The proposed assemblies utilize an 5x5x1/4 HSS primary structural column. Where covered in 2 layers of GWB, the protection is compared to the *GA-CM 1451;UL Design D759*.

Note HSS 5x5x1/4 (W/D Ratio = 0.76) is heavier than HSS 4x4x3/16 (W/D Ratio = 0.57).

Fig. 1a

Column is to be protected with a combination of sacrificial studs and 5/8" Type X, GWB. Top and Bottom are protected with 1 hour of equivalent wood and 20 minutes of GWB over sacrificial blocking.

Location on Column	Protection Element	
Top and Bottom of detail	<ul style="list-style-type: none"> • (1) Layers of Type X gypsum board • (1) 2 x blocking 	<ul style="list-style-type: none"> • 20 mins for the bottom layer of 5/8" Type X gypsum board per NDS TR10 • 60 Minutes for 1.5" wood per OSSC <p>(Exceeds 60 Minutes)</p>
Left and Right side of detail	<ul style="list-style-type: none"> • (2) Layers of Type X gypsum board 	<ul style="list-style-type: none"> • 80 Minutes per CAM, OSSC • Exceeds UL design D759 (Fig 2 below)
Fire-Resistance Rating	Required (60 min minimum)	60 min (Exceeds minimum)

Fig. 1b

Column is to be protected with 2 layers of 5/8" Type X, GWB.

Location on Column	Protection Element	
Left and Right side of detail	<ul style="list-style-type: none"> • (2) Layers of Type X gypsum board 	<ul style="list-style-type: none"> • 80 Minutes per CAM, OSSC • Exceeds UL design D759 (Fig 2 below)
Fire-Resistance Rating	Required (60 min minimum)	60 min (Exceeds minimum)

Fig. 1c

Column is to be protected with a combination of sacrificial studs and 5/8" Type X, GWB. Sides are protected with 1 hour of equivalent wood and 20 minutes of GWB over sacrificial blocking.

Location on Column	Protection Element	
Left and Right of detail	<ul style="list-style-type: none"> • (1) Layer of Type X gypsum board • (1) 2 x blocking 	<ul style="list-style-type: none"> • 20 mins for the bottom layer of 5/8" Type X gypsum board per NDS TR10 • 60 Minutes for 1.5" wood per OSSC (Exceeds 60 Minutes)
Top side of detail	(1) 2 x blocking (in stud cavity)	<ul style="list-style-type: none"> • 60 Minutes for 1.5" wood per OSSC
Fire-Resistance Rating	Required (60 min minimum)	60 min (Exceeds minimum)

Fig. 1d

Column is to be protected with a combination of sacrificial studs and 5/8" Type X, GWB. Left and Bottom sides are not exposed to fire as the face exterior and Fire Separation distance is greater than 30 ft.

Location on Column	Protection Element	
Top and Right of detail	<ul style="list-style-type: none"> • (1) Layers of Type X gypsum board • (1) 2 x blocking (in stud cavity) 	<ul style="list-style-type: none"> • 60 Minutes for 1.5" wood per OSSC (60 Minutes)
Left and bottom side of detail	<ul style="list-style-type: none"> • Not rated 	<ul style="list-style-type: none"> • Per Table 602
Fire-Resistance Rating	Required (60 min minimum)	60 min (Meets minimum)

Fig. 1e

Column is to be protected with a combination of sacrificial studs on all sides in a stud wall.

Location on Column	Protection Element	
All sides of detail	<ul style="list-style-type: none"> • (1) 2 x blocking (in stud cavity) 	<ul style="list-style-type: none"> • 60 Minutes for 1.5" wood per OSSC (Meets 60 Minutes)
Fire-Resistance Rating	Required (60 min minimum)	60 min (Meets minimum)

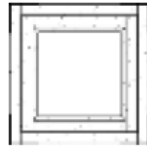
COLUMNS, NONCOMBUSTIBLE			
GA FILE NO. CM 1451	GENERIC	1 HOUR FIRE	
<p>GYPSUM WALLBOARD, STEEL COLUMN COVER</p> <p>Base layer 1/2" type X gypsum wallboard applied around TS4x4x0.188 tube steel column and held in place with paper masking tape. Second layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x1/2" sheet metal screws 12" o.c. Face layer 1/2" type X gypsum wallboard applied without horizontal joints to column cover with 1" Type S drywall screws 8" o.c. spaced 1" from vertical edges. Metal cornerbead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange.</p>			
			<p>Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X526</p>

Figure 2: GA-CM 1451;UL Design D759

6 SUMMARY

During this evaluation, a UL test D759 (GA-CM 1451) was considered, the test assembly is protected on all sides with (2) layers of 1/2" Type X GWB. The proposed Columns are protected on all sides with a combination of 5/8" Type X GWB, Wood blocking or a combination of both.

7 CONCLUSION

In all 5 conditions, the protection scheme for the columns exceeds the minimum of 60 minutes. The proposed protection will meet the minimum 60-minute fire resistance rating per the OSSC for this application.



EXPIRES 12-31-19

Franklin Callfas
Principal/Fire Protection Engineer
Code Unlimited



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Engineering Judgement Letter

SW 4th & Grant - EJ #2

Fire Protection-Steel Beams

Client Name: Koz Development

Client Address: 1830 Bickford Ave, Suite 201 Snohomish, WA 98290

Date: 9/30/2019

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1 PROJECT OVERVIEW

The SW 4th & Grant project is a new podium style apartment building being developed in Portland, Oregon by KOZ Development. Some of the proposed building systems do not meet a tested fire resistive assembly requirement. Code Unlimited has been asked to provide an analysis and engineering judgement letter for these conditions. The building is 6 stories with approximately 108 studio apartments units. The building is arranged in an “L” shape opening to the I-405 freeway. A retail space will be located at the corner of 4th and Grant.

The proposed 6 story building of III-A over I-A construction contains groups A-3, B, M, R-2, & S-2 occupancies. The building is protected by automatic fire sprinkler and fire alarm systems throughout. The support members are not part of a UL listed as a fire rated assembly. Since they are part of primary structural members, they are required to be 1-hr fire resistance rated per 2014 OSSC §704.3.

2 APPLICABLE CODES, STANDARDS, AND GUIDES

- 2014 Oregon Structural Specialty Code
- 2015 National Design Standard (NDS) Technical Report NO. 10 (TR-10)– Fire Resistance of Exposed Wood Members - American Wood Council

3 APPROACH

- The proposed assembly has been analyzed in accordance with 2014 OSSC §703.3 **Alternative Methods for Determining Fire Resistance**.
- 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.
- NDS TR-10 is utilized to calculate wood char protection.
- The proposed design has been evaluated by an Oregon Licensed Fire Protection Engineer.

4 PROPOSED DESIGN

The proposed design assemblies are steel beams supporting the floors above. Three (3) similar conditions are analyzed (see fig 1a-1c). The beams are to be protected equally with 1-hr fire resistance rated per 2014 OSSC §704.3.

As shown on Detail 1 (a-c), beams are protected with gypsum wallboard (GWB), wood blocking and SFRM (Beam Conditions A, B, C). These assemblies are required to be 1-hour fire-resistance rated per OSSC Table 601.

