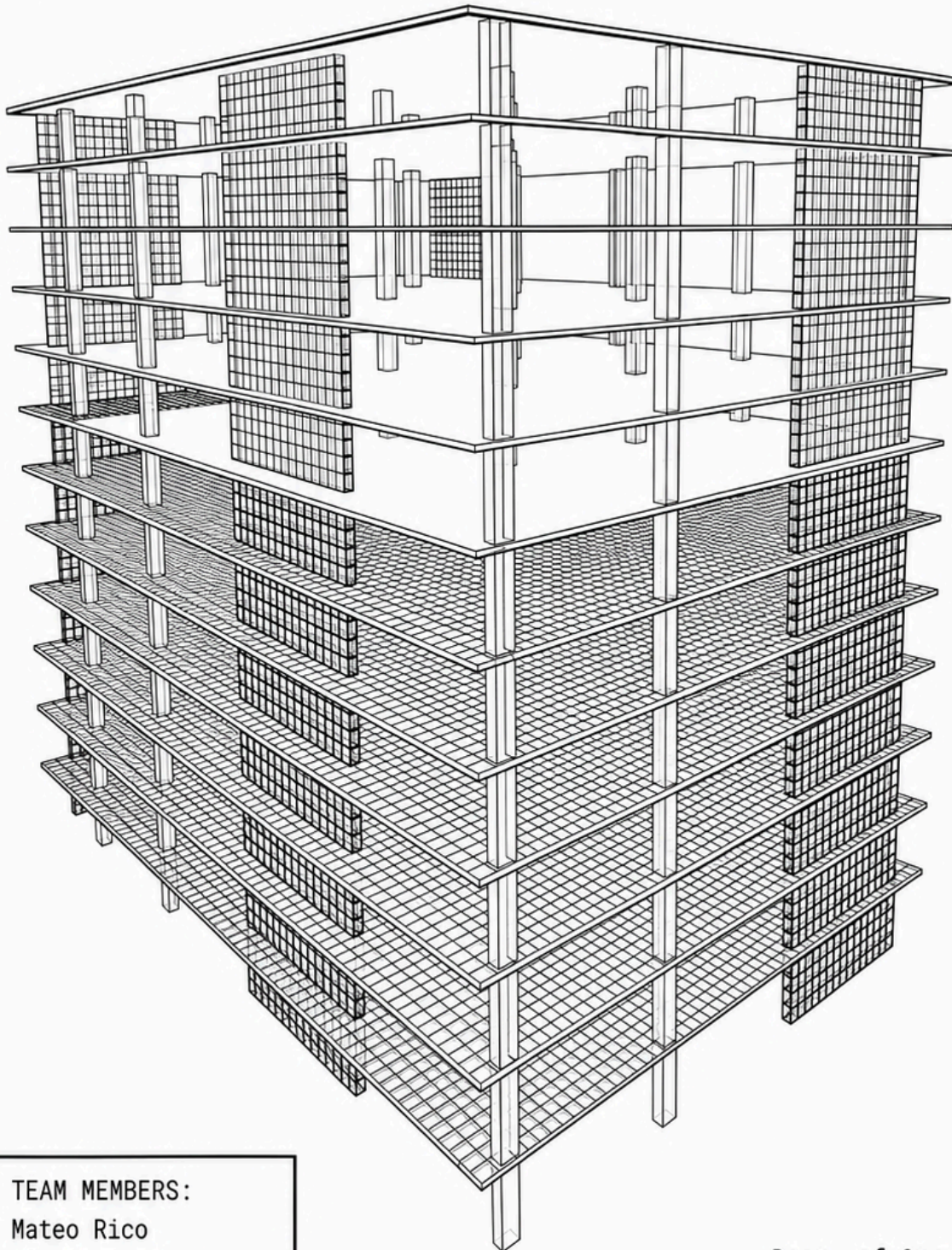


PROJECT_ID: ONE PASEO SD
SEISMIC_DESIGN_CATEGORY: D
SITE_COORDINATES: 32.95, -117.23'
TOTAL_BUILDING_WEIGHT: 26,091.96 KIPS



TEAM MEMBERS:

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Oscar Henriquez
Antonio Robles
Justin Vega

**ZEN
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Cal Poly Pomona
Dept. of Structural Engineering
Prepared for Professor Zen Hoda
05-06-2026 Submission date

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BUILDING STRUCTURE PARAMETERS

Floor Weight	116 psf	
Roof Weight	210 psf	
Exterior Wall	15 psf	
Shear Wall	225 psf	
Column	675 plf	
Perimeter	480 ft	
Story Height	10 ft	typical

SEISMIC WEIGHT

Level	Slab area (ft ²)	Ext wall area (ft ²)	Shear wall area (ft ²)	Column height (ft)	Weight (kips)
R	14076	2400	600	80	3181
12	14076	4800	1200	160	2083
11	14076	4800	1200	160	2083
10	14076	4800	1200	160	2083
9	14076	4800	1200	160	2083
8	14076	4800	1200	160	2083
7	14076	4800	1200	160	2083
6	14076	4800	1200	160	2083
5	14076	4800	1200	160	2083
4	14076	4800	1200	160	2083
3	14076	4800	1200	160	2083
2	14076	4800	1200	160	2083
				Σ	26092

SEISMIC PARAMETERS

S_s	1.11 g	R	6
S_1	0.43 g	I_e	1
F_a	1.2	SDC	D
F_v	1.4		
S_{MS}	1.33 g	T_0	0.090 s
S_{M1}	0.60 g	T_s	0.452 s
S_{DS}	0.89 g	T_L	8.0 s
S_{D1}	0.40 g		
S_a	0.40 g		

SEISMIC RESPONSE COEFFICIENT

C_s	0.148	12.8-3
$C_{s,max}$	0.066	12.8-4
$C_{s,min}$	0.0391	12.8-6
C_s	0.066	

BASE SHEAR

V	1719 kips	12.8-1
----------	------------------	--------

APPROXIMATE PERIOD T_a

12.8.2.1 Approximate Fundamental Period The approximate fundamental period (T_a), in seconds, shall be determined from the following equation:

$$T_a = C_t h_n^x \quad (12.8-8)$$

C_t	0.02	Table 12.8-2
x	0.75	Table 12.8-2
h_n	120 ft	Total Building height
T_a	0.725 s	12.8-8
C_u	1.4	Table 12.8-1
$T_{a,max}$	1.02 s	§12.8.2

VERTICAL DISTRIBUTION OF FORCES

k

1.26

12.8-12

Level	W (kips)	H (ft)	W*H ^K (k-ft)	C _v	F (kips)
R	3181	120	1310140.8	0.241	414
12	2083	110	768932.3	0.141	243
11	2083	100	682076.4	0.125	215
10	2083	90	597432.5	0.110	189
9	2083	80	515181.0	0.095	163
8	2083	70	435541.7	0.080	137
7	2083	60	358788.1	0.066	113
6	2083	50	285272.8	0.052	90
5	2083	40	215470.2	0.040	68
4	2083	30	150060.2	0.028	47
3	2083	20	90118.6	0.017	28
2	2083	10	37691.4	0.007	12
		Σ	5446706.0	1.0	1719

DIAPHRAGM FORCES

$$F_{px} = \frac{\sum_{i=x}^n F_i}{\sum_{i=x}^n w_i} w_{px} \quad (12.10-1)$$

where

F_{px} = Diaphragm design force at level x ;

F_i = Design force applied to level i ;

w_i = Weight tributary to level i ; and

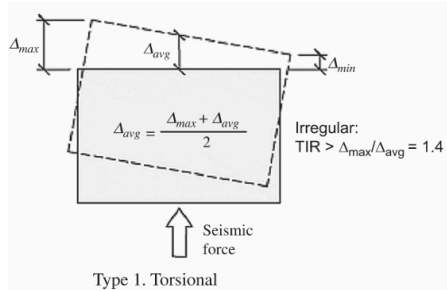
w_{px} = Weight tributary to the diaphragm at level x .

Level	w_{px} (kips)	F (kips)	F_i (kips)	Σw_i (kips)	F_{px} (kips)	F_{px} (kips)	
						Min	Max
R	3181	414	414	3181	414	565	1130
12	2083	243	656	5264	260	370	740
11	2083	215	872	7347	247	370	740
10	2083	189	1060	9429	234	370	740
9	2083	163	1223	11512	221	370	740
8	2083	137	1360	13595	208	370	740
7	2083	113	1473	15678	196	370	740
6	2083	90	1563	17761	183	370	740
5	2083	68	1631	19843	171	370	740
4	2083	47	1679	21926	159	370	740
3	2083	28	1707	24009	148	370	740
2	2083	12	1719	26092	137	370	740



RAM Structural System 25.00.02.42
 DataBase: sw 8fc col 6fc
 Building Code: IBC

Drift



Torsional Irregularity: Torsional irregularity, defined to exist where either:

- More than 75% of any story's lateral strength below the diaphragm is provided at or on one side of the center of mass, or
- The Torsional Irregularity Ratio (TIR) exceeds 1.2.

The story lateral strength is the total strength of all seismic-resisting elements sharing the story shear for the direction under consideration.

TORSIONAL IRREGULARITY DATA:

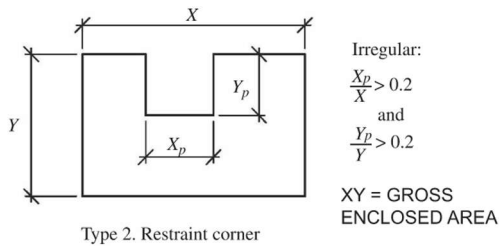
X-Axis:

Story	LdC	Drift in	Coord ft	Drift in	Coord ft	Max/Min	Max/Ave
12th	E1	0.3222	(0.00 0.00)	0.3728	(0.00 138.00)	1.157	1.073
11th	E1	0.3224	(0.00 0.00)	0.3731	(0.00 138.00)	1.157	1.073
10th	E1	0.3197	(0.00 0.00)	0.3700	(0.00 138.00)	1.157	1.073
9th	E1	0.3130	(0.00 0.00)	0.3623	(0.00 138.00)	1.157	1.073
8th	E1	0.3017	(0.00 0.00)	0.3492	(0.00 138.00)	1.158	1.073
7th	E1	0.2850	(0.00 0.00)	0.3299	(0.00 138.00)	1.158	1.073
6th	E1	0.2623	(0.00 0.00)	0.3036	(0.00 138.00)	1.158	1.073
5th	E1	0.2331	(0.00 0.00)	0.2699	(0.00 138.00)	1.158	1.073
4th	E1	0.1972	(0.00 0.00)	0.2284	(0.00 138.00)	1.158	1.073
3rd	E1	0.1542	(0.00 0.00)	0.1786	(0.00 138.00)	1.158	1.073
2nd	E1	0.1039	(0.00 0.00)	0.1204	(0.00 138.00)	1.159	1.073
1st	E1	0.0455	(0.00 0.00)	0.0528	(0.00 138.00)	1.159	1.074

Y-Axis:

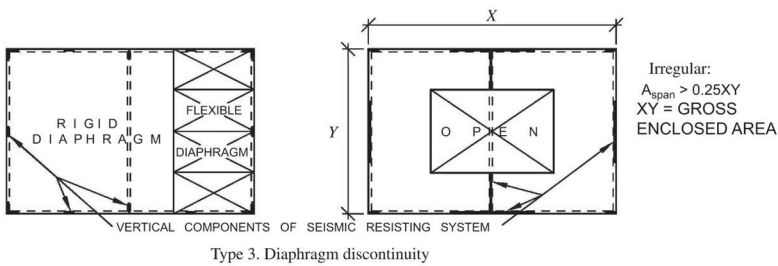
Story	LdC	Drift in	Coord ft	Drift in	Coord ft	Max/Min	Max/Ave
12th	E4	0.3613	(0.00 0.00)	0.3342	(102.00 0.00)	1.081	1.039
11th	E4	0.3615	(0.00 0.00)	0.3344	(102.00 0.00)	1.081	1.039
10th	E4	0.3585	(0.00 0.00)	0.3316	(102.00 0.00)	1.081	1.039
9th	E4	0.3510	(0.00 0.00)	0.3247	(102.00 0.00)	1.081	1.039
8th	E4	0.3383	(0.00 0.00)	0.3129	(102.00 0.00)	1.081	1.039
7th	E4	0.3196	(0.00 0.00)	0.2956	(102.00 0.00)	1.081	1.039
6th	E4	0.2941	(0.00 0.00)	0.2721	(102.00 0.00)	1.081	1.039
5th	E4	0.2615	(0.00 0.00)	0.2418	(102.00 0.00)	1.081	1.039
4th	E4	0.2212	(0.00 0.00)	0.2046	(102.00 0.00)	1.081	1.039
3rd	E4	0.1730	(0.00 0.00)	0.1600	(102.00 0.00)	1.081	1.039
2nd	E4	0.1166	(0.00 0.00)	0.1078	(102.00 0.00)	1.081	1.039
1st	E4	0.0511	(0.00 0.00)	0.0472	(102.00 0.00)	1.081	1.039

REENTRANT CORNER IRREGULARITY:



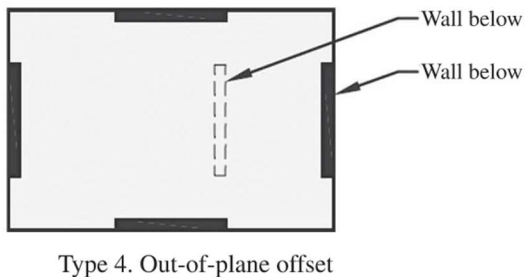
The building plan is rectangular with no projections or recesses. All plan dimensions are uniform, and there are no reentrant corners exceeding 20% of the overall plan dimension in any direction.

DIAPHRAGM DISCONTINUITY IRREGULARITY:



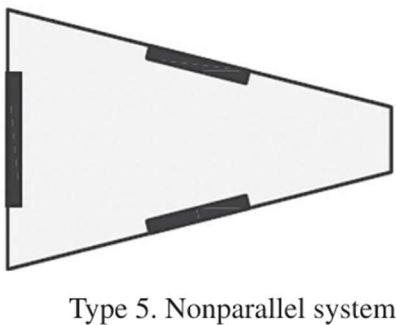
The floor diaphragm is uniform within a given floor throughout the structure. There are no abrupt changes in stiffness, significant cutouts, or open areas that would constitute a diaphragm discontinuity.

OUT-OF-PLANE OFFSET IRREGULARITY:



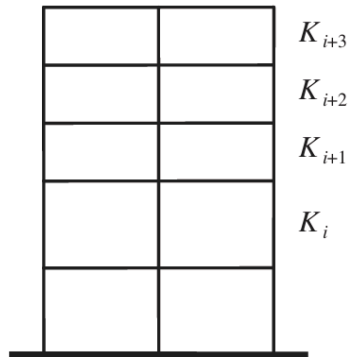
All vertical elements of the lateral-force-resisting system are aligned continuously throughout the full height of the building. There are no out-of-plane offsets in the vertical path of resistance.

NONPARALLEL SYSTEM IRREGULARITY:



All shear walls are oriented parallel to the major orthogonal axes of the building. The lateral-force-resisting system contains no skewed or non-parallel elements.

SOFT STORY IRREGULARITY:

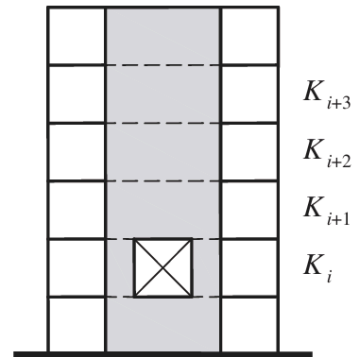
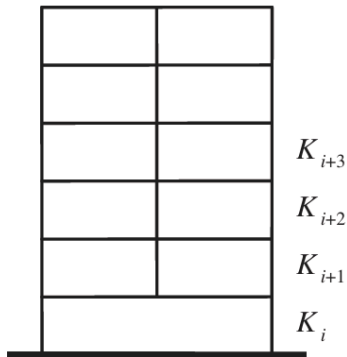


Irregular:

$$K_i < 0.7K_{i+1}$$

or

$$K_i < \frac{0.8}{3} (K_{i+1} + K_{i+2} + K_{i+3})$$



Extreme:

$$K_i < 0.6K_{i+1}$$

or

$$K_i < \frac{0.7}{3} (K_{i+1} + K_{i+2} + K_{i+3})$$

Type 1. Stiffness — Soft Story

Center of Rigidity



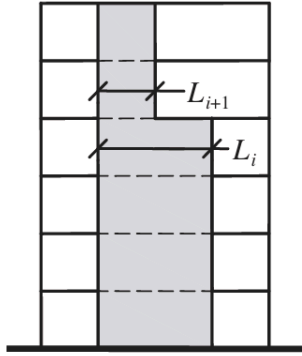
RAM Frame 25.00.02.42
DataBase: sw 8fc col 6fc

Page 1/2
05/05/26 23:09:10

Level	Diaph. #	Type	Story Lateral Stiffness	
			KX kips/ ft	KY kips/ ft
12th	1	Rigid	36685.26	37192.77
11th	1	Rigid	43387.96	43953.03
10th	1	Rigid	52072.30	52724.21
9th	1	Rigid	63616.88	64370.11
8th	1	Rigid	79411.61	80283.12
7th	1	Rigid	101776.39	102785.93
6th	1	Rigid	134780.56	135949.18
5th	1	Rigid	185972.37	187316.28
4th	1	Rigid	270174.37	271685.10
3rd	1	Rigid	417599.01	419187.53
2nd	1	Rigid	685960.33	687347.06
1st	1	Rigid	1169487.55	1170020.23

The lateral stiffness increases from top story to the base, therefore the structure does not exhibit soft story irregularities.

VERTICAL GEOMETRIC IRREGULARITY:



Type 3. Geometric

Irregular:

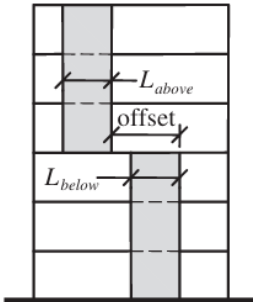
$$L_i > 1.3 L_{i+1}$$

No horizontal dimension of any wall varies by 30% between adjacent stories. All shear walls have a constant length ($l_w = 30$ feet) over the full height of the structure resulting in uniform vertical geometry.

IN-PLANE DISCONTINUITY IRREGULARITY:

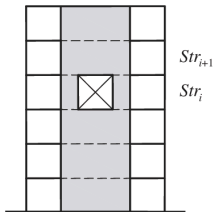
Irregular:

$$\text{offset} > L_{\text{below}} \\ \text{or} \\ \text{offset} > L_{\text{above}}$$

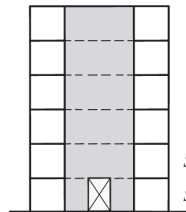


Shear walls are continuous and vertically aligned throughout the height, with no offsets, abrupt terminations, or significant openings that would interrupt load transfer.

WEAK STORY IRREGULARITY:



Type 4. Lateral Strength — Weak Story



Irregular:

$$Str_i < 1.0 Str_{i+1}$$

Extreme:

$$Str_i < 0.65 Str_{i+1}$$

Preliminary shear wall designs were generated through RAM Concrete. This module is unable to define boundary elements and detail specially reinforced concrete walls without user-input. It indicates a weak story condition on the seventh story, with only 90% of the eighth story's strength. The presence of this irregularity should be disregarded until preliminary and final special detailing has been provided for that level. The table provided

reflects only the capacities of the shear walls along gridline 10 (WG1) and gridline 1 (WG2).

Level	ϕV_n (kip)			Ratio
	WG1	WG2	Σ	
12	1448	1448	2895	-
11	1448	1448	2895	1.0
10	1448	1448	2895	1.0
9	1448	1448	2895	1.0
8	2289	1576	3866	1.3
7	1698	1698	3395	0.9
6	1863	1930	3793	1.1
5	2112	2171	4283	1.1
4	2460	2460	4920	1.1
3	2641	2641	5281	1.1
2	2818	2914	5732	1.1
1	2914	2990	5904	1.0

REDUNDANCY:

C12.3.4.2 Redundancy Factor, ρ , for Seismic Design Categories D through F There are two approaches to be designed for the full loss of the element.

Table 12.3-3 describes the requirements for element or connection removal based on the lateral-force-resisting system (LFRS) type. The removal of long shear walls with height-to-length ratios less than or equal to 1.0 is not required for the evaluation of redundancy. If all lateral resisting elements in the direction considered consist of such long, stout walls, the layout is deemed redundant and ρ is 1.0. Removal of short, slender shear walls with height-to-length ratios greater than 1.0 is required to be checked, with the full length of a wall segment between openings or edges.

All shear walls in each direction have a height to width ratio of 0.33 $\therefore \rho = 1.0$

AMPLIFICATION OF ACCIDENTAL TORSION:

12.8.4.3 Amplification of Accidental Torsional Moment A structure assigned to Seismic Design Category C, D, E, or F, where Type 1 horizontal structural irregularity exists as defined in Table 12.3-1 shall have the effects accounted for by multiplying M_{ta} at each level by a torsional amplification factor, A_x , as illustrated in Figure 12.8-1 and determined from the following equation:

$$A_x = \left(\frac{\delta_{\max}}{1.2\delta_{\text{avg}}} \right)^2 \quad (12.8-15)$$

Type 1 horizontal irregularity does not exist $\therefore$ amplification of accidental torsional moment not required.

ACTIONS AT BASE OF WALL

R =

6

	SW5 C5	SW5 C6	SW6 C6	SW8 C6	SW10 C6	SW10 C7
V _{ELF}	1727.04	1727.04	1725.82	1724.14	1723	1723
V _{SEED}	6546.18	6546.18	6656.66	6849.51	7016.09	7016.09
V _{SEED} / R	1091.03	1091	1109	1141.59	1169	1169
T	1.726	1.726	1.647	1.530	1.445	1.445
SF _{DRIFT}	0.83	0.83	0.83	0.83	0.83	0.83
SF _{STREN.}	0.264	0.264	0.259	0.252	0.246	0.246
V _{WALL}	960.87	960.87	958.7	960.04	960.12	960.12
M _{WALL}	57602.69	57602.69	58857.35	61110.3	62776.27	62776.27
P _D	1886.55	1882.8	1885.97	1890.99	1894.93	1891.91
P _L	319.53	318.59	319.4	320.73	321.8	321.04

2443.07	2443.07	2432.05	2438.86	2439.26	2439.26
5496.92	5496.92	5472.12	5487.43	5488.34	5488.34

Load Combo 1	2765.4	kips
Load Combo 2	1366.1	kips

P _u =	1366.1 kip
M _u =	61110.3 kip-ft
V _u =	960.04 kips

PRELIMINARY SIZING OF WALL

Wall Thickness 18 in

Wall Length 30 ft

Longitudinal Rebar in Web

Bar Size Designation	Weight (lbs/foot)	Bar Diameter (inches)	Area	Area at 12" C.C. (sq. in. per ft)	Spacing
#6	1.502	0.75	0.44	0.44	12

$\rho_v = 2A_s/bs$ 0.0041 > 0.0025 OK

Longitudinal Rebar in Special Boundry Zone

Bar Size Designation	Weight (lbs/foot)	Bar Diameter (inches)	Area	Area at 9" C.C. (sq. in. per ft)	Spacing
#9	3.4	1.128	1.00	1.33	9

$\rho_v = A_s/bs$ 0.0123 > 0.0067 OK

c_c 1.5 in

Wall Thickness - $2c_c$ 15 in

Three bars required on ends of wall as max permissible c-t-c spacing >14

SP Column Results

1. Material Properties

1.1. Concrete

Type	Standard
f'_c	8 ksi
E_c	5098.24 ksi
f_c	6.8 ksi
ϵ_u	0.003 in/in
β_1	0.65

1.2. Steel

Type	Standard
f_y	80 ksi
E_s	29000 ksi
ϵ_{ty}	0.00275862 in/in

2. Section

2.1. Shape and Properties

Type	Irregular
A_g	6480 in ²
I_x	174960 in ⁴
I_y	6.9984e+007 in ⁴
r_x	5.19615 in
r_y	103.923 in
X_o	0 in
Y_o	0 in

2.2. Section Figure

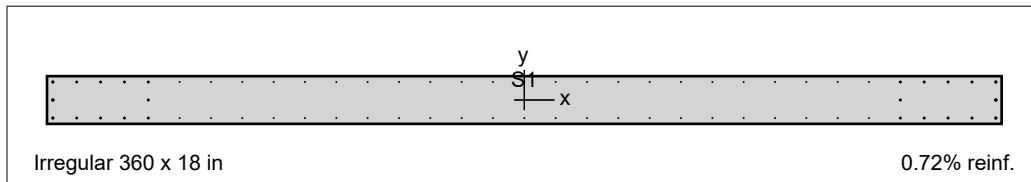


Figure 1: Column section

3. Reinforcement

3.1. Arrangement

Pattern	Irregular
Bar layout	---
Cover to	---
Clear cover	---
Bars	---
Total steel area, A_s	46.44 in ²
Rho	0.72 %
Minimum clear spacing	5.45 in

(Note: Rho < 1.0%)

3.2. Bars Provided

Area in ²	X in	Y in	Area in ²	X in	Y in	Area in ²	X in	Y in
1.27	-177.8	6.8	1.00	-168.8	6.8	1.00	-159.8	6.8

Area in ²	X in	Y in	Area in ²	X in	Y in	Area in ²	X in	Y in
1.00	-150.8	6.8	1.00	-141.8	6.8	1.56	-177.8	0.0
1.00	-168.8	-6.8	1.00	-159.8	-6.8	1.00	-150.8	-6.8
1.00	-141.8	-6.8	1.27	-177.8	-6.8	1.00	168.8	6.8
1.00	159.8	6.8	1.00	150.8	6.8	1.00	141.8	6.8
1.56	177.8	0.0	1.00	168.8	-6.8	1.00	159.8	-6.8
1.00	150.8	-6.8	1.00	141.8	-6.8	1.27	177.8	-6.8
1.27	177.8	6.8	0.44	-130.0	6.8	0.44	-118.2	6.8
0.44	-106.3	6.8	0.44	-94.5	6.8	0.44	-82.7	6.8
0.44	-70.9	6.8	0.44	-59.1	6.8	0.44	-47.3	6.8
0.44	-35.4	6.8	0.44	-23.6	6.8	0.44	-11.8	6.8
0.44	0.0	6.8	0.44	11.8	6.8	0.44	23.6	6.8
0.44	35.4	6.8	0.44	47.3	6.8	0.44	59.1	6.8
0.44	70.9	6.8	0.44	82.7	6.8	0.44	94.5	6.8
0.44	106.3	6.8	0.44	118.2	6.8	0.44	130.0	6.8
0.44	-118.2	-6.8	0.44	-106.3	-6.8	0.44	-94.5	-6.8
0.44	-82.7	-6.8	0.44	-70.9	-6.8	0.44	-59.1	-6.8
0.44	-47.3	-6.8	0.44	-35.4	-6.8	0.44	-23.6	-6.8
0.44	-11.8	-6.8	0.44	0.0	-6.8	0.44	11.8	-6.8
0.44	23.6	-6.8	0.44	35.4	-6.8	0.44	47.3	-6.8
0.44	59.1	-6.8	0.44	70.9	-6.8	0.44	82.7	-6.8
0.44	94.5	-6.8	0.44	106.3	-6.8	0.44	118.2	-6.8
0.44	130.0	-6.8	0.44	-130.0	-6.8	1.00	-141.8	0.0
1.00	141.8	0.0						

4. Control Points

About Point	P kip	X-Moment k-ft	Y-Moment k-ft	NA Depth in	d _t Depth in	ε _t	φ
Y @ Max compression	30851.2	0.00	0.00	4446.88	357.80	-0.00276	0.65000
Y @ Allowable comp.	24681.0	0.00	72634.53	450.06	357.80	-0.00062	0.65000
Y @ f _s = 0.0	19662.4	0.00	107568.59	357.80	357.80	0.00000	0.65000
Y @ f _s = 0.5 f _y	13255.6	0.00	120257.80	245.10	357.80	0.00138	0.65000
Y @ Balanced point	9626.1	0.00	115177.77	186.40	357.80	0.00276	0.65000
Y @ Tension control	7996.6	0.00	130689.77	122.55	357.80	0.00576	0.90000
Y @ Pure bending	0.0	0.00	47060.13	28.84	357.80	0.03421	0.90000
Y @ Max tension	-3343.7	0.00	0.00	0.00	357.80	9.99999	0.90000
-Y @ Max compression	30851.2	0.00	0.00	4446.88	357.80	-0.00276	0.65000
-Y @ Allowable comp.	24681.0	0.00	-72634.54	450.06	357.80	-0.00062	0.65000
-Y @ f _s = 0.0	19662.4	0.00	-107568.61	357.80	357.80	0.00000	0.65000
-Y @ f _s = 0.5 f _y	13255.6	0.00	-120257.83	245.10	357.80	0.00138	0.65000
-Y @ Balanced point	9626.1	0.00	-115177.76	186.40	357.80	0.00276	0.65000
-Y @ Tension control	7996.6	0.00	-130689.80	122.55	357.80	0.00576	0.90000
-Y @ Pure bending	0.0	0.00	-47060.14	28.84	357.80	0.03421	0.90000
-Y @ Max tension	-3343.7	0.00	0.00	0.00	357.80	9.99999	0.90000

5. Factored Loads and Moments with Corresponding Capacity Ratios

NOTE: Calculations are based on "Moment Capacity" Method.

