

General Information

Number of Stories	3	Occupancy Category	II
Distance from base to Heighest Story (ft)	42	Lumber Used	Dry
Importance Factor	1	Lumber Species	DF/SP

Wind Information

Method of Analysis:	Analytical Method		
Wind exposure cat.	C	Wind Speed, V	110
Hurricane Prone Region	No	Building Enclosure	Enclosed
On hill, ridge or escarpment?	Yes	Shape of feature	Hill
Taller than 15 or 60 ft?	Yes	Height of feature	120
Unobstructed?	Yes	Average Slope of feature	0.4
Twice as tall as other features?	Yes	Distance from feature to building site	10
Directionality Coefficient (Kd)	0.85	Kzt	1.120
a	9.5	Zg	900.000

Seismic Information

Method of Analysis:	Equivalent Lateral Force Method		
Site Class	D	Long-Period Transition Period (sec)	3
0.2 Sec. Spectral Response Acceleration, Ss	148%	Damped 0.2 Sec. Spectral Response Acc., Sds	99%
1 Sec. Spectral Response Acceleration, S1	58%	Damped 1 Sec. Spectral Response Acc., Sd1	58%
Response Modification Factor, R	6.5	Seismic Design Category	D
Deflection Amplification Factor	4	System Overstrength Factor, O	2.5

Total Forces of Building

Response Coefficient (Cs)	0.15
Total Seismic Weight (w)	158.32 kips
Redundancy Coefficient (Rho)	1.30
Base Shear (Cs*W)	24.03 kips
Design Base Shear (0.7pCsW)	21.87 kips

UPPER Story Seismic Dead Loads

Dia	Diaphragm			Tributary Exterior Wall			Interior Wall			Total		
	Area (sq ft)	Unit DL (psf)	Wt (lbs)	Ht (ft)	Ln (ft)	Unit DL (psf)	Wt (lbs)	Wt Below (lbs)	Wt Above (lbs)	Added DL	Added Dia Wt	
U1	660	14	9240	5	84	9	3780	1348	-	14	112	15936
U2	540	14	7560	5	76	9	3420	1103	-	14	130	13903
Total	-	-	16800	-	-	-	7200	2450	-	-	-	-

Story Wt 26450

UPPER Story Seismic Forces

Seismic Weight (w)	29.84 kips
Height (h)	37.00 ft
Vert. Distribution (Cv)	0.54
Story Shear (V)	12.99 kips
Design Story Shear (0.7pV)	11.82 kips
Area	1200.00 sqft

UPPER Story Building Exterior

Dia	Height				East Face			West Face		North Face		South Face	
	From Base (ft)	Roof Type	Roof Slope	Roof Dir	Area (sqft)	Walls (sqft)	Area (sqft)	Walls (sqft)	Area (sqft)	Walls (sqft)	Area (sqft)	Walls (sqft)	
U1	36	G/H	6/12	N-S	45	50	150	150	110	110	110	110	
U2	38	G/H	6/12	N-S	150	150	45	50	90	90	90	90	

UPPER Story Diaphragms

Dia	Running N-S				Running E-W				Running N-S			Running E-W		
	East Grid	West Grid	Width (ft)	North Grid	South Grid	Width (ft)	Area (sqft)	Applied Wind Shear (plf)	Applied Seis. Shear (plf)	Wind / Seis Governing	Applied Wind Shear (plf)	Applied Seis. Shear (plf)	Wind / Seis Governing	
U1	6	4	22	D	G	30	660	274	287	Seismic	212	210	Wind	
U2	8	6	18	B	F	30	540	232	306	Seismic	213	184	Wind	

UPPER Story Lateral Forces Running N-S: Tributary Method

Grid Line	Allocation	Tributary Width (ft)	Tributary Force (lb)	Added Force (lb)	Wind Load Case (1, 3) Gridline		Wind Load Case (2, 4) Gridline	
					Force (lb)	Gridline	Force (lb)	Gridline
4	50% (4-6) (U1)=50% (22 ft.)	11	3157	0	3014	3157	2833	
6	50% (4-6) (U1)=50% (22 ft.)	11	3157	0	5102	5911	3898	
	50% (6-8) (U2)=50% (18 ft.)	9	2754	0				
8	50% (6-8) (U2)=50% (18 ft.)	9	2754	0	2088	2754	2067	

UPPER Story Lateral Forces Running E-W: Tributary Method

Grid Line	Allocation	Tributary Width (ft)	Tributary Force (lb)	Added Force (lb)	Wind Load Force (lb)	CaSeismic Force (lb)	Wind Load Case (lb)
B	50% (B-F) (U2)=50% (30 ft.)	15	3195	0	3195	2760	2881
D	50% (D-G) (U1)=50% (30 ft.)	15	3180	0	3180	3150	2610
F	50% (B-F) (U2)=50% (30 ft.)	15	3195	0	3195	2760	2577
G	50% (D-G) (U1)=50% (30 ft.)	15	3180	0	3180	3150	2913

UPPER Story Shear Walls Running N-S

Grid Line	Wall #	Length (ft)	Height (ft)	Acting Wind Unit Shear (plf)	Acting Seis. Unit Shear (plf)	Shear Wall Type	Shear Wall Wind Capacity (plf)	Shear Wall Seis. Unit Shear (plf)	Shear Wall Uplift (lb)	Seis. Wall Drift (in)
4	1	6	10	215	226	A	365	260	1906	1.46
4	2	4	10	215	226	B	530	304	2022	1.03
4	3	4	10	215	226	B	530	304	2022	1.03
6	1	12	10	425	493	D	895	640	3878	1.44
8	1	9	10	232	306	B	530	380	2536	1.39

UPPER Story Shear Walls Running E-W

Grid Line	Wall #	Length (ft)	Height (ft)	Acting Wind Unit Shear (plf)	Acting Seis. Unit Shear (plf)	Shear Wall Type	Shear Wall Wind Capacity (plf)	Shear Wall Seis. Unit Shear (plf)	Shear Wall Uplift (lb)	Shear Wall Drift (in)
D	1	8	10	398	394	C	685	490	4034	1.59
B	1	4	10	399	345	D	895	512	4025	1.27
B	2	4	10	399	345	C	685	392	4025	1.45
F	1	6	10	533	460	D	895	640	5372	1.96
G	1	5	10	318	315	B	530	380	3217	1.50
G	2	5	10	318	315	B	530	380	3322	1.50

