

SHEARWALL LOAD DISTRIBUTION - FLEXIBLE DIAPHRAGM ANALYSIS - SITE CLASS E
IBC 2006 SHEAR WALL CRITERIA
2295 FRANCISCO STREET, SAN FRANCISCO - SEISMIC RETROFIT

Wall Location: Gridline 5

Loading: EQ
 Loading Direction: N-S

1. Diaphragm and Shear Wall Dimensions along Plane of Assembled Walls

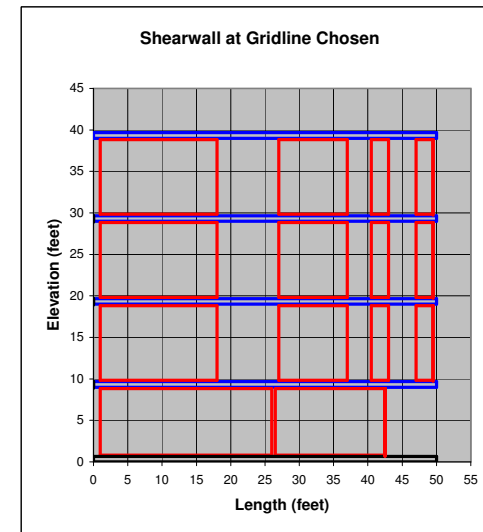
Level	Story Forces		Foundation			Diaphragm			Wall Segments										Summation of Segments					
	Strength Load (lbs)	Service Load (lbs)	Offset (feet)	Length (feet)	Edge (feet)	Offset (feet)	Length (feet)	Edge (feet)	Wall Levels	Wall Height (feet)	Wall 1 Offset* (feet)	Wall 1 Length (feet)	Wall 2 Offset (feet)	Wall 2 Length (feet)	Wall 3 Offset (feet)	Wall 3 Length (feet)	Wall 4 Offset (feet)	Wall 4 Length (feet)	Wall 5 Offset (feet)	Wall 5 Length (feet)	Wall Length (feet)	Floor Length (feet)	Tied to Foundation (feet)*	
R		6,234				0	50.00	50.00																
3		6,494	0	0	0.00	0	50.00	50.00	3 Level Tied *	10.00	1.00	17.00	9.00	10.00	3.50	2.50	4.00	2.50				32.00	50.00	0.00
2		4,255	0	0	0.00	0	50.00	50.00	2 Level Tied *	10.00	1.00	17.00	9.00	10.00	3.50	2.50	4.00	2.50				32.00	50.00	0.00
1		2,062	0	0.00	0.00	0.00	50.00	50.00	1 Level Tied *	10.00	1.00	17.00	9.00	10.00	3.50	2.50	4.00	2.50				32.00	50.00	0.00
OG	-		0	50.00	50.00		-		OG Level Tied *	9.00	1.00	25.00	0.50	16.00								41.00	50.00	41.00

- *Notes: 1. Wall segment offset defined from edge of diaphragm (Diaphragm offset).
 2. Marked automatically with an X if Wall segment is tied to foundation.
 3. After all data is complete, run macro w/ Ctrl - w to update spreadsheet.

2. Vertical Wall Distribution and Shear Wall Loads

Level	Story Force (lbs)	Total Shear (lbs)	Story Shear			Wall Length (feet)	Diaphragm Length (feet)	Wall Shear (lbs/ft)	Diaphragm Shear (lbs/ft)
			To Foundation (lbs)	To Walls (lbs)	Total Shear (lbs)				
R	6,234	6,234					50.00		125
3	6,494	12,728	0	6,234	6,234	32.00	50.00	195	130
2	4,255	16,983	0	12,728	12,728	32.00	50.00	398	85
1	2,062	19,045	0	16,983	16,983	32.00	50.00	531	41
OG		19,045	19,045	19,045	19,045	41.00	50.00	465	

- Notes: 1. Diaphragm connected to foundation transfers all load to shear walls; diaphragm connection to wall calculated separately (conservative).
 2. Load transferred to floor below is proportional to wall length over diaphragm/total wall length;

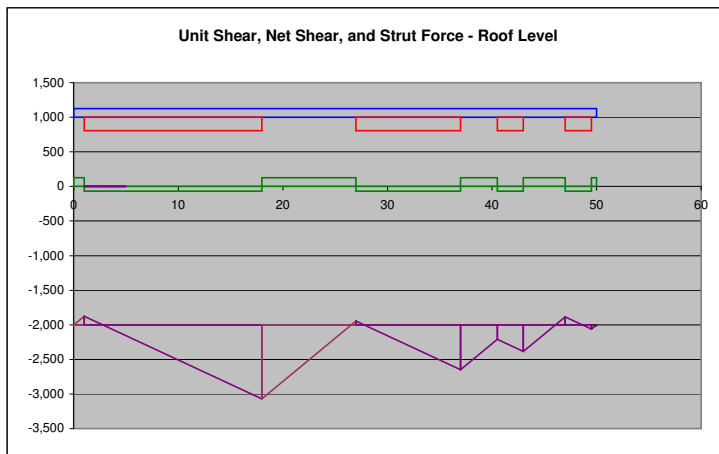


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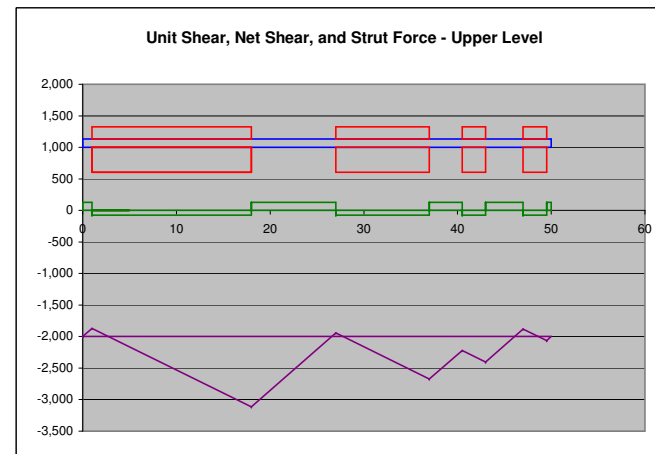
3. Plots of Unit and Net Shears and Strut Force at Wall Levels



R Level Demands:

$V_{sw} = 195$ lb/ft

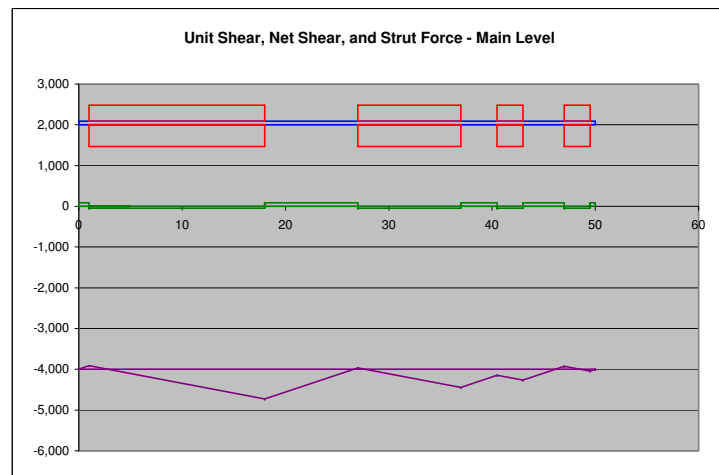
$F_{strut} = 1,068$ lbs



3 Level Demands:

$V_{sw} = 398$ lb/ft

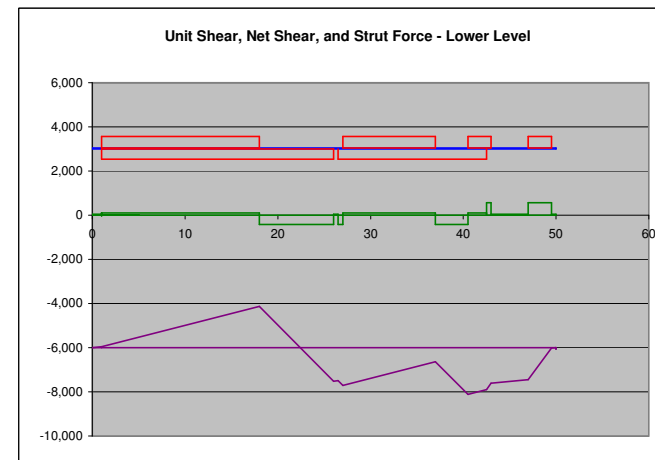
$F_{strut} = 1,112$ lbs



2 Level Demands:

$V_{sw} = 531$ lb/ft

$F_{strut} = 729$ lbs



1 Level Demands:

$V_{sw} = 465$ lb/ft

$F_{strut} = 2,116$ lbs