

#20035

Structural Calculations For:
FOO RESIDENCE

AT

3453 74th Ave SE
Mercer Island, WA 98040



06/12/2020

Client: Jimmy and Shannon Foo
2820 29th Ave. W
Seattle, WA 98199

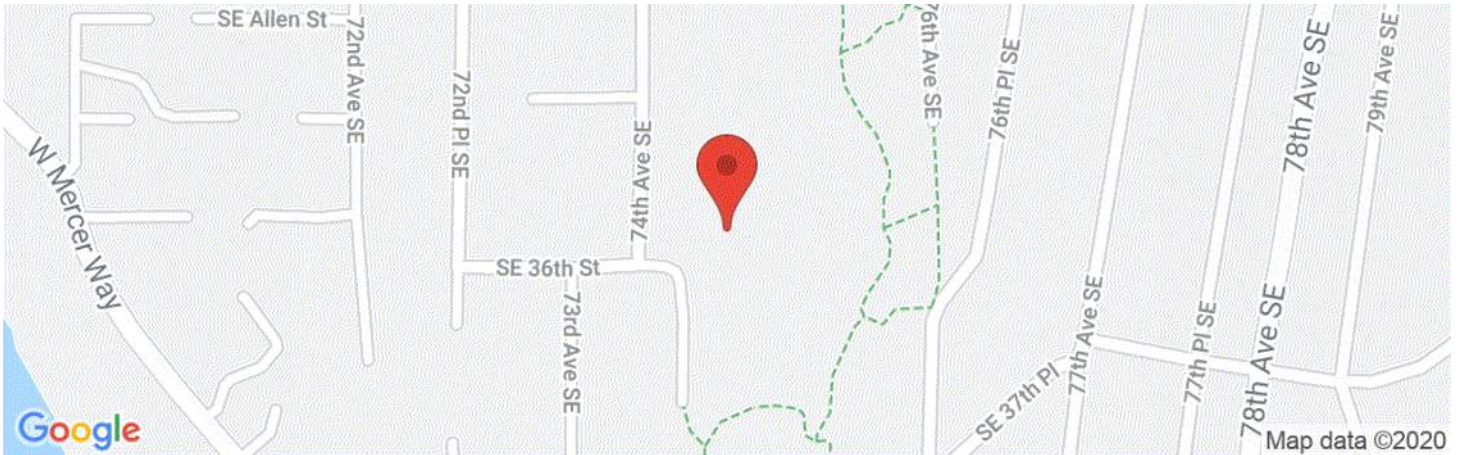
LATERAL CALCULATIONS



Foo Residence

3453 74th Ave SE, Mercer Island, WA 98040, USA

Latitude, Longitude: 47.57840179999999, -122.2396407



Date	5/7/2020, 11:49:30 AM
Design Code Reference Document	ASCE7-10
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.397	MCE_R ground motion. (for 0.2 second period)
S_1	0.538	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.397	Site-modified spectral acceleration value
S_{M1}	0.806	Site-modified spectral acceleration value
S_{DS}	0.932	Numeric seismic design value at 0.2 second SA
S_{D1}	0.538	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	D	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	1.5	Site amplification factor at 1.0 second
PGA	0.576	MCE_G peak ground acceleration
F_{PGA}	1	Site amplification factor at PGA
PGA_M	0.576	Site modified peak ground acceleration
T_L	6	Long-period transition period in seconds
$SsRT$	1.397	Probabilistic risk-targeted ground motion. (0.2 second)
$SsUH$	1.458	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.867	Factored deterministic acceleration value. (0.2 second)
$S1RT$	0.538	Probabilistic risk-targeted ground motion. (1.0 second)
$S1UH$	0.576	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S1D$	1.187	Factored deterministic acceleration value. (1.0 second)
$PGAd$	1.103	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.959	Mapped value of the risk coefficient at short periods
C_{R1}	0.934	Mapped value of the risk coefficient at a period of 1 s

2015 IBC SEISMIC OVERVIEW

SHEET TITLE: **2015 IBC SEISMIC OVERVIEW**
 CT PROJECT # : **20035 Foo Residence**