UPPER Story Shear Wall Connectors Running N-S

Grid Line	Wall #	Connector Type	Connector Uplift (lb)	Connector Name	Connector Max Uplift (lb)	Anchor Bolt
4	1	SW Below	2011	MSTI60	4350	N/A
4	2	SW Below	2194	MSTI48	3045	N/A
4	3N	Post	2194	MSTI48	3045	N/A
	3S	SW Below	2194	MSTI48	3045	N/A
6	1	SW Below	4003	MSTI60	4350	N/A
8	1	SW Below	2647	MSTI60	4350	N/A

UPPER Story Shear Wall Edge Members Running N-S

Grid Line	Wall #	Wind Edge Member Uplift (lb)	Seis Edge Member Uplift (lb)	Seismic Uplift (lb)	Wind Crushing (lb)	Seismic Crushing (lb)	Seismic Crushing (lb)	Wall Edge Member	Max Wind Edge Uplift (lb)	Max Seis Edge Uplift (lb)	Max Wind Edge Crushing (lb)	Max Seis Edge Crushing (lb)
4	1	2918	1906	-	2847	2876	-	3x6 STAN	8250	8250	5285	10929
4	2	2779	2022	-	2730	2669	-	3x6 STAN	8250	8250	5285	10929
4	3N	2779	2022	-	2730	2669	-	3x6 STAN	8250	8250	5285	10929
	3S	2779	2022	-	2730	2669	-	3x6 STAN	8250	8250	5285	10929
6	1	4293	3878	-	6630	7382	-	2-2x6 NO.2	19734	19734	10416	14832
8	1	3396	2536	-	3403	3992	-	2-2x6 NO.2	19734	19734	10416	14832

UPPER Story Shear Wall Connectors Running E-W

Grid Line	Wall #	Connector Type	Connector Uplift (lb)	Connector Name	Connector Max Uplift (lb)	Anchor Bolt
D	1E	Post	3946	MSTI60	4350	N/A
	1W	SW Below	3946	MSTI60	4350	N/A
B	1E	Post	3693	MSTI72	5080	N/A
	1W	SW Below	3693	MSTI72	5080	N/A
B	2E	SW Below	3693	MSTI72	5080	N/A
	2W	Post	3693	MSTI72	5080	N/A
F	1	Post no SW	4741	PHD6	5860	ATR-7/8"
			4445			N/A
G	1	SW Below	3266	MSTI60	4350	N/A
			3021			N/A
G	2	SW Below	3266	MSTI60	4350	N/A

UPPER Story Shear Wall Edge Members Running E-W

Grid Line	Wall #	Wind Edge Member Uplift (lb)	Seis Edge Member Uplift (lb)	Seismic Uplift (lb)	Wind Crushing (lb)	Seismic Crushing (lb)	Seismic Crushing (lb)	Wall Edge Member	Max Wind Edge Uplift (lb)	Max Seis Edge Uplift (lb)	Max Wind Edge Crushing (lb)	Max Seis Edge Crushing (lb)
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Line #	Uplift (lb)	Uplift (lb)	(Beam/Hdr)	(lb)	(lb)	(Beam/Hdr)	Member	Uplift (lb)	Uplift (lb)	Crushing (lb)	Crushing (lb)	
D	1E	4268	3731	-	4143	4129	-	4x6 NO.2	23023	23023	12164	17304
	1W	4268	3731	-	4143	4129	-	4x6 NO.2	23023	23023	12164	17304
B	1E	4441	3347	-	4078	3546	-	2-2x6 NO.2	19734	19734	10416	14832
	1W	4441	3347	-	4078	3546	-	2-2x6 NO.2	19734	19734	10416	14832
B	2E	4441	3347	-	4078	3546	-	2-2x6 NO.2	19734	19734	10416	14832
	2W	4441	3347	-	4078	3546	-	2-2x6 NO.2	19734	19734	10416	14832
F	1	5730	4445	-	5451	5060	-	2-2x6 NO.2	19734	19734	10416	14832
G	1	3478	3021	-	3285	3535	-	2-2x6 NO.2	19734	19734	10416	14832
G	2	3592	3021	-	3285	3535	-	2-2x6 NO.2	19734	19734	10416	14832

UPPER Story Components and Cladding

Name	Type	Zone	Diaphragm	Effective Wind Area (sqft)	Positive Design Pressure (p+)	Negative Design Pressure (p-)
Gable Roof	Gable Roof (Slope <= 7°)	2	U1	156	11.00	-37.06
Gable Roof	Gable Overhang (Slope <= 7°)	3	U1	12	19.92	-81.69
Gable Roof	Gable Roof (Slope <= 7°)	1	U1	780	11.00	-31.27
Flat Roof	Monoslope Roof (3° < Slope <= 10°)	1	U2	532	11.10	-37.39
Flat Roof	Monoslope Roof (3° < Slope <= 10°)	2	U2	18	13.28	-42.49
Flat Roof	Monoslope Roof (3° < Slope <= 10°)	3	U2	36	12.40	-48.09
Flat Roof	Monoslope Roof (3° < Slope <= 10°)	2'	U2	18	13.28	-51.25
Flat Roof	Monoslope Roof (3° < Slope <= 10°)	3'	U2	144	11.10	-52.00

MIDDLE Story Seismic Dead Loads

Dia	Diaphragm			Tributary Exterior Wall			Interior Wall			Total	
	Area (sq ft)	Unit DL (psf)	Wt (lbs)	Ht (ft)	Ln (ft)	Unit DL (psf)	Wt (lbs)	Wt Below (lbs)	Wt Above (lbs)	Added DL	Area (lbs)
M1	660	13	8580	10	54	9	4860	2697	858	0	16996
M2	540	13	7020	8	58	9	5220	2207	702	0	15149
M3	360	14	5040	4	56	9	2520	1471	468	14	10283
M4	324	16	5184	4	44	9	1980	1324	421	0	8910
Total	-	-	25824	-	-	-	14580	7700	2450	-	-
Story Wt 48104											

MIDDLE Story Seismic Forces

Seismic Weight (w) 48.89 kips
 Height (h) 22.00 ft
 Vert. Distribution (Cv) 0.31
 Story Shear (V) 7.52 kips
 Design Story Shear (0.7pV) 6.85 kips
 Area 1884.00 sqft

