LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX
BY L.R. POPE ENGINEERING, INC.

WIND LOADS
SIMPLIFIED WIND LOAD METHOD (ASCE 7-05 6.4)

BASIC WIND SPEED =	90	MPH
EXPOSURE =	C	
Roof Height (r) =	9	ft
Wall Height 3rd Level (h_3) =	8	ft
Width of 2nd Floor (f_2) =	1.17	ft
Wall Height 2nd Level (h_2) =	9	ft
Width of 1st Floor (f_1) =	1.17	ft
Wall Height First Level (h_1) =	9	ft
ROOF PITCH =	5	:12
ROOF TYPE =	GABLE	
Topographical factor, K_{zt} =	1.00	
Htotal = $h_1+h_2+h_3+f_1+f_2+h_f$ =	37.34	
mean roof ht, h =	32.84	
Building ht & exposure, λ =	1.43	ASCE 7-05 Figure 6-3
Wind pressure zone A, p_{s30} =	16.91	psf
Wind pressure zone B, p_{s30} =	-0.87	psf
Wind pressure zone C, p_{s30} =	11.80	psf
Wind pressure zone D, p_{s30} =	0.18	psf
Wind pressure zone E_{OH}, p_{s30} =	-17.25	psf
Wind pressure zone G_{OH}, p_{s30} =	-14.02	psf
Wind Importance Fact. I_W =	1.00	

ASCE 7-05 Figure 6-2

EDGE STRIPS (a) END ZONES 2(a)
LONG. (a) = 14.05 2(a)= 28.10
TRANS. (a) = 13.14 2(a)= 26.27

CONSTRUCTION TYPE = RESIDENTIAL

Formula	Results Trans	Long	
WIND LOAD, $p_s = \lambda K_{zt} I_W p_{S30}$ (ASCE 7-05 EQN 6-1)			
WALL END ZONE A, $\lambda K_{zt} I_W p_{S30}$ =	24.2	18.3	psf
ROOF END ZONE B, $\lambda K_{zt} I_W p_{S30}$ =	1.2	N/A	psf
WALL INTERIOR ZONE C, $\lambda K_{zt} I_W p_{S30}$ =	16.8	12.1	psf
ROOF INTERIOR ZONE D, $\lambda K_{zt} I_W p_{S30}$ =	0.3	N/A	psf
OVERHANG INTERIOR ZONE E_{OH}, $\lambda K_{zt} I_W p_{S30}$ =	-24.6	-30.9	psf
OVERHANG INTERIOR ZONE G_{OH}, $\lambda K_{zt} I_W p_{S30}$ =	-20.0	-24.1	psf

****Min allowable pressure = ±10 psf (Zones A, B, C, &D) per ASCE 7-05 Figure 6-2****

Total Wind Load at Roof
w=WL*(r+hs/2)

TRANSVERSE	**END ZONE w=**	**130**	**plf**
	INTERIOR w=	**130**	**plf**
LONGITUDINAL	**END ZONE w=**	**180**	**plf**
	INTERIOR w=	**158**	**plf**

Total Wind Load at 3rd Floor
w=WL*(r+hs+hf/2)

TRANSVERSE	**END ZONE w=**	**364**	**plf**
	INTERIOR w=	**293**	**plf**
LONGITUDINAL	**END ZONE w=**	**357**	**plf**
	INTERIOR w=	**275**	**plf**

Total Wind Load at 2nd Floor
w=WL*(r+hs+hf/2)

TRANSVERSE	**END ZONE w=**	**472**	**plf**
	INTERIOR w=	**369**	**plf**
LONGITUDINAL	**END ZONE w=**	**543**	**plf**
	INTERIOR w=	**399**	**plf**

SEISMIC FORCES
EQUIVALENT LATERAL FORCE PROCEDURE (ASCE 7-05 12.8)
Seismic loads multiplied by 0.7 in accordance with IBC 2009 EQN 16-15

ZIP CODE = 84790
Central lat. = 37.05618° Central long. = -113.547918 °

Occupancy Category =	**II**	
Seismic Design Category =	**D**	IBC Tables 1613.5.6(1),1613.5.6(2)
Site Class =	**D**	
Seismic Importance Factor, I_g=	1.00	
S_1=	0.193	
S_S=	0.600	
Response modification coefficient, R =	6.5	ASCE 7-05 TABLE 12.2-1
Upper Roof area (A_{3u}) =	7153	ft^2
Lower Roof area (A_{3l}) =	600	ft^2
3rd Floor area (A_2) =	6285	ft^2
2nd Floor area (A_1) =	4086	ft^2
Roof length (L_3) =	140.50	ft
Roof width (W_3) =	45.50	ft
2nd story or roof length (L_2) =	140.50	ft
2nd story or roof width (W_2) =	49.00	ft
1st story or floor length (L_1) =	140.50	ft
1st story or floor width (W_1) =	29.08	ft
Height of 3rd Story Wall (h_3) =	8	ft
Height of 2nd Story Wall (h_2) =	9	ft
Height of First Story Wall (h_1) =	9	ft
Weight of Exterior Walls (W_w) =	15	psf
Roof Dead Load (DL_3) =	25	psf
3rd Floor Dead Load + partition (DL_2) =	15	psf
2nd Floor Dead Load + partition (DL_1) =	15	psf

Fv=	2.03	IBC 2009 Table 1613.5.3(1)
Fa=	1.32	IBC 2009 Table 1613.5.3(2)
S_{MS} = Fa*S_S =	0.792	IBC 2009 EQN 16-36
S_{M1} = Fv*S_1 =	0.391	IBC 2009 EQN 16-37
S_{DS} = 2/3*S_{MS} =	0.528	IBC 2009 EQN 16-38
S_{D1} = 2/3*S_{M1} =	0.261	IBC 2009 EQN 16-39
Cs = S_{DS}/(R/Ig) =	***0.0812***	ASCE 7-05 EQN 12.8-2
Cs_{max} = S_{D1}/(T*(R/Ig)) =	0.133	ASCE 7-05 EQN 12.8-3
Cs_{min} =	0.010	ASCE 7-05 EQN 12.8-5
T_s = S_{D1}/S_{DS} =	0.494	**sec**
x =	0.75	
C_t =	0.020	
Period, T = $C_t h_n^x$ =	0.302	**sec**
Frequency = 1/T =	3.310	**Hz**

