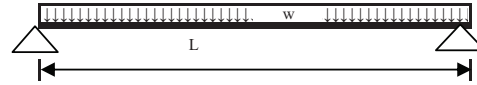


Flexural Strength of Full Composite Action Wide Flange Beams

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Core Floor Beams



$$RF = 0.25 + \frac{15}{\sqrt{(KLLAT)}} \geq 0.5 \text{ (supporting one floor)}$$

$$KLL = 2$$

- "Office" space designed @ 100psf on 1st floor (unknown locations of future corridors)
- "Office" space designed @ 80psf on 2nd-8th floor (unknown locations of future corridors)
- "Office" space designed @ 115psf on 9th-12th floor (100psf project specified, 15psf access flooring)
- "Office" space designed @ 125psf on 2nd floor (file storage, area defined on plans) *
- Balconies designed @ 100psf

	# Bms	Weight (k)	Wide Flange Shape										Steel deck t in	f _c ksi		
			Nom. Depth	Weight plf	Notes	A _s in ²	d in	t _w in	h / t _w	k _v	C _v	f _y ksi				
A	1	0.235	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
B	1	0.235	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
C	1	0.235	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
D	1	0.085	8 x	10	f	2.96	7.89	0.170					NO	50	1.5	4
E	1	0.085	8 x	10	f	2.96	7.89	0.170					NO	50	1.5	4
F	1	0.085	8 x	10	f	2.96	7.89	0.170					NO	50	1.5	4
G	1	0.235	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
H	1	0.235	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
J	2	0.470	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
K	2	0.470	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
L	2	0.470	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
G1	2	1.343	16 x	26	v	7.68	15.70	0.250	56.8	5	1.00		50	1.5	4	
G2	1	0.386	12 x	14	v	4.16	11.90	0.200	54.3	5	1.00		50	1.5	4	

	Slab		Trib Width/Space in	L ft	b _e in	ΣQ _n (AsF _y) K	a in	Strength			AISC Tab3-21 3/4" dia Q _n (K)	Stud # req'd	DL Super-imp. psf	DL Steel Deck psf
	Tot. t in	Conc. Weight pcf						ΦM _n Φ=0.9 ft-K	Φ	ΦV _n K				
A	4.00	115	82.5	19.58	58.75	177	0.886	112.73	1.00	56.3	17.2	20.6	30	1.6
B	4.00	115	65.3	19.58	58.75	177	0.886	112.73	1.00	56.3	17.2	20.6	30	1.6
C	4.00	115	40.0	19.58	32.00	177	1.627	107.81	1.00	56.3	17.2	20.6	30	1.6
D	4.00	115	58.0	8.50				32.90	1.00	40.2	17.2	2.0	30	1.6
E	4.00	115	41.8	8.50				32.90	1.00	40.2	17.2	2.0	30	1.6
F	4.00	115	65.5	8.50				32.90	1.00	40.2	17.2	2.0	30	1.6
G	4.00	115	36.0	19.58	24.00	177	2.169	104.21	1.00	56.3	17.2	20.6	30	1.6
H	4.00	115	58.3	19.58	58.25	177	0.894	112.68	1.00	56.3	17.2	20.6	30	1.6
J	4.00	115	77.3	19.58	23.15	177	2.249	103.69	1.00	56.3	17.2	20.6	30	1.6
K	4.00	115	64.3	19.58	58.75	177	0.886	112.73	1.00	56.3	17.2	20.6	30	1.6
L	4.00	115	82.9	19.58	58.75	177	0.886	112.73	1.00	56.3	17.2	20.6	30	1.6
G1	4.00	115	240.0	25.83	159.75	384	0.707	331.10	0.90	106.0	17.2	44.7	30	1.6
G2	4.00	115	53.3	27.54	53.25	208	1.149	146.26	0.90	64.3	17.2	24.2	30	1.6

	DL Slab psf	DL Perimeter plf	DL Total plf	Concn. DL P lb	LL psf	LL Reduct Factor	LL w/ reduct plf	Concn. LL P lb	1.2DL+ 1.6LL W _u plf	1.2DL+ 1.6LL P _u lb	1.4DL W _u plf	1.4DL P _u lb	Mu ft-K	Vu K
B	27.4	0.0	332.8		100.0	1.00	543.8		1269.4		465.9		60.85	12.4
C	27.4	0.0	208.7	3798.2	100.0	1.00	333.3	6110.9	783.7	14335.3	292.1	5317.5	107.75	14.8
D	27.4	0.0	295.2		100.0	1.00	483.3		1127.5		413.2		10.18	4.8
E	27.4	0.0	215.3		100.0	1.00	347.9		815.0		301.4		7.36	3.5
F	27.4	0.0	332.0		100.0	1.00	545.8		1271.8		464.9		11.49	5.4
G	27.4	0.0	189.0	3798.2	100.0	1.00	300.0	6110.9	706.8	14335.3	264.6	5317.5	104.07	14.1
H	27.4	0.0	298.4		100.0	1.00	485.4		1134.7		417.8		54.40	11.1
J	27.4	0.0	391.8		100.0	1.00	643.8		1500.2		548.5		71.92	14.7
K	27.4	0.0	327.9		100.0	1.00	535.4		1250.1		459.1		59.93	12.2
L	27.4	0.0	419.3		100.0	1.00	690.4		1607.9		587.1		77.08	15.7
G1	27.4	0.0	1206.0		100.0	0.72	1433.3		3740.4		1688.4		312.03	48.3
G2	27.4	0.0	275.8		100.0	1.00	443.8		1041.0		386.1		98.71	14.3

	$\Phi V_n > V_u$ & $\Phi M_n > M_u$?	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel I _{xx} in ⁴	Mu Const ft-K	Y2 in	Low Bnd I _{xx} in ⁴	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
A	OK	211.4	17.6	687.5	57.3	53.8	10.13	3.557	180	0.45	0.44	0.65	OK	OK
B	OK	169.7	14.1	543.8	45.3	53.8	8.13	3.557	180	0.36	0.34	0.65	OK	OK
C	OK	108.7	9.1	333.3	27.8	53.8	5.21	3.187	180	0.25	0.41	0.65	OK	OK
D	OK	150.2	12.5	483.3	40.3	16.4	1.36	4.000	16.4	0.04	0.12	0.28	OK	OK
E	OK	110.9	9.2	347.9	29.0	16.4	1.00	4.000	16.4	0.03	0.09	0.28	OK	OK
F	OK	168.3	14.0	545.8	45.5	16.4	1.52	4.000	16.4	0.04	0.13	0.28	OK	OK
G	OK	99.0	8.3	300.0	25.0	53.8	4.75	2.915	180	0.23	0.39	0.65	OK	OK
H	OK	152.8	12.7	485.4	40.5	53.8	7.32	3.553	180	0.32	0.31	0.65	OK	OK
J	OK	198.7	16.6	643.8	53.6	53.8	9.52	2.876	180	0.42	0.41	0.65	OK	OK
K	OK	167.3	13.9	535.4	44.6	53.8	8.02	3.557	180	0.35	0.34	0.65	OK	OK
L	OK	212.2	17.7	690.4	57.5	53.8	10.17	3.557	180	0.45	0.44	0.65	OK	OK
G1	OK	606.0	50.5	2000.0	166.7	301.0	50.55	3.647	808.23	0.70	0.86	0.86	OK	OK
G2	OK	142.7	11.9	443.8	37.0	88.6	13.53	3.426	270	0.72	0.73	0.92	OK	OK

2nd Floor: Flexural Strength of Full Composite Action Wide Flange Beams

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$$RF = 0.25 + \frac{15}{\sqrt{(KLLAT)}} \geq 0.5 \text{ (supporting one floor)}$$

$$KLL = \frac{2}{2} \text{ (for interior \& edge beams w/out cantilever slab ASCE 7-05 Table 4-2)}$$

"Office" space designed @ 100psf on 1st (unknown corridor location)

"Office" space designed @ 80psf on 2nd-8th (unknown corridor location)

"Office" space designed @ 115psf on 9th-12th (100psf project specified, 15psf access flooring)

"Office" space designed @ 125psf on 2nd file storage, area defined on plans *

Balconies designed @ 100psf

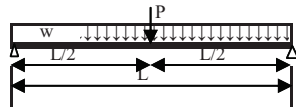
$$M'_p = M_p - (0.7F_y' \frac{(\lambda - \lambda_p)}{(\lambda_r - \lambda_p)})$$

$$\lambda = h/t_w \quad \lambda_p = 3.76 \sqrt{E/F_y} \quad \lambda_r = 5.7 \sqrt{E/F_y}$$

$$\lambda = b_f/2t_f \quad \lambda_p = 0.38 \sqrt{E/F_y} \quad \lambda_r = 1.0 \sqrt{E/F_y}$$

Per Floor Structural Steel DL = 94.2 K

Beams
110

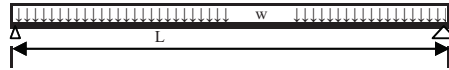


Transfer Girders D1-E1, D7-E7														
# Bms	Weight (k)	Node	Node	Wide Flange Shape						Steel deck t in	Slab			Trib Width/ Space in
				Nom. Depth	Weight plf	A _s in ²	d in	t _w in	f _y ksi		f _c ksi	Total t in	Conc. Weight pcf	
2	5.440	D1/7	E17	24 x	68	20.10	23.70	0.415	50	1.5	4	4.00	115	46.5

Node	Node	L ft	be in	0.85f _c *a*be ΣQ _n K	a in	ΦM _n Φ=0.9 ft-K	ΦV _n Φ=1.0 K	AISC Tab3-21 3/4" dia Q _n (K)	Stud # req'd	PD Beam #	PD Super Imposed #	PD Deck #	PD Slab DL #	PD Total #
D1/7	E17	40.00	46.50	395.3	2.500	953.95	295.1	17.2	46.0	418.5	4050.0	216.0	3915.0	8599.5

Node	Node	WD Self plf	WD Super Imposed plf	WD Deck plf	WD Slab plf	WD Peri- meter plf	WD Total plf	PL Beam #	WL Beam #	LL Reduct Factor	Mu ft-K	Vu K	ΦV _n > V _u & ΦM _n > M _u ?	PD Const #
D1/7	E17	68.0	217.5	11.6	210.3	520.0	0.0	16875.0	906.3	1.00	663.19	47.7	OK	4549.5

Node	Node	WD Const plf	Steel I _{xx} in ⁴	Const. Mu ft-K	Y1 in	Y2 in	Low Bnd I _{xx} in ⁴	Const. DL Δ in	LL Δ in	L/400 in	DL Δ OK ?	LL Δ OK ?
D1/7	E17	289.9	1830.0	909.90	2.638	2.750	2970	0.51	1.06	1.20	OK	OK

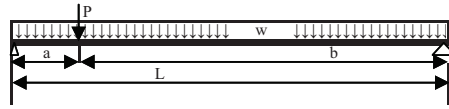


2nd Interior Girders																
# Bms	Weight (k)	Node	Node	Wide Flange Shape										Steel deck t in		
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi			
1	0.875	C2*	C3*	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	1.100	C3*	C4*	18 x	40		11.80	17.90	0.315					NO	50	1.5
1	1.100	C4*	C5*	18 x	40		11.80	17.90	0.315					NO	50	1.5
1	0.750	C5	C6	14 x	30		8.85	13.80	0.270					NO	50	1.5
1	0.963	(D.5)1*	(D.5)3*	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.853	(D.5)5	(D.5)7	16 x	31		9.13	15.90	0.275					NO	50	1.5
2	2.100	D5/E5	D7/E7	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.750	F2	F3	14 x	30		8.85	13.80	0.270					NO	50	1.5
1	0.963	F3	F4	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.963	F4	F5	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.750	F5	F6	14 x	30		8.85	13.80	0.270					NO	50	1.5

Node	Node	f _c ksi	Slab		Trib Width/Space in	L ft	b _e in	ΣQn (AsFy) K	a in	ΦMn Φ-0.9 ft-K	Shear Strength		AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
			Total t in	Conc. Weight pcf							Φ	ΦVn K		
C2*	C3*	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9
C3*	C4*	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6
C4*	C5*	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6
C5	C6	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5
(D.5)1*	(D.5)3*	4	4.00	115	240.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
(D.5)5	(D.5)7	4	4.00	115	240.0	27.50	82.50	457	1.627	381.28	1.00	131.2	17.2	53.1
D5/E5	D7/E7	4	4.00	115	282.0	30.00	90.00	515	1.683	463.83	1.00	159.3	17.2	59.9
F2	F3	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5
F3	F4	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
F4	F5	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
F5	F6	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5

Node	Node	DL Super-Imposed psf	DL Steel Deck psf	DL psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?
														OK
C2*	C3*	30	1.6	29.0	0.0	1398.5	125.0	0.70	1960.9	4815.7	1957.9	376.22	60.2	OK
C3*	C4*	30	1.6	29.0	0.0	1464.1	125.0	0.67	1960.0	4892.9	2049.7	462.53	67.3	OK
C4*	C5*	30	1.6	29.0	0.0	1464.1	125.0	0.67	1960.0	4892.9	2049.7	462.53	67.3	OK
C5	C6	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK
(D.5)1*	(D.5)3*	30	1.6	29.0	0.0	1247.0	102.5	0.70	1439.6	3799.8	1745.8	359.20	52.2	OK
(D.5)5	(D.5)7	30	1.6	29.0	0.0	1243.0	80.0	0.70	1123.6	3289.4	1740.2	310.95	45.2	OK
D5/E5	D7/E7	30	1.6	29.0	0.0	1459.1	80.0	0.65	1221.0	3704.5	2042.7	416.76	55.6	OK
F2	F3	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK
F3	F4	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
F4	F5	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
F5	F6	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK	LL Δ OK
													?	?
C2*	C3*	723.5	60.3	2812.5	234.4	510.0	56.52	2.990	1230	0.43	0.69	0.83	OK	OK
C3*	C4*	759.1	63.3	2937.5	244.8	612.0	71.76	2.948	1412	0.55	0.92	0.92	OK	NG
C4*	C5*	759.1	63.3	2937.5	244.8	612.0	71.76	2.948	1450	0.55	0.90	0.92	OK	OK
C5	C6	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK
(D.5)1*	(D.5)3*	647.0	53.9	2050.0	170.8	510.0	61.16	3.082	1230	0.56	0.74	0.92	OK	OK
(D.5)5	(D.5)7	643.0	53.6	1600.0	133.3	375.0	60.78	3.186	940	0.76	0.76	0.92	OK	OK
D5/E5	D7/E7	754.1	62.8	1880.0	156.7	510.0	84.84	3.158	1230	0.93	0.96	1.00	OK	OK
F2	F3	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK
F3	F4	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
F4	F5	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
F5	F6	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK



2nd Interior Floor Girders															
# Bms	Weight (k)	Wide Flange Shape		Nom. Depth	Weight plf	Notes	As in²	d in	tw in	h / tw	kv	Cv	fy ksi	Steel deck t in	
		D1*	D3*												
1	1.080	D1*	D3*	18x	40		11.80	17.90	0.315				NO	50	1.5
1	0.945	E1	E3	18x	35		10.30	17.70	0.300				NO	50	1.5
1	0.312	A3	C3	12x	16		4.71	12.00	0.220				NO	50	1.5
1	0.312	A5	C5	12x	16		4.71	12.00	0.220				NO	50	1.5
1	0.312	F3	H3	12x	16		4.71	12.00	0.220				NO	50	1.5
1	0.312	F5	H5	12x	16		4.71	12.00	0.220				NO	50	1.5

	Slab		Trib Width/Space in	L ft	be in	ΣQn (AsFy) K	a in	ΦMn Φ=0.9 ft-K	Shear Strength		AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd		
	fc ksi	Total t in							Conc. Weight pcf	Φ			ΦVn K	
D1*	D3*	4	4.00	115	285.0	27.00	81.00	590	2.142	525.64	1.00	169.2	17.2	68.6
E1	E3	4	4.00	115	285.0	27.00	81.00	515	1.870	460.22	1.00	159.3	17.2	59.9
A3	C3	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
A5	C5	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
F3	H3	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
F5	H5	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4

	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri-meter plf	DL Total plf	Concen. DL P lb	LL psf	LL Reduct Factor	LL w/ RF plf	Concen. LL (P) P lb	Concen. LL (P) w/ RF lb	1.2DL+ 1.6LL Wu plf	1.2DL+ 1.6LL Pu lb	
												4952.2	17684.3	
D1*	D3*	30	1.6	29.0	0.0	1479.3	9947.0	125.0	0.67	1985.7	5371.0	3592.4	4952.2	17684.3
E1	E3	30	1.6	29.0	0.0	1474.3	9947.0	80.0	0.67	1270.8	3438.0	2299.5	3802.4	15615.6
A3	C3	30	1.6	29.0	0.0	413.7	13404.0	125.0	1.00	820.3	3418.0	3418.0	1808.9	21553.6
A5	C5	30	1.6	29.0	0.0	413.7	13404.0	125.0	1.00	820.3	3418.0	3418.0	1808.9	21553.6
F3	H3	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6
F5	H5	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6

	1.4DL Wu plf	1.4DL Pu plf	a ft	b ft	Ma ft-K	Mb ft-K	Mc ft-K	Md ft-K	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?	DL Const	DL lb/in	
												766.8	63.9	
D1*	D3*	2071.0	13925.8	2.0	25.0	32.7	17.7	123.8	451.3	468.95	83.2	OK	766.8	63.9
E1	E3	2064.0	13925.8	2.0	25.0	28.9	15.6	95.1	346.5	362.11	65.8	OK	761.8	63.5
A3	C3	579.2	18765.6	2.0	17.5	38.7	21.6	31.7	86.0	107.53	37.0	OK	216.8	18.1
A5	C5	579.2	18765.6	2.0	17.5	38.7	21.6	31.7	86.0	107.53	37.0	OK	216.8	18.1
F3	H3	579.2	18765.6	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1
F5	H5	579.2	18765.6	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1

	LL plf	LL lb/in	Steel Ixx in^4	Mu Const ft-K	Y2 in	Low Bnd Ixx in^4	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK	LL Δ OK	
										?	?	
D1*	D3*	2968.8	247.4	612.0	88.29	2.929	1430	0.60	0.88	0.90	OK	OK
E1	E3	1900.0	158.3	510.0	87.83	3.065	1230	0.72	0.65	0.90	OK	OK
A3	C3	820.3	68.4	103.0	34.36	3.408	312	0.60	0.33	0.65	OK	OK
A5	C5	820.3	68.4	103.0	34.36	3.408	312	0.60	0.33	0.65	OK	OK
F3	H3	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK
F5	H5	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK

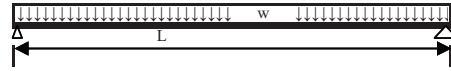


# Bms	Weight (k)	Interior Floor Beams		Wide Flange Shape											Steel deck t in	F _c ksi
		Span	Bay	Nom. Depth	Weight plf	Notes	A _s in ²	d in	tw in	h / tw	kv	Cv	f _y ksi			
7	1.470	F-H	3,4	10 x	12		3.54	9.87	0.190			NO	50	1.5	4	
9	2.106	B-C, F-G	2,5	10 x	12		3.54	9.87	0.190			NO	50	1.5	4	
3	0.630	B-C	2*	10 x	12		3.54	9.87	0.190			NO	50	1.5	4	
7	1.638	A-C	3,4*	10 x	12		3.54	9.87	0.190			NO	50	1.5	4	
3	1.320	E-F	2	12 x	16		4.71	12.00	0.220			NO	50	1.5	4	
9	3.960	E-F	3,4	12 x	16		4.71	12.00	0.220			NO	50	1.5	4	
8	3.520	C-D, E-F	5	12 x	16		4.71	12.00	0.220			NO	50	1.5	4	
3	1.568	C-D	2*	12 x	19		5.57	12.20	0.235			NO	50	1.5	4	
9	5.445	C-D	3,4*	12 x	22		6.48	12.30	0.260			NO	50	1.5	4	
3	0.720	D-D.5	2	10 x	12		3.54	9.87	0.190			NO	50	1.5	4	
4	0.960	D.5-E	3,4	10 x	12		3.54	9.87	0.190			NO	50	1.5	4	
4	0.960		5	10 x	12		3.54	9.87	0.190			NO	50	1.5	4	
3	0.720	D-D.5	2*	10 x	12		3.54	9.87	0.190			NO	50	1.5	4	

Span	Bay	Slab		Trib Width/Space in	L ft	be in	ΣQn (AsF _y) K	a in	ΦMn Φ=0.9 ft-K	Shear Strength		AISC-21 3/4" dia Qn (K)	Stud # req'd	DL Super-Imposed psf	DL Steel Deck psf
		Total t in	Conc. Weight pcf							Φ	ΦVn K				
F-H	3,4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6	30	1.6
B-C, F-G	2,5	4.00	115	82.5	19.50	58.50	177	0.890	112.71	1.00	56.3	17.2	20.6	30	1.6
B-C	2*	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6	30	1.6
A-C	3,4*	4.00	115	82.5	19.50	58.50	177	0.890	112.71	1.00	56.3	17.2	20.6	30	1.6
E-F	2	4.00	115	75.0	27.50	75.00	236	0.924	168.47	1.00	79.2	17.2	27.4	30	1.6
E-F	3,4	4.00	115	82.5	27.50	82.50	236	0.840	169.21	1.00	79.2	17.2	27.4	30	1.6
C-D, E-F	5	4.00	115	75.0	27.50	75.00	236	0.924	168.47	1.00	79.2	17.2	27.4	30	1.6
C-D	2*	4.00	115	75.0	27.50	75.00	279	1.092	199.56	1.00	86.0	17.2	32.4	30	1.6
C-D	3,4*	4.00	115	82.5	27.50	82.50	324	1.155	232.61	1.00	95.9	17.2	37.7	30	1.6
D-D.5	2	4.00	115	81.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6	30	1.6
D.5-E	3,4	4.00	115	82.5	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6	30	1.6
D-D.5	5	4.00	115	75.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6	30	1.6
D-D.5	2*	4.00	115	81.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6	30	1.6

Span	Bay	DL Slab psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?	DL Const plf	DL lb/in	LL plf
B-C, F-G	2,5	29.0	0.0	428.6	80.0	1.00	550.0	1394.4	600.1	66.28	13.6	OK	222.4	18.5	550.0
B-C	2*	29.0	0.0	390.8	125.0	1.00	781.3	1718.9	547.1	65.80	15.0	OK	203.3	16.9	781.3
A-C	3,4*	29.0	0.0	428.6	125.0	1.00	859.4	1889.4	600.1	89.80	18.4	OK	222.4	18.5	859.4
E-F	2	29.0	0.0	394.8	80.0	1.00	500.0	1273.7	552.7	120.40	17.5	OK	207.3	17.3	500.0
E-F	3,4	29.0	0.0	432.6	80.0	1.00	550.0	1399.2	605.7	132.26	19.2	OK	226.4	18.9	550.0
C-D, E-F	5	29.0	0.0	394.8	80.0	1.00	500.0	1273.7	552.7	120.40	17.5	OK	207.3	17.3	500.0
C-D	2*	29.0	0.0	397.8	125.0	1.00	781.3	1727.3	556.9	163.28	23.8	OK	210.3	17.5	781.3
C-D	3,4*	29.0	0.0	438.6	125.0	1.00	859.4	1901.4	614.1	179.74	26.1	OK	232.4	19.4	859.4
D-D.5	2	29.0	0.0	421.1	80.0	1.00	540.0	1369.3	589.5	68.46	13.7	OK	218.6	18.2	540.0
D.5-E	3,4	29.0	0.0	428.6	80.0	1.00	550.0	1394.4	600.1	69.72	13.9	OK	222.4	18.5	550.0
D-D.5	5	29.0	0.0	390.8	80.0	1.00	500.0	1268.9	547.1	63.45	12.7	OK	203.3	16.9	500.0
D-D.5	2*	29.0	0.0	421.1	125.0	1.00	843.8	1855.3	589.5	92.76	18.6	OK	218.6	18.2	843.8

Span	Bay	LL lb/in	Steel I _{xx} in ⁴	Mu Const ft-K	ΦMn Steel B _m ft-K	Y1 in	Y2 in	Low Bnd I _{xx} in ⁴	DL Δ Const, in	LL Δ in	L/360 in	DL Δ OK	LL Δ OK
B-C, F-G	2,5	45.8	53.8	10.57	46.9	0	3.555	180	0.46	0.34	0.65	OK	OK
B-C	2*	65.1	53.8	7.78	46.9	0	3.504	180	0.27	0.32	0.58	OK	OK
A-C	3,4*	71.6	53.8	10.57	46.9	0	3.555	180	0.46	0.54	0.65	OK	OK
E-F	2	41.7	103.0	19.59	75.4	0	3.538	317	0.89	0.70	0.92	OK	OK
E-F	3,4	45.8	103.0	21.40	75.4	0	3.580	317	0.98	0.77	0.92	NG	OK
C-D, E-F	5	41.7	103.0	19.59	75.4	0	3.538	317	0.89	0.70	0.92	OK	OK
C-D	2*	65.1	130.0	19.88	92.6	0	3.454	383	0.72	0.91	0.92	OK	OK
C-D	3,4*	71.6	156.0	21.97	92.6	0	3.422	453	0.66	0.84	0.92	OK	OK
D-D.5	2	45.0	53.8	10.93	46.9	0	3.566	180	0.50	0.37	0.67	OK	OK
D.5-E	3,4	45.8	53.8	11.12	46.9	0	3.566	180	0.51	0.38	0.67	OK	OK
D-D.5	5	41.7	53.8	10.16	46.9	0	3.566	180	0.47	0.34	0.67	OK	OK
D-D.5	2*	70.3	53.8	10.93	46.9	0	3.566	180	0.50	0.58	0.67	OK	OK



2nd Exterior Floor Girders																	
# Bms	Weight (k)	Node	Node	Wide Flange Shape										Steel deck t in	f _c ksi		
				Nom. Depth	Weight plf	Notes	A _s in ²	d in	tw in	h / tw	kv	Cv	f _y ksi				
1	0.210	B2	C2	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
1	0.210	F2	G2	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
1	0.210	B6	C6	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
1	0.210	F6	G6	10 x	12		3.54	9.87	0.190					NO	50	1.5	4
1	0.385	C2	D2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00		50	1.5	4	
1	0.385	E2	F2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00		50	1.5	4	
1	0.385	C7	D7	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00		50	1.5	4	
1	0.385	E7	F7	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00		50	1.5	4	
1	0.550	B2	B3	14 x	22		6.49	13.70	0.230					NO	50	1.5	4
1	0.550	G2	G3	14 x	22		6.49	13.70	0.230					NO	50	1.5	4
1	0.550	B5	B6	14 x	22		6.49	13.70	0.230					NO	50	1.5	4
1	0.550	G5	G6	14 x	22		6.49	13.70	0.230					NO	50	1.5	4
1	0.715	A3	A4	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00		50	1.5	4	
1	0.715	A4	A5	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00		50	1.5	4	
1	0.605	H3	H4	14 x	22		6.49	13.70	0.230					NO	50	1.5	4
1	0.605	H4	H5	14 x	22		6.49	13.70	0.230					NO	50	1.5	4
1	0.050	C6	C7	8 x	10	f	2.96	7.89	0.170					NO	50	1.5	4
1	0.050	F6	F7	8 x	10	f	2.96	7.89	0.170					NO	50	1.5	4