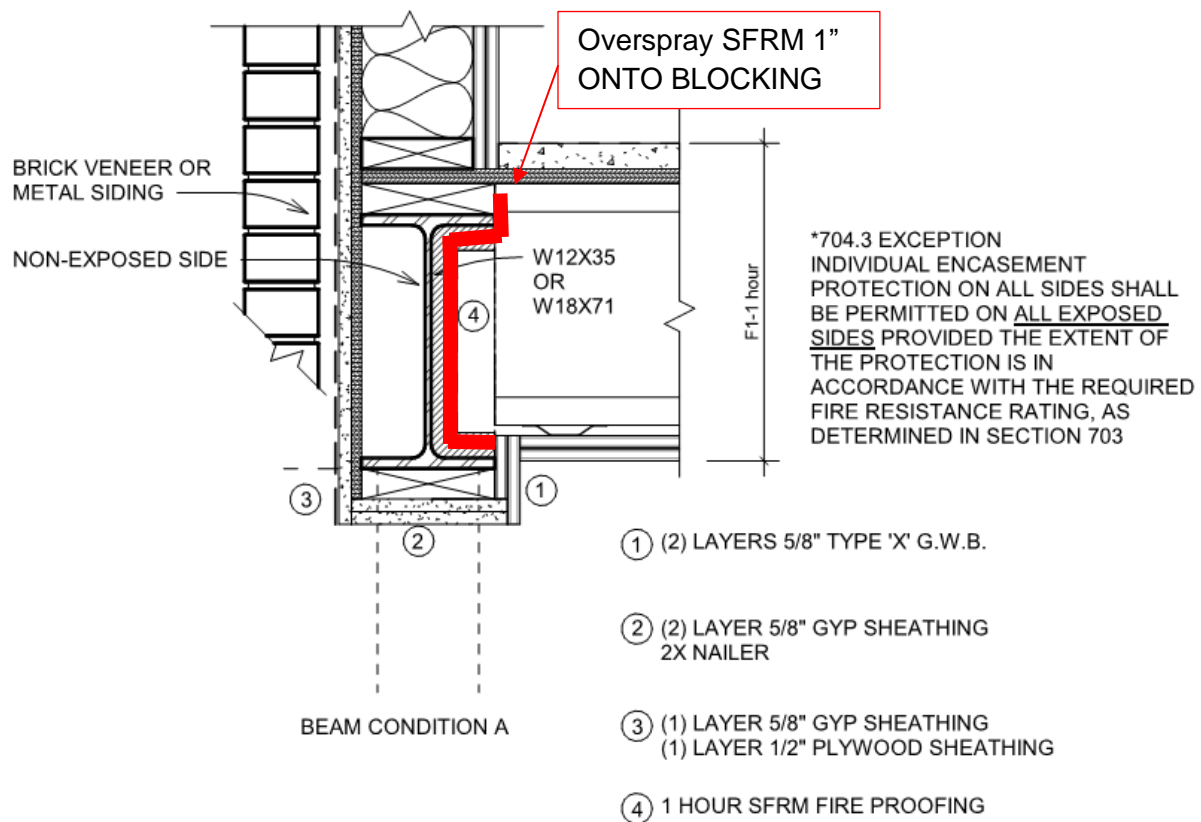


Figure 1a: Beam Protection (Condition A)

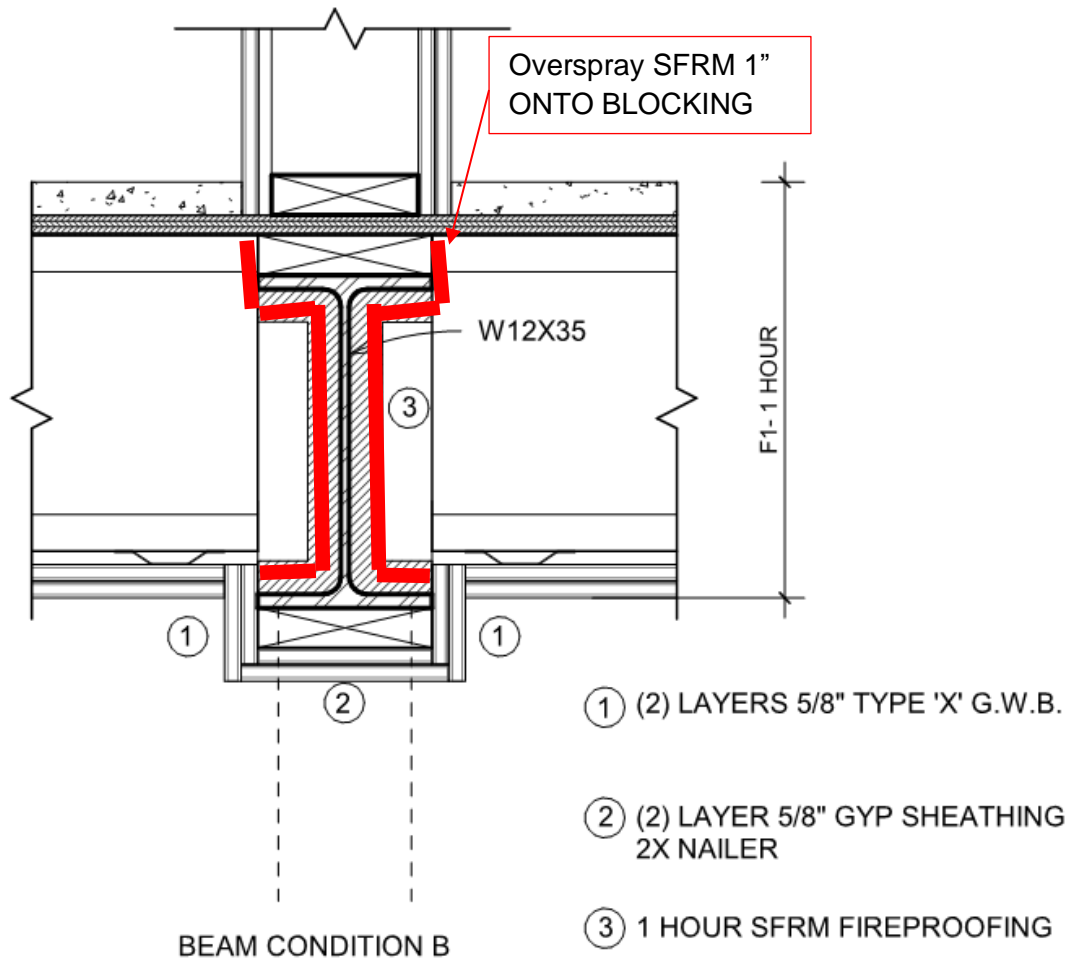


Figure 1b: Beam Protection (Condition B)