Step #			2015 IBC	ASCE 7-10
1.	OCCUPANCY CATEGORY	TYPE = II	Table 1604.5	Table 1.5-1
2.	IMPORTANCE FACTOR	$I_E = 1.00$	Section 1613.1 -> ASCE	Table 1.5-2
3.	Site Class - Per Geo. Engr.	S.C. = D	Section 1613.3.5 Table 1613.3.3(2)	Section 11.4.2 / Ch. 20 Table 20.3-1
4.	0.2 Sec. Spectral Response	$S_S = 1.40$	Figure 1613.3.1(1)	Figure 22-1
5.	1.0 Sec. Spectral Response	$S_1 = 0.54$	Figure 1613.3.1(2)	Figure 22-2
6.	Site Coefficient (short period)	$F_a = 1.00$	Figure 1613.3.3(1)	Table 11.4-1
7.	Site Coefficient (1.0 second)	$F_v = 1.50$	Figure 1613.3.3(2)	Table 11.4-2
	$S_{MS} = F_a * S_S$	$S_{MS} = 1.40$	EQ 16-37	EQ 11.4-1
	$S_{M1} = F_v * S_1$	$S_{M1} = 0.81$	EQ 16-38	EQ 11.4-2
	$S_{DS} = 2/3 * S_{MS}$	$S_{DS} = 0.93$	EQ 16-39	EQ 11.4-3
	$S_{D1} = 2/3 * S_{M1}$	$S_{D1} = 0.54$	EQ 16-40	EQ 11.4-4
8.	Seismic Design Category 0.2s	$SDC_S = D$	Table 1613.3.5(1)	Table 11.6-1
9.	Seismic Design Category 1.0s	$SDC_1 = D$	Table 1613.3.5(2)	Table 11.6-2
10.	Seismic Design Category	$SDC = D$	Max.	Max.
11.	Wood structural panels	---	N/A	Table 12.2-1
12.	Response Modification Coef.	$R = 6.5$	N/A	Table 12.2-1
13.	Overstrength Factor	$\Omega_0 = 3.0$	N/A	Table 12.2-1
14.	Deflection Amplification Factor	$C_D = 4.0$	N/A	Table 12.2-1
15.	Plan Structural Irregularities	--- No	N/A	Table 12.3-1
16.	Vertical Structural Irregularities	--- No	N/A	Table 12.3-2
17.	Permitted Procedure	Equiv. Lateral Force	---	Table 12.6-1

2015 IBC EQUIV. LAT. FORCE

SHEET TITLE: **2015 IBC EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7-10**
 CT PROJECT #: 20035 Foo Residence

$S_{DS} = 0.93$ $h_n = 18.00$ (ft)
 $S_{D1} = 0.54$ $x = 0.75$ ASCE 7-10 (Table 12.8-2)
 $R = 6.5$ $C_t = 0.020$ ASCE 7-10 (Table 12.8-2)
 $I_E = 1.0$ $T = 0.175$ ASCE 7-10 (EQ 12.8-7)
 $S_1 = 0.54$ $k = 1$ ASCE 7-10 (Section 12.8.3)

 $T_L = 16$ ASCE 7-10 (Section 11.4.5: Figure 22-15)

$C_s = S_{DS} / (R/I_E)$ 0.143 W ASCE 7-10 (EQ 12.8-2)
 $C_s = S_{D1} / (T^*(R/I_E))$ (for $T \leq T_L$) 0.474 W ASCE 7-10 (EQ 12.8-3) (MAX.)
 $C_s = (S_{D1} * T_L) / (T^{2*}(R/I_E))$ (for $T \geq T_L$) 0.000 W ASCE 7-10 (EQ 12.8-4) (MAX.)
 $C_s = 0.01$ 0.010 W ASCE 7-10 (EQ 12.8-5) (MIN.)
 $C_s = (0.5 S_1)/(R/I_E)$ 0.041 W ASCE 7-10 (EQ 12.8-6) (MIN.if $S_1 > 0.6g$)

CONTROLLING DESIGN BASE SHEAR = 0.143 W

VERTICAL DISTRIBUTION OF SEISMIC FORCES PER ASCE 7-10 SECTION 12.8.3											
DIAPHR. LEVEL	Story Height	Elevation (ft)	Height h_i (ft)	AREA (sqft)	DL (ksf)	w_i (kips)	$w_i * h_i^k$ (kips)	(EQ 12.8-11)	(EQ 12.8-12)	DESIGN Vi	SUM DESIGN Vi
								$C_{vx} =$	$C_{vx} =$		
								$\frac{w_x * h_x^k}{\sum w_i * h_i^k}$			
Roof	---	18.00	18.00	3707	0.025	92.675	1668.2	0.63		11.72	11.72
1st	7.00	11.00	11.00	3572	0.025	89.3	982.3	0.37		6.90	18.62
0	11.00	0.00	0.00			0	0.0	0.00		0.00	18.62
	0.00	0.00									
					SUM =	182.0	2650.5	1.00		18.62	
					E = V =	26.07					
					E/1.4 =	18.62					

SHEET TITLE: **MAIN WIND FORCE RESISTING SYSTEM USING LOADS FROM ASCE 7-10 CHAPTER 28, PART 2**
 CT PROJECT #: 20035 Foo Residence