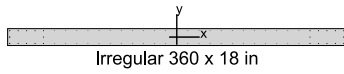
No.	Demand P _u kip	M _{uy} k-ft	Capacity φP _n kip	φM _{ny} k-ft	Parameters at Capacity NA Depth in	ε _t	φ	Capacity Ratio
1	2647.39	-5328.51	2647.39	-79711.82	58.77	0.01526	0.900	0.07
2	2789.63	-6425.45	2789.63	-81333.79	60.43	0.01476	0.900	0.08
3	2452.83	-5212.68	2452.83	-77479.30	56.31	0.01606	0.900	0.07
4	2925.76	54719.70	2925.76	82878.27	62.02	0.01431	0.900	0.66
5	2925.76	-67500.90	2925.76	-82878.25	62.02	0.01431	0.900	0.81
6	2619.58	55822.22	2619.58	79400.83	58.24	0.01543	0.900	0.70
7	2619.58	-66398.38	2619.58	-79400.79	58.24	0.01543	0.900	0.84

No.	Demand		Capacity		Parameters at Capacity			Capacity Ratio
	P_u kip	M_{uy} k-ft	ϕP_n kip	ϕM_{ny} k-ft	NA Depth in	ϵ_t	ϕ	
8	1366.05	58360.79	1366.05	64470.59	43.76	0.02153	0.900	0.91
9	1366.05	-63859.81	1366.05	-64470.59	43.76	0.02153	0.900	0.99

Combo ID	Description	P_u (kips)	M_{ux} (kip-ft)	M_{uy} (kip-ft)
LC1 (G1)	1.4D	2647.39	0.00	-5328.51
LC2 (G2)	1.2D + 1.6L + 0.5Lr	2789.63	0.00	-6425.45
LC3 (G3)	1.2D + 0.5L + 1.6Lr	2452.83	0.00	-5212.68
LC4 (EQ+)	(1.2+0.2SDS)D + L + 0.2S + +EQ	2925.76	0.00	54719.70
LC5 (EQ-)	(1.2+0.2SDS)D + L + 0.2S + -EQ	2925.76	0.00	-67500.90
LC6 (EQ+)	(1.2+0.2SDS)D + Lr + 0.2S + +EQ	2619.58	0.00	55822.22
LC7 (EQ-)	(1.2+0.2SDS)D + Lr + 0.2S + -EQ	2619.58	0.00	-66398.38
LC8 (EQ+)	(0.9-0.2SDS)D + +EQ	1366.05	0.00	58360.79
LC9 (EQ-)	(0.9-0.2SDS)D + -EQ	1366.05	0.00	-63859.81

6. Diagrams

6.1. PM at $\theta=0$ [deg]



General Information

Project	---
Column	---
Engineer	---
Code	ACI 318-19
Bar Set	ASTM A615
Units	English
Run Option	Investigation
Run Axis	Y - axis
Slenderness	Not Considered
Column Type	Structural
Capacity Method	Moment capacity

Materials

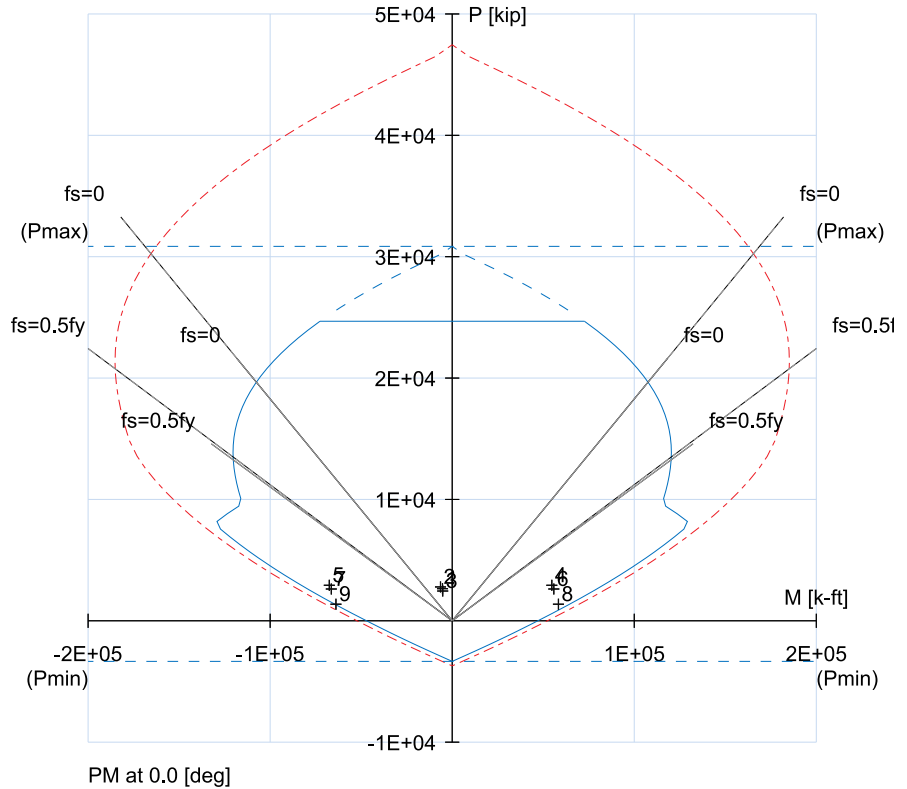
f'_c	8 ksi
E_c	5098.24 ksi
f_y	80 ksi
E_s	29000 ksi

Section

Type	Irregular
A_g	6480 in ²
I_x	174960 in ⁴
I_y	6.9984e+007 in ⁴

Reinforcement

Pattern	Irregular
Bar layout	---
Cover to	---
Clear cover	---
Bars	---
Confinement type	Tied
Total steel area, A_s	46.44 in ²
Rho	0.72 %
Min. clear spacing	5.45 in

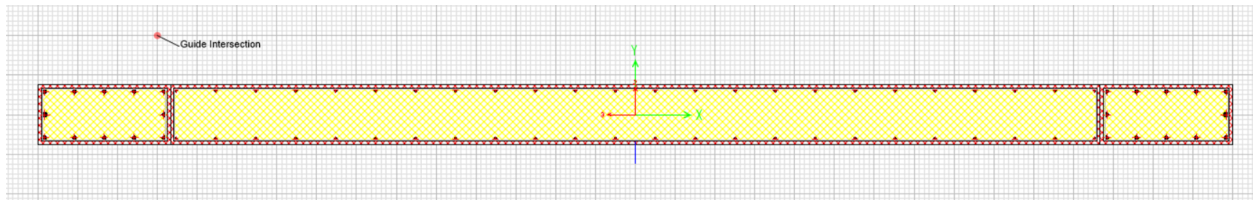


No.	P_u kip	M_{uy} k-ft	ϕP_n kip	ϕM_{ny} k-ft	Capacity Ratio
9	1366.1	-63859.8	1366.05	-64470.59	0.99
8	1366.1	58360.8	1366.05	64470.59	0.91
7	2619.6	-66398.4	2619.58	-79400.79	0.84
5	2925.8	-67500.9	2925.76	-82878.25	0.81
6	2619.6	55822.2	2619.58	79400.83	0.70
4	2925.8	54719.7	2925.76	82878.27	0.66
2	2789.6	-6425.5	2789.63	-81333.79	0.08
1	2647.4	-5328.5	2647.39	-79711.82	0.07
3	2452.8	-5212.7	2452.83	-77479.30	0.07

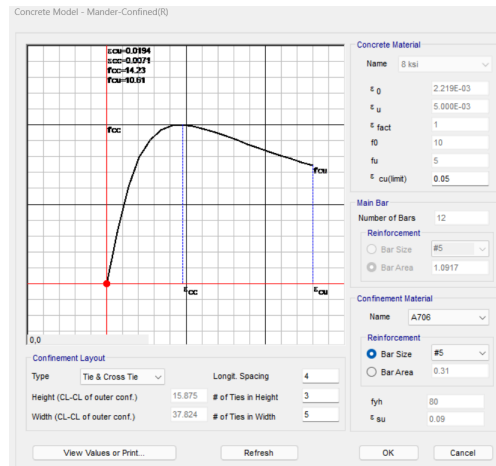
Max. Capacity Ratio: 0.99

SAP2000 Fiber Analysis

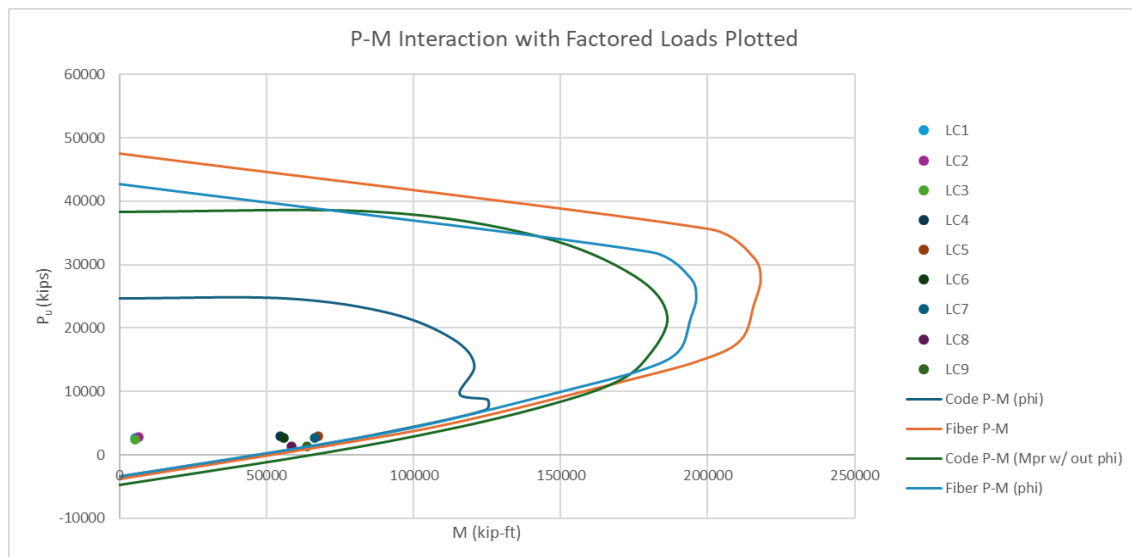
To better capture the P-M behavior of the reinforced concrete shear wall, a nonlinear fiber-section model was developed in SAP2000. Unlike conventional code-based interaction diagrams, which rely on simplified assumptions and sectional approximations, the fiber model explicitly accounts for nonlinear material behavior, strain compatibility, confinement effects, and the individual contribution of concrete and reinforcing steel fibers throughout the section.

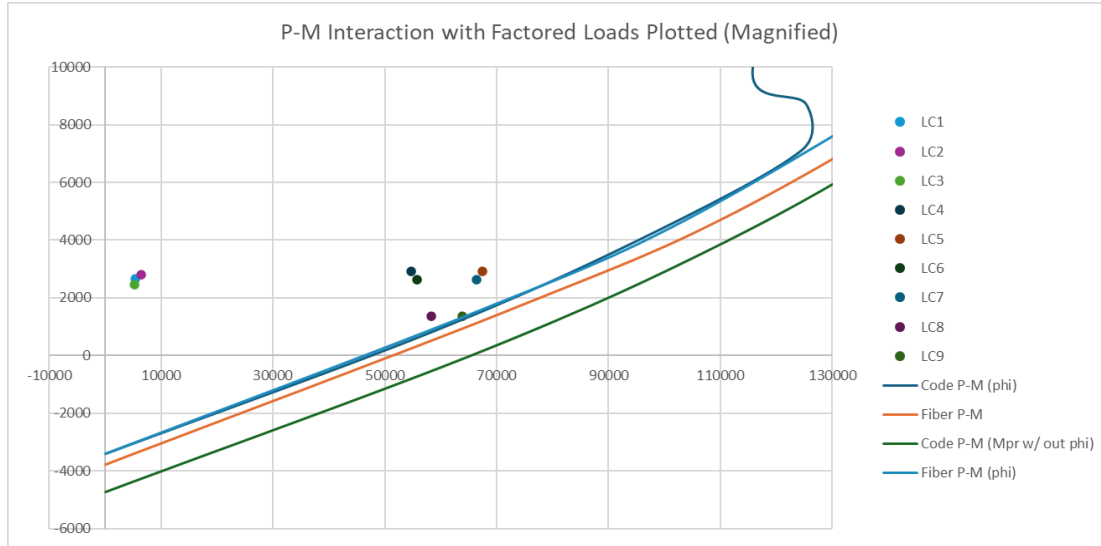


Fiber Model Cross Section



Boundary Element Confinement ($f_{cc}=14.22$ ksi)





The nonlinear fiber-section analysis produced a more refined P-M interaction response compared to the code-based interaction diagrams. The SAP2000 fiber model captured the nonlinear stress-strain behavior of the confined concrete and reinforcing steel, resulting in increased moment capacity at moderate-to-high axial load levels relative to the conventional ACI-based curves. Overall, the factored load combinations remained within the predicted strength envelopes, indicating adequate wall capacity under combined axial and flexural demands. The comparison also demonstrated that the code-based interaction diagrams provide a generally conservative estimate of strength, while the fiber model offers improved insight into the actual sectional behavior and redistribution of stresses within the wall boundary elements. The wall exhibits great performance with all load cases well below the balance point. Furthermore the capacity ratios for the governing load cases are pushing a DCR of 1.0.

SHEAR STRENGTH OF WALL

$V_u = 960.04$ kips
 $f'_c = 8000$ psi
 $A_{cv} = 6480$ in²
 $\lambda = 1$ normal weight concrete

$\alpha_c = 2$

$\Omega_v = 1.5$

$\omega_v = 1.24$

$\Omega_v \omega_v = 1.87$

$V_{uEH} = 1791.32$ kips

$V_n = 2388.42$ kips

$\alpha_{sh} = 1$

$V_{n,max} = 5795.888198$ k

$\rho_{t,req} = 0.00237$

$\rho_{t,min} = 0.0025$

$\rho_{t,gov} = 0.0025$

Bar Size #6

Spacing 10 in

$\rho_{t,selected} = 0.005867$

$\Phi V_n = 3150.34$ k

$$\alpha_v = \begin{cases} 3 & \frac{h_w}{\ell_w} \leq 1.5 \\ 2 & \frac{h_w}{\ell_w} \geq 2.0 \end{cases} \Rightarrow \alpha_v = 2 \text{ since } \frac{h_w}{\ell_w} = \frac{120'}{4'} = 4 \geq 2.0$$

$$V_{u,EH} = \Omega_v \omega_v V_u$$

$$V_n = \frac{V_{u,EH}}{\phi}, \quad \phi = 0.75$$

18.10.4.4 ACI 318-25

$$V_n \leq V_{n,max} = 10 \alpha_{sh} \sqrt{f'_c} A_{cv}$$

$$\rho_{t,req} = \frac{1}{f_y} \left(\frac{V_n}{A_{cv}} - \alpha_c \lambda \sqrt{f'_c} \right)$$

$$\rho_{t,gov} = \max(\rho_{t,req}, \rho_{t,min})$$

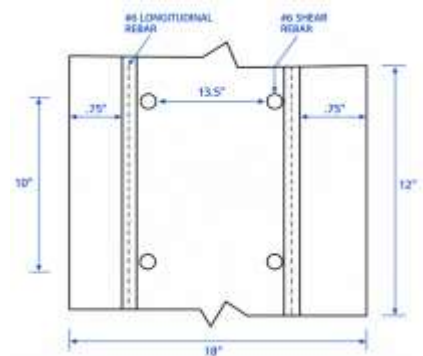
18.10.4.1 ACI 318-25

ACI 318-25: Table 18.10.3.3.3 – Wall Shear Amplification

Condition	Ω_v	ω_v
$h_{wcl}/\ell_w \leq 1.0$	1.0	1.0
$1.0 < h_{wcl}/\ell_w < 2.0$	Linear interpolation permitted between 1.0 and 1.5	
$h_{wcl}/\ell_w \geq 2.0$	1.5	$0.8 + 0.09 \Omega_v^{1/3} \geq 1.0$

$$\alpha_{sh} = 0.7 \left(1 + \frac{(0.6 - h_{wcl}) \ell_w}{\lambda_{wcl}} \right)^2, \quad 1.0 \leq \alpha_{sh} \leq 1.2$$

$$V_n = \left(\alpha_c \lambda \sqrt{f'_c} + \rho_t f_y \right) A_{cv}$$



18.10.2.4 Minimum longitudinal reinforcement ratio for $h_w/l_w \geq 2.0$

(a) longitudinal reinforcement ratio with $0.15l_w$ from the end of wall

check: $\rho_{\min} = 6 \cdot \sqrt{f'_c/f_y} = 0.006708$
 $\rho = 0.01408 > 0.006708$ O.K.

18.10.2.1 Minimum longitudinal & vertical reinforcement ratio in web

check: $\rho_l, \rho_t \geq 0.0025$
 $\rho_l = A_s / s \cdot t = 0.00407 > 0.0025$ O.K.
 $\rho_t = A_s / s \cdot t = 0.00488 > 0.0025$ O.K.

18.10.6.4 Boundary Element Checks

(a) minimum boundary element length

$c = 62.02$ in (SP Column Results)
check: $l_{be} \geq c - 0.1l_w \geq c/2$
 $l_{be} = 40$ in > 31.01 in O.K.

(b) Compression zone thickness requirement

check: $b \geq h_u/16$
 $b = 18$ in > 7.5 in O.K.

(c) Additional minimum thickness requirement for $h_w/l_w \geq 2.0$

check: $b \geq 12$ in O.K.

(e) Boundary transverse reinforcement

check: Spacing shall not exceed:

(a) $1/3 \cdot b$

(b) For Grade 80, $5 \cdot d_b$ of the smallest longitudinal bar

(c) $4 + [(14 - h_x) / 3]$

(d) 6in

$s_{max} = 5.64 \text{ in}$

$s = 4 \text{ in} < s_{max} \text{ O.K.}$

(f) Lateral support h_x and hoop overlap

check: $h_x \leq \min(14\text{in}, 2/3t)$

$h_x = 9\text{in} \text{ O.K.}$

hoop overlap $\geq \min(6\text{in}, 2 \cdot b/3)$

overlap = 19.9in $> 12 \text{ in} \text{ O.K.}$

(g) A_{sh} minimum

legs in x: (5) #5 $A_{sh1} = 1.55 \text{ in}^2$

legs in y: (3) #5 $A_{sh2} = 1.55 \text{ in}^2$

$A_{sh} / s \cdot b_c \geq \max[0.3(A_g/A_{ch} - 1)f'_c/f_{yt}, 0.09f'_c/f_{yt}]$

check: $A_{sh1,min} = 1.411052 \text{ in}^2 < 1.55 \text{ in}^2 \text{ O.K.}$

$A_{sh2,min} = 0.594 \text{ in}^2 < 0.93 \text{ in}^2 \text{ O.K.}$

DEVELOPMENT OF REINFORCEMENT

λ	1.0	
d_b	0.75 in	#6 bar
$1.25f_y$	100000 psi	ACI 18.10.2.3(b)
ψ_t	1.0	
ψ_e	1.0	
ψ_g	1.15	
s	14.25 in	
clear cover	1.875 in	
K_{tr}	0	
c_b	1.875 in	
l_{d1}	38.6 in	ACI Table 25.4.2.3
l_{d2}	28.9 in	ACI 25.4.2.4a
l_d	38.6 in	ACI 25.4.2.1

Table 25.4.2.3—Development length for deformed bars and deformed wires in tension

Spacing and cover	No. 6 and smaller bars and deformed wires	No. 7 and larger bars
Clear spacing of bars or wires being developed or lap spliced not less than d_b , clear cover at least d_b , and stirrups or ties throughout ℓ_d not less than the Code minimum or Clear spacing of bars or wires being developed or lap spliced at least $2d_b$ and clear cover at least d_b	$\left(\frac{f_y \psi_t \psi_e \psi_g}{25 \lambda \sqrt{f'_c}} \right) d_b$	$\left(\frac{f_y \psi_t \psi_e \psi_g}{20 \lambda \sqrt{f'_c}} \right) d_b$
Other cases	$\left(\frac{3 f_y \psi_t \psi_e \psi_g}{50 \lambda \sqrt{f'_c}} \right) d_b$	$\left(\frac{3 f_y \psi_t \psi_e \psi_g}{40 \lambda \sqrt{f'_c}} \right) d_b$

25.4.2.4 For deformed bars or deformed wires, ℓ_d shall be calculated by:

$$\ell_d = \left(\frac{3}{40} \frac{f_y}{\lambda \sqrt{f'_c}} \frac{\psi_t \psi_e \psi_s \psi_g}{\left(\frac{c_b + K_{tr}}{d_b} \right)} \right) d_b \quad (25.4.2.4a)$$

in which the confinement term $(c_b + K_{tr})/d_b$ shall not exceed 2.5, and

$$K_{tr} = \frac{40 A_{tr}}{sn} \quad (25.4.2.4b)$$

where n is the number of bars or wires being developed or lap spliced along the plane of splitting. It shall be permitted to use $K_{tr} = 0$ as a design simplification even if transverse reinforcement is present or required.

Table 25.4.2.5—Modification factors for development of deformed bars and deformed wires in tension

Modification factor	Condition	Value of factor
Lightweight λ	Lightweight concrete	0.75
	Normalweight concrete	1.0
Reinforcement grade ψ_g	Grade 40 or Grade 60	1.0
	Grade 80	1.15
	Grade 100	1.3
Epoxy ⁽¹⁾ ψ_e	Epoxy-coated or zinc and epoxy dual-coated reinforcement with clear cover less than $3d_b$ or clear spacing less than $6d_b$	1.5
	Epoxy-coated or zinc and epoxy dual-coated reinforcement for all other conditions	1.2
	Uncoated or zinc-coated (galvanized) reinforcement	1.0
Size ψ_s	No. 7 and larger bars	1.0
	No. 6 and smaller bars and deformed wires	0.8
Casting position ⁽¹⁾ ψ_t	More than 12 in. of fresh concrete placed below horizontal reinforcement	1.3
	Other	1.0

⁽¹⁾The product $\psi_e \psi_s$ need not exceed 1.7.

Loads and Applied Forces



RAM Frame 25.00.02.42
DataBase: sw 8fc col 6fc

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LOAD CASE: ELF

Seismic ASCE 7-22 Equivalent Lateral Force

Cs Cal. Method Used: 2

Importance Factor: 1.00 TL: 8.00 s

Site Class: C - Very Dense Sand and Hard Clay

S1: 0.430 g

SMS: 1.330 g SM1: 0.600 g

SDs: 0.887 g SD1: 0.400 g

Risk Category: II Seismic Design Category: D

Provisions for: Force

Ground Level: Base

Dir	Eccent	R	Ta Equation		Building Period-T				
X	+ And -	6.00	Std,Ct=0.020,x=0.75		Calculated				
Y	+ And -	6.00	Std,Ct=0.020,x=0.75		Calculated				
Dir	Ta	Cu	T	T-used	Cs	Cs(max)	Cs(min)	Cs-used	k
					Eq. 12.8-3	Eq. 12.8-4	Eq. 12.8-6		
X	0.725	1.400	1.530	1.015	0.148	0.066	0.039	0.066	1.258
Y	0.725	1.400	1.530	1.015	0.148	0.066	0.039	0.066	1.258

Total Building Weight (kips) = 26091.96

APPLIED DIAPHRAGM FORCES

Type: EQ_ASCE722_X_+E_F

Level	Diaph.#	Ht ft	Fx kips	Fy kips	X ft	Y ft
12th	1	120.00	412.15	0.00	51.00	76.18
11th	1	110.00	241.89	0.00	51.00	76.77
10th	1	100.00	214.57	0.00	51.00	76.77
9th	1	90.00	187.94	0.00	51.00	76.77
8th	1	80.00	162.07	0.00	51.00	76.77
7th	1	70.00	137.01	0.00	51.00	76.77
6th	1	60.00	112.87	0.00	51.00	76.77
5th	1	50.00	89.74	0.00	51.00	76.77
4th	1	40.00	67.78	0.00	51.00	76.77
3rd	1	30.00	47.21	0.00	51.00	76.77
2nd	1	20.00	28.35	0.00	51.00	76.77
1st	1	10.00	11.86	0.00	51.00	76.77

APPLIED STORY FORCES



Loads and Applied Forces

Type: EQ_ASCE722_X_+E_F

Level	Ht ft	Fx kips	Fy kips
12th	120.00	412.15	0.00
11th	110.00	241.89	0.00
10th	100.00	214.57	0.00
9th	90.00	187.94	0.00
8th	80.00	162.07	0.00
7th	70.00	137.01	0.00
6th	60.00	112.87	0.00
5th	50.00	89.74	0.00
4th	40.00	67.78	0.00
3rd	30.00	47.21	0.00
2nd	20.00	28.35	0.00
1st	10.00	11.86	0.00

1713.45

0.00

APPLIED DIAPHRAGM FORCES

Type: EQ_ASCE722_X_-E_F

Level	Diaph.#	Ht ft	Fx kips	Fy kips	X ft	Y ft
12th	1	120.00	412.15	0.00	51.00	62.38
11th	1	110.00	241.89	0.00	51.00	62.97
10th	1	100.00	214.57	0.00	51.00	62.97
9th	1	90.00	187.94	0.00	51.00	62.97
8th	1	80.00	162.07	0.00	51.00	62.97
7th	1	70.00	137.01	0.00	51.00	62.97
6th	1	60.00	112.87	0.00	51.00	62.97
5th	1	50.00	89.74	0.00	51.00	62.97
4th	1	40.00	67.78	0.00	51.00	62.97
3rd	1	30.00	47.21	0.00	51.00	62.97
2nd	1	20.00	28.35	0.00	51.00	62.97
1st	1	10.00	11.86	0.00	51.00	62.97

APPLIED STORY FORCES

Type: EQ_ASCE722_X_-E_F

Level	Ht ft	Fx kips	Fy kips
12th	120.00	412.15	0.00

Loads and Applied Forces



RAM Frame 25.00.02.42
DataBase: sw 8fc col 6fc

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11th	110.00	241.89	0.00
10th	100.00	214.57	0.00
9th	90.00	187.94	0.00
8th	80.00	162.07	0.00
7th	70.00	137.01	0.00
6th	60.00	112.87	0.00
5th	50.00	89.74	0.00
4th	40.00	67.78	0.00
3rd	30.00	47.21	0.00
2nd	20.00	28.35	0.00
1st	10.00	11.86	0.00
1713.45			0.00

APPLIED DIAPHRAGM FORCES

Type: EQ_ASCE722_Y_+E_F

Level	Diaph.#	Ht ft	Fx kips	Fy kips	X ft	Y ft
12th	1	120.00	0.00	412.15	56.10	69.28
11th	1	110.00	0.00	241.89	56.10	69.87
10th	1	100.00	0.00	214.57	56.10	69.87
9th	1	90.00	0.00	187.94	56.10	69.87
8th	1	80.00	0.00	162.07	56.10	69.87
7th	1	70.00	0.00	137.01	56.10	69.87
6th	1	60.00	0.00	112.87	56.10	69.87
5th	1	50.00	0.00	89.74	56.10	69.87
4th	1	40.00	0.00	67.78	56.10	69.87
3rd	1	30.00	0.00	47.21	56.10	69.87
2nd	1	20.00	0.00	28.35	56.10	69.87
1st	1	10.00	0.00	11.86	56.10	69.87

APPLIED STORY FORCES

Type: EQ_ASCE722_Y_+E_F

Level	Ht ft	Fx kips	Fy kips
12th	120.00	0.00	412.15
11th	110.00	0.00	241.89
10th	100.00	0.00	214.57
9th	90.00	0.00	187.94



Loads and Applied Forces

8th	80.00	0.00	162.07
7th	70.00	0.00	137.01
6th	60.00	0.00	112.87
5th	50.00	0.00	89.74
4th	40.00	0.00	67.78
3rd	30.00	0.00	47.21
2nd	20.00	0.00	28.35
1st	10.00	0.00	11.86

0.00 1713.45

APPLIED DIAPHRAGM FORCES

Type: EQ_ASCE722_Y_-E_F

Level	Diaph.#	Ht ft	Fx kips	Fy kips	X ft	Y ft
12th	1	120.00	0.00	412.15	45.90	69.28
11th	1	110.00	0.00	241.89	45.90	69.87
10th	1	100.00	0.00	214.57	45.90	69.87
9th	1	90.00	0.00	187.94	45.90	69.87
8th	1	80.00	0.00	162.07	45.90	69.87
7th	1	70.00	0.00	137.01	45.90	69.87
6th	1	60.00	0.00	112.87	45.90	69.87
5th	1	50.00	0.00	89.74	45.90	69.87
4th	1	40.00	0.00	67.78	45.90	69.87
3rd	1	30.00	0.00	47.21	45.90	69.87
2nd	1	20.00	0.00	28.35	45.90	69.87
1st	1	10.00	0.00	11.86	45.90	69.87

APPLIED STORY FORCES

Type: EQ_ASCE722_Y_-E_F

Level	Ht ft	Fx kips	Fy kips
12th	120.00	0.00	412.15
11th	110.00	0.00	241.89
10th	100.00	0.00	214.57
9th	90.00	0.00	187.94
8th	80.00	0.00	162.07
7th	70.00	0.00	137.01
6th	60.00	0.00	112.87

Loads and Applied Forces



RAM Frame 25.00.02.42
DataBase: sw 8fc col 6fc

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5th	50.00	0.00	89.74
4th	40.00	0.00	67.78
3rd	30.00	0.00	47.21
2nd	20.00	0.00	28.35
1st	10.00	0.00	11.86

0.00	1713.45
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Loads and Applied Forces

RAM Frame 25.00.02.42
DataBase: sw 8fc col 6fc

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LOAD CASE: RSA Seed

Dynamic Response Spectra for ASCE 7-22
Damping Ratio: 0.050
Scale Factors (X-Dir): +Ecc Case: 1.0000 -Ecc Case: 1.0000
Scale Factors (Y-Dir): +Ecc Case: 1.0000 -Ecc Case: 1.0000
Design Spectral Acceleration Parameters: Two-Period Design Response Spectrum
Site Class : C - Very Dense Sand and Hard Clay
SMS : 1.330 SM1 : 0.600
SDS : 0.887 SD1: 0.400
To : 0.090 sec Ts : 0.451 sec TL : 8.000 sec
Modal Combination Technique: CQC
Ground Level: Base
Dir Eccent
X + And -
Y + And -

DIRECTION

Type: Dyn_ASCE722_CQC_X_+E
Type: Dyn_ASCE722_CQC_X_-E
Type: Dyn_ASCE722_CQC_Y_+E
Type: Dyn_ASCE722_CQC_Y_-E

GENERATED RESPONSE SPECTRA CURVE

Period	Spectral Acceleration (S(T))
0.0000(To)	0.3547 g
0.0902(To)	0.8867 g
0.4511(Ts)	0.8867 g
0.4511 < T < 8.0000 (TL)	0.4000 g/T
T > 8.0000	3.2000 g/(T*T)



Loads and Applied Forces

RAM Frame 25.00.02.42
DataBase: sw 8fc col 6fc

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LOAD CASE: RSA Drift

Dynamic

Response Spectra for ASCE 7-22

Damping Ratio:

0.050

Scale Factors (X-Dir):

+Ecc Case: 0.8330 -Ecc Case: 0.8330

Scale Factors (Y-Dir):

+Ecc Case: 0.8330 -Ecc Case: 0.8330

Design Spectral Acceleration Parameters: Two-Period Design Response Spectrum

Site Class : C - Very Dense Sand and Hard Clay

SMS : 1.330

SM1 : 0.600

SDS : 0.887

SD1: 0.400

To : 0.090 sec

Ts : 0.451 sec

TL : 8.000 sec

Modal Combination Technique: CQC

Ground Level:

Base

Dir

Eccent

X

+ And -

Y

+ And -

DIRECTION

Type: Dyn_ASCE722_CQC_X_+E

Type: Dyn_ASCE722_CQC_X_-E

Type: Dyn_ASCE722_CQC_Y_+E

Type: Dyn_ASCE722_CQC_Y_-E

GENERATED RESPONSE SPECTRA CURVE

Period	Spectral Acceleration (S(T))
0.0000(To)	0.3547 g
0.0902(To)	0.8867 g
0.4511(Ts)	0.8867 g
0.4511 < T < 8.0000 (TL)	0.4000 g/T
T > 8.0000	3.2000 g/(T*T)



CRITERIA:

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

LOAD CASE DEFINITIONS:

D	DeadLoad	RAMUSER
Lp	PosLiveLoad	RAMUSER
Rfp	PosRoofLiveLoad	RAMUSER
Dyn1	RSA Drift	Dyn_ASCE722_CQC_X_+E
Dyn2	RSA Drift	Dyn_ASCE722_CQC_X_-E
Dyn3	RSA Drift	Dyn_ASCE722_CQC_Y_+E
Dyn4	RSA Drift	Dyn_ASCE722_CQC_Y_-E

RESULTS:

Location (ft): (0.000, 0.000)

Story	LdC	Displacement		Story Drift		Drift Ratio	
		X in	Y in	X in	Y in	X	Y
12th	D	-0.1813	0.0006	-0.0233	-0.0002	0.0002	0.0000
	Lp	-0.0516	0.0022	-0.0062	0.0003	0.0001	0.0000
	Rfp	-0.0030	-0.0005	-0.0005	-0.0001	0.0000	0.0000
	Dyn1	6.1863	0.7261	0.7131	0.0834	0.0059	0.0007
	Dyn2	7.8088	-0.7019	0.9005	-0.0807	0.0075	0.0007
	Dyn3	0.7288	6.5965	0.0838	0.7604	0.0007	0.0063
	Dyn4	-0.7289	7.4863	-0.0838	0.8631	0.0007	0.0072
11th	D	-0.1580	0.0008	-0.0226	0.0000	0.0002	0.0000
	Lp	-0.0454	0.0019	-0.0062	0.0003	0.0001	0.0000
	Rfp	-0.0025	-0.0004	-0.0004	-0.0001	0.0000	0.0000
	Dyn1	5.4821	0.6436	0.7130	0.0834	0.0059	0.0007
	Dyn2	6.9199	-0.6221	0.9004	-0.0807	0.0075	0.0007
	Dyn3	0.6460	5.8458	0.0838	0.7603	0.0007	0.0063
	Dyn4	-0.6460	6.6343	-0.0838	0.8630	0.0007	0.0072
10th	D	-0.1354	0.0008	-0.0218	0.0000	0.0002	0.0000
	Lp	-0.0391	0.0016	-0.0061	0.0003	0.0001	0.0000
	Rfp	-0.0021	-0.0003	-0.0004	-0.0001	0.0000	0.0000
	Dyn1	4.7803	0.5614	0.7045	0.0825	0.0059	0.0007



Drift

9th	Dyn2	6.0340	-0.5425	0.8896	-0.0798	0.0074	0.0007
	Dyn3	0.5634	5.0974	0.0828	0.7513	0.0007	0.0063
	Dyn4	-0.5634	5.7851	-0.0828	0.8527	0.0007	0.0071
	D	-0.1136	0.0007	-0.0207	0.0001	0.0002	0.0000
	Lp	-0.0331	0.0013	-0.0059	0.0002	0.0000	0.0000
	Rfp	-0.0017	-0.0003	-0.0003	-0.0001	0.0000	0.0000
	Dyn1	4.0881	0.4803	0.6860	0.0804	0.0057	0.0007
	Dyn2	5.1603	-0.4639	0.8661	-0.0777	0.0072	0.0006
8th	Dyn3	0.4819	4.3594	0.0807	0.7315	0.0007	0.0061
	Dyn4	-0.4819	4.9475	-0.0807	0.8303	0.0007	0.0069
	D	-0.0929	0.0007	-0.0193	0.0001	0.0002	0.0000
	Lp	-0.0272	0.0011	-0.0055	0.0002	0.0000	0.0000
	Rfp	-0.0013	-0.0002	-0.0003	-0.0000	0.0000	0.0000
	Dyn1	3.4142	0.4012	0.6570	0.0771	0.0055	0.0006
	Dyn2	4.3099	-0.3874	0.8294	-0.0745	0.0069	0.0006
	Dyn3	0.4024	3.6409	0.0774	0.7006	0.0006	0.0058
7th	Dyn4	-0.4024	4.1322	-0.0774	0.7951	0.0006	0.0066
	D	-0.0736	0.0006	-0.0177	0.0001	0.0001	0.0000
	Lp	-0.0217	0.0009	-0.0051	0.0002	0.0000	0.0000
	Rfp	-0.0010	-0.0002	-0.0003	-0.0000	0.0000	0.0000
	Dyn1	2.7682	0.3253	0.6172	0.0725	0.0051	0.0006
	Dyn2	3.4947	-0.3140	0.7790	-0.0700	0.0065	0.0006
	Dyn3	0.3262	2.9522	0.0727	0.6581	0.0006	0.0055
	Dyn4	-0.3262	3.3507	-0.0727	0.7469	0.0006	0.0062
6th	D	-0.0559	0.0005	-0.0158	0.0001	0.0001	0.0000
	Lp	-0.0166	0.0007	-0.0046	0.0002	0.0000	0.0000
	Rfp	-0.0007	-0.0001	-0.0002	-0.0000	0.0000	0.0000
	Dyn1	2.1602	0.2538	0.5662	0.0665	0.0047	0.0006
	Dyn2	2.7274	-0.2449	0.7147	-0.0642	0.0060	0.0005
	Dyn3	0.2545	2.3038	0.0667	0.6038	0.0006	0.0050
	Dyn4	-0.2545	2.6150	-0.0667	0.6853	0.0006	0.0057
5th	D	-0.0401	0.0004	-0.0136	0.0001	0.0001	0.0000
	Lp	-0.0120	0.0005	-0.0040	0.0002	0.0000	0.0000
	Rfp	-0.0005	-0.0001	-0.0002	-0.0000	0.0000	0.0000
	Dyn1	1.6009	0.1881	0.5036	0.0592	0.0042	0.0005
	Dyn2	2.0216	-0.1814	0.6357	-0.0571	0.0053	0.0005
	Dyn3	0.1885	1.7075	0.0593	0.5370	0.0005	0.0045



Drift

	Dyn4	-0.1885	1.9383	-0.0593	0.6095	0.0005	0.0051
4th	D	-0.0266	0.0003	-0.0111	0.0001	0.0001	0.0000
	Lp	-0.0080	0.0003	-0.0033	0.0001	0.0000	0.0000
	Rfp	-0.0003	-0.0000	-0.0001	-0.0000	0.0000	0.0000
	Dyn1	1.1022	0.1295	0.4281	0.0503	0.0036	0.0004
	Dyn2	1.3922	-0.1247	0.5406	-0.0485	0.0045	0.0004
	Dyn3	0.1297	1.1757	0.0504	0.4566	0.0004	0.0038
	Dyn4	-0.1297	1.3348	-0.0504	0.5183	0.0004	0.0043
3rd	D	-0.0155	0.0002	-0.0083	0.0001	0.0001	0.0000
	Lp	-0.0047	0.0002	-0.0025	0.0001	0.0000	0.0000
	Rfp	-0.0002	-0.0000	-0.0001	-0.0000	0.0000	0.0000
	Dyn1	0.6772	0.0795	0.3385	0.0398	0.0028	0.0003
	Dyn2	0.8557	-0.0765	0.4276	-0.0383	0.0036	0.0003
	Dyn3	0.0796	0.7225	0.0398	0.3611	0.0003	0.0030
	Dyn4	-0.0796	0.8204	-0.0398	0.4099	0.0003	0.0034
2nd	D	-0.0072	0.0001	-0.0053	0.0001	0.0000	0.0000
	Lp	-0.0022	0.0001	-0.0016	0.0001	0.0000	0.0000
	Rfp	-0.0001	-0.0000	-0.0001	-0.0000	0.0000	0.0000
	Dyn1	0.3406	0.0399	0.2330	0.0273	0.0019	0.0002
	Dyn2	0.4306	-0.0384	0.2945	-0.0263	0.0025	0.0002
	Dyn3	0.0399	0.3635	0.0274	0.2486	0.0002	0.0021
	Dyn4	-0.0399	0.4128	-0.0274	0.2823	0.0002	0.0024
1st	D	-0.0019	0.0000	-0.0019	0.0000	0.0000	0.0000
	Lp	-0.0006	0.0000	-0.0006	0.0000	0.0000	0.0000
	Rfp	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000
	Dyn1	0.1087	0.0127	0.1087	0.0127	0.0009	0.0001
	Dyn2	0.1375	-0.0122	0.1375	-0.0122	0.0011	0.0001
	Dyn3	0.0127	0.1160	0.0127	0.1160	0.0001	0.0010
	Dyn4	-0.0127	0.1318	-0.0127	0.1318	0.0001	0.0011

Location (ft): (51.000, 0.000)

Story	LdC	Displacement		Story Drift		Drift Ratio	
		X	Y	X	Y	X	Y
		in	in	in	in		
12th	D	-0.1813	-0.1044	-0.0233	-0.0137	0.0002	0.0001
	Lp	-0.0516	-0.0277	-0.0062	-0.0033	0.0001	0.0000
	Rfp	-0.0030	-0.0022	-0.0005	-0.0004	0.0000	0.0000
	Dyn1	6.1863	-0.0000	0.7131	-0.0000	0.0059	0.0000



Drift

11th	Dyn2	7.8088	0.0000	0.9005	0.0000	0.0075	0.0000
	Dyn3	0.7288	7.0353	0.0838	0.8111	0.0007	0.0068
	Dyn4	-0.7289	7.0353	-0.0838	0.8111	0.0007	0.0068
	D	-0.1580	-0.0907	-0.0226	-0.0131	0.0002	0.0001
	Lp	-0.0454	-0.0244	-0.0062	-0.0033	0.0001	0.0000
	Rfp	-0.0025	-0.0018	-0.0004	-0.0003	0.0000	0.0000
	Dyn1	5.4821	-0.0000	0.7130	-0.0000	0.0059	0.0000
	Dyn2	6.9199	0.0000	0.9004	0.0000	0.0075	0.0000
10th	Dyn3	0.6460	6.2346	0.0838	0.8110	0.0007	0.0068
	Dyn4	-0.6460	6.2346	-0.0838	0.8110	0.0007	0.0068
	D	-0.1354	-0.0776	-0.0218	-0.0126	0.0002	0.0001
	Lp	-0.0391	-0.0211	-0.0061	-0.0033	0.0001	0.0000
	Rfp	-0.0021	-0.0015	-0.0004	-0.0003	0.0000	0.0000
	Dyn1	4.7803	-0.0000	0.7045	-0.0000	0.0059	0.0000
	Dyn2	6.0340	0.0000	0.8896	0.0000	0.0074	0.0000
	Dyn3	0.5634	5.4365	0.0828	0.8013	0.0007	0.0067
9th	Dyn4	-0.5634	5.4365	-0.0828	0.8013	0.0007	0.0067
	D	-0.1136	-0.0650	-0.0207	-0.0119	0.0002	0.0001
	Lp	-0.0331	-0.0178	-0.0059	-0.0031	0.0000	0.0000
	Rfp	-0.0017	-0.0012	-0.0003	-0.0003	0.0000	0.0000
	Dyn1	4.0881	-0.0000	0.6860	-0.0000	0.0057	0.0000
	Dyn2	5.1603	0.0000	0.8661	0.0000	0.0072	0.0000
	Dyn3	0.4819	4.6494	0.0807	0.7803	0.0007	0.0065
	Dyn4	-0.4819	4.6494	-0.0807	0.7803	0.0007	0.0065
8th	D	-0.0929	-0.0531	-0.0193	-0.0111	0.0002	0.0001
	Lp	-0.0272	-0.0147	-0.0055	-0.0030	0.0000	0.0000
	Rfp	-0.0013	-0.0009	-0.0003	-0.0002	0.0000	0.0000
	Dyn1	3.4142	-0.0000	0.6570	-0.0000	0.0055	0.0000
	Dyn2	4.3099	0.0000	0.8294	0.0000	0.0069	0.0000
	Dyn3	0.4024	3.8832	0.0774	0.7472	0.0006	0.0062
	Dyn4	-0.4024	3.8832	-0.0774	0.7472	0.0006	0.0062
7th	D	-0.0736	-0.0420	-0.0177	-0.0101	0.0001	0.0001
	Lp	-0.0217	-0.0117	-0.0051	-0.0028	0.0000	0.0000
	Rfp	-0.0010	-0.0007	-0.0003	-0.0002	0.0000	0.0000
	Dyn1	2.7682	-0.0000	0.6172	-0.0000	0.0051	0.0000
	Dyn2	3.4947	0.0000	0.7790	0.0000	0.0065	0.0000
	Dyn3	0.3262	3.1487	0.0727	0.7019	0.0006	0.0058



Drift

	Dyn4	-0.3262	3.1487	-0.0727	0.7019	0.0006	0.0058
6th	D	-0.0559	-0.0318	-0.0158	-0.0090	0.0001	0.0001
	Lp	-0.0166	-0.0089	-0.0046	-0.0025	0.0000	0.0000
	Rfp	-0.0007	-0.0005	-0.0002	-0.0002	0.0000	0.0000
	Dyn1	2.1602	-0.0000	0.5662	-0.0000	0.0047	0.0000
	Dyn2	2.7274	0.0000	0.7147	0.0000	0.0060	0.0000
	Dyn3	0.2545	2.4573	0.0667	0.6440	0.0006	0.0054
	Dyn4	-0.2545	2.4573	-0.0667	0.6440	0.0006	0.0054
5th	D	-0.0401	-0.0228	-0.0136	-0.0077	0.0001	0.0001
	Lp	-0.0120	-0.0064	-0.0040	-0.0022	0.0000	0.0000
	Rfp	-0.0005	-0.0004	-0.0002	-0.0001	0.0000	0.0000
	Dyn1	1.6009	-0.0000	0.5036	-0.0000	0.0042	0.0000
	Dyn2	2.0216	0.0000	0.6357	0.0000	0.0053	0.0000
	Dyn3	0.1885	1.8213	0.0593	0.5728	0.0005	0.0048
	Dyn4	-0.1885	1.8213	-0.0593	0.5728	0.0005	0.0048
4th	D	-0.0266	-0.0151	-0.0111	-0.0063	0.0001	0.0001
	Lp	-0.0080	-0.0043	-0.0033	-0.0018	0.0000	0.0000
	Rfp	-0.0003	-0.0002	-0.0001	-0.0001	0.0000	0.0000
	Dyn1	1.1022	-0.0000	0.4281	-0.0000	0.0036	0.0000
	Dyn2	1.3922	0.0000	0.5406	0.0000	0.0045	0.0000
	Dyn3	0.1297	1.2542	0.0504	0.4870	0.0004	0.0041
	Dyn4	-0.1297	1.2542	-0.0504	0.4870	0.0004	0.0041
3rd	D	-0.0155	-0.0087	-0.0083	-0.0047	0.0001	0.0000
	Lp	-0.0047	-0.0025	-0.0025	-0.0013	0.0000	0.0000
	Rfp	-0.0002	-0.0001	-0.0001	-0.0001	0.0000	0.0000
	Dyn1	0.6772	-0.0000	0.3385	-0.0000	0.0028	0.0000
	Dyn2	0.8557	0.0000	0.4276	0.0000	0.0036	0.0000
	Dyn3	0.0796	0.7708	0.0398	0.3852	0.0003	0.0032
	Dyn4	-0.0796	0.7708	-0.0398	0.3852	0.0003	0.0032
2nd	D	-0.0072	-0.0040	-0.0053	-0.0030	0.0000	0.0000
	Lp	-0.0022	-0.0012	-0.0016	-0.0009	0.0000	0.0000
	Rfp	-0.0001	-0.0001	-0.0001	-0.0000	0.0000	0.0000
	Dyn1	0.3406	-0.0000	0.2330	-0.0000	0.0019	0.0000
	Dyn2	0.4306	0.0000	0.2945	0.0000	0.0025	0.0000
	Dyn3	0.0399	0.3878	0.0274	0.2652	0.0002	0.0022
	Dyn4	-0.0399	0.3878	-0.0274	0.2652	0.0002	0.0022
1st	D	-0.0019	-0.0010	-0.0019	-0.0010	0.0000	0.0000



Drift

Lp	-0.0006	-0.0003	-0.0006	-0.0003	0.0000	0.0000
Rfp	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000
Dyn1	0.1087	-0.0000	0.1087	-0.0000	0.0009	0.0000
Dyn2	0.1375	0.0000	0.1375	0.0000	0.0011	0.0000
Dyn3	0.0127	0.1238	0.0127	0.1238	0.0001	0.0010
Dyn4	-0.0127	0.1238	-0.0127	0.1238	0.0001	0.0010

Location (ft): (102.000, 0.000)

Story	LdC	Displacement		Story Drift		Drift Ratio	
		X	Y	X	Y	X	Y
		in	in	in	in		
12th	D	-0.1813	-0.2094	-0.0233	-0.0272	0.0002	0.0002
	Lp	-0.0516	-0.0576	-0.0062	-0.0069	0.0001	0.0001
	Rfp	-0.0030	-0.0039	-0.0005	-0.0007	0.0000	0.0000
	Dyn1	6.1863	-0.7261	0.7131	-0.0834	0.0059	0.0007
	Dyn2	7.8088	0.7019	0.9005	0.0807	0.0075	0.0007
	Dyn3	0.7288	7.4863	0.0838	0.8631	0.0007	0.0072
	Dyn4	-0.7289	6.5965	-0.0838	0.7604	0.0007	0.0063
11th	D	-0.1580	-0.1822	-0.0226	-0.0262	0.0002	0.0002
	Lp	-0.0454	-0.0507	-0.0062	-0.0069	0.0001	0.0001
	Rfp	-0.0025	-0.0032	-0.0004	-0.0006	0.0000	0.0000
	Dyn1	5.4821	-0.6436	0.7130	-0.0834	0.0059	0.0007
	Dyn2	6.9199	0.6221	0.9004	0.0807	0.0075	0.0007
	Dyn3	0.6460	6.6343	0.0838	0.8630	0.0007	0.0072
	Dyn4	-0.6460	5.8457	-0.0838	0.7603	0.0007	0.0063
10th	D	-0.1354	-0.1559	-0.0218	-0.0252	0.0002	0.0002
	Lp	-0.0391	-0.0438	-0.0061	-0.0068	0.0001	0.0001
	Rfp	-0.0021	-0.0027	-0.0004	-0.0005	0.0000	0.0000
	Dyn1	4.7803	-0.5614	0.7045	-0.0825	0.0059	0.0007
	Dyn2	6.0340	0.5425	0.8896	0.0798	0.0074	0.0007
	Dyn3	0.5634	5.7851	0.0828	0.8527	0.0007	0.0071
	Dyn4	-0.5634	5.0974	-0.0828	0.7513	0.0007	0.0063
9th	D	-0.1136	-0.1307	-0.0207	-0.0239	0.0002	0.0002
	Lp	-0.0331	-0.0370	-0.0059	-0.0065	0.0000	0.0001
	Rfp	-0.0017	-0.0021	-0.0003	-0.0005	0.0000	0.0000
	Dyn1	4.0881	-0.4803	0.6860	-0.0804	0.0057	0.0007
	Dyn2	5.1603	0.4639	0.8661	0.0777	0.0072	0.0006
	Dyn3	0.4819	4.9475	0.0807	0.8303	0.0007	0.0069



Drift

	Dyn4	-0.4819	4.3594	-0.0807	0.7315	0.0007	0.0061
8th	D	-0.0929	-0.1068	-0.0193	-0.0223	0.0002	0.0002
	Lp	-0.0272	-0.0304	-0.0055	-0.0062	0.0000	0.0001
	Rfp	-0.0013	-0.0017	-0.0003	-0.0004	0.0000	0.0000
	Dyn1	3.4142	-0.4012	0.6570	-0.0771	0.0055	0.0006
	Dyn2	4.3099	0.3874	0.8294	0.0745	0.0069	0.0006
	Dyn3	0.4024	4.1322	0.0774	0.7951	0.0006	0.0066
	Dyn4	-0.4024	3.6409	-0.0774	0.7006	0.0006	0.0058
7th	D	-0.0736	-0.0845	-0.0177	-0.0204	0.0001	0.0002
	Lp	-0.0217	-0.0242	-0.0051	-0.0057	0.0000	0.0000
	Rfp	-0.0010	-0.0013	-0.0003	-0.0003	0.0000	0.0000
	Dyn1	2.7682	-0.3253	0.6172	-0.0725	0.0051	0.0006
	Dyn2	3.4947	0.3140	0.7790	0.0700	0.0065	0.0006
	Dyn3	0.3262	3.3507	0.0727	0.7469	0.0006	0.0062
	Dyn4	-0.3262	2.9521	-0.0727	0.6581	0.0006	0.0055
6th	D	-0.0559	-0.0642	-0.0158	-0.0181	0.0001	0.0002
	Lp	-0.0166	-0.0185	-0.0046	-0.0052	0.0000	0.0000
	Rfp	-0.0007	-0.0010	-0.0002	-0.0003	0.0000	0.0000
	Dyn1	2.1602	-0.2538	0.5662	-0.0665	0.0047	0.0006
	Dyn2	2.7274	0.2449	0.7147	0.0642	0.0060	0.0005
	Dyn3	0.2545	2.6150	0.0667	0.6853	0.0006	0.0057
	Dyn4	-0.2545	2.3038	-0.0667	0.6038	0.0006	0.0050
5th	D	-0.0401	-0.0460	-0.0136	-0.0156	0.0001	0.0001
	Lp	-0.0120	-0.0134	-0.0040	-0.0045	0.0000	0.0000
	Rfp	-0.0005	-0.0007	-0.0002	-0.0002	0.0000	0.0000
	Dyn1	1.6009	-0.1881	0.5036	-0.0592	0.0042	0.0005
	Dyn2	2.0216	0.1814	0.6357	0.0571	0.0053	0.0005
	Dyn3	0.1885	1.9383	0.0593	0.6095	0.0005	0.0051
	Dyn4	-0.1885	1.7075	-0.0593	0.5370	0.0005	0.0045
4th	D	-0.0266	-0.0304	-0.0111	-0.0127	0.0001	0.0001
	Lp	-0.0080	-0.0089	-0.0033	-0.0037	0.0000	0.0000
	Rfp	-0.0003	-0.0004	-0.0001	-0.0002	0.0000	0.0000
	Dyn1	1.1022	-0.1295	0.4281	-0.0503	0.0036	0.0004
	Dyn2	1.3922	0.1247	0.5406	0.0485	0.0045	0.0004
	Dyn3	0.1297	1.3348	0.0504	0.5183	0.0004	0.0043
	Dyn4	-0.1297	1.1757	-0.0504	0.4566	0.0004	0.0038
3rd	D	-0.0155	-0.0177	-0.0083	-0.0095	0.0001	0.0001



Drift

	Lp	-0.0047	-0.0052	-0.0025	-0.0028	0.0000	0.0000
	Rfp	-0.0002	-0.0002	-0.0001	-0.0001	0.0000	0.0000
	Dyn1	0.6772	-0.0795	0.3385	-0.0398	0.0028	0.0003
	Dyn2	0.8557	0.0765	0.4276	0.0383	0.0036	0.0003
	Dyn3	0.0796	0.8204	0.0398	0.4099	0.0003	0.0034
	Dyn4	-0.0796	0.7225	-0.0398	0.3611	0.0003	0.0030
2nd	D	-0.0072	-0.0082	-0.0053	-0.0061	0.0000	0.0001
	Lp	-0.0022	-0.0024	-0.0016	-0.0018	0.0000	0.0000
	Rfp	-0.0001	-0.0001	-0.0001	-0.0001	0.0000	0.0000
	Dyn1	0.3406	-0.0399	0.2330	-0.0273	0.0019	0.0002
	Dyn2	0.4306	0.0384	0.2945	0.0263	0.0025	0.0002
	Dyn3	0.0399	0.4128	0.0274	0.2823	0.0002	0.0024
	Dyn4	-0.0399	0.3635	-0.0274	0.2486	0.0002	0.0021
1st	D	-0.0019	-0.0021	-0.0019	-0.0021	0.0000	0.0000
	Lp	-0.0006	-0.0006	-0.0006	-0.0006	0.0000	0.0000
	Rfp	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000
	Dyn1	0.1087	-0.0127	0.1087	-0.0127	0.0009	0.0001
	Dyn2	0.1375	0.0122	0.1375	0.0122	0.0011	0.0001
	Dyn3	0.0127	0.1318	0.0127	0.1318	0.0001	0.0011
	Dyn4	-0.0127	0.1160	-0.0127	0.1160	0.0001	0.0010

Location (ft): (0.000, 69.000)

Story	LdC	Displacement		Story Drift		Drift Ratio	
		X	Y	X	Y	X	Y
		in	in	in	in		
12th	D	-0.0393	0.0006	-0.0050	-0.0002	0.0000	0.0000
	Lp	-0.0111	0.0022	-0.0013	0.0003	0.0000	0.0000
	Rfp	-0.0007	-0.0005	-0.0001	-0.0001	0.0000	0.0000
	Dyn1	6.9849	0.7261	0.8053	0.0834	0.0067	0.0007
	Dyn2	7.0030	-0.7019	0.8074	-0.0807	0.0067	0.0007
	Dyn3	0.0122	6.5965	0.0015	0.7604	0.0000	0.0063
	Dyn4	-0.0122	7.4863	-0.0015	0.8631	0.0000	0.0072
11th	D	-0.0343	0.0008	-0.0049	0.0000	0.0000	0.0000
	Lp	-0.0098	0.0019	-0.0013	0.0003	0.0000	0.0000
	Rfp	-0.0006	-0.0004	-0.0001	-0.0001	0.0000	0.0000
	Dyn1	6.1899	0.6436	0.8052	0.0834	0.0067	0.0007
	Dyn2	6.2059	-0.6221	0.8074	-0.0807	0.0067	0.0007
	Dyn3	0.0108	5.8458	0.0014	0.7603	0.0000	0.0063



Drift

	Dyn4	-0.0108	6.6343	-0.0014	0.8630	0.0000	0.0072
10th	D	-0.0294	0.0008	-0.0047	0.0000	0.0000	0.0000
	Lp	-0.0084	0.0016	-0.0013	0.0003	0.0000	0.0000
	Rfp	-0.0005	-0.0003	-0.0001	-0.0001	0.0000	0.0000
	Dyn1	5.3976	0.5614	0.7956	0.0825	0.0066	0.0007
	Dyn2	5.4115	-0.5425	0.7977	-0.0798	0.0066	0.0007
	Dyn3	0.0094	5.0974	0.0014	0.7513	0.0000	0.0063
	Dyn4	-0.0094	5.7851	-0.0014	0.8527	0.0000	0.0071
9th	D	-0.0247	0.0007	-0.0045	0.0001	0.0000	0.0000
	Lp	-0.0071	0.0013	-0.0013	0.0002	0.0000	0.0000
	Rfp	-0.0004	-0.0003	-0.0001	-0.0001	0.0000	0.0000
	Dyn1	4.6161	0.4803	0.7747	0.0804	0.0065	0.0007
	Dyn2	4.6280	-0.4639	0.7767	-0.0777	0.0065	0.0006
	Dyn3	0.0080	4.3594	0.0014	0.7315	0.0000	0.0061
	Dyn4	-0.0080	4.9475	-0.0014	0.8303	0.0000	0.0069
8th	D	-0.0202	0.0007	-0.0042	0.0001	0.0000	0.0000
	Lp	-0.0059	0.0011	-0.0012	0.0002	0.0000	0.0000
	Rfp	-0.0003	-0.0002	-0.0001	-0.0000	0.0000	0.0000
	Dyn1	3.8555	0.4012	0.7419	0.0771	0.0062	0.0006
	Dyn2	3.8653	-0.3874	0.7438	-0.0745	0.0062	0.0006
	Dyn3	0.0067	3.6409	0.0013	0.7006	0.0000	0.0058
	Dyn4	-0.0067	4.1322	-0.0013	0.7951	0.0000	0.0066
7th	D	-0.0160	0.0006	-0.0038	0.0001	0.0000	0.0000
	Lp	-0.0047	0.0009	-0.0011	0.0002	0.0000	0.0000
	Rfp	-0.0002	-0.0002	-0.0001	-0.0000	0.0000	0.0000
	Dyn1	3.1263	0.3253	0.6969	0.0725	0.0058	0.0006
	Dyn2	3.1342	-0.3140	0.6987	-0.0700	0.0058	0.0006
	Dyn3	0.0054	2.9522	0.0012	0.6581	0.0000	0.0055
	Dyn4	-0.0054	3.3507	-0.0012	0.7469	0.0000	0.0062
6th	D	-0.0121	0.0005	-0.0034	0.0001	0.0000	0.0000
	Lp	-0.0036	0.0007	-0.0010	0.0002	0.0000	0.0000
	Rfp	-0.0002	-0.0001	-0.0001	-0.0000	0.0000	0.0000
	Dyn1	2.4399	0.2538	0.6394	0.0665	0.0053	0.0006
	Dyn2	2.4460	-0.2449	0.6410	-0.0642	0.0053	0.0005
	Dyn3	0.0042	2.3038	0.0011	0.6038	0.0000	0.0050
	Dyn4	-0.0042	2.6150	-0.0011	0.6853	0.0000	0.0057
5th	D	-0.0087	0.0004	-0.0029	0.0001	0.0000	0.0000



Drift

	Lp	-0.0026	0.0005	-0.0009	0.0002	0.0000	0.0000
	Rfp	-0.0001	-0.0001	-0.0000	-0.0000	0.0000	0.0000
	Dyn1	1.8085	0.1881	0.5687	0.0592	0.0047	0.0005
	Dyn2	1.8130	-0.1814	0.5701	-0.0571	0.0048	0.0005
	Dyn3	0.0032	1.7075	0.0010	0.5370	0.0000	0.0045
	Dyn4	-0.0032	1.9383	-0.0010	0.6095	0.0000	0.0051
4th	D	-0.0058	0.0003	-0.0024	0.0001	0.0000	0.0000
	Lp	-0.0017	0.0003	-0.0007	0.0001	0.0000	0.0000
	Rfp	-0.0001	-0.0000	-0.0000	-0.0000	0.0000	0.0000
	Dyn1	1.2454	0.1295	0.4836	0.0503	0.0040	0.0004
	Dyn2	1.2485	-0.1247	0.4848	-0.0485	0.0040	0.0004
	Dyn3	0.0022	1.1757	0.0008	0.4566	0.0000	0.0038
	Dyn4	-0.0022	1.3348	-0.0008	0.5183	0.0000	0.0043
3rd	D	-0.0034	0.0002	-0.0018	0.0001	0.0000	0.0000
	Lp	-0.0010	0.0002	-0.0005	0.0001	0.0000	0.0000
	Rfp	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000
	Dyn1	0.7655	0.0795	0.3825	0.0398	0.0032	0.0003
	Dyn2	0.7674	-0.0765	0.3834	-0.0383	0.0032	0.0003
	Dyn3	0.0014	0.7225	0.0007	0.3611	0.0000	0.0030
	Dyn4	-0.0014	0.8204	-0.0007	0.4099	0.0000	0.0034
2nd	D	-0.0015	0.0001	-0.0011	0.0001	0.0000	0.0000
	Lp	-0.0005	0.0001	-0.0003	0.0001	0.0000	0.0000
	Rfp	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000
	Dyn1	0.3852	0.0399	0.2634	0.0273	0.0022	0.0002
	Dyn2	0.3861	-0.0384	0.2641	-0.0263	0.0022	0.0002
	Dyn3	0.0007	0.3635	0.0005	0.2486	0.0000	0.0021
	Dyn4	-0.0007	0.4128	-0.0005	0.2823	0.0000	0.0024
1st	D	-0.0004	0.0000	-0.0004	0.0000	0.0000	0.0000
	Lp	-0.0001	0.0000	-0.0001	0.0000	0.0000	0.0000
	Rfp	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000
	Dyn1	0.1230	0.0127	0.1230	0.0127	0.0010	0.0001
	Dyn2	0.1233	-0.0122	0.1233	-0.0122	0.0010	0.0001
	Dyn3	0.0002	0.1160	0.0002	0.1160	0.0000	0.0010
	Dyn4	-0.0002	0.1318	-0.0002	0.1318	0.0000	0.0011

Location (ft): (0.000, 138.000)

Story	LdC	Displacement		Story Drift		Drift Ratio	
		X	Y	X	Y	X	Y



Drift

		in	in	in	in		
12th	D	0.1027	0.0006	0.0132	-0.0002	0.0001	0.0000
	Lp	0.0294	0.0022	0.0035	0.0003	0.0000	0.0000
	Rfp	0.0016	-0.0005	0.0003	-0.0001	0.0000	0.0000
	Dyn1	7.8253	0.7261	0.9021	0.0834	0.0075	0.0007
	Dyn2	6.2378	-0.7019	0.7189	-0.0807	0.0060	0.0007
	Dyn3	-0.7147	6.5965	-0.0821	0.7604	0.0007	0.0063
	Dyn4	0.7147	7.4863	0.0821	0.8631	0.0007	0.0072
11th	D	0.0895	0.0008	0.0128	0.0000	0.0001	0.0000
	Lp	0.0258	0.0019	0.0036	0.0003	0.0000	0.0000
	Rfp	0.0013	-0.0004	0.0002	-0.0001	0.0000	0.0000
	Dyn1	6.9349	0.6436	0.9021	0.0834	0.0075	0.0007
	Dyn2	5.5280	-0.6221	0.7189	-0.0807	0.0060	0.0007
	Dyn3	-0.6335	5.8458	-0.0821	0.7603	0.0007	0.0063
	Dyn4	0.6335	6.6343	0.0821	0.8630	0.0007	0.0072
10th	D	0.0766	0.0008	0.0123	0.0000	0.0001	0.0000
	Lp	0.0223	0.0016	0.0035	0.0003	0.0000	0.0000
	Rfp	0.0011	-0.0003	0.0002	-0.0001	0.0000	0.0000
	Dyn1	6.0473	0.5614	0.8913	0.0825	0.0074	0.0007
	Dyn2	4.8205	-0.5425	0.7104	-0.0798	0.0059	0.0007
	Dyn3	-0.5526	5.0974	-0.0812	0.7513	0.0007	0.0063
	Dyn4	0.5526	5.7851	0.0812	0.8527	0.0007	0.0071
9th	D	0.0643	0.0007	0.0117	0.0001	0.0001	0.0000
	Lp	0.0188	0.0013	0.0033	0.0002	0.0000	0.0000
	Rfp	0.0009	-0.0003	0.0002	-0.0001	0.0000	0.0000
	Dyn1	5.1720	0.4803	0.8679	0.0804	0.0072	0.0007
	Dyn2	4.1226	-0.4639	0.6917	-0.0777	0.0058	0.0006
	Dyn3	-0.4726	4.3594	-0.0791	0.7315	0.0007	0.0061
	Dyn4	0.4727	4.9475	0.0791	0.8303	0.0007	0.0069
8th	D	0.0526	0.0007	0.0109	0.0001	0.0001	0.0000
	Lp	0.0154	0.0011	0.0031	0.0002	0.0000	0.0000
	Rfp	0.0007	-0.0002	0.0002	-0.0000	0.0000	0.0000
	Dyn1	4.3199	0.4012	0.8312	0.0771	0.0069	0.0006
	Dyn2	3.4432	-0.3874	0.6625	-0.0745	0.0055	0.0006
	Dyn3	-0.3948	3.6409	-0.0759	0.7006	0.0006	0.0058
	Dyn4	0.3948	4.1322	0.0759	0.7951	0.0006	0.0066
7th	D	0.0416	0.0006	0.0100	0.0001	0.0001	0.0000



Drift

	Lp	0.0123	0.0009	0.0029	0.0002	0.0000	0.0000
	Rfp	0.0005	-0.0002	0.0001	-0.0000	0.0000	0.0000
	Dyn1	3.5030	0.3253	0.7808	0.0725	0.0065	0.0006
	Dyn2	2.7919	-0.3140	0.6224	-0.0700	0.0052	0.0006
	Dyn3	-0.3201	2.9522	-0.0713	0.6581	0.0006	0.0055
	Dyn4	0.3201	3.3507	0.0713	0.7469	0.0006	0.0062
	D	0.0316	0.0005	0.0089	0.0001	0.0001	0.0000
6th	Lp	0.0094	0.0007	0.0026	0.0002	0.0000	0.0000
	Rfp	0.0004	-0.0001	0.0001	-0.0000	0.0000	0.0000
	Dyn1	2.7341	0.2538	0.7164	0.0665	0.0060	0.0006
	Dyn2	2.1788	-0.2449	0.5710	-0.0642	0.0048	0.0005
	Dyn3	-0.2497	2.3038	-0.0655	0.6038	0.0005	0.0050
	Dyn4	0.2497	2.6150	0.0655	0.6853	0.0005	0.0057
5th	D	0.0227	0.0004	0.0077	0.0001	0.0001	0.0000
	Lp	0.0068	0.0005	0.0023	0.0002	0.0000	0.0000
	Rfp	0.0003	-0.0001	0.0001	-0.0000	0.0000	0.0000
	Dyn1	2.0268	0.1881	0.6372	0.0592	0.0053	0.0005
	Dyn2	1.6148	-0.1814	0.5079	-0.0571	0.0042	0.0005
	Dyn3	-0.1850	1.7075	-0.0582	0.5370	0.0005	0.0045
	Dyn4	0.1850	1.9383	0.0582	0.6095	0.0005	0.0051
4th	D	0.0150	0.0003	0.0063	0.0001	0.0001	0.0000
	Lp	0.0045	0.0003	0.0019	0.0001	0.0000	0.0000
	Rfp	0.0002	-0.0000	0.0001	-0.0000	0.0000	0.0000
	Dyn1	1.3959	0.1295	0.5419	0.0503	0.0045	0.0004
	Dyn2	1.1119	-0.1247	0.4319	-0.0485	0.0036	0.0004
	Dyn3	-0.1273	1.1757	-0.0495	0.4566	0.0004	0.0038
	Dyn4	0.1273	1.3348	0.0495	0.5183	0.0004	0.0043
3rd	D	0.0088	0.0002	0.0047	0.0001	0.0000	0.0000
	Lp	0.0027	0.0002	0.0014	0.0001	0.0000	0.0000
	Rfp	0.0001	-0.0000	0.0001	-0.0000	0.0000	0.0000
	Dyn1	0.8581	0.0795	0.4287	0.0398	0.0036	0.0003
	Dyn2	0.6833	-0.0765	0.3415	-0.0383	0.0028	0.0003
	Dyn3	-0.0781	0.7225	-0.0391	0.3611	0.0003	0.0030
	Dyn4	0.0781	0.8204	0.0391	0.4099	0.0003	0.0034
2nd	D	0.0041	0.0001	0.0030	0.0001	0.0000	0.0000
	Lp	0.0012	0.0001	0.0009	0.0001	0.0000	0.0000
	Rfp	0.0000	-0.0000	0.0000	-0.0000	0.0000	0.0000



	Dyn1	0.4319	0.0399	0.2953	0.0273	0.0025	0.0002
	Dyn2	0.3438	-0.0384	0.2351	-0.0263	0.0020	0.0002
	Dyn3	-0.0392	0.3635	-0.0269	0.2486	0.0002	0.0021
	Dyn4	0.0392	0.4128	0.0269	0.2823	0.0002	0.0024
1st	D	0.0011	0.0000	0.0011	0.0000	0.0000	0.0000
	Lp	0.0003	0.0000	0.0003	0.0000	0.0000	0.0000
	Rfp	0.0000	-0.0000	0.0000	-0.0000	0.0000	0.0000
	Dyn1	0.1380	0.0127	0.1380	0.0127	0.0011	0.0001
	Dyn2	0.1097	-0.0122	0.1097	-0.0122	0.0009	0.0001
	Dyn3	-0.0125	0.1160	-0.0125	0.1160	0.0001	0.0010
	Dyn4	0.0125	0.1318	0.0125	0.1318	0.0001	0.0011

TORSIONAL IRREGULARITY DATA:

X-Axis:

Story	LdC	Drift in	Coord ft	Drift in	Coord ft	Max/Min	Max/Ave
12th	Dyn1	0.7131	(0.00 0.00)	0.9021	(0.00 138.00)	1.265	1.117
11th	Dyn1	0.7130	(0.00 0.00)	0.9021	(0.00 138.00)	1.265	1.117
10th	Dyn1	0.7045	(0.00 0.00)	0.8913	(0.00 138.00)	1.265	1.117
9th	Dyn1	0.6860	(0.00 0.00)	0.8679	(0.00 138.00)	1.265	1.117
8th	Dyn1	0.6570	(0.00 0.00)	0.8312	(0.00 138.00)	1.265	1.117
7th	Dyn1	0.6172	(0.00 0.00)	0.7808	(0.00 138.00)	1.265	1.117
6th	Dyn1	0.5662	(0.00 0.00)	0.7164	(0.00 138.00)	1.265	1.117
5th	Dyn1	0.5036	(0.00 0.00)	0.6372	(0.00 138.00)	1.265	1.117
4th	Dyn1	0.4281	(0.00 0.00)	0.5419	(0.00 138.00)	1.266	1.117
3rd	Dyn1	0.3385	(0.00 0.00)	0.4287	(0.00 138.00)	1.266	1.118
2nd	Dyn1	0.2330	(0.00 0.00)	0.2953	(0.00 138.00)	1.267	1.118
1st	Dyn1	0.1087	(0.00 0.00)	0.1380	(0.00 138.00)	1.269	1.119

Y-Axis:

Story	LdC	Drift in	Coord ft	Drift in	Coord ft	Max/Min	Max/Ave
12th	Dyn4	0.8631	(0.00 0.00)	0.7604	(102.00 0.00)	1.135	1.063
11th	Dyn4	0.8630	(0.00 0.00)	0.7603	(102.00 0.00)	1.135	1.063
10th	Dyn4	0.8527	(0.00 0.00)	0.7513	(102.00 0.00)	1.135	1.063
9th	Dyn4	0.8303	(0.00 0.00)	0.7315	(102.00 0.00)	1.135	1.063
8th	Dyn4	0.7951	(0.00 0.00)	0.7006	(102.00 0.00)	1.135	1.063
7th	Dyn4	0.7469	(0.00 0.00)	0.6581	(102.00 0.00)	1.135	1.063
6th	Dyn4	0.6853	(0.00 0.00)	0.6038	(102.00 0.00)	1.135	1.063
5th	Dyn4	0.6095	(0.00 0.00)	0.5370	(102.00 0.00)	1.135	1.063

Drift



RAM Structural System 25.00.02.42

DataBase: sw 8fc col 6fc

Building Code: IBC

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Steel Code: IBC

4th	Dyn4	0.5183	(0.00 0.00)	0.4566	(102.00 0.00)	1.135	1.063
3rd	Dyn4	0.4099	(0.00 0.00)	0.3611	(102.00 0.00)	1.135	1.063
2nd	Dyn4	0.2823	(0.00 0.00)	0.2486	(102.00 0.00)	1.136	1.063
1st	Dyn4	0.1318	(0.00 0.00)	0.1160	(102.00 0.00)	1.136	1.064



Loads and Applied Forces

RAM Frame 25.00.02.42
DataBase: sw 8fc col 6fc

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LOAD CASE: RSA Strength

Dynamic Response Spectra for ASCE 7-22
Damping Ratio: 0.050
Scale Factors (X-Dir): +Ecc Case: 0.2520 -Ecc Case: 0.2520
Scale Factors (Y-Dir): +Ecc Case: 0.2520 -Ecc Case: 0.2520
Design Spectral Acceleration Parameters: Two-Period Design Response Spectrum
Site Class : C - Very Dense Sand and Hard Clay
SMS : 1.330 SM1 : 0.600
SDS : 0.887 SD1: 0.400
To : 0.090 sec Ts : 0.451 sec TL : 8.000 sec
Modal Combination Technique: CQC
Ground Level: Base
Dir Eccent
X + And -
Y + And -

DIRECTION

Type: Dyn_ASCE722_CQC_X_+E
Type: Dyn_ASCE722_CQC_X_-E
Type: Dyn_ASCE722_CQC_Y_+E
Type: Dyn_ASCE722_CQC_Y_-E

GENERATED RESPONSE SPECTRA CURVE

Period	Spectral Acceleration (S(T))
0.0000(To)	0.3547 g
0.0902(To)	0.8867 g
0.4511(Ts)	0.8867 g
0.4511 < T < 8.0000 (TL)	0.4000 g/T
T > 8.0000	3.2000 g/(T*T)



Member Forces

CONCRETE WALL INFORMATION:

Wall Number: 2

Frame Number: 0

Level Top: 1st

Column Line (66.00,2.00)-(96.00,2.00)

Bot: Base

Thickness (in) = 18.00

Length (ft) = 30.00

f_c (ksi) = 8.00

Unit Wt (pcf) = 150.00

Unit Wt-SelfWt (pcf) = 150.00

Elastic Modulus (ksi) = 5422

Cracked Section Properties =

Membrane : 0.50

Bending : 1.00

Poisson's Ratio = 0.20

Num of Wall FEs = 32

Rigid Links Included at Fixed Beam-to-Wall Locations

INPUT PARAMETERS:

P-Delta: Yes

Scale Factor: 1.00

Ground Level: Base

LOAD CASES:

D	DeadLoad	RAMUSER
Lp	PosLiveLoad	RAMUSER
Rfp	PosRoofLiveLoad	RAMUSER
Dyn9	RSA Strength	Dyn_ASCE722_CQC_X_+E
Dyn10	RSA Strength	Dyn_ASCE722_CQC_X_-E
Dyn11	RSA Strength	Dyn_ASCE722_CQC_Y_+E
Dyn12	RSA Strength	Dyn_ASCE722_CQC_Y_-E

MEMBER FORCES:

LdC	P kips	Mmajor kip-ft	Mminor kip-ft	Vmajor kips	Vminor kips
D	1890.99	-3806.08	6.64	-3.02	-1.98
Lp	320.73	-1147.34	2.28	-1.04	-0.68
Rfp	14.55	-44.82	0.00	0.00	-0.00
Dyn9	0.00	48694.49	0.03	762.35	0.00
Dyn10	0.00	61110.30	-0.03	960.04	-0.00
Dyn11	-0.00	5540.00	-0.58	83.95	-0.04
Dyn12	-0.00	-5540.14	-0.54	-83.96	-0.04



CRITERIA:

Rigid End Zones: Ignore Effects
Member Force Output: At Face of Joint
P-Delta: Yes Scale Factor: 1.00
Ground Level: Base
Mesh Criteria :
 Max. Distance Between Nodes on Mesh Line (ft) : 4.00
 Merge Node Tolerance (in) : 0.0100
 Geometry Tolerance (in) : 0.0050
Walls Out-of-plane Stiffness Not Included in Analysis.
Sign considered for Dynamic Load Case Results.
Rigid Links Included at Fixed Beam-to-Wall Locations
Eigenvalue Analysis : Eigen Vectors (Subspace Iteration)

Load Case: D	DeadLoad	RAMUSER			
Level	Diaph. #	Shear-X	Shear-Y		
		kips	kips		
12th	1	-0.13	-0.36		
11th	1	-0.21	-0.57		
10th	1	-0.28	-0.77		
9th	1	-0.34	-0.94		
8th	1	-0.39	-1.07		
7th	1	-0.42	-1.15		
6th	1	-0.43	-1.18		
5th	1	-0.42	-1.15		
4th	1	-0.38	-1.04		
3rd	1	-0.32	-0.86		
2nd	1	-0.22	-0.60		
1st	1	-0.08	-0.22		

Summary - Total Story Shears

Level	Shear-X	Change-X	Shear-Y	Change-Y
	kips	kips	kips	kips
12th	-0.13	-0.13	-0.36	-0.36
11th	-0.21	-0.08	-0.57	-0.21
10th	-0.28	-0.07	-0.77	-0.20
9th	-0.34	-0.06	-0.94	-0.17
8th	-0.39	-0.05	-1.07	-0.13
7th	-0.42	-0.03	-1.15	-0.08
6th	-0.43	-0.01	-1.18	-0.03



Building Story Shears

5th	-0.42	0.01	-1.15	0.03
4th	-0.38	0.04	-1.04	0.10
3rd	-0.32	0.07	-0.86	0.18
2nd	-0.22	0.10	-0.60	0.27
1st	-0.08	0.14	-0.22	0.37

Load Case: Lp	PosLiveLoad	RAMUSER			
Level		Diaph. #	Shear-X	Shear-Y	
			kips	kips	
12th		1	-0.03	-0.09	
11th		1	-0.06	-0.15	
10th		1	-0.08	-0.20	
9th		1	-0.10	-0.25	
8th		1	-0.11	-0.29	
7th		1	-0.12	-0.31	
6th		1	-0.13	-0.32	
5th		1	-0.12	-0.32	
4th		1	-0.11	-0.29	
3rd		1	-0.09	-0.25	
2nd		1	-0.07	-0.17	
1st		1	-0.03	-0.06	

Summary - Total Story Shears

Level	Shear-X	Change-X	Shear-Y	Change-Y
	kips	kips	kips	kips
12th	-0.03	-0.03	-0.09	-0.09
11th	-0.06	-0.02	-0.15	-0.06
10th	-0.08	-0.02	-0.20	-0.05
9th	-0.10	-0.02	-0.25	-0.05
8th	-0.11	-0.01	-0.29	-0.04
7th	-0.12	-0.01	-0.31	-0.03
6th	-0.13	-0.00	-0.32	-0.01
5th	-0.12	0.00	-0.32	0.01
4th	-0.11	0.01	-0.29	0.03
3rd	-0.09	0.02	-0.25	0.05
2nd	-0.07	0.03	-0.17	0.07
1st	-0.03	0.04	-0.06	0.11

Load Case: Rfp	PosRoofLiveLoad	RAMUSER			
Level		Diaph. #	Shear-X	Shear-Y	
			kips	kips	



Building Story Shears

12th	1	-0.00	-0.01
11th	1	-0.00	-0.01
10th	1	-0.01	-0.02
9th	1	-0.01	-0.02
8th	1	-0.01	-0.02
7th	1	-0.01	-0.02
6th	1	-0.01	-0.02
5th	1	-0.01	-0.02
4th	1	-0.01	-0.02
3rd	1	-0.00	-0.01
2nd	1	-0.00	-0.01
1st	1	-0.00	-0.00

Summary - Total Story Shears

Level	Shear-X kips	Change-X kips	Shear-Y kips	Change-Y kips
12th	-0.00	-0.00	-0.01	-0.01
11th	-0.00	-0.00	-0.01	-0.00
10th	-0.01	-0.00	-0.02	-0.00
9th	-0.01	-0.00	-0.02	-0.00
8th	-0.01	-0.00	-0.02	-0.00
7th	-0.01	-0.00	-0.02	-0.00
6th	-0.01	0.00	-0.02	0.00
5th	-0.01	0.00	-0.02	0.00
4th	-0.01	0.00	-0.02	0.00
3rd	-0.00	0.00	-0.01	0.00
2nd	-0.00	0.00	-0.01	0.00
1st	-0.00	0.00	-0.00	0.01

Load Case: Dyn5 RSA Seed Dyn_ASCE722_CQC_X_+E

Level	Diaph. #	Shear-X kips	Shear-Y kips
12th	1	-2229.19	0.00
11th	1	-3053.25	0.00
10th	1	3422.94	0.00
9th	1	3566.69	0.00
8th	1	3692.25	0.00
7th	1	3947.32	0.00
6th	1	4384.48	0.00
5th	1	4964.09	0.00



Building Story Shears

4th	1	5597.86	0.00
3rd	1	6186.28	-0.01
2nd	1	6630.85	-0.01
1st	1	6845.15	-0.01

Summary - Total Story Shears

Level	Shear-X kips	Change-X kips	Shear-Y kips	Change-Y kips
12th	-2229.19	-2229.19	0.00	0.00
11th	-3053.25	-923.78	-0.00	0.00
10th	3422.94	-802.45	-0.00	0.00
9th	3566.69	-950.79	-0.00	0.00
8th	3692.25	-1119.88	-0.00	0.00
7th	3947.32	-1240.36	-0.00	0.00
6th	4384.48	-1304.36	-0.00	0.00
5th	4964.09	-1310.65	-0.00	0.00
4th	5597.86	-1258.35	-0.00	0.00
3rd	6186.28	-1137.30	-0.01	0.00
2nd	6630.85	-922.37	-0.01	0.00
1st	6845.15	-585.99	-0.01	0.00

Load Case: Dyn6 RSA Seed Dyn_ASCE722_CQC_X-E

Level	Diaph. #	Shear-X kips	Shear-Y kips
12th	1	-2233.76	0.00
11th	1	-3057.22	0.00
10th	1	3426.35	0.00
9th	1	3569.80	0.00
8th	1	3695.36	0.00
7th	1	3950.61	0.00
6th	1	4388.00	0.00
5th	1	4967.90	0.00
4th	1	5602.01	0.00
3rd	1	6190.65	0.01
2nd	1	6635.26	0.01
1st	1	6849.51	0.01

Summary - Total Story Shears

Level	Shear-X kips	Change-X kips	Shear-Y kips	Change-Y kips
12th	-2233.76	-2233.76	0.00	0.00



Building Story Shears

11th	-3057.22	-923.77	0.00	-0.00
10th	3426.35	-803.36	0.00	-0.00
9th	3569.80	-951.95	0.00	-0.00
8th	3695.36	-1120.98	0.00	-0.00
7th	3950.61	-1241.32	0.00	-0.00
6th	4388.00	-1305.23	0.00	-0.00
5th	4967.90	-1311.54	0.00	-0.00
4th	5602.01	-1259.07	0.00	-0.00
3rd	6190.65	-1137.64	0.01	-0.00
2nd	6635.26	-922.51	0.01	-0.00
1st	6849.51	-586.07	0.01	-0.00

Load Case: Dyn7	RSA Seed	Dyn_ASCE722_CQC_Y_+E		
Level	Diaph. #	Shear-X	Shear-Y	
		kips	kips	
12th	1	-5.18	-2241.43	
11th	1	-6.41	-3069.20	
10th	1	6.60	3441.13	
9th	1	6.22	3586.89	
8th	1	5.92	3714.63	
7th	1	6.19	3971.70	
6th	1	7.11	4410.58	
5th	1	8.49	4991.99	
4th	1	10.11	5627.70	
3rd	1	11.70	6217.71	
2nd	1	12.94	6663.07	
1st	1	13.57	6877.40	

Summary - Total Story Shears

Level	Shear-X	Change-X	Shear-Y	Change-Y
	kips	kips	kips	kips
12th	-5.18	-5.18	-2241.43	-2241.43
11th	-6.41	-1.97	-3069.20	-928.20
10th	6.60	1.80	3441.13	-807.08
9th	6.22	2.27	3586.89	-955.96
8th	5.92	-2.69	3714.63	-1124.97
7th	6.19	-2.91	3971.70	-1245.36
6th	7.11	-3.00	4410.58	-1309.44
5th	8.49	-3.07	4991.99	-1315.89
4th	10.11	-3.04	5627.70	-1263.06



Building Story Shears

3rd	11.70	2.79	6217.71	-1140.72
2nd	12.94	2.27	6663.07	-924.35
1st	13.57	1.38	6877.40	-586.68

Load Case: Dyn8	RSA Seed	Dyn_ASCE722_CQC_Y_-E		
Level	Diaph. #	Shear-X	Shear-Y	
		kips	kips	
12th	1	5.18	-2241.43	
11th	1	6.41	-3069.20	
10th	1	-6.60	3441.13	
9th	1	-6.22	3586.89	
8th	1	-5.92	3714.63	
7th	1	-6.19	3971.70	
6th	1	-7.11	4410.58	
5th	1	-8.49	4991.99	
4th	1	-10.11	5627.70	
3rd	1	-11.70	6217.71	
2nd	1	-12.94	6663.07	
1st	1	-13.57	6877.39	

Summary - Total Story Shears

Level	Shear-X	Change-X	Shear-Y	Change-Y
	kips	kips	kips	kips
12th	5.18	5.18	-2241.43	-2241.43
11th	6.41	1.97	-3069.20	-928.20
10th	-6.60	-1.80	3441.13	-807.08
9th	-6.22	-2.27	3586.89	-955.96
8th	-5.92	2.69	3714.63	-1124.97
7th	-6.19	2.91	3971.70	-1245.36
6th	-7.11	3.00	4410.58	-1309.44
5th	-8.49	3.07	4991.99	-1315.89
4th	-10.11	3.04	5627.70	-1263.06
3rd	-11.70	-2.79	6217.71	-1140.72
2nd	-12.94	-2.27	6663.07	-924.35
1st	-13.57	-1.38	6877.39	-586.68

BASE SHEAR (Dynamic Load Cases)

LdC	Shear-X	Shear-Y
Dyn5	-6845.15	0.01
Dyn6	-6849.51	-0.01

Building Story Shears



RAM Frame 25.00.02.42
DataBase: sw 8fc col 6fc

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Bentley

Dyn7

-13.57

-6877.40

Dyn8

13.57

-6877.39