MaxQuake <u>Example Projects</u>

Example 1

South Jordan UT
Location: **Zip Code 84095**
Code: **O6 IBC**
Site Class: **B**
Occ Cat: **II**
Ss: **119%**
S1:   **48%**
T$_L$:   **8**
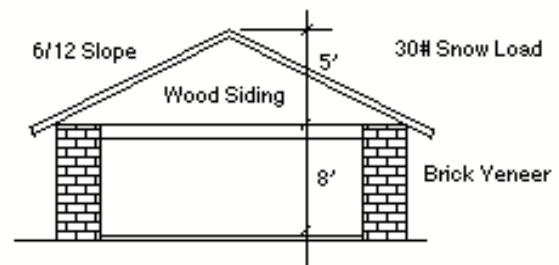**Wind Speed:**   **90**
Exposure: **B**
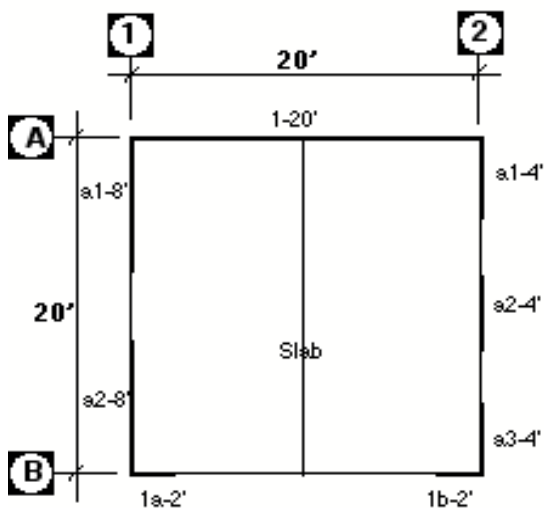
First Floor

Front Elevation

<u>**Look For Example pdf files in the MaxQuake Software Folder.**</u>
Open: Select Thumbnail Tab to see all the MaxQuake pages Change the display scale to show one page at a time. Print out to look more closely at project drawing and how Data is entered in MaxQuake and the values calculated.

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Lateral Load Analysis & Construction Design Software

Date:	February 27 2008	Firm:	Architect, Engineer or Builder
Job:	Example 1	By:	AAA

FLOOR PLAN AREAS & SHEAR WALL GRID SPACING
•Establish Grid Spacing and Floor Plan Configuration at Each Level•

TYPICAL DEAD LOADS
•Establish Dead Loads (lbs/sf)•

Wind Area Calc →

Grid columns: Left 1 2 3 4 5 6 7 8 Right

Shear Wall Spacing	20

Back

				Roof Block Area+OH	Floor Block Area	Perim Wall	Overall Width

A
- Roof 2
- 2nd Fl/Rf 1   20   R   560 ... Overall Width 20
- 1st Fl   1

B
- Roof 2   400   40   20   Roof at 2nd Fl 20
- 2nd Fl/Rf 1
- 1st Fl

C
- Roof 2
- 2nd Fl/Rf 1

D
- 1st Fl
- Roof 2
- 2nd Fl/Rf 1

E
- 1st Fl
- Roof 2

F
- 2nd Fl/Rf 1
- 1st Fl
- Roof 2

G
- 2nd Fl/Rf 1
- 1st Fl
- Roof 2

H
- 2nd Fl/Rf 1
- 1st Fl

Front

Dead Load values

Roof		Interior Wall	
Roofing	3	Gyp.Bd	6
Sheathing	1.5	Framing	4
Framing	2	Int. Finish	
Snow	7.5	Other	
L-R	**14**		**10**

FL wdth
Vt Rf Area
Zone E=

Ceiling		Exterior Wall	
Insulation	1		
Framing	0.5	Ext Finish	15
Gyp. Bd.	2	Shear	1.5
Other		Framing	3
	3.5	Insulation	
		Gyp. Bd.	

Typ OH   120
L to R   Zone G=
2

Hz Rf Area   280
Zone B=   OhZoneE

Floor		
Floor	4	Int .Finish
Sub. Fl.	2	Other
Framing	3.5	**19.5**
Insul	0.5	
Topping		1-1/2"=18psf
Other		
	10	

60   24
Zone D=   OhZoneG
40   16
Hz Wl Area
Zone A=
96
Zone C=
64

FLOOR HEIGHTS & WIND AREA
•Establish Floor to Floor and Roof Heights (ft)•

	Roof Pitch	Roof Height	Floor Height
	X/12		

N	L Plan w/ both Legs>
15% of Plan or Vert SW offset.Y?	