MIDDLE Story Building Exterior

Dia	Height		East Face				West Face		North Face		South Face		
	From	Roof	Roof	Slope	Dir	Roof	Area Ext	Roof	Area Ext	Roof	Area Ext	Roof	Area Ext
M1	21	Floor	N/A	N/A	0	0	0	0	100	0	220	0	220
M2	21	Floor	N/A	N/A	0	300	0	100	0	180	0	0	0
M3	25	G/H	6/12	E-W	0	0	110	100	95	90	95	90	90
M4	21	G/H	0	E-W	0	90	0	40	0	0	0	90	90

MIDDLE Story Diaphragms

Dia	Running N-S			Running E-W			Running N-S			Running E-W			
	East Grid	West Grid	Width (ft)	North Grid	South Grid	Width (ft)	Area (sqft)	Applied Wind Shear (plf)	Applied Seis. Shear (plf)	Wind / Seis Governing	Applied Wind Shear (plf)	Applied Seis. Shear (plf)	Wind / Seis Governing
M1	6	4	22	D	G	30	660	289	103	Wind	75	75	Seismic
M2	8	6	18	B	F	30	540	272	112	Wind	241	67	Wind
M3	4	2	18	D	F	20	360	260	76	Wind	166	69	Wind
M4	8	6	18	F	H	18	324	111	66	Wind	122	66	Wind

MIDDLE Story Lateral Forces Running N-S: Tributary Method

Grid Line	Allocation	Tributary Width (ft)	Tributary Force (lb)	Added Force (lb)	Wind Force Above (lb)	Seismic Force Above (lb)	Wind Load (lb)	CaSeismic Force (lb)	Wind I (lb)
2	50% (2-4) (M3)=50% (18 ft.)	9	2340	0	0	0	2340	684	2753
4	50% (4-6) (M1)=50% (22 ft.)	11	3179	0	3014	3157	8533	4974	7848
6	50% (2-4) (M3)=50% (18 ft.)	9	2340	0	5102	5911	11728	8646	9491
	50% (4-6) (M1)=50% (22 ft.)	11	3179	0					
8	50% (6-8) (M2)=50% (18 ft.)	9	2448	0	2088	2754	5535	4356	5903
	50% (6-8) (M4)=50% (18 ft.)	9	999	0					

50% (6-8) (M4)=50% (18 ft.) 9 999 0

MIDDLE Story Lateral Forces Running E-W: Tributary Method

Grid Line	Allocation	Tributary Width (ft)	Tributary Force (lb)	Added Force (lb)	Wind Force Above (lb)	Seismic Force Above (lb)	Wind Load (1, 3) Force (lb)	CaSeismic Gridline Force (lb)	Wind Load (2, 4) Force
B	50% (B-D) (M2)=50% (10 ft.)	5	1205	0	3195	2760	4400	3095	4579
D	50% (F-D) (M1)=50% (20 ft.)	10	750	0	3180	3150	9205	5595	8009
F	50% (B-D) (M2)=50% (10 ft.)	5	1205	0	3195	2760	9000	5575	7575
	50% (D-F) (M2)=50% (20 ft.)	10	2410	0					
	50% (D-F) (M3)=50% (20 ft.)	10	1660	0					
	50% (D-F) (M1)=50% (20 ft.)	10	750	0					
	50% (G-F) (M1)=50% (10 ft.)	5	375	0					
	50% (D-F) (M2)=50% (20 ft.)	10	2410	0					
G	50% (D-F) (M3)=50% (20 ft.)	10	1660	0	3180	3150	4653	4119	4521
	50% (F-G) (M4)=50% (10 ft.)	5	610	0					
	50% (F-G) (M1)=50% (10 ft.)	5	375	0					
	50% (F-G) (M4)=50% (10 ft.)	5	610	0					
H	50% (G-H) (M4)=50% (8 ft.)	4	488	0	0	0	488	264	994
	50% (G-H) (M4)=50% (8 ft.)	4	488	0					

MIDDLE Story Shear Walls Running N-S

Grid Line	Wall #	Length (ft)	Height (ft)	Acting Wind Unit Shear (plf)	Acting Seis. Unit Shear (plf)	Shear Wall Type	Shear Wall Wind Capacity (plf)	Shear Wall Seis. Unit Shear Capacity (plf)	Shear Wall Uplift (lb)	Shear Wall Drift (in)
2	1	8	10	344	86	A	365	260	3729	0.32
4	1	6	10	427	249	C	685	392	3430	1.54
4	2	14	10	427	249	B	530	380	N:5934 / S:1.06	
6	1	12	10	558	412	C	685	490	3911	1.91
6	2	4	10	558	412	D	895	512	5360	2.32
6	3	5	10	558	412	C	685	490	4887	1.81
8	1	9	10	394	290	B	530	380	3185	1.57
8	2	6	10	394	290	B	530	380	4281	1.27

MIDDLE Story Shear Walls Running E-W

Grid Line	Wall #	Length (ft)	Height (ft)	Acting Wind Unit Shear (plf)	Acting Seis. Unit Shear (plf)	Shear Wall Type	Shear Wall Wind Capacity (plf)	Shear Wall Seis. Unit Shear Capacity (plf)	Shear Wall Uplift (lb)	Shear Wall Drift (in)
D	1	9	10	484	294	B	530	380	2363	1.48
D	2	10	10	484	294	B	530	380	E:2723 / W:1.47	
B	1	6	10	382	258	B	530	380	E:3714 / W:1.49	
B	2	6	10	382	258	B	530	380	3494	1.83
F	1	10	10	450	279	B	530	380	2552	1.25
F	2	10	10	450	279	B	530	380	2536	1.28
G	1	4	10	388	343	C	685	392	3344	2.35
G	2	4	10	388	343	C	685	392	3320	2.35
G	3	4	10	388	343	C	685	392	3342	2.17
H	1	4	10	249	66	A	365	208	1220	0.38