Node	Node	Slab		Trib Width/Space in	L ft	be in	ΣQ _n (AsF _y) K	a in	Shear Strength			AISC Tab3-21 3/4" dia Q _n (K)	Stud # req'd	DL Super-Imposed psf	DL Steel Deck psf
		Total t in	Conc. Weight pcf						ΦM _n Φ=0.9 ft-K	Φ	ΦV _n K				
B2	C2	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6	30	1.6
F2	G2	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6	30	1.6
B6	C6	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6	30	1.6
F6	G6	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6	30	1.6
C2	D2	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2	30	1.6
E2	F2	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2	30	1.6
C7	D7	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2	30	1.6
E7	F7	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2	30	1.6
B2	B3	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7	30	1.6
G2	G3	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7	30	1.6
B5	B6	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7	30	1.6
G5	G6	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7	30	1.6
A3	A4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7	30	1.6
A4	A5	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7	30	1.6
H3	H4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7	30	1.6
H4	H5	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7	30	1.6
C6	C7	4.00	115	0.1	5.00	unbraced L = 5'			28.50	1.00	40.2	17.2		30	1.6
F6	F7	4.00	115	0.1	5.00	unbraced L = 5'			28.50	1.00	40.2	17.2		30	1.6

Node	Node	DL Slab psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+ 1.6LL W _u plf	1.4DL W _u plf	Mu ft-K	Vu K	ΦV _n >Vu & ΦM _n >Mu ?	DL Const plf	DL lb/in	LL plf
F2	G2	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK	107.6	9.0	250.0
B6	C6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK	107.6	9.0	250.0
F6	G6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK	107.6	9.0	250.0
C2	D2	29.0	520.0	723.4	125.0	1.00	390.6	1493.1	1012.7	141.14	20.5	OK	109.6	9.1	390.6
E2	F2	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK	109.6	9.1	250.0
C7	D7	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK	109.6	9.1	250.0
E7	F7	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK	109.6	9.1	250.0
B2	B3	29.0	520.0	1072.3	125.0	0.97	1057.8	2979.2	1501.2	232.75	37.2	OK	289.8	24.1	1093.8
G2	G3	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK	289.8	24.1	700.0
B5	B6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK	289.8	24.1	700.0
G5	G6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK	289.8	24.1	700.0
A3	A4	29.0	520.0	1136.9	125.0	0.90	1094.1	3114.8	1591.6	294.45	42.8	OK	324.4	27.0	1218.8
A4	A5	29.0	520.0	1136.9	125.0	0.90	1094.1	3114.8	1591.6	294.45	42.8	OK	324.4	27.0	1218.8
H3	H4	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK	320.4	26.7	780.0
H4	H5	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK	320.4	26.7	780.0
C6	C7	29.0	520.0	530.5	80.0	1.00	0.7	637.7	742.7	2.32	1.9	OK	10.3	0.9	0.7
F6	F7	29.0	520.0	530.5	80.0	1.00	0.7	637.7	742.7	2.32	1.9	OK	10.3	0.9	0.7

Node	Node	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const. in	LL Δ in	L/400 in	DL Δ OK	LL Δ OK
B2	C2	32.6	53.8	4.12	3.306	180	0.15	0.16	0.53	OK	OK
F2	G2	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
B6	C6	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
F6	G6	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
C2	D2	32.6	88.6	10.36	3.184	262	0.55	0.66	0.83	OK	OK
E2	F2	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
C7	D7	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
E7	F7	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
B2	B3	91.1	199.0	22.64	3.364	535	0.44	0.62	0.75	OK	OK
G2	G3	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
B5	B6	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
G5	G6	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
A3	A4	101.6	245.0	30.66	3.316	780	0.59	0.69	0.83	OK	OK
A4	A5	101.6	245.0	30.66	3.316	780	0.59	0.69	0.83	OK	OK
H3	H4	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
H4	H5	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
C6	C7	0.1	30.8	0.03		30.8	0.00	0.00	0.15	OK	OK
F6	F7	0.1	30.8	0.03		30.8	0.00	0.00	0.15	OK	OK

Non Composite
Non Composite

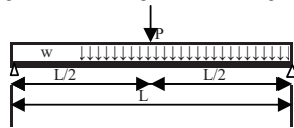
3rd-5th Floor: Flexural Strength of Full Composite Action Wide Flange Beams

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$$RF = 0.25 + \frac{15}{\sqrt{(KLLAT)}} \geq 0.5 \text{ (supporting one floor)}$$

KLL = 2 (for interior & edge beams w/out cantilever slab ASCE 7-05 Table 4-2)

"Office" space designed @ 100psf on 1st (unknown corridor location)
 "Office" space designed @ 80psf on 2nd-8th (unknown corridor location)
 "Office" space designed @ 115psf on 9th-12th (100psf project specified, 15psf access flooring)
 "Office" space designed @ 125psf on 2nd file storage, area defined on plans)*
 Balconies designed @ 100psf



$$M_p = M_p - (0.7F_y S_x \frac{(\lambda - \lambda_p)}{(\lambda_r - \lambda_p)})$$

$$\lambda = h/t_w \quad \lambda = bf/2tf$$

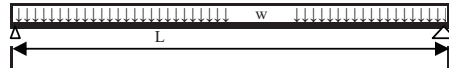
$$\lambda_p = 3.76 \sqrt{E/F_y} \quad \lambda_p = 0.38 \sqrt{E/F_y}$$

$$\lambda_r = 5.7 \sqrt{E/F_y} \quad \lambda_r = 1.0 \sqrt{E/F_y}$$

Per Floor Structural Steel DL =
49.6 K

Beams
110

Transfer Girders D1-E1, D7-E7														
# Bms	Weight (k)	Node	Node	Wide Flange Shape						Steel deck t in	Slab			Trib Width/ Space in
				Nom. Depth	Weight plf	As in ²	d in	tw in	fy ksi		f _c ksi	Total t in	Conc. Weight pcf	
2	4.400	D1	E1	21 x	55	16.20	20.80	0.375	50	1.5	4	4.00	115	46.5
Node	Node	L ft	be in	0.85f _c *a*be ΣQn K	a in	ΦMn Φ=0.9 ft-K	ΦVn Φ=1.0 K	AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd	PD Beam #	PD Super Imposed #	PD Deck #	PD Slab DL #	PD Total #
D1	E1	40.00	46.50	395.3	2.500	702.00	234.0	17.2	46.0	472.5	4050.0	216.0	3915.0	8653.5
Node	Node	WD Self plf	WD Super Imposed plf	WD Deck plf	WD Slab plf	WD Peri- meter plf	WD Total plf	PL Beam #	WL Beam #	LL Reduct Factor	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?	PD Const #
D1	E1	55.0	217.5	11.6	210.3	520.0	959.4	10800.0	580.0	1.00	692.50	55.4	OK	4603.5
Node	Node	WD Const plf	Steel Ixx in ⁴	Const. Mu ft-K	Y1 in	Y2 in	Low Bnd Ixx in ⁴	Const. DL Δ in	LL Δ in	L/400 in	DL Δ OK	LL Δ OK		
D1	E1	276.9	1140	920.70	2.505	2.750	2035	0.80	0.99	1.20	OK	OK		

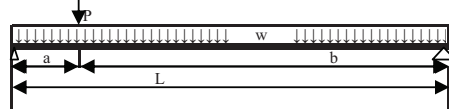


		3rd-5th Interior Girders													Steel deck t in	
# Bms	Weight (k)	Node	Node	Wide Flange Shape										fy ksi		
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv				
1	0.750	C2	C3	14 x	30		8.85	13.80	0.270					NO	50	1.5
1	0.963	C3	C4	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.963	C4	C5	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.750	C5	C6	14 x	30		8.85	13.80	0.270					NO	50	1.5
1	0.963	D1	D2	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.963	E1	E3	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	1.050	D5	D7	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	1.050	E5	E7	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.963	(D.5)1	(D.5)3	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.853	(D.5)5	(D.5)7	16 x	31		9.13	15.90	0.275					NO	50	1.5
1	0.750	F2	F3	14 x	30		8.85	13.80	0.270					NO	50	1.5
1	0.963	F3	F4	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.963	F4	F5	18 x	35		10.30	17.70	0.300					NO	50	1.5
1	0.750	F5	F6	14 x	30		8.85	13.80	0.270					NO	50	1.5

Node	Node	Slab			Trib Width/ Space in	L ft	be in	ΣQn (AsFy) K	a in	Shear Strength			AISC Tab3-21 3/4"dia Qn (K)	Stud # req'd
		fc ksi	Total t in	Conc. Weight pcf						ΦMn Φ=0.9 ft-K	Φ	ΦVn K		
C2	C3	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5
C3	C4	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
C4	C5	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
C5	C6	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5
D1	D2	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
E1	E3	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
D5	D7	4	4.00	115	282.0	30.00	90.00	515	1.683	463.83	1.00	159.3	17.2	59.9
E5	E7	4	4.00	115	282.0	30.00	90.00	515	1.683	463.83	1.00	159.3	17.2	59.9
(D.5)1	(D.5)3	4	4.00	115	240.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
(D.5)5	(D.5)7	4	4.00	115	240.0	27.50	82.50	457	1.627	381.28	1.00	131.2	17.2	53.1
F2	F3	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5
F3	F4	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
F4	F5	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
F5	F6	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5

Node	Node	DL Super- Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri- meter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+ 1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?
														OK
C2	C3	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK
C3	C4	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
C4	C5	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
C5	C6	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK
D1	D2	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
E1	E3	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
D5	D7	30	1.6	29.0	0.0	1459.1	80.0	0.65	1221.0	3704.5	2042.7	416.76	55.6	OK
E5	E7	30	1.6	29.0	0.0	1459.1	80.0	0.65	1221.0	3704.5	2042.7	416.76	55.6	OK
(D.5)1	(D.5)3	30	1.6	29.0	0.0	1247.0	80.0	0.70	1123.6	3294.2	1745.8	311.41	45.3	OK
(D.5)5	(D.5)7	30	1.6	29.0	0.0	1243.0	80.0	0.70	1123.6	3289.4	1740.2	310.95	45.2	OK
F2	F3	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK
F3	F4	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
F4	F5	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
F5	F6	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
C2	C3	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK
C3	C4	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
C4	C5	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
C5	C6	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK
D1	D2	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
E1	E3	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
D5	D7	754.1	62.8	1880.0	156.7	510.0	84.84	3.158	1230	0.93	0.96	1.00	OK	OK
E5	E7	754.1	62.8	1880.0	156.7	510.0	84.84	3.158	1230	0.93	0.96	1.00	OK	OK
(D.5)1	(D.5)3	647.0	53.9	1600.0	133.3	375.0	60.78	3.186	940	0.76	0.76	0.92	OK	OK
(D.5)5	(D.5)7	643.0	53.6	1600.0	133.3	375.0	60.78	3.186	940	0.76	0.76	0.92	OK	OK
F2	F3	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK
F3	F4	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
F4	F5	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
F5	F6	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK



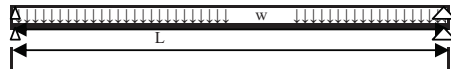
3rd - 5th Interior Floor Girders													
# Bms	Weight (k)	Wide Flange Shape											Steel deck t in
		Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
1	0.945	D1	D3	18x	35		10.30	17.70	0.300		NO	50	1.5
1	0.945	E1	E3	18x	35		10.30	17.70	0.300		NO	50	1.5
1	0.312	A3	C3	12x	16		4.71	12.00	0.220		NO	50	1.5
1	0.312	A5	C5	12x	16		4.71	12.00	0.220		NO	50	1.5
1	0.312	F3	H3	12x	16		4.71	12.00	0.220		NO	50	1.5
1	0.312	F5	H5	12x	16		4.71	12.00	0.220		NO	50	1.5

		Slab			Trib Width/Space		ΣQn		Shear Strength			AISC Tab3-21 3/4" dia Qn (K)		Stud # req'd
		f _c ksi	Total t in	Conc. Weight pcf	L ft	b _e in	(AsFy) K	a in	ΦMn Φ=0.9 ft-K	Φ	ΦVn K			
D1	D3	4	4.00	115	285.0	27.00	81.00	515	1.870	460.22	1.00	159.3	17.2	59.9
E1	E3	4	4.00	115	285.0	27.00	81.00	515	1.870	460.22	1.00	159.3	17.2	59.9
A3	C3	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
A5	C5	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
F3	H3	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
F5	H5	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4

		DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri-meter plf	DL Total plf	Concen. DL P lb	LL psf	LL Reduct Factor	LL w/ RF plf	Concen. LL (P) lb	Concen. LL (P) w/ RF lb	1.2DL+ 1.6LL Wu plf	1.2DL+ 1.6LL Pu lb
D1	D3	30	1.6	29.0	0.0	1474.3	9947.0	80.0	0.67	1270.8	3438.0	2299.5	3802.4	15615.6
E1	E3	30	1.6	29.0	0.0	1474.3	9947.0	80.0	0.67	1270.8	3438.0	2299.5	3802.4	15615.6
A3	C3	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6
A5	C5	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6
F3	H3	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6
F5	H5	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6

		1.4DL Wu plf	1.4DL Pu plf	a ft	b ft	Ma ft-K	Mb ft-K	Mc ft-K	Md ft-K	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?	DL Const plf	DL lb/in
D1	D3	2064.0	13926	2.0	25.0	28.9	15.6	95.1	346.5	362.11	65.8	OK	761.8	63.5
E1	E3	2064.0	13926	2.0	25.0	28.9	15.6	95.1	346.5	362.11	65.8	OK	761.8	63.5
A3	C3	579.2	18766	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1
A5	C5	579.2	18766	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1
F3	H3	579.2	18766	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1
F5	H5	579.2	18766	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1

		LL	LL	Steel	Mu	Y2	Low	DL Δ	LL Δ	L/360	DL	LL
		plf	lb/in	Ixx	Const	in	Bnd Ixx	Const	in	in	Δ OK	Δ OK
				in ⁴	ft-K		in ⁴	in	in	in	?	?
D1	D3	1900.0	158.3	510.0	87.83	3.065	1230	0.72	0.65	0.90	OK	OK
E1	E3	1900.0	158.3	510.0	87.83	3.065	1230	0.72	0.65	0.90	OK	OK
A3	C3	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK
A5	C5	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK
F3	H3	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK
F5	H5	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK

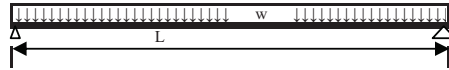


3rd-5th Interior Floor Beams															
# Bms	Weight (k)	Span	Bay	Wide Flange Shape										Steel deck t in	
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
14	2.940	A-C, F-H	3,4	10 x	12		3.54	9.87	0.190				NO	50	1.5
12	2.808	B-C, F-G	2,5	10 x	12		3.54	9.87	0.190				NO	50	1.5
30	13.200	C-D, E-F	2	12 x	16		4.71	12.00	0.220				NO	50	1.5
			3,4	12 x	16		4.71	12.00	0.220				NO	50	1.5
			5	12 x	16		4.71	12.00	0.220				NO	50	1.5
14	3.360	D-D.5, D.5-E	2	10 x	12		3.54	9.87	0.190				NO	50	1.5
			3,4	10 x	12		3.54	9.87	0.190				NO	50	1.5
			5	10 x	12		3.54	9.87	0.190				NO	50	1.5

Span	Bay	Slab			Trib Width/Space in	L ft	be in	ΣQn (AsFy) K	a in	Shear Strength			AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f'c ksi	Total t in	Conc. Weight pcf						ΦMn Φ=0.9 ft-K	Φ	ΦVn K		
A-C, F-H	3,4	4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6
B-C, F-G	2,5	4	4.00	115	82.5	19.50	58.50	177	0.890	112.71	1.00	56.3	17.2	20.6
C-D, E-F	2	4	4.00	115	75.0	27.50	75.00	236	0.924	168.47	1.00	79.2	17.2	27.4
	3,4	4	4.00	115	82.5	27.50	82.50	236	0.840	169.21	1.00	79.2	17.2	27.4
	5	4	4.00	115	75.0	27.50	75.00	236	0.924	168.47	1.00	79.2	17.2	27.4
D-D.5, D.5-E	2	4	4.00	115	81.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6
	3,4	4	4.00	115	82.5	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6
	5	4	4.00	115	75.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6

Span	Bay	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+ 1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?
B-C, F-G	2,5	30	1.6	29.0	0.0	428.6	80.0	1.00	550.0	1394.4	600.1	66.28	13.6	OK
C-D, E-F	2	30	1.6	29.0	0.0	394.8	80.0	1.00	500.0	1273.7	552.7	120.40	17.5	OK
	3,4	30	1.6	29.0	0.0	432.6	80.0	1.00	550.0	1399.2	605.7	132.26	19.2	OK
	5	30	1.6	29.0	0.0	394.8	80.0	1.00	500.0	1273.7	552.7	120.40	17.5	OK
D-D.5, D.5-E	2	30	1.6	29.0	0.0	421.1	80.0	1.00	540.0	1369.3	589.5	68.46	13.7	OK
	3,4	30	1.6	29.0	0.0	428.6	80.0	1.00	550.0	1394.4	600.1	69.72	13.9	OK
	5	30	1.6	29.0	0.0	390.8	80.0	1.00	500.0	1268.9	547.1	63.45	12.7	OK

Span	Bay	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const in	LL Δ in	L/360 in	DL Δ OK	LL Δ OK
B-C, F-G	2,5	222.4	18.5	550.0	45.8	53.8	10.57	3.555	180	0.46	0.34	0.65	OK	OK
C-D, E-F	2	207.3	17.3	500.0	41.7	103.0	19.59	3.538	317	0.89	0.70	0.92	OK	OK
	3,4	226.4	18.9	550.0	45.8	103.0	21.40	3.580	317	0.98	0.77	0.92	OK	OK
	5	207.3	17.3	500.0	41.7	103.0	19.59	3.538	317	0.89	0.70	0.92	OK	OK
D-D.5, D.5-E	2	218.6	18.2	540.0	45.0	53.8	10.93	3.566	180	0.50	0.37	0.67	OK	OK
	3,4	222.4	18.5	550.0	45.8	53.8	11.12	3.566	180	0.51	0.38	0.67	OK	OK
	5	203.3	16.9	500.0	41.7	53.8	10.16	3.566	180	0.47	0.34	0.67	OK	OK



		3rd-5th Exterior Floor Girders													Steel deck t in	
# Bms	Weight (k)	Node	Node	Wide Flange Shape										fy ksi		
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv				
1	0.210	B2	C2	10 x	12		3.54	9.87	0.190					NO	50	1.5
1	0.210	F2	G2	10 x	12		3.54	9.87	0.190					NO	50	1.5
1	0.210	B6	C6	10 x	12		3.54	9.87	0.190					NO	50	1.5
1	0.210	F6	G6	10 x	12		3.54	9.87	0.190					NO	50	1.5
1	0.385	C2	D2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00		50	1.5	
1	0.385	E2	F2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00		50	1.5	
1	0.385	C7	D7	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00		50	1.5	
1	0.385	E7	F7	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00		50	1.5	
1	0.550	B2	B3	14 x	22		6.49	13.70	0.230				NO	50	1.5	
1	0.550	G2	G3	14 x	22		6.49	13.70	0.230				NO	50	1.5	
1	0.550	B5	B6	14 x	22		6.49	13.70	0.230				NO	50	1.5	
1	0.550	G5	G6	14 x	22		6.49	13.70	0.230				NO	50	1.5	
1	0.605	A3	A4	14 x	22		6.49	13.70	0.230				NO	50	1.5	
1	0.605	A4	A5	14 x	22		6.49	13.70	0.230				NO	50	1.5	
1	0.605	H3	H4	14 x	22		6.49	13.70	0.230				NO	50	1.5	
1	0.605	H4	H5	14 x	22		6.49	13.70	0.230				NO	50	1.5	
1	0.050	C6	C7	8 x	10	f	2.96	7.89	0.170				NO	50	1.5	
1	0.050	F6	F7	8 x	10	f	2.96	7.89	0.170				NO	50	1.5	

Node	Node	Slab			Trib Width/ Space in	L ft	be in	ΣQn (AsFy) K	a in	ΦMn Φ=0.9 ft-K	Shear Strength		AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f'c ksi	Total t in	Conc. Weight pcf							Φ	ΦVn K		
B2	C2	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
F2	G2	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
B6	C6	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
F6	G6	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
C2	D2	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
E2	F2	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
C7	D7	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
E7	F7	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
B2	B3	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
G2	G3	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
B5	B6	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
G5	G6	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
A3	A4	4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7
A4	A5	4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7
H3	H4	4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7
H4	H5	4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7
C6	C7	4	4.00	115	15.0	5.00	unbraced L = 5'			28.50	1.00	40.2	17.2	
F6	F7	4	4.00	115	15.0	5.00	unbraced L = 5'			28.50	1.00	40.2	17.2	

Node	Node	DL Super- Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri- meter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+ 1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?
														OK
B2	C2	30	1.6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK
F2	G2	30	1.6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK
B6	C6	30	1.6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK
F6	G6	30	1.6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK
C2	D2	30	1.6	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK
E2	F2	30	1.6	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK
C7	D7	30	1.6	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK
E7	F7	30	1.6	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK
B2	B3	30	1.6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK
G2	G3	30	1.6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK
B5	B6	30	1.6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK
G5	G6	30	1.6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK
A3	A4	30	1.6	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK
A4	A5	30	1.6	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK
H3	H4	30	1.6	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK
H4	H5	30	1.6	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK
C6	C7	30	1.6	29.0	520.0	605.8	80.0	1.00	100.0	886.9	848.1	2.77	2.2	OK
F6	F7	30	1.6	29.0	520.0	605.8	80.0	1.00	100.0	886.9	848.1	2.77	2.2	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const. in	LL Δ in	L/400 in	DL Δ OK ?	LL Δ OK ?
B2	C2	107.6	9.0	250.0	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
F2	G2	107.6	9.0	250.0	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
B6	C6	107.6	9.0	250.0	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
F6	G6	107.6	9.0	250.0	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
C2	D2	109.6	9.1	250.0	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
E2	F2	109.6	9.1	250.0	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
C7	D7	109.6	9.1	250.0	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
E7	F7	109.6	9.1	250.0	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
B2	B3	289.8	24.1	700.0	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
G2	G3	289.8	24.1	700.0	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
B5	B6	289.8	24.1	700.0	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
G5	G6	289.8	24.1	700.0	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
A3	A4	320.4	26.7	780.0	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
A4	A5	320.4	26.7	780.0	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
H3	H4	320.4	26.7	780.0	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
H4	H5	320.4	26.7	780.0	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
C6	C7	48.3	4.0	100.0	8.3	30.8	0.15		30.8	0.00	0.00	0.15	OK	OK
F6	F7	48.3	4.0	100.0	8.3	30.8	0.15		30.8	0.00	0.00	0.15	OK	OK

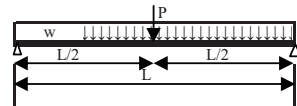
6th -8th Floor: Flexural Strength of Full Composite Action Wide Flange Beams

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$$RF = 0.25 + \frac{15}{\sqrt{(KLLAT)}} \geq 0.5 \text{ (supporting one floor)}$$

KLL = 2 (for interior & edge beams w/out cantilever slab ASCE 7-05 Table 4-2)

- "Office" space designed @ 100psf on 1st (unknown corridor location)
- "Office" space designed @ 80psf on 2nd-8th (unknown corridor location)
- "Office" space designed @ 115psf on 9th-12th (100psf project specified, 15psf access flooring)
- "Office" space designed @ 125psf on 2nd file storage, area defined on plans *
- Balconies designed @ 100psf



$$M_p = M_p - (0.7F_y S_x) \frac{(\lambda - \lambda_p)}{(\lambda_r - \lambda_p)}$$

$$\lambda = h/t_w \quad \lambda_p = bf/2t_f$$

$$\lambda_p = 3.76 \sqrt{E/F_y} \quad \lambda_r = 0.38 \sqrt{E/F_y}$$

$$\lambda_r = 5.7 \sqrt{E/F_y} \quad \lambda_r = 1.0 \sqrt{E/F_y}$$

Per Floor Structural Steel DL = 92.6 K

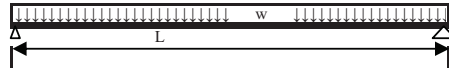
Beams = 110

Transfer Girders D1-E1, D7-E7													
# Bms	Weight (k)	Node	Node	Wide Flange Shape						Steel deck t in	Slab		
				Nom. Depth	Weight plf	A _s in ²	d in	t _w in	f _y ksi		f _c ksi	Total t in	Conc. Weight pcf
2	4,400	D1	E1	21 x	55	16.20	20.80	0.375	50	1.5	4	4.00	115

Node	Node	Trib Width/Space in	L ft	be in	0.85f _c *a*be ΣQ _n K	a in	ΦM _n Φ=0.9 ft-K	ΦV _n Φ=1.0 K	AISC Tab3-21 3/4" dia Q _n (K)	Stud # req'd	PD Beam #	PD Super Imposed #	PD Deck #
D1	E1	46.5	40.00	46.50	395.3	2.500	702.00	234.0	17.2	46.0	472.5	4050.0	216.0

Node	Node	PD Slab DL #	PD Total #	WD Self plf	WD Super Imposed plf	WD Deck plf	WD Slab plf	WD Perimeter plf	WD Total plf	PL Beam #	WL Beam #	LL Reduct Factor	Mu ft-K	Vu K
D1	E1	3915.0	4738.5	55.0	217.5	11.6	210.3	520.0	959.4	10800.0	580.0	1.00	645.52	53.1

Node	Node	ΦV _n >V _u & ΦM _n >M _u ?	PD Const #	WD Const plf	Steel Ixx in ⁴	Const. Mu ft-K	Y1 in	Y2 in	Low Bnd Ixx in ⁴	Const. DL Δ in	LL Δ in	L/400 in	DL Δ OK ?	LL Δ OK ?
D1	E1	OK	4603.5	276.9	1140.0	920.70	2.505	2.750	2035	0.80	0.99	1.20	OK	OK