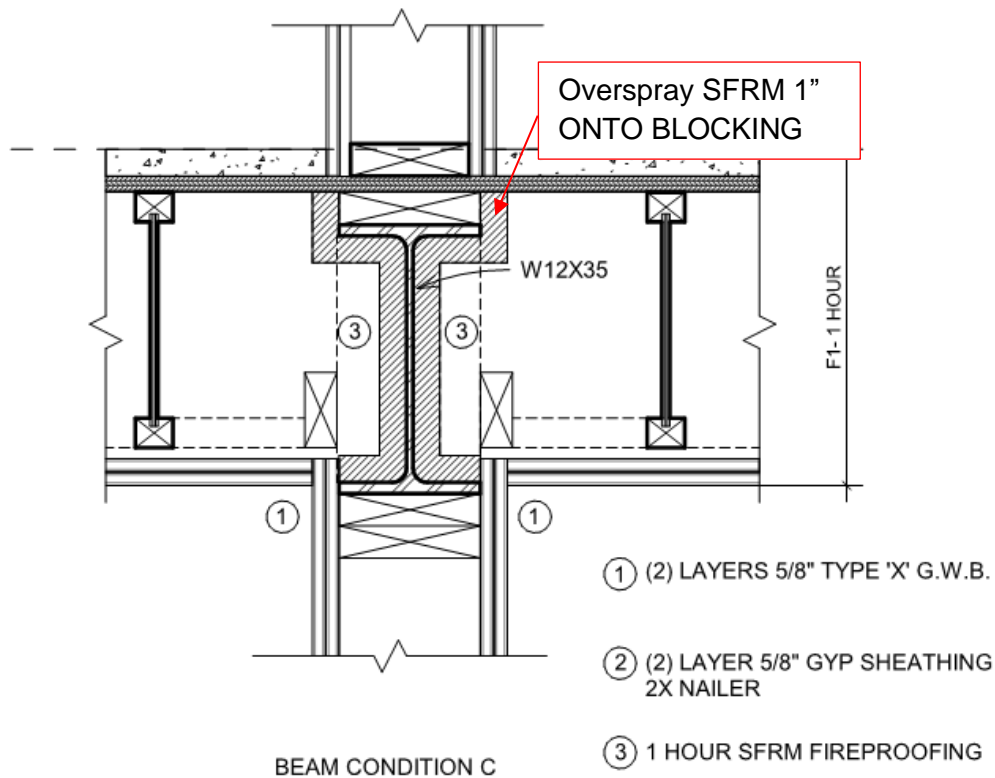


Figure 1c: Beam Protection (Condition C)

5 ASSEMBLY ANALYSIS

The proposed structural beams (W12x35(W/D=0.810) and W18x71 (W/D=1.22)) supporting the floors above in the Type IIIA portion of the building and are required to be protected for a 1-hr rating per OSSC, Table 601.

The proposed assemblies evaluate the W12x35 beam. Where covered in SFRM, the protection is compared to the *UL Design S720*.

Note W8x28 Beam (UL (W/D Ratio = 0.819) is similar in weight to W12x35 (W/D Ratio = 0.810).

Proposed Design 1A(Fig. 1a)

Beam is to be protected with a combination of sacrificial studs and 5/8" Type X, GWB. Top and Bottom are protected with 1 hour of equivalent wood and 20 minutes of GWB over sacrificial blocking.

Location on Beam	Protection Element	
Bottom of detail	<ul style="list-style-type: none"> • (2) Layers of Type X gypsum board • (1) 2 x blocking 	<ul style="list-style-type: none"> • 60 mins for the 5/8" Type X gypsum board • 60 Minutes for 1.5" wood per OSSC <p>(Exceeds 60 Minutes)</p>
Right side of detail	<ul style="list-style-type: none"> • SFRM per S720 (9/16") 	<ul style="list-style-type: none"> • Meets UL design S720 (Fig 2 below)
Fire-Resistance Rating	Required (60 min minimum)	60 min (Exceeds minimum)

Proposed Design 1B (Fig. 1b)

Beam is to be enclosed in ceiling with 2 layers of 5/8" Type X GWB , Wood Blocking and SFRM.

Location on Beam	Protection Element	
Bottom of detail	<ul style="list-style-type: none"> • (2) Layers of Type X gypsum board • (1) 2 x blocking 	<ul style="list-style-type: none"> • 60 mins for the 5/8" Type X gypsum board • 60 Minutes for 1.5" wood per OSSC • (Exceeds 60 Minutes)
Left and Right side of detail	<ul style="list-style-type: none"> • SFRM per S720 (9/16") 	<ul style="list-style-type: none"> • Meets UL design S720 (Fig 2 below)
Fire-Resistance Rating	Required (60 min minimum)	60 min (Exceeds minimum)

Proposed Design 1B (Fig. 1b)

Beam is to be enclosed in ceiling with 2 layers of 5/8" Type X GWB , Wood Blocking and SFRM.

Location on Beam	Protection Element	
Bottom of detail	<ul style="list-style-type: none"> • (2) Layers of Type X gypsum board • (2) 2 x blocking 	<ul style="list-style-type: none"> • 60 mins for the 5/8" Type X gypsum board • 120 Minutes for 1.5" wood per OSSC • (Exceeds 60 Minutes)
Left and Right side of detail	<ul style="list-style-type: none"> • SFRM per S720 (9/16") 	<ul style="list-style-type: none"> • Meets UL design S720 (Fig 2 below)
Fire-Resistance Rating	Required (60 min minimum)	60 min (Exceeds minimum)

Design No. S720

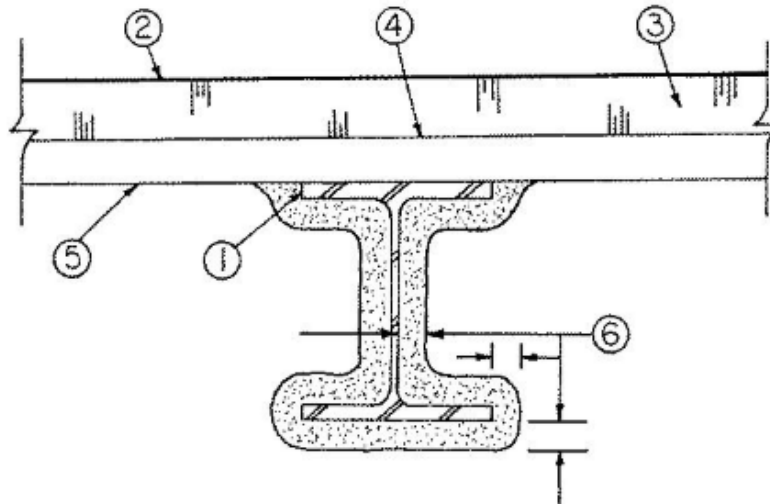
November 12, 2014

Restrained Beam Ratings — 1, 1-1/2, 2 or 3 Hr (See Item 6)

Unrestrained Beam Ratings — 1, 1-1/2, 2 or 3 Hr (See Item 6)

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.



1. Steel Beam — W8X28 min size.

2. Roof Covering* — Consisting of hot mopped, cold application or single-ply materials, compatible with insulation(s) described herein which provide Class A, B or C coverings. See Roofing Materials and Systems Directory-Roof Covering Materials (TEVT).

3. Roof Insulation* — Mineral and fiber boards, applied in one or more layers. When multiple layers are used, end and side joints shall be offset a min of 12 in. in both directions in order to lap all joints. See Mineral and Fiber Boards (CERZ) category in the Fire Resistance Directory for names of manufacturers. Roof insulation shall be compatible with Roof Covering (Item 2). See Roofing Materials and Systems Directory-Roof Covering Materials (TEVT).

4. Adhesive* — Applied to crests of roof deck units and/or insulation in 1/2 in. wide ribbons at 0.4 gal per 100 sq ft. See Adhesives (BYWR) category for names of companies which can supply adhesive.

5. Steel Roof Deck — (Unclassified) — Fluted, No. 22 MSG, galv, 1-1/2 in. deep with 3-1/2 in. wide flutes spaced 6 in. OC. Ends overlapped 1-1/2 min, at supports and welded 12 in. OC to supports. Adjacent units welded or button punched together 18 in. OC max.