MIDDLE Story Shear Wall Connectors Running N-S

Grid Line	Wall #	Connector Type	Connector Uplift (lb)	Connector Name	Connector Max Uplift (lb)	Anchor Bolt
2	1	SW Below	3881	MSTI60	4350	N/A
4	1	SW Below	6384	HDU8	8350	ATR-7/8"
4	2N	Post	6026	HDU8	8350	ATR-7/8"
4	2S	Post	6042	HDU11	11275	ATR-1"
6	1	Post	8307	HDU11	11275	ATR-1"
6	2	Post	5815	HDU8	8350	ATR-7/8"
6	3	SW Below	5213	MSTC66	5660	N/A
8	1	SW Below	6554	HDU8	8350	ATR-7/8"
8	2	SW Below	4516	MSTI72	5080	N/A

MIDDLE Story Shear Wall Edge Members Running N-S

Grid Line	Wall #	Wind Edge Member Uplift (lb)	Seis Edge Member Uplift (lb)	Seismic Uplift (lb) (Beam/Hdr)	Wind Crushing (lb)	Seismic Crushing (lb)	Seismic Crushing (lb) (Beam/Hdr)	Wall Edge Member	Max Wind Edge Uplift (lb)	Max Seis Edge Uplift (lb)	Max Wind Edge Crushing (lb)	Max Seis Edge Crushing (lb)
2	1	3881	448	-	3710	1925	-	3x6 STAN	8250	8250	5285	10929
4	1	6384	4034	-	8170	7199	-	3x6 NO.2	16445	16445	8265	12360
4	2N	6026	3870	-	9207	8130	-	2-2x6 NO.2	19734	19734	10416	14832
4	2S	6042	3879	-	9238	8155	-	4x6 NO.2	23023	23023	12164	17304
6	1	8307	7249	-	16110	16425	-	6x6 NO.1	39930	39930	19965	25097

6	2	5815	4279	-	6312	4755	-	3x6 NO.2	16445	16445	8265	12360
6	3	5213	3974	-	6674	5710	-	3x6 NO.2	16445	16445	8265	12360
8	1	6554	5142	-	7932	8128	-	3x6 NO.2	16445	16445	8265	12360
8	2	4516	2777	-	4292	3606	-	3x6 STAN	8250	8250	5285	10929

MIDDLE Story Shear Wall Connectors Running E-W

Grid Line	Wall #	Connector Type	Connector Uplift (lb)	Connector Name	Connector Max Uplift (lb)	Anchor Bolt
D	1	SW Below	2448	HDU8	8350	ATR-7/8"
			2363			N/A
D	2E	SW Below	2811	MSTC66	5660	N/A
	2W	Post	2848	HDU11	11275	ATR-1"
B	1E	Post	4006	MSTI60	4350	N/A
	1W	SW Below	4006	HDU8	8350	ATR-7/8"
B	2E	SW Below	7794	HDU8	8350	ATR-7/8"
	2W	Post	7794	MSTI72	5080	N/A
F	1	SW Below	2669	HDU8	8350	ATR-7/8"
			2552			N/A
F	2	SW Below	2635	PHD6	5860	ATR-7/8"
			2536			N/A
G	1	SW Below	6775	HDU8	8350	ATR-7/8"
			6364			N/A
G	2	SW Below	6748	HDU8	8350	ATR-7/8"
			6340			N/A
G	3	Beam / Blocking	3625	PHD5	4685	ATR-5/8"
			3342			N/A
H	1	Concrete	1346	STHD8	2687	N/A

MIDDLE Story Shear Wall Edge Members Running E-W

Grid Line	Wall #	Wind Edge Uplift (lb)	Seis Edge Uplift (lb)	Seismic Uplift (lb) (Beam/Hdr)	Wind Crushing (lb)	Seismic Crushing (lb)	Seismic Crushing (lb) (Beam/Hdr)	Wall Edge Member	Max Wind Uplift (lb)	Max Seis Uplift (lb)	Max Wind Edge Member Crushing (lb)	Max Seis Edge Member Crushing (lb)
D	1	4553	2448	-	5997	4251	-	4x6 NO.2	23023	23023	12164	17304
D	2E	4704	2811	-	5135	3192	-	3x6 NO.2	16445	16445	8265	12360
	2W	8800	6578	-	9345	7363	-	4x6 NO.2	23023	23023	12164	17304
B	1E	4006	2615	-	4091	2937	-	4x6 NO.2	23023	23023	12164	17304
	1W	8031	5961	-	8169	6482	-	4x6 NO.2	23023	23023	12164	17304
B	2E	7794	5985	-	8117	6423	-	4x6 NO.2	23023	23023	12164	17304
	2W	3769	2639	-	4039	2878	-	4x6 NO.2	23023	23023	12164	17304
F	1	4740	2669	-	4873	3105	-	4x6 NO.2	23023	23023	12164	17304
F	2	4336	2635	-	4878	3127	-	2-2x6 NO.2	19734	19734	10416	14832
G	1	7442	6775	-	7697	7190	-	4x6 NO.2	23023	23023	12164	17304
G	2	7511	6748	-	7755	7256	-	4x6 NO.2	23023	23023	12164	17304
G	3	4321	3625	9283 (Em)	4267	3793	9372 (Em)	3x6 NO.2	16445	16445	8265	12360
H	1	1346	657	-	1346	728	-	2-2x4 NO.2	14490	14490	2092	4132

MIDDLE Story Shear Wall Post Connectors Running N-S

Grid Line	Wall #	Post Height (ft)	Connector Type	Connector Uplift (lb)	Connector Name	Connector Max Uplift (lb)	Anchor Bolt
4		10	Concrete	2779	STHD10	3552	N/A
4	3N	10	Concrete	2779	STHD8	2941	N/A

MIDDLE Story Posts Running N-S

Grid Line	Wall #	Wind Uplift (lb)	Seismic Uplift (lb)	Wind Crushing (lb)	Seismic Crushing (lb)	Post	Max Wind Uplift (lb)	Max Seis Uplift (lb)	Max Wind Post Crushing (lb)	Max Seis Post Crushing (lb)
4		2779	2669	4616	4743	4x4 NO.2	16905	20286	6799	11249
4	3N	2779	2669	6166	6293	4x4 NO.2	16905	20286	6799	11249