	Roof Pitch	Roof Height
Rf 2 Area + OH =	5	5

Roof 2

Typical Overhang F to B	2

Roof Block Area+OH				Zone B=	Zone D=	Vt Rf Area	FB Zone E=
Overall Depth		a=	3				

Oh Zone E=
2nd Fl Depth

2nd Fl / Roof 1   20   Dpth of Roof 2nd Fl

Roof Block Area+OH	560

FB Zone G=

Floor Block Area						Rf 1 Area + OH =	560

Fl to Fl Height   8

Perimeter Wall
Oh Zone G=   Floor 2 Area =

Overall Depth	20	a=	3	Zone B=	15	Zone D=		Wl 2 Perimeter =

1st Fl Dp - S if Zero   s

1st Floor   Dpth of Roof 1st Fl   Zone A=   Zone C=

FB Zone E=   120
Ave. Sill to Fl Ht

Floor Block Area	400					FB Zone G=	120

24
Floor 1 Area =   400   Wind Ht.@Ridge   13.00

Perimeter Wall	40					Oh Zone G=	Wl1 Perimeter =	80

Wind Ht.@Gable   10.50   Ridge   F to B   L to R

Overall Depth	20	a=	3	Zone A=	96	Zone C=	64	16

Mean Roof Ht.   10.50   Runs?   Y

Roof / 2nd Fl/Roof / 1st Floor / Base/ Crawl Sp / Slab/Foundation

ASCE7   a = less of 10%of least horiz dim or 40%of ht but not less than 4%of least horiz dim but at least 3 ft. Sec 6.2 Low-rise Building: ht < 60 ft. Rf ht < least horiz dim.   Hips?

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SEISMIC LOADS

•Establish Dead Loads•
Sec.12.7.2 ASCE7

Mat. Weights		2nd Floor		1st Floor		Base Level	
Item	DL(psf)	Area (sf)	DL(lbs)	Area(sf)	DL(lbs)	Area(sf)	DL(lbs)
Wt Roof	14			560	7,840		
Wt Ceil	3.5			400	1,400		
Wt Ext Wl	19.5			320	6,240		
Wt Int Wl	10						
Wt Floor	10						
		Sum 2nd		Sum 1st	15,480	Base	
interior wall default: 10 psf of floor area				Sum 2nd,1st & Base	15,480		

•Distribute Weights to Various Levels•

	Roof 2	2nd Fl	1st Fl	Wt
Tributary Weight	Line	Rf 1 Line	Line	Sum
Wt Roof 2nd				
Wt Ceil 2nd				
1/2Wt Ext Wl 2				
Wt Int Wl 2				
Wt Floor 2				
Wt Roof 1st		7,840		7,840
Wt Ceil 1		1,400		1,400
1/2 Wt Ext Wl 1		6,240		6,240
Wt Int Wl 1				
Wt Floor 1				
1/2Wt Ext Wl Base				
Wt Ceil Base				
Line Sum		15,480	W=	15,480

•Determine Base Shear•

06 IBC Calculation Method per 12.8 ASCE7 & Sec.1613.5 IBC

Site Class=	B	Sec.11.4.2 ASCE7	Mapped %g: Ss=	119	Sec.1613.5 (Fig.1-14 odd)
Occ. Cat.=	II	Tbl.1604.5 IBC	Mapped %g: S1=	48	Sec.1613.5 (Fig.1-14 even)
R=	5.5	Tbl.12-12.2-1 ASCE7	Mapped Period TL=	8	Fig.(22-20) ASCE7
Site Coef. Fa=	1.00	Tbl. 1613.5.3(1)	Seismic Design Cat.=	D	Sec.1613.5.6 IBC
Site Coef. Fy=	1.00	Tbl. 1613.5.3(2)	Seis Coef Cs=Sds/(R/I) =	0.145	Eq.(12.8-2) ASCE7
Importance Ie=	1.00	Tbl.11.5-1 ASCE7	Cs not >Sd1 /T(R/I) =	15.162	for T < = TL Eq.(12.8-3)
Sms=FaSs=	1.19	Eq.(16-37) IBC	Cs not >Sd1 TL / (R/I) T^2 =	NA	for T > TL Eq.(12.8-4)
Sm1=FyS1=	0.48	Eq.(16-38) IBC	Cs not < 0.01 =	0.010	Eq.(12.8-5) ASCE7
Sds=2/3Sms=	0.80	Eq.(16-39) IBC	Cs not < 0.5 S1/ (R/I) =	NA	for S1 => 0.6g Eq.(12.8-6)
Sd1=2/3Sm1=	0.32	Eq.(16-40) IBC	V (SD)= CsW =	2,244	Eq.(12.8-1) ASCE7
P limit Cu=	1.40	Tbl.12.8-1 ASCE7	**V= (SD)*0.7=V(ASD) =**	**1,571**	(ASD) Comb 5. ASCE7 12.4.1
Ta=Cth^n	0.12	Eq.(12.8-7) ASCE7	For Code Table references used by MaxQuake see Code Sections Cited or Appendix A (below)		