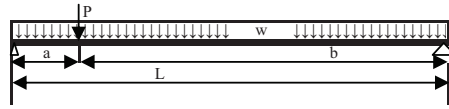


6th-8th Interior Girders															
# Bms	Weight (k)	Node	Node	Wide Flange Shape											Steel deck t in
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
1	0.750	C2	C3	14 x	30		8.85	13.80	0.270				NO	50	1.5
1	0.963	C3	C4	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.963	C4	C5	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.750	C5	C6	14 x	30		8.85	13.80	0.270				NO	50	1.5
1	0.963	D5	D7	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.963	(D.5)1	(D.5)3	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.853	(D.5)5	(D.5)7	16 x	31		9.13	15.90	0.275				NO	50	1.5
1	0.963	E5	E7	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.750	F2	F3	14 x	30		8.85	13.80	0.270				NO	50	1.5
1	0.963	F3	F4	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.963	F4	F5	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.750	F5	F6	14 x	30		8.85	13.80	0.270				NO	50	1.5

Node	Node	Slab			Trib Width/ Space in	L ft	be in	ΣQn (AsFy) K	a in	ΦMn Φ=0.9 ft-K	Shear Strength		AISC Tab3-21 3/4"dia Qn (K)	Stud # req'd
		fc ksi	Total t in	Conc. Weight pcf							Φ	ΦVn K		
C2	C3	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5
C3	C4	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
C4	C5	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
C5	C6	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5
D5	D7	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
(D.5)1	(D.5)3	4	4.00	115	240.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
(D.5)5	(D.5)7	4	4.00	115	240.0	27.50	82.50	457	1.627	381.28	1.00	131.2	17.2	53.1
E5	E7	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
F2	F3	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5
F3	F4	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
F4	F5	4	4.00	115	282.0	27.50	82.50	515	1.836	460.87	1.00	159.3	17.2	59.9
F5	F6	4	4.00	115	270.0	25.00	75.00	443	1.735	332.95	1.00	111.8	17.2	51.5

Node	Node	DL Super- Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri- meter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+ 1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?
														OK
C2	C3	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK
C3	C4	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
C4	C5	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
C5	C6	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK
D5	D7	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
(D.5)1	(D.5)3	30	1.6	29.0	0.0	1247.0	80.0	0.70	1123.6	3294.2	1745.8	311.41	45.3	OK
(D.5)5	(D.5)7	30	1.6	29.0	0.0	1243.0	80.0	0.70	1123.6	3289.4	1740.2	310.95	45.2	OK
E5	E7	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
F2	F3	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK
F3	F4	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
F4	F5	30	1.6	29.0	0.0	1459.1	80.0	0.67	1254.4	3757.9	2042.7	355.24	51.7	OK
F5	F6	30	1.6	29.0	0.0	1393.5	80.0	0.70	1255.0	3680.2	1950.9	287.51	46.0	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
C2	C3	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK
C3	C4	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
C4	C5	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
C5	C6	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK
D5	D7	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
(D.5)1	(D.5)3	647.0	53.9	1600.0	133.3	510.0	61.16	3.082	1230	0.56	0.58	0.92	OK	OK
(D.5)5	(D.5)7	643.0	53.6	1600.0	133.3	375.0	60.78	3.186	940	0.76	0.76	0.92	OK	OK
E5	E7	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
F2	F3	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK
F3	F4	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
F4	F5	754.1	62.8	1880.0	156.7	510.0	71.29	3.082	1230	0.66	0.68	0.92	OK	OK
F5	F6	718.5	59.9	1800.0	150.0	291.0	56.13	3.132	738	0.75	0.74	0.83	OK	OK



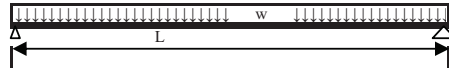
		6th-8th		Interior Floor Girders										Steel deck
# Bms	Weight (k)			Wide Flange Shape										t in
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi	
1	0.945	D1	D3	18x	35		10.30	17.70	0.300			NO	50	1.5
1	0.945	E1	E3	18x	35		10.30	17.70	0.300			NO	50	1.5
1	0.312	A3	C3	12x	16		4.71	12.00	0.220			NO	50	1.5
1	0.312	A5	C5	12x	16		4.71	12.00	0.220			NO	50	1.5
1	0.312	F3	H3	12x	16		4.71	12.00	0.220			NO	50	1.5
1	0.312	F5	H5	12x	16		4.71	12.00	0.220			NO	50	1.5

		Slab		Trib Width/Space		ΣQn		Shear Strength		AISC Tab3-21		Stud # req'd		
		f _c ksi	Total t in	Conc. Weight pcf	in	L ft	be in	(AsFy) K	a in	ΦMn Φ=0.9 ft-K	ΦVn K	3/4" dia Qn (K)		
D1	D3	4	4.00	115	285.0	27.00	81.00	515	1.870	460.22	1.00	159.3	17.2	59.9
E1	E3	4	4.00	115	285.0	27.00	81.00	515	1.870	460.22	1.00	159.3	17.2	59.9
A3	C3	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
A5	C5	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
F3	H3	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
F5	H5	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4

		DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri-meter plf	DL Total plf	Concen. DL P lb	LL psf	LL Reduct Factor	LL w/ RF plf	Concen. LL (P) P lb	Concen. LL (P) w/ RF lb	1.2DL+ 1.6LL Wu plf	1.2DL+ 1.6LL Pu lb
D1	D3	30	1.6	29.0	0.0	1474.3	9947.0	80.0	0.67	1270.8	3438.0	2299.5	3802.4	15615.6
E1	E3	30	1.6	29.0	0.0	1474.3	9947.0	80.0	0.67	1270.8	3438.0	2299.5	3802.4	15615.6
A3	C3	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6
A5	C5	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6
F3	H3	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6
F5	H5	30	1.6	29.0	0.0	413.7	13404.0	80.0	1.00	525.0	2188.0	2188.0	1336.4	19585.6

		1.4DL Wu plf	1.4DL Pu plf	a ft	b ft	Ma ft-K	Mb ft-K	Mc ft-K	Md ft-K	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?	DL Const plf	DL lb/in
D1	D3	2064.0	13925.8	2.0	25.0	28.9	15.6	95.1	346.5	362.11	65.8	OK	761.8	63.5
E1	E3	2064.0	13925.8	2.0	25.0	28.9	15.6	95.1	346.5	362.11	65.8	OK	761.8	63.5
A3	C3	579.2	18765.6	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1
A5	C5	579.2	18765.6	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1
F3	H3	579.2	18765.6	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1
F5	H5	579.2	18765.6	2.0	17.5	35.2	19.6	23.4	63.5	83.11	30.6	OK	216.8	18.1

		LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
D1	D3	1900.0	158.3	510.0	87.83	3.065	1230	0.72	0.65	0.90	OK	OK
E1	E3	1900.0	158.3	510.0	87.83	3.065	1230	0.72	0.65	0.90	OK	OK
A3	C3	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK
A5	C5	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK
F3	H3	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK
F5	H5	525.0	43.8	103.0	34.36	3.408	312	0.60	0.21	0.65	OK	OK

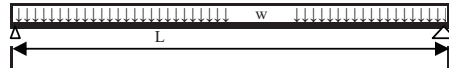


6th-8th Interior Floor Beams															
# Bms	Weight (k)	Span	Bay	Wide Flange Shape										Steel deck t in	
				Nom. Depth	Weight plf	Notes	As in²	d in	tw in	h / tw	kv	Cv	fy ksi		
14	2.940	A-C, F-H	3,4	10 x	12		3.54	9.87	0.190				NO	50	1.5
12	2.808	B-C, F-G	2,5	10 x	12		3.54	9.87	0.190				NO	50	1.5
30	13.200	C-D, E-F	2	12 x	16		4.71	12.00	0.220				NO	50	1.5
			3,4	12 x	16		4.71	12.00	0.220				NO	50	1.5
			5	12 x	16		4.71	12.00	0.220				NO	50	1.5
14	3.360	D-D.5, D.5-E	2	10 x	12		3.54	9.87	0.190				NO	50	1.5
			3,4	10 x	12		3.54	9.87	0.190				NO	50	1.5
			5	10 x	12		3.54	9.87	0.190				NO	50	1.5

Span	Bay	Slab			Trib Width/Space in	L ft	be in	ΣQn (AsFy) K	a in	ΦMn Φ=0.9 ft-K	Shear Strength		AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f'c ksi	Total t in	Conc. Weight pcf							Φ	ΦVn K		
A-C, F-H	3,4	4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6
B-C, F-G	2,5	4	4.00	115	82.5	19.50	58.50	177	0.890	112.71	1.00	56.3	17.2	20.6
C-D, E-F	2	4	4.00	115	75.0	27.50	75.00	236	0.924	168.47	1.00	79.2	17.2	27.4
	3,4	4	4.00	115	82.5	27.50	82.50	236	0.840	169.21	1.00	79.2	17.2	27.4
	5	4	4.00	115	75.0	27.50	75.00	236	0.924	168.47	1.00	79.2	17.2	27.4
D-D.5, D.5-E	2	4	4.00	115	81.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6
	3,4	4	4.00	115	82.5	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6
	5	4	4.00	115	75.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6

Span	Bay	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?
														OK
A-C, F-H	3,4	30	1.6	29.0	0.0	390.8	80.0	1.00	500.0	1268.9	547.1	48.58	11.1	OK
B-C, F-G	2,5	30	1.6	29.0	0.0	428.6	80.0	1.00	550.0	1394.4	600.1	66.28	13.6	OK
C-D, E-F	2	30	1.6	29.0	0.0	394.8	80.0	1.00	500.0	1273.7	552.7	120.40	17.5	OK
	3,4	30	1.6	29.0	0.0	432.6	80.0	1.00	550.0	1399.2	605.7	132.26	19.2	OK
	5	30	1.6	29.0	0.0	394.8	80.0	1.00	500.0	1273.7	552.7	120.40	17.5	OK
D-D.5, D.5-E	2	30	1.6	29.0	0.0	421.1	80.0	1.00	540.0	1369.3	589.5	68.46	13.7	OK
	3,4	30	1.6	29.0	0.0	428.6	80.0	1.00	550.0	1394.4	600.1	69.72	13.9	OK
	5	30	1.6	29.0	0.0	390.8	80.0	1.00	500.0	1268.9	547.1	63.45	12.7	OK

Span	Bay	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in^4	Mu Const ft-K	Y2 in	Low Bnd Ixx in^4	DL Δ Const in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
A-C, F-H	3,4	203.3	16.9	500.0	41.7	53.8	7.78	3.504	180	0.27	0.20	0.58	OK	OK
B-C, F-G	2,5	222.4	18.5	550.0	45.8	53.8	10.57	3.555	180	0.46	0.34	0.65	OK	OK
C-D, E-F	2	207.3	17.3	500.0	41.7	103.0	19.59	3.538	317	0.89	0.70	0.92	OK	OK
	3,4	226.4	18.9	550.0	45.8	103.0	21.40	3.580	317	0.98	0.77	0.92	NG	OK
	5	207.3	17.3	500.0	41.7	103.0	19.59	3.538	317	0.89	0.70	0.92	OK	OK
D-D.5, D.5-E	2	218.6	18.2	540.0	45.0	53.8	10.93	3.566	180	0.50	0.37	0.67	OK	OK
	3,4	222.4	18.5	550.0	45.8	53.8	11.12	3.566	180	0.51	0.38	0.67	OK	OK
	5	203.3	16.9	500.0	41.7	53.8	10.16	3.566	180	0.47	0.34	0.67	OK	OK



6th-8th Exterior Floor Girders															
# Bms	Weight (k)	Node	Node	Wide Flange Shape											Steel deck t in
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
1	0.210	B2	C2	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	F2	G2	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	B6	C6	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	F6	G6	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.385	C2	D2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.385	E2	F2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.523	C6	D6	12 x	19		5.57	12.20	0.235				NO	50	1.5
1	0.523	E6	F6	12 x	19		5.57	12.20	0.235				NO	50	1.5
1	0.385	C7	D7	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.385	E7	F7	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.550	B2	B3	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.550	G2	G3	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.550	B5	B6	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.550	G5	G6	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.605	A3	A4	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.605	A4	A5	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.605	H3	H4	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.605	H4	H5	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.050	C6	C7	8 x	10		2.96	7.89	0.170				NO	50	1.5
1	0.050	F6	F7	8 x	10		2.96	7.89	0.170				NO	50	1.5

Node	Node	Slab			Trib Width/ Space in	L ft	be in	ΣQn (AsFy) K	a in	ΦMn Φ=0.9 ft-K	Shear Strength		AISC Tab3-21 3/4'dia Qn (K)	Stud # req'd
		f'c ksi	Total t in	Conc. Weight pcf							Φ	ΦVn K		
B2	C2	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
F2	G2	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
B6	C6	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
F6	G6	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
C2	D2	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
E2	F2	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
C6	D6	4	4.00	115	67.5	27.50	67.50	279	1.214	198.29	1.00	86.0	17.2	32.4
E6	F6	4	4.00	115	67.5	27.50	67.50	279	1.214	198.29	1.00	86.0	17.2	32.4
C7	D7	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
E7	F7	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
B2	B3	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
G2	G3	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
B5	B6	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
G5	G6	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
A3	A4	4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7
A4	A5	4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7
H3	H4	4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7
H4	H5	4	4.00	115	117.0	27.50	82.50	325	1.157	249.98	1.00	94.5	17.2	37.7
C6	C7	4	4.00	115	0.1	5.00	unbraced L =	5'		28.50	1.00	40.2	17.2	
F6	F7	4	4.00	115	0.1	5.00	unbraced L =	5'		28.50	1.00	40.2	17.2	

Node	Node	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	$\phi V_n > V_u$ & $\phi M_n > M_u$?
B2	C2	30	1.6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK
F2	G2	30	1.6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK
B6	C6	30	1.6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK
F6	G6	30	1.6	29.0	520.0	721.4	80.0	1.00	250.0	1265.7	1009.9	48.45	11.1	OK
C2	D2	30	1.6	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK
E2	F2	30	1.6	29.0	520.0	723.4	80.0	1.00	250.0	1268.1	1012.7	119.87	17.4	OK
C6	D6	30	1.6	29.0	520.0	879.9	100.0	1.00	562.5	1955.9	1231.8	184.89	26.9	OK
E6	F6	30	1.6	29.0	520.0	879.9	100.0	1.00	562.5	1955.9	1231.8	184.89	26.9	OK
C7	D7	30	1.6	29.0	520.0	723.4	100.0	1.00	312.5	1368.1	1012.7	129.32	18.8	OK
E7	F7	30	1.6	29.0	520.0	723.4	100.0	1.00	312.5	1368.1	1012.7	129.32	18.8	OK
B2	B3	30	1.6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK
G2	G3	30	1.6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK
B5	B6	30	1.6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK
G5	G6	30	1.6	29.0	520.0	1072.3	80.0	0.97	677.0	2369.9	1501.2	185.15	29.6	OK
A3	A4	30	1.6	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK
A4	A5	30	1.6	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK
H3	H4	30	1.6	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK
H4	H5	30	1.6	29.0	520.0	1132.9	80.0	0.90	700.2	2479.8	1586.0	234.42	34.1	OK
C6	C7	30	1.6	29.0	520.0	530.5	80.0	1.00	0.7	637.7	742.7	2.32	1.9	OK
F6	F7	30	1.6	29.0	520.0	530.5	80.0	1.00	0.7	637.7	742.7	2.32	1.9	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in^4	Mu Const ft-K	Y2 in	Low Bnd Ixx in^4	DL Δ Const in	LL Δ in	L/400 in	DL Δ OK ?	LL Δ OK ?
B2	C2	107.6	9.0	250.0	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
F2	G2	107.6	9.0	250.0	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
B6	C6	107.6	9.0	250.0	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
F6	G6	107.6	9.0	250.0	20.8	53.8	4.12	3.306	180	0.15	0.10	0.53	OK	OK
C2	D2	109.6	9.1	250.0	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
E2	F2	109.6	9.1	250.0	20.8	88.6	10.36	3.184	262	0.55	0.42	0.83	OK	OK
C6	D6	191.1	15.9	562.5	46.9	130.0	18.07	3.393	381	0.65	0.66	0.83	OK	OK
E6	F6	191.1	15.9	562.5	46.9	130.0	18.07	3.393	381	0.65	0.66	0.83	OK	OK
C7	D7	109.6	9.1	312.5	26.0	88.6	10.36	3.184	262	0.55	0.53	0.83	OK	OK
E7	F7	109.6	9.1	312.5	26.0	88.6	10.36	3.184	262	0.55	0.53	0.83	OK	OK
B2	B3	289.8	24.1	700.0	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
G2	G3	289.8	24.1	700.0	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
B5	B6	289.8	24.1	700.0	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
G5	G6	289.8	24.1	700.0	58.3	199.0	22.64	3.364	535	0.44	0.40	0.75	OK	OK
A3	A4	320.4	26.7	780.0	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
A4	A5	320.4	26.7	780.0	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
H3	H4	320.4	26.7	780.0	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
H4	H5	320.4	26.7	780.0	65.0	199.0	30.28	3.422	538	0.71	0.64	0.83	OK	OK
C6	C7	10.3	0.9	0.7	0.1	30.8	0.03		30.8	0.00	0.00	0.15	OK	OK
F6	F7	10.3	0.9	0.7	0.1	30.8	0.03		30.8	0.00	0.00	0.15	OK	OK

Non
Non

9th - 11th: Flexural Strength of Full Composite Action Wide Flange Beams

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$$RF = 0.25 + \frac{15}{\sqrt{(KLLAT)}} \geq 0.5 \text{ (supporting one floor)}$$

$$KLL = 2 \text{ (for interior \& edge beams w/out cantilever slab ASCE 7-05 Table 4-2)}$$

"Office" space designed @ 100psf on 1st (unknown corridor location)
 "Office" space designed @ 80psf on 2nd-8th (unknown corridor location)
 "Office" space designed @ 115psf on 9th-12th (100psf project specified, 15psf access flooring)
 "Office" space designed @ 125psf on 2nd file storage, area defined on plans)*
 Balconies designed @ 100psf

$$M_p = M_p - (0.7F_y S_x) \frac{(\lambda - \lambda_p)}{(\lambda_r - \lambda_p)}$$

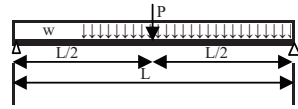
$$\lambda = h/t_w \quad \lambda_p = b_f/2t_f$$

$$\lambda_p = 3.76 \sqrt{E/F_y} \quad \lambda_p = 0.38 \sqrt{E/F_y}$$

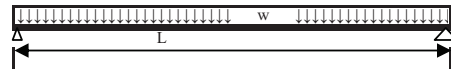
$$\lambda_r = 5.7 \sqrt{E/F_y} \quad \lambda_r = 1.0 \sqrt{E/F_y}$$

Per Floor Structural Steel DL =
112.8 K

Beams
106



Transfer Girders D1-E1, D7-E7														
# Bms	Weight (k)	Node	Node	Wide Flange Shape						Steel deck t in	Slab			Trib Width/ Space in
				Nom. Depth	Weight plf	As in ²	d in	tw in	fy ksi		f _c ksi	Total t in	Conc. Weight pcf	
2	4.960	D1	E1	24 x	62	18.20	23.60	0.395	50	1.5	4	4.00	115	46.5
Node	Node	L ft	be in	0.85f _c ΣQn K	a in	ΦMn Φ=0.9 ft-K	ΦVn Φ=1.0 K	AISC Tab3-21 3/4"dia Qn (K)	Stud # req'd	PD Beam #	PD Super Imposed #	PD Deck #	PD Slab DL #	PD Total #
D1	E1	40.00	46.50	395.3	2.500	869.60	279.7	17.2	46.0	540.0	4050.0	216.0	3915.0	8721.0
Node	Node	WD Self plf	WD Super Imposed plf	WD Deck plf	WD Slab plf	WD Peri- meter plf	WD Total plf	PL Beam #	WL Beam #	LL Reduct Factor	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?	PD Const #
D1	E1	62.0	217.5	11.6	210.3	520.0	#REF!	15525.0	833.8	1.00	#REF!	#REF!	#REF!	4671.0
Node	Node	WD Const plf	Steel Ixx in ⁴	Const. Mu ft-K	Steel ΦMn ft-K	Y1 in	Y2 in	Low Bnd Ixx in ⁴	Const. DL Δ in	LL Δ in	L/400 in	DL Δ OK ?	LL Δ OK ?	
D1	E1	283.9	1350.0	934.20		2.75	2.750	2660	0.69	1.09	1.20	OK	OK	

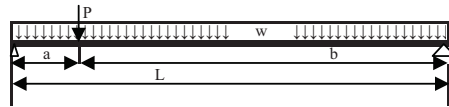


9th-11th Interior Girders														
# Bms	Weight (k)	Node	Node	Wide Flange Shape						Steel deck t in				
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in		h / tw	kv	Cv	fy ksi
1	0.875	C2	C3	18 x	35		10.30	17.70	0.300			NO	50	1.5
1	1.100	C3	C4	18 x	40		11.80	17.90	0.315			NO	50	1.5
1	1.100	C4	C5	18 x	40		11.80	17.90	0.315			NO	50	1.5
1	0.875	C5	C6	18 x	35		10.30	17.70	0.300			NO	50	1.5
1	1.500	D5	D7	18 x	50		14.70	18.00	0.355			NO	50	1.5
1	1.100	(D.5)1	(D.5)3	18 x	40		11.80	17.90	0.315			NO	50	1.5
1	1.200	(D.5)5	(D.5)7	18 x	40		11.80	17.90	0.315			NO	50	1.5
1	1.500	E5	E7	18 x	50		14.70	18.00	0.355			NO	50	1.5
1	0.875	F2	F3	18 x	35		10.30	17.70	0.300			NO	50	1.5
1	1.100	F3	F4	18 x	40		11.80	17.90	0.315			NO	50	1.5
1	1.100	F4	F5	18 x	40		11.80	17.90	0.315			NO	50	1.5
1	0.875	F5	F6	18 x	35		10.30	17.70	0.300			NO	50	1.5

Node	Node	Slab			Trib	L	be	ΣQn	a	ΦMn	Shear Strength			AISC	Stud
		f _c	Total	Conc.	Width/ Space	ft	in	(AsFy)	in	Φ=0.9 ft-K	Φ	ΦVn	Tab3-21 3/4"dia Qn (K)	# req'd	
C2	C3	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9	
C3	C4	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6	
C4	C5	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6	
C5	C6	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9	
D5	D7	4	4.00	115	282.0	30.00	90.00	735	2.402	650.42	1.00	191.7	17.2	85.5	
(D.5)1	(D.5)3	4	4.00	115	240.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6	
(D.5)5	(D.5)7	4	4.00	115	240.0	30.00	90.00	590	1.928	530.38	1.00	169.2	17.2	68.6	
E5	E7	4	4.00	115	282.0	30.00	90.00	735	2.402	650.42	1.00	191.7	17.2	85.5	
F2	F3	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9	
F3	F4	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6	
F4	F5	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6	
F5	F6	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9	

Node	Node	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+ 1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	$\Phi V_n > V_u$ & $\Phi M_n > M_u$?
C2	C3	30	1.6	29.0	0.0	1398.5	115.0	0.70	1804.0	4564.7	1957.9	356.61	57.1	OK
C3	C4	30	1.6	29.0	0.0	1464.1	115.0	0.67	1803.2	4642.0	2049.7	438.82	63.8	OK
C4	C5	30	1.6	29.0	0.0	1464.1	115.0	0.67	1803.2	4642.0	2049.7	438.82	63.8	OK
C5	C6	30	1.6	29.0	0.0	1398.5	115.0	0.70	1804.0	4564.7	1957.9	356.61	57.1	OK
D5	D7	30	1.6	29.0	0.0	1474.1	115.0	0.65	1755.2	4577.2	2063.7	514.94	68.7	OK
(D.5)1	(D.5)3	30	1.6	29.0	0.0	1252.0	115.0	0.70	1615.2	4086.7	1752.8	386.32	56.2	OK
(D.5)5	(D.5)7	30	1.6	29.0	0.0	1252.0	115.0	0.68	1570.9	4015.9	1752.8	451.79	60.2	OK
E5	E7	30	1.6	29.0	0.0	1474.1	115.0	0.65	1755.2	4577.2	2063.7	514.94	68.7	OK
F2	F3	30	1.6	29.0	0.0	1398.5	115.0	0.70	1804.0	4564.7	1957.9	356.61	57.1	OK
F3	F4	30	1.6	29.0	0.0	1464.1	115.0	0.67	1803.2	4642.0	2049.7	438.82	63.8	OK
F4	F5	30	1.6	29.0	0.0	1464.1	115.0	0.67	1803.2	4642.0	2049.7	438.82	63.8	OK
F5	F6	30	1.6	29.0	0.0	1398.5	115.0	0.70	1804.0	4564.7	1957.9	356.61	57.1	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd in ⁴	DL Δ Const in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
C2	C3	723.5	60.3	2587.5	215.6	510.0	56.52	2.990	1230	0.43	0.64	0.83	OK	OK
C3	C4	759.1	63.3	2702.5	225.2	612.0	71.76	2.948	1448	0.55	0.83	0.92	OK	OK
C4	C5	759.1	63.3	2702.5	225.2	612.0	71.76	2.948	1448	0.55	0.83	0.92	OK	OK
C5	C6	723.5	60.3	2587.5	215.6	510.0	56.52	2.990	1230	0.43	0.64	0.83	OK	OK
D5	D7	769.1	64.1	2702.5	225.2	800.0	86.52	2.799	1818	0.60	0.93	1.00	OK	OK
(D.5)1	(D.5)3	652.0	54.3	2300.0	191.7	612.0	61.63	2.948	1448	0.47	0.70	0.92	OK	OK
(D.5)5	(D.5)7	652.0	54.3	2300.0	191.7	612.0	73.35	3.036	1448	0.67	1.00	1.00	OK	OK
E5	E7	769.1	64.1	2702.5	225.2	800.0	86.52	2.799	1818	0.60	0.93	1.00	OK	OK
F2	F3	723.5	60.3	2587.5	215.6	510.0	56.52	2.990	1230	0.43	0.64	0.83	OK	OK
F3	F4	759.1	63.3	2702.5	225.2	612.0	71.76	2.948	1448	0.55	0.83	0.92	OK	OK
F4	F5	759.1	63.3	2702.5	225.2	612.0	71.76	2.948	1448	0.55	0.83	0.92	OK	OK
F5	F6	723.5	60.3	2587.5	215.6	510.0	56.52	2.990	1230	0.43	0.64	0.83	OK	OK



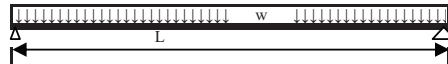
9th - 11th Interior Floor Girders														
# Bms	Weight (k)	Wide Flange Shape		Steel deck										
		Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi	t in		
1	1.080	D1	D3	18x	40		11.80	17.90	0.315			NO	50	1.5
1	1.080	E1	E3	18x	40		11.80	17.90	0.315			NO	50	1.5
1	0.312	A3	C3	12x	16		4.71	12.00	0.220			NO	50	1.5
1	0.312	A5	C5	12x	16		4.71	12.00	0.220			NO	50	1.5
1	0.312	F3	H3	12x	16		4.71	12.00	0.220			NO	50	1.5
1	0.312	F5	H5	12x	16		4.71	12.00	0.220			NO	50	1.5

		Slab			Trib Width/ Space in	L ft	be in	ΣQn (AsFy) K	a in	Shear Strength			AISC Tab3-21 Qn (K)	Stud # req'd
		f'c ksi	Total t in	Conc. Weight pcf						ΦMn Φ=0.9 ft-K	Φ	ΦVn K		
D1	D3	4	4.00	115	285.0	27.00	81.00	590	2.142	525.64	1.00	169.2	17.2	68.6
E1	E3	4	4.00	115	285.0	27.00	81.00	590	2.142	525.64	1.00	169.2	17.2	68.6
A3	C3	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
A5	C5	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
F3	H3	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4
F5	H5	4	4.00	115	78.8	19.50	58.50	236	1.184	166.17	1.00	79.2	17.2	27.4

		DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Perimeter plf	DL Total plf	Concen. DL P lb	LL psf	LL Reduct Factor	LL w/ RF plf	Concen. LL (P) P lb	Concen. LL (P) w/ RF lb	1.2DL+ 1.6LL Wu plf	1.2DL+ 1.6LL Pu lb
D1	D3	30	1.6	29.0	0.0	1479.3	9947.0	115.0	0.67	1826.8	4942.0	3305.5	4698.0	17225.2
E1	E3	30	1.6	29.0	0.0	1479.3	9947.0	115.0	0.67	1826.8	4942.0	3305.5	4698.0	17225.2
A3	C3	30	1.6	29.0	0.0	413.7	13404.0	115.0	1.00	754.7	3145.0	3145.0	1703.9	21116.8
A5	C5	30	1.6	29.0	0.0	413.7	13404.0	115.0	1.00	754.7	3145.0	3145.0	1703.9	21116.8
F3	H3	30	1.6	29.0	0.0	413.7	13404.0	115.0	1.00	754.7	3145.0	3145.0	1703.9	21116.8
F5	H5	30	1.6	29.0	0.0	413.7	13404.0	115.0	1.00	754.7	3145.0	3145.0	1703.9	21116.8

		1.4DL Wu plf	1.4DL Pu plf	a ft	b ft	Ma ft-K	Mb ft-K	Mc ft-K	Md ft-K	Mu ft-K	Vu K	$\Phi V_n > V_u$ & $\Phi M_n > M_u$?	DL Const plf	DL lb/in
D1	D3	2071.0	13925.8	2.0	25.0	31.9	17.2	117.4	428.1	445.33	79.4	OK	766.8	63.9
E1	E3	2071.0	13925.8	2.0	25.0	31.9	17.2	117.4	428.1	445.33	79.4	OK	766.8	63.9
A3	C3	579.2	18765.6	2.0	17.5	37.9	21.1	29.8	81.0	102.11	35.6	OK	216.8	18.1
A5	C5	579.2	18765.6	2.0	17.5	37.9	21.1	29.8	81.0	102.11	35.6	OK	216.8	18.1
F3	H3	579.2	18765.6	2.0	17.5	37.9	21.1	29.8	81.0	102.11	35.6	OK	216.8	18.1
F5	H5	579.2	18765.6	2.0	17.5	37.9	21.1	29.8	81.0	102.11	35.6	OK	216.8	18.1

		LL plf	LL lb/in	Steel Ixx in^4	Mu Const ft-K	Y2 in	Low Bnd Ixx in^4	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
D1	D3	2731.3	227.6	612.0	88.29	2.929	1430	0.60	0.81	0.90	OK	OK
E1	E3	2731.3	227.6	612.0	88.29	2.929	1430	0.60	0.81	0.90	OK	OK
A3	C3	754.7	62.9	103.0	34.36	3.408	312	0.60	0.30	0.65	OK	OK
A5	C5	754.7	62.9	103.0	34.36	3.408	312	0.60	0.30	0.65	OK	OK
F3	H3	754.7	62.9	103.0	34.36	3.408	312	0.60	0.30	0.65	OK	OK
F5	H5	754.7	62.9	103.0	34.36	3.408	312	0.60	0.30	0.65	OK	OK

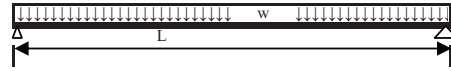


# Bms	Weight (k)	Span	Bay	Wide Flange Shape										Steel deck t in	
				Nom. Depth	Weight plf	Notes	As in²	d in	tw in	h / tw	kv	Cv	fy ksi		
14	2.940	A-C, F-H	3,4	10 x	12		3.54	9.87	0.190				NO	50	1.5
12	2.808	B-C, F-G	2,5	10 x	12		3.54	9.87	0.190				NO	50	1.5
30	15.675	C-D, E-F	2	12 x	19		5.57	12.20	0.235				NO	50	1.5
			3,4	12 x	19		5.57	12.20	0.235				NO	50	1.5
			5	12 x	19		5.57	12.20	0.235				NO	50	1.5
14	3.360	D-D.5, D.5-E	2	10 x	12		3.54	9.87	0.190				NO	50	1.5
			3,4	10 x	12		3.54	9.87	0.190				NO	50	1.5
			5	10 x	12		3.54	9.87	0.190				NO	50	1.5

Span	Bay	Slab			Trib Width/ Space in	L ft	be in	ΣQ_n (AsFy) K	LL Reduct Factor	LL 1.2DL+ 1.6LL w/ reduct plf	Shear Strength		AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f'c ksi	Total t in	Conc. Weight psf							ΦM_n $\Phi = 0.9$ ft-K	ΦV_n K		
A-C, F-H	3,4	4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6
B-C, F-G	2,5	4	4.00	115	82.5	19.50	58.50	177	0.890	112.71	1.00	56.3	17.2	20.6
C-D, E-F	2	4	4.00	115	75.0	27.50	75.00	279	1.092	199.56	1.00	86.0	17.2	32.4
	3,4	4	4.00	115	82.5	27.50	82.50	279	0.993	200.59	1.00	86.0	17.2	32.4
	5	4	4.00	115	75.0	27.50	75.00	279	1.092	199.56	1.00	86.0	17.2	32.4
D-D.5, D.5-E	2	4	4.00	115	81.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6
	3,4	4	4.00	115	82.5	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6
	5	4	4.00	115	75.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6

Span	Bay	DL Super- Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri- meter plf	DL Total plf	LL psf	LL Reduct Factor	LL 1.2DL+ 1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	$\Phi V_n > V_u$ & $\Phi M_n > M_u$?		
													A-C, F-H	3,4
B-C, F-G	2,5	30	1.6	29.0	0.0	428.6	115.0	1.00	790.6	1779.4	600.1	84.57	17.3	OK
C-D, E-F	2	30	1.6	29.0	0.0	397.8	115.0	1.00	718.8	1627.3	556.9	153.83	22.4	OK
	3,4	30	1.6	29.0	0.0	435.6	115.0	1.00	790.6	1787.8	609.9	169.00	24.6	OK
	5	30	1.6	29.0	0.0	397.8	115.0	1.00	718.8	1627.3	556.9	153.83	22.4	OK
D-D.5, D.5-E	2	30	1.6	29.0	0.0	421.1	115.0	1.00	776.3	1747.3	589.5	87.36	17.5	OK
	3,4	30	1.6	29.0	0.0	428.6	115.0	1.00	790.6	1779.4	600.1	88.97	17.8	OK
	5	30	1.6	29.0	0.0	390.8	115.0	1.00	718.8	1618.9	547.1	80.95	16.2	OK

Span	Bay	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in^4	Mu Const ft-K	Y2 in	Low Bnd Ixx in^4	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
B-C, F-G	2,5	222.4	18.5	790.6	65.9	53.8	10.57	3.555	180	0.46	0.49	0.65	OK	OK
C-D, E-F	2	210.3	17.5	718.8	59.9	130.0	19.88	3.454	383	0.72	0.83	0.92	OK	OK
	3,4	229.4	19.1	790.6	65.9	130.0	21.68	3.504	383	0.78	0.92	0.92	OK	OK
	5	210.3	17.5	718.8	59.9	130.0	19.88	3.454	383	0.72	0.83	0.92	OK	OK
D-D.5, D.5-E	2	218.6	18.2	776.3	64.7	53.8	10.93	3.566	180	0.50	0.54	0.67	OK	OK
	3,4	222.4	18.5	790.6	65.9	53.8	11.12	3.566	180	0.51	0.55	0.67	OK	OK
	5	203.3	16.9	718.8	59.9	53.8	10.16	3.566	180	0.47	0.50	0.67	OK	OK



9th-11th Exterior Floor Girders															
# Bms	Weight (k)	Node	Node	Wide Flange Shape										Steel deck t in	
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
1	0.210	B2	C2	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	F2	G2	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	B6	C6	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	F6	G6	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.385	C2	D2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.385	E2	F2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.385	C6	D6	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.385	E6	F6	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.550	B2	B3	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.550	G2	G3	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.550	B5	B6	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.550	G5	G6	14 x	22		6.49	13.70	0.230				NO	50	1.5
1	0.715	A3	A4	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00	50	1.5	
1	0.715	A4	A5	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00	50	1.5	
1	0.715	H3	H4	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00	50	1.5	
1	0.715	H4	H5	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00	50	1.5	

Node	Node	Slab			Trib Width/Space in	L ft	be in	ΣQn (AsFy) K	a in	Shear Strength			AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f _c ksi	Total t in	Conc. Weight pcf						ΦMn Φ=0.9 ft-K	Φ	ΦVn K		
B2	C2	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
F2	G2	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
B6	C6	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
F6	G6	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
C2	D2	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
E2	F2	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
C6	D6	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
E6	F6	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
B2	B3	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
G2	G3	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
B5	B6	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
G5	G6	4	4.00	115	105.0	25.00	75.00	325	1.273	248.58	1.00	94.5	17.2	37.7
A3	A4	4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7
A4	A5	4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7
H3	H4	4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7
H4	H5	4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7

Node	Node	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri-meter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?
														OK
B2	C2	30	1.6	29.0	520.0	721.4	115.0	1.00	359.4	1440.7	1009.9	55.15	12.6	OK
F2	G2	30	1.6	29.0	520.0	721.4	115.0	1.00	359.4	1440.7	1009.9	55.15	12.6	OK
B6	C6	30	1.6	29.0	520.0	721.4	115.0	1.00	359.4	1440.7	1009.9	55.15	12.6	OK
F6	G6	30	1.6	29.0	520.0	721.4	115.0	1.00	359.4	1440.7	1009.9	55.15	12.6	OK
C2	D2	30	1.6	29.0	520.0	723.4	115.0	1.00	359.4	1443.1	1012.7	136.41	19.8	OK
E2	F2	30	1.6	29.0	520.0	723.4	115.0	1.00	359.4	1443.1	1012.7	136.41	19.8	OK
C6	D6	30	1.6	29.0	520.0	723.4	115.0	1.00	359.4	1443.1	1012.7	136.41	19.8	OK
E6	F6	30	1.6	29.0	520.0	723.4	115.0	1.00	359.4	1443.1	1012.7	136.41	19.8	OK
B2	B3	30	1.6	29.0	520.0	1072.3	115.0	0.97	973.2	2843.8	1501.2	222.17	35.5	OK
G2	G3	30	1.6	29.0	520.0	1072.3	115.0	0.97	973.2	2843.8	1501.2	222.17	35.5	OK
B5	B6	30	1.6	29.0	520.0	1072.3	115.0	0.97	973.2	2843.8	1501.2	222.17	35.5	OK
G5	G6	30	1.6	29.0	520.0	1072.3	115.0	0.97	973.2	2843.8	1501.2	222.17	35.5	OK
A3	A4	30	1.6	29.0	520.0	1136.9	115.0	0.90	1006.6	2974.8	1591.6	281.21	40.9	OK
A4	A5	30	1.6	29.0	520.0	1136.9	115.0	0.90	1006.6	2974.8	1591.6	281.21	40.9	OK
H3	H4	30	1.6	29.0	520.0	1136.9	115.0	0.90	1006.6	2974.8	1591.6	281.21	40.9	OK
H4	H5	30	1.6	29.0	520.0	1136.9	115.0	0.90	1006.6	2974.8	1591.6	281.21	40.9	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const. in	LL Δ in	L/400 in	DL Δ OK ?	LL Δ OK ?
B2	C2	107.6	9.0	359.4	29.9	53.8	4.12	3.306	180	0.15	0.15	0.53	OK	OK
F2	G2	107.6	9.0	359.4	29.9	53.8	4.12	3.306	180	0.15	0.15	0.53	OK	OK
B6	C6	107.6	9.0	359.4	29.9	53.8	4.12	3.306	180	0.15	0.15	0.53	OK	OK
F6	G6	107.6	9.0	359.4	29.9	53.8	4.12	3.306	180	0.15	0.15	0.53	OK	OK
C2	D2	109.6	9.1	359.4	29.9	88.6	10.36	3.184	262	0.55	0.61	0.83	OK	OK
E2	F2	109.6	9.1	359.4	29.9	88.6	10.36	3.184	262	0.55	0.61	0.83	OK	OK
C6	D6	109.6	9.1	359.4	29.9	88.6	10.36	3.184	262	0.55	0.61	0.83	OK	OK
E6	F6	109.6	9.1	359.4	29.9	88.6	10.36	3.184	262	0.55	0.61	0.83	OK	OK
B2	B3	289.8	24.1	1006.3	83.9	199.0	22.64	3.364	535	0.44	0.57	0.75	OK	OK
G2	G3	289.8	24.1	1006.3	83.9	199.0	22.64	3.364	535	0.44	0.57	0.75	OK	OK
B5	B6	289.8	24.1	1006.3	83.9	199.0	22.64	3.364	535	0.44	0.57	0.75	OK	OK
G5	G6	289.8	24.1	1006.3	83.9	199.0	22.64	3.364	535	0.44	0.57	0.75	OK	OK
A3	A4	324.4	27.0	1121.3	93.4	301.0	30.66	3.316	778	0.48	0.64	0.83	OK	OK
A4	A5	324.4	27.0	1121.3	93.4	301.0	30.66	3.316	778	0.48	0.64	0.83	OK	OK
H3	H4	324.4	27.0	1121.3	93.4	301.0	30.66	3.316	778	0.48	0.64	0.83	OK	OK
H4	H5	324.4	27.0	1121.3	93.4	301.0	30.66	3.316	778	0.48	0.64	0.83	OK	OK

12th Floor: Flexural Strength of Full Composite Action Wide Flange Beams

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$$RF = 0.25 + \frac{15}{\sqrt{(KLLAT)}} \geq 0.5 \text{ (supporting one floor)}$$

$$KLL = \frac{2}{2} \text{ (for interior \& edge beams w/out cantilever slab ASCE 7-05 Table 4-2)}$$

- "Office" space designed @ 100psf on 1st (unknown corridor location)
- "Office" space designed @ 80psf on 2nd-8th (unknown corridor location)
- "Office" space designed @ 115psf on 9th-12th (100psf project specified, 15psf access flooring)
- "Office" space designed @ 125psf on 2nd file storage, area defined on plans *
- Balconies designed @ 100psf

$$M_p = M_p - (0.7F_y S) \frac{(\lambda - \lambda_p)}{(\lambda_r - \lambda_p)}$$

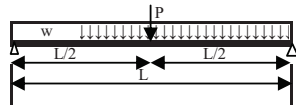
$$\lambda = h/t_w \quad \lambda = bf/2tf$$

$$\lambda_p = 3.76 \sqrt{E/F_y} \quad \lambda_p = 0.38 \sqrt{E/F_y}$$

$$\lambda_r = 5.7 \sqrt{E/F_y} \quad \lambda_r = 1.0 \sqrt{E/F_y}$$

Per Floor Structural Steel DL = 112.639 K

Beams
106

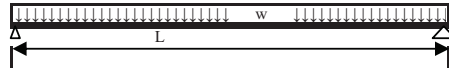


Transfer Girders D1-E1, D7-E7														
# Bms	Weight (k)	Node	Node	Wide Flange Shape						Steel deck t in	Slab			Trib Width/ Space in
				Nom. Depth	Weight plf	As in ²	d in	tw in	fy ksi		f'c ksi	Total t in	Conc. Weight pcf	
2	4.960	D1/D7	E1/E7	24 x	62	18.20	23.60	0.395	50	1.5	4	4.00	115	46.5

Node	Node	L ft	be in	0.85f'c *a*be ΣQn K	a in	ΦMn Φ=0.9 ft-K	ΦVn Φ=1.0 K	AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd	PD Beam #	PD Super Imposed #	PD Deck #	PD Slab DL #	PD Total #
D1/D7	E1/E7	40.00	46.50	395.3	2.500	869.60	279.7	17.2	46.0	540.0	4050.0	216.0	3915.0	8721.0

Node	Node	WD Self plf	WD Super Imposed plf	WD Deck plf	WD Slab plf	WD Perimeter plf	WD Total plf	PL Beam #	WL Beam #	LL Reduct Factor	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?	PD Const #
D1/D7	E1/E7	62.0	217.5	11.6	210.3	520.0	959.4	15525.0	833.8	1.00	850.11	67.4	OK	4671.0

Node	Node	WD Const plf	Steel Ixx in ⁴	Const. Mu ft-K	Y2 in	Low Bnd Ixx in ⁴	Const. DL Δ in	LL Δ in	L/400 in	DL Δ OK ?	LL Δ OK ?
D1/D7	E1/E7	283.9	1350.0	934.20	2.750	2660	0.69	1.09	1.20	OK	OK

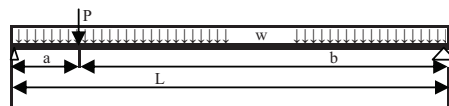


12th Interior Girders															
# Bms	Weight (k)	Node	Node	Wide Flange Shape										Steel deck t in	
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
1	1.100	C3	C4	18 x	40		11.80	17.90	0.315				NO	50	1.5
1	1.100	C4	C5	18 x	40		11.80	17.90	0.315				NO	50	1.5
1	1.500	D5	D7	18 x	50		14.70	18.00	0.355				NO	50	1.5
1	1.200	(D.5)1	(D.5)3	18 x	40		11.80	17.90	0.315				NO	50	1.5
1	1.200	(D.5)5	(D.5)7	18 x	40		11.80	17.90	0.315				NO	50	1.5
1	1.500	E5	E7	18 x	50		14.70	18.00	0.355				NO	50	1.5
1	1.100	F3	F4	18 x	40		11.80	17.90	0.315				NO	50	1.5
1	1.100	F4	F5	18 x	40		11.80	17.90	0.315				NO	50	1.5

Node	Node	Slab			Trib Width/ Space in	L ft	be in	ΣQn (AsFy) K	a in	ΦMn Φ=0.9 ft-K	Shear Strength		AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f _c ksi	Total t in	Conc. Weight pcf							Φ	ΦVn K		
C3	C4	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6
C4	C5	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6
D5	D7	4	4.00	115	282.0	30.00	90.00	735	2.402	650.42	1.00	191.7	17.2	85.5
(D.5)1	(D.5)3	4	4.00	115	240.0	30.00	90.00	590	1.928	530.38	1.00	169.2	17.2	68.6
(D.5)5	(D.5)7	4	4.00	115	240.0	30.00	90.00	590	1.928	530.38	1.00	169.2	17.2	68.6
E5	E7	4	4.00	115	282.0	30.00	90.00	735	2.402	650.42	1.00	191.7	17.2	85.5
F3	F4	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6
F4	F5	4	4.00	115	282.0	27.50	82.50	590	2.103	526.50	1.00	169.2	17.2	68.6

Node	Node	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+ 1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	ΦVn>Vu & ΦMn>Mu ?
C4	C5	30	1.6	29.0	0.0	1464.1	115.0	0.67	1803.2	4642.0	2049.7	438.82	63.8	OK
D5	D7	30	1.6	29.0	0.0	1474.1	115.0	0.65	1755.2	4577.2	2063.7	514.94	68.7	OK
(D.5)1	(D.5)3	30	1.6	29.0	0.0	1252.0	115.0	0.68	1570.9	4015.9	1752.8	451.79	60.2	OK
(D.5)5	(D.5)7	30	1.6	29.0	0.0	1252.0	115.0	0.68	1570.9	4015.9	1752.8	451.79	60.2	OK
E5	E7	30	1.6	29.0	0.0	1474.1	115.0	0.65	1755.2	4577.2	2063.7	514.94	68.7	OK
F3	F4	30	1.6	29.0	0.0	1464.1	115.0	0.67	1803.2	4642.0	2049.7	438.82	63.8	OK
F4	F5	30	1.6	29.0	0.0	1464.1	115.0	0.67	1803.2	4642.0	2049.7	438.82	63.8	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
C4	C5	759.1	63.3	2702.5	225.2	612.0	71.76	2.948	1448	0.55	0.83	0.92	OK	OK
D5	D7	769.1	64.1	2702.5	225.2	800.0	86.52	2.799	1818	0.60	0.93	1.00	OK	OK
(D.5)1	(D.5)3	652.0	54.3	2300.0	191.7	612.0	73.35	3.036	1448	0.67	1.00	1.00	OK	OK
(D.5)5	(D.5)7	652.0	54.3	2300.0	191.7	612.0	73.35	3.036	1448	0.67	1.00	1.00	OK	OK
E5	E7	769.1	64.1	2702.5	225.2	800.0	86.52	2.799	1818	0.60	0.93	1.00	OK	OK
F3	F4	759.1	63.3	2702.5	225.2	612.0	71.76	2.948	1448	0.55	0.83	0.92	OK	OK
F4	F5	759.1	63.3	2702.5	225.2	612.0	71.76	2.948	1448	0.55	0.83	0.92	OK	OK



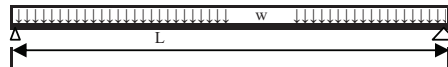
12th Interior Floor Girders															
# Bms	Weight (k)	Node	Node	Wide Flange Shape										Steel deck t in	
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
1	1.080	D1	D3	18x	40		11.80	17.90	0.315				NO	50	1.5
1	1.080	E1	E3	18x	40		11.80	17.90	0.315				NO	50	1.5
1	0.273	A3	C3	12x	14	v	4.16	11.90	0.200	54.3	5	1.00	50	1.5	
1	0.273	A5	C5	12x	14	v	4.16	11.90	0.200	54.3	5	1.00	50	1.5	
1	0.273	F3	H3	12x	14	v	4.16	11.90	0.200	54.3	5	1.00	50	1.5	
1	0.273	F5	H5	12x	14	v	4.16	11.90	0.200	54.3	5	1.00	50	1.5	

		Slab			Trib Width/Space in	L ft	be in	ΣQ_n (AsFy) K	a in	ΦM_n $\Phi=0.9$ ft-K	Shear Strength		AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f _c ksi	Total t in	Conc. Weight pcf							Φ	ΦV_n K		
D1	D3	4	4.00	115	285.0	27.00	81.00	590	2.142	525.64	1.00	169.2	17.2	68.6
E1	E3	4	4.00	115	285.0	27.00	81.00	590	2.142	525.64	1.00	169.2	17.2	68.6
A3	C3	4	4.00	115	78.8	19.50	58.50	208	1.046	147.06	0.90	64.3	17.2	24.2
A5	C5	4	4.00	115	78.8	19.50	58.50	208	1.046	147.06	0.90	64.3	17.2	24.2
F3	H3	4	4.00	115	78.8	19.50	58.50	208	1.046	147.06	0.90	64.3	17.2	24.2
F5	H5	4	4.00	115	78.8	19.50	58.50	208	1.046	147.06	0.90	64.3	17.2	24.2

		DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Perimeter plf	DL Total plf	Concn. DL lb	LL psf	LL Reduct Factor	LL w/ RF plf	Concn. LL (P) lb	Concn. LL (P) w/ RF lb	1.2DL+1.6LL Wu plf	1.2DL+1.6LL Pu lb
D1	D3	30	1.6	29.0	0.0	1479.3	9947.0	115.0	0.67	1826.8	5371.0	3592.4	4698.0	17684.3
E1	E3	30	1.6	29.0	0.0	1479.3	9947.0	115.0	0.67	1826.8	3438.0	2299.5	4698.0	15615.6
A3	C3	30	1.6	29.0	0.0	411.7	8854.0	115.0	1.00	754.7	3145.0	3145.0	1701.5	15656.8
A5	C5	30	1.6	29.0	0.0	411.7	8854.0	115.0	1.00	754.7	3145.0	3145.0	1701.5	15656.8
F3	H3	30	1.6	29.0	0.0	411.7	8854.0	115.0	1.00	754.7	3145.0	3145.0	1701.5	15656.8
F5	H5	30	1.6	29.0	0.0	411.7	8854.0	115.0	1.00	754.7	3145.0	3145.0	1701.5	15656.8

		1.4DL Wu plf	1.4DL Pu plf	a ft	b ft	Ma ft-K	Mb ft-K	Mc ft-K	Md ft-K	Mu ft-K	Vu K	$\Phi V_n > V_u$ & $\Phi M_n > M_u$?	DL Const plf	DL lb/in
D1	D3	2071.0	13925.8	2.0	25.0	32.7	17.7	117.4	428.1	445.79	79.8	OK	766.8	63.9
E1	E3	2071.0	13925.8	2.0	25.0	28.9	15.6	117.4	428.1	443.72	77.9	OK	766.8	63.9
A3	C3	576.4	12395.6	2.0	17.5	28.1	15.7	29.8	80.9	96.53	30.6	OK	214.8	17.9
A5	C5	576.4	12395.6	2.0	17.5	28.1	15.7	29.8	80.9	96.53	30.6	OK	214.8	17.9
F3	H3	576.4	12395.6	2.0	17.5	28.1	15.7	29.8	80.9	96.53	30.6	OK	214.8	17.9
F5	H5	576.4	12395.6	2.0	17.5	28.1	15.7	29.8	80.9	96.53	30.6	OK	214.8	17.9

		LL plf	LL lb/in	Steel I _{xx} in ⁴	Mu Const ft-K	ΦM_n Steel Bm ft-K	Y1 in	Y2 in	Low Bnd I _{xx} in ⁴	DL Δ Const. in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
D1	D3	2731.3	227.6	612.0	79.82		0	2.929	1430	0.60	0.81	0.90	OK	OK
E1	E3	2731.3	227.6	612.0	76.24		0	2.929	1430	0.60	0.80	0.90	OK	OK
A3	C3	754.7	62.9	88.6	15.86		0	3.477	270	0.55	0.35	0.65	OK	OK
A5	C5	754.7	62.9	88.6	15.86		0	3.477	270	0.55	0.35	0.65	OK	OK
F3	H3	754.7	62.9	88.6	15.86		0	3.477	270	0.55	0.35	0.65	OK	OK
F5	H5	754.7	62.9	88.6	15.86		0	3.477	270	0.55	0.35	0.65	OK	OK

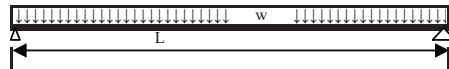


		12th Interior Floor Beams												Steel deck t in	
# Bms	Weight (k)	Span	Bay	Wide Flange Shape											
				Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
14	2.940	A-C, F-H	3,4	10 x	12		3.54	9.87	0.190				NO	50	1.5
8	1.872	B-C, F-G	2,5	10 x	12		3.54	9.87	0.190				NO	50	1.5
30	15.675	C-D, E-F	2	12 x	19		5.57	12.20	0.235				NO	50	1.5
			3,4	12 x	19		5.57	12.20	0.235				NO	50	1.5
			5	12 x	19		5.57	12.20	0.235				NO	50	1.5
14	3.360	D-D.5,	2	10 x	12		3.54	9.87	0.190				NO	50	1.5
		D.5-E	3,4	10 x	12		3.54	9.87	0.190				NO	50	1.5
			5	10 x	12		3.54	9.87	0.190				NO	50	1.5

Span	Bay	Slab			Trib Width/Space in	L ft	be in	ΣQ_n (AsFy) K	a in	ΦM_n $\Phi=0.9$ ft-K	Shear Strength		AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f _c ksi	Total t in	Conc. Weight pcf							Φ	ΦV_n K		
A-C, F-H	3,4	4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6
B-C, F-G	2,5	4	4.00	115	82.5	19.50	58.50	177	0.890	112.71	1.00	56.3	17.2	20.6
C-D, E-F	2	4	4.00	115	75.0	27.50	75.00	279	1.092	199.56	1.00	86.0	17.2	32.4
	3,4	4	4.00	115	82.5	27.50	82.50	279	0.993	200.59	1.00	86.0	17.2	32.4
	5	4	4.00	115	75.0	27.50	75.00	279	1.092	199.56	1.00	86.0	17.2	32.4
D-D.5,	2	4	4.00	115	81.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6
D.5-E	3,4	4	4.00	115	82.5	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6
	5	4	4.00	115	75.0	20.00	60.00	177	0.868	112.85	1.00	56.3	17.2	20.6

Span	Bay	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Peri-meter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+ 1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	$\Phi V_n > V_u$ & $\Phi M_n > M_u$?
A-C, F-H	3,4	30	1.6	29.0	0.0	390.8	100.0	1.00	625.0	1468.9	547.1	56.23	12.9	OK
B-C, F-G	2,5	30	1.6	29.0	0.0	428.6	100.0	1.00	687.5	1614.4	600.1	76.73	15.7	OK
C-D, E-F	2	30	1.6	29.0	0.0	397.8	115.0	1.00	718.8	1627.3	556.9	153.83	22.4	OK
	3,4	30	1.6	29.0	0.0	435.6	115.0	1.00	790.6	1787.8	609.9	169.00	24.6	OK
	5	30	1.6	29.0	0.0	397.8	115.0	1.00	718.8	1627.3	556.9	153.83	22.4	OK
D-D.5, D.5-E	2	30	1.6	29.0	0.0	421.1	115.0	1.00	776.3	1747.3	589.5	87.36	17.5	OK
	3,4	30	1.6	29.0	0.0	428.6	115.0	1.00	790.6	1779.4	600.1	88.97	17.8	OK
	5	30	1.6	29.0	0.0	390.8	115.0	1.00	718.8	1618.9	547.1	80.95	16.2	OK

Span	Bay	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const in	LL Δ in	L/360 in	DL Δ OK ?	LL Δ OK ?
A-C, F-H	3,4	203.3	16.9	625.0	52.1	53.8	7.78	3.504	180	0.27	0.25	0.58	OK	OK
B-C, F-G	2,5	222.4	18.5	687.5	57.3	53.8	10.57	3.555	180	0.46	0.43	0.65	OK	OK
C-D, E-F	2	210.3	17.5	718.8	59.9	130.0	19.88	3.454	383	0.72	0.83	0.92	OK	OK
	3,4	229.4	19.1	790.6	65.9	130.0	21.68	3.504	383	0.78	0.92	0.92	OK	OK
	5	210.3	17.5	718.8	59.9	130.0	19.88	3.454	383	0.72	0.83	0.92	OK	OK
D-D.5, D.5-E	2	218.6	18.2	776.3	64.7	53.8	10.93	3.566	180	0.50	0.54	0.67	OK	OK
	3,4	222.4	18.5	790.6	65.9	53.8	11.12	3.566	180	0.51	0.55	0.67	OK	OK
	5	203.3	16.9	718.8	59.9	53.8	10.16	3.566	180	0.47	0.50	0.67	OK	OK



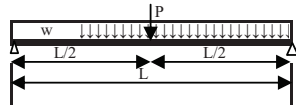
# Bms	Weight (k)	12th Exterior Floor Girders		Wide Flange Shape											Steel deck t in
		Node	Node	Nom. Depth	Weight plf	Notes	As in ²	d in	tw in	h / tw	kv	Cv	fy ksi		
1	0.210	B2	C2	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	F2	G2	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	B6	C6	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	F6	G6	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.875	C2	C3	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.875	F2	F3	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.875	C5	C6	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.875	F5	F6	18 x	35		10.30	17.70	0.300				NO	50	1.5
1	0.385	E2	D2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.385	E2	F2	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.385	C6	D6	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.385	E6	F6	12 x	14	v	4.16	11.90	0.200	54.30	5	1.00	50	1.5	
1	0.715	A3	A4	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00	50	1.5	
1	0.715	A4	A5	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00	50	1.5	
1	0.715	H3	H4	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00	50	1.5	
1	0.715	H4	H5	16 x	26	v	7.68	15.70	0.250	56.80	5	1.00	50	1.5	
1	0.210	B2.5	C2.5	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	B5.5	C5.5	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	F2.5	G2.5	10 x	12		3.54	9.87	0.190				NO	50	1.5
1	0.210	F5.5	G5.5	10 x	12		3.54	9.87	0.190				NO	50	1.5

Node	Node	Slab			Trib Width/Space in	L ft	be in	ΣQn (AsFy) K	a in	Shear Strength			AISC Tab3-21 3/4" dia Qn (K)	Stud # req'd
		f'c ksi	Total t in	Conc. Weight pcf						ΦMn Φ=0.9 ft-K	ΦVn K			
B2	C2	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
F2	G2	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
B6	C6	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
F6	G6	4	4.00	115	37.5	17.50	37.50	177	1.388	109.40	1.00	56.3	17.2	20.6
C2	C3	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9
F2	F3	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9
C5	C6	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9
F5	F6	4	4.00	115	270.0	25.00	75.00	515	2.020	457.33	1.00	159.3	17.2	59.9
C2	D2	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
E2	F2	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
C6	D6	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
E6	F6	4	4.00	115	37.5	27.50	37.50	208	1.631	142.50	0.90	64.3	17.2	24.2
A3	A4	4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7

A4	A5	4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7
H3	H4	4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7
H4	H5	4	4.00	115	117.0	27.50	82.50	384	1.369	321.57	0.90	106.0	17.2	44.7
B2.5	C2.5	4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6
B5.5	C5.5	4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6
F2.5	G2.5	4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6
F5.5	G5.5	4	4.00	115	75.0	17.50	52.50	177	0.992	112.03	1.00	56.3	17.2	20.6

Node	Node	DL Super-Imposed psf	DL Steel Deck psf	DL Slab psf	DL Perimeter plf	DL Total plf	LL psf	LL Reduct Factor	LL w/ reduct plf	1.2DL+1.6LL Wu plf	1.4DL Wu plf	Mu ft-K	Vu K	$\Phi V_n > V_u$ & $\Phi M_n > M_u$?
B2	C2	30	1.6	29.0	156.0	357.4	115.0	1.00	359.4	1003.9	500.3	38.43	8.8	OK
F2	G2	30	1.6	29.0	156.0	357.4	115.0	1.00	359.4	1003.9	500.3	38.43	8.8	OK
B6	C6	30	1.6	29.0	156.0	357.4	115.0	1.00	359.4	1003.9	500.3	38.43	8.8	OK
F6	G6	30	1.6	29.0	156.0	357.4	115.0	1.00	359.4	1003.9	500.3	38.43	8.8	OK
C2	C3	30	1.6	29.0	520.0	1918.5	115.0	0.70	1804.0	5188.7	2685.9	405.36	64.9	OK
F2	F3	30	1.6	29.0	520.0	1918.5	115.0	0.70	1804.0	5188.7	2685.9	405.36	64.9	OK
C5	C6	30	1.6	29.0	520.0	1918.5	115.0	0.70	1804.0	5188.7	2685.9	405.36	64.9	OK
F5	F6	30	1.6	29.0	520.0	1918.5	115.0	0.70	1804.0	5188.7	2685.9	405.36	64.9	OK
C2	D2	30	1.6	29.0	520.0	723.4	115.0	1.00	359.4	1443.1	1012.7	136.41	19.8	OK
E2	F2	30	1.6	29.0	520.0	723.4	115.0	1.00	359.4	1443.1	1012.7	136.41	19.8	OK
C6	D6	30	1.6	29.0	520.0	723.4	115.0	1.00	359.4	1443.1	1012.7	136.41	19.8	OK
E6	F6	30	1.6	29.0	520.0	723.4	115.0	1.00	359.4	1443.1	1012.7	136.41	19.8	OK
A3	A4	30	1.6	29.0	520.0	1136.9	115.0	0.90	1006.6	2974.8	1591.6	281.21	40.9	OK
A4	A5	30	1.6	29.0	520.0	1136.9	115.0	0.90	1006.6	2974.8	1591.6	281.21	40.9	OK
H3	H4	30	1.6	29.0	520.0	1136.9	115.0	0.90	1006.6	2974.8	1591.6	281.21	40.9	OK
H4	H5	30	1.6	29.0	520.0	1136.9	115.0	0.90	1006.6	2974.8	1591.6	281.21	40.9	OK
B2.5	C2.5	30	1.6	29.0	156.0	546.8	115.0	1.00	718.8	1806.1	765.5	69.14	15.8	OK
B5.5	C5.5	30	1.6	29.0	156.0	546.8	115.0	1.00	718.8	1806.1	765.5	69.14	15.8	OK
F2.5	G2.5	30	1.6	29.0	156.0	546.8	115.0	1.00	718.8	1806.1	765.5	69.14	15.8	OK
F5.5	G5.5	30	1.6	29.0	156.0	546.8	115.0	1.00	718.8	1806.1	765.5	69.14	15.8	OK

Node	Node	DL Const plf	DL lb/in	LL plf	LL lb/in	Steel Ixx in ⁴	Mu Const ft-K	Y2 in	Low Bnd Ixx in ⁴	DL Δ Const. in	LL Δ in	L/400 in	DL Δ OK ?	LL Δ OK ?
B2	C2	107.6	9.0	359.4	29.9	53.8	4.12	3.306	180	0.15	0.15	0.53	OK	OK
F2	G2	107.6	9.0	359.4	29.9	53.8	4.12	3.306	180	0.15	0.15	0.53	OK	OK
B6	C6	107.6	9.0	359.4	29.9	53.8	4.12	3.306	180	0.15	0.15	0.53	OK	OK
F6	G6	107.6	9.0	359.4	29.9	53.8	4.12	3.306	180	0.15	0.15	0.53	OK	OK
C2	C3	723.5	60.3	2587.5	215.6	375.0	56.52	2.990	1230	0.58	0.64	0.75	OK	OK
F2	F3	723.5	60.3	2587.5	215.6	375.0	56.52	2.990	1230	0.58	0.64	0.75	OK	OK
C5	C6	723.5	60.3	2587.5	215.6	375.0	56.52	2.990	1230	0.58	0.64	0.75	OK	OK
F5	F6	723.5	60.3	2587.5	215.6	375.0	56.52	2.990	1230	0.58	0.64	0.75	OK	OK
C2	D2	109.6	9.1	359.4	29.9	88.6	10.36	3.184	262	0.55	0.61	0.83	OK	OK
E2	F2	109.6	9.1	359.4	29.9	88.6	10.36	3.184	262	0.55	0.61	0.83	OK	OK
C6	D6	109.6	9.1	359.4	29.9	88.6	10.36	3.184	262	0.55	0.61	0.83	OK	OK
E6	F6	109.6	9.1	359.4	29.9	88.6	10.36	3.184	262	0.55	0.61	0.83	OK	OK
A3	A4	324.4	27.0	1121.3	93.4	301.0	30.66	3.316	780	0.48	0.64	0.83	OK	OK
A4	A5	324.4	27.0	1121.3	93.4	301.0	30.66	3.316	780	0.48	0.64	0.83	OK	OK
H3	H4	324.4	27.0	1121.3	93.4	301.0	30.66	3.316	780	0.48	0.64	0.83	OK	OK
H4	H5	324.4	27.0	1121.3	93.4	301.0	30.66	3.316	780	0.48	0.64	0.83	OK	OK
B2.5	C2.5	203.3	16.9	718.8	59.9	53.8	7.78	3.504	180	0.27	0.29	0.53	OK	OK
B5.5	C5.5	203.3	16.9	718.8	59.9	53.8	7.78	3.504	180	0.27	0.29	0.53	OK	OK
F2.5	G2.5	203.3	16.9	718.8	59.9	53.8	7.78	3.504	180	0.27	0.29	0.53	OK	OK
F5.5	G5.5	203.3	16.9	718.8	59.9	53.8	7.78	3.504	180	0.27	0.29	0.53	OK	OK



12th Exterior Girders B2-B3, H2-H3, B5-B6, G5-G6														
# Bms	Weight (k)	Node	Node	Wide Flange Shape						Steel deck t in	Slab			Trib Width/ Space in
				Nom. Depth	Weight plf	As in ²	d in	tw in	fy ksi		f'c ksi	Total t in	Conc. Weight pcf	
4	2.200	B2	B3	14x	22	6.49	13.70	0.230	50	1.5	4	4.00	115	123.0
Node	Node			ΣQn		ΦMn	ΦVn	AISC	Stud	PD	PD	PD	PD	PD
		L	be	(AsFy)	a	Φ=0.9	Φ=1.0	Tab3-21	#	Beam	Super	Deck	Peri-	PD
		ft	in	K	in	ft-K	K	3/4" dia	req'd	#	Imposed	#	meter	Roof
								Qn (K)		#	#	#	#	#
B2	B3	25.00	75.00	324.5	1.273	953.95	94.5	17.2	37.7	1000	2870	153	5330	480
Node	Node	PD Total	WD Self	WD Super	WD Deck	WD Slab	WD Peri-	WD Total	PL Beam	WL Beam	LL Reduct	Mu	Vu	ΦVn>Vu & ΦMn>Mu
		#	plf	plf	plf	plf	plf	plf	#	#	Factor	ft-K	K	?
B2	B3	9833.0	22.0	307.5	16.4	297.3	520.0	1141.2	4.8	1178.8	0.91	328.12	46.6	OK
Node	Node	PD Const	WD Const	Steel Ixx	Const. Mu	Y1	Y2	Low Bnd Ixx	Const. DL Δ	LL Δ	L/400	DL Δ OK	LL Δ OK	
		#	plf	in ⁴	ft-K	in	in	in ⁴	in	in	in	?	?	
B2	B3	1633.0	335.7	199.0	127.58	2.638	3.364	535	0.67	0.67	0.75	OK	OK	

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1st Floor: Column Design

		Total Flr Column Self Weight= 26.21 k										
DL Superimposed = 30 psf		DL Steel Deck = 1.6 psf		DL Slab = 29 psf		DL Perimeter = 520 plf				Story Height = 14 ft		
DL Roof	5 psf	Snow Load		5 psf		KLL = 4						
Column	A3	A4	A5	B2	B6	C2	C3	C4	C5	C6	C7	D1
	w12	w12	w12	w10	w10	w12	w12	w12	w12	w12	8x	w12
	65	65	65	45	45	65	96	96	96	65	31	96
DPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
DPn	700.09	700.09	700.09	376.57	376.57	700.09	1043.18	1043.18	1043.18	1043.18	700.09	248
Pu =	631.6	681.6	631.6	365.7	361.5	658.4	973.3	1040.1	973.2	664.9	147.3	1035.5
1.4 DL=	519.65	557.68	519.65	312.50	312.50	523.68	646.65	690.14	646.44	532.90	134.18	831.44
1.2 DL+1.6 LL+0.5(L+S)=	631.64	681.62	631.64	365.70	361.51	658.40	973.33	1040.11	973.16	664.92	147.34	1035.50
1.2 DL+1.0 LL+1.6(L+S)=	568.53	614.71	568.53	329.01	326.39	589.54	835.62	892.70	835.44	593.64	135.22	929.41
DL (k)	371.18	398.35	371.18	223.21	223.21	374.06	461.89	492.96	461.74	380.64	95.84	593.89
LL (k)	286.90	312.40	286.90	136.37	130.53	321.50	642.99	688.26	642.99	321.12	31.07	495.34
LL REDUCED (k)	114.76	124.96	114.76	61.15	58.53	128.60	257.20	275.30	257.20	128.45	20.21	198.14
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21	0.00	9.30
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05	0.00	2.33
LL Reduct.Fact.(>0.4)	0.400	0.400	0.400	0.448	0.448	0.400	0.400	0.400	0.400	0.400	0.650	0.400
Length (ft)	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Effective Length (ft)	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Column Self Weight (#)	910.00	910.00	910.00	630.00	630.00	910.00	1344.00	1344.00	1344.00	910.00	434.00	1344.00
Trib.Area per floor ft²	2 269.39	293.33	269.39	129.69	129.69	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	3 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	4 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	5 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	6 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	7 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	8 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	9 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	10 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	11 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	12 269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	R 208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11
	PHR 0	0	0	0	0	0	0	0	0	0	0	0
Total Trib.Area	3172.22	3519.96	3172.22	1428.69	1428.69	3622.56	7243	7755	7243	3696.16	350.77	5581.32
Perimeter Length per floor ft	2 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	3 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	4 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	5 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	6 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	7 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	8 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	9 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	10 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	11 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	12 26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	R 26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	PHR 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total P.Length	315	330	315	242.913	242.913	270	0	0	0	270	137.66667	429
Live Load per floor psf	2 125	125	125	125	80	125	125	125	125	80	80	125
	3 80	80	80	80	80	80	80	80	80	80	80	80
	4 80	80	80	80	80	80	80	80	80	80	80	80
	5 80	80	80	80	80	80	80	80	80	80	80	80
	6 80	80	80	80	80	80	80	80	80	80	100	80
	7 80	80	80	80	80	80	80	80	80	80	100	80
	8 80	80	80	80	80	80	80	80	80	80	100	80
	9 115	115	115	115	115	115	115	115	115	115	115	115
	10 115	115	115	115	115	115	115	115	115	115	115	115
	11 115	115	115	115	115	115	115	115	115	115	115	115
	12 115	115	115	100	100	115	115	115	115	115	115	115
	R 20	20	20	20	20	20	20	20	20	20	20	20
	PHR 20	20	20	20	20	20	20	20	20	20	20	20
DL Beams / Girders per floor #	2 1122	1183	1122	538	538	1354	2625	2778	2477	1158	233	3150
	3 1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	4 1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	5 1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	6 1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	7 1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	8 1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	9 1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	10 1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	11 1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	12 1047	1073	1047	538	538	1285	2502	2613	2502	1285	0	2995
	R 2000	2000	2000	0	0	1500	3000	3000	3000	1500	0	3500
	PHR 0	0	0	0	0	0	0	0	0	0	0	0
Column Weight Above (#)	5473.33	5653.33	5473.33	3773.33	3773.33	5653.33	7326.67	7460.00	7326.67	5653.33	933.33	7761.33
Self Weight+Above (#)	6383.33	6563.33	6383.33	4403.33	4403.33	6563.33	8670.67	8804.00	8670.67	6563.33	1367.33	9105.33

1st Floor: Column Design

D7 w12 106	E1 w12 96	E7 w12 106	F2 w12 65	F3 w12 96	F4 w12 96	F5 w12 96	F6 w12 65	F7 8x 31	G2 w10 45	G6 w10 45	H3 w12 65	H4 w12 65	H5 w12 65
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
1157.06	1043.18	1157.06	700.09	1043.18	1043.18	1043.18	700.09	248	376.57	376.57	700.09	700.09	700.09
1114.3	1022.1	1114.3	649.7	955.4	1020.9	955.4	664.9	147.3	361.5	361.5	623.8	673.0	623.8
900.88	831.44	900.88	523.68	646.00	689.40	646.00	532.90	134.18	312.50	312.50	519.57	557.53	519.57
1114.34	1022.10	1114.34	649.71	955.39	1020.86	955.39	664.92	147.34	361.51	361.51	623.82	673.04	623.82
1001.35	921.04	1001.35	584.11	824.20	880.43	824.20	593.64	135.22	326.39	326.39	563.62	609.30	563.62
643.48	593.89	643.48	374.06	461.43	492.43	461.43	380.64	95.84	223.21	223.21	371.12	398.24	371.12
525.32	474.41	525.32	307.92	615.83	659.18	615.83	321.12	31.07	130.53	130.53	274.78	299.20	274.78
210.13	189.76	210.13	123.17	246.33	263.67	246.33	128.45	20.21	58.53	58.53	109.91	119.68	109.91
9.52	9.30	9.52	6.04	12.08	12.93	12.08	4.21	0.00	0.00	0.00	4.18	5.87	4.18
2.38	2.33	2.38	1.51	3.02	3.23	3.02	1.05	0.00	0.00	0.00	1.04	1.47	1.04
0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.650	0.448	0.448	0.400	0.400	0.400
14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
1484.00	1344.00	1484.00	910.00	1344.00	1344.00	1344.00	910.00	434.00	630.00	630.00	910.00	910.00	910.00
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.69	129.69	269.39	293.33	269.39
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
0	0	0	0	0	0	0	0	0	0.00	0.00	208.93	293.33	208.93
6209.48	5581.32	6209.48	3622.56	7245	7755	7245	3696.16	350.77	1428.69	1428.69	3172.22	3519.96	3172.22
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.25	27.50	26.25
445	429	445	270	0	0	0	270	137.66667	242.913	242.913	315	330	315
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	100	100	115	115	115
20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20	20	20	20	20
3198	3150	3198	1354	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2502	2613	2502	1285	0	538	538	1047	1073	1047
3700	3500	3700	1500	3000	3000	3000	1500	0	0	0	2000	2000	2000
0	0	0	0	0	0	0	0	0	0	0	0	0	0
8308.00	7761.33	8308.00	5653.33	7326.67	7460.00	7326.67	5653.33	933.33	3773.33	3773.33	5473.33	5653.33	5473.33
9792.00	9105.33	9792.00	6563.33	8670.67	8804.00	8670.67	6563.33	1367.33	4403.33	4403.33	6383.33	6563.33	6383.33

2nd Floor: Column Design

Total Flr Column Self Weight= 24.96 k

DL Superimposed = DL Steel Deck =	30 psf 1.6 psf	DL Slab = DL Perimet	29 psf 520 plf	DL Roof Snow Load	5 psf 5 psf	KLL =	4 Story High	13.333333 ft							
Column	A3	A4	A5	B2	B6	C2	C3	C4	C5	C6	C7	D1			
	w12 65	w12 65	w12 65	w10 45	w10 45	w12 65	w12 96	w12 96	w12 96	w12 65	8x 31	w12 96			
DPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
DPn	700.09	700.09	700.09	376.37	376.37	700.09	1043.18	1043.18	1043.18	1043.18	700.09	248	1043.18		
Pu =	571.7	617.1	571.7	331.3	331.3	595.5	876.4	936.5	876.4	608.1	127.8	936.8			
1.4 DL=	474.84	509.85	474.84	283.79	283.79	478.52	589.87	629.54	589.87	486.02	114.68	759.67			
1.2 DL+1.6 LL+0.5(Lr+S)=	571.68	617.15	571.68	331.31	331.31	595.54	876.37	936.47	876.37	608.07	127.84	936.77			
1.2 DL+1.0 LL+1.6(Lr+S)=	516.65	559.04	516.65	298.29	298.29	535.74	756.76	808.45	756.76	543.04	116.76	844.63			
DL (k)	339.17	364.18	339.17	202.70	202.70	341.80	421.34	449.67	421.34	347.15	81.91	542.62			
LL (k)	253.23	275.73	253.23	120.16	120.16	283.77	567.53	607.48	567.53	295.08	27.06	437.20			
LL REDUCED (k)	101.29	110.29	101.29	55.04	55.04	113.51	227.01	242.99	227.01	118.03	18.47	174.88			
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21	0.00	9.30			
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05	0.00	2.33			
LL Reduct.Fact.(>0.4)	0.400	0.400	0.400	0.458	0.458	0.400	0.400	0.400	0.400	0.400	0.683	0.400			
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33			
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	0.00	13.33			
Column Self Weight (#)	866.67	866.67	866.67	600.00	600.00	866.67	1280.00	1280.00	1280.00	866.67	0.00	1280.00			
Trib.Area per floor ft²	2	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	3	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	4	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	5	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	6	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	7	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	8	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	9	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11		
	10	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11		
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11		
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11		
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11		
	PHR	0	0	0	0	0	0	0	0	0	0	0			
Total Trib.Area	2902.83	3226.63	2902.83	1299	1299	3320.68	6641.25	7108.75	6641.25	3370.71	300.66	5116.21			
Perimeter Length per floor ft	2	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	3	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	4	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	5	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	6	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	7	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	8	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	9	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	10	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total P.Length	288.75	302.5	288.75	220.83	220.83	247.5	0	0	0	247.5	118	393.25			
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80	80	125			
	3	80	80	80	80	80	80	80	80	80	80	80			
	4	80	80	80	80	80	80	80	80	80	80	80			
	5	80	80	80	80	80	80	80	80	80	80	80			
	6	80	80	80	80	80	80	80	80	80	80	100	80		
	7	80	80	80	80	80	80	80	80	80	100	80	80		
	8	80	80	80	80	80	80	80	80	80	100	80	80		
	9	115	115	115	115	115	115	115	115	115	115	115	115		
	10	115	115	115	115	115	115	115	115	115	115	115	115		
	11	115	115	115	115	115	115	115	115	115	115	115	115		
	12	115	115	115	100	100	115	115	115	115	115	115	115		
	R	20	20	20	20	20	20	20	20	20	20	20	20		
	PHR	20	20	20	20	20	20	20	20	20	20	20	20		
DL Beams / Girders per floor #	2	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	3	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	4	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	5	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	6	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	7	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	8	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	9	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995		
	10	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995		
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995		
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285	0	2995		
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500	0	3500		
	PHR	0	0	0	0	0	0	0	0	0	0	0	0		
Column Weight Above (#)	4606.67	4786.67	4606.67	3173.33	3173.33	4786.67	6046.67	6180.00	6046.67	4786.67	933.33	6481.33			
Self Weight+Above (#)	5473.33	5653.33	5473.33	3773.33	3773.33	5653.33	7326.67	7460.00	7326.67	5653.33	933.33	7761.33			

2nd Floor: Column Design

D7 w12 106	E1 w12 96	E7 w12 106	F2 w12 65	F3 w12 96	F4 w12 96	F5 w12 96	F6 w12 65	F7 8x 31	G2 w10 45	G6 w10 45	H3 w12 65	H4 w12 65	H5 w12 65
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
1157.06	1043.18	1157.06	700.09	1043.18	1043.18	1043.18	700.09	248	376.57	376.57	700.09	700.09	700.09
1020.7	936.8	1020.7	595.5	876.4	936.5	876.4	608.1	127.8	331.3	331.3	571.7	617.1	571.7
823.92	759.67	823.92	478.52	589.87	629.54	589.87	486.02	114.68	283.79	283.79	474.84	509.85	474.84
1020.72	936.77	1020.72	595.54	876.37	936.47	876.37	608.07	127.84	331.31	331.31	571.68	617.15	571.68
918.10	844.63	918.10	535.74	756.76	808.45	756.76	543.04	116.76	298.29	298.29	516.65	559.04	516.65
588.52	542.62	588.52	341.80	421.34	449.67	421.34	347.15	81.91	202.70	202.70	339.17	364.18	339.17
482.11	437.20	482.11	283.77	567.53	607.48	567.53	295.08	27.06	120.16	120.16	253.23	275.73	253.23
192.84	174.88	192.84	113.51	227.01	242.99	227.01	118.03	18.47	55.04	55.04	101.29	110.29	101.29
9.52	9.30	9.52	6.04	12.08	12.93	12.08	4.21	0.00	0.00	0.00	4.18	5.87	4.18
2.38	2.33	2.38	1.51	3.02	3.23	3.02	1.05	0.00	0.00	0.00	1.04	1.47	1.04
0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.683	0.458	0.458	0.400	0.400	0.400
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	13.33	13.33	13.33	13.33
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	0.00	13.33	13.33	13.33	13.33	13.33
1413.33	1280.00	1413.33	866.67	1280.00	1280.00	1280.00	866.67	0.00	600.00	600.00	866.67	866.67	866.67
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0
5669.3	5116.21	5669.3	3320.68	6641.25	7108.75	6641.25	3370.71	300.66	1299	1299	2902.83	3226.63	2902.83
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
411.25	393.25	411.25	247.5	0	0	0	247.5	118	220.83	220.83	288.75	302.5	288.75
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	100	100	115	115	115
20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20	20	20	20	20
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2502	2613	2502	1285	0	538	538	1047	1073	1047
3700	3500	3700	1500	3000	3000	3000	1500	0	0	0	2000	2000	2000
0	0	0	0	0	0	0	0	0	0	0	0	0	0
6894.67	6481.33	6894.67	4786.67	6046.67	6180.00	6046.67	4786.67	933.33	3173.33	3173.33	4606.67	4786.67	4606.67
8308.00	7761.33	8308.00	5653.33	7326.67	7460.00	7326.67	5653.33	933.33	3773.33	3773.33	5473.33	5653.33	5473.33

3rd Floor: Column Design

Total Flr Column Self Weight= 20.88 k

DL Superimposed = DL Steel Deck =	30 psf 1.6 psf	DL Slab = DL Perimet	29 psf 520 plf	DL Roof Snow Load	5 psf 5 psf	KLL = Story High	4 13.333333 ft								
Column	A3 w10 54	A4 w12 58	A5 w10 54	B2 w10 39	B6 w10 39	C2 w12 58	C3 w12 79	C4 w12 79	C5 w12 79	C6 w12 58	C7 6x 20	D1 w12 79			
DPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK			
DPn	534.42	568.44	534.42	321.11	321.11	568.44	853.79	853.79	853.79	568.44	114.96	853.79			
Pu =	519.6	561.3	519.6	301.1	301.1	541.7	797.4	852.2	797.4	551.3	108.8	852.1			
1.4 DL=	430.17	462.23	430.17	255.10	255.10	433.72	533.83	569.78	533.83	439.19	95.78	688.65			
1.2 DL+1.6 LL+0.5(Lr+S)=	519.60	561.31	519.60	301.08	301.08	541.69	797.42	852.16	797.42	551.27	108.79	852.08			
1.2 DL+1.0 LL+1.6(Lr+S)=	469.74	508.83	469.74	270.17	270.17	487.68	689.41	736.54	689.41	492.49	98.78	768.88			
DL (k)	307.26	330.16	307.26	182.21	182.21	309.80	381.31	406.98	381.31	313.71	68.41	491.90			
LL (k)	231.68	252.26	231.68	109.77	109.77	259.62	319.23	355.78	319.23	269.04	23.05	399.99			
LL REDUCED (k)	92.67	100.91	92.67	51.52	51.52	103.85	127.69	138.61	127.69	107.62	16.68	160.00			
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21	0.00	9.30			
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05	0.00	2.33			
LL Reduct.Fact.(>0.4)	0.400	0.400	0.400	0.469	0.469	0.400	0.400	0.400	0.400	0.400	0.724	0.400			
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33			
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33			
Column Self Weight (#)	720.00	773.33	720.00	520.00	520.00	773.33	1053.33	1053.33	1053.33	773.33	266.67	1053.33			
Trib.Area per floor ft²	2														
	3														
	4	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	5	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	6	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	7	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	8	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11		
	9	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11		
	10	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11		
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11		
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11		
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11		
	PHR	0	0	0	0	0	0	0	0	0	0	0			
Total Trib.Area	2633.44	2933.33	2633.44	1169.1	1169.1	3018.8	6037.5	6462.5	6037.5	3045.26	250.53	4651.1			
Perimeter Length per floor ft	2														
	3														
	4	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	5	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	6	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	7	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	8	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75		
	9	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	10	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75		
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total P.Length	262.5	275	262.5	198.74	198.74	225	0	0	0	225	98.333333	357.5			
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80	80	125			
	3	80	80	80	80	80	80	80	80	80	80	80			
	4	80	80	80	80	80	80	80	80	80	80	80			
	5	80	80	80	80	80	80	80	80	80	80	80			
	6	80	80	80	80	80	80	80	80	80	80	100	80		
	7	80	80	80	80	80	80	80	80	80	80	100	80		
	8	80	80	80	80	80	80	80	80	80	80	100	80		
	9	115	115	115	115	115	115	115	115	115	115	115	115		
	10	115	115	115	115	115	115	115	115	115	115	115	115		
	11	115	115	115	115	115	115	115	115	115	115	115	115		
	12	115	115	115	100	100	115	115	115	115	115	115	115		
	R	20	20	20	20	20	20	20	20	20	20	20	20		
	PHR	20	20	20	20	20	20	20	20	20	20	20	20		
DL Beams / Girders per floor #	2														
	3														
	4	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	5	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	6	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	7	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	8	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668		
	9	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995		
	10	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995		
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995		
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285	0	2995		
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500	0	3500		
	PHR	0	0	0	0	0	0	0	0	0	0	0	0		
Column Weight Above (#)	3886.67	4013.33	3886.67	2653.33	2653.33	4013.33	4993.33	5126.67	4993.33	4013.33	666.67	5428.00			
Self Weight+Above (#)	4606.67	4786.67	4606.67	3173.33	3173.33	4786.67	6046.67	6180.00	6046.67	4786.67	933.33	6481.33			

3rd Floor: Column Design

D7 w12 87	E1 w12 79	E7 w12 87	F2 w12 58	F3 w12 79	F4 w12 79	F5 w12 79	F6 w12 58	F7 6x 20	G2 w10 39	G6 w10 39	H3 w10 54	H4 w12 58	H5 w10 54
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
944.58	853.79	944.58	568.44	853.79	853.79	853.79	568.44	114.96	321.11	321.11	534.42	568.44	534.42
927.5	852.1	927.5	541.7	797.4	852.2	797.4	551.3	108.8	301.1	301.1	519.6	561.3	519.6
747.43	688.65	747.43	433.72	533.83	569.78	533.83	439.19	95.78	255.10	255.10	430.17	462.23	430.17
927.50	852.08	927.50	541.69	797.42	852.16	797.42	551.27	108.79	301.08	301.08	519.60	561.31	519.60
835.25	768.88	835.25	487.68	689.41	736.54	689.41	492.49	98.78	270.17	270.17	469.74	508.83	469.74
533.88	491.90	533.88	309.80	381.31	406.98	381.31	313.71	68.41	182.21	182.21	307.26	330.16	307.26
438.89	399.99	438.89	259.62	519.23	555.78	519.23	269.04	23.05	109.77	109.77	231.68	252.26	231.68
175.56	160.00	175.56	103.85	207.69	222.31	207.69	107.62	16.68	51.52	51.52	92.67	100.91	92.67
9.52	9.30	9.52	6.04	12.08	12.93	12.08	4.21	0.00	0.00	0.00	4.18	5.87	4.18
2.38	2.33	2.38	1.51	3.02	3.23	3.02	1.05	0.00	0.00	0.00	1.04	1.47	1.04
0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.724	0.469	0.469	0.400	0.400	0.400
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
1160.00	1053.33	1160.00	773.33	1053.33	1053.33	1053.33	773.33	266.67	520.00	520.00	720.00	773.33	720.00
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0
5129.12	4651.1	5129.12	3018.8	6037.5	6462.5	6037.5	3045.26	250.55	1169.1	1169.1	2633.44	2933.3	2633.44
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.25	27.50	26.25
377.5	357.5	377.5	225	0	0	0	225	198.333333	198.747	198.747	262.5	275	262.5
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	100	100	115	115	115
20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20	20	20	20	20
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2502	2613	2502	1285	0	538	538	1047	1073	1047
3700	3500	3700	1500	3000	3000	3000	1500	0	0	0	2000	2000	2000
0	0	0	0	0	0	0	0	0	0	0	0	0	0
5734.67	5428.00	5734.67	4013.33	4993.33	5126.67	4993.33	4013.33	666.67	2653.33	2653.33	3886.67	4013.33	3886.67
6894.67	6481.33	6894.67	4786.67	6046.67	6180.00	6046.67	4786.67	933.33	3173.33	3173.33	4606.67	4786.67	4606.67

4th Floor: Column Design

Total Flr Column Self Weight= 20.88 k

DL Superimposed = DL Steel Deck =	30 psf 1.6 psf	DL Slab = DL Perimet	29 psf 520 plf	DL Roof Snow Load	5 psf 5 psf	KLL = Story Heigh	4 13.333333 ft						
Column	A3 w10 54	A4 w12 58	A5 w10 54	B2 w10 39	B6 w10 39	C2 w12 58	C3 w12 79	C4 w12 79	C5 w12 79	C6 w12 58	C7 6x 20	C8 6x 20	D1 w12 79
ΦPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
ΦPn	534.42	568.44	534.42	321.11	321.11	568.44	853.79	853.79	853.79	568.44	114.96	853.79	
Pu	469.1	505.6	469.1	270.9	270.9	487.9	718.7	768.1	718.7	494.6	89.3	767.7	
1.4 DL	385.70	414.74	385.70	226.52	226.52	389.06	478.11	510.33	478.11	392.50	76.51	617.96	
1.2 DL+1.6 LL+0.5(Lr+S)	469.12	505.58	469.12	270.90	270.90	487.95	718.74	768.11	718.74	494.58	89.34	767.67	
1.2 DL+1.0 LL+1.6(Lr+S)	423.90	458.74	423.90	242.12	242.12	439.74	622.33	664.91	622.33	442.05	80.43	693.40	
DL (k)	275.50	296.24	275.50	161.80	161.80	277.90	341.50	364.52	341.50	280.35	54.65	441.40	
LL (k)	210.12	228.80	210.12	99.37	99.37	235.47	470.93	504.08	470.93	243.01	19.04	362.79	
LL REDUCED (k)	84.94	91.52	84.94	47.96	47.96	94.19	188.37	201.63	188.37	97.20	14.85	145.11	
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21	0.00	9.30	
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05	0.00	2.33	
LL Reduct.Fact.(>0.4)	0.404	0.400	0.404	0.483	0.483	0.400	0.400	0.400	0.400	0.400	0.780	0.400	
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	
Column Self Weight (#)	720.00	773.33	720.00	520.00	520.00	773.33	1053.33	1053.33	1053.33	773.33	266.67	1053.33	
Trib.Area per floor ft ²	2												
	3												
	4												
	5	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	6	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	7	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	8	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	9	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	10	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11
	PHR	0	0	0	0	0	0	0	0	0	0	0	0
Total Trib.Area	2364.05	2639.97	2364.05	1039.2	1039.2	2716.92	5433.75	5816.25	5433.75	2719.81	200.44	4188.99	
Perimeter Length per floor ft	2												
	3												
	4												
	5	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	6	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	7	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	8	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	9	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	10	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total P.Length	236.25	247.5	236.25	176.664	176.664	202.5	0	0	0	202.5	78.666667	321.75	
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80	80	125	
	3	80	80	80	80	80	80	80	80	80	80	80	
	4	80	80	80	80	80	80	80	80	80	80	80	
	5	80	80	80	80	80	80	80	80	80	80	80	
	6	80	80	80	80	80	80	80	80	80	80	100	80
	7	80	80	80	80	80	80	80	80	80	80	100	80
	8	80	80	80	80	80	80	80	80	80	80	100	80
	9	115	115	115	115	115	115	115	115	115	115	115	115
	10	115	115	115	115	115	115	115	115	115	115	115	115
	11	115	115	115	115	115	115	115	115	115	115	115	115
	12	115	115	115	100	100	115	115	115	115	115	115	115
	R	20	20	20	20	20	20	20	20	20	20	20	20
	PHR	20	20	20	20	20	20	20	20	20	20	20	20
DL Beams / Girders per floor #	2												
	3												
	4												
	5	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	6	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	7	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	8	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	9	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	10	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285	0	2995
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500	0	3500
	PHR	0	0	0	0	0	0	0	0	0	0	0	0
Column Weight Above (#)	3166.67	3240.00	3166.67	2133.33	2133.33	3240.00	3940.00	4073.33	3940.00	3240.00	400.00	4374.67	
Self Weight+Above (#)	3886.67	4013.33	3886.67	2653.33	2653.33	4013.33	4993.33	5126.67	4993.33	4013.33	666.67	5428.00	

4th Floor: Column Design

D7 w12 87	E1 w12 79	E7 w12 87	F2 w12 58	F3 w12 79	F4 w12 79	F5 w12 79	F6 w12 58	F7 6x 20	G2 w10 39	G6 w10 39	H3 w10 54	H4 w12 58	H5 w10 54
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
944.58	853.79	944.58	568.44	853.79	853.79	853.79	568.44	114.96	321.11	321.11	534.42	568.44	534.42
834.6	767.7	834.6	487.9	718.7	768.1	718.7	494.6	89.3	270.9	270.9	469.1	505.6	469.1
671.30	617.96	671.30	389.06	478.11	510.33	478.11	392.50	76.51	226.52	226.52	385.70	414.74	385.70
834.58	767.67	834.58	487.95	718.74	768.11	718.74	494.58	89.34	270.90	270.90	469.12	505.58	469.12
752.71	693.40	752.71	439.74	622.33	664.91	622.33	442.05	80.43	242.12	242.12	423.90	458.74	423.90
479.50	441.40	479.50	277.90	341.50	364.52	341.50	280.35	54.65	161.80	161.80	275.50	296.24	275.50
395.68	362.79	395.68	235.47	470.93	504.08	470.93	243.01	19.04	99.37	99.37	210.12	228.80	210.12
158.27	145.11	158.27	94.19	188.37	201.63	188.37	97.20	14.85	47.96	47.96	84.94	91.52	84.94
9.52	9.30	9.52	6.04	12.08	12.93	12.08	4.21	0.00	0.00	0.00	4.18	5.87	4.18
2.38	2.33	2.38	1.51	3.02	3.23	3.02	1.05	0.00	0.00	0.00	1.04	1.47	1.04
0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.780	0.483	0.483	0.404	0.400	0.404
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
1160.00	1053.33	1160.00	773.33	1053.33	1053.33	1053.33	773.33	266.67	520.00	520.00	720.00	773.33	720.00
540.18	465.11	540.18	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0
4588.94	4185.99	4588.94	2716.92	5433.75	5816.25	5433.75	2719.81	200.44	1039.2	1039.2	2364.05	2639.97	2364.05
33.75	35.75	33.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
343.75	321.75	343.75	202.5	0	0	0	202.5	78.666667	176.664	176.664	236.25	247.5	236.25
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	100	100	115	115	115
20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20	20	20	20	20
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2502	2613	2502	1285	0	538	538	1067	1073	1047
3700	3500	3700	1500	3000	3000	3000	1500	0	0	0	2000	2000	2000
0	0	0	0	0	0	0	0	0	0	0	0	0	0
4574.67	4374.67	4574.67	3240.00	3940.00	4073.33	3940.00	3240.00	400.00	2133.33	2133.33	3166.67	3240.00	3166.67
5734.67	5428.00	5734.67	4013.33	4993.33	5126.67	4993.33	4013.33	666.67	2653.33	2653.33	3886.67	4013.33	3886.67

5th Floor: Column Design

Total Flr Column Self Weight= 17.55 k

DL Superimposed = 30 psf DL Slab = 29 psf DL Roof = 5 psf KLL = 4
DL Steel Deck = 1.6 psf DL Perimet = 520 plf Snow Load = 5 psf Story Heigh 13.333333 ft

Column	A3 w10 49	A4 w10 49	A5 w10 49	B2 w10 33	B6 w10 33	C2 w10 49	C3 w12 65	C4 w12 65	C5 w12 65	C6 w10 49	C7 6x 15	D1 w12 65	
ΦPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
ΦPn	484.87	484.87	484.87	265.72	265.72	484.87	700.09	700.09	700.09	484.87	81.84	700.09	
Pu =	420.0	451.4	420.0	240.7	240.7	435.1	640.1	684.1	640.1	439.0	69.8	683.3	
1.4 DL=	341.23	367.24	341.23	197.94	197.94	344.39	422.38	450.88	422.38	345.80	57.24	547.26	
1.2 DL+1.6 LL+0.5(Lr+S)=	419.97	451.44	419.97	240.66	240.66	435.09	640.07	684.07	640.07	439.03	69.79	683.26	
1.2 DL+1.0 LL+1.6(Lr+S)=	378.89	409.64	378.89	214.04	214.04	392.35	555.24	593.27	555.24	392.32	62.02	617.92	
DL (k)	243.74	262.32	243.74	141.39	141.39	245.99	301.70	322.06	301.70	247.00	40.89	390.90	
LL (k)	188.57	205.33	188.57	88.98	88.98	211.32	422.63	452.38	422.63	216.97	15.03	325.58	
LL REDUCED (k)	78.05	83.12	78.05	44.38	44.38	85.08	169.05	180.95	169.05	87.50	12.95	130.23	
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21	0.00	9.30	
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05	0.00	2.33	
LL Reduct.Fact.(>0.4)	0.414	0.405	0.414	0.499	0.499	0.403	0.400	0.400	0.400	0.403	0.862	0.400	
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	
Column Self Weight (#)	653.33	653.33	653.33	440.00	440.00	653.33	866.67	866.67	866.67	653.33	200.00	866.67	
Trib.Area per floor ft²	2												
	3												
	4												
	5												
	6	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	7	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	8	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	9	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	10	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11
	PHR	0	0	0	0	0	0	0	0	0	0	0	
Total Trib.Area	2094.66	2346.64	2094.66	909.3	909.3	2415.04	4830	5170	4830	2394.36	150.33	3720.88	
Perimeter Length per floor ft	2												
	3												
	4												
	5												
	6	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	7	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	8	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	9	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	10	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total P.Length	210	220	210	154.581	154.581	180	0	0	0	180	59	286	
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80	80	125	
	3	80	80	80	80	80	80	80	80	80	80	80	
	4	80	80	80	80	80	80	80	80	80	80	80	
	5	80	80	80	80	80	80	80	80	80	80	80	
	6	80	80	80	80	80	80	80	80	80	100	80	
	7	80	80	80	80	80	80	80	80	80	100	80	
	8	80	80	80	80	80	80	80	80	80	100	80	
	9	115	115	115	115	115	115	115	115	115	115	115	
	10	115	115	115	115	115	115	115	115	115	115	115	
	11	115	115	115	115	115	115	115	115	115	115	115	
	12	115	115	115	100	100	115	115	115	115	115	115	
	R	20	20	20	20	20	20	20	20	20	20	20	
	PHR	20	20	20	20	20	20	20	20	20	20	20	
DL Beams / Girders per floor #	2												
	3												
	4												
	5												
	6	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	7	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	8	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	9	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	10	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285	0	2995
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500	0	3500
	PHR	0	0	0	0	0	0	0	0	0	0	0	
Column Weight Above (#)	2513.33	2586.67	2513.33	1693.33	1693.33	2586.67	3073.33	3206.67	3073.33	2586.67	200.00	3508.00	
Self Weight+Above (#)	3166.67	3240.00	3166.67	2133.33	2133.33	3240.00	3940.00	4073.33	3940.00	3240.00	400.00	4374.67	

5th Floor: Column Design

D7 w12 72	E1 w12 65	E7 w12 72	F2 w10 49	F3 w12 65	F4 w12 65	F5 w12 65	F6 w10 49	F7 6x 15	G2 w10 33	G6 w10 33	H3 w10 49	H4 w10 49	H5 w10 49
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
761	700.09	761	471	700.09	700.09	700.09	484.87	81.84	265.72	265.72	484.87	484.87	484.87
741.7	683.3	741.7	435.1	640.1	684.1	640.1	439.0	69.8	240.7	240.7	420.0	451.4	420.0
595.16	547.26	595.16	344.39	422.38	450.88	422.38	345.80	57.24	197.94	197.94	341.23	367.24	341.23
741.66	683.26	741.66	435.09	640.07	684.07	640.07	439.03	69.79	240.66	240.66	419.97	451.44	419.97
670.16	617.92	670.16	392.35	555.24	593.27	555.24	392.32	62.02	214.04	214.04	378.89	409.64	378.89
425.12	390.90	425.12	245.99	301.70	322.06	301.70	247.00	40.89	141.39	141.39	243.74	262.32	243.74
352.46	325.58	352.46	211.32	422.63	452.38	422.63	216.97	15.03	88.98	88.98	188.57	205.33	188.57
140.98	130.23	140.98	85.08	169.05	180.95	169.05	87.50	12.95	44.38	44.38	78.05	83.12	78.05
9.52	9.30	9.52	6.04	12.08	12.93	12.08	4.21	0.00	0.00	0.00	4.18	5.87	4.18
2.38	2.33	2.38	1.51	3.02	3.23	3.02	1.05	0.00	0.00	0.00	1.04	1.47	1.04
0.400	0.400	0.400	0.403	0.400	0.400	0.400	0.403	0.862	0.499	0.499	0.414	0.405	0.414
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
960.00	866.67	960.00	653.33	866.67	866.67	866.67	653.33	200.00	440.00	440.00	653.33	653.33	653.33
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	210.49	0.00	0.00	0.00	208.93	293.33	208.93
0	0	0	0	0	0	0	0	0	0	0	0	0	0
4048.76	3720.88	4048.76	2415.04	4830	5170	4830	2394.36	150.33	909.3	909.3	2094.66	2346.64	2094.66
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
310	286	310	180	0	0	0	180	39	154.581	154.581	210	220	210
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20	20	20	20	20
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2502	2613	2502	1285	0	538	538	1047	1073	1047
3700	3500	3700	1500	3000	3000	3000	1500	0	0	0	2000	2000	2000
0	0	0	0	0	0	0	0	0	0	0	0	0	0
3614.67	3508.00	3614.67	2586.67	3073.33	3206.67	3073.33	2586.67	200.00	1693.33	1693.33	2513.33	2586.67	2513.33
4574.67	4374.67	4574.67	3240.00	3940.00	4073.33	3940.00	3240.00	400.00	2133.33	2133.33	3166.67	3240.00	3166.67

6th Floor: Column Design

Total Flr Column Self Weight= 17.55 k

DL Superimposed = 30 psf DL Slab = 29 psf DL Roof = 5 psf KLL = 4
DL Steel Deck = 1.6 psf DL Perimet = 520 plf Snow Load = 5 psf Story Heigh 13.333333 ft

Column	A3 w10 49	A4 w10 49	A5 w10 49	B2 w10 33	B6 w10 33	C2 w10 49	C3 w12 65	C4 w12 65	C5 w12 65	C6 w10 49	C7 6x 15	D1 w12 65
ΦPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
ΦPn	484.87	484.87	484.87	265.72	265.72	484.87	700.09	700.09	700.09	484.87	81.84	700.09
Pu =	371.6	399.6	371.6	211.0	211.0	385.3	562.7	601.3	562.7	386.7	48.9	600.1
1.4 DL=	297.77	320.84	297.77	170.09	170.09	300.81	368.13	392.91	368.13	300.19	38.35	478.04
1.2 DL+1.6 LL+0.5(Lr+S)=	371.57	399.58	371.57	211.01	211.01	385.34	562.66	601.29	562.66	386.68	48.89	600.12
1.2 DL+1.0 LL+1.6(Lr+S)=	334.67	362.30	334.67	186.55	186.55	347.24	489.42	522.90	489.42	344.94	42.88	543.70
DL (k)	212.70	229.17	212.70	121.49	121.49	214.86	262.95	280.65	262.95	214.42	27.39	341.46
LL (k)	167.02	181.86	167.02	78.59	78.59	187.17	374.33	400.68	374.33	190.94	10.02	288.37
LL REDUCED (k)	71.08	75.57	71.08	40.76	40.76	77.33	149.73	160.27	149.73	79.22	10.01	115.35
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21	0.00	9.30
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05	0.00	2.33
LL Reduct.Fact.(>0.4)	0.426	0.416	0.426	0.519	0.519	0.413	0.400	0.400	0.400	0.415	0.999	0.400
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
Column Self Weight (#)	653.33	653.33	653.33	440.00	440.00	653.33	866.67	866.67	866.67	653.33	200.00	866.67
Trib.Area per floor ft²	2											
	3											
	4											
	5											
	6											
	7	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11
	8	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11
	9	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00
	10	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00
	PHR	0	0	0	0	0	0	0	0	0	0	0
Total Trib.Area	1825.27	2053.31	1825.27	779.4	779.4	2113.16	4226.28	4523.75	4226.28	2068.91	100.22	3255.77
Perimeter Length per floor ft	2											
	3											
	4											
	5											
	6											
	7	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67
	8	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67
	9	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00
	10	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total P.Length	183.75	192.5	183.75	132.498	132.498	157.5	0	0	0	157.5	39.333333	250.25
Live Load per floor psf	2	125	125	125	125	125	125	125	125	125	80	125
	3	80	80	80	80	80	80	80	80	80	80	80
	4	80	80	80	80	80	80	80	80	80	80	80
	5	80	80	80	80	80	80	80	80	80	80	80
	6	80	80	80	80	80	80	80	80	80	100	80
	7	80	80	80	80	80	80	80	80	80	100	80
	8	80	80	80	80	80	80	80	80	80	100	80
	9	115	115	115	115	115	115	115	115	115	115	115
	10	115	115	115	115	115	115	115	115	115	115	115
	11	115	115	115	115	115	115	115	115	115	115	115
	12	115	115	115	100	100	115	115	115	115	115	115
	R	20	20	20	20	20	20	20	20	20	20	20
	PHR	20	20	20	20	20	20	20	20	20	20	20
DL Beams / Girders per floor #	2											
	3											
	4											
	5											
	6											
	7	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233
	8	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233
	9	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0
	10	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285	0
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500	0
	PHR	0	0	0	0	0	0	0	0	0	0	0
Column Weight Above (#)	2513.33	2586.67	2513.33	1693.33	1693.33	2586.67	3073.33	3206.67	3073.33	2586.67	200.00	3508.00
Self Weight+Above (#)	3166.67	3240.00	3166.67	2133.33	2133.33	3240.00	3940.00	4073.33	3940.00	3240.00	400.00	4374.67

6th Floor: Column Design

D7 w12 72	E1 w12 65	E7 w12 72	F2 w10 49	F3 w12 65	F4 w12 65	F5 w12 65	F6 w10 49	F7 6x 15	G2 w10 33	G6 w10 33	H3 w10 49	H4 w10 49	H5 w10 49
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
761	700.09	761	471	700.09	700.09	700.09	484.87	81.84	265.72	265.72	484.87	484.87	484.87
645.0	600.1	645.0	385.3	562.7	601.3	562.7	386.7	48.9	211.0	211.0	371.6	399.6	371.6
515.65	478.04	515.65	300.81	368.13	392.91	368.13	300.19	38.35	170.09	170.09	297.77	320.84	297.77
645.03	600.12	645.03	385.34	562.66	601.29	562.66	386.68	48.89	211.01	211.01	371.57	399.58	371.57
584.21	543.70	584.21	347.24	489.42	522.90	489.42	344.94	42.88	186.55	186.55	334.67	362.30	334.67
368.32	341.46	368.32	214.86	262.95	280.65	262.95	214.42	27.39	121.49	121.49	212.70	229.17	212.70
307.96	288.37	307.96	187.17	374.33	400.68	374.33	190.94	10.02	78.59	78.59	167.02	181.86	167.02
123.19	115.35	123.19	77.33	149.73	160.27	149.73	79.22	10.01	40.76	40.76	71.08	75.57	71.08
9.52	9.30	9.52	6.04	12.08	12.93	12.08	4.21	0.00	0.00	0.00	4.18	5.87	4.18
2.38	2.33	2.38	1.51	3.02	3.23	3.02	1.05	0.00	0.00	0.00	1.04	1.47	1.04
0.400	0.400	0.400	0.413	0.400	0.400	0.400	0.413	0.999	0.519	0.519	0.426	0.416	0.426
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
960.00	866.67	960.00	653.33	866.67	866.67	866.67	653.33	200.00	440.00	440.00	653.33	653.33	653.33
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
556.22	465.11	556.22	301.88	603.75	646.25	603.75	325.45	50.11	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	210.49	0.00	0.00	0.00	208.93	293.33	208.93
0	0	0	0	0	0	0	0	0	0	0	0	0	0
3492.54	3255.77	3492.54	2113.16	4226.25	4523.78	4226.25	2068.91	100.22	779.4	779.4	1825.27	2053.31	1825.27
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
271.25	250.25	271.25	157.25	0	0	0	157.25	39.333333	132.498	132.498	183.75	192.5	183.75
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
80	80	80	80	80	80	80	80	100	80	80	80	80	80
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	115	115	115	115	115
115	115	115	115	115	115	115	115	115	100	100	115	115	115
20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20	20	20	20	20
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
2938	2668	2938	1136	2162	2247	2162	1158	233	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285	0	538	538	1067	1073	1067
3224	2995	3224	1285	2502	2613	2502	1285	0	538	538	1047	1073	1047
3700	3500	3700	1500	3000	3000	3000	1500	0	0	0	2000	2000	2000
0	0	0	0	0	0	0	0	0	0	0	0	0	0
3614.67	3508.00	3614.67	2586.67	3073.33	3206.67	3073.33	2586.67	200.00	1693.33	1693.33	2513.33	2586.67	2513.33
4574.67	4374.67	4574.67	3240.00	3940.00	4073.33	3940.00	3240.00	400.00	2133.33	2133.33	3166.67	3240.00	3166.67

7th Floor: Column Design

Total Flr Column Self Weight= 15.09 k

DL Superimposed = 30 psf DL Slab = 29 psf DL Roof 5 psf KLL = 4
DL Steel Deck = 1.6 psf DL Perimet 520 plf Snow Load 5 psf Story Heigh 13.333333 ft

Column	A3 w10 45	A4 w10 45	A5 w10 45	B2 w8 31	B6 w8 31	C2 w10 45	C3 w10 49	C4 w10 54	C5 w10 49	C6 w10 45	C7 6x 15	D1 10x 54	
ΦPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
ΦPn	376.37	376.37	376.37	248	248	376.37	484.87	520	484.87	376.37	81.84	534.42	
Pu =	322.3	346.8	322.3	180.8	180.8	334.6	484.2	517.5	484.2	333.4	24.5	515.9	
1.4 DL=	253.40	273.51	253.40	141.62	141.62	256.31	312.67	333.72	312.67	253.66	19.17	407.61	
1.2 DL+1.6 LL+0.5(Lr+S)=	322.26	346.77	322.26	180.78	180.78	334.64	484.21	517.47	484.21	333.41	24.45	515.93	
1.2 DL+1.0 LL+1.6(Lr+S)=	289.59	314.09	289.59	158.51	158.51	301.25	422.56	451.49	422.56	296.69	21.45	468.44	
DL (k)	181.00	195.37	181.00	101.16	101.16	183.08	223.34	238.37	223.34	181.19	13.70	291.15	
LL (k)	145.47	158.40	145.47	68.20	68.20	163.02	326.03	348.98	326.03	164.90	5.01	251.16	
LL REDUCED (k)	64.03	67.92	64.03	37.12	37.12	69.48	130.41	139.59	130.41	70.84	5.01	100.46	
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21	0.00	9.30	
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05	0.00	2.33	
LL Reduct.Fact.(>0.4)	0.440	0.429	0.440	0.544	0.544	0.426	0.400	0.400	0.400	0.430	1.000	0.400	
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	
Column Self Weight (#)	600.00	600.00	600.00	413.33	413.33	600.00	653.33	720.00	653.33	600.00	200.00	720.00	
Trib.Area per floor ft²	2												
	3												
	4												
	5												
	6												
	7												
	8	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	325.45	50.11	465.11
	9	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	10	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11
	PHR	0	0	0	0	0	0	0	0	0	0	0	
Total Trib.Area	1555.88	1759.98	1555.88	649.5	649.5	1811.28	3622.5	3877.5	3622.5	1743.46	50.11	2790.66	
Perimeter Length per floor ft	2												
	3												
	4												
	5												
	6												
	7												
	8	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	9	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	10	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total P.Length	157.5	165	157.5	110.415	110.415	135	0	0	0	135	19.666667	214.5	
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80	80	125	
	3	80	80	80	80	80	80	80	80	80	80	80	
	4	80	80	80	80	80	80	80	80	80	80	80	
	5	80	80	80	80	80	80	80	80	80	80	80	
	6	80	80	80	80	80	80	80	80	80	100	80	
	7	80	80	80	80	80	80	80	80	80	100	80	
	8	80	80	80	80	80	80	80	80	80	100	80	
	9	115	115	115	115	115	115	115	115	115	115	115	
	10	115	115	115	115	115	115	115	115	115	115	115	
	11	115	115	115	115	115	115	115	115	115	115	115	
	12	115	115	115	100	100	115	115	115	115	115	115	
	R	20	20	20	20	20	20	20	20	20	20	20	
	PHR	20	20	20	20	20	20	20	20	20	20	20	
DL Beams / Girders per floor #	2												
	3												
	4												
	5												
	6												
	7												
	8	1067	1073	1067	538	538	1136	2162	2247	2162	1158	233	2668
	9	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	10	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285	0	2995
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285	0	2995
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500	0	3500
	PHR	0	0	0	0	0	0	0	0	0	0	0	
Column Weight Above (#)	1913.33	1986.67	1913.33	1280.00	1280.00	1986.67	2420.00	2486.67	2420.00	1986.67	200.00	2788.00	
Self Weight+Above (#)	2513.33	2586.67	2513.33	1693.33	1693.33	2586.67	3073.33	3206.67	3073.33	2586.67	200.00	3508.00	

8th Floor: Column Design

Total Flr Column Self Weight= 14.69 k

DL Superimposed = 30 psf DL Slab = 29 psf DL Roof 5 psf KLL = 4
DL Steel Deck = 1.6 psf DL Perimet 520 plf Snow Load 5 psf Story Heigh 13.333333 ft

Column	A3 w10 45	A4 w10 45	A5 w10 45	B2 w8 31	B6 w8 31	C2 w10 45	C3 w10 49	C4 w10 54	C5 w10 49	C6 w10 45	C7	D1 10x 54	
ΦPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK		OK	
ΦPn	358	358	358	248	248	358	484.87	520	484.87	358		534.42	
Pu =	289.2	311.0	289.2	164.4	164.4	297.9	406.0	433.8	406.0	294.1		456.1	
1.4 DL=	228.21	246.28	228.21	129.27	129.27	228.27	257.51	274.74	257.51	223.59		363.40	
1.2 DL+1.6 LL+0.5(Lr+S)=	289.25	311.02	289.25	164.36	164.36	297.87	406.01	433.83	406.01	294.08		456.12	
1.2 DL+1.0 LL+1.6(Lr+S)=	260.86	282.99	260.86	144.27	144.27	269.26	355.96	380.25	355.96	262.44		416.86	
DL (k)	163.01	175.92	163.01	92.34	92.34	163.05	183.93	196.24	183.93	159.71		259.57	
LL (k)	123.92	134.93	123.92	57.81	57.81	138.86	277.73	297.28	277.73	138.86		213.95	
LL REDUCED (k)	56.89	60.16	56.89	33.47	33.47	61.52	111.09	118.91	111.09	62.37		86.76	
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21		9.30	
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05		2.33	
LL Reduct.Fact.(>0.4)	0.459	0.446	0.459	0.579	0.579	0.443	0.400	0.400	0.400	0.449		0.406	
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	
Column Self Weight (#)	600.00	600.00	600.00	413.33	413.33	600.00	653.33	720.00	653.33	600.00		720.00	
Trib.Area per floor ft²	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	10	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11
	PHR	0	0	0	0	0	0	0	0	0	0	0	0
	PHR	0	0	0	0	0	0	0	0	0	0	0	0
Total Trib.Area	1286.49	1466.65	1286.49	519.6	519.6	1509.4	3018.75	3231.25	3018.75	1418.01		2325.55	
Perimeter Length per floor ft	2												
	3												
	4												
	5												
	6												
	7												
	8	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	19.67	35.75
	9	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	10	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total P.Length	157.3	165	157.3	110.415	110.415	135	0	0	0	135		214.5	
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80		125	
	3	80	80	80	80	80	80	80	80	80		80	
	4	80	80	80	80	80	80	80	80	80		80	
	5	80	80	80	80	80	80	80	80	80		80	
	6	80	80	80	80	80	80	80	80	80		80	
	7	80	80	80	80	80	80	80	80	80		80	
	8	80	80	80	80	80	80	80	80	80		80	
	9	115	115	115	115	115	115	115	115	115		115	
	10	115	115	115	115	115	115	115	115	115		115	
	11	115	115	115	115	115	115	115	115	115		115	
	12	115	115	115	100	100	115	115	115	115		115	
	R	20	20	20	20	20	20	20	20	20		20	
	PHR	20	20	20	20	20	20	20	20	20		20	
	PHR	0	0	0	0	0	0	0	0	0		0	
DL Beams / Girders per floor #	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9	1067	1073	1067	538	538	1285	2522	2613	2522	1285		2995
	10	1067	1073	1067	538	538	1285	2522	2613	2522	1285		2995
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285		2995
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285		2995
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500		3500
	PHR	0	0	0	0	0	0	0	0	0		0	
	PHR	0	0	0	0	0	0	0	0	0		0	
Column Weight Above (#)	1313.33	1386.67	1313.33	866.67	866.67	1386.67	1766.67	1766.67	1766.67	1386.67		2068.00	
Self Weight+Above (#)	1913.33	1986.67	1913.33	1280.00	1280.00	1986.67	2420.00	2486.67	2420.00	1986.67		2788.00	

8th Floor: Column Design

D7 12x 58	E1 10x 54	E7 12x 58	F2 w10 45	F3 w10 49	F4 w10 54	F5 w10 49	F6 w10 45	F7	G2 w8 31	G6 w8 31	H3 w10 45	H4 w10 45	H5 w10 45
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
568.44	534.42	568.44	358	484.87	520	484.87	358		248	248	358	358	358
475.2	456.1	475.2	297.9	406.0	433.3	406.0	294.1		164.4	164.4	289.2	311.0	289.2
382.41	363.40	382.41	228.27	257.51	274.74	257.51	223.59		129.27	129.27	228.21	246.28	228.21
475.17	456.12	475.17	297.87	406.01	433.83	406.01	294.08		164.36	164.36	289.25	311.02	289.25
435.22	416.86	435.22	269.26	355.96	380.25	355.96	262.44		144.27	144.27	260.86	282.99	260.86
273.15	259.57	273.15	163.05	183.93	196.24	183.93	159.71		92.34	92.34	163.01	175.92	163.01
218.97	213.95	218.97	138.86	277.73	297.28	277.73	138.86		57.81	57.81	123.92	134.93	123.92
88.40	86.76	88.40	61.52	111.09	118.91	111.09	62.37		33.47	33.47	56.89	60.16	56.89
9.52	9.30	9.52	6.04	12.08	12.93	12.08	4.21		0.00	0.00	4.18	5.87	4.18
2.38	2.33	2.38	1.51	3.02	3.23	3.02	1.05		0.00	0.00	1.04	1.47	1.04
0.404	0.406	0.404	0.443	0.400	0.400	0.400	0.449		0.579	0.579	0.459	0.446	0.459
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	13.33	13.33	13.33	13.33
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	13.33	13.33	13.33	13.33
773.33	720.00	773.33	600.00	653.33	720.00	653.33	600.00		413.33	413.33	600.00	600.00	600.00
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0
2380.1	2325.58	2380.1	1509.4	3018.75	3231.25	3018.75	1418.01		519.6	519.6	1286.49	1466.65	1286.49
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	19.67	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
232.5	214.3	232.5	135	0	0	0	135		110.415	110.415	157.3	165	157.3
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
115	115	115	115	115	115	115	115		115	115	115	115	115
115	115	115	115	115	115	115	115		115	115	115	115	115
115	115	115	115	115	115	115	115		115	115	115	115	115
115	115	115	115	115	115	115	115		100	100	115	115	115
20	20	20	20	20	20	20	20		20	20	20	20	20
20	20	20	20	20	20	20	20		20	20	20	20	20
3224	2995	3224	1285	2522	2613	2522	1285		538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285		538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285		538	538	1067	1073	1067
3224	2995	3224	1285	2502	2613	2502	1285		538	538	1047	1073	1047
3700	3500	3700	1500	3000	3000	3000	1500		0	0	2000	2000	2000
0	0	0	0	0	0	0	0		0	0	0	0	0
2068.00	2068.00	2068.00	1386.67	1766.67	1766.67	1766.67	1386.67		866.67	866.67	1313.33	1386.67	1313.33
2841.33	2788.00	2841.33	1986.67	2420.00	2486.67	2420.00	1986.67		1280.00	1280.00	1913.33	1986.67	1913.33

9th Floor: Column Design

Total Flr Column Self Weight= 11.07 k

DL Superimposed = 30 psf DL Slab = 29 psf DL Roof 5 psf KLL = 4
DL Steel Deck = 1.6 psf DL Perimet 520 plf Snow Load 5 psf Story Heigh 13.333333 ft

Column	A3 8x 31	A4 8x 31	A5 8x 31	B2 6x 25	B6 6x 25	C2 8x 31	C3 8x 40	C4 8x 40	C5 8x 40	C6 8x 31	C7	D1 10x 45	
ΦPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK		OK	
ΦPn	248	248	248	146.91	146.91	248	335.83	335.83	335.83	248		376.37	
Pu =	216.3	233.5	216.3	116.3	116.3	225.3	315.4	335.8	315.4	221.5		344.0	
1.4 DL=	165.38	179.60	165.38	85.23	85.23	167.84	202.59	215.85	202.59	163.16		267.53	
1.2 DL+1.6 LL+0.5(Lr+S)=	216.51	233.54	216.51	116.26	116.26	225.26	315.37	335.79	315.37	221.55		343.95	
1.2 DL+1.0 LL+1.6(Lr+S)=	195.20	213.13	195.20	100.06	100.06	204.45	281.66	300.05	281.66	197.69		315.93	
DL (k)	118.13	128.28	118.13	60.88	60.88	119.89	144.71	154.18	144.71	116.54		191.09	
LL (k)	92.94	101.20	92.94	42.87	42.87	104.15	208.29	222.96	208.29	104.15		160.46	
LL REDUCED (k)	45.09	47.46	45.09	27.00	27.00	48.52	83.86	89.18	83.86	49.42		68.02	
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21		9.30	
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05		2.33	
LL Reduct.Fact.(>0.4)	0.485	0.469	0.485	0.630	0.630	0.466	0.403	0.400	0.403	0.474		0.424	
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	
Column Self Weight (#)	413.33	413.33	413.33	333.33	333.33	413.33	533.33	533.33	533.33	413.33		600.00	
Trib.Area per floor ft²	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11
	PHR	0	0	0	0	0	0	0	0	0	0	0	0
Total Trib.Area	1017.10	1173.32	1017.10	389.70	389.70	1207.52	2415.00	2585.00	2415.00	1116.13		1860.44	
Perimeter Length per floor ft	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total P.Length	105	110	105	66.249	66.249	90	0	0	0	90		143	
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80		125	
	3	80	80	80	80	80	80	80	80	80		80	
	4	80	80	80	80	80	80	80	80	80		80	
	5	80	80	80	80	80	80	80	80	80		80	
	6	80	80	80	80	80	80	80	80	80		80	
	7	80	80	80	80	80	80	80	80	80		80	
	8	80	80	80	80	80	80	80	80	80		80	
	9	115	115	115	115	115	115	115	115	115		115	
	10	115	115	115	115	115	115	115	115	115		115	
	11	115	115	115	115	115	115	115	115	115		115	
	12	115	115	115	100	100	115	115	115	115		115	
	R	20	20	20	20	20	20	20	20	20		20	
	PHR	20	20	20	20	20	20	20	20	20		20	
DL Beams / Girders per floor #	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10	1067	1073	1067	538	538	1285	2522	2613	2522	1285		2995
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285		2995
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285		2995
	R	2000	2000	2000	0	0	1500	3000	2900	3000	1500		3500
	PHR	0	0	0	0	0	0	0	0	0	0		0
Column Weight Above (#)	900.00	973.33	900.00	533.33	533.33	973.33	1233.33	1233.33	1233.33	973.33		1468.00	
Self Weight+Above (#)	1313.33	1386.67	1313.33	866.67	866.67	1386.67	1766.67	1766.67	1766.67	1386.67		2068.00	

9th Floor: Column Design

D7 10x 45	E1 10x 45	E7 10x 45	F2 8x 31	F3 8x 40	F4 8x 40	F5 8x 40	F6 8x 31	F7	G2 6x 25	G6 6x 25	H3 8x 31	H4 8x 31	H5 8x 31
OK	OK	OK	OK	OK	OK	OK	OK		OK	OK	OK	OK	OK
376.37	376.37	376.37	248	335.85	335.85	335.85	248		146.91	146.91	248	248	248
357.5	344.0	357.5	225.3	315.4	335.8	315.4	221.3		116.3	116.3	216.3	233.5	216.3
280.84	267.53	280.84	167.84	202.59	215.85	202.59	163.16		85.23	85.23	165.38	179.60	165.38
357.53	343.95	357.53	225.26	315.37	335.79	315.37	221.55		116.26	116.26	216.51	233.54	216.51
329.05	315.93	329.05	204.45	281.66	300.05	281.66	197.69		100.06	100.06	195.20	213.13	195.20
200.60	191.09	200.60	119.89	144.71	154.18	144.71	116.54		60.88	60.88	118.13	128.28	118.13
164.23	160.46	164.23	104.15	208.29	222.96	208.29	104.15		42.87	42.87	92.94	101.20	92.94
69.28	68.02	69.28	48.52	83.86	89.18	83.86	49.42		27.00	27.00	45.09	47.46	45.09
9.52	9.30	9.52	6.04	12.08	12.93	12.08	4.21		0.00	0.00	4.18	5.87	4.18
2.38	2.33	2.38	1.51	3.02	3.23	3.02	1.05		0.00	0.00	1.04	1.47	1.04
0.422	0.424	0.422	0.466	0.403	0.400	0.403	0.474		0.630	0.630	0.485	0.469	0.485
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	13.33	13.33	13.33	13.33
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	13.33	13.33	13.33	13.33
600.00	600.00	600.00	413.33	533.33	533.33	533.33	413.33		333.33	333.33	413.33	413.33	413.33
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	301.88	0.00	129.90	129.90	269.39	293.33	269.39
476.02	465.11	476.02	301.88	603.75	646.25	603.75	210.49	0.00	0.00	0.00	208.93	293.33	208.93
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1904.08	1860.44	1904.08	1207.52	2415.00	2585.00	2415.00	1116.13		389.70	389.70	1017.10	1173.32	1017.10
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	22.08	22.08	26.25	27.50	26.25
38.75	35.75	38.75	22.50	0.00	0.00	0.00	22.50	0.00	0.00	0.00	26.25	27.50	26.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	143	155	90	0	0	0	90		66.249	66.249	105	110	105
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
80	80	80	80	80	80	80	80		80	80	80	80	80
115	115	115	115	115	115	115	115		115	115	115	115	115
115	115	115	115	115	115	115	115		115	115	115	115	115
115	115	115	115	115	115	115	115		115	115	115	115	115
115	115	115	115	115	115	115	115		100	100	115	115	115
20	20	20	20	20	20	20	20		20	20	20	20	20
20	20	20	20	20	20	20	20		20	20	20	20	20
3224	2995	3224	1285	2522	2613	2522	1285		538	538	1067	1073	1067
3224	2995	3224	1285	2522	2613	2522	1285		538	538	1067	1073	1067
3224	2995	3224	1285	2502	2613	2502	1285		538	538	1047	1073	1047
3700	3500	3700	1500	3000	2900	3000	1500		0	0	2000	2000	2000
0	0	0	0	0	0	0	0		0	0	0	0	0
1468.00	1468.00	1468.00	973.33	1233.33	1233.33	1233.33	973.33		533.33	533.33	900.00	973.33	900.00
2068.00	2068.00	2068.00	1386.67	1766.67	1766.67	1766.67	1386.67		866.67	866.67	1313.33	1386.67	1313.33

10th Floor: Column Design

Total Flr Column Self Weight= 11.07 k

DL Superimposed = 30 psf DL Slab = 29 psf DL Roof 5 psf KLL = 4
DL Steel Deck = 1.6 psf DL Perimet 520 plf Snow Load 5 psf Story High 13.333333 ft

Column	A3	A4	A5	B2	B6	C2	C3	C4	C5	C6	C7	D1	
DPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
DPn	248	248	248	146.91	146.91	248	335.83	335.83	335.83	248		376.37	
Pu =	158.6	171.6	158.6	80.7	80.7	165.1	228.3	242.4	228.3	161.4		251.8	
1.4 DL=	121.34	132.61	121.34	56.91	56.91	123.47	147.09	156.76	147.09	118.79		197.01	
1.2 DL+1.6 LL+0.5(Lr+S)=	158.60	171.61	158.60	80.75	80.75	165.06	228.32	242.41	228.32	161.42		251.84	
1.2 DL+1.0 LL+1.6(Lr+S)=	144.85	159.32	144.85	68.76	68.76	152.57	209.41	222.69	209.41	145.85		235.69	
DL (k)	86.67	94.72	86.67	40.65	40.65	88.19	105.06	111.97	105.06	84.85		140.72	
LL (k)	61.96	67.47	61.96	27.93	27.93	69.43	138.86	148.64	138.86	69.43		106.98	
LL REDUCED (k)	32.48	33.92	32.48	19.98	19.98	34.66	59.19	62.48	59.19	35.61		48.22	
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21		9.30	
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05		2.33	
LL Reduct.Fact.(≥0.4)	0.524	0.503	0.524	0.715	0.715	0.499	0.426	0.426	0.426	0.513		0.431	
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	
Column Self Weight (#)	413.33	413.33	413.33	333.33	333.33	413.33	333.33	333.33	333.33	413.33		600.00	
Trib.Area per floor ft²	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11
	PHR	0	0	0	0	0	0	0	0	0	0	0	0
Total Trib.Area	747.71	879.99	747.71	259.8	259.8	905.64	1811.25	1938.75	1811.25	814.25		1395.33	
Perimeter Length per floor ft	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total P.Length	78.75	82.5	78.75	44.166	44.166	67.5	0	0	0	67.5		107.25	
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80		125	
	3	80	80	80	80	80	80	80	80	80		80	
	4	80	80	80	80	80	80	80	80	80		80	
	5	80	80	80	80	80	80	80	80	80		80	
	6	80	80	80	80	80	80	80	80	80		80	
	7	80	80	80	80	80	80	80	80	80		80	
	8	80	80	80	80	80	80	80	80	80		80	
	9	115	115	115	115	115	115	115	115	115		115	
	10	115	115	115	115	115	115	115	115	115		115	
	11	115	115	115	115	115	115	115	115	115		115	
	12	115	115	115	100	100	115	115	115	115		115	
	R	20	20	20	20	20	20	20	20	20		20	
	PHR	20	20	20	20	20	20	20	20	20		20	
DL Beams / Girders per floor #	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11	1067	1073	1067	538	538	1285	2522	2613	2522	1285		2995
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285		2995
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500		3500
	PHR	0	0	0	0	0	0	0	0	0	0		0
Column Weight Above (#)	486.67	560.00	486.67	200.00	200.00	560.00	700.00	700.00	700.00	560.00		868.00	
Self Weight+Above (#)	900.00	973.33	900.00	533.33	533.33	973.33	1233.33	1233.33	1233.33	973.33		1468.00	

11th Floor: Column Design

Total Flr Column Self Weight= 7.12 k

DL Superimposed = 30 psf DL Slab = 29 psf DL Roof 5 psf KLL = 4
DL Steel Deck = 1.6 psf DL Perimet 520 plf Snow Load 5 psf Story High 13.333333 ft

Column	A3	A4	A5	B2	B6	C2	C3	C4	C5	C6	C7	D1	
DPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
DPn	114.96	114.96	114.96	81.84	81.84	114.96	146.91	146.91	146.91	114.96		248	
Pu	98.1	107.1	98.1	43.2	43.2	102.2	137.6	146.0	137.6	98.5		156.5	
1.4 DL=	77.10	85.42	77.10	28.41	28.41	78.90	91.31	97.25	91.31	74.21		126.23	
1.2 DL+1.6 LL+0.5(Lr+S)=	98.09	107.09	98.09	43.22	43.22	102.24	137.56	145.97	137.56	98.53		156.45	
1.2 DL+1.0 LL+1.6(Lr+S)=	92.81	103.83	92.81	36.15	36.15	98.98	134.76	143.29	134.76	92.21		153.33	
DL (k)	55.07	61.01	55.07	20.29	20.29	56.35	65.22	69.46	65.22	53.01		90.17	
LL (k)	30.98	33.73	30.98	12.99	12.99	34.72	69.43	74.32	69.43	34.72		53.49	
LL REDUCED (k)	18.37	18.88	18.37	11.80	11.80	19.28	32.34	34.08	32.34	20.18		26.52	
Lr (k)	4.18	5.87	4.18	0.00	0.00	6.04	12.08	12.93	12.08	4.21		9.30	
S (k)	1.04	1.47	1.04	0.00	0.00	1.51	3.02	3.23	3.02	1.05		2.33	
LL Reduct.Fact.(≥0.4)	0.593	0.560	0.593	0.908	0.908	0.555	0.466	0.459	0.466	0.581		0.496	
Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Effective Length (ft)	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33		13.33	
Column Self Weight (#)	266.67	266.67	266.67	200.00	200.00	266.67	333.33	333.33	333.33	266.67		413.33	
Trib.Area per floor ft²	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11												
	12	269.39	293.33	269.39	129.90	129.90	301.88	603.75	646.25	603.75	301.88	0.00	465.11
	R	208.93	293.33	208.93	0.00	0.00	301.88	603.75	646.25	603.75	210.49	0.00	465.11
	PHR	0	0	0	0	0	0	0	0	0	0	0	0
Total Trib.Area	478.32	586.66	478.32	129.90	129.90	603.76	1207.5	1292.5	1207.5	512.37		930.22	
Perimeter Length per floor ft	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11												
	12	26.25	27.50	26.25	22.08	22.08	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	R	26.25	27.50	26.25	0.00	0.00	22.50	0.00	0.00	0.00	22.50	0.00	35.75
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total P.Length	32.5	35	32.5	22.083	22.083	45	0	0	0	45		71.5	
Live Load per floor psf	2	125	125	125	125	80	125	125	125	80		125	
	3	80	80	80	80	80	80	80	80	80		80	
	4	80	80	80	80	80	80	80	80	80		80	
	5	80	80	80	80	80	80	80	80	80		80	
	6	80	80	80	80	80	80	80	80	80		80	
	7	80	80	80	80	80	80	80	80	80		80	
	8	80	80	80	80	80	80	80	80	80		80	
	9	115	115	115	115	115	115	115	115	115		115	
	10	115	115	115	115	115	115	115	115	115		115	
	11	115	115	115	115	115	115	115	115	115		115	
	12	115	115	115	100	100	115	115	115	115		115	
	R	20	20	20	20	20	20	20	20	20		20	
	PHR	20	20	20	20	20	20	20	20	20		20	
DL Beams / Girders per floor #	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11												
	12	1047	1073	1047	538	538	1285	2502	2613	2502	1285	2995	
	R	2000	2000	2000	0	0	1500	3000	3000	3000	1500	3500	
	PHR	0	0	0	0	0	0	0	0	0	0	0	
Column Weight Above (#)	220.00	293.33	220.00			293.33	366.67	366.67	366.67	293.33		454.67	
Self Weight+Above (#)	486.67	560.00	486.67	200.00	200.00	560.00	700.00	700.00	700.00	560.00		868.00	

12th Column Design

DL Superimposed = 30 psf DL Slab = 29 psf DL Roof Snow Load 5 psf Total Flr Column Self Weight= 7.54 k
DL Steel Deck = 1.6 psf DL Perimet 520 plf KLL = 4 Story Height 14.666667 ft

Column	A3	A4	A5	C2	C3	C4	C5	C6	D1	D7	E1	E7	
	6x 15	6x 20	6x 15	6x 20	6x 25	6x 25	6x 25	6x 20	8x 31	8x 31	8x 31	8x 31	
DPn>Pu?	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
DPn	67.92	96.32	67.92	96.32	123.67	123.67	123.67	248	230	230	230	230	
Pu	35.26	46.23	35.26	42.98	55.15	58.71	55.15	44.26	68.38	71.30	68.38	71.30	
1.4 DL=	32.27	39.49	32.27	35.44	36.16	38.34	36.16	36.22	57.10	60.06	57.10	60.06	
1.2 DL+1.6 LL+0.5(Lr+S)=	30.04	37.72	30.04	34.32	38.54	40.94	38.54	35.18	55.02	57.67	55.02	57.67	
1.2 DL+1.0 LL+1.6(Lr+S)=	35.26	46.23	35.26	42.98	55.15	58.71	55.15	44.26	68.38	71.30	68.38	71.30	
DL (k)	23.05	28.21	23.05	25.32	25.83	27.39	25.83	25.87	40.79	42.90	40.79	42.90	
LL (k)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LL REDUCED (k)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Lr (k)	3.80	6.19	3.80	6.30	12.08	12.93	12.08	6.61	9.72	9.91	9.72	9.91	
S (k)	0.95	1.55	0.95	1.58	3.02	3.23	3.02	1.65	2.43	2.48	2.43	2.48	
LL Reduct.Fact.(≥0.4)	0.794	0.676	0.794	0.673	0.555	0.545	0.555	0.663	0.590	0.587	0.590	0.587	
Length (ft)	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	
K	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Effective Length (ft)	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	
Column Self Weight (#)	220.00	293.33	220.00	293.33	366.67	366.67	366.67	293.33	454.67	454.67	454.67	454.67	
Trib.Area per floor ft²	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11												
	12												
	R	190.14	309.38	190.14	315.00	603.75	646.25	603.75	330.25	485.97	495.63	485.97	495.63
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Trib.Area	190.14	309.38	190.14	315	603.75	646.25	603.75	330.25	485.97	495.63	485.97	495.63	
Perimeter Length per floor ft	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11												
	12												
	R	26.25	27.50	26.25	22.50	0.00	0.00	0.00	22.50	35.75	38.75	35.75	38.75
	PHR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total P.Length	26.25	27.5	26.25	22.5	0	0	0	22.5	35.75	38.75	35.75	38.75	
Live Load per floor psf	2	125	125	125	125	125	125	80	125	80	80	80	
	3	80	80	80	80	80	80	80	80	80	80	80	
	4	80	80	80	80	80	80	80	80	80	80	80	
	5	80	80	80	80	80	80	80	80	80	80	80	
	6	80	80	80	80	80	80	80	80	80	80	80	
	7	80	80	80	80	80	80	80	80	80	80	80	
	8	80	80	80	80	80	80	80	80	80	80	80	
	9	115	115	115	115	115	115	115	115	115	115	115	
	10	115	115	115	115	115	115	115	115	115	115	115	
	11	115	115	115	115	115	115	115	115	115	115	115	
	12	115	115	115	115	115	115	115	115	115	115	115	
	R	20	20	20	20	20	20	20	20	20	20	20	
	PHR	20	20	20	20	20	20	20	20	20	20	20	
DL Beams / Girders per floor #	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11												
	12												
	R	2000	2000	2000	1500	3000	3000	3000	1500	3500	3700	3500	3700
	PHR	0	0	0	0	0	0	0	0	0	0	0	0
Column Weight Above (#)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Self Weight+Above (#)	220.00	293.33	220.00	293.33	366.67	366.67	366.67	293.33	454.67	454.67	454.67	454.67	

Dead Loads

Slab = 27.4 psf RF Level = 11386.69 RF w = mg Mech.Cool.Tower = 22000
 Stl Deck = 1.6 psf 2296.00 Slab g = 386 in/sec² Elev.Equip. = 3000
 S'Imposed = 30.0 psf
 Roof = 5.0 psf LW Con = 115 pcf slab vol = 0.255 ft³/ft²
 Perimeter = 520.0 plf NW Con = 150 pcf

	Story Height ft	Structural Steel			Gross Area ft ²	Elev. Opening ft ²	Net Area ft ²	Conc Slab DL (k)	Steel Deck DL (k)	Super-imposed DL (k)	ROOF DL (k)	Exterior Wall LF	Exterior Wall DL (k)
		Column DL (k)	Floor Sys DL (k)	Core DL (k)									
1	14.00	26.21	0.00	0.00	14879.36	270.00	14609.36				0.00	499.33	259.65
2	13.33	24.96	52.22	6.57	14879.36	270.00	14609.36	400.30	23.37	438.28	0.00	499.33	259.65
3	13.33	20.88	49.64	6.57	14879.36	270.00	14609.36	400.30	23.37	438.28	0.00	499.33	259.65
4	13.33	20.80	49.64	6.57	14879.36	270.00	14609.36	400.30	23.37	438.28	0.00	499.33	259.65
5	13.33	17.55	49.64	6.57	14879.36	270.00	14609.36	400.30	23.37	438.28	0.00	499.33	259.65
6	13.33	17.55	48.58	6.57	14879.36	270.00	14609.36	400.30	23.37	438.28	0.00	531.83	276.55
7	13.33	15.09	48.58	6.57	14879.36	270.00	14609.36	400.30	23.37	438.28	0.00	531.83	276.55
8	13.33	14.69	48.58	6.57	14879.36	270.00	14609.36	400.30	23.37	438.28	0.00	499.33	259.65
9	13.33	11.48	53.79	6.57	14604.36	270.00	14334.36	392.76	22.93	430.03	0.00	499.33	259.65
10	13.33	11.07	53.79	6.57	14604.36	270.00	14334.36	392.76	22.93	430.03	0.00	499.33	259.65
11	13.33	7.12	53.79	6.57	14604.36	270.00	14334.36	392.76	22.93	430.03	0.00	499.33	259.65
12	14.67	7.54	53.64	6.57	14604.36	270.00	14334.36	392.76	22.93	430.03	0.00	499.33	259.65
RF	9.67	0.50	55.00	6.57	13682.69	270	13412.69	62.91	21.46	402.38	56.93	499.63	129.90
PHRF				6.57	2296.00	0.00	2296.00	0.00	3.67	68.88		11.48	
Totals	171.67	195.44	616.88	85.40	193431.0	3510.00	189921.0	4436.03	280.50	5259.35	68.41		
	ft	DL (k)	DL (k)	DL (k)	ft ²	ft ²	ft ²	DL (k)	DL (k)	DL (k)	DL (k)		

	Story Height ft	Structural Steel			C.Wall Length ft	C.Wall Thick. in	C.Wall Length ft	C.Wall Thick. in	C.Wall Length ft	C.Wall Thick. in	Column 20x20 ft ²	Steel Weight K
		Column DL (k)	Floor Sys DL (k)	Core DL (k)								
1	14.00	26.21	0.00	0.00	48.33	16.00	48.33	14.00	55.00	20.00	2.78	26.21
2	13.33	24.96	52.22	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	83.74
3	13.33	20.88	49.64	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	77.09
4	13.33	20.80	49.64	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	77.01
5	13.33	17.55	49.64	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	73.76
6	13.33	17.55	48.58	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	72.70
7	13.33	15.09	48.58	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	70.24
8	13.33	14.69	48.58	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	69.84
9	13.33	11.48	53.79	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	71.84
10	13.33	11.07	53.79	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	71.43
11	13.33	7.12	53.79	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	67.48
12	14.67	7.54	53.64	6.57	48.33	16.00	48.33	14.00	55.00	20.00	2.78	67.75
RF	9.67	0.50	55.00	6.57	48.33	16.00	48.33	14.00	36.67	20.00	2.78	62.07
PHRF				6.57								6.57
Totals	171.67	195.44	616.88	85.40								897.715
	ft	DL (k)	DL (k)	DL (k)								

	Wall/Col Volume ft ³	Wall/Col weight K	Slab volume ft ³	Slab weight K	Steel Deck DL (k)	Super-imposed DL (k)	ROOF DL (k)	Exterior Wall DL (k)	Total DL K	DL psf	Seismic MASS K-sec ² /in	Seismic MASS per in ²
1	3325.00	498.75					0.00	259.65	784.61			
2	3166.67	475.00	3725.39	400.30	23.37	438.28	0.00	259.65	1680.35	115.02	4.38	2.046E-06
3	3166.67	475.00	3725.39	400.30	23.37	438.28	0.00	259.65	1673.69	114.56	4.34	2.024E-06
4	3166.67	475.00	3725.39	400.30	23.37	438.28	0.00	259.65	1673.61	114.56	4.34	2.024E-06
5	3166.67	364.17	3725.39	400.30	23.37	438.28	0.00	259.65	1559.53	106.75	4.18	1.953E-06
6	3166.67	364.17	3725.39	400.30	23.37	438.28	0.00	276.55	1575.37	107.83	4.06	1.895E-06
7	3166.67	364.17	3725.39	400.30	23.37	438.28	0.00	276.55	1572.91	107.66	4.07	1.902E-06
8	3166.67	364.17	3725.39	400.30	23.37	438.28	0.00	259.65	1555.61	106.48	4.05	1.891E-06
9	3166.67	364.17	3655.26	392.76	22.93	430.03	0.00	259.65	1541.39	107.53	3.99	1.864E-06
10	3166.67	364.17	3655.26	392.76	22.93	430.03	0.00	259.65	1540.98	107.50	3.99	1.898E-06
11	3166.67	364.17	3655.26	392.76	22.93	430.03	0.00	259.65	1537.03	107.23	3.98	1.893E-06
12	3483.33	400.58	3655.26	392.76	22.93	430.03	0.00	259.65	1573.71	109.79	4.03	1.916E-06
RF	2000.46	230.05	3420.24	62.91	21.46	402.38	56.93	129.90	965.71	72.00	2.74	1.304E-06
PHRF	0.00	0.00	0.00	0	3.67	68.88	11.48		90.60	39.46	0.67	3.407E-07
Totals	40475.46	5103.553	44118.995	4436	280.50	5259.35	68.41	3279.54	19325.11		48.84	
					DL (k)	DL (k)	DL (k)					

Seismic DL = 18851.28 K

Torsional Irregularities Y-Direction (E-W)

Story	Point	Load	UX	UY	UZ	RX	RY	RZ	Average	1.2*Ave	Ave/UY
RF	2518	CHU2E	0.0317	2.5718	0	0	0	0.0022	2.369	2.843	1.086
RF	2519	CHU2E	0.0317	2.1659	0	0	0	0.0022			
STORY12	2518	CHU2E	0.0278	2.2632	0	0	0	0.0019	2.083	2.500	1.086
STORY12	2519	CHU2E	0.0278	1.9032	0	0	0	0.0019			
STORY11	2518	CHU2E	0.0243	1.9825	0	0	0	0.0017	1.824	2.189	1.087
STORY11	2519	CHU2E	0.0243	1.6652	0	0	0	0.0017			
STORY10	2518	CHU2E	0.0208	1.7042	0	0	0	0.0014	1.567	1.880	1.088
STORY10	2519	CHU2E	0.0208	1.4299	0	0	0	0.0014			
STORY9	2518	CHU2E	0.0175	1.4311	0	0	0	0.0012	1.315	1.578	1.088
STORY9	2519	CHU2E	0.0175	1.1995	0	0	0	0.0012			
STORY8	2518	CHU2E	0.0143	1.1669	0	0	0	0.0010	1.072	1.286	1.089
STORY8	2519	CHU2E	0.0143	0.9769	0	0	0	0.0010			
STORY7	2518	CHU2E	0.0112	0.9157	0	0	0	0.0008	0.841	1.009	1.089
STORY7	2519	CHU2E	0.0112	0.7654	0	0	0	0.0008			
STORY6	2518	CHU2E	0.0084	0.6823	0	0	0	0.0006	0.626	0.751	1.091
STORY6	2519	CHU2E	0.0084	0.5687	0	0	0	0.0006			
STORY5	2518	CHU2E	0.0059	0.4723	0	0	0	0.0004	0.432	0.518	1.093
STORY5	2519	CHU2E	0.0059	0.3917	0	0	0	0.0004			
STORY4	2518	CHU2E	0.0036	0.2919	0	0	0	0.0003	0.266	0.319	1.098
STORY4	2519	CHU2E	0.0036	0.2399	0	0	0	0.0003			
STORY3	2518	CHU2E	0.0018	0.1483	0	0	0	0.0001	0.134	0.161	1.107
STORY3	2519	CHU2E	0.0018	0.1197	0	0	0	0.0001			
STORY2	2518	CHU2E	0.0006	0.0490	0	0	0	0.0000	0.044	0.052	1.125
STORY2	2519	CHU2E	0.0006	0.0381	0	0	0	0.0000			

Story	Point	Load	UX	UY	UZ	RX	RY	RZ	Average	1.2*Ave	Ave/UY
RF	2518	CHU2NE	0.0313	2.5744	0	0	0	0.0022	2.373	2.847	1.085
RF	2519	CHU2NE	0.0313	2.1714	0	0	0	0.0022			
STORY12	2518	CHU2NE	0.0275	2.2656	0	0	0	0.0019	2.087	2.504	1.086
STORY12	2519	CHU2NE	0.0275	1.9083	0	0	0	0.0019			
STORY11	2518	CHU2NE	0.0240	1.9847	0	0	0	0.0017	1.827	2.193	1.086
STORY11	2519	CHU2NE	0.0240	1.6698	0	0	0	0.0017			
STORY10	2518	CHU2NE	0.0206	1.7060	0	0	0	0.0014	1.570	1.884	1.087
STORY10	2519	CHU2NE	0.0206	1.4340	0	0	0	0.0014			
STORY9	2518	CHU2NE	0.0173	1.4326	0	0	0	0.0012	1.318	1.581	1.087
STORY9	2519	CHU2NE	0.0173	1.2030	0	0	0	0.0012			
STORY8	2518	CHU2NE	0.0141	1.1681	0	0	0	0.0010	1.074	1.289	1.088
STORY8	2519	CHU2NE	0.0141	0.9797	0	0	0	0.0010			
STORY7	2518	CHU2NE	0.0111	0.9165	0	0	0	0.0008	0.842	1.010	1.089
STORY7	2519	CHU2NE	0.0111	0.7674	0	0	0	0.0008			
STORY6	2518	CHU2NE	0.0083	0.6827	0	0	0	0.0006	0.626	0.752	1.090
STORY6	2519	CHU2NE	0.0083	0.5700	0	0	0	0.0006			
STORY5	2518	CHU2NE	0.0058	0.4723	0	0	0	0.0004	0.432	0.519	1.093
STORY5	2519	CHU2NE	0.0058	0.3922	0	0	0	0.0004			
STORY4	2518	CHU2NE	0.0036	0.2915	0	0	0	0.0003	0.266	0.319	1.098
STORY4	2519	CHU2NE	0.0036	0.2396	0	0	0	0.0003			
STORY3	2518	CHU2NE	0.0018	0.1474	0	0	0	0.0001	0.133	0.160	1.108
STORY3	2519	CHU2NE	0.0018	0.1186	0	0	0	0.0001			
STORY2	2518	CHU2NE	0.0006	0.0478	0	0	0	0.0000	0.042	0.051	1.134
STORY2	2519	CHU2NE	0.0006	0.0365	0	0	0	0.0000			

Torsional Irregularities X-Direction (N-S)

Story	Point	Load	UX	UY	UZ	RX	RY	RZ	Average	1.2*Ave	Ave/UX
RF	2517	CHUIE	2.3943	0.1205	0	0	0	0.0013	2.335	2.802	1.025
RF	2520	CHUIE	2.2759	0.1205	0	0	0	0.0013			
STORY12	2517	CHUIE	2.1060	0.1059	0	0	0	0.0011	2.054	2.465	1.025
STORY12	2520	CHUIE	2.0025	0.1059	0	0	0	0.0011			
STORY11	2517	CHUIE	1.8444	0.0927	0	0	0	0.0010	1.799	2.159	1.025
STORY11	2520	CHUIE	1.7543	0.0927	0	0	0	0.0010			
STORY10	2517	CHUIE	1.5856	0.0797	0	0	0	0.0008	1.547	1.856	1.025
STORY10	2520	CHUIE	1.5085	0.0797	0	0	0	0.0008			
STORY9	2517	CHUIE	1.3320	0.0669	0	0	0	0.0007	1.300	1.560	1.025
STORY9	2520	CHUIE	1.2675	0.0669	0	0	0	0.0007			
STORY8	2517	CHUIE	1.0869	0.0545	0	0	0	0.0006	1.061	1.273	1.025
STORY8	2520	CHUIE	1.0344	0.0545	0	0	0	0.0006			
STORY7	2517	CHUIE	0.8538	0.0427	0	0	0	0.0005	0.833	1.000	1.025
STORY7	2520	CHUIE	0.8124	0.0427	0	0	0	0.0005			
STORY6	2517	CHUIE	0.6368	0.0316	0	0	0	0.0004	0.621	0.745	1.025
STORY6	2520	CHUIE	0.6056	0.0316	0	0	0	0.0004			
STORY5	2517	CHUIE	0.4408	0.0217	0	0	0	0.0002	0.430	0.516	1.025
STORY5	2520	CHUIE	0.4189	0.0217	0	0	0	0.0002			
STORY4	2517	CHUIE	0.2718	0.0132	0	0	0	0.0002	0.265	0.318	1.026
STORY4	2520	CHUIE	0.2579	0.0132	0	0	0	0.0002			
STORY3	2517	CHUIE	0.1366	0.0064	0	0	0	0.0001	0.133	0.160	1.027
STORY3	2520	CHUIE	0.1294	0.0064	0	0	0	0.0001			
STORY2	2517	CHUIE	0.0436	0.0020	0	0	0	0.0000	0.042	0.051	1.030
STORY2	2520	CHUIE	0.0411	0.0020	0	0	0	0.0000			

Story	Point	Load	UX	UY	UZ	RX	RY	RZ	Average	1.2*Ave	Ave/UX
RF	2517	CHUINE	2.3898	0.1189	0	0	0	0.0013	2.330	2.796	1.026
RF	2520	CHUINE	2.2704	0.1189	0	0	0	0.0013			
STORY12	2517	CHUINE	2.1020	0.1045	0	0	0	0.0011	2.050	2.460	1.025
STORY12	2520	CHUINE	1.9977	0.1045	0	0	0	0.0011			
STORY11	2517	CHUINE	1.8410	0.0915	0	0	0	0.0010	1.796	2.155	1.025
STORY11	2520	CHUINE	1.7502	0.0915	0	0	0	0.0010			
STORY10	2517	CHUINE	1.5826	0.0786	0	0	0	0.0008	1.544	1.853	1.025
STORY10	2520	CHUINE	1.5049	0.0786	0	0	0	0.0008			
STORY9	2517	CHUINE	1.3294	0.0660	0	0	0	0.0007	1.297	1.556	1.025
STORY9	2520	CHUINE	1.2645	0.0660	0	0	0	0.0007			
STORY8	2517	CHUINE	1.0847	0.0537	0	0	0	0.0006	1.058	1.270	1.025
STORY8	2520	CHUINE	1.0317	0.0537	0	0	0	0.0006			
STORY7	2517	CHUINE	0.8519	0.0421	0	0	0	0.0005	0.831	0.997	1.025
STORY7	2520	CHUINE	0.8102	0.0421	0	0	0	0.0005			
STORY6	2517	CHUINE	0.6352	0.0312	0	0	0	0.0004	0.620	0.743	1.025
STORY6	2520	CHUINE	0.6038	0.0312	0	0	0	0.0004			
STORY5	2517	CHUINE	0.4395	0.0214	0	0	0	0.0002	0.428	0.514	1.026
STORY5	2520	CHUINE	0.4174	0.0214	0	0	0	0.0002			
STORY4	2517	CHUINE	0.2706	0.0129	0	0	0	0.0002	0.264	0.316	1.026
STORY4	2520	CHUINE	0.2567	0.0129	0	0	0	0.0002			
STORY3	2517	CHUINE	0.1355	0.0062	0	0	0	0.0001	0.132	0.158	1.027
STORY3	2520	CHUINE	0.1283	0.0062	0	0	0	0.0001			
STORY2	2517	CHUINE	0.0424	0.0018	0	0	0	0.0000	0.041	0.049	1.029
STORY2	2520	CHUINE	0.0400	0.0018	0	0	0	0.0000			

9-story hotel gets height rezoning

By Dave Munday

The Post and Courier
Thursday, July 19, 2007

The old library site by Marion Square took another step toward a rebirth Wednesday.

The Charleston Planning Commission unanimously approved a height zoning change for the land where a nine-story, 285-room hotel is planned at 404 King St.

Zoning Administrator Lee Batchelder said the new hotel would revitalize King Street near Marion Square. He compared it to the effect of Charleston Place on King Street near the Market in the 1980s. The city also changed its height restrictions to allow Charleston Place to be 120 feet tall.

A number of others also urged the commission to support the zoning change.

"This will be a signature building, an anchor that will draw people north of Calhoun," said Francis Cantwell, an attorney representing the owners.

Opponents argued that changing the zoning near Marion Square was unnecessary, because the city's Board of Architectural Review had already granted a zoning variance.

"There is no reason for the board to change the rules to accomplish this project," said G. Trenholm Walker, an attorney for the Preservation Society of Charleston. "The skyline of Charleston is being assaulted again and again."

"It doesn't have to be tall to be a signature," said Edward K. Pritchard, representing the Historic Charleston Foundation. "We're deeply concerned about the canyonization of Marion Square."

Pritchard also warned that changing the zoning could be legally risky, since the variance is the subject of a lawsuit that's still in court.

Opponents also warned that changing the boundaries could allow a more disagreeable building on the site if the present developer backed out of this project. Members of the planning commission responded that the BAR would have to approve any new project, and they had confidence in the BAR.

The city's height zoning allows about one-third of the new hotel to be 105 feet tall. The rest is in a zone that allowed only 55 feet. The zoning change would extend the boundaries of the 105-foot district to accommodate the entire hotel.

City Council must still approve the zoning change.

http://www.postandcourier.com/news/2007/jul/19/story_hotel_gets_height_rezoning10912/