MIDDLE Story Shear Wall Post Connectors Running E-W

Grid Line	Wall #	Post Height (ft)	Connector Type	Connector Uplift (lb)	Connector Name	Connector Max Uplift (lb)	Anchor Bolt
D	1E	10	Concrete	4268	STHD14	5785	N/A
B	1E	10	Concrete	4441	STHD14	5785	N/A
B	2W	10	Concrete	4441	STHD14	5785	N/A
F	1	10	Concrete	11564	HHDQ14	14700	B

MIDDLE Story Shear Wall Posts Running E-W

Wall Above Grid Line	Wind Post	Seismic Post	Wind Crushing (lb)	Seismic Crushing (lb)	Post	Max Wind Post Uplift (lb)	Max Seis Post Uplift (lb)	Max Wind Post Crushing (lb)	Max Seis Post Crushing (lb)	
D	1E	4268	4129	6073	6068	4x4 NO.2	16905	20286	6799	11249
B	1E	4441	3546	4328	3796	4x4 NO.2	16905	20286	6799	11249
B	2W	4441	3546	6621	6225	4x4 NO.2	16905	20286	6799	11249
F	1	5730	11564	7451	14961	2-2x6 NO.2	19734	23681	10416	17798

MIDDLE Story Components and Cladding

Name	Type	Zone	Diaphragm	Effective Wind Area (sqft)	Positive Design Pressure (p+)	Negative Design Pressure (p-)
Shed Roof	Monoslope Roof (10° < Slope <= 30°)	1	M3	360	13.06	-34.82
Shed Roof	Monoslope Roof (10° < Slope <= 30°)	2	M3	112	13.06	-37.55
Shed Roof	Multispan Gable Roof (10° < Slope <= 30°)	3	M3	8	21.22	-78.36
Shed Roof	Multispan Gable Roof (10° < Slope <= 30°)	1	M4	324	15.30	-41.69
Shed Roof	Multispan Gable Roof (10° < Slope <= 30°)	2	M4	98	15.35	-49.72
Shed Roof	Multispan Gable Roof (10° < Slope <= 30°)	3	M4	8	20.58	-75.99

LOWER Story Seismic Dead Loads

Dia	Diaphragm			Tributary Exterior Wall				Interior Wall				Total Dia Wt
	Area (sq ft)	Unit DL (psf)	Wt (lbs)	Ht (ft)	Ln (ft)	Unit DL (psf)	Wt (lbs)	Wt Below (lbs)	Wt Above (lbs)	Added DL	Added DL Area	
L1	660	16	10560	8	32	9	5058	0	1762	0	0	17380
L2	540	16	8640	5	48	9	4320	0	1442	0	0	14402
L3	324	16	5184	5	48	9	4320	0	865	0	0	10369
L4	360	16	5760	5	38	9	3420	0	961	0	0	10141
L5	1000	14	14000	5	90	9	4050	0	2670	14	120	22400
Total	-	-	44144	-	-	-	21168	0	7700	-	-	-

Story Wt 65312

LOWER Story Seismic Forces

Seismic Weight (w) 79.59 kips
 Height (h) 11.80 ft
 Vert. Distribution (Cv) 0.15
 Story Shear (V) 3.52 kips
 Design Story Shear (0.7pV) 3.21 kips
 Area 2884.00 sqft

LOWER Story Building Exterior

Dia	Height From Base (ft)	East Face				West Face		North Face		South Face		
		Roof Type	Roof Slope	Dir	Area (sqft)	Area (sqft)	Area (sqft)	Area (sqft)	Area (sqft)	Area (sqft)	Area (sqft)	
L1	11	Floor	N/A	N/A	0	0	100	0	0	0	462	
L2	11	Floor	N/A	N/A	0	300	0	0	180	0	0	
L3	11	Floor	N/A	N/A	0	300	0	0	0	0	180	
L4	11	Floor	N/A	N/A	0	0	200	0	0	0	180	
L5	15	G/H	6/12	E-W	45	50	110	100	250	250	45	50

LOWER Story Diaphragms

Dia	Running N-S			Running E-W			Running N-S			Running E-W			
	East Grid	West Grid	Width (ft)	North Grid	South Grid	Width (ft)	Area (sqft)	Applied Wind Shear (plf)	Applied Seis. Shear (plf)	Wind / Seis Governing	Applied Wind Shear (plf)	Applied Seis. Shear (plf)	Wind / Seis Governing
L1	6	4	22	D	G	30	660	451	29	Wind	72	21	Wind
L2	8	6	18	B	F	30	540	215	29	Wind	215	17	Wind
L3	8	6	18	F	H	18	324	215	21	Wind	358	21	Wind
L4	4	2	18	D	F	20	360	215	21	Wind	215	18	Wind
L5	6	1	50	A	D	20	1000	186	16	Wind	136	40	Wind

LOWER Story Lateral Forces Running N-S: Tributary Method

Grid Line	Allocation	Tributary Width (ft)	Tributary Force (lb)	Added Force (lb)	Wind Force Above (lb)	Seismic Force (lb)	Wind Load (1, 3) Force (lb)	CaSeismic Gridline Force (lb)	Wind (2, 4) Force (lb)
1	50% (1-3) (L5)=50% (21 ft.)	10.5	1953	0	0	0	1953	168	2708
2	50% (2-4) (L4)=50% (18 ft.)	9	1935	0	2340	684	4275	873	4844
3	50% (1-3) (L5)=50% (21 ft.)	10.5	1953	0	0	0	4650	400	4335
	50% (3-6) (L5)=50% (29 ft.)	14.5	2697	0					
4	50% (4-6) (L1)=50% (22 ft.)	11	4961	0	8533	4974	15429	5482	13551
	50% (2-4) (L4)=50% (18 ft.)	9	1935	0					
6	50% (4-6) (L1)=50% (22 ft.)	11	4961	0	11728	8646	23256	9647	20326
	50% (6-8) (L2)=50% (18 ft.)	9	1935	0					
	50% (6-8) (L3)=50% (18 ft.)	9	1935	0					

8	50% (3-6) (L5)=50% (29 ft.)	14.5	2697	0					
	50% (6-8) (L2)=50% (18 ft.)	9	1935	0	5535	4356	9405	4806	9877
	50% (6-8) (L3)=50% (18 ft.)	9	1935	0					