	F-B	S-S	ASCE 7-10	2015 IBC
Ridge Elevation (ft) =	31.50	31.50 ft.		
Roof Plate Ht. =	18.00	18.00		
Roof Mean Ht. =	24.75	24.75 ft.	---	---
Building Width =	96.0	62.0 ft.		
Basic Wind Speed _{3 Sec. Gust} =	110	110 mph	Fig. 26.5-1A thru C	Figure 1609A-C
Exposure =	C	C		
Roof Type =	Gable	Gable		
p _{S30 A} =	21.6	21.6 psf	Figure 28.6-1	
p _{S30 B} =	14.8	14.8 psf	Figure 28.6-1	
p _{S30 C} =	17.2	17.2 psf	Figure 28.6-1	
p _{S30 D} =	11.8	11.8 psf	Figure 28.6-1	
λ =	1.35	1.35	Figure 28.6-1	
K _{zt} =	1.60	1.60	Section 26.8	
windward/lee =	1.00	1.00		
λ * K _{zt} * I _w * windward/lee :	2.16	2.16		
p _S = λ * K _{zt} * I * p _{S30} =			(Eq. 28.6-1)	
p _{S A} =	46.66	46.66 psf	(Eq. 28.6-1)	
p _{S B} =	31.97	31.97 psf	(Eq. 28.6-1)	
p _{S C} =	37.15	37.15 psf	(Eq. 28.6-1)	
p _{S D} =	25.49	25.49 psf	(Eq. 28.6-1)	
p _{S A and C average} =	41.9	41.9 psf		
p _{S B and D average} =	28.7	28.7 psf		
a =	6.2	6.2	Figure 28.6-1	
2a =	12.4	12.4		
width - 2*2a =	71.2	37.2		

MAIN WIND - ASCE 7-10 CHAPTER 28 PART 2				Areas (F-B)				Areas (S-S)				(F-B)	(S-S)	Wind (F-B)		Wind (S-S)		
DIAPHR.	Story	Elevation	Height	1.00				1.00				10 psf min.	16 psf min.	WIND	SUM	WIND	SUM	
LEVEL	Height	(ft)	hi (ft)	A _A	A _B	A _C	A _D	A _A	A _B	A _C	A _D	per 6.1.4.1	per 6.1.4.1	Vi (F-B)	V (F-B)	Vi (S-S)	V (S-S)	
Roof	---	18.00	18.00	13.5	0	334.8	0	961.2	0	334.8	0	502.2						
1st	7.00	11.00	11.00	3.5	86.8	0	249.2	0	86.8	0	130.2	0	26.1	16.9	48.51	48.51	32.39	32.39
0	11.00	0.00	0.00	9.0	223.2	0	640.8	0	223.2	0	334.8	0	13.8	8.9	34.22	82.73	22.85	55.24
0	0.00	0.00			0	0	0	0	0	0	0	0	0.0	0.0	0.00		0.00	
				A _F = 2496				A _F = 1612				39.9	25.8	V (F-B)=	82.73	V (S-S)=	55.24	
													kips	kips	kips		kips	

SHEET TITLE: **MAIN WIND FORCE RESISTING SYSTEM USING LOADS FROM ASCE 7-10 CHAPTER 28, PART 1**
 CT PROJECT #: 20035 Foo Residence

MAIN WIND - 7-10 CHAPTER 28 PART 1				Wind (F-B)		Wind (S-S)		Min/Part 2 (Max.)		Min/Part 2 (Max.)	
DIAPHR. LEVEL	Story Height	Elevation (ft)	Height hi (ft)	DESIGN Vi (F-B)	SUM V (F-B)	DESIGN Vi (S-S)	SUM V (S-S)	Wind (F-B) LRFD Vi (F-B)	SUM V (F-B)	Wind (S-S) LRFD Vi (S-S)	SUM V (S-S)
Roof	---	18.00	18.00	0.00	0.00	0.00	0.00	48.51	48.51	32.39	32.39
1st	7.00	11.00	11.00	0.00	0.00	0.00	0.00	34.22	82.73	22.85	55.24
0	11.00	0.00									
				V (F-B)=	0.00	V (S-S)=	0.00	V (F-B)=	82.73	V (S-S)=	55.24
				kips		kips		kips		kips	

DESIGN WIND - Min./Part 2/Part 1 ASD				Wind (F-B)			Wind (S-S)		
DIAPHR. LEVEL	Story Height	Elevation (ft)	Height hi (ft)	LRFD Vi (F-B)	DESIGN Vi	SUM V (F-B)	LRFD Vi (S-S)	DESIGN Vi	SUM V (S-S)
Roof	7.00	10	10	48.51	29.11	29.11	32.39	19.43	19.43
1st	11.00	0	0	34.22	20.53	49.64	22.85	13.71	33.15
0	0.00	0							
				V (F-B)=		49.64	V (S-S)=		33.15
						kips			kips

SHEET TITLE: **LATERAL F-B (front to back)**
 CT PROJECT #: 20035 Foo Residence

Diaph. Level: **Roof**
 Panel Height = 8 ft.
 Max. aspect = 3.5 SDPWS-15 Table 4.3.4
 Min. Lwall = 2.29 ft.