BUILDING CODE

	07 CBC	X	06 IBC

•Vertical Distribution of Shear to Various Levels•
Sec. 12.8.3 ASCE7

$F_x = V(W_{tx})(H_{tx})^k / Sum(W_{ti})(H_{ti})^k$ Eq.(12.8-11) Ht from plate to foundation $E_h = pQe$ Eq.(12.4-3)

k= 1 Eq.(12.8-12) ASCE7

	Wt x	Ht x^k	(Wt)(Ht)^k	Fx	p F to B	p L to R
Roof 2					1.30	1.30
2nd Fl/Rf 1	15,480	8	123,840	1,571	1.00	1.00
1st Floor						
Sum	15,480	8	123,840	1,571	Sec 12.3.4 ASCE7	

WIND LOADS   •Adjusted Wind Zone Loads•
Eq. (6-1) ASCE7 $Ps = \lambda K_{zt} I Ps30 =$

IBC Sec 6.4 Method 1 (Simplified Procedure) ASCE7 Figure 6-2 ASCE7 Roof 2 Ø Roof 1 Ø
for design of Main Wind-Force Resisting System

				Longit	Trans	Trans
Wind Speed Ps30=	90	Fig 1609 IBC or Fig 6-1 ASCE7	HZ Zone A	12.8	12.8	16.9
Occupancy Cat.=	II	Tbl.1604.5 IBC or Tbl.1-1 ASCE7	Zone B	12.8	10.0	10.0
Roughness Cat.=	B	Sec 6.5.6.2 ASCE7 or IBC1609.4.2	Zone C	10.0	10.0	11.8
Exposure Cat.=	B	Sec 6.5.6.3 ASCE7 or IBC1609.4.3	Zone D	10.0	10.0	10.0
Importance Iw=	1.00	Tbl. 6-1 ASCE7	VT Zone E	-15.4	-15.4	-12.6
Ht & Exp Coef λ=	1.00	Fig. 6-2 ASCE7	Zone G	-10.7	-10.7	-10.3
Topo Factor Kzt =	1.00	Eq.(6-3) Fig.6-4 ASCE7	Zone E oh	-21.6	-21.6	-17.3
Topo Type =	Flat		Zone G oh	-16.9	-16.9	-14.0

Escarpment Hill / Ridge

Topo Features = H=____ ft z=____ ft L=____ ft x=____

•Total Wind Load In Each Direction At Each Level (lbs)•

Horizontal	Trib Area F to B			Trib Area L to R			Wind Load	
	B,A area	D,C area	Sum PsA	B,A area	D,C area	Sum PsA	F to B	L to R
Roof 2								
Roof 1	15		192	60	40	1,000		
2nd Floor							1,126	2,189
1st Floor	96	64	1,869	96	64	2,378		
Vert Uplift	E,F,Eoh	G,H,Goh	Sum PsA	E,F,Eoh	G,H,Goh	Sum PsA	F to B	L to R
Roof 2					144			
Roof 1	144	136	-3,650	144	296	-5,040	3,650	5,040

GOVERNING LATERAL LOADS

•Maximum Total Load In Each Direction At Each Level (lbs)•
Wind %of Seismic

	Front to Back	Left to Right	F to B	L to R
Roof 2				
2nd Fl / Roof 1	1,571 Seismic	2,189 Wind	72%	139%
1st Floor				

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Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8

Segment (Seg) names a-g appear to show possible quadrants (q). Remove Segs not used. Move and add 1,2...to denote multiple (m) seg's in a quadrant, ie., b2.

Seg Variables; Lg: Seg lgth. Ht: Seg hght (from pg 1). X: Wl Opening. B: Bearing Wall? - B=yes. E: Ext./Int. Wall? - E or I. S: Stacked Seg above, same row, q-m & ≤ Lg.

2nd level — 1,2,3.. Wall Lines Run From Front to Back

Each line: Seg / Wall Variables (q-m Lg Ht X B E), with "sum" and "Syst" rows.

1st level

Line 1 — Seg Wall Variables (q-m Lg Ht X B E S)

q-m	Lg	Ht	X	B	E	S
a1	8	8		B	E	
a2	8	8		B	E	

sum 16.00   Syst WS

Line 2 — Seg Wall Variables (q-m Lg Ht X B E S)

q-m	Lg	Ht	X	B	E	S
a1	4	4	4	B	E	
a2	4	4	4	B	E	
a3	4	4		B	E	

sum 12.00   Syst W%

0.5 = max X ht / Wall ht"

Lines 3–8: Seg Wall Variables (q-m Lg Ht X B E S) with "sum" and "Syst" rows (no data entered).

Base level

All lines: Seg Wall Variables (q-m Lg Ht X B E S) with "sum" and "Syst" rows.

Seg Height/Length ratio is limited to 2:1 for wood edge blocked panel. "Ht/Lg >2 limit" appears if exceeded, per IBC/CBC Tbl.2305.3.4 and LA for Ht/Lg limits for other assemblies.

