PCS Structural Solutions

Seattle 1011 Western Avenue, Suite 810 | Seattle, WA 98104 | 206.292.5076
Tacoma 1250 Pacific Avenue, Suite 701 | Tacoma, WA 98402 | 253.383.2797
Portland 101 SW Main Street, Suite 1602 | Portland, OR 97204 | 503.232.3746

www.pcs-structural.com

PRCTI20260468

STRUCTURAL CALCULATIONS

FOR

PEM WOODS COFFEE
1127 E MAIN AVE
PUYALLUP, WA 98372

Calculations required to be provided by the Permittee on site for all Inspections

PREPARED BY
PCS STRUCTURAL *SOLUTIONS*

LUKE A. HEATH
STATE OF WASHINGTON
42292
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

City of Puyallup
Building
REVIEWED
FOR
COMPLIANCE
SKinnear
04/14/2026
9:06:50 AM

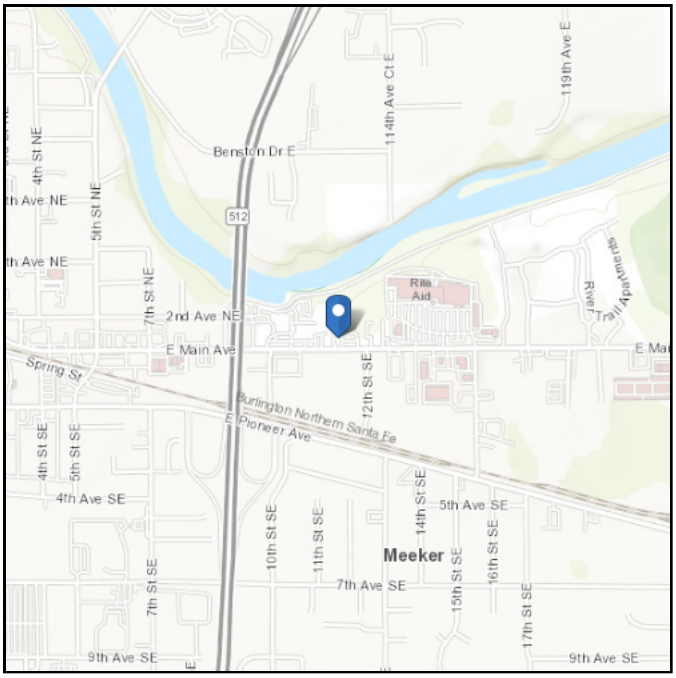
MARCH 30, 2026
26-216

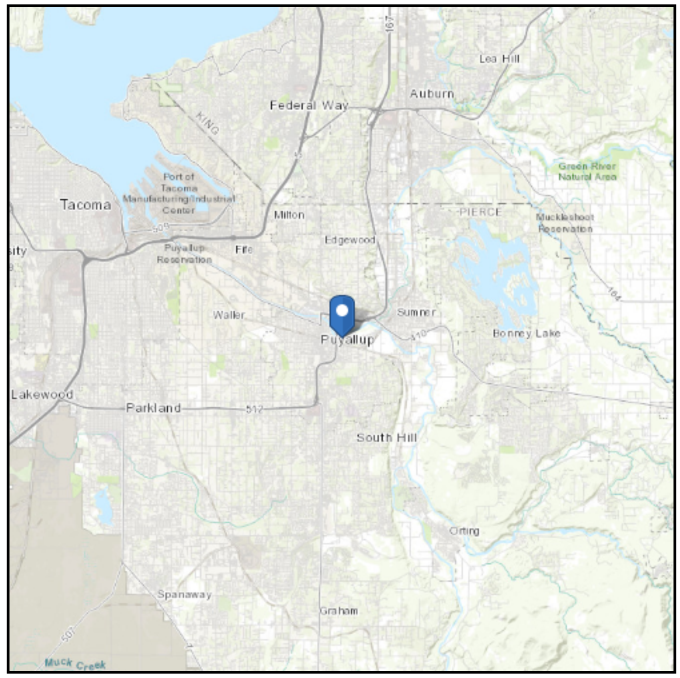
DESIGN CRITERIA

ASCE Hazards Report

Address:
1115 E Main
Puyallup, Washington
98372

Standard:	ASCE/SEI 7-16	**Latitude:**	47.192103
Risk Category:	II	**Longitude:**	-122.27905
Soil Class:	D - Default (see Section 11.4.3)	**Elevation:**	54.273300457218 ft (NAVD 88)





Wind

Results:

Wind Speed	98 Vmph
10-year MRI	67 Vmph
25-year MRI	73 Vmph
50-year MRI	78 Vmph
100-year MRI	83 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Fri Jul 26 2024

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Seismic

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.266	S_{D1} :	N/A
S_1 :	0.436	T_L :	6
F_a :	1.2	PGA :	0.5
F_v :	N/A	PGA_M :	0.6
S_{MS} :	1.519	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.013	C_v :	1.353

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Fri Jul 26 2024

Date Source: USGS Seismic Design Maps

Snow

Results:

Ground Snow Load, p_g :	18 lb/ft^2
Mapped Elevation:	54.3 ft
Data Source:	
Date Accessed:	Fri Jul 26 2024

Statutory requirements of the Authority Having Jurisdiction are not included.

Snow load values are mapped to a 0.5 mile resolution. This resolution can create a mismatch between the mapped elevation and the site-specific elevation in topographically complex areas. Engineers should consult the local authority having jurisdiction in locations where the reported ‘elevation’ and ‘mapped elevation’ differ significantly from each other.

PCS Structural Solutions

Project:	PEM Woods Coffee	Job Number:	26-216
Sheet:	of	Name:	KES
Originating Office:	Tacoma	Date:	3/23/2026

DESIGN CRITERIA CHECKLIST

CODE: IBC 2021, ASCE 7-16 LOCATION: PUYALLUP, WA

RISK CATEGORY: II (Per ASCE 7-16 Table 1.5-1 & IBC Table 1604.5)

VERTICAL DESIGN CRITERIA

	DEAD	LIVE	PARTITION	CONCENTRATED
ROOF:	20 PSF	25 PSF		

WIND DESIGN CRITERIA

BASIC WIND SPEED (V) =	98 MPH	(Per ASCE 7-16 Sec. 26.5.1, Fig. 26.5-1A; 1B; 1C & 1D, or as required by Bld'g Dept.)
EXPOSURE CATEGORY:	B	(Per ACSE 7-16 Section 26.7.3)
DIRECTIONALITY FACTOR (K_d):	0.85	(Per ASCE 7-16 Table 26.6-1)
GUST EFFECT FACTOR (G):	0.85	(Per ASCE 7-16 Section 26.11)
TOPOGRAPHIC FEATURE:	None	(See ASCE 7-16 Figure 26.8-1)
HILL HEIGHT (H):	0 FT	(See ASCE 7-16 Figure 26.8-1)
UPWIND DISTANCE TO HALF HILL (Lh):	0 FT	(See ASCE 7-16 Figure 26.8-1)
DISTANCE FROM CREST TO SITE (x):	0 FT UPWIND	(See ASCE 7-16 Figure 26.8-1)
MEAN ROOF HEIGHT:	0-15 FT	(See ASCE 7-16 Section 26.2 - Definitions)
ELEVATION:	0 FT	(See ASCE 7-16 Section 26.9)
ENCLOSURE CLASSIFICATION:	Enclosed	(See ASCE 7-16 Secion 26.2 & Table 26.13-1)
ROOF TYPE:	Monoslope	(See ASCE 7-16 Figure 27.3-1)
ROOF SLOPE (__:12):	0.25:12	(Enter vertical rise in 12 horizontal units) θ (degrees): 1.19

SEISMIC DESIGN CRITERIA

SITE CLASS:	D	(Per IBC Section 1613.2.2, Assumed as "D" or per Geotech.)
IMPORTANCE FACTOR (I_E):	1	(Per ASCE 7-16 Table 1.5-2)
STRUCTURAL SYSTEM (R):	6.5	(Per ASCE 7-16 Table 12.2-1)
OVERSTRENGTH FACTOR (Ω_o):	2.5	(Per ASCE 7-16 Table 12.2-1)

INFORMATION BELOW FROM APPLIED TECHNOLOGY COUNCIL (ATC) "HAZARDS BY LOCATION"

LATITUDE:	47.192	S_S =	1.266	F_a =	1.200
LONGITUDE:	-122.279	S_1 =	0.436	F_v =	N/A

DEFLECTION CRITERIA

FLOOR (LIVE):	L/ 480	ROOF (LIVE):	L/ 360
FLOOR (TOTAL):	L/ 360	ROOF (TOTAL):	L/ 240
WALLS:	L/ 360	SPECIAL:	L/

SOIL DESIGN CRITERIA

REPORT: NO

NO SOILS REPORT PROVIDED. ALL ENGINEERING SOIL PARAMETERS ARE ASSUMED.