Trib. wt @ roof, $w_3 = A_3*DL_3+h_3*W_w*(L_3+W_3)$ =

w_3 = 201139 **lbs**

Trib. wt @ 3rd floor, $w_2 = A_2*DL_2+h_2*W_w*(L_2+W_2)$ =

w_2 = 134850 **lbs**

Trib. wt @ 2nd floor, $w_1 = A_1*DL_1+h_1*W_w*(L_1+W_1)$ =

w_1 = 84179 **lbs**

Total wt, $W = w_1+w_2+w_3$ = 420168 **lbs**

$V = C_sW$ = 34131 **lbs**

k = 1.000

$w_3h_3^k$ = 5700272

$w_2h_2^k$ = 2663962

$w_1h_1^k$ = 806860

$C_{v3} = w_3h_3^k/(w_1h_1^k+w_2h_2k+w_3h_3^k)$ = 0.622 ASCE 7-05 EQN 12.8-12

$C_{v2} = w_2h_2^k/(w_1h_1^k+w_2h_2k+w_3h_3^k)$ = 0.290 ASCE 7-05 EQN 12.8-12

$C_{v1} = w_1h_1^k/(w_1h_1^k+w_2h_2k+w_3h_3^k)$ = 0.088 ASCE 7-05 EQN 12.8-12

Redundancy factor calculation 1.00 < ρ_x < 1.30

Long roof % =	0.143	ρ_x =	1.000
Long 3rd floor % =	0.125	ρ_x =	1.000
Long 2nd floor % =	0.064	ρ_x =	1.000
Trans roof % =	0.090	ρ_x =	1.000
Trans 3rd floor % =	0.090	ρ_x =	1.000
Trans 2nd floor % =	0.090	ρ_x =	1.000

Maximum Roof story ρ_{x3} = 1.000

Maximum Floor ρ_{x2} = 1.000

Maximum Floor ρ_{x1} = 1.000

Story forces (ASCE 7-05 EQN 12.8-11)

Story force @ roof, $F_3 = C_{v3}*V$ = 21214 **lbs**

Story force @ 3rd floor, $F_2 = C_{v2}*V$ = 9914 **lbs**

Story force @ 2nd floor, $F_1 = C_{v1}*V$ = 3003 **lbs**

Story shear @ roof, V_3 = 21214 **lbs**

Story shear @ roof, V_2 = 31128 **lbs**

Story shear @ floor, V_1 = 34131 **lbs**

Total story shear forces

Long. Diaphragm load @ roof, $Q_{E3L} = V_3/W_3$ = **466** **plf**

Long. Diaphragm load @ 3rd floor, $Q_{E2L} = V_2/W_2$ = **635** **plf**

Long. Diaphragm load @ 2nd floor, $Q_{E1L} = V_1/W_1$ = **1174** **plf**

Trans. Diaphragm load @ roof, $Q_{E3T} = V_3/L_3$ = **151** **plf**

Trans. Diaphragm load @ 3rd floor, $Q_{E2T} = V_2/L_2$ = **222** **plf**

Trans. Diaphragm load @ 2nd floor, $Q_{E1T} = V_1/L_1$ = **243** **plf**

Longitudinal Diaphragm Seismic loads

Seismic load @ roof, 0.7*E = 0.7*ρQ_{E3L} = **326** **plf**

Seismic load @ 3rd floor, 0.7*E = 0.7*ρQ_{E2L} = **445** **plf**

Seismic load @ 2nd floor, 0.7*E = 0.7*ρQ_{E1L} = **822** **plf**

Transverse DiaphragmSeismic loads

Seismic load @ roof, 0.7*E = 0.7*ρQ_{E3T} = **106** **plf**

Seismic load @ 3rd floor, 0.7*E = 0.7*ρQ_{E2T} = **155** **plf**

Seismic load @ 2nd floor, 0.7*E = 0.7*ρQ_{E1T} = **170** **plf**

ROOF LEVEL LONGITUDINAL END ZONES GOVERNED BY SEISMIC LOADS (326 plf)
ROOF LEVEL LONGITUDINAL INTERIOR ZONES GOVERNED BY SEISMIC LOADS (326 plf)
ROOF LEVEL TRANSVERSE END ZONES GOVERNED BY WIND LOADS (130 plf)
ROOF LEVEL TRANSVERSE INTERIOR ZONES GOVERNED BY WIND LOADS (130 plf)
3rd FLOOR LEVEL LONGITUDINAL END ZONES GOVERNED BY SEISMIC LOADS (445 plf)
3rd FLOOR LEVEL LONGITUDINAL INTERIOR ZONES GOVERNED BY SEISMIC LOADS (445 plf)
3rd FLOOR LEVEL TRANSVERSE END ZONES GOVERNED BY WIND LOADS (364 plf)
3rd FLOOR LEVEL TRANSVERSE INTERIOR ZONES GOVERNED BY WIND LOADS (293 plf)
2nd FLOOR LEVEL LONGITUDINAL END ZONES GOVERNED BY SEISMIC LOADS (822 plf)
2nd FLOOR LEVEL LONGITUDINAL INTERIOR ZONES GOVERNED BY SEISMIC LOADS (822 plf)
2nd FLOOR LEVEL TRANSVERSE END ZONES GOVERNED BY WIND LOADS (472 plf)
2nd FLOOR LEVEL TRANSVERSE INTERIOR ZONES GOVERNED BY WIND LOADS (369 plf)

LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

Grid Line A

LONGITUDINAL OR TRANSVERSE?	L
END ZONE OR INTERIOR?	E

At Roof **Seismic governs shear wall design**

End Zone Wind Load (WL/Vs)=	180	plf
Interior Zone Wind Load (WL/Vs)=	158	plf
Seismic Load ,(WL/Vs) =	326	plf
Shear Load Span (sls)=	45.50	ft
Roof Dead Load (Rdl)=	25	psf
Wall Weight (wwt)=	15	psf
Length of Shear Wall (Sw)=	29.15	ft

Formula		Results	Units
P=WL/Vs*sls/2	**Wind Shear Load (P)=**	**4099**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**141**	**plf**
P=WL/Vs*sls/2	**Seismic Shear Load (P)=**	**7425**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**255**	**plf**
	Wind end zone width =	**22.75**	**ft**
	Wind interior zone width =	**0.00**	**ft**

INTERIOR SHEAR WALLS: SW-2

EXTERIOR SHEAR WALLS: SW-2

Wall Overturning

w1 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	4.83	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	22.75	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces

Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**5433**	**ft-lbs**	**9842**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**689**	**plf**	**638**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**4820**	**ft-lbs**	**4464**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**127**	**lbs**	**1113**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = **0.69** **OK**

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

w2 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	8.33	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	16.25	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces

Below = Wood framing

		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**9370**	**ft-lbs**	**16974**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**526**	**plf**	**487**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**10955**	**ft-lbs**	**10145**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-190**	**lbs**	**820**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = **0.55** **OK**

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

w3 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	2.83	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	20.25	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces

Below = Wood framing

		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**3183**	**ft-lbs**	**5767**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**626**	**plf**	**580**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**1505**	**ft-lbs**	**1393**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**593**	**lbs**	**1545**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = **0.92** **OK**

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-4

USE SIMPSON HOLDOWN: CS16

w4 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	8.33	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	16.25	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces

Below = Wood framing

		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**9370**	**ft-lbs**	**16974**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**526**	**plf**	**487**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**10955**	**ft-lbs**	**10145**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-190**	**lbs**	**820**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = **0.55** **OK**

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

w5 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	4.83	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	22.75	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces

Below = Wood framing

		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**5433**	**ft-lbs**	**9842**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**689**	**plf**	**638**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**4820**	**ft-lbs**	**4464**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**127**	**lbs**	**1113**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = **0.69** **OK**

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

Grid Line A

LONGITUDINAL OR TRANSVERSE?	L
END ZONE OR INTERIOR?	E

At 3rd Floor **Seismic governs shear wall design**

End Zone Wind Load (WL/Vs)=	357	plf
Interior Zone Wind Load (WL/Vs)=	275	plf
Seismic Load ,(WL/Vs) =	445	plf
Shear Load Span (sls)=	49.00	ft
Roof Dead Load (Rdl)=	25	psf
3rd Floor Dead Load (Fdl)=	15	psf
Wall Weight (wwt)=	15	psf
Length of Shear Wall (Sw)=	47.07	ft

Formula		Results	Units
P=WL/Vs*sls/2	**Wind Shear Load (P)=**	**8746**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**186**	**plf**
P=WL/Vs*sls/2	**Seismic Shear Load (P)=**	**10895**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**231**	**plf**

Wind end zone width = **24.50** **ft**
Wind interior zone width = **0.00** **ft**

INTERIOR SHEAR WALLS: SW-2
EXTERIOR SHEAR WALLS: SW-2

Wall Overturning

w1 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	9.33	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	22.75	ft
Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces

Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**15602**	**ft-lbs**	**19436**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**839**	**plf**	**777**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**21904**	**ft-lbs**	**20285**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-675**	**lbs**	**-91**	**lbs**
	Uplift from wall above =	**66**	**lbs**	**576**	**lbs**
	Total HD Uplift =	**-610**	**lbs**	**485**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.59** **OK**

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

w2 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	8.33	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	16.25	ft
Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces

Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**13930**	**ft-lbs**	**17352**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**676**	**plf**	**626**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**14077**	**ft-lbs**	**13037**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-18**	**lbs**	**518**	**lbs**
	Uplift from wall above =	**-190**	**lbs**	**820**	**lbs**
	Total HD Uplift =	**-208**	**lbs**	**1338**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.61** **OK**

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

w3 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	11.75	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	20.25	ft
Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces

Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**19649**	**ft-lbs**	**24477**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**776**	**plf**	**719**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**32151**	**ft-lbs**	**29775**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-1064**	**lbs**	**-451**	**lbs**
	Uplift from wall above =	**143**	**lbs**	**372**	**lbs**
	Total HD Uplift =	**-921**	**lbs**	**-79**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.55** **OK**

h/w ratio OK for seismic forces

NO HOLDOWNS REQUIRED

w4 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	8.33	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	16.25	ft
Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces

Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**13930**	**ft-lbs**	**17352**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**676**	**plf**	**626**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**14077**	**ft-lbs**	**13037**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-18**	**lbs**	**518**	**lbs**
	Uplift from wall above =	**-190**	**lbs**	**820**	**lbs**
	Total HD Uplift =	**-208**	**lbs**	**1338**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.61** **OK**

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

w5 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	9.33	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	22.75	ft
Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces

Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**15602**	**ft-lbs**	**19436**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**839**	**plf**	**777**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**21904**	**ft-lbs**	**20285**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-675**	**lbs**	**-91**	**lbs**
	Uplift from wall above =	**66**	**lbs**	**576**	**lbs**
	Total HD Uplift =	**-610**	**lbs**	**485**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.59** **OK**

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

Grid Line A

LONGITUDINAL OR TRANSVERSE?	L
END ZONE OR INTERIOR?	E

At 2nd Floor **Seismic governs shear wall design**

End Zone Wind Load (WL/Vs)=	186	plf
Interior Zone Wind Load (WL/Vs)=	123	plf
Seismic Load ,(WL/Vs) =	377	plf
Shear Load Span (sls)=	29.08	ft
Roof Dead Load (Rdl)=	25	psf
3rd Floor Dead Load (Fdl)=	15	psf
2nd Floor Dead Load (Fdl)=	15	psf
Wall Weight (wwt)=	15	psf
Length of Shear Wall (Sw)=	63.41	ft

Formula		Results	Units
P=WL/Vs*sls/2	**Wind Shear Load (P)=**	**2704**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**43**	**plf**
P=WL/Vs*sls/2	**Seismic Shear Load (P)=**	**5480**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**86**	**plf**
	Wind end zone width =	**14.54**	**ft**
	Wind interior zone width =	**0.00**	**ft**

INTERIOR SHEAR WALLS: SW-1
EXTERIOR SHEAR WALLS: SW-1

Wall Overturning

w1 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	17.50	ft
3rd & 2nd story Wall height (hs)=	17.00	ft
1st story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	22.75	ft
3rd Floor Load Width (flw)=	1.00	ft
2nd Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces
Below = Concrete

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**6715**	**ft-lbs**	**13611**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**989**	**plf**	**916**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**90841**	**ft-lbs**	**84126**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-4807**	**lbs**	**-4029**	**lbs**
	Uplift from wall above =	**-325**	**lbs**	**259**	**lbs**
	Total HD Uplift =	**-5132**	**lbs**	**-3771**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.18** **OK**

h/w ratio OK for seismic forces
NO HOLDOWNS REQUIRED

w2 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	8.33	ft
3rd & 2nd story Wall height (hs)=	17.00	ft
1st story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	16.25	ft
3rd Floor Load Width (flw)=	1.00	ft
2nd Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces
Below = Concrete

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**3197**	**ft-lbs**	**6479**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**826**	**plf**	**765**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**17200**	**ft-lbs**	**15928**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-1681**	**lbs**	**-1134**	**lbs**
	Uplift from wall above =	**-208**	**lbs**	**1338**	**lbs**
	Total HD Uplift =	**-1889**	**lbs**	**204**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.28** **OK**

h/w ratio OK for seismic forces
USE SIMPSON HOLDOWN: LSDTHD8 OR HTT4

w3 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	11.75	ft
3rd & 2nd story Wall height (hs)=	17.00	ft
1st story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	20.25	ft
3rd Floor Load Width (flw)=	1.00	ft
2nd Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces
Below = Concrete

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**4509**	**ft-lbs**	**9139**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**926**	**plf**	**858**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**38364**	**ft-lbs**	**35528**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-2881**	**lbs**	**-2246**	**lbs**
	Uplift from wall above =	**-921**	**lbs**	**-79**	**lbs**
	Total HD Uplift =	**-3802**	**lbs**	**-2325**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.22** **OK**

h/w ratio OK for seismic forces
NO HOLDOWNS REQUIRED

w4 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	8.33	ft
3rd & 2nd story Wall height (hs)=	17.00	ft
1st story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	16.25	ft
3rd Floor Load Width (flw)=	1.00	ft
2nd Floor Load Width (flw)=	1.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

h/w ratio OK for wind forces
Below = Concrete

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**3197**	**ft-lbs**	**6479**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**826**	**plf**	**765**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**17200**	**ft-lbs**	**15928**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-1681**	**lbs**	**-1134**	**lbs**
	Uplift from wall above =	**-208**	**lbs**	**1338**	**lbs**
	Total HD Uplift =	**-1889**	**lbs**	**204**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.28** **OK**

h/w ratio OK for seismic forces
USE SIMPSON HOLDOWN: LSDTHD8 OR HTT4

w5 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	17.50	ft
3rd & 2nd story Wall height (hs)=	17.00	ft
1st story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	22.75	ft
3rd Floor Load Width (flw)=	1.00	ft
2nd Floor Load Width (flw)=	0.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**6715**	**ft-lbs**	**13611**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**974**	**plf**	**902**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**89463**	**ft-lbs**	**82850**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-4728**	**lbs**	**-3956**	**lbs**
	Uplift from wall above =		**lbs**		**lbs**
	Total HD Uplift =	**-4728**	**lbs**	**-3956**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.18** **OK**

	h/w ratio OK for wind forces	h/w ratio OK for seismic forces
Below =	Concrete	*NO HOLDOWNS REQUIRED*

LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

Roof

Structure length, L_S = **140.49**

υ_{RW} = W/L_S = **29.18** **(Wind)**

υ_W = P/Sw - υ_{RW} = **-111.44** **(Wind)**

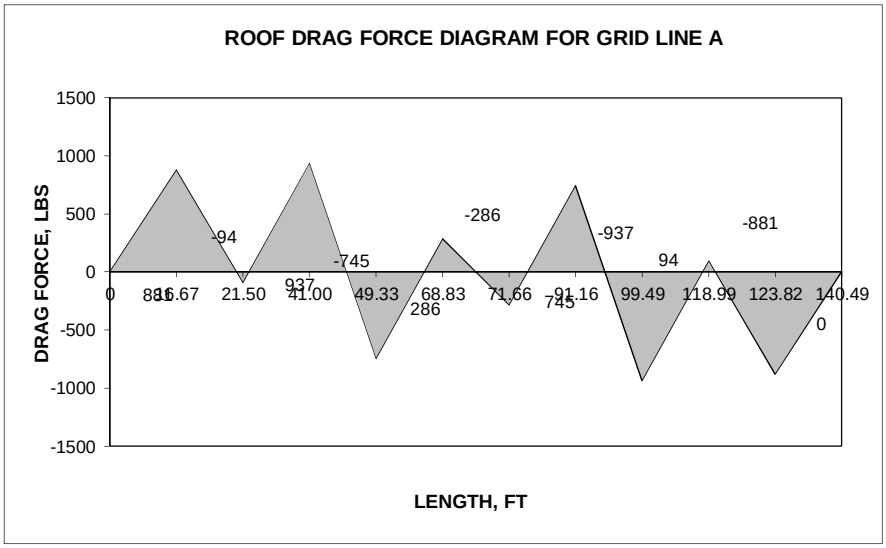
υ_{RE} = E/L_S = **52.85** **(Seismic)**

υ_W = P/Sw - υ_{RE} = **-201.86** **(Seismic)**

Ω = **1.0** ASCE 7-05 Table 12.2-1

DRAG FORCE CALCULATIONS

WALL/OPENING	LENGTH	Σ LENGTH	Wind DRAG, LBS	Seismic DRAG, LBS	E_m LEVEL
	0	0	**0**	**0**	**0**
OPENING	**16.67**	16.67	**486**	**881**	**881**
W1	**4.83**	21.50	**-52**	**-94**	**-94**
OPENING	**19.50**	41.00	**517**	**937**	**937**
W2	**8.33**	49.33	**-411**	**-745**	**-745**
OPENING	**19.50**	68.83	**158**	**286**	**286**
W3	**2.83**	71.66	**-158**	**-286**	**-286**
OPENING	**19.50**	91.16	**411**	**745**	**745**
W4	**8.33**	99.49	**-517**	**-937**	**-937**
OPENING	**19.50**	118.99	**52**	**94**	**94**
W5	**4.83**	123.82	**-486**	**-881**	**-881**
OPENING	**16.67**	140.49	**0**	**0**	**0**



LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

3rd Floor

Structure length, L_S = **140.49**

υ_{RW} = W/L_S = **62.25** **(Wind)**

υ_W = P/Sw - υ_{RW} = **-123.55** **(Wind)**

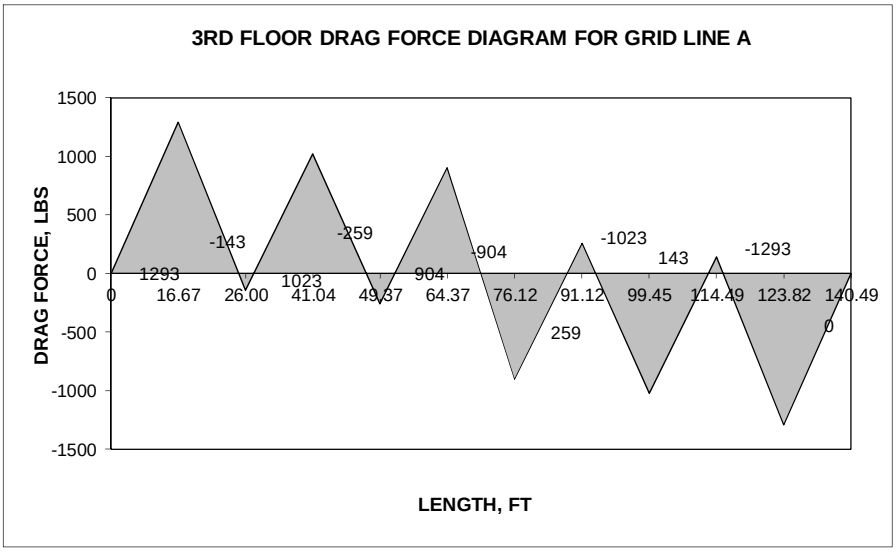
υ_{RE} = E/L_S = **77.55** **(Seismic)**

υ_W = P/Sw - υ_{RE} = **-153.91** **(Seismic)**

Ω = **1.0** ASCE 7-05 Table 12.2-1

DRAG FORCE CALCULATIONS

WALL/OPENING	LENGTH	Σ LENGTH	Wind DRAG, LBS	Seismic DRAG, LBS	E_m LEVEL
	0	0	**0**	**0**	**0**
OPENING	**16.67**	16.67	**1038**	**1293**	**1293**
W1	**9.33**	26.00	**-115**	**-143**	**-143**
OPENING	**15.04**	41.04	**821**	**1023**	**1023**
W2	**8.33**	49.37	**-208**	**-259**	**-259**
OPENING	**15.00**	64.37	**726**	**904**	**904**
W3	**11.75**	76.12	**-726**	**-904**	**-904**
OPENING	**15.00**	91.12	**208**	**259**	**259**
W4	**8.33**	99.45	**-821**	**-1023**	**-1023**
OPENING	**15.04**	114.49	**115**	**143**	**143**
W5	**9.33**	123.82	**-1038**	**-1293**	**-1293**
OPENING	**16.67**	140.49	**0**	**0**	**0**



LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

2nd Floor

Structure length, L_S = **140.50**

$\upsilon_{RW} = W/L_S$ = **19.24** **(Wind)**

$\upsilon_W = P/Sw - \upsilon_{RW}$ = **-23.39** **(Wind)**

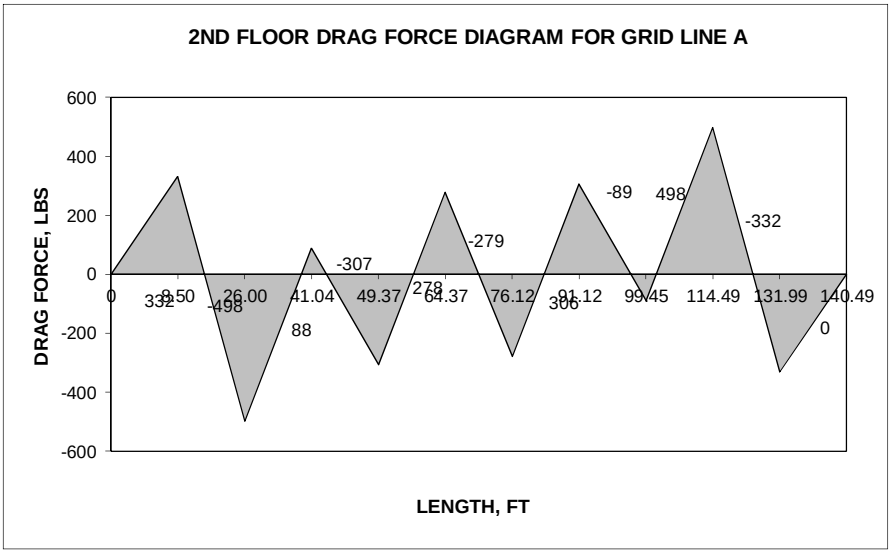
$\upsilon_{RE} = E/L_S$ = **39.00** **(Seismic)**

$\upsilon_W = P/Sw - \upsilon_{RE}$ = **-47.42** **(Seismic)**

Ω = **1.0** ASCE 7-05 Table 12.2-1

DRAG FORCE CALCULATIONS

WALL/OPENING	LENGTH	Σ LENGTH	Wind DRAG, LBS	Seismic DRAG, LBS	E_m LEVEL
	0	0	**0**	**0**	**0**
OPENING	**8.50**	8.50	**164**	**332**	**332**
W1	**17.50**	26.00	**-246**	**-498**	**-498**
OPENING	**15.04**	41.04	**44**	**88**	**88**
W2	**8.33**	49.37	**-151**	**-307**	**-307**
OPENING	**15.00**	64.37	**137**	**278**	**278**
W3	**11.75**	76.12	**-138**	**-279**	**-279**
OPENING	**15.00**	91.12	**151**	**306**	**306**
W4	**8.33**	99.45	**-44**	**-89**	**-89**
OPENING	**15.04**	114.49	**246**	**498**	**498**
W5	**17.50**	131.99	**-164**	**-332**	**-332**
OPENING	**8.50**	140.49	**0**	**0**	**0**



LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

Grid Line B

LONGITUDINAL OR TRANSVERSE?	L
END ZONE OR INTERIOR?	I

At 3rd Floor **Seismic governs shear wall design**

End Zone Wind Load (WL/Vs)=	177	plf
Interior Zone Wind Load (WL/Vs)=	117	plf
Seismic Load ,(WL/Vs) =	118	plf
Shear Load Span (sls)=	49.00	ft
Roof Dead Load (Rdl)=	25	psf
3rd Floor Dead Load (Fdl)=	15	psf
Wall Weight (wwt)=	15	psf
Length of Shear Wall (Sw)=	65.84	ft

Formula		Results	Units
P=WL/Vs*sls/2	**Wind Shear Load (P)=**	**2876**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**44**	**plf**
P=WL/Vs*sls/2	**Seismic Shear Load (P)=**	**2899**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**44**	**plf**

Wind end zone width = 0.00 ft

Wind interior zone width = 24.50 ft

INTERIOR SHEAR WALLS: SW-1

EXTERIOR SHEAR WALLS: SW-1

Wall Overturning

w1 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	7.42	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	0.00	ft
Floor Load Width (flw)=	1.33	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**2918**	**ft-lbs**	**2940**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**275**	**plf**	**255**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**4541**	**ft-lbs**	**4206**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-219**	**lbs**	**-171**	**lbs**
	Uplift from wall above =		**lbs**		**lbs**
	Total HD Uplift =	**-219**	**lbs**	**-171**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.28** **OK**

h/w ratio OK for wind forces **h/w ratio OK for seismic forces**

Below = Concrete ***NO HOLDOWNS REQUIRED***

w2 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	7.75	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	0.00	ft
Floor Load Width (flw)=	1.33	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**3047**	**ft-lbs**	**3071**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**275**	**plf**	**255**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**4954**	**ft-lbs**	**4588**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-246**	**lbs**	**-196**	**lbs**
	Uplift from wall above =		**lbs**		**lbs**
	Total HD Uplift =	**-246**	**lbs**	**-196**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.27** **OK**

h/w ratio OK for wind forces **h/w ratio OK for seismic forces**

Below = Concrete ***NO HOLDOWNS REQUIRED***

w3 **Seismic controls overturning, 0.6D+0.7E**

Short wall segment (sws)=	5.00	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	0.00	ft
Floor Load Width (flw)=	1.33	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**1966**	**ft-lbs**	**1981**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**275**	**plf**	**255**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**2062**	**ft-lbs**	**1910**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-19**	**lbs**	**14**	**lbs**
	Uplift from wall above =		**lbs**		**lbs**
	Total HD Uplift =	**-19**	**lbs**	**14**	**lbs**

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$ **0.38** **OK**

h/w ratio OK for wind forces **h/w ratio OK for seismic forces**

Below = Concrete **N/A** **USE SIMPSON HOLDOWN: N/A**

Perforated Wall (SDPWS 2008 Table 4.3.3.5) $C_o =$ 0.838 **Sill plate uplift anchorage: SW-1**

Perforated Wall Length (sws) =	15.42	ft
% Full Height sheathing =	83%	
Max Opening Ht =	8.00	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	9.00	ft
Roof Load Width (rlw)=	0.00	ft
Floor Load Width (flw)=	1.33	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	2.16	

		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**5013**	**ft-lbs**	**5052**	**ft-lbs**
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	**DL=**	**275**	**plf**	**255**	**plf**
Mres=(swred *DL*sws^2)/2	**Mres=**	**19613**	**ft-lbs**	**18163**	**ft-lbs**
T/C =V*h/(Co*ΣL)	**T/C =**	**469**	**lbs**	**473**	
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**-803**	**lbs**	**-705**	**lbs**
	Uplift from wall above =		**lbs**		**lbs**
	Total HD Uplift =	**-803**	**lbs**	**-705**	**lbs**

$\Delta_s = 8vh^3/(Eab*Co) + vh/(Gt) + 0.75*h*e_n + h/(b*Co)*d_a =$ **0.19** **OK**

h/w ratio OK for wind forces **h/w ratio OK for seismic forces**

Below = Wood framing ***NO HOLDOWNS REQUIRED***

LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

3rd Floor

Structure length, L_S = **140.51**

υ_{RW} = W/L_S = **20.47** **(Wind)**

υ_W = P/Sw - υ_{RW} = **-23.22** **(Wind)**

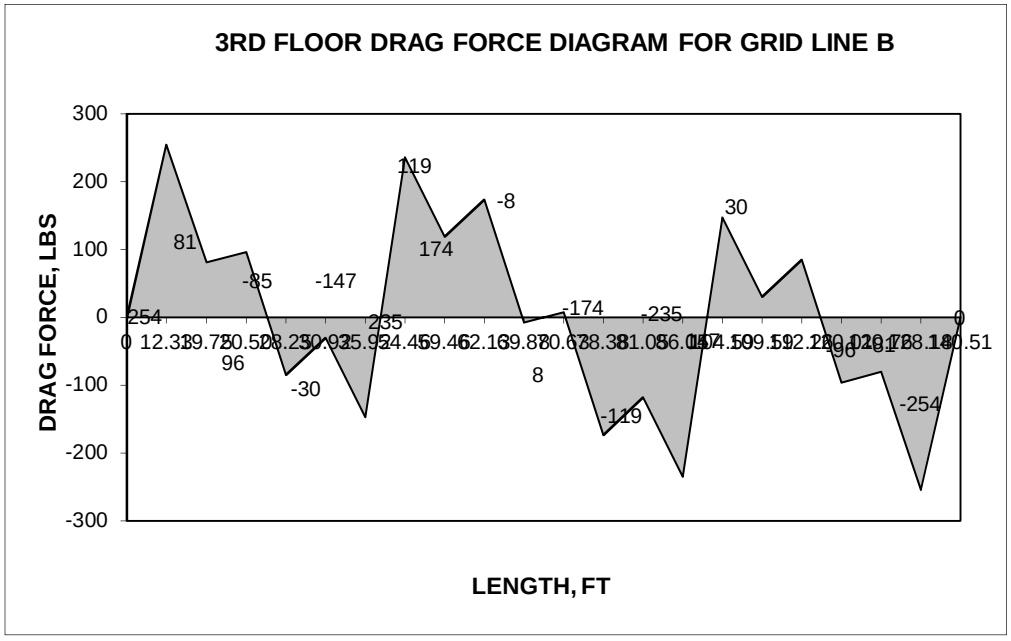
υ_{RE} = E/L_S = **20.63** **(Seismic)**

υ_W = P/Sw - υ_{RE} = **-23.40** **(Seismic)**

Ω = **1.0** ASCE 7-05 Table 12.2-1

DRAG FORCE CALCULATIONS

WALL/OPENING	LENGTH	Σ LENGTH	Wind DRAG, LBS	Seismic DRAG, LBS	E_m LEVEL
	0	0	**0**	**0**	**0**
OPENING	**12.33**	12.33	**252**	**254**	**254**
W1	**7.42**	19.75	**80**	**81**	**81**
OPENING	**0.75**	20.50	**95**	**96**	**96**
W2	**7.75**	28.25	**-84**	**-85**	**-85**
OPENING	**2.67**	30.92	**-30**	**-30**	**-30**
W3	**5.00**	35.92	**-146**	**-147**	**-147**
OPENING	**18.54**	54.46	**234**	**235**	**235**
W3	**5.00**	59.46	**118**	**119**	**119**
OPENING	**2.67**	62.13	**172**	**174**	**174**
W2	**7.75**	69.88	**-8**	**-8**	**-8**
OPENING	**0.75**	70.63	**8**	**8**	**8**
W2	**7.75**	78.38	**-172**	**-174**	**-174**
OPENING	**2.67**	81.05	**-118**	**-119**	**-119**
W3	**5.00**	86.05	**-234**	**-235**	**-235**
OPENING	**18.54**	104.59	**146**	**147**	**147**
W3	**5.00**	109.59	**30**	**30**	**30**
OPENING	**2.67**	112.26	**84**	**85**	**85**
W2	**7.75**	120.01	**-95**	**-96**	**-96**
OPENING	**0.75**	120.76	**-80**	**-81**	**-81**
W1	**7.42**	128.18	**-252**	**-254**	**-254**
OPENING	**12.33**	140.51	**0**	**0**	**0**



LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

Grid Line C

LONGITUDINAL OR TRANSVERSE?	L
END ZONE OR INTERIOR?	E

At Roof **Wind governs shear wall design**

End Zone Wind Load (WL/Vs)=	180	plf
Interior Zone Wind Load (WL/Vs)=	158	plf
Seismic Load ,(WL/Vs) =	109	plf
Shear Load Span (sls)=	45.50	ft
Roof Dead Load (Rdl)=	25	psf
Wall Weight (wwt)=	15	psf
Length of Shear Wall (Sw)=	24.15	ft

Formula		Results	Units
P=WL/Vs*sls/2	**Wind Shear Load (P)=**	**4099**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**170**	**plf**
P=WL/Vs*sls/2	**Seismic Shear Load (P)=**	**2475**	**lbs**
Us=P/Sw	**Unit Shear (Us)=**	**102**	**plf**

Wind end zone width = 22.75 ft
Wind interior zone width = 0.00 ft

INTERIOR SHEAR WALLS: SW-2
EXTERIOR SHEAR WALLS: SW-2

Wall Overturning

w1 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	3.08	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	2.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces
Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**4182**	**ft-lbs**	**2525**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**170**	**plf**	**157**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**484**	**ft-lbs**	**448**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**1201**	**lbs**	**674**	**lbs**
$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$		**0.81**	**OK**		

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-1

USE SIMPSON HOLDOWN: CS16

w2 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	5.83	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	2.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces
Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**7916**	**ft-lbs**	**4780**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**170**	**plf**	**157**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**1733**	**ft-lbs**	**1605**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**1060**	**lbs**	**545**	**lbs**
$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$		**0.59**	**OK**		

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

w3 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	3.08	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	2.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces
Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**4182**	**ft-lbs**	**2525**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**170**	**plf**	**157**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**484**	**ft-lbs**	**448**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**1201**	**lbs**	**674**	**lbs**
$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$		**0.81**	**OK**		

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-1

USE SIMPSON HOLDOWN: CS16

w4 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	3.08	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	22.75	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces
Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**4182**	**ft-lbs**	**2525**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**689**	**plf**	**638**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**1960**	**ft-lbs**	**1815**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**721**	**lbs**	**230**	**lbs**
$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$		**0.81**	**OK**		

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-1

USE SIMPSON HOLDOWN: CS16

w5 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	6.00	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	22.75	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

h/w ratio OK for wind forces
Below = Wood framing

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**8147**	**ft-lbs**	**4919**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**689**	**plf**	**638**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**7439**	**ft-lbs**	**6889**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**118**	**lbs**	**-328**	**lbs**
$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$		**0.58**	**OK**		

h/w ratio OK for seismic forces

USE SIMPSON HOLDOWN: CS16

w6 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	3.08	ft
3rd story Wall height (hs)=	8.00	ft
Roof Load Width (rlw)=	22.75	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.92	

Formula		Wind		Seismic	
Mot=Us*sws*h	**Mot=**	**4182**	**ft-lbs**	**2525**	**ft-lbs**
Hdl=wwt*h+Rdl*rlw	**Hdl=**	**689**	**plf**	**638**	**plf**
Mres=(swred *Hdl*sws^2)/2	**Mres=**	**1960**	**ft-lbs**	**1815**	**ft-lbs**
Hd-uplift=(Mot-Mres)/sws	**Hd-uplift=**	**721**	**lbs**	**230**	**lbs**
$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a =$		**0.81**	**OK**		

C-END

h/w ratio OK for wind forces

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-1

Below = Wood framing

USE SIMPSON HOLDOWN: CS16

LATERAL LOAD ANALYSIS FOR CREEKSIDE 6 PLEX

Grid Line C

LONGITUDINAL OR TRANSVERSE?	L
END ZONE OR INTERIOR?	E

At 3rd Floor **Wind governs shear wall design**

End Zone Wind Load (WL/Vs)=	177	plf
Interior Zone Wind Load (WL/Vs)=	117	plf
Seismic Load ,(WL/Vs) =	39	plf
Shear Load Span (sls)=	20.58	ft
Roof Dead Load (Rdl)=	25	psf
3rd Floor Dead Load (Fdl)=	15	psf
Wall Weight (wwt)=	15	psf
Length of Shear Wall (Sw)=	8.00	ft

Formula		Results	Units
P=WL/Vs*sls/2	Wind Shear Load (P)=	5247	lbs
Us=P/Sw	Unit Shear (Us)=	656	plf
P=WL/Vs*sls/2	Seismic Shear Load (P)=	2475	lbs
Us=P/Sw	Unit Shear (Us)=	309	plf
	Wind end zone width =	10.29	ft
	Wind interior zone width =	0.00	ft

INTERIOR SHEAR WALLS: SW-6
EXTERIOR SHEAR WALLS: SW-6

Wall Overturning

w1 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	2.00	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	7.00	ft
Roof Load Width (rlw)=	4.00	ft
Floor Load Width (flw)=	0.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.68	

h/w ratio OK for wind forces
Below = Concrete

Formula		Wind		Seismic	
Mot=Us*sws*h	Mot=	9182	ft-lbs	4332	ft-lbs
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	DL=	325	plf	301	plf
Mres=(swred *DL*sws^2)/2	Mres=	390	ft-lbs	361	ft-lbs
Hd-uplift=(Mot-Mres)/sws	Hd-uplift=	4396	lbs	1985	lbs
	Uplift from wall above =		lbs		lbs
	Total HD Uplift =	4396	lbs	1985	lbs

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = 1.09 OK

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-5

USE SIMPSON HOLDOWN: OR HTT5

w2 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	2.00	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	7.00	ft
Roof Load Width (rlw)=	4.00	ft
Floor Load Width (flw)=	0.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.68	

h/w ratio OK for wind forces
Below = Concrete

Formula		Wind		Seismic	
Mot=Us*sws*h	Mot=	9182	ft-lbs	4332	ft-lbs
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	DL=	325	plf	301	plf
Mres=(swred *DL*sws^2)/2	Mres=	390	ft-lbs	361	ft-lbs
Hd-uplift=(Mot-Mres)/sws	Hd-uplift=	4396	lbs	1985	lbs
	Uplift from wall above =		lbs		lbs
	Total HD Uplift =	4396	lbs	1985	lbs

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = 1.09 OK

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-5

USE SIMPSON HOLDOWN: OR HTT5

w3 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	2.00	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	7.00	ft
Roof Load Width (rlw)=	4.00	ft
Floor Load Width (flw)=	0.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.68	

h/w ratio OK for wind forces
Below = Concrete

Formula		Wind		Seismic	
Mot=Us*sws*h	Mot=	9182	ft-lbs	4332	ft-lbs
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	DL=	325	plf	301	plf
Mres=(swred *DL*sws^2)/2	Mres=	390	ft-lbs	361	ft-lbs
Hd-uplift=(Mot-Mres)/sws	Hd-uplift=	4396	lbs	1985	lbs
	Uplift from wall above =		lbs		lbs
	Total HD Uplift =	4396	lbs	1985	lbs

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = 1.09 OK

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-5

USE SIMPSON HOLDOWN: OR HTT5

w4 **Wind controls overturning, 0.6D+W**

Short wall segment (sws)=	2.00	ft
3rd story Wall height (hs)=	8.00	ft
2nd story Wall height (hf)=	7.00	ft
Roof Load Width (rlw)=	4.00	ft
Floor Load Width (flw)=	0.00	ft
Dead load Reduct (swred)=	0.60	
Allowable story drift = .02*h =	1.68	

h/w ratio OK for wind forces
Below = Concrete

Formula		Wind		Seismic	
Mot=Us*sws*h	Mot=	9182	ft-lbs	4332	ft-lbs
DL=(wwt*(hf+hs))+(rlw*Rdl)+(flw*Fdl)	DL=	325	plf	301	plf
Mres=(swred *DL*sws^2)/2	Mres=	390	ft-lbs	361	ft-lbs
Hd-uplift=(Mot-Mres)/sws	Hd-uplift=	4396	lbs	1985	lbs
	Uplift from wall above =		lbs		lbs
	Total HD Uplift =	4396	lbs	1985	lbs

$\Delta_s = 8vh^3/(EAb) + vh/(Gt) + 0.75*h*e_n + h/b*d_a$ = 1.09 OK

2:1 < h/w ratio < 3.5:1, tabulated shear value muliplied by 2w/h, use SW-5

USE SIMPSON HOLDOWN: OR HTT5

C-END

#REF!