6. Spray-Applied Fire Resistant Materials* — See table below for appropriate thicknesses. Prepared by mixing with water and spray or trowel applied in one or more coats to beam surfaces which must be clean and free of dirt, loose scale and oil. Flute areas above the beam shall be filled with Spray-Applied Fire Resistant Materials. Min average density of 38 pcf with min individual density of 35 pcf for Type 800. Min avg density of 44 pcf with min ind value of 40 pcf for Type M-II. Min avg density of 44 pcf with min ind value of 42 pcf for Type TG. For method of density determination, see Design Information Section, Sprayed Material.

Restrained & Unrestrained Beam Rating Hr	Min Thkns In.
1	9/16
1-1/2	15/16
2	1-5/8
3	2-9/16

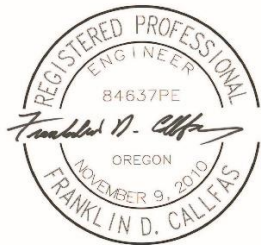
Figure 2: UL Design D720

6 SUMMARY

During this evaluation UL test S720 was considered, the test assembly is protected on exposed sides with 9/16" SFRM. The difference in W/D ratio from the proposed beam to the UL tested beam can be disregarded as the proposed beam is only partially exposed to heat and the actual W/D ratio "as constructed" would be much higher, therefore the comparison is quite conservative. The proposed Beams are protected on all sides with a combination of Type X GWB, Wood blocking or a combination of both with SFRM oversprayed onto the wood blocking to ensure complete protection during a fire scenario.

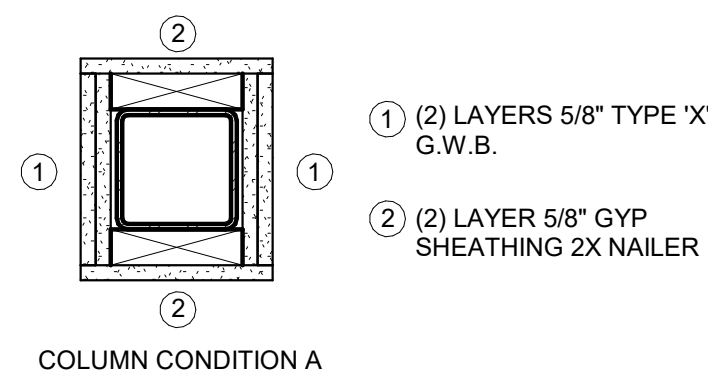
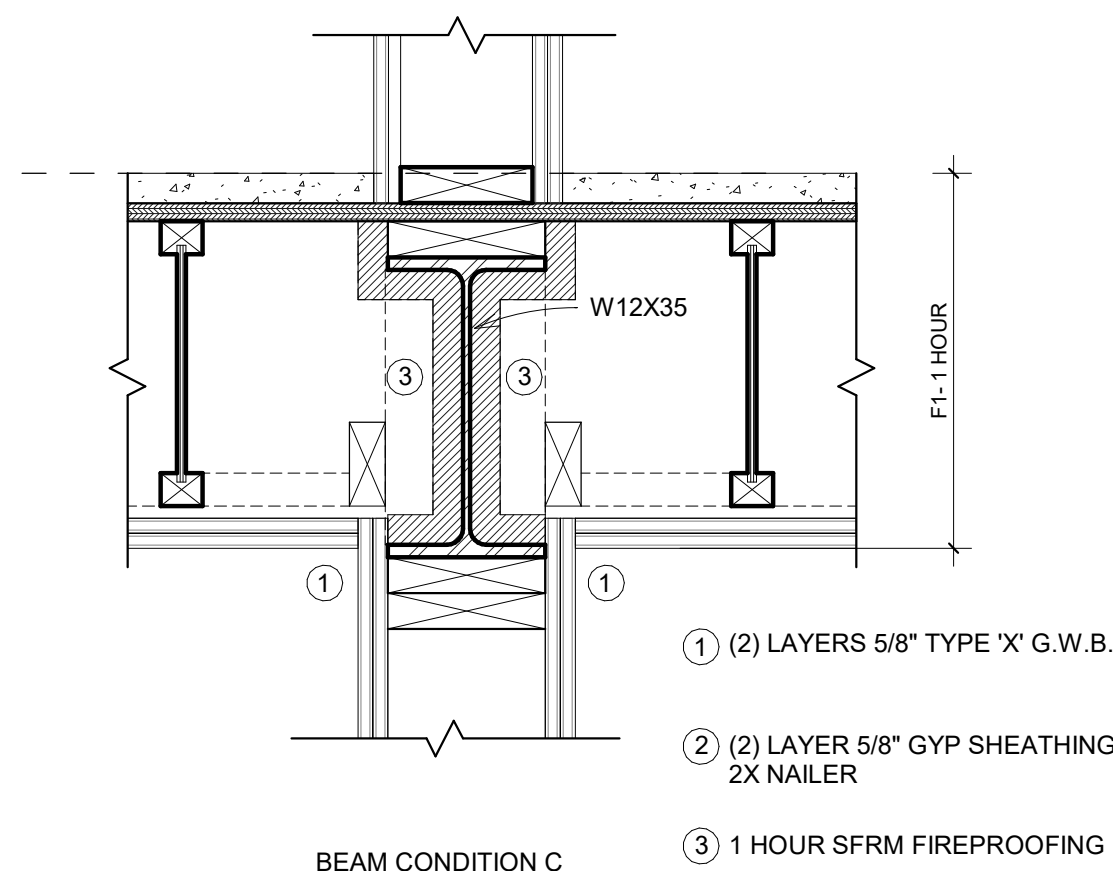
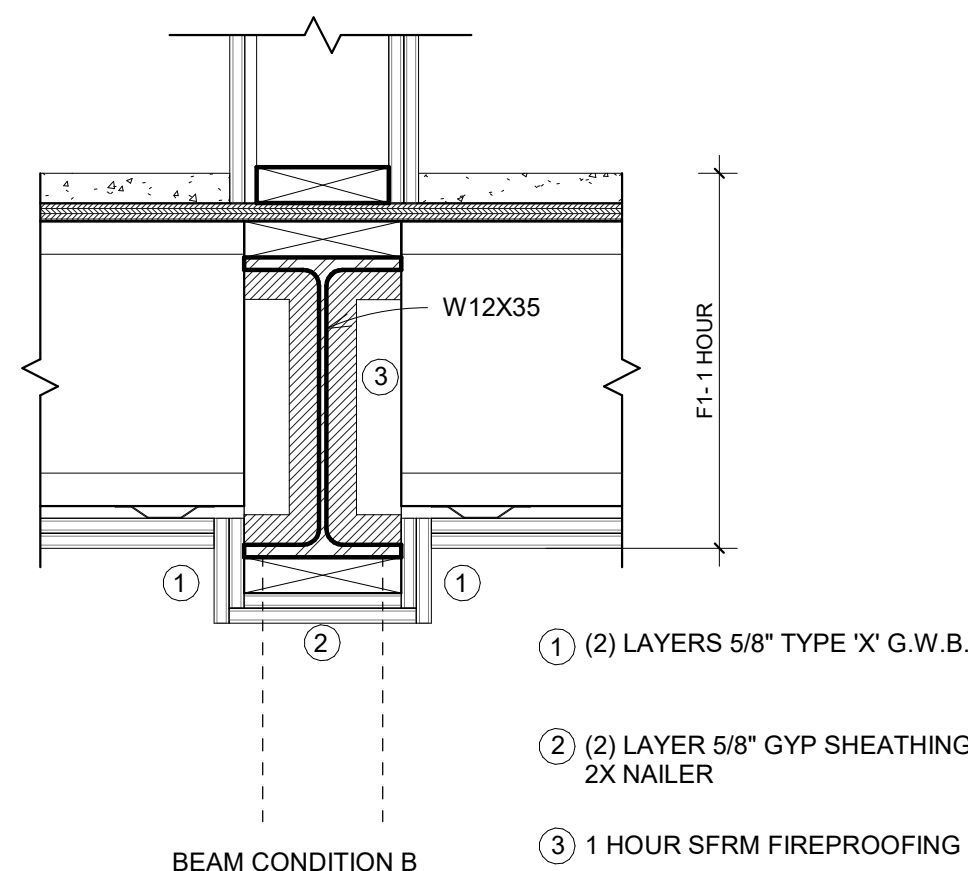
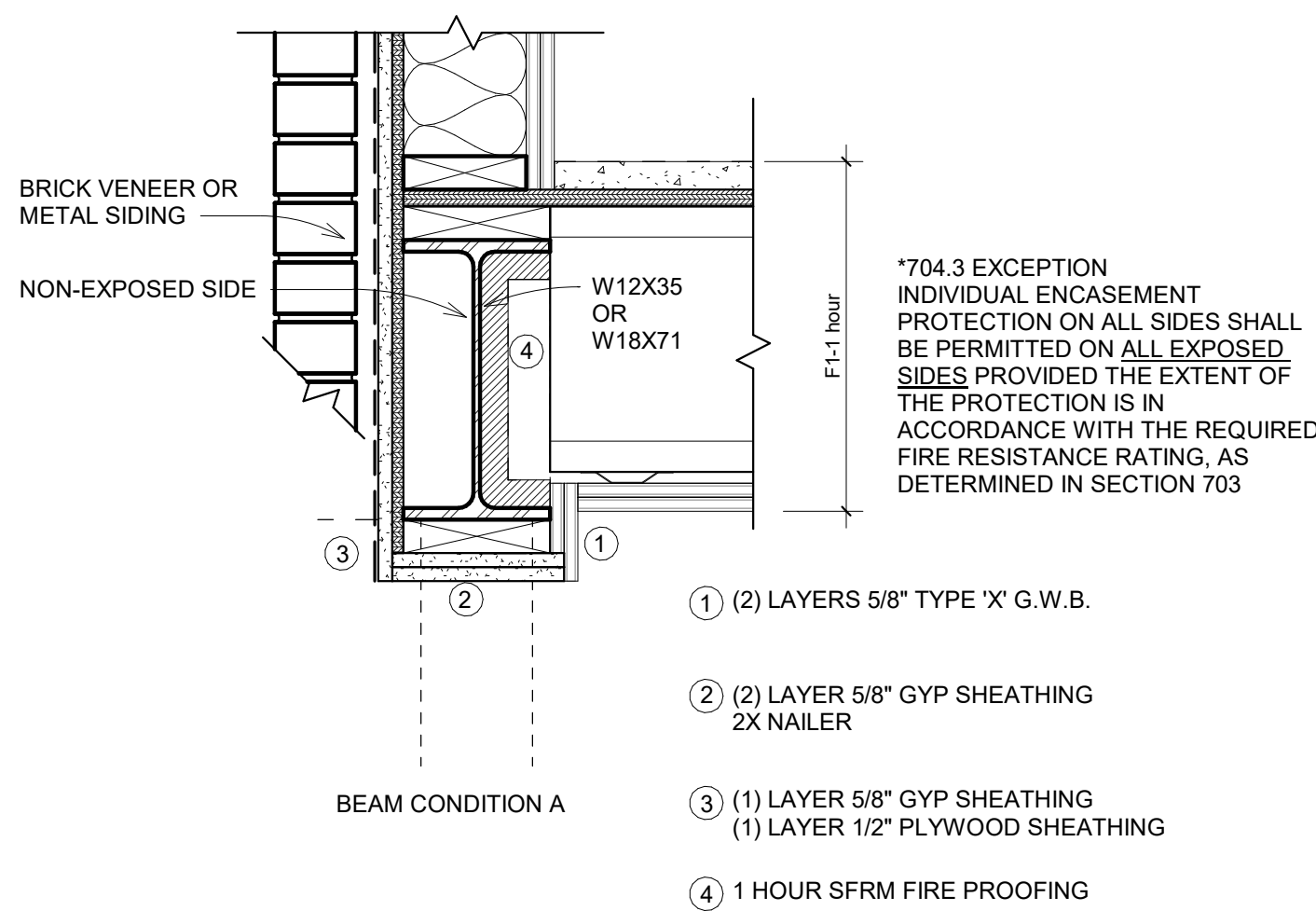
7 CONCLUSION