Seismic V i = 11.72 kips
 Sum Seismic V i = 11.72 kips
 Design Wind F-B V i = 29.11 kips
 Sum Wind F-B V i = 29.11 kips

		per SDPWS-15 Table 4.3.3.5																				Max.			
Grid	ID	T.A. (sqft)	Lwall (ft)	L _{DL,eff.} (ft)	C ₀	w dl (klf)	Wind V level (kip)	Wind V abv. (kip)	E.Q. V level (kip)	E.Q. V abv. (kip)	$\rho = 1.00$ ρ	E.Q. 2w/h	E.Q. v i (plf)	E.Q. Type	Wind Type	Wind v i (plf)	E.Q. OTM (kip-ft)	E.Q. R _{OTM} (kip-ft)	E.Q. U _{net} (kip)	E.Q. U _{sum} (kip)	Wind OTM (kip-ft)	Wind R _{OTM} (kip-ft)	Wind U _{net} (kip)	Wind U _{sum} (kip)	U _{sum} (kip)
Ext	A*	318.88	4.0	19.0	1.00	0.15	2.50	0.00	1.01	0.00	1.00	1.00	252	P4	P2	626	8.07	5.13	0.88	0.88	20.03	3.80	4.87	4.87	4.87
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int	B	837.06	10.5	12.5	1.00	0.15	6.57	0.00	2.65	0.00	1.00	1.00	252	P4	P2	626	21.17	8.86	1.25	1.25	52.58	6.56	4.68	4.68	4.68
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int	C	797.2	10.0	12.0	1.00	0.15	6.26	0.00	2.52	0.00	1.00	1.00	252	P4	P2	626	20.17	8.10	1.29	1.29	50.07	6.00	4.72	4.72	4.72
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	D	617.83	7.8	9.8	1.00	0.15	4.85	0.00	1.95	0.00	1.00	1.00	252	P4	P2	626	15.63	5.10	1.49	1.49	38.81	3.78	4.95	4.95	4.95
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	E	1136	14.3	16.3	1.00	0.15	8.92	0.00	3.59	0.00	1.00	1.00	252	P4	P2	626	28.74	15.63	0.96	0.96	71.36	11.58	4.40	4.40	4.40
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3707	3707.0	46.5			46.5 = L eff.		29.11	0.00	11.72	0.00															
							ΣV_{wind}	29.11	ΣV_{EQ}	11.72															

Notes: * denotes a wall with force transfer

SHEET TITLE: **LATERAL F-B (front to back)**
 CT PROJECT #: 20035 Foo Residence

Diaph. Level: **1st**

Panel Height = 11 ft.

Max. aspect = 3.5 SDPWS-15 Table 4.3.4

Min. Lwall = 3.14 ft.

Seismic V i = 6.90 kips
 Sum Seismic V i = 18.62 kips

Design Wind F-B V i = 20.53 kips
 Sum Wind F-B V i = 49.64 kips

per SDPWS-15
 Table 4.3.3.5

Grid	ID	T.A. (sqft)	Lwall (ft)	L _{DL,eff.} (ft)	C _o	w dl (klf)	Wind V level (kip)	Wind V abv. (kip)	E.Q. V level (kip)	E.Q. V abv. (kip)	ρ = 1.00 2w/h ρ	E.Q. v i (plf)	E.Q. Type	Wind Type	v i (plf)	OTM (kip-ft)	E.Q. R _{OTM} (kip-ft)	E.Q. U _{net} (kip)	E.Q. U _{sum} (kip)	Wind OTM (kip-ft)	Wind R _{OTM} (kip-ft)	Wind U _{net} (kip)	Wind U _{sum} (kip)	Max. U _{sum} (kip)
Ext	A	950.72	17.5	19.5	1.00	0.15	5.46	7.75	1.84	3.12	1.00	1.00	283 P4	P2	755	54.53	23.03	1.87	1.87	145.33	17.06	7.62	7.62	7.62
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	B	814.9	15.0	15.0	1.00	0.25	4.68	6.64	1.57	2.67	1.00	1.00	283 P4	P2	755	46.74	25.31	1.49	1.49	124.57	18.75	7.38	7.38	7.38
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int	C	611.18	11.3	13.3	1.00	0.25	3.51	4.98	1.18	2.01	1.00	1.00	283 P4	P2	755	35.05	16.77	1.73	1.73	93.43	12.42	7.65	7.65	7.65
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	D	434.62	8.0	8.0	1.00	0.25	2.50	3.54	0.84	1.43	1.00	1.00	283 P4	P2	755	24.93	7.20	2.42	2.42	66.44	5.33	8.33	8.33	8.33
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	E	760.58	14.0	14.0	1.00	0.25	4.37	6.20	1.47	2.50	1.00	1.00	283 P4	P2	755	43.62	22.05	1.55	1.55	116.26	16.33	7.06	7.06	7.06
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		3572	3572.0	65.8		65.8 = L eff.	20.53	29.11	6.90	11.72	1.00													
							ΣV_{wind}	49.64	ΣV_{EQ}	18.62														

Notes: * denotes a wall with force transfer

SHEET TITLE: **LATERAL S-S (side to side)**
 CT PROJECT #: 20035 Foo Residence

Diaph. Level: **Roof**
 Panel Height = **8 ft.**
 Max. aspect = **3.5** SDPWS-15 Table 4.3.4
 Min. Lwall = **2.29 ft.**

Seismic V i = 11.72 kips
Sum Seismic V i = 11.72 kips

Design Wind F-B V i = 19.43 kips
Sum Wind F-B V i = 19.43 kips

		per SDPWS-15 Table 4.3.3.5																		Max.					
Wall	ID	T.A. (sqft)	Lwall (ft)	L _{DL} eff. (ft)	C _o	w dl (klf)	Wind V level (kip)	Wind V abv. (kip)	E.Q. V level (kip)	E.Q. V abv. (kip)	ρ = 1.00 ρ	E.Q. 2w/h (plf)	E.Q. v i (plf)	E.Q. Type Type	Wind v i (plf)	Wind OTM (kip-ft)	E.Q. R _{OTM} (kip-ft)	E.Q. U _{net} (kip)	E.Q. U _{sum} (kip)	Wind OTM (kip-ft)	Wind R _{OTM} (kip-ft)	Wind U _{net} (kip)	Wind U _{sum} (kip)	U _{sum} (kip)	
Ext	1	915.02	9.8	11.8	1.00	0.15	4.80	0.00	2.89	0.00	1.00	1.00	297	P4	P3	492	23.15	7.73	1.70	1.70	38.38	5.73	3.59	3.59	3.59
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	2	398.85	4.3	5.3	1.00	0.15	2.09	0.00	1.26	0.00	1.00	1.00	297	P4	P3	492	10.09	1.51	2.40	2.40	16.73	1.12	4.36	4.36	4.36
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int	3	539.63	5.8	7.8	1.00	0.15	2.83	0.00	1.71	0.00	1.00	1.00	297	P4	P3	492	13.65	3.01	2.09	2.09	22.63	2.23	4.01	4.01	4.01
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int	4	492.7	5.3	7.3	1.00	0.15	2.58	0.00	1.56	0.00	1.00	1.00	297	P4	P3	492	12.46	2.57	2.16	2.16	20.66	1.90	4.09	4.09	4.09
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	5	351.93	3.8	5.8	1.00	0.15	1.84	0.00	1.11	0.00	1.00	0.94	317	P4	P3	492	8.90	1.46	2.42	2.42	14.76	1.08	4.44	4.44	4.44
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	6	563.09	6.0	8.0	1.00	0.15	2.95	0.00	1.78	0.00	1.00	1.00	297	P4	P3	492	14.24	3.24	2.06	2.06	23.62	2.40	3.98	3.98	3.98
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ext	7	445.78	4.8	5.8	1.00	0.15	2.34	0.00	1.41	0.00	1.00	1.00	297	P4	P3	492	11.28	1.84	2.31	2.31	18.70	1.37	4.24	4.24	4.24
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		3707	3707.0	39.5	39.5 = L eff.		19.43	0.00	11.72	0.00															
							ΣV_{wind}	19.43	ΣV_{EQ}	11.72															