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| Line A | Line B | Line C | Line D | Line E | Line F | Line G | Line H |

Segment (Seg) names 1-7 appear to show possible quadrants (q). Remove Segs not used. Move and add a,b...to denote multiple (m) seg's in a quadrant, ie., 2b.

Seg Variables; Lg: Seg lgth. Ht: Seg hght (from pg 1). X: Wl Opening. B: Bearing Wall? - B=yes. E: Ext. /Int. Wall? - E or I. S: Stacked Seg above, same row, q-m & ≤ Lg.

2nd level

A,B,C.. Wall Lines Run From Side to Side

Line	Seg q-m	Lg	Ht	X	B	E
A						
B						
C						
D						
E						
F						
G						
H						

sum ... Syst (for each line)

1st level

Line	Seg q-m	Lg	Ht	X	B	E	S
A	1	20	8		N	E	
A sum		20.00			Syst	WS	
B	1a	2	8		N	E	
B	1b	2	8		N	E	
B sum		4.00			Syst	SW	
C							
D							
E							
F							
G							
H							

Base level

Line	Seg q-m	Lg	Ht	X	B	E	S
A							
B							
C							
D							
E							
F							
G							
H							

sum ... Syst (for each line)

Seg Ht/Lg ratio limit is 2:1 for wood edge blocked panel at v = Tbl. 2306.4.1, and Ht/Lg up to a 3.5:1 at v* 2w/h. "3.5 >Ht/Lg >2.0"appears if between, "Ht/Lg>3.5" if exceeded. See Tbl. 2305.3.4. for other mat.
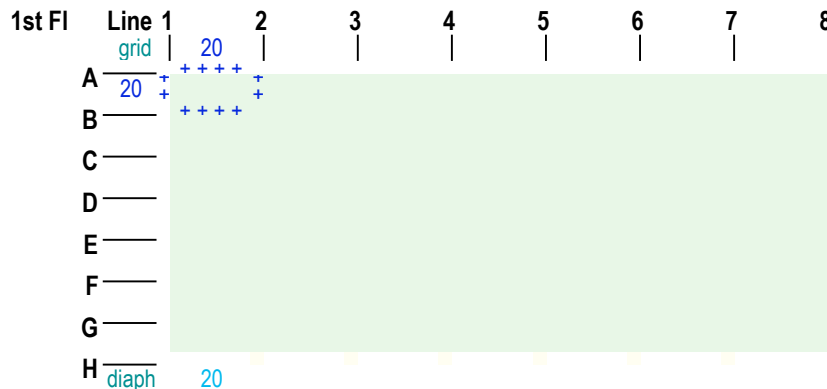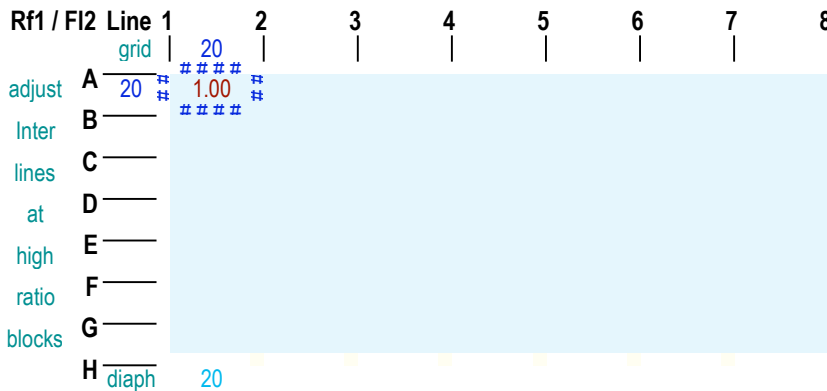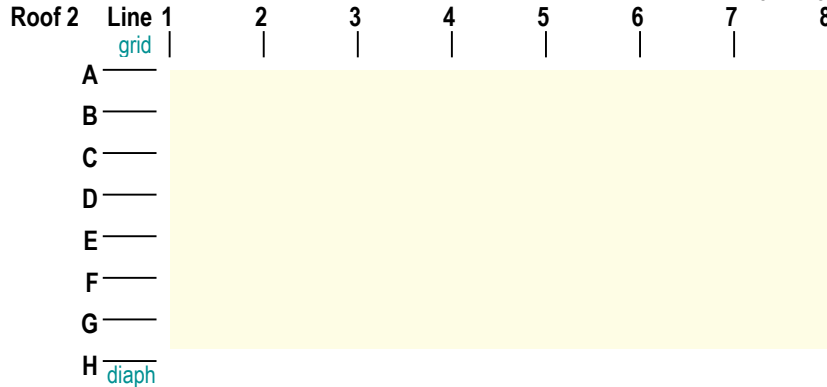
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DIAPHRAGM DIVISIONS AND LENGTH / WIDTH RATIOS