In all 3 conditions, the protection scheme for the beams exceeds the minimum of 60 minutes. The proposed protection will meet the minimum 60-minute fire resistance rating per the OSSC for this application.

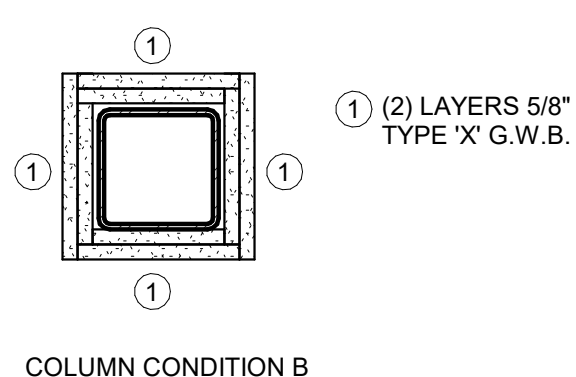


EXPIRES 12-31-19

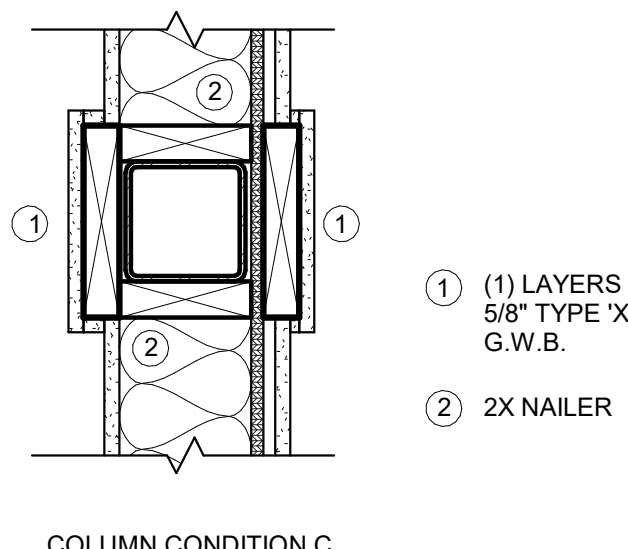
Franklin Callfas
Principal/Fire Protection Engineer
Code Unlimited