BEARING:	1500 PSF
ACTIVE:	35 PCF
PASSIVE:	250 PCF
COEFFICIENT OF FRICTION:	0.35

MINIMUM FOOTING DIMENSIONS:

CONTINUOUS:	1'-4"
SPREAD:	1'-6"
FROST DEPTH:	1'-6"

PILE TYPE:	NONE		
VERTICAL CAPACITY :	N/A	LATERAL CAPACITY:	N/A
UPLIFT CAPACITY:	N/A	SIZE:	N/A

PCS Structural Solutions

MATERIALS

CONCRETE

Footings/Piles:	3000 PSI	Columns:	4000 PSI
Slabs/Walls:	4000 PSI	Beams:	4000 PSI
-	-	-	-

REINFORCING

Steel Grade =	60	f_y =	60 KSI

STRUCTURAL STEEL

W-Flange Beams	ASTM A992	f_y =	50 KSI
Shapes & Plates	ASTM A36	f_y =	36 KSI
Pipes	ASTM A53, Grade B	f_y =	35 KSI
HSS Rect.	ASTM A500, Grade C	f_y =	50 KSI
HSS Round	ASTM A500, Grade C	f_y =	46 KSI

MASONRY

ASTM C90	f'_m =	2000 PSI	SOLID GROUTED

GLULAM BEAMS

Simple Spans		Cantilevers
24F-V4	Grade =	24F-V8
1.80E+06 PSI	E =	1.80E+06 PSI
2400 PSI	$F_{b\,(BOTTOM)}$ =	2400 PSI
1850 PSI	$F_{b\,(TOP)}$ =	2400 PSI
240 PSI	F_v =	240 PSI

SCL PRODUCTS

	2x SCL	1¾" SCL	3½, 5¼ SCL
E =	1.30E+06 PSI	1.80E+06 PSI	2.00E+06 PSI
F_b =	1700 PSI	2600 PSI	2900 PSI
F_v =	285 PSI	285 PSI	285 PSI
F_c =	1400 PSI	2400 PSI	2600 PSI

FRAMING LUMBER

Joists & Studs		2x DF #2	2x HF #1	-
	E =	1.60E+06 PSI	1.50E+06 PSI	-
	F_b =	900 PSI	975 PSI	-
	F_v =	180 PSI	150 PSI	-
	F_c =	1350 PSI	1350 PSI	-
Beams & Headers		4x DF #2	4x HF #1	6x DF #1
	E =	1.60E+06 PSI	1.50E+06 PSI	1.60E+06 PSI
	F_b =	900 PSI	975 PSI	1350 PSI
	F_v =	180 PSI	150 PSI	170 PSI
Posts & Timbers		6x DF #1	-	-
	E =	1.60E+06 PSI	-	-
	F_c =	1000 PSI	-	-

DESIGN CRITERIA - WIND

BASIC WIND SPEED (V):	98 MPH	MEAN ROOF HEIGHT:	15 FT
RISK CATEGORY:	II	GROUND ELEVATION FACTOR (Ke):	1.00
EXPOSURE CATEGORY:	B	ENCLOSURE CLASSIFICATION:	Enclosed
DIRECTIONALITY FACTOR (K_d):	0.85	ROOF TYPE:	Monoslope
GUST EFFECT FACTOR (G):	0.85	ROOF SLOPE (__:12):	0.3:12
		θ (degrees):	1.19

ROOF PRESSURES (Figure 27.3-1)

		External Pressures (q_h*(GC_p)):			Internal Pressures (±q_i*(GC_{pi}))
Wind Direction:	h/L:	Windward (Positive)	Windward (Negative)	Leeward	All Roofs
Normal to Ridge for θ ≥ 10°	≤0.25	N/A	N/A	N/A	2.1
	0.50	N/A	N/A	N/A	
	≥1.0	N/A	N/A	N/A	

	h/L:	Horizontal Distance from Windward Edge	External Pressures (q*(GC_p)): Positive Pressure	Negative Pressure	Internal Pressures (±q_i*(GC_{pi})) All Roofs
Normal to Ridge for θ < 10° and Parallel to Ridge for All θ	≤0.5	0 to h	-1.8	-9.1	2.1
		h to 2h		-5.1	
		>2h		-3.0	
			-1.8	-13.2	
		>h/2		-7.1	

ASCE 7-16 CHAPTER 27: WIND LOADS ON BUILDINGS: MWFRS (DIRECTIONAL PROCEDURE)
PART 1: ENCLOSED AND PARTIALLY ENCLOSED BUILDINGS OF ALL HEIGHTS
HORIZONTAL WALL PRESSURES (Figure 27.3-1)

Windward External Pressures (q_z*(GC_p)):			Leeward & Sidewall External Pressures (q_h*(GC_p)):			Internal Pressures (±q_i*(GC_{pi}))
Height Above Ground Level, z	K_{zt}	Windward wall	L/B:	Leeward wall	Sidewall	All walls
15	1.00	8.1	0-1	-5.1	-7.1	2.1
20	1.00	8.8	2	-3.0		
25	1.00	9.4	≥4	-2.0		
30	1.00	9.9				
40	1.00	10.8				
50	1.00	11.5				
60	1.00	12.1				
70	1.00	12.6				
80	1.00	13.2				
90	1.00	13.6				
100	1.00	14.1				
120	1.00	14.8				
140	1.00	15.5				
160	1.00	16.1				
180	1.00	16.6				
200	1.00	17.1				
250	1.00	18.2				
300	1.00	19.2				
350	1.00	20.0				
400	1.00	20.9				
450	1.00	21.6				
500	1.00	22.2				

NOTES:

1) Minimum Design Wind Loads (Per ASCE 7-16 27.1.5): The wind load used for design of the MWFRS shall not be less than 16 PSF multiplied by the wall area of the building, and 8 PSF multiplied by the roof area of the building projected on a vertical plane normal to the assumed wind direction. Wall and roof loads shall be applied simultaneously.
2) q_i has conservatively been taken equal to q_h

K_{ht} = 1.00
q_h = 11.9 PSF

DESIGN CRITERIA - WIND

BASIC WIND SPEED (V):	98 MPH	MEAN ROOF HEIGHT:	15 FT
RISK CATEGORY:	II	GROUND ELEVATION FACTOR (Ke):	1.00
EXPOSURE CATEGORY:	B	ENCLOSURE CLASSIFICATION:	Enclosed
DIRECTIONALITY FACTOR (K_d):	0.85	ROOF TYPE:	Monoslope
GUST EFFECT FACTOR (G):	0.85	ROOF SLOPE (__:12):	0.3:12
		θ (degrees):	1.19

ASCE 7-16 CHAPTER 30: WIND LOADS: COMPONENTS AND CLADDING
PART 1: LOW-RISE BUILDINGS (h≤60 ft)

ROOF SURFACES

Effective Wind Area	POSITIVE PRESSURES	NEGATIVE PRESSURES					
	ZONE						
	ALL ZONES	1'	1	2	3	N/A	N/A
10 SF	16.0	-16.0	-22.4	-29.5	-40.3	N/A	N/A
20 SF	16.0	-16.0	-20.9	-27.6	-36.5	N/A	N/A
50 SF	16.0	-16.0	-19.0	-25.1	-31.4	N/A	N/A
100 SF	16.0	-16.0	-17.5	-23.2	-27.6	N/A	N/A

WALL SURFACES & ROOF OVERHANGS

Effective Wind Area	WALL ZONES				ROOF OVERHANG ZONES					
	POSITIVE PRESSURES		NEGATIVE PRESSURES		NEGATIVE PRESSURES					
	4	5	4	5	1'	1	2	3	N/A	N/A
10 SF	16.0	16.0	-16.0	-18.8	-20.3	-20.3	-27.4	-38.1	N/A	N/A
20 SF	16.0	16.0	-16.0	-17.6	-19.9	-19.9	-24.9	-33.7	N/A	N/A
50 SF	16.0	16.0	-16.0	-16.0	-19.4	-19.4	-21.5	-27.8	N/A	N/A
100 SF	16.0	16.0	-16.0	-16.0	-19.1	-19.1	-19.0	-23.4	N/A	N/A
500 SF	16.0	16.0	-16.0	-16.0	-18.2	-18.2	-16.0	-16.0	N/A	N/A

NOTES:

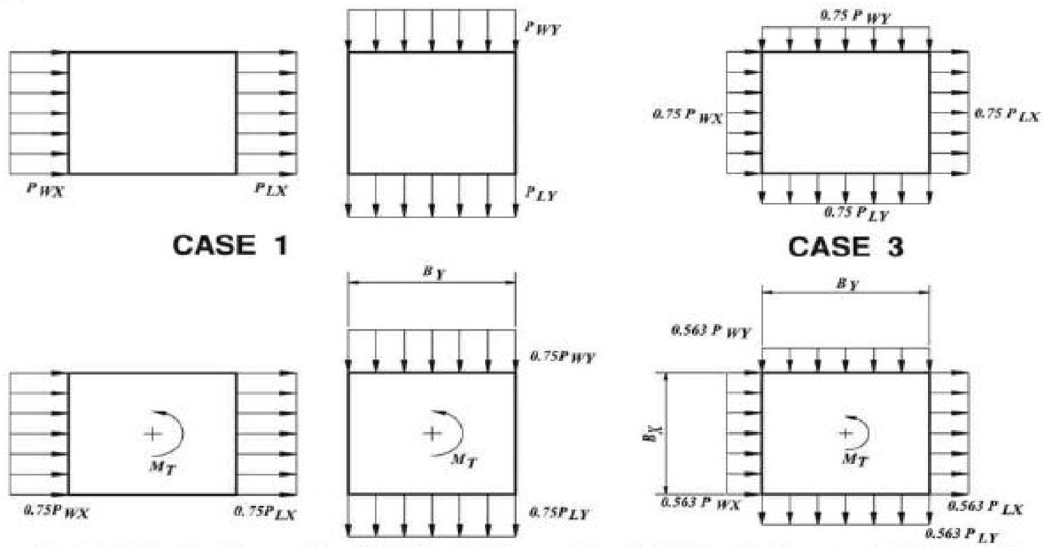
1) ASCE 7-16 30.2.2: Minimum Design Wind Loads: The design wind pressure for C&C of buildings shall not be less than a net pressure of 16 PSF acting in either direction normal to the surface.
2) q_i has conservatively been taken equal to q_h