: # # : Shear Wall/Collector Line   + + + + + Perimeter of Cantilevered Diaphragm Edge

Roof 2 **Line 1**   2   3   4   5   6   7   8

grid

A
B
C
D
E
F
G
H diaph

Rf1 / Fl2 **Line 1**   2   3   4   5   6   7   8

grid   20

adjust   20   A   # # # #   # 1.00   #
Inter   B   # # # #   #
lines   C
at   D
high   E
ratio   F
blocks   G
H diaph   20

1st Fl **Line 1**   2   3   4   5   6   7   8

grid   20

A   20   + + + +   +
B   + + + +   +
C
D
E
F
G
H diaph   20

If Gap? Check Load Dist btwn Jogs in Bldg - Cant wings out from Bldg Shear Lines.

FLEXIBLE DIAPHRAGM LIMITATIONS   ASCE7 Sec 12.3.1 & Sec1613.6.1 **STORY DRIFT**

l/w Ratios <Tbl.2305.2.3,Cantilever d< 25' & 2/3 w, Topping<1-1/2" and Wl Drift <Tbl.12.12-1 **Actual   Limit**
Limitations: MaxTopping 1-1/2",Max Blocked Ratio 4.0, Unblocked 3.0, all Cantilevers Blocked Eq. 23-2   12.12-1

1   2   3   4   5   6   7   8 Drift Limit =0.02 ht.

A
B
C
D
E
F
G
H

Drift Limit=
Actual=

Diaph Flexible 1   2   3   4   5   6   7   8 Drift Limit =0.02 ht.   **Act Drift < Limit**

20   A Unblock   0.42 < 1.92
B   1.00 < 1.92
C
D
E
F
G
H   0.49   0.62
Drift Limit=   <   <
Actual=   1.92   1.92

1   2   3   4   5   6   7   8 Drift Limit =0.02 ht.   **Act Drift < Limit**

A
B
C
D
E
F
G
H
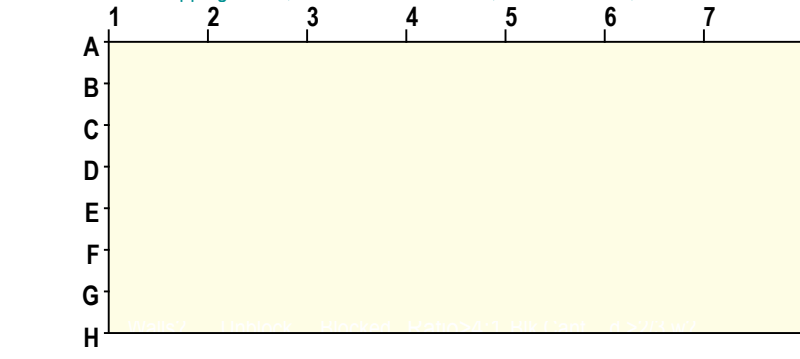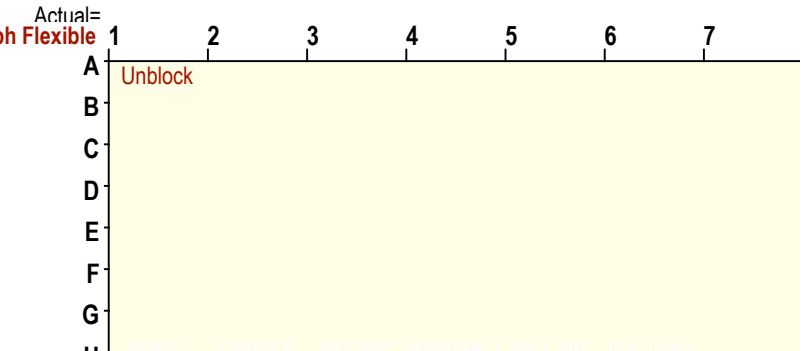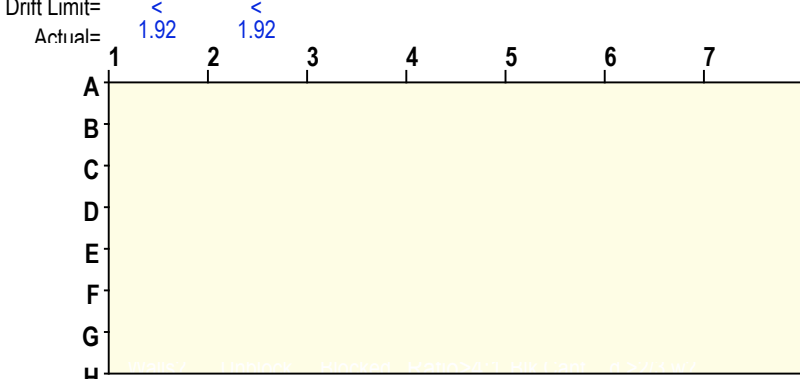
Drift Limit=
Actual=

Act Drift < Limit

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Front to Back	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8

Uplift = Overturning Moment (OTM) - Resisting Moment (RM) / Segment Length (Seg Lg).
Hold Down (HD Type) Built into Shear Units, Mfg Abreviation Shown at req'd Units, see Wall Type for Frame Size- HD for Sheathed Walls seclected from Hold-down Shd

2nd Level

	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type

| | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | |
| | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | |

Roof Uplift from Side to Side Winds resisted by Left and Right Ext. Walls   Uplift (plf) Rf 2 @ Ext WI   Uplift Detail @ Rf 2 & Ext WI   NA

1st Level

60% Full Ht WI

	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type
	a1		NA	a1		W%																		
	a2		NA	a2		W%																		
				a3		NA																		

| | V (plf) | | 36 | 0.83 | V (plf) | 48 | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | |
| | WIΔ | | 6 | | WIΔ | 6 | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | |

Roof Uplift from Side to Side Winds resisted by Left and Right Ext. Walls   Uplift (plf) Rf 1 @ Ext WI   65   Uplift Detail @ Rf 1 & Ext WI   Δ T
Straps/Hold-Downs must run continuous down through the Wall below to the Foundation. If no Wall below; tie to Beams, sized for Hold-Down Point Loads.

Base Level

	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type

| | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | | V (plf) | | |
| | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | | WIΔ | | |

Shear Each Unit (V (ea.)) = Sum of Shear at that Line & Level (Sum V) / Number of Shear Frames at that Line & Level - V (plf) = Sum V / Sum Seg Lgth.

Maximum required Shear Wall Construction or Shear Frame for Wall Type Symbol is selected from Shear Wall Schedule on Page 11.

| Date: | February 27 2008 | Firm: | Architect, Engineer or Builder |
| Job: | Project Name | By: | AAA |

Side to Side	Line A	Line B	Line C	Line D	Line E	Line F	Line G	Line H

Uplift = Overturning Moment (OTM) - Resisting Moment (RM) / Segment Length (Seg Lg).
Hold Down (HD Type) Built into Shear Units, Mfg Abreviation Shown at req'd Units, see Wall Type for Frame Size- HD for Sheathed Walls seclected from Hold-down Shd

2nd Level

	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type
	V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ	

Roof Uplift from Front to Back Winds resisted by Front and Back Ext. Walls   Uplift(plf) Rf 2 @ Ext WI   Uplift Detail @ Rf 2 & Ext WI   NA

1st Level

	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type
	1		NA	1a	2,052 Δ	SW																		
				1b	2,052 Δ	SW																		
	V (plf)	55		V (plf)	547		V (plf)			V (plf)			V (plf)			V (plf)			V (plf)			V (plf)		
	WIΔ	6	SW	WIΔ	24x8c		WIΔ			WIΔ			WIΔ			WIΔ			WIΔ			WIΔ		

Roof Uplift from Front to Back Winds resisted by Front and Back Ext. Walls   Uplift(plf) Rf 1 @ Ext WI   31   Uplift Detail @ Rf 1 & Ext WI   NA
Straps/Hold-Downs must run continuous down through the Wall below to the Foundation. If no Wall below; tie to Beams, sized for Hold-Down Point Loads.

Base Level

	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type	Seg	Uplift	HD Type
	V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ		V (plf)	WIΔ	

Shear Each Unit (V (ea.)) = Sum of Shear at that Line & Level (Sum V) / Number of Shear Frames at that Line & Level - V (plf) = Sum V / Sum Seg Lgth.
Maximum required Shear Wall Construction or Shear Frame for Wall Type Symbol is selected from Shear Wall Schedule on Page 11.

Shear Wall and Hold Down Schedules

Schd W

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Date:	February 27 2008
Job:	Project Name
Firm:	Architect, Engineer or Builder
By:	AAA

SHEAR WALL OPTIONS:

Place an "X" in the appropriate shaded block. Select only one option under each heading (except System when using frames)

Special Zone
- X No
- Los Angeles Area

Hardware Mfg.
- X Simpson
- USP
- Other (Apx.W)

Wall Framing Material
- X Doug Fir or So.Pine
- Hem Fir (s.grav.<.49)
- 3-1/2" Metal Studs
- Other (See Apx. W)

To Customize, Overwrite Sched. on Apx. W below

Shear Wall System
- X WS-All Plywd or PB
- WS-Gyp,Stuc or Ply
- Wall Frame Units on Shd X

Ply/PB Wall Sheathing
- X 3/8"or1/2" CC or CD Ply
- 3/8"or1/2" Struc I Ply
- 3/8"or1/2" CD Ply o/GB
- 1/2"Ext M,S/M-2 Prtcl Bd
- Other Sheathing/Fastener Combo (See Apx. W)

Fasteners
- X 8d
- 10d
- 14ga Staple
- 1"Screw in Stl

WIND AND EARTHQUAKE DATA   06 IBC

Importance Fact.	1.00	S.Design Cat.	D	Seis. Site Class	B
Basic Wind Speed	90	Ss Acc. %g	119%	S. Res Coef. Cs	0.14
Wind Exposure	B	S1 Acc. %g	48%	Response Factor	5.5
Wind Horiz. (psf)	16.909	Res Coef Sd1	0.32	Base V	1,571
Wind Vert. (psf)	-15.4	Res Coef Sds	0.80	System:	Light Frame SW
Sec 6.4 Method 1 ASCE7		Analysis Proc.	Method per 12.8 ASCE7 & Sec.1613.5 IBC		

WALL HOLD-DOWN & STRAP SCHEDULE

Hold-Down Symbol	Max. Uplift lbs.	Min. Post Size	Wall Fl to Fl Strap	Foundation Anchor Straps	Bolt Type HD	Bolt Dia.
			Note 3,4	Note 2	Note 2,4	Note 2
NA up to	300		use the hold-down across or below req'd type			
Δ H1a	920	2x	CS18-20"	PAHD42		
Δ H1b	1,750	2x	CS16-28"	STHD8	LTT20B	1/2"
Δ H2	3,235	2-2x	MST 37"	STHD14	PHD2	5/8"
Δ H5	4,685	2-2x	MST 48"		PHD5	5/8"
Δ H6	5,860	2-2x	MST 60"		PHD6	7/8"
Δ H8	6,490	2-2x	CMST14+136"		HDQ8	7/8"
Δ H10	9,235	4x	CMST12+136"		HDC10	7/8"
Δ H11	11,445	4x			HD14A	1"
Δ H15	15,305	6x6			HD15	1-1/4"
?	Add ___ inches to Fl to Fl Tie Strap for gap across Joist					

1 Straps and HD's as Mfg. by Simpson Strong-Tie Co. Cat C-2008
2 Nail Straps w/10d & SDS 1/4" Scw at HD (min.pen.1-3/4") SB Anchor
   and Mfg. Data for Nailing, Bolt and Embedment Requirements
3 If No Cont. Rim Joist Add Lgth Of Gap.10d at CS, 16d: CMST & MST
4 Straps and Hold-Downs must run continuous to Walls below;
   if no Wall below, tie to Beams, sized for Hold-Down Point Loads

SHEAR WALL SCHEDULE

	Wall Type Symbol	Shear Load (plf)	Wall Sheathing Material		Edge Nail 8d	Anchor Bolts 5/8"x12	Plate to Fl. Nail 16d	Lag 1/2"	Plate Clips A35
						GF:900	GF:120	GF:478	GF:450
			Note 1,2		Note 3	Note 6	Note 7	Note 6,8	Note 9,10
	NA	construct wall as spec'd per symbol or any below							
	Δ 6	260	1/2"	Ply	6"	40"oc	6"oc	22"oc	20"oc
2,4,5	Δ 4	380	1/2"	Ply	4"	27"oc	4"oc	15"oc	14"oc
2,4,5	Δ 3	490	1/2"	Ply	3"	21"oc		11"oc	11"oc
2,4,5	Δ 2	640	1/2"	Ply	2"	16"oc		9"oc	8"oc
2,4,5	Δ 44	760	ea side	1/2" Ply	4"	14"oc		7"oc	7"oc
2,4,5	Δ 33	980	ea side	1/2" Ply	3"	10"oc		6"oc	5"oc
2,4,5	Δ 22	1,280	ea side	1/2" Ply	2"	8"oc		4"oc	4"oc
	?								

1 Sheathing: 3/8"-1/2" (4 ply min) CD, CC Plyor OSB with all edges blocked
2 Framing: 2x DF typ @ 16"oc., 3x req'd if 10d w/ +1-5/8" penetration, 2" or 3"oc
3 Typical Fasteners: 8d Common or Galv. Box nails (no sinkers), nail field @12"
4 3x or 2x w/ dbl AB at plate and 3x panel edges at walls 600lbs>Shear >350lbs,
5 Offset panel edges on opposite sides of wall and stagger plate splices
6 Anchor Bolts spaced per Schd w/ 3"x3"x0.229" Plate Washers req'd at Mud Sill
7 Stagger 16d nails in 2x, lags at 3x plates when no sheathing continuity to Rim Joist
8 Pre-drill 3/8" hole for Lag. Provide Washer. Adjust lgth for 2" penetration into Joist.
9 Clips: Plate to Blocks only req'd if no shear sheathing continuity from Wall to Blocks
10 Anchors and Clips as Mfg. by Simpson Strong-Tie Co. Cat C-2008