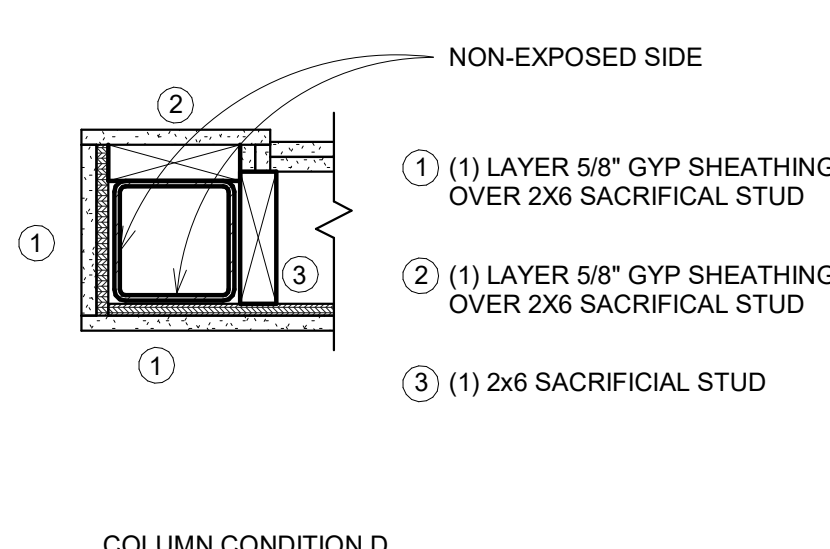
HSS 5x5x1/4" COLUMN SUPPORTING
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1 HOUR INDIVIDUAL ENCASEMENT REQUIRED



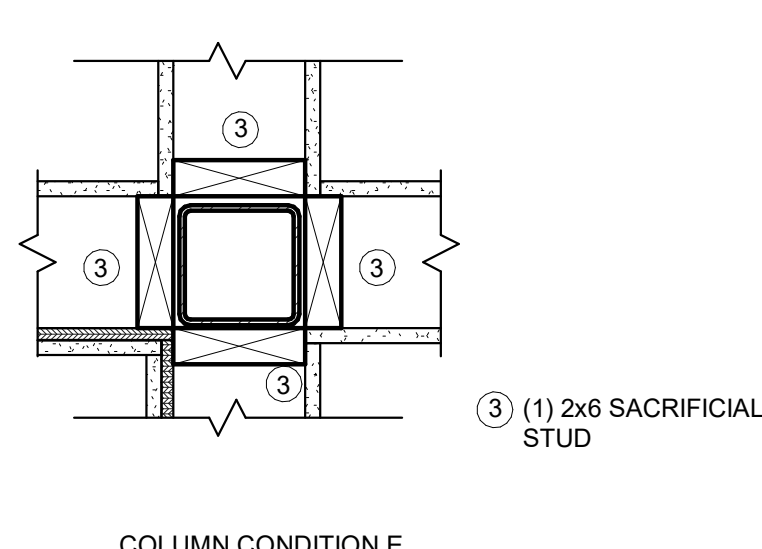
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HSS 5x5x1/4" COLUMN SUPPORTING
2 OR MORE FLOORS
1 HOUR INDIVIDUAL ENCASEMENT REQUIRED



HSS 5x5x1/4" COLUMN SUPPORTING
2 OR MORE FLOORS
1 HOUR INDIVIDUAL ENCASEMENT REQUIRED

① FIREPROOFING DETAILS AT PRIMARY FRAME
1 1/2" = 1'-0"

CONSTRUCTION SET



DATE DESCRIPTION

kōz
DEVELOPMENT

1830 BICKFORD AVE.,
SUITE 201
SNOHOMISH, WA 98290
206.755.1290

GRANT AND 4TH

2211 SW 4TH AVENUE
PORTLAND, OR 97201

FIREPROOFING DETAILS AT
PRIMARY FRAME

DATE: 2019-03-28

SHEET: SK-27

Plan Notes

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
- WOOD FRAMING IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED. REFER TO SHEARWALL SCHEDULE ON 2/S4.1 FOR SILL PLATE BOLTING REQUIREMENTS.
- REFER TO SHEARWALL SCHEDULE ON 2/S4.1 FOR 3X SILL PLATE REQUIREMENTS, WHERE OCCURS.
- BWx REFERS TO BEARING WALL OCCURRING AT ALL LEVELS ABOVE. FRAMING BEARING WALLS @ EACH FLOOR PER THE BEARING WALL SCHEDULE. (SHEARWALL TYPES ARE CALLED OUT INDIVIDUALLY AT EACH LEVEL)
- REFER TO BEARING WALL SCHEDULE ON PLAN FOR DOUG-FIR SILL PLATE REQUIREMENTS, WHERE OCCURS.
- REFER GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.

Legend

STRUCTURAL WOOD WALL ABOVE

+Hxx
→ HOLDOWN STRAP REFER 5/S3.3
→ TO ALIGN W/ HOLDOWN ABOVE

+HD#1
→ HOLDOWN PER 4/S3.3
→ TO ALIGN W/ HOLDOWN ABOVE

CORRIDOR LIVE LOAD = 100 PSF

PATIO WATER RETENTION AREA
(designed for superimposed DL = 60 PSF)