LOWER Story Lateral Forces Running E-W: Tributary Method

Grid Line	Allocation	Tributary Width (ft)	Tributary Force (lb)	Added Force (lb)	Wind Force Above (lb)	Seismic Force Above (lb)	Wind Load (1, 3) Force (lb)	CaSeismic Gridline Force (lb)	Wind I (2, 4) Force
A	50% (A-D) (L5)=50% (20 ft.)	10	1360	0	0	0	1360	400	6075
B	50% (B-D) (L2)=50% (10 ft.)	5	1075	0	4400	3095	5475	3180	5339
D	50% (D-F) (L1)=50% (20 ft.)	10	720	0	9205	5595	16660	6640	13243
	50% (B-D) (L2)=50% (10 ft.)	5	1075	0					
	50% (D-F) (L2)=50% (20 ft.)	10	2150	0					
	50% (D-F) (L4)=50% (20 ft.)	10	2150	0					
	50% (A-D) (L5)=50% (20 ft.)	10	1360	0					
E	50% (D-E) (L1)=50% (10 ft.)	5	360	0	0	0	360	105	2526
F	50% (E-F) (L1)=50% (10 ft.)	5	360	0	9000	5575	15810	6240	15542
	50% (F-G) (L1)=50% (10 ft.)	5	360	0					
	50% (D-F) (L2)=50% (20 ft.)	10	2150	0					
	50% (F-G) (L3)=50% (10 ft.)	5	1790	0					
	50% (D-F) (L4)=50% (20 ft.)	10	2150	0					
G	50% (F-G) (L1)=50% (10 ft.)	5	360	0	4653	4119	8235	4413	6785
	50% (F-G) (L3)=50% (10 ft.)	5	1790	0					
	50% (G-H) (L3)=50% (8 ft.)	4	1432	0					
H	50% (G-H) (L3)=50% (8 ft.)	4	1432	0	488	264	1920	348	1440

LOWER Story Shear Walls Running N-S

Grid Line	Wall #	Length (ft)	Height (ft)	Acting Wind Unit Shear (plf)	Acting Seis. Unit Shear (plf)	Shear Wall Type	Shear Wall Wind Capacity (plf)	Shear Wall Seis. Unit Shear Capacity (plf)	Shear Wall Uplift (lb)	Shear Wall Drift (in)
1	1	3	10	451	28	B	530	228	3282	1.35
1	2	3	10	451	28	B	530	228	3282	1.35
2	1	8	10	605	109	C	685	490	4830	1.25
3	1	6	10	775	67	D	895	640	7714	1.56
4	1	6	10	771	274	D	895	640	6818	2.03
4	2	14	10	771	274	D	895	640	5522	1.37
6	1	4	10	775	322	D	895	512	7457	2.27
6	2	12	10	775	322	D	895	640	5959	1.18
6	3	5	10	775	322	E	1020	730	6963	2.25
6	4	5	10	775	322	E	1020	730	7575	1.74
6	5	4	10	775	322	D	895	512	7728	2.29
8	1	9	10	658	320	C	685	490	5692	2.32
8	2	6	10	658	320	D	895	640	6086	2.04

LOWER Story Shear Walls Running E-W

Grid Line	Wall #	Length (ft)	Height (ft)	Acting Wind Unit Shear (plf)	Acting Seis. Unit Shear (plf)	Shear Wall Type	Shear Wall Wind Capacity (plf)	Shear Wall Seis. Unit Shear Capacity (plf)	Shear Wall Uplift (lb)	Shear Wall Drift (in)
B	1	18	10	304	177	A	365	260	E:6167 / W:1.31	
A	1	8	10	338	22	A	365	260	1190	0.15
A	2	10	10	338	22	A	365	260	1298	0.33
D	1	9	10	595	237	D	895	640	5883	1.58
D	2	14	10	595	237	D	895	640	4715	1.23
D	3	5	10	595	237	D	895	640	6221	2.39
E	1	10	10	253	11	A	365	260	54	0.03
F	1	10	10	791	312	D	895	640	7599	1.39
F	2	10	10	791	312	D	895	640	7599	1.66
G	1	4	10	515	276	C	685	392	4602	2.78
G	2	4	10	515	276	B	530	304	4602	2.96
G	3	8	10	515	276	B	530	380	4748	1.63

LOWER Story Shear Wall Connectors Running N-S

Grid Line	Wall #	Connector Type	Connector Uplift (lb)	Connector Name	Connector Max Uplift (lb)	Anchor Bolt
1	1	Concrete	3501	STHD10	3725	N/A
1	2	Concrete	3501	STHD10	3725	N/A
2	1	Concrete	8910	HDU11	11275	A
3	1	Concrete	8480	HDU11	11275	A
4	1	Concrete	7495	HDU8	8350	SSTB28
4	2	Concrete	11787	HDU11	11275	A
6	1	Concrete	8625	HDU11	11275	A

6	2	Concrete	6241	HDU8	8350	SSTB28
6	3	Concrete	13201	HHDQ14	14700	B
6	4	Concrete	8495	HDU11	11275	A
6	5	Concrete	8939	HDU11	11275	A
8	1	Concrete	12496	HDU11	11275	A
8	2	Concrete	10972	HDU11	11275	A

LOWER Story Shear Wall Edge Members Running N-S

Grid Line	Wall #	Wind Edge Member Uplift (lb)	Seis Edge Member Uplift (lb)	Seismic Uplift (lb) (Beam/Hdr)	Wind Crushing (lb)	Seismic Crushing (lb)	Seismic Crushing (lb) (Beam/Hdr)	Wall Edge Member	Max Wind Edge Member Uplift (lb)	Max Seis Edge Member Uplift (lb)	Max Wind Edge Member Crushing (lb)	Max Seis Edge Member Crushing (lb)
1	1	3501	206	-	3562	403	-	6x4 NO.2	23023	23023	4482	7561
4	2	3501	206	-	3562	403	-	6x4 NO.2	23023	23023	4482	7561
4	1	8910	1177	-	9915	4589	-	4x6 NO.2	23023	23023	12164	17304
6	1	8480	584	-	8611	838	-	4x6 NO.2	23023	23023	12164	17304
6	1	7495	2446	-	9476	5372	-	4x6 NO.2	23023	23023	12164	17304
6	2	11787	5465	-	21578	17131	-	6x6 NO.1	39930	39930	19965	25097
8	1	8625	3456	-	9373	4183	-	4x6 NO.2	23023	23023	12164	17304
8	2	6241	2288	-	11474	8456	-	4x6 NO.2	23023	23023	12164	17304
	3	13201	7033	-	16457	11187	-	6x6 NO.1	39930	39930	19965	25097
	4	8495	3454	-	8828	3760	-	4x6 NO.1	27027	27027	13319	18504
	5	8939	3615	-	9031	3793	-	4x6 NO.1	27027	27027	13319	18504
	1	12496	7988	-	15131	12619	-	4x6 NO.2	23023	23023	12164	17304
	2	10972	5999	-	11066	7060	-	4x6 NO.1	27027	27027	13319	18504

