



A p p e n d i x I I I





Shear Wall Properties

Wall	Direction	L (ft)	W (ft)	H (ft)	A (ft ²)	I (in ⁴)	k (k/in)
Wall 1	N/S	96	0.833	9.3	79.968	1157811	1107
Wall 2	N/S	78	0.833	9.3	64.974	1157811	1098
Wall 3	N/S	52	0.833	9.3	43.316	1157811	1056
Wall 4	N/S	24	1	9.3	24	1389929	985
Wall 5	E/W	52	0.833	9.3	43.316	1157811	1056
Wall 6	E/W	78	0.833	9.3	64.974	1157811	1098
Wall 7	E/W	96	0.833	9.3	79.968	1157811	1107
Wall 8	E/W	24	1	9.3	24	1389929	985

Center of Rigidity

Wall	Direction	L (ft)	W (ft)	A (ft ²)	X	f'c (psi)	Ec (psi)
Wall 1	N/S	96	0.833	79.968	115	5000	420000
Wall 2	N/S	78	0.833	64.974	115	5000	420000
Wall 3	N/S	52	0.833	43.316	115	5000	420000
Wall 4	N/S	24	1	24	115	5000	420000
Wall 4	N/S	24	1	24	115	5000	420000
Wall 4	N/S	24	1	24	105	5000	420000



Wall 4	N/S	24	1	24	105	5000	420000
Wall 4	N/S	24	1	24	95	5000	420000
Wall 4	N/S	24	1	24	95	5000	420000

Wall	k (k/in)	%k	%k*L	di	kidi	kidi ²
Wall 1	1107	0.260716	25.02873	0	0	0
Wall 2	1098	0.258596	20.17051	0	0	0
Wall 3	1056	0.248705	12.93264	0	0	0
Wall 4	985	0.231983	5.567593	0	0	0
Wall 4	252	0.05935	1.424399	0	0	0
Wall 4	843	0.19854	4.764955	0	0	0
Wall 4	489	0.115167	2.764013	0	0	0
Wall 4	454	0.106924	2.56618	0	0	0
Wall 4	159	0.037447	0.898728	0	0	0

Wall	Direction	L (ft)	W (ft)	A (ft ²)	Y	f'c (psi)	Ec (psi)
Wall 5	E/W	52	0.833	43.316	54	5000	420000
Wall 6	E/W	78	0.833	64.974	22.5	5000	420000
Wall 7	E/W	96	0.833	79.968	16.5	5000	420000
Wall 8	E/W	24	1	24	1.5	5000	420000
Wall 8	E/W	24	1	24	-1.5	5000	420000
Wall 8	E/W	24	1	24	-11.5	5000	420000
Wall 8	E/W	24	1	24	-11.5	5000	420000
Wall 8	E/W	24	1	24	-20.5	5000	420000
Wall 8	E/W	24	1	24	-20.5	5000	420000

Wall	k (k/in)	%k	%k*L	di	kidi	kidi ²
Wall 5	1056	0.248705	12.93264	698.3627	737471	515022238



Wall 6	1098	0.258596	20.17051	453.8366	498312.5	226152442
Wall 7	1107	0.260716	25.02873	412.9741	457162.3	188796195
Wall 8	985	0.231983	5.567593	8.35139	8226.119	68699.522
Wall 8	233	0.054875	1.317004	-1.97551	-460.293	909.31171
Wall 8	1569	0.369524	8.868582	-101.989	-160020	16320258
Wall 8	455	0.10716	2.571832	-29.5761	-13457.1	398008.53
Wall 8	1165	0.274376	6.585021	-134.993	-157267	21229903
Wall 8	1612	0.379651	9.111634	-186.789	-301103	56242593

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Wall	Direction	L (ft)	W (ft)	H (ft)	A (ft ²)	f' _c (psi)	E _c (psi)	I (in ⁴)	k (k/in)	EI	%k
Wall 1	N/S	96	0.833	44.5	79.968	5000	420000	126843662	1107	5.327E+13	0.130358
Wall 2	N/S	78	0.833	44.5	64.974	5000	420000	126843662	1098	5.327E+13	0.1292982
Wall 3	N/S	52	0.833	44.5	43.316	5000	420000	126843662	1056	5.327E+13	0.1243523
Wall 4	N/S	24	1	44.5	24	5000	420000	152273304	985	6.395E+13	0.1159915
Wall 5	E/W	52	0.833	44.5	43.316	5000	420000	126843662	1056	5.327E+13	0.1243523
Wall 6	E/W	78	0.833	44.5	64.974	5000	420000	126843662	1098	5.327E+13	0.1292982
Wall 7	E/W	96	0.833	44.5	79.968	5000	420000	126843662	1107	5.327E+13	0.130358
Wall 8	E/W	24	1	44.5	24	5000	420000	152273304	985	6.395E+13	0.1159915

Stiffness Calculations