Schedules

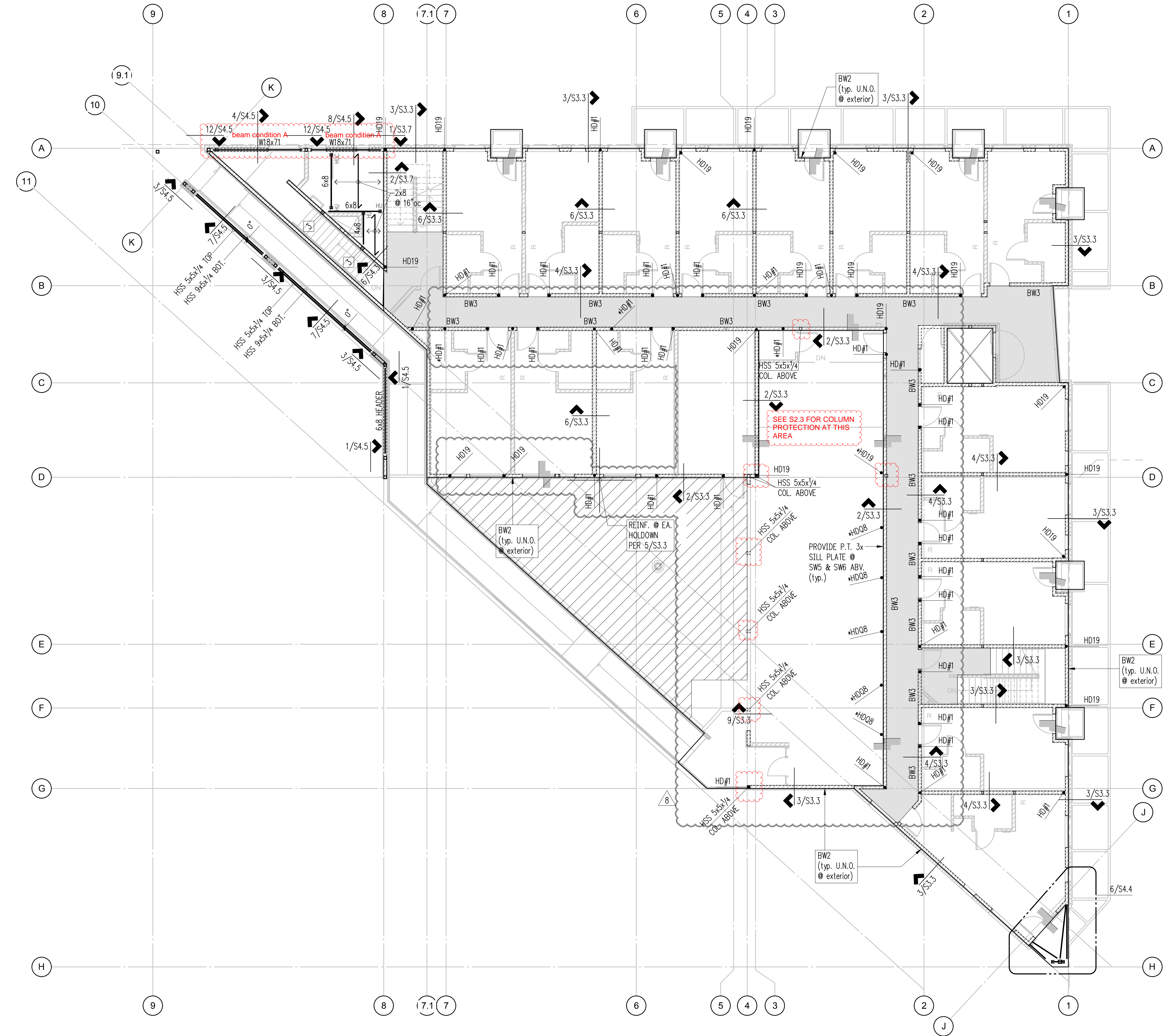
Wood Column Schedule

MARK	LEVEL	2x4	2x6
WC1	ALL	—	FULL-HT PSL 5/4x5 1/4 W/ (2)A35 TO T&B PLATE
	6TH	2	2
	5TH	2	2
WC2	4TH	2	2
	3RD	2	2
	2ND	3	2
WC3	6TH	2	2
	5TH	2	2
	4TH	3	2
WC3	3RD	4	3
	2ND	5	3

Bearing Wall Schedule

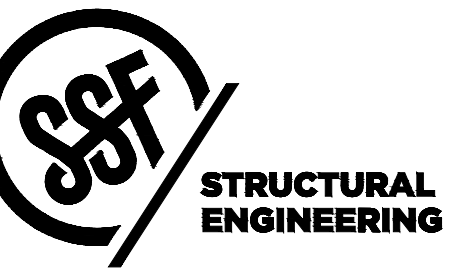
MARK	LEVEL	2x4	2x6
BW1 ^②	6TH	③ 16"	③ 16"
	5TH	③ 16"	③ 16"
	4TH	③ 16"	③ 16"
	3RD	③ 16"	③ 16"
BW2 ^①	2ND	③ 16"	③ 16"
	6TH	—	③ 12"
	5TH	—	(2) ③ 12"
	4TH	—	(2) ③ 16"
BW3 ^①	3RD	—	(2) ③ 16"
	2ND	—	(2) ③ 12"
	6TH	—	③ 16"
	5TH	—	(2) ③ 16"
BW3 ^①	4TH	—	(2) ③ 16"
	3RD	—	(2) ③ 12"
	2ND	—	(2) ③ 12"

- ① BW2 & BW3 MAY NOT BE BUILT W/ 2x4 STUDS.
② STRUCTURAL WALLS TO BE BW1 (typ. U.N.O.).
③ BEARING WALLS NOTED ON S2.2B SHALL CONTINUE ON ALL LEVELS ABOVE.



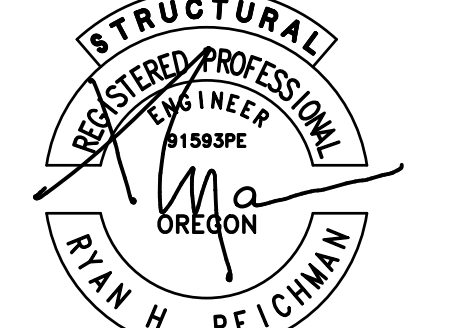
Level 2 Transfer Framing Plan

Scale: 1/8" = 1'-0"



934 Broadway - Suite 100 - Tacoma, WA 98402
p: 253.284.9470 ssfengineers.com

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EXPIRATION DATE: 12/31/2018

DRAWN: JAD
DESIGN: CCP
CHECKED: RHR
APPROVED: RHR

REVISIONS:		
1	BLDG. DEPT. CORRECTION	Feb. 14, 2017
2	BLDG. DEPT. CORRECTION	Apr. 05, 2017
3	ARCH. REVISIONS	May 01, 2017
4	BLDG. DEPT. CORRECTION	Aug. 21, 2017
5	CRANE FOOTING	Mar. 14, 2018
6	ARCH. REVISIONS	Mar. 16, 2018
7	ARCH. REVISIONS	Mar. 22, 2018
8	ARCH. REVISIONS	May 23, 2018

DPD:

PROJECT TITLE:
4th & Grant
Student Housing
4th & Grant
Portland, OR

ARCHITECT:
KOZ Development
1208 10th St, Suite 201
Snohomish, WA 98290
PH 206.755.1290
kozdevelopment.com

ISSUE:
Permit

SHEET TITLE:
Level 2 Transfer Framing Plan

SCALE: 1/8" = 1'-0" U.N.O.
DATE: May 23, 2018
PROJECT NO: 10526-2016-01
SHEET NO:

S2.2b

NO: OF SHEETS:

Plan Notes

- DO NOT SCALE DRAWINGS. REFER ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
- TYPICAL FLOOR FRAMING CONSISTS OF FINISH PER ARCH. OVER 1 1/2" CONCRETE TOPPING OVER 3/4" CDX PLYWOOD, FACE GRAIN PERPENDICULAR TO SUPPORTS OVER JOISTS PER PLAN. NAIL SHEATHING WITH 8D @ 6" O.C. EDGES AND OVER SHEARWALLS, 12" O.C. FIELD
- ALL INTERIOR HEADERS SHALL BE (2) 2X8'S UNLESS NOTED OTHERWISE. AT CONTRACTORS OPTION, (2) 2X8'S MAY BE SUBSTITUTED WITH 4X8 OR 6X6. REFER TO 8/S4.1 FOR HEADER FRAMING
- PROVIDE (2) BEARING STUDS AT EACH END OF ALL HEADERS AND BEAMS UNLESS NOTED OTHERWISE.
- ALL BUNDLED STUDS CALLED OUT ON PLAN OR AT ENDS OF HEADERS AND BEAMS SHALL BE PROVIDED AT EACH LEVEL, TERMINATING AT CONCRETE SUPPORT BELOW. REFER 3/S4.1 AND 7/S4.1 FOR BUNDLED STUD FRAMING THROUGH BUILDING.
- "BW" INDICATES BEARING WALL BELOW FRAMING SHOWN. REFER BEARING WALL SCHEDULE ON PLAN. ALL STRUCTURAL WALLS SHOWN ARE TO BE BW1 UNLES NOTED OTHERWISE.
- "SW" INDICATES PLYWOOD SHEATHED SHEARWALL BELOW FRAMING SHOWN. REFER SHEARWALL SCHEDULE ON DETAIL 2/S4.1. PROVIDE JOIST OR BLOCKING ABOVE ALL SHEARWALLS PER DETAIL 6/S4.1. ALL EXTERIOR WALLS SHALL BE SW1 UNLESS NOTED OTHERWISE.
- PLUMBING, MECHANICAL, AND ELECTRICAL SYSTEMS SHALL BE DESIGNED AND BUILT TO ACCOMMODATE A 3/8" PER FLOOR WOOD SHRINKAGE. (EXCLUDES LOFT FLOORS)
- REFER 10/S4.1 FOR NAILING AT SHEARWALL INTERSECTIONS.
- DOUBLE TOP PLATE SPLICE TO BE FRAMED PER 4/S4.1
- REFER GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.