Roof

Structure length, L_S = **40.15**

υ_{RW} = W/L_S = **102.09** **(Wind)**

υ_W = P/Sw - υ_{RW} = **-67.64** **(Wind)**

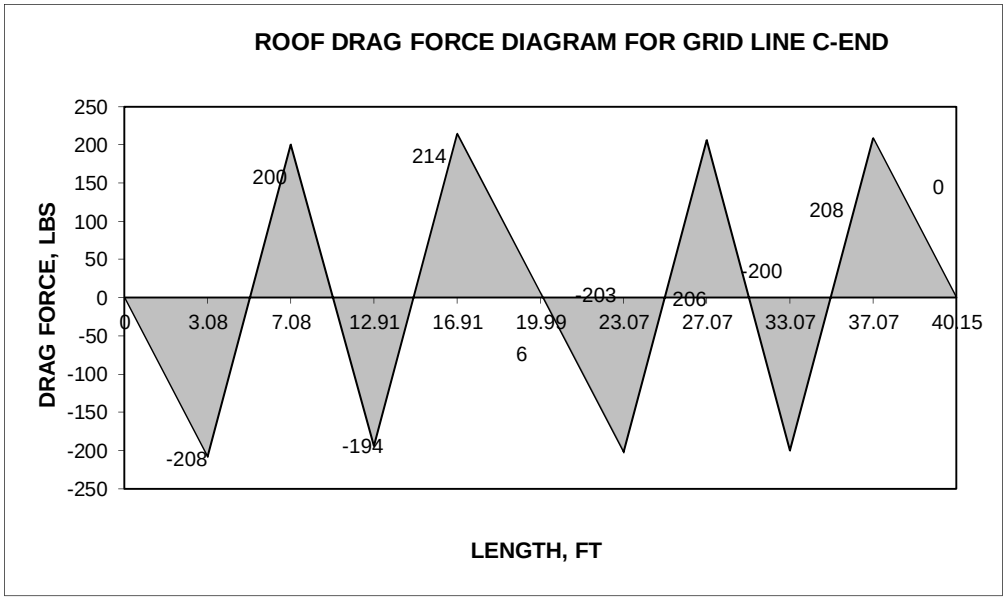
υ_{RE} = E/L_S = **61.64** **(Seismic)**

υ_W = P/Sw - υ_{RE} = **-40.84** **(Seismic)**

Ω = **1.0** ASCE 7-05 Table 12.2-1

DRAG FORCE CALCULATIONS

WALL/OPENING	LENGTH	Σ LENGTH	Wind DRAG, LBS	Seismic DRAG, LBS	E_m LEVEL
	0	0	**0**	**0**	**0**
W1	**3.08**	3.08	**-208**	**-126**	**-126**
OPENING	**4.00**	7.08	**200**	**121**	**121**
W2	**5.83**	12.91	**-194**	**-117**	**-117**
OPENING	**4.00**	16.91	**214**	**129**	**129**
W3	**3.08**	19.99	**6**	**3**	**3**
W4	**3.08**	23.07	**-203**	**-122**	**-122**
OPENING	**4.00**	27.07	**206**	**124**	**124**
W5	**6.00**	33.07	**-200**	**-121**	**-121**
OPENING	**4.00**	37.07	**208**	**126**	**126**
W6	**3.08**	40.15	**0**	**0**	**0**



C-END

#REF!

3rd Floor

Structure length, L_S = **40.00**

υ_{RW} = W/L_S = **131.17** **(Wind)**

υ_W = P/Sw - υ_{RW} = **-524.68** **(Wind)**

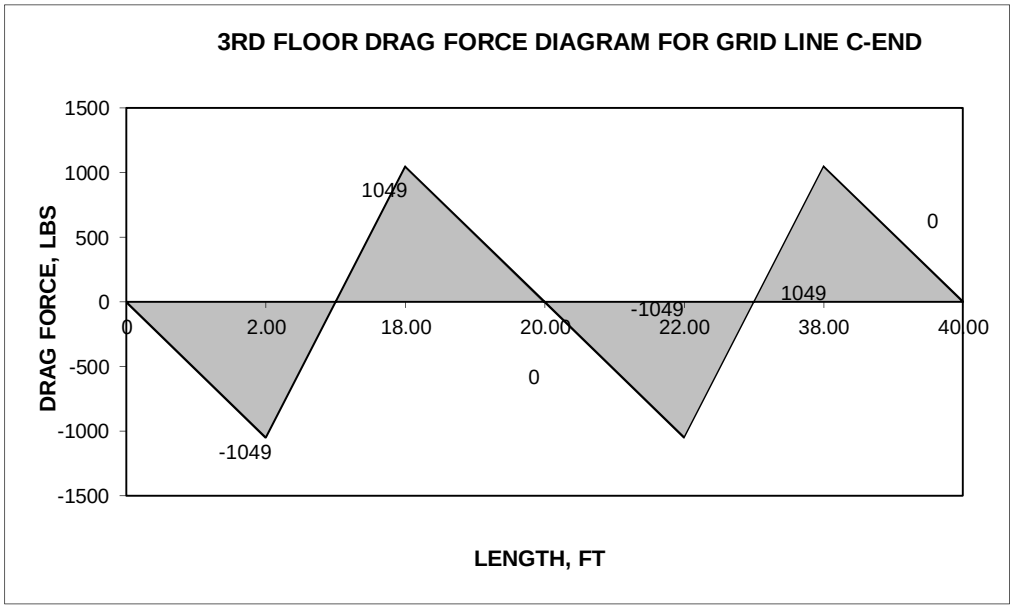
υ_{RE} = E/L_S = **61.88** **(Seismic)**

υ_W = P/Sw - υ_{RE} = **-247.54** **(Seismic)**

Ω = **1.0** ASCE 7-05 Table 12.2-1

DRAG FORCE CALCULATIONS

WALL/OPENING	LENGTH	Σ LENGTH	Wind DRAG, LBS	Seismic DRAG, LBS	E_m LEVEL
	0	0	**0**	**0**	**0**
W1	**2.00**	2.00	**-1049**	**-495**	**-495**
OPENING	**16.00**	18.00	**1049**	**495**	**495**
W2	**2.00**	20.00	**0**	**0**	**0**
W3	**2.00**	22.00	**-1049**	**-495**	**-495**
OPENING	**16.00**	38.00	**1049**	**495**	**495**
W4	**2.00**	40.00	**0**	**0**	**0**



C-END