Notes: * denotes a wall with force transfer

JOB #: 20035

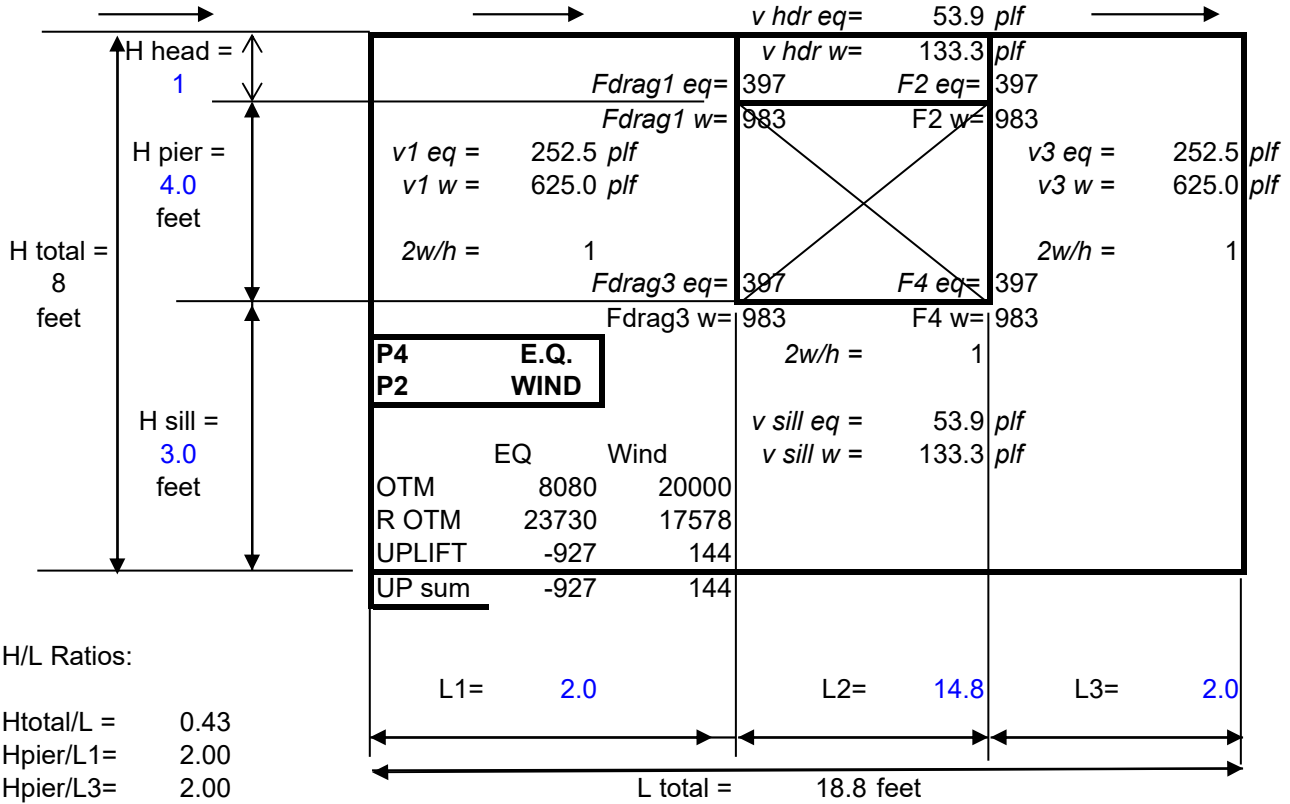
ID: A

w dl = 150 plf

V eq = 1010.0 pounds
V w = 2500.0 pounds

V1 eq = 505.0 pounds
V1 w = 1250.0 pounds

V3 eq = 505.0 pounds
V3 w = 1250.0 pounds



2015 IBC SEISMIC OVERVIEW

SHEET TITLE: **2015 IBC SEISMIC OVERVIEW**
 CT PROJECT #: **20035 Foo Residence Shed**

Step #			2015 IBC	ASCE 7-10
1.	OCCUPANCY CATEGORY	TYPE = II	Table 1604.5	Table 1.5-1
2.	IMPORTANCE FACTOR	$I_E = 1.00$	Section 1613.1 -> ASCE	Table 1.5-2
3.	Site Class - Per Geo. Engr.	S.C. = D	Section 1613.3.5 Table 1613.3.3(2)	Section 11.4.2 / Ch. 20 Table 20.3-1
4.	0.2 Sec. Spectral Response	$S_S = 1.40$	Figure 1613.3.1(1)	Figure 22-1
5.	1.0 Sec. Spectral Response	$S_1 = 0.54$	Figure 1613.3.1(2)	Figure 22-2
6.	Site Coefficient (short period)	$F_a = 1.00$	Figure 1613.3.3(1)	Table 11.4-1
7.	Site Coefficient (1.0 second)	$F_v = 1.50$	Figure 1613.3.3(2)	Table 11.4-2
	$S_{MS} = F_a * S_S$	$S_{MS} = 1.40$	EQ 16-37	EQ 11.4-1
	$S_{M1} = F_v * S_1$	$S_{M1} = 0.81$	EQ 16-38	EQ 11.4-2
	$S_{DS} = 2/3 * S_{MS}$	$S_{DS} = 0.93$	EQ 16-39	EQ 11.4-3
	$S_{D1} = 2/3 * S_{M1}$	$S_{D1} = 0.54$	EQ 16-40	EQ 11.4-4
8.	Seismic Design Category 0.2s	$SDC_S = D$	Table 1613.3.5(1)	Table 11.6-1
9.	Seismic Design Category 1.0s	$SDC_1 = D$	Table 1613.3.5(2)	Table 11.6-2
10.	Seismic Design Category	$SDC = D$	Max.	Max.
11.	Wood structural panels	---	N/A	Table 12.2-1
12.	Response Modification Coef.	$R = 6.5$	N/A	Table 12.2-1
13.	Overstrength Factor	$\Omega_0 = 3.0$	N/A	Table 12.2-1
14.	Deflection Amplification Factor	$C_D = 4.0$	N/A	Table 12.2-1
15.	Plan Structural Irregularities	--- No	N/A	Table 12.3-1
16.	Vertical Structural Irregularities	--- No	N/A	Table 12.3-2
17.	Permitted Procedure	Equiv. Lateral Force	---	Table 12.6-1

2015 IBC EQUIV. LAT. FORCE

SHEET TITLE: **2015 IBC EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7-10**
 CT PROJECT #: 20035 Foo Residence Shed

$S_{DS} = 0.93$ $h_n = 11.00$ (ft)
 $S_{D1} = 0.54$ $x = 0.75$ ASCE 7-10 (Table 12.8-2)
 $R = 6.5$ $C_t = 0.020$ ASCE 7-10 (Table 12.8-2)
 $I_E = 1.0$ $T = 0.121$ ASCE 7-10 (EQ 12.8-7)
 $S_1 = 0.54$ $k = 1$ ASCE 7-10 (Section 12.8.3)

 $T_L = 16$ ASCE 7-10 (Section 11.4.5: Figure 22-15)

$C_s = S_{DS} / (R/I_E) = 0.143$ W ASCE 7-10 (EQ 12.8-2)
 $C_s = S_{D1} / (T^*(R/I_E))$ (for $T \leq T_L$) = 0.685 W ASCE 7-10 (EQ 12.8-3) (MAX.)
 $C_s = (S_{D1} * T_L) / (T^{2*}(R/I_E))$ (for $T \geq T_L$) = 0.000 W ASCE 7-10 (EQ 12.8-4) (MAX.)
 $C_s = 0.01$ ASCE 7-10 (EQ 12.8-5) (MIN.)
 $C_s = (0.5 S_1)/(R/I_E) = 0.041$ W ASCE 7-10 (EQ 12.8-6) (MIN. if $S_1 > 0.6g$)

CONTROLLING DESIGN BASE SHEAR = 0.143 W

VERTICAL DISTRIBUTION OF SEISMIC FORCES PER ASCE 7-10 SECTION 12.8.3

DIAPHR. LEVEL	Story Height	Elevation (ft)	Height h_i (ft)	AREA (sqft)	DL (ksf)	w_i (kips)	$w_i * h_i^k$ (kips)	(EQ 12.8-11)	DESIGN V_i	SUM DESIGN V_i
								(EQ 12.8-12)		
								$C_{vx} =$		
								$\frac{w_x * h_x^k}{\sum w_i * h_i^k}$		
Roof	---	11.00	11.00	120	0.025	3	33.0	1.00	0.31	0.31
1st	11.00	0.00	0.00	0	0.000	0	0.0	0.00	0.00	0.31
0	0.00	0.00	0.00			0	0.0	0.00	0.00	0.31
	0.00	0.00								
SUM =						3.0	33.0	1.00	0.31	
E = V =						0.43				
E/1.4 =						0.31				

SHEET TITLE: **MAIN WIND FORCE RESISTING SYSTEM USING LOADS FROM ASCE 7-10 CHAPTER 28, PART 2**
 CT PROJECT #: 20035 Foo Residence Shed

	F-B	S-S	ASCE 7-10	2015 IBC
Ridge Elevation (ft) =	12.25	12.25 ft.		
Roof Plate Ht. =	11.00	11.00		
Roof Mean Ht. =	11.63	11.63 ft.	---	---
Building Width =	10.0	12.0 ft.		
Basic Wind Speed _{3 Sec. Gust} =	110	110 mph	Fig. 26.5-1A thru C	Figure 1609A-C
Exposure =	C	C		
Roof Type =	Gable	Gable		
p _{S30 A} =	19.2	19.2 psf	Figure 28.6-1	
p _{S30 B} =	-10.0	-10.0 psf	Figure 28.6-1	
p _{S30 C} =	12.7	12.7 psf	Figure 28.6-1	
p _{S30 D} =	-5.9	-5.9 psf	Figure 28.6-1	
λ =	1.35	1.35	Figure 28.6-1	
K _{zt} =	1.60	1.60	Section 26.8	
windward/lee =	1.00	1.00		
λ * K _{zt} * I _w * windward/lee :	2.16	2.16		
p _S = λ * K _{zt} * I * p _{S30} =			(Eq. 28.6-1)	
p _{S A} =	41.47	41.47 psf	(Eq. 28.6-1)	
p _{S B} =	-21.60	-21.60 psf	(Eq. 28.6-1)	
p _{S C} =	27.43	27.43 psf	(Eq. 28.6-1)	
p _{S D} =	-12.74	-12.74 psf	(Eq. 28.6-1)	
p _{S A and C average} =	34.5	34.5 psf		
p _{S B and D average} =	-17.2	-17.2 psf		
a =	3	3	Figure 28.6-1	
2a =	6	6		
width - 2*2a =	-2	0		

MAIN WIND - ASCE 7-10 CHAPTER 28 PART 2				Areas (F-B)				Areas (S-S)				(F-B)	(S-S)	Wind (F-B)		Wind (S-S)		
DIAPHR.	Story	Elevation	Height	1.00		1.00		1.00		1.00		10 psf min.	16 psf min.	WIND	SUM	WIND	SUM	
LEVEL	Height	(ft)	hi (ft)	A _A	A _B	A _C	A _D	A _A	A _B	A _C	A _D	per 6.1.4.1	per 6.1.4.1	Vi (F-B)	V (F-B)	Vi (S-S)	V (S-S)	
Roof	---	12.25	11.00	1.3	0	15	0	-2.5	0	15	0	0						
1st	11.00	0.00	0.00	5.5	66	0	-11	0	66	0	0	0	1.1	1.3	2.14	2.14	2.41	2.41
0	0.00	0.00	0.00	5.5	66	0	-11	0	66	0	0	0	0.9	1.1	2.44	4.58	2.74	5.15
0	0.00	0.00		0	0	0	0	0	0	0	0	0	0.0	0.0	0.00		0.00	
				A _F = 122.5				A _F = 147				2.0	2.4	V (F-B)=	4.58	V (S-S)=	5.15	
												kips	kips		kips		kips	

SHEET TITLE: **MAIN WIND FORCE RESISTING SYSTEM USING LOADS FROM ASCE 7-10 CHAPTER 28, PART 1**
 CT PROJECT #: 20035 Foo Residence Shed

MAIN WIND - 7-10 CHAPTER 28 PART 1				Wind (F-B)		Wind (S-S)		Min/Part 2 (Max.)		Min/Part 2 (Max.)	
DIAPHR. LEVEL	Story Height	Elevation (ft)	Height hi (ft)	DESIGN Vi (F-B)	SUM V (F-B)	DESIGN Vi (S-S)	SUM V (S-S)	Wind (F-B) LRFD Vi (F-B)	SUM V (F-B)	Wind (S-S) LRFD Vi (S-S)	SUM V (S-S)
Roof	---	11.00	11.00	0.00	0.00	0.00	0.00	2.14	2.14	2.41	2.41
1st	11.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44	4.58	2.74	5.15
0	0.00	0.00									
				V (F-B)=	0.00	V (S-S)=	0.00	V (F-B)=	4.58	V (S-S)=	5.15
				kips		kips		kips		kips	

DESIGN WIND - Min./Part 2/Part 1 ASD				Wind (F-B)			Wind (S-S)		
DIAPHR. LEVEL	Story Height	Elevation (ft)	Height hi (ft)	LRFD Vi (F-B)	DESIGN Vi	SUM V (F-B)	LRFD Vi (S-S)	DESIGN Vi	SUM V (S-S)
Roof	11.00	10	10	2.14	1.29	1.29	2.41	1.45	1.45
1st	0.00	0	0	2.44	1.46	2.75	2.74	1.64	3.09
0	0.00	0							
				V (F-B)=		2.75	V (S-S)=		3.09
						kips			kips

SHEET TITLE: **LATERAL S-S (side to side)**
 CT PROJECT #: 20035 Foo Residence Shed 1

Diaph. Level: **Roof**
 Panel Height = **11** ft.
 Max. aspect = **3.5** SDPWS-15 Table 4.3.4
 Min. Lwall = 3.14 ft.

Seismic V i = 0.31 kips
Sum Seismic V i = 0.31 kips

Design Wind F-B V i = 1.45 kips
Sum Wind F-B V i = 3.09 kips

		per SDPWS-15 Table 4.3.3.5																				Max.			
Wall	ID	T.A. (sqft)	Lwall (ft)	L _{DL} eff. (ft)	C ₀	w dl (klf)	Wind V level (kip)	Wind V abv. (kip)	E.Q. V level (kip)	E.Q. V abv. (kip)	$\rho = 1.30$	E.Q. $2w/h$	E.Q. v_i (plf)	E.Q. Type	Wind Type	Wind v_i (plf)	E.Q. OTM (kip-ft)	E.Q. R _{OTM} (kip-ft)	E.Q. U _{net} (kip)	E.Q. U _{sum} (kip)	Wind OTM (kip-ft)	Wind R _{OTM} (kip-ft)	Wind U _{net} (kip)	Wind U _{sum} (kip)	U _{sum} (kip)
Ext	1	120	10.0	10.0	1.00	0.15	3.09	0.00	0.31	0.00	1.30	1.00	40	P6TN	P6	309	4.39	6.75	-0.25	-0.25	33.99	5.00	3.11	3.11	3.11
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	-	0	0.0	0.0	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0	---	---	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		120	120.0	10.0		10.0 = L eff.	3.09	0.00	0.31	0.00															
							ΣV_{wind}	3.09	ΣV_{EQ}	0.31															

Notes: * denotes a wall with force transfer