K_{ht} = 1.00
q_h = 11.9 PSF

DESIGN CRITERIA - WIND

FIGURE 27.3-8: Main Wind Force Resisting System, Part 1 (All Heights): Design Wind Load Cases per ASCE 7-16

Diagrams



$M_T = 0.75\ (P_{WX}+P_{LX})B_X e_X$ $e_X = \pm\ 0.15\ B_X$

$M_T = 0.75\ (P_{WY}+P_{LY})B_Y e_Y$ $e_Y = \pm\ 0.15\ B_Y$

$M_T = 0.563\ (P_{WX}+P_{LX})B_X e_X + 0.563\ (P_{WY}+P_{LY})B_Y e_Y$ $e_X = \pm\ 0.15\ B_X$ $e_Y = \pm\ 0.15\ B_Y$

CASE 2 **CASE 4**

Notation

P_{WX}, P_{WY} = Windward face design pressure acting in the x, y principal axis, respectively.
P_{LX}, P_{LY} = Leeward face design pressure acting in the x, y principal axis, respectively.
$e(e_X, e_Y)$ = Eccentricity for the x, y principal axis of the structure, respectively.
M_T = Torsional moment per unit height acting about a vertical axis of the building.

Case 1. Full design wind pressure acting on the projected area perpendicular to each principal axis of the structure, considered separately along each principal axis.
Case 2. Three-quarters of the design wind pressure acting on the projected area perpendicular to each principal axis of the structure in conjunction with a torsional moment as shown, considered separately for each principal axis.
Case 3. Wind loading as defined in Case 1, but considered to act simultaneously at 75% of the specified value.
Case 4. Wind loading as defined in Case 2, but considered to act simultaneously at 75% of the specified value.

Notes

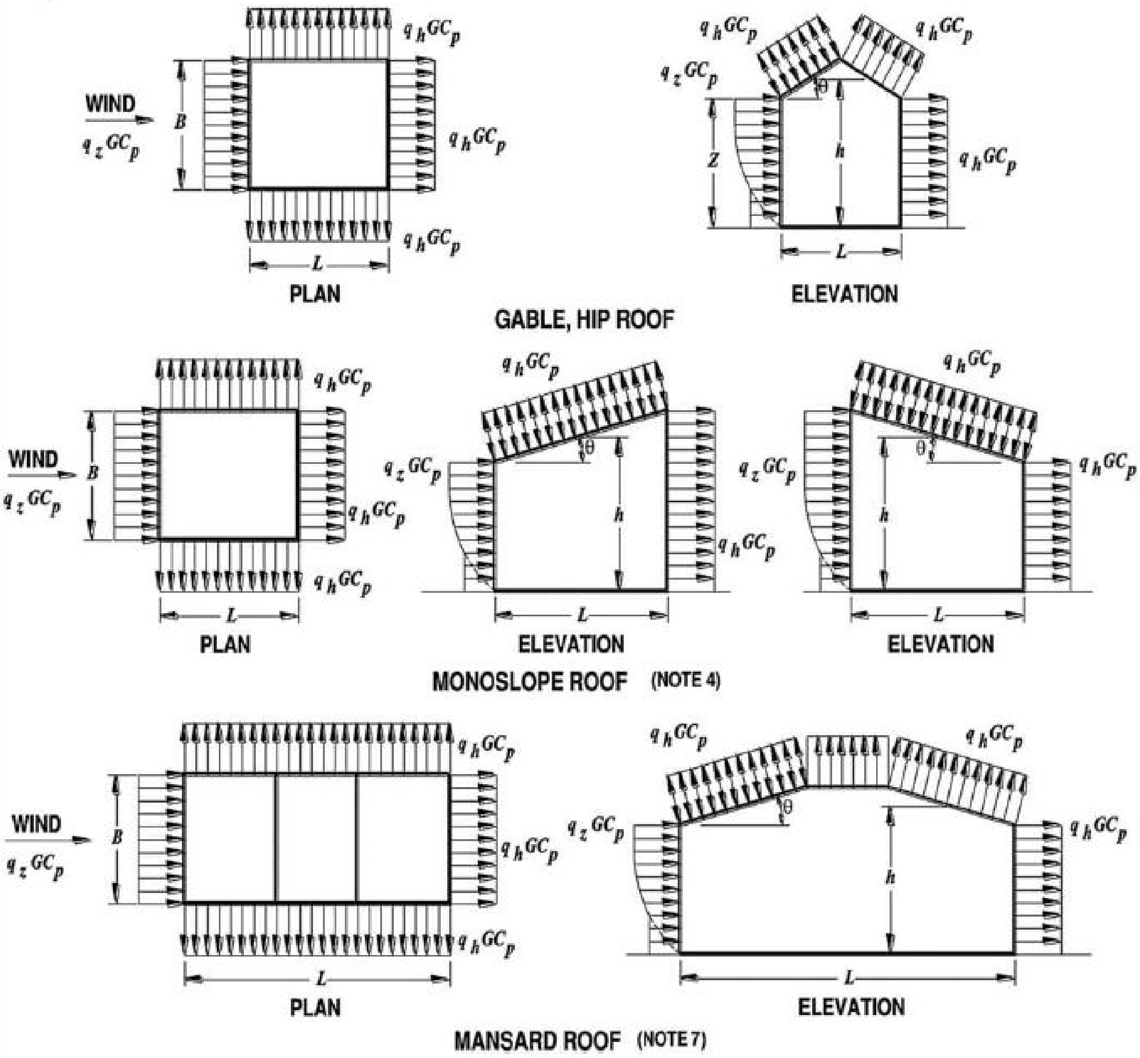
1. Design wind pressures for windward and leeward faces shall be determined in accordance with the provisions of Sections 27.3.1 and 27.3.2 as applicable for buildings of all heights.
2. Diagrams show plan views of buildings.

FIGURE 27.3-8 Main Wind Force Resisting System, Part 1 (All Heights): Design Wind Load Cases

DESIGN CRITERIA - WIND

FIGURE 27.3-1 Main Wind Force Resisting System, Part 1 (All Heights): External Pressure Coefficients, Cp, for Enclosed and Partially Enclosed Buildings - Walls and Roofs per ASCE 7-16

Diagrams



Notation

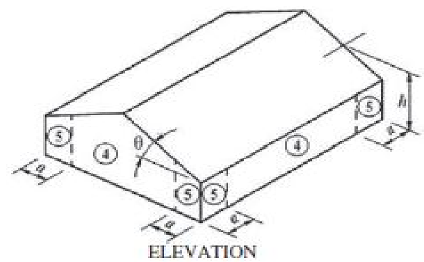
B = Horizontal dimension of building, in ft (m), measured normal to wind direction.
L = Horizontal dimension of building, in ft (m), measured parallel to wind direction.
h = Mean roof height, in ft (m), except that eave height shall be used for $\theta \leq 10$ degrees.
z = Height above ground, in ft (m).
G = Gust-effect factor.
q_z, q_h = Velocity pressure, in lb/ft^2 (N/m^2), evaluated at respective height.
θ = Angle of plane of roof from horizontal, in degrees.

FIGURE 27.3-1 Main Wind Force Resisting System, Part 1 (All Heights): External Pressure Coefficients, C_p, for Enclosed and Partially Enclosed Buildings—Walls and Roofs

DESIGN CRITERIA - WIND

FIGURE 30.3-1: Components and Cladding [h ≤ 60 ft]: External Pressure Coefficients, (GCp), for Enclosed and Partially Enclosed Buildings - Walls

Diagram



Notation

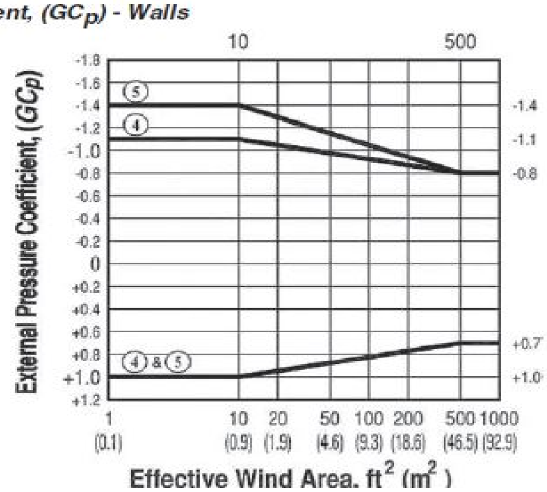
a = 10% of least horizontal dimension or $0.4h$, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).

Exception: For buildings with $\theta = 0°$ to $7°$ and a least horizontal dimension greater than 300 ft (90 m), dimension a shall be limited to a maximum of $0.8h$.

h = Mean roof height, in ft (m), except that eave height shall be used for $\theta \leq 10°$.

θ = Angle of plane of roof from horizontal, in degrees.

External Pressure Coefficient, (GC_p) - Walls



Notes

1. Vertical scale denotes (GCp) to be used with qh.
2. Horizontal scale denotes effective wind area, in ft^2 (m^2).
3. Plus and minus signs signify pressures acting toward and away from the surfaces, respectively.
4. Each component shall be designed for maximum positive and negative pressures.
5. Values of (GCp) for walls shall be reduced by 10% when $\theta \leq 10°$.