Legend

	STRUCTURAL WOOD WALL BELOW
	STRUCTURAL WOOD WALL BELOW
	HOLDDOWN STRAP REFER 11/S4.2
	HOLDDOWN PER 12/S4.2 TO ALIGN W/ HOLDDOWN ABOVE
	# OF BUNDLED STUDS
	CORRIDOR LIVE LOAD = 100 PSF
	PROVIDE FLAT 2x BLOCKING AT ALL UNSUPPORTED PANEL EDGES. NAIL PANEL EDGES AND OVER SHEARWALLS W/ 8d @ 3"oc, 8d @ 12"oc FIELD.

Schedules

Joist Schedule

MARK	JOIST
J1	11 7/8" TJI/560 @ 24"oc
J2	11 7/8" TJI/560 @ 12"oc
J3	11 7/8" TJI/230 @ 16"oc
J4	2x6 @ 16"oc
J5	(2)2X6 @ 12"oc

Post Schedule

MARK	POST
P1	4x4 W/ CCQ/ECCQ CAP
P2	6x6 W/ (2)HGA10 @ TOP & BOT.
P3	HSS 5x5x1/4 PER DTL. X/X.XX
P4	P.T. 6x6 W/ CC66 CAP

Wood Column Schedule

MARK	LEVEL	2x4	2x6
WC1	ALL	-	FULL-HT PSL 5 1/4x5 1/4 W/ (2)A35 TO T&B PLATE
	6TH	2	2
	5TH	2	2
WC2	4TH	2	2
	3RD	2	2
	2ND	3	2
WC3	6TH	2	2
	5TH	2	2
	4TH	3	2
	3RD	4	3
	2ND	5	3

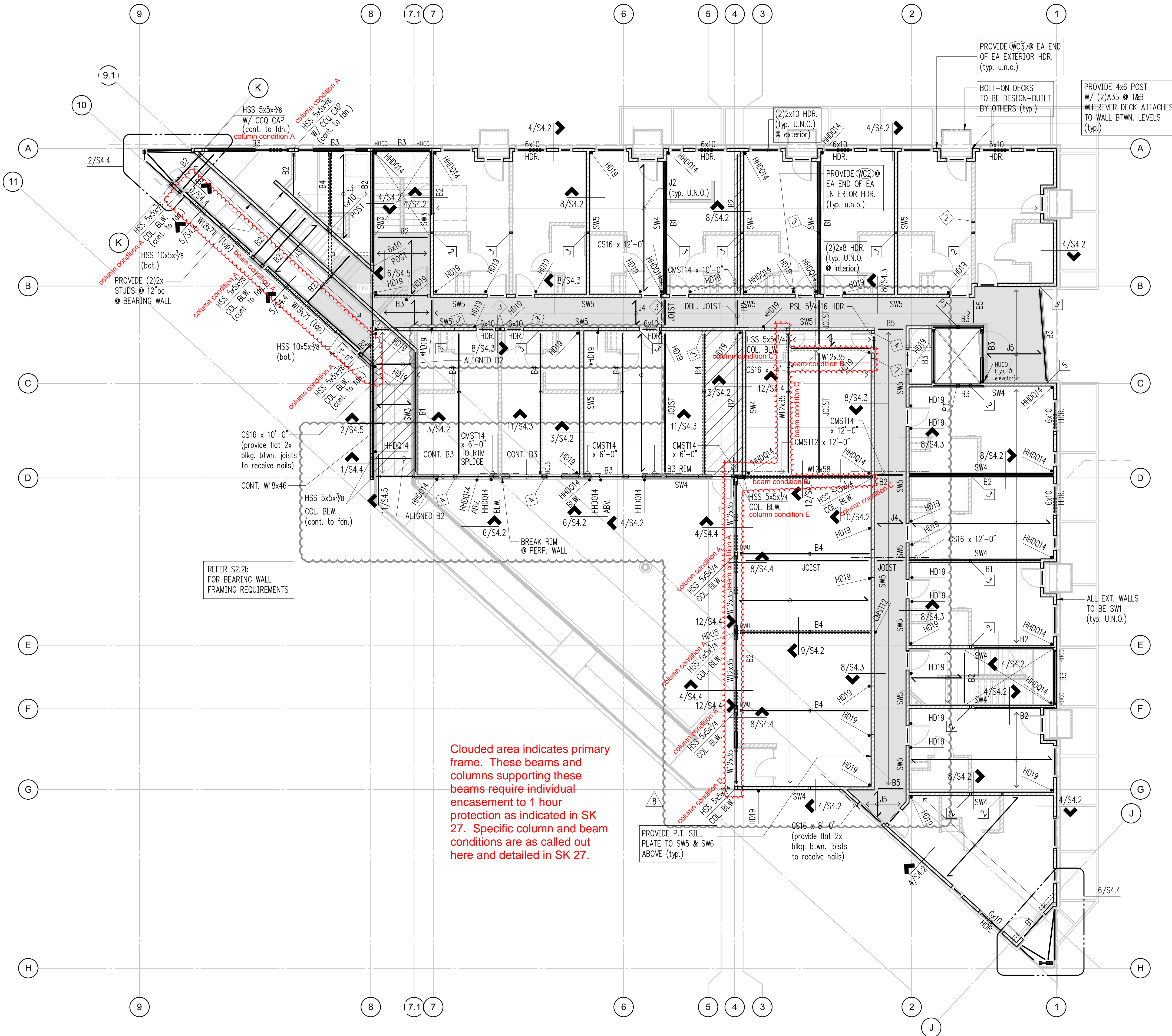
Beam Schedule

MARK	SIZE	HANGER
B1	LSL 1 3/4x11 7/8	HU11
B2	LSL 3 1/2x11 7/8	HHUS410
B3	PSL 5 1/4x11 7/8	HGUS5.50/12
B4	PSL 7x11 7/8	HGUS7.25/10
B5	4x6	HU46
B6	P.T. 6x10	HUCQ610-SDS
B7	GLB 5 7/8x7 1/2	-

Bearing Wall Schedule

MARK	LEVEL	2x4	2x6
BW1 ^②	6TH	@ 16"	@ 16"
	5TH	@ 16"	@ 16"
	4TH	@ 16"	@ 16"
	3RD	@ 16"	@ 16"
	2ND	@ 16"	@ 16"
BW2 ^①	6TH	-	@ 12"
	5TH	-	(2) @ 12"
	4TH	-	(2) @ 16"
	3RD	-	(2) @ 16"
	2ND	-	(2) @ 12"
BW3 ^①	6TH	-	@ 16"
	5TH	-	(2) @ 16"
	4TH	-	(2) @ 16"
	3RD	-	(2) @ 12"
	2ND	-	(2) @ 12"

- ① BW2 & BW3 MAY NOT BE BUILT W/ 2x4 STUDS.
② STRUCTURAL WALLS TO BE BW1 (typ. U.N.O.).
③ BEARING WALLS NOTED ON S2.2B SHALL CONTINUE ON ALL LEVELS ABOVE.



Level 3 Framing Plan

Scale: 1/8" = 1'-0"



REVISIONS:		
1	BLDG. DEPT. CORRECTION	Feb. 14, 2017
2	BLDG. DEPT. CORRECTION	Apr. 05, 2017
3	ARCH. REVISIONS	May 01, 2017
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ISSUE:
Permit
SHEET TITLE:

Level 3 Framing Plan
SCALE: 1/8" = 1'-0" U.N.O.
DATE: May 23, 2018
PROJECT NO: 10526-2016-01
SHEET NO:

S2.3
NO: OF SHEETS: