Robert M. Arnold Public Health Sciences Building
The Fred Hutchinson Cancer Research Center
Seattle, Washington

Technical Report 3

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EXECUTIVE SUMMARY

The Robert M. Arnold Public Health Sciences Building was constructed on the campus of the Fred Hutchinson Cancer Research Center (FHCRC). The Public Health Sciences Building houses four Programs: Epidemiology, Cancer Biology, Biostatistics & Mathematics, and Cancer Prevention. Both laboratories and offices occupy Arnold Building. The building height is five stories (60') above grade. The structure also extends three stories below ground. There is an entrance plaza, service road, and turnaround at the building entrance. These public spaces are supported by a portion of the submerged structure.

This report is an investigation into the main lateral force resisting system of Robert M. Arnold Building on the Fred Hutchinson Cancer Research Center's campus in Seattle, Washington. The site of the building exposes it to high lateral loads of both wind and seismic nature. The report discusses methods of both computer modeling and manual calculation of the applied forces, their distribution through the building, and the effect this causes on the main lateral force resisting system. It was noted on the structural drawings that the owner wanted the building's structural design to be above the minimum standards dictated by the building code. The investigation found forces comparable to those listed on the structural drawings. The findings also noted that the drift ratio of the building was well below serviceability limitations of the American Society of Civil Engineers minimum design loads for buildings.

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BACKGROUND INFORMATION

The Robert M. Arnold Building was designed and completed prior to the City of Seattle's adoption of the International Building Code (IBC). The applicable building code, when the building was designed, was the 1997 Uniform Building Code (UBC) as amended by the Department of Planning and Development. The design of concrete structures shall also be in accordance with standards set forth by the American Concrete Institution (ACI). The Seattle Building Code is comprised of the 1997 Uniform Building Code and the amendments made by the City of Seattle. The current building code in Seattle is now the IBC. These design requirements will also be examined. Further investigations, analyses, and designs will comply with the current code. It is therefore necessary to look at any differences between the design requirements set forth by design professionals, the UBC and the IBC.

The Uniform Building Code refers to the American Institute of Steel Construction (AISC) for design provisions of steel structures. Regarding concrete construction, the UBC has based its own provisions on the American Concrete Institute 318 but has not explicitly adopted the standard. Certain portions of the Uniform Building Code reference specific sections of the American Society of Civil Engineers (ASCE) 7. One specific example of this is wind design. The section of ASCE 7 on wind design is referenced. However the UBC specifies its own method for determining wind pressures.

The International Building Code refers to AISC's design provisions for steel construction. The IBC has also adopted ACI 318 for the design of concrete structures. ASCE 7 is referenced regarding the minimum load for buildings.

GRAVITY LOADS

Dead Loads

As specified by the Seattle Building Code, the dead loads are considered to be, "the weight of all materials and fixed equipment incorporated into the structure". Unlike the live loads, there is no table specified in the code. Where necessary, minimum design dead loads from ASCE 7 will be used.

FLOOR DEAD LOADS

Description		
Superimposed		
Mechanical & Electrical Allowance	5	lb/ft^2
Partition Load	20	lb/ft^2
Floor Finishes	2.5	lb/ft^2
Ceiling Finishes	2.5	lb/ft^2
Total	30	lb/ft^2
Non-Superimposed		
Concrete	150	lb/ft^3
Total	150	lb/ft^3
Composite Concrete Deck	50	lb/ft^2
Total	50	lb/ft^2

Table 3-1

Live Loads

Table 3-2 shows the live loads as obtained from the code and also those obtained from the structural drawings. Certain loads are not specified by the Seattle Building Code and do not fall into a broader category. The loads listed on the structural drawings in some areas differ from the code. For the purpose of analysis, the live loads determined by the design professionals will be used. The structural engineers had more information regarding building occupancy, building equipment, and building use. The office live load

takes into account the additional loads of filing systems. In accordance with the Seattle Building Code, reduction of live loads is permitted. However, the structural engineers have specified that there will be no live load reduction for the first level through the fourth level.

LIVE LOADS

Description	Uniform Load (lb/ft^2)		
	Uniform Building Code	Structural Drawings	International Building Code
Floor			
Offices	50	80	50
Levels 1—4 (Office)	50	75	50
Laboratories	-	100	60
Interstitial	-	25	-
Corridors	100	100	100
Parking	50	50	40
Sidewalks & Driveways	250	250	250
Roof			
Roof	25	25	20

Table 3-2

DESCRIPTION OF STRUCTURAL SYSTEM

Arnold Building is an interesting collage of structural systems. Different portions of this building employ different methods of supporting the necessary loads. The building itself consists of five stories above grade plus a mechanical "penthouse" on the roof, while also extending 3 stories below grade. The triangular transfer of load around the atrium provides an element of structural complexity unseen in rectilinear buildings. Arnold Building houses the Public Health Science Department of the Fred Hutchinson Cancer Research Center. FHCRC specified that the building be designed to a standard of structural integrity higher than that of the code.

Foundation

The foundation of the Public Health Sciences Building consists mainly of spread footings and wall footings. Where the foundation is required to resist lateral loads carried down by shear walls, the building uses deeper drilled piers. The average footing is about 12 square feet, however, sizes ranging from eight feet square to 28 feet by 24 feet. The depth ranges from 30 inches to 48 inches deep, but is typically around 40 inches deep.

Framing

The framing of Arnold Building is mainly composed of concrete structural elements; however, there are some portions of the building where steel has been used. Steel framing was used for the stairs and skylight in the atrium. A special stipulation was made by the structural engineers that the structure of the atrium be designed such that it would not cause any torsional load on the rest of the building. The columns on the fifth story are made of tube steel with typical size being TS 12x12x5/8. Steel was also employed in the design of the roof structure that houses the building's mechanical equipment. The typical steel column in this area is a TS 4x4x4 ¼. The irregularity of the steel roof structure lends itself to atypical beam and girder sizes. They range from W 10x12 to W 30x132. There also are a few steel columns in the main structure.

Almost all of the remaining portions of the structure are made of concrete. The columns are continuous cast in place reinforced concrete. The typical columns are 24 inches square and are on an average grid of 30 feet by 30 feet. The columns do not taper towards the top; however, the amount of reinforcement can vary. The shape of some columns varies. On certain floors, columns have a diameter of 24 inches instead of a width of 24 inches. Supporting Campus Drive, the turnaround, and the entrance plaza, under which the building extends, is an area of the building which uses cast in place reinforced concrete. The average beam is 24 inches wide by 30 inches deep.

Structural Slabs

The floor system of Arnold Building is mainly composed of two way post-tensioned concrete floor slabs. The slab in the basement is not post-tensioned but instead is made of fiber reinforced concrete. The portion of the building that is under the entrance plaza uses reinforced concrete slabs. The roof slab is composed of reinforced concrete. With the noted exceptions the typical floor system is a flat port-tensioned concrete slab with drop panels.

SEISMIC LOADING

Computer Modeling

The mass of building components plays a pivotal role when the site is subjected to seismic excitation. It is critical that these masses and their distribution throughout the building be determined accurately. In a structure as complex as the FHCRC's Public Health Sciences Building, manual calculation of mass properties becomes quite cumbersome.

A computer model in Bentley's RAM Structural System was generated for Arnold building. The model was used to determine the participating masses at each story. Some portions of structure that extend above the Upper Roof Level were lumped to the supporting roof level. These roof structures contain smaller braced frames that are discontinuous at the roof level. The roof level to which they were combined helps to distribute them to the main lateral force resisting system. If they were modeled as frame members in RAM they would not be supported by other frame members that would result in various errors and warnings in the program. The roof level below these members is assumed to act as a rigid diaphragm and to distribute the loads to the braced frames which are part of the main lateral force resisting system. The method for calculating the seismic load in RAM Structural System was the Equivalent Lateral Force Procedure per ASCE 7-02. While the atrium provides a large opening in the slabs of the main floor levels it is within the limit

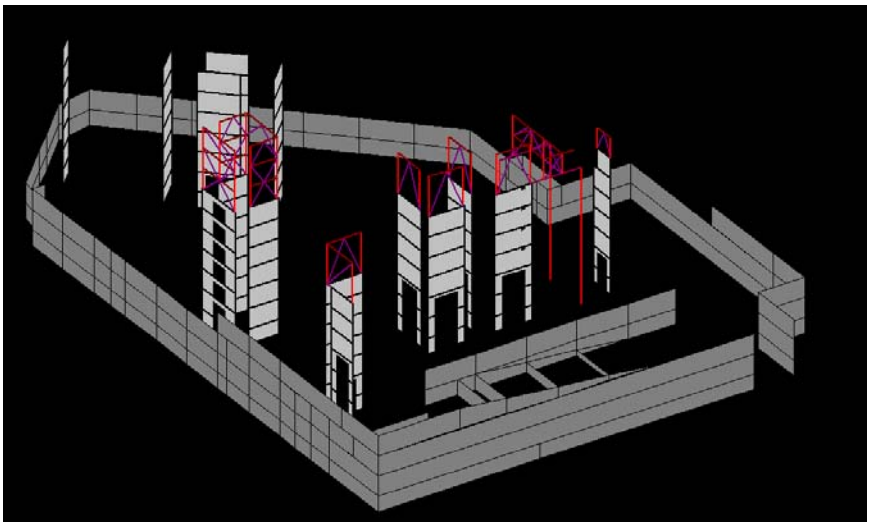


Figure 3-1

of 50% of the gross enclosed diaphragm area so that it does it does not constitute a Diaphragm Discontinuity Irregularity.

MANUAL VERIFICATION

Determination of Participating Mass

Manual methods of calculating weight and mass distribution were completed in order to verify the validity of the RAM model. The weights of the building components were first calculated. For steel members the linear weights as given in the AISC Steel Construction Manual were used. The linear nature of steel shapes simplifies locating the center of mass to locating the midpoint of the member. Steel construction constitutes only a small portion of the building, with the majority of Arnold Building being composed of concrete. The method for determining centers of mass for concrete elements was different. Having the structural plans drawn up in AutoCAD greatly simplified this task. The concrete structural elements of the building are mostly planar. Exploiting the planar geometry and Mass Properties command in AutoCAD concrete elements of the same depth and at the same elevation could be grouped together into regions; the area properties could be calculated. AutoCAD determines key properties such as area, location of the centroid, and moments of inertia. These areas could then be treated as plates. Using half of the story height for wall and column depths facilitates distributing the masses accurately by allowing half of the mass to be applied to the story below and half of the mass to be applied to the story above. Additional masses, such as exterior walls, elevator walls, and partition loads, were applied as either linear elements or area elements on the floor slab, similar to the application of mass dead loads in RAM and other computer modeling programs.

While determining the mass properties in AutoCAD of the various elements, the data was simultaneously entered into a Microsoft Access Database. The database allowed for the different elements of the building to be grouped according to story level. Querying the data allowed for the weighted coordinates of the center of mass for each story to be

determined, as well as the weight of the story. Additionally, an approximate mass moment of inertia could be determined for each story under the thin plate assumption.

Determination of Rigidities

Following the determination of masses and their distribution, rigidities of the main lateral force resisting system were determined. A simplified method of determining braced frame rigidities was used that only considers the contributions of the diagonal braces. The stiffness of these elements was calculated through another query in the Microsoft Access Database previously mentioned. Subsequently, the center of rigidity was calculated through a method of weighted coordinates.

The main portion of the lateral force resisting system is composed of shear walls. The rigidity for each shear wall was calculated at each floor level by applying a unit force at the top of the wall. The lateral deflection of the wall was determined based on shear and bending deformation of the wall. For shear walls with openings in them, initially the solid wall rigidity was determined. Subsequently the wall was then broken down into strips of pier and beam elements. The individual rigidities and deflections for these elements were determined and then built up to determine the overall rigidity of the wall. Calculations of each wall rigidity were carried out using Microsoft Excel spreadsheets. The variations of the amount of segments in each wall did not lend itself to the use of the database. Centers of rigidity for each story was determined by using weighted coordinates similar to the method used for the braced frames, however, this was carried out in spreadsheets. A few samples of the shear wall spreadsheet are included in the appendices, a complete set for all shear walls is available upon request. Also in the appendices is a summary of the rigidities for each level of each shear wall.

Seismic story forces were calculated using the Equivalent Lateral Force Procedure in accordance with ASCE-7. These calculations were completed using a spreadsheet which can be seen below. Through manual calculations the seismic base shear was determined to be 5938 kips, which is close to the 5980 kips listed on the structural drawings.

Level	Manual	RAM
LVL PH	230.59	127.20
LVL RF	502.34	559.17
LVL ML	157.75	329.40
LVL 5	1612.01	1645.95
LVL 4	1086.70	1196.06
LVL 3	836.15	849.37
LVL 2	635.32	635.94
LVL 1	585.45	445.89
LVL D	291.86	131.49
BASE SHEAR	5938.16	5920.47

Table 3-3

Wind Loading

The design wind pressures for Robert M. Arnold building were determined in accordance with Method 2, the analytical method, of ASCE-7. This method was used in both the RAM Structural System, and manually. The manual calculation wind pressure was completed in Microsoft Excel. The pressures were then entered into the database aforementioned and forces were distributed to individual stories. The difference between the computer model and manual calculation of wind forces is due to limitations of software. The RAM model yields conservative results because Level 1 is only fully exposed on the east side of Arnold building due to changes in site grading. For examining the wind loads effects on the lateral system the loads determined in RAM will be used.

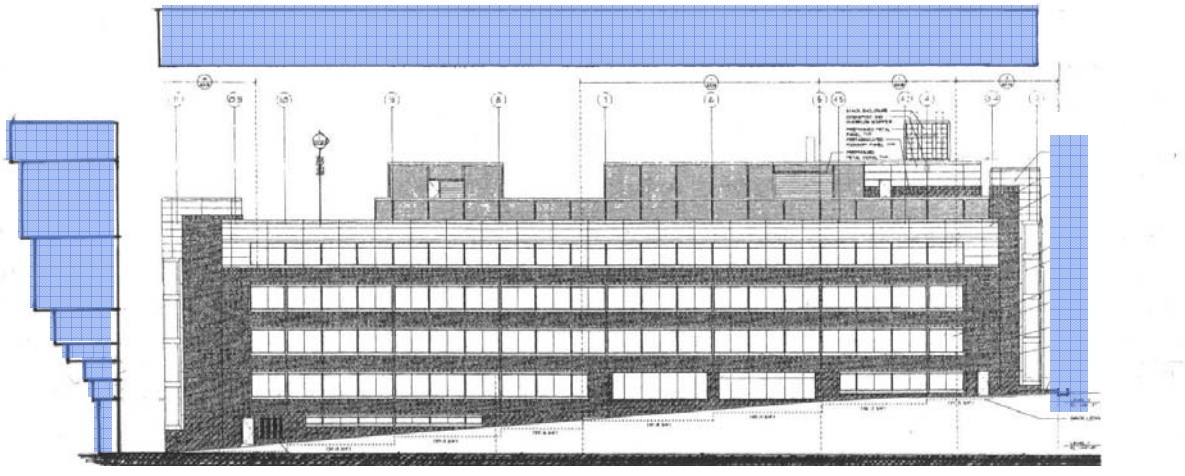


Figure 3-2

Distribution of Lateral Loads

The distribution of lateral story forces was based upon the relative rigidities of lateral force resisting elements. Both direct shear and torsional shear were distributed to the lateral members. Torsional shear was distributed based upon relative torsional rigidities. The appendices contain spreadsheets that calculate both the relative rigidities and the torsional rigidities/ torsional moment of inertia. In the appendices may be found the distribution of story shears to individual shear walls.

The lateral drift of Arnold Building was examined using the load cases generated in RAM structural system. The applied wind loads produced almost no drift at all. Seismic loads produced slightly higher story drifts but still were well within the 0.015 ratio provided by ASCE-7.

The shear walls of Robert M. Arnold Building typical call for 6000 psi concrete. In some locations it is noted on the shear wall elevations that an 8000 psi concrete mix is to be used for the lower stories. This is typically where the shear wall has an opening on the parking garage levels. All the shear walls have boundary elements and in some locations a special boundary element is required. These special boundary zones are discontinued at the slab of Level 3. Reinforcement in the special boundary zones is so extremely dense; mechanical couplers were required in order to reach full development without exceeding the maximum reinforcement ratio.

CONCLUSIONS

Using both a computer modeling program and hand calculations the seismic base shear of Arnold building was verified. Concerning lateral loads seismic loading seemed to be the controlling factor. The concrete construction of Arnold Building provides a significant amount of mass to participate in seismic events. The higher strength of the concrete in the shear combined, with the reinforcement of boundary elements and the use mechanical

couplers together have significant implications on construction costs. The investigation into the lateral system of Arnold building shows that the lateral force resisting system is more than sufficient for the applied loads.

Appendix 1

Mass Summary

Level	Mass		Center of Mass		
			X	Y	Z
RF	547284		2607.69	2440.21	1249.28
UR	1380877		2572.75	2388.12	1121.77
LR	473049		2342.54	2034.85	1133.82
5	11566790		2281.66	1841.52	989.465
4	9715412		2253.39	1697.29	843.019
3	9712842		2253.28	1695.92	698.537
2	10199604		2223.6	1609.33	551.069
1	14358423		1981.94	2039.24	392.458
P	13242807		2013.23	1965.16	248.292

Appendix 2

Equivalent Lateral Force Procedure

Equivalent Lateral Force Procedure

Site Class - B T_L = 6

Ss = 1.25 Fa = 1.0

S1 = 0.50 Fv = 1.0

Sms = 1.25 SDS = 0.833

Sm1 = 0.50 SD1 = 0.333

Importance Factor

I = 1.0

Response Modification Factor [Table 12-2-1]

R = 6

Seismic Response Coefficient

Cs = 0.08068336

Fundamental Period

h_n = 112

Ct = 0.02

x = 0.75

Ta = 0.689

k = 1.377

Level		wi		h			h_x	$w_i h_i^k$	C_{vx}	Fx	Vx	Mx
LVL PH	547284	1095	112	ft	0.5	in	112.04	726934.80	0.038832	230.59	231	2613.33778
LVL RF	1380877	2762	100	ft	8.5	in	100.71	1583643.10	0.084596	502.34	733	8555.04163
LVL ML	473049	946	94	ft	6.5	in	94.54	497298.25	0.026565	157.75	891	29955.5633
LVL 5	11566790	11567	83	ft	0.0	in	83.00	5081876.88	0.271466	1612.01	2503	83327.3404
LVL 4	9715412	9715	70	ft	9.0	in	70.75	3425836.38	0.183003	1086.70	3589	180669.04
LVL 3	9712842	9713	58	ft	6.0	in	58.50	2635977.28	0.140810	836.15	4426	332223.496
LVL 2	10199604	10200	46	ft	3.0	in	46.25	2002862.16	0.106990	635.32	5061	545773.396
LVL 1	14358423	14358	34	ft	0.0	in	34.00	1845633.05	0.098591	585.45	5646	828490.47
LVL D	13242807	13243	21	ft	9.0	in	21.75	920087.76	0.049150	291.86	5938	1183949.98
		0	9	ft	6.0	in	9.50	0.00	0.000000	0.00	5938	1498547.32
		0	0	ft	6.0	in	0.50	0.00	0.000000	0.00	5938	1518994.03
		73598										

Seismic Base Shear

V = 5938 kip

(NORTH Wind) Fred Hutchinson Cancer Research Center Wind Loading

International Building Code Loading Calculations
According to the methods specified in ASCE-07
Buildings of all Heights
p = qGCp - qh(Gcpi)
q: qz for windward wall at height z above ground
qh for leeward wall, side walls and roof a mean roof height
G: given in 6.6.1
Cp given in Fig. 6-3
GCpi given in Table 6-4

L =	382	(parrallel to wind)
V =	130	mph
h_{mean} =	70.31	
B =	243	(perpendicular to wind)
Roof Type:	Flat	
Roof Angle θ:	0	
Wind Direction:	90	(relative roof ridge)

Applicable Variables & Symbols [as defined my ASCE-07]

V	*basic wind speed*
K_d	*wind directionality factor*
I	*importance factor*
Kz	*velocity pressure exposure coefficient at height z = h*
Kh	*velocity pressure exposure coefficient at height z*
G	*gust effect factor*
GCpi	*internal pressure coefficient*

H	*Height of hill or escarpment relative to the upwind terrain, in feet*
L_h	*Distance upwind of crest to where the difference in ground elevation is half the height of the hill or escarpment, in feet*
K_1	*Factor to account for shape of topographic feature and maximum speed-up effect*
K_2	*Factor to account for reduction in speed-up with a distance upwind or downwind of crest*
K_3	*Factor to account for reduction in speed-up with height above local terrain*
x	*Distance (upwind/downwind) from the crest to the building site, in feet*
z	*Height above local ground level, in feet*
μ	*Horizontal attenuation factor*
γ	*Height attenuation factor*

Enclosure Classification: GC_{pi} = +0.18/-0.18

- ☐ *Open Buildings*
- ☐ *Partially Enclosed Buildings*
- ☉ *Enclosed Buildings*

Wind Directionality: K_d = 0.85

ONLY use wind directionality coefficient when the load combinations from ASCE 7-05 Section 2.3-2.4 used.

STRUCTURE TYPE

Buildings

- ☉ *Main Wind Force Resisting System*
- ☐ *Components & Cladding*
- ☐ *Arched Roofs*

Chimneys, Tanks, and SImilar Structures

- ☐ *Square*
- ☐ *Hexagonal*
- ☐ *Round*
- ☐ *Solid Signs*
- ☐ *Open Signs & Lattice Framework*

Trussed Towers

- ☐ *Triangular, square, rectangular*
- ☐ *All other cross sections*

Surface Roughness Category: C

- ☐ *Urban & suburban areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.*
- ☉ *Open terrain with scattered obstructions having heights generally less than 30 ft (9.1 m). This category includes flat open country, grasslands, and all water surfaces in hurricane prone regions.*
- ☐ *Flat, unobstructed areas and water surfaces outside hurricane prone regions. This category includes smooth mud flats, salt flats, and unbroken ice.*

Building Exposure Category: C

Surface Roughness is Constant in upwind direction?

☉ yes ☐ no

Neither Exposure B nor Exposure D apply

☉ true ☐ false

- ☐ The hill, ridge, or escarpment is isolated and unobstructed upwind by other similar topographic features of comparable height for 100 times the height of the topographic feature (100H) or 2 mi (3.22 km), whichever is less. This distance shall be measured horizontally from the point at which the height H of the hill, ridge, or escarpment is determined.
- ☐ The hill, ridge, or escarpment protrudes above the height of upwind terrain features within a 2-mi (3.22 km) radius in any quadrant by a factor of two or more.
- ☐ The structure is located as shown in Fig. 6-4 in the upper one-half of a hill or ridge or near the crest of an escarpment.
- ☐ H/Lh ≥ 0.2.
- ☐ H is greater than or equal to 15 ft (4.5 m) for Exposures C and D and 60 ft (18 m) for Exposure B.

Importance Factor: *I =* 1

Hurricane prone region? 1

☑ yes ☐ no

Occupancy Category? 2

☐ I ☑ II ☐ III ☐ IV

Velocity Pressure Exposure Coefficients, K_h & K_z

☐ *Components & Cladding*

☑ *Main Wind Force Resisting System*

Low rise building designed using ASCE 7 Figure 6-10? ☐ yes ☑ no

Case 2

K_z or K_h= 0.85

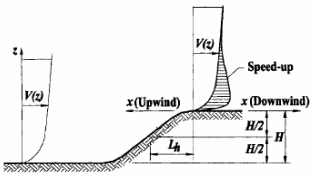
z	
h_{mean}	1.175157214
0	0.848884152
15	0.848884152
25	0.945264669
26.15	0.954257011
30	0.982252543
33	1.0021608
40	1.043580736
43	1.059591247
50	1.093775426
60	1.136574473
62	1.144447526
63	1.14830909
64	1.152122562
70	1.174064506
72.9	1.184141031
80	1.207537953
90	1.237854904
91.9	1.243311204
93.9	1.248959298
100	1.2656187

Gust Effect Factor

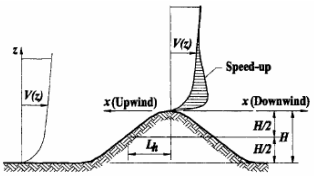
G = *0.8867244*

Velocity Pressure (at height z)

$q_z = 0.00256 K_z K_{zt} K_d V^2 I$



ESCARPMENT



2-D RIDGE OR 3-D AXISYMMETRICAL HILL

Topographical Data: K_{zt} = 1.00

Type of topography: Escarp

☑ Escarpment ☐ 2-D Ridge ☐ 3-D Axisymmetrical Hill

Crest Location: Upwind

H = 0 **x =** 0

L_h = 0 **z =** 0

K_1 = #VALUE! K_2 = #VALUE! K_3 = #VALUE!

External Pressure Coefficients

Walls

Windward	0.8
Leeward	-0.5
Side	-0.7

Roof

Perpendicular

Windward		N/A
Leeward		N/A

Parallel

0 to h/2	-0.9	-0.18
h/2 to h	-0.9	-0.18
h to 2h	-0.5	-0.18
>2h	-0.3	-0.18

Design Wind Pressure

p = q GCp-qi(GCpi)

Negative Internal pressure

z	q				Leeward-Side-Roof							
h_{mean}	43.2157014	Windward	Leeward	Side	0 to h/2		h/2 to h		h to 2h		>2h	
0	31.2172054	29.92	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
15	31.2172054	29.92	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
25	34.761541	32.44	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
26.15	35.092229	32.67	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
30	36.1217479	33.40	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
33	36.8538621	33.92	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
40	38.3770554	35.00	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
43	38.9658323	35.42	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
50	40.222935	36.31	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
60	41.7968443	37.43	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
62	42.0863711	37.63	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
63	42.2283778	37.73	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
64	42.3686159	37.83	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
70	43.1755178	38.41	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
72.9	43.5460759	38.67	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
80	44.4064837	39.28	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
90	45.5213714	40.07	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
91.9	45.7220235	40.21	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
93.9	45.9297288	40.36	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
100	46.5423699	40.80	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80

Positive Internal Pressure

z				Leeward-Side-Roof							
h_{mean}	Windward	Leeward	Side	0 to h/2		h/2 to h		h to 2h		>2h	
0	-32.69	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
15	-32.69	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
25	-35.52	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
26.15	-35.78	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
30	-36.61	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
33	-37.19	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
40	-38.41	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
43	-38.88	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
50	-39.88	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
60	-41.13	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
62	-41.37	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
63	-41.48	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
64	-41.59	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
70	-42.24	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
72.9	-42.53	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
80	-43.22	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
90	-44.11	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
91.9	-44.27	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
93.9	-44.43	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
100	-44.92	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76

Technical Report 3

APPENDIX 3

NORTH WIND

(West Wind) Fred Hutchinson Cancer Research Center Wind Loading

International Building Code Loading Calculations
According to the methods specified in ASCE-07
Buildings of all Heights
p = qGCp - qh(Gcpi)
q: qz for windward wall at height z above ground
qh for leeward wall, side walls and roof a mean roof height
G: given in 6.6.1
Cp given in Fig. 6-3
GCpi given in Table 6-4

L =	382	(parrallel to wind)
V =	130	mph
h_{mean} =	70.31	
B =	243	(perpendicular to wind)
Roof Type:	Flat	
Roof Angle θ:	0	
Wind Direction:	90	(relative roof ridge)

Applicable Variables & Symbols [as defined my ASCE-07]

V	*basic wind speed*
K_d	*wind directionality factor*
I	*importance factor*
Kz	*velocity pressure exposure coefficient at height z = h*
Kh	*velocity pressure exposure coefficient at height z*
G	*gust effect factor*
GCpi	*internal pressure coefficient*

H	*Height of hill or escarpment relative to the upwind terrain, in feet*
L_h	*Distance upwind of crest to where the difference in ground elevation is half the height of the hill or escarpment, in feet*
K_1	*Factor to account for shape of topographic feature and maximum speed-up effect*
K_2	*Factor to account for reduction in speed-up with a distance upwind or downwind of crest*
K_3	*Factor to account for reduction in speed-up with height above local terrain*
x	*Distance (upwind/downwind) from the crest to the building site, in feet*
z	*Height above local ground level, in feet*
μ	*Horizontal attenuation factor*
γ	*Height attenuation factor*

Enclosure Classification: GC_{pi} = +0.18/-0.18

- ☐ *Open Buildings*
- ☐ *Partially Enclosed Buildings*
- ☒ *Enclosed Buildings*

Wind Directionality: K_d = 0.85

ONLY use wind directionality coefficient when the load combinations from ASCE 7-05 Section 2.3-2.4 used.

STRUCTURE TYPE

Buildings

- ☒ *Main Wind Force Resisting System*
- ☐ *Components & Cladding*

- ☐ *Arched Roofs*

Chimneys, Tanks, and SImilar Structures

- ☐ *Square*
- ☐ *Hexagonal*
- ☐ *Round*

- ☐ *Solid Signs*

- ☐ *Open Signs & Lattice Framework*

Trussed Towers

- ☐ *Triangular, square, rectangular*
- ☐ *All other cross sections*

Surface Roughness Category: C

- ☐ *Urban & suburban areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.*
- ☒ *Open terrain with scattered obstructions having heights generally less than 30 ft (9.1 m). This category includes flat open country, grasslands, and all water surfaces in hurricane prone regions.*
- ☐ *Flat, unobstructed areas and water surfaces outside hurricane prone regions. This category includes smooth mud flats, salt flats, and unbroken ice.*

Building Exposure Category: C

Surface Roughness is Constant in upwind direction?
☒ yes ☐ no

Neither Exposure B nor Exposure D apply
☒ true ☐ false

- ☐ The hill, ridge, or escarpment is isolated and unobstructed upwind by other simil topographic features of comparable height for 100 times the height of the topographic feature (100H) or 2 mi (3.22 km), whichever is less. This distance shall be measured horizontally from the point at which the height H of the hill, ridge, or escarpment is determined.
- ☐ The hill, ridge, or escarpment protrudes above the height of upwind terrain features within a 2-mi (3.22 km) radius in any quadrant by a factor of two or more.
- ☐ The structure is located as shown in Fig. 6-4 in the upper one-half of a hill or ridge or near the crest of an escarpment.
- ☐ H/Lh ≥ 0.2.
- ☐ H is greater than or equal to 15 ft (4.5 m) for Exposures C and D and 60 ft (18 m for Exposure B.

Importance Factor: *I =* *1*

Hurricane prone region? 1

☑ yes ☐ no

Occupancy Category? 2

☐ I ☑ II ☐ III ☐ IV

Velocity Pressure Exposure Coefficients, K_h & K_z

☐ *Components & Cladding*

☑ *Main Wind Force Resisting System*

Low rise building designed using ASCE 7 Figure 6-10? ☐ yes ☑ no

Case 2

K_z or K_h= 0.85

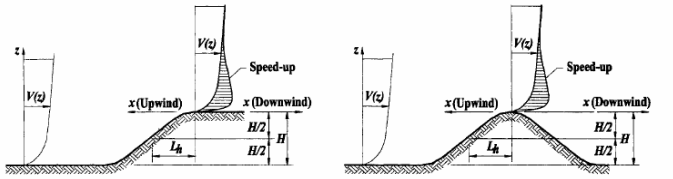
z	
h_{mean}	1.175157214
0	0.848884152
15	0.848884152
25	0.945264669
26.15	0.954257011
30	0.982252543
33	1.0021608
40	1.043580736
43	1.059591247
50	1.093775426
60	1.136574473
62	1.144447526
63	1.14830909
64	1.152122562
70	1.174064506
72.9	1.184141031
80	1.207537953
90	1.237854904
91.9	1.243311204
93.9	1.248959298
100	1.2656187

Gust Effect Factor

G = *0.8867244*

Velocity Pressure (at height z)

$q_z = 0.00256K_zK_{zt}K_dV^2I$



ESCARPMENT **2-D RIDGE OR 3-D AXISYMMETRICAL HILL**

Topographical Data: K_{zt} = 1.00

Type of topography: *Escarp*

☑ Escarpment ☐ 2-D Ridge ☐ 3-D Axisymmetrical Hill

Crest Location: *Upwind*

H = 0 **x =** 0

L_h = 0 **z =** 0

K_1 = #VALUE! K_2 = #VALUE! K_3 = #VALUE!

External Pressure Coefficients

Walls

Windward	0.8
Leeward	-0.5
Side	-0.7

Roof

Perpendicular

Windward	N/A
Leeward	N/A

Parallel

0 to h/2	-0.9	-0.18
h/2 to h	-0.9	-0.18
h to 2h	-0.5	-0.18
>2h	-0.3	-0.18

Design Wind Pressure

p = q GCp-qi(GCpi)

Negative Internal pressure

z	q				Leeward-Side-Roof							
h_{mean}	43.2157014	Windward	Leeward	Side	0 to h/2		h/2 to h		h to 2h		>2h	
0	31.2172054	**29.92**	**-11.38**	**38.44**	**-26.71**	**0.88**	**-26.71**	**0.88**	**-11.38**	**0.88**	**-3.72**	**2.80**
15	31.2172054	**29.92**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
25	34.761541	**32.44**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
26.15	35.092229	**32.67**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
30	36.1217479	**33.40**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
33	36.8538621	**33.92**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
40	38.3770554	**35.00**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
43	38.9658323	**35.42**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
50	40.222935	**36.31**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
60	41.7968443	**37.43**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
62	42.0863711	**37.63**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
63	42.2283778	**37.73**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
64	42.3686159	**37.83**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
70	43.1755178	**38.41**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
72.9	43.5460759	**38.67**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
80	44.4064837	**39.28**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
90	45.5213714	**40.07**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
91.9	45.7220235	**40.21**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
93.9	45.9297288	**40.36**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
100	46.5423699	**40.80**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80

Positive Internal Pressure

z				Leeward-Side-Roof							
h_{mean}	Windward	Leeward	Side	0 to h/2		h/2 to h		h to 2h		>2h	
0	**-32.69**	**-26.94**	**22.88**	**-42.27**	**-14.68**	**-42.27**	**-14.68**	**-26.94**	**-14.68**	**-19.27**	**-12.76**
15	**-32.69**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
25	**-35.52**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
26.15	**-35.78**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
30	**-36.61**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
33	**-37.19**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
40	**-38.41**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
43	**-38.88**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
50	**-39.88**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
60	**-41.13**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
62	**-41.37**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
63	**-41.48**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
64	**-41.59**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
70	**-42.24**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
72.9	**-42.53**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
80	**-43.22**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
90	**-44.11**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
91.9	**-44.27**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
93.9	**-44.43**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
100	**-44.92**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76

Technical Report 3

APPENDIX 3

West Wind

(East Wind) Fred Hutchinson Cancer Research Center Wind Loading

International Building Code Loading Calculations
According to the methods specified in ASCE-07
Buildings of all Heights
p = qGCp - qh(Gcpi)
q: qz for windward wall at height z above ground
qh for leeward wall, side walls and roof a mean roof height
G: given in 6.6.1
Cp given in Fig. 6-3
GCpi given in Table 6-4

L =	382	(parrallel to wind)
V =	130	mph
h_{mean} =	70.31	
B =	243	(perpendicular to wind)
Roof Type:	Flat	
Roof Angle θ:	0	
Wind Direction:	90	(relative roof ridge)

Applicable Variables & Symbols [as defined my ASCE-07]

V	*basic wind speed*
K_d	*wind directionality factor*
I	*importance factor*
Kz	*velocity pressure exposure coefficient at height z = h*
Kh	*velocity pressure exposure coefficient at height z*
G	*gust effect factor*
GCpi	*internal pressure coefficient*

H	*Height of hill or escarpment relative to the upwind terrain, in feet*
L_h	*Distance upwind of crest to where the difference in ground elevation is half the height of the hill or escarpment, in feet*
K_1	*Factor to account for shape of topographic feature and maximum speed-up effect*
K_2	*Factor to account for reduction in speed-up with a distance upwind or downwind of crest*
K_3	*Factor to account for reduction in speed-up with height above local terrain*
x	*Distance (upwind/downwind) from the crest to the building site, in feet*
z	*Height above local ground level, in feet*
μ	*Horizontal attenuation factor*
γ	*Height attenuation factor*

Enclosure Classification: GC_{pi} = +0.18/-0.18

- ☐ *Open Buildings*
- ☐ *Partially Enclosed Buildings*
- ☒ *Enclosed Buildings*

Wind Directionality: K_d = 0.85

ONLY use wind directionality coefficient when the load combinations from ASCE 7-05 Section 2.3-2.4 used.

STRUCTURE TYPE

Buildings

- ☒ *Main Wind Force Resisting System*
- ☐ *Components & Cladding*

- ☐ *Arched Roofs*

Chimneys, Tanks, and SImilar Structures

- ☐ *Square*
- ☐ *Hexagonal*
- ☐ *Round*

- ☐ *Solid Signs*

- ☐ *Open Signs & Lattice Framework*

Trussed Towers

- ☐ *Triangular, square, rectangular*
- ☐ *All other cross sections*

Surface Roughness Category: C

- ☐ *Urban & suburban areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.*
- ☒ *Open terrain with scattered obstructions having heights generally less than 30 ft (9.1 m). This category includes flat open country, grasslands, and all water surfaces in hurricane prone regions.*
- ☐ *Flat, unobstructed areas and water surfaces outside hurricane prone regions. This category includes smooth mud flats, salt flats, and unbroken ice.*

Building Exposure Category: C

Surface Roughness is Constant in upwind direction?
☒ yes ☐ no

Neither Exposure B nor Exposure D apply
☒ true ☐ false

- ☐ The hill, ridge, or escarpment is isolated and unobstructed upwind by other simil topographic features of comparable height for 100 times the height of the topographic feature (100H) or 2 mi (3.22 km), whichever is less. This distance shall be measured horizontally from the point at which the height H of the hill, ridge, or escarpment is determined.
- ☐ The hill, ridge, or escarpment protrudes above the height of upwind terrain features within a 2-mi (3.22 km) radius in any quadrant by a factor of two or more.
- ☐ The structure is located as shown in Fig. 6-4 in the upper one-half of a hill or ridge or near the crest of an escarpment.
- ☐ H/Lh ≥ 0.2.
- ☐ H is greater than or equal to 15 ft (4.5 m) for Exposures C and D and 60 ft (18 m for Exposure B.

Importance Factor: *I* = 1

Hurricane prone region? 1

☑ yes ☐ no

Occupancy Category? 2

☐ I ☑ II ☐ III ☐ IV

Velocity Pressure Exposure Coefficients, K_h & K_z

☐ *Components & Cladding*

☑ *Main Wind Force Resisting System*

Low rise building designed using ASCE 7 Figure 6-10? ☐ yes ☑ no

Case 2

K_z or K_h= 0.85

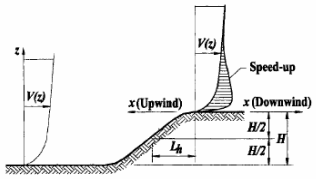
z	
h_{mean}	1.175157214
0	0.848884152
15	0.848884152
25	0.945264669
26.15	0.954257011
30	0.982252543
33	1.0021608
40	1.043580736
43	1.059591247
50	1.093775426
60	1.136574473
62	1.144447526
63	1.14830909
64	1.152122562
70	1.174064506
72.9	1.184141031
80	1.207537953
90	1.237854904
91.9	1.243311204
93.9	1.248959298
100	1.2656187

Gust Effect Factor

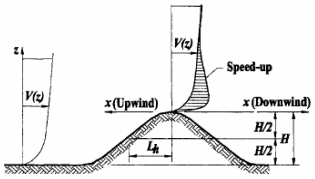
***G* =** *0.8867244*

Velocity Pressure (at height z)

$q_z = 0.00256K_zK_{zt}K_dV^2I$



ESCARPMENT



2-D RIDGE OR 3-D AXISYMMETRICAL HILL

Topographical Data: K_{zt} = 1.00

Type of topography: Escarp

☑ Escarpment ☐ 2-D Ridge ☐ 3-D Axisymmetrical Hill

Crest Location: Upwind

H = 0 **x =** 0

L_h = 0 **z =** 0

K_1 = #VALUE! K_2 = #VALUE! K_3 = #VALUE!

External Pressure Coefficients

Walls

Windward	0.8
Leeward	-0.5
Side	-0.7

Roof

Perpendicular

Windward	N/A
Leeward	N/A

Parallel

0 to h/2	-0.9	-0.18
h/2 to h	-0.9	-0.18
h to 2h	-0.5	-0.18
>2h	-0.3	-0.18

Design Wind Pressure

p = q GCp-qi(GCpi)

Appendix 3

East Wind

Negative Internal pressure

z	q				Leeward-Side-Roof							
h_{mean}	43.2157014	Windward	Leeward	Side	0 to h/2		h/2 to h		h to 2h		>2h	
0	31.2172054	**29.92**	**-11.38**	**38.44**	**-26.71**	**0.88**	**-26.71**	**0.88**	**-11.38**	**0.88**	**-3.72**	**2.80**
15	31.2172054	**29.92**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
25	34.761541	**32.44**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
26.15	35.092229	**32.67**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
30	36.1217479	**33.40**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
33	36.8538621	**33.92**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
40	38.3770554	**35.00**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
43	38.9658323	**35.42**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
50	40.222935	**36.31**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
60	41.7968443	**37.43**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
62	42.0863711	**37.63**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
63	42.2283778	**37.73**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
64	42.3686159	**37.83**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
70	43.1755178	**38.41**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
72.9	43.5460759	**38.67**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
80	44.4064837	**39.28**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
90	45.5213714	**40.07**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
91.9	45.7220235	**40.21**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
93.9	45.9297288	**40.36**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80
100	46.5423699	**40.80**	-11.38	38.44	-26.71	0.88	-26.71	0.88	-11.38	0.88	-3.72	2.80

Positive Internal Pressure

z				Leeward-Side-Roof							
h_{mean}	Windward	Leeward	Side	0 to h/2		h/2 to h		h to 2h		>2h	
0	**-32.69**	**-26.94**	**22.88**	**-42.27**	**-14.68**	**-42.27**	**-14.68**	**-26.94**	**-14.68**	**-19.27**	**-12.76**
15	**-32.69**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
25	**-35.52**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
26.15	**-35.78**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
30	**-36.61**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
33	**-37.19**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
40	**-38.41**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
43	**-38.88**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
50	**-39.88**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
60	**-41.13**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
62	**-41.37**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
63	**-41.48**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
64	**-41.59**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
70	**-42.24**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
72.9	**-42.53**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
80	**-43.22**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
90	**-44.11**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
91.9	**-44.27**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
93.9	**-44.43**	-26.94	22.88	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76
100	**-44.92**	**-26.94**	**22.88**	-42.27	-14.68	-42.27	-14.68	-26.94	-14.68	-19.27	-12.76

Loads and Applied Forces

RAM Frame v11.0
Jonathan Williams
DataBase: FHCRC_Existing 01/12/08 09:57:13

LOAD CASE: Seismic

Seismic ASCE 7-02 / IBC 2003 Equivalent Lateral Force
Site Class: D Importance Factor: 1.00 Ss: 1.250 g S1: 0.500 g
Fa: 1.000 Fv: 1.500 SDs: 0.833 g SD1: 0.500 g
Seismic Use Group: III Seismic Design Category: D
Provisions for: Force
Ground Level: Floor_E

Dir	Eccent	R	Ta Equation	Building Period-T
X	None	6.0	Std,Ct=0.030,x=0.75	Calculated
Y	None	6.0	Std,Ct=0.030,x=0.75	Calculated

Dir	Ta	Cu	T	T-used	Eq95521-1	Eq95521-2	Eq95521-3	k
X	1.088	1.400	2.215	1.523	0.139	0.055	0.0367	1.511
Y	1.088	1.400	2.009	1.523	0.139	0.055	0.0367	1.511

Total Building Weight (kips) = 108204.78

APPLIED DIAPHRAGM FORCES

Type: EQ_IBC03_X_NoE_F

Level	Diaph.#	Ht ft	Fx kips	Fy kips	X ft	Y ft
PentHous_Roof	1	120.00	59.45	0.00	248.01	153.02
PH	1	110.00	21.95	0.00	141.33	219.67
PH	2	110.00	0.00	0.00	110.39	187.64
PH	3	110.00	0.00	0.00	280.73	312.01
PH	4	110.00	0.00	0.00	268.03	138.75
PH	5	110.00	45.80	0.00	247.88	258.04
PH	6	110.00	0.00	0.00	195.89	280.19
Roof	1	98.00	559.17	0.00	212.27	234.96
Mech	1	85.75	329.40	0.00	204.21	209.41
Floor_5	1	73.50	1645.95	0.00	188.48	148.89
Floor_4	1	61.25	1196.06	0.00	189.48	141.65
Floor_3	1	49.00	849.37	0.00	189.32	141.54
Floor_2	1	36.75	635.94	0.00	188.14	154.15
Floor_1	1	24.50	446.89	0.00	164.13	180.03
Floor_1	2	24.50	0.00	0.00	269.96	342.32
Floor_D	1	12.25	131.49	0.00	168.22	160.40

APPLIED STORY FORCES

Type: EQ_IBC03_X_NoE_F

Level	Ht ft	Fx kips	Fy kips
PentHous_Roof	120.00	59.45	0.00
PH	110.00	67.75	0.00
Roof	98.00	559.17	0.00
Mech	85.75	329.40	0.00

Floor_5	73.50	1645.95	0.00
Floor_4	61.25	1196.06	0.00
Floor_3	49.00	849.37	0.00
Floor_2	36.75	635.94	0.00
Floor_1	24.50	446.89	0.00
Floor_D	12.25	131.49	0.00
		5921.48	0.00

APPLIED DIAPHRAGM FORCES

Type: EQ_IBC03_Y_NoE_F

Level	Diaph.#	Ht	Fx	Fy	X	Y
		ft	kips	kips	ft	ft
PentHous_Roof	1	120.00	0.00	59.45	248.01	153.02
PH	1	110.00	0.00	21.95	141.33	219.67
PH	2	110.00	0.00	0.00	110.39	187.64
PH	3	110.00	0.00	0.00	280.73	312.01
PH	4	110.00	0.00	0.00	268.03	138.75
PH	5	110.00	0.00	45.80	247.88	258.04
PH	6	110.00	0.00	0.00	195.89	280.19
Roof	1	98.00	0.00	559.17	212.27	234.96
Mech	1	85.75	0.00	329.40	204.21	209.41
Floor_5	1	73.50	0.00	1645.95	188.48	148.89
Floor_4	1	61.25	0.00	1196.06	189.48	141.65
Floor_3	1	49.00	0.00	849.37	189.32	141.54
Floor_2	1	36.75	0.00	635.94	188.14	154.15
Floor_1	1	24.50	0.00	446.89	164.13	180.03
Floor_1	2	24.50	0.00	0.00	269.96	342.32
Floor_D	1	12.25	0.00	131.49	168.22	160.40

APPLIED STORY FORCES

Type: EQ_IBC03_Y_NoE_F

Level	Ht	Fx	Fy
	ft	kips	kips
PentHous_Roof	120.00	0.00	59.45
PH	110.00	0.00	67.75
Roof	98.00	0.00	559.17
Mech	85.75	0.00	329.40
Floor_5	73.50	0.00	1645.95
Floor_4	61.25	0.00	1196.06
Floor_3	49.00	0.00	849.37
Floor_2	36.75	0.00	635.94
Floor_1	24.50	0.00	446.89
Floor_D	12.25	0.00	131.49
		0.00	5921.48

Level Floor_1 has no Diaphragm. Story Force is NEGLECTED.
Level PH has no Diaphragm. Story Force is NEGLECTED.

LOAD CASE: Wind

Wind ASCE 7-02/IBC2003
Exposure: B
Basic Wind Speed (mph): 130.0 Importance Factor: 1.000
Apply Directionality Factor, Kd = 0.85
Use Topography Factor, Kzt: 1.00
Use Calculated Frequency for X-Dir.
Use Calculated Frequency for Y-Dir.
Gust Factor for Flexible Structures, G: Use Calculated G for X-Dir.
Gust Factor for Flexible Structures, G: Use Calculated G for Y-Dir.
Damping Ratio for Flexible Structures= 0.01
Mean Roof Height (ft): Top Story Height = 120.00
Ground Level: Floor_E

WIND PRESSURES:

X-Direction: Natural Frequency = 0.452 Structure is Flexible
Y-Direction: Natural Frequency = 0.498 Structure is Flexible
CpWindward = 0.80 qLeeward (qh) = 38.28 psf
GCpn (Parapet): Windward = 1.80 Leeward = -1.10

Height	Kz	Kzt	qz	Gust Factor G		CpLeeward		Pressure (psf)	
ft			psf	X	Y	X	Y	X	Y
120.00	1.041	1.000	38.285	1.311	1.272	-0.500	-0.479	65.563	61.989
110.00	1.016	1.000	37.345	0.988	0.958	-0.498	-0.500	48.316	46.968
110.00	1.016	1.000	37.345	0.988	0.958	-0.498	-0.500	48.316	46.968
110.00	1.016	1.000	37.345	0.988	0.958	-0.498	-0.500	48.316	46.968
110.00	1.016	1.000	37.345	0.988	0.958	-0.498	-0.500	48.316	46.968
110.00	1.016	1.000	37.345	0.988	0.958	-0.498	-0.500	48.316	46.968
110.00	1.016	1.000	37.345	0.988	0.958	-0.498	-0.500	48.316	46.968
98.00	0.983	1.000	36.132	0.991	0.964	-0.500	-0.498	47.629	46.250
85.75	0.946	1.000	34.780	0.947	0.925	-0.500	-0.497	44.461	43.337
73.50	0.905	1.000	33.281	0.890	0.925	-0.500	-0.384	40.803	38.173
61.25	0.859	1.000	31.592	0.890	0.925	-0.500	-0.384	39.598	36.925
49.00	0.806	1.000	29.641	0.890	0.925	-0.500	-0.384	38.206	35.483
36.75	0.742	1.000	27.302	0.880	0.925	-0.500	-0.356	36.121	32.734
24.50	0.661	1.000	24.315	0.880	0.902	-0.500	-0.416	33.988	31.883
24.50	0.661	1.000	24.315	0.880	0.902	-0.500	-0.416	33.988	31.883
12.25	0.575	1.000	21.135	0.877	0.902	-0.500	-0.409	31.642	29.335
0.00	0.575	1.000	21.135	0.877	0.902	-0.500	-0.409	31.642	29.335

APPLIED DIAPHRAGM FORCES

Type: Wind_IBC03_1_X

Level	Diaph.#	Ht	Fx	Fy	X	Y
		ft	kips	kips	ft	ft
PentHous_Roof	1	120.00	17.78	0.00	248.00	154.69
PH	1	110.00	5.09	0.00	141.33	219.67
PH	2	110.00	6.26	0.00	110.40	187.62
PH	3	110.00	3.87	0.00	280.75	312.21

PH	4	110.00	6.03	0.00	267.21	139.14
PH	5	110.00	7.09	0.00	247.88	258.02
PH	6	110.00	15.33	0.00	195.88	275.38
Roof	1	98.00	98.67	0.00	194.33	223.50
Mech	1	85.75	117.51	0.00	171.75	208.96
Floor_5	1	73.50	157.33	0.00	171.75	155.65
Floor_4	1	61.25	184.69	0.00	171.75	128.50
Floor_3	1	49.00	177.80	0.00	171.75	128.50
Floor_2	1	36.75	176.17	0.00	171.54	137.48
Floor_1	1	24.50	173.06	0.00	145.75	146.03
Floor_1	2	24.50	10.74	0.00	267.75	341.17
Floor_D	1	12.25	165.38	0.00	145.75	143.32

APPLIED STORY FORCES

Type: Wind_IBC03_1_X

Level	Ht	Fx	Fy
	ft	kips	kips
PentHous_Roof	120.00	17.78	0.00
PH	110.00	43.66	0.00
Roof	98.00	98.67	0.00
Mech	85.75	117.51	0.00
Floor_5	73.50	157.33	0.00
Floor_4	61.25	184.69	0.00
Floor_3	49.00	177.80	0.00
Floor_2	36.75	176.17	0.00
Floor_1	24.50	183.81	0.00
Floor_D	12.25	165.38	0.00
		1322.81	0.00

APPLIED DIAPHRAGM FORCES

Type: Wind_IBC03_1_Y

Level	Diaph.#	Ht	Fx	Fy	X	Y
		ft	kips	kips	ft	ft
PentHous_Roof	1	120.00	0.00	13.62	245.67	153.02
PH	1	110.00	0.00	2.87	141.33	219.67
PH	2	110.00	0.00	3.00	110.40	187.62
PH	3	110.00	0.00	8.61	282.64	312.02
PH	4	110.00	0.00	12.15	264.62	139.17
PH	5	110.00	0.00	7.90	247.88	258.02
PH	6	110.00	0.00	10.42	195.88	275.38
Roof	1	98.00	0.00	79.64	200.72	227.83
Mech	1	85.75	0.00	114.40	185.91	196.27
Floor_5	1	73.50	0.00	114.72	171.75	128.50
Floor_4	1	61.25	0.00	109.14	171.75	128.50
Floor_3	1	49.00	0.00	104.33	171.75	128.50

Floor_2	1	36.75	0.00	97.86	171.65	146.03
Floor_1	1	24.50	0.00	103.45	157.63	146.03
Floor_1	2	24.50	0.00	19.16	267.75	341.17
Floor_D	1	12.25	0.00	107.00	145.75	140.61

APPLIED STORY FORCES

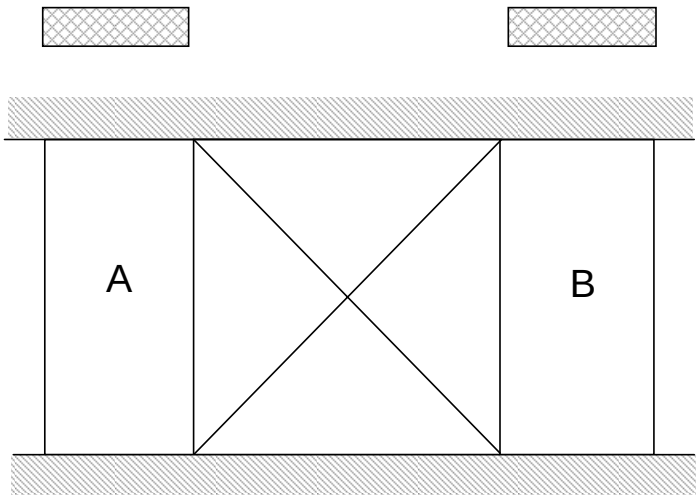
Type: Wind_IBC03_1_Y

Level	Ht	Fx	Fy
	ft	kips	kips
PentHous_Roof	120.00	0.00	13.62
PH	110.00	0.00	44.95
Roof	98.00	0.00	79.64
Mech	85.75	0.00	114.40
Floor_5	73.50	0.00	114.72
Floor_4	61.25	0.00	109.14
Floor_3	49.00	0.00	104.33
Floor_2	36.75	0.00	97.86
Floor_1	24.50	0.00	122.61
Floor_D	12.25	0.00	107.00
		0.00	908.27

Level Floor_1 has no Diaphragm. Story Force is NEGLECTED.
Level PH has no Diaphragm. Story Force is NEGLECTED.

Wall Rigidity

WALL (OR PORTION THEREOF) GEOMETRY



$$R = \frac{1}{\Delta} \qquad R_t = R_A + R_B$$

h =	99.5
b =	20
da =	48
db =	48

END FIXITY: FIXED

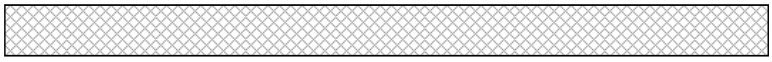
P =	1	lbs
Em =	5098235	psi
Er =	2124265	psi

LONGITUDINAL		TRANSVERSE	
R_A =	6853715.192	R_A =	1780235
R_B =	6853715.192	R_B =	1780235
R_T =	13707430.38	R_T =	3560470

Wall Rigidity (A)

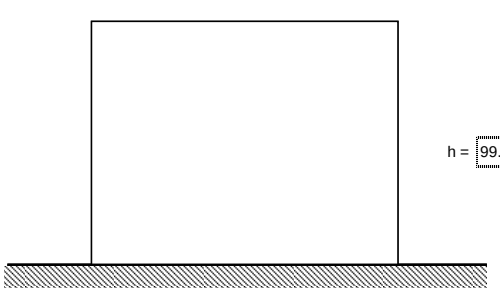
WALL (OR PORTION THEREOF) GEOMETRY

Longitudinal Direction

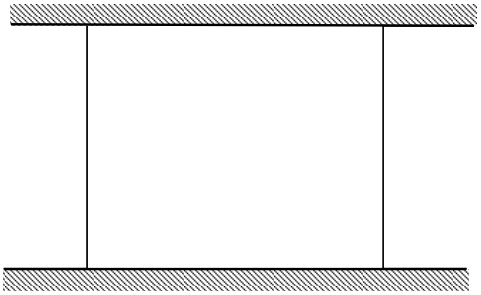


b = 20 *INCHES*

d = 48 *INCHES*



h = 99.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

I =	184320	in4	P =	1	lbs
h =	99.5	in	Em =	5098235	psi
d =	48	in	Er =	2124264.6	psi
A =	960	in2			

Δ_m =	**8.73566E-08**	Δ_t =	**1.45906E-07**
Δ_v =	**5.85497E-08**	R =	**6853715.192**

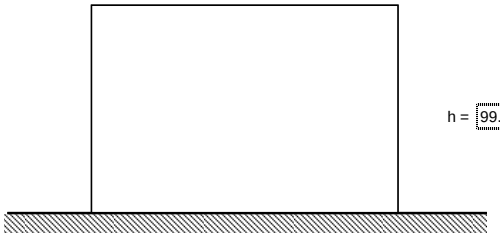
Wall Rigidity (B)

WALL (OR PORTION THEREOF) GEOMETRY

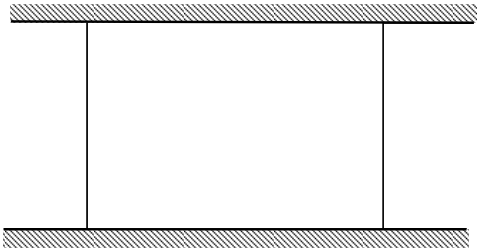
Longitudinal Direction

b = 20 INCHES

d = 48 INCHES



h = 99.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

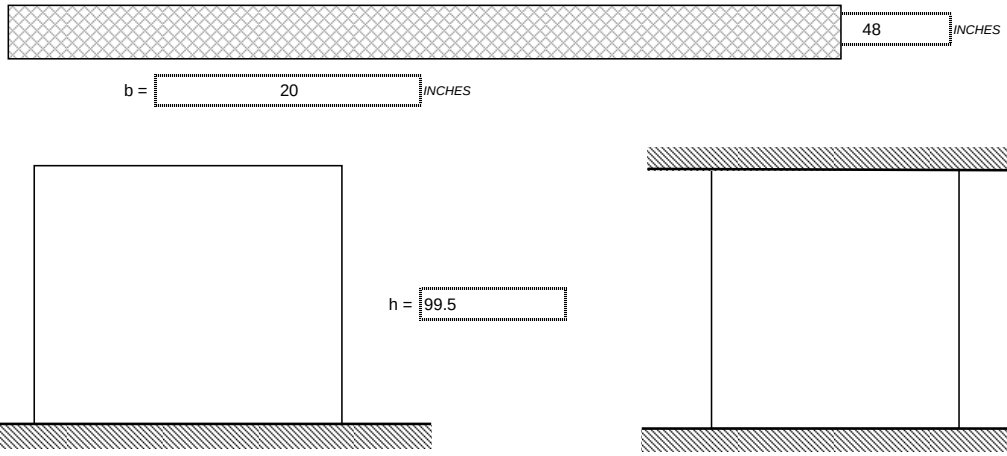
I =	184320	in4	P =	1	lbs
h =	99.5	in	Em =	5098235	psi
d =	48	in	Er =	2124264.6	psi
A =	960	in2			

Δ_m =	**8.73566E-08**	Δ_t =	**1.45906E-07**
Δ_v =	**5.85497E-08**	R =	**6853715.192**

Wall Rigidity (A)

WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction



$$R = \frac{1}{\Delta} \qquad R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m \qquad \Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad _m = \frac{Ph^3}{3E_m I} \text{ (CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad = \frac{Ph^3}{12E_m I} \text{ (FIXED)} \qquad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A} \quad \Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

I =	32000	in4	P =	1	lbs
h =	99.5	in	Em =	5098235	psi
d =	20	in	Er =	2124264.6	psi
A =	960	in2			

Δ_m =	**5.03174E-07**	Δ_t =	**5.61724E-07**
Δ_v =	**5.85497E-08**	R =	**1780234.826**

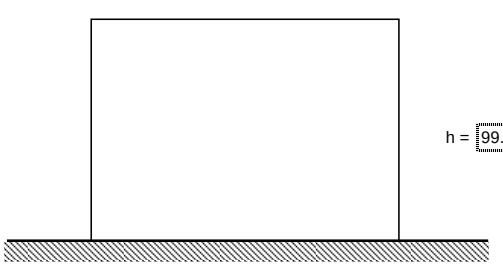
Wall Rigidity (B)

WALL (OR PORTION THEREOF) GEOMETRY

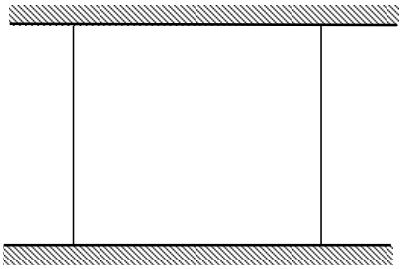
Transverse Direction

d = 48 *INCHES*

b = 20 *INCHES*



h = 99.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta} \qquad R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m \qquad \Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad _m = \frac{Ph^3}{3E_m I} \text{ (CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad = \frac{Ph^3}{12E_m I} \text{ (FIXED)} \qquad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A} \quad \Delta_v = \frac{1.2Ph}{E_v A}$$

Input

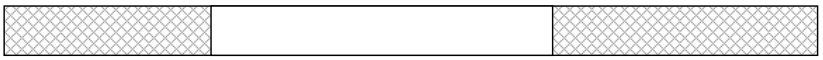
END FIXITY: FIXED

I =	32000	in4	P =	1	lbs
h =	99.5	in	Em =	5098235	psi
d =	20	in	Er =	2124264.6	psi
A =	960	in2			

Δ_m =	**5.03174E-07**	Δ_t =	**5.61724E-07**
Δ_v =	**5.85497E-08**	R =	**1780234.826**

Wall Rigidity (SOLID)

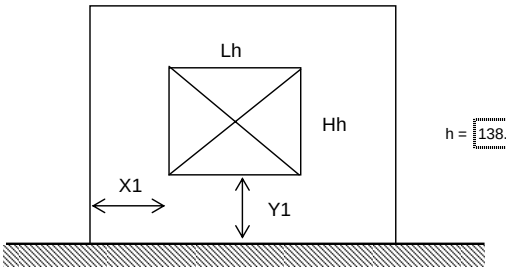
WALL (OR PORTION THEREOF) GEOMETRY



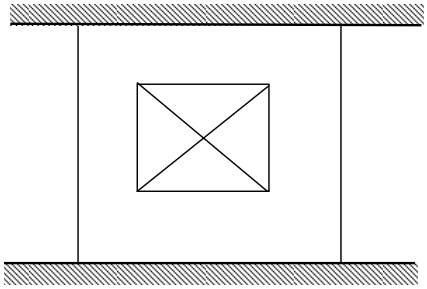
Longitudinal Direction

b = 20 *INCHES*

d = 204 *INCHES*



h = 138.5



CANTILEVER

FIXED

Hh = 123 *INCHES*
Lh = 108 *INCHES*
X1 = 48 *INCHES*
Y1 = *INCHES*

END FIXITY: FIXED

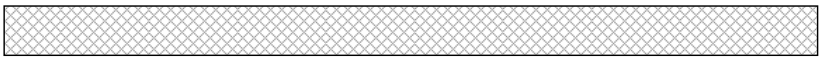
P = 1 lbs
Em = 5098234.989 psi
Er = 2124264.579 psi

Longitudinal Direction		
Element	Rigidty	Deflection
Solid Wall	44953372.4	2.22453E-08
Solid Midstrip	52138184.21	1.91798E-08
Left Pier	4212300.561	2.374E-07
Right Pier	4212300.561	2.374E-07
Effective Midstrip	8424601.123	1.187E-07
Effective Wall	8212510.007	1.21765E-07

Transverse Direction		
Element	Rigidty	Deflection
Solid Wall	2954350.863	3.38484E-07
Solid Midstrip	4154835.329	2.40683E-07
Left Pier	977608.3128	1.0229E-06
Right Pier	4083955.605	2.44861E-07
Effective Midstrip	5061563.918	1.97567E-07
Effective Wall	3385609.384	2.95368E-07

Wall Rigidity (SOLID)

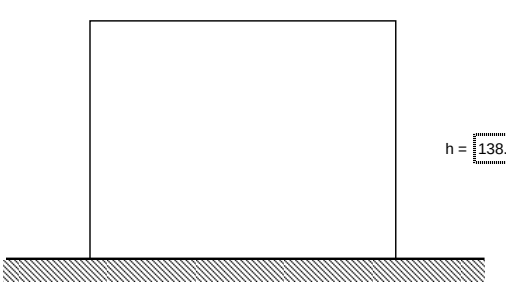
WALL (OR PORTION THEREOF) GEOMETRY



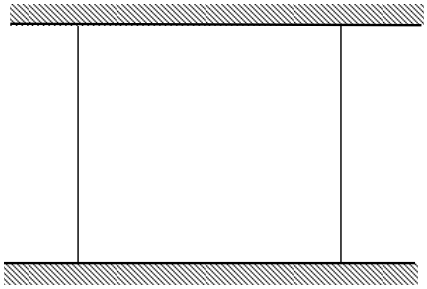
Longitudinal Direction

b = 20 INCHES

d = 204 INCHES



h = 138.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

I =	14149440	in4	P =	1	lbs
h =	138.5	in	Em =	5098234.99	psi
d =	204	in	Er =	2124264.58	psi
A =	4080	in2			

Δ_m =	**3.06909E-09**	Δ_t =	**2.22453E-08**
Δ_v =	**1.91762E-08**	R =	**44953372.4**

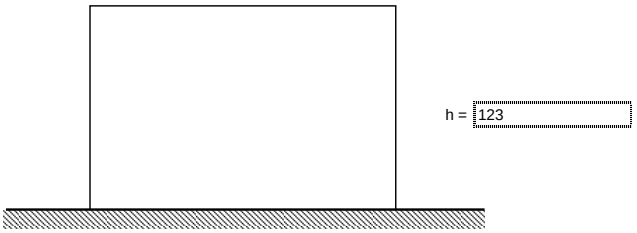
Wall Rigidity (SOLID MIDSTRIP)

WALL (OR PORTION THEREOF) GEOMETRY

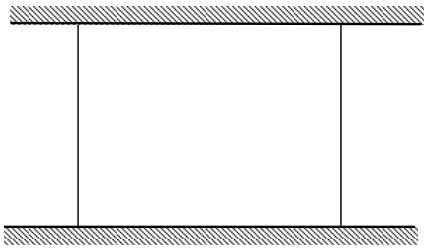
Longitudinal Direction

b = 20 *INCHES*

d = 204 *INCHES*



CANTILEVER



FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

I =	14149440	in4	P =	1	lbs
h =	123	in	Em =	5098234.99	psi
d =	204	in	Er =	2124264.58	psi
A =	4080	in2			

Δ_m =	**2.14969E-09**	Δ_t =	**1.91798E-08**
Δ_v =	**1.70301E-08**	R =	**52138184.21**

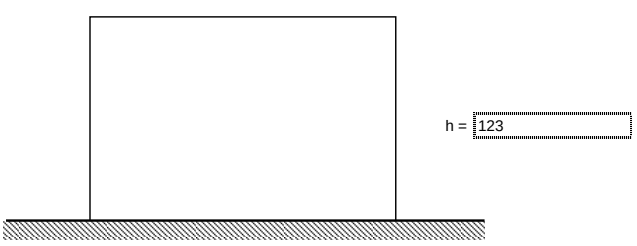
Wall Rigidity (LEFT PIER)

WALL (OR PORTION THEREOF) GEOMETRY

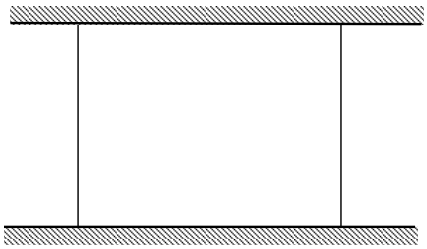
Longitudinal Direction

b = 20 INCHES

d = 48 INCHES



CANTILEVER



FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

I =	184320	in4	P =	1	lbs
h =	123	in	Em =	5098234.99	psi
d =	48	in	Er =	2124264.58	psi
A =	960	in2			

Δ_m =	**1.65022E-07**	Δ_t =	**2.374E-07**
Δ_v =	**7.2378E-08**	R =	**4212300.561**

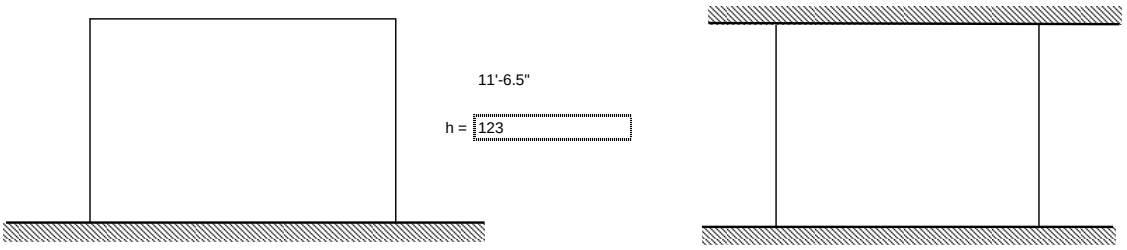
Wall Rigidity (RIGHT PIER)

WALL (OR PORTION THEREOF) GEOMETRY

Longitudinal Direction

b = 20 INCHES

d = 48 INCHES



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_mI} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_mI} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_vA}$$

Input

END FIXITY: FIXED

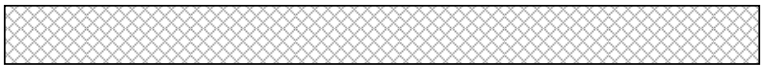
I =	184320	in4	P =	1	lbs
h =	123	in	Em =	5098234.99	psi
d =	48	in	Er =	2124264.58	psi
A =	960	in2			

Δ_m =	**1.65022E-07**	Δ_t =	**2.374E-07**
Δ_v =	**7.2378E-08**	R =	**4212300.561**

Wall Rigidity (SOLID)

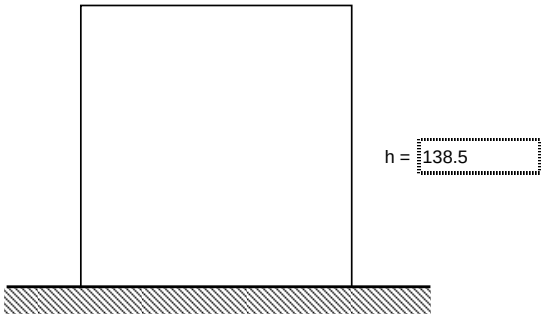
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction

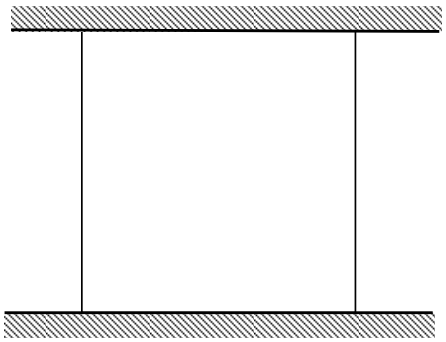


d = 204 *INCHES*

b = 20 *INCHES*



h = 138.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

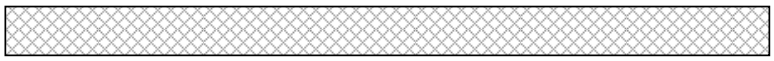
I =	136000	in4	P =	1	lbs
h =	138.5	in	Em =	5098234.99	psi
d =	20	in	Er =	2124264.58	psi
A =	4080	in2			

Δ_m =	**3.19308E-07**	Δ_t =	**3.38484E-07**
Δ_v =	**1.91762E-08**	R =	**2954350.863**

Wall Rigidity (SOLID MIDSTRIP)

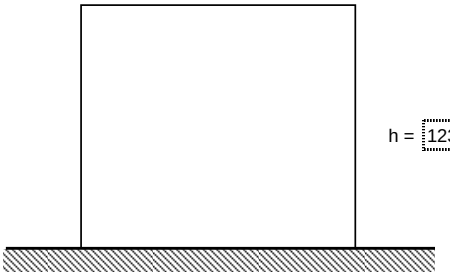
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction



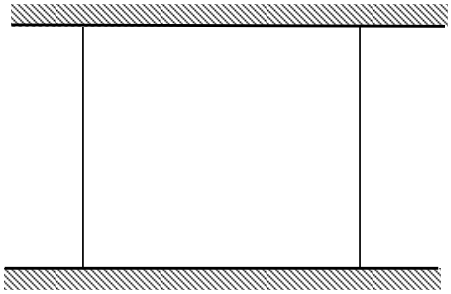
d = 204 *INCHES*

b = 20 *INCHES*



h = 123

CANTILEVER



FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

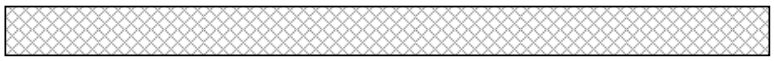
I =	136000	in4	P =	1	lbs
h =	123	in	Em =	5098234.99	psi
d =	20	in	Er =	2124264.58	psi
A =	4080	in2			

Δ_m =	**2.23653E-07**	Δ_t =	**2.40683E-07**
Δ_v =	**1.70301E-08**	R =	**4154835.329**

Wall Rigidity (LEFT PIER)

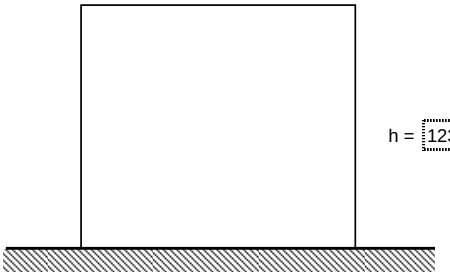
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction

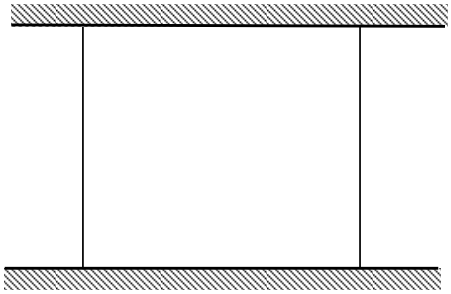


d = 48 INCHES

b = 20 INCHES



h = 123



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

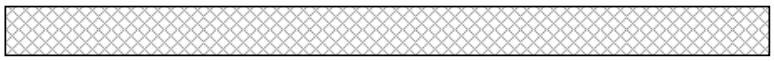
I =	32000	in4	P =	1	lbs
h =	123	in	Em =	5098234.99	psi
d =	20	in	Er =	2124264.58	psi
A =	960	in2			

Δ_m =	**9.50527E-07**	Δ_t =	**1.0229E-06**
Δ_v =	**7.2378E-08**	R =	**977608.3128**

Wall Rigidity (RIGHT PIER)

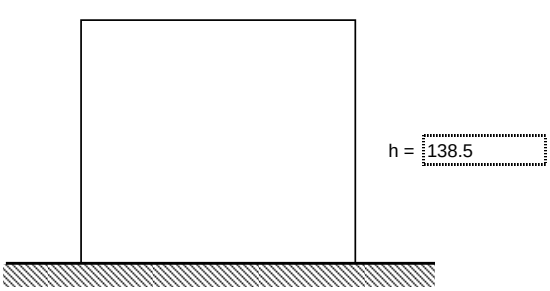
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction

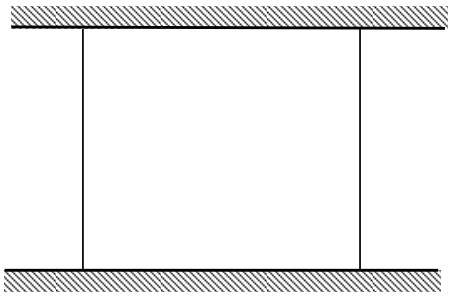


d = 282 *INCHES*

b = 20 *INCHES*



CANTILEVER



FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

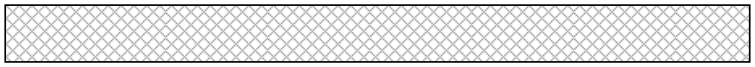
I =	188000	in4	P =	1	lbs
h =	138.5	in	Em =	5098234.99	psi
d =	20	in	Er =	2124264.58	psi
A =	5640	in2			

Δ_m =	**2.30989E-07**	Δ_t =	**2.44861E-07**
Δ_v =	**1.38721E-08**	R =	**4083955.605**

Wall Rigidity

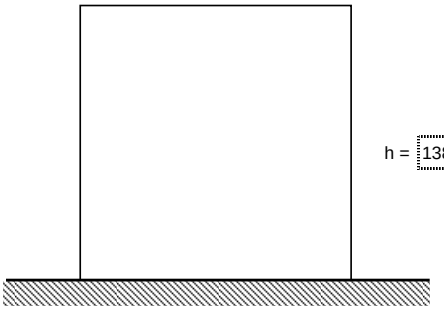
WALL (OR PORTION THEREOF) GEOMETRY

Longitudinal Direction

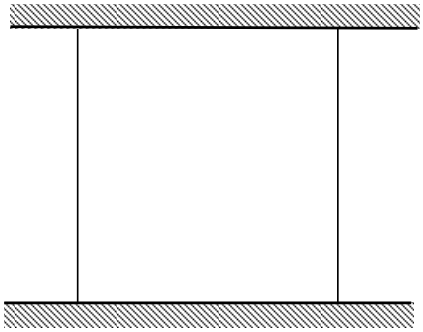


b = 20 *INCHES*

d = 204 *INCHES*



h = 138.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

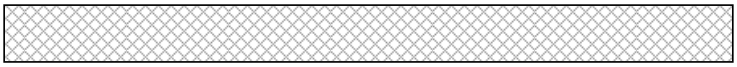
I =	14149440	in4	P =	1	lbs
h =	138.5	in	Em =	5098235	psi
d =	204	in	Er =	2124265	psi
A =	4080	in2			

Δ_m =	**3.06909E-09**	Δ_t =	**2.22453E-08**
Δ_v =	**1.91762E-08**	R =	**44953372.4**

Wall Rigidity

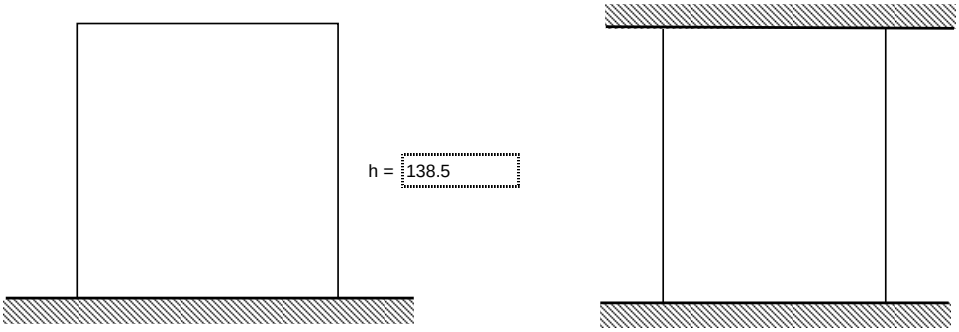
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction



d = 204 *INCHES*

b = 20 *INCHES*



CANTILEVER FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

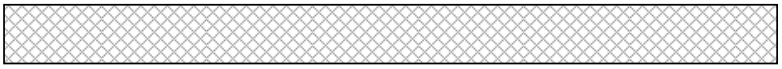
I =	136000	in4	P =	1	lbs
h =	138.5	in	Em =	5098235	psi
d =	20	in	Er =	2124265	psi
A =	4080	in2			

Δ_m =	**3.19308E-07**	Δ_t =	**3.38E-07**
Δ_v =	**1.91762E-08**	R =	**2954351**

Wall Rigidity

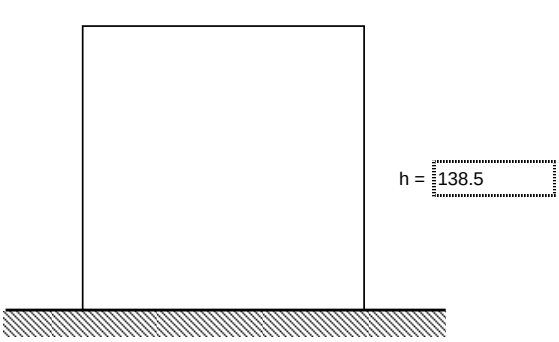
WALL (OR PORTION THEREOF) GEOMETRY

Longitudinal Direction

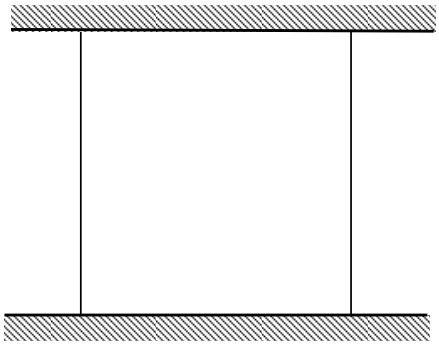


b = 20 *INCHES*

d = 204 *INCHES*



h = 138.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

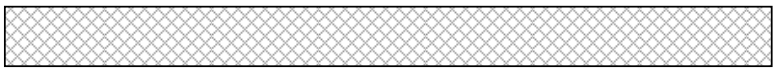
I =	14149440	in4	P =	1	lbs
h =	138.5	in	Em =	5098235	psi
d =	204	in	Er =	2124265	psi
A =	4080	in2			

Δ_m =	**3.06909E-09**	Δ_t =	**2.22453E-08**
Δ_v =	**1.91762E-08**	R =	**44953372.4**

Wall Rigidity

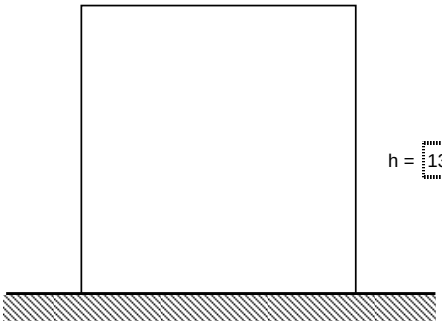
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction

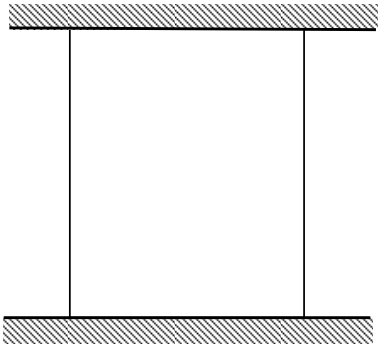


d = 204 *INCHES*

b = 20 *INCHES*



h = 138.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

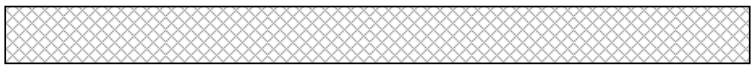
I =	136000	in4	P =	1	lbs
h =	138.5	in	Em =	5098235	psi
d =	20	in	Er =	2124265	psi
A =	4080	in2			

Δ_m =	**3.19308E-07**	Δ_t =	**3.38E-07**
Δ_v =	**1.91762E-08**	R =	**2954351**

Wall Rigidity

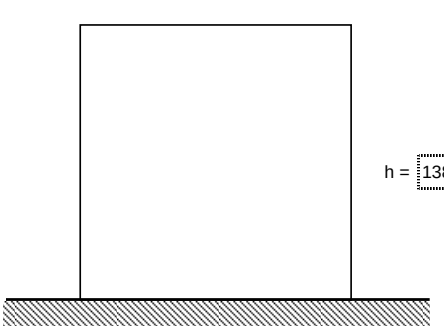
WALL (OR PORTION THEREOF) GEOMETRY

Longitudinal Direction

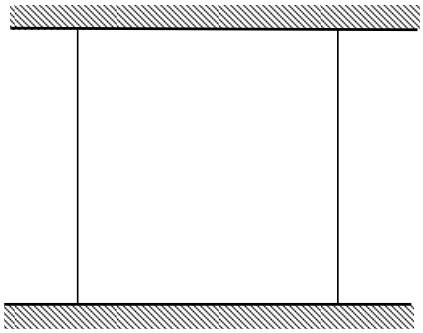


b = 20 *INCHES*

d = 204 *INCHES*



h = 138.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

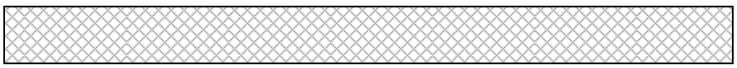
I =	14149440	in4	P =	1	lbs
h =	138.5	in	Em =	5098235	psi
d =	204	in	Er =	2124265	psi
A =	4080	in2			

Δ_m =	**3.06909E-09**	Δ_t =	**2.22453E-08**
Δ_v =	**1.91762E-08**	R =	**44953372.4**

Wall Rigidity

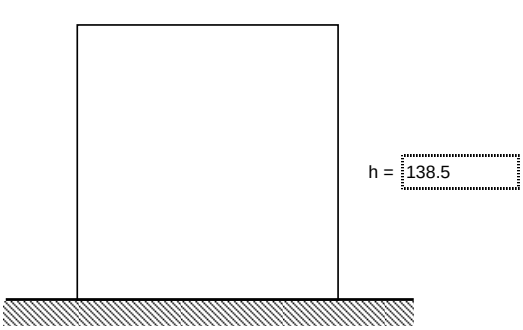
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction

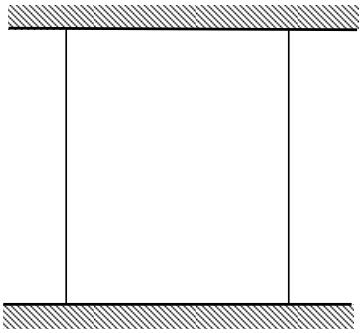


d = 204 *INCHES*

b = 20 *INCHES*



h = 138.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

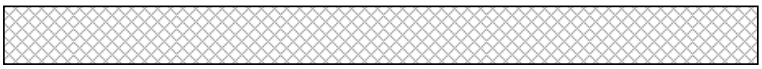
I =	136000	in4	P =	1	lbs
h =	138.5	in	Em =	5098235	psi
d =	20	in	Er =	2124265	psi
A =	4080	in2			

Δ_m =	**3.19308E-07**	Δ_t =	**3.38E-07**
Δ_v =	**1.91762E-08**	R =	**2954351**

Wall Rigidity

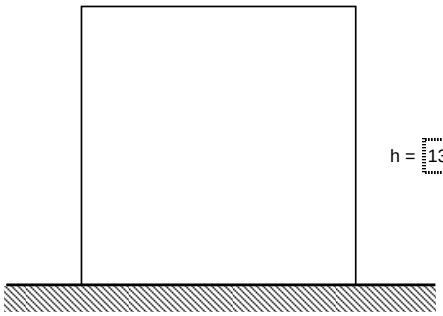
WALL (OR PORTION THEREOF) GEOMETRY

Longitudinal Direction



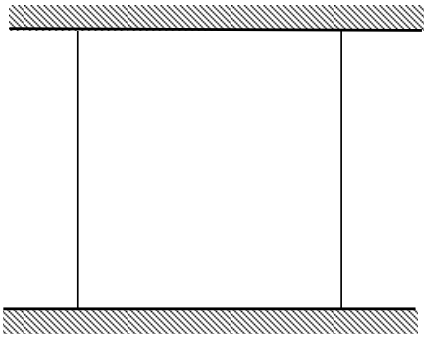
b = 20 *INCHES*

d = 204 *INCHES*



h = 138.5

CANTILEVER



FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

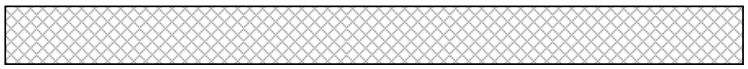
I =	14149440	in4	P =	1	lbs
h =	138.5	in	Em =	5098235	psi
d =	204	in	Er =	2124265	psi
A =	4080	in2			

Δ_m =	**3.06909E-09**	Δ_t =	**2.22453E-08**
Δ_v =	**1.91762E-08**	R =	**44953372.4**

Wall Rigidity

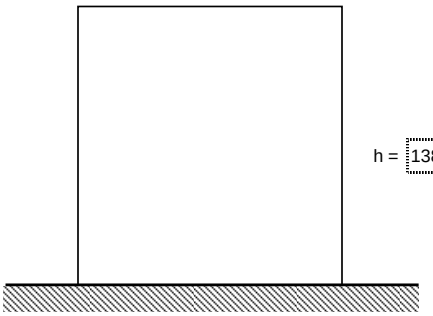
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction

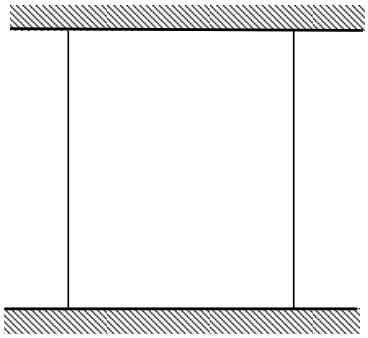


d = 204 *INCHES*

b = 20 *INCHES*



h = 138.5



CANTILEVER

FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: FIXED

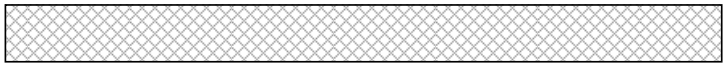
I =	136000 in4	P =	1 lbs
h =	138.5 in	Em =	5098235 psi
d =	20 in	Er =	2124265 psi
A =	4080 in2		

Δ_m =	**3.19308E-07**	Δ_t =	**3.38E-07**
Δ_v =	**1.91762E-08**	R =	**2954351**

Wall Rigidity

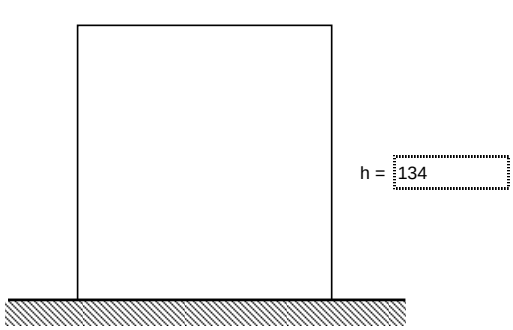
WALL (OR PORTION THEREOF) GEOMETRY

Longitudinal Direction

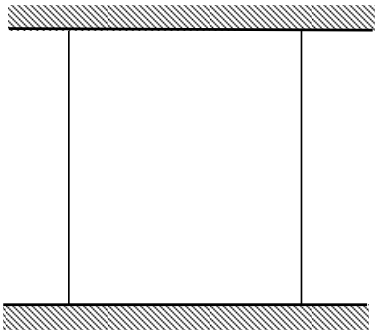


b = 20 *INCHES*

d = 162.5 *INCHES*



CANTILEVER



FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED)}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: CANTILEVER

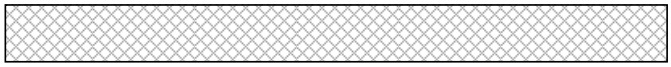
I =	7151692.7	in4	P =	1	lbs
h =	134	in	Em =	5098235	psi
d =	162.5	in	Er =	2124265	psi
A =	3250	in2			

Δ_m =	**2.19971E-08**	Δ_t =	**4.5288E-08**
Δ_v =	**2.32913E-08**	R =	**22080724.6**

Wall Rigidity

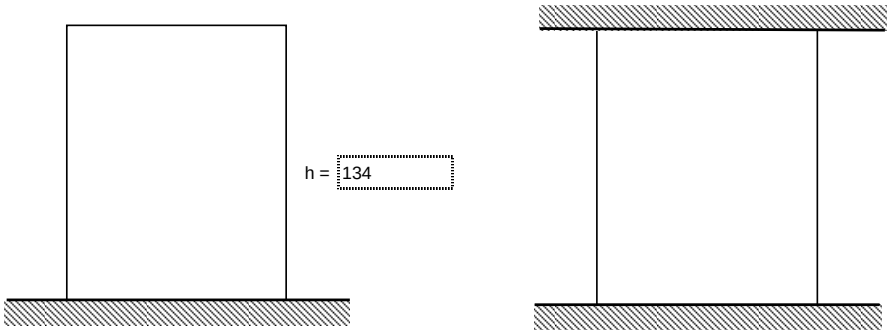
WALL (OR PORTION THEREOF) GEOMETRY

Transverse Direction



d = 162.5 *INCHES*

b = 20 *INCHES*



CANTILEVER FIXED

$$R = \frac{1}{\Delta}$$

$$\Delta_t = \Delta_v + \Delta_m$$

$$\Delta_m = \frac{Ph^3}{3E_m I} \quad \text{(CANTILEVER)}$$

$$= \frac{Ph^3}{12E_m I} \quad \text{(FIXED}$$

$$\Delta_v = \frac{1.2Ph}{E_v A}$$

Input

END FIXITY: CANTILEVER

I =	108333.3	in4	P =	1	lbs
h =	134	in	Em =	5098235	psi
d =	20	in	Er =	2124265	psi
A =	3250	in2			

Δ_m =	**1.45E-06**	Δ_t =	**1.48E-06**
Δ_v =	**2.33E-08**	R =	**677763.8**

Appendix 4

Shear Wall 304 F

Rigidity Summary

$f'c$ = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	46917139	1038543
3	57476765	3606046
2	57476765	3606046
1	12193341	4657588
D	5680042	887027
E	18736682	3944636
F	19709897	4228058
TOTAL	2390714	298543

Appendix 4

Shear Wall 304 G

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	56720213	1176181
3	66515939	4083956
2	66515939	4083956
1	66515939	4083956
D	56337941	2711710
E	18126098	4641479
F	19709897	4228058
TOTAL	5365169	415709

Appendix 4

Shear Wall 304 H

Rigidity Summary

f'_c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	2.2E+07	677764
3	4.5E+07	2954351
2	4.5E+07	2954351
1	4.5E+07	2954351
D	4.5E+07	2954351
E	8212510	3385609
F	1.4E+07	3560470
TOTAL	3039624	293634

Appendix 4

Shear Wall 304 J

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	65203092	1940807
3	76294906	6417518
2	76294906	6417518
1	76294906	6417518
D	5917378	3411274
E	26780001	8261640
F	23651876	6985704
TOTAL	3297361	649327

Appendix 4

Shear Wall 304 K

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	68064255	2018421
3	79819126	6885439
2	79819126	6885439
1	79819126	6885439
D	6732535	3477316
E	22654849	6606520
F	23651876	6985704
TOTAL	3481530	660837

SHEAR WALL 304 R

RIGIDITY SUMMARY

$F'c$ = 8000

LVL	RIGIDITY (Lg)	RIGIDITY (Tr)
	Ec = 5098235	Er = 2124265
5		
4	56720213	1176181
3	66515939	4083956
2	66515939	4083956
1	66515939	4083956
D	10001714	2916410
E	15935609	3338467
F	19709897	4228058
TOTAL	3620516	405888

Appendix 4

Shear Wall 304 S

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	56720213	1176181
3	66515939	4083956
2	66515939	4083956
1	66515939	4083956
D	10544905	3126627
E	13385344	2584207
F	19709897	4228058
TOTAL	3533451.4	395553

Appendix 4

Shear Wall 304 T

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	(Tr)
	Ec = 5098235	Er = 2124265
5		
4	34282126	1504935
3	54883740	5442032
2	54883740	5442032
1	54883740	5442032
D	54883740	5442032
E	54883740	5442032
F	85591134	15074414
TOTAL	7578351	606210.4

Appendix 4

Shear Wall 304 U

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	47793304	6033171
3	60994637	5493701
2	60994637	5493701
1	60994637	5493701
D	60994637	5493701
E	60994637	5493701
F	89963482	13787574
TOTAL	8770893	870767.2

Appendix 4

Shear Wall 305 F

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	47793304	6033171
3	60994637	5493701
2	60994637	5493701
1	60994637	5493701
D	60994637	5493701
E	60994637	5493701
F	89963482	13787574
TOTAL	8770893	870767.2

Appendix 4

Shear Wall 305 G

Rigidity Summary

f'_c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	68064255	7561574
3	79819126	6885439
2	79819126	6885439
1	79819126	6885439
D	79819126	6885439
E	79819126	6885439
F	1.15E+08	17280426
TOTAL	11628239	1091362

Appendix 4

Shear Wall 305 H

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	68064255	7561574
3	79819126	6885439
2	79819126	6885439
1	79819126	6885439
D	79819126	6885439
E	12298667	4296565
F	23651876	6985704
TOTAL	5308000	918208.5

Appendix 4

SHEAR WALL 305 J

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098234.99	Er = 2124265
5		
4	68064255.4	7561574
3	79819126.5	6885439
2	79819126.5	6885439
1	79819126.5	6885439
D	79819126.5	6885439
E	79819126.5	6885439
F	115421256	17280426
TOTAL	11628239.3	1091362

Appendix 4

Shear Wall 305 K

Rigidity Summary

f'c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	68064255	7561574
3	79819126	6885439
2	79819126	6885439
1	79819126	6885439
D	15076584	6885439
E	12298667	4296565
F	23651876	6985704
TOTAL	4128912	918208.5

Appendix 4

SHEAR WALL 305 R

Rigidity Summary

f'_c = 8000

LVL	Rigidity (Lg)	Rigidity (Tr)
	Ec = 5098235	Er = 2124265
5		
4	33259187	1478028
3	47238886	5041997
2	47238886	5041997
1	47238886	5041997
D	47238886	5041997
E	47238886	5041997
F	72105622	1.3E+07
TOTAL	6676440	572320

Appendix 7

Level E

Shear Wall	Rigidity (LG)	Rigidity (TR)	Orientation	Rigidity X-direction	Rigidity Y-direction
304 F	19709896.9	4228057.71	270	4228057.71	19709896.88
304 G	19709896.9	4228057.71	0	19709896.88	4228057.71
304 H	13707430.4	3560469.65	270	3560469.65	13707430.38
304 J	23651876.3	6985704.28	0	23651876.25	6985704.28
304 K	23651876.3	6985704.28	0	23651876.25	6985704.28
304 R	19709896.9	4228057.71	270	4228057.71	19709896.88
304 S	19709896.9	4228057.71	270	4228057.71	19709896.88
304 T	85591133.9	15074414.5	270	15074414.49	85591133.91
304 U	89963481.6	13787574.2	0	89963481.65	13787574.23
305 F	89963481.6	13787574.2	0	89963481.65	13787574.23
305 G	115421256	17280426.4	45	93834259.70	93834259.70
305 H	23651876.3	6985704.28	135	21664040.95	21664040.95
305 J	115421256	17280426.4	45	93834259.70	93834259.70
305 K	23651876.3	6985704.28	135	21664040.95	21664040.95
305 R	72105621.8	12653929.2	45	59934053.34	59934053.34
			TOTAL	569190324.5883	495133524.2833

Level E

Shear Wall	Relative Rigidity X-direction	Relative Rigidity Y-direction
304 F	0.0074282	0.0398072
304 G	0.0346280	0.0085392
304 H	0.0062553	0.0276843
304 J	0.0415535	0.0141087
304 K	0.0415535	0.0141087
304 R	0.0074282	0.0398072
304 S	0.0074282	0.0398072
304 T	0.0264840	0.1728648
304 U	0.1580552	0.0278462
305 F	0.1580552	0.0278462
305 G	0.1648557	0.1895130
305 H	0.0380612	0.0437539
305 J	0.1648557	0.1895130
305 K	0.0380612	0.0437539
305 R	0.1052970	0.1210462
TOTAL	1.0000	1.0000

Shear Wall	Coordinates X	Coordinates Y	Weighted Coordinates X	Weighted Coordinates Y
304 F	3138	3151.75	1.3268E+10	6.2121E+10
304 G	3150.25	3096.25	6.2091E+10	1.3091E+10
304 H	768	2544.25	2734440693	3.4875E+10
304 J	1638	2736.25	3.8742E+10	1.9115E+10
304 K	2148	2736.25	5.0804E+10	1.9115E+10
304 R	1752	2364.25	7407557112	4.6599E+10
304 S	2136	2364.25	9031131274	4.6599E+10
304 T	3138	1644.25	4.7304E+10	1.4073E+11
304 U	3026	2016.25	2.7223E+11	2.7799E+10
305 F	3026	1656.25	2.7223E+11	2.2836E+10
305 G	2015.125	748.6562	1.8909E+11	7.025E+10
305 H	2366.2187	380.5937	5.1262E+10	8245197502
305 J	2524.25	239.5312	2.3686E+11	2.2476E+10
305 K	2183.7812	198.1562	4.731E+10	4292864031
305 R	2911.375	-319.4375	1.7449E+11	-1.9145E+10
		TOTAL	1.4749E+12	5.19E+11

Building Torsional Moment of Inertia & Shear Distribution

D_{xi}	D_{yi}	$R_y * D_{xi}^2$	$R_x * D_{yi}^2$	$(R_y * D_{xi}^2)/J$	$(R_x * D_{yi}^2)/J$
546.86	2103.55	5.89438E+12	1.87087E+13	1.45545E-05	1.201E-05
559.11	2048.05	1.32171E+12	8.2673E+13	3.19209E-06	5.4508E-05
-1823.14	1496.05	4.55612E+13	7.96887E+12	-3.37452E-05	7.1926E-06
-953.14	1688.05	6.34633E+12	6.7396E+13	-8.99089E-06	5.3912E-05
-443.14	1688.05	1.3718E+12	6.7396E+13	-4.1801E-06	5.3912E-05
-839.14	1316.05	1.38788E+13	7.32289E+12	-2.23334E-05	7.5136E-06
-455.14	1316.05	4.08293E+12	7.32289E+12	-1.21134E-05	7.5136E-06
546.86	596.05	2.55966E+13	5.35549E+12	6.32037E-05	1.2133E-05
434.86	968.05	2.60729E+12	8.43059E+13	8.09608E-06	0.0001176
434.86	608.05	2.60729E+12	3.32612E+13	8.09608E-06	7.3865E-05
-576.01	-299.55	3.11335E+13	8.41968E+12	-7.29845E-05	-3.7955E-05
-224.92	-667.61	1.09596E+12	9.65576E+12	-6.57967E-06	-1.953E-05
-66.89	-808.67	4.19826E+11	6.13632E+13	-8.47523E-06	-0.00010246
-407.36	-850.05	3.59494E+12	1.56541E+13	-1.19166E-05	-2.4867E-05
320.24	-1367.64	6.14631E+12	1.12103E+14	2.59167E-05	-0.00011068
		1.51659E+14	5.88907E+14	-5.82598E-05	0.00010466
J =	7.4E+14				

Level E Summary

	Rigidity X	Rigidity Y	Center of Rigidity X	Center of Rigidity Y
	569190324.5883	495133524.2833	2591.13885	1048.20459

Appendix 7

Level D

Shear Wall	Rigidity (LG)	Rigidity (TR)	Orientation	Rigidity X-direction	Rigidity Y-direction
304 F	18736681.8	3944636.44	270	3944636.44	18736681.76
304 G	18126098.4	4641479.47	0	18126098.39	4641479.47
304 H	8212510.01	3385609.38	270	3385609.38	8212510.01
304 J	26780000.7	8261640.45	0	26780000.72	8261640.45
304 K	22654848.7	6606519.95	0	22654848.71	6606519.95
304 R	15935608.8	3338467.15	270	3338467.15	15935608.80
304 S	13385343.6	2584206.78	270	2584206.78	13385343.60
304 T	54883740.2	5442032.32	270	5442032.32	54883740.20
304 U	60994636.8	5493701.48	0	60994636.81	5493701.48
305 F	60994636.8	5493701.48	0	60994636.81	5493701.48
305 G	79819126.5	6885439.18	45	61309386.35	61309386.35
305 H	12298666.5	4296564.82	135	11734600.62	11734600.62
305 J	79819126.5	6885439.18	45	61309386.35	61309386.35
305 K	12298666.5	4296564.82	135	11734600.62	11734600.62
305 R	47238886.2	5041997.13	45	36968167.10	36968167.10
			TOTAL	391301314.5586	324707068.2132

Level D

Shear Wall	Relative Rigidity X-direction	Relative Rigidity Y-direction
304 F	0.0100808	0.0577033
304 G	0.0463226	0.0142944
304 H	0.0086522	0.0252921
304 J	0.0684383	0.0254434
304 K	0.0578962	0.0203461
304 R	0.0085317	0.0490769
304 S	0.0066041	0.0412228
304 T	0.0139075	0.1690254
304 U	0.1558764	0.0169189
305 F	0.1558764	0.0169189
305 G	0.1566808	0.1888144
305 H	0.0299887	0.0361390
305 J	0.1566808	0.1888144
305 K	0.0299887	0.0361390
305 R	0.0944749	0.1138508
TOTAL	1.0000	1.0000

Shear Wall	Coordinates X	Coordinates Y	Weighted Coordinates X	Weighted Coordinates Y
304 F	3138	3151.75	1.2378E+10	5.9053E+10
304 G	3150.25	3096.25	5.7102E+10	1.4371E+10
304 H	768	2544.25	2600148007	2.0895E+10
304 J	1638	2736.25	4.3866E+10	2.2606E+10
304 K	2148	2736.25	4.8663E+10	1.8077E+10
304 R	1752	2364.25	5848994453	3.7676E+10
304 S	2136	2364.25	5519865687	3.1646E+10
304 T	3138	1644.25	1.7077E+10	9.0243E+10
304 U	3026	2016.25	1.8457E+11	1.1077E+10
305 F	3026	1656.25	1.8457E+11	9098943069
305 G	2015.125	748.6562	1.2355E+11	4.59E+10
305 H	2366.2187	380.5937	2.7767E+10	4466115067
305 J	2524.25	239.5312	1.5476E+11	1.4686E+10
305 K	2183.7812	198.1562	2.5626E+10	2325283867
305 R	2911.375	-319.4375	1.0763E+11	-1.1809E+10
		TOTAL	1.0015E+12	3.7031E+11

Building Torsional Moment of Inertia & Shear Distribution

D_{xi}	D_{yi}	$R_y * D_{xi}^2$	$R_x * D_{yi}^2$	$(R_y * D_{xi}^2)/J$	$(R_x * D_{yi}^2)/J$
578.54	2011.31	6.2713E+12	1.5957E+13	1.98125E-05	1.4501E-05
590.79	1955.81	1.62E+12	6.9336E+13	5.0119E-06	6.4796E-05
-1791.46	1403.81	2.6357E+13	6.6719E+12	-2.689E-05	8.6868E-06
-921.46	1595.81	7.0149E+12	6.8198E+13	-1.3914E-05	7.811E-05
-411.46	1595.81	1.1185E+12	5.7693E+13	-4.9684E-06	6.6078E-05
-807.46	1223.81	1.039E+13	5E+12	-2.3518E-05	7.4675E-06
-423.46	1223.81	2.4003E+12	3.8704E+12	-1.036E-05	5.7804E-06
578.54	503.81	1.837E+13	1.3813E+12	5.8035E-05	5.0112E-06
466.54	875.81	1.1957E+12	4.6785E+13	4.68454E-06	9.7637E-05
466.54	515.81	1.1957E+12	1.6228E+13	4.68454E-06	5.7503E-05
-544.34	-391.79	1.8166E+13	9.4108E+12	-6.0997E-05	-4.39E-05
-193.24	-759.85	4.382E+11	6.7752E+12	-4.1446E-06	-1.63E-05
-35.21	-900.91	7.6017E+10	4.9761E+13	-3.9458E-06	-0.000101
-375.68	-942.29	1.6562E+12	1.0419E+13	-8.0575E-06	-2.021E-05
351.91	-1459.88	4.5782E+12	7.8788E+13	2.37781E-05	-9.864E-05
		1.0085E+14	4.4628E+14	-4.079E-05	0.00012556
J =	5.5E+14				

Level D Summary

	Rigidity X	Rigidity Y	Center of Rigidity X	Center of Rigidity Y
	391301314.5586	324707068.2132	2559.46198	1140.44334

Appendix 7

Level 1

Shear Wall	Rigidity (LG)	Rigidity (TR)	Orientation	Rigidity X-direction	Rigidity Y-direction
304 F	5680041.9	887026.96	270	887026.96	5680041.90
304 G	56337940.6	2711709.56	0	56337940.63	2711709.56
304 H	44953372.4	2954350.86	270	2954350.86	44953372.40
304 J	5917378.13	3411274.13	0	5917378.13	3411274.13
304 K	6732534.97	3477315.7	0	6732534.97	3477315.70
304 R	10001714.3	2916409.9	270	2916409.90	10001714.30
304 S	10544905	3126627.48	270	3126627.48	10544904.98
304 T	54883740.2	5442032.32	270	5442032.32	54883740.20
304 U	60994636.8	5493701.48	0	60994636.81	5493701.48
305 F	60994636.8	5493701.48	0	60994636.81	5493701.48
305 G	79819126.5	6885439.18	45	61309386.35	61309386.35
305 H	79819126.5	6885439.18	135	61309386.35	61309386.35
305 J	79819126.5	6885439.18	45	61309386.35	61309386.35
305 K	15076584.2	6885439.18	135	15529495.68	15529495.68
305 R	47238886.2	5041997.13	45	36968167.10	36968167.10
			TOTAL	442729396.7165	383077297.9721

Level 1

Shear Wall	Relative Rigidity X-direction	Relative Rigidity Y-direction
304 F	0.0020035	0.0148274
304 G	0.1272514	0.0070788
304 H	0.0066730	0.1173480
304 J	0.0133657	0.0089049
304 K	0.0152069	0.0090773
304 R	0.0065873	0.0261089
304 S	0.0070622	0.0275268
304 T	0.0122920	0.1432707
304 U	0.1377696	0.0143410
305 F	0.1377696	0.0143410
305 G	0.1384805	0.1600444
305 H	0.1384805	0.1600444
305 J	0.1384805	0.1600444
305 K	0.0350767	0.0405388
305 R	0.0835006	0.0965032
TOTAL	1.0000	1.0000

Shear Wall	Coordinates X	Coordinates Y	Weighted Coordinates X	Weighted Coordinates Y
304 F	3138	3151.75	2783490600	1.7902E+10
304 G	3150.25	3096.25	1.7748E+11	8396130722
304 H	768	2544.25	2268941463	1.1437E+11
304 J	1638	2736.25	9692665369	9334098843
304 K	2148	2736.25	1.4461E+10	9514805094
304 R	1752	2364.25	5109550151	2.3647E+10
304 S	2136	2364.25	6678476302	2.4931E+10
304 T	3138	1644.25	1.7077E+10	9.0243E+10
304 U	3026	2016.25	1.8457E+11	1.1077E+10
305 F	3026	1656.25	1.8457E+11	9098943069
305 G	2015.125	748.6562	1.2355E+11	4.59E+10
305 H	2366.2187	380.5937	1.4507E+11	2.3334E+10
305 J	2524.25	239.5312	1.5476E+11	1.4686E+10
305 K	2183.7812	198.1562	3.3913E+10	3077265853
305 R	2911.375	-319.4375	1.0763E+11	-1.1809E+10
		TOTAL	1.1696E+12	3.937E+11

Building Torsional Moment of Inertia & Shear Distribution

D_{xi}	D_{yi}	$R_y * D_{xi}^2$	$R_x * D_{yi}^2$	$(R_y * D_{xi}^2)/J$	$(R_x * D_{yi}^2)/J$
496.19	2124.01	1.3984E+12	4.0018E+12	3.7223E-06	2.4883E-06
508.44	2068.51	7.01E+11	2.4106E+14	1.8209E-06	0.00015391
-1873.81	1516.51	1.5784E+14	6.7945E+12	-0.00011125	5.9173E-06
-1003.81	1708.51	3.4373E+12	1.7273E+13	-4.5225E-06	1.3352E-05
-493.81	1708.51	8.4795E+11	1.9652E+13	-2.2679E-06	1.5192E-05
-889.81	1336.51	7.919E+12	5.2095E+12	-1.1754E-05	5.148E-06
-505.81	1336.51	2.6979E+12	5.585E+12	-7.0444E-06	5.519E-06
496.19	616.51	1.3512E+13	2.0685E+12	3.5967E-05	4.4311E-06
384.19	988.51	8.1086E+11	5.9601E+13	2.7875E-06	7.9632E-05
384.19	628.51	8.1086E+11	2.4095E+13	2.7875E-06	5.0631E-05
-626.69	-279.08	2.4079E+13	4.7751E+12	-5.0745E-05	-2.2598E-05
-275.60	-647.14	4.6566E+12	2.5676E+13	-2.2316E-05	-5.2401E-05
-117.56	-788.21	8.4738E+11	3.809E+13	-9.5195E-06	-6.3823E-05
-458.03	-829.58	3.258E+12	1.0687E+13	-9.3944E-06	-1.7015E-05
269.56	-1347.17	2.6862E+12	6.7093E+13	1.3161E-05	-6.5776E-05
		2.255E+14	5.3166E+14	-0.00016857	0.00011461
J =	7.6E+14				

Level 1 Summary

	Rigidity X	Rigidity Y	Center of Rigidity X	Center of Rigidity Y
	442729396.7165	383077297.9721	2641.81413	1027.73685

Appendix 7

Level 2

Shear Wall	Rigidity (LG)	Rigidity (TR)	Orientation	Rigidity X-direction	Rigidity Y-direction
304 F	12193341.1	4657587.7	270	4657587.70	12193341.08
304 G	66515938.7	4083955.6	0	66515938.75	4083955.60
304 H	44953372.4	2954350.86	270	2954350.86	44953372.40
304 J	76294906.2	6417517.75	0	76294906.24	6417517.75
304 K	79819126.5	6885439.18	0	79819126.50	6885439.18
304 R	66515938.7	4083955.6	270	4083955.60	66515938.75
304 S	66515938.7	4083955.6	270	4083955.60	66515938.75
304 T	54883740.2	5442032.32	270	5442032.32	54883740.20
304 U	60994636.8	5493701.48	0	60994636.81	5493701.48
305 F	60994636.8	5493701.48	0	60994636.81	5493701.48
305 G	79819126.5	6885439.18	45	61309386.35	61309386.35
305 H	79819126.5	6885439.18	135	61309386.35	61309386.35
305 J	79819126.5	6885439.18	45	61309386.35	61309386.35
305 K	79819126.5	6885439.18	135	61309386.35	61309386.35
305 R	47238886.2	5041997.13	45	36968167.10	36968167.10
			TOTAL	648046839.7086	555642359.1820

Level 2

Shear Wall	Relative Rigidity X-direction	Relative Rigidity Y-direction
304 F	0.0071871	0.0219446
304 G	0.1026406	0.0073500
304 H	0.0045589	0.0809034
304 J	0.1177305	0.0115497
304 K	0.1231688	0.0123919
304 R	0.0063019	0.1197100
304 S	0.0063019	0.1197100
304 T	0.0083976	0.0987753
304 U	0.0941207	0.0098871
305 F	0.0941207	0.0098871
305 G	0.0946064	0.1103397
305 H	0.0946064	0.1103397
305 J	0.0946064	0.1103397
305 K	0.0946064	0.1103397
305 R	0.0570455	0.0665323
TOTAL	1.0000	1.0000

Shear Wall	Coordinates X	Coordinates Y	Weighted Coordinates X	Weighted Coordinates Y
304 F	3138	3151.75	1.4616E+10	3.843E+10
304 G	3150.25	3096.25	2.0954E+11	1.2645E+10
304 H	768	2544.25	2268941463	1.1437E+11
304 J	1638	2736.25	1.2497E+11	1.756E+10
304 K	2148	2736.25	1.7145E+11	1.884E+10
304 R	1752	2364.25	7155090220	1.5726E+11
304 S	2136	2364.25	8723329172	1.5726E+11
304 T	3138	1644.25	1.7077E+10	9.0243E+10
304 U	3026	2016.25	1.8457E+11	1.1077E+10
305 F	3026	1656.25	1.8457E+11	9098943069
305 G	2015.125	748.6562	1.2355E+11	4.59E+10
305 H	2366.2187	380.5937	1.4507E+11	2.3334E+10
305 J	2524.25	239.5312	1.5476E+11	1.4686E+10
305 K	2183.7812	198.1562	1.3389E+11	1.2149E+10
305 R	2911.375	-319.4375	1.0763E+11	-1.1809E+10
		TOTAL	1.5898E+12	7.1105E+11

Building Torsional Moment of Inertia & Shear Distribution

D_{xi}	D_{yi}	$R_Y * D_{xi}^2$	$R_X * D_{yi}^2$	$(R_Y * D_{xi}^2)/J$	$(R_X * D_{yi}^2)/J$
684.73	1872.07	5.7169E+12	1.6323E+13	7.21595E-06	7.53592E-06
696.98	1816.57	1.9839E+12	2.195E+14	2.4601E-06	0.000104431
-1685.27	1264.57	1.2767E+14	4.7244E+12	-6.54767E-05	3.22892E-06
-815.27	1456.57	4.2655E+12	1.6187E+14	-4.52193E-06	9.60462E-05
-305.27	1456.57	6.4167E+11	1.6934E+14	-1.81666E-06	0.000100483
-701.27	1084.57	3.2712E+13	4.8039E+12	-4.0315E-05	3.82817E-06
-317.27	1084.57	6.6957E+12	4.8039E+12	-1.82395E-05	3.82817E-06
684.73	364.57	2.5732E+13	7.233E+11	3.24799E-05	1.71472E-06
572.73	736.57	1.802E+12	3.3092E+13	2.71936E-06	3.88292E-05
572.73	376.57	1.802E+12	8.6492E+12	2.71936E-06	1.98513E-05
-438.15	-531.03	1.177E+13	1.7289E+13	-2.32168E-05	-2.81382E-05
-87.05	-899.09	4.6463E+11	4.956E+13	-4.61289E-06	-4.76413E-05
70.98	-1040.15	3.0886E+11	6.6332E+13	3.76094E-06	-5.5116E-05
-269.49	-1081.53	4.4527E+12	7.1714E+13	-1.428E-05	-5.73084E-05
458.10	-1599.12	7.758E+12	9.4534E+13	1.46367E-05	-5.10932E-05
		2.3378E+14	9.2325E+14	-0.000106487	0.00014048
J =	1.2E+15				

Level 2 Summary

	Rigidity X	Rigidity Y	Center of Rigidity X	Center of Rigidity Y
	648046839.7086	555642359.1820	2453.27341	1279.6827

Appendix 7

Level 3

Shear Wall	Rigidity (Lg)	Rigidity (Tr)	Orientation	Rigidity x-direction	Rigidity y-direction
304 F	57476764.9	3606045.91	270	3606045.91	57476764.95
304 G	66515938.7	4083955.6	0	66515938.75	4083955.60
304 H	44953372.4	2954350.86	270	2954350.86	44953372.40
304 J	76294906.2	6417517.75	0	76294906.24	6417517.75
304 K	79819126.5	6885439.18	0	79819126.50	6885439.18
304 R	66515938.7	4083955.6	270	4083955.60	66515938.75
304 S	66515938.7	4083955.6	270	4083955.60	66515938.75
304 T	54883740.2	5442032.32	270	5442032.32	54883740.20
304 U	60994636.8	5493701.48	0	60994636.81	5493701.48
305 F	60994636.8	5493701.48	0	60994636.81	5493701.48
305 G	79819126.5	6885439.18	45	61309386.35	61309386.35
305 H	79819126.5	6885439.18	135	61309386.35	61309386.35
305 J	79819126.5	6885439.18	45	61309386.35	61309386.35
305 K	79819126.5	6885439.18	135	61309386.35	61309386.35
305 R	47238886.2	5041997.13	45	36968167.10	36968167.10
			TOTAL	646995297.9170	600925783.0438

Level 3

Shear Wall	Relative Rigidity x-direction	Relative Rigidity y-direction
304 F	0.0055735	0.0956470
304 G	0.1028075	0.0067961
304 H	0.0045663	0.0748069
304 J	0.1179219	0.0106794
304 K	0.1233689	0.0114581
304 R	0.0063122	0.1106891
304 S	0.0063122	0.1106891
304 T	0.0084112	0.0913320
304 U	0.0942737	0.0091421
305 F	0.0942737	0.0091421
305 G	0.0947602	0.1020249
305 H	0.0947602	0.1020249
305 J	0.0947602	0.1020249
305 K	0.0947602	0.1020249
305 R	0.0571382	0.0615187
TOTAL	1.0000	1.0000

Shear Wall	Coordinates x	Coordinates y	Weighted Coordinates x	Weighted Coordinates y
304 F	3138	3151.75	1.1316E+10	1.8115E+11
304 G	3150.25	3096.25	2.0954E+11	1.2645E+10
304 H	768	2544.25	2268941463	1.1437E+11
304 J	1638	2736.25	1.2497E+11	1.756E+10
304 K	2148	2736.25	1.7145E+11	1.884E+10
304 R	1752	2364.25	7155090220	1.5726E+11
304 S	2136	2364.25	8723329172	1.5726E+11
304 T	3138	1644.25	1.7077E+10	9.0243E+10
304 U	3026	2016.25	1.8457E+11	1.1077E+10
305 F	3026	1656.25	1.8457E+11	9098943069
305 G	2015.125	748.6562	1.2355E+11	4.59E+10
305 H	2366.2187	380.5937	1.4507E+11	2.3334E+10
305 J	2524.25	239.5312	1.5476E+11	1.4686E+10
305 K	2183.7812	198.1562	1.3389E+11	1.2149E+10
305 R	2911.375	-319.4375	1.0763E+11	-1.1809E+10
		TOTAL	1.5865E+12	8.5377E+11

Building Torsional Moment of Inertia & Shear Distribution

D_{xi}	D_{yi}	$R_y * D_{xi}^2$	$R_x * D_{yi}^2$	$(R_y * D_{xi}^2)/J$	$(R_x * D_{yi}^2)/J$
685.84	1731.00	2.7036E+13	1.0805E+13	3.45198E-05	5.46615E-06
698.09	1675.50	1.9902E+12	1.8673E+14	2.49658E-06	9.7594E-05
-1684.16	1123.50	1.2751E+14	3.7291E+12	-6.62979E-05	2.90661E-06
-814.16	1315.50	4.2539E+12	1.3203E+14	-4.57542E-06	8.78899E-05
-304.16	1315.50	6.37E+11	1.3813E+14	-1.83395E-06	9.19497E-05
-700.16	943.50	3.2608E+13	3.6355E+12	-4.07828E-05	3.37423E-06
-316.16	943.50	6.6488E+12	3.6355E+12	-1.84157E-05	3.37423E-06
685.84	223.50	2.5816E+13	2.7183E+11	3.29625E-05	1.06508E-06
573.84	595.50	1.809E+12	2.163E+13	2.76064E-06	3.18071E-05
573.84	235.50	1.809E+12	3.3827E+12	2.76064E-06	1.25785E-05
-437.04	-672.10	1.171E+13	2.7694E+13	-2.34638E-05	-3.60839E-05
-85.94	-1040.16	4.5283E+11	6.6333E+13	-4.61408E-06	-5.58446E-05
72.09	-1181.22	3.1862E+11	8.5544E+13	3.87037E-06	-6.3418E-05
-268.38	-1222.60	4.416E+12	9.1642E+13	-1.44089E-05	-6.56394E-05
459.21	-1740.19	7.7958E+12	1.1195E+14	1.48661E-05	-5.63351E-05
		2.5481E+14	8.8714E+14	-8.01558E-05	6.06844E-05
J =	1.1E+15				

Level 3 Summary

	Rigidity X	Rigidity Y	Center of Rigidity X	Center of Rigidity Y
	646995297.9170	600925783.0438	2452.16055	1420.75439

Appendix 7

Level 4

Shear Wall	Rigidity (LG)	Rigidity (TR)	Orientation	Rigidity X-direction	Rigidity Y-direction
304 F	57476764.9	3606045.91	270	3606045.91	57476764.95
304 G	66515938.7	4083955.6	0	66515938.75	4083955.60
304 H	44953372.4	2954350.86	270	2954350.86	44953372.40
304 J	76294906.2	6417517.75	0	76294906.24	6417517.75
304 K	79819126.5	6885439.18	0	79819126.50	6885439.18
304 R	66515938.7	4083955.6	270	4083955.60	66515938.75
304 S	66515938.7	4083955.6	270	4083955.60	66515938.75
304 T	54883740.2	5442032.32	270	5442032.32	54883740.20
304 U	60994636.8	5493701.48	0	60994636.81	5493701.48
305 F	60994636.8	5493701.48	0	60994636.81	5493701.48
305 G	79819126.5	6885439.18	45	61309386.35	61309386.35
305 H	79819126.5	6885439.18	135	61309386.35	61309386.35
305 J	79819126.5	6885439.18	45	61309386.35	61309386.35
305 K	79819126.5	6885439.18	135	61309386.35	61309386.35
305 R	47238886.2	5041997.13	45	36968167.10	36968167.10
			TOTAL	646995297.9170	600925783.0438

Level 4

Shear Wall	Relative Rigidity X-direction	Relative Rigidity Y-direction
304 F	0.0055735	0.0956470
304 G	0.1028075	0.0067961
304 H	0.0045663	0.0748069
304 J	0.1179219	0.0106794
304 K	0.1233689	0.0114581
304 R	0.0063122	0.1106891
304 S	0.0063122	0.1106891
304 T	0.0084112	0.0913320
304 U	0.0942737	0.0091421
305 F	0.0942737	0.0091421
305 G	0.0947602	0.1020249
305 H	0.0947602	0.1020249
305 J	0.0947602	0.1020249
305 K	0.0947602	0.1020249
305 R	0.0571382	0.0615187
TOTAL	1.0000	1.0000

Shear Wall	Coordinates X	Coordinates Y	Weighted Coordinates X	Weighted Coordinates Y
304 F	3138	3151.75	1.1316E+10	1.8115E+11
304 G	3150.25	3096.25	2.0954E+11	1.2645E+10
304 H	768	2544.25	2268941463	1.1437E+11
304 J	1638	2736.25	1.2497E+11	1.756E+10
304 K	2148	2736.25	1.7145E+11	1.884E+10
304 R	1752	2364.25	7155090220	1.5726E+11
304 S	2136	2364.25	8723329172	1.5726E+11
304 T	3138	1644.25	1.7077E+10	9.0243E+10
304 U	3026	2016.25	1.8457E+11	1.1077E+10
305 F	3026	1656.25	1.8457E+11	9098943069
305 G	2015.125	748.6562	1.2355E+11	4.59E+10
305 H	2366.2187	380.5937	1.4507E+11	2.3334E+10
305 J	2524.25	239.5312	1.5476E+11	1.4686E+10
305 K	2183.7812	198.1562	1.3389E+11	1.2149E+10
305 R	2911.375	-319.4375	1.0763E+11	-1.1809E+10
		TOTAL	1.5865E+12	8.5377E+11

Building Torsional Moment of Inertia & Shear Distribution

D_{xi}	D_{yi}	$R_Y * D_{xi}^2$	$R_X * D_{yi}^2$	$(R_Y * D_{xi}^2)/J$	$(R_X * D_{yi}^2)/J$
685.84	1731.00	2.7036E+13	1.0805E+13	3.45198E-05	5.46615E-06
698.09	1675.50	1.9902E+12	1.8673E+14	2.49658E-06	9.7594E-05
-1684.16	1123.50	1.2751E+14	3.7291E+12	-6.6298E-05	2.90661E-06
-814.16	1315.50	4.2539E+12	1.3203E+14	-4.5754E-06	8.78899E-05
-304.16	1315.50	6.37E+11	1.3813E+14	-1.834E-06	9.19497E-05
-700.16	943.50	3.2608E+13	3.6355E+12	-4.0783E-05	3.37423E-06
-316.16	943.50	6.6488E+12	3.6355E+12	-1.8416E-05	3.37423E-06
685.84	223.50	2.5816E+13	2.7183E+11	3.29625E-05	1.06508E-06
573.84	595.50	1.809E+12	2.163E+13	2.76064E-06	3.18071E-05
573.84	235.50	1.809E+12	3.3827E+12	2.76064E-06	1.25785E-05
-437.04	-672.10	1.171E+13	2.7694E+13	-2.3464E-05	-3.60839E-05
-85.94	-1040.16	4.5283E+11	6.6333E+13	-4.6141E-06	-5.58446E-05
72.09	-1181.22	3.1862E+11	8.5544E+13	3.87037E-06	-6.3418E-05
-268.38	-1222.60	4.416E+12	9.1642E+13	-1.4409E-05	-6.56394E-05
459.21	-1740.19	7.7958E+12	1.1195E+14	1.48661E-05	-5.63351E-05
		2.5481E+14	8.8714E+14	-8.0156E-05	6.06844E-05
J =	1.1E+15				

Level 4 Summary

Rigidity X	Rigidity Y	Center of Rigidity X	Center of Rigidity Y
646995297.9170	600925783.0438	2452.16055	1420.75439

Appendix 7

Level 5

Shear Wall	Rigidity (LG)	Rigidity (TR)	Orientation	Rigidity X-direction	Rigidity Y-direction
304 F	46917138.8	1038542.63	270	1038542.63	46917138.80
304 G	56720212.8	1176180.81	0	56720212.82	1176180.81
304 H	22080724.6	677763.767	270	677763.77	22080724.63
304 J	65203091.9	1940806.71	0	65203091.88	1940806.71
304 K	68064255.4	2018420.81	0	68064255.39	2018420.81
304 R	56720212.8	1176180.81	270	1176180.81	56720212.82
304 S	56720212.8	1176180.81	270	1176180.81	56720212.82
304 T	34282126.5	1504935.37	270	1504935.37	34282126.50
304 U	47793304.4	6033171.05	0	47793304.39	6033171.05
305 F	47793304.4	6033171.05	0	47793304.39	6033171.05
305 G	68064255.4	7561574.38	45	53475537.06	53475537.06
305 H	68064255.4	7561574.38	135	53475537.06	53475537.06
305 J	68064255.4	7561574.38	45	53475537.06	53475537.06
305 K	68064255.4	7561574.38	135	53475537.06	53475537.06
305 R	33259186.9	1478028	45	24562920.22	24562920.22
			TOTAL	529612840.7545	472387234.4910

Level 5

Shear Wall	Relative Rigidity X-direction	Relative Rigidity Y-direction
304 F	0.0019609	0.0993192
304 G	0.1070975	0.0024899
304 H	0.0012797	0.0467428
304 J	0.1231146	0.0041085
304 K	0.1285170	0.0042728
304 R	0.0022208	0.1200714
304 S	0.0022208	0.1200714
304 T	0.0028416	0.0725721
304 U	0.0902420	0.0127717
305 F	0.0902420	0.0127717
305 G	0.1009710	0.1132028
305 H	0.1009710	0.1132028
305 J	0.1009710	0.1132028
305 K	0.1009710	0.1132028
305 R	0.0463790	0.0519974
TOTAL	1.0000	1.0000

Shear Wall	Coordinates X	Coordinates Y	Weighted Coordinates X	Weighted Coordinates Y
304 F	3138	3151.75	3258946787	1.4787E+11
304 G	3150.25	3096.25	1.7868E+11	3641749848
304 H	768	2544.25	520522573	5.6179E+10
304 J	1638	2736.25	1.068E+11	5310532350
304 K	2148	2736.25	1.462E+11	5522903941
304 R	1752	2364.25	2060668788	1.341E+11
304 S	2136	2364.25	2512322221	1.341E+11
304 T	3138	1644.25	4722487194	5.6368E+10
304 U	3026	2016.25	1.4462E+11	1.2164E+10
305 F	3026	1656.25	1.4462E+11	9992439553
305 G	2015.125	748.6562	1.0776E+11	4.0035E+10
305 H	2366.2187	380.5937	1.2653E+11	2.0352E+10
305 J	2524.25	239.5312	1.3499E+11	1.2809E+10
305 K	2183.7812	198.1562	1.1678E+11	1.0597E+10
305 R	2911.375	-319.4375	7.1512E+10	-7846317829
		TOTAL	1.2916E+12	6.412E+11

Building Torsional Moment of Inertia & Shear Distribution

D_{xi}	D_{yi}	$R_y * D_{xi}^2$	$R_x * D_{yi}^2$	$(R_y * D_{xi})/J$	$(R_x * D_{yi})/J$
699.28	1794.39	2.2942E+13	3.3439E+12	3.66988E-05	2.08455E-06
711.53	1738.89	5.9547E+11	1.7151E+14	9.36132E-07	0.000110327
-1670.72	1186.89	6.1634E+13	9.5478E+11	-4.12657E-05	8.99831E-07
-800.72	1378.89	1.2444E+12	1.2397E+14	-1.73834E-06	0.00010057
-290.72	1378.89	1.706E+11	1.2941E+14	-6.56389E-07	0.000104983
-686.72	1006.89	2.6749E+13	1.1925E+12	-4.35703E-05	1.32473E-06
-302.72	1006.89	5.1979E+12	1.1925E+12	-1.92067E-05	1.32473E-06
699.28	286.89	1.6764E+13	1.2387E+11	2.68157E-05	4.82957E-07
587.28	658.89	2.0808E+12	2.0749E+13	3.96333E-06	3.52251E-05
587.28	298.89	2.0808E+12	4.2697E+12	3.96333E-06	1.59791E-05
-423.60	-608.70	9.5954E+12	1.9814E+13	-2.53384E-05	-3.64108E-05
-72.50	-976.76	2.8111E+11	5.1019E+13	-4.33696E-06	-5.84273E-05
85.53	-1117.83	3.9117E+11	6.682E+13	5.11603E-06	-6.68653E-05
-254.94	-1159.20	3.4756E+12	7.1858E+13	-1.52499E-05	-6.93402E-05
472.65	-1676.80	5.4874E+12	6.9062E+13	1.29865E-05	-4.60714E-05
		1.5869E+14	7.3529E+14	-6.08828E-05	9.60868E-05
J =	8.9E+14				

Level 5 Summary

Rigidity X	Rigidity Y	Center of Rigidity X	Center of Rigidity Y
529612840.7545	472387234.4910	2438.72229	1357.35758

LEVEL E

SHEAR FORCE

V = 5938

	X	Y		DISTRIBUTION OF SHEAR FORCES X	Y
304 F	0.007428	0.039807		44.11	236.38
304 G	0.034628	0.008539		205.63	50.71
304 H	0.006255	0.027684		37.15	164.39
304 J	0.041554	0.014109		246.75	83.78
304 K	0.041554	0.014109		246.75	83.78
304 R	0.007428	0.039807		44.11	236.38
304 S	0.007428	0.039807		44.11	236.38
304 T	0.026484	0.172865		157.27	1026.50
304 U	0.158055	0.027846		938.56	165.35
305 F	0.158055	0.027846		938.56	165.35
305 G	0.164856	0.189513		978.94	1125.36
305 H	0.038061	0.043754		226.01	259.82
305 J	0.164856	0.189513		978.94	1125.36
305 K	0.038061	0.043754		226.01	259.82
305 R	0.105297	0.121046		625.27	718.79
TOTAL	1.00000	1.00000			

TORSIONAL SHEAR FORCE

				DISTRIBUTION OF SHEAR FORCES							
				X				Y			
				e_x+e_{xACI}		e_x-e_{xACI}		e_y+e_{yACI}		e_y-e_{yACI}	
				e = 145.8		e = -145.8		e = 229.2		e = -229.2	
	X	Y	V_T =	865783		-865783		1361025.793		-1361025.793	
304 F	0.000012	0.000015		10.40	12.60	-10.40	-12.60	16.35	19.81	-16.35	-19.81
304 G	0.000055	0.000003		47.19	2.76	-47.19	-2.76	74.19	4.34	-74.19	-4.34
304 H	0.000007	-0.000034		6.23	-29.22	-6.23	29.22	9.79	-45.93	-9.79	45.93
304 J	0.000054	-0.000009		46.68	-7.78	-46.68	7.78	73.38	-12.24	-73.38	12.24
304 K	0.000054	-0.000004		46.68	-3.62	-46.68	3.62	73.38	-5.69	-73.38	5.69
304 R	0.000008	-0.000022		6.51	-19.34	-6.51	19.34	10.23	-30.40	-10.23	30.40
304 S	0.000008	-0.000012		6.51	-10.49	-6.51	10.49	10.23	-16.49	-10.23	16.49
304 T	0.000012	0.000063		10.50	54.72	-10.50	-54.72	16.51	86.02	-16.51	-86.02
304 U	0.000118	0.000008		101.81	7.01	-101.81	-7.01	160.05	11.02	-160.05	-11.02
305 F	0.000074	0.000008		63.95	7.01	-63.95	-7.01	100.53	11.02	-100.53	-11.02
305 G	-0.000038	-0.000073		-32.86	-63.19	32.86	63.19	-51.66	-99.33	51.66	99.33
305 H	-0.000020	-0.000007		-16.91	-5.70	16.91	5.70	-26.58	-8.96	26.58	8.96
305 J	-0.000102	-0.000008		-88.71	-7.34	88.71	7.34	-139.46	-11.54	139.46	11.54
305 K	-0.000025	-0.000012		-21.53	-10.32	21.53	10.32	-33.84	-16.22	33.84	16.22
305 R	-0.000111	0.000026		-95.83	22.44	95.83	-22.44	-150.64	35.27	150.64	-35.27

		DISTRIBUTION OF SHEAR FORCES							
		X				Y			
		e_x+e_{xACI}		e_x-e_{xACI}		e_y+e_{yACI}		e_y-e_{yACI}	
		e = -62		e = -353		e = 349		e = -109	
304 F		54.51	248.98	33.71	223.78	60.46	256.19	27.76	216.57
304 G		252.82	53.47	158.43	47.94	279.81	55.05	131.44	46.36
304 H		43.37	135.18	30.92	193.61	46.93	118.47	27.36	210.32
304 J		293.43	76.00	200.08	91.56	320.13	71.54	173.38	96.02
304 K		293.43	80.16	200.08	87.40	320.13	78.09	173.38	89.47
304 R		50.61	217.05	37.60	255.72	54.34	205.99	33.88	266.78
304 S		50.61	225.89	37.60	246.87	54.34	219.90	33.88	252.87
304 T		167.77	1081.22	146.76	971.78	173.78	1112.52	140.75	940.48
304 U		1040.37	172.36	836.74	158.35	1098.61	176.37	778.50	154.34
305 F		1002.51	172.36	874.61	158.35	1039.09	176.37	838.02	154.34
305 G		946.08	1062.17	1011.80	1188.55	927.28	1026.02	1030.60	1224.69
305 H		209.10	254.12	242.92	265.51	199.43	250.86	252.59	268.77
305 J		890.23	1118.02	1067.65	1132.70	839.48	1113.82	1118.40	1136.89
305 K		204.48	249.50	247.54	270.13	192.17	243.60	259.86	276.04
305 R		529.44	741.23	721.10	696.35	474.63	754.07	775.91	683.52

APPENDIX E

LEVEL D

SHEAR FORCE

V = 5938

	X	Y		Distribution of Shear Forces X	Y
304 F	0.001961	0.099319		11.64	589.77
304 G	0.107098	0.002490		635.96	14.79
304 H	0.001280	0.046743		7.60	277.57
304 J	0.123115	0.004109		731.07	24.40
304 K	0.128517	0.004273		763.15	25.37
304 R	0.002221	0.120071		13.19	713.00
304 S	0.002221	0.120071		13.19	713.00
304 T	0.002842	0.072572		16.87	430.94
304 U	0.090242	0.012772		535.87	75.84
305 F	0.090242	0.012772		535.87	75.84
305 G	0.100971	0.113203		599.58	672.22
305 H	0.100971	0.113203		599.58	672.22
305 J	0.100971	0.113203		599.58	672.22
305 K	0.100971	0.113203		599.58	672.22
305 R	0.046379	0.051997		275.41	308.77
TOTAL	1.00000	1.00000			

TORSIONAL SHEAR FORCE

				Distribution of Shear Forces							
				X				Y			
				e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
				e = 692.034		e = 400.434		e = -595.516		e = -1053.92	
	X	Y	V_T =	4109407		2377840		-3536266.185		-6258317.771	
304 F	0.000015	0.000020		59.59	81.42	34.48	47.11	-51.28	-70.06	-90.75	-123.99
304 G	0.000065	0.000005		266.27	20.60	154.07	11.92	-229.13	-17.72	-405.51	-31.37
304 H	0.000009	-0.000027		35.70	-110.50	20.66	-63.94	-30.72	95.09	-54.36	168.29
304 J	0.000078	-0.000014		320.98	-57.18	185.73	-33.09	-276.22	49.20	-488.84	87.08
304 K	0.000066	-0.000005		271.54	-20.42	157.12	-11.81	-233.67	17.57	-413.54	31.09
304 R	0.000007	-0.000024		30.69	-96.65	17.76	-55.92	-26.41	83.17	-46.73	147.18
304 S	0.000006	-0.000010		23.75	-42.57	13.74	-24.63	-20.44	36.64	-36.18	64.84
304 T	0.000005	0.000058		20.59	238.49	11.92	138.00	-17.72	-205.23	-31.36	-363.20
304 U	0.000098	0.000005		401.23	19.25	232.17	11.14	-345.27	-16.57	-611.04	-29.32
305 F	0.000058	0.000005		236.30	19.25	136.73	11.14	-203.35	-16.57	-359.87	-29.32
305 G	#######	-0.000061		-180.41	-250.66	-104.39	-145.04	155.25	215.70	274.76	381.74
305 H	#######	-0.000004		-66.97	-17.03	-38.75	-9.86	57.63	14.66	101.99	25.94
305 J	#######	-0.000004		-414.86	-16.21	-240.05	-9.38	357.00	13.95	631.80	24.69
305 K	#######	-0.000008		-83.05	-33.11	-48.06	-19.16	71.47	28.49	126.48	50.43
305 R	#######	0.000024		-405.36	97.71	-234.55	56.54	348.82	-84.09	617.33	-148.81

	Distribution of Shear Forces							
	X				Y			
	e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
	e = -62		e = -353		e = 349		e = -109	
304 F	71.24	671.19	46.13	636.88	-39.64	519.71	-79.11	465.78
304 G	902.23	35.38	790.04	26.70	406.83	-2.94	230.45	-16.58
304 H	43.30	167.06	28.26	213.63	-23.12	372.66	-46.77	445.86
304 J	1052.06	-32.78	916.81	-8.69	454.86	73.60	242.24	111.48
304 K	1034.70	4.96	920.28	13.56	529.49	42.94	349.62	56.47
304 R	43.87	616.36	30.94	657.08	-13.22	796.17	-33.55	860.19
304 S	36.94	670.43	26.93	688.37	-7.25	749.64	-22.99	777.84
304 T	37.47	669.43	28.79	568.94	-0.85	225.72	-14.49	67.74
304 U	937.10	95.09	768.04	86.98	190.60	59.27	-75.17	46.52
305 F	772.18	95.09	672.60	86.98	332.52	59.27	176.00	46.52
305 G	419.17	421.55	495.19	527.17	754.83	887.92	874.34	1053.96
305 H	532.61	655.18	560.83	662.36	657.21	686.87	701.57	698.15
305 J	184.72	656.00	359.53	662.83	956.58	686.17	1231.38	696.91
305 K	516.53	639.10	551.53	653.06	671.05	700.71	726.06	722.64
305 R	-129.95	406.48	40.85	365.31	624.23	224.68	892.74	159.96

LEVEL 1

SHEAR FORCE

V = 5646

	X	Y		DISTRIBUTION OF SHEAR FORCES X	Y
304 F	0.001961	0.099319		11.07	560.79
304 G	0.107098	0.002490		604.70	14.06
304 H	0.001280	0.046743		7.23	263.92
304 J	0.123115	0.004109		695.14	23.20
304 K	0.128517	0.004273		725.65	24.13
304 R	0.002221	0.120071		12.54	677.96
304 S	0.002221	0.120071		12.54	677.96
304 T	0.002842	0.072572		16.04	409.76
304 U	0.090242	0.012772		509.53	72.11
305 F	0.090242	0.012772		509.53	72.11
305 G	0.100971	0.113203		570.11	639.18
305 H	0.100971	0.113203		570.11	639.18
305 J	0.100971	0.113203		570.11	639.18
305 K	0.100971	0.113203		570.11	639.18
305 R	0.046379	0.051997		261.87	293.59
TOTAL	1.00000	1.00000			

TORSIONAL SHEAR FORCE

				DISTRIBUTION OF SHEAR FORCES							
				X				Y			
				E_X+E_{XACI}		E_X-E_{XACI}		E_Y+E_{YACI}		E_Y-E_{YACI}	
				e = 805.67374		e = 514.074		e = -782.3043		e = -1240.7043	
	X	Y	V_T =	4549076		2902615		-4417124.557		-7005388.413	
304 F	0.000002	0.000004		11.32	16.93	7.22	10.80	-10.99	-16.44	-17.43	-26.08
304 G	0.000154	0.000002		700.16	8.28	446.75	5.29	-679.85	-8.04	-1078.21	-12.76
304 H	0.000006	-0.000111		26.92	-506.09	17.18	-322.92	-26.14	491.41	-41.45	779.35
304 J	0.000013	-0.000005		60.74	-20.57	38.76	-13.13	-58.98	19.98	-93.54	31.68
304 K	0.000015	-0.000002		69.11	-10.32	44.10	-6.58	-67.10	10.02	-106.42	15.89
304 R	0.000005	-0.000012		23.42	-53.47	14.94	-34.12	-22.74	51.92	-36.06	82.34
304 S	0.000006	-0.000007		25.11	-32.05	16.02	-20.45	-24.38	31.12	-38.66	49.35
304 T	0.000004	0.000036		20.16	163.62	12.86	104.40	-19.57	-158.87	-31.04	-251.96
304 U	0.000080	0.000003		362.25	12.68	231.14	8.09	-351.74	-12.31	-557.85	-19.53
305 F	0.000051	0.000003		230.33	12.68	146.96	8.09	-223.64	-12.31	-354.69	-19.53
305 G	-0.000023	-0.000051		-102.80	-230.84	-65.59	-147.29	99.82	224.15	158.31	355.49
305 H	-0.000052	-0.000022		-238.38	-101.52	-152.10	-64.77	231.46	98.57	367.09	156.33
305 J	-0.000064	-0.000010		-290.34	-43.30	-185.25	-27.63	281.92	42.05	447.11	66.69
305 K	-0.000017	-0.000009		-77.40	-42.74	-49.39	-27.27	75.16	41.50	119.20	65.81
305 R	-0.000066	0.000013		-299.22	59.87	-190.92	38.20	290.54	-58.13	460.78	-92.20

	DISTRIBUTION OF SHEAR FORCES							
	X				Y			
	E_X+E_{XACI}		E_X-E_{XACI}		E_Y+E_{YACI}		E_Y-E_{YACI}	
	e = -62		e = -353		e = 349		e = -109	
304 F	22.39	577.72	18.29	571.59	0.08	544.34	-6.36	534.71
304 G	1304.86	22.34	1051.45	19.34	-75.14	6.02	-473.51	1.30
304 H	34.14	-242.16	24.40	-58.99	-18.91	755.33	-34.23	1043.28
304 J	755.88	2.62	733.90	10.07	636.16	43.17	601.60	54.88
304 K	794.75	13.81	769.74	17.54	658.54	34.14	619.22	40.01
304 R	35.96	624.49	27.48	643.84	-10.20	729.88	-23.52	760.30
304 S	37.65	645.91	28.56	657.51	-11.84	709.08	-26.12	727.31
304 T	36.20	573.38	28.91	514.16	-3.53	250.89	-15.00	157.80
304 U	871.78	84.79	740.67	80.20	157.79	59.80	-48.32	52.58
305 F	739.86	84.79	656.50	80.20	285.89	59.80	154.84	52.58
305 G	467.31	408.33	504.52	491.88	669.93	863.32	728.42	994.66
305 H	331.74	537.66	418.01	574.40	801.57	737.75	937.20	795.51
305 J	279.78	595.87	384.86	611.55	852.03	681.23	1017.22	705.86
305 K	492.71	596.44	520.72	611.91	645.27	680.67	689.31	704.99
305 R	-37.35	353.46	70.95	331.80	552.41	235.46	722.65	201.39

Level 2

Shear Force

V = 5061

	X	Y		Distribution of Shear Forces X	Y
304 F	0.007187	0.021945		36.37	111.06
304 G	0.102641	0.007350		519.45	37.20
304 H	0.004559	0.080903		23.07	409.44
304 J	0.117731	0.011550		595.82	58.45
304 K	0.123169	0.012392		623.34	62.71
304 R	0.006302	0.119710		31.89	605.83
304 S	0.006302	0.119710		31.89	605.83
304 T	0.008398	0.098775		42.50	499.89
304 U	0.094121	0.009887		476.33	50.04
305 F	0.094121	0.009887		476.33	50.04
305 G	0.094606	0.110340		478.79	558.41
305 H	0.094606	0.110340		478.79	558.41
305 J	0.094606	0.110340		478.79	558.41
305 K	0.094606	0.110340		478.79	558.41
305 R	0.057046	0.066532		288.70	336.71
TOTAL	1.00000	1.00000			

Torsional Shear Force

				Distribution of Shear Forces							
				X				Y			
				e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
				e = 375.469973		e = 83.869973		e = -100.44539		e = -558.84539	
	X	Y	V_T =	1900198		424454		-508339.3224		-2828234.149	
304 F	0.000008	0.000007		14.32	13.71	3.20	3.06	-3.83	-3.67	-21.31	-20.41
304 G	0.000104	0.000002		198.44	4.67	44.33	1.04	-53.09	-1.25	-295.36	-6.96
304 H	0.000003	-0.000065		6.14	-124.42	1.37	-27.79	-1.64	33.28	-9.13	185.18
304 J	0.000096	-0.000005		182.51	-8.59	40.77	-1.92	-48.82	2.30	-271.64	12.79
304 K	0.000100	-0.000002		190.94	-3.45	42.65	-0.77	-51.08	0.92	-284.19	5.14
304 R	0.000004	-0.000040		7.27	-76.61	1.62	-17.11	-1.95	20.49	-10.83	114.02
304 S	0.000004	-0.000018		7.27	-34.66	1.62	-7.74	-1.95	9.27	-10.83	51.59
304 T	0.000002	0.000032		3.26	61.72	0.73	13.79	-0.87	-16.51	-4.85	-91.86
304 U	0.000039	0.000003		73.78	5.17	16.48	1.15	-19.74	-1.38	-109.82	-7.69
305 F	0.000020	0.000003		37.72	5.17	8.43	1.15	-10.09	-1.38	-56.14	-7.69
305 G	-0.000028	-0.000023		-53.47	-44.12	-11.94	-9.85	14.30	11.80	79.58	65.66
305 H	-0.000048	-0.000005		-90.53	-8.77	-20.22	-1.96	24.22	2.34	134.74	13.05
305 J	-0.000055	0.000004		-104.73	7.15	-23.39	1.60	28.02	-1.91	155.88	-10.64
305 K	-0.000057	-0.000014		-108.90	-27.13	-24.32	-6.06	29.13	7.26	162.08	40.39
305 R	-0.000051	0.000015		-97.09	27.81	-21.69	6.21	25.97	-7.44	144.50	-41.40

	Distribution of Shear Forces							
	X				Y			
	e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
	e = -62		e = -353		e = 349		e = -109	
304 F	50.69	124.77	39.57	114.12	32.54	107.39	15.06	90.65
304 G	717.89	41.87	563.78	38.24	466.36	35.95	224.09	30.24
304 H	29.21	285.02	24.44	381.65	21.43	442.72	13.94	594.62
304 J	778.32	49.86	636.58	56.53	546.99	60.75	324.18	71.24
304 K	814.28	59.26	665.99	61.94	572.26	63.64	339.15	67.85
304 R	39.17	529.23	33.52	588.72	29.95	626.33	21.07	719.85
304 S	39.17	571.18	33.52	598.09	29.95	615.11	21.07	657.42
304 T	45.76	561.61	43.23	513.67	41.63	483.38	37.65	408.03
304 U	550.11	55.20	492.81	51.19	456.59	48.65	366.51	42.35
305 F	514.05	55.20	484.76	51.19	466.24	48.65	420.19	42.35
305 G	425.32	514.30	466.85	548.56	493.09	570.21	558.37	624.08
305 H	388.26	549.65	458.57	556.45	503.01	560.76	613.53	571.46
305 J	374.06	565.56	455.39	560.01	506.81	556.50	634.67	547.78
305 K	369.89	531.28	454.46	552.35	507.92	565.67	640.87	598.80
305 R	191.61	364.52	267.01	342.92	314.67	329.27	433.20	295.31

Level 3

Shear Force

V = 4426

	Distribution of Shear Forces			
	X	Y	X	Y
304 F	0.005574	0.095647	24.67	423.29
304 G	0.102807	0.006796	454.98	30.08
304 H	0.004566	0.074807	20.21	331.06
304 J	0.117922	0.010679	521.87	47.26
304 K	0.123369	0.011458	545.97	50.71
304 R	0.006312	0.110689	27.93	489.86
304 S	0.006312	0.110689	27.93	489.86
304 T	0.008411	0.091332	37.22	404.19
304 U	0.094274	0.009142	417.21	40.46
305 F	0.094274	0.009142	417.21	40.46
305 G	0.094760	0.102025	419.36	451.51
305 H	0.094760	0.102025	419.36	451.51
305 J	0.094760	0.102025	419.36	451.51
305 K	0.094760	0.102025	419.36	451.51
305 R	0.057138	0.061519	252.87	272.25
TOTAL	1.00000	1.00000		

Torsional Shear Force

			Distribution of Shear Forces							
			X				Y			
			E_x+E_{XACI}		E_x-E_{XACI}		E_y+E_{YACI}		E_y-E_{YACI}	
			ε = 344.68375		ε = 53.083749		ε = -45.96122		ε = -504.36122	
	X	Y	V_T = 1525409		234924		-203402.8335		-2232066.329	
304 F	0.000005	0.000035	8.34	52.66	1.28	8.11	-1.11	-7.02	-12.20	-77.05
304 G	0.000098	0.000002	148.87	3.81	22.93	0.59	-19.85	-0.51	-217.84	-5.57
304 H	0.000003	-0.000066	4.43	-101.13	0.68	-15.57	-0.59	13.49	-6.49	147.98
304 J	0.000088	-0.000005	134.07	-6.98	20.65	-1.07	-17.88	0.93	-196.18	10.21
304 K	0.000092	-0.000002	140.26	-2.80	21.60	-0.43	-18.70	0.37	-205.24	4.09
304 R	0.000003	-0.000041	5.15	-62.21	0.79	-9.58	-0.69	8.30	-7.53	91.03
304 S	0.000003	-0.000018	5.15	-28.09	0.79	-4.33	-0.69	3.75	-7.53	41.10
304 T	0.000001	0.000033	1.62	50.28	0.25	7.74	-0.22	-6.70	-2.38	-73.57
304 U	0.000032	0.000003	48.52	4.21	7.47	0.65	-6.47	-0.56	-71.00	-6.16
305 F	0.000013	0.000003	19.19	4.21	2.95	0.65	-2.56	-0.56	-28.08	-6.16
305 G	-0.000036	-0.000023	-55.04	-35.79	-8.48	-5.51	7.34	4.77	80.54	52.37
305 H	-0.000056	-0.000005	-85.19	-7.04	-13.12	-1.08	11.36	0.94	124.65	10.30
305 J	-0.000063	0.000004	-96.74	5.90	-14.90	0.91	12.90	-0.79	141.55	-8.64
305 K	-0.000066	-0.000014	-100.13	-21.98	-15.42	-3.38	13.35	2.93	146.51	32.16
305 R	-0.000056	0.000015	-85.93	22.68	-13.23	3.49	11.46	-3.02	125.74	-33.18

	Distribution of Shear Forces							
	X				Y			
	E_x+E_{XACI}		E_x-E_{XACI}		E_y+E_{YACI}		E_y-E_{YACI}	
	ε = -62		ε = -353		ε = 349		ε = -109	
304 F	33.00	475.95	25.95	431.40	23.55	416.27	12.47	346.24
304 G	603.85	33.88	477.90	30.66	435.13	29.57	237.14	24.50
304 H	24.64	229.93	20.89	315.49	19.62	344.55	13.72	479.04
304 J	655.93	40.28	542.51	46.19	503.99	48.19	325.69	57.47
304 K	686.23	47.91	567.57	50.28	527.27	51.08	340.74	54.80
304 R	33.08	427.65	28.73	480.28	27.25	498.15	20.40	580.89
304 S	33.08	461.77	28.73	485.53	27.25	493.60	20.40	530.96
304 T	38.85	454.47	37.47	411.94	37.01	397.49	34.85	330.62
304 U	465.73	44.67	424.68	41.11	410.74	39.90	346.22	34.30
305 F	436.40	44.67	420.17	41.11	414.65	39.90	389.14	34.30
305 G	364.32	415.72	410.89	446.00	426.70	456.29	499.91	503.89
305 H	334.18	444.48	406.24	450.43	430.72	452.45	544.01	461.81
305 J	322.63	457.42	404.47	452.42	432.26	450.73	560.92	442.88
305 K	319.24	429.53	403.94	448.13	432.72	454.45	565.88	483.68
305 R	166.93	294.93	239.63	275.75	264.33	269.23	378.61	239.07

APPENDIX E

LEVEL 4

SHEAR FORCE

V = 3589

	X	Y		DISTRIBUTION OF SHEAR FORCES X	Y
304 F	0.005574	0.095647		20.01	343.31
304 G	0.102807	0.006796		369.02	24.39
304 H	0.004566	0.074807		16.39	268.51
304 J	0.117922	0.010679		423.27	38.33
304 K	0.123369	0.011458		442.82	41.13
304 R	0.006312	0.110689		22.66	397.31
304 S	0.006312	0.110689		22.66	397.31
304 T	0.008411	0.091332		30.19	327.83
304 U	0.094274	0.009142		338.38	32.81
305 F	0.094274	0.009142		338.38	32.81
305 G	0.094760	0.102025		340.13	366.21
305 H	0.094760	0.102025		340.13	366.21
305 J	0.094760	0.102025		340.13	366.21
305 K	0.094760	0.102025		340.13	366.21
305 R	0.057138	0.061519		205.09	220.81
TOTAL	1.00000	1.00000			

TORSIONAL SHEAR FORCE

				DISTRIBUTION OF SHEAR FORCES							
				X				Y			
				e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
				e = 344.56611		e = 52.9661		e = -47.3344		e = -505.734	
	X	Y	V_T =	1236779		190116		-169901.0555		-1815273.484	
304 F	0.000005	0.000035		6.76	42.69	1.04	6.56	-0.93	-5.86	-9.92	-62.66
304 G	0.000098	0.000002		120.70	3.09	18.55	0.47	-16.58	-0.42	-177.16	-4.53
304 H	0.000003	-0.000066		3.59	-82.00	0.55	-12.60	-0.49	11.26	-5.28	120.35
304 J	0.000088	-0.000005		108.70	-5.66	16.71	-0.87	-14.93	0.78	-159.54	8.31
304 K	0.000092	-0.000002		113.72	-2.27	17.48	-0.35	-15.62	0.31	-166.91	3.33
304 R	0.000003	-0.000041		4.17	-50.44	0.64	-7.75	-0.57	6.93	-6.13	74.03
304 S	0.000003	-0.000018		4.17	-22.78	0.64	-3.50	-0.57	3.13	-6.13	33.43
304 T	0.000001	0.000033		1.32	40.77	0.20	6.27	-0.18	-5.60	-1.93	-59.84
304 U	0.000032	0.000003		39.34	3.41	6.05	0.52	-5.40	-0.47	-57.74	-5.01
305 F	0.000013	0.000003		15.56	3.41	2.39	0.52	-2.14	-0.47	-22.83	-5.01
305 G	-0.000036	-0.000023		-44.63	-29.02	-6.86	-4.46	6.13	3.99	65.50	42.59
305 H	-0.000056	-0.000005		-69.07	-5.71	-10.62	-0.88	9.49	0.78	101.37	8.38
305 J	-0.000063	0.000004		-78.43	4.79	-12.06	0.74	10.77	-0.66	115.12	-7.03
305 K	-0.000066	-0.000014		-81.18	-17.82	-12.48	-2.74	11.15	2.45	119.15	26.16
305 R	-0.000056	0.000015		-69.67	18.39	-10.71	2.83	9.57	-2.53	102.26	-26.99

				DISTRIBUTION OF SHEAR FORCES							
				X				Y			
				e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
				e = -62		e = -353		e = 349		e = -109	
304 F				26.77	386.01	21.04	349.88	19.08	337.45	10.08	280.65
304 G				489.72	27.48	387.57	24.87	352.43	23.97	191.86	19.86
304 H				19.98	186.51	16.94	255.91	15.90	279.77	11.11	388.86
304 J				531.97	32.67	439.98	37.46	408.33	39.11	263.72	46.64
304 K				556.54	38.86	460.30	40.78	427.20	41.44	275.90	44.46
304 R				26.83	346.87	23.30	389.55	22.08	404.23	16.53	471.34
304 S				26.83	374.53	23.30	393.80	22.08	400.43	16.53	430.73
304 T				31.51	368.59	30.39	334.09	30.01	322.22	28.26	267.99
304 U				377.72	36.23	344.43	33.34	332.98	32.35	280.65	27.80
305 F				353.94	36.23	340.78	33.34	336.25	32.35	315.55	27.80
305 G				295.50	337.19	333.27	361.75	346.26	370.19	405.63	408.80
305 H				271.06	360.50	329.51	365.33	349.62	366.99	441.50	374.58
305 J				261.70	370.99	328.07	366.94	350.91	365.55	455.25	359.18
305 K				258.95	348.39	327.65	363.47	351.28	368.65	459.28	392.36
305 R				135.42	239.20	194.38	223.64	214.66	218.29	307.35	193.83

Level 5

Shear Force

V = 2503

	X	Y		Distribution of Shear Forces X	Y
304 F	0.001961	0.099319		4.91	248.56
304 G	0.107098	0.002490		268.03	6.23
304 H	0.001280	0.046743		3.20	116.98
304 J	0.123115	0.004109		308.12	10.28
304 K	0.128517	0.004273		321.64	10.69
304 R	0.002221	0.120071		5.56	300.50
304 S	0.002221	0.120071		5.56	300.50
304 T	0.002842	0.072572		7.11	181.62
304 U	0.090242	0.012772		225.85	31.96
305 F	0.090242	0.012772		225.85	31.96
305 G	0.100971	0.113203		252.70	283.31
305 H	0.100971	0.113203		252.70	283.31
305 J	0.100971	0.113203		252.70	283.31
305 K	0.100971	0.113203		252.70	283.31
305 R	0.046379	0.051997		116.07	130.13
TOTAL	1.00000	1.00000			

Torsional Shear Force

				Distribution of Shear Forces							
				X				Y			
				e_x+e_{xACI}		e_x-e_{xACI}		e_y+e_{yACI}		e_y-e_{yACI}	
				e = 302.8616		e = 11.261596		e = -254.95845		e = -713.358	
	X	Y	V_T =	757967		28184		-638080.1693		-1785310.033	
304 F	0.000002	0.00		1.58	27.82	0.06	1.03	-1.33	-23.42	-3.72	-65.52
304 G	0.000110	0.000001		83.62	0.71	3.11	0.03	-70.40	-0.60	-196.97	-1.67
304 H	0.000001	-0.000041		0.68	-31.28	0.03	-1.16	-0.57	26.33	-1.61	73.67
304 J	0.000101	-0.000002		76.23	-1.32	2.83	-0.05	-64.17	1.11	-179.55	3.10
304 K	0.000105	-0.000001		79.57	-0.50	2.96	-0.02	-66.99	0.42	-187.43	1.17
304 R	0.000001	-0.000044		1.00	-33.02	0.04	-1.23	-0.85	27.80	-2.37	77.79
304 S	0.000001	-0.000019		1.00	-14.56	0.04	-0.54	-0.85	12.26	-2.37	34.29
304 T	0.000000	0.000027		0.37	20.33	0.01	0.76	-0.31	-17.11	-0.86	-47.87
304 U	0.000035	0.000004		26.70	3.00	0.99	0.11	-22.48	-2.53	-62.89	-7.08
305 F	0.000016	0.000004		12.11	3.00	0.45	0.11	-10.20	-2.53	-28.53	-7.08
305 G	-0.000036	-0.000025		-27.60	-19.21	-1.03	-0.71	23.23	16.17	65.00	45.24
305 H	-0.000058	-0.000004		-44.29	-3.29	-1.65	-0.12	37.28	2.77	104.31	7.74
305 J	-0.000067	0.000005		-50.68	3.88	-1.88	0.14	42.67	-3.26	119.38	-9.13
305 K	-0.000069	-0.000015		-52.56	-11.56	-1.95	-0.43	44.24	9.73	123.79	27.23
305 R	-0.000046	0.000013		-34.92	9.84	-1.30	0.37	29.40	-8.29	82.25	-23.18

		Distribution of Shear Forces							
		X				Y			
		e_x+e_{xACI}		e_x-e_{xACI}		e_y+e_{yACI}		e_y-e_{yACI}	
		e = -62		e = -353		e = 349		e = -109	
304 F		6.49	276.38	4.97	249.60	3.58	225.15	1.19	183.05
304 G		351.66	6.94	271.14	6.26	197.63	5.63	71.06	4.56
304 H		3.88	85.70	3.23	115.82	2.63	143.31	1.60	190.65
304 J		384.35	8.96	310.95	10.23	243.94	11.39	128.57	13.39
304 K		401.21	10.20	324.60	10.67	254.65	11.11	134.21	11.87
304 R		6.56	267.48	5.60	299.27	4.71	328.30	3.19	378.29
304 S		6.56	285.94	5.60	299.96	4.71	312.76	3.19	334.79
304 T		7.48	201.95	7.13	182.38	6.80	164.51	6.25	133.75
304 U		252.55	34.97	226.84	32.08	203.37	29.43	162.96	24.89
305 F		237.96	34.97	226.30	32.08	215.65	29.43	197.32	24.89
305 G		225.10	264.10	251.67	282.60	275.93	299.48	317.70	328.55
305 H		208.41	280.02	251.05	283.19	289.98	286.08	357.01	291.05
305 J		202.02	287.19	250.81	283.45	295.36	280.05	372.07	274.18
305 K		200.14	271.75	250.74	282.88	296.94	293.04	376.49	310.54
305 R		81.15	139.98	114.77	130.50	145.47	121.85	198.32	106.95

Level	ML

Shear Force

V = 891

		X	Y		Distribution of Shear Forces X	Y
BF	305M	0.217197	0.000000		193.45	0.00
BF	305S	0.000000	0.433016		0.00	385.68
BF	305T	0.105258	0.000000		93.75	0.00
BF	305U	0.070658	0.035564		62.93	31.68
BF	304T_B	0.000000	0.531420		0.00	473.32
BF	304U_B	0.321644	0.000000		286.48	0.00
BF	305F_B	0.285243	0.000000		254.06	0.00
	TOTAL	1.00000	1.00000			

Torsional Shear Force

					Distribution of Shear Forces							
					X				Y			
					e_x+e_{xACI}		e_x-e_{xACI}		e_y+e_{yACI}		e_y-e_{yACI}	
					e = -1.284428		e = -292.88443		e = 52.7570357		e = -405.643	
		X	Y	V_T =	-1144		-260866		46989.49298		-361296.9713	
BF	305M	0.002331	0.000000		-2.67	0.00	-607.97	0.00	109.51	0.00	-842.04	0.00
BF	305S	0.000000	0.003861		0.00	-4.42	0.00	-1007.22	0.00	181.43	0.00	-1394.99
BF	305T	0.001764	0.000000		-2.02	0.00	-460.10	0.00	82.88	0.00	-637.23	0.00
BF	305U	0.000698	0.000317		-0.80	-0.36	-182.20	-82.72	32.82	14.90	-252.34	-114.57
BF	304T_B	0.000000	0.004178		0.00	-4.78	0.00	-1089.94	0.00	196.33	0.00	-1509.56
BF	304U_B	0.000969	0.000000		-1.11	0.00	-252.81	0.00	45.54	0.00	-350.14	0.00
BF	305F_B	0.001101	0.000000		-1.26	0.00	-287.13	0.00	51.72	0.00	-397.67	0.00

		Distribution of Shear Forces							
		X				Y			
		e_x+e_{xACI}		e_x-e_{xACI}		e_y+e_{yACI}		e_y-e_{yACI}	
		e = -62		e = -353		e = 349		e = -109	
BF	305M	190.79	0.00	-414.52	0.00	302.97	0.00	-648.59	0.00
BF	305S	0.00	381.26	0.00	-621.54	0.00	567.11	0.00	-1009.31
BF	305T	91.73	0.00	-366.35	0.00	176.63	0.00	-543.48	0.00
BF	305U	62.13	31.31	-119.26	-51.05	95.75	46.58	-189.41	-82.89
BF	304T_B	0.00	468.54	0.00	-616.62	0.00	669.65	0.00	-1036.24
BF	304U_B	285.37	0.00	33.68	0.00	332.02	0.00	-63.65	0.00
BF	305F_B	252.80	0.00	-33.07	0.00	305.78	0.00	-143.61	0.00

Appendix B

Level	RF

Shear Force

V = 733

		X	Y		Distribution of Shear Forces X	Y
BF	304F	0.000000	0.071836		0.00	52.65
BF	304G	0.091480	0.000000		67.05	0.00
BF	304H	0.000000	0.131354		0.00	96.27
BF	304J	0.055044	0.000000		40.34	0.00
BF	304K	0.043878	0.018974		32.16	13.91
BF	304R	0.000000	0.061420		0.00	45.02
BF	304S	0.000000	0.191006		0.00	139.99
BF	304T	0.000000	0.302929		0.00	222.03
BF	304U	0.270082	0.000000		197.95	0.00
BF	305F	0.266791	0.000000		195.54	0.00
BF	304T_A	0.000000	0.222482		0.00	163.06
BF	304U_A	0.144747	0.000000		106.09	0.00
BF	305F_A	0.127978	0.000000		93.80	0.00
	TOTAL	1.00000	1.00000			

Torsional Shear Force

					Distribution of Shear Forces							
					X				Y			
					e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
					e = 96.93209		e = -194.66791		e = -122.82976		e = -581.23	
		X	Y	V_T =	71045		-142678		-90025.72602		-426001.2573	
BF	304F	0.000000	0.00052		0.00	36.85	0.00	-74.01	0.00	-46.70	0.00	-220.97
BF	304G	0.001665	0.000000		118.32	0.00	-237.63	0.00	-149.94	0.00	-709.50	0.00
BF	304H	0.000000	0.002712		0.00	192.66	0.00	-386.92	0.00	-244.14	0.00	-1155.25
BF	304J	0.000662	0.000000		47.02	0.00	-94.43	0.00	-59.58	0.00	-281.94	0.00
BF	304K	0.000528	0.000172		37.48	12.23	-75.27	-24.57	-47.50	-15.50	-224.75	-73.36
BF	304R	0.000000	0.000557		0.00	39.60	0.00	-79.53	0.00	-50.18	0.00	-237.46
BF	304S	0.000000	0.000871		0.00	61.89	0.00	-124.29	0.00	-78.42	0.00	-371.09
BF	304T	0.000000	0.002187		0.00	155.40	0.00	-312.09	0.00	-196.92	0.00	-931.83
BF	304U	0.000092	0.000000		6.54	0.00	-13.13	0.00	-8.28	0.00	-39.20	0.00
BF	305F	0.001879	0.000000		133.48	0.00	-268.06	0.00	-169.14	0.00	-800.37	0.00
BF	304T_A	0.000000	0.001606		0.00	114.13	0.00	-229.21	0.00	-144.63	0.00	-684.37
BF	304U_A	0.000049	0.000000		3.50	0.00	-7.04	0.00	-4.44	0.00	-21.01	0.00
BF	305F_A	0.000835	0.000000		59.31	0.00	-119.11	0.00	-75.15	0.00	-355.62	0.00

	Distribution of Shear Forces							
	X				Y			
	e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
	e = -62		e = -353		e = 349		e = -109	
	0		0		0		0	
BF 304F	0.00	89.50	0.00	-21.36	0.00	5.95	0.00	-168.32
BF 304G	185.37	0.00	-170.58	0.00	-82.89	0.00	-642.45	0.00
BF 304H	0.00	288.94	0.00	-290.65	0.00	-147.86	0.00	-1058.98
BF 304J	87.36	0.00	-54.09	0.00	-19.24	0.00	-241.60	0.00
BF 304K	69.64	26.14	-43.11	-10.66	-15.34	-1.60	-192.59	-59.45
BF 304R	0.00	84.62	0.00	-34.52	0.00	-5.17	0.00	-192.45
BF 304S	0.00	201.88	0.00	15.71	0.00	61.57	0.00	-231.10
BF 304T	0.00	377.43	0.00	-90.07	0.00	25.11	0.00	-709.80
BF 304U	204.49	0.00	184.82	0.00	189.67	0.00	158.76	0.00
BF 305F	329.02	0.00	-72.52	0.00	26.40	0.00	-604.83	0.00
BF 304T_A	0.00	277.20	0.00	-66.15	0.00	18.44	0.00	-521.30
BF 304U_A	109.59	0.00	99.05	0.00	101.65	0.00	85.08	0.00
BF 305F_A	153.11	0.00	-25.31	0.00	18.65	0.00	-261.82	0.00

Level	PH

Shear Force

V = 231

		X	Y		Distribution of Shear Forces X	Y
BF	306B	0.000000	0.019299		0.00	4.45
BF	306C1	0.118175	0.000000		27.25	0.00
BF	306D	0.000000	0.101229		0.00	23.34
BF	306C2	0.118175	0.000000		27.25	0.00
BF	306A	0.000000	0.159595		0.00	36.80
BF	306E	0.208389	0.000000		48.05	0.00
BF	306F	0.234776	0.000000		54.14	0.00
BF	306G	0.000000	0.112594		0.00	25.96
BF	305Q	0.000000	0.221014		0.00	50.96
BF	306H	0.097270	0.000000		22.43	0.00
BF	306J	0.000000	0.386269		0.00	89.07
BF	306K	0.223215	0.000000		51.47	0.00
	TOTAL	1.00000	1.00000			

Torsional Shear Force

		X	Y		Distribution of Shear Forces							
					X				Y			
					e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
					e = -62		e = -353		e = 349		e = -109	
		X	Y	V_T =	-14212		-81452		80483.1917		-25218.63534	
BF	306B	0.000000	0.000255		0.00	-3.62	0.00	-20.76	0.00	20.51	0.00	-6.43
BF	306C1	0.000791	0.000000		-11.25	0.00	-64.46	0.00	63.69	0.00	-19.96	0.00
BF	306D	0.000000	0.000744		0.00	-10.58	0.00	-60.63	0.00	59.91	0.00	-18.77
BF	306C2	0.000464	0.000000		-6.60	0.00	-37.82	0.00	37.37	0.00	-11.71	0.00
BF	306A	0.000000	0.001173		0.00	-16.68	0.00	-95.58	0.00	94.45	0.00	-29.59
BF	306E	0.001129	0.000000		-16.05	0.00	-91.99	0.00	90.89	0.00	-28.48	0.00
BF	306F	0.002115	0.000000		-30.05	0.00	-172.24	0.00	170.19	0.00	-53.33	0.00
BF	306G	0.000000	0.001487		0.00	-21.13	0.00	-121.12	0.00	119.68	0.00	-37.50
BF	305Q	0.000000	0.004488		0.00	-63.78	0.00	-365.53	0.00	361.18	0.00	-113.17
BF	306H	0.001022	0.000000		-14.53	0.00	-83.28	0.00	82.29	0.00	-25.78	0.00
BF	306J	0.000000	0.000828		0.00	-11.77	0.00	-67.44	0.00	66.64	0.00	-20.88
BF	306K	0.000966	0.000000		-13.73	0.00	-78.68	0.00	77.74	0.00	-24.36	0.00

		Distribution of Shear Forces							
		X				Y			
		e_x+e_{xaci}		e_x-e_{xaci}		e_y+e_{yaci}		e_y-e_{yaci}	
		e = -62		e = -353		e = 349		e = -109	
		0		0		0		0	
BF 306B		0.00	0.83	0.00	-16.31	0.00	24.96	0.00	-1.98
BF 306C1		16.00	0.00	-64.46	0.00	63.69	0.00	-19.96	0.00
BF 306D		0.00	12.76	0.00	-60.63	0.00	59.91	0.00	-18.77
BF 306C2		20.65	0.00	-37.82	0.00	37.37	0.00	-11.71	0.00
BF 306A		0.00	20.12	0.00	-95.58	0.00	94.45	0.00	-29.59
BF 306E		32.00	0.00	-91.99	0.00	90.89	0.00	-28.48	0.00
BF 306F		24.08	0.00	-172.24	0.00	170.19	0.00	-53.33	0.00
BF 306G		0.00	4.83	0.00	-121.12	0.00	119.68	0.00	-37.50
BF 305Q		0.00	-12.82	0.00	-365.53	0.00	361.18	0.00	-113.17
BF 306H		7.90	0.00	-83.28	0.00	82.29	0.00	-25.78	0.00
BF 306J		0.00	77.30	0.00	-67.44	0.00	66.64	0.00	-20.88
BF 306K		37.74	0.00	-78.68	0.00	77.74	0.00	-24.36	0.00

Appendix 9

Level D			West				East			
	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			-37883	21558	44904	-16005	-24344	25978	-10136	10817
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0100808	0.0577033	-381.892	1243.97	452.671	-923.546	-245.407	1499	-102.183	624.154
304 G	0.0463226	0.0142944	-1754.84	308.158	2080.08	-228.782	-1127.68	371.335	-469.542	154.616
304 H	0.0086522	0.0252921	-327.771	545.246	388.519	-404.801	-210.628	657.03	-87.7015	273.574
304 J	0.0684383	0.0254434	-2592.65	548.508	3073.17	-407.223	-1666.06	660.961	-693.715	275.211
304 K	0.0578962	0.0203461	-2193.28	438.621	2599.78	-325.641	-1409.42	528.545	-586.856	220.076
304 R	0.0085317	0.0490769	-323.207	1058	383.109	-785.479	-207.696	1274.91	-86.4803	530.845
304 S	0.0066041	0.0412228	-250.185	888.682	296.553	-659.774	-160.771	1070.88	-66.9418	445.891
304 T	0.0139075	0.1690254	-526.859	3643.85	624.506	-2705.26	-338.564	4390.9	-140.971	1828.28
304 U	0.1558764	0.0169189	-5905.07	364.739	6999.51	-270.789	-3794.65	439.516	-1580.02	183.006
305 F	0.1558764	0.0169189	-5905.07	364.739	6999.51	-270.789	-3794.65	439.516	-1580.02	183.006
305 G	0.1566808	0.1888144	-5935.54	4070.46	7035.63	-3021.99	-3814.23	4904.97	-1588.17	2042.33
305 H	0.0299887	0.0361390	-1136.06	779.086	1346.62	-578.408	-730.043	938.81	-303.975	390.902
305 J	0.1566808	0.1888144	-5935.54	4070.46	7035.63	-3021.99	-3814.23	4904.97	-1588.17	2042.33
305 K	0.0299887	0.0361390	-1136.06	779.086	1346.62	-578.408	-730.043	938.81	-303.975	390.902
305 R	0.0944749	0.1138508	-3579	2454.4	4242.32	-1822.19	-2299.9	2957.59	-957.631	1231.48
TOTAL	1.0000	1.0000								

Level D			West				East			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	-3730561	Torsion =	-4320565	Torsion =	656508	Torsion =	273357
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000198	0.0000145	-73.9117	-54.0971	-85.6012	-62.6528	13.0071	9.52007	5.41588	3.96397
304 G	0.0000050	0.0000648	-18.6972	-241.724	-21.6543	-279.953	3.29036	42.5388	1.37004	17.7123
304 H	-0.0000269	0.0000087	100.316	-32.4066	116.182	-37.5318	-17.6538	5.70294	-7.35069	2.37459
304 J	-0.0000139	0.0000781	51.9078	-291.393	60.1172	-337.478	-9.13479	51.2797	-3.80354	21.3519
304 K	-0.0000050	0.0000661	18.5349	-246.508	21.4663	-285.494	-3.2618	43.3807	-1.35815	18.0628
304 R	-0.0000235	0.0000075	87.7363	-27.8579	101.612	-32.2638	-15.4399	4.90247	-6.42888	2.04129
304 S	-0.0000104	0.0000058	38.6485	-21.564	44.7609	-24.9744	-6.80141	3.79485	-2.83197	1.5801
304 T	0.0000580	0.0000050	-216.503	-18.6945	-250.744	-21.6511	38.1005	3.28988	15.8643	1.36984
304 U	0.0000047	0.0000976	-17.476	-364.241	-20.2399	-421.847	3.07544	64.0995	1.28055	26.6898
305 F	0.0000047	0.0000575	-17.476	-214.52	-20.2399	-248.447	3.07544	37.7514	1.28055	15.7189
305 G	-0.0000610	-0.0000439	227.554	163.782	263.542	189.685	-40.0451	-28.8225	-16.674	-12.0011
305 H	-0.0000041	-0.0000163	15.4619	60.7974	17.9072	70.4127	-2.72099	-10.6992	-1.13297	-4.45493
305 J	-0.0000039	-0.0001010	14.7199	376.616	17.048	436.179	-2.59043	-66.2772	-1.0786	-27.5965
305 K	-0.0000081	-0.0000202	30.0591	75.3946	34.8131	87.3186	-5.28983	-13.268	-2.20258	-5.52454
305 R	0.0000238	-0.0000986	-88.7058	367.988	-102.735	426.187	15.6105	-64.759	6.49992	-26.9644
TOTAL	0.0000	0.0001								

Level D			West				East			
Total Shear			(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall			X	Y	X	Y	X	Y	X	Y
304 F			-455.803	1298.07	367.07	-860.893	-232.4	1489.48	-96.7668	620.191
304 G			-1773.54	549.882	2058.43	51.171	-1124.39	328.796	-468.172	136.904
304 H			-227.454	577.653	504.701	-367.269	-228.282	651.327	-95.0522	271.2
304 J			-2540.74	839.902	3133.29	-69.7443	-1675.2	609.681	-697.518	253.859
304 K			-2174.75	685.129	2621.25	-40.1468	-1412.68	485.165	-588.214	202.013
304 R			-235.47	1085.86	484.722	-753.215	-223.136	1270	-92.9092	528.804
304 S			-211.536	910.246	341.314	-634.8	-167.572	1067.08	-69.7738	444.311
304 T			-743.362	3662.55	373.762	-2683.61	-300.464	4387.61	-125.107	1826.91
304 U			-5922.54	728.98	6979.27	151.058	-3791.58	375.416	-1578.74	156.316
305 F			-5922.54	579.259	6979.27	-22.3418	-3791.58	401.764	-1578.74	167.287
305 G			-5707.99	3906.68	7299.17	-3211.67	-3854.28	4933.79	-1604.84	2054.33
305 H			-1120.6	718.288	1364.52	-648.82	-732.764	949.509	-305.108	395.357
305 J			-5920.82	3693.85	7052.67	-3458.17	-3816.82	4971.25	-1589.25	2069.93
305 K			-1106	703.691	1381.43	-665.726	-735.333	952.078	-306.178	396.426
305 R			-3667.7	2086.41	4139.59	-2248.38	-2284.28	3022.34	-951.131	1258.44
TOTAL										

Appendix 9

Level D			South				North			
	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			36061	30419	19424	12666	20010	30419	36647	12666
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0100808	0.0577033	363.52	1755.26	195.811	730.854	201.718	1755.26	369.427	730.854
304 G	0.0463226	0.0142944	1670.42	434.815	899.776	181.048	926.921	434.815	1697.56	181.048
304 H	0.0086522	0.0252921	312.002	769.349	168.061	320.342	173.131	769.349	317.072	320.342
304 J	0.0684383	0.0254434	2467.92	773.952	1329.35	322.258	1369.46	773.952	2508.03	322.258
304 K	0.0578962	0.0203461	2087.77	618.9	1124.58	257.698	1158.51	618.9	2121.69	257.698
304 R	0.0085317	0.0490769	307.658	1492.85	165.721	621.593	170.72	1492.85	312.657	621.593
304 S	0.0066041	0.0412228	238.149	1253.94	128.28	522.116	132.149	1253.94	242.019	522.116
304 T	0.0139075	0.1690254	501.513	5141.52	270.142	2140.83	278.291	5141.52	509.662	2140.83
304 U	0.1558764	0.0169189	5620.99	514.651	3027.76	214.29	3119.1	514.651	5712.33	214.29
305 F	0.1558764	0.0169189	5620.99	514.651	3027.76	214.29	3119.1	514.651	5712.33	214.29
305 G	0.1566808	0.1888144	5649.99	5743.47	3043.39	2391.47	3135.2	5743.47	5741.81	2391.47
305 H	0.0299887	0.0361390	1081.41	1099.3	582.504	457.726	600.076	1099.3	1098.98	457.726
305 J	0.1566808	0.1888144	5649.99	5743.47	3043.39	2391.47	3135.2	5743.47	5741.81	2391.47
305 K	0.0299887	0.0361390	1081.41	1099.3	582.504	457.726	600.076	1099.3	1098.98	457.726
305 R	0.0944749	0.1138508	3406.82	3463.18	1835.09	1442	1890.45	3463.18	3462.18	1442
TOTAL	1.0000	1.0000								

Level D			South				North			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	-212404	Torsion =	-661054	Torsion =	3996414	Torsion =	3547763
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000198	0.0000145	-4.20825	-3.08008	-13.0971	-9.58599	79.179	57.9523	70.2901	51.4464
304 G	0.0000050	0.0000648	-1.06455	-13.7628	-3.31314	-42.8334	20.0296	258.95	17.7811	229.879
304 H	-0.0000269	0.0000087	5.71163	-1.8451	17.7761	-5.74243	-107.465	34.716	-95.401	30.8186
304 J	-0.0000139	0.0000781	2.95543	-16.5908	9.19805	-51.6348	-55.6069	312.159	-49.3643	277.115
304 K	-0.0000050	0.0000661	1.05531	-14.0352	3.28439	-43.6811	-19.8558	264.075	-17.6267	234.429
304 R	-0.0000235	0.0000075	4.99537	-1.58612	15.5469	-4.93642	-93.9888	29.8432	-83.4373	26.4929
304 S	-0.0000104	0.0000058	2.2005	-1.22777	6.84851	-3.82113	-41.4027	23.1007	-36.7547	20.5073
304 T	0.0000580	0.0000050	-12.3269	-1.06439	-38.3643	-3.31266	231.932	20.0267	205.895	17.7785
304 U	0.0000047	0.0000976	-0.99501	-20.7385	-3.09673	-64.5434	18.7214	390.198	16.6196	346.393
305 F	0.0000047	0.0000575	-0.99501	-12.2139	-3.09673	-38.0129	18.7214	229.807	16.6196	204.008
305 G	-0.0000610	-0.0000439	12.956	9.32511	40.3224	29.0221	-243.77	-175.454	-216.403	-155.757
305 H	-0.0000041	-0.0000163	0.88034	3.46157	2.73984	10.7733	-16.5637	-65.13	-14.7042	-57.8183
305 J	-0.0000039	-0.0001010	0.8381	21.443	2.60837	66.7362	-15.7689	-403.455	-13.9987	-358.161
305 K	-0.0000081	-0.0000202	1.71145	4.29268	5.32647	13.3599	-32.2012	-80.7675	-28.5862	-71.7003
305 R	0.0000238	-0.0000986	-5.05057	20.9518	-15.7186	65.2074	95.0273	-394.213	84.3592	-349.957
TOTAL	0.0000	0.0001								

Level D	South				North			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	359.311	1758.34	182.714	740.44	280.897	1697.3	439.717	679.407
304 G	1669.35	448.577	896.463	223.882	946.95	175.865	1715.34	-48.831
304 H	317.714	771.194	185.837	326.084	65.6657	734.633	221.671	289.523
304 J	2470.88	790.543	1338.55	373.893	1313.85	461.793	2458.66	45.1431
304 K	2088.82	632.935	1127.87	301.379	1138.65	354.825	2104.07	23.2689
304 R	312.653	1494.44	181.268	626.53	76.7316	1463.01	229.22	595.1
304 S	240.349	1255.17	135.128	525.937	90.7467	1230.84	205.264	501.609
304 T	489.186	5142.58	231.777	2144.14	510.223	5121.49	715.557	2123.05
304 U	5619.99	535.389	3024.67	278.834	3137.83	124.453	5728.95	-132.103
305 F	5619.99	526.865	3024.67	252.303	3137.83	284.844	5728.95	10.2821
305 G	5662.95	5734.15	3083.71	2362.45	2891.43	5918.93	5525.4	2547.22
305 H	1082.29	1095.84	585.243	446.953	583.513	1164.43	1084.28	515.545
305 J	5650.83	5722.03	3046	2324.73	3119.43	6146.93	5727.81	2749.63
305 K	1083.12	1095.01	587.83	444.367	567.875	1180.07	1070.39	529.427
305 R	3401.77	3442.23	1819.37	1376.79	1985.48	3857.4	3546.54	1791.96
TOTAL								

Appendix 9

Level	D				Load App:	0	
Wind Case	Internal Pressure	Windward	Leeward	Net	Side 1	Side 2	Net
West	(+)	21558	0	21558	-6987	-44870	-37883
	(-)	44904	0	44904	-2952	-18957	-16005
East	(+)	0	-25978	25978	-4490	-28834	-24344
	(-)	0	-10817	10817	-1870	-12006	-10136
South	(+)	2297	-33763	36061	-30419	0	30419
	(-)	5366	-14058	19424	-12666	0	12666
North	(+)	14752	-5258	20010	-30419	0	30419
	(-)	34457	-2189	36647	-12666	0	12666

Level	D				Load App:	0	
Wind Case	Internal Pressure	Windward		Resultant Coordinates		Eccentricity	
		Fs X	Fs Y	X	Y	Ex	Ey
West	(+)	2945250	0	136.62	0	-76.6687	0
	(-)	6134802	0	136.62	0	-76.6687	0
East	(+)	#N/A	#N/A	0	0	0	0
	(-)	#N/A	#N/A	0	0	0	0
South	(+)	0	-80014	0	-34.83	0	-129.867
	(-)	0	-186890	0	-34.83	0	-129.867
North	(+)	0	420568	0	28.5084	0	-66.5285
	(-)	0	982325	0	28.5084	0	-66.5285

C.O.R. X = 2559.46 Y = 1140.44

Leeward		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	0	0	0	0	0
0	0	0	0	0	0
-3549070	0	136.62	0	-76.6687	0
-1477762	0	136.62	0	-76.6687	0
0	-962538	0	28.5084	0	-66.5285
0	-400782	0	28.5084	0	-66.5285
0	183125	0	-34.83	0	-129.867
0	76250	0	-34.83	0	-129.867

Side 1		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	243368	0	-34.83	0	-129.867
0	102820	0	-34.83	0	-129.867
0	156391	0	-34.83	0	-129.867
0	65118	0	-34.83	0	-129.867
-4155783	0	136.62	0	-76.6687	0
-1730386	0	136.62	0	-76.6687	0
-4155783	0	136.62	0	-76.6687	0
-1730386	0	136.62	0	-76.6687	0

Side 2		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	-1279183	0	28.5084	0	-66.5285
0	-540438	0	28.5084	0	-66.5285
0	-822015	0	28.5084	0	-66.5285
0	-342271	0	28.5084	0	-66.5285
#N/A	#N/A	0	0	0	0
#N/A	#N/A	0	0	0	0
#N/A	#N/A	0	0	0	0
#N/A	#N/A	0	0	0	0

Level	D	[=] ft lb										
Wind Case	Internal Pressure	Windward		Leeward		Side 1		Side 2				
		F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	Fex	Fey	Torsion
West	(+)	-1652825	0	0	0	0	907421	0	2985156	-1652825	2077735	**-3730561**
	(-)	-3442750	0	0	0	0	383373	0	1261189	-3442750	877815	**-4320565**
East	(+)	0	0	1991680	0	0	583117	0	1918289	1991680	1335172	**656508**
	(-)	0	0	829296	0	0	242798	0	798737	829296	555939	**273357**
South	(+)	0	-298341	0	2246220	2332157	0	0	0	2332157	2544561	**-212404**
	(-)	0	-696837	0	935281	971064	0	0	0	971064	1632118	**-661054**
North	(+)	0	-981456	0	682801	2332157	0	0	0	2332157	-1664257	**3996414**
	(-)	0	-2292395	0	284305	971064	0	0	0	971064	-2576699	**3547763**

Appendix 9

Level	1				Load App:	1	
Wind Case	Internal Pressure	Windward	Leeward	Net	Side 1	Side 2	Net
West	(+)	23568	-25080	48648	-55659	-117646	-61987
	(-)	47925	-10596	58521	-23515	-49704	-26189
East	(+)	9050	-27103	36153	-35767	-75600	-39833
	(-)	18456	-11285	29741	-14893	-31479	-16586
South	(+)	19152	-88524	107677	-31736	-18872	12864
	(-)	43595	-36860	80455	-13214	-7858	5356
North	(+)	40482	-41882	82364	-31736	-18872	12864
	(-)	92147	-17439	109585	-13214	-7858	5356

Level	1				Load App:	1	
Wind Case	Internal Pressure	Windward		Resultant Coordinates		Eccentricity	
		Fs X	Fs Y	X	Y	Ex	Ey
West	(+)	3366347	0	142.836	0	-70.4523	0
	(-)	6847138	0	142.871	0	-70.4175	0
East	(+)	1144805	0	126.5	0	-86.7885	0
	(-)	2334674	0	126.5	0	-86.7885	0
South	(+)	0	589396	0	30.7743	0	-64.2627
	(-)	0	1323126	0	30.3503	0	-64.6867
North	(+)	0	5710247	0	141.056	0	46.0192
	(-)	0	#######	0	141.947	0	46.9102

C.O.R. X = 2559.46 Y = 1140.44

Leeward		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
-3172650	0	126.5	0	-86.7885	0
-1340402	0	126.5	0	-86.7885	0
-3873137	0	142.905	0	-70.3839	0
-1612698	0	142.905	0	-70.3839	0
0	#######	0	142.645	0	47.6083
0	-5257873	0	142.645	0	47.6083
0	-1257205	0	30.018	0	-65.0189
0	-523475	0	30.018	0	-65.0189

Side 1		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	-1670787	0	30.018	0	-65.0189
0	-705885	0	30.018	0	-65.0189
0	-1073663	0	30.018	0	-65.0189
0	-447052	0	30.018	0	-65.0189
-4535249	0	142.905	0	-70.3839	0
-1888388	0	142.905	0	-70.3839	0
-4535249	0	142.905	0	-70.3839	0
-1888388	0	142.905	0	-70.3839	0

Side 2		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	#######	0	142.645	0	47.6083
0	-7090026	0	142.645	0	47.6083
0	#######	0	142.645	0	47.6083
0	-4490263	0	142.645	0	47.6083
-2387302	0	126.5	0	-86.7885	0
-994025	0	126.5	0	-86.7885	0
-2387302	0	126.5	0	-86.7885	0
-994025	0	126.5	0	-86.7885	0

Level	1	[=] ft lb										
Wind Case	Internal Pressure	Windward		Leeward		Side 1		Side 2				
		F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	Fex	Fey	Torsion
West	(+)	-1660412	0	2176676	0	0	3618914	0	-5600929	-3837088	-9219843	**5382755**
	(-)	-3374784	0	919617	0	0	1528943	0	-2366318	-4294401	-3895260	**-399140**
East	(+)	-785422	0	1907612	0	0	2325547	0	-3599209	2693034	-5924756	**8617790**
	(-)	-1601761	0	794292	0	0	968312	0	-1498639	2396053	-2466951	**4863004**
South	(+)	0	-1230774	0	-4214492	2233718	0	1637869	0	595849	-2983719	**3579568**
	(-)	0	-2820028	0	-1754831	930076	0	681976	0	248100	1065197	**-817097**
North	(+)	0	1862954	0	2723099	2233718	0	1637869	0	595849	-860145	**1455994**
	(-)	0	4322615	0	1133844	930076	0	681976	0	248100	3188771	**-2940671**

Appendix 9

Level 1			West				East			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			-61987	48648	58521	-26189	-39833	36153	-16586	29741
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0020035	0.0148274	-124.193	721.325	117.25	-388.308	-79.8076	536.052	-33.2303	440.983
304 G	0.1272514	0.0070788	-7887.9	344.368	7446.93	-185.382	-5068.84	255.917	-2110.56	210.53
304 H	0.0066730	0.1173480	-413.64	5708.76	390.516	-3073.18	-265.809	4242.46	-110.677	3490.05
304 J	0.0133657	0.0089049	-828.494	433.208	782.178	-233.207	-532.398	321.938	-221.68	264.842
304 K	0.0152069	0.0090773	-942.625	441.595	889.928	-237.722	-605.739	328.171	-252.218	269.969
304 R	0.0065873	0.0261089	-408.328	1270.15	385.5	-683.754	-262.395	943.909	-109.256	776.505
304 S	0.0070622	0.0275268	-437.76	1339.13	413.288	-720.888	-281.309	995.172	-117.131	818.677
304 T	0.0122920	0.1432707	-761.941	6969.85	719.345	-3752.05	-489.63	5179.64	-203.872	4261.02
304 U	0.1377696	0.0143410	-8539.88	697.661	8062.47	-375.569	-5487.81	518.466	-2285.01	426.516
305 F	0.1377696	0.0143410	-8539.88	697.661	8062.47	-375.569	-5487.81	518.466	-2285.01	426.516
305 G	0.1384805	0.1600444	-8583.95	7785.86	8104.07	-4191.33	-5516.13	5786.05	-2296.81	4759.89
305 H	0.1384805	0.1600444	-8583.95	7785.86	8104.07	-4191.33	-5516.13	5786.05	-2296.81	4759.89
305 J	0.1384805	0.1600444	-8583.95	7785.86	8104.07	-4191.33	-5516.13	5786.05	-2296.81	4759.89
305 K	0.0350767	0.0405388	-2174.29	1972.14	2052.74	-1061.65	-1397.22	1465.59	-581.774	1205.67
305 R	0.0835006	0.0965032	-5175.93	4694.7	4886.57	-2527.28	-3326.1	3488.86	-1384.92	2870.11
TOTAL	1.0000	1.0000								

Level 1			West				East			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	5382755	Torsion =	-399140	Torsion =	8617790	Torsion =	4863004
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000037	0.0000025	20.0361	13.394	-1.48571	-0.99319	32.0778	21.4438	18.1014	12.1007
304 G	0.0000018	0.0001539	9.8016	828.47	-0.7268	-61.4324	15.6924	1326.38	8.85517	748.474
304 H	-0.0001113	0.0000059	-598.834	31.8512	44.4045	-2.36182	-958.733	50.9937	-541.011	28.7757
304 J	-0.0000045	0.0000134	-24.3437	71.8729	1.80513	-5.32949	-38.9743	115.068	-21.9931	64.9329
304 K	-0.0000023	0.0000152	-12.2075	81.7738	0.9052	-6.06366	-19.5441	130.92	-11.0287	73.8779
304 R	-0.0000118	0.0000051	-63.269	27.7102	4.6915	-2.05476	-101.294	44.364	-57.1599	25.0345
304 S	-0.0000070	0.0000055	-37.9185	29.7075	2.81172	-2.20286	-60.7075	47.5618	-34.2571	26.839
304 T	0.0000360	0.0000044	193.6	23.8518	-14.3558	-1.76865	309.954	38.1867	174.906	21.5487
304 U	0.0000028	0.0000796	15.0046	428.639	-1.11261	-31.7843	24.0223	686.251	13.5558	387.25
305 F	0.0000028	0.0000506	15.0046	272.536	-1.11261	-20.209	24.0223	436.33	13.5558	246.22
305 G	-0.0000507	-0.0000226	-273.147	-121.639	20.2543	9.01976	-437.308	-194.745	-246.772	-109.894
305 H	-0.0000223	-0.0000524	-120.12	-282.062	8.90712	20.9154	-192.313	-451.581	-108.522	-254.827
305 J	-0.0000095	-0.0000638	-51.2412	-343.545	3.79962	25.4744	-82.0371	-550.016	-46.2934	-310.373
305 K	-0.0000094	-0.0000170	-50.5675	-91.5869	3.74966	6.79132	-80.9586	-146.631	-45.6848	-82.7434
305 R	0.0000132	-0.0000658	70.8439	-354.054	-5.25319	26.2537	113.421	-566.84	64.0033	-319.867
TOTAL	-0.0002	0.0001								

Level 1	West				East			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	-104.157	707.931	115.764	-387.315	-47.7298	514.608	-15.1288	428.882
304 G	-7878.1	-484.102	7446.2	-123.95	-5053.14	-1070.46	-2101.71	-537.944
304 H	-1012.47	5676.91	434.92	-3070.81	-1224.54	4191.47	-651.689	3461.28
304 J	-852.838	361.335	783.983	-227.878	-571.372	206.869	-243.673	199.909
304 K	-954.832	359.821	890.833	-231.658	-625.284	197.251	-263.247	196.091
304 R	-471.597	1242.44	390.192	-681.699	-363.689	899.545	-166.416	751.471
304 S	-475.679	1309.42	416.099	-718.685	-342.016	947.61	-151.389	791.838
304 T	-568.341	6946	704.99	-3750.28	-179.677	5141.45	-28.966	4239.47
304 U	-8524.88	269.023	8061.35	-343.785	-5463.79	-167.784	-2271.46	39.2656
305 F	-8524.88	425.126	8061.35	-355.36	-5463.79	82.1367	-2271.46	180.296
305 G	-8857.1	7907.5	8124.33	-4200.35	-5953.43	5980.8	-2543.58	4869.78
305 H	-8704.07	8067.92	8112.98	-4212.25	-5708.44	6237.63	-2405.33	5014.72
305 J	-8635.19	8129.41	8107.87	-4216.81	-5598.16	6336.07	-2343.1	5070.26
305 K	-2224.86	2063.72	2056.49	-1068.44	-1478.18	1612.22	-627.459	1288.41
305 R	-5105.08	5048.75	4881.32	-2553.53	-3212.68	4055.7	-1320.92	3189.97
TOTAL								

Appendix 9

Level 1

Direct Shear	Relative Rigidity		South (+)		South (-)		North (+)		North (-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			107677	12864	80455	5356	82364	12864	109585	5356
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0020035	0.0148274	215.735	190.743	161.195	79.4218	165.019	190.743	219.559	79.4218
304 G	0.1272514	0.0070788	13702	91.0628	10238	37.9168	10480.9	91.0628	13944.9	37.9168
304 H	0.0066730	0.1173480	718.53	1509.59	536.879	628.565	549.616	1509.59	731.267	628.565
304 J	0.0133657	0.0089049	1439.17	114.555	1075.34	47.6985	1100.85	114.555	1464.68	47.6985
304 K	0.0152069	0.0090773	1637.43	116.773	1223.47	48.6219	1252.5	116.773	1666.45	48.6219
304 R	0.0065873	0.0261089	709.303	335.871	529.984	139.85	542.558	335.871	721.876	139.85
304 S	0.0070622	0.0275268	760.43	354.112	568.186	147.445	581.666	354.112	773.91	147.445
304 T	0.0122920	0.1432707	1323.56	1843.07	988.953	767.417	1012.42	1843.07	1347.02	767.417
304 U	0.1377696	0.0143410	14834.6	184.486	11084.2	76.8162	11347.2	184.486	15097.5	76.8162
305 F	0.1377696	0.0143410	14834.6	184.486	11084.2	76.8162	11347.2	184.486	15097.5	76.8162
305 G	0.1384805	0.1600444	14911.1	2058.85	11141.4	857.265	11405.8	2058.85	15175.4	857.265
305 H	0.1384805	0.1600444	14911.1	2058.85	11141.4	857.265	11405.8	2058.85	15175.4	857.265
305 J	0.1384805	0.1600444	14911.1	2058.85	11141.4	857.265	11405.8	2058.85	15175.4	857.265
305 K	0.0350767	0.0405388	3776.94	521.501	2822.1	217.143	2889.05	521.501	3843.89	217.143
305 R	0.0835006	0.0965032	8991.06	1241.44	6718.04	516.911	6877.42	1241.44	9150.44	516.911
TOTAL	1.0000	1.0000								

Level 1

Torsional Shear	Relative Rigidity		South (+)		South (-)		North (+)		North (-)	
			Torsion =	3579568	Torsion =	-817097	Torsion =	1455994	Torsion =	-2940671
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000037	0.0000025	13.3241	8.90712	-3.04146	-2.0332	5.41961	3.62298	-10.946	-7.31734
304 G	0.0000018	0.0001539	6.51813	550.938	-1.48787	-125.761	2.65126	224.095	-5.35474	-452.604
304 H	-0.0001113	0.0000059	-398.228	21.1813	90.9024	-4.83498	-161.98	8.6155	327.151	-17.4007
304 J	-0.0000045	0.0000134	-16.1888	47.7959	3.69536	-10.9102	-6.5848	19.4411	13.2993	-39.2651
304 K	-0.0000023	0.0000152	-8.11804	54.3801	1.85308	-12.4132	-3.30202	22.1192	6.66909	-44.6741
304 R	-0.0000118	0.0000051	-42.0743	18.4274	9.60418	-4.20638	-17.1138	7.49539	34.5647	-15.1384
304 S	-0.0000070	0.0000055	-25.216	19.7557	5.75599	-4.50958	-10.2567	8.03567	20.7154	-16.2296
304 T	0.0000360	0.0000044	128.745	15.8616	-29.3883	-3.62068	52.3673	6.45173	-105.766	-13.0305
304 U	0.0000028	0.0000796	9.97815	285.048	-2.27768	-65.067	4.05862	115.944	-8.1972	-234.171
305 F	0.0000028	0.0000506	9.97815	181.238	-2.27768	-41.3707	4.05862	73.7188	-8.1972	-148.89
305 G	-0.0000507	-0.0000226	-181.645	-80.891	41.4635	18.4647	-73.8842	-32.9025	149.224	66.4532
305 H	-0.0000223	-0.0000524	-79.8808	-187.573	18.2342	42.8168	-32.4916	-76.2956	65.6233	154.094
305 J	-0.0000095	-0.0000638	-34.0757	-228.46	7.77837	52.1499	-13.8604	-92.9264	27.9937	187.683
305 K	-0.0000094	-0.0000170	-33.6277	-60.9059	7.6761	13.9028	-13.6781	-24.7736	27.6257	50.0352
305 R	0.0000132	-0.0000658	47.1116	-235.448	-10.754	53.745	19.1627	-95.7688	-38.7029	193.424
TOTAL	-0.0002	0.0001								

Level 1

Total Shear	South (+)		South (-)		North (+)		North (-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	229.059	181.836	158.153	81.455	170.439	187.12	208.613	86.7391
304 G	13708.5	-459.875	10236.5	163.678	10483.6	-133.032	13939.5	490.521
304 H	320.302	1488.41	627.782	633.4	387.636	1500.98	1058.42	645.966
304 J	1422.98	66.7592	1079.03	58.6087	1094.26	95.1141	1477.98	86.9636
304 K	1629.31	62.3928	1225.32	61.0351	1249.19	94.6537	1673.12	93.2961
304 R	667.228	317.443	539.589	144.056	525.444	328.376	756.441	154.988
304 S	735.214	334.356	573.942	151.955	571.409	346.076	794.625	163.675
304 T	1452.31	1827.21	959.565	771.038	1064.78	1836.62	1241.26	780.448
304 U	14844.5	-100.562	11082	141.883	11351.3	68.5423	15089.3	310.987
305 F	14844.5	3.24777	11082	118.187	11351.3	110.767	15089.3	225.706
305 G	14729.5	2139.74	11182.9	838.8	11331.9	2091.75	15324.7	790.812
305 H	14831.2	2246.42	11159.7	814.448	11373.3	2135.15	15241.1	703.17
305 J	14877	2287.31	11149.2	805.115	11391.9	2151.78	15203.4	669.581
305 K	3743.31	582.407	2829.77	203.24	2875.37	546.275	3871.52	167.108
305 R	9038.17	1476.89	6707.28	463.166	6896.58	1337.21	9111.74	323.487
TOTAL								

APPENDIX 9

LEVEL	2				LOAD APP:	2	
WIND CASE	INTERNAL PRESSURE	WINDWARD	LEEWARD	NET	SIDE 1	SIDE 2	NET
WEST	(+)	52863	-66001	118864	-108925	-152791	-43867
	(-)	101080	-27884	128965	-46019	-64552	-18533
EAST	(+)	23815	-53652	77467	-69996	-98185	-28189
	(-)	48568	-22340	70908	-29145	-40882	-11737
SOUTH	(+)	46236	-114970	161206	-62824	-49663	13161
	(-)	94070	-47871	141942	-26159	-20679	5480
NORTH	(+)	64373	-81962	146335	-62824	-49663	13161
	(-)	131472	-34127	165599	-26159	-20679	5480

LEVEL	2				LOAD APP:	2	C.O.R.	X =	2559.46	Y =	1140.44
WIND CASE	INTERNAL PRESSURE	WINDWARD		RESULTANT COORDINATES		ECCENTRICITY		LEEWARD		RESULTANT COORDINATES		ECCENTRICITY	
		FS X	FS Y	X	Y	EX	EY	FS X	FS Y	X	Y	EX	EY
WEST	(+)	7475209	0	141.406	0	-71.882	0	#######	0	154.91	0	-58.3785	0
	(-)	#######	0	141.406	0	-71.882	0	-4319570	0	154.91	0	-58.3785	0
EAST	(+)	3689238	0	154.91	0	-58.3785	0	-7586734	0	141.406	0	-71.882	0
	(-)	7523701	0	154.91	0	-58.3785	0	-3158965	0	141.406	0	-71.882	0
SOUTH	(+)	0	5013062	0	108.424	0	13.3868	0	#######	0	106.957	0	11.9202
	(-)	0	#######	0	107.797	0	12.7601	0	-5120167	0	106.957	0	11.9202
NORTH	(+)	0	6885173	0	106.957	0	11.9202	0	-8785587	0	107.191	0	12.1544
	(-)	0	#######	0	106.957	0	11.9202	0	-3658144	0	107.191	0	12.1544

SIDE 1		RESULTANT COORDINATES		ECCENTRICITY	
FS X	FS Y	X	Y	EX	EY
0	#######	0	107.191	0	12.1544
0	-4932857	0	107.191	0	12.1544
0	-7502958	0	107.191	0	12.1544
0	-3124083	0	107.191	0	12.1544
-8883684	0	141.406	0	-71.882	0
-3698990	0	141.406	0	-71.882	0
-8883684	0	141.406	0	-71.882	0
-3698990	0	141.406	0	-71.882	0

SIDE 2		RESULTANT COORDINATES		ECCENTRICITY	
FS X	FS Y	X	Y	EX	EY
0	#######	0	106.957	0	11.9202
0	-6904336	0	106.957	0	11.9202
0	#######	0	106.957	0	11.9202
0	-4372662	0	106.957	0	11.9202
-7693301	0	154.91	0	-58.3785	0
-3203338	0	154.91	0	-58.3785	0
-7693301	0	154.91	0	-58.3785	0
-3203338	0	154.91	0	-58.3785	0

LEVEL	2	[=] FT LB										
WIND CASE	INTERNAL PRESSURE	WINDWARD		LEEWARD		SIDE 1		SIDE 2				
		F(EX)	F(EY)	F(EX)	F(EY)	F(EX)	F(EY)	F(EX)	F(EY)	FEX	FEY	TORSION
WEST	(+)	-3799919	0	3853018	0	0	-1323909	0	-1821306	-7652937	-497397	**-7155539**
	(-)	-7265858	0	1627849	0	0	-559334	0	-769477	-8893707	-210144	**-8683563**
EAST	(+)	-1390305	0	3856611	0	0	-850756	0	-1170388	5246916	-319632	**5566548**
	(-)	-2835339	0	1605816	0	0	-354238	0	-487326	4441155	-133088	**4574244**
SOUTH	(+)	0	618951	0	-1370465	4515898	0	2899254	0	1616644	-1989417	**3606061**
	(-)	0	1200349	0	-570635	1880330	0	1207192	0	673139	-1770983	**2444122**
NORTH	(+)	0	767342	0	-996192	4515898	0	2899254	0	1616644	1763534	**-146890**
	(-)	0	1567172	0	-414795	1880330	0	1207192	0	673139	1981967	**-1308829**

Appendix 9

Level 2			West				East			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			-43867	118864	128965	-18533	-28189	77467	-11737	70908
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0071871	0.0219446	-315.276	2608.42	926.884	-406.702	-202.599	1699.99	-84.3583	1556.04
304 G	0.1026406	0.0073500	-4502.52	873.646	13237	-136.218	-2893.36	569.383	-1204.74	521.17
304 H	0.0045589	0.0809034	-199.983	9616.5	587.931	-1499.4	-128.511	6267.37	-53.5093	5736.69
304 J	0.1177305	0.0115497	-5164.47	1372.85	15183.1	-214.053	-3318.73	894.726	-1381.86	818.966
304 K	0.1231688	0.0123919	-5403.03	1472.94	15884.4	-229.66	-3472.03	959.964	-1445.69	878.679
304 R	0.0063019	0.1197100	-276.446	14229.2	812.729	-2218.6	-177.647	9273.61	-73.9687	8488.37
304 S	0.0063019	0.1197100	-276.446	14229.2	812.729	-2218.6	-177.647	9273.61	-73.9687	8488.37
304 T	0.0083976	0.0987753	-368.376	11740.8	1082.99	-1830.62	-236.722	7651.86	-98.5662	7003.94
304 U	0.0941207	0.0098871	-4128.78	1175.22	12138.3	-183.24	-2653.19	765.929	-1104.74	701.074
305 F	0.0941207	0.0098871	-4128.78	1175.22	12138.3	-183.24	-2653.19	765.929	-1104.74	701.074
305 G	0.0946064	0.1103397	-4150.09	13115.4	12200.9	-2044.94	-2666.88	8547.72	-1110.44	7823.94
305 H	0.0946064	0.1103397	-4150.09	13115.4	12200.9	-2044.94	-2666.88	8547.72	-1110.44	7823.94
305 J	0.0946064	0.1103397	-4150.09	13115.4	12200.9	-2044.94	-2666.88	8547.72	-1110.44	7823.94
305 K	0.0946064	0.1103397	-4150.09	13115.4	12200.9	-2044.94	-2666.88	8547.72	-1110.44	7823.94
305 R	0.0570455	0.0665323	-2502.41	7908.29	7356.86	-1233.05	-1608.07	5154.08	-669.568	4717.66
TOTAL	1.0000	1.0000								

Level 2			West				East			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	-7155539	Torsion =	-8683563	Torsion =	5566548	Torsion =	4574244
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000072	0.0000075	-51.634	-53.9236	-62.6602	-65.4387	40.168	41.9491	33.0075	34.4711
304 G	0.0000025	0.0001044	-17.6034	-747.263	-21.3624	-906.837	13.6943	581.322	11.2531	477.695
304 H	-0.0000655	0.0000032	468.521	-23.1047	568.571	-28.0386	-364.479	17.974	-299.506	14.7699
304 J	-0.0000045	0.0000960	32.3569	-687.262	39.2665	-834.023	-25.1716	534.646	-20.6844	439.339
304 K	-0.0000018	0.0001005	12.9992	-719.008	15.7751	-872.548	-10.1125	559.342	-8.30986	459.632
304 R	-0.0000403	0.0000038	288.476	-27.3926	350.078	-33.2422	-224.416	21.3097	-184.411	17.511
304 S	-0.0000182	0.0000038	130.514	-27.3926	158.384	-33.2422	-101.531	21.3097	-83.432	17.511
304 T	0.0000325	0.0000017	-232.411	-12.2697	-282.041	-14.8899	180.801	9.54506	148.571	7.84354
304 U	0.0000027	0.0000388	-19.4585	-277.844	-23.6137	-337.175	15.1374	216.144	12.439	177.614
305 F	0.0000027	0.0000199	-19.4585	-142.046	-23.6137	-172.38	15.1374	110.503	12.439	90.8045
305 G	-0.0000232	-0.0000281	166.129	201.344	201.604	244.34	-129.237	-156.633	-106.199	-128.711
305 H	-0.0000046	-0.0000476	33.0077	340.899	40.0563	413.696	-25.6779	-265.198	-21.1005	-217.923
305 J	0.0000038	-0.0000551	-26.9115	394.384	-32.6583	478.603	20.9354	-306.806	17.2034	-252.114
305 K	-0.0000143	-0.0000573	102.181	410.072	124.001	497.641	-79.4901	-319.01	-65.32	-262.142
305 R	0.0000146	-0.0000511	-104.734	365.599	-127.099	443.671	81.476	-284.413	66.9519	-233.713
TOTAL	-0.0001	0.0001								

Level 2	West				East			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	-366.91	2662.34	864.224	-341.264	-162.431	1658.04	-51.3508	1521.57
304 G	-4520.12	1620.91	13215.7	770.618	-2879.67	-11.9398	-1193.49	43.4758
304 H	268.538	9639.6	1156.5	-1471.36	-492.99	6249.4	-353.015	5721.92
304 J	-5132.11	2060.11	15222.4	619.97	-3343.91	360.081	-1402.54	379.627
304 K	-5390.03	2191.95	15900.2	642.888	-3482.15	400.622	-1454	419.047
304 R	12.0293	14256.6	1162.81	-2185.36	-402.063	9252.3	-258.379	8470.86
304 S	-145.933	14256.6	971.113	-2185.36	-279.178	9252.3	-157.401	8470.86
304 T	-600.787	11753.1	800.952	-1815.73	-55.9207	7642.31	50.0048	6996.1
304 U	-4148.24	1453.07	12114.6	153.936	-2638.05	549.784	-1092.3	523.46
305 F	-4148.24	1317.27	12114.6	-10.8598	-2638.05	655.426	-1092.3	610.269
305 G	-3983.96	12914.1	12402.5	-2289.28	-2796.12	8704.35	-1216.64	7952.66
305 H	-4117.08	12774.5	12240.9	-2458.64	-2692.56	8812.91	-1131.54	8041.87
305 J	-4177	12721	12168.2	-2523.55	-2645.95	8854.52	-1093.23	8076.06
305 K	-4047.9	12705.3	12324.9	-2542.58	-2746.37	8866.73	-1175.76	8086.09
305 R	-2607.14	7542.69	7229.76	-1676.72	-1526.59	5438.49	-602.616	4951.37
TOTAL								

Appendix 9

LEVEL 2			SOUTH				NORTH			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			161206	13161	141942	5480	146335	13161	165599	5480
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0071871	0.0219446	1158.6	288.806	1020.15	120.253	1051.73	288.806	1190.18	120.253
304 G	0.1026406	0.0073500	16546.3	96.7308	14569	40.2768	15019.9	96.7308	16997.2	40.2768
304 H	0.0045589	0.0809034	734.913	1064.75	647.091	443.339	667.12	1064.75	754.942	443.339
304 J	0.1177305	0.0115497	18978.8	152.003	16710.9	63.2908	17228.1	152.003	19496.1	63.2908
304 K	0.1231688	0.0123919	19855.5	163.086	17482.8	67.9056	18023.9	163.086	20396.6	67.9056
304 R	0.0063019	0.1197100	1015.91	1575.47	894.508	655.994	922.195	1575.47	1043.6	655.994
304 S	0.0063019	0.1197100	1015.91	1575.47	894.508	655.994	922.195	1575.47	1043.6	655.994
304 T	0.0083976	0.0987753	1353.74	1299.95	1191.97	541.274	1228.86	1299.95	1390.63	541.274
304 U	0.0941207	0.0098871	15172.8	130.121	13359.6	54.18	13773.1	130.121	15586.3	54.18
305 F	0.0941207	0.0098871	15172.8	130.121	13359.6	54.18	13773.1	130.121	15586.3	54.18
305 G	0.0946064	0.1103397	15251.1	1452.15	13428.6	604.645	13844.2	1452.15	15666.7	604.645
305 H	0.0946064	0.1103397	15251.1	1452.15	13428.6	604.645	13844.2	1452.15	15666.7	604.645
305 J	0.0946064	0.1103397	15251.1	1452.15	13428.6	604.645	13844.2	1452.15	15666.7	604.645
305 K	0.0946064	0.1103397	15251.1	1452.15	13428.6	604.645	13844.2	1452.15	15666.7	604.645
305 R	0.0570455	0.0665323	9196.07	875.612	8097.13	364.587	8347.75	875.612	9446.69	364.587
TOTAL	1.0000	1.0000								

LEVEL 2			SOUTH				NORTH			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	3606061	Torsion =	2444122	Torsion =	-146890	Torsion =	-1308829
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000072	0.0000075	26.0212	27.175	17.6367	18.4187	-1.05995	-1.10695	-9.44445	-9.86323
304 G	0.0000025	0.0001044	8.87128	376.586	6.01279	255.243	-0.36136	-15.3399	-3.21985	-136.683
304 H	-0.0000655	0.0000032	-236.113	11.6437	-160.033	7.89189	9.61786	-0.4743	85.6977	-4.22611
304 J	-0.0000045	0.0000960	-16.3064	346.348	-11.0522	234.749	0.66423	-14.1082	5.91844	-125.708
304 K	-0.0000018	0.0001005	-6.551	362.347	-4.44015	245.592	0.26685	-14.7599	2.3777	-131.515
304 R	-0.0000403	0.0000038	-145.378	13.8046	-98.5348	9.35652	5.92187	-0.56232	52.7655	-5.01042
304 S	-0.0000182	0.0000038	-65.7728	13.8046	-44.5796	9.35652	2.6792	-0.56232	23.8724	-5.01042
304 T	0.0000325	0.0000017	117.125	6.18338	79.3849	4.19098	-4.77097	-0.25187	-42.5106	-2.24427
304 U	0.0000027	0.0000388	9.80617	140.02	6.64644	94.9032	-0.39945	-5.70361	-3.55917	-50.8207
305 F	0.0000027	0.0000199	9.80617	71.5849	6.64644	48.5189	-0.39945	-2.91595	-3.55917	-25.9819
305 G	-0.0000232	-0.0000281	-83.7211	-101.468	-56.7447	-68.7733	3.41031	4.13322	30.3868	36.8281
305 H	-0.0000046	-0.0000476	-16.6344	-171.797	-11.2745	-116.441	0.67759	6.99802	6.03748	62.3543
305 J	0.0000038	-0.0000551	13.5622	-198.752	9.19219	-134.71	-0.55244	8.09598	-4.92242	72.1374
305 K	-0.0000143	-0.0000573	-51.4944	-206.657	-34.902	-140.069	2.09758	8.41802	18.69	75.0068
305 R	0.0000146	-0.0000511	52.7809	-184.245	35.7739	-124.878	-2.14999	7.50507	-19.157	66.8722
TOTAL	-0.0001	0.0001								

LEVEL 2	SOUTH				NORTH			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	1184.63	261.631	1037.79	101.834	1050.67	289.913	1180.74	130.116
304 G	16555.1	-279.855	14575	-214.966	15019.5	112.071	16994	176.96
304 H	498.801	1053.1	487.058	435.447	676.737	1065.22	840.64	447.565
304 J	18962.5	-194.346	16699.8	-171.458	17228.8	166.111	19502	188.999
304 K	19849	-199.261	17478.3	-177.686	18024.2	177.845	20399	199.42
304 R	870.531	1561.66	795.973	646.637	928.117	1576.03	1096.36	661.004
304 S	950.137	1561.66	849.928	646.637	924.874	1576.03	1067.47	661.004
304 T	1470.86	1293.77	1271.35	537.083	1224.09	1300.2	1348.12	543.519
304 U	15182.6	-9.89885	13366.3	-40.7232	13772.8	135.825	15582.8	105.001
305 F	15182.6	58.5366	13366.3	5.66108	13772.8	133.037	15582.8	80.1619
305 G	15167.4	1553.62	13371.8	673.419	13847.6	1448.01	15697.1	567.817
305 H	15234.5	1623.95	13417.3	721.087	13844.9	1445.15	15672.8	542.291
305 J	15264.7	1650.9	13437.8	739.356	13843.7	1444.05	15661.8	532.508
305 K	15199.6	1658.81	13393.7	744.714	13846.3	1443.73	15685.4	529.639
305 R	9248.85	1059.86	8132.9	489.465	8345.6	868.107	9427.53	297.715
TOTAL								

Appendix 9

Level	3				Load App:	3	
Wind Case	Internal Pressure	Windward	Leeward	Net	Side 1	Side 2	Net
West	(+)	59454	-79861	139315	-126391	-152791	-26400
	(-)	107671	-33740	141411	-53399	-64552	-11154
East	(+)	28817	-53652	82469	-81220	-98185	-16965
	(-)	58768	-22340	81107	-33818	-40882	-7064
South	(+)	62789	-114970	177759	-62824	-60092	2731
	(-)	118294	-47871	166165	-26159	-25021	1137
North	(+)	75905	-95105	171009	-62824	-60092	2731
	(-)	143003	-39600	182603	-26159	-25021	1137

Level	3				Load App:	3	
Wind Case	Internal Pressure	Windward		Resultant Coordinates		Eccentricity	
		Fs X	Fs Y	X	Y	Ex	Ey
West	(+)	8407144	0	141.406	0	-71.882	0
	(-)	#######	0	141.406	0	-71.882	0
East	(+)	4942045	0	171.5	0	-41.7885	0
	(-)	#######	0	171.5	0	-41.7885	0
South	(+)	0	8099817	0	129	0	33.9631
	(-)	0	#######	0	129	0	33.9631
North	(+)	0	8118533	0	106.957	0	11.9202
	(-)	0	#######	0	106.957	0	11.9202

C.O.R. X = 2559.46 Y = 1140.44

Leeward		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
#######	0	171.5	0	-41.7885	0
-5786428	0	171.5	0	-41.7885	0
-7586734	0	141.406	0	-71.882	0
-3158965	0	141.406	0	-71.882	0
0	#######	0	106.957	0	11.9202
0	-5120167	0	106.957	0	11.9202
0	#######	0	129	0	33.9631
0	-5108364	0	129	0	33.9631

Side 1		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	#######	0	129	0	33.9631
0	-6888419	0	129	0	33.9631
0	#######	0	129	0	33.9631
0	-4362581	0	129	0	33.9631
-8883684	0	141.406	0	-71.882	0
-3698990	0	141.406	0	-71.882	0
-8883684	0	141.406	0	-71.882	0
-3698990	0	141.406	0	-71.882	0

Side 2		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	#######	0	106.957	0	11.9202
0	-6904336	0	106.957	0	11.9202
0	#######	0	106.957	0	11.9202
0	-4372662	0	106.957	0	11.9202
#######	0	171.5	0	-41.7885	0
-4291141	0	171.5	0	-41.7885	0
#######	0	171.5	0	-41.7885	0
-4291141	0	171.5	0	-41.7885	0

Level	3	[=] ft lb										
Wind Case	Internal Pressure	Windward		Leeward		Side 1		Side 2				
		F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	Fex	Fey	Torsion
West	(+)	-4273655	0	3337262	0	0	-4292632	0	-1821306	-7610917	2471326	**-1E+07**
	(-)	-7739595	0	1409948	0	0	-1813580	0	-769477	-9149543	1044102	**-1E+07**
East	(+)	-1204202	0	3856611	0	0	-2758485	0	-1170388	5060813	1588097	**3472716**
	(-)	-2455807	0	1605816	0	0	-1148578	0	-487326	4061623	661252	**3400371**
South	(+)	0	2132516	0	-1370465	4515898	0	2511166	0	2004732	-3502981	**5507713**
	(-)	0	4017635	0	-570635	1880330	0	1045600	0	834730	-4588270	**5423000**
North	(+)	0	904798	0	-3230047	4515898	0	2511166	0	2004732	4134845	**-2130113**
	(-)	0	1704629	0	-1344927	1880330	0	1045600	0	834730	3049556	**-2214825**

Appendix 9

Level 3

	Relative Rigidity		West				East			
			(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			-26400	139315	141411	-11154	-16965	82469	-7064	81107
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0055735	0.0956470	-147.143	13325	788.158	-1066.82	-94.5551	7887.87	-39.3709	7757.66
304 G	0.1028075	0.0067961	-2714.14	946.796	14538.1	-75.8021	-1744.13	560.465	-726.222	551.213
304 H	0.0045663	0.0748069	-120.551	10421.7	645.719	-834.377	-77.4669	6169.21	-32.2557	6067.37
304 J	0.1179219	0.0106794	-3113.17	1487.79	16675.4	-119.115	-2000.55	880.713	-832.989	866.174
304 K	0.1233689	0.0114581	-3256.97	1596.27	17445.7	-127.8	-2092.96	944.929	-871.467	929.33
304 R	0.0063122	0.1106891	-166.643	15420.6	892.612	-1234.6	-107.087	9128.37	-44.5887	8977.68
304 S	0.0063122	0.1106891	-166.643	15420.6	892.612	-1234.6	-107.087	9128.37	-44.5887	8977.68
304 T	0.0084112	0.0913320	-222.059	12723.9	1189.44	-1018.69	-142.697	7532.02	-59.4162	7407.68
304 U	0.0942737	0.0091421	-2488.85	1273.62	13331.3	-101.968	-1599.36	753.933	-665.941	741.487
305 F	0.0942737	0.0091421	-2488.85	1273.62	13331.3	-101.968	-1599.36	753.933	-665.941	741.487
305 G	0.0947602	0.1020249	-2501.69	14213.5	13400.1	-1137.96	-1607.61	8413.84	-669.377	8274.95
305 H	0.0947602	0.1020249	-2501.69	14213.5	13400.1	-1137.96	-1607.61	8413.84	-669.377	8274.95
305 J	0.0947602	0.1020249	-2501.69	14213.5	13400.1	-1137.96	-1607.61	8413.84	-669.377	8274.95
305 K	0.0947602	0.1020249	-2501.69	14213.5	13400.1	-1137.96	-1607.61	8413.84	-669.377	8274.95
305 R	0.0571382	0.0615187	-1508.46	8570.45	8079.97	-686.164	-969.353	5073.36	-403.619	4989.61
TOTAL	1.0000	1.0000								

Level 3

Torsional Shear	Relative Rigidity		West				East			
			(+)		(-)		(+)		(-)	
			Torsion =	#######	Torsion =	#######	Torsion =	3472716	Torsion =	3400371
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000345	0.0000055	-348.037	-55.111	-351.883	-55.7199	119.878	18.9824	117.38	18.5869
304 G	0.0000025	0.0000976	-25.1712	-983.966	-25.4493	-994.838	8.66992	338.916	8.48931	331.856
304 H	-0.0000663	0.0000029	668.431	-29.3052	675.817	-29.629	-230.234	10.0938	-225.437	9.88357
304 J	-0.0000046	0.0000879	46.1305	-886.127	46.6402	-895.918	-15.8891	305.217	-15.5581	298.858
304 K	-0.0000018	0.0000919	18.4904	-927.059	18.6947	-937.303	-6.3688	319.315	-6.23612	312.663
304 R	-0.0000408	0.0000034	411.182	-34.0198	415.726	-34.3957	-141.627	11.7177	-138.677	11.4736
304 S	-0.0000184	0.0000034	185.671	-34.0198	187.723	-34.3957	-63.9524	11.7177	-62.6201	11.4736
304 T	0.0000330	0.0000011	-332.336	-10.7384	-336.008	-10.8571	114.469	3.69874	112.085	3.62168
304 U	0.0000028	0.0000318	-27.8334	-320.687	-28.141	-324.23	9.58691	110.457	9.38719	108.156
305 F	0.0000028	0.0000126	-27.8334	-126.819	-28.141	-128.221	9.58691	43.6815	9.38719	42.7715
305 G	-0.0000235	-0.0000361	236.567	363.807	239.181	367.827	-81.483	-125.309	-79.7855	-122.699
305 H	-0.0000046	-0.0000558	46.5203	563.039	47.0343	569.26	-16.0234	-193.933	-15.6896	-189.892
305 J	0.0000039	-0.0000634	-39.022	639.396	-39.4532	646.461	13.4407	-220.233	13.1607	-215.645
305 K	-0.0000144	-0.0000656	145.274	661.792	146.879	669.105	-50.0379	-227.947	-48.9955	-223.198
305 R	0.0000149	-0.0000563	-149.884	567.984	-151.54	574.26	51.6258	-195.636	50.5503	-191.56
TOTAL	-0.0001	0.0001								

Level 3

Total Shear			West				East			
			(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall			X	Y	X	Y	X	Y	X	Y
304 F			-495.18	13380.1	436.275	-1011.1	25.3225	7868.89	78.0094	7739.07
304 G			-2739.31	1930.76	14512.6	919.036	-1735.46	221.549	-717.733	219.357
304 H			547.881	10451	1321.54	-804.748	-307.701	6159.12	-257.693	6057.49
304 J			-3067.04	2373.92	16722.1	776.803	-2016.44	575.497	-848.548	567.316
304 K			-3238.48	2523.33	17464.4	809.502	-2099.33	625.614	-877.703	616.667
304 R			244.539	15454.6	1308.34	-1200.2	-248.714	9116.65	-183.265	8966.2
304 S			19.0278	15454.6	1080.33	-1200.2	-171.039	9116.65	-107.209	8966.2
304 T			-554.395	12734.6	853.433	-1007.84	-28.2277	7528.32	52.6685	7404.05
304 U			-2516.68	1594.31	13303.2	222.262	-1589.77	643.476	-656.554	633.331
305 F			-2516.68	1400.44	13303.2	26.2523	-1589.77	710.251	-656.554	698.715
305 G			-2265.13	13849.7	13639.3	-1505.79	-1689.09	8539.15	-749.163	8397.65
305 H			-2455.17	13650.5	13447.2	-1707.22	-1623.63	8607.78	-685.067	8464.84
305 J			-2540.71	13574.2	13360.7	-1784.42	-1594.17	8634.08	-656.216	8490.59
305 K			-2356.42	13551.8	13547	-1807.07	-1657.65	8641.79	-718.373	8498.15
305 R			-1658.35	8002.46	7928.43	-1260.42	-917.727	5268.99	-353.069	5181.17
TOTAL										

Appendix 9

Level 3			South				North			
	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			177759	2731	166165	1137	171009	2731	182603	1137
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0055735	0.0956470	990.746	261.257	926.128	108.782	953.125	261.257	1017.74	108.782
304 G	0.1028075	0.0067961	18275	18.5633	17083	7.72941	17581	18.5633	18772.9	7.72941
304 H	0.0045663	0.0748069	811.695	204.332	758.755	85.08	780.873	204.332	833.813	85.08
304 J	0.1179219	0.0106794	20961.7	29.1704	19594.5	12.146	20165.7	29.1704	21532.9	12.146
304 K	0.1233689	0.0114581	21930	31.2973	20499.7	13.0316	21097.2	31.2973	22527.5	13.0316
304 R	0.0063122	0.1106891	1122.05	302.344	1048.87	125.89	1079.44	302.344	1152.62	125.89
304 S	0.0063122	0.1106891	1122.05	302.344	1048.87	125.89	1079.44	302.344	1152.62	125.89
304 T	0.0084112	0.0913320	1495.18	249.47	1397.66	103.874	1438.4	249.47	1535.92	103.874
304 U	0.0942737	0.0091421	16758	24.9712	15665	10.3975	16121.7	24.9712	17214.7	10.3975
305 F	0.0942737	0.0091421	16758	24.9712	15665	10.3975	16121.7	24.9712	17214.7	10.3975
305 G	0.0947602	0.1020249	16844.5	278.678	15745.9	116.036	16204.9	278.678	17303.5	116.036
305 H	0.0947602	0.1020249	16844.5	278.678	15745.9	116.036	16204.9	278.678	17303.5	116.036
305 J	0.0947602	0.1020249	16844.5	278.678	15745.9	116.036	16204.9	278.678	17303.5	116.036
305 K	0.0947602	0.1020249	16844.5	278.678	15745.9	116.036	16204.9	278.678	17303.5	116.036
305 R	0.0571382	0.0615187	10156.8	168.036	9494.4	69.967	9771.17	168.036	10433.6	69.967
TOTAL	1.0000	1.0000								

Level 3			South				North			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	5507713	Torsion =	5423000	Torsion =	-2130113	Torsion =	-2214825
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000345	0.0000055	190.125	30.106	187.201	29.6429	-73.5311	-11.6435	-76.4554	-12.1066
304 G	0.0000025	0.0000976	13.7505	537.52	13.539	529.252	-5.318	-207.886	-5.5295	-216.154
304 H	-0.0000663	0.0000029	-365.15	16.0088	-359.533	15.7626	141.222	-6.19142	146.838	-6.43764
304 J	-0.0000046	0.0000879	-25.2001	484.072	-24.8125	476.627	9.74616	-187.215	10.1338	-194.661
304 K	-0.0000018	0.0000919	-10.1009	506.433	-9.94553	498.643	3.90653	-195.863	4.06189	-203.653
304 R	-0.0000408	0.0000034	-224.62	18.5843	-221.165	18.2985	86.872	-7.18749	90.3268	-7.47333
304 S	-0.0000184	0.0000034	-101.428	18.5843	-99.8681	18.2985	39.2274	-7.18749	40.7875	-7.47333
304 T	0.0000330	0.0000011	181.548	5.86618	178.756	5.77595	-70.2138	-2.26875	-73.0062	-2.35898
304 U	0.0000028	0.0000318	15.2048	175.184	14.9709	172.49	-5.88047	-67.7527	-6.11433	-70.4472
305 F	0.0000028	0.0000126	15.2048	69.2787	14.9709	68.2131	-5.88047	-26.7936	-6.11433	-27.8592
305 G	-0.0000235	-0.0000361	-129.232	-198.74	-127.244	-195.683	49.9805	76.8628	51.9681	79.9196
305 H	-0.0000046	-0.0000558	-25.4131	-307.576	-25.0222	-302.845	9.82852	118.955	10.2194	123.686
305 J	0.0000039	-0.0000634	21.3169	-349.288	20.989	-343.916	-8.24433	135.088	-8.5722	140.46
305 K	-0.0000144	-0.0000656	-79.3599	-361.523	-78.1393	-355.963	30.6925	139.819	31.9131	145.38
305 R	0.0000149	-0.0000563	81.8783	-310.277	80.6189	-305.505	-31.6665	120	-32.9258	124.772
TOTAL	-0.0001	0.0001								

Level 3	South				North			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	1180.8711	231.15075	1113.33	79.1392	879.594	272.9	941.287	120.889
304 G	18288.722	-518.9562	17096.6	-521.523	17575.7	226.449	18767.4	223.883
304 H	446.54563	188.32369	399.222	69.3174	922.095	210.524	980.652	91.5176
304 J	20936.502	-454.9018	19569.7	-464.481	20175.5	216.386	21543	206.807
304 K	21919.865	-475.1352	20489.7	-485.612	21101.1	227.161	22531.6	216.684
304 R	897.42939	283.75936	827.702	107.591	1166.31	309.531	1242.95	133.363
304 S	1020.6213	283.75936	949	107.591	1118.67	309.531	1193.41	133.363
304 T	1676.7232	243.60411	1576.41	98.0985	1368.19	251.739	1462.91	106.233
304 U	16773.222	-150.2132	15680	-162.092	16115.8	92.724	17208.5	80.8447
305 F	16773.222	-44.30745	15680	-57.8156	16115.8	51.7648	17208.5	38.2567
305 G	16715.262	477.41746	15618.6	311.719	16254.8	201.815	17355.5	36.1163
305 H	16819.081	586.25375	15720.8	418.881	16214.7	159.722	17313.7	-7.65025
305 J	16865.811	627.96602	15766.9	459.952	16196.6	143.59	17294.9	-24.4241
305 K	16765.134	640.20063	15667.7	471.998	16235.6	138.858	17335.4	-29.344
305 R	10238.725	478.31377	9575.02	375.472	9739.5	48.0362	10400.7	-54.8054
TOTAL								

Appendix 9

Level	4				Load App:	4	
Wind Case	Internal Pressure	Windward	Leeward	Net	Side 1	Side 2	Net
West	(+)	64510	-79861	144371	-126391	-152791	-26400
	(-)	112727	-33740	146467	-53399	-64552	-11154
East	(+)	32929	-53652	86581	-81220	-98185	-16965
	(-)	62880	-22340	85219	-33818	-40882	-7064
South	(+)	70298	-114970	185268	-62824	-60092	2731
	(-)	125803	-47871	173674	-26159	-25021	1137
North	(+)	84982	-95105	180086	-62824	-60092	2731
	(-)	152080	-39600	191680	-26159	-25021	1137

Level	4				Load App:	4	
Wind Case	Internal Pressure	Windward		Resultant Coordinates		Eccentricity	
		Fs X	Fs Y	X	Y	Ex	Ey
West	(+)	9122127	0	141.406	0	-71.882	0
	(-)	#######	0	141.406	0	-71.882	0
East	(+)	9391440	0	285.206	0	71.9179	0
	(-)	#######	0	288.681	0	75.392	0
South	(+)	0	9068430	0	129	0	33.9631
	(-)	0	#######	0	129	0	33.9631
North	(+)	0	9089384	0	106.957	0	11.9202
	(-)	0	#######	0	106.957	0	11.9202

C.O.R. X = 2559.46 Y = 1140.44

Leeward		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
#######	0	292.5	0	79.2115	0
-9868981	0	292.5	0	79.2115	0
-7586734	0	141.406	0	-71.882	0
-3158965	0	141.406	0	-71.882	0
0	#######	0	106.957	0	11.9202
0	-5120167	0	106.957	0	11.9202
0	#######	0	129	0	33.9631
0	-5108364	0	129	0	33.9631

Side 1		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	#######	0	129	0	33.9631
0	-6888419	0	129	0	33.9631
0	#######	0	129	0	33.9631
0	-4362581	0	129	0	33.9631
-8883684	0	141.406	0	-71.882	0
-3698990	0	141.406	0	-71.882	0
-8883684	0	141.406	0	-71.882	0
-3698990	0	141.406	0	-71.882	0

Side 2		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	#######	0	106.957	0	11.9202
0	-6904336	0	106.957	0	11.9202
0	#######	0	106.957	0	11.9202
0	-4372662	0	106.957	0	11.9202
#######	0	292.5	0	79.2115	0
-7318710	0	292.5	0	79.2115	0
#######	0	292.5	0	79.2115	0
-7318710	0	292.5	0	79.2115	0

Level	4	[=] ft lb										
Wind Case	Internal Pressure	Windward		Leeward		Side 1		Side 2				
		F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	Fex	Fey	Torsion
West	(+)	-4637107	0	-6325891	0	0	-4292632	0	-1821306	1688785	2471326	**-782541**
	(-)	-8103046	0	-2672604	0	0	-1813580	0	-769477	-5430441	1044102	**-6474544**
East	(+)	2368155	0	3856611	0	0	-2758485	0	-1170388	1488456	1588097	**-99640.8**
	(-)	4740614	0	1605816	0	0	-1148578	0	-487326	-3134798	661252	**-3796050**
South	(+)	0	2387532	0	-1370465	4515898	0	-4759999	0	9275897	-3757997	**1.3E+07**
	(-)	0	4272651	0	-570635	1880330	0	-1981969	0	3862299	-4843286	**8705585**
North	(+)	0	1012998	0	-3230047	4515898	0	-4759999	0	9275897	4243044	**5032853**
	(-)	0	1812828	0	-1344927	1880330	0	-1981969	0	3862299	3157756	**704544**

Appendix 9

Level 4			West				East			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			-26400	144371	-11154	-64552	-16965	86581	-7064	85219
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0055735	0.0956470	-147.143	13808.6	-62.1658	-6174.24	-94.5551	8281.17	-39.3709	8150.96
304 G	0.1028075	0.0067961	-2714.14	981.159	-1146.69	-438.705	-1744.13	588.41	-726.222	579.158
304 H	0.0045663	0.0748069	-120.551	10799.9	-50.931	-4828.96	-77.4669	6476.82	-32.2557	6374.97
304 J	0.1179219	0.0106794	-3113.17	1541.79	-1315.27	-689.379	-2000.55	924.627	-832.989	910.088
304 K	0.1233689	0.0114581	-3256.97	1654.21	-1376.03	-739.644	-2092.96	992.044	-871.467	976.445
304 R	0.0063122	0.1106891	-166.643	15980.3	-70.4046	-7145.24	-107.087	9583.52	-44.5887	9432.83
304 S	0.0063122	0.1106891	-166.643	15980.3	-70.4046	-7145.24	-107.087	9583.52	-44.5887	9432.83
304 T	0.0084112	0.0913320	-222.059	13185.7	-93.8169	-5895.69	-142.697	7907.57	-59.4162	7783.23
304 U	0.0942737	0.0091421	-2488.85	1319.85	-1051.51	-590.142	-1599.36	791.525	-665.941	779.079
305 F	0.0942737	0.0091421	-2488.85	1319.85	-1051.51	-590.142	-1599.36	791.525	-665.941	779.079
305 G	0.0947602	0.1020249	-2501.69	14729.4	-1056.93	-6585.95	-1607.61	8833.37	-669.377	8694.47
305 H	0.0947602	0.1020249	-2501.69	14729.4	-1056.93	-6585.95	-1607.61	8833.37	-669.377	8694.47
305 J	0.0947602	0.1020249	-2501.69	14729.4	-1056.93	-6585.95	-1607.61	8833.37	-669.377	8694.47
305 K	0.0947602	0.1020249	-2501.69	14729.4	-1056.93	-6585.95	-1607.61	8833.37	-669.377	8694.47
305 R	0.0571382	0.0615187	-1508.46	8881.5	-637.306	-3971.18	-969.353	5326.32	-403.619	5242.57
TOTAL	1.0000	1.0000								

Level 4			West				East			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	-782541	Torsion =	-6474544	Torsion =	-99641	Torsion =	-3796050
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000345	0.0000055	-27.0132	-4.27748	-223.5	-35.3908	-3.43958	-0.54465	-131.039	-20.7498
304 G	0.0000025	0.0000976	-1.95368	-76.3713	-16.1642	-631.876	-0.24876	-9.72434	-9.47715	-370.472
304 H	-0.0000663	0.0000029	51.8808	-2.27455	429.249	-18.819	6.60597	-0.28962	251.67	-11.0337
304 J	-0.0000046	0.0000879	3.58046	-68.7775	29.6238	-569.047	0.4559	-8.75742	17.3685	-333.634
304 K	-0.0000018	0.0000919	1.43514	-71.9544	11.874	-595.332	0.18274	-9.16194	6.96178	-349.046
304 R	-0.0000408	0.0000034	31.9142	-2.64047	264.05	-21.8466	4.06363	-0.33621	154.814	-12.8087
304 S	-0.0000184	0.0000034	14.411	-2.64047	119.233	-21.8466	1.83495	-0.33621	69.9068	-12.8087
304 T	0.0000330	0.0000011	-25.7945	-0.83347	-213.417	-6.89594	-3.28441	-0.10613	-125.127	-4.04311
304 U	0.0000028	0.0000318	-2.16031	-24.8904	-17.8739	-205.936	-0.27507	-3.16928	-10.4795	-120.741
305 F	0.0000028	0.0000126	-2.16031	-9.84318	-17.8739	-81.44	-0.27507	-1.25333	-10.4795	-47.7486
305 G	-0.0000235	-0.0000361	18.3614	28.2371	151.917	233.627	2.33795	3.59543	89.0696	136.976
305 H	-0.0000046	-0.0000558	3.61071	43.7007	29.8741	361.568	0.45975	5.5644	17.5153	211.989
305 J	0.0000039	-0.0000634	-3.02872	49.6272	-25.0589	410.603	-0.38565	6.31902	-14.6921	240.738
305 K	-0.0000144	-0.0000656	11.2755	51.3655	93.2909	424.985	1.43571	6.54036	54.6968	249.17
305 R	0.0000149	-0.0000563	-11.6333	44.0845	-96.2513	364.744	-1.48127	5.61327	-56.4325	213.851

Level 4	West				East			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	-174.156	13812.9	-285.666	-6138.85	-97.9947	8281.71	-170.41	8171.71
304 G	-2716.1	1057.53	-1162.85	193.172	-1744.38	598.135	-735.7	949.63
304 H	-68.6697	10802.2	378.318	-4810.14	-70.8609	6477.11	219.414	6386.01
304 J	-3109.59	1610.57	-1285.65	-120.333	-2000.09	933.384	-815.621	1243.72
304 K	-3255.54	1726.16	-1364.15	-144.312	-2092.78	1001.21	-864.505	1325.49
304 R	-134.729	15982.9	193.646	-7123.4	-103.023	9583.86	110.225	9445.64
304 S	-152.232	15982.9	48.8284	-7123.4	-105.252	9583.86	25.3181	9445.64
304 T	-247.853	13186.5	-307.234	-5888.8	-145.981	7907.68	-184.543	7787.27
304 U	-2491.01	1344.74	-1069.38	-384.205	-1599.63	794.694	-676.42	899.82
305 F	-2491.01	1329.69	-1069.38	-508.702	-1599.63	792.778	-676.42	826.827
305 G	-2483.33	14701.2	-905.015	-6819.57	-1605.27	8829.77	-580.308	8557.49
305 H	-2498.08	14685.7	-1027.06	-6947.51	-1607.15	8827.8	-651.862	8482.48
305 J	-2504.72	14679.8	-1081.99	-6996.55	-1608	8827.05	-684.069	8453.73
305 K	-2490.42	14678	-963.641	-7010.93	-1606.17	8826.83	-614.68	8445.3
305 R	-1520.1	8837.41	-733.557	-4335.92	-970.834	5320.71	-460.052	5028.72
TOTAL								

Appendix 9

Level 4			South				North			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			185268	2731	173674	1137	180086	2731	191680	1137
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0055735	0.0956470	1032.6	261.257	967.977	108.782	1003.72	261.257	1068.33	108.782
304 G	0.1028075	0.0067961	19046.9	18.5633	17855	7.72941	18514.2	18.5633	19706.1	7.72941
304 H	0.0045663	0.0748069	845.982	204.332	793.042	85.08	822.321	204.332	875.261	85.08
304 J	0.1179219	0.0106794	21847.1	29.1704	20480	12.146	21236.1	29.1704	22603.3	12.146
304 K	0.1233689	0.0114581	22856.3	31.2973	21426	13.0316	22217.1	31.2973	23647.4	13.0316
304 R	0.0063122	0.1106891	1169.45	302.344	1096.26	125.89	1136.74	302.344	1209.92	125.89
304 S	0.0063122	0.1106891	1169.45	302.344	1096.26	125.89	1136.74	302.344	1209.92	125.89
304 T	0.0084112	0.0913320	1558.33	249.47	1460.81	103.874	1514.75	249.47	1612.27	103.874
304 U	0.0942737	0.0091421	17465.9	24.9712	16372.9	10.3975	16977.4	24.9712	18070.4	10.3975
305 F	0.0942737	0.0091421	17465.9	24.9712	16372.9	10.3975	16977.4	24.9712	18070.4	10.3975
305 G	0.0947602	0.1020249	17556	278.678	16457.4	116.036	17065	278.678	18163.6	116.036
305 H	0.0947602	0.1020249	17556	278.678	16457.4	116.036	17065	278.678	18163.6	116.036
305 J	0.0947602	0.1020249	17556	278.678	16457.4	116.036	17065	278.678	18163.6	116.036
305 K	0.0947602	0.1020249	17556	278.678	16457.4	116.036	17065	278.678	18163.6	116.036
305 R	0.0571382	0.0615187	10585.9	168.036	9923.43	69.967	10289.8	168.036	10952.3	69.967
TOTAL	1.0000	1.0000								

Level 4			South				North			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	#######	Torsion =	8705585	Torsion =	5032853	Torsion =	704544
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000345	0.0000055	449.928	71.2452	300.515	47.586	173.733	27.5103	24.3207	3.85114
304 G	0.0000025	0.0000976	32.5402	1272.03	21.7342	849.613	12.5649	491.176	1.75895	68.7592
304 H	-0.0000663	0.0000029	-864.12	37.8845	-577.162	25.3038	-333.668	14.6286	-46.7098	2.04784
304 J	-0.0000046	0.0000879	-59.6356	1145.55	-39.8317	765.133	-23.0274	442.337	-3.22358	61.9223
304 K	-0.0000018	0.0000919	-23.9036	1198.46	-15.9656	800.476	-9.23002	462.769	-1.2921	64.7826
304 R	-0.0000408	0.0000034	-531.559	43.9794	-355.038	29.3747	-205.254	16.982	-28.7333	2.37729
304 S	-0.0000184	0.0000034	-240.028	43.9794	-160.319	29.3747	-92.6833	16.982	-12.9746	2.37729
304 T	0.0000330	0.0000011	429.63	13.8822	286.958	9.27218	165.895	5.36041	23.2235	0.7504
304 U	0.0000028	0.0000318	35.9819	414.57	24.033	276.899	13.8939	160.08	1.94499	22.4095
305 F	0.0000028	0.0000126	35.9819	163.947	24.033	109.503	13.8939	63.3057	1.94499	8.86209
305 G	-0.0000235	-0.0000361	-305.824	-470.314	-204.266	-314.132	-118.09	-181.605	-16.5312	-25.4227
305 H	-0.0000046	-0.0000558	-60.1395	-727.873	-40.1683	-486.16	-23.222	-281.058	-3.25082	-39.345
305 J	0.0000039	-0.0000634	50.446	-826.584	33.6938	-552.091	19.479	-319.174	2.72685	-44.6808
305 K	-0.0000144	-0.0000656	-187.804	-855.537	-125.438	-571.429	-72.5177	-330.353	-10.1517	-46.2458
305 R	0.0000149	-0.0000563	193.763	-734.266	129.418	-490.43	74.819	-283.526	10.4738	-39.6905
TOTAL	-0.0001	0.0001								

Level 4	South				North			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	1482.52	190.012	1268.49	61.1961	1177.45	233.746	1092.65	104.931
304 G	19079.5	-1253.47	17876.7	-841.883	18526.8	-472.613	19707.9	-61.0298
304 H	-18.1379	166.448	215.88	59.7762	488.654	189.704	828.552	83.0322
304 J	21787.5	-1116.38	20440.1	-752.987	21213.1	-413.166	22600	-49.7763
304 K	22832.4	-1167.17	21410	-787.444	22207.8	-431.472	23646.1	-51.751
304 R	637.886	258.364	741.225	96.5152	931.484	285.362	1181.19	123.513
304 S	929.418	258.364	935.944	96.5152	1044.05	285.362	1196.95	123.513
304 T	1987.96	235.588	1747.77	94.6023	1680.64	244.11	1635.49	103.124
304 U	17501.9	-389.599	16396.9	-266.502	16991.3	-135.109	18072.3	-12.012
305 F	17501.9	-138.975	16396.9	-99.1056	16991.3	-38.3344	18072.3	1.53544
305 G	17250.2	748.992	16253.1	430.167	16946.9	460.283	18147.1	141.459
305 H	17495.9	1006.55	16417.2	602.196	17041.8	559.735	18160.4	155.381
305 J	17606.5	1105.26	16491.1	668.127	17084.5	597.851	18166.4	160.717
305 K	17368.2	1134.21	16332	687.465	16992.5	609.031	18153.5	162.282
305 R	10779.6	902.302	10052.8	560.397	10364.6	451.562	10962.7	109.658
TOTAL								

Appendix 9

Level	5				Load App:	5	
Wind Case	Internal Pressure	Windward	Leeward	Net	Side 1	Side 2	Net
West	(+)	78128	-71440	149568	-112813	-134310	-21497
	(-)	133005	-30182	163187	-47662	-56744	-9082
East	(+)	35326	-61062	96388	-72495	-86309	-13814
	(-)	62119	-25425	87544	-30185	-35937	-5752
South	(+)	68598	-101063	169661	-71500	-53756	17744
	(-)	118140	-42081	160221	-29771	-22383	7388
North	(+)	80987	-84887	165874	-71500	-53756	17744
	(-)	139969	-35345	175315	-29771	-22383	7388

Level	5				Load App:	5		C.O.R.	X =	2559.46	Y =	1140.44	
Wind Case	Internal Pressure	Windward		Resultant Coordinate		Eccentricity		Leeward		Resultant Coordinate		Eccentricity	
		Fs X	Fs Y	X	Y	Ex	Ey	Fs X	Fs Y	X	Y	Ex	Ey
West	(+)	#######	0	160.271	0	-53.018	0	#######	0	171.5	0	-41.7885	0
	(-)	#######	0	160.177	0	-53.1115	0	-5176295	0	171.5	0	-41.7885	0
East	(+)	6058375	0	171.5	0	-41.7885	0	-9772582	0	160.044	0	-53.2446	0
	(-)	#######	0	171.5	0	-41.7885	0	-4069109	0	160.044	0	-53.2446	0
South	(+)	0	8636786	0	125.905	0	30.8677	0	#######	0	112.02	0	16.9827
	(-)	0	#######	0	126.357	0	31.3199	0	-4713878	0	112.02	0	16.9827
North	(+)	0	9081705	0	112.138	0	17.1015	0	#######	0	126.983	0	31.9459
	(-)	0	#######	0	112.088	0	17.0514	0	-4488267	0	126.983	0	31.9459

Side 1		Resultant Coordinate		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	#######	0	126.983	0	31.9459
0	-6052244	0	126.983	0	31.9459
0	-9205563	0	126.983	0	31.9459
0	-3833014	0	126.983	0	31.9459
#######	0	160.044	0	-53.2446	0
-4764723	0	160.044	0	-53.2446	0
#######	0	160.044	0	-53.2446	0
-4764723	0	160.044	0	-53.2446	0

Side 2		Resultant Coordinate		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	#######	0	112.02	0	16.9827
0	-6356471	0	112.02	0	16.9827
0	-9668299	0	112.02	0	16.9827
0	-4025688	0	112.02	0	16.9827
-9219157	0	171.5	0	-41.7885	0
-3838674	0	171.5	0	-41.7885	0
-9219157	0	171.5	0	-41.7885	0
-3838674	0	171.5	0	-41.7885	0

Level	5	[=] ft lb										
Wind Case	Internal Pressure	Windward		Leeward		Side 1		Side 2				
		F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	Fex	Fey	Torsion
West	(+)	-4142210	0	2985373	0	0	-3603905	0	-2280951	-7127584	1322954	**-8450538**
	(-)	-7064083	0	1261280	0	0	-1522602	0	-963671	-8325364	558930	**-8884294**
East	(+)	-1476212	0	3251219	0	0	-2315902	0	-1465760	4727431	850142	**3877289**
	(-)	-2595845	0	1353743	0	0	-964296	0	-610313	3949588	353982	**3595606**
South	(+)	0	2117459	0	-1716331	3807014	0	2246383	0	1560631	-3833790	**5394421**
	(-)	0	3700123	0	-714646	1585165	0	935349	0	649816	-4414769	**5064585**
North	(+)	0	1384991	0	-2711805	3807014	0	2246383	0	1560631	4096796	**-2536165**
	(-)	0	2386676	0	-1129142	1585165	0	935349	0	649816	3515817	**-2866002**

Appendix 9

Level 5			West				East			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			-21497	149568	163187	-9082	-13814	96388	-5752	87544
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0019609	0.0993192	-42.1552	14855	320.002	-902.051	-27.0893	9573.15	-11.2794	8694.76
304 G	0.1070975	0.0024899	-2302.31	372.405	17476.9	-22.6138	-1479.49	239.992	-616.029	217.972
304 H	0.0012797	0.0467428	-27.5109	6991.26	208.836	-424.535	-17.6788	4505.44	-7.36108	4092.04
304 J	0.1231146	0.0041085	-2646.64	614.503	20090.7	-37.3149	-1700.75	396.01	-708.16	359.674
304 K	0.1285170	0.0042728	-2762.77	639.078	20972.3	-38.8071	-1775.38	411.846	-739.235	374.057
304 R	0.0022208	0.1200714	-47.742	17958.9	362.411	-1090.53	-30.6794	11573.4	-12.7743	10511.5
304 S	0.0022208	0.1200714	-47.742	17958.9	362.411	-1090.53	-30.6794	11573.4	-12.7743	10511.5
304 T	0.0028416	0.0725721	-61.0864	10854.5	463.709	-659.125	-39.2547	6995.06	-16.3449	6353.22
304 U	0.0902420	0.0127717	-1939.96	1910.24	14726.3	-115.997	-1246.64	1231.03	-519.075	1118.08
305 F	0.0902420	0.0127717	-1939.96	1910.24	14726.3	-115.997	-1246.64	1231.03	-519.075	1118.08
305 G	0.1009710	0.1132028	-2170.61	16931.6	16477.2	-1028.15	-1394.85	10911.4	-580.789	9910.18
305 H	0.1009710	0.1132028	-2170.61	16931.6	16477.2	-1028.15	-1394.85	10911.4	-580.789	9910.18
305 J	0.1009710	0.1132028	-2170.61	16931.6	16477.2	-1028.15	-1394.85	10911.4	-580.789	9910.18
305 K	0.1009710	0.1132028	-2170.61	16931.6	16477.2	-1028.15	-1394.85	10911.4	-580.789	9910.18
305 R	0.0463790	0.0519974	-997.026	7777.18	7568.46	-472.258	-640.698	5011.91	-266.774	4552.04
TOTAL	1.0000	1.0000								

Level 5			West				East			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	-8450538	Torsion =	-8884294	Torsion =	3877289	Torsion =	3595606
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000367	0.0000021	-310.125	-17.6156	-326.043	-18.5198	142.292	8.08241	131.955	7.49523
304 G	0.0000009	0.0001103	-7.91082	-932.322	-8.31687	-980.177	3.62965	427.77	3.36596	396.692
304 H	-0.0000413	0.0000009	348.717	-7.60406	366.616	-7.99436	-159.999	3.4889	-148.375	3.23544
304 J	-0.0000017	0.0001006	14.6899	-849.873	15.4439	-893.496	-6.74006	389.94	-6.2504	361.611
304 K	-0.0000007	0.0001050	5.54684	-887.166	5.83155	-932.704	-2.54501	407.051	-2.36012	377.479
304 R	-0.0000436	0.0000013	368.192	-11.1947	387.091	-11.7693	-168.935	5.13637	-156.661	4.76322
304 S	-0.0000192	0.0000013	162.307	-11.1947	170.638	-11.7693	-74.47	5.13637	-69.0598	4.76322
304 T	0.0000268	0.0000005	-226.607	-4.08124	-238.238	-4.29073	103.972	1.87256	96.4186	1.73652
304 U	0.0000040	0.0000352	-33.4923	-297.671	-35.2114	-312.951	15.367	136.578	14.2506	126.656
305 F	0.0000040	0.0000160	-33.4923	-135.032	-35.2114	-141.963	15.367	61.9557	14.2506	57.4547
305 G	-0.0000253	-0.0000364	214.123	307.691	225.114	323.485	-98.2444	-141.175	-91.107	-130.919
305 H	-0.0000043	-0.0000584	36.6497	493.742	38.5309	519.086	-16.8157	-226.54	-15.594	-210.082
305 J	0.0000051	-0.0000669	-43.2332	565.048	-45.4523	594.051	19.8363	-259.256	18.3952	-240.421
305 K	-0.0000152	-0.0000693	128.87	585.962	135.484	616.039	-59.1282	-268.852	-54.8325	-249.32
305 R	0.0000130	-0.0000461	-109.743	389.328	-115.376	409.312	50.3526	-178.632	46.6945	-165.655

Level 5	West				East			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	-352.28	14872.6	-6.0418	-883.532	115.203	9565.07	120.675	8687.27
304 G	-2310.22	1304.73	17468.6	957.564	-1475.86	-187.777	-612.663	-178.721
304 H	321.206	6998.86	575.453	-416.54	-177.678	4501.95	-155.736	4088.8
304 J	-2631.95	1464.38	20106.2	856.181	-1707.49	6.0695	-714.411	-1.93756
304 K	-2757.23	1526.24	20978.2	893.896	-1777.93	4.7953	-741.595	-3.42177
304 R	320.45	17970.1	749.502	-1078.76	-199.614	11568.3	-169.436	10506.7
304 S	114.565	17970.1	533.05	-1078.76	-105.149	11568.3	-81.8341	10506.7
304 T	-287.693	10858.6	225.471	-654.834	64.7174	6993.18	80.0737	6351.49
304 U	-1973.46	2207.91	14691.1	196.954	-1231.27	1094.45	-504.825	991.422
305 F	-1973.46	2045.27	14691.1	25.9667	-1231.27	1169.08	-504.825	1060.62
305 G	-1956.49	16623.9	16702.3	-1351.63	-1493.1	11052.5	-671.896	10041.1
305 H	-2133.96	16437.8	16515.7	-1547.23	-1411.67	11137.9	-596.383	10120.3
305 J	-2213.84	16366.5	16431.7	-1622.2	-1375.02	11170.6	-562.394	10150.6
305 K	-2041.74	16345.6	16612.7	-1644.19	-1453.98	11180.2	-635.622	10159.5
305 R	-1106.77	7387.85	7453.09	-881.57	-590.345	5190.54	-220.079	4717.7
TOTAL								

Appendix 9

Level 5			SOUTH				NORTH			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			169661	17744	160221	7388	165874	17744	175315	7388
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0019609	0.0993192	332.697	1762.36	314.184	733.812	325.27	1762.36	343.783	733.812
304 G	0.1070975	0.0024899	18170.3	44.1812	17159.2	18.3962	17764.7	44.1812	18775.8	18.3962
304 H	0.0012797	0.0467428	217.121	829.424	205.04	345.356	212.275	829.424	224.356	345.356
304 J	0.1231146	0.0041085	20887.8	72.903	19725.5	30.3554	20421.5	72.903	21583.8	30.3554
304 K	0.1285170	0.0042728	21804.4	75.8185	20591.1	31.5693	21317.6	75.8185	22530.9	31.5693
304 R	0.0022208	0.1200714	376.789	2130.6	355.823	887.138	368.378	2130.6	389.344	887.138
304 S	0.0022208	0.1200714	376.789	2130.6	355.823	887.138	368.378	2130.6	389.344	887.138
304 T	0.0028416	0.0725721	482.105	1287.75	455.279	536.193	471.344	1287.75	498.17	536.193
304 U	0.0902420	0.0127717	15310.6	226.626	14458.6	94.3624	14968.8	226.626	15820.7	94.3624
305 F	0.0902420	0.0127717	15310.6	226.626	14458.6	94.3624	14968.8	226.626	15820.7	94.3624
305 G	0.1009710	0.1132028	17130.9	2008.72	16177.6	836.389	16748.5	2008.72	17701.7	836.389
305 H	0.1009710	0.1132028	17130.9	2008.72	16177.6	836.389	16748.5	2008.72	17701.7	836.389
305 J	0.1009710	0.1132028	17130.9	2008.72	16177.6	836.389	16748.5	2008.72	17701.7	836.389
305 K	0.1009710	0.1132028	17130.9	2008.72	16177.6	836.389	16748.5	2008.72	17701.7	836.389
305 R	0.0463790	0.0519974	7868.72	922.663	7430.88	384.179	7693.07	922.663	8130.92	384.179
TOTAL	1.0000	1.0000								

Level 5			SOUTH				NORTH			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	5394421	Torsion =	5064585	Torsion =	-2536165	Torsion =	-2866002
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
304 F	0.0000367	0.0000021	197.969	11.245	185.864	10.5574	-93.0743	-5.28677	-105.179	-5.97433
304 G	0.0000009	0.0001103	5.04989	595.15	4.74112	558.76	-2.37419	-279.807	-2.68296	-316.197
304 H	-0.0000413	0.0000009	-222.604	4.85407	-208.993	4.55727	104.657	-2.28212	118.267	-2.57892
304 J	-0.0000017	0.0001006	-9.37735	542.519	-8.80398	509.347	4.40872	-255.063	4.98209	-288.235
304 K	-0.0000007	0.0001050	-3.54084	566.325	-3.32434	531.697	1.66471	-266.255	1.88121	-300.883
304 R	-0.0000436	0.0000013	-235.036	7.14617	-220.665	6.70922	110.501	-3.35974	124.872	-3.79669
304 S	-0.0000192	0.0000013	-103.609	7.14617	-97.2741	6.70922	48.7114	-3.35974	55.0465	-3.79669
304 T	0.0000268	0.0000005	144.655	2.60527	135.81	2.44597	-68.009	-1.22486	-76.8538	-1.38415
304 U	0.0000040	0.0000352	21.3799	190.019	20.0726	178.401	-10.0517	-89.3368	-11.3589	-100.955
305 F	0.0000040	0.0000160	21.3799	86.1982	20.0726	80.9277	-10.0517	-40.5257	-11.3589	-45.7962
305 G	-0.0000253	-0.0000364	-136.686	-196.415	-128.329	-184.406	64.2624	92.3439	72.62	104.354
305 H	-0.0000043	-0.0000584	-23.3954	-315.182	-21.9649	-295.91	10.9993	148.181	12.4297	167.453
305 J	0.0000051	-0.0000669	27.598	-360.7	25.9106	-338.645	-12.9751	169.581	-14.6626	191.636
305 K	-0.0000152	-0.0000693	-82.2642	-374.05	-77.2343	-351.179	38.6762	175.858	43.7062	198.729
305 R	0.0000130	-0.0000461	70.0549	-248.528	65.7714	-233.332	-32.936	116.845	-37.2194	132.041
TOTAL	-0.0001	0.0001								

Level 5	SOUTH				NORTH			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	530.666	1751.12	500.049	723.254	232.196	1767.65	238.604	739.786
304 G	18175.3	-550.969	17164	-540.364	17762.3	323.989	18773.1	334.594
304 H	-5.48302	824.57	-3.95356	340.798	316.931	831.706	342.624	347.935
304 J	20878.4	-469.616	19716.7	-478.991	20425.9	327.966	21588.8	318.59
304 K	21800.8	-490.506	20587.8	-500.128	21319.3	342.074	22532.8	332.452
304 R	141.753	2123.45	135.158	880.429	478.88	2133.96	514.217	890.934
304 S	273.18	2123.45	258.549	880.429	417.09	2133.96	444.391	890.934
304 T	626.76	1285.14	591.089	533.747	403.335	1288.97	421.316	537.577
304 U	15331.9	36.6063	14478.7	-84.0384	14958.7	315.962	15809.4	195.318
305 F	15331.9	140.427	14478.7	13.4347	14958.7	267.151	15809.4	140.159
305 G	16994.2	2205.13	16049.3	1020.79	16812.7	1916.37	17774.3	732.036
305 H	17107.5	2323.9	16155.7	1132.3	16759.5	1860.53	17714.1	668.936
305 J	17158.5	2369.41	16203.5	1175.03	16735.5	1839.13	17687	644.753
305 K	17048.6	2382.77	16100.4	1187.57	16787.1	1832.86	17745.4	637.66
305 R	7938.78	1171.19	7496.65	617.511	7660.14	805.819	8093.7	252.138
TOTAL								

Appendix 9

Level	ML				Load App:	6	
Wind Case	Internal Pressure	Windward	Leeward	Net	Side 1	Side 2	Net
West	(+)	44105	-39250	83355	-6735	-41298	-34563
	(-)	73972	-16583	90555	-2845	-17448	-14602
East	(+)	22377	-33233	55610	-4328	-26538	-22210
	(-)	37097	-13838	50935	-1802	-11050	-9248
South	(+)	4532	-31075	35607	-38915	-29534	9380
	(-)	7489	-12939	20428	-16203	-12297	3906
North	(+)	26439	-5068	31507	-38915	-29534	9380
	(-)	44575	-2110	46685	-16203	-12297	3906

Level	ML				Load App:	6	
Wind Case	Internal Pressure	Windward		Resultant Coordinates		Eccentricity	
		Fs X	Fs Y	X	Y	Ex	Ey
West	(+)	8507626	0	192.894	0	-20.3949	0
	(-)	#######	0	192.894	0	-20.3947	0
East	(+)	4239911	0	189.479	0	-23.8099	0
	(-)	7020146	0	189.237	0	-24.0514	0
South	(+)	0	856111	0	188.914	0	93.8773
	(-)	0	1410267	0	188.304	0	93.2667
North	(+)	0	5827973	0	220.429	0	125.392
	(-)	0	9822696	0	220.363	0	125.326

C.O.R. X = 2559.46 Y = 1140.44

Leeward		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
-7413178	0	188.87	0	-24.4186	0
-3131968	0	188.87	0	-24.4186	0
-6410513	0	192.894	0	-20.3943	0
-2669210	0	192.894	0	-20.3943	0
0	-6844734	0	220.266	0	125.229
0	-2850012	0	220.266	0	125.229
0	-949517	0	187.368	0	92.3311
0	-395360	0	187.368	0	92.3311

Side 1		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	-1261878	0	187.368	0	92.3311
0	-533127	0	187.368	0	92.3311
0	-810895	0	187.368	0	92.3311
0	-337640	0	187.368	0	92.3311
-7506389	0	192.894	0	-20.3943	0
-3125511	0	192.894	0	-20.3943	0
-7506389	0	192.894	0	-20.3943	0
-3125511	0	192.894	0	-20.3943	0

Side 2		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	-9096439	0	220.266	0	125.229
0	-3843124	0	220.266	0	125.229
0	-5845455	0	220.266	0	125.229
0	-2433932	0	220.266	0	125.229
-5578142	0	188.87	0	-24.4186	0
-2322628	0	188.87	0	-24.4186	0
-5578142	0	188.87	0	-24.4186	0
-2322628	0	188.87	0	-24.4186	0

Level	ML	[=] ft lb										
Wind Case	Internal Pressure	Windward		Leeward		Side 1		Side 2				
		F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	Fex	Fey	Torsion
West	(+)	-899524	0	958433	0	0	-621827	0	-5171647	-1857957	-4549820	**2691863**
	(-)	-1508637	0	404925	0	0	-262714	0	-2184952	-1913562	-1922238	**8676.26**
East	(+)	-532787	0	677770	0	0	-399592	0	-3323348	1210557	-2923756	**4134313**
	(-)	-892237	0	282210	0	0	-166382	0	-1383776	1174447	-1217394	**2391841**
South	(+)	0	425428	0	-3891473	793635	0	721185	0	72449	-4316901	**4389351**
	(-)	0	698505	0	-1620332	330454	0	300287	0	30167	-2318837	**2349004**
North	(+)	0	3315268	0	-467902	793635	0	721185	0	72449	3783170	**-3710721**
	(-)	0	5586409	0	-194825	330454	0	300287	0	30167	5781234	**-5751068**

Appendix 9

Level M1			West				East			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			-34563	83355	90555	-14602	-22210	55610	-9248	50935
Shear Wall	X-direction	Y-direction	X	Y	X	Y	X	Y	X	Y
BF 305M	0.2171968	0.0000000	-7506.92	0	19668.2	0	-4824.02	0	-2008.63	0
BF 305S	0.0000000	0.4330162	0	36094.3	0	-6323.04	0	24080	0	22055.6
BF 305T	0.1052581	0.0000000	-3638.01	0	9531.63	0	-2337.82	0	-973.422	0
BF 305U	0.0706577	0.0355636	-2442.13	2964.42	6398.39	-519.311	-1569.33	1977.69	-653.439	1811.43
BF 304T_B	0.0000000	0.5314202	0	44296.8	0	-7759.96	0	29552.3	0	27067.8
BF 304U_B	0.3216444	0.0000000	-11116.9	0	29126.4	0	-7143.84	0	-2974.55	0
BF 305F_B	0.2852430	0.0000000	-9858.79	0	25830.1	0	-6335.35	0	-2637.91	0
TOTAL	1.0000	1.0000								

Level M1			West				East			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	2691863	Torsion =	8676	Torsion =	4134313	Torsion =	2391841
Shear Wall	X-direction	Y-direction	X	Y	X	Y	X	Y	X	Y
BF 305M	0.0023306	0.0000000	6273.66	0	20.2209	0	9635.44	0	5574.43	0
BF 305S	0.0000000	0.0038611	0	10393.5	0	33.4996	0	15962.9	0	9235.05
BF 305T	0.0017637	0.0000000	4747.74	0	15.3027	0	7291.85	0	4218.58	0
BF 305U	0.0006984	0.0003171	1880.07	853.615	6.05973	2.75132	2887.51	1311.03	1670.52	758.475
BF 304T_B	0.0000000	0.0041782	0	11247.1	0	36.2509	0	17273.9	0	9993.53
BF 304U_B	0.0009691	0.0000000	2608.7	0	8.40822	0	4006.59	0	2317.95	0
BF 305F_B	0.0011007	0.0000000	2962.85	0	9.54968	0	4550.51	0	2632.62	0
TOTAL	0.0069	0.0084								

Level M1	West				East			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	-1233.26	0	19688.4	0	4811.43	0	3565.81	0
304 G	0	25700.8	0	-6356.54	0	8117.19	0	12820.5
304 H	1109.73	0	9546.93	0	4954.03	0	3245.16	0
304 J	-562.058	2110.81	6404.45	-522.062	1318.18	666.665	1017.09	1052.95
304 K	0	33049.7	0	-7796.21	0	12278.4	0	17074.2
304 R	-8508.23	0	29134.8	0	-3137.25	0	-656.606	0
304 S	-6895.94	0	25839.7	0	-1784.84	0	-5.29105	0
304 T	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
304 U	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 F	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 G	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 H	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 J	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 K	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 R	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
TOTAL								

Appendix 9

Level M1			South				North			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			35607	9380	20428	3906	31507	9380	46685	3906
Shear Wall	X-direction	Y-direction	X	Y	X	Y	X	Y	X	Y
BF 305M	0.2171968	0.0000000	7733.64	0	4436.96	0	6843.2	0	10139.9	0
BF 305S	0.0000000	0.4330162	0	4061.79	0	1691.25	0	4061.79	0	1691.25
BF 305T	0.1052581	0.0000000	3747.89	0	2150.24	0	3316.36	0	4914	0
BF 305U	0.0706577	0.0355636	2515.88	333.595	1443.42	138.902	2226.2	333.595	3298.67	138.902
BF 304T_B	0.0000000	0.5314202	0	4984.84	0	2075.59	0	4984.84	0	2075.59
BF 304U_B	0.3216444	0.0000000	11452.7	0	6570.64	0	10134	0	15016	0
BF 305F_B	0.2852430	0.0000000	10156.5	0	5827.03	0	8987.12	0	13316.6	0
TOTAL	1.0000	1.0000								

Level M1			South				North			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	4389351	Torsion =	2349004	Torsion =	-3710721	Torsion =	-5751068
Shear Wall	X-direction	Y-direction	X	Y	X	Y	X	Y	X	Y
BF 305M	0.0023306	0.0000000	10229.8	0	5474.6	0	-8648.22	0	-13403.5	0
BF 305S	0.0000000	0.0038611	0	16947.6	0	9069.66	0	-14327.3	0	-22205.3
BF 305T	0.0017637	0.0000000	7741.67	0	4143.03	0	-6544.74	0	-10143.4	0
BF 305U	0.0006984	0.0003171	3065.64	1391.9	1640.61	744.891	-2591.66	-1176.7	-4016.7	-1823.72
BF 304T_B	0.0000000	0.0041782	0	18339.5	0	9814.55	0	-15504	0	-24029
BF 304U_B	0.0009691	0.0000000	4253.75	0	2276.43	0	-3596.08	0	-5573.39	0
BF 305F_B	0.0011007	0.0000000	4831.22	0	2585.47	0	-4084.27	0	-6330.02	0
TOTAL	0.0069	0.0084								

Level M1	South				North			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
304 F	17963.5	0	9911.55	0	-1805.02	0	-3263.58	0
304 G	0	-12885.8	0	-7378.41	0	18389.1	0	23896.5
304 H	11489.6	0	6293.27	0	-3228.39	0	-5229.39	0
304 J	5581.52	-1058.31	3084.02	-605.989	-365.46	1510.3	-718.027	1962.62
304 K	0	-13354.6	0	-7738.96	0	20488.9	0	26104.6
304 R	15706.4	0	8847.08	0	6537.94	0	9442.65	0
304 S	14987.8	0	8412.5	0	4902.85	0	6986.62	0
304 T	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
304 U	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 F	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 G	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 H	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 J	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 K	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
305 R	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
TOTAL								

Appendix 9

Level	RF				Load App:	7	
Wind Case	Internal Pressure	Windward	Leeward	Net	Side 1	Side 2	Net
West	(+)	53212	-64941	118153	-95656	-68976	26680
	(-)	88047	-27437	115484	-40413	-29141	11272
East	(+)	35574	-38761	74335	-61469	-44324	17145
	(-)	59929	-16139	76069	-25595	-18456	7139
South	(+)	62020	-51902	113922	-45388	-48866	-3478
	(-)	104028	-21611	125639	-18899	-20347	-1448
North	(+)	45413	-71978	117391	-45388	-48866	-3478
	(-)	75704	-29970	105674	-18899	-20347	-1448

Level	RF				Load App:	7	
Wind Case	Internal Pressure	Windward		Resultant Coordinate		Eccentricity	
		Fs X	Fs Y	X	Y	Ex	Ey
West	(+)	10498308	0	197.291	0	-15.9971	0
	(-)	17369251	0	197.272	0	-16.0162	0
East	(+)	6291690	0	176.863	0	-36.4254	0
	(-)	10600678	0	176.887	0	-36.4019	0
South	(+)	0	12811419	0	206.567	0	111.531
	(-)	0	21478979	0	206.473	0	111.436
North	(+)	0	8811919	0	194.039	0	99.0016
	(-)	0	14651008	0	193.53	0	98.493

C.O.R. X = 2559.46198 Y = 1140.44

Leeward		Resultant Coordinate		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
-11489426	0	176.921	0	-36.3676	0
-4854129	0	176.921	0	-36.3676	0
-7645417	0	197.243	0	-16.0453	0
-3183400	0	197.243	0	-16.0453	0
0	-10004952	0	192.767	0	97.7305
0	-4165863	0	192.767	0	97.7305
0	-14851380	0	206.333	0	111.296
0	-6183820	0	206.333	0	111.296

Side 1		Resultant Coordinate		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	-19737023	0	206.333	0	111.296
0	-8338628	0	206.333	0	111.296
0	-12683192	0	206.333	0	111.296
0	-5281029	0	206.333	0	111.296
-8952400	0	197.243	0	-16.0453	0
-3727601	0	197.243	0	-16.0453	0
-8952400	0	197.243	0	-16.0453	0
-3727601	0	197.243	0	-16.0453	0

Side 2		Resultant Coordinate		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	-13296270	0	192.767	0	97.7305
0	-5617496	0	192.767	0	97.7305
0	-8544305	0	192.767	0	97.7305
0	-3557679	0	192.767	0	97.7305
-8645369	0	176.921	0	-36.3676	0
-3599760	0	176.921	0	-36.3676	0
-8645369	0	176.921	0	-36.3676	0
-3599760	0	176.921	0	-36.3676	0

Level	RF	[=] ft lb										
Wind Case	Internal Pressure	Windward		Leeward		Side 1		Side 2				
		F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	Fex	Fey	Torsion
West	(+)	-851239.213	0	2361749	0	0	-1.1E+07	0	-6741028.8	-3212988.1	3905138	**-7E+06**
	(-)	-1410176	0	997807	0	0	-4497863	0	-2847994.5	-2407983.3	1649868	**-4E+06**
East	(+)	-1295791	0	621939	0	0	-6841324	0	-4331847	1917730	2509477	**-591748**
	(-)	-2181540	0	258963	0	0	-2848592	0	-1803695.1	2440503	1044897	**1395606**
South	(+)	0	6917180	0	-5072375	728259	0	1777129	0	-1048870	#######	**1.1E+07**
	(-)	0	11592470	0	-2112036	303233	0	739961	0	-436729	#######	**1.3E+07**
North	(+)	0	4495984	0	-8010847	728259	0	1777129	0	-1048870	#######	**-1E+07**
	(-)	0	7456323	0	-3335558	303233	0	739961	0	-436729	#######	**-1E+07**

Appendix 9

LEVEL RF			WEST				EAST			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			26680	118153	115484	11272	17145	74335	7139	76069
Shear Wall	X-direction	Y-direction	X	Y	X	Y	X	Y	X	Y
BF 304F	0.0000000	0.0718356	0	8487.6	0	809.736	0	5339.91	0	5464.44
BF 304G	0.0914799	0.0000000	2440.71	0	10564.5	0	1568.42	0	653.061	0
BF 304H	0.0000000	0.1313538	0	15519.9	0	1480.63	0	9764.21	0	9991.91
BF 304J	0.0550442	0.0000000	1468.6	0	6356.72	0	943.734	0	392.952	0
BF 304K	0.0438783	0.0189744	1170.69	2241.89	5067.23	213.881	752.294	1410.47	313.24	1443.36
BF 304R	0.0000000	0.0614196	0	7256.93	0	692.327	0	4565.64	0	4672.11
BF 304S	0.0000000	0.1910062	0	22568	0	2153.04	0	14198.5	0	14529.6
BF 304T	0.0000000	0.3029286	0	35792	0	3414.63	0	22518.2	0	23043.4
BF 304U	0.2700823	0.0000000	7205.88	0	31190.1	0	4630.56	0	1928.07	0
BF 305F	0.2667906	0.0000000	7118.06	0	30810	0	4574.13	0	1904.58	0
BF 304T_A	0.0000000	0.2224818	0	26286.9	0	2507.83	0	16538.2	0	16923.9
BF 304U_A	0.1447471	0.0000000	3861.9	0	16715.9	0	2481.69	0	1033.33	0
BF 305F_A	0.1279776	0.0000000	3414.48	0	14779.3	0	2194.18	0	913.612	0
TOTAL	1.0000	1.0000								

LEVEL RF			WEST				EAST			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	-7118126	Torsion =	-4057852	Torsion =	-591748	Torsion =	1395606
Shear Wall	X-direction	Y-direction	X	Y	X	Y	X	Y	X	Y
BF 304F	0.0000000	0.0005187	0	-3692.24	0	-2104.84	0	-306.945	0	723.914
BF 304G	0.0016655	0.0000000	-11855.1	0	-6758.27	0	-985.544	0	2324.35	0
BF 304H	0.0000000	0.0027119	0	-19303.3	0	-11004.3	0	-1604.73	0	3784.68
BF 304J	0.0006618	0.0000000	-4711.04	0	-2685.64	0	-391.641	0	923.665	0
BF 304K	0.0005276	0.0001722	-3755.39	-1225.78	-2140.85	-698.781	-312.195	-101.902	736.296	240.33
BF 304R	0.0000000	0.0005574	0	-3967.8	0	-2261.94	0	-329.853	0	777.942
BF 304S	0.0000000	0.0008711	0	-6200.64	0	-3534.82	0	-515.475	0	1215.72
BF 304T	0.0000000	0.0021874	0	-15570.1	0	-8876.07	0	-1294.38	0	3052.72
BF 304U	0.0000920	0.0000000	-654.941	0	-373.364	0	-54.4469	0	128.41	0
BF 305F	0.0018788	0.0000000	-13373.5	0	-7623.86	0	-1111.77	0	2622.06	0
BF 304T_A	0.0000000	0.0016065	0	-11435.2	0	-6518.91	0	-950.639	0	2242.03
BF 304U_A	0.0000493	0.0000000	-351.007	0	-200.1	0	-29.1801	0	68.8198	0
BF 305F_A	0.0008348	0.0000000	-5942.09	0	-3387.42	0	-493.981	0	1165.03	0

LEVEL RF		WEST				EAST			
Total Shear		(+)		(-)		(+)		(-)	
		Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall		X	Y	X	Y	X	Y	X	Y
BF	304F	0	12179.8	0	2914.58	0	5646.85	0	4740.52
BF	304G	-9414.38	0	3806.18	0	582.881	0	2977.41	0
BF	304H	0	34823.2	0	12484.9	0	11368.9	0	6207.24
BF	304J	-3242.45	0	3671.08	0	552.093	0	1316.62	0
BF	304K	-2584.7	3467.66	2926.39	912.662	440.099	1512.37	1049.54	1203.03
BF	304R	0	11224.7	0	2954.26	0	4895.49	0	3894.17
BF	304S	0	28768.6	0	5687.85	0	14714	0	13313.9
BF	304T	0	51362	0	12290.7	0	23812.6	0	19990.7
BF	304U	6550.94	0	30816.8	0	4576.12	0	2056.48	0
BF	305F	-6255.43	0	23186.1	0	3462.36	0	4526.63	0
BF	304T_A	0	37722.2	0	9026.74	0	17488.9	0	14681.9
BF	304U_A	3510.89	0	16515.8	0	2452.51	0	1102.15	0
BF	305F_A	-2527.61	0	11391.9	0	1700.2	0	2078.64	0
TOTAL									

Appendix 9

Level RF			South				North			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			113922	-3478	125639	-1448	117391	-3478	105674	-1448
Shear Wall	X-direction	Y-direction	X	Y	X	Y	X	Y	X	Y
BF 304F	0.0000000	0.0718356	0	-249.851	0	-104.03316	0	-249.8514	0	-104.0331628
BF 304G	0.0914799	0.0000000	10421.6	0	11493.4	0	10738.9	0	9667.06	0
BF 304H	0.0000000	0.1313538	0	-456.862	0	-190.22823	0	-456.8619	0	-190.2282274
BF 304J	0.0550442	0.0000000	6270.76	0	6915.7	0	6461.69	0	5816.75	0
BF 304K	0.0438783	0.0189744	4998.71	-65.9949	5512.82	-27.478962	5150.91	-65.994889	4636.8	-27.4789619
BF 304R	0.0000000	0.0614196	0	-213.624	0	-88.948688	0	-213.62375	0	-88.94868847
BF 304S	0.0000000	0.1910062	0	-664.339	0	-276.61764	0	-664.33915	0	-276.6176357
BF 304T	0.0000000	0.3029286	0	-1053.62	0	-438.70495	0	-1053.6164	0	-438.7049542
BF 304U	0.2700823	0.0000000	30768.4	0	33932.8	0	31705.2	0	28540.7	0
BF 305F	0.2667906	0.0000000	30393.4	0	33519.3	0	31318.8	0	28192.9	0
BF 304T_A	0.0000000	0.2224818	0	-773.814	0	-322.20098	0	-773.81445	0	-322.20098
BF 304U_A	0.1447471	0.0000000	16489.9	0	18185.9	0	16992	0	15296	0
BF 305F_A	0.1279776	0.0000000	14579.5	0	16079	0	15023.4	0	13523.9	0
TOTAL	1.0000	1.0000								

Level RF			South				North			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	10940685	Torsion =	13267777	Torsion =	-13555701	Torsion =	-11228610
Shear Wall	X-direction	Y-direction	X	Y	X	Y	X	Y	X	Y
BF 304F	0.0000000	0.0005187	0	5675.032	0	6882.11572	0	-7031.4645	0	-5824.38102
BF 304G	0.0016655	0.0000000	18221.5	0	22097.2	0	-22576.7	0	-18701	0
BF 304H	0.0000000	0.0027119	0	29669.51	0	35980.2333	0	-36761.04	0	-30450.31452
BF 304J	0.0006618	0.0000000	7240.96	0	8781.11	0	-8971.67	0	-7431.51	0
BF 304K	0.0005276	0.0001722	5772.1	1884.038	6999.83	2284.77472	-7151.73	-2334.3566	-5924	-1933.620282
BF 304R	0.0000000	0.0005574	0	6098.583	0	7395.75665	0	-7556.252	0	-6259.07881
BF 304S	0.0000000	0.0008711	0	9530.491	0	11557.6337	0	-11808.446	0	-9781.303458
BF 304T	0.0000000	0.0021874	0	23931.45	0	29021.6906	0	-29651.49	0	-24561.25278
BF 304U	0.0000920	0.0000000	1006.66	0	1220.77	0	-1247.26	0	-1033.15	0
BF 305F	0.0018788	0.0000000	20555.3	0	24927.4	0	-25468.4	0	-21096.2	0
BF 304T_A	0.0000000	0.0016065	0	17576.14	0	21314.5921	0	-21777.14	0	-18038.68326
BF 304U_A	0.0000493	0.0000000	539.504	0	654.257	0	-668.455	0	-553.702	0
BF 305F_A	0.0008348	0.0000000	9133.09	0	11075.7	0	-11316.1	0	-9373.45	0

Level RF	South				North			
Total Shear	(+)		(-)		(+)		(-)	
	Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall	X	Y	X	Y	X	Y	X	Y
BF 304F	0	-5924.88	0	-6986.1489	0	6781.61312	0	5720.347857
BF 304G	28643.1	0	33590.6	0	-11837.8	0	-9033.95	0
BF 304H	0	-30126.4	0	-36170.462	0	36304.1785	0	30260.08629
BF 304J	13511.7	0	15696.8	0	-2509.98	0	-1614.76	0
BF 304K	10770.8	-1950.03	12512.7	-2312.2537	-2000.82	2268.36173	-1287.2	1906.141321
BF 304R	0	-6312.21	0	-7484.7053	0	7342.62823	0	6170.130121
BF 304S	0	-10194.8	0	-11834.251	0	11144.1068	0	9504.685823
BF 304T	0	-24985.1	0	-29460.396	0	28597.8739	0	24122.54783
BF 304U	31775	0	35153.6	0	30457.9	0	27507.6	0
BF 305F	50948.7	0	58446.7	0	5850.42	0	7096.63	0
BF 304T_A	0	-18349.9	0	-21636.793	0	21003.3256	0	17716.48228
BF 304U_A	17029.4	0	18840.1	0	16323.5	0	14742.3	0
BF 305F_A	23712.6	0	27154.7	0	3707.33	0	4150.47	0
TOTAL								

Appendix 9

Level	PH				Load App:	8	
Wind Case	Internal Pressure	Windward	Leeward	Net	Side 1	Side 2	Net
West	(+)	12059	-23060	35118	-41298	-34030	7268
	(-)	19620	-9742	29362	-17448	-14377	3071
East	(+)	14112	-8413	22525	-26538	-21868	4670
	(-)	22760	-3503	26264	-11050	-9105	1945
South	(+)	28581	-25606	54187	-9852	-17352	-7500
	(-)	46717	-10662	57378	-4102	-7225	-3123
North	(+)	24097	-31075	55171	-9852	-17352	-7500
	(-)	39041	-12939	51980	-4102	-7225	-3123

Level	PH				Load App:	8	
Wind Case	Internal Pressure	Windward		Resultant Coordinates		Eccentricity	
		Fs X	Fs Y	X	Y	Ex	Ey
West	(+)	2574528	0	213.503	0	13.4813	0
	(-)	4189428	0	213.533	0	13.5119	0
East	(+)	3049129	0	216.064	0	16.0429	0
	(-)	4919534	0	216.144	0	16.1223	0
South	(+)	0	6695318	0	234.261	0	20.9239
	(-)	0	10939299	0	234.163	0	20.8265
North	(+)	0	5308526	0	220.302	0	6.96497
	(-)	0	8607570	0	220.476	0	7.13953

C.O.R. X = 2400.2589 Y = 2560.04

Leeward		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
-4987223	0	216.273	0	16.2518	0
-2107035	0	216.273	0	16.2518	0
-1796927	0	213.582	0	13.5607	0
-748205	0	213.582	0	13.5607	0
0	-5652729	0	220.758	0	7.42099
0	-2353684	0	220.758	0	7.42099
0	-7271824	0	234.01	0	20.673
0	-3027843	0	234.01	0	20.673

Side 1		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	-9664028	0	234.01	0	20.673
0	-4082923	0	234.01	0	20.673
0	-6210193	0	234.01	0	20.673
0	-2585801	0	234.01	0	20.673
-2104111	0	213.582	0	13.5607	0
-876110	0	213.582	0	13.5607	0
-2104111	0	213.582	0	13.5607	0
-876110	0	213.582	0	13.5607	0

Side 2		Resultant Coordinates		Eccentricity	
Fs X	Fs Y	X	Y	Ex	Ey
0	-7512301	0	220.758	0	7.42099
0	-3173847	0	220.758	0	7.42099
0	-4827474	0	220.758	0	7.42099
0	-2010064	0	220.758	0	7.42099
-3752701	0	216.273	0	16.2518	0
-1562550	0	216.273	0	16.2518	0
-3752701	0	216.273	0	16.2518	0
-1562550	0	216.273	0	16.2518	0

Level	PH	[=] ft lb									
Wind Case	Internal Pressure	Windward		Leeward		Side 1		Side 2				
		F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	F(Ex)	F(Ey)	Fex	Fey	Torsion
West	(+)	162563.99	0	-374763	0	0	-853745	0	-252533.56	537327.21	601211	**-63884.1**
	(-)	265097	0	-158332	0	0	-360696	0	-106692.05	423429.37	254004	**169426**
East	(+)	226400	0	-114090	0	0	-548624	0	-162280.38	-340490	386344	**-726834**
	(-)	366951	0	-47504.9	0	0	-228436	0	-67570.331	-414456	160866	**-575321**
South	(+)	0	598019	0	-190022	-133594	0	-281995	0	148402	-788041	**936443**
	(-)	0	972943	0	-79121.5	-55625.8	0	-117417	0	61791	-1052064	**1113856**
North	(+)	0	167832	0	-642411	-133594	0	-281995	0	148402	810244	**-661842**
	(-)	0	278733	0	-267487	-55625.8	0	-117417	0	61791	546220	**-484429**

Appendix 9

Level PH			West				East			
Direct Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			7268	35118	29362	3071	4670	22525	1945	26264
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
BF 306B	0.0000000	0.0192994	0	677.763	0	59.2608	0	434.727	0	506.872
BF 306C1	0.1181752	0.0000000	858.889	0	3469.86	0	551.93	0	229.813	0
BF 306D	0.0000000	0.1012295	0	3555.01	0	310.835	0	2280.23	0	2658.65
BF 306C2	0.1181752	0.0000000	858.889	0	3469.86	0	551.93	0	229.813	0
BF 306A	0.0000000	0.1595953	0	5604.72	0	490.054	0	3594.95	0	4191.54
BF 306E	0.2083887	0.0000000	1514.55	0	6118.71	0	973.266	0	405.249	0
BF 306F	0.2347758	0.0000000	1706.33	0	6893.49	0	1096.51	0	456.563	0
BF 306G	0.0000000	0.1125936	0	3954.1	0	345.73	0	2536.21	0	2957.11
BF 305Q	0.0000000	0.2210135	0	7761.63	0	678.645	0	4978.42	0	5804.61
BF 306H	0.0972701	0.0000000	706.952	0	2856.04	0	454.294	0	189.159	0
BF 306J	0.0000000	0.3862687	0	13565.1	0	1186.08	0	8700.86	0	10144.8
BF 306K	0.2232151	0.0000000	1622.31	0	6554.04	0	1042.51	0	434.081	0
TOTAL	1.0000	1.0000								

Level PH			West				East			
Torsional Shear	Relative Rigidity		(+)		(-)		(+)		(-)	
			Torsion =	-63884	Torsion =	169426	Torsion =	-726834	Torsion =	-575321
Shear Wall	x-direction	y-direction	X	Y	X	Y	X	Y	X	Y
BF 306B	0.0000000	0.0002549	0	-16.2829	0	43.1835	0	-185.257	0	-146.639
BF 306C1	0.0007914	0.0000000	-50.5566	0	134.08	0	-575.203	0	-455.299	0
BF 306D	0.0000000	0.0007443	0	-47.5509	0	126.109	0	-541.005	0	-428.23
BF 306C2	0.0004643	0.0000000	-29.6594	0	78.659	0	-337.446	0	-267.104	0
BF 306A	0.0000000	0.0011735	0	-74.9673	0	198.819	0	-852.932	0	-675.134
BF 306E	0.0011293	0.0000000	-72.1466	0	191.338	0	-820.839	0	-649.731	0
BF 306F	0.0021146	0.0000000	-135.092	0	358.276	0	-1537	0	-1216.6	0
BF 306G	0.0000000	0.0014870	0	-94.9951	0	251.935	0	-1080.8	0	-855.498
BF 305Q	0.0000000	0.0044877	0	-286.691	0	760.329	0	-3261.8	0	-2581.86
BF 306H	0.0010224	0.0000000	-65.3163	0	173.224	0	-743.128	0	-588.219	0
BF 306J	0.0000000	0.0008280	0	-52.8952	0	140.282	0	-601.809	0	-476.359
BF 306K	0.0009659	0.0000000	-61.7066	0	163.651	0	-702.06	0	-555.712	0

Level PH		West				East			
Total Shear		(+)		(-)		(+)		(-)	
		Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
Shear Wall		X	Y	X	Y	X	Y	X	Y
BF	306B	0	694.046	0	16.0773	0	619.984	0	653.511
BF	306C1	808.332	0	3603.94	0	-23.2729	0	-225.486	0
BF	306D	0	3602.56	0	184.727	0	2821.24	0	3086.88
BF	306C2	829.229	0	3548.52	0	214.484	0	-37.2912	0
BF	306A	0	5679.69	0	291.234	0	4447.88	0	4866.68
BF	306E	1442.41	0	6310.05	0	152.427	0	-244.482	0
BF	306F	1571.24	0	7251.76	0	-440.493	0	-760.04	0
BF	306G	0	4049.09	0	93.7954	0	3617.01	0	3812.61
BF	305Q	0	8048.32	0	-81.6841	0	8240.22	0	8386.47
BF	306H	641.636	0	3029.27	0	-288.835	0	-399.061	0
BF	306J	0	13618	0	1045.8	0	9302.67	0	10621.2
BF	306K	1560.6	0	6717.69	0	340.452	0	-121.631	0
TOTAL									

APPENDIX 9

LEVEL PH			SOUTH				NORTH			
DIRECT SHEAR	RELATIVE RIGIDITY		(+)		(-)		(+)		(-)	
			Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
			54187	-7500	57378	-3123	55171	-7500	51980	-3123
SHEAR WALL	X-DIRECTION	Y-DIRECTION	X	Y	X	Y	X	Y	X	Y
BF 306B	0.0000000	0.0192994	0	-144.748	0	-60.27025	0	-144.7481	0	-60.27025
BF 306C1	0.1181752	0.0000000	6403.52	0	6780.7	0	6519.9	0	6142.72	0
BF 306D	0.0000000	0.1012295	0	-759.235	0	-316.1302	0	-759.2346	0	-316.1302
BF 306C2	0.1181752	0.0000000	6403.52	0	6780.7	0	6519.9	0	6142.72	0
BF 306A	0.0000000	0.1595953	0	-1196.99	0	-498.4011	0	-1196.986	0	-498.4011
BF 306E	0.2083887	0.0000000	11291.9	0	11957	0	11497.1	0	10832	0
BF 306F	0.2347758	0.0000000	12721.7	0	13471.1	0	12952.9	0	12203.6	0
BF 306G	0.0000000	0.1125936	0	-844.467	0	-351.6191	0	-844.4666	0	-351.6191
BF 305Q	0.0000000	0.2210135	0	-1657.63	0	-690.2045	0	-1657.631	0	-690.2045
BF 306H	0.0972701	0.0000000	5270.74	0	5581.2	0	5366.54	0	5056.08	0
BF 306J	0.0000000	0.3862687	0	-2897.07	0	-1206.281	0	-2897.067	0	-1206.281
BF 306K	0.2232151	0.0000000	12095.3	0	12807.7	0	12315.1	0	11602.7	0
TOTAL	1.0000	1.0000								

LEVEL PH			SOUTH				NORTH			
TORSIONAL SHEAR	RELATIVE RIGIDITY		(+)		(-)		(+)		(-)	
			Torsion =	936443	Torsion =	1113856	Torsion =	-661842	Torsion =	-484429
SHEAR WALL	X-DIRECTION	Y-DIRECTION	X	Y	X	Y	X	Y	X	Y
BF 306B	0.0000000	0.0002549	0	238.682	0	283.9018	0	-168.6916	0	-123.4722
BF 306C1	0.0007914	0.0000000	741.083	0	881.485	0	-523.769	0	-383.368	0
BF 306D	0.0000000	0.0007443	0	697.024	0	829.078	0	-492.6299	0	-360.5756
BF 306C2	0.0004643	0.0000000	434.761	0	517.128	0	-307.273	0	-224.905	0
BF 306A	0.0000000	0.0011735	0	1098.91	0	1307.099	0	-776.6649	0	-568.4723
BF 306E	0.0011293	0.0000000	1057.56	0	1257.92	0	-747.442	0	-547.083	0
BF 306F	0.0021146	0.0000000	1980.25	0	2355.41	0	-1399.56	0	-1024.4	0
BF 306G	0.0000000	0.0014870	0	1392.48	0	1656.295	0	-984.154	0	-720.3419
BF 305Q	0.0000000	0.0044877	0	4202.46	0	4998.633	0	-2970.138	0	-2173.963
BF 306H	0.0010224	0.0000000	957.437	0	1138.83	0	-676.68	0	-495.289	0
BF 306J	0.0000000	0.0008280	0	775.363	0	922.2591	0	-547.9972	0	-401.1012
BF 306K	0.0009659	0.0000000	904.524	0	1075.89	0	-639.283	0	-467.917	0

LEVEL PH		SOUTH				NORTH			
TOTAL SHEAR		(+)		(-)		(+)		(-)	
		Vx	Vy	Vx	Vy	Vx	Vy	Vx	Vy
SHEAR WALL		X	Y	X	Y	X	Y	X	Y
BF 306B		0	-383.431	0	-344.1721	0	23.943503	0	63.20195
BF 306C1		7144.6	0	7662.19	0	5996.13	0	5759.35	0
BF 306D		0	-1456.26	0	-1145.208	0	-266.6047	0	44.44541
BF 306C2		6838.28	0	7297.83	0	6212.63	0	5917.81	0
BF 306A		0	-2295.89	0	-1805.5	0	-420.3207	0	70.07126
BF 306E		12349.4	0	13214.9	0	10749.7	0	10284.9	0
BF 306F		14702	0	15826.5	0	11553.4	0	11179.2	0
BF 306G		0	-2236.95	0	-2007.914	0	139.68739	0	368.7228
BF 305Q		0	-5860.09	0	-5688.837	0	1312.507	0	1483.759
BF 306H		6228.18	0	6720.03	0	4689.86	0	4560.79	0
BF 306J		0	-3672.43	0	-2128.54	0	-2349.07	0	-805.1799
BF 306K		12999.8	0	13883.6	0	11675.8	0	11134.8	0
TOTAL									

Wall Section Force Summary

RAM FRAME v11.0
Jonathan Williams
Database: FHCRC_EXISTING 01/11/08 20:00:47

CRITERIA:

Wall Mesh
Max Distance between Nodes (ft): 8.00
P-Delta: Yes Scale Factor: 1.00
Diaphragm: Rigid
Ground Level: Floor_E

LOAD CASES:

D	DeadLoad	RAMUSER
Lp	PosLiveLoad	RAMUSER
Ln	NegLiveLoad	RAMUSER
E1	Seismic	EQ_IBC03_X_NoE_F
E2	Seismic	EQ_IBC03_Y_NoE_F
W1	Wind	Wind_IBC03_1_X
W2	Wind	Wind_IBC03_1_Y
W3	Wind	Wind_IBC03_2_X+E
W4	Wind	Wind_IBC03_2_X-E
W5	Wind	Wind_IBC03_2_Y+E
W6	Wind	Wind_IBC03_2_Y-E
W7	Wind	Wind_IBC03_3_X+Y
W8	Wind	Wind_IBC03_3_X-Y
W9	Wind	Wind_IBC03_4_X+Y_CW
W10	Wind	Wind_IBC03_4_X+Y_CCW
W11	Wind	Wind_IBC03_4_X-Y_CW
W12	Wind	Wind_IBC03_4_X-Y_CCW
E7	Seismic Eccent	EQ_IBC03_X_+E_F
E8	Seismic Eccent	EQ_IBC03_X_-E_F
E9	Seismic Eccent	EQ_IBC03_Y_+E_F
E10	Seismic Eccent	EQ_IBC03_Y_-E_F

Level: Floor_E

Section: 12

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	683.10	-24.76	-0.00	16.25	-0.00	-0.00
Lp	235.55	-8.32	-0.00	5.47	-0.00	-0.00
Ln	-1.28	-0.06	-0.00	0.04	-0.00	0.00
E1	1827.12	-267.36	-0.00	183.08	-0.00	-0.00
E2	-2583.10	572.69	0.00	-391.04	-0.00	0.00
W1	339.53	-58.23	-0.00	39.83	-0.00	-0.00
W2	-365.32	88.44	0.00	-60.36	0.00	0.00
W3	-9.34	16.66	0.00	-11.31	0.00	-0.00

W4	234.91	-37.54	-0.00	25.69	-0.00	-0.00
W5	-204.31	47.18	-0.00	-32.21	-0.00	0.00
W6	-316.37	71.59	0.00	-48.87	0.00	0.00
W7	-19.34	22.66	-0.00	-15.40	-0.00	0.00
W8	528.64	-110.00	-0.00	75.14	-0.00	-0.00
W9	-148.13	46.47	-0.00	-31.67	-0.00	0.00
W10	119.11	-12.49	-0.00	8.58	-0.00	-0.00
W11	262.86	-53.02	-0.00	36.23	-0.00	-0.00
W12	530.10	-111.98	-0.00	76.48	-0.00	-0.00
E7	1013.77	-138.57	-0.00	94.94	-0.00	-0.00
E8	1434.64	-219.71	-0.00	150.38	-0.00	-0.00
E9	-1587.19	356.49	-0.00	-243.40	-0.00	0.00
E10	-1874.27	410.93	0.00	-280.60	0.00	0.00

Section: SC15

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1210.56	-1628.08	0.00	-69.95	0.00	-0.00
Lp	272.51	-859.38	0.00	-36.91	0.00	-0.00
Ln	-0.00	85.07	0.00	3.62	0.00	-0.00
E1	-0.00	35790.59	0.00	1566.64	0.00	-0.00
E2	-0.00	40740.36	-0.01	1791.49	-0.00	-0.00
W1	-0.00	6671.84	0.00	292.83	0.00	-0.00
W2	-0.00	5354.90	-0.00	236.58	-0.00	-0.00
W3	-0.00	4039.48	-0.00	181.17	-0.00	-0.00
W4	-0.00	4999.79	0.00	219.79	0.00	-0.00
W5	-0.00	4167.79	-0.00	182.94	-0.00	-0.00
W6	-0.00	3716.83	-0.00	164.75	-0.00	-0.00
W7	-0.00	9020.05	-0.00	397.06	-0.00	-0.00
W8	-0.00	987.71	0.00	42.18	0.00	-0.00
W9	-0.00	6235.81	-0.00	276.49	-0.00	-0.00
W10	-0.00	7294.26	0.00	319.10	0.00	-0.00
W11	0.00	211.56	0.00	10.33	0.00	-0.00
W12	-0.00	1270.00	0.00	52.94	0.00	0.00
E7	-0.00	23052.98	0.00	1011.69	0.00	-0.00
E8	-0.00	24907.86	0.00	1087.67	0.00	-0.00
E9	-0.00	27935.54	-0.01	1226.54	-0.00	-0.00
E10	-0.00	26658.19	-0.01	1174.13	-0.00	-0.00

Section: SC16

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1202.00	-1728.46	-0.00	-74.25	-0.00	0.00
Lp	299.12	-830.46	0.00	-35.75	0.00	0.00

Ln	-0.00	68.81	0.00	2.94	-0.00	0.00
E1	0.00	24912.55	0.00	1079.00	0.00	0.00
E2	-0.00	34335.22	-0.01	1491.51	-0.00	0.00
W1	0.00	4810.83	0.00	209.28	0.00	0.00
W2	-0.00	3911.65	-0.00	169.88	-0.00	0.00
W3	-0.00	-2288.40	-0.00	-101.48	-0.00	-0.00
W4	0.00	3167.49	0.00	137.40	0.00	0.00
W5	-0.00	4487.00	-0.00	195.96	-0.00	0.00
W6	-0.00	1998.38	-0.00	87.06	-0.00	0.00
W7	-0.00	6541.86	-0.00	284.37	-0.00	0.00
W8	0.00	674.38	0.00	29.55	0.00	0.00
W9	-0.00	1927.20	-0.00	82.86	-0.00	-0.00
W10	-0.00	7885.59	0.00	343.70	0.00	0.00
W11	0.00	-2473.41	0.00	-108.26	0.00	-0.00
W12	0.00	3484.98	0.00	152.58	0.00	0.00
E7	-0.00	12123.97	0.00	523.74	0.00	0.00
E8	0.00	21259.86	0.00	922.16	0.00	0.00
E9	-0.00	26106.07	-0.01	1134.51	-0.00	0.00
E10	-0.00	19904.51	-0.01	864.17	-0.00	0.00

Section: SC17

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	669.66	-8.39	0.00	3.91	0.00	-0.00
Lp	197.16	-1.01	0.00	0.34	0.00	-0.00
Ln	1.69	-0.05	-0.00	0.03	-0.00	-0.00
E1	-1670.63	-252.25	-0.00	157.08	-0.00	0.00
E2	2627.41	650.51	-0.00	-404.86	-0.00	-0.00
W1	-313.09	-56.50	-0.00	35.18	-0.00	0.00
W2	378.58	101.98	-0.00	-63.46	-0.00	-0.00
W3	102.42	38.67	-0.00	-24.06	-0.00	-0.00
W4	-209.45	-34.17	-0.00	21.28	-0.00	0.00
W5	195.17	50.89	-0.00	-31.67	-0.00	-0.00
W6	338.09	83.69	-0.00	-52.09	-0.00	-0.00
W7	49.11	34.11	-0.00	-21.22	-0.00	-0.00
W8	-518.75	-118.86	-0.00	73.98	-0.00	0.00
W9	207.38	65.20	-0.00	-40.57	-0.00	-0.00
W10	-133.71	-14.04	-0.00	8.75	-0.00	0.00
W11	-218.52	-49.53	0.00	30.83	0.00	0.00
W12	-559.61	-128.76	-0.00	80.14	-0.00	0.00
E7	-851.02	-114.33	-0.00	71.21	-0.00	0.00
E8	-1387.68	-223.70	-0.00	139.29	-0.00	0.00
E9	1577.49	399.16	-0.00	-248.42	-0.00	-0.00
E10	1943.34	472.55	-0.00	-294.11	-0.00	-0.00

Section: SC18

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	753.32	3.20	0.00	-0.63	-0.00	0.00
Lp	260.03	-2.56	0.00	1.90	0.00	0.00
Ln	-1.69	-0.05	-0.00	0.03	-0.00	-0.00
E1	1670.63	-252.04	-0.00	157.21	-0.00	0.00
E2	-2627.41	652.17	-0.00	-406.55	-0.00	-0.00
W1	313.09	-56.53	-0.00	35.25	-0.00	0.00
W2	-378.58	102.28	-0.00	-63.75	-0.00	-0.00
W3	-102.42	38.84	0.00	-24.20	0.00	-0.00
W4	209.45	-34.16	-0.00	21.31	-0.00	0.00
W5	-195.17	51.03	-0.00	-31.81	-0.00	-0.00
W6	-338.09	83.91	-0.00	-52.30	-0.00	-0.00
W7	-49.11	34.31	-0.00	-21.38	-0.00	-0.00
W8	518.75	-119.11	-0.00	74.26	-0.00	0.00
W9	-207.38	65.44	-0.00	-40.78	-0.00	-0.00
W10	133.71	-13.97	-0.00	8.72	-0.00	0.00
W11	218.52	-49.63	0.00	30.94	0.00	0.00
W12	559.61	-129.04	-0.00	80.44	-0.00	0.00
E7	851.02	-114.11	-0.00	71.19	-0.00	0.00
E8	1387.68	-223.63	-0.00	139.47	-0.00	0.00
E9	-1577.49	400.22	-0.00	-249.48	-0.00	-0.00
E10	-1943.34	473.71	-0.00	-295.30	-0.00	-0.00

Section: SC19

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	596.29	21.91	0.00	-12.72	0.00	0.00
Lp	175.02	5.55	0.00	-3.17	0.00	0.00
Ln	1.28	-0.07	-0.00	0.04	-0.00	0.00
E1	-1827.12	-298.90	-0.00	183.01	-0.00	-0.00
E2	2583.10	637.88	-0.00	-389.79	-0.00	0.00
W1	-339.53	-64.99	-0.00	39.76	-0.00	-0.00
W2	365.32	98.44	-0.00	-60.14	-0.00	0.00
W3	9.34	18.44	-0.00	-11.22	-0.00	-0.00
W4	-234.91	-41.93	-0.00	25.66	-0.00	-0.00
W5	204.31	52.53	-0.00	-32.10	-0.00	0.00
W6	316.37	79.73	-0.00	-48.71	-0.00	0.00
W7	19.34	25.09	-0.00	-15.28	-0.00	-0.00
W8	-528.64	-122.58	-0.00	74.92	-0.00	-0.00
W9	148.13	51.65	-0.00	-31.52	-0.00	0.00
W10	-119.11	-14.02	-0.00	8.60	-0.00	-0.00
W11	-262.86	-59.10	0.00	36.13	-0.00	-0.00

W12	-530.10	-124.77	-0.00	76.26	-0.00	-0.00
E7	-1013.77	-155.03	-0.00	94.96	-0.00	-0.00
E8	-1434.64	-245.51	-0.00	150.28	-0.00	-0.00
E9	1587.19	397.03	-0.00	-242.61	-0.00	0.00
E10	1874.27	457.75	-0.00	-279.73	-0.00	0.00

Section: SC21

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1066.11	-396.54	0.00	-46.56	0.00	-0.00
Lp	276.37	-179.67	0.00	-20.98	0.00	-0.00
Ln	0.00	11.34	0.00	1.34	0.00	-0.00
E1	-0.00	2879.19	0.00	335.11	0.00	-0.00
E2	0.00	5877.06	-0.01	687.82	-0.00	-0.00
W1	-0.00	629.86	0.00	73.84	0.00	-0.00
W2	0.00	494.80	-0.00	57.09	-0.00	-0.00
W3	0.00	-1996.69	-0.00	-239.90	-0.00	0.00
W4	-0.00	259.46	0.00	29.80	0.00	-0.00
W5	0.00	1065.97	-0.00	126.24	-0.00	-0.00
W6	0.00	42.76	-0.00	3.95	-0.00	-0.00
W7	0.00	843.49	-0.00	98.20	-0.00	-0.00
W8	-0.00	101.29	0.00	12.57	0.00	-0.00
W9	0.00	-597.15	-0.00	-73.35	-0.00	-0.00
W10	-0.00	1862.38	0.00	220.64	0.00	-0.00
W11	-0.00	-1153.79	0.00	-137.57	0.00	0.00
W12	-0.00	1305.74	0.00	156.42	0.00	-0.00
E7	-0.00	103.76	0.00	6.91	0.00	-0.00
E8	-0.00	3754.47	0.00	442.15	0.00	-0.00
E9	0.00	5172.07	-0.00	607.98	-0.00	-0.00
E10	0.00	2703.43	-0.00	313.74	-0.00	-0.00

Section: SC22

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1183.93	-219.94	0.00	-16.28	0.00	0.00
Lp	504.83	-120.32	0.00	-8.83	0.00	0.00
Ln	-76.46	22.65	-0.00	1.61	-0.00	-0.00
E1	5.81	22632.93	0.00	1632.91	0.00	-0.00
E2	-42.21	-3262.99	-0.00	-240.59	-0.00	-0.00
W1	0.82	4295.10	0.00	310.67	0.00	-0.00
W2	-7.23	-423.36	-0.00	-31.25	-0.00	-0.00
W3	18.39	3554.03	0.00	257.82	0.00	-0.00
W4	18.41	3271.82	0.00	236.73	0.00	-0.00
W5	-30.23	-433.29	-0.00	-32.06	-0.00	-0.00

W6	-31.30	-311.36	-0.00	-22.93	-0.00	-0.00
W7	-4.80	2903.81	-0.00	209.57	-0.00	-0.00
W8	6.04	3538.85	0.00	256.44	0.00	0.00
W9	-4.01	2329.41	-0.00	168.51	-0.00	-0.00
W10	-3.19	2026.30	-0.00	145.84	-0.00	0.00
W11	4.12	2805.69	0.00	203.67	0.00	-0.00
W12	4.94	2502.58	0.00	181.00	0.00	0.00
E7	3.99	15358.42	0.00	1108.59	0.00	-0.00
E8	3.80	14970.61	0.00	1079.58	0.00	0.00
E9	-28.23	-2313.60	-0.00	-170.73	-0.00	-0.00
E10	-28.32	-2058.94	-0.00	-151.67	-0.00	-0.00

Section: SC23

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1183.93	-219.94	0.00	-16.28	0.00	0.00
Lp	504.83	-120.32	0.00	-8.83	0.00	0.00
Ln	-76.46	22.65	-0.00	1.61	-0.00	-0.00
E1	5.81	22632.93	0.00	1632.91	0.00	-0.00
E2	-42.21	-3262.99	-0.00	-240.59	-0.00	-0.00
W1	0.82	4295.10	0.00	310.67	0.00	-0.00
W2	-7.23	-423.36	-0.00	-31.25	-0.00	-0.00
W3	18.39	3554.03	0.00	257.82	0.00	-0.00
W4	18.41	3271.82	0.00	236.73	0.00	-0.00
W5	-30.23	-433.29	-0.00	-32.06	-0.00	-0.00
W6	-31.30	-311.36	-0.00	-22.93	-0.00	-0.00
W7	-4.80	2903.81	-0.00	209.57	-0.00	-0.00
W8	6.04	3538.85	0.00	256.44	0.00	0.00
W9	-4.01	2329.41	-0.00	168.51	-0.00	-0.00
W10	-3.19	2026.30	-0.00	145.84	-0.00	0.00
W11	4.12	2805.69	0.00	203.67	0.00	-0.00
W12	4.94	2502.58	0.00	181.00	0.00	0.00
E7	3.99	15358.42	0.00	1108.59	0.00	-0.00
E8	3.80	14970.61	0.00	1079.58	0.00	0.00
E9	-28.23	-2313.60	-0.00	-170.73	-0.00	-0.00
E10	-28.32	-2058.94	-0.00	-151.67	-0.00	-0.00

Section: SC24

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1616.83	-71.14	0.00	-37.29	0.00	0.00
Lp	634.03	-30.19	0.00	-15.27	0.00	0.00
Ln	-3.15	0.86	0.00	0.38	0.00	-0.00
E1	687.26	-588.02	0.00	-268.96	0.00	0.00

E2	-2832.17	1781.52	-0.00	807.34	-0.00	-0.00
W1	119.97	-116.13	0.00	-53.31	0.00	0.00
W2	-358.50	234.60	-0.00	106.57	-0.00	-0.00
W3	258.80	-177.47	0.00	-80.38	0.00	0.00
W4	82.85	-94.47	0.00	-43.27	0.00	0.00
W5	-291.58	199.79	-0.00	90.60	-0.00	-0.00
W6	-208.97	162.17	-0.00	73.78	-0.00	-0.00
W7	-178.90	88.85	0.00	39.95	0.00	-0.00
W8	358.85	-263.05	0.00	-119.91	0.00	0.00
W9	-37.21	21.41	0.00	9.74	0.00	-0.00
W10	-231.13	111.87	0.00	50.19	0.00	-0.00
W11	366.10	-242.52	0.00	-110.16	0.00	0.00
W12	172.18	-152.06	0.00	-69.71	0.00	0.00
E7	611.27	-462.97	0.00	-211.02	0.00	0.00
E8	309.68	-325.00	0.00	-149.40	0.00	0.00
E9	-2002.08	1240.34	-0.00	561.78	-0.00	-0.00
E10	-1793.14	1146.96	-0.00	520.08	-0.00	-0.00

Section: SC25

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1204.64	-6.32	0.00	2.94	0.00	-0.00
Lp	447.26	-9.03	0.00	-1.97	0.00	-0.00
Ln	2.31	0.86	0.00	0.38	0.00	-0.00
E1	-687.26	-588.49	0.00	-269.27	0.00	0.00
E2	2832.17	1783.24	-0.00	808.71	0.00	-0.00
W1	-119.97	-116.22	0.00	-53.36	0.00	0.00
W2	358.50	234.81	-0.00	106.74	0.00	-0.00
W3	-258.80	-177.66	0.00	-80.52	0.00	0.00
W4	-82.85	-94.56	0.00	-43.32	0.00	0.00
W5	291.58	199.99	-0.00	90.75	-0.00	-0.00
W6	208.97	162.33	0.00	73.88	0.00	-0.00
W7	178.90	88.94	0.00	40.04	0.00	-0.00
W8	-358.85	-263.27	0.00	-120.07	0.00	0.00
W9	37.21	21.42	0.00	9.75	0.00	-0.00
W10	231.13	111.99	0.00	50.30	0.00	-0.00
W11	-366.10	-242.74	0.00	-110.33	0.00	0.00
W12	-172.18	-152.16	0.00	-69.78	0.00	0.00
E7	-611.27	-463.38	0.00	-211.30	0.00	0.00
E8	-309.68	-325.22	0.00	-149.53	0.00	0.00
E9	2002.08	1241.56	-0.00	562.76	-0.00	-0.00
E10	1793.14	1148.05	-0.00	520.95	0.00	-0.00

Section: SC26

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	645.15	9.40	0.00	-5.79	0.00	0.00
Lp	281.02	4.52	0.00	-2.79	0.00	0.00
Ln	-0.23	-0.13	0.00	0.08	0.00	-0.00
E1	401.01	125.05	0.00	-77.10	0.00	0.00
E2	-1173.26	-356.55	0.00	220.29	0.00	-0.00
W1	70.52	25.33	0.00	-15.61	0.00	0.00
W2	-137.73	-47.79	0.00	29.50	0.00	-0.00
W3	143.57	35.07	0.00	-21.67	0.00	0.00
W4	61.92	20.20	0.00	-12.45	0.00	0.00
W5	-130.03	-40.05	-0.00	24.74	-0.00	-0.00
W6	-92.55	-33.29	0.00	20.55	0.00	-0.00
W7	-50.41	-16.84	0.00	10.42	0.00	-0.00
W8	156.18	54.84	0.00	-33.83	0.00	0.00
W9	6.87	-4.52	0.00	2.79	0.00	-0.00
W10	-82.48	-20.74	0.00	12.85	0.00	-0.00
W11	161.81	49.24	0.00	-30.41	0.00	0.00
W12	72.46	33.02	0.00	-20.34	0.00	0.00
E7	344.98	96.11	0.00	-59.30	0.00	0.00
E8	192.39	71.46	0.00	-44.01	0.00	0.00
E9	-837.45	-247.25	-0.00	152.78	-0.00	-0.00
E10	-734.76	-230.55	0.00	142.42	0.00	-0.00

Section: SC27

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	678.38	-12.94	0.00	7.87	0.00	-0.00
Lp	294.56	-3.74	0.00	2.25	0.00	-0.00
Ln	2.12	-0.14	0.00	0.09	0.00	-0.00
E1	-145.56	124.37	0.00	-76.69	0.00	0.00
E2	1539.50	-357.45	0.00	220.82	0.00	-0.00
W1	-22.76	25.21	0.00	-15.53	0.00	0.00
W2	195.46	-47.93	0.00	29.59	0.00	-0.00
W3	-93.41	34.93	0.00	-21.59	0.00	0.00
W4	-10.81	20.07	0.00	-12.37	0.00	0.00
W5	154.83	-40.10	-0.00	24.77	-0.00	-0.00
W6	115.73	-33.34	0.00	20.58	0.00	-0.00
W7	129.52	-17.04	0.00	10.55	0.00	-0.00
W8	-163.67	54.85	0.00	-33.84	0.00	0.00
W9	51.50	-4.67	0.00	2.88	0.00	-0.00
W10	142.78	-20.89	0.00	12.94	0.00	-0.00
W11	-168.39	49.25	0.00	-30.41	0.00	0.00
W12	-77.11	33.03	0.00	-20.35	0.00	0.00
E7	-168.53	95.64	0.00	-59.02	0.00	0.00

E8	-26.53	71.02	0.00	-43.75	0.00	0.00
E9	1081.13	-247.84	0.00	153.13	0.00	-0.00
E10	981.87	-231.16	0.00	142.77	0.00	-0.00

Section: SC28

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1001.84	22.54	-0.00	-14.02	-0.00	-0.00
Lp	469.97	8.58	-0.00	-5.36	-0.00	-0.00
Ln	-14.76	-0.41	0.00	0.25	0.00	0.00
E1	54.31	26.74	0.00	-16.48	0.00	-0.00
E2	-1915.99	-419.40	0.00	259.35	0.00	0.00
W1	10.42	8.32	0.00	-5.12	0.00	-0.00
W2	-251.85	-62.21	0.00	38.43	0.00	0.00
W3	-40.49	-19.92	0.00	12.25	0.00	0.00
W4	3.83	3.31	0.00	-2.03	0.00	-0.00
W5	-175.26	-37.85	-0.00	23.41	0.00	0.00
W6	-195.75	-48.25	0.00	29.81	0.00	0.00
W7	-181.07	-40.42	0.00	24.99	0.00	0.00
W8	196.71	52.90	0.00	-32.66	0.00	-0.00
W9	-160.11	-42.93	0.00	26.50	0.00	0.00
W10	-111.50	-17.70	0.00	10.98	0.00	0.00
W11	123.23	27.06	0.00	-16.74	0.00	-0.00
W12	171.83	52.29	0.00	-32.25	0.00	-0.00
E7	-2.83	1.26	0.00	-0.79	0.00	-0.00
E8	75.61	34.57	0.00	-21.30	0.00	-0.00
E9	-1256.78	-269.89	0.00	166.92	0.00	0.00
E10	-1310.72	-292.13	0.00	180.61	0.00	0.00

Section: SC29

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	716.91	12.15	-0.00	-7.33	-0.00	0.00
Lp	323.16	6.49	-0.00	-3.93	-0.00	0.00
Ln	-3.24	-0.23	0.00	0.14	0.00	-0.00
E1	-54.31	26.74	0.00	-16.48	0.00	-0.00
E2	1915.99	-419.10	-0.00	259.18	-0.00	0.00
W1	-10.42	8.32	0.00	-5.12	0.00	-0.00
W2	251.85	-62.17	-0.00	38.41	-0.00	0.00
W3	40.49	-19.91	0.00	12.24	0.00	0.00
W4	-3.83	3.31	0.00	-2.03	0.00	-0.00
W5	175.26	-37.82	-0.00	23.40	-0.00	0.00
W6	195.75	-48.22	0.00	29.79	-0.00	0.00
W7	181.07	-40.39	0.00	24.97	0.00	0.00

W8	-196.71	52.87	0.00	-32.65	0.00	-0.00
W9	160.11	-42.90	0.00	26.48	0.00	0.00
W10	111.50	-17.69	0.00	10.98	0.00	0.00
W11	-123.23	27.05	0.00	-16.73	0.00	-0.00
W12	-171.83	52.26	0.00	-32.24	0.00	-0.00
E7	2.83	1.27	0.00	-0.80	0.00	-0.00
E8	-75.61	34.56	0.00	-21.29	0.00	-0.00
E9	1256.78	-269.70	-0.00	166.82	-0.00	0.00
E10	1310.72	-291.92	-0.00	180.50	-0.00	0.00

Section: SC30

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1005.63	26.98	-0.00	-16.72	-0.00	-0.00
Lp	478.41	9.87	-0.00	-6.14	-0.00	-0.00
Ln	-23.52	-0.61	0.00	0.37	0.00	0.00
E1	-68.19	-8.64	0.00	5.39	0.00	-0.00
E2	-1948.84	-452.05	0.00	279.38	0.00	0.00
W1	-9.81	2.19	0.00	-1.33	0.00	-0.00
W2	-262.39	-68.78	0.00	42.47	0.00	0.00
W3	-119.68	-40.02	0.00	24.68	0.00	-0.00
W4	-14.90	-2.79	0.00	1.73	0.00	-0.00
W5	-167.69	-37.98	-0.00	23.48	-0.00	0.00
W6	-216.06	-54.70	0.00	33.78	0.00	0.00
W7	-204.15	-49.94	0.00	30.86	0.00	0.00
W8	189.43	53.23	0.00	-32.85	0.00	-0.00
W9	-210.54	-57.69	0.00	35.61	0.00	0.00
W10	-95.68	-17.22	0.00	10.68	0.00	0.00
W11	84.64	19.69	0.00	-12.17	0.00	-0.00
W12	199.51	60.16	0.00	-37.11	0.00	-0.00
E7	-138.31	-33.06	0.00	20.43	0.00	-0.00
E8	46.93	21.48	0.00	-13.21	0.00	-0.00
E9	-1242.27	-284.63	-0.00	175.94	-0.00	0.00
E10	-1369.25	-321.13	0.00	198.45	0.00	0.00

Section: SC31

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	714.03	11.67	-0.00	-7.04	-0.00	0.00
Lp	325.71	6.43	-0.00	-3.89	-0.00	0.00
Ln	-7.28	-0.30	0.00	0.19	0.00	-0.00
E1	68.19	-8.63	0.00	5.38	0.00	-0.00
E2	1948.84	-451.73	0.00	279.21	-0.00	0.00
W1	9.81	2.19	0.00	-1.33	0.00	-0.00

W2	262.39	-68.74	0.00	42.45	0.00	0.00
W3	119.68	-40.00	0.00	24.66	0.00	-0.00
W4	14.90	-2.79	0.00	1.73	0.00	-0.00
W5	167.69	-37.95	-0.00	23.46	-0.00	0.00
W6	216.06	-54.67	0.00	33.76	0.00	0.00
W7	204.15	-49.91	0.00	30.84	0.00	0.00
W8	-189.43	53.20	0.00	-32.83	0.00	-0.00
W9	210.54	-57.66	0.00	35.59	0.00	0.00
W10	95.68	-17.21	0.00	10.67	0.00	0.00
W11	-84.64	19.68	0.00	-12.16	0.00	-0.00
W12	-199.51	60.12	0.00	-37.09	0.00	-0.00
E7	138.31	-33.03	0.00	20.41	0.00	-0.00
E8	-46.93	21.47	0.00	-13.20	0.00	-0.00
E9	1242.27	-284.43	-0.00	175.82	-0.00	0.00
E10	1369.25	-320.90	0.00	198.33	0.00	0.00

Section: SC33

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	947.66	23.01	-0.00	-14.26	-0.00	-0.00
Lp	388.58	8.57	-0.00	-5.32	-0.00	-0.00
Ln	-5.13	-0.37	-0.00	0.23	0.00	0.00
E1	-2538.40	-524.80	0.00	325.01	0.00	0.00
E2	142.14	-29.35	-0.00	17.86	-0.00	-0.00
W1	-444.74	-100.77	0.00	62.37	0.00	0.00
W2	0.33	-11.42	-0.00	7.01	-0.00	0.00
W3	-527.40	-136.47	-0.00	84.40	-0.00	0.00
W4	-349.31	-81.65	0.00	50.53	0.00	0.00
W5	51.87	10.51	-0.00	-6.51	-0.00	-0.00
W6	-29.39	-14.15	-0.00	8.72	-0.00	0.00
W7	-333.30	-84.14	-0.00	52.03	-0.00	0.00
W8	-333.81	-67.01	0.00	41.52	0.00	0.00
W9	-347.23	-92.91	-0.00	57.44	-0.00	0.00
W10	-152.72	-33.30	-0.00	20.61	-0.00	0.00
W11	-347.61	-80.06	0.00	49.55	0.00	0.00
W12	-153.10	-20.46	0.00	12.72	0.00	0.00
E7	-1859.98	-392.64	-0.00	243.12	0.00	0.00
E8	-1541.57	-310.62	0.00	192.40	0.00	0.00
E9	203.28	7.84	-0.00	-5.05	-0.00	-0.00
E10	-12.80	-47.18	-0.00	28.99	-0.00	0.00

Section: SC34

LdC	P	Mmajor	Mminor	Vmajor	Vminor	Torsion
	kip	kip-ft	kip-ft	kip	kip	kip-ft
D	821.46	-3.07	-0.00	2.03	-0.00	0.00
Lp	316.98	0.08	-0.00	-0.00	-0.00	0.00
Ln	5.52	-0.36	-0.00	0.23	-0.00	0.00
E1	2862.01	-522.38	-0.00	323.60	-0.00	0.00
E2	-9.47	-27.80	-0.00	16.94	-0.00	-0.00
W1	502.67	-100.33	-0.00	62.11	-0.00	0.00
W2	20.98	-11.18	-0.00	6.87	-0.00	0.00
W3	602.51	-135.92	-0.00	84.08	-0.00	0.00
W4	385.52	-81.43	-0.00	50.40	-0.00	0.00
W5	-34.55	10.74	-0.00	-6.65	-0.00	-0.00
W6	65.83	-13.75	-0.00	8.48	-0.00	0.00
W7	392.74	-83.64	-0.00	51.74	-0.00	0.00
W8	361.27	-66.86	0.00	41.43	0.00	0.00
W9	413.57	-92.34	-0.00	57.11	-0.00	0.00
W10	175.54	-33.11	-0.00	20.50	-0.00	0.00
W11	389.96	-79.76	0.00	49.38	-0.00	0.00
W12	151.94	-20.53	0.00	12.77	0.00	0.00
E7	2107.77	-390.76	-0.00	242.03	-0.00	0.00
E8	1727.44	-309.25	-0.00	191.60	-0.00	0.00
E9	-136.97	8.69	-0.00	-5.55	-0.00	-0.00
E10	124.28	-45.94	-0.00	28.25	-0.00	0.00

Section: SC35

LdC	P	Mmajor	Mminor	Vmajor	Vminor	Torsion
	kip	kip-ft	kip-ft	kip	kip	kip-ft
D	947.19	5.99	-0.00	-3.88	-0.00	-0.00
Lp	433.28	1.69	-0.00	-1.14	-0.00	-0.00
Ln	-5.36	-0.37	-0.00	0.23	0.00	0.00
E1	-2712.17	-524.29	0.00	324.70	0.00	0.00
E2	75.82	-28.57	-0.00	17.40	-0.00	-0.00
W1	-475.82	-100.67	0.00	62.31	0.00	0.00
W2	-10.42	-11.31	-0.00	6.95	-0.00	0.00
W3	-567.55	-136.33	-0.00	84.32	-0.00	0.00
W4	-369.06	-81.63	0.00	50.52	0.00	0.00
W5	43.37	10.63	-0.00	-6.59	-0.00	-0.00
W6	-47.88	-13.96	-0.00	8.61	-0.00	0.00
W7	-364.68	-83.98	-0.00	51.94	-0.00	0.00
W8	-349.05	-67.02	0.00	41.52	0.00	0.00
W9	-382.16	-92.72	-0.00	57.33	-0.00	0.00
W10	-164.86	-33.25	-0.00	20.58	-0.00	0.00
W11	-370.44	-80.00	0.00	49.52	0.00	0.00
W12	-153.14	-20.53	0.00	12.77	0.00	0.00
E7	-1992.72	-392.21	0.00	242.87	0.00	0.00

E8	-1641.70	-310.36	0.00	192.24	0.00	0.00
E9	170.70	8.30	-0.00	-5.32	-0.00	-0.00
E10	-69.09	-46.59	-0.00	28.63	-0.00	0.00

Section: SC36

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	973.82	-17.94	-0.00	11.09	-0.00	0.00
Lp	435.11	-5.03	-0.00	3.12	-0.00	0.00
Ln	5.33	-0.37	-0.00	0.23	-0.00	0.00
E1	2712.17	-523.88	-0.00	324.47	-0.00	0.00
E2	-75.82	-28.56	-0.00	17.39	-0.00	-0.00
W1	475.82	-100.60	-0.00	62.27	-0.00	0.00
W2	10.42	-11.30	-0.00	6.94	-0.00	0.00
W3	567.55	-136.26	-0.00	84.28	-0.00	0.00
W4	369.06	-81.58	-0.00	50.50	-0.00	0.00
W5	-43.37	10.63	-0.00	-6.59	-0.00	-0.00
W6	47.88	-13.95	-0.00	8.60	-0.00	0.00
W7	364.68	-83.93	-0.00	51.91	-0.00	0.00
W8	349.05	-66.97	0.00	41.50	0.00	0.00
W9	382.16	-92.67	-0.00	57.30	-0.00	0.00
W10	164.86	-33.22	-0.00	20.57	-0.00	0.00
W11	370.44	-79.95	0.00	49.49	0.00	0.00
W12	153.14	-20.51	0.00	12.75	0.00	0.00
E7	1992.72	-391.91	-0.00	242.70	-0.00	0.00
E8	1641.70	-310.10	-0.00	192.10	-0.00	0.00
E9	-170.70	8.29	-0.00	-5.31	-0.00	-0.00
E10	69.09	-46.56	-0.00	28.62	-0.00	0.00

Level: Floor_2

Section: SC32

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1211.51	-149.21	-0.00	-67.66	-0.00	0.00
Lp	596.37	-50.84	-0.00	-43.79	-0.00	0.00
Ln	0.00	-171.24	-0.00	10.45	-0.00	-0.00
E1	-0.00	1171.86	-0.00	9.64	0.00	0.00
E2	0.00	33910.75	0.00	-1330.50	-0.00	0.00
W1	-0.00	160.47	-0.00	5.26	0.00	0.00
W2	0.00	4573.74	0.00	-178.34	-0.00	0.00
W3	-0.00	2098.45	-0.00	-76.73	0.00	0.00
W4	-0.00	241.89	-0.00	-8.63	0.00	0.00
W5	0.00	2919.17	-0.00	-109.10	-0.00	0.00

W6	0.00	3778.52	-0.00	-139.04	-0.00	0.00
W7	0.00	3550.66	-0.00	-129.81	0.00	0.00
W8	-0.00	-3309.95	-0.00	137.70	0.00	-0.00
W9	0.00	3681.46	-0.00	-134.12	0.00	0.00
W10	0.00	1644.53	-0.00	-60.59	0.00	-0.00
W11	-0.00	-1464.00	-0.00	66.51	0.00	0.00
W12	-0.00	-3500.93	-0.00	140.04	0.00	-0.00
E7	-0.00	2421.66	-0.00	-51.76	0.00	0.00
E8	-0.00	-851.33	-0.00	64.68	0.00	0.00
E9	0.00	21598.08	0.00	-852.65	-0.00	0.00
E10	0.00	23843.70	0.00	-930.27	-0.00	0.00

Section: SC37

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1328.09	-507.08	-0.00	118.91	-0.00	0.00
Lp	636.94	-447.58	-0.00	91.66	-0.00	0.00
Ln	-0.03	97.96	0.00	-0.84	-0.00	0.00
E1	-0.00	46071.09	0.00	-1570.07	-0.00	0.01
E2	0.00	-1131.05	0.00	70.82	0.00	0.00
W1	-0.00	8045.22	0.00	-282.47	-0.00	0.00
W2	0.00	188.49	0.00	-6.87	0.00	0.00
W3	-0.00	9481.51	0.00	-378.09	-0.00	0.00
W4	-0.00	6179.63	0.00	-239.94	-0.00	0.00
W5	0.00	-667.95	0.00	44.73	0.00	-0.00
W6	-0.00	861.02	0.00	-15.13	0.00	0.00
W7	-0.00	6175.28	0.00	-217.01	-0.00	0.00
W8	-0.00	5892.55	-0.00	-206.70	-0.00	0.00
W9	-0.00	6443.03	0.00	-237.01	-0.00	0.00
W10	-0.00	2819.89	0.00	-88.50	-0.00	0.00
W11	-0.00	6230.98	0.00	-229.28	-0.00	0.00
W12	-0.00	2607.84	-0.00	-80.78	-0.00	0.00
E7	-0.00	33816.11	0.00	-1167.97	-0.00	0.00
E8	-0.00	27921.02	0.00	-935.99	-0.00	0.00
E9	0.00	-2777.18	0.00	124.41	0.00	-0.00
E10	0.00	1261.53	0.00	-29.52	0.00	0.00

Section: SC38

LdC	P kip	Mmajor kip-ft	Mminor kip-ft	Vmajor kip	Vminor kip	Torsion kip-ft
D	1118.72	273.25	-0.00	-65.13	-0.00	-0.00
Lp	466.44	-109.35	-0.00	-38.04	-0.00	-0.00
Ln	0.39	97.45	0.00	-0.93	0.00	0.00
E1	323.61	45804.76	0.00	-1578.04	-0.00	0.01

E2	132.68	-1124.06	0.00	65.72	0.00	0.00
W1	57.93	7998.53	0.00	-283.56	-0.00	0.00
W2	21.32	187.41	0.00	-7.53	0.00	0.00
W3	75.12	9425.76	0.00	-378.33	0.00	0.00
W4	36.21	6143.43	0.00	-239.92	-0.00	0.00
W5	17.32	-663.73	0.00	43.58	0.00	-0.00
W6	36.44	856.22	0.00	-16.54	0.00	0.00
W7	59.44	6139.45	0.00	-218.32	0.00	0.00
W8	27.46	5858.34	-0.00	-207.03	-0.00	0.00
W9	66.34	6405.44	0.00	-238.19	0.00	0.00
W10	22.82	2803.74	0.00	-89.29	-0.00	0.00
W11	42.35	6194.61	0.00	-229.72	-0.00	0.00
W12	-1.16	2592.90	-0.00	-80.82	-0.00	0.00
E7	247.79	33620.32	0.00	-1173.69	-0.00	0.00
E8	185.87	27759.91	0.00	-940.95	-0.00	0.00
E9	66.31	-2760.65	0.00	121.36	0.00	-0.00
E10	111.48	1254.37	0.00	-33.30	0.00	0.00

Drift

RAM Frame v11.0
Jonathan Williams
DataBase: FHCRC_Existing 01/11/08 19:53:39
Building Code: IBC Steel Code: IBC

CRITERIA:

Rigid End Zones: Ignore Effects
Member Force Output: At Face of Joint
P-Delta: Yes Scale Factor: 1.00
Diaphragm: Rigid
Ground Level: Floor_E

LOAD CASE DEFINITIONS:

E3	SeismicDrift	EQ_IBC03_X_+E_Drft
E4	SeismicDrift	EQ_IBC03_X_-E_Drft
E5	SeismicDrift	EQ_IBC03_Y_+E_Drft
E6	SeismicDrift	EQ_IBC03_Y_-E_Drft

RESULTS:

Location (ft): (222.995, 305.413)

Story	LdC	Displacement		Story Drift		Drift Ratio	
		X	Y	X	Y	X	Y
		in	in	in	in		
PentHous_Roof	E3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PH	E3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof	E3	4.2811	-0.4684	0.7735	-0.1219	0.0053	0.0008
	E4	3.1917	-0.3292	0.6085	-0.0953	0.0041	0.0006
	E5	-0.3942	2.7632	-0.0567	0.3250	0.0004	0.0022
	E6	0.4409	2.6553	0.0733	0.3052	0.0005	0.0021
Mech	E3	3.5076	-0.3465	0.5352	-0.0585	0.0036	0.0004
	E4	2.5832	-0.2339	0.3970	-0.0334	0.0027	0.0002
	E5	-0.3375	2.4383	-0.0877	0.4382	0.0006	0.0030
	E6	0.3676	2.3502	0.0249	0.4158	0.0002	0.0028
Floor_5	E3	2.9724	-0.2879	0.6006	-0.0548	0.0041	0.0004
	E4	2.1862	-0.2005	0.4471	-0.0356	0.0030	0.0002
	E5	-0.2498	2.0001	-0.0607	0.3994	0.0004	0.0027
	E6	0.3427	1.9343	0.0560	0.3849	0.0004	0.0026

Drift

Story	LdC	Displacement		Story Drift		Drift Ratio	
Floor_4	E3	2.3718	-0.2331	0.5879	-0.0532	0.0040	0.0004
	E4	1.7391	-0.1649	0.4353	-0.0341	0.0030	0.0002
	E5	-0.1891	1.6006	-0.0573	0.3926	0.0004	0.0027
	E6	0.2867	1.5494	0.0583	0.3782	0.0004	0.0026
Floor_3	E3	1.7838	-0.1799	0.5445	-0.0491	0.0037	0.0003
	E4	1.3039	-0.1308	0.4003	-0.0311	0.0027	0.0002
	E5	-0.1318	1.2080	-0.0504	0.3677	0.0003	0.0025
	E6	0.2285	1.1712	0.0583	0.3542	0.0004	0.0024
Floor_2	E3	1.2394	-0.1308	0.4723	-0.0451	0.0032	0.0003
	E4	0.9035	-0.0996	0.3445	-0.0284	0.0023	0.0002
	E5	-0.0815	0.8403	-0.0479	0.3299	0.0003	0.0022
	E6	0.1702	0.8170	0.0481	0.3174	0.0003	0.0022
Floor_1	E3	0.7671	-0.0858	0.4270	-0.0460	0.0029	0.0003
	E4	0.5590	-0.0713	0.3132	-0.0329	0.0021	0.0002
	E5	-0.0336	0.5104	-0.0402	0.2858	0.0003	0.0019
	E6	0.1220	0.4995	0.0451	0.2760	0.0003	0.0019
Floor_D	E3	0.3401	-0.0397	0.3401	-0.0397	0.0023	0.0003
	E4	0.2458	-0.0384	0.2458	-0.0384	0.0017	0.0003
	E5	0.0066	0.2246	0.0066	0.2246	0.0000	0.0015
	E6	0.0769	0.2236	0.0769	0.2236	0.0005	0.0015
Floor_E	E3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	E6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Drift

RAM Frame v11.0
Jonathan Williams
DataBase: FHCRC_Existing 01/11/08 19:57:50
Building Code: IBC Steel Code: IBC

CRITERIA:

Rigid End Zones: Ignore Effects
Member Force Output: At Face of Joint
P-Delta: Yes Scale Factor: 1.00
Diaphragm: Rigid
Ground Level: Floor_E

LOAD CASE DEFINITIONS:

W1	Wind	Wind_IBC03_1_X
W2	Wind	Wind_IBC03_1_Y
W3	Wind	Wind_IBC03_2_X+E
W4	Wind	Wind_IBC03_2_X-E
W5	Wind	Wind_IBC03_2_Y+E
W6	Wind	Wind_IBC03_2_Y-E
W7	Wind	Wind_IBC03_3_X+Y
W8	Wind	Wind_IBC03_3_X-Y
W9	Wind	Wind_IBC03_4_X+Y_CW
W10	Wind	Wind_IBC03_4_X+Y_CCW
W11	Wind	Wind_IBC03_4_X-Y_CW
W12	Wind	Wind_IBC03_4_X-Y_CCW

RESULTS:

Location (ft): (127.253, 39.071)

Story	LdC	Displacement		Story Drift		Drift Ratio	
		X	Y	X	Y	X	Y
		in	in	in	in		
PentHous_Roof	W1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PH	W1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Story	LdC	Displacement		Story Drift		Drift Ratio	
	W4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof	W1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mech	W1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Floor_5	W1	0.5448	0.0459	0.1094	0.0107	0.0007	0.0001
	W2	-0.1255	0.5586	-0.0215	0.1074	0.0001	0.0007
	W3	0.0114	0.3530	0.0047	0.0654	0.0000	0.0004
	W4	0.3908	0.0538	0.0814	0.0093	0.0006	0.0001
	W5	0.0007	0.3363	-0.0005	0.0679	0.0000	0.0005
	W6	-0.1755	0.4746	-0.0368	0.0944	0.0003	0.0006
	W7	0.3145	0.4534	0.0659	0.0886	0.0004	0.0006
	W8	0.5027	-0.3845	0.0982	-0.0726	0.0007	0.0005
	W9	0.0275	0.5041	0.0070	0.0974	0.0000	0.0007

Story	LdC	Displacement		Story Drift		Drift Ratio	
	W10	0.4442	0.1760	0.0917	0.0355	0.0006	0.0002
	W11	0.1687	-0.1243	0.0313	-0.0235	0.0002	0.0002
	W12	0.5854	-0.4524	0.1160	-0.0854	0.0008	0.0006
Floor_4	W1	0.4355	0.0353	0.1077	0.0103	0.0007	0.0001
	W2	-0.1040	0.4511	-0.0211	0.1050	0.0001	0.0007
	W3	0.0066	0.2876	0.0045	0.0647	0.0000	0.0004
	W4	0.3094	0.0445	0.0793	0.0096	0.0005	0.0001
	W5	0.0012	0.2684	0.0012	0.0651	0.0000	0.0004
	W6	-0.1387	0.3803	-0.0339	0.0908	0.0002	0.0006
	W7	0.2486	0.3648	0.0649	0.0865	0.0004	0.0006
	W8	0.4046	-0.3119	0.0966	-0.0711	0.0007	0.0005
	W9	0.0204	0.4067	0.0075	0.0952	0.0001	0.0006
	W10	0.3525	0.1405	0.0899	0.0345	0.0006	0.0002
	W11	0.1374	-0.1008	0.0312	-0.0230	0.0002	0.0002
	W12	0.4695	-0.3670	0.1136	-0.0836	0.0008	0.0006
Floor_3	W1	0.3278	0.0250	0.1022	0.0089	0.0007	0.0001
	W2	-0.0829	0.3461	-0.0202	0.0988	0.0001	0.0007
	W3	0.0021	0.2230	0.0030	0.0618	0.0000	0.0004
	W4	0.2301	0.0349	0.0736	0.0096	0.0005	0.0001
	W5	0.0001	0.2034	0.0024	0.0602	0.0000	0.0004
	W6	-0.1048	0.2894	-0.0305	0.0844	0.0002	0.0006
	W7	0.1837	0.2783	0.0615	0.0808	0.0004	0.0005
	W8	0.3080	-0.2408	0.0918	-0.0675	0.0006	0.0005
	W9	0.0130	0.3115	0.0073	0.0893	0.0000	0.0006
	W10	0.2626	0.1059	0.0849	0.0319	0.0006	0.0002
	W11	0.1062	-0.0778	0.0300	-0.0219	0.0002	0.0001
	W12	0.3558	-0.2834	0.1077	-0.0793	0.0007	0.0005
Floor_2	W1	0.2256	0.0161	0.0914	0.0064	0.0006	0.0000
	W2	-0.0627	0.2473	-0.0180	0.0887	0.0001	0.0006
	W3	-0.0008	0.1611	0.0007	0.0547	0.0000	0.0004
	W4	0.1565	0.0253	0.0642	0.0084	0.0004	0.0001
	W5	-0.0023	0.1432	0.0033	0.0536	0.0000	0.0004
	W6	-0.0743	0.2050	-0.0260	0.0749	0.0002	0.0005
	W7	0.1222	0.1976	0.0551	0.0713	0.0004	0.0005
	W8	0.2162	-0.1734	0.0821	-0.0617	0.0006	0.0004
	W9	0.0057	0.2223	0.0065	0.0788	0.0000	0.0005
	W10	0.1777	0.0741	0.0761	0.0282	0.0005	0.0002
	W11	0.0761	-0.0559	0.0267	-0.0210	0.0002	0.0001
	W12	0.2482	-0.2041	0.0964	-0.0716	0.0007	0.0005
Floor_1	W1	0.1342	0.0097	0.0768	0.0069	0.0005	0.0000
	W2	-0.0447	0.1586	-0.0164	0.0795	0.0001	0.0005

Drift

Story	LdC	Displacement		Story Drift		Drift Ratio	
	W3	-0.0015	0.1064	0.0021	0.0512	0.0000	0.0003
	W4	0.0923	0.0169	0.0534	0.0093	0.0004	0.0001
	W5	-0.0056	0.0896	0.0020	0.0470	0.0000	0.0003
	W6	-0.0483	0.1301	-0.0215	0.0661	0.0001	0.0004
	W7	0.0671	0.1262	0.0453	0.0648	0.0003	0.0004
	W8	0.1341	-0.1116	0.0699	-0.0545	0.0005	0.0004
	W9	-0.0008	0.1434	0.0060	0.0714	0.0000	0.0005
	W10	0.1015	0.0459	0.0620	0.0257	0.0004	0.0002
	W11	0.0494	-0.0350	0.0244	-0.0180	0.0002	0.0001
	W12	0.1518	-0.1325	0.0805	-0.0637	0.0005	0.0004
Floor_D	W1	0.0573	0.0028	0.0573	0.0028	0.0004	0.0000
	W2	-0.0283	0.0791	-0.0283	0.0791	0.0002	0.0005
	W3	-0.0036	0.0552	-0.0036	0.0552	0.0000	0.0004
	W4	0.0389	0.0076	0.0389	0.0076	0.0003	0.0001
	W5	-0.0076	0.0426	-0.0076	0.0426	0.0001	0.0003
	W6	-0.0269	0.0640	-0.0269	0.0640	0.0002	0.0004
	W7	0.0218	0.0614	0.0218	0.0614	0.0001	0.0004
	W8	0.0642	-0.0572	0.0642	-0.0572	0.0004	0.0004
	W9	-0.0068	0.0720	-0.0068	0.0720	0.0000	0.0005
	W10	0.0395	0.0202	0.0395	0.0202	0.0003	0.0001
	W11	0.0250	-0.0170	0.0250	-0.0170	0.0002	0.0001
	W12	0.0713	-0.0688	0.0713	-0.0688	0.0005	0.0005
Floor_E	W1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	W12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000