FIGURE 30.3-1 Components and Cladding [$h \leq 60$ ft ($h \leq 18.3$ m)]: External Pressure Coefficients, (GC_p), for Enclosed and Partially Enclosed Buildings—Walls

DESIGN CRITERIA - SEISMIC

ASCE 7-16 SECTION 12.8 - EQUIVALENT LATERAL FORCE PROCEDURE

RISK CATEGORY:	II	LATITUDE:	47.192
SITE CLASS:	D	LONGITUDE:	-122.279
IMPORTANCE FACTOR (I_E):	1	S_S =	1.266
STRUCTURAL SYSTEM (R):	6.5	S_1 =	0.436
OVERSTRENGTH FACTOR (Ω_o):	2.5	F_a =	1.200
		F_v =	N/A

ASCE 7-16 SECTION 11.4 SEISMIC GROUND MOTION VALUES

Section 11.4.4 - Coefficients and Risk-Targeted Maximum Considered Earthquake (MCER) Spectral Response Acceleration Parameters

$S_{MS} = F_a*S_S =$ 1.519 $S_{M1} = F_v*S_1 =$ #VALUE!

Section 11.4.5 - Design Spectral Response Acceleration Parameters

$S_{DS} = 2/3*S_{MS} =$ 1.013 $S_{D1} = 2/3*S_{M1} =$ #VALUE!

ASCE 7-16 SECTION 11.6 - SEISMIC DESIGN CATEGORY - SECTION 12.8.2 - PERIOD DETERMINATION

ASCE 7-16 TABLE 11.6-1

SEISMIC DESIGN CATEGORY BASED ON S_{DS}

	RISK CATEGORY:		
	I & II	III	IV
< 0.167g	A	A	A
< 0.33g	B	B	C
< 0.50g	C	C	D
>= 0.50g	D	D	D
	D		

ASCE 7-16 TABLE 11.6-2

SEISMIC DESIGN CATEGORY BASED ON S_{D1}

	RISK CATEGORY:		
	I & II	III	IV
< 0.067g	A	A	A
< 0.133g	B	B	C
< 0.20g	C	C	D
>= 0.20g	D	D	D
	#VALUE!		

Each building and structure shall be assigned to the most severe Seismic Design Category in accordance with Table 11.6-1 or Table 11.6-2, irrespective of the fundamental period of vibration of the structure.

PERIOD DETERMINATION:

C_t =	0.02
h_n =	15 FT
x =	0.75
$T_a = C_t*h_n^x$ =	0.152

ASCE 7-16 SECTION 12.8.1.1 - SEISMIC RESPONSE COEFFICIENT

GENERAL EQUATION:	$C_S = S_{DS}/(R/I)$ =	0.156	CONTROLS	EQ. 12.8-2
MAXIMUM:	CS = 1.5*SD1/(T*(R/I)) =	#VALUE!		EQ. 12.8-3
MINIMUM:	$C_S = 0.044*S_{DS}*I > 0.01$ =	0.045		EQ. 12.8-5
For structures located where S1 > 0.6g				
	$C_S = 0.5*S_1/(R/I)$ =	0.000		EQ. 12.8-6

ASCE 7-16 SECTION 12.8.1 - SEISMIC BASE SHEAR

$V = C_S*W =$ **0.156*W**

W = the total dead load and applicable portion of other loads as indicated in Section 12.7.2

LATERAL

Seismic

Roof wt: 20psf (2124 ft²) = 42.5K
Walls: 5psf (2124 ft²) = 10.6K
53K

$V = C_s W$ $C_s = 0.156$
$V = .156(53K) = 8.3K$
$0.7V = 0.7(8.3K) = 5.8K$

Wind

Walls

EW: windward = 8.1psf, leeward = 5.1psf → 13.2psf → 16psf min
L/B = 40'/59' = .67

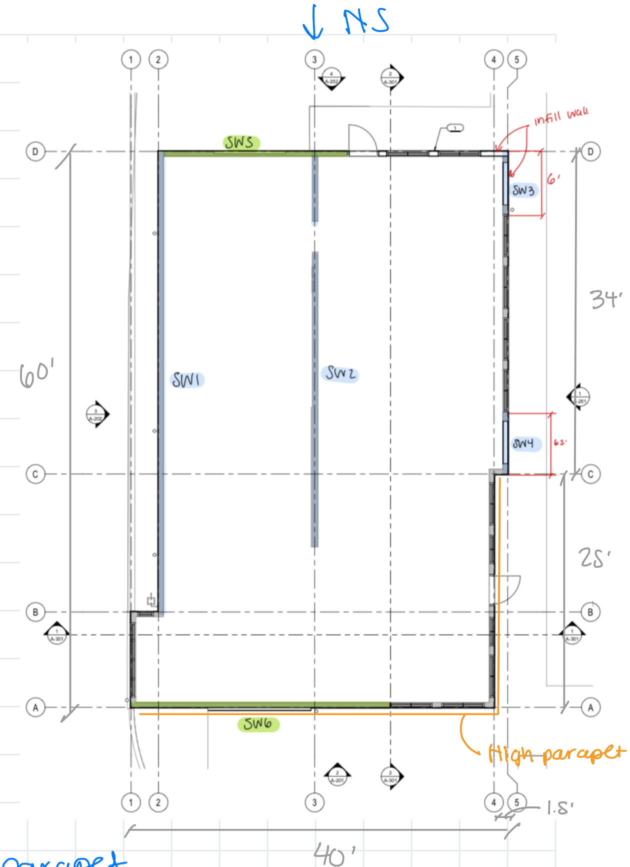
NS: windward = 8.1psf, leeward = 4.6psf → 12.7psf → 16psf min
L/B = 59/40 = 1.5

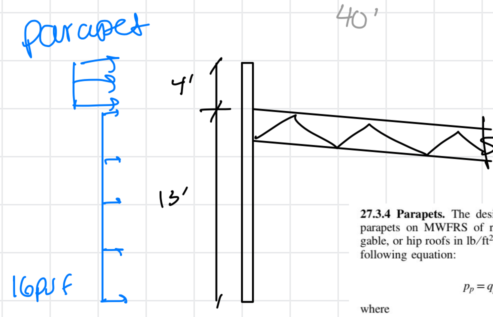
Parapet: ASCE 7-16 27.3.4

Windward: $P_p = q_p(GC_{pn}) = 8.8psf(1.5) = 13.2 psf$ (windward)
@ H = 20' q_p = 8.8psf

Leeward: $P_p = q_p(GC_{pn}) = 5psf(1.0) = 5psf$ (leeward)

Σ total = 18.2psf





27.3.4 Parapets. The design wind pressure for the effect of parapets on MWFRS of rigid or flexible buildings with flat, gable, or hip roofs in lb/ft² (N/m²), shall be determined by the following equation:

$$p_p = q_p(GC_{pn}) \text{ (lb/ft}^2\text{)} \quad (27.3\text{-}3)$$

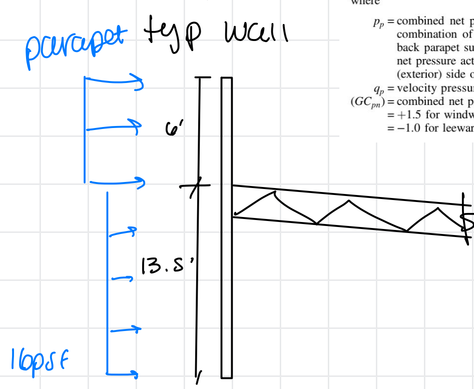
where

p_p = combined net pressure on the parapet caused by the combination of the net pressures from the front and back parapet surfaces. Plus (and minus) signs signify net pressure acting toward (and away from) the front (exterior) side of the parapet.
q_p = velocity pressure evaluated at the top of the parapet.
(GC_{pn}) = combined net pressure coefficient:
= +1.5 for windward parapet or
= −1.0 for leeward parapet.