Manufactured Shear Frame Schedules

Schd X

MaxQuake
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Q08.2h

Archforms Ltd.
Lateral Load Analysis &
Construction Design Software

| Date: | February 27 2008 | Firm: | Architect, Engineer or Builder |
| Job: | Project Name | By: | AAA |

(HF) HARDY FRAME SCHEDULE

ICBO No.1Jun03
PFC-5342

For IBC/CBC: ICC Report Table Values Multiplied by 0.88

Location	Type											
	W											

Frame Model Numbers and Unit Shear & Uplift Capacities (lbs)

	Ht.	8 ft	V	UL	9 ft	V	UL	10 ft	V	UL	11 ft	V	UL
2,3	2.7												
2,3	4.0												
2,3	5.3												
2,3	6.7												
Location	?		?			?			?				
	W	V	UL	9 ft	V	UL	10 ft	V	UL	11 ft	V	UL
	Ht.	8 ft											
2,3	2.7												
2,3	4.0												
2,3	5.3												
2,3	6.7												
	?		?			?			?				

(HP) HARDY PANEL SCHEDULE

For IBC/CBC: ICC Report Table Values Multiplied by 0.77

Location	Type
	W

Ht	7 ft	V	UL	8 ft	V	UL	9 ft	V	UL	10 ft	V	UL
4,5 1.5												
4,5 2.0												
4,5 2.0												
4,5 2.5												
4,5 2.5												
Location ?		?			?			?				
	7 ft	V	UL	8 ft	V	UL	9 ft	V	UL	10 ft	V	UL
4,5 1.5												
4,5 1.5												
4,5 1.5												
4,5 1.5												
4,5 1.5												
?		?			?			?				

1 Mfg. By Hardy Frames, Inc. 800 754-3030
2 Follow Mfg. literature for all Straps, Screws, Anchor Bolt & other installation req'ts.
3 Provide Mfg. post or Calculate Beam under free ends of frames if not stacked.
4 Install on Crushing Plate Extending 3" ea. Side of Panel at Wood Installations
5 Typical 7/8" Anchor Bolt h at Panels indicates 1-1/8" Anchor Bolts

(SW) STRONG-WALL SCHEDULE

ICC-ER 5485

Frame Model Numbers and Unit Shear & Uplift Capacities (lbs)

Note 5

	Ht.	7 ft	V	UL	8 ft	V	UL	9 ft	V	UL	10 ft	V	UL
	Width	5		8325			10790			10790			10790
4,6	1.3	16x7c	1,050										
4,6	1.5				18x8c	1,150		18x9c	1,080				
4,6	1.8	22x7c	1,315										
4,6	2.0				24x8c	1,610		24x9c	1,585		24x10c	1,590	
4,6	2.7				32x8c	2,865		32x9c	2,600		32x10c	2,460	
4,6	4.0				48x8c	4,545		48x9c	4,370		48x10c	4,095	
		?			?			?			?		
4,7	1.5				18x8r	735		18x9r	620				
4,7	2.0				24x8r	1,105		24x9r	960		24x10r	850	
4,7	2.7				32x8r	1,480		32x9r	1,420		32x10r	1,400	
4,7	4.0				48x8r	2,790		48x9r	2,395		48x10r	2,115	
		?			?			?			?		

1 Mfg. By Simpson Strong-Tie Co.   800 999-5099 www.strongtie.com
2 Follow Mfg. literature for all HD, Connector, Anchor Bolt & other installation req'ts.
3 Provide min. 4x4 DF No. 1 post or beam under free ends of frames if not stacked
4 All Strong-Wall listed are 3-1/2" thick, see Mfg. data for 5-1/2"units
5 7'Portal Units Pair Req'd w/ 4x12 DF No.1 Min. Hdr. Load Factor Calc. May be Req'd.
6 c Suffix for Units Based Directly on Concrete Footing or Slab, r for Raised Floor
7 Raised Floor Framing Min. DF No.1, Crush Plates Req'd, See Mfg. Req'ts

TJ) TRUS JOIST PANEL SCHEDULE

ICBO ES PFC-5929

Limited to Installation Directly on Concrete Footing or Slab

Frame Model Numbers and Unit Shear & Uplift Capacities (lbs)

	Ht.	7 ft	V	UL	8 ft	V	UL	9 ft	V	UL	10	V	UL
	Width		11000			11000			11000			11000	
3	1.3	16x7	1340										
3	1.8	22x7	2395										
	2				24x8	1980		24x9	1830				
	2.7				32x8	2905		32x9	2795		32x10	2615	
	4				48x8	4900		48x9	4600		48x10	4300	
		?			?			?			?		

1 Mfg. By Trus Joist - a Weyerhaeuser Business 800 628-3997 www.trusjoist.com
2 Follow Mfg. literature for all HD, Connector, Anchor Bolt & other installation req'ts.
3 Provide 1.5E TimberStrand LSL Portal Column at other end of Hdr if used single.