LOWER Story Shear Wall Connectors Running E-W

Grid Line	Wall #	Connector Type	Connector Uplift (lb)	Connector Name	Connector Max Uplift (lb)	Anchor Bolt
B	1E	Concrete	6243	HDU8	8350	SSTB28
	1W	Concrete	6243	HDU8	8350	SSTB28
A	1	Concrete	1248	STHD14	5785	N/A
			1190			N/A
A	2	Concrete	1349	STHD14	5785	N/A
			1298			N/A
D	1	Concrete	10862	HHDQ14	14700	B
			10278			N/A
D	2E	Concrete	9562	HHDQ14	14700	B
	2W	Concrete	9462	HDU11	11275	A
D	3	Concrete	6977	HDU11	11275	A
			6221			N/A
E	1	Concrete	57	HHDQ14	14700	B
			54			N/A
F	1	Concrete	12585	HHDQ14	14700	B
			12132			N/A
F	2	Concrete	12225	HHDQ14	14700	B
			11772			N/A
G	1	Concrete	12302	HDU11	11275	A
			11582			N/A
G	2	Concrete	12376	HDU11	11275	A
			11655			N/A
G	3	Concrete	5023	STHD14	5785	N/A

LOWER Story Shear Wall Edge Members Running E-W

Grid Line	Wall #	Wind Edge Member Uplift (lb)	Seis Edge Member Uplift (lb)	Seismic Uplift (lb) (Beam/Hdr)	Wind Crushing (lb)	Seismic Crushing (lb)	Seismic Crushing (lb) (Beam/Hdr)	Wall Edge Member	Max Wind Edge Member Uplift (lb)	Max Seis Edge Member Uplift (lb)	Max Wind Edge Member Crushing (lb)	Max Seis Edge Member Crushing (lb)
B	1E	6243	3778	-	7342	5336	-	4x6 NO.2	23023	23023	12164	17304
	1W	6023	1354	-	7294	5281	-	4x6 NO.2	23023	23023	12164	17304
A	1	1248	0	-	1812	1473	-	2-2x6 NO.2	19734	19734	10416	14832
A	2	1349	0	-	1939	1624	-	2-2x6 NO.2	19734	19734	10416	14832
D	1	10862	4021	-	14039	9504	-	6x6 NO.1	39930	39930	19965	25097
D	2E	9562	4341	-	12718	7942	-	6x6 NO.1	39930	39930	19965	25097
	2W	4905	1586	-	7588	4752	-	4x6 NO.2	23023	23023	12164	17304
D	3	6977	2388	-	7065	3106	-	4x6 NO.2	23023	23023	12164	17304
E	1	57	0	-	774	594	-	4x6 NO.1	27027	27027	13319	18504
F	1	12585	5608	-	13206	6469	-	4x6 NO.1	27027	27027	13319	18504
F	2	12225	5592	-	13241	6508	-	4x6 NO.1	27027	27027	13319	18504
G	1	12302	9206	-	13760	10938	-	4x6 NO.2	23023	23023	12164	17304
G	2	12376	9182	-	13812	10997	-	4x6 NO.1	27027	27027	13319	18504
G	3	5023	2593	-	5851	3412	-	4x6 NO.2	23023	23023	12164	17304

MIDDLE Story Shear Wall Post Connectors Running N-S

Wall Above	Grid	Wall	Post	Connector	Connector	Connector	Connector	Anchor
Line #	#	Height (ft)	Type	Uplift (lb)	Name	Max Uplift (lb)	Bolt	
4		10	Concrete	2779	STHD10	3552	N/A	
4	3N	10	Concrete	2779	STHD8	2941	N/A	

MIDDLE Story Posts Running N-S

Wall Above	Grid	Wall	Post	Wind	Seismic	Post	Max Wind	Max Seis	Max Wind	Max Seis
Line #	#	Uplift (lb)	Uplift (lb)	Crushing (lb)	Crushing (lb)	Post	Uplift (lb)	Uplift (lb)	Crushing (lb)	Crushing (lb)
4		2779	2669	4616	4743	4x4 NO.2	16905	20286	6799	11249
4	3N	2779	2669	6166	6293	4x4 NO.2	16905	20286	6799	11249

MIDDLE Story Shear Wall Post Connectors Running E-W

Wall Above	Grid	Wall	Post	Connector	Connector	Connector	Anchor
Line #	#	Height (ft)	Type	Uplift (lb)	Name	Max Uplift (lb)	Bolt
D	1E	10	Concrete	4268	STHD14	5785	N/A
B	1E	10	Concrete	4441	STHD14	5785	N/A
B	2W	10	Concrete	4441	STHD14	5785	N/A
F	1	10	Concrete	11564	HHDD14	14700	B

MIDDLE Story Shear Wall Posts Running E-W

Wall Above	Grid	Wall	Post	Wind	Seismic	Post	Max Wind	Max Seis	Max Wind	Max Seis
Line #	#	Uplift (lb)	Uplift (lb)	Crushing (lb)	Crushing (lb)	Post	Uplift (lb)	Uplift (lb)	Crushing (lb)	Crushing (lb)
D	1E	4268	4129	6073	6068	4x4 NO.2	16905	20286	6799	11249
B	1E	4441	3546	4328	3796	4x4 NO.2	16905	20286	6799	11249
B	2W	4441	3546	6621	6225	4x4 NO.2	16905	20286	6799	11249
F	1	5730	11564	7451	14961	2-2x6 NO.2	19734	23681	10416	17798