Total Wind Loading

EW: Wall + Parapet
16psf (13'/2)(60') + 18.2psf (4')(34') + 18.2psf (6')(25')
= 6.2K + 2.5K + 2.7K
≈ 11.4K
$0.6W_{EW} = 0.6(11.4K) = 6.8K$

NS: Wall + Parapet
16psf (13'/2)(40') + 18.2psf (6')(40')
= 4.2K + 4.4K
= 8.6K
$0.6W_{NS} = 0.6(8.6K) = 5.2K$

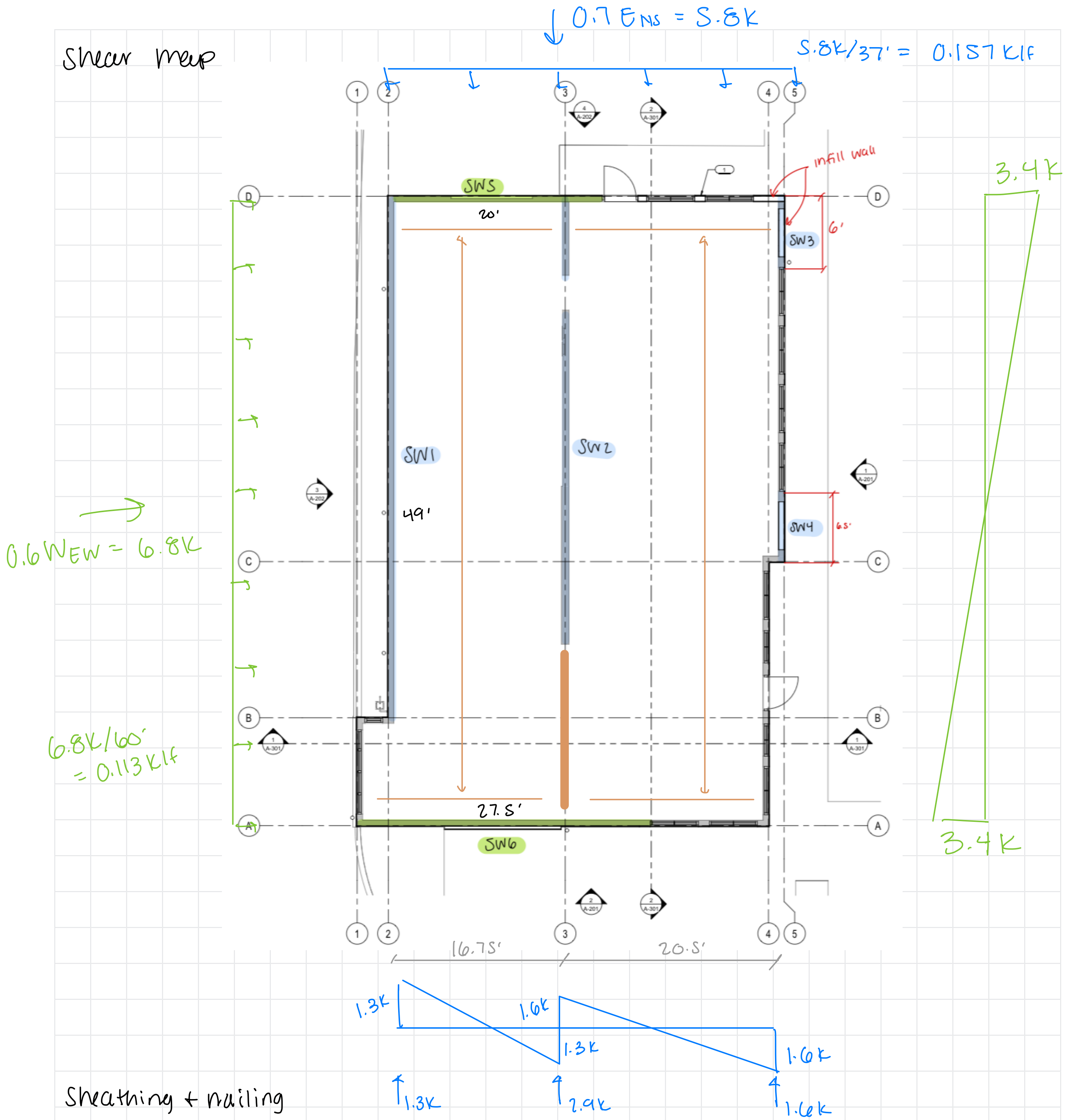


Seismic controls	NS
Wind controls	EW

PCS Structural Solutions

Project: PEM Woods Coffee | Job No: 26.216
Subject: Lateral | Sheet | Name: KES
Originating Office: ☐ Seattle ☒ Tacoma ☐ Portland | Date: 3.17.26

Shear map

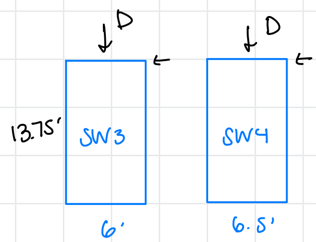


Sheathing + nailing

grid D: 3.4k / 20' = 0.17 klf
grid A: 3.4k / 27.5' = 0.12 klf
grid 2: 1.3k / 49' = .027 klf
grid 3: 2.9k / 31' = .09 klf
grid 4: 1.6k / (6' + 6.5') = .128 klf

10d @ 6" o.c. works for all walls

NS Shear Walls



$0.7E = 1.6k / 2 = 0.8k$

LC: $0.46 S_{DS} D + 0.7E_h$

$0.46(1.013)D + 0.7E_h$

$0.466 D$

SW3

$D_{roof} = 20psf(20.5'/2)(6') = 1230\ lb$

$D_{wall} = 10psf(6')(13.75') = 825\ lb$

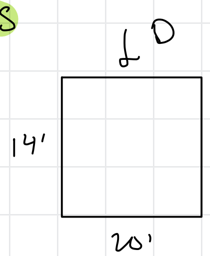
$\} 2k$

$M_{OT} = 0.7E \times H = 0.8k \times 13.75' = 11\ kft$

$M_{RES} = 0.466 D \times L/2 = 0.466(2k)(6'/2) = 2.8\ kft$

$T = \frac{M_{OT} - M_{RES}}{L} = \frac{11\ kft - 2.8\ kft}{6'} = 1.4k$ HDU2

SW5



$0.6W = 3.5k$

$D_{wall} = 10psf(20')(14') = 2.8k$

$D_{roof} = 20psf(1')(20') = .4k$

$3.2k$

$M_{OT} = 3.8k \times 14' = 49\ kft$

$M_{RES} = 0.6 D \times L/2 = 0.6(3.2k)(20'/2) = 19.2\ kft$

$T = \frac{M_{OT} - M_{RES}}{L} = \frac{49\ kft - 19.2\ kft}{20'} = 1.5k$ HDU2 requ.

By inspection all other shear walls do not need HDU

PCS Structural Solutions

Project:	Project Name	Job Number:	xx-xxx
Sheet:	of	Name:	xxx
Originating Office:	Tacoma	Date:	3/23/2026

WOOD SHEATHED SHEAR WALLS - 2021 SDPWS TABLE 4.3A

SEISMIC OR WIND:	SEISMIC	SHEATHING NAILS:	10d
DESIGN METHODOLOGY:	ASD	HOLDOWN SYSTEM:	INSIDE POST
SHEAR CAPACITY FACTOR:	2.8	10d NAIL CAPACITY REDUCTION:	0.92
FRAMING SPECIES:	DFL	SILL PLATE ANCHOR DIAMETER:	5/8"
SHEATHING MATERIAL:	SHEATHING	RIM MATERIAL:	SCL
PANEL THICKNESS:	15/32"	TREATED MATERIAL FACTOR:	1.00
S.G. ADJUSTMENT FACTOR:	1.00		

SHEAR WALL CAPACITIES

If using LRFD, verify	WALL SHEATHING	SIDES	SHEATHING NAILS	EDGE NAILING	EDGE FRAMING	BOTTOM PLATE	NOMINAL CAPACITY (PLF)	**ADJUSTED CAPACITY (PLF)**
A	15/32"	(1)	10d	6" o.c.	2x	2x	870	**286**
B	15/32"	(1)	10d	4" o.c.	3x	2x	1290	**424**
C	15/32"	(1)	10d	3" o.c.	3x	2x	1680	**552**
D	15/32"	(1)	10d	2" o.c.	3x	2x	2155	**708**
E	15/32"	(2)	10d	6" o.c.	3x	2x	1740	**572**
F	15/32"	(2)	10d	4" o.c.	3x	2x	2580	**848**
G	15/32"	(2)	10d	3" o.c.	3x	2x	3360	**1104**
H	15/32"	(2)	10d	2" o.c.	3x	2x	4310	**1416**

CONNECTION CALCULATOR

	SOLE PLATE					SILL PLATE			RIM CONNECTOR		
MARK	FASTENER	ROWS	SPACING	RIM	CHECK	ANCHOR	SPACING	CHECK	CLIP	SPACING	CHECK
A	16d	(1)	4" o.c.	1-1/4"	NG	5/8"	48" o.c.	OK	A35	16" o.c.	OK
B	16d	(2)	5" o.c.	1-3/4"	OK	5/8"	32" o.c.	OK	A35	12" o.c.	OK
C	16d	(2)	4" o.c.	1-3/4"	NG	5/8"	24" o.c.	OK	A35	9" o.c.	OK
D	16d	(3)	5" o.c.	3-1/2"	NG	5/8"	16" o.c.	OK	A35	8" o.c.	OK
E	16d	(2)	4" o.c.	1-3/4"	NG	5/8"	24" o.c.	OK	A35	9" o.c.	OK
F	SDWS	(2)	5" o.c.	3-1/2"	OK	5/8"	16" o.c.	OK	A35	6" o.c.	OK
G	SDWS	(2)	8" o.c.	3-1/2"	NG	5/8"	12" o.c.	OK	A35	5" o.c.	OK
H	SDWS	(2)	6" o.c.	3-1/2"	NG	5/8"	10" o.c.	OK	N/A		

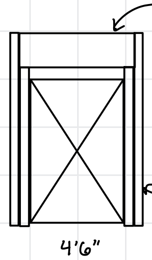
CONNECTION CALCULATOR - REFERENCE VALUES

CONNECTION CAPACITIES				
SOLE PLATE:	**16d**	**110 lbs**	**SDWS**	**440 lbs**
5/8" ANCHOR:	**2x**	**1488 lbs**	**3x**	**1888 lbs**
RIM:	**A35**	**547 lbs**	**A35/LTP**	**410 lbs**

NDS Table 11.3.1 Adjustment Factors			
ASD	**LRFD Adjustment Factors**		
C_D	K_F	Φ	λ
1.6	**N/A**	**N/A**	**N/A**

GRAVITY

Window framing

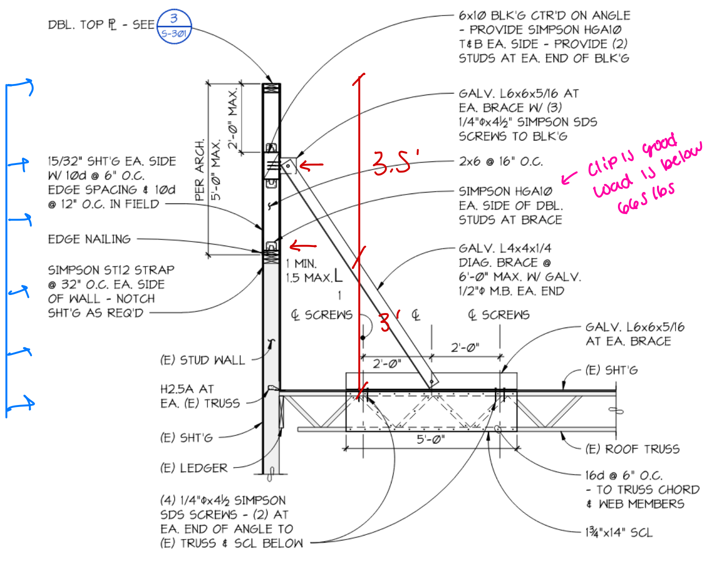


(E) Hdr is okay
Same window size
Same roof + canopy loading

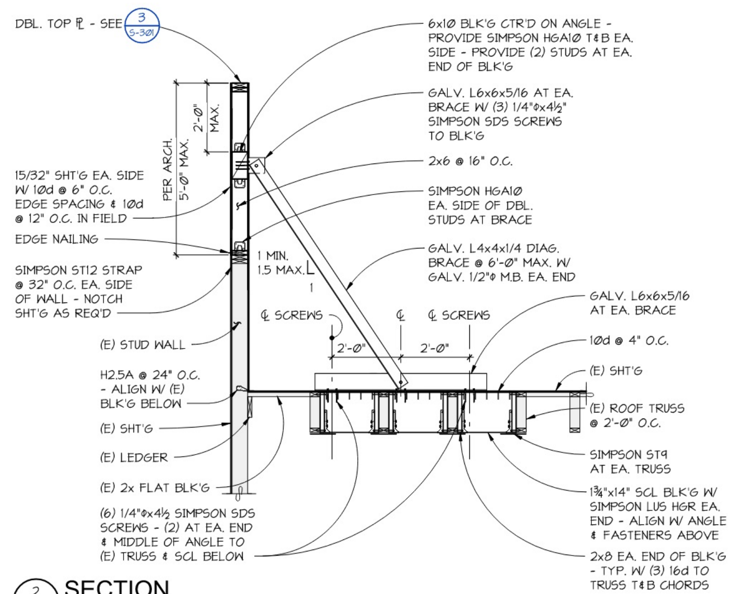
(E) Brg stud
+ (E) full height
stud are okay
since window width
is not changing

MISC.

parapet support



1 S-301 SECTION 1/2" = 1'-0"



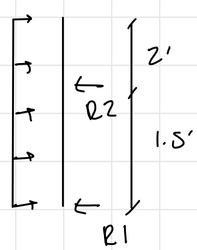
2 S-301 SECTION 1/2" = 1'-0"

Components + Cladding Wind Load

Case A: $P_1 + P_2 = 45.5$ psf

Case B: $P_3 + P_4 = 34.8$ psf

$P = 45.5$ psf



Check Studs

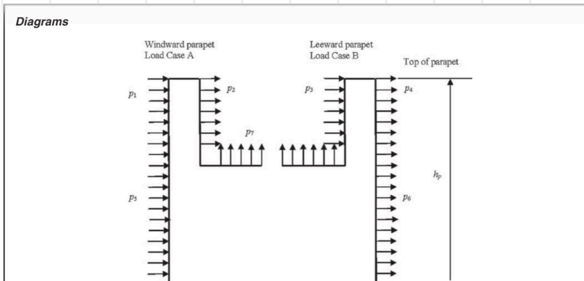
Wind loading = 45.5 psf (6')

2x6 works

R1: W = .62 K

R2: W = 1.15 K

Diagrams



Notes

Windward Parapet: Load Case A

1. Windward parapet pressure (p_1) is determined using the positive wall pressure (p_5) zones 4 or 5 from the applicable figure.
2. Leeward parapet pressure (p_2) is determined using the negative roof pressure (p_7) zones 2 or 3 from the applicable figure.

Leeward Parapet: Load Case B

1. Windward parapet pressure (p_3) is determined using the positive wall pressure (p_5) zones 4 or 5 from the applicable figure.
2. Leeward parapet pressure (p_4) is determined using the negative wall pressure (p_6) zones 4 or 5 from the applicable figure.

User Note: See Note 5 in Fig. 30.3-2A and Note 7 in Fig. 30.5-1 for reductions in component and cladding roof pressures when parapets 3 ft (0.9 m) or higher are present.

FIGURE 30.8-1 Components and Cladding, Part 6 (All Building Heights): Parapet Wind Loads, All Building Types—Parapet Wind Loads

H2.5A Clip

$$\frac{1.15\text{ K}}{6'}(2') = 0.38\text{ K} < 700\text{ lb capacity}$$

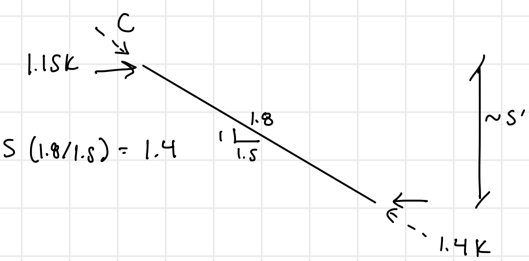
$P_1 = 16$ psf
$P_2 = -29.5$ psf
} 45.5 psf

$P_3 = 16$ psf
$P_4 = -18.8$ psf
} 34.8 psf

Check bracing @ 6' o.c.

Wind loading = 45.5 psf (6') = 273 plf

R1 : w = 1.15k



$C = 1.15\,(1.8/1.5) = 1.4$

AISC E5

Is flexural torsional buckling a concern

$b/t \le 0.71\sqrt{E/F_y}$

$4''/.25'' \le 0.71\sqrt{29\times10^6/36000}$

$16 \le 20.2$ ✓

buckling is not a concern

$KL/r = 1.0\,(5' \times 12''/ft \times (1.8/1))/1.25'' = 86.4 < 200$ ✓

AISC E3 $P_n = f_{cr} A_g$

$\frac{KL}{r} \le 4.71\sqrt{E/f_y}$

$86.4 \le 133$ ✓

$f_{cr} = \left(0.658^{F_y/f_e}\right) F_y$

$= \left(0.658^{36ksi/38.3}\right) 36ksi$

$f_{cr} = 24.3\ ksi$

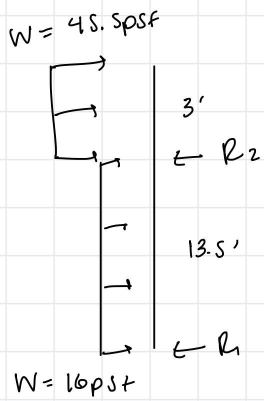
$f_e = \frac{\pi^2 E}{\left(\frac{KL}{r}\right)^2} = \frac{\pi^2\, 29\times10^6 psi}{(86.4)^2}$

$f_e = 38.3\ ksi$

$P_n = 24.3ksi\,(1.93 in^2) = 46.9k$

L4x4x1/4 angle is good

new 2x6 studs @ back wall



R_1 = 120 lb
R_2 = 350 lb

2x6 full height studs are good

Project Title: PEM Woods Coffee
Engineer: KES
Project ID: 26-216
Project Descr:

Wood Beam

Project File: 26-216 woods coffee.ec6

LIC# : KW-06014122, Build:20.25.10.02 PCS STRUCTURAL SOLUTIONS (c) ENERCALC, LLC 1982-2026

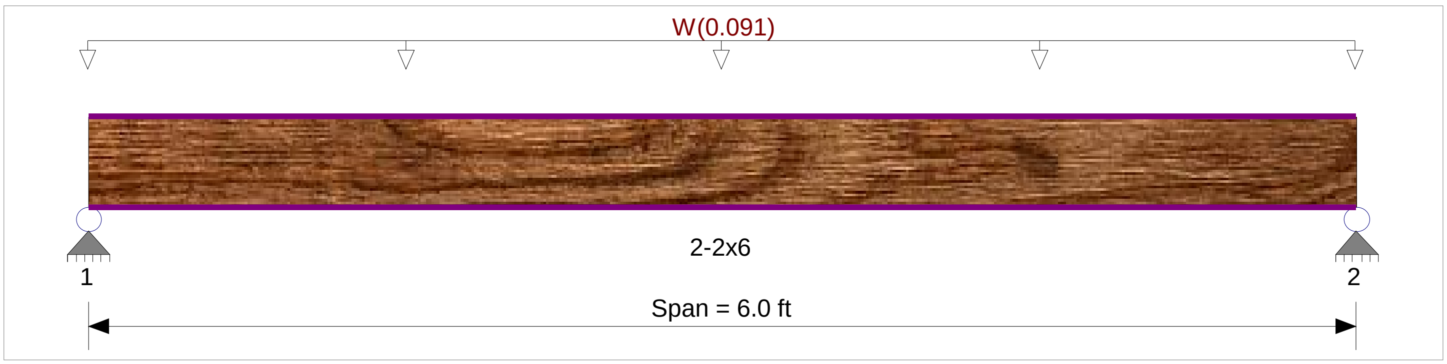
DESCRIPTION: PARAPET DBL TOP PL 3-19-26

Code References

Governing Code : IBC 2024
Referenced Design Standard(s) : NDS 2024
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method :	Allowable Stress Design	Fb +	850.0 psi	*E : Modulus of Elasticity*	
Load Combination :	ASCE 7-16	Fb -	850.0 psi	Ebend- xx	1,600.0 ksi
		Fc - Prll	1,400.0 psi	Eminbend - xx	580.0 ksi
Wood Species :	Douglas Fir-Larch (North)	Fc - Perp	625.0 psi		
Wood Grade :	No. 1/No. 2	Fv	180.0 psi		
		Ft	500.0 psi	Density	30.590 pcf
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
Uniform Load : W = 0.04550 ksf, Tributary Width = 2.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	**0.110** : 1	Maximum Shear Stress Ratio	=	**0.044** : 1
Section used for this span		**2-2x6**	Section used for this span		**2-2x6**
		NDS2018			NDS2018
fb: Actual	=	194.94 psi	fv: Actual	=	12.72 psi
F'b	=	1,768.00 psi	F'v	=	288.00 psi
Load Combination		+0.60W	Load Combination		+0.60W
Location of maximum on span	=	3.000 ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.040 in	Ratio =	1795	>=360	Span: 1 : W Only
Max Upward Transient Deflection	0 in	Ratio =	0	>=360	n/a
Max Downward Total Deflection	0.024 in	Ratio =	2992	>=240	Span: 1 : +0.60W
Max Upward Total Deflection	0 in	Ratio =	0	>=240	n/a

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C_t	CLx	C_F	Cfu	C_i	C_r	M	fb	F'b	V	fv	F'v
														0.0	0.00	0.0	0.0
Length = 6.0 ft	1			0.90	1.00	1.00	1.00	1.300	1.00	1.00	1.00			994.5	0.00	0.0	162.0
+0.60W					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 6.0 ft	1	0.110	0.044	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.25	194.9	1,768.0	0.14	12.7	288.0
+0.450W					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 6.0 ft	1	0.083	0.033	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.18	146.2	1,768.0	0.10	9.5	288.0

Wood Beam

Project File: 26-216 woods coffee.ec6

LIC# : KW-06014122, Build:20.25.10.02 PCS STRUCTURAL SOLUTIONS (c) ENERCALC, LLC 1982-2026

DESCRIPTION: PARAPET DBL TOP PL 3-19-26

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	W Only	0.0401	3.022		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.273	0.273
Max Upward from Load Combinations	0.164	0.164
Max Upward from Load Cases	0.273	0.273
+0.60W	0.164	0.164
+0.450W	0.123	0.123
W Only	0.273	0.273

Project Title: PEM Woods Coffee
Engineer: KES
Project ID: 26-216
Project Descr:

Wood Beam

Project File: 26-216 woods coffee.ec6

LIC# : KW-06014122, Build:20.25.10.02 PCS STRUCTURAL SOLUTIONS

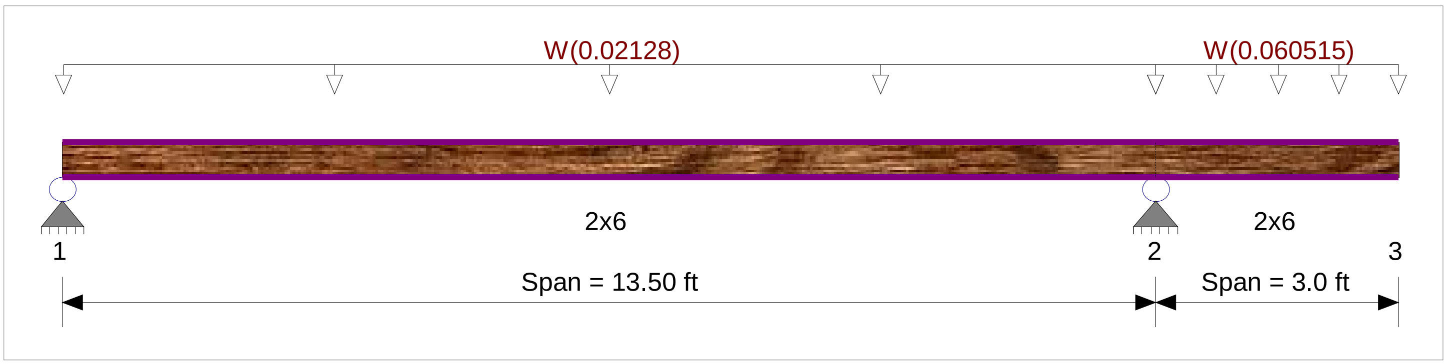
DESCRIPTION: new wall at the back (3-26-26)

Code References

Governing Code : IBC 2024
Referenced Design Standard(s) : NDS 2024
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method :	Allowable Stress Design	Fb +	900.0 psi	*E : Modulus of Elasticity*	
Load Combination :	ASCE 7-16	Fb -	900.0 psi	Ebend- xx	1,600.0 ksi
		Fc - Prll	1,350.0 psi	Eminbend - xx	580.0 ksi
Wood Species :	Douglas Fir-Larch	Fc - Perp	625.0 psi		
Wood Grade :	No.2	Fv	180.0 psi		
		Ft	575.0 psi	Density	31.210 pcf
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
Load for Span Number 1
Uniform Load : W = 0.0160 ksf, Tributary Width = 1.330 ft
Load for Span Number 2
Uniform Load : W = 0.04550 ksf, Tributary Width = 1.330 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	**0.182** : 1	Maximum Shear Stress Ratio	=	**0.058** : 1
Section used for this span		**2x6**	Section used for this span		**2x6**
		NDS2018			NDS2018
fb: Actual	=	341.02 psi	fv: Actual	=	16.82 psi
F'b	=	1,872.00 psi	F'v	=	288.00 psi
Load Combination		+0.60W	Load Combination		+0.60W
Location of maximum on span	=	5.807 ft	Location of maximum on span	=	13.047 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0 in	Ratio =	0	>=360	n/a
Max Upward Transient Deflection	0 in	Ratio =	0	>=360	n/a
Max Downward Total Deflection	0.193 in	Ratio =	839	>=360	Span: 1 : +0.60W
Max Upward Total Deflection	-0.070 in	Ratio =	1022	>=360	Span: 2 : +0.60W

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C_t	CLx	C_F	Cfu	C_i	C_r	M	fb	F'b	V	fv	F'v
														0.0	0.00	0.0	0.0
Length = 13.50 ft	1			0.90	1.00	1.00	1.00	1.300	1.00	1.00	1.00			1,053.0	0.00	0.0	162.0
Length = 3.0 ft	2			0.90	1.00	1.00	1.00	1.300	1.00	1.00	1.00			1,053.0	0.00	0.0	162.0
+0.60W					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 13.50 ft	1	0.182	0.058	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.21	341.0	1,872.0	0.09	16.8	288.0

Wood Beam

Project File: 26-216 woods coffee.ec6

LIC# : KW-06014122, Build:20.25.10.02 PCS STRUCTURAL SOLUTIONS (c) ENERCALC, LLC 1982-2026

DESCRIPTION: new wall at the back (3-26-26)

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C_t	CLx	C_F	Cfu	C_i	C_r	M	fb	F'b	V	fv	F'v
Length = 3.0 ft	**2**	0.138	0.058	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.16	259.3	1,872.0	0.09	16.8	288.0
+0.450W					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 13.50 ft	**1**	0.137	0.044	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.16	255.8	1,872.0	0.07	12.6	288.0
Length = 3.0 ft	**2**	0.104	0.044	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.12	194.4	1,872.0	0.07	12.6	288.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+0.60W	0.1930	6.335		0.0000	0.000
2		0.0000	6.335	+0.60W	-0.0704	3.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2	Support 3
Max Upward from all Load Conditions	0.123	0.345	
Max Upward from Load Combinations	0.074	0.207	
Max Upward from Load Cases	0.123	0.345	
+0.60W	0.074	0.207	
+0.450W	0.056	0.155	
W Only	0.123	0.345	

Wood Beam

Project File: 26-216 woods coffee.ec6

LIC# : KW-06014122, Build:20.25.10.02 PCS STRUCTURAL SOLUTIONS (c) ENERCALC, LLC 1982-2026

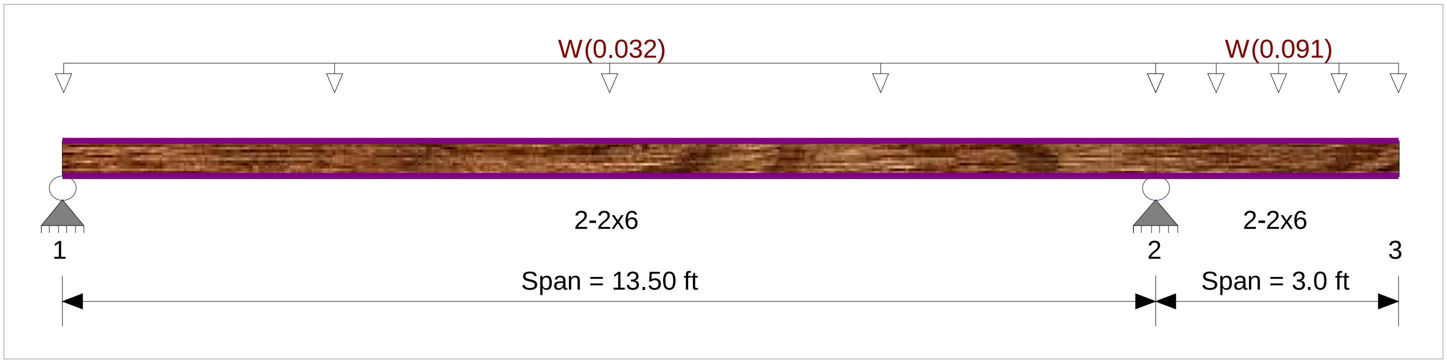
DESCRIPTION: new wall at the back (3-26-26) full height studs

Code References

Governing Code : IBC 2024
Referenced Design Standard(s) : NDS 2024
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method :	Allowable Stress Design	Fb +	900.0 psi	*E : Modulus of Elasticity*	
Load Combination :	ASCE 7-16	Fb -	900.0 psi	Ebend- xx	1,600.0 ksi
		Fc - Prll	1,350.0 psi	Eminbend - xx	580.0 ksi
Wood Species :	Douglas Fir-Larch	Fc - Perp	625.0 psi		
Wood Grade :	No.2	Fv	180.0 psi		
		Ft	575.0 psi	Density	31.210 pcf
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
Load for Span Number 1
Uniform Load : W = 0.0160 ksf, Tributary Width = 2.0 ft
Load for Span Number 2
Uniform Load : W = 0.04550 ksf, Tributary Width = 2.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	**0.137** : 1	Maximum Shear Stress Ratio	=	**0.044** : 1
Section used for this span		**2-2x6**	Section used for this span		**2-2x6**
		NDS2018			NDS2018
fb: Actual	=	256.40 psi	fv: Actual	=	12.65 psi
F'b	=	1,872.00 psi	F'v	=	288.00 psi
Load Combination		+0.60W	Load Combination		+0.60W
Location of maximum on span	=	5.807 ft	Location of maximum on span	=	13.047 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0	in	Ratio =	0 >=360	n/a
Max Upward Transient Deflection	0	in	Ratio =	0 >=360	n/a
Max Downward Total Deflection	0.145	in	Ratio =	1116 >=360	Span: 1 : +0.60W
Max Upward Total Deflection	-0.053	in	Ratio =	1360 >=360	Span: 2 : +0.60W

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C_t	CLx	C_F	Cfu	C_i	C_r	M	fb	F'b	V	fv	F'v
														0.0	0.00	0.0	0.0
Length = 13.50 ft	1			0.90	1.00	1.00	1.00	1.300	1.00	1.00	1.00			1,053.0	0.00	0.0	162.0
Length = 3.0 ft	2			0.90	1.00	1.00	1.00	1.300	1.00	1.00	1.00			1,053.0	0.00	0.0	162.0
+0.60W					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 13.50 ft	1	0.137	0.044	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.32	256.4	1,872.0	0.14	12.6	288.0

Wood Beam

Project File: 26-216 woods coffee.ec6

LIC# : KW-06014122, Build:20.25.10.02 PCS STRUCTURAL SOLUTIONS

DESCRIPTION: new wall at the back (3-26-26) full height studs

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C_t	CLx	C_F	Cfu	C_i	C_r	M	fb	F'b	V	fv	F'v
Length = 3.0 ft	**2**	0.104	0.044	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.25	194.9	1,872.0	0.14	12.6	288.0
+0.450W					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 13.50 ft	**1**	0.103	0.033	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.24	192.3	1,872.0	0.10	9.5	288.0
Length = 3.0 ft	**2**	0.078	0.033	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.18	146.2	1,872.0	0.10	9.5	288.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+0.60W	0.1451	6.335		0.0000	0.000
2		0.0000	6.335	+0.60W	-0.0529	3.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2	Support 3
Max Upward from all Load Conditions	0.186	0.519	
Max Upward from Load Combinations	0.111	0.312	
Max Upward from Load Cases	0.186	0.519	
+0.60W	0.111	0.312	
+0.450W	0.084	0.234	
W Only	0.186	0.519	

Wood Beam

Project File: 26-216 woods coffee.ec6

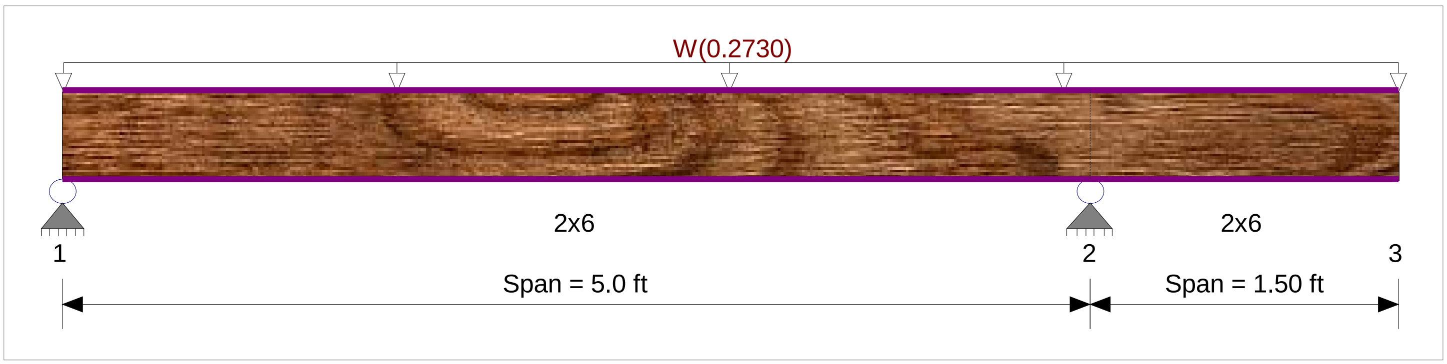
DESCRIPTION: Parapet stud 3-18-26

Code References

Governing Code : IBC 2024
Referenced Design Standard(s) : NDS 2024
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method :	Allowable Stress Design	Fb +	850.0 psi	*E : Modulus of Elasticity*	
Load Combination :	ASCE 7-16	Fb -	850.0 psi	Ebend- xx	1,600.0 ksi
		Fc - Prll	1,400.0 psi	Eminbend - xx	580.0 ksi
Wood Species :	Douglas Fir-Larch (North)	Fc - Perp	625.0 psi		
Wood Grade :	No. 1/No. 2	Fv	180.0 psi		
		Ft	500.0 psi	Density	30.590 pcf
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
Loads on all spans...
Uniform Load on ALL spans : W = 0.04550 ksf, Tributary Width = 6.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	**0.380** : 1	Maximum Shear Stress Ratio	=	**0.236** : 1
Section used for this span		**2x6**	Section used for this span		**2x6**
		NDS2018			NDS2018
fb: Actual	=	672.59 psi	fv: Actual	=	67.85 psi
F'b	=	1,768.00 psi	F'v	=	288.00 psi
Load Combination		+0.60W	Load Combination		+0.60W
Location of maximum on span	=	2.263 ft	Location of maximum on span	=	4.553 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.091 in	Ratio =	656	>=360	Span: 1 : W Only
Max Upward Transient Deflection	-0.062 in	Ratio =	580	>=360	Span: 2 : W Only
Max Downward Total Deflection	0.055 in	Ratio =	1093	>=240	Span: 1 : +0.60W
Max Upward Total Deflection	-0.037 in	Ratio =	968	>=240	Span: 2 : +0.60W

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C_t	CLx	C_F	Cfu	C_i	C_r	M	fb	F'b	V	fv	F'v
														0.0	0.00	0.0	0.0
Length = 5.0 ft	1			0.90	1.00	1.00	1.00	1.300	1.00	1.00	1.00			994.5	0.00	0.0	162.0
Length = 1.50 ft	2			0.90	1.00	1.00	1.00	1.300	1.00	1.00	1.00			994.5	0.00	0.0	162.0
+0.60W					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 5.0 ft	1	0.380	0.236	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.42	672.6	1,768.0	0.37	67.8	288.0
Length = 1.50 ft	2	0.165	0.108	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.18	292.4	1,768.0	0.17	31.2	288.0

Wood Beam

Project File: 26-216 woods coffee.ec6

LIC# : KW-06014122, Build:20.25.10.02 PCS STRUCTURAL SOLUTIONS

DESCRIPTION: Parapet stud 3-18-26

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios											Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C_t	CLx	C_F	Cfu	C_i	C_r	M	fb	F'b	V	fv	F'v
+0.450W					1.00	1.00	1.00	1.300	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 5.0 ft	**1**	0.285	0.177	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.32	504.4	1,768.0	0.28	50.9	288.0
Length = 1.50 ft	**2**	0.124	0.081	1.60	1.00	1.00	1.00	1.300	1.00	1.00	1.00	0.14	219.3	1,768.0	0.13	23.4	288.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	W Only	0.0915	2.430		0.0000	0.000
2		0.0000	2.430	W Only	-0.0619	1.500

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2	Support 3
Max Upward from all Load Conditions	0.621	1.153	
Max Upward from Load Combinations	0.373	0.692	
Max Upward from Load Cases	0.621	1.153	
+0.60W	0.373	0.692	
+0.450W	0.279	0.519	
W Only	0.621	1.153	