LOWER Story Components and Cladding

Name	Type	Zone	Diaphragm	Effective Wind Area (sqft)	Positive Design Pressure (p+)	Negative Design Pressure (p-)
Hip Roof	Gable/Hip Roof (7° < Slope <= 27°)	3	L5	27	14.74	-62.58
Hip Roof	Gable/Hip Roof (7° < Slope <= 27°)	2	L5	750	11.91	-34.25
Hip Roof	Gable/Hip Roof (7° < Slope <= 27°)	1	L5	223	11.91	-24.32

Torsional Analysis

Building Dimensions

Floor Name	Running N-S (ft)	E-W (ft)
UPPER	40	40
MIDDLE	48	58
LOWER	58	68

Center of Rigidity

Floor Name	Dist. From GL 1 (ft)	Dist. From GL A (ft)
UPPER	48	29
MIDDLE	44	32
LOWER	39	23

UPPER Story N-S Wind Torsion Calcs

Grid	G.L. Offset (ft)	G.L. Rigidity (lb/in)	G.L. Torsion N-S (ft-lb)	G.L. Torsion E-W (ft-lb)	Wind Load Case 1 (lb)	Wind Load Case 2 (lb)	Wind Load Case 4 (lb)
Line	(ft)	(lb/in)	N-S (ft-lb)	E-W (ft-lb)	Case 1 (lb)	Case 2 (lb)	Case 4 (lb)
4	28	2755	763	953	3014	2833	2663
6	50	3986	95	119	5102	3898	2993
8	68	2474	668	834	2088	2067	2021

UPPER Story E-W Wind Torsion Calcs

Grid	G.L. Offset (ft)	G.L. Rigidity (lb/in)	G.L. Torsion N-S (ft-lb)	G.L. Torsion E-W (ft-lb)	Wind Load Case 1 (lb)	Wind Load Case 2 (lb)	Wind Load Case 4 (lb)
Line	(ft)	(lb/in)	N-S (ft-lb)	E-W (ft-lb)	Case 1 (lb)	Case 2 (lb)	Case 4 (lb)
B	10	2466	646	807	3195	2881	2617
D	20	2395	300	375	3180	2610	2170
F	40	1630	242	302	3195	2577	2105
G	50	2473	704	880	3180	2913	2682

MIDDLE Story N-S Wind Torsion Calcs

Grid	G.L. Offset	G.L. Rigidity	G.L. Torsion	G.L. Torsion	Wind Load	Wind Load	Wind Load
Line	(ft)	(lb/in)	N-S (lb)	E-W (lb)	Case 1 (lb)	Case 2 (lb)	Case 4 (lb)
2	10	1106	1331	1086	2340	2753	2679
4	28	3403	1931	1576	8533	7848	6778
6	50	4411	927	756	11728	9491	7551
8	68	2759	2335	1906	5535	5903	5504

MIDDLE Story E-W Wind Torsion Calcs

Grid	G.L. Offset	G.L. Rigidity	G.L. Torsion	G.L. Torsion	Wind Load	Wind Load	Wind Load
Line	(ft)	(lb/in)	N-S (lb)	E-W (lb)	Case 1 (lb)	Case 2 (lb)	Case 4 (lb)
B	10	2177	1705	1391	4400	4579	4220
D	20	3428	1473	1202	9205	8009	6689
F	40	3970	1100	897	9000	7575	6191
G	50	2181	1375	1122	4653	4521	4026
H	58	771	704	574	488	894	994

LOWER Story N-S Wind Torsion Calcs

Grid	G.L. Offset	G.L. Rigidity	G.L. Torsion	G.L. Torsion	Wind Load	Wind Load	Wind Load
Line	(ft)	(lb/in)	N-S (lb)	E-W (lb)	Case 1 (lb)	Case 2 (lb)	Case 4 (lb)
1	0	778	1658	1195	1953	2708	2705
2	10	1374	2183	1573	4275	4844	4522
4	28	4309	2639	1902	15429	13551	11243
6	50	6615	3846	2771	23256	20326	16819
8	68	2416	3765	2713	9405	9877	8942
3	21	1139	1130	814	4650	4335	3713

LOWER Story E-W Moment Arms

Grid	G.L. Offset	G.L. Rigidity	G.L. Torsion	G.L. Torsion	Wind Load	Wind Load	Wind Load
Line	(ft)	(lb/in)	N-S (lb)	E-W (lb)	Case 1 (lb)	Case 2 (lb)	Case 4 (lb)
A	0	4444	5481	3950	1360	5131	6075
B	10	2380	1643	1184	5475	5339	4674
D	20	6744	998	719	16660	13243	10346
F	40	5240	4912	3540	15810	15542	13659
G	50	549	812	585	8235	6785	5423
H	58	0	0	0	1920	1440	1081
E	30	6074	2398	1728	360	2068	2526

Required Shearwall Types

SITE-BUILT SHEAR WALLS		Stag.	Shear Wall/ Bottom Plate	Joist/Blkg/ Rafter to Top Plates	Wood	Bottom	Concrete	Panel Edge	Sill	Seis Shear
Name	Sheathing/Nailing	Sides	Connection		Connection	Bottom	Connection	Framing	Plate	(plf)
A	3/8" PLYWOOD 8d @ 6"/121	No	SDS 1/4x6" @ 15"oLTP4 @ 30"	OLTP5 @ 30"	@ 28"5/8" Dia_x 12"	A.B.	@2x	STUDS2x		260
B	3/8" PLYWOOD 8d @ 4"/121	Yes	SDS 1/4x6" @ 11"oLTP4 @ 20"	OLTP5 @ 20"	@ 18"5/8" Dia_x 12"	A.B.	@3x	STUDS3x		380
C	3/8" PLYWOOD 8d @ 3"/121	Yes	SDS 1/4x6" @ 8"oLTP4 @ 16"	OLTP5 @ 16"	@ 14"5/8" Dia_x 12"	A.B.	@3x	STUDS3x		490
D	3/8" PLYWOOD 8d @ 2"/121	Yes	SDS 1/4x6" @ 6"oLTP4 @ 12"	OLTP5 @ 12"	@ 10"5/8" Dia_x 12"	A.B.	@3x	STUDS3x		640
E	3/8" STRUCT 1 8d @ 2"/11"	Yes	SDS 1/4x6" @ 5"oLTP4 @ 10"	OLTP5 @ 10"	@ 10"5/8" Dia_x 12"	A.B.	@3x	STUDS3x		730

Building Description:

General Notes:

Errors: