STRUCTURAL CALCULATIONS

100% CONSTRUCTION DOCUMNETS - 04/17/07

Of

THE HALL OF JUSTICE

Los Angeles, California

VOLUME II

Prepared for:

Nadel Architects, Inc.
1990 S. Bundy Dr., Fourth Floor
Los Angeles, California 90025

Prepared by:

Nabih Youssef & Associates
Structural Engineers
800 Wilshire Boulevard, Suite 200
Los Angeles, California 90017

NYA Job # 05121

REGISTERED PROFESSIONAL ENGINEER
NABIH F. G. YOUSSEF
No. 2026
Exp. 9/30/07
STRUCTURAL
STATE OF CALIFORNIA

TABLE OF CONTENTS

Volume I

Volume II

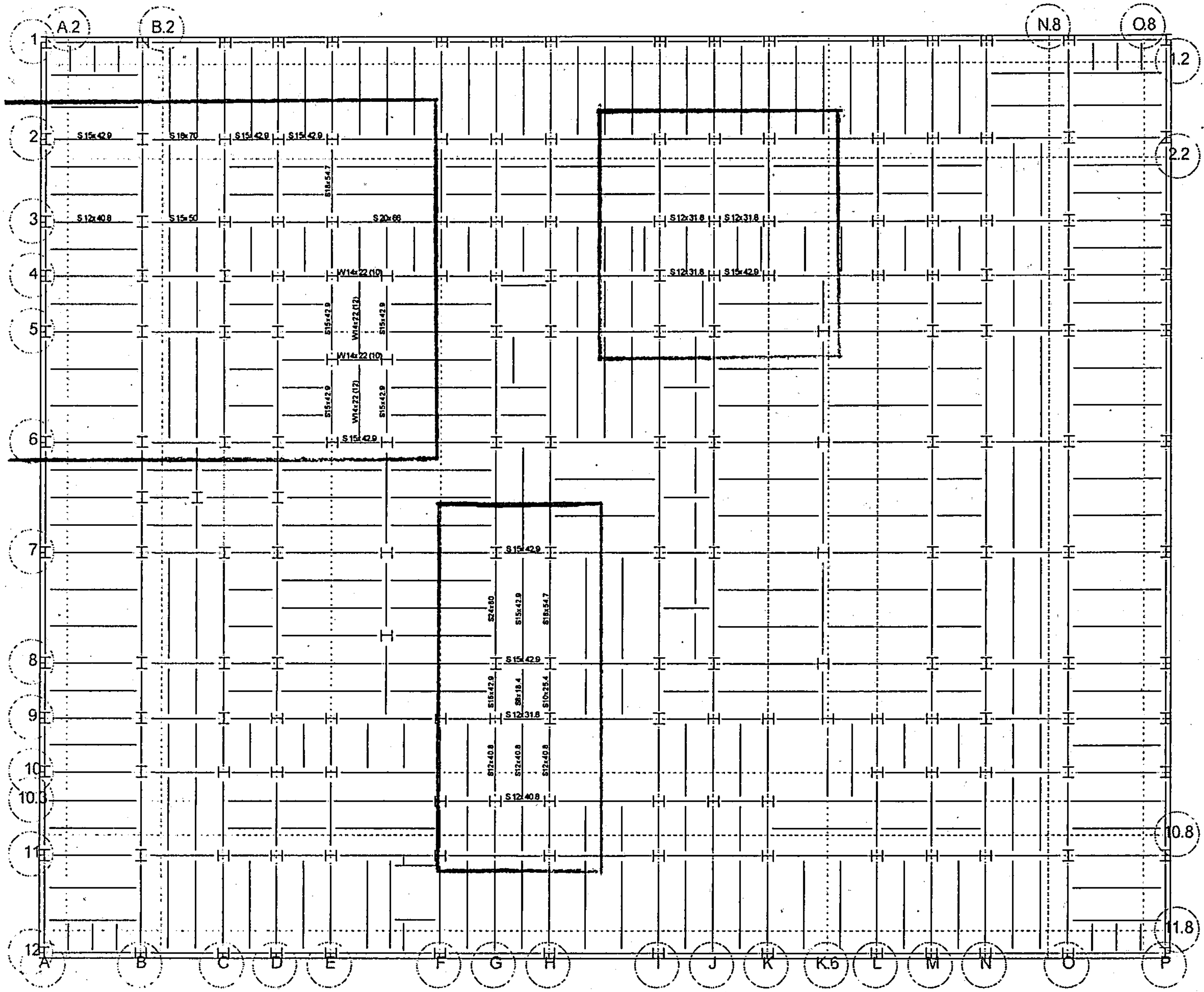
A.1: First Floor Infill Framing

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L1



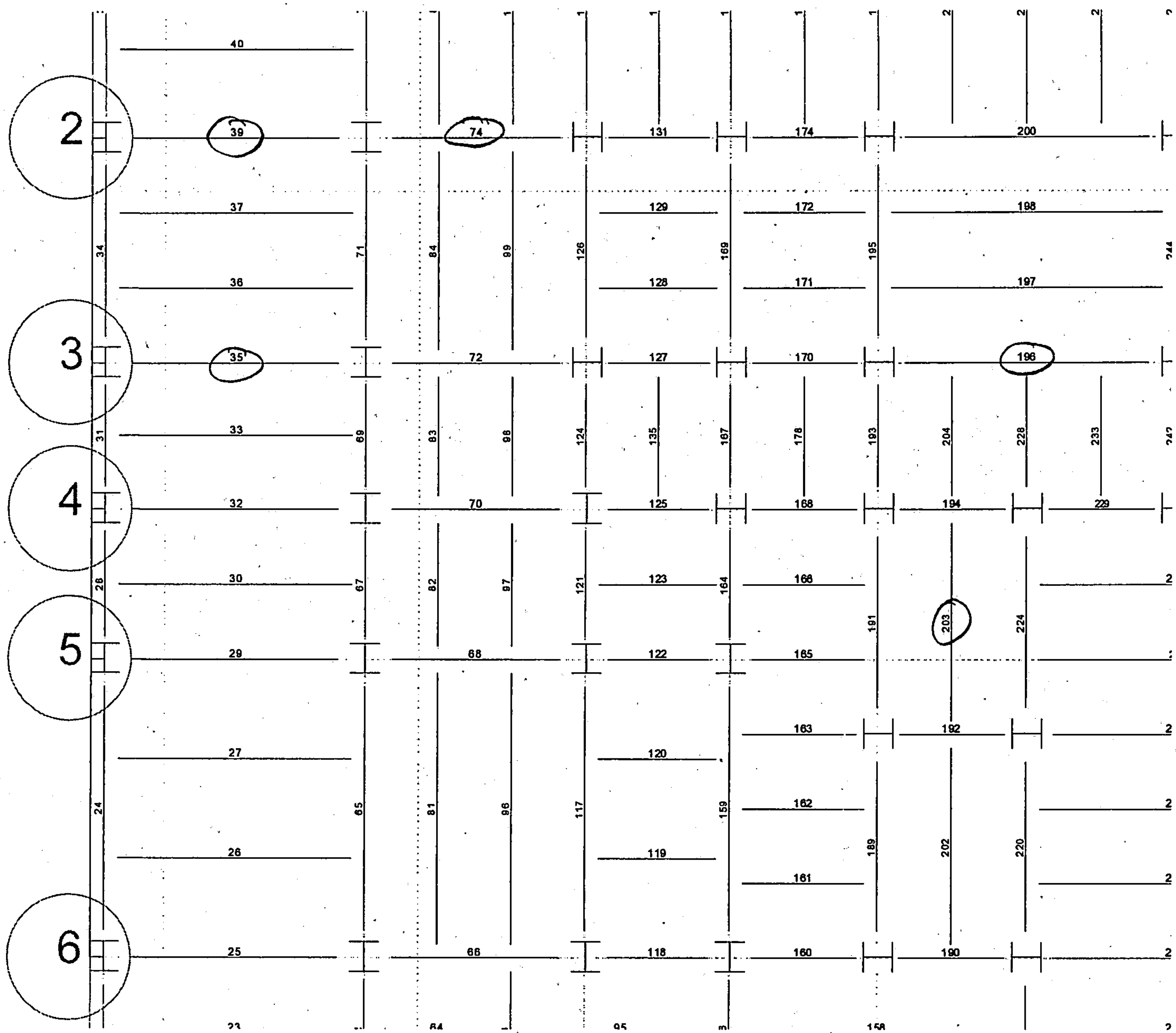
KEY PLAN

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L1



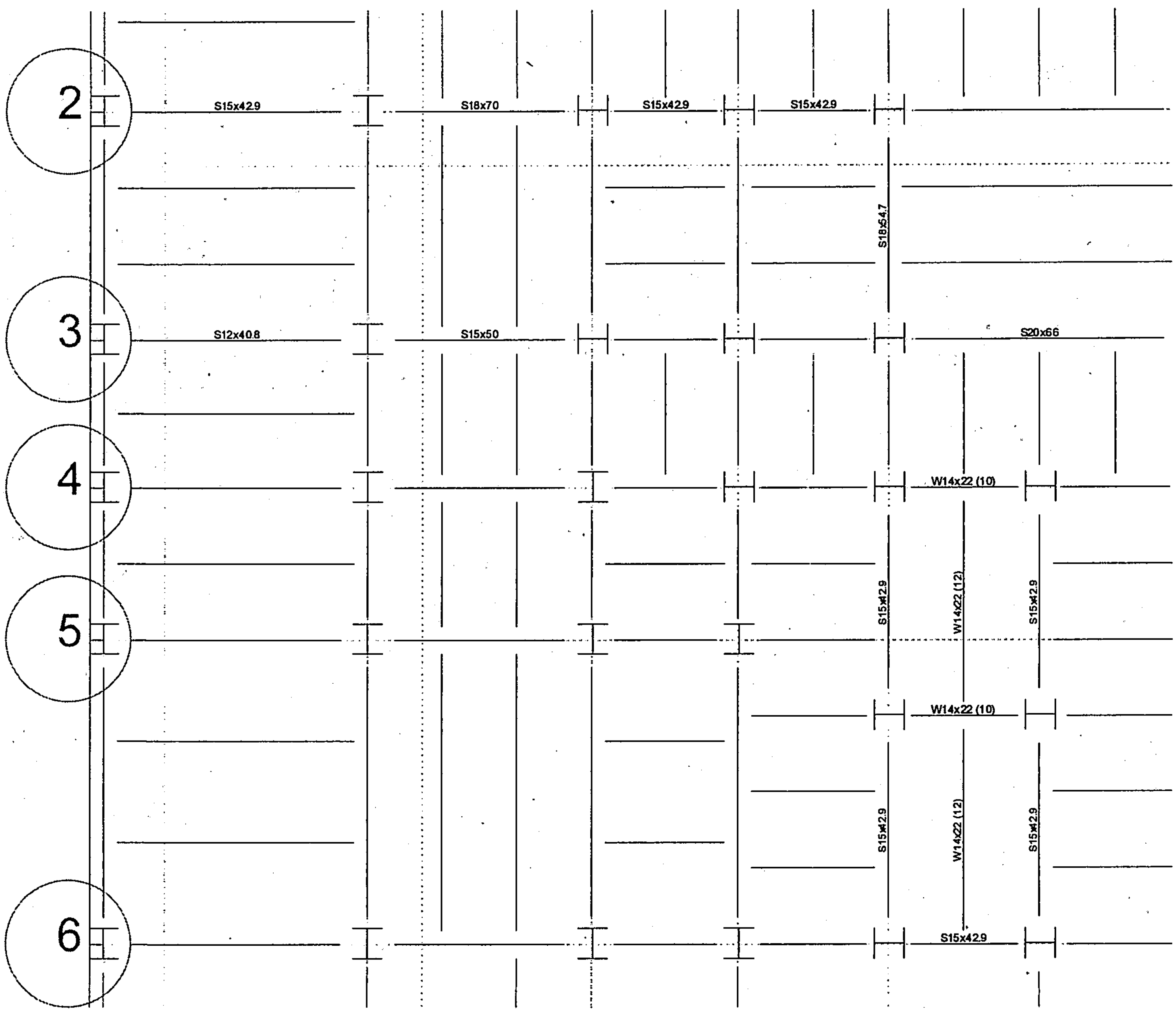
2

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L1



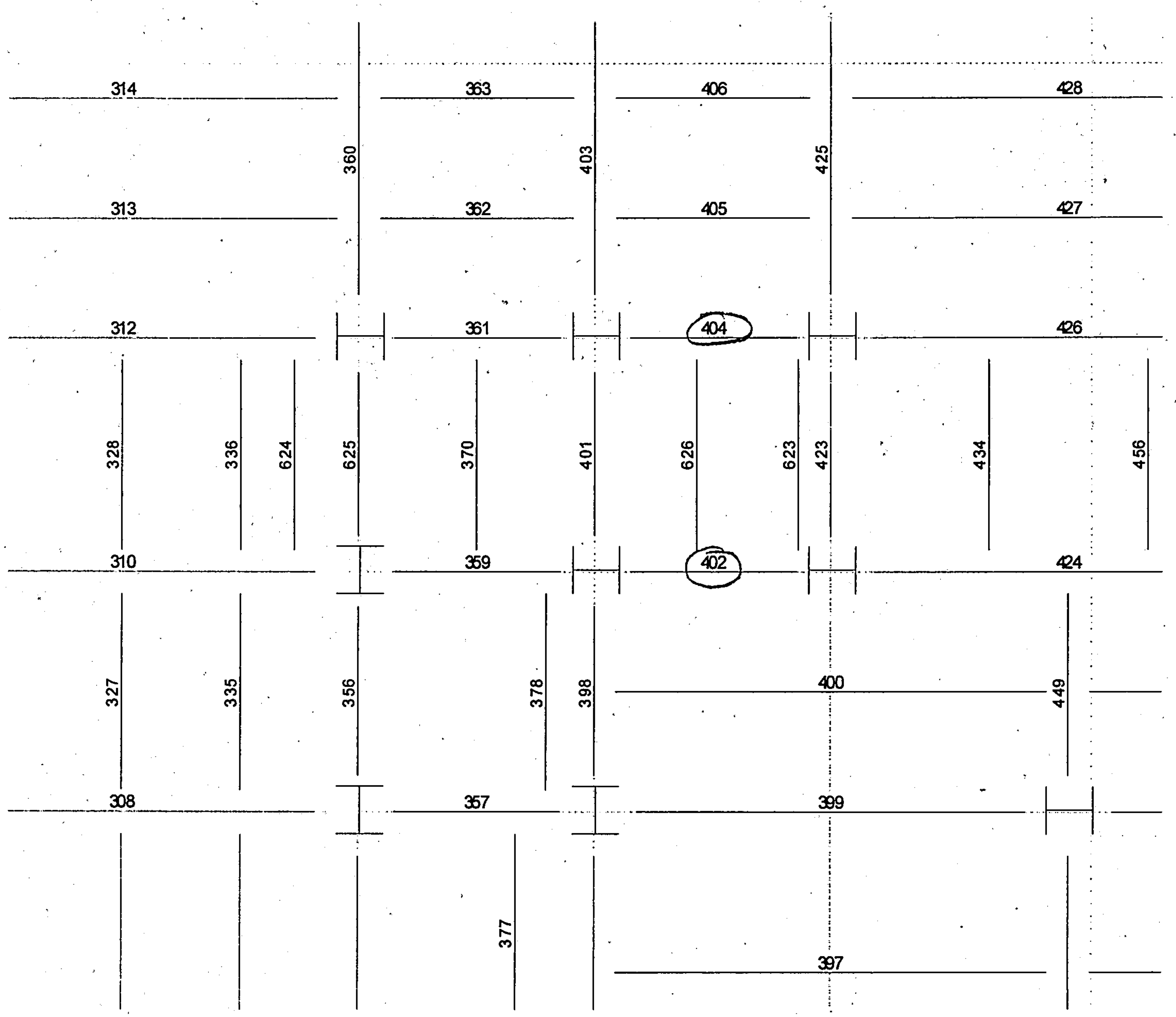
3

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L1



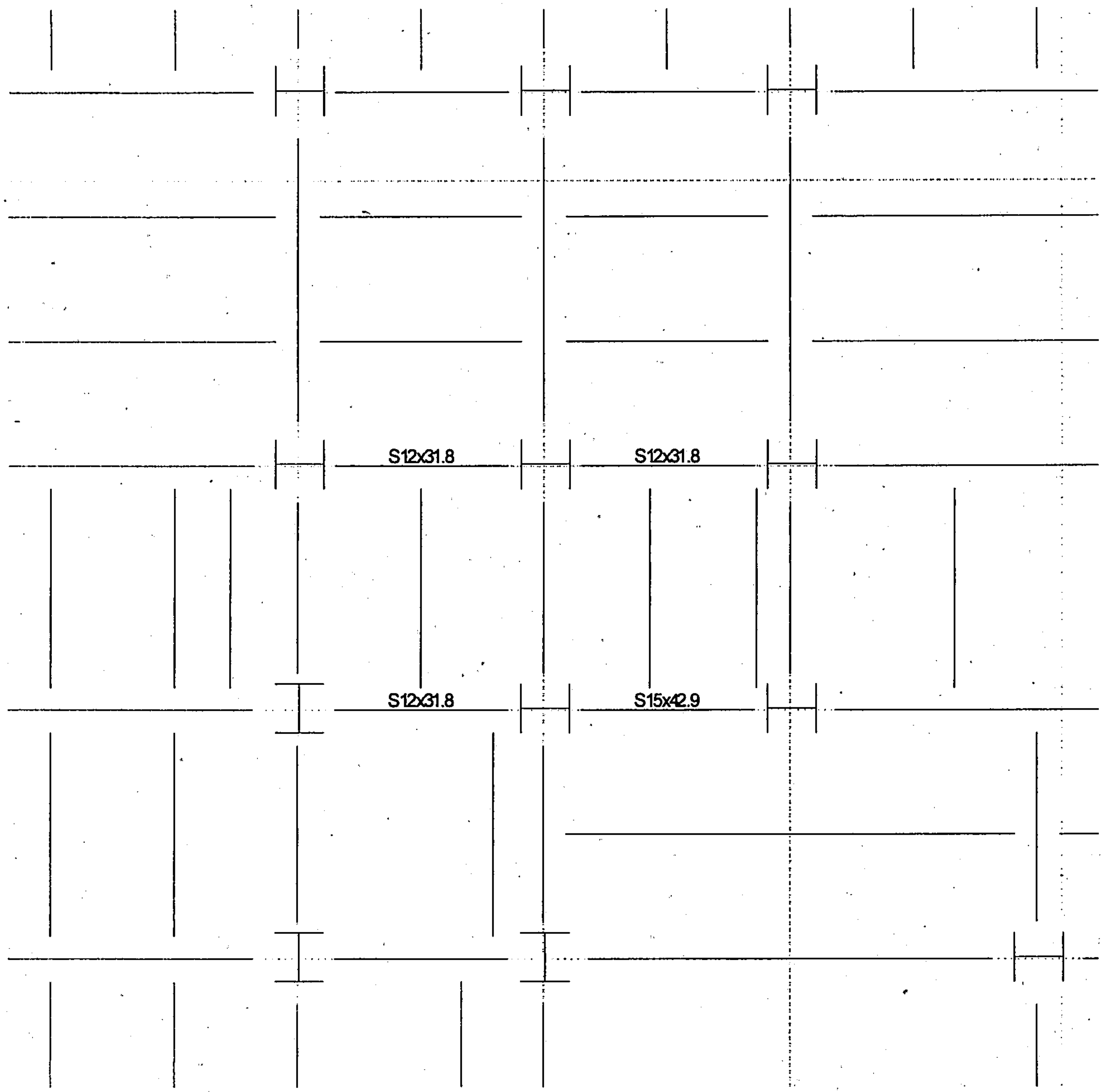
4

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L1



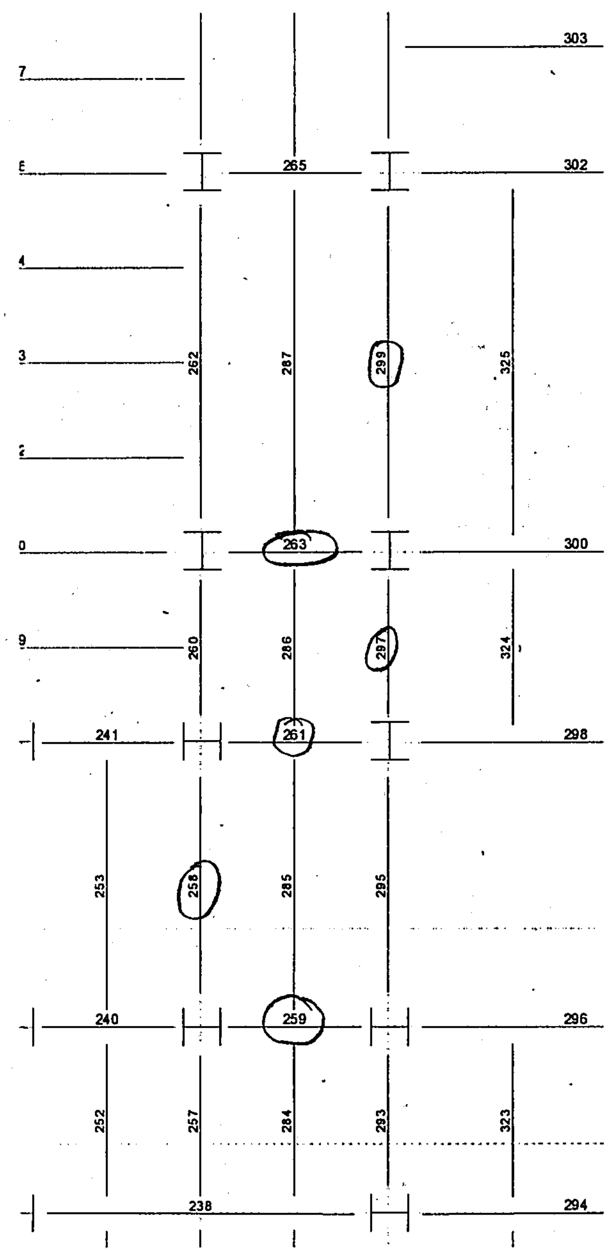
5

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

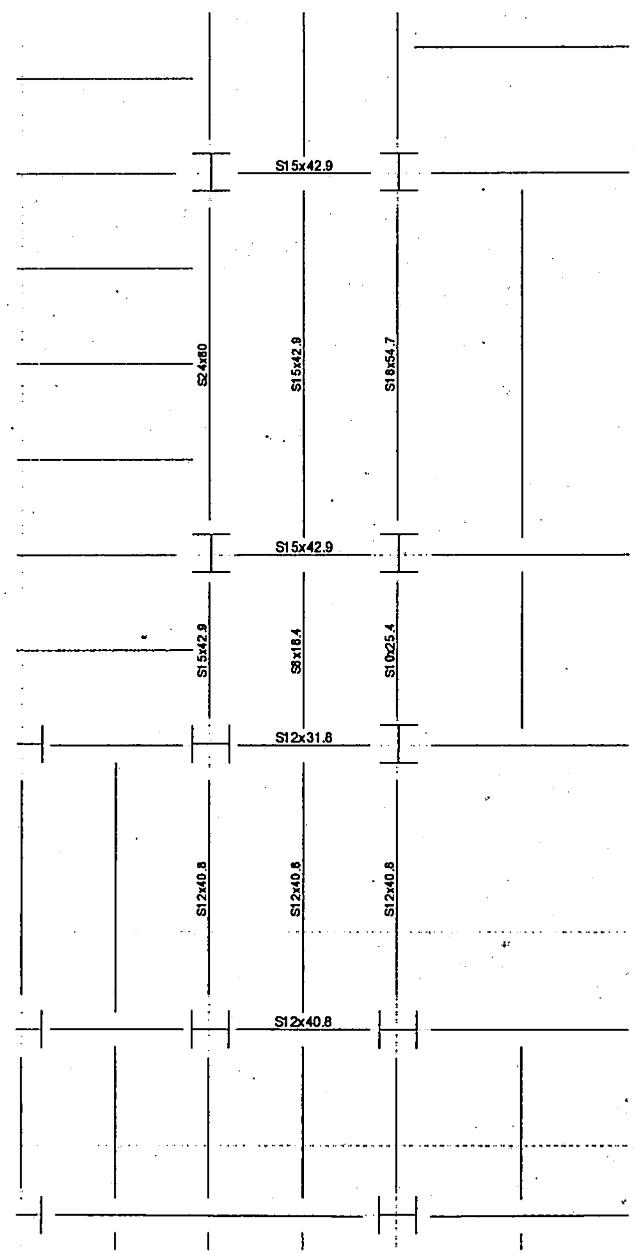
Floor Type: L1



6

Floor Map

Floor Type: L1

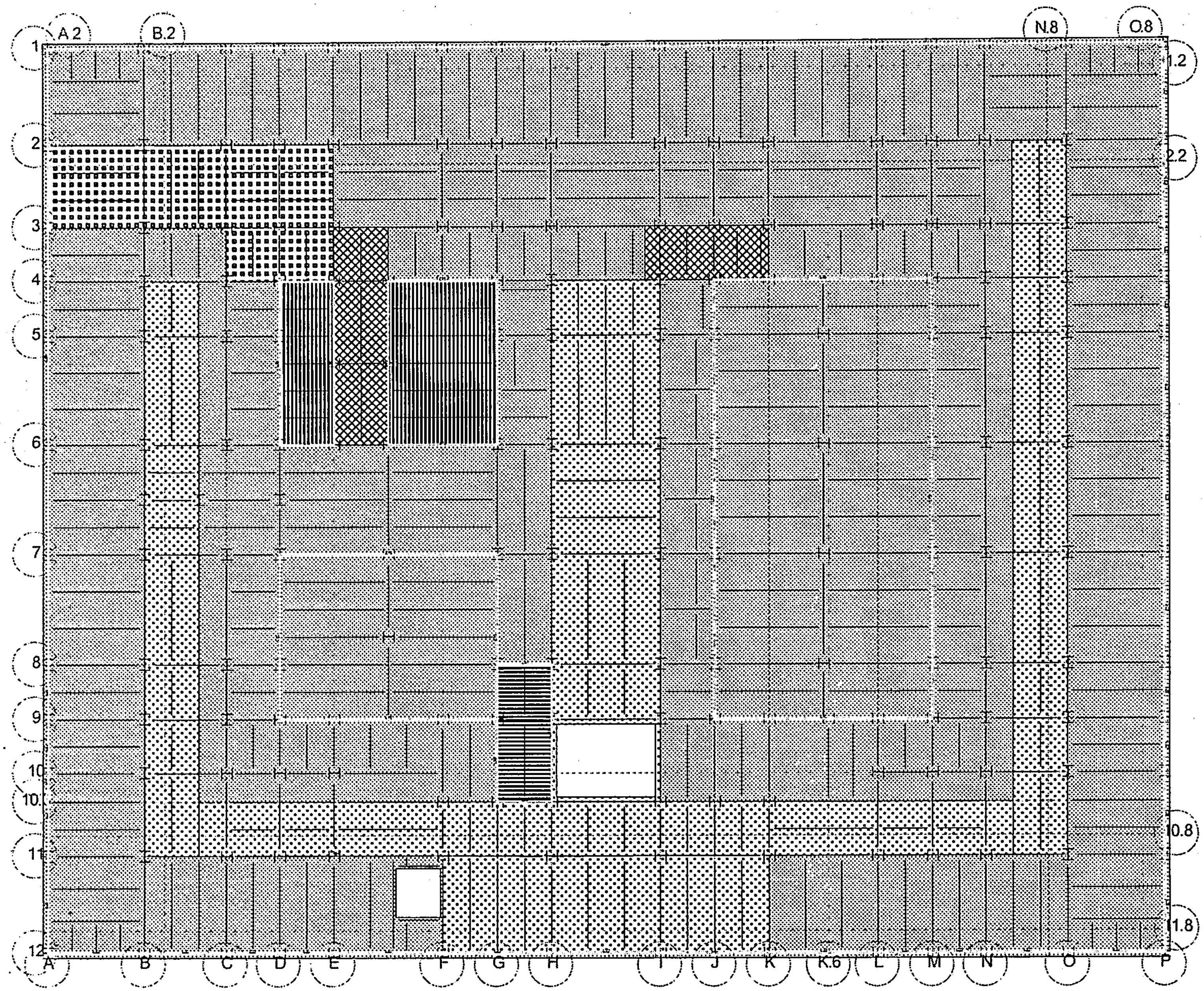


Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L1



8

Floor Map

Surface Loads

Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0
(N)Floor LL=100	105.0	58.0	100.0	Reducible	20.0	0.0
(N)Storage	105.0	58.0	125.0	Reducible	20.0	0.0
LightCourtRoof	140.0	0.0	20.0	Reducible	0.0	0.0
BU Slab	178.0	0.0	100.0	Reducible	0.0	0.0

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L15	LC L1	1.400	0.000	0.000	Reducible	0.000	0.000
L22	Ext L1	2.000	0.000	0.000	Reducible	0.000	0.000
L29	Ext L1 36"wall	5.100	0.000	0.000	Reducible	0.000	0.000
L30	4" LWC x 2'	0.770	0.000	0.000	Reducible	0.000	0.000

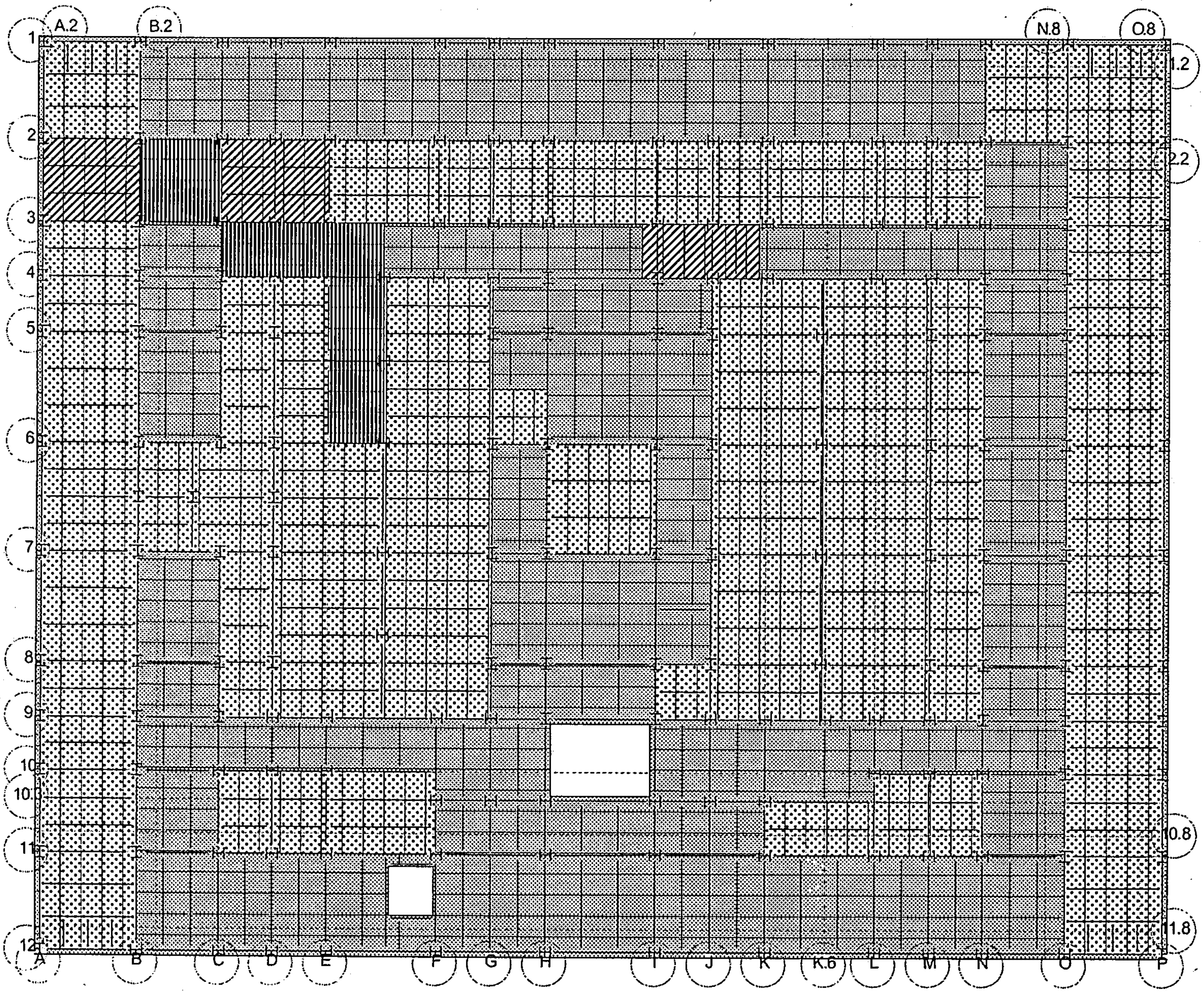
9

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L1



Floor Map

Decks:

Deck Type	Orientation
Noncomposite	0.00 degrees
Noncomposite	90.00 degrees
VERCO W2 Formlok	0.00 degrees
VERCO W2 Formlok	90.00 degrees

11

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 35**

SPAN INFORMATION (ft): I-End (0.00,145.33) J-End (19.33,145.33)
Beam Size (User Selected) = S12X40.8 Fy = 30.0 ksi
Total Beam Length (ft) = 19.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.289	0.344	0.0%	Red
	19.333	0.289	0.344		
2	0.000	0.376	0.134	0.0%	Red
	19.333	0.376	0.134		

SHEAR: Max V (DL+LL) = 11.05 kips fv = 1.99 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	53.4	9.7	0.0	1.00	14.21	19.80	14.21	19.80
Controlling		53.4	9.7	0.0	1.00	14.21	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	6.43	6.43
Max +LL reaction	4.62	4.62
Max +total reaction	11.05	11.05

DEFLECTIONS:

Dead load (in)	at	9.67 ft	=	-0.267	L/D	=	869
Live load (in)	at	9.67 ft	=	-0.192	L/D	=	1209
Net Total load (in)	at	9.67 ft	=	-0.459	L/D	=	506

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 39**

SPAN INFORMATION (ft): **I-End (0.00,161.83)** **J-End (19.33,161.83)**

Beam Size (User Selected) = S15X42.9 Fy = 30.0 ksi
Total Beam Length (ft) = 19.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.451	0.161	0.0%	Red
	19.333	0.451	0.161		
2	0.000	0.289	0.344	0.0%	Red
	19.333	0.289	0.344		

SHEAR: Max V (DL+LL) = 12.03 kips fv = 1.95 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	58.2	9.7	0.0	1.00	11.75	19.80	11.75	19.80
Controlling		58.2	9.7	0.0	1.00	11.75	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	7.15	7.15
Max +LL reaction	4.88	4.88
Max +total reaction	12.03	12.03

DEFLECTIONS:

Dead load (in)	at	9.67 ft	=	-0.180	L/D =	1290
Live load (in)	at	9.67 ft	=	-0.123	L/D =	1891
Net Total load (in)	at	9.67 ft	=	-0.303	L/D =	767

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 74**

SPAN INFORMATION (ft): I-End (19.33,161.83) J-End (35.83,161.83)
Beam Size (User Selected) = S18X70 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	7.44	2.66	3.8	0.00	0.00	0.0	0.00	0.0
5.500	4.76	5.67	3.8	0.00	0.00	0.0	0.00	0.0
11.000	7.44	2.66	3.8	0.00	0.00	0.0	0.00	0.0
11.000	4.76	5.67	3.8	0.00	0.00	0.0	0.00	0.0

SHEAR: Max V (DL+LL) = 20.22 kips fv = 1.58 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	111.2	5.5	0.0	1.00	12.96	19.80	12.96	19.80
Controlling		111.2	5.5	0.0	1.00	12.96	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	12.21	12.21
Max +LL reaction	8.02	8.02
Max +total reaction	20.22	20.22

DEFLECTIONS:

Dead load (in)	at	8.25 ft	=	-0.126	L/D =	1576
Live load (in)	at	8.25 ft	=	-0.083	L/D =	2400
Net Total load (in)	at	8.25 ft	=	-0.208	L/D =	951

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 196**

SPAN INFORMATION (ft): I-End (57.58,145.33) J-End (79.58,145.33)

Beam Size (User Selected) = S20X66 Fy = 30.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	3.10	2.96	0.0	0.00	0.00	0.0	0.00	0.0
11.000	3.62	2.22	0.0	0.00	0.00	0.0	0.00	0.0
16.500	4.14	1.48	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.385	0.138	0.0%	Red
	22.000	0.385	0.138		

SHEAR: Max V (DL+LL) = 14.62 kips fv = 1.45 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	95.8	11.0	0.0	1.00	9.66	19.80	9.66	19.80
Controlling		95.8	11.0	0.0	1.00	9.66	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	9.41	9.93
Max +LL reaction	5.21	4.47
Max +total reaction	14.62	14.39

DEFLECTIONS:

Dead load (in)	at	11.11 ft =	-0.154	L/D =	1711
Live load (in)	at	11.00 ft =	-0.079	L/D =	3321
Net Total load (in)	at	11.00 ft =	-0.234	L/D =	1129

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 203**

SPAN INFORMATION (ft): I-End (63.08,118.08) J-End (63.08,134.58)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 16.50

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Concrete thickness (in)	4.00	4.00
Unit weight concrete (pcf)	110.00	110.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	VERCO W2 Formlok	VERCO W2 Formlok

beff (in)	=	49.50	Y bar(in)	=	14.30
Seff (in3)	=	41.71	Str (in3)	=	53.65
Ieff (in4)	=	479.35	Itr (in4)	=	742.78
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 7.2
# of studs: Max = 16 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 26.58

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	CLL
1	0.000	0.577	0.319	0.550	0.0%	Red	0.110
	16.500	0.577	0.319	0.550			0.110

SHEAR: Max V (DL+LL) = 9.30 kips fv = 3.10 ksi Fv = 18.96 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	14.6	8.3	0.0	1.00	6.04	33.00	6.04	33.00
	Max +	38.4	8.3	---	---				
	Mmax/Seff					11.04	33.00	---	---
	Mconst/Sx+Mpost/Seff					12.41	45.00	---	---
Controlling		38.4	8.3	---	---	11.04	33.00	---	---

fc (ksi) = 0.20 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	3.54	3.54
DL reaction	4.76	4.76
Max +LL reaction	4.54	4.54
Max +total reaction	9.30	9.30

DEFLECTIONS:

Initial load (in)	at	8.25 ft	=	-0.092	L/D	=	2148
Live load (in)	at	8.25 ft	=	-0.066	L/D	=	3001
Post Comp load (in)	at	8.25 ft	=	-0.097	L/D	=	2041
Net Total load (in)	at	8.25 ft	=	-0.189	L/D	=	1047

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 258**

SPAN INFORMATION (ft): I-End (90.58,30.08) J-End (90.58,46.58)

Beam Size (User Selected) = S12X40.8 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.770	0.000	0.0%	Red
	16.500	0.770	0.000		
2	0.000	0.385	0.138	0.0%	Red
	16.500	0.385	0.138		
3	0.000	0.490	0.275	0.0%	Red
	16.500	0.490	0.275		

SHEAR: Max V (DL+LL) = 16.97 kips fv = 3.06 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	70.0	8.3	0.0	1.00	18.63	19.80	18.63	19.80
Controlling		70.0	8.3	0.0	1.00	18.63	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	13.57	13.57
Max +LL reaction	3.40	3.40
Max +total reaction	16.97	16.97

DEFLECTIONS:

Dead load (in)	at	8.25 ft	=	-0.350	L/D =	565
Live load (in)	at	8.25 ft	=	-0.088	L/D =	2254
Net Total load (in)	at	8.25 ft	=	-0.438	L/D =	452

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 259**

SPAN INFORMATION (ft): I-End (90.58,30.08) J-End (101.58,30.08)
Beam Size (User Selected) = S12X40.8 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	8.08	4.54	0.0	0.00	0.00	0.0	0.00	0.0
5.500	4.82	2.96	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.770	0.000	0.0%	Red
	11.000	0.770	0.000		

SHEAR: Max V (DL+LL) = 14.43 kips fv = 2.60 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	67.7	5.5	0.0	1.00	18.02	19.80	18.02	19.80
Controlling		67.7	5.5	0.0	1.00	18.02	19.80	—	—

REACTIONS (kips):

	Left	**Right**
DL reaction	10.68	10.68
Max +LL reaction	3.75	3.75
Max +total reaction	14.43	14.43

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.111	L/D	=	1186
Live load (in)	at	5.50 ft	=	-0.046	L/D	=	2879
Net Total load (in)	at	5.50 ft	=	-0.157	L/D	=	840

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 261**

SPAN INFORMATION (ft): I-End (90.58,46.58) J-End (101.58,46.58)

Beam Size (User Selected) = S12X31.8 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	13.46	7.56	0.0	0.00	0.00	0.0	0.00	0.0

SHEAR: Max V (DL+LL) = 10.51 kips fv = 2.50 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	57.8	5.5	0.0	1.00	19.16	19.80	19.16	19.80
Controlling		57.8	5.5	0.0	1.00	19.16	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	6.73	6.73
Max +LL reaction	3.78	3.78
Max +total reaction	10.51	10.51

DEFLECTIONS:

Dead load (in)	at	5.50 ft =	-0.102	L/D	=	1288
Live load (in)	at	5.50 ft =	-0.058	L/D	=	2293
Net Total load (in)	at	5.50 ft =	-0.160	L/D	=	825

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 263**

SPAN INFORMATION (ft): I-End (90.58,57.58) J-End (101.58,57.58)

Beam Size (User Selected) = S15X42.9 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	8.47	3.02	0.0	0.00	0.00	0.0	0.00	0.0
5.500	5.38	3.02	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.770	0.000	0.0%	Red
	11.000	0.770	0.000		

SHEAR: Max V (DL+LL) = 14.19 kips fv = 2.30 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	66.4	5.5	0.0	1.00	13.41	19.80	13.41	19.80
Controlling		66.4	5.5	0.0	1.00	13.41	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	11.16	11.16
Max +LL reaction	3.02	3.02
Max +total reaction	14.19	14.19

DEFLECTIONS:

Dead load (in)	at	5.50 ft =	-0.071	L/D	=	1861
Live load (in)	at	5.50 ft =	-0.022	L/D	=	5890
Net Total load (in)	at	5.50 ft =	-0.093	L/D	=	1414

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 297**

SPAN INFORMATION (ft): I-End (101.58,46.58) J-End (101.58,57.58)

Beam Size (User Selected) = S10X25.4 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.770	0.000	0.0%	Red
	11.000	0.770	0.000		
2	0.000	0.490	0.275	0.0%	Red
	11.000	0.490	0.275		
3	0.000	0.598	0.367	0.0%	Red
	11.000	0.598	0.367		

SHEAR: Max V (DL+LL) = 13.74 kips fv = 4.42 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	37.8	5.5	0.0	1.00	18.44	19.80	18.44	19.80
Controlling		37.8	5.5	0.0	1.00	18.44	19.80	—	—

REACTIONS (kips):

	Left	Right
DL reaction	10.21	10.21
Max +LL reaction	3.53	3.53
Max +total reaction	13.74	13.74

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.172	L/D =	770
Live load (in)	at	5.50 ft	=	-0.059	L/D =	2227
Net Total load (in)	at	5.50 ft	=	-0.231	L/D =	572

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 299**

SPAN INFORMATION (ft): I-End (101.58,57.58) J-End (101.58,79.58)
Beam Size (User Selected) = S18X54.7 Fy = 30.0 ksi
Total Beam Length (ft) = 22.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.385	0.138	0.0%	Red
	22.000	0.385	0.138		
2	0.000	0.598	0.367	0.0%	Red
	22.000	0.598	0.367		

SHEAR: Max V (DL+LL) = 16.35 kips fv = 1.97 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	90.0	11.0	0.0	1.00	12.13	19.80	12.13	19.80
Controlling		90.0	11.0	0.0	1.00	12.13	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	10.81	10.81
Max +LL reaction	5.55	5.55
Max +total reaction	16.35	16.35

DEFLECTIONS:

Dead load (in)	at	11.00 ft	=	-0.223	L/D =	1184
Live load (in)	at	11.00 ft	=	-0.114	L/D =	2308
Net Total load (in)	at	11.00 ft	=	-0.337	L/D =	783

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 402**

SPAN INFORMATION (ft): I-End (134.58,134.58) J-End (145.58,134.58)
Beam Size (User Selected) = S15X42.9 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
9.500	0.42	0.40	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	1.400	0.000	0.0%	Red
	11.000	1.400	0.000		
2	0.000	0.564	0.537	0.0%	Red
	9.500	0.564	0.537		
3	0.000	0.385	0.138	0.0%	Red
	11.000	0.385	0.138		

SHEAR: Max V (DL+LL) = 16.63 kips fv = 2.70 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	45.7	5.5	0.0	1.00	9.24	19.80	9.24	19.80
Controlling		45.7	5.5	0.0	1.00	9.24	19.80	—	—

REACTIONS (kips):

	Left	Right
DL reaction	12.92	12.50
Max +LL reaction	3.71	3.31
Max +total reaction	16.63	15.81

DEFLECTIONS:

Dead load (in)	at	5.50 ft =	-0.060	L/D	=	2206
Live load (in)	at	5.50 ft =	-0.017	L/D	=	7682
Net Total load (in)	at	5.50 ft =	-0.077	L/D	=	1714

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L1 **Beam Number = 404**

SPAN INFORMATION (ft): I-End (134.58,145.33) J-End (145.58,145.33)

Beam Size (User Selected) = S12X31.8 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
9.500	0.42	0.40	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.385	0.138	0.0%	Red
	11.000	0.385	0.138		
2	0.000	0.564	0.537	0.0%	Red
	9.500	0.564	0.537		

SHEAR: Max V (DL+LL) = 8.93 kips fv = 2.13 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	24.6	5.5	0.0	1.00	8.14	19.80	8.14	19.80
Controlling		24.6	5.5	0.0	1.00	8.14	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	5.22	4.80
Max +LL reaction	3.71	3.31
Max +total reaction	8.93	8.11

DEFLECTIONS:

Dead load (in)	at	5.50 ft =	-0.050	L/D	=	2657
Live load (in)	at	5.50 ft =	-0.035	L/D	=	3737
Net Total load (in)	at	5.50 ft =	-0.085	L/D	=	1553

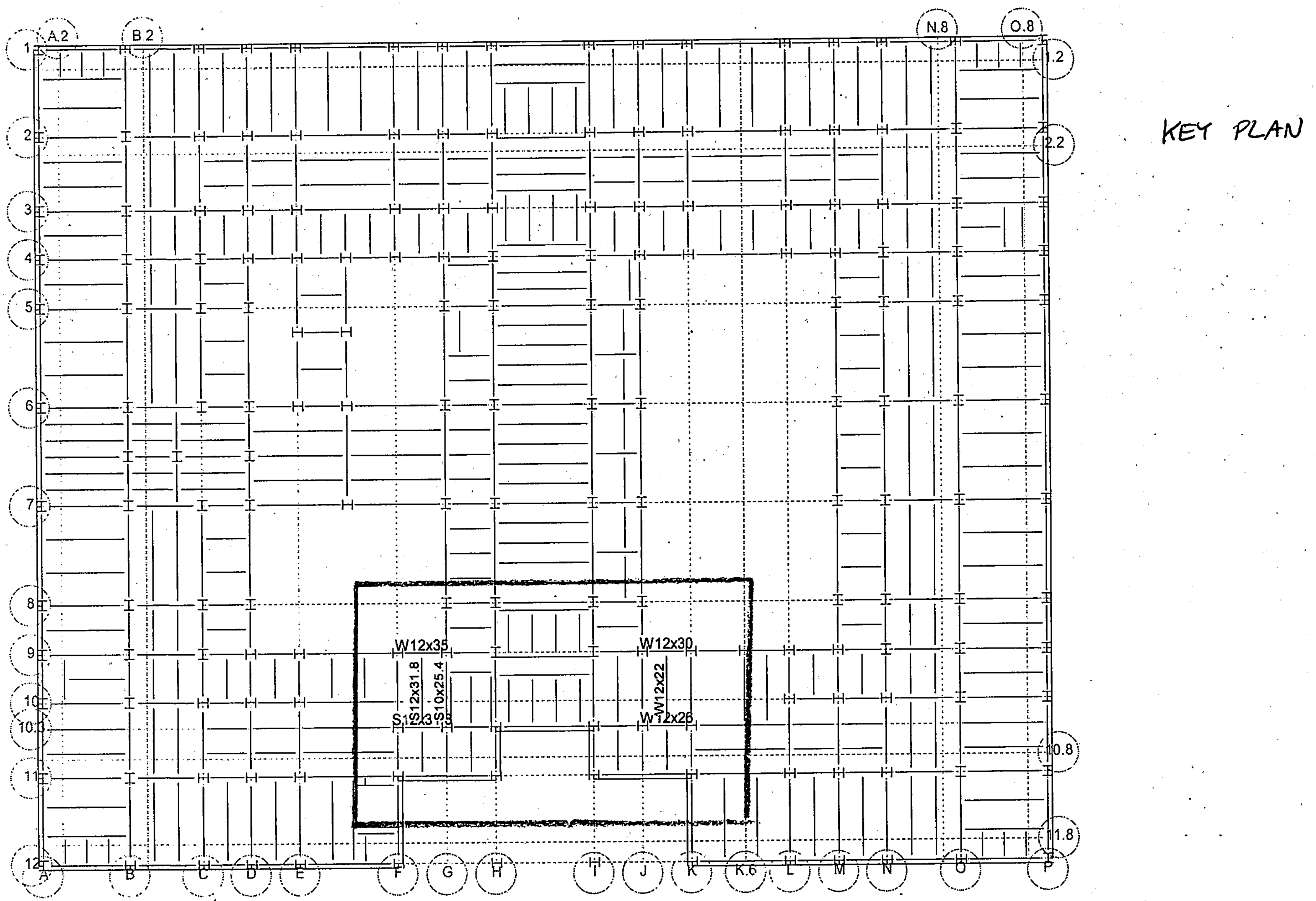
A.2: Second Floor Infill Framing

Floor Map

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2

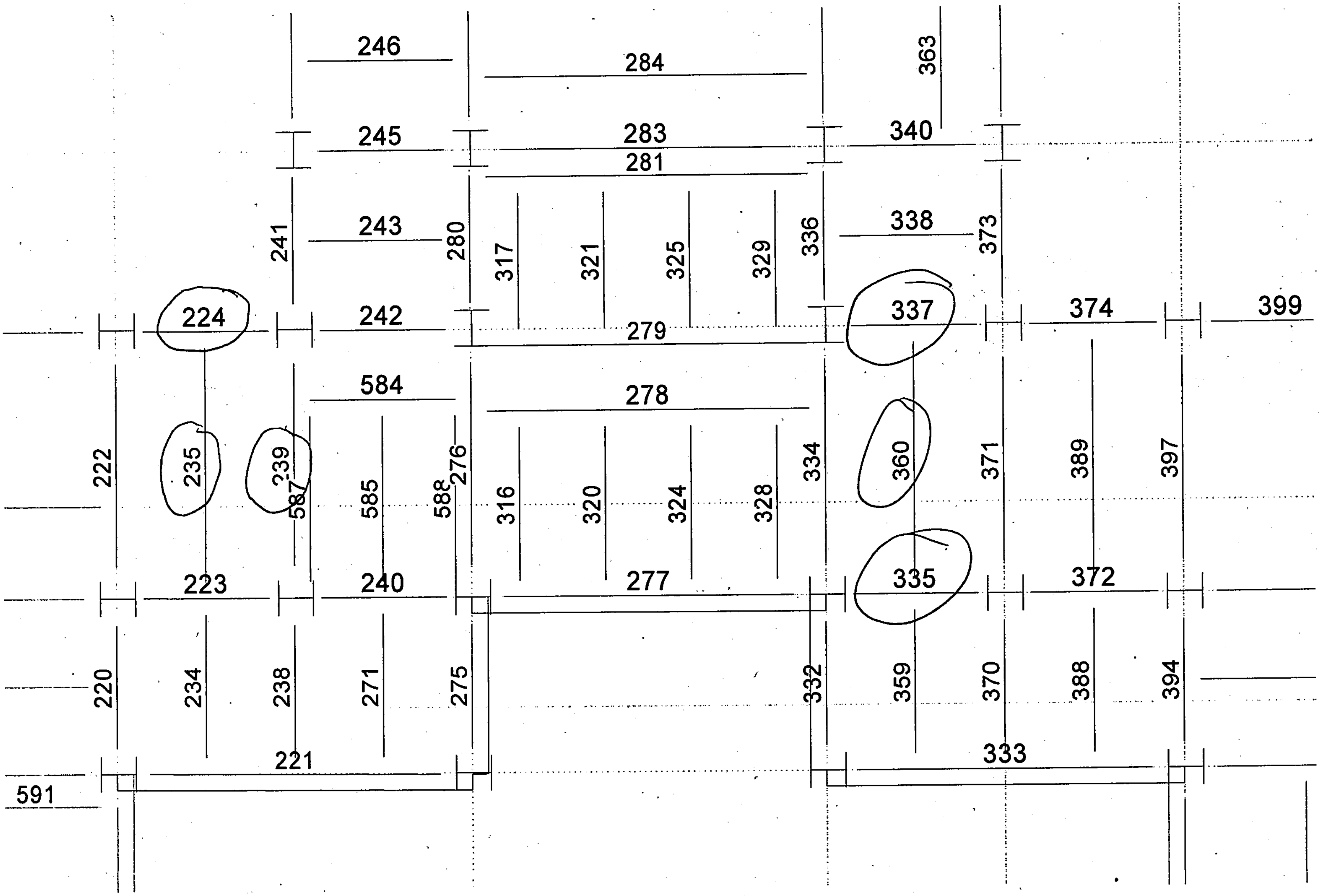


Floor Map

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2

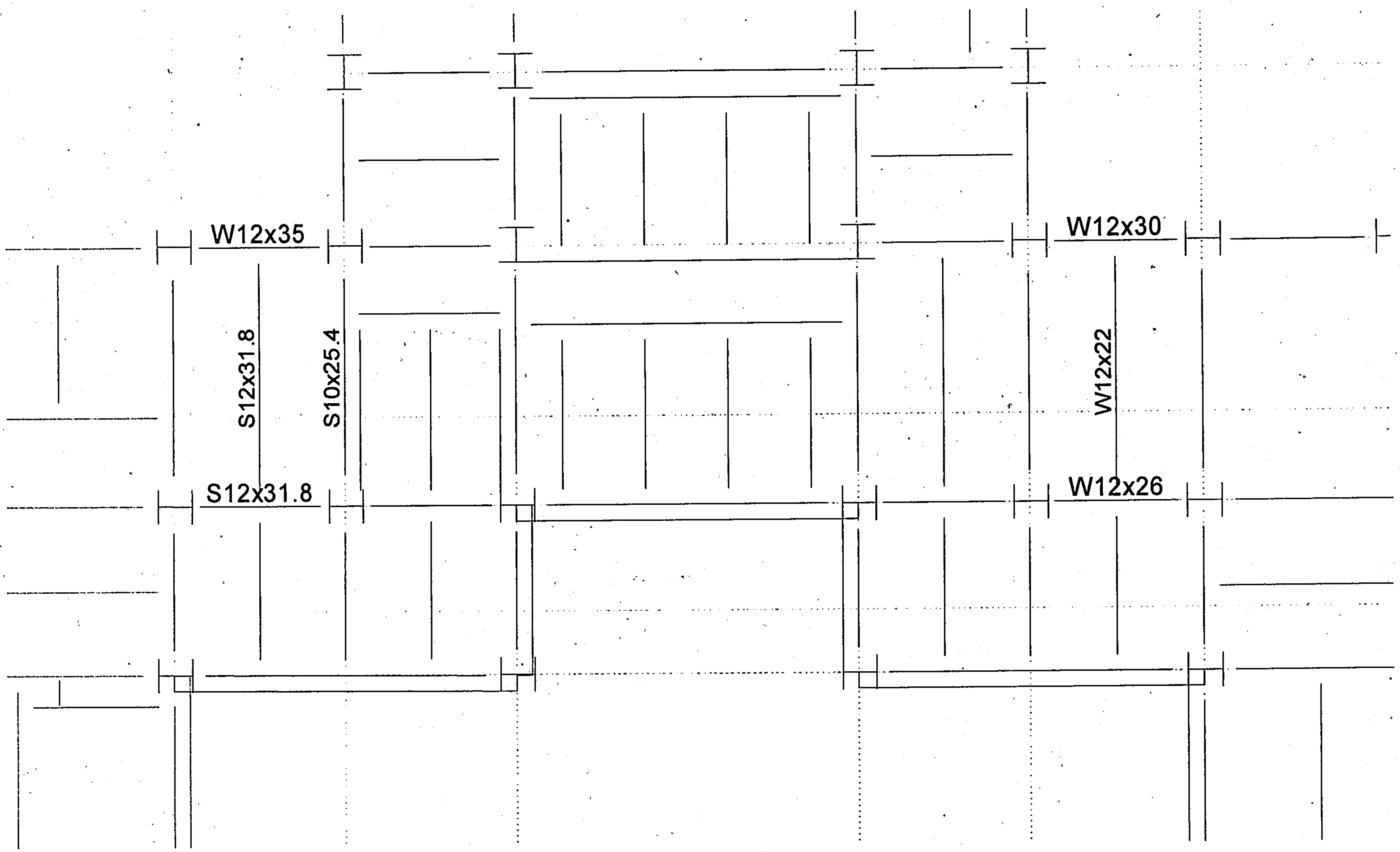


Floor Map

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2



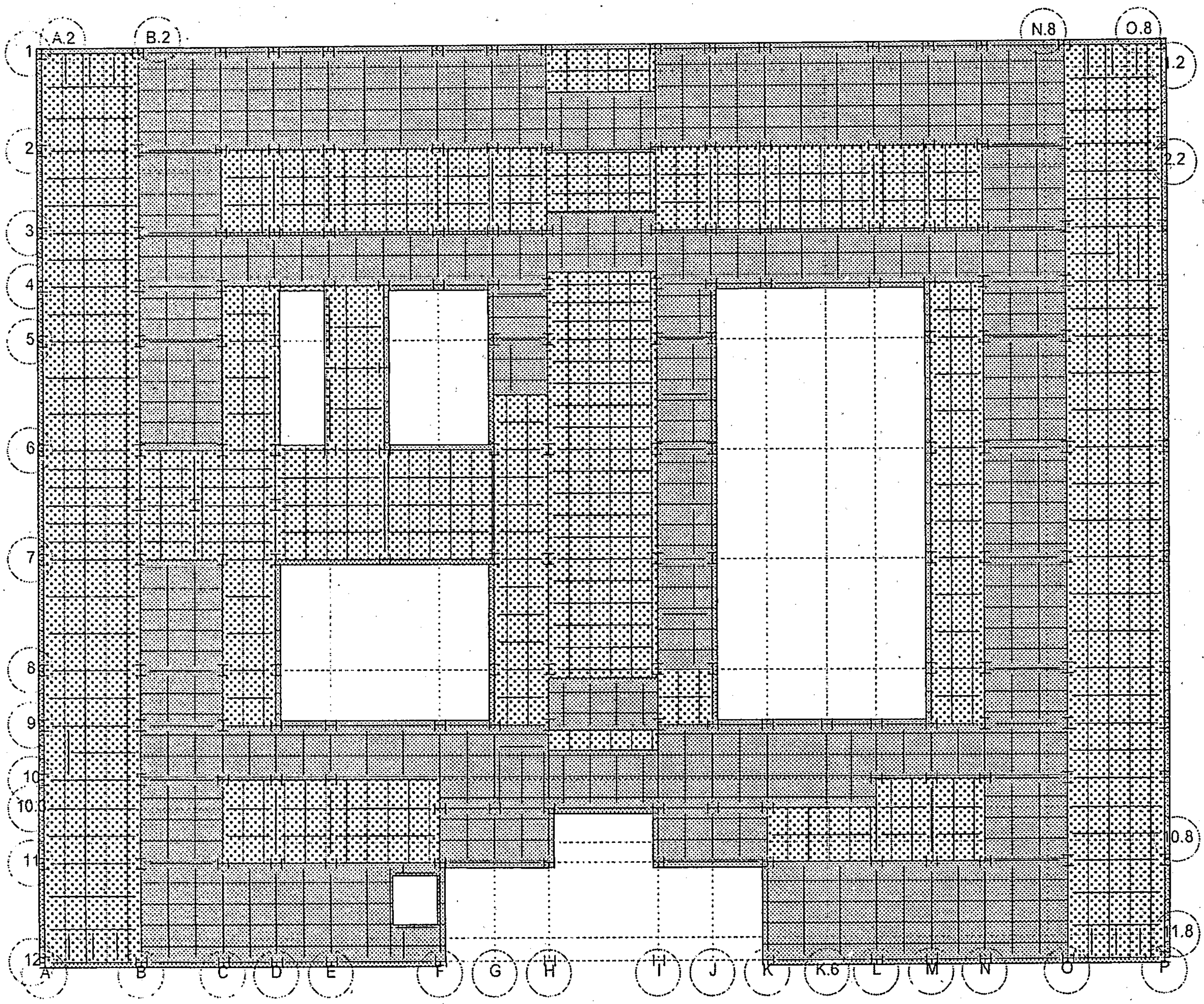
3

Floor Map

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2



4

Floor Map

Decks:	Deck Type	Orientation
	Noncomposite	0.00 degrees
	Noncomposite	90.00 degrees

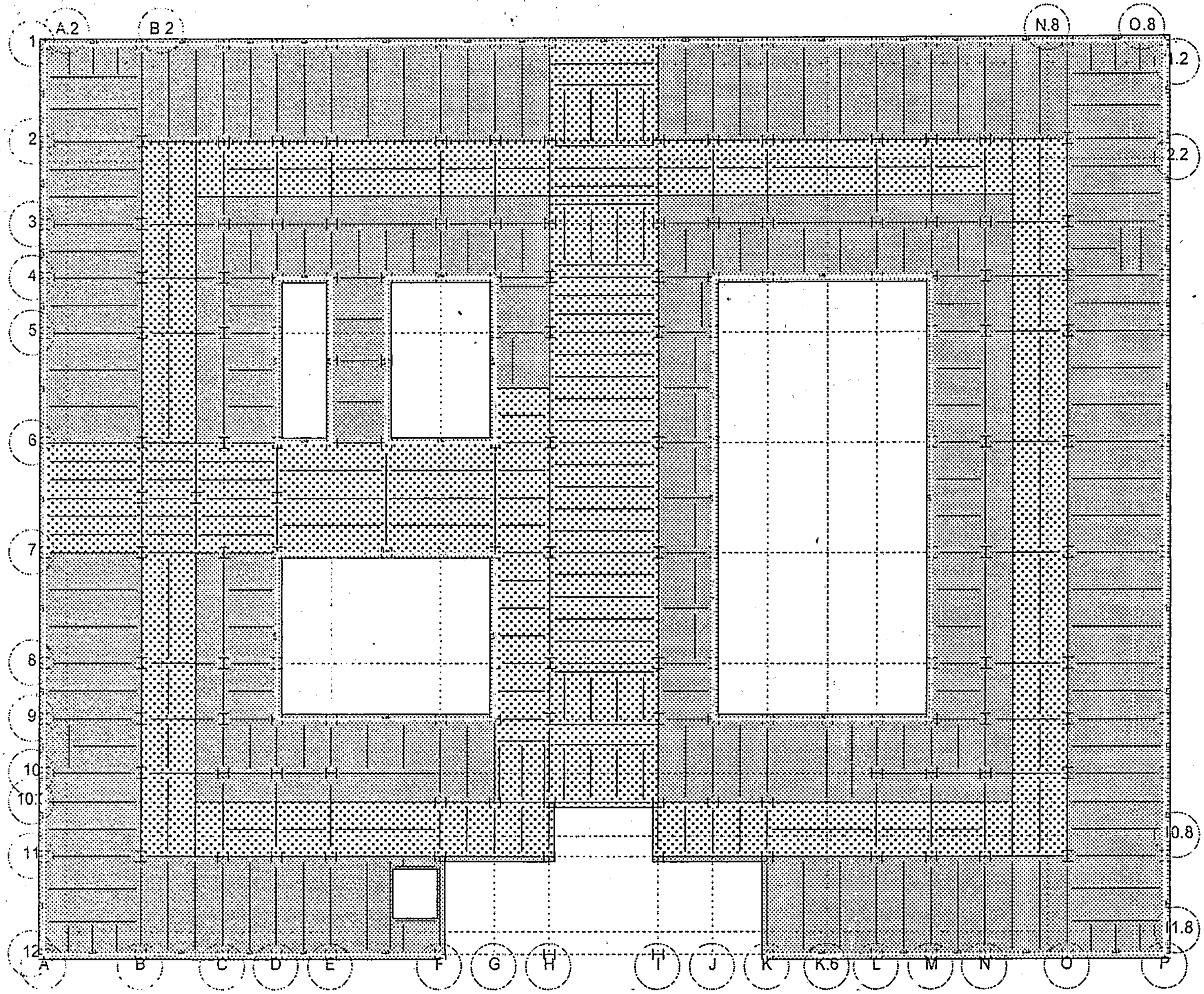
5

Floor Map

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2



6

Floor Map

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Surface Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		psf	psf	psf	Type	psf	psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0

Line Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		k/ft	k/ft	k/ft	Type	k/ft	k/ft
L16	LC L2	1.950	0.000	0.000	Reducible	0.000	0.000
L23	Ext L2	2.500	0.000	0.000	Reducible	0.000	0.000

Gravity Beam Design

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2 **Beam Number = 224**

SPAN INFORMATION (ft): I-End (79.58,46.58) J-End (90.58,46.58)

Beam Size (User Selected) = W12X35 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	11.50	4.11	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	1.950	0.000	0.0%	Red
	11.000	1.950	0.000		
2	0.000	0.140	0.050	0.0%	Red
	11.000	0.140	0.050		

SHEAR: Max V (DL+LL) = 19.57 kips fv = 5.22 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	75.3	5.5	0.0	1.00	19.81	19.80	19.81	19.80
Controlling		75.3	5.5	0.0	1.00	19.81	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	17.24	17.24
Max +LL reaction	2.33	2.33
Max +total reaction	19.57	19.57

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.150	L/D	=	880
Live load (in)	at	5.50 ft	=	-0.026	L/D	=	5117
Net Total load (in)	at	5.50 ft	=	-0.176	L/D	=	751

Gravity Beam Design

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2 **Beam Number = 223**

SPAN INFORMATION (ft): I-End (79.58,30.08) J-End (90.58,30.08)

Beam Size (User Selected) = S12X31.8 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	9.29	3.32	0.0	0.00	0.00	0.0	0.00	0.0
5.500	4.82	2.96	0.0	0.00	0.00	0.0	0.00	0.0

SHEAR: Max V (DL+LL) = 10.19 kips fv = 2.43 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	56.1	5.5	0.0	1.00	18.58	19.80	18.58	19.80
Controlling		56.1	5.5	0.0	1.00	18.58	19.80	---	---

REACTIONS (kips):

	Left	**Right**
DL reaction	7.06	7.06
Max +LL reaction	3.14	3.14
Max +total reaction	10.19	10.19

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.107	L/D =	1229
Live load (in)	at	5.50 ft	=	-0.048	L/D =	2763
Net Total load (in)	at	5.50 ft	=	-0.155	L/D =	850

Gravity Beam Design

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2 **Beam Number = 235**

SPAN INFORMATION (ft): I-End (85.08,30.08) J-End (85.08,46.58)

Beam Size (User Selected) = S12X31.8 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
10.500	8.08	2.89	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.770	0.275	0.0%	Red
	16.500	0.770	0.275		

SHEAR: Max V (DL+LL) = 15.60 kips fv = 3.71 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	74.8	10.5	0.0	1.00	24.80	19.80	24.80	19.80
Controlling		74.8	10.5	0.0	1.00	24.80	19.80	---	---

REACTIONS (kips):

	Left	**Right**
DL reaction	9.29	11.50
Max +LL reaction	3.32	4.11
Max +total reaction	12.61	15.60

DEFLECTIONS:

Dead load (in)	at	8.58 ft	=	-0.391	L/D =	506
Live load (in)	at	8.58 ft	=	-0.140	L/D =	1416
Net Total load (in)	at	8.58 ft	=	-0.531	L/D =	373

Gravity Beam Design

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2 **Beam Number = 239**

SPAN INFORMATION (ft): I-End (90.58,30.08) J-End (90.58,46.58)

Beam Size (User Selected) = S10X25.4 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
12.167	4.96	3.04	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.385	0.138	0.0%	Red
	16.500	0.385	0.138		
2	0.000	0.081	0.050	0.0%	Red
	12.166	0.082	0.050		
3	12.167	0.897	0.550	0.0%	Red
	16.500	0.897	0.550		

SHEAR: Max V (DL+LL) = 16.24 kips fv = 5.22 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	51.9	12.2	0.0	1.00	25.32	19.80	25.32	19.80
Controlling		51.9	12.2	0.0	1.00	25.32	19.80	---	---

REACTIONS (kips):

	Left	**Right**
DL reaction	5.61	10.57
Max +LL reaction	2.63	5.67
Max +total reaction	8.24	16.24

DEFLECTIONS:

Dead load (in)	at	8.74 ft	=	-0.441	L/D =	449
Live load (in)	at	8.74 ft	=	-0.225	L/D =	882
Net Total load (in)	at	8.74 ft	=	-0.665	L/D =	298

Gravity Beam Design

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2 **Beam Number = 372**

SPAN INFORMATION (ft): I-End (134.58,30.08) J-End (145.58,30.08)

Beam Size (User Selected) = W12X26 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	6.35	2.27	0.0	0.00	0.00	0.0	0.00	0.0
5.500	4.82	2.96	0.0	0.00	0.00	0.0	0.00	0.0

SHEAR: Max V (DL+LL) = 8.20 kips fv = 2.92 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	45.1	5.5	0.0	1.00	16.20	19.80	16.20	19.80
Controlling		45.1	5.5	0.0	1.00	16.20	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	5.59	5.59
Max +LL reaction	2.61	2.61
Max +total reaction	8.20	8.20

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.090	L/D =	1459
Live load (in)	at	5.50 ft	=	-0.042	L/D =	3119
Net Total load (in)	at	5.50 ft	=	-0.133	L/D =	994

Gravity Beam Design

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2 **Beam Number = 374**

SPAN INFORMATION (ft): I-End (134.58,46.58) J-End (145.58,46.58)

Beam Size (User Selected) = W12X30 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	6.35	2.27	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	1.950	0.000	0.0%	Red
	11.000	1.950	0.000		
2	0.000	0.140	0.050	0.0%	Red
	11.000	0.140	0.050		

SHEAR: Max V (DL+LL) = 16.08 kips fv = 5.03 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	56.1	5.5	0.0	1.00	17.43	19.80	17.43	19.80
Controlling		56.1	5.5	0.0	1.00	17.43	19.80	---	---

REACTIONS (kips):

	Left	**Right**
DL reaction	14.67	14.67
Max +LL reaction	1.41	1.41
Max +total reaction	16.08	16.08

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.144	L/D =	918
Live load (in)	at	5.50 ft	=	-0.018	L/D =	7278
Net Total load (in)	at	5.50 ft	=	-0.162	L/D =	815

Gravity Beam Design

RAM Steel v11.0
Tim Angers, P.E.
DataBase: HOJ
Building Code: UBC2

04/20/07 10:04:05
Steel Code: ASD 9th Ed.

Floor Type: L2 **Beam Number = 389**

SPAN INFORMATION (ft): I-End (140.08,30.08) J-End (140.08,46.58)

Beam Size (User Selected) = W12X22 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.770	0.275	0.0%	Red
	16.500	0.770	0.275		

SHEAR: Max V (DL+LL) = 8.62 kips fv = 2.70 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	35.6	8.3	0.0	1.00	16.80	19.80	16.80	19.80
Controlling		35.6	8.3	0.0	1.00	16.80	19.80	---	---

REACTIONS (kips):

	Left	**Right**
DL reaction	6.35	6.35
Max +LL reaction	2.27	2.27
Max +total reaction	8.62	8.62

DEFLECTIONS:

Dead load (in)	at	8.25 ft	=	-0.284	L/D	=	698
Live load (in)	at	8.25 ft	=	-0.101	L/D	=	1953
Net Total load (in)	at	8.25 ft	=	-0.385	L/D	=	514

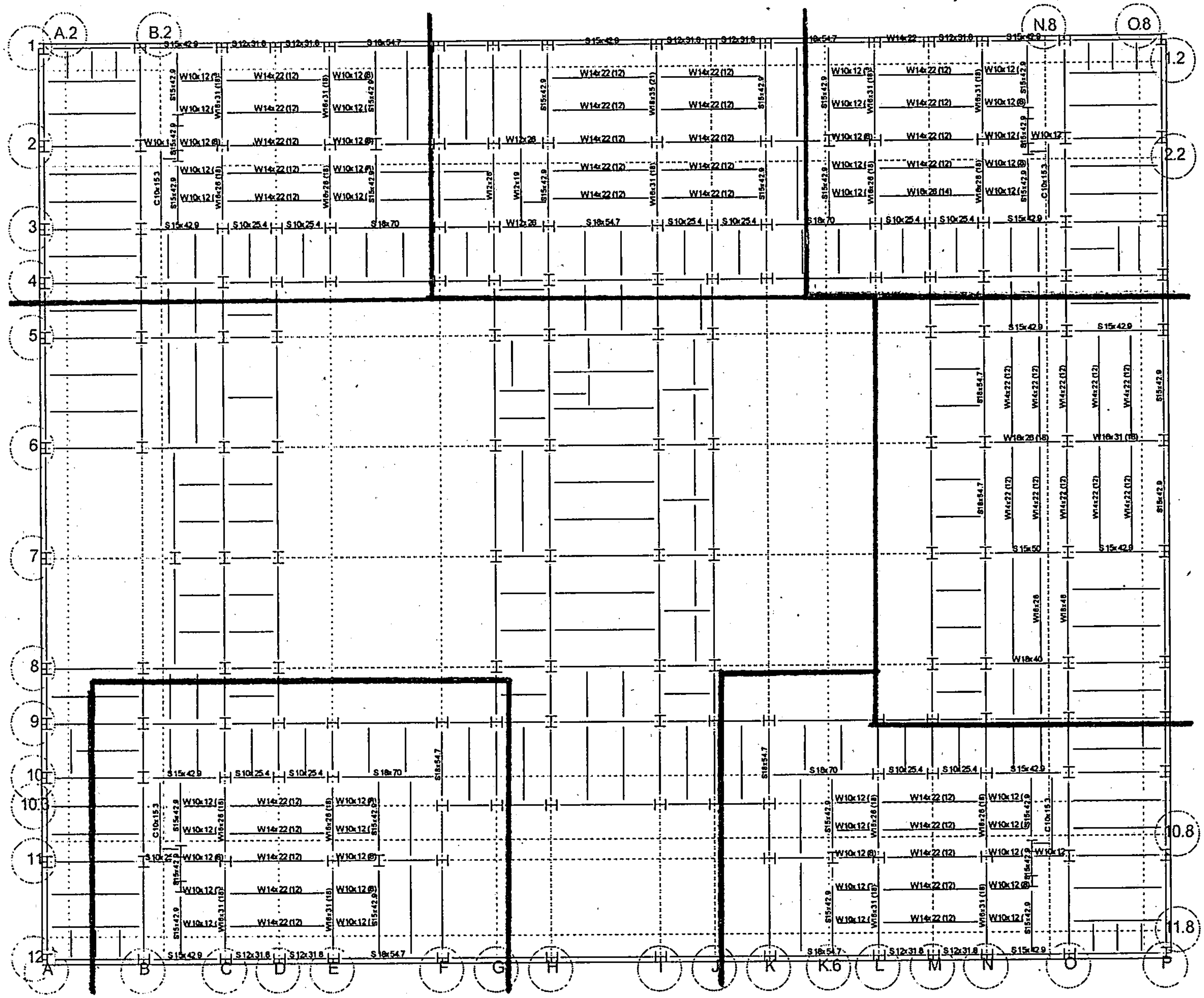
A.3: Ninth Floor Infill Framing

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



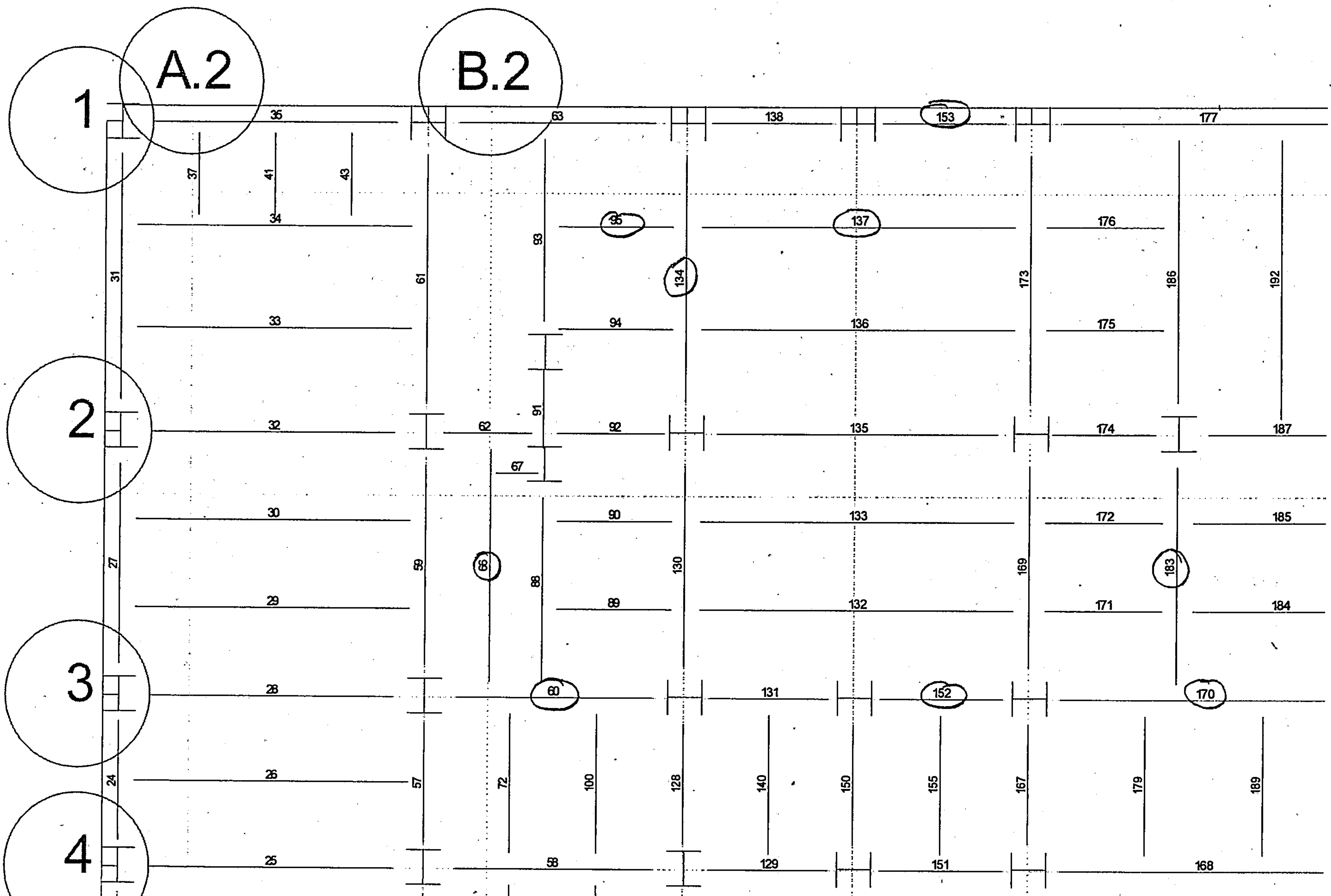
KEY PLAN

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



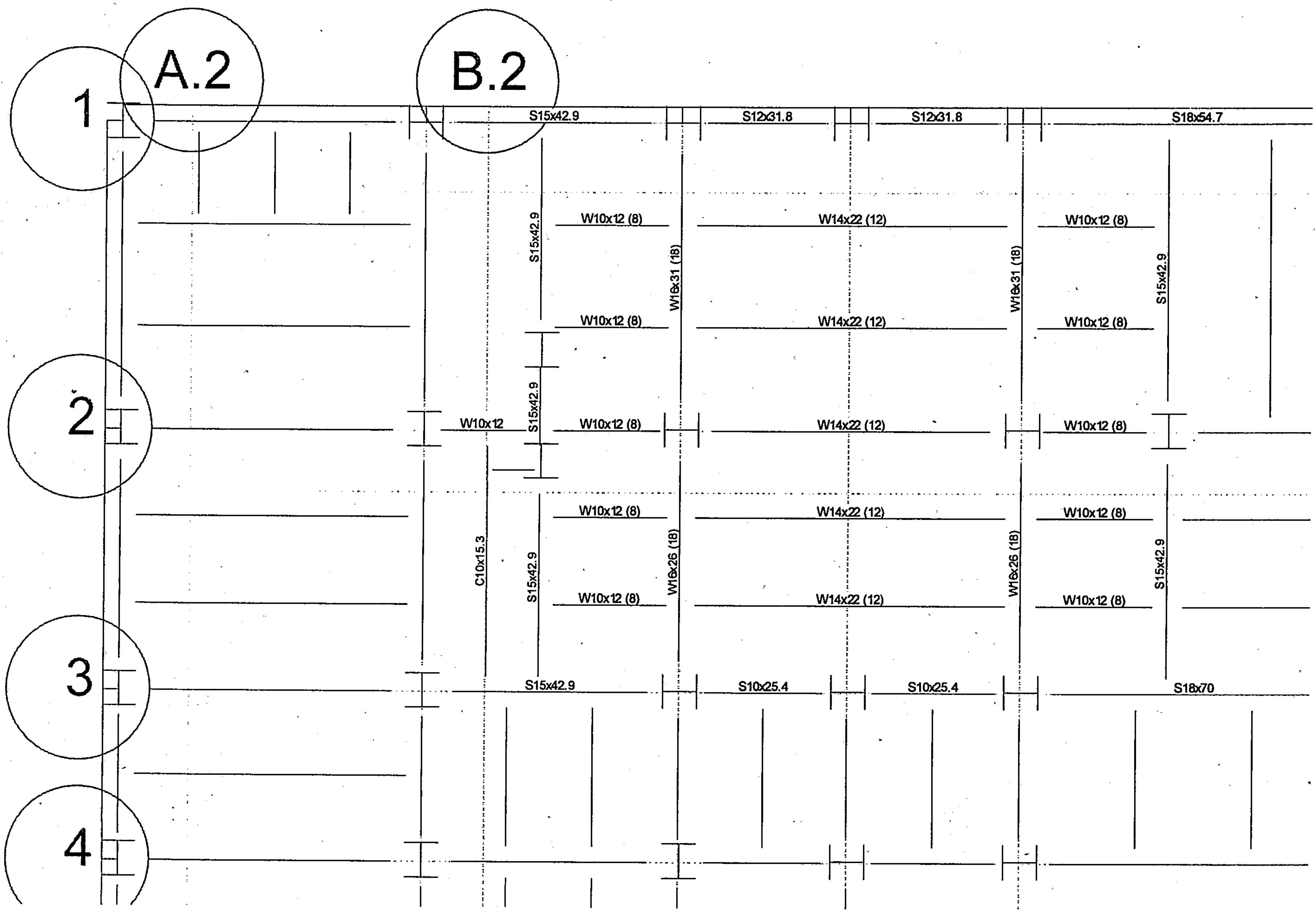
2

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9

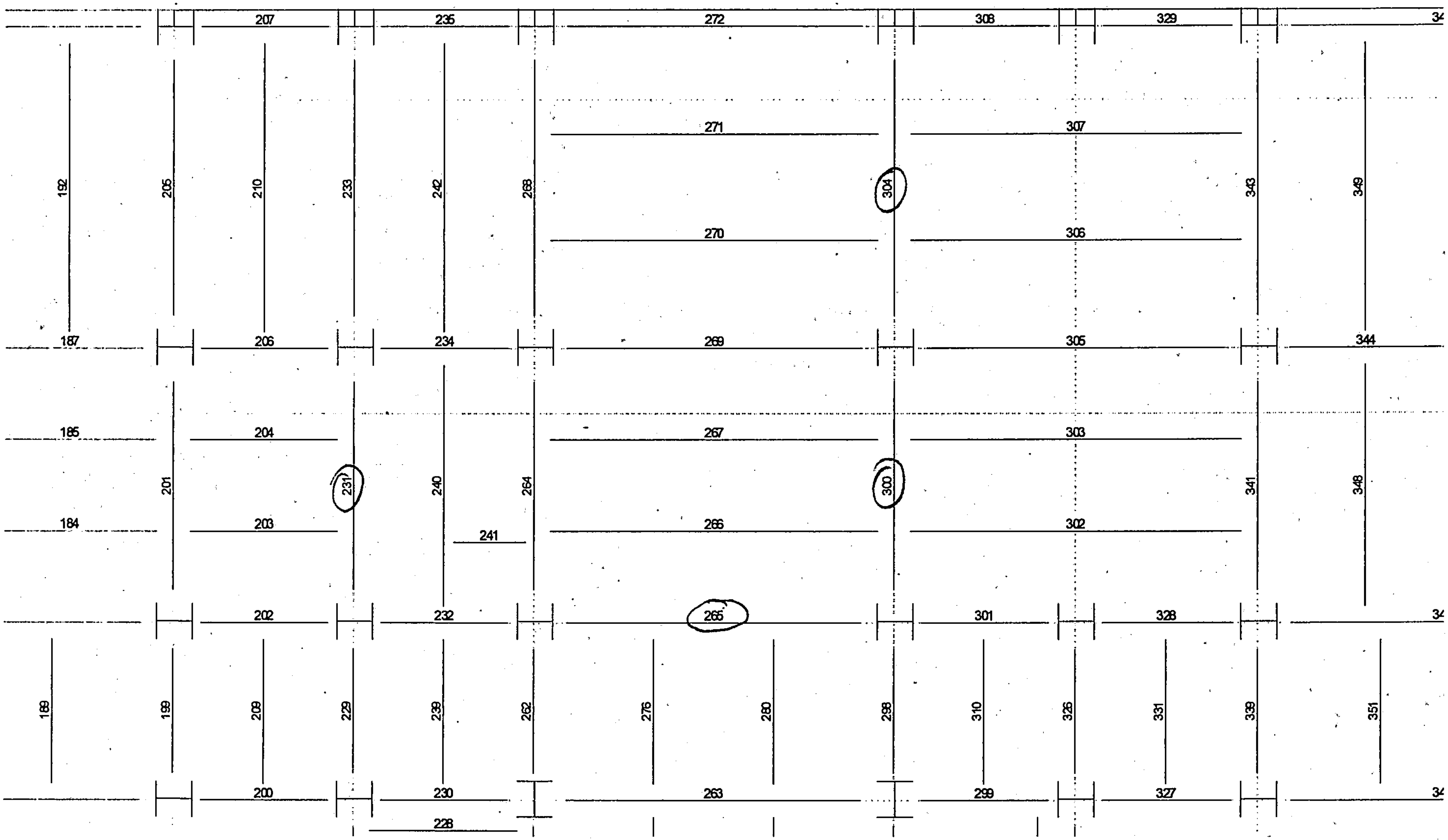


Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



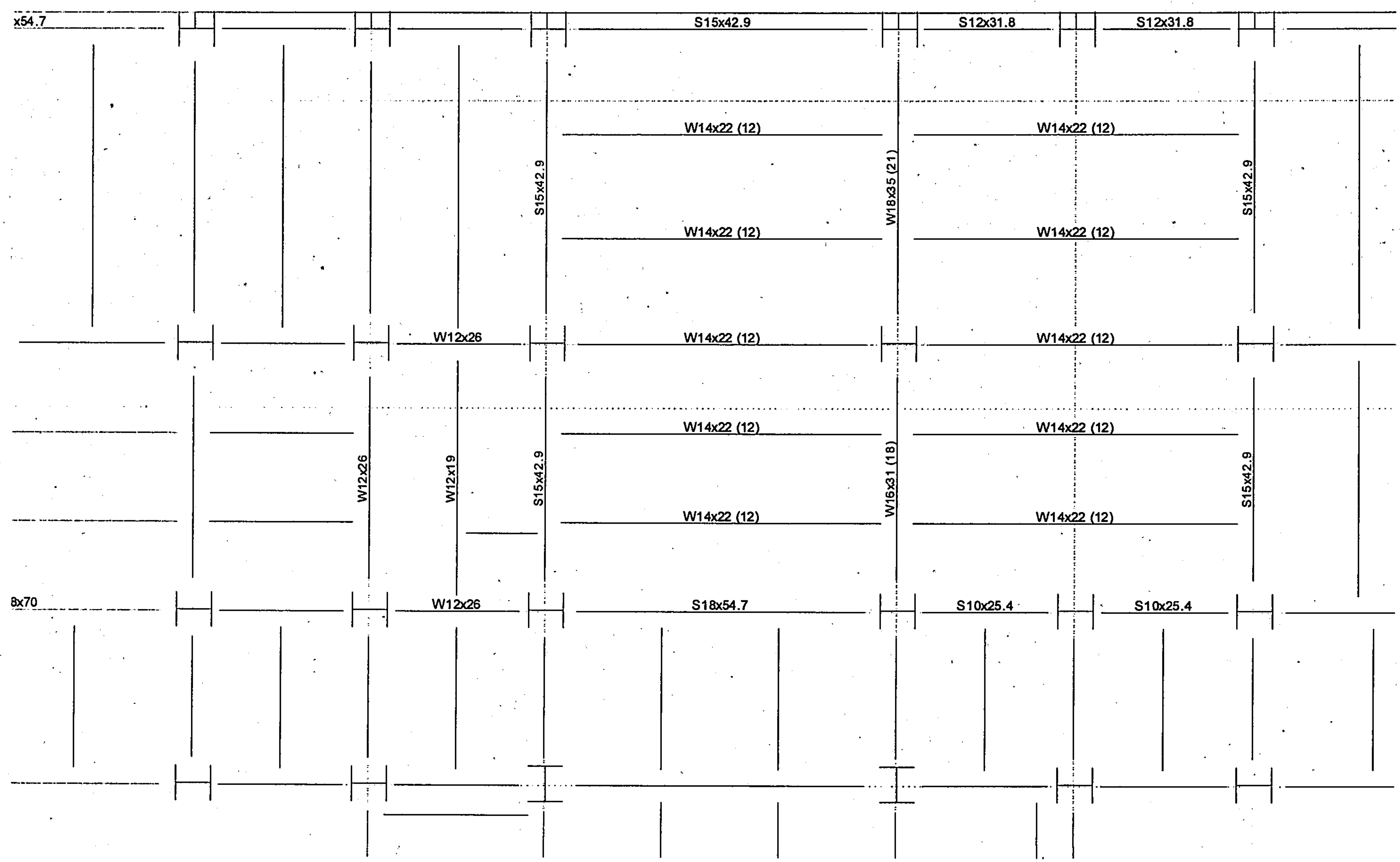
4

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



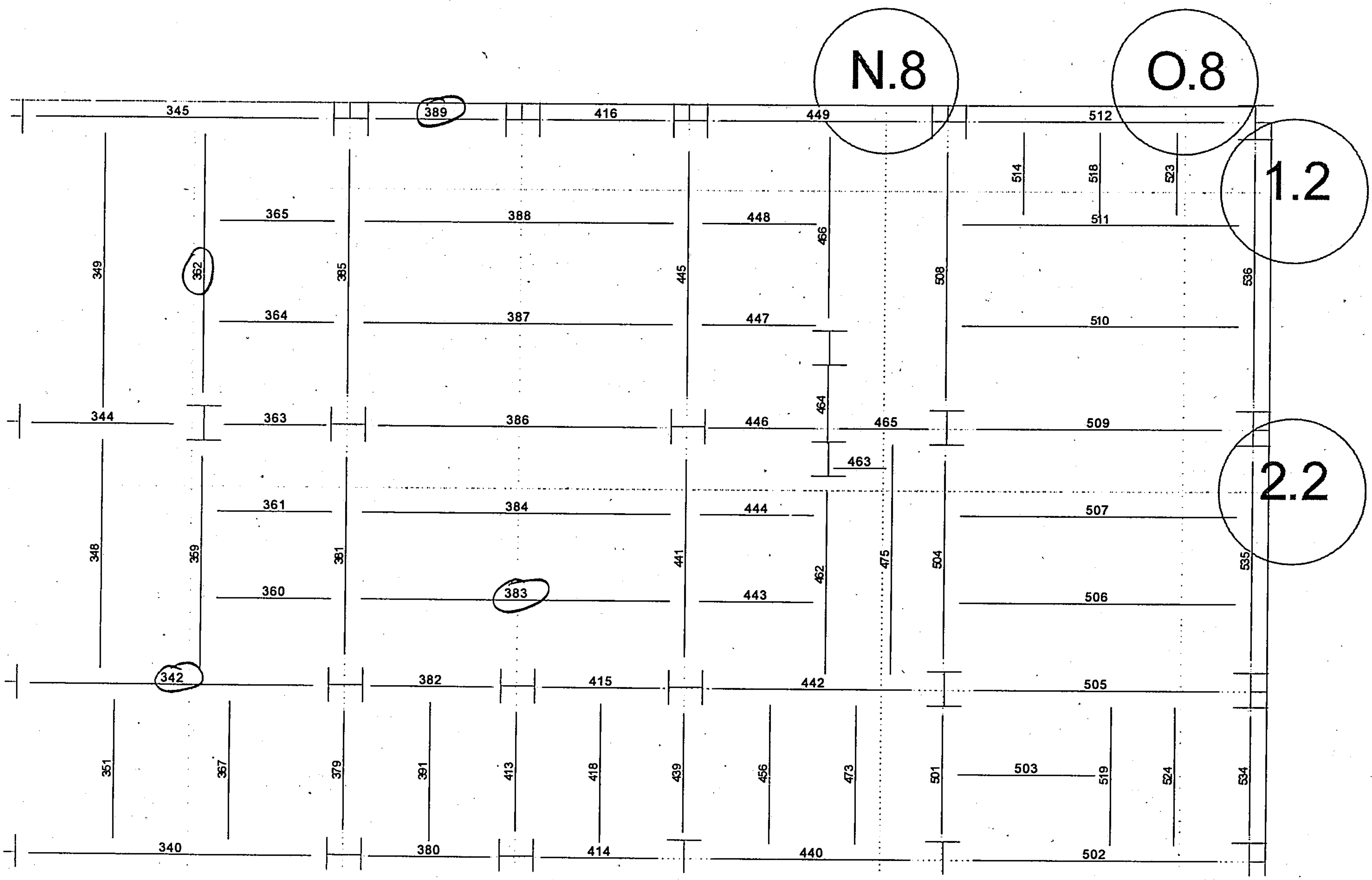
5

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



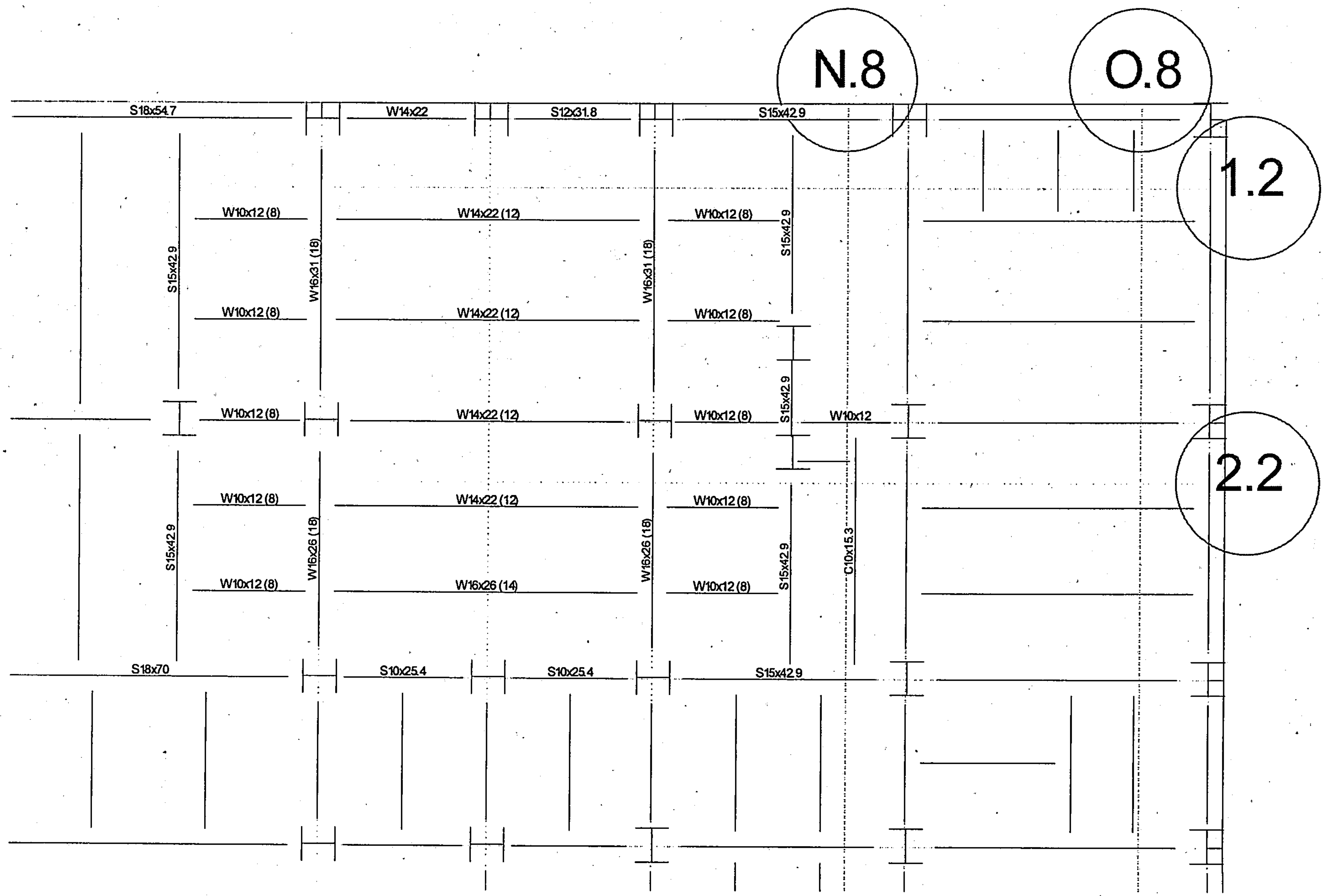
6

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



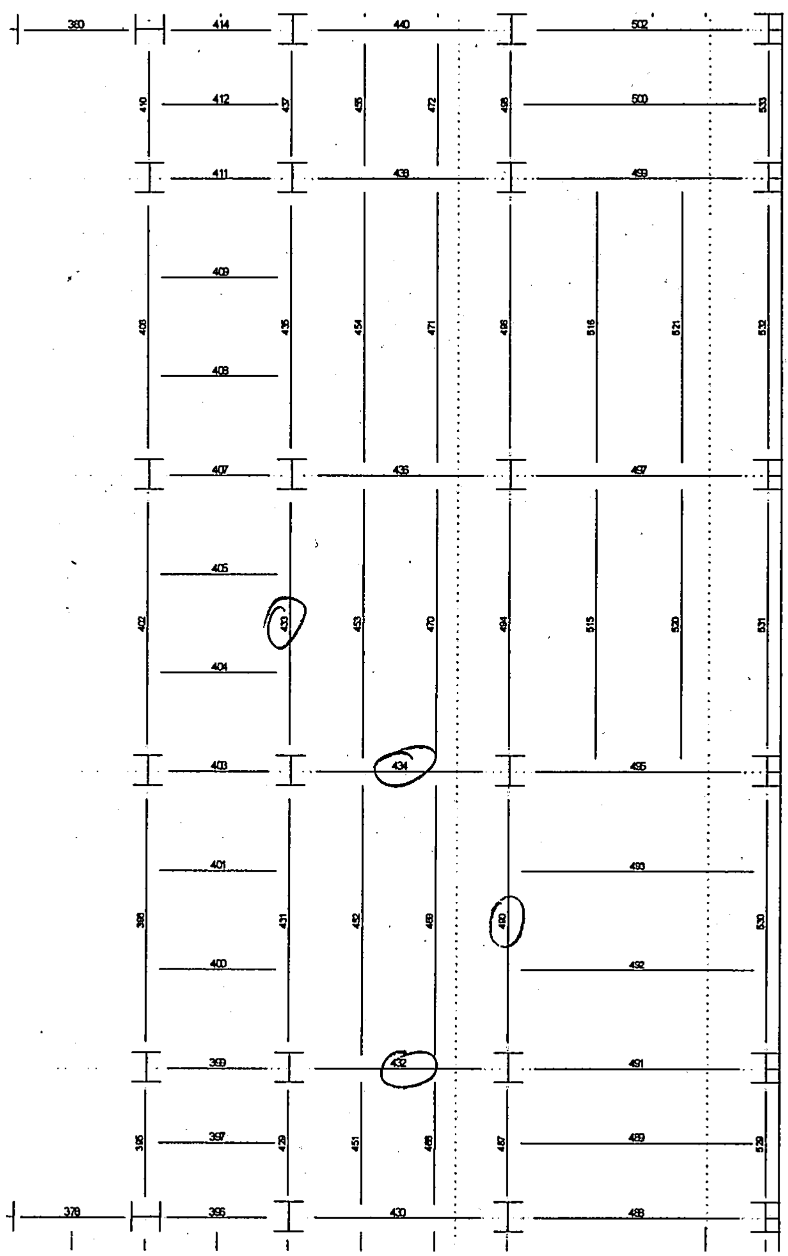
7

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



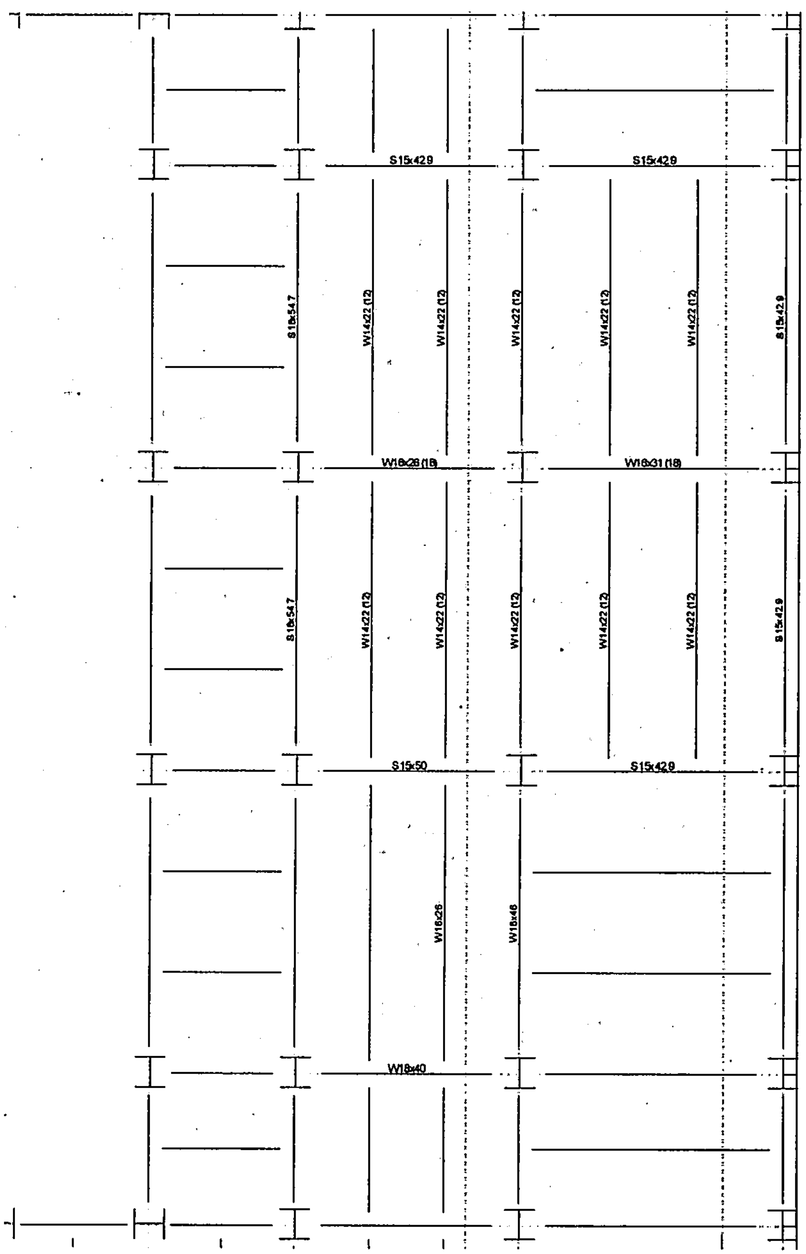
8

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9

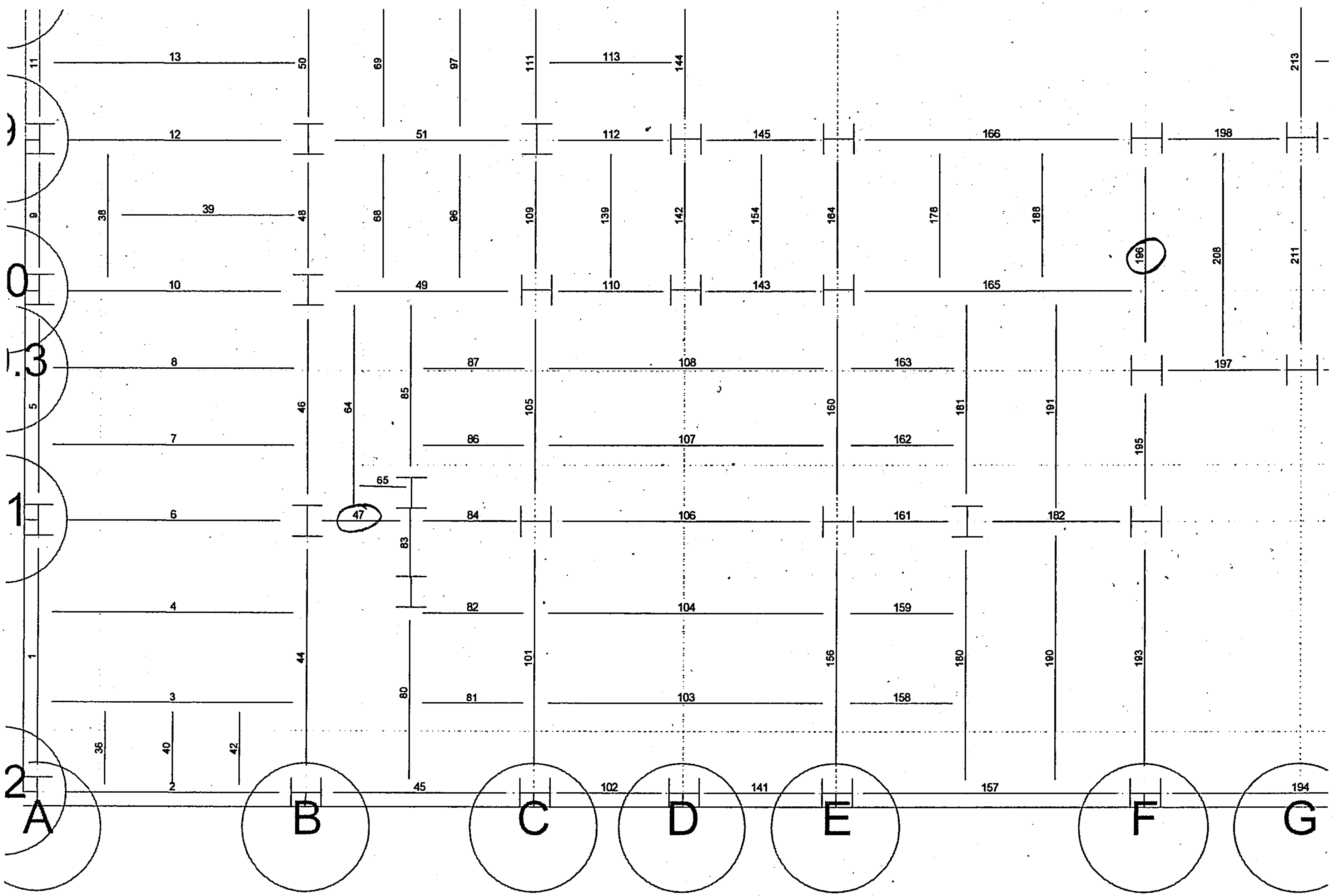


Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9

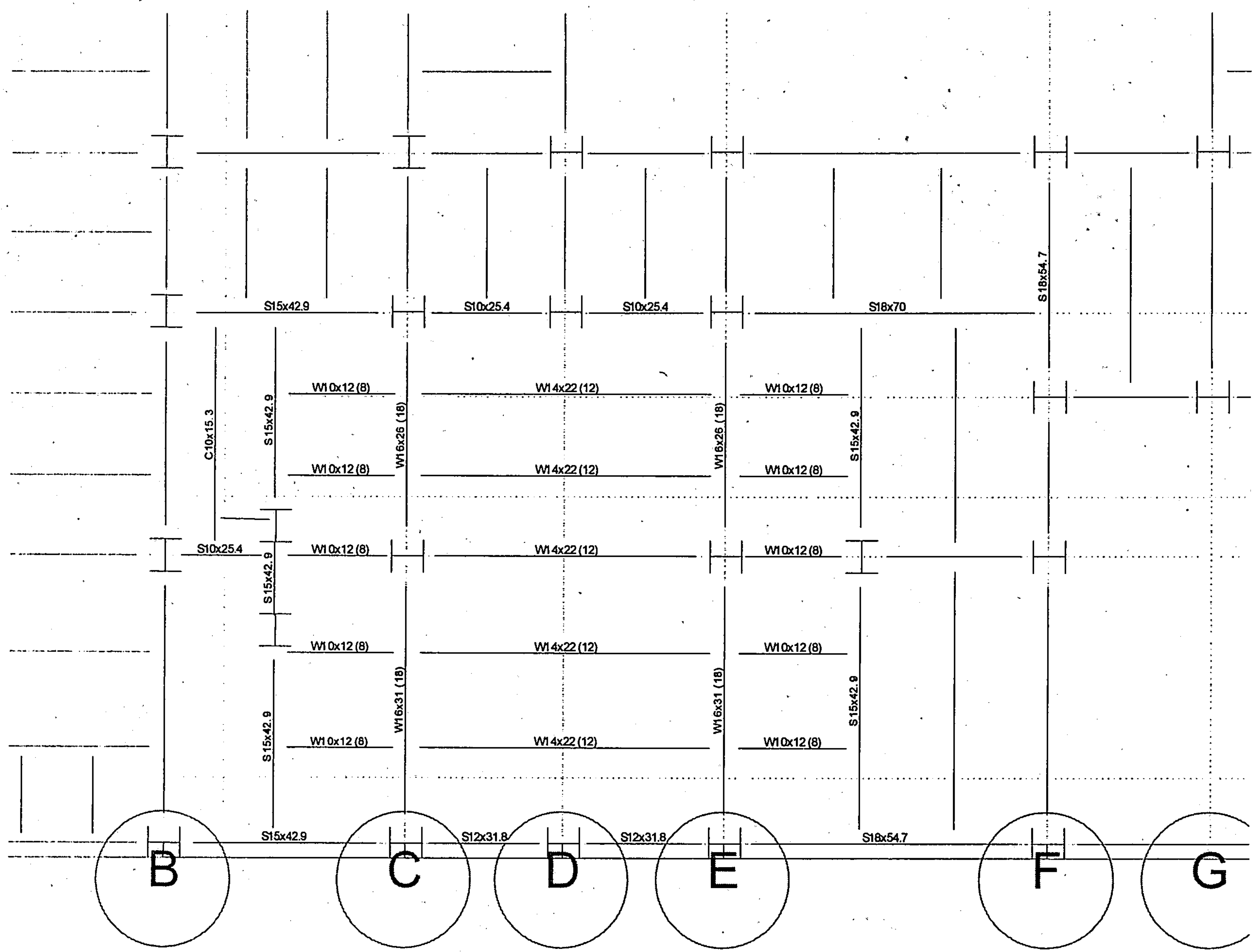


Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



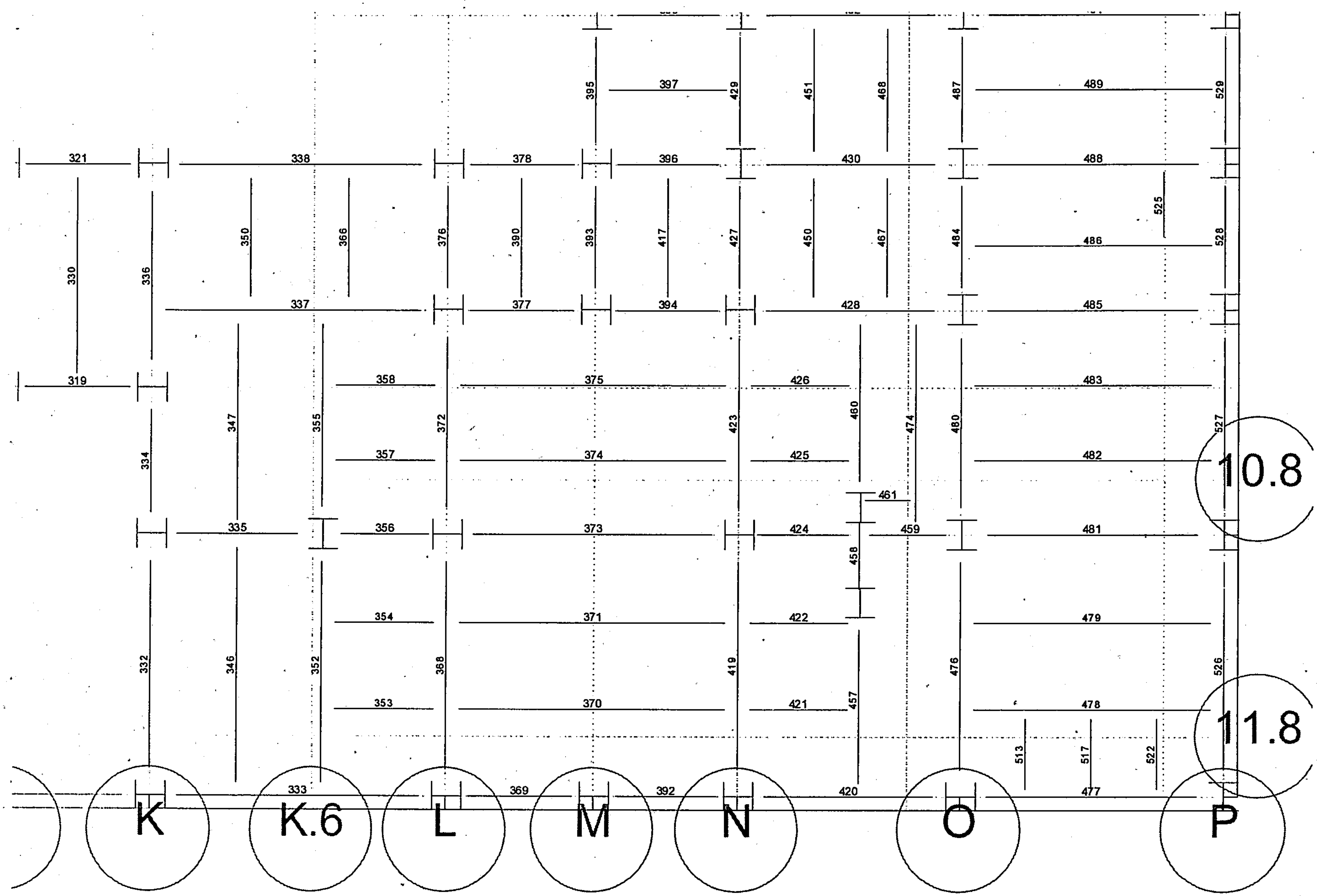
11

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



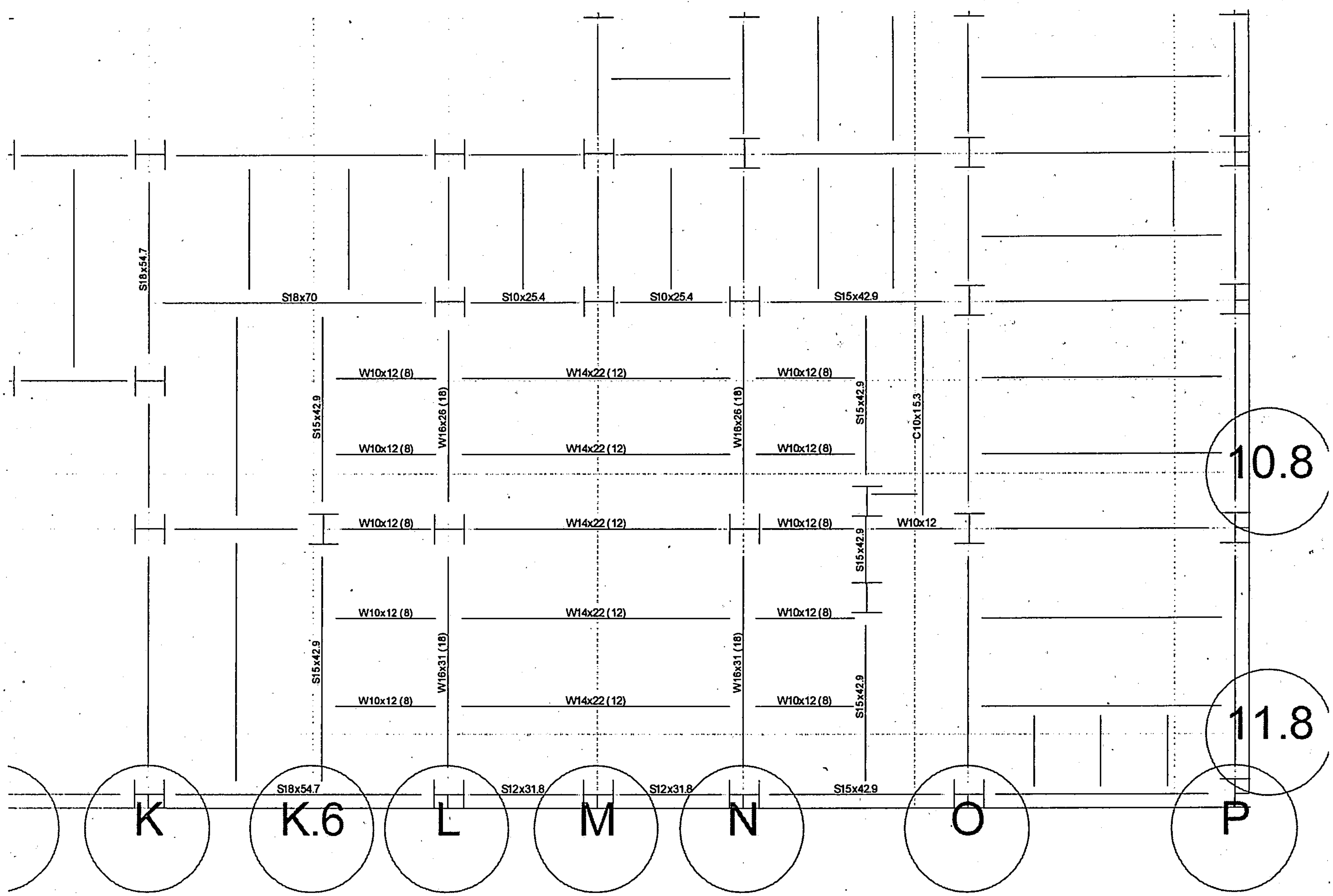
12

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



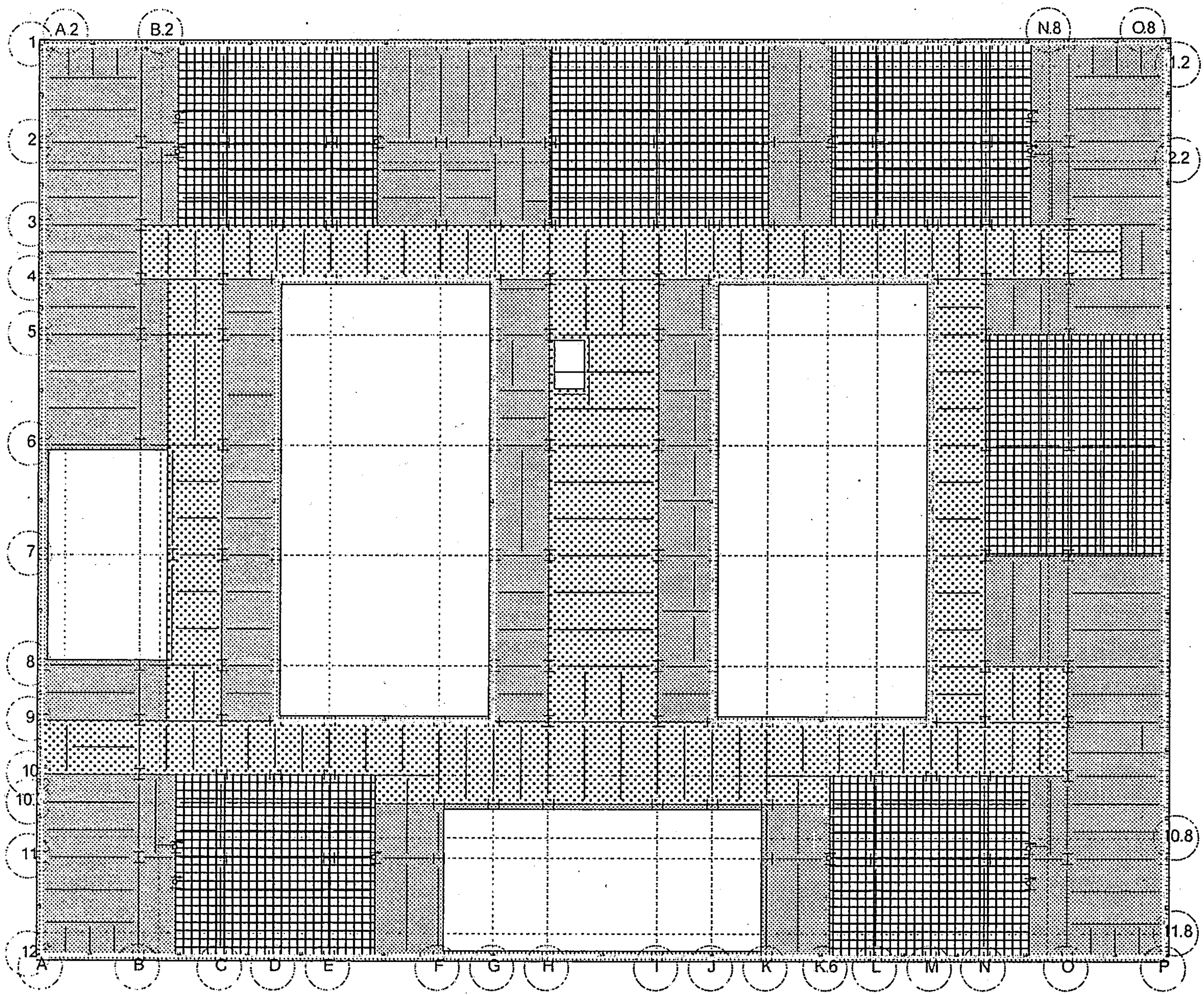
13

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L9



LOADING
LAYOUT

Floor Map

Surface Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		psf	psf	psf	Type	psf	psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0
	(N)Floor	105.0	58.0	50.0	Reducible	20.0	0.0

Line Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		k/ft	k/ft	k/ft	Type	k/ft	k/ft
L2	LC L9	1.150	0.000	0.000	Reducible	0.000	0.000
L6	Ext L9	2.450	0.000	0.000	Reducible	0.000	0.000

Point Loads

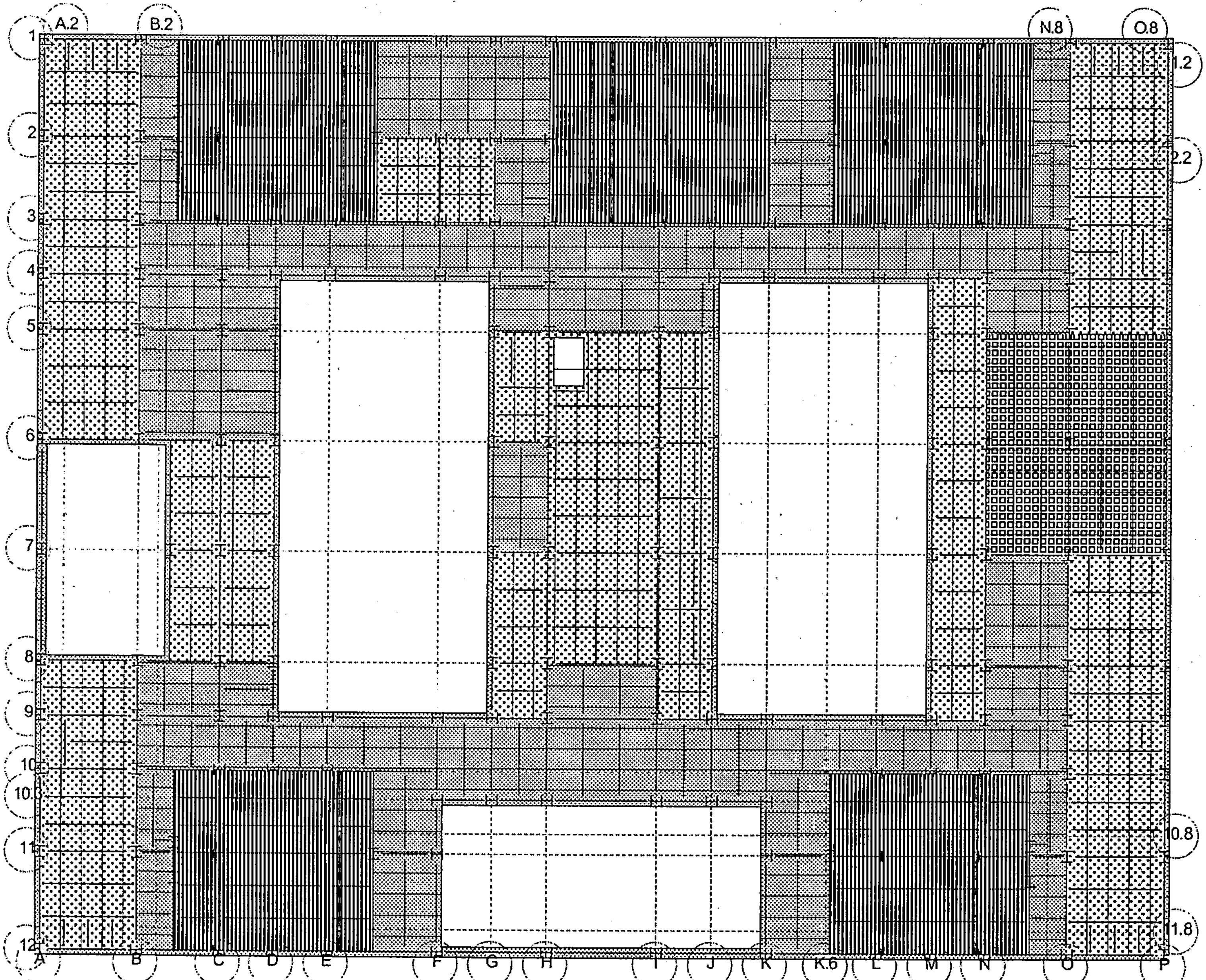
	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		kips	kips	kips	Type	kips	kips
P19	Strut 1	1.000	0.000	0.600	Reducible	0.000	0.000
P20	Strut 2	2.000	0.000	0.800	Reducible	0.000	0.000
P21	Strut 3	5.000	0.000	2.000	Reducible	0.000	0.000

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9



DECK LAYOUT

Floor Map

Decks:

Deck Type	Orientation
Noncomposite	0.00 degrees
Noncomposite	90.00 degrees
VERCO W2 Formlok	0.00 degrees
VERCO W2 Formlok	90.00 degrees

17

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 47**

SPAN INFORMATION (ft): I-End (19.33,19.33) J-End (26.83,19.33)
Beam Size (User Selected) = S10X25.4 Fy = 30.0 ksi
Total Beam Length (ft) = 7.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
3.375	4.33	1.55	0.0	0.00	0.00	0.0	0.00	0.0

SHEAR: Max V (DL+LL) = 3.23 kips fv = 1.04 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	10.9	3.4	0.0	1.00	5.32	19.80	5.32	19.80
Controlling		10.9	3.4	0.0	1.00	5.32	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	2.38	1.95
Max +LL reaction	0.85	0.70
Max +total reaction	3.23	2.65

DEFLECTIONS:

Dead load (in)	at	3.64 ft	=	-0.018	L/D =	4946
Live load (in)	at	3.64 ft	=	-0.006	L/D =	13848
Net Total load (in)	at	3.64 ft	=	-0.025	L/D =	3644

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 60**

SPAN INFORMATION (ft): I-End (19.33,145.33) J-End (35.83,145.33)
Beam Size (User Selected) = S15X42.9 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
4.125	4.33	1.55	0.0	0.00	0.00	0.0	0.00	0.0
5.500	4.82	2.96	0.0	0.00	0.00	0.0	0.00	0.0
7.500	3.95	1.68	0.0	0.00	0.00	0.0	0.00	0.0
11.000	4.82	2.96	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	7.500	0.289	0.138	0.0%	Red
	16.500	0.289	0.138		

SHEAR: Max V (DL+LL) = 16.30 kips fv = 2.64 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	86.9	7.5	0.0	1.00	17.55	19.80	17.55	19.80
Controlling		86.9	7.5	0.0	1.00	17.55	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	10.93	9.59
Max +LL reaction	5.37	5.01
Max +total reaction	16.30	14.59

DEFLECTIONS:

Dead load (in)	at	8.08 ft =	-0.210	L/D	=	942
Live load (in)	at	8.08 ft =	-0.107	L/D	=	1848
Net Total load (in)	at	8.08 ft =	-0.317	L/D	=	624

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 66**

SPAN INFORMATION (ft): I-End (23.46,145.33) J-End (23.46,161.83)

Beam Size (User Selected) = C10X15.3 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.525	0.188	0.0%	Red
	16.500	0.525	0.188		

SHEAR: Max V (DL+LL) = 5.88 kips fv = 2.45 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange		
		kip-ft	ft	ft		fb	Fb	fb	Fb	
Center	Max +	24.2	8.2	0.0	1.00	21.55	19.80	21.55 >	19.80	N.G.
Controlling		24.2	8.2	0.0	1.00	21.55	19.80	--	--	

REACTIONS (kips):

	Left	Right
DL reaction	4.33	4.33
Max +LL reaction	1.55	1.55
Max +total reaction	5.88	5.88

DEFLECTIONS:

Dead load (in)	at	8.25 ft =	-0.449	L/D	=	441
Live load (in)	at	8.25 ft =	-0.160	L/D	=	1236
Net Total load (in)	at	8.25 ft =	-0.609	L/D	=	325

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 95**

SPAN INFORMATION (ft): I-End (26.83,174.72) J-End (35.83,174.72)
Beam Size (User Selected) = W10X12 Fy = 50.0 ksi
Total Beam Length (ft) = 9.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Concrete thickness (in)	4.00	4.00
Unit weight concrete (pcf)	110.00	110.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	VERCO W2 Formlok	VERCO W2 Formlok

beff (in)	=	27.00	Y bar(in)	=	11.07
Seff (in3)	=	18.53	Str (in3)	=	24.29
Ieff (in4)	=	170.34	Itr (in4)	=	258.28
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 7.2
# of studs: Max = 9 Partial = 8 Actual = 8
Number of Stud Rows = 1 Percent of Full Composite Action = 32.48

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	CLL
1	0.000	0.677	0.374	0.322	0.0%	Red	0.129
	9.000	0.677	0.374	0.322			0.129

SHEAR: Max V (DL+LL) = 4.49 kips fv = 2.40 ksi Fv = 20.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	5.1	4.5	0.0	1.00	5.60	33.00	5.60	33.00
	Max +	10.1	4.5	---	---				
	Mmax/Seff					6.55	33.00	---	---
	Mconst/Sx+Mpost/Seff					8.26	45.00	---	---
Controlling		10.1	4.5	---	---	6.55	33.00	---	---

fc (ksi) = 0.12 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	2.26	2.26
DL reaction	3.04	3.04
Max +LL reaction	1.45	1.45
Max +total reaction	4.49	4.49

DEFLECTIONS:

Initial load (in)	at	4.50 ft =	-0.035	L/D	=	3054
Live load (in)	at	4.50 ft =	-0.010	L/D	=	11216
Post Comp load (in)	at	4.50 ft =	-0.019	L/D	=	5782
Net Total load (in)	at	4.50 ft =	-0.054	L/D	=	1998

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 134**

SPAN INFORMATION (ft): I-End (35.83,161.83) J-End (35.83,181.17)

Beam Size (User Selected) = W16X31 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Concrete thickness (in)		4.00			4.00
Unit weight concrete (pcf)		110.00			110.00
f'c (ksi)		3.00			3.00
Decking Orientation		parallel			parallel
Decking type		VERCO W2 Formlok			VERCO W2 Formlok
beff (in)	= 58.00		Y bar(in)	=	15.85
Seff (in3)	= 64.43		Str (in3)	=	81.52
Ieff (in4)	= 812.05		Itr (in4)	=	1245.78
Stud length (in)	= 4.50		Stud diam (in)	=	0.75

Stud Capacity (kips) q = 9.6
\# of studs: Full = 72 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 25.19

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	CLL
6.444	10.40	5.75	4.95	3.9	0.00	0.00	0.0	0.00	0.0	1.98
12.889	10.40	5.75	4.95	3.9	0.00	0.00	0.0	0.00	0.0	1.98

SHEAR: Max V (DL+LL) = 15.17 kips fv = 3.67 ksi Fv = 19.67 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	49.8	6.4	0.0	1.00	12.66	33.00	12.66	33.00
	Max +	97.7	6.4	---	---				
	Mmax/Seff					18.20	33.00	---	---
	Mconst/Sx+Mpost/Seff					20.72	45.00	---	---
Controlling		97.7	6.4	---	---	18.20	33.00	---	---

fc (ksi) = 0.30 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	7.73	7.73
DL reaction	10.40	10.40
Max +LL reaction	4.76	4.76
Max +total reaction	15.17	15.17

DEFLECTIONS:

Initial load (in)	at	9.67 ft =	-0.234	L/D = 991
Live load (in)	at	9.67 ft =	-0.090	L/D = 2588
Post Comp load (in)	at	9.67 ft =	-0.177	L/D = 1309
Net Total load (in)	at	9.67 ft =	-0.411	L/D = 564

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 137**

SPAN INFORMATION (ft): I-End (35.83,174.72) J-End (57.58,174.72)
Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 21.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Concrete thickness (in)	4.00	4.00
Unit weight concrete (pcf)	110.00	110.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	VERCO W2 Formlok	VERCO W2 Formlok

beff (in)	=	65.25	Y bar(in)	=	14.91
Seff (in3)	=	42.28	Str (in3)	=	54.76
Ieff (in4)	=	504.58	Itr (in4)	=	791.73
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 7.2
\# of studs: Max = 21 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 26.58

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	CLL
1	0.000	0.677	0.374	0.322	0.0%	Red	0.129
	21.750	0.677	0.374	0.322			0.129

SHEAR: Max V (DL+LL) = 10.86 kips fv = 3.62 ksi Fv = 18.96 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	29.7	10.9	0.0	1.00	12.30	33.00	12.30	33.00
	Max +	59.1	10.9	---	---				
	Mmax/Seff					16.76	33.00	---	---
	Mconst/Sx+Mpost/Seff					19.64	45.00	---	---
Controlling		59.1	10.9	---	---	16.76	33.00	---	---

fc (ksi) = 0.23 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	5.47	5.47
DL reaction	7.36	7.36
Max +LL reaction	3.50	3.50
Max +total reaction	10.86	10.86

DEFLECTIONS:

Initial load (in)	at	10.88 ft	=	-0.326	L/D	=	800
Live load (in)	at	10.88 ft	=	-0.111	L/D	=	2354
Post Comp load (in)	at	10.88 ft	=	-0.215	L/D	=	1213
Net Total load (in)	at	10.88 ft	=	-0.541	L/D	=	482

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 152**

SPAN INFORMATION (ft): **I-End (46.58,145.33)** **J-End (57.58,145.33)**

Beam Size (User Selected) = S10X25.4 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	4.82	2.96	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.289	0.138	0.0%	Red
	11.000	0.289	0.138		

SHEAR: **Max V (DL+LL) = 6.23 kips fv = 2.00 ksi Fv = 12.00 ksi**

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	27.8	5.5	0.0	1.00	13.57	19.80	13.57	19.80
Controlling		27.8	5.5	0.0	1.00	13.57	19.80	—	—

REACTIONS (kips):

	Left	Right
DL reaction	4.00	4.00
Max +LL reaction	2.23	2.23
Max +total reaction	6.23	6.23

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.091	L/D =	1444
Live load (in)	at	5.50 ft	=	-0.052	L/D =	2519
Net Total load (in)	at	5.50 ft	=	-0.144	L/D =	918

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 153**

SPAN INFORMATION (ft): I-End (46.58,181.17) J-End (57.58,181.17)
Beam Size (User Selected) = S12X31.8 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	2.450	0.000	0.0%	Red
	11.000	2.450	0.000		
2	0.000	0.140	0.050	0.0%	Red
	11.000	0.140	0.050		
3	0.000	0.338	0.161	0.0%	Red
	11.000	0.338	0.161		

SHEAR: Max V (DL+LL) = 17.27 kips fv = 4.11 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	47.5	5.5	0.0	1.00	15.74	19.80	15.74	19.80
Controlling		47.5	5.5	0.0	1.00	15.74	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	16.10	16.10
Max +LL reaction	1.16	1.16
Max +total reaction	17.27	17.27

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.153	L/D =	861
Live load (in)	at	5.50 ft	=	-0.011	L/D =	11944
Net Total load (in)	at	5.50 ft	=	-0.164	L/D =	803

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 170**

SPAN INFORMATION (ft): I-End (57.58,145.33) J-End (79.58,145.33)
Beam Size (User Selected) = S18X70 Fy = 30.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
7.333	6.42	3.94	4.0	0.00	0.00	0.0	0.00	0.0
9.250	7.58	3.02	4.0	0.00	0.00	0.0	0.00	0.0
14.667	6.42	3.94	4.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.289	0.138	4.0%	Red
	9.250	0.289	0.138		
2	9.250	0.385	0.138	4.0%	Red
	22.000	0.385	0.138		

SHEAR: Max V (DL+LL) = 21.27 kips fv = 1.66 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	159.2	9.2	0.0	1.00	18.54	19.80	18.54	19.80
Controlling		159.2	9.2	0.0	1.00	18.54	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	14.35	13.66
Max +LL reaction	6.92	6.46
Max +total reaction	21.27	20.12

DEFLECTIONS:

Dead load (in)	at	10.89 ft =	-0.330	L/D =	800
Live load (in)	at	10.89 ft =	-0.158	L/D =	1666
Net Total load (in)	at	10.89 ft =	-0.489	L/D =	540

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 183**

SPAN INFORMATION (ft): I-End (66.83,145.33) J-End (66.83,161.83)

Beam Size (User Selected) = S15X42.9 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	4.91	1.75	0.0	0.00	0.00	0.0	0.00	0.0
5.500	2.67	1.27	0.0	0.00	0.00	0.0	0.00	0.0
11.000	4.91	1.75	0.0	0.00	0.00	0.0	0.00	0.0
11.000	2.67	1.27	0.0	0.00	0.00	0.0	0.00	0.0

SHEAR: Max V (DL+LL) = 10.60 kips fv = 1.72 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	58.3	5.5	0.0	1.00	11.78	19.80	11.78	19.80
Controlling		58.3	5.5	0.0	1.00	11.78	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	7.58	7.58
Max +LL reaction	3.02	3.02
Max +total reaction	10.60	10.60

DEFLECTIONS:

Dead load (in)	at	8.25 ft	=	-0.161	L/D =	1226
Live load (in)	at	8.25 ft	=	-0.064	L/D =	3073
Net Total load (in)	at	8.25 ft	=	-0.226	L/D =	877

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 196**

SPAN INFORMATION (ft): I-End (79.58,30.08) J-End (79.58,46.58)
Beam Size (User Selected) = S18X54.7 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.750	15.53	8.56	4.6	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.520	0.319	4.6%	Red
	5.750	0.520	0.319		
2	5.750	0.598	0.367	4.6%	Red
	16.500	0.598	0.367		
3	0.000	0.448	0.275	4.6%	Red
	16.500	0.448	0.275		

SHEAR: Max V (DL+LL) = 28.53 kips fv = 3.44 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	138.7	5.7	0.0	1.00	18.70	19.80	18.70	19.80
Controlling		138.7	5.7	0.0	1.00	18.70	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	18.37	13.96
Max +LL reaction	10.16	7.85
Max +total reaction	28.53	21.81

DEFLECTIONS:

Dead load (in)	at	7.84 ft	=	-0.169	L/D =	1173
Live load (in)	at	7.84 ft	=	-0.093	L/D =	2126
Net Total load (in)	at	7.84 ft	=	-0.262	L/D =	756

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 231**

SPAN INFORMATION (ft): I-End (90.58,145.33) J-End (90.58,161.83)

Beam Size (User Selected) = W12X26 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	4.23	1.51	0.0	0.00	0.00	0.0	0.00	0.0
11.000	4.23	1.51	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.385	0.138	0.0%	Red
	16.500	0.385	0.138		

SHEAR: Max V (DL+LL) = 10.06 kips fv = 3.58 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	49.4	8.3	0.0	1.00	17.74	19.80	17.74	19.80
Controlling		49.4	8.3	0.0	1.00	17.74	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	7.41	7.41
Max +LL reaction	2.65	2.65
Max +total reaction	10.06	10.06

DEFLECTIONS:

Dead load (in)	at	8.25 ft =	-0.306	L/D	=	648
Live load (in)	at	8.25 ft =	-0.109	L/D	=	1813
Net Total load (in)	at	8.25 ft =	-0.415	L/D	=	477

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 265**

SPAN INFORMATION (ft): I-End (101.58,145.33) J-End (123.58,145.33)
Beam Size (User Selected) = S18X54.7 Fy = 30.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
7.333	6.42	3.94	0.0	0.00	0.00	0.0	0.00	0.0
14.667	6.42	3.94	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.289	0.138	0.0%	Red
	22.000	0.289	0.138		

SHEAR: Max V (DL+LL) = 15.05 kips fv = 1.81 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	101.8	11.0	0.0	1.00	13.73	19.80	13.73	19.80
Controlling		101.8	11.0	0.0	1.00	13.73	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	9.60	9.60
Max +LL reaction	5.45	5.45
Max +total reaction	15.05	15.05

DEFLECTIONS:

Dead load (in)	at	11.00 ft	=	-0.246	L/D	=	1073
Live load (in)	at	11.00 ft	=	-0.142	L/D	=	1859
Net Total load (in)	at	11.00 ft	=	-0.388	L/D	=	680

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 300**

SPAN INFORMATION (ft): I-End (123.58,145.33) J-End (123.58,161.83)

Beam Size (User Selected) = W16X31 Fy = 50.0 ksi
Total Beam Length (ft) = 16.50

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Concrete thickness (in)	4.00	4.00
Unit weight concrete (pcf)	110.00	110.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	VERCO W2 Formlok	VERCO W2 Formlok

beff (in)	= 49.50	Y bar(in)	=	15.46
Seff (in3)	= 63.86	Str (in3)	=	80.39
Ieff (in4)	= 787.85	Itr (in4)	=	1197.55
Stud length (in)	= 4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 9.6
\# of studs: Full = 72 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 25.19

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	CLL
5.500	12.70	7.02	6.05	7.4	0.00	0.00	0.0	0.00	0.0	2.42
11.000	12.70	7.02	6.05	7.4	0.00	0.00	0.0	0.00	0.0	2.42

SHEAR: Max V (DL+LL) = 18.31 kips fv = 4.43 ksi Fv = 19.67 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	51.9	8.3	0.0	1.00	13.20	33.00	13.20	33.00
	Max +	100.7	5.5	---	---				
	Mmax/Seff					18.92	33.00	---	---
	Mconst/Sx+Mpost/Seff					21.48	45.00	---	---
Controlling		100.7	5.5	---	---	18.92	33.00	---	---

fc (ksi) = 0.34 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	9.44	9.44
DL reaction	12.70	12.70
Max +LL reaction	5.60	5.60
Max +total reaction	18.31	18.31

DEFLECTIONS:

Initial load (in)	at	8.25 ft =	-0.178	L/D = 1114
Live load (in)	at	8.25 ft =	-0.068	L/D = 2930
Post Comp load (in)	at	8.25 ft =	-0.136	L/D = 1454
Net Total load (in)	at	8.25 ft =	-0.314	L/D = 631

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 304**

SPAN INFORMATION (ft): I-End (123.58,161.83) J-End (123.58,181.17)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Concrete thickness (in)		4.00			4.00
Unit weight concrete (pcf)		110.00			110.00
f'c (ksi)		3.00			3.00
Decking Orientation		parallel			parallel
Decking type		VERCO W2 Formlok			VERCO W2 Formlok
beff (in)	=	58.00	Y bar(in)	=	17.06
Seff (in3)	=	77.70	Str (in3)	=	96.99
Ieff (in4)	=	1065.15	Itr (in4)	=	1597.66
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 9.6
\# of studs: Full = 81 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 26.05

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	CLL
6.444	14.89	8.22	7.09	10.7	0.00	0.00	0.0	0.00	0.0	2.84
12.889	14.89	8.22	7.09	10.7	0.00	0.00	0.0	0.00	0.0	2.84

SHEAR: Max V (DL+LL) = 21.22 kips fv = 4.20 ksi Fv = 19.13 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	71.3	6.4	0.0	1.00	14.85	33.00	14.85	33.00
	Max +	136.7	6.4	---	---				
	Mmax/Seff					21.12	33.00	---	---
	Mconst/Sx+Mpost/Seff					23.97	45.00	---	---
Controlling		136.7	6.4	---	---	21.12	33.00	---	---

fc (ksi) = 0.35 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	11.06	11.06
DL reaction	14.89	14.89
Max +LL reaction	6.33	6.33
Max +total reaction	21.22	21.22

DEFLECTIONS:

Initial load (in)	at	9.67 ft =	-0.246	L/D	=	941
Live load (in)	at	9.67 ft =	-0.091	L/D	=	2554
Post Comp load (in)	at	9.67 ft =	-0.186	L/D	=	1244
Net Total load (in)	at	9.67 ft =	-0.433	L/D	=	536

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 342**

SPAN INFORMATION (ft): I-End (145.58,145.33) J-End (167.58,145.33)
Beam Size (User Selected) = S18X70 Fy = 30.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
6.375	7.36	2.63	4.7	0.00	0.00	0.0	0.00	0.0
7.333	6.42	3.94	4.7	0.00	0.00	0.0	0.00	0.0
12.750	6.35	2.59	4.7	0.00	0.00	0.0	0.00	0.0
14.667	6.42	3.94	4.7	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	12.750	0.289	0.138	4.7%	Red
	22.000	0.289	0.138		

SHEAR: Max V (DL+LL) = 21.71 kips fv = 1.70 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	158.8	12.8	0.0	1.00	18.50	19.80	18.50	19.80
Controlling		158.8	12.8	0.0	1.00	18.50	19.80	—	—

REACTIONS (kips):

	Left	Right
DL reaction	14.89	14.35
Max +LL reaction	6.83	6.87
Max +total reaction	21.71	21.22

DEFLECTIONS:

Dead load (in)	at	11.00 ft	=	-0.347	L/D =	761
Live load (in)	at	11.00 ft	=	-0.163	L/D =	1619
Net Total load (in)	at	11.00 ft	=	-0.510	L/D =	517

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 362**

SPAN INFORMATION (ft): I-End (158.33,161.83) J-End (158.33,181.17)
Beam Size (User Selected) = S15X42.9 Fy = 30.0 ksi
Total Beam Length (ft) = 19.33

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
6.444	3.13	1.49	0.0	0.00	0.00	0.0	0.00	0.0
12.889	3.13	1.49	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.446	0.159	0.0%	Red
	19.333	0.446	0.159		

SHEAR: Max V (DL+LL) = 10.47 kips fv = 1.70 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	58.1	9.7	0.0	1.00	11.73	19.80	11.73	19.80
Controlling		58.1	9.7	0.0	1.00	11.73	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	7.44	7.44
Max +LL reaction	3.03	3.03
Max +total reaction	10.47	10.47

DEFLECTIONS:

Dead load (in)	at	9.67 ft =	-0.216	L/D = 1076
Live load (in)	at	9.67 ft =	-0.090	L/D = 2584
Net Total load (in)	at	9.67 ft =	-0.305	L/D = 759

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 383**

SPAN INFORMATION (ft): I-End (167.58,150.83) J-End (189.33,150.83)

Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 21.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Concrete thickness (in)	4.00	4.00
Unit weight concrete (pcf)	110.00	110.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	VERCO W2 Formlok	VERCO W2 Formlok

beff (in)	= 65.25	Y bar(in)	=	16.26
Seff (in3)	= 54.14	Str (in3)	=	69.15
Ieff (in4)	= 705.56	Itr (in4)	=	1091.30
Stud length (in)	= 4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 7.2
\# of studs: Max = 42 Partial = 14 Actual = 14
Number of Stud Rows = 1 Percent of Full Composite Action = 26.20

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	CLL
1	0.000	0.577	0.319	0.275	0.0%	Red	0.110
	21.750	0.577	0.319	0.275			0.110

SHEAR: Max V (DL+LL) = 9.27 kips fv = 2.47 ksi Fv = 17.89 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	25.4	10.9	0.0	1.00	7.93	33.00	7.93	33.00
	Max +	50.4	10.9	---	---				
	Mmax/Seff					11.17	33.00	---	---
	Mconst/Sx+Mpost/Seff					12.89	45.00	---	---
Controlling		50.4	10.9	---	---	11.17	33.00	---	---

fc (ksi) = 0.16 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	4.67	4.67
DL reaction	6.28	6.28
Max +LL reaction	2.99	2.99
Max +total reaction	9.27	9.27

DEFLECTIONS:

Initial load (in)	at	10.88 ft =	-0.184	L/D = 1418
Live load (in)	at	10.88 ft =	-0.068	L/D = 3857
Post Comp load (in)	at	10.88 ft =	-0.131	L/D = 1988
Net Total load (in)	at	10.88 ft =	-0.315	L/D = 828

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 389**

SPAN INFORMATION (ft): I-End (167.58,181.17) J-End (178.58,181.17)
Beam Size (User Selected) = W14X22 Fy = 30.0 ksi
Total Beam Length (ft) = 11.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	2.450	0.000	0.0%	Red
	11.000	2.450	0.000		
2	0.000	0.140	0.050	0.0%	Red
	11.000	0.140	0.050		
3	0.000	0.338	0.161	0.0%	Red
	11.000	0.338	0.161		

SHEAR: Max V (DL+LL) = 17.27 kips fv = 5.48 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	47.5	5.5	0.0	1.00	19.65	19.80	19.65	19.80
Controlling		47.5	5.5	0.0	1.00	19.65	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	16.10	16.10
Max +LL reaction	1.16	1.16
Max +total reaction	17.27	17.27

DEFLECTIONS:

Dead load (in)	at	5.50 ft =	-0.167	L/D =	790
Live load (in)	at	5.50 ft =	-0.012	L/D =	10954
Net Total load (in)	at	5.50 ft =	-0.179	L/D =	737

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 432**

SPAN INFORMATION (ft): I-End (189.33,57.58) J-End (205.83,57.58)

Beam Size (User Selected) = W18X40 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	8.47	3.02	2.5	0.00	0.00	0.0	0.00	0.0
5.500	4.93	3.02	2.5	0.00	0.00	0.0	0.00	0.0
11.000	8.47	3.02	2.5	0.00	0.00	0.0	0.00	0.0
11.000	4.93	3.02	2.5	0.00	0.00	0.0	0.00	0.0

SHEAR: Max V (DL+LL) = 19.30 kips fv = 3.42 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	106.1	8.3	0.0	1.00	18.62	19.80	18.62	19.80
Controlling		106.1	8.3	0.0	1.00	18.62	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	13.40	13.40
Max +LL reaction	5.90	5.90
Max +total reaction	19.30	19.30

DEFLECTIONS:

Dead load (in)	at	8.25 ft =	-0.208	L/D =	952
Live load (in)	at	8.25 ft =	-0.092	L/D =	2163
Net Total load (in)	at	8.25 ft =	-0.300	L/D =	661

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 433**

SPAN INFORMATION (ft): I-End (189.33,79.58) J-End (189.33,101.58)

Beam Size (User Selected) = S18X54.7 Fy = 30.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
7.333	6.42	3.94	0.0	0.00	0.00	0.0	0.00	0.0
14.667	6.42	3.94	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.289	0.138	0.0%	Red
	22.000	0.289	0.138		

SHEAR: Max V (DL+LL) = 15.05 kips fv = 1.81 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	101.8	11.0	0.0	1.00	13.73	19.80	13.73	19.80
Controlling		101.8	11.0	0.0	1.00	13.73	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	9.60	9.60
Max +LL reaction	5.45	5.45
Max +total reaction	15.05	15.05

DEFLECTIONS:

Dead load (in)	at	11.00 ft =	-0.246	L/D	=	1073
Live load (in)	at	11.00 ft =	-0.142	L/D	=	1859
Net Total load (in)	at	11.00 ft =	-0.388	L/D	=	680

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 13:41:01
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 434**

SPAN INFORMATION (ft): I-End (189.33,79.58) J-End (205.83,79.58)
Beam Size (User Selected) = S15X50 Fy = 30.0 ksi
Total Beam Length (ft) = 16.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
5.500	6.35	3.02	7.4	0.00	0.00	0.0	0.00	0.0
5.500	8.47	3.02	7.4	0.00	0.00	0.0	0.00	0.0
11.000	6.35	3.02	7.4	0.00	0.00	0.0	0.00	0.0
11.000	8.47	3.02	7.4	0.00	0.00	0.0	0.00	0.0

SHEAR: Max V (DL+LL) = 20.43 kips fv = 2.48 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	112.3	5.5	0.0	1.00	20.84	19.80	20.84 >	19.80
Controlling		112.3	5.5	0.0	1.00	20.84	19.80	—	—

N.G.

REACTIONS (kips):

	Left	Right
DL reaction	14.82	14.82
Max +LL reaction	5.60	5.60
Max +total reaction	20.43	20.43

DEFLECTIONS:

Dead load (in)	at	8.25 ft	=	-0.290	L/D =	682
Live load (in)	at	8.25 ft	=	-0.110	L/D =	1803
Net Total load (in)	at	8.25 ft	=	-0.400	L/D =	495

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L9 **Beam Number = 490**

SPAN INFORMATION (ft): I-End (205.83,57.58) J-End (205.83,79.58)
Beam Size (User Selected) = W18X46 Fy = 30.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
7.333	9.92	3.54	4.2	0.00	0.00	0.0	0.00	0.0
14.667	9.92	3.54	4.2	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.385	0.138	4.2%	Red
	22.000	0.385	0.138		

SHEAR: Max V (DL+LL) = 19.00 kips fv = 2.92 ksi Fv = 12.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	128.9	11.0	0.0	1.00	19.64	19.80	19.64	19.80
Controlling		128.9	11.0	0.0	1.00	19.64	19.80	---	---

REACTIONS (kips):

	Left	Right
DL reaction	14.16	14.16
Max +LL reaction	4.85	4.85
Max +total reaction	19.00	19.00

DEFLECTIONS:

Dead load (in)	at	11.00 ft	=	-0.412	L/D	=	641
Live load (in)	at	11.00 ft	=	-0.141	L/D	=	1872
Net Total load (in)	at	11.00 ft	=	-0.553	L/D	=	477

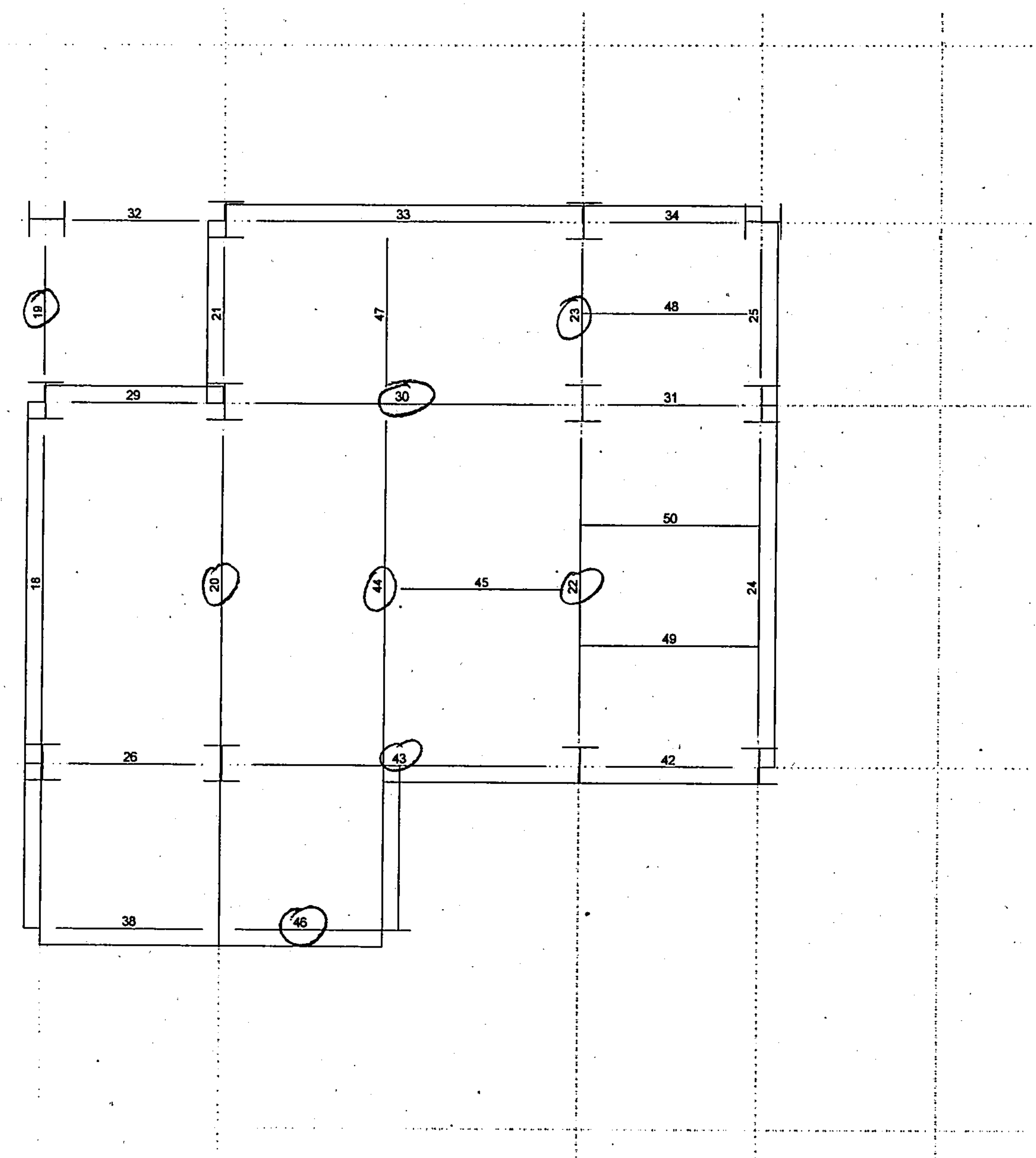
A.4: Elevator Machine Room 1 Framing

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: PH1

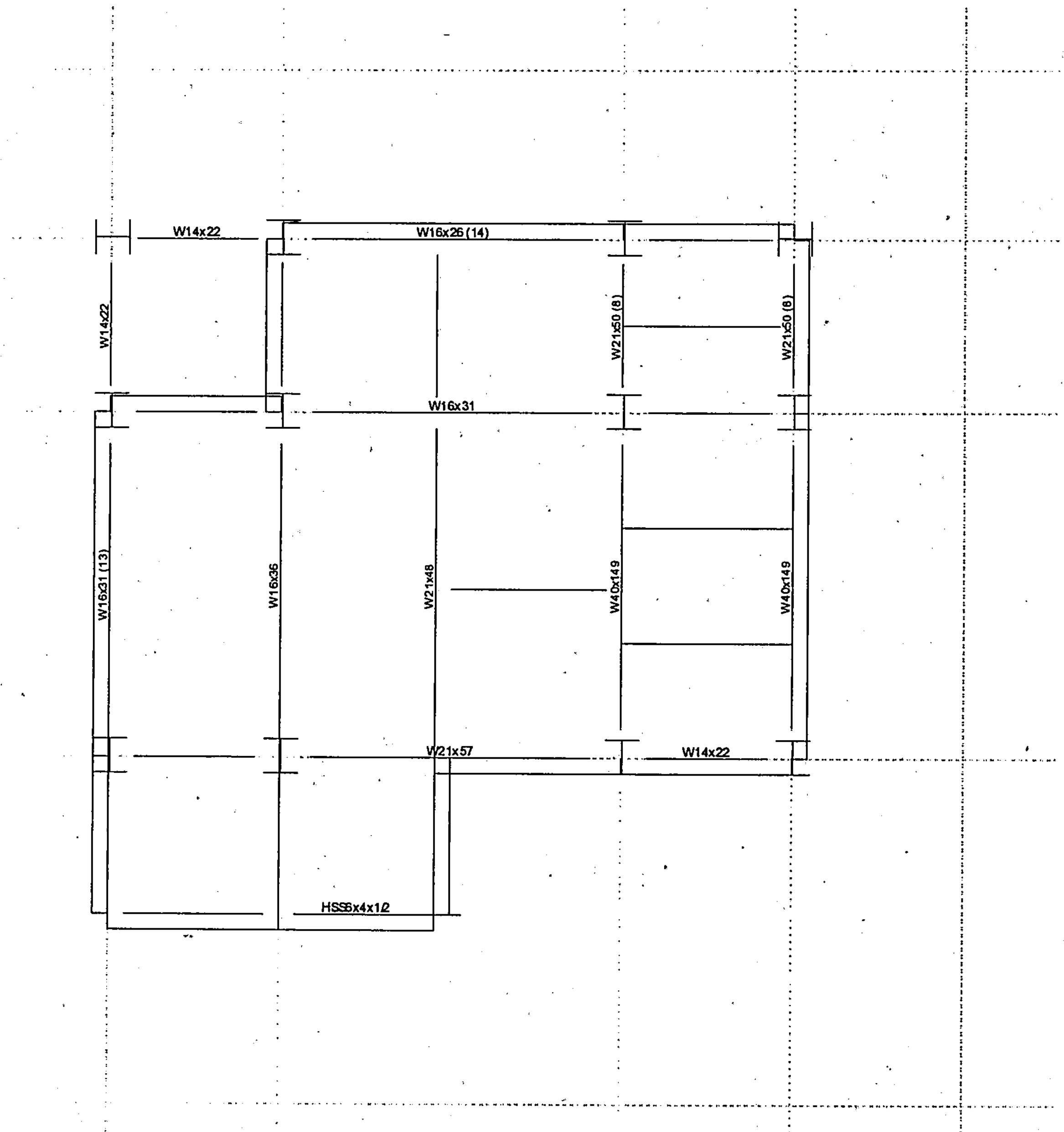


Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: PH1

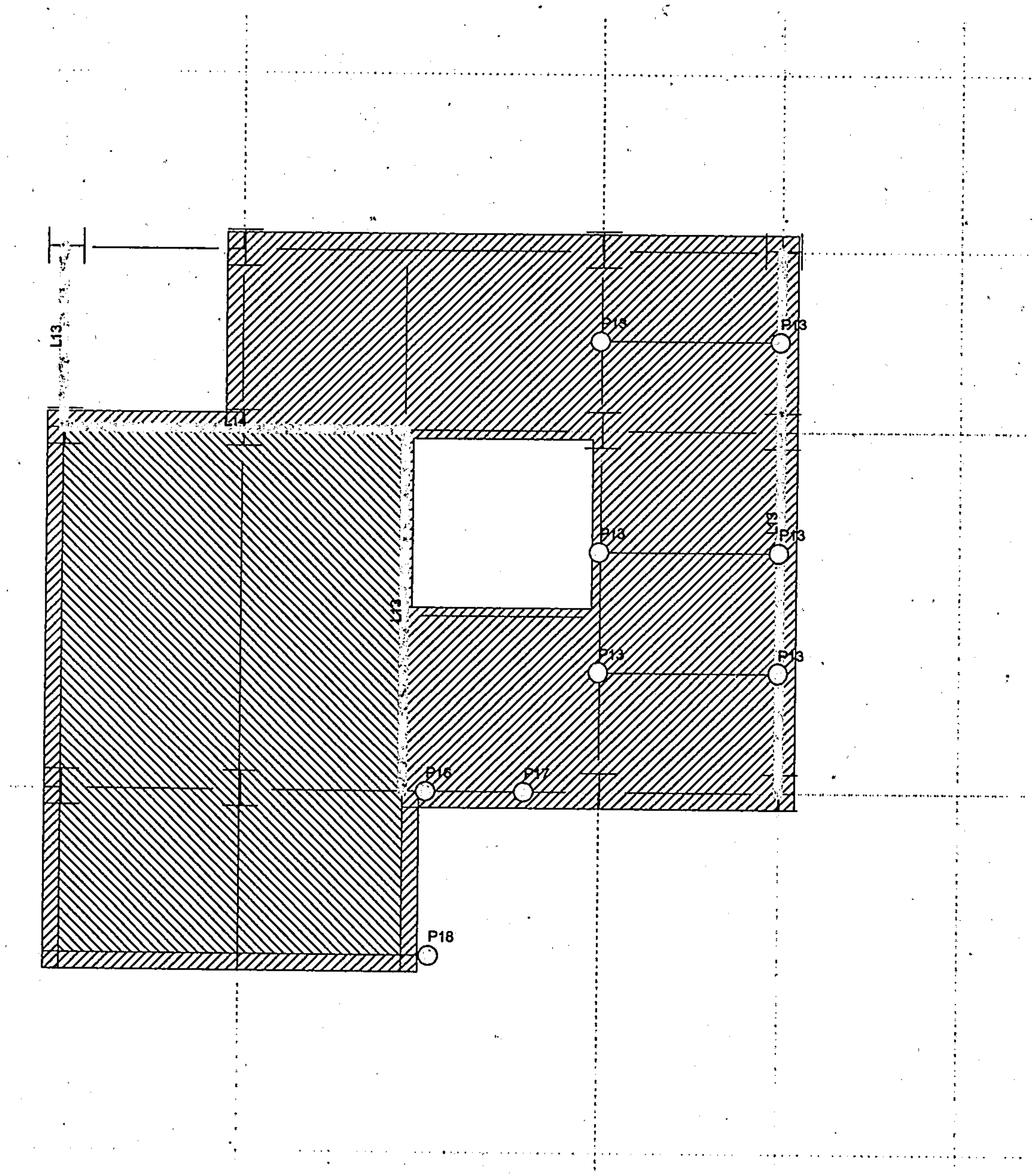


RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Map

Floor Type: PH1



Floor Map

Surface Loads

Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
(N)ElevMachRm	60.0	48.0	125.0	Unreducible	20.0	0.0
(N) PH Roof	70.0	48.0	20.0	Roof	20.0	0.0

Line Loads

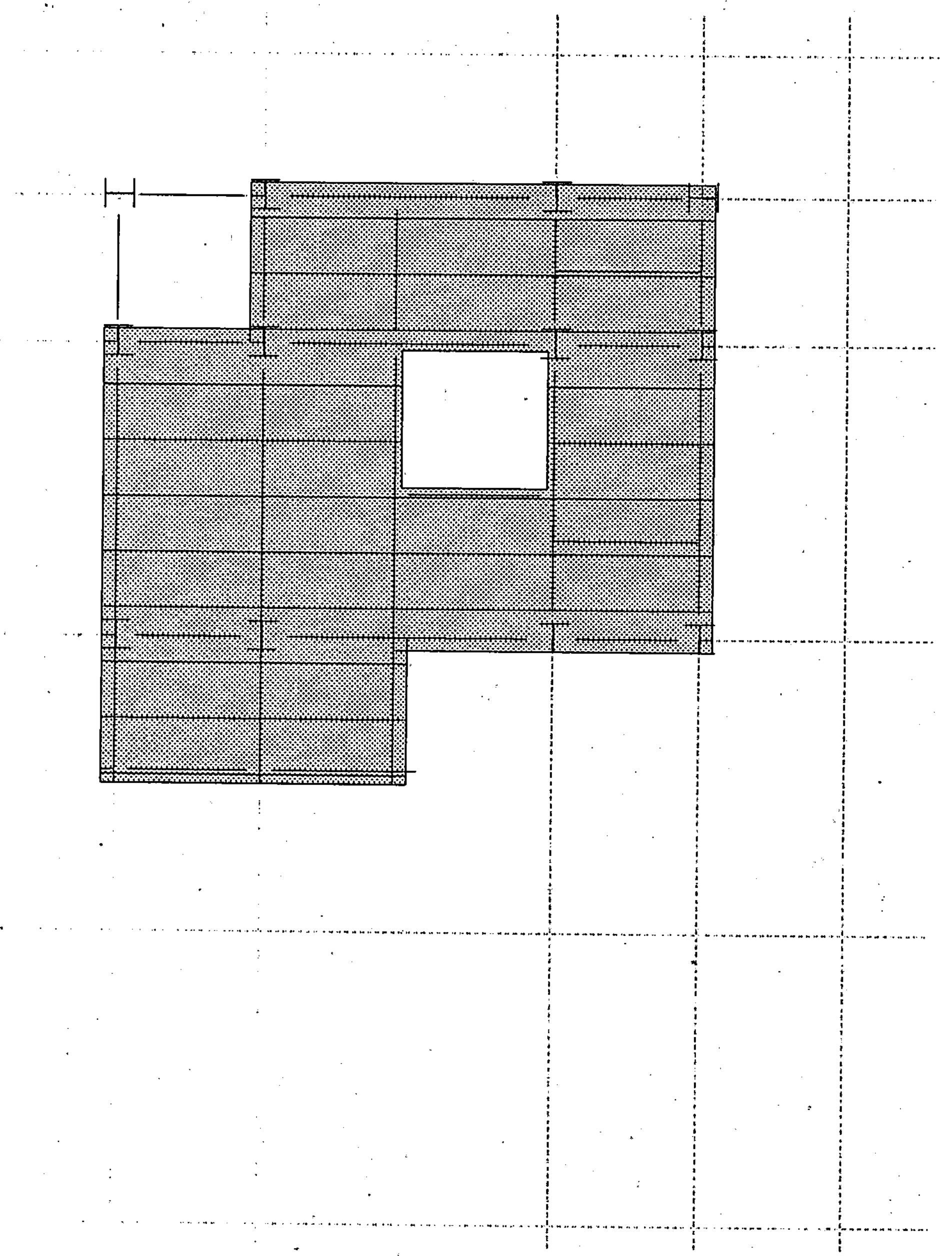
	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L13	15psf x 10'	0.150	0.000	0.000	Reducible	0.000	0.000
L14	15psf x 24'	0.360	0.000	0.000	Reducible	0.000	0.000

Point Loads

	Label	DL kips	CDL kips	LL kips	Reduction Type	CLL kips	Mass DL kips
P13	Zero	0.000	0.000	0.000	Reducible	0.000	0.000
P16	Stair 3	0.530	0.000	1.100	Reducible	0.000	0.000
P17	Stair 4	2.300	0.000	4.500	Reducible	0.000	0.000
P18	Stair 5	3.300	0.000	6.500	Reducible	0.000	0.000

Floor Map

Floor Type: PH1



Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Decks:	Deck Type	Orientation
	VERCO W3 Formlok	0.00 degrees

5

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH1 **Beam Number = 19**

SPAN INFORMATION (ft): I-End (90.58,123.58) J-End (90.58,134.58)
Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 11.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.150	0.000	0.0%	Red
	11.000	0.150	0.000		

SHEAR: Max V (DL+LL) = 0.82 kips fv = 0.28 ksi Fv = 18.96 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	2.3	5.5	11.0	1.00	0.94	30.00	0.94	15.24
Controlling		2.3	5.5	11.0	1.00	---	---	0.94	15.24

REACTIONS (kips):

	Left	Right
DL reaction	0.82	0.82
Max +total reaction	0.82	0.82

DEFLECTIONS:

Dead load (in)	at	5.50 ft	=	-0.009	L/D = 15416
Live load (in)	at	5.50 ft	=	0.000	
Net Total load (in)	at	5.50 ft	=	-0.009	L/D = 15416

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH1 **Beam Number = 20**

SPAN INFORMATION (ft): I-End (101.58,91.58) J-End (101.58,123.58)

Beam Size (User Selected) = W16X36 Fy = 50.0 ksi
Total Beam Length (ft) = 32.00
Cantilever on left (ft) = 10.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	
0.000	0.05	0.00	0.0	1.31	0.00	0.0	0.00	0.0	
		-1.14	0.0	0.00	0.00	0.0	0.00	0.0	0.21

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.735	0.210	0.0%	Roof
	10.000	0.735	0.210		
2	10.000	0.735	0.210	6.5%	Roof
	32.000	0.735	0.210		

SHEAR: Max V (DL+LL) = 13.01 kips fv = 2.77 ksi Fv = 20.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Left	Max -	-60.9	10.0	10.0	1.00	12.93	30.00	12.93	26.15
Center	Max +	44.1	22.3	0.0	1.00	9.38	33.00	9.38	33.00
	Max -	-60.9	10.0	22.0	1.75	12.93	30.00	12.93	15.04
Controlling		-60.9	10.0	22.0	1.75	---	---	12.93	15.04

REACTIONS (kips):

	Left	Right
DL reaction	17.18	6.39
Max +LL reaction	6.65	2.68
Max -LL reaction	-1.65	-1.07
Max +total reaction	23.83	9.07

DEFLECTIONS:

Left cantilever:

Dead load (in)	=	-0.054	L/D	=	4418
Pos Live load (in)	=	-0.324	L/D	=	742
Neg Live load (in)	=	0.277	L/D	=	866
Pos Total load (in)	=	-0.378	L/D	=	635
Neg Total load (in)	=	0.223	L/D	=	1076

Center span:

Dead load (in)	at	21.55 ft	=	-0.150	L/D	=	1758
Live load (in)	at	21.55 ft	=	-0.124	L/D	=	2123
Net Total load (in)	at	21.55 ft	=	-0.275	L/D	=	962

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH1 **Beam Number = 22**

SPAN INFORMATION (ft): I-End (123.58,101.58) J-End (123.58,123.58)
Beam Size (User Selected) = W40X149 Fy = 50.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
10.750	0.18	0.00	0.0	0.37	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.360	0.750	---	NonR
	10.750	0.360	0.750		
2	10.750	0.030	0.063	---	NonR
	22.000	0.030	0.063		
3	0.000	0.330	0.687	---	NonR
	22.000	0.330	0.687		

SHEAR: Max V (DL+LL) = 20.76 kips fv = 0.90 ksi Fv = 18.52 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	101.3	9.8	0.0	1.00	2.37	33.00	2.37	33.00
Controlling		101.3	9.8	0.0	1.00	2.37	33.00	---	---

REACTIONS (kips):

	Left	Right
DL reaction	6.73	4.91
Max +LL reaction	14.03	10.24
Max +total reaction	20.76	15.15

DEFLECTIONS:

Dead load (in)	at	10.67 ft =	-0.010	L/D =	26733
Live load (in)	at	10.67 ft =	-0.021	L/D =	12832
Net Total load (in)	at	10.67 ft =	-0.030	L/D =	8670

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH1 **Beam Number = 23**

SPAN INFORMATION (ft): I-End (123.58,123.58) J-End (123.58,134.58)

Beam Size (User Selected) = W21X50 Fy = 50.0 ksi
Total Beam Length (ft) = 11.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	110.00	110.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	VERCO W3 Formlok	VERCO W3 Formlok

beff (in)	= 33.00	Y bar(in)	=	14.61
Seff (in3)	= 116.69	Str (in3)	=	136.95
Ieff (in4)	= 1459.86	Itr (in4)	=	1894.21
Stud length (in)	= 4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 7.2
\# of studs: Max = 22 Partial = 8 Actual = 8
Number of Stud Rows = 1 Percent of Full Composite Action = 27.33

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	CLL

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	CLL
1	0.000	0.690	0.552	1.437	---	NonR	0.230
	11.000	0.690	0.552	1.437			0.230

SHEAR: Max V (DL+LL) = 11.70 kips fv = 1.48 ksi Fv = 20.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	11.8	5.5	0.0	1.00	1.50	33.00	1.50	33.00
	Max +	32.2	5.5	---	---				
	Mmax/Seff					3.31	33.00	---	---
	Mconst/Sx+Mpost/Seff					3.51	45.00	---	---
Controlling		32.2	5.5	---	---	3.31	33.00	---	---

fc (ksi) = 0.15 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	4.30	4.30
DL reaction	3.79	3.79
Max +LL reaction	7.91	7.91
Max +total reaction	11.70	11.70

DEFLECTIONS:

Initial load (in)	at	5.50 ft =	-0.006	L/D	=	20715

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Live load (in)	at	5.50 ft =	-0.011	L/D	=	11801
Post Comp load (in)	at	5.50 ft =	-0.012	L/D	=	10767
Net Total load (in)	at	5.50 ft =	-0.019	L/D	=	7085

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH1 **Beam Number = 30**

SPAN INFORMATION (ft): I-End (101.58,123.58) J-End (123.58,123.58)
Beam Size (User Selected) = W16X31 Fy = 50.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	
10.000	3.63	0.00	0.0	7.56	0.00	0.0	0.00	0.0	
10.000	3.95	0.00	0.0	2.68	0.00	0.0	1.10	0.0	
		-3.47	0.0	-0.57	0.00	0.0	-0.23	0.0	1.21

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.360	0.000	0.0%	Red
	10.000	0.360	0.000		
2	10.000	0.030	0.063	---	NonR
	22.000	0.030	0.063		

SHEAR: Max V (DL+LL) = 13.41 kips fv = 3.25 ksi Fv = 19.67 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	116.1	10.0	0.0	1.00	29.51	33.00	29.51	33.00
Controlling		116.1	10.0	0.0	1.00	29.51	33.00	---	---

REACTIONS (kips):

	Left	Right
DL reaction	7.02	4.53
Max +LL reaction	6.39	5.70
Max -LL reaction	-2.33	-1.94
Max +total reaction	13.41	10.23

DEFLECTIONS:

Dead load (in)	at	10.67 ft	=	-0.348	L/D =	759
Live load (in)	at	10.67 ft	=	-0.413	L/D =	640
Net Total load (in)	at	10.67 ft	=	-0.760	L/D =	347

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH1 **Beam Number = 43**

SPAN INFORMATION (ft): **I-End (101.58,101.58)** **J-End (123.58,101.58)**
Beam Size (User Selected) = W21X57 Fy = 50.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
10.000	19.71	11.11	0.0	8.91	0.00	0.0	2.33	0.0
11.500	0.53	1.10	0.0	0.00	0.00	0.0	0.00	0.0
17.500	2.30	4.50	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	10.000	0.060	0.125	---	NonR
	22.000	0.060	0.125		

SHEAR: Max V (DL+LL) = 26.99 kips fv = 3.16 ksi Fv = 20.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	257.1	10.0	0.0	1.00	27.80	33.00	27.80	33.00
Controlling		257.1	10.0	0.0	1.00	27.80	33.00	---	---

REACTIONS (kips):

	Left	Right
DL reaction	11.67	11.59
Max +LL reaction	14.04	15.40
Max +total reaction	25.71	26.99

DEFLECTIONS:

Dead load (in)	at	10.78 ft	=	-0.246	L/D =	1071
Live load (in)	at	10.89 ft	=	-0.302	L/D =	873
Net Total load (in)	at	10.89 ft	=	-0.549	L/D =	481

Gravity Beam Design

Floor Type: PH1 **Beam Number = 44**

SPAN INFORMATION (ft): I-End (111.58,91.58) J-End (111.58,123.58)

Beam Size (User Selected) = W21X48 Fy = 50.0 ksi
Total Beam Length (ft) = 32.00
Cantilever on left (ft) = 10.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
0.000	4.18	7.64	0.0	0.62	0.00	0.0	0.00	0.0
20.750	0.18	0.00	0.0	0.37	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	10.000	0.150	0.000	0.0%	Red
	32.000	0.150	0.000		
2	0.000	0.350	0.100	0.0%	Roof
	10.000	0.350	0.100		
3	10.000	0.350	0.100	0.0%	Roof
	32.000	0.350	0.100		
4	0.000	0.060	0.125	---	NonR
	10.000	0.060	0.125		
5	10.000	0.360	0.750	---	NonR
	20.750	0.360	0.750		
6	20.750	0.030	0.063	---	NonR
	32.000	0.030	0.063		

SHEAR: Max V (DL+LL) = 23.26 kips fv = 3.37 ksi Fv = 19.05 ksi

MOMENTS:

Span	Cond	Moment kip-ft	@ ft	Lb ft	Cb	Tension Flange fb	Tension Flange Fb	Compr Flange fb	Compr Flange Fb
Left	Max -	-156.1	10.0	10.0	1.00	20.15	30.00	20.15	27.69
Center	Max +	43.1	20.8	0.0	1.00	5.57	32.81	5.57	32.81
	Max -	-156.1	10.0	10.8	1.52	20.15	30.00	20.15	29.04
Controlling		-156.1	10.0	10.0	1.00	---	---	20.15	27.69

REACTIONS (kips):

	Left	Right
DL reaction	19.71	3.95
Max +LL reaction	22.34	3.78
Max -LL reaction	0.00	-4.27
Max +total reaction	42.05	7.73
Max -total reaction	19.71	-0.31

DEFLECTIONS:

Left cantilever:

Dead load (in)	= -0.203	L/D =	1182
Pos Live load (in)	= -0.616	L/D =	389
Neg Live load (in)	= 0.155	L/D =	1546

Gravity Beam Design

Left cantilever:

Pos Total load (in) = -0.819 L/D = 293

Center span:

Dead load (in)	at	21.66 ft =	-0.018	L/D =	14819
Live load (in)	at	18.03 ft =	0.178	L/D =	1481
Net Total load (in)	at	18.03 ft =	0.174	L/D =	1521

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH1 **Beam Number = 46**

SPAN INFORMATION (ft): I-End (101.58,91.58) J-End (113.33,91.58)

Beam Size (User Selected) = HSS6X4X1/2 Fy = 46.0 ksi
Total Beam Length (ft) = 11.75
Cantilever on right (ft) = 1.75

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
11.750	3.30	6.50	0.0	0.00	0.00	0.0	0.00	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.060	0.125	---	NonR
	10.000	0.060	0.125		

SHEAR: Max V (DL+LL) = 9.80 kips fv = 1.76 ksi Fv = 18.40 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	0.3	1.9	0.0	1.00	0.35	30.36	0.35	30.36
	Max -	-17.2	10.0	10.0	1.75	18.21	27.60	18.21	27.60
Right	Max -	-17.1	10.0	1.8	1.00	18.21	30.36	18.21	30.36
Controlling		-17.1	10.0	10.0	1.75	18.21	27.60	---	---

REACTIONS (kips):

	Left	Right
DL reaction	-0.28	4.18
Max +LL reaction	0.62	8.26
Max -LL reaction	-1.14	0.00
Max +total reaction	0.35	12.44
Max -total reaction	-1.42	4.18

DEFLECTIONS:

Center span:

Dead load (in)	at	5.85 ft	=	0.052	L/D =	2315
Live load (in)	at	5.85 ft	=	0.128	L/D =	936
Net Total load (in)	at	5.85 ft	=	0.180	L/D =	666

Right cantilever:

Dead load (in)	=	-0.062	L/D =	679
Pos Live load (in)	=	-0.137	L/D =	306
Neg Live load (in)	=	0.016	L/D =	2622
Pos Total load (in)	=	-0.199	L/D =	211

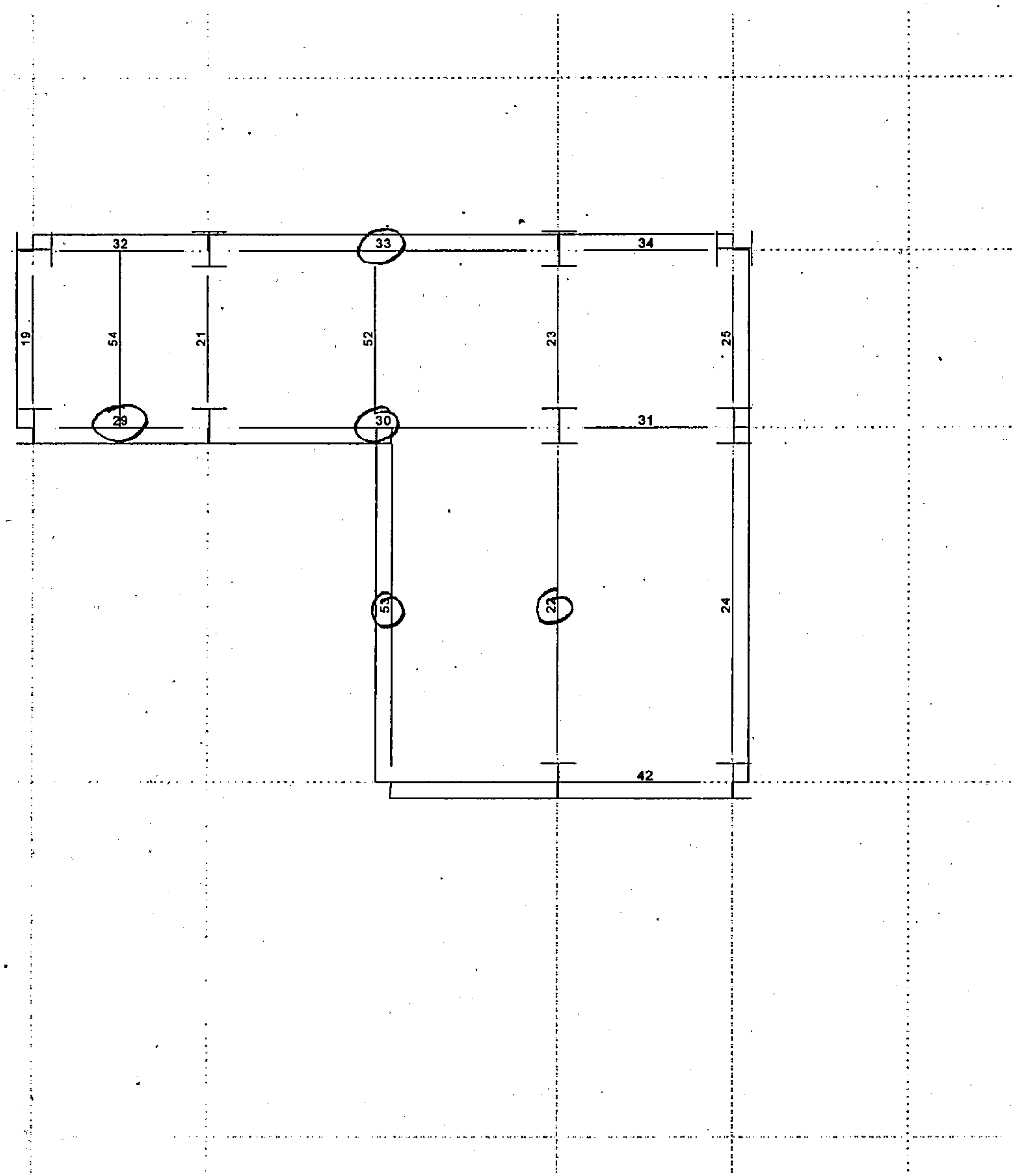
A.5: Elevator Machine Room 2 Framing

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: PH2

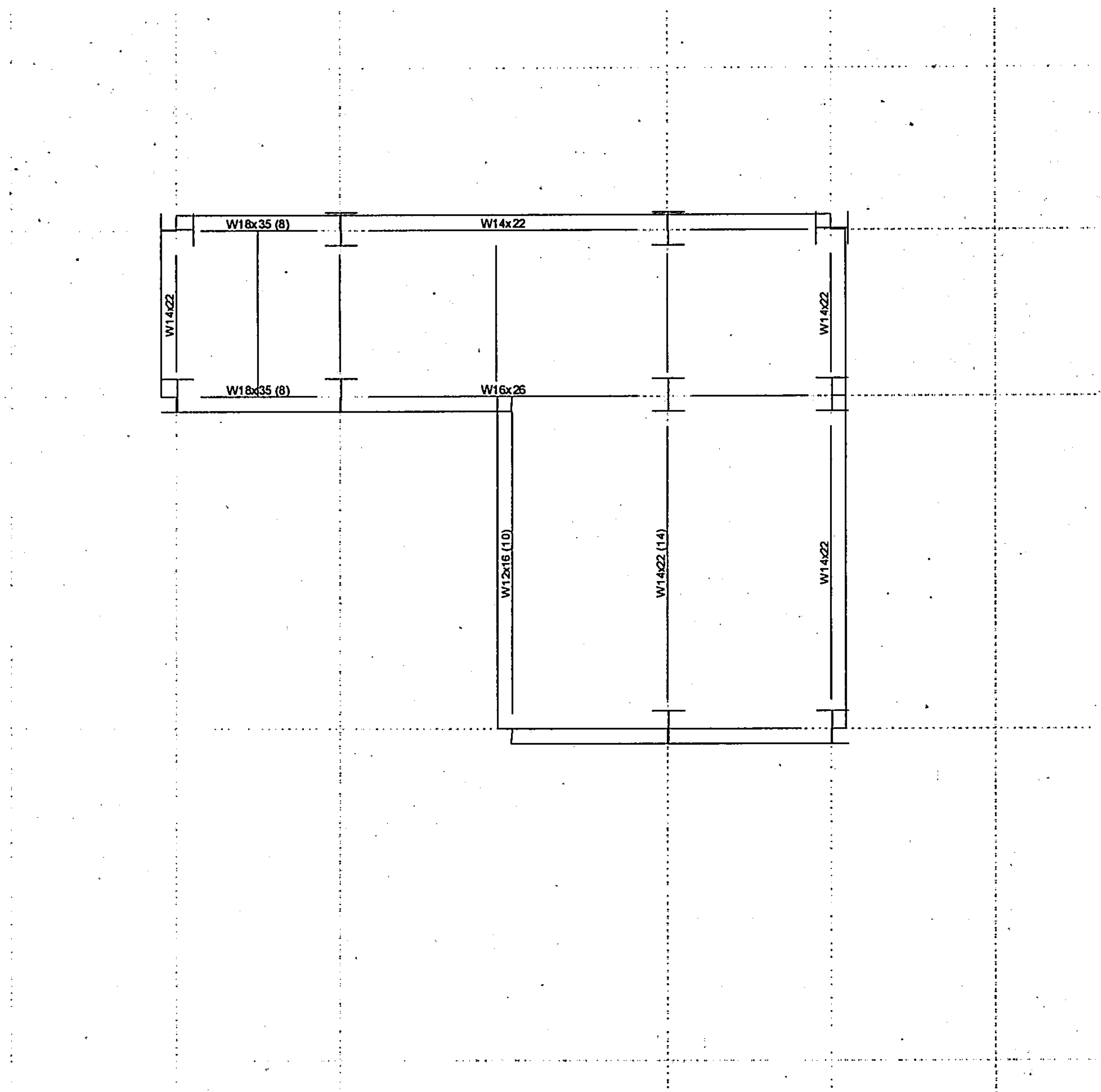


Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: PH2



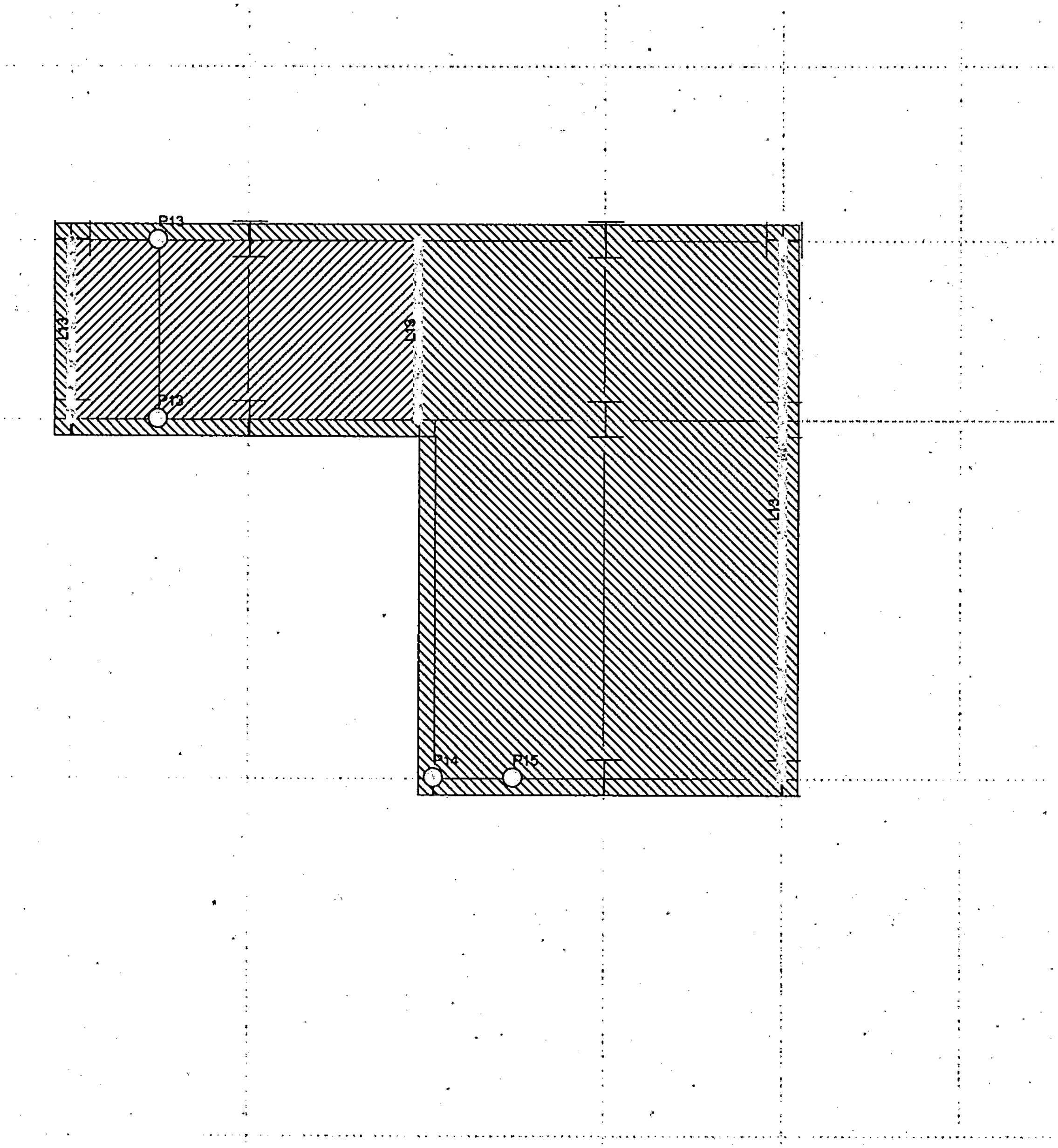
2

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH2



Floor Map

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	(N)ElevMachRm	60.0	48.0	125.0	Unreducible	20.0	0.0
	(N) PH Roof	70.0	48.0	20.0	Roof	20.0	0.0

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L13	15psf x 10'	0.150	0.000	0.000	Reducible	0.000	0.000

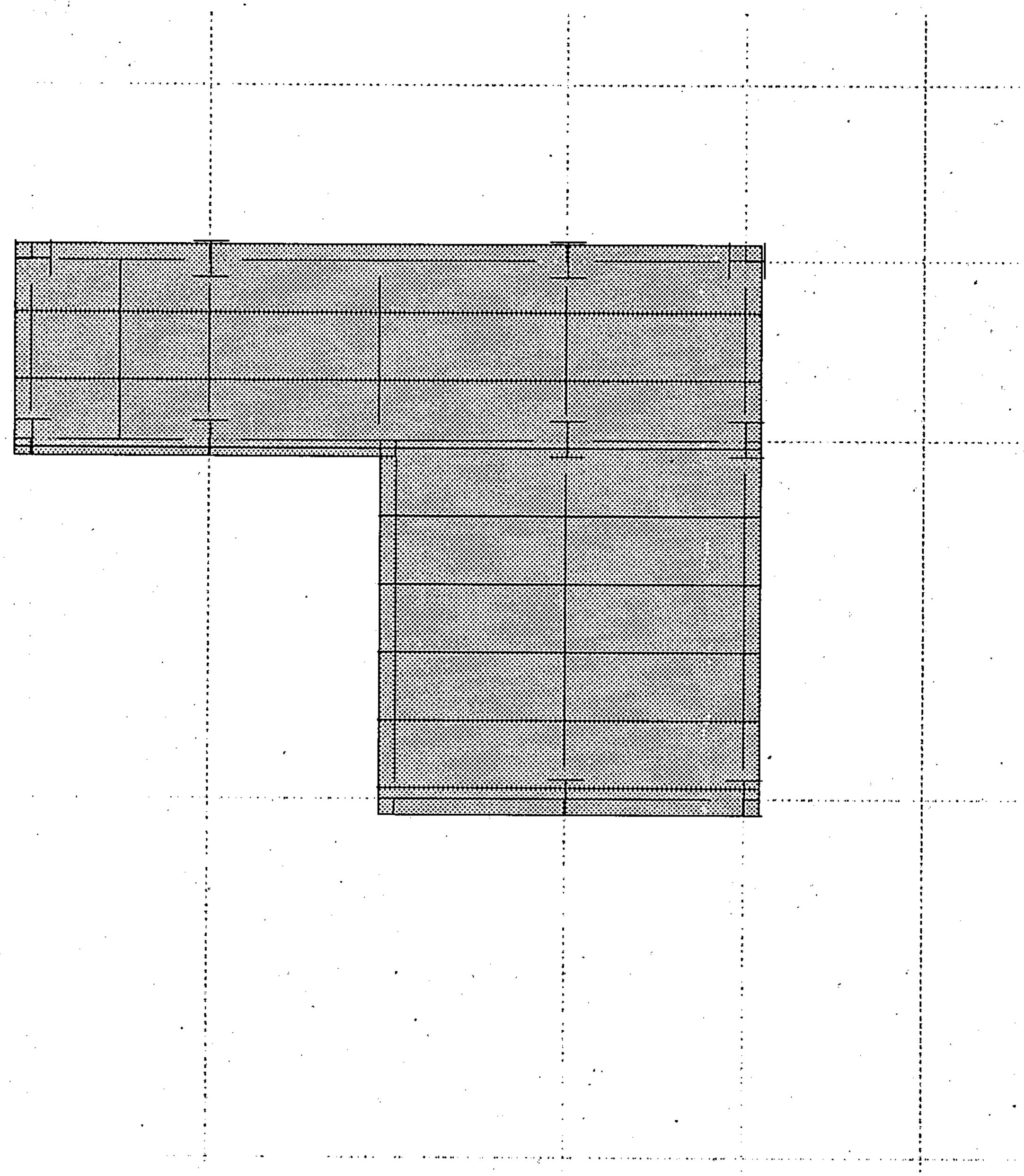
Point Loads

	Label	DL kips	CDL kips	LL kips	Reduction Type	CLL kips	Mass DL kips
P13	Zero	0.000	0.000	0.000	Reducible	0.000	0.000
P14	Stair 1	3.300	0.000	6.500	Reducible	0.000	0.000
P15	Stair 2	1.200	0.000	2.300	Reducible	0.000	0.000

4

Floor Map

Floor Type: PH2



5

Floor Map

Decks:	Deck Type	Orientation
	VERCO W3 Formlok	0.00 degrees

6

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH2 **Beam Number = 22**

SPAN INFORMATION (ft): I-End (123.58,101.58) J-End (123.58,123.58)
Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 22.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	110.00	110.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	VERCO W3 Formlok	VERCO W3 Formlok

beff (in)	=	66.00	Y bar(in)	=	14.03
Seff (in3)	=	42.38	Str (in3)	=	53.04
Ieff (in4)	=	490.28	Itr (in4)	=	722.07
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 7.2
\# of studs: Max = 22 Partial = 12 Actual = 14
Number of Stud Rows = 1 Percent of Full Composite Action = 31.01

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	CLL
1	0.000	0.752	0.516	0.215	6.9%	Roof	0.215
	22.000	0.752	0.516	0.215			0.215

SHEAR: Max V (DL+LL) = 10.48 kips fv = 3.50 ksi Fv = 18.96 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	44.2	11.0	0.0	1.00	18.30	33.00	18.30	33.00
	Max +	57.6	11.0	---	---				
	Mmax/Seff					16.32	33.00	---	---
	Mconst/Sx+Mpost/Seff					20.40	45.00	---	---
Controlling		44.2	11.0	0.0	1.00	18.30	33.00	---	---

fc (ksi) = 0.18 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	8.04	8.04
DL reaction	8.28	8.28
Max +LL reaction	2.20	2.20
Max +total reaction	10.48	10.48

DEFLECTIONS:

Initial load (in)	at	11.00 ft =	-0.471	L/D =	560
Live load (in)	at	11.00 ft =	-0.074	L/D =	3559
Post Comp load (in)	at	11.00 ft =	-0.162	L/D =	1631
Net Total load (in)	at	11.00 ft =	-0.633	L/D =	417

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH2 **Beam Number = 29**

SPAN INFORMATION (ft): I-End (90.58,123.58) J-End (101.58,123.58)
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 11.00

COMPOSITE PROPERTIES (Not Shored):

			Left			Right
Concrete thickness (in)			2.50			2.50
Unit weight concrete (pcf)			110.00			110.00
f'c (ksi)			3.00			3.00
Decking Orientation			parallel			parallel
Decking type			VERCO W3 Formlok			VERCO W3 Formlok
beff (in)	=	28.50	Y bar(in)		=	14.22
Seff (in3)	=	73.17	Str (in3)		=	87.92
Ieff (in4)	=	862.26	Itr (in4)		=	1195.93
Stud length (in)	=	4.50	Stud diam (in)		=	0.75

Stud Capacity (kips) q = 9.6
\# of studs: Full = 32 Partial = 8 Actual = 8
Number of Stud Rows = 1 Percent of Full Composite Action = 26.37

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	CLL
5.500	1.81	1.45	0.00	0.0	3.78	0.00	0.0	0.00	0.0	0.60

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	CLL
1	0.000	0.070	0.048	0.020	0.0%	Roof	0.020
	11.000	0.070	0.048	0.020			0.020

SHEAR: Max V (DL+LL) = 3.29 kips fv = 0.65 ksi Fv = 19.13 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	6.7	5.5	0.0	1.00	1.39	33.00	1.39	33.00
	Max +	16.7	5.5	---	---				
	Mmax/Seff					2.75	33.00	---	---
	Mconst/Sx+Mpost/Seff					2.96	45.00	---	---
Controlling		16.7	5.5	---	---	2.75	33.00	---	---

fc (ksi) = 0.09 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	1.40	1.40
DL reaction	1.29	1.29
Max +LL reaction	2.00	2.00
Max +total reaction	3.29	3.29

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

DEFLECTIONS:

Initial load (in)	at	5.50 ft	=	-0.006	L/D =	22865
Live load (in)	at	5.50 ft	=	-0.008	L/D =	17580
Post Comp load (in)	at	5.50 ft	=	-0.008	L/D =	15540
Net Total load (in)	at	5.50 ft	=	-0.014	L/D =	9252

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH2 **Beam Number = 30**

SPAN INFORMATION (ft): I-End (101.58,123.58) J-End (123.58,123.58)
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
10.500	4.77	0.00	0.0	3.61	0.00	0.0	0.63	0.0
11.500	4.81	0.00	0.0	0.00	0.00	0.0	1.37	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.070	0.020	0.0%	Roof
	11.500	0.070	0.020		

SHEAR: Max V (DL+LL) = 8.43 kips fv = 2.25 ksi Fv = 17.89 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	83.5	10.5	0.0	1.00	26.11	33.00	26.11	33.00
Controlling		83.5	10.5	0.0	1.00	26.11	33.00	—	—

REACTIONS (kips):

	Left	Right
DL reaction	5.39	5.00
Max +LL reaction	3.04	2.80
Max +total reaction	8.43	7.81

DEFLECTIONS:

Dead load (in)	at	11.00 ft =	-0.442	L/D =	597
Live load (in)	at	10.89 ft =	-0.252	L/D =	1046
Net Total load (in)	at	10.89 ft =	-0.695	L/D =	380

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PH2 **Beam Number = 33**

SPAN INFORMATION (ft): I-End (101.58,134.58) J-End (123.58,134.58)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 22.00

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%
10.500	4.77	0.00	0.0	3.61	0.00	0.0	0.63	0.0

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.070	0.020	0.0%	Roof
	22.000	0.070	0.020		

SHEAR: Max V (DL+LL) = 5.70 kips fv = 1.90 ksi Fv = 18.96 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	Max +	54.9	10.5	0.0	1.00	22.72	33.00	22.72	33.00
Controlling		54.9	10.5	0.0	1.00	22.72	33.00	---	---

REACTIONS (kips):

	Left	Right
DL reaction	3.26	3.05
Max +LL reaction	2.44	2.24
Max +total reaction	5.70	5.29

DEFLECTIONS:

Dead load (in)	at	10.89 ft =	-0.380	L/D	=	695
Live load (in)	at	10.89 ft =	-0.299	L/D	=	882
Net Total load (in)	at	10.89 ft =	-0.679	L/D	=	389

Gravity Beam Design

Floor Type: PH2 **Beam Number = 53**

SPAN INFORMATION (ft): I-End (113.08,101.58) J-End (113.08,123.58)

Beam Size (User Selected) = W12X16 Fy = 50.0 ksi
Total Beam Length (ft) = 22.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	110.00	110.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	VERCO W3 Formlok	VERCO W3 Formlok

beff (in)	= 45.00	Y bar(in)	=	12.48
Seff (in3)	= 26.89	Str (in3)	=	34.83
Ieff (in4)	= 278.11	Itr (in4)	=	419.96
Stud length (in)	= 4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) q = 7.2
\# of studs: Max = 22 Partial = 10 Actual = 10
Number of Stud Rows = 1 Percent of Full Composite Action = 30.52

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	CLL
1	0.000	0.070	0.048	0.020	0.0%	Roof	0.020
	22.000	0.070	0.048	0.020			0.020
2	0.000	0.367	0.252	0.105	0.0%	Roof	0.105
	22.000	0.367	0.252	0.105			0.105

SHEAR: Max V (DL+LL) = 6.19 kips fv = 2.34 ksi Fv = 20.00 ksi

MOMENTS:

Span	Cond	Moment	@	Lb	Cb	Tension Flange		Compr Flange	
		kip-ft	ft	ft		fb	Fb	fb	Fb
Center	PreCmp+	25.7	11.0	0.0	1.00	18.04	33.00	18.04	33.00
	Max +	34.0	11.0	---	---				
	Mmax/Seff					15.19	33.00	---	---
	Mconst/Sx+Mpost/Seff					19.82	45.00	---	---
Controlling		25.7	11.0	0.0	1.00	18.04	33.00	---	---

fc (ksi) = 0.18 Fc = 1.35

REACTIONS (kips):

	Left	Right
Initial reaction	4.67	4.67
DL reaction	4.81	4.81
Max +LL reaction	1.37	1.37
Max +total reaction	6.19	6.19

DEFLECTIONS:

Initial load (in)	at	11.00 ft =	-0.529	L/D =	499
Live load (in)	at	11.00 ft =	-0.082	L/D =	3232

Gravity Beam Design

Post Comp load (in)	at	11.00 ft =	-0.172	L/D =	1539
Net Total load (in)	at	11.00 ft =	-0.701	L/D =	377

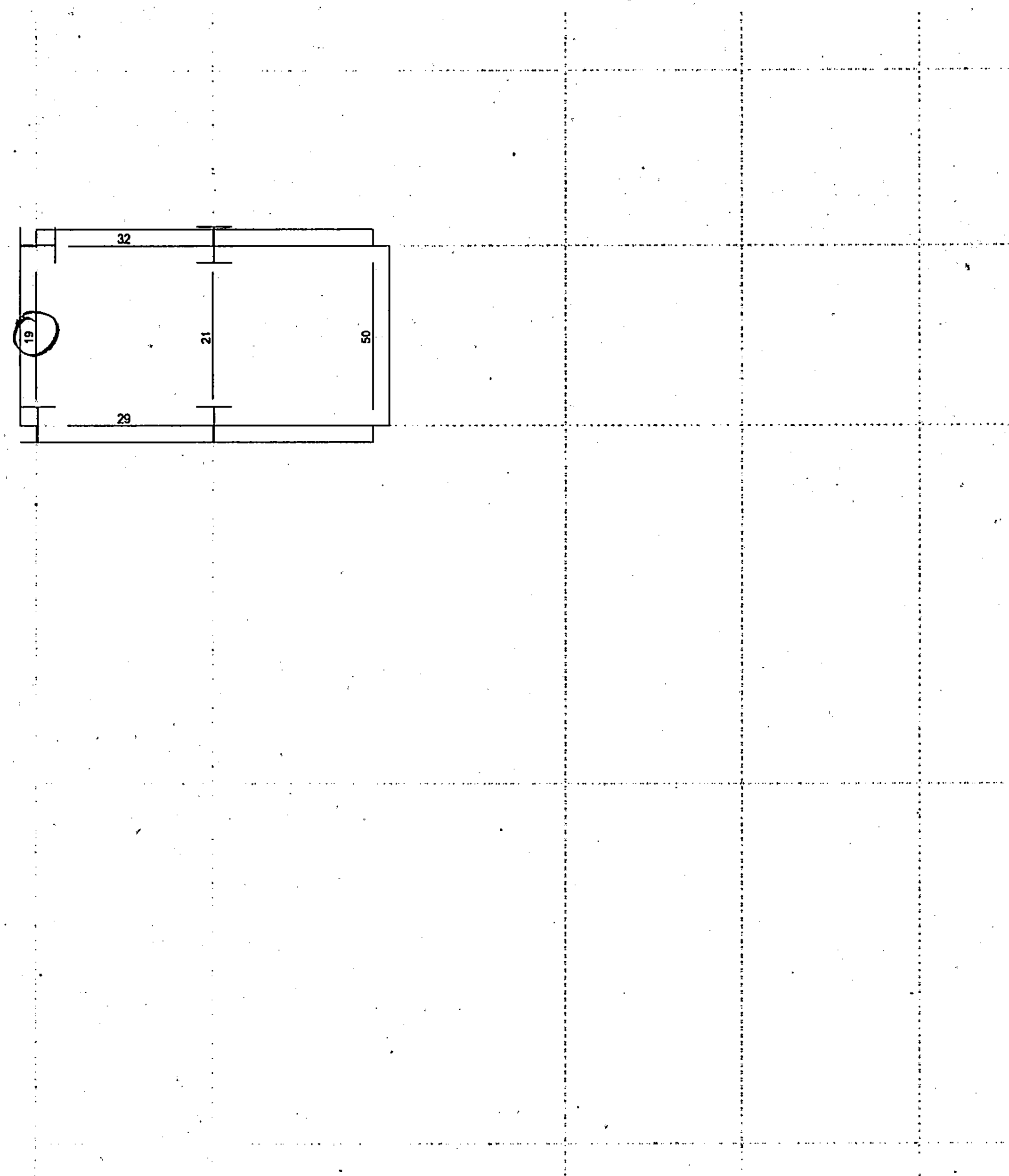
A.6: Elevator Machine Roof Framing

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

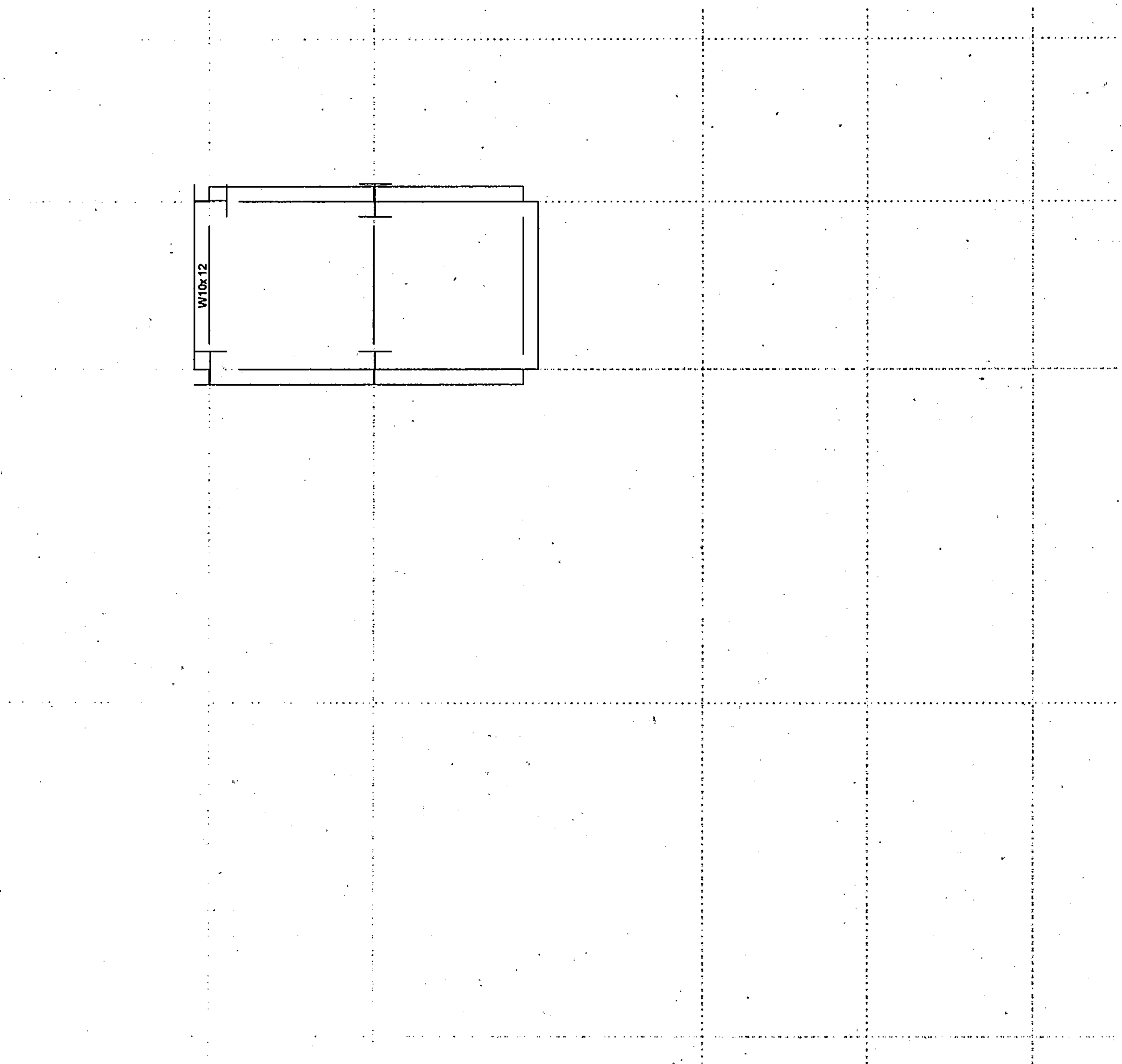
04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: PHRF



Floor Map

Floor Type: PHRF



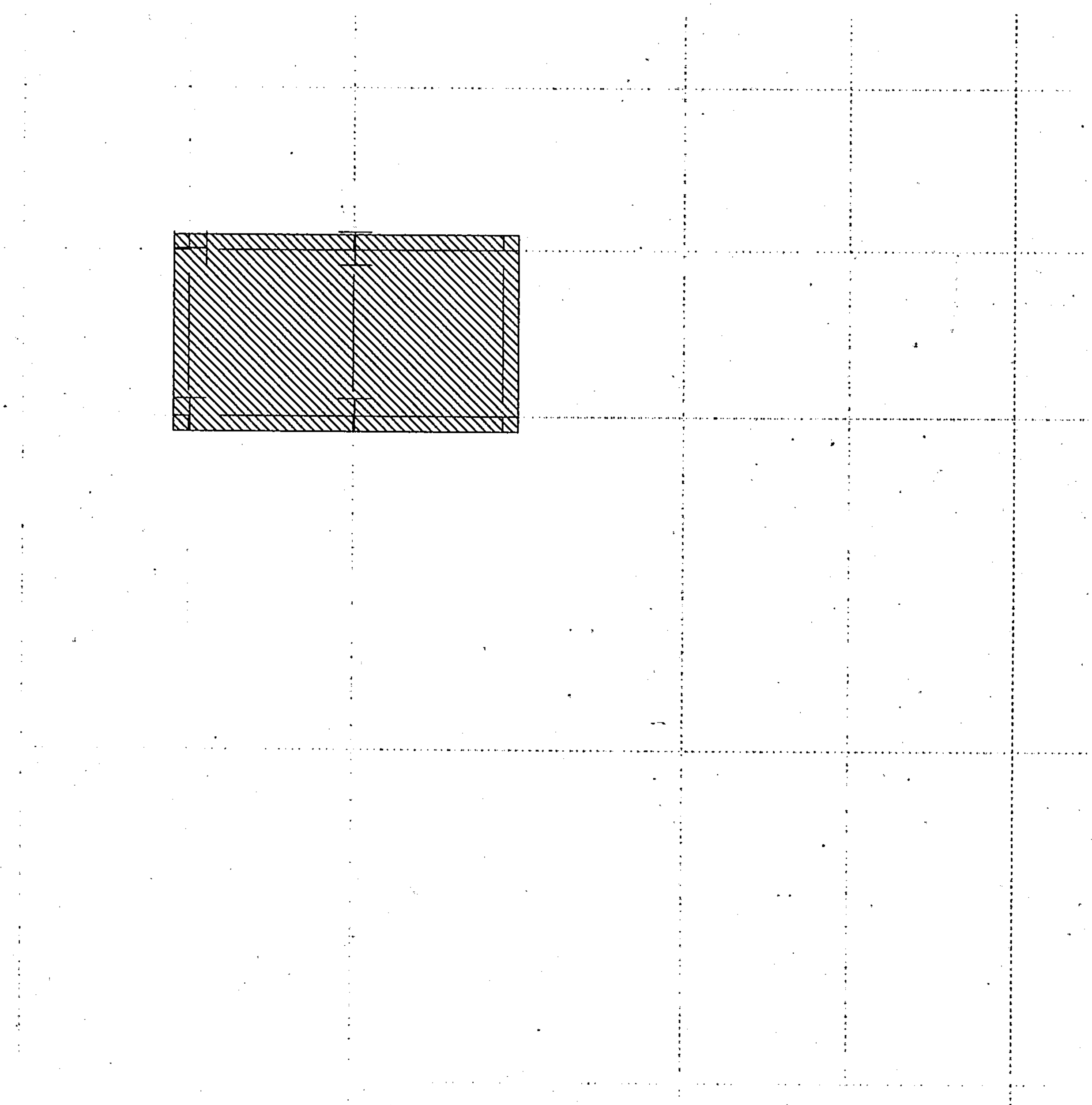
2

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Map

Floor Type: PHRF



3

Floor Map

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	(N) PH Roof	70.0	48.0	20.0	Roof	20.0	0.0

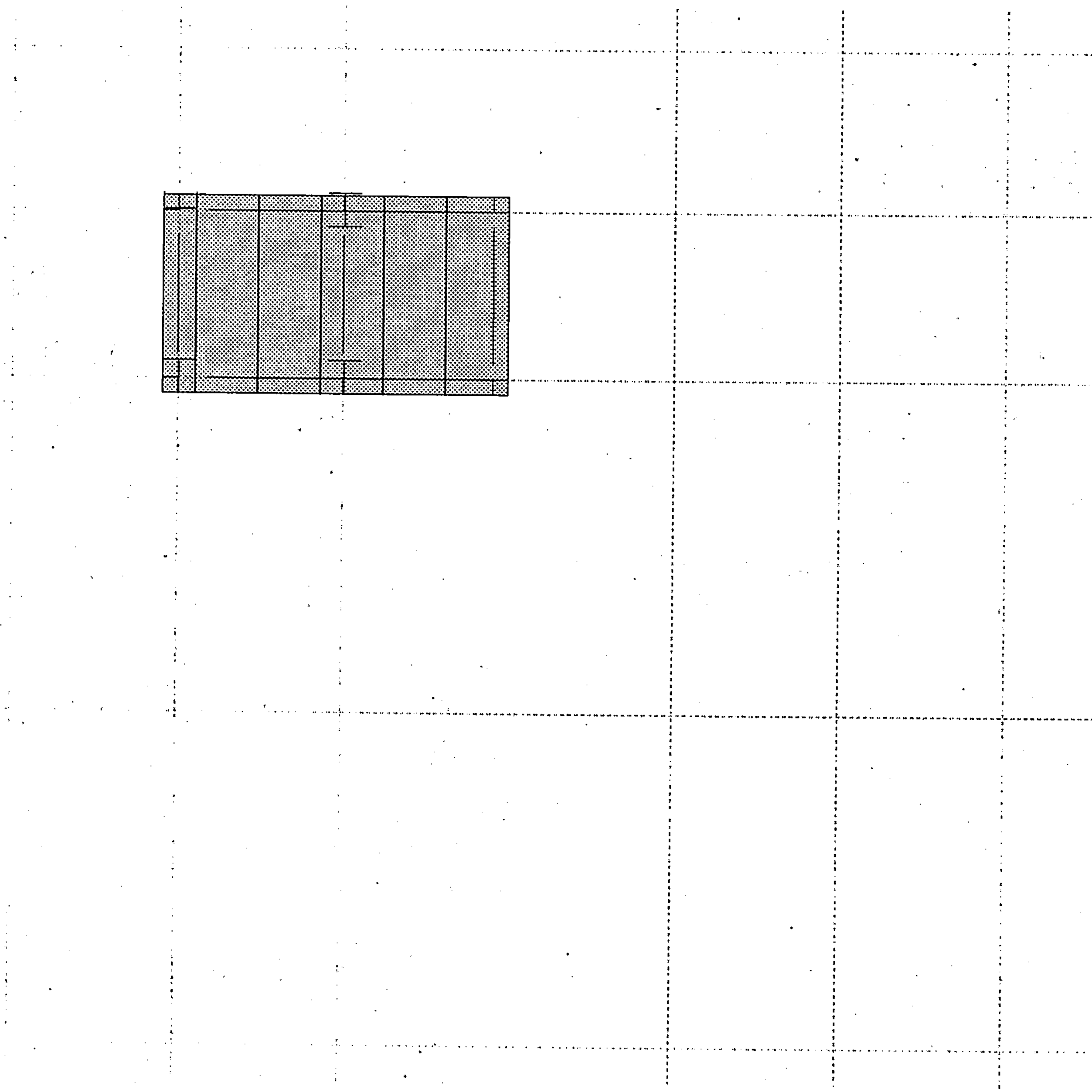
4

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PHRF



Floor Map

Decks:	Deck Type	Orientation
	VERCO W3 Formlok	90.00 degrees

6

Gravity Beam Design

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: PHRF **Beam Number = 19**

SPAN INFORMATION (ft): I-End (90.58,123.58) J-End (90.58,134.58)
Beam Size (User Selected) = W10X12 Fy = 50.0 ksi
Total Beam Length (ft) = 11.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type
1	0.000	0.070	0.020	0.0%	Roof
	11.000	0.070	0.020		

SHEAR: Max V (DL+LL) = 0.49 kips fv = 0.26 ksi Fv = 20.00 ksi

MOMENTS:

Span	Cond	Moment kip-ft	@ ft	Lb ft	Cb	Tension Flange fb	Tension Flange Fb	Compr Flange fb	Compr Flange Fb
Center	Max +	1.4	5.5	0.0	1.00	1.50	32.83	1.50	32.83
Controlling		1.4	5.5	0.0	1.00	1.50	32.83	—	—

REACTIONS (kips):

	Left	Right
DL reaction	0.38	0.38
Max +LL reaction	0.11	0.11
Max +total reaction	0.49	0.49

DEFLECTIONS:

Dead load (in)	at	5.50 ft =	-0.015	L/D =	8931
Live load (in)	at	5.50 ft =	-0.004	L/D =	31259
Net Total load (in)	at	5.50 ft =	-0.019	L/D =	6946

B: Beam Strengthening Design

Title :
Dsgnr:
Description :

Scope :

Job #
Date: 11:05AM, 20 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002
(c)1983-2002 ENERCALC Engineering Software

Built-Up Section Properties

n:\2005\05121.00_hallofjustice\calcs\enercalc

Description Built-up beam, L2, B239

General Information

	Type...					X cg	Y cg
#1	Rectangular	Height	0.7500 in	Width	2.6600 in	0.0000 in	-5.3750 in

Steel Shapes

#1: Name **S10x25.4** Angle **0** deg

Location of Centroid from Datum

Xcg **0.000** in Ycg **0.000** in

Depth	10.0000 in	Ixx	124.0000 in4
Width	4.6610 in	Iyy	6.7900 in4
Area	7.4600 in2	Xbar	2.331 in
		Ybar	5.000 in

Summary

Total Area	9.4550 in2	Ixx	169.569 in4	r xx	4.2349 in
X cg Dist.	0.0000 in	Iyy	7.966 in4	r yy	0.9179 in
Y cg Dist.	1.1341 in	Edge Distances from CG...			
		+X	2.3305 in	S left	3.4183 in3
		-X	-2.3305 in	S right	3.4183 in3
		+Y	6.1341 in	S top	27.6436 in3
		-Y	-4.6159 in	S bottom	36.7360 in3

Composite Steel Beam

Description Level 2, Beam 239

Design Input

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Section Name	**W10X33**	Fy	30.00 ksi
Beam Span	16.500 ft	f'c	3,000.00 psi
Beam Spacing	5.500 ft	Concrete Density	110.00 pcf
Slab Thickness	5.000 in	Stud Diameter	0.750 in
Deck Rib Height	3.000 in	Stud Height	4.000 in
Rib Spacing	12.000 in	Beam Weight Added Internally	
Rib Width	6.000 in	Using Partial Composite Action	
Rib Orientation	Perpendicular	Elastic Modulus	29,000.00 ksi
Beam Location	Slab Both Sides		

Dead Loads *(applied before 75% curing)*

Full Span Uniform Loads...		Point Loads...		
# 1	0.385 k/ft	# 1	k	ft
# 2	0.081 k/ft	# 2	k	ft
# 3	0.897 k/ft	# 3	k	ft

Live Loads *(applied after 75% curing)*

Full Span Uniform Loads...		Point Loads...		
# 1	0.138 k/ft	# 1	k	ft
# 2	0.050 k/ft	# 2	k	ft
# 3	0.550 k/ft	# 3	k	ft

Construction Loads

Point Loads...			Uniform Loads...			
# 1	k	ft	# 1	0.165 k/ft	-->	ft

Summary

OK Shored & Unshored

Using: W10X33, Span = 16.50ft, Slab Thickness = 5.000in, Deck Rib Ht= 3.00in, Rib Spac= 12.00in, Rib Width= 6.00in w/ Slab I

Stress Checks for Shored & Unshored Cases...

@ Bottom of Beam	Actual =	17,507.8 psi	Allowable =	19,999.8 psi	**OK**
Unshored DL Stress	Actual =	18,242.8 psi	Allowable =	19,999.8 psi	**OK**
Actual Shear Stress	Actual =	6,239.3 psi	Allowable =	12,000.0 psi	**OK**

Unshored Stress Check....

(Mdl/Ss + Mll/Strans)	Actual =	22,369.2 psi	Allowable =	27,000.0 psi	**OK**
Mll / Strans(top)	Actual =	296.0 psi	Allowable =	1,350.0 psi	**OK**

Alternate Unshored Stress Check : (Mdl + Mll) / Ss	24,939.3	22,800.0 psi
Shored Concrete Stress Check....(Mdl + Mll) / (Strans:top * n)	855.9	1,350.0 psi

Shear Studs & Shear Transfer

Actual # Studs 8 per 1/2 beam span

		Stud Capacity	5.41 k	V'h : min	31.56 k
Total req'd 1/2 Span	**6 studs**	Vh @ 100%	126.23k	Vh : Used	43.27 k

Zone 1 from	0.000 ft	to	2.750 ft	, Use	3	studs
Zone 2 from	2.750 ft	to	5.500 ft	, Use	3	studs
Zone 3 from	5.500 ft	to	8.250 ft	, Use	2	studs
Zone 4 from	8.250 ft	to	11.000 ft	, Use	2	studs
Zone 5 from	11.000 ft	to	13.750 ft	, Use	3	studs
Zone 6 from	13.750 ft	to	16.500 ft	, Use	3	studs

Composite Steel Beam

Description Level 2, Beam 239

Deflections

I : Transformed	495.17 in4		I : Effective	360.38in4
	Shored		**Unshored**	
Before 75 % Curing	0.223 in	*(after shores removed)*	0.472 in	
Construction Loads Only	0.026 in		0.056 in	
After 75% Curing	0.118 in		0.118 in	
Total Uncured Deflection	0.249 in	: L / 795.3	0.528 in	: L / 375.2
Composite Deflection	0.340 in	: L / 581.5	0.590 in	: L / 335.8

Reactions

Load Combinations...	@ Left	@ Right
Dead + Constuction	12.88 k	12.88 k
Composite	6.09 k	6.09 k
Max DL + LL	17.61 k	17.61 k

Analysis Values

Maximum Moments				**Effective Flange Width...**	
Dead Load Alone	47.51 k-ft	Fb : Allow	19.80 psi	Based on Beam Span	4.125 ft
Dead + Const	53.12 k-ft	n : Strength	9.29	Based on Beam Spacing	5.500 ft
Live Load Only	25.12 k-ft	n : Deflection	13.91		
Dead + Live	72.62 k-ft			Effective Width	4.125 ft

Support Shears

Shear @ Left	17.61 k
Shear @ Right	17.61 k

Section Properties

Section Name	**W10X33**		
Depth	9.730 in	Ixx : Steel Section	170.00 in4
Width	7.960 in	I transformed	572.86 in4
Flange Thick	0.435 in	Strans : top	109.61 in3
Web Thick	0.290 in	Strans : bot	60.28 in3
Area	9.710 in2	Strans : eff @ bot	49.78 in3
Weight	32.982 #/ft	n*Strans : Ef @ top	730.7 in3
I-steel	170.00 in4	X-X Axis from Bot	9.50 in
S steel : top	34.94 in3	Vh @ 100%	126.23 k
S steel : bottom	34.94 in3		

Title :	Job #
Dsgnr:	Date: 10:56AM, 20 APR 07
Description :	
Scope :	

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002

Built-Up Section Properties

n:\2005\05121.00_hallofjustice\calcs\enercalc

Description Built-up beam, L2, B235

General Information

	Type...					X cg	Y cg
#1	Rectangular	Height	0.7500 in	Width	3.0000 in	0.0000 in	-6.3750 in

Steel Shapes

#1: Name **S12x31.8** Angle **0** deg
Location of Centroid from Datum
Xcg **0.000** in Ycg **0.000** in

Depth	12.0000 in	Ixx	218.0000 in4
Width	5.0000 in	Iyy	9.3600 in4
Area	9.3500 in2	Xbar	2.500 in
		Ybar	6.000 in

#2: Name Angle **0** deg
Location of Centroid from Datum
Xcg **0.000** in Ycg **-6.000** in

Depth	0.5000 in	Ixx	0.0000 in4
Width	6.0000	Iyy	0.0000 in4
Area	3.0000 in2	Xbar	0.000 in
		Ybar	0.000 in

Summary

Total Area	14.6000 in2	Ixx	345.895 in4	r xx	4.8674 in
		Iyy	11.048 in4	r yy	0.8699 in
X cg Dist.	0.0000 in	Edge Distances from CG...			
Y cg Dist.	2.2153 in	+X	6.0000 in	S left	4.4190 in3
		-X	-2.5000 in	S right	1.8413 in3
		+Y	8.2153 in	S top	42.1036 in3
		-Y	-4.5347 in	S bottom	76.2778 in3

Title :
Dsgnr:
Description :

Scope :

Job #
Date: 10:56AM, 20 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002

Composite Steel Beam

Description Level 2, Beam 235

Design Input

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Section Name	W12X58	Fy	30.00 ksi
Beam Span	16.500 ft	f'c	3,000.00 psi
Beam Spacing	5.500 ft	Concrete Density	110.00 pcf
Slab Thickness	5.000 in	Stud Diameter	0.750 in
Deck Rib Height	3.000 in	Stud Height	4.000 in
Rib Spacing	12.000 in	Beam Weight Added Internally	
Rib Width	6.000 in	Using Partial Composite Action	
Rib Orientation	Perpendicular		
Beam Location	Slab Both Sides	Elastic Modulus	29,000.00 ksi

Dead Loads *(applied before 75% curing)*

Full Span Uniform Loads...
1 0.770 k/ft

Point Loads...
1 k ft

Live Loads *(applied after 75% curing)*

Full Span Uniform Loads...
1 0.275 k/ft

Point Loads...
1 k ft

Construction Loads

Point Loads...
1 k ft

Uniform Loads...
1 0.275 k/ft --> 16.500 ft

Summary

OK Shored & Unshored

Using: W12X58, Span = 16.50ft, Slab Thickness = 5.000in, Deck Rib Ht= 3.00in, Rib Spac= 12.00in, Rib Width= 6.00in w/ Slab I

Stress Checks for Shored & Unshored Cases...

@ Bottom of Beam	Actual =	4,525.5 psi	Allowable =	19,999.8 psi	OK
Unshored DL Stress	Actual =	5,778.5 psi	Allowable =	19,999.8 psi	OK
Actual Shear Stress	Actual =	2,073.1 psi	Allowable =	12,000.0 psi	OK

Unshored Stress Check....

(Mdl/Ss + Mll/Strans)	Actual =	5,466.0 psi	Allowable =	27,000.0 psi	OK
Mll / Strans(top)	Actual =	76.0 psi	Allowable =	1,350.0 psi	OK

Alternate Unshored Stress Check : (Mdl + Mll) / Ss 5,778.5 22,800.0 psi
Shored Concrete Stress Check....(Mdl + Mll) / (Strans:top * n) 304.8 1,350.0 psi

Shear Studs & Shear Transfer

Actual # Studs 8 per 1/2 beam span

		Stud Capacity	5.41 k	V'h : min	31.56 k
Total req'd 1/2 Span	6 studs	Vh @ 100%	126.23k	Vh : Used	43.27 k

Zone 1 from	0.000 ft	to	2.750 ft	, Use	3 studs
Zone 2 from	2.750 ft	to	5.500 ft	, Use	3 studs
Zone 3 from	5.500 ft	to	8.250 ft	, Use	2 studs
Zone 4 from	8.250 ft	to	11.000 ft	, Use	2 studs
Zone 5 from	11.000 ft	to	13.750 ft	, Use	3 studs
Zone 6 from	13.750 ft	to	16.500 ft	, Use	3 studs

Composite Steel Beam

Description Level 2, Beam 235

Deflections

I : Transformed 988.71 in4 I.: Effective 775.78in4

	Shored		Unshored	
Before 75 % Curing	0.061 in	*(after shores removed)*	0.100 in	
Construction Loads Only	0.020 in		0.033 in	
After 75% Curing	0.020 in		0.020 in	
Total Uncured Deflection	0.082 in	: L / 2423.4	0.133 in	: L / 1483.8
Composite Deflection	0.082 in	: L / 2422.4	0.121 in	: L / 1642.6

Reactions

Load Combinations...	@ Left	@ Right
Dead + Constuction	9.10 k	9.10 k
Composite	2.27 k	2.27 k
Max DL + LL	9.10 k	9.10 k

Analysis Values

Maximum Moments				**Effective Flange Width...**	
Dead Load Alone	28.17 k-ft	Fb : Allow	19.80 psi	Based on Beam Span	4.125 ft
Dead + Const	37.53 k-ft	n : Strength	9.29	Based on Beam Spacing	5.500 ft
Live Load Only	9.36 k-ft	n : Deflection	13.91		
Dead + Live	37.53 k-ft			Effective Width	4.125 ft

Support Shears

Shear @ Left	9.10 k
Shear @ Right	9.10 k

Section Properties

Section Name	**W12X58**		
Depth	12.190 in	Ixx : Steel Section	475.00 in4
Width	10.010 in	I transformed	1,146.15 in4
Flange Thick	0.640 in	Strans : top	159.08 in3
Web Thick	0.360 in	Strans : bot	114.79 in3
Area	17.000 in2	Strans : eff @ bot	99.51 in3
Weight	57.744 #/ft	n*Strans : Ef @ top	1,165.2 in3
I-steel	475.00 in4	X-X Axis from Bot	9.99 in
S steel : top	77.93 in3	Vh @ 100%	126.23 k
S steel : bottom	77.93 in3		

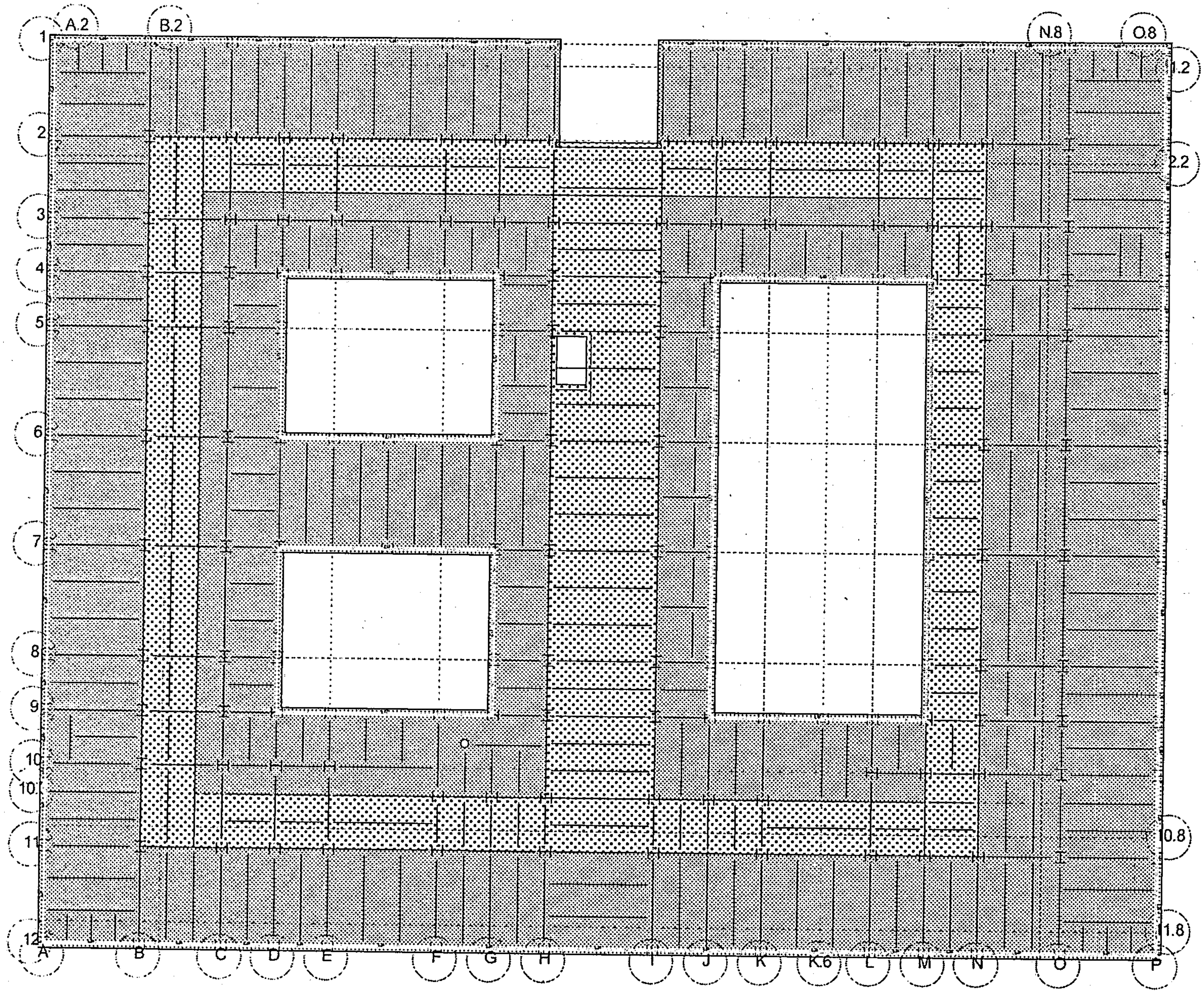
C: RAM Column Design

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L3



Floor Map

Surface Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		psf	psf	psf	Type	psf	psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0

Line Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		k/ft	k/ft	k/ft	Type	k/ft	k/ft
L17	LC L3	1.700	0.000	0.000	Reducible	0.000	0.000
L24	Ext L3	2.300	0.000	0.000	Reducible	0.000	0.000

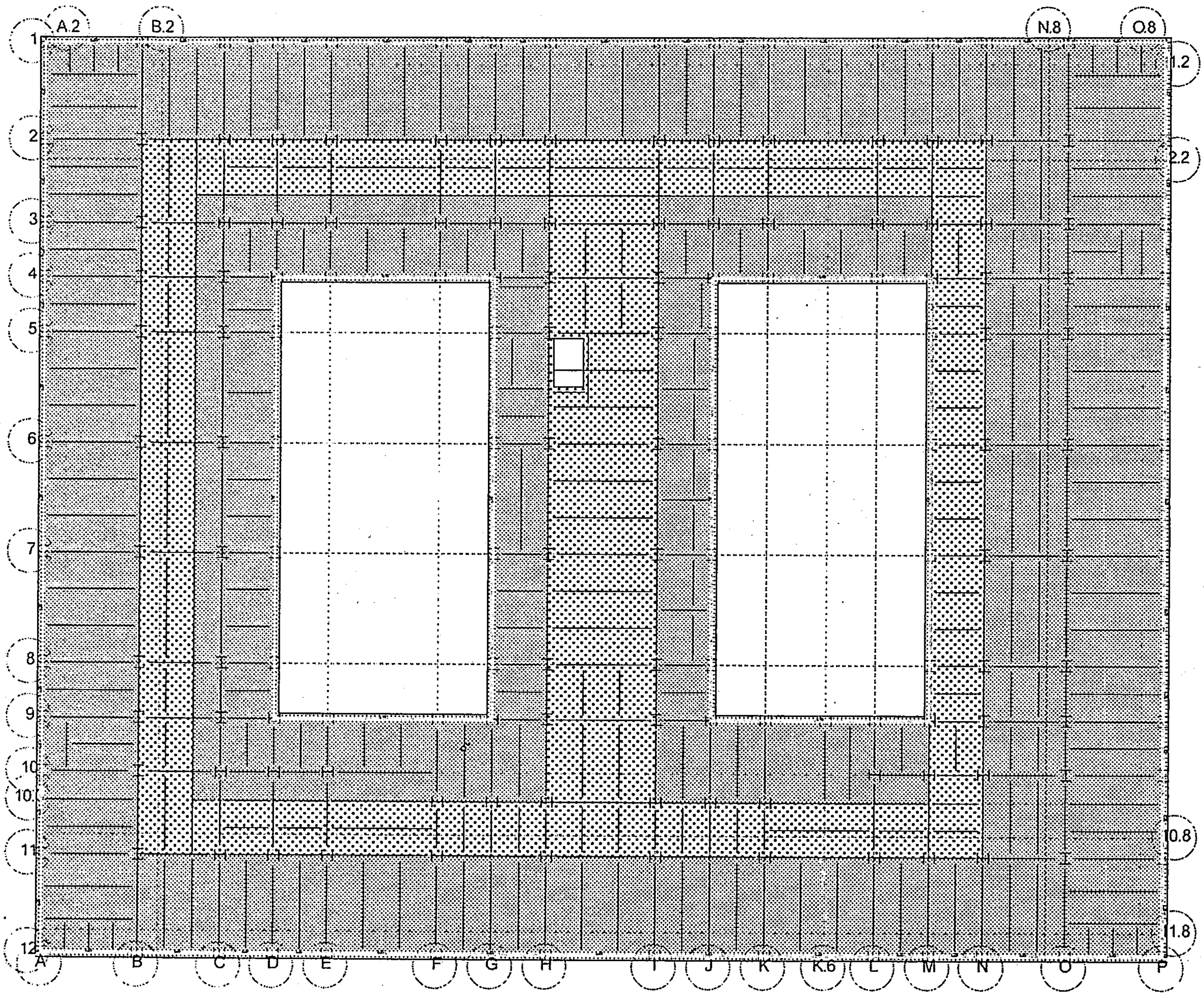
2

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L4



Floor Map

Surface Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		psf	psf	psf	Type	psf	psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0

Line Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		k/ft	k/ft	k/ft	Type	k/ft	k/ft
L18	LC L4	1.450	0.000	0.000	Reducible	0.000	0.000
L25	Ext L4	2.300	0.000	0.000	Reducible	0.000	0.000

Point Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		kips	kips	kips	Type	kips	kips
P8	Hanger L4	8.000	0.000	3.000	Unreducible	0.000	0.000

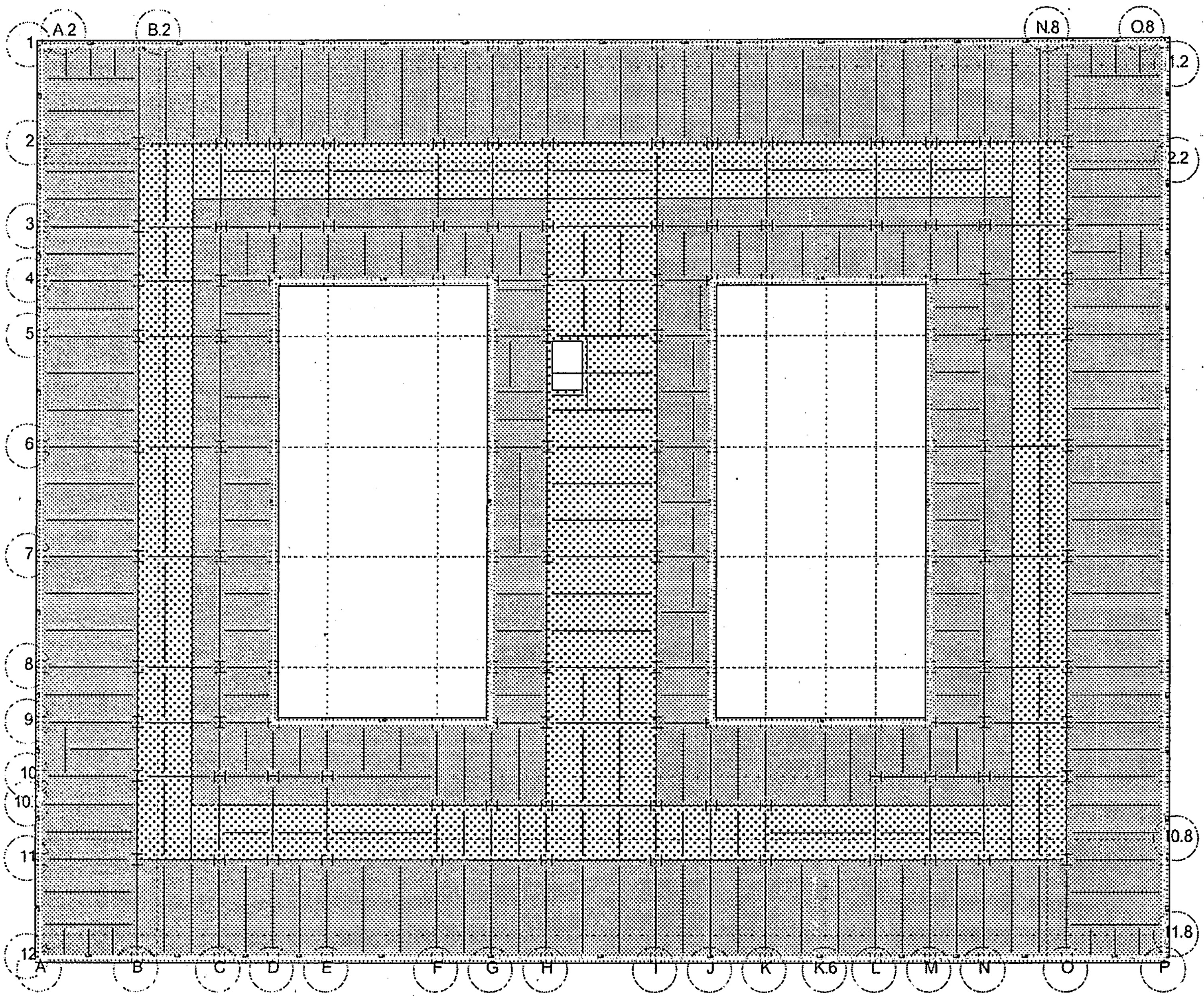
4

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L5



5

Floor Map

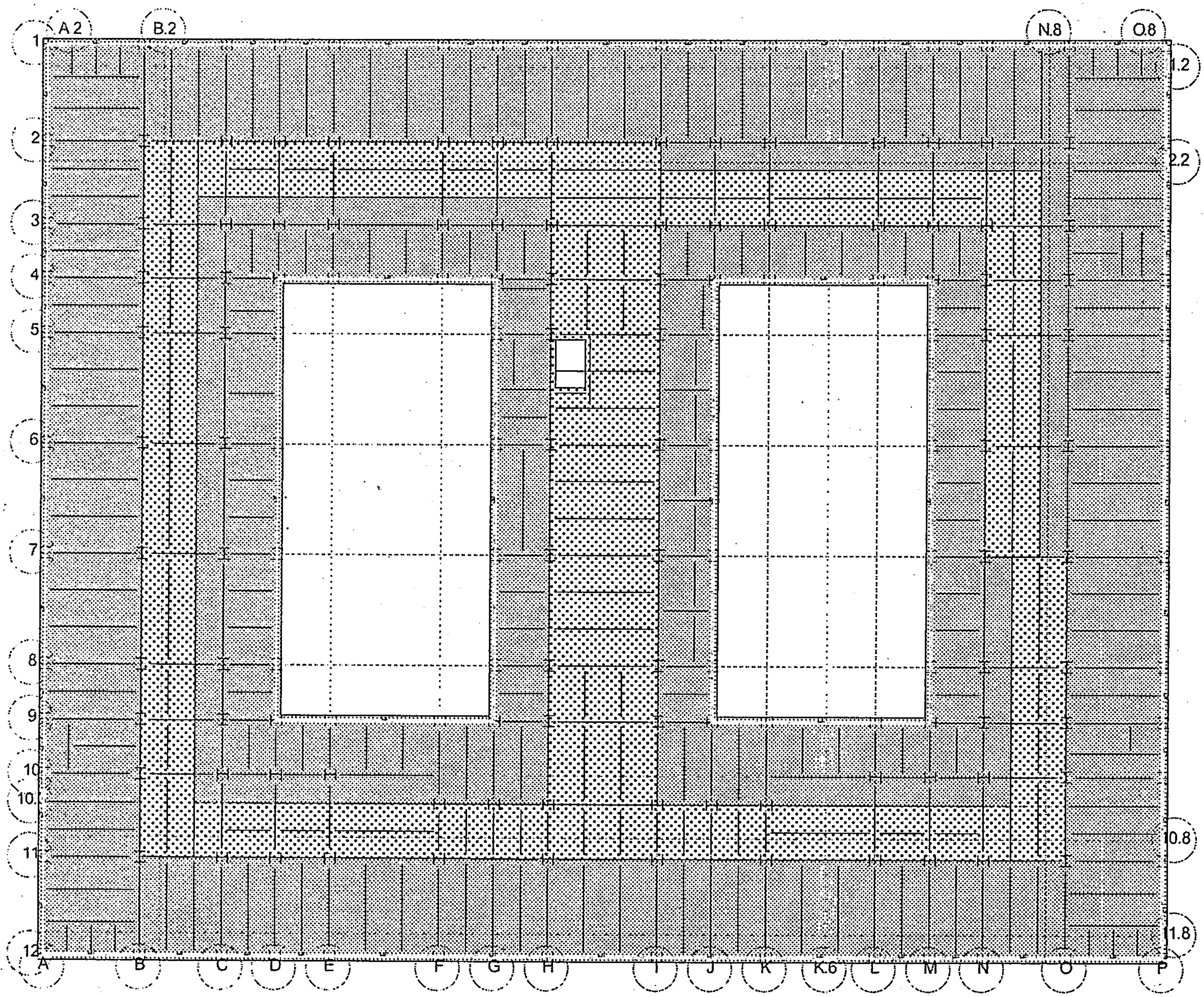
Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L19	LC L5	1.250	0.000	0.000	Reducible	0.000	0.000
L26	Ext L5	2.000	0.000	0.000	Reducible	0.000	0.000

Floor Type: L6



Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L20	LC L6	1.250	0.000	0.000	Reducible	0.000	0.000
L27	Ext L6	2.100	0.000	0.000	Reducible	0.000	0.000

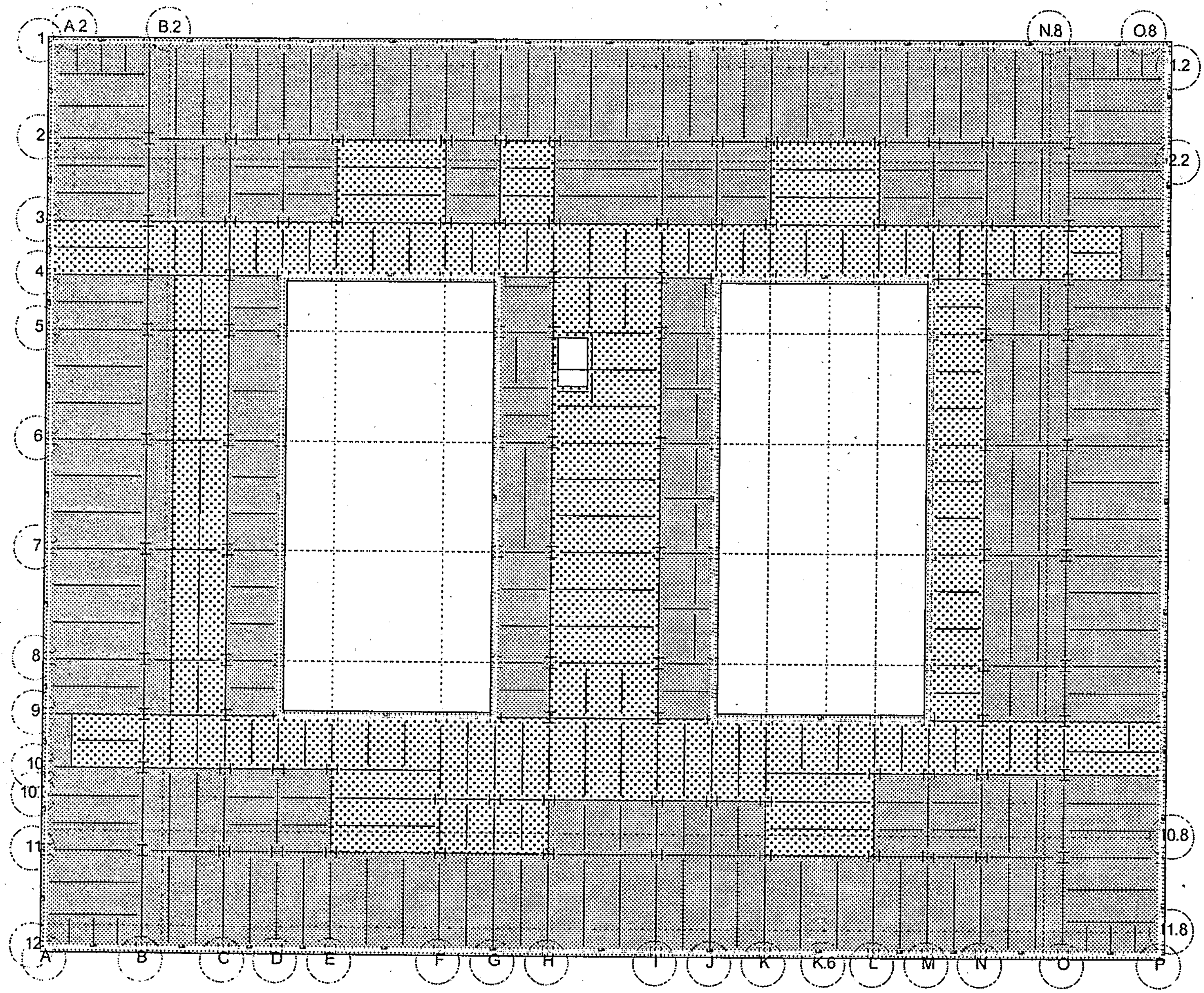
9

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L7



Floor Map

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L21	LC L7	1.750	0.000	0.000	Reducible	0.000	0.000
L28	Ext L7	2.900	0.000	0.000	Reducible	0.000	0.000

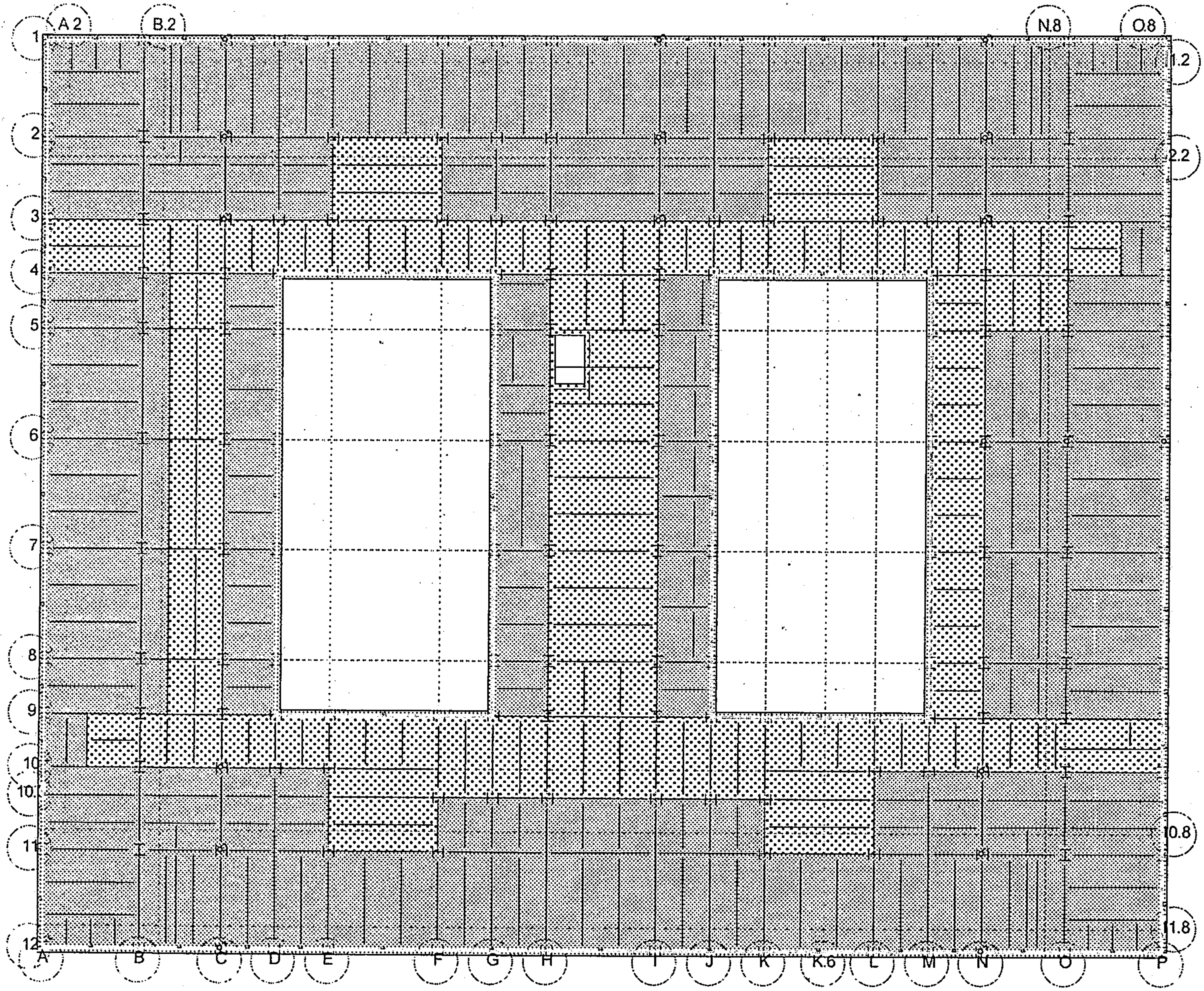
11

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L8



Floor Map

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	Corridor 7" slab	163.0	0.0	100.0	Reducible	0.0	0.0

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L1	LC L8	1.350	0.000	0.000	Reducible	0.000	0.000
L5	Ext L8	2.100	0.000	0.000	Reducible	0.000	0.000

Point Loads

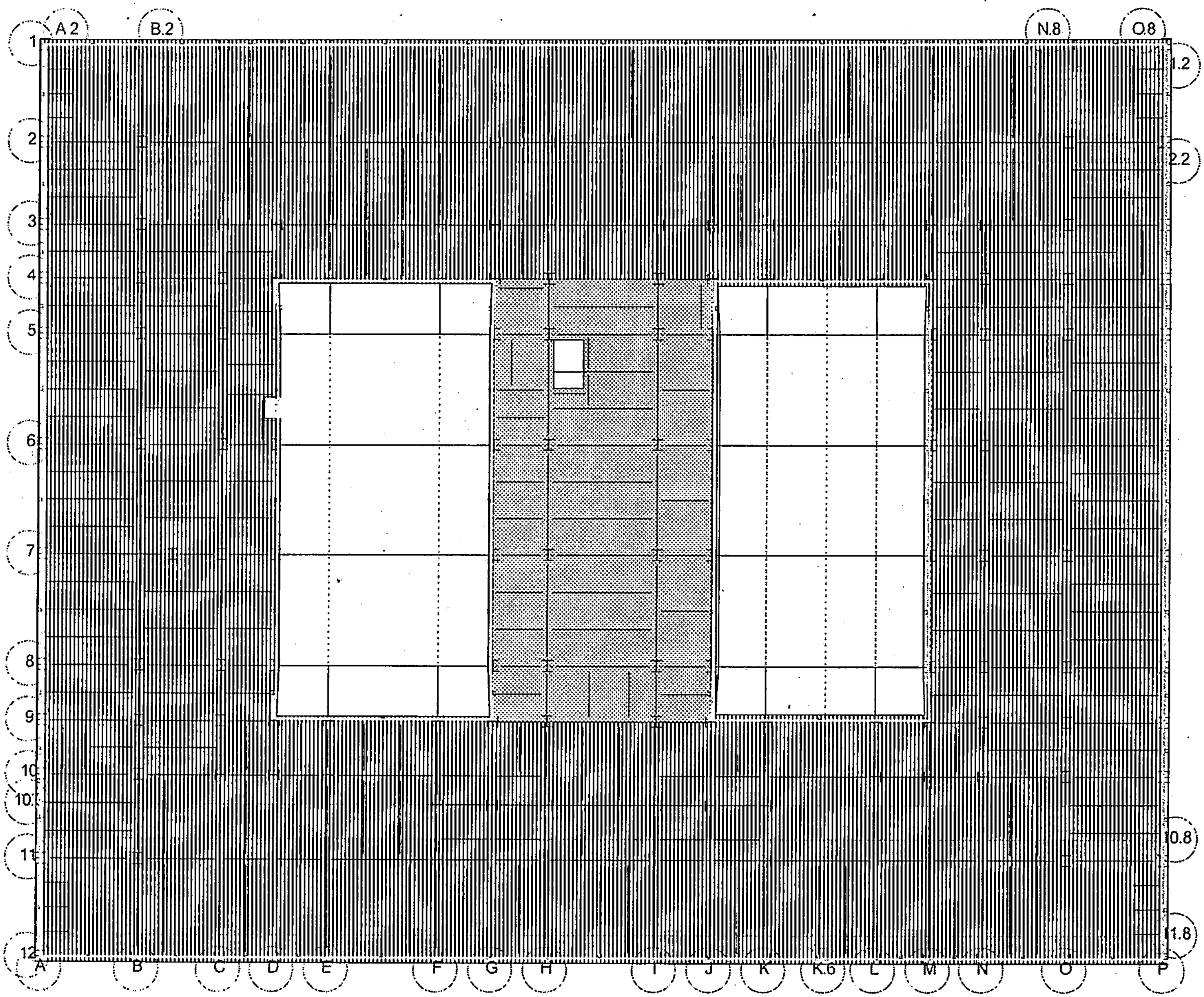
	Label	DL kips	CDL kips	LL kips	Reduction Type	CLL kips	Mass DL kips
P2	-41k	-41.000	0.000	0.000	Reducible	0.000	0.000
P3	-43k	-43.000	0.000	0.000	Reducible	0.000	0.000
P4	-55.4k	-55.400	0.000	0.000	Reducible	0.000	0.000
P5	20.5	20.500	0.000	0.000	Reducible	0.000	0.000
P6	21.5	21.500	0.000	0.000	Reducible	0.000	0.000
P7	27.7	27.700	0.000	0.000	Reducible	0.000	0.000

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 08:19:35
Steel Code: ASD 9th Ed.

Floor Type: L10



Floor Map

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	L10-14 7" slab	172.0	0.0	50.0	Reducible	0.0	0.0

Line Loads

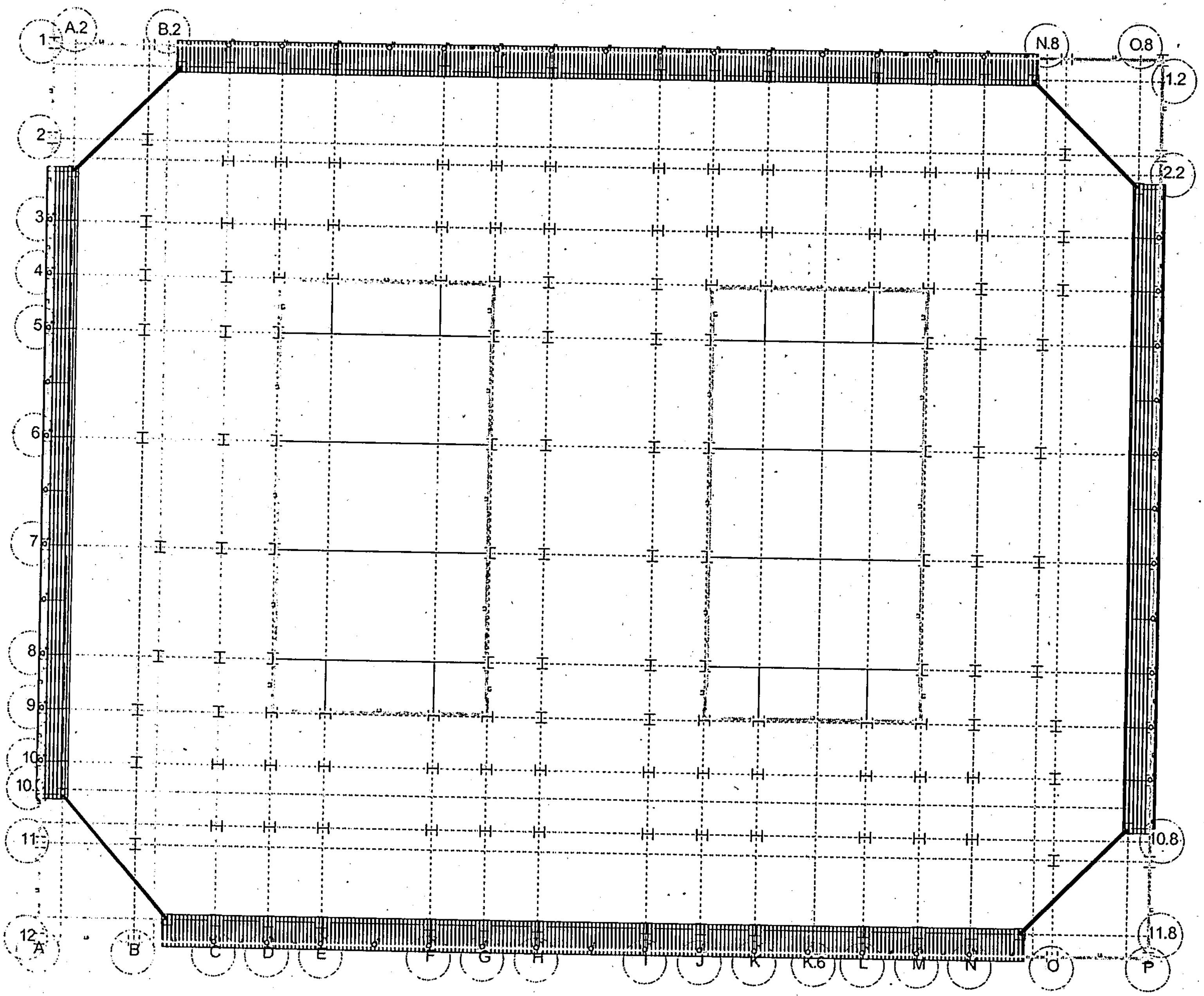
	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L3	LC L10-13	1.000	0.000	0.000	Reducible	0.000	0.000
L7	Ext L10	1.400	0.000	0.000	Reducible	0.000	0.000

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L11



Floor Map

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	L10-14 7" slab	172.0	0.0	50.0	Reducible	0.0	0.0

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L3	LC L10-13	1.000	0.000	0.000	Reducible	0.000	0.000
L8	Ext L11-13	1.200	0.000	0.000	Reducible	0.000	0.000

Point Loads

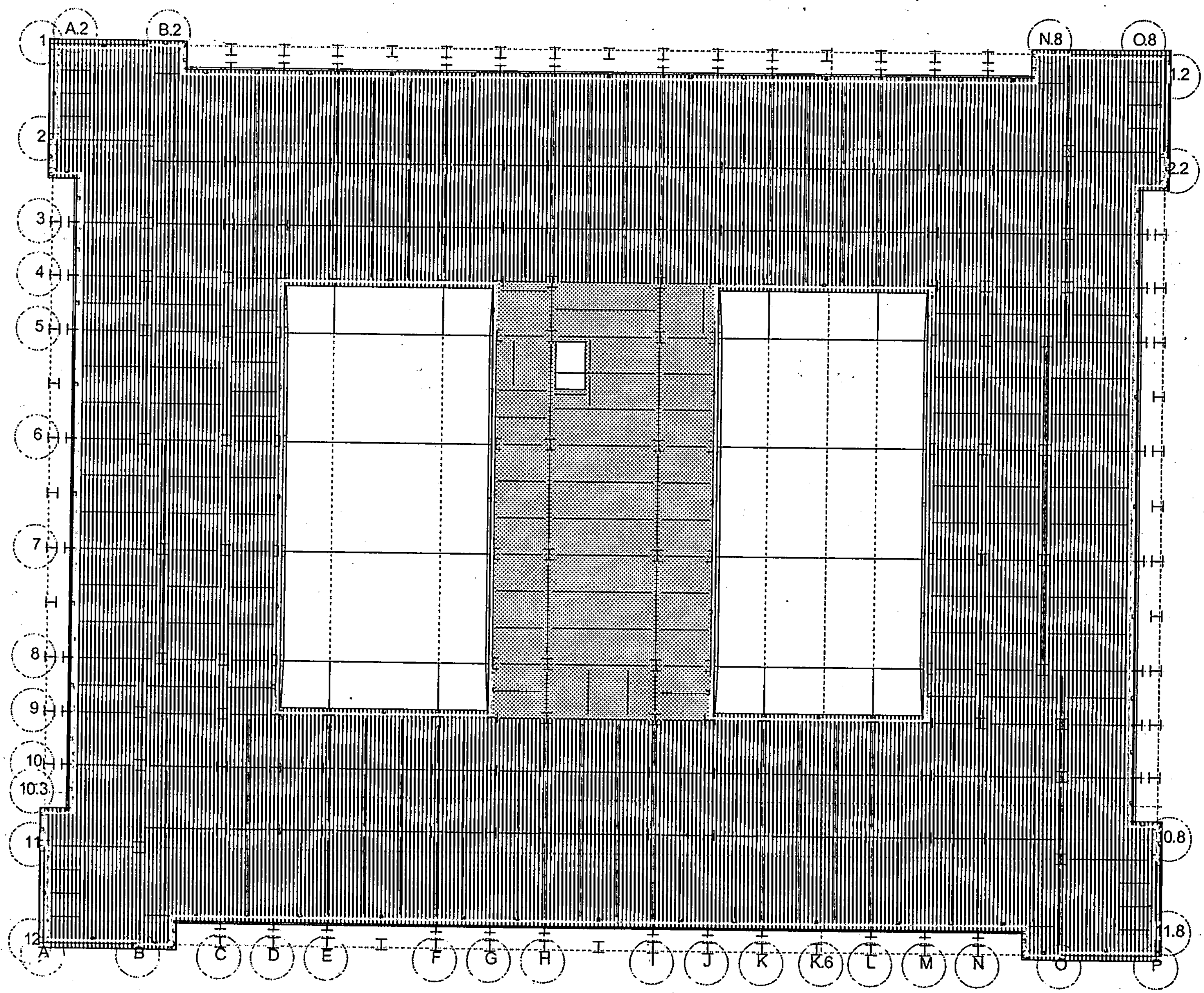
	Label	DL kips	CDL kips	LL kips	Reduction Type	CLL kips	Mass DL kips
P1	Collonade	31.000	0.000	0.000	Reducible	0.000	0.000

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L12



8

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	L10-14 7" slab	172.0	0.0	50.0	Reducible	0.0	0.0

Line Loads

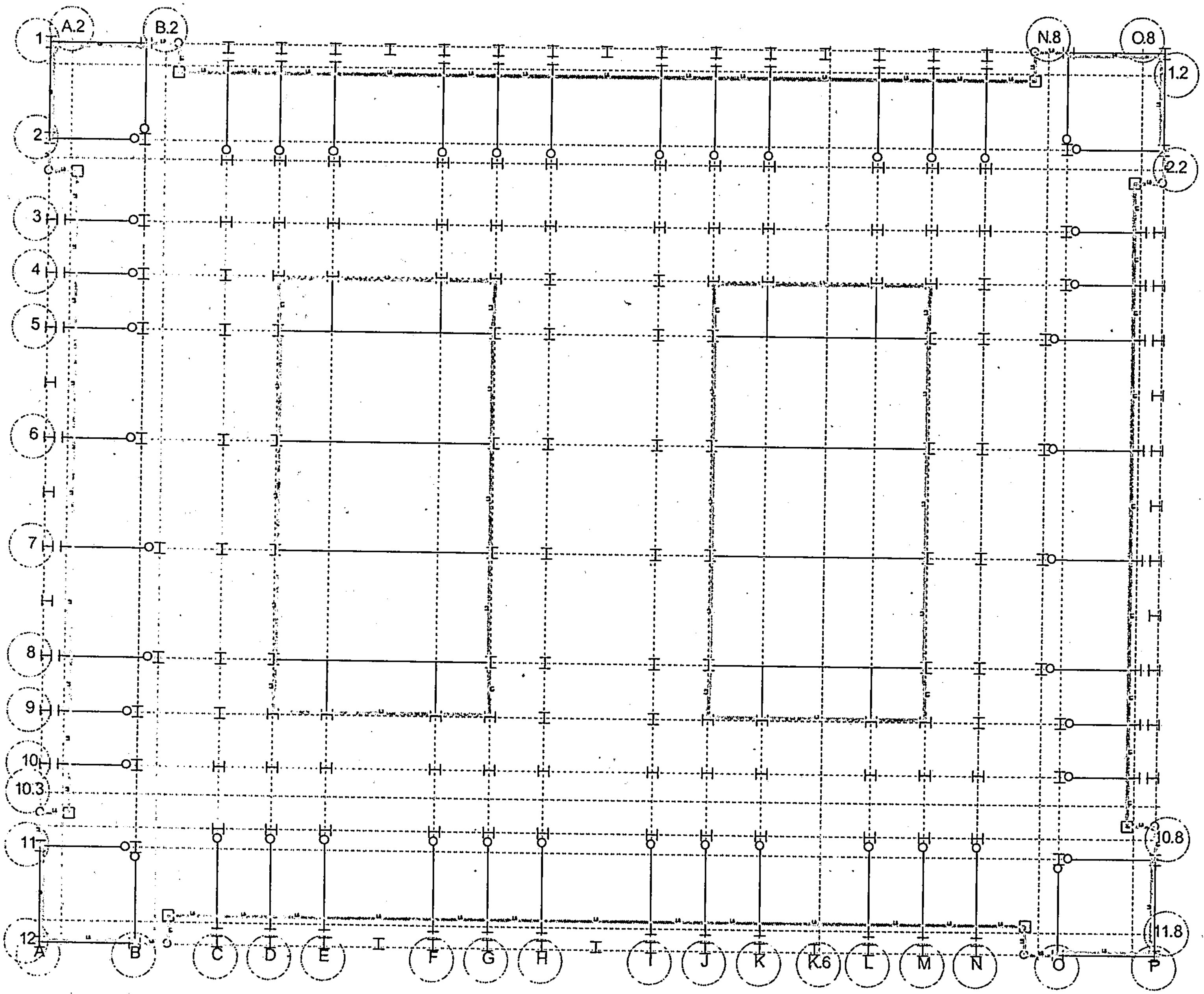
	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L3	LC L10-13	1.000	0.000	0.000	Reducible	0.000	0.000
L8	Ext L11-13	1.200	0.000	0.000	Reducible	0.000	0.000

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L13



Floor Map

Line Loads

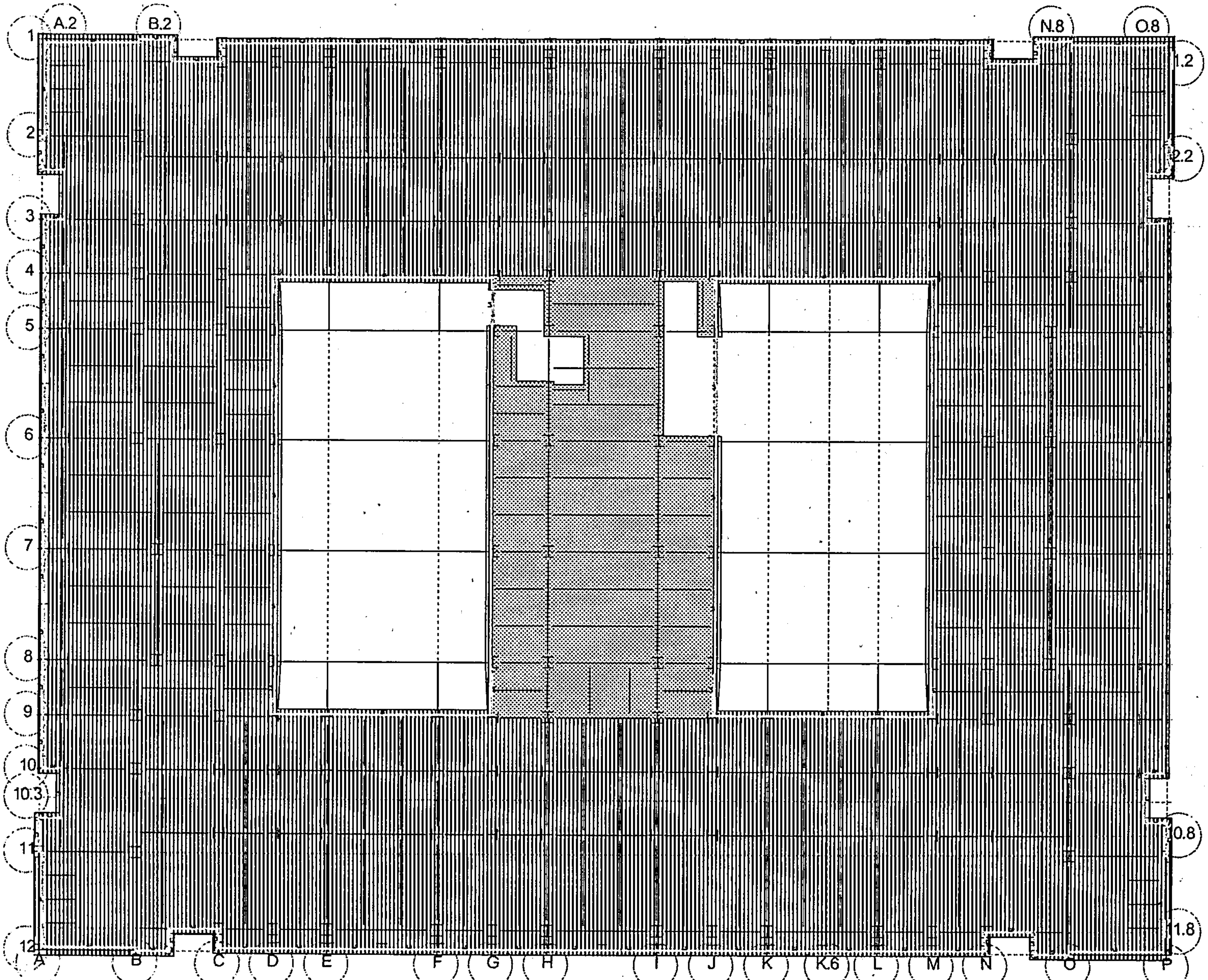
	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L3	LC L10-13	1.000	0.000	0.000	Reducible	0.000	0.000
L8	Ext L11-13	1.200	0.000	0.000	Reducible	0.000	0.000

Floor Map

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: L14



Floor Map

Surface Loads

	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		psf	psf	psf	Type	psf	psf
	TypFloor	140.0	0.0	50.0	Reducible	0.0	0.0
	L10-14 7" slab	172.0	0.0	50.0	Reducible	0.0	0.0

Line Loads

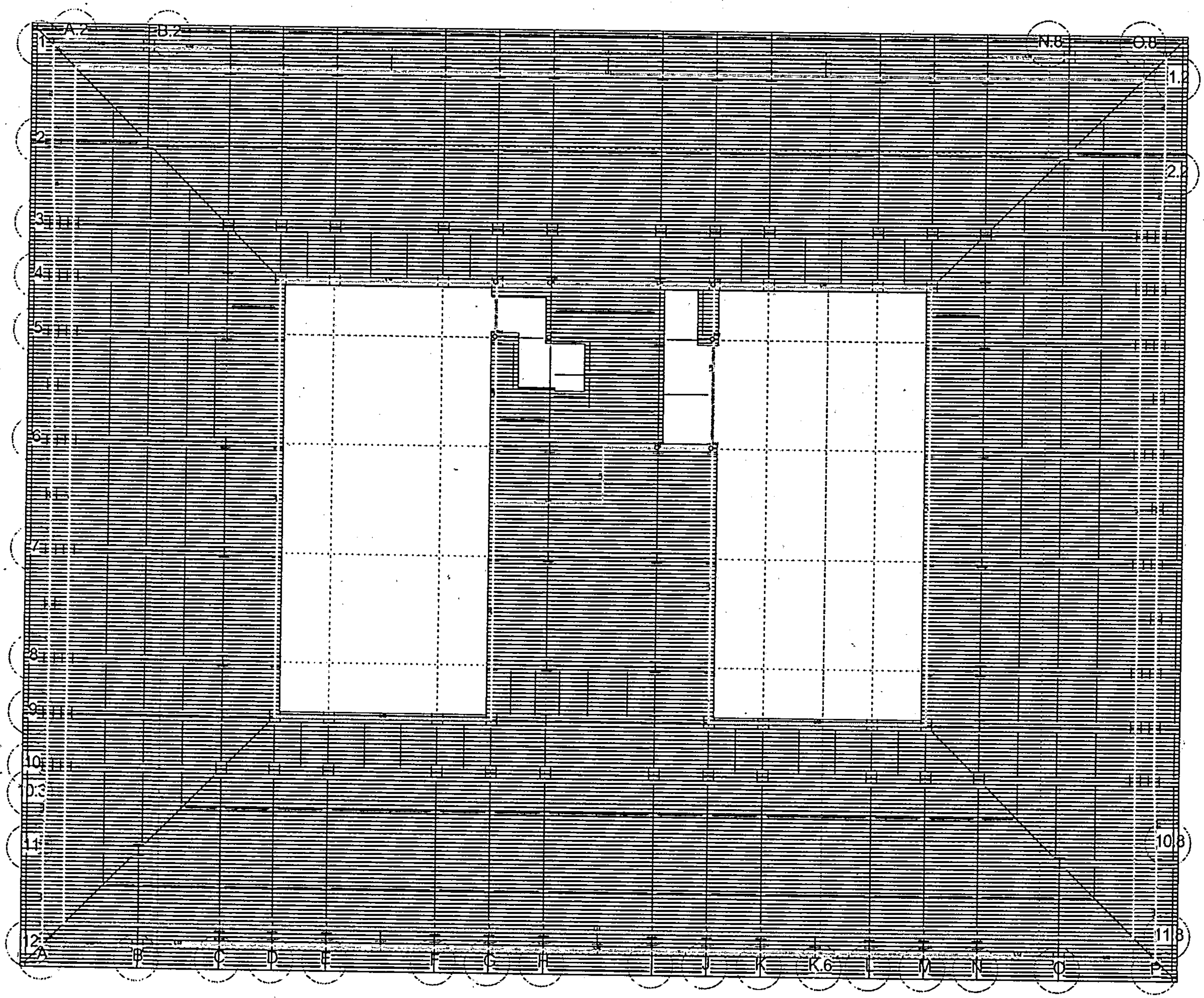
	Label	DL	CDL	LL	Reduction	CLL	Mass DL
		k/ft	k/ft	k/ft	Type	k/ft	k/ft
L4	LC L14	1.900	0.000	0.000	Reducible	0.000	0.000
L9	Ext L14	3.950	0.000	0.000	Reducible	0.000	0.000

RAM Steel v11.0
Nabih Youssef & Associates
DataBase: HOJ
Building Code: UBC2

Floor Map

04/19/07 10:26:15
Steel Code: ASD 9th Ed.

Floor Type: RF



Floor Map

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	CLL psf	Mass DL psf
	Roof	120.0	0.0	20.0	Roof	0.0	0.0

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	CLL k/ft	Mass DL k/ft
L10	LC Parapet 5'	0.250	0.000	0.000	Reducible	0.000	0.000
L11	Canopy 15'+7'wall	3.895	0.000	0.240	Roof	0.000	0.000
L12	Canopy 2.5'	0.500	0.000	0.040	Roof	0.000	0.000
L14	15psf x 24'	0.360	0.000	0.000	Reducible	0.000	0.000
L31	15psf x 13'	0.195	0.000	0.000	Reducible	0.000	0.000
L32	15psf x 33'	0.495	0.000	0.000	Reducible	0.000	0.000

Point Loads

	Label	DL kips	CDL kips	LL kips	Reduction Type	CLL kips	Mass DL kips
P11	BF1=.75Fp/1.4	0.000	0.000	79.000	Unreducible	0.000	0.000
P12	PH Fp2	0.000	0.000	109.000	Unreducible	0.000	0.000

Hall of Justice
(E) Column Properties

(E) Col	Grid	Levels	Web d {in}	Web tw {in}	Angles (4) l {in}	w {in}	t {in}	B {in}	Cover Pls w {in}	t {in}	Steel prop bf {in}	d {in}	As {in^2}	wt {plf}	Group	"HandProp" table	1 d {in}	2 bf {in}	3 A {in}	4 tw {in}	5 tf {in}	6 PLATE B {in}	7 T {in}	8 DOUBLE ANGLES D {in}	9 B {in}	10 TF {in}	11 PLATES B {in}	12 T {in}	13 ETABS d {in}	bf {in}	A {in}
Columns below seventh floor with additional axial load due to floor infill at level 9																															
19	C-2	L6L7	13.5	0.375	4	3	0.375	8.375	0	0	8.375	13.5	15.0	51		C19L6L7	13.5	8.375	15.0	0.375	0.375	13.5	0.375	3	8.375	0.375	0	0	13.5	8.375	15
19	C-2	L4L5	13.5	0.375	5	3	0.375	10.375	0	0	10.375	13.5	16.5	56		C19L4L5	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0	0	13.5	10.38	17
19	C-2	L2L3	13.5	0.5	6	3.5	0.5	12.5	0	0	12.5	13.5	24.8	84		C19L2L3	13.5	12.5	24.8	0.5	0.5	13.5	0.5	3.5	12.5	0.5	0	0	13.5	12.5	25
19	C-2	L1	13.5	0.5	6	3.5	0.5	12.5	14	0.375	14	14.25	35.3	120		C19L1	14.3	14	35.3	0.5	0.5	13.5	0.5	3.5	12.5	0.5	14	0.375	14.25	14	35
30(N-2), 147(C-11), and 158(N-11) same as 19																															
21	E-2	L6L8	13.5	0.375	4	3	0.375	8.375	0	0	8.375	13.5	15.0	51		C21L6L8	13.5	8.375	15.0	0.375	0.375	13.5	0.375	3	8.375	0.375	0	0	13.5	8.375	15
21	E-2	L4L5	13.5	0.4375	6	3.5	0.5	12.438	0	0	12.4375	13.5	23.9	81		C21L4L5	13.5	12.44	23.9	0.438	0.5	13.5	0.438	3.5	12.44	0.5	0	0	13.5	12.44	24
21	E-2	L1L3	13.5	0.75	7	3.5	0.6875	14.75	0	0	14.75	13.5	37.1	126		C21L1L3	13.5	14.75	37.1	0.75	0.688	13.5	0.75	3.5	14.75	0.688	0	0	13.5	14.75	37
28(L-2), 149(E-11), and 156(L-11) same as 21																															
25	I-2	L6L7	13.5	0.375	4	3	0.375	8.375	0	0	8.375	13.5	15.0	51		C25L6L7	13.5	8.375	15.0	0.375	0.375	13.5	0.375	3	8.375	0.375	0	0	13.5	8.375	15
25	I-2	L4L5	13.5	0.375	5	3	0.5	10.375	0	0	10.375	13.5	20.1	68		C25L4L5	13.5	10.38	20.1	0.375	0.5	13.5	0.375	3	10.38	0.5	0	0	13.5	10.38	20
25	I-2	L1L3	13.5	0.625	7	3.5	0.6875	14.625	0	0	14.625	13.5	35.4	121		C25L1L3	13.5	14.63	35.4	0.625	0.688	13.5	0.625	3.5	14.63	0.688	0	0	13.5	14.63	35
87	O-6	L6L7	13.5	0.375	5	3	0.375	10.375	0	0	10.375	13.5	16.5	56		C87L6L7	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0	0	13.5	10.38	17
87	O-6	L4L5	13.5	0.5	6	3.5	0.5625	12.5	0	0	12.5	13.5	26.9	91		C87L4L5	13.5	12.5	26.9	0.5	0.563	13.5	0.5	3.5	12.5	0.563	0	0	13.5	12.5	27
87	O-6	L1L3	13.5	0.5	6	3.5	0.5625	12.5	14	0.625	14	14.75	44.4	151		C87L1L3	14.8	14	44.4	0.5	0.563	13.5	0.5	3.5	12.5	0.563	14	0.625	14.75	14	44
Between levels 10 and 14																															
Light court																															
52	D-4	L11L14	13.5	0.375	6	3.5	0.375	12.375	0	0	12.375	13.5	18.8	64	1	C52L11L14	13.5	12.38	18.8	0.375	0.375	13.5	0.375	3.5	12.38	0.375	0	0	13.5	12.38	19
61,116 and 125 same as 52																								0							
53	E-4	L11L14	13.5	0.375	5	3	0.4375	10.375	0	0	10.375	13.5	18.3	62	2	C53L11L14	13.5	10.38	18.3	0.375	0.438	13.5	0.375	3	10.38	0.438	0	0	13.5	10.38	18
54,55,58,59,60,73,104,108,109,117,118 & 124 same as 53																								0							
68	D-5	L11L14	13.5	0.375	6	3.5	0.5	12.375	0	0	12.375	13.5	23.1	78	3	C68L11L14	13.5	12.38	23.1	0.375	0.5	13.5	0.375	3.5	12.38	0.5	0	0	13.5	12.38	23
69,72,81,84,85,96,97& 105 same as 68																								0							
80	D-6	L11L14	13.5	0.5	6	3.5	0.5625	12.5	0	0	12.5	13.5	26.9	91	4	C80L11L14	13.5	12.5	26.9	0.5	0.563	13.5	0.5	3.5	12.5	0.563	0	0	13.5	12.5	27
92 & 93 same as 80																								0							
119	G-9	L11L14	13.5	0.375	5	3	0.875	10.375	0	0	10.375	13.5	30.0	102	5	C119L11L1	13.5	10.38	30.0	0.375	0.875	13.5	0.375	3	10.38	0.875	0	0	13.5	10.38	30
122 same as 119																								0							
123	K-9	L11L14	13.5	0.5	6	3.5	0.5	12.5	0	0	12.5	13.5	24.8	84	6	C123L11L1	13.5	12.5	24.8	0.5	0.5	13.5	0.5	3.5	12.5	0.5	0	0	13.5	12.5	25
Corners																								0							
																								0							
1	A-1	L11L14	13.5	0.625	6	3.5	0.5	12.625	0	0	12.625	13.5	26.4	90	1	C1L11L14	13.5	12.63	26.4	0.625	0.5	13.5	0.625	3.5	12.63	0.5	0	0	13.5	12.63	26
2,15,16,17,32,145,160,161,162,175,176 same as 1																								0							
18	B-1	L11L14	13.5	0.5	6	3.5	0.5	12.5	0	0	12.5	13.5	24.8	84	2	C18L11L14	13.5	12.5	24.8	0.5	0.5	13.5	0.5	3.5	12.5	0.5	0	0	13.5	12.5	25
31,146,159 same as 18																								0							
Perimeter at (E) Wall																								0							
																								0							
177	C-1.2	L11L14	10	0.375	6	4	0.4375	12.375	0	0	12.375	10	20.5	70	1	C177L11L1	10	12.38	20.5	0.375	0.438	10	0.375	4	12.38	0.438	0	0	10	12.38	20
188,189,194,196,205,216,197,204 same as 177																								0							
178	D-1.2	L11L14	10	0.375	6	4	0.375	12.375	0	0	12.375	10	18.2	62	2	C178L11L1	10	12.38	18.2	0.375	0.375	10	0.375	4	12.38	0.375	0	0	10	12.38	18
181,184,187,206,209,212,215 same as 178																								0							
179	E-1.2	L11L14	10	0.375	6	4	0.5	12.375	0	0	12.375	10	22.8	77	3	C179L11L1	10	12.38	22.8	0.375	0.5	10	0.375	4	12.38	0.5	0	0	10	12.38	23
180,182,183,185,186,191,207,208,210,211,213,214,199,202 same as 179																								0							
190	A.2-9	L11L14	10	0.375	5	3.5	0.375	10.375	0	0	10.375	10	15.9	54	4	C190L11L1	10	10.38	15.9	0.375	0.375	10	0.375	3.5	10.38	0.375	0	0	10	10.38	16
195,198,203 same as 190																								0							
192	A.2-7	L13L14	10	0.375	6	4	0.4375	12.375	0	0	12.375	10	20.5	70	5	C192L13L1	10	12.38	20.5	0.375	0.438	10	0.375	4	12.38	0.438	0	0	10	12.38	20
192	A.2-7	L11L12	10	0.375	6	4	0.4375	12.375	14	0.5	14	11	34.5	117	5	C192L11L1	11	14	34.5	0.375	0.438	10	0.375	4	12.38	0.438	14	0.5			
193,200,201 same as 192																								0							
Interior along lines 2.2,10.8,B.2 and N.8																								0							
																								0							
217	C-2.2	L11L14	10	0.375	4	3	0.4375	8.375	0	0	8.375	10	15.2	52	1	C217L11L1	10	8.375	15.2	0.375	0.438	10	0.375	3	8.375	0.438	0	0	10	8.375	15
218,221,224,227,228,235,236,239,242,245,246 same as 217																								0							
219	E-2.2	L11L14	10	0.375	5	3.5	0.4375	10.375	0	0	10.375	10	17.9	61	2	C219L11L1	10	10.38	17.9	0.375	0.438	10	0.375	3.5	10.38	0.438	0	0	10	10.38	18
220,222,223,225,226,229,231,234,237,238,240,241,243,244 same as 219																								0							

Hall of Justice
(E) Column Properties

(E) Col	Grid	Levels	Web d {in}	Web tw {in}	Angles (4) l {in}	Angles (4) w {in}	Angles (4) t {in}	B {in}	Cover Pls w {in}	Cover Pls t {in}	Steel prop bf {in}	Steel prop d {in}	As {in^2}	wt {plf}
230	B.2-7	L13L14	10	0.375	4	3	0.4375	8.375	0	0	8.375	10	15.2	52
230	B.2-7	L11L12	10	0.375	4	3	0.4375	8.375	10	0.375	10	10.75	22.7	77
232,233 same as 230														
Interior along lines 3 and 10														
34	B-3	L11L14	13.5	0.375	5	3	0.375	10.375	0	0	10.375	13.5	16.5	56
35,37,38,40,41,43,44,46,47,130,131,133,140,142,143 same as 34														
36	D-3	L11L14	13.5	0.375	4	3	0.375	8.375	0	0	8.375	13.5	15.0	51
39,42,45,132,141 same as 36														
251	F-10	L11L14	10	0.375	5	3.5	0.4375	10.375	0	0	10.375	10	17.9	61
253,254,256 same as 251														
252	G-10	L11L14	10	0.375	4	3	0.375	8.375	0	0	8.375	10	13.7	47
255 same as 252														
Interior along lines B,C,H,I,N and O from 4 to 9														
50	B-4	L11L14	13.5	0.375	4	3	0.375	8.375	0	0	8.375	13.5	15.0	51
51,62,63,114,115,126,127 same as 50														
56	H-4	L11L14	13.5	0.5625	7	3.5	0.625	14.563	0	0	14.5625	13.5	32.3	110
57 same as 56														
66	B-5	L11L14	13.5	0.375	5	3	0.375	10.375	0	0	10.375	13.5	16.5	56
74,103,110 same as 66														
67	C-5	L11L14	13.5	0.375	6	3.5	0.5	12.375	0	0	12.375	13.5	23.1	78
91 same as 67														
70	H-5	L11L14	13.5	0.75	7	3.5	0.6875	14.75	0	0	14.75	13.5	37.1	126
71,same as 70														
78	B-6	L11L14	13.5	0.375	6	3.5	0.4375	12.375	0	0	12.375	13.5	20.9	71
79	C-6	L11L14	13.5	0.5	6	3.5	0.5625	12.5	0	0	12.5	13.5	26.9	91
98,106,107 same as 79														
82	H-6	L13L14	13.5	0.5	6	3.5	0.4375	12.5	0	0	12.5	13.5	22.6	77
82	H-6	L11L12	13.5	0.5	6	3.5	0.4375	12.5	14	0.5	14	14.5	36.6	125
83	I-6	L11L14	13.5	0.5	7	3.5	0.5625	14.5	0	0	14.5	13.5	29.1	99
94,95 same as 83														
86	N-6	L11L14	13.5	0.4375	6	3.5	0.4375	12.438	0	0	12.4375	13.5	21.8	74
120	H-9	L11L14	13.5	0.375	5	3	0.5	10.375	0	0	10.375	13.5	20.1	68
121 same as 120														
Columns below penthouse														
55	G-4	RF	13.5	0.375	5	3	0.375	10.375	0.01	0.01	10.375	13.52	16.5	56
55	G-4	L11L14	13.5	0.375	5	3	0.4375	10.375	0.01	0.01	10.375	13.52	18.3	62
55	G-4	L8L10	13.5	0.5625	7	3.5	0.5625	14.563	0.01	0.01	14.5625	13.52	30.0	102
55	G-4	L6L7	13.5	0.5625	7	3.5	0.625	14.563	0.01	0.01	14.5625	13.52	32.3	110
55	G-4	L4L5	13.5	0.75	7	3.5	0.6875	14.75	0.01	0.01	14.75	13.52	37.1	126
55	G-4	L2L3	13.5	0.75	6	3.5	0.75	12.75	14	0.438	14	14.38	48.6	165
55	G-4	L1	13.5	0.75	6	3.5	0.75	12.75	14	0.438	14	14.38	48.6	165
58 (J-4) same as 55														
56	H-4	RF	13.5	0.375	5	3	0.375	10.375	0	0.001	10.375	13.5	16.5	56
56	H-4	L11L14	13.5	0.5625	7	3.5	0.625	14.563	0	0.001	14.5625	13.5	32.3	110
56	H-4	L8L10	13.5	0.75	7	3.5	0.75	14.75	0	0.001	14.75	13.5	39.4	134
56	H-4	L6L7	13.5	0.75	6	3.5	0.75	12.75	0	0.001	12.75	13.5	36.4	124
56	H-4	L4L5	13.5	0.75	6	3.5	0.75	12.75	14	0.438	14	14.38	48.6	165
56	H-4	L2L3	13.5	0.75	6	3.5	0.75	12.75	14	0.625	14	14.75	53.9	183
56	H-4	L1	13.5	0.75	6	3.5	0.75	12.75	14	0.875	14	15.25	60.9	207

Group	"HandProp" table	1 d {in}	2 bf {in}	3 A {in}	4 tw {in}	5 tf {in}	6 PLATE B {in}	7 PLATE T {in}	8 DOUBLE ANGLES D {in}	9 DOUBLE ANGLES B {in}	10 DOUBLE ANGLES TF {in}	11 PLATES B {in}	12 PLATES T {in}	13 ETABS d {in}	ETABS bf {in}	ETABS A {in}
3	C230L13L1	10	8.375	15.2	0.375	0.438	10	0.375	3	8.375	0.438	0	0	10	8.375	15
3	C230L11L1	10.8	10	22.7	0.375	0.438	10	0.375	3	8.375	0.438	10	0.375	10.75	10	23
									0							
									0							
									0							
1	C34L11L14	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0	0	13.5	10.38	17
									0							
2	C36L11L14	13.5	8.375	15.0	0.375	0.375	13.5	0.375	3	8.375	0.375	0	0	13.5	8.375	15
									0							
3	C251L11L1	10	10.38	17.9	0.375	0.438	10	0.375	3.5	10.38	0.438	0	0	10	10.38	18
									0							
4	C252L11L1	10	8.375	13.7	0.375	0.375	10	0.375	3	8.375	0.375	0	0	10	8.375	14
									0							
									0							
									0							
1	C50L11L14	13.5	8.375	15.0	0.375	0.375	13.5	0.375	3	8.375	0.375	0	0	13.5	8.375	15
									0							
2	C56L11L14	13.5	14.56	32.3	0.563	0.625	13.5	0.563	3.5	14.56	0.625	0	0	13.5	14.56	32
									0							
3	C66L11L14	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0	0	13.5	10.38	17
									0							
4	C67L11L14	13.5	12.38	23.1	0.375	0.5	13.5	0.375	3.5	12.38	0.5	0	0	13.5	12.38	23
									0							
5	C70L11L14	13.5	14.75	37.1	0.75	0.688	13.5	0.75	3.5	14.75	0.688	0	0	13.5	14.75	37
6	C78L11L14	13.5	12.38	20.9	0.375	0.438	13.5	0.375	3.5	12.38	0.438	0	0	13.5	12.38	21
									0							
7	C79L11L14	13.5	12.5	26.9	0.5	0.563	13.5	0.5	3.5	12.5	0.563	0	0	13.5	12.5	27
									0							
8	C82L13L14	13.5	12.5	22.6	0.5	0.438	13.5	0.5	3.5	12.5	0.438	0	0	13.5	12.5	23
8	C82L11L12	14.5	14	36.6	0.5	0.438	13.5	0.5	3.5	12.5	0.438	14	0.5	14.5	14	37
									0							
9	C83L11L14	13.5	14.5	29.1	0.5	0.563	13.5	0.5	3.5	14.5	0.563	0	0	13.5	14.5	29
									0							
10	C86L11L14	13.5	12.44	21.8	0.438	0.438	13.5	0.438	3.5	12.44	0.438	0	0	13.5	12.44	22
									0							
11	C120L11L1	13.5	10.38	20.1	0.375	0.5	13.5	0.375	3	10.38	0.5	0	0	13.5	10.38	20
									0							
									0							
									0							
	C55RF	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0.01	0.01	13.52	10.38	17
	C55L11L14	13.5	10.38	18.3	0.375	0.438	13.5	0.375	3	10.38	0.438	0.01	0.01	13.52	10.38	18
	C55L8L10	13.5	14.56	30.0	0.563	0.563	13.5	0.563	3.5	14.56	0.563	0.01	0.01	13.52	14.56	30
	C55L6L7	13.5	14.56	32.3	0.563	0.625	13.5	0.563	3.5	14.56	0.625	0.01	0.01	13.52	14.56	32
	C55L4L5	13.5	14.75	37.1	0.75	0.688	13.5	0.75	3.5	14.75	0.688	0.01	0.01	13.52	14.75	37
	C55L2L3	14.4	14	48.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.438	14.38	14	49
	C55L1	14.4	14	48.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.438	14.38	14	49
									0							
									0							
	C56RF	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0.001	0.001	13.5	10.38	17
	C56L11L14	13.5	14.56	32.3	0.563	0.625	13.5	0.563	3.5	14.56	0.625	0.001	0.001	13.5	14.56	32
	C56L8L10	13.5	14.75	39.4	0.75	0.75	13.5	0.75	3.5	14.75	0.75	0.001	0.001	13.5	14.75	39
	C56L6L7	13.5	12.75	36.4	0.75	0.75	13.5	0.75	3.5	12.75	0.75	0.001	0.001	13.5	12.75	36
	C56L4L5	14.4	14	48.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.438	14.38	14	49
	C56L2L3	14.8	14	53.9	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.625	14.75	14	54
	C56L1	15.3	14	60.9	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.875	15.25	14	61

Hall of Justice
(E) Column Properties

			Web		Angles (4)				Cover Pls		Steel prop					"HandProp" table	1	2	3	4	5	6 PLATE	7	8 DOUBLE ANGLES	9	10	11 PLATES	12	13 ETABS		
(E) Col	Grid	Levels	d {in}	tw {in}	l {in}	w {in}	t {in}	B {in}	w {in}	t {in}	bf {in}	d {in}	As {in^2}	wt {plf}	Group		d {in}	bf {in}	A {in}	tw {in}	tf {in}	B {in}	T {in}	D {in}	B {in}	TF {in}	B {in}	T {in}	d {in}	bf {in}	A {in}
57 (I-4) same as 56																								0							
																								0							
69	G-4	RF	13.5	0.375	5	3	0.375	10.375	0	0.001	10.375	13.5	16.5	56		C69RF	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0.001	0.001	13.5	10.38	17
69	G-4	L11L14	13.5	0.375	6	3.5	0.5	12.375	0	0.001	12.375	13.5	23.1	78		C69L11L14	13.5	12.38	23.1	0.375	0.5	13.5	0.375	3.5	12.38	0.5	0.001	0.001	13.5	12.38	23
69	G-4	L8L10	13.5	0.625	7	3.5	0.75	14.625	0	0.001	14.625	13.5	37.7	128		C69L8L10	13.5	14.63	37.7	0.625	0.75	13.5	0.625	3.5	14.63	0.75	0.001	0.001	13.5	14.63	38
69	G-4	L6L7	13.5	0.625	6	3.5	0.625	12.625	14	0.375	14	14.25	41.1	140		C69L6L7	14.3	14	41.1	0.625	0.625	13.5	0.625	3.5	12.63	0.625	14	0.375	14.25	14	41
69	G-4	L4L5	13.5	0.625	6	3.5	0.625	12.625	14	0.5	14	14.5	44.6	152		C69L4L5	14.5	14	44.6	0.625	0.625	13.5	0.625	3.5	12.63	0.625	14	0.5	14.5	14	45
69	G-4	L2L3	13.5	0.75	6	3.5	0.75	12.75	14	0.563	14	14.63	52.1	177		C69L2L3	14.6	14	52.1	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.563	14.63	14	52
69	G-4	L1	13.5	0.75	6	3.5	0.75	12.75	14	0.938	14	15.38	62.6	213		C69L1	15.4	14	62.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.938	15.38	14	63
72 (J-5) same as 69																								0							
																								0							
70	H-5	RF	13.5	0.375	5	3	0.375	10.375	0	0.001	10.375	13.5	16.5	56		C70RF	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0.001	0.001	13.5	10.38	17
70	H-5	L11L14	13.5	0.75	7	3.5	0.6875	14.75	0	0.001	14.75	13.5	37.1	126		C70L11L14	13.5	14.75	37.1	0.75	0.688	13.5	0.75	3.5	14.75	0.688	0.001	0.001	13.5	14.75	37
70	H-5	L8L10	13.5	0.75	6	3.5	0.75	12.75	14	0.438	14	14.38	48.6	165		C70L8L10	14.4	14	48.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.438	14.38	14	49
70	H-5	L6L7	13.5	0.75	6	3.5	0.75	12.75	14	0.688	14	14.88	55.6	189		C70L6L7	14.9	14	55.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.688	14.88	14	56
70	H-5	L4L5	13.5	0.75	6	3.5	0.75	12.75	14	1	14	15.5	64.4	219		C70L4L5	15.5	14	64.4	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1	15.5	14	64
70	H-5	L2L3	13.5	0.75	6	3.5	0.75	12.75	14	1.563	14	16.63	80.1	273		C70L2L3	16.6	14	80.1	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.563	16.63	14	80
70	H-5	L1	13.5	0.75	6	3.5	0.75	12.75	14	1.563	14	16.63	80.1	273		C70L1	16.6	14	80.1	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.563	16.63	14	80
71 (I-5) same as 70																								0							
																								0							
81	G-6	RF	13.5	0.375	5	3	0.375	10.375	0	0.001	10.375	13.5	16.5	56		C81RF	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0.001	0.001	13.5	10.38	17
81	G-6	L11L14	13.5	0.75	6	3.5	0.5	12.75	0	0.001	12.75	13.5	28.1	96		C81L11L14	13.5	12.75	28.1	0.75	0.5	13.5	0.75	3.5	12.75	0.5	0.001	0.001	13.5	12.75	28
81	G-6	L8L10	13.5	0.75	6	3.5	0.75	12.75	14	0.438	14	14.38	48.6	165		C81L8L10	14.4	14	48.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.438	14.38	14	49
81	G-6	L6L7	13.5	0.75	6	3.5	0.75	12.75	14	0.688	14	14.88	55.6	189		C81L6L7	14.9	14	55.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.688	14.88	14	56
81	G-6	L4L5	13.5	0.75	6	3.5	0.75	12.75	14	1.188	14	15.88	69.6	237		C81L4L5	15.9	14	69.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.188	15.88	14	70
81	G-6	L2L3	13.5	0.75	6	3.5	0.75	12.75	14	1.75	14	17	85.4	291		C81L2L3	17	14	85.4	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.75	17	14	85
81	G-6	L1	13.5	0.75	6	3.5	0.75	12.75	14	1.75	14	17	85.4	291		C81L1	17	14	85.4	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.75	17	14	85
																								0							
82	H-6	RF	13.5	0.375	5	3	0.375	10.375	0	0.001	10.375	13.5	16.5	56		C82RF	13.5	10.38	16.5	0.375	0.375	13.5	0.375	3	10.38	0.375	0.001	0.001	13.5	10.38	17
82	H-6	L11L14	13.5	0.5	6	3.5	0.4375	12.5	0	0.001	12.5	13.5	22.6	77		C82L11L14	13.5	12.5	22.6	0.5	0.438	13.5	0.5	3.5	12.5	0.438	0.001	0.001	13.5	12.5	23
82	H-6	L8L10	13.5	0.75	6	3.5	0.75	12.75	14	0.438	14	14.38	48.6	165		C82L8L10	14.4	14	48.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.438	14.38	14	49
82	H-6	L6L7	13.5	0.75	6	3.5	0.75	12.75	14	0.813	14	15.13	59.1	201		C82L6L7	15.1	14	59.1	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.813	15.13	14	59
82	H-6	L4L5	13.5	0.75	6	3.5	0.75	12.75	14	1.25	14	16	71.4	243		C82L4L5	16	14	71.4	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.25	16	14	71
82	H-6	L2L3	13.5	0.75	6	3.5	0.75	12.75	14	1.625	14	16.75	81.9	279		C82L2L3	16.8	14	81.9	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.625	16.75	14	82
82	H-6	L1	13.5	0.75	6	3.5	0.75	12.75	14	1.625	14	16.75	81.9	279		C82L1	16.8	14	81.9	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.625	16.75	14	82
																								0							
83	I-6	RF	13.5	0.5	7	3.5	0.5625	14.5	0	0.001	14.5	13.5	29.1	99		C83RF	13.5	14.5	29.1	0.5	0.563	13.5	0.5	3.5	14.5	0.563	0.001	0.001	13.5	14.5	29
83	I-6	L11L14	13.5	0.5	7	3.5	0.5625	14.5	0	0.001	14.5	13.5	29.1	99		C83L11L14	13.5	14.5	29.1	0.5	0.563	13.5	0.5	3.5	14.5	0.563	0.001	0.001	13.5	14.5	29
83	I-6	L8L10	13.5	0.75	6	3.5	0.75	12.75	14	0.438	14	14.38	48.6	165		C83L8L10	14.4	14	48.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.438	14.38	14	49
83	I-6	L6L7	13.5	0.75	6	3.5	0.75	12.75	14	0.688	14	14.88	55.6	189		C83L6L7	14.9	14	55.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.688	14.88	14	56
83	I-6	L4L5	13.5	0.75	6	3.5	0.75	12.75	14	1.188	14	15.88	69.6	237		C83L4L5	15.9	14	69.6	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.188	15.88	14	70
83	I-6	L2L3	13.5	0.75	6	3.5	0.75	12.75	14	1.625	14	16.75	81.9	279		C83L2L3	16.8	14	81.9	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.625	16.75	14	82
83	I-6	L1	13.5	0.75	6	3.5	0.75	12.75	14	1.625	14	16.75	81.9	279		C83L1	16.8	14	81.9	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1.625	16.75	14	82
																								0							
84	J-6	RF	13.5	0.375	6	3.5	0.5	12.375	0	0.001	12.375	13.5	23.1	78		C84RF	13.5	12.38	23.1	0.375	0.5	13.5	0.375	3.5	12.38	0.5	0.001	0.001	13.5	12.38	23
84	J-6	L11L14	13.5	0.75	7	3.5	0.6875	14.75	0	0.001	14.75	13.5	37.1	126		C84L11L14	13.5	14.75	37.1	0.75	0.688	13.5	0.75	3.5	14.75	0.688	0.001	0.001	13.5	14.75	37
84	J-6	L8L10	13.5	0.75	6	3.5	0.6875	12.75	14	0.375	14	14.25	44.9	153		C84L8L10	14.3	14	44.9	0.75	0.688	13.5	0.75	3.5	12.75	0.688	14	0.375	14.25	14	45
84	J-6	L6L7	13.5	0.75	6	3.5	0.75	12.75	14	0.563	14	14.63	52.1	177		C84L6L7	14.6	14	52.1	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	0.563	14.63	14	52
84	J-6	L4L5	13.5	0.75	6	3.5	0.75	12.75	14	1	14	15.5	64.4	219		C84L4L5	15.5	14	64.4	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1	15.5	14	64
84	J-6	L2L3	13.5	0.75	6	3.5	0.75	12.75	14	1	14	15.5	64.4	219		C84L2L3	15.5	14	64.4	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1	15.5	14	64
84	J-6	L1	13.5	0.75	6	3.5	0.75	12.75	14	1	14	15.5	64.4	219		C84L1	15.5	14	64.4	0.75	0.75	13.5	0.75	3.5	12.75	0.75	14	1	15.5	14	64

Gravity Column Design Summary

Column Line A - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	89.4	26.0	0.2	1	0.65 Eq H1-1	90.0	30	W14X53
L14	182.3	44.5	0.3	1	0.63 Eq H1-2	90.0	30	C1L11L14
L13	203.3	16.4	0.2	1	0.52 Eq H1-1	90.0	30	C1L11L14
L12	247.5	16.3	1.0	1	0.64 Eq H1-1	90.0	30	C1L11L14
L11	270.7	9.3	3.9	1	0.71 Eq H1-1	90.0	30	C1L11L14
L10	321.1	15.7	13.4	1	0.73 Eq H1-2	90.0	30	W14X109
L9	387.1	14.9	12.6	1	0.83 Eq H1-2	90.0	30	W14X109
L8	445.3	13.3	11.8	1	0.94 Eq H1-1	90.0	30	W14X109
L7	518.0	17.8	15.5	1	0.90 Eq H1-2	90.0	30	W14X132
L6	574.2	13.5	2.9	1	0.92 Eq H1-1	90.0	30	W14X132
L5	627.4	14.9	3.2	1	0.84 Eq H1-1	90.0	30	W14X159
L4	689.6	14.9	3.2	1	0.94 Eq H1-1	90.0	30	W14X159
L3	752.1	13.5	11.5	3	0.89 Eq H1-1	90.0	30	W14X193
L2	818.5	17.3	15.0	4	0.92 Eq H1-1	90.0	30	W14X193
L1	875.2	12.8	10.8	1	0.92 Eq H1-1	90.0	30	W14X211

Column Line A - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	92.1	3.2	6.2	2	0.89 Eq H1-1	90.0	30	W14X48
L14	194.0	5.6	10.8	8	0.55 Eq H1-2	90.0	30	W14X90
L13	210.2	1.6	5.6	2	0.51 Eq H1-2	90.0	30	W14X90
L12	268.7	9.9	2.8	5	0.73 Eq H1-1	90.0	30	W14X90
L11	316.6	9.9	2.7	4	0.85 Eq H1-1	90.0	30	W14X90
L10	378.2	3.2	4.4	3	0.67 Eq H1-1	90.0	30	W14X120
L9	449.6	2.8	4.3	3	0.80 Eq H1-1	90.0	30	W14X120
L8	513.2	2.3	3.3	4	0.94 Eq H1-1	90.0	30	W14X120
L7	595.7	2.5	4.2	5	0.87 Eq H1-1	90.0	30	W14X145
L6	663.9	2.5	1.0	3	0.95 Eq H1-1	90.0	30	W14X145
L5	730.3	2.7	1.0	3	0.87 Eq H1-1	90.0	30	W14X176
L4	802.1	2.7	1.0	3	0.98 Eq H1-1	90.0	30	W14X176
L3	873.9	2.4	3.4	3	0.91 Eq H1-1	90.0	30	W14X211
L2	949.3	2.5	4.5	5	0.95 Eq H1-1	90.0	30	W14X211
L1	1015.7	1.9	3.8	1	0.93 Eq H1-1	90.0	30	W14X233

Column Line 0.00ft - 26.00ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	24.8	5.8	3.2	1	0.68 Eq H1-2	0.0	30	HSS10.000X0.188
L13	32.2	1.3	1.2	1	0.45 Eq H1-2	0.0	30	HSS10.000X0.188
L12	43.2	1.3	0.7	1	0.54 Eq H1-1	0.0	30	HSS10.000X0.188

Column Line A - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	121.8	17.0	38.9	12	0.55 Eq H1-2	90.0	30	W14X120
L10	335.3	7.5	27.9	3	0.70 Eq H1-2	90.0	30	W14X132
L9	394.6	7.2	6.4	4	0.65 Eq H1-1	90.0	30	W14X132
L8	445.0	6.0	5.2	4	0.75 Eq H1-1	90.0	30	W14X132
L7	504.9	7.6	6.3	5	0.91 Eq H1-1	90.0	30	W14X120
L6	554.6	6.3	1.4	3	0.97 Eq H1-1	90.0	30	W14X120
L5	605.1	6.8	1.4	3	0.88 Eq H1-1	90.0	30	W14X145
L4	659.6	6.8	1.4	3	0.98 Eq H1-1	90.0	30	W14X145
L3	714.2	6.1	4.8	2	0.91 Eq H1-1	90.0	30	W14X176
L2	771.5	7.6	6.2	5	0.94 Eq H1-1	90.0	30	W14X176
L1	822.0	4.3	3.6	1	0.91 Eq H1-1	90.0	30	W14X193

Column Line A - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	112.2	2.7	35.5	2	0.92 Eq H1-2	90.0	30	W14X82
L10	265.3	2.3	20.2	2	0.78 Eq H1-2	90.0	30	W14X90
L9	314.1	2.3	6.5	5	0.76 Eq H1-1	90.0	30	W14X90
L8	355.5	1.7	5.2	4	0.89 Eq H1-1	90.0	30	W14X90
L7	405.0	2.1	6.5	4	0.89 Eq H1-1	90.0	30	W14X99
L6	443.1	2.0	1.3	5	0.94 Eq H1-1	90.0	30	W14X99
L5	480.2	2.0	1.4	2	0.85 Eq H1-1	90.0	30	W14X120
L4	523.8	2.0	1.4	2	0.95 Eq H1-1	90.0	30	W14X120
L3	567.3	1.8	4.7	3	0.88 Eq H1-1	90.0	30	W14X145
L2	613.1	2.1	6.1	4	0.90 Eq H1-1	90.0	30	W14X145
L1	653.4	0.1	3.5	1	0.97 Eq H1-1	90.0	30	W14X145

Column Line A - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	40.5	53.6	8	1.00 Eq H1-2	90.0	30	W14X99
L10	408.2	7.5	44.6	1	0.93 Eq H1-2	90.0	30	W14X132
L9	461.8	9.6	4.8	2	0.76 Eq H1-1	90.0	30	W14X132
L8	520.3	8.3	3.6	5	0.87 Eq H1-1	90.0	30	W14X132
L7	594.5	10.6	4.6	4	0.87 Eq H1-1	90.0	30	W14X145
L6	657.3	8.5	1.1	2	0.94 Eq H1-1	90.0	30	W14X145
L5	718.5	9.5	1.1	2	0.86 Eq H1-1	90.0	30	W14X176
L4	784.6	9.5	1.1	2	0.96 Eq H1-1	90.0	30	W14X176
L3	850.7	8.3	3.7	3	0.89 Eq H1-1	90.0	30	W14X211
L2	920.1	24.0	4.9	5	0.94 Eq H1-1	90.0	30	W14X211
L1	1015.3	22.4	4.2	1	0.95 Eq H1-1	90.0	30	W14X233

Column Line A - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	226.2	2.0	84.4	2	0.93 Eq H1-2	90.0	30	W14X132
L10	579.3	0.2	67.7	2	0.96 Eq H1-2	90.0	30	W14X176
L9	640.2	0.8	5.5	2	0.77 Eq H1-1	90.0	30	W14X176

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L8	724.0	0.6	4.3	4	0.89 Eq H1-1	90.0	30	W14X176
L7	825.3	0.7	5.3	4	0.90 Eq H1-1	90.0	30	W14X193
L6	909.1	0.7	1.2	2	0.97 Eq H1-1	90.0	30	W14X193
L5	990.6	0.8	1.3	2	0.89 Eq H1-1	90.0	30	W14X233
L4	1078.7	0.8	1.3	2	0.99 Eq H1-1	90.0	30	W14X233
L3	1166.9	3.2	3.5	2	0.90 Eq H1-1	90.0	30	W14X283
L2	1264.0	3.4	4.6	4	0.93 Eq H1-1	90.0	30	W14X283
L1	1413.7	0.6	4.2	1	0.96 Eq H1-1	90.0	30	W14X311

Column Line A - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	226.2	2.0	67.1	2	0.98 Eq H1-2	90.0	30	W14X109
L10	527.4	4.7	55.2	2	0.94 Eq H1-2	90.0	30	W14X159
L9	601.1	3.8	5.5	3	0.81 Eq H1-1	90.0	30	W14X159
L8	683.8	0.6	4.3	4	0.94 Eq H1-1	90.0	30	W14X159
L7	785.1	0.7	5.3	4	0.85 Eq H1-1	90.0	30	W14X193
L6	868.8	0.7	1.2	2	0.93 Eq H1-1	90.0	30	W14X193
L5	950.4	0.8	1.3	2	0.85 Eq H1-1	90.0	30	W14X233
L4	1038.5	0.8	1.3	2	0.95 Eq H1-1	90.0	30	W14X233
L3	1126.7	3.2	3.5	3	0.96 Eq H1-1	90.0	30	W14X257
L2	1223.8	3.4	4.6	5	1.00 Eq H1-1	90.0	30	W14X257
L1	1373.5	0.6	4.2	1	0.94 Eq H1-1	90.0	30	W14X311

Column Line A - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	40.5	50.5	12	0.97 Eq H1-2	90.0	30	W14X99
L10	397.6	10.0	42.0	3	0.99 Eq H1-2	90.0	30	W14X120
L9	463.8	9.4	4.8	3	0.83 Eq H1-1	90.0	30	W14X120
L8	521.9	8.2	3.6	4	0.97 Eq H1-1	90.0	30	W14X120
L7	597.1	10.6	4.6	5	0.88 Eq H1-1	90.0	30	W14X145
L6	659.9	8.5	1.1	3	0.95 Eq H1-1	90.0	30	W14X145
L5	721.0	9.5	1.1	3	0.86 Eq H1-1	90.0	30	W14X176
L4	787.1	9.5	1.1	3	0.96 Eq H1-1	90.0	30	W14X176
L3	853.3	8.3	3.7	2	0.90 Eq H1-1	90.0	30	W14X211
L2	922.7	16.4	4.9	4	0.93 Eq H1-1	90.0	30	W14X211
L1	1035.0	15.2	4.2	1	0.96 Eq H1-1	90.0	30	W14X233

Column Line A - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	112.2	0.8	35.5	3	0.91 Eq H1-2	90.0	30	W14X82
L10	265.3	0.7	19.3	3	0.77 Eq H1-2	90.0	30	W14X90
L9	311.0	1.1	4.9	2	0.75 Eq H1-1	90.0	30	W14X90
L8	354.6	0.4	3.8	4	0.88 Eq H1-1	90.0	30	W14X90
L7	405.4	0.5	4.5	4	0.88 Eq H1-1	90.0	30	W14X99
L6	443.5	0.5	0.9	4	0.94 Eq H1-1	90.0	30	W14X99

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L5	480.5	0.4	0.9	3	0.85 Eq H1-1	90.0	30	W14X120
L4	524.1	0.4	0.9	3	0.95 Eq H1-1	90.0	30	W14X120
L3	567.7	0.4	3.0	3	0.97 Eq H1-1	90.0	30	W14X132
L2	613.4	0.6	3.9	4	0.99 Eq H1-1	90.0	30	W14X132
L1	687.4	0.3	3.5	1	0.93 Eq H1-1	90.0	30	W14X159

Column Line A - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	122.8	17.6	78.4	8	0.96 Eq H1-2	90.0	30	W14X109
L10	337.0	5.9	66.8	2	0.98 Eq H1-2	90.0	30	W14X132
L9	393.2	4.7	4.9	3	0.64 Eq H1-1	90.0	30	W14X132
L8	445.6	4.6	3.7	5	0.75 Eq H1-1	90.0	30	W14X132
L7	506.6	5.3	4.3	4	0.90 Eq H1-1	90.0	30	W14X120
L6	556.5	4.8	0.9	2	0.97 Eq H1-1	90.0	30	W14X120
L5	607.0	5.3	0.9	2	0.88 Eq H1-1	90.0	30	W14X145
L4	661.6	5.3	0.9	2	0.98 Eq H1-1	90.0	30	W14X145
L3	716.2	4.5	3.1	3	0.90 Eq H1-1	90.0	30	W14X176
L2	773.5	8.7	4.1	5	0.93 Eq H1-1	90.0	30	W14X176
L1	865.9	7.9	3.4	1	0.97 Eq H1-1	90.0	30	W14X193

Column Line -0.00ft - 155.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	24.8	5.8	3.2	1	0.68 Eq H1-2	0.0	30	HSS10.000X0.188
L13	32.2	1.3	1.2	1	0.45 Eq H1-2	0.0	30	HSS10.000X0.188
L12	43.2	1.3	0.7	1	0.54 Eq H1-1	0.0	30	HSS10.000X0.188

Column Line A - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	92.1	3.2	6.2	3	0.89 Eq H1-1	90.0	30	W14X48
L14	194.0	5.6	10.8	12	0.55 Eq H1-2	90.0	30	W14X90
L13	210.2	1.6	5.6	3	0.51 Eq H1-2	90.0	30	W14X90
L12	268.7	10.4	2.8	4	0.73 Eq H1-1	90.0	30	W14X90
L11	317.7	10.4	2.7	5	0.86 Eq H1-1	90.0	30	W14X90
L10	379.2	3.2	4.3	2	0.67 Eq H1-1	90.0	30	W14X120
L9	450.5	2.9	4.4	2	0.80 Eq H1-1	90.0	30	W14X120
L8	514.3	2.3	3.3	5	0.95 Eq H1-1	90.0	30	W14X120
L7	596.8	2.6	4.3	4	0.87 Eq H1-1	90.0	30	W14X145
L6	665.0	2.5	1.0	2	0.95 Eq H1-1	90.0	30	W14X145
L5	731.4	2.8	1.0	2	0.87 Eq H1-1	90.0	30	W14X176
L4	803.2	2.8	1.0	2	0.98 Eq H1-1	90.0	30	W14X176
L3	875.0	2.4	3.5	2	0.92 Eq H1-1	90.0	30	W14X211
L2	950.3	5.4	4.5	5	0.95 Eq H1-1	90.0	30	W14X211
L1	1071.9	3.9	3.8	1	0.98 Eq H1-1	90.0	30	W14X233

Column Line A - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	89.4	26.0	0.2	1	0.65 Eq H1-1	90.0	30	W14X53
L14	182.3	44.5	0.3	1	0.63 Eq H1-2	90.0	30	C1L11L14
L13	203.3	16.4	0.2	1	0.52 Eq H1-1	90.0	30	C1L11L14
L12	247.5	16.3	1.0	1	0.64 Eq H1-1	90.0	30	C1L11L14
L11	270.7	9.3	3.9	1	0.71 Eq H1-1	90.0	30	C1L11L14
L10	321.1	15.7	13.4	1	0.73 Eq H1-2	90.0	30	W14X109
L9	387.1	14.9	12.6	1	0.83 Eq H1-2	90.0	30	W14X109
L8	445.3	13.3	11.8	1	0.94 Eq H1-1	90.0	30	W14X109
L7	518.0	17.8	15.5	1	0.90 Eq H1-2	90.0	30	W14X132
L6	574.2	13.5	2.9	1	0.92 Eq H1-1	90.0	30	W14X132
L5	627.4	14.9	3.2	1	0.84 Eq H1-1	90.0	30	W14X159
L4	689.6	14.9	3.2	1	0.94 Eq H1-1	90.0	30	W14X159
L3	752.1	13.5	11.5	2	0.89 Eq H1-1	90.0	30	W14X193
L2	818.5	26.9	25.0	1	0.97 Eq H1-2	90.0	30	W14X193
L1	935.1	25.6	23.4	1	0.93 Eq H1-1	90.0	30	W14X233

Column Line 0.67ft - 35.83ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.3	3.9	3.2	1	0.32 Eq H1-1	0.0	30	W14X43
L14	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61
L13	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61
L12	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61

Column Line 0.67ft - 46.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.2	0.0	0.2	4	0.16 Eq H1-3	0.0	30	W14X43
L14	71.1	0.0	0.0	1	0.52 Eq H1-1	0.0	30	W14X61
L13	71.1	0.0	0.0	1	0.52 Eq H1-1	0.0	30	W14X61
L12	71.1	0.0	0.0	1	0.52 Eq H1-1	0.0	30	W14X61

Column Line 0.67ft - 57.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	0.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	0.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	0.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	0.0	30	C19L4L5

Column Line 0.67ft - 68.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	10	0.10 Eq H1-3	0.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48

L12	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48

Column Line 0.67ft - 79.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	31.0	0.0	0.1	2	0.23 Eq H1-1	0.0	30	C19L6L7
L14	80.7	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5
L13	80.7	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5
L12	80.7	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5

Column Line 0.67ft - 90.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	10	0.10 Eq H1-3	0.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48

Column Line 0.67ft - 101.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	31.0	0.0	0.1	2	0.23 Eq H1-1	0.0	30	C19L6L7
L14	80.7	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5
L13	80.7	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5
L12	80.7	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5

Column Line 0.67ft - 112.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	10	0.10 Eq H1-3	0.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48

Column Line 0.67ft - 123.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	0.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	0.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	0.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	0.0	30	C19L4L5

Column Line 0.67ft - 134.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.2	0.0	0.2	2	0.16 Eq H1-3	0.0	30	W14X43
L14	71.1	0.0	0.0	1	0.52 Eq H1-1	0.0	30	W14X61
L13	71.1	0.0	0.0	1	0.52 Eq H1-1	0.0	30	W14X61
L12	71.1	0.0	0.0	1	0.52 Eq H1-1	0.0	30	W14X61

Gravity Column Design Summary

Column Line 0.67ft - 145.33ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.3	3.9	3.2	1	0.32 Eq H1-1	0.0	30	W14X43
L14	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61
L13	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61
L12	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61

Column Line 4.42ft - 29.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	4.4	0.8	0.2	14	0.10 Eq H1-3	90.0	30	HSS8X8X3/16

Column Line A.2 - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	80.8	20.1	8.7	6	0.90 Eq H1-1	0.0	30	W14X48
L14	148.4	4.4	3.1	1	0.77 Eq H1-1	0.0	30	W14X61
L13	159.5	15.9	3.1	1	0.88 Eq H1-1	0.0	30	W14X61
L12	199.3	15.8	0.6	4	0.79 Eq H1-1	0.0	30	W14X61
L11	213.4	3.3	0.6	10	0.78 Eq H1-1	0.0	30	W14X61

Column Line A.2 - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	65.5	17.2	1.3	11	0.62 Eq H1-1	0.0	30	W14X43
L14	88.8	5.5	0.3	10	0.77 Eq H1-1	0.0	30	W14X43
L13	100.5	11.4	0.3	10	0.92 Eq H1-1	0.0	30	W14X43
L12	130.6	11.3	0.2	4	0.80 Eq H1-1	0.0	30	W14X43
L11	147.8	3.9	0.2	10	0.82 Eq H1-1	0.0	30	W14X43

Column Line A.2 - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	10	0.94 Eq H1-2	0.0	30	W14X61
L14	143.4	7.7	1.3	1	0.70 Eq H1-1	0.0	30	W14X61
L13	161.7	20.7	1.3	1	0.84 Eq H1-1	0.0	30	W14X61
L12	212.0	20.3	2.7	4	0.89 Eq H1-1	0.0	30	W14X61
L11	237.7	4.3	2.7	10	0.91 Eq H1-1	0.0	30	W14X61

Column Line A.2 - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	131.0	34.5	2.0	6	0.75 Eq H1-1	0.0	30	W14X61
L14	188.6	9.2	0.0	1	0.71 Eq H1-1	0.0	30	W14X74
L13	212.9	27.4	0.0	1	0.86 Eq H1-1	0.0	30	W14X74
L12	277.7	26.7	0.4	3	0.91 Eq H1-1	0.0	30	W14X74
L11	310.6	4.6	0.4	6	0.92 Eq H1-1	0.0	30	W14X74

Gravity Column Design Summary

Column Line A.2 - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	131.5	34.8	2.0	11	0.76 Eq H1-1	0.0	30	W14X61
L14	182.8	8.9	0.3	1	0.77 Eq H1-1	0.0	30	W14X68
L13	206.5	24.4	0.3	1	0.92 Eq H1-1	0.0	30	W14X68
L12	265.4	23.9	0.5	3	0.94 Eq H1-1	0.0	30	W14X68
L11	298.6	4.5	0.4	6	0.97 Eq H1-1	0.0	30	W14X68

Column Line A.2 - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	100.1	26.4	17.9	6	0.95 Eq H1-2	0.0	30	W14X61
L14	136.0	6.6	1.0	1	0.66 Eq H1-1	0.0	30	W14X61
L13	153.7	17.4	1.0	1	0.78 Eq H1-1	0.0	30	W14X61
L12	196.7	17.2	2.7	3	0.82 Eq H1-1	0.0	30	W14X61
L11	222.7	4.3	2.7	6	0.85 Eq H1-1	0.0	30	W14X61

Column Line A.2 - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	65.5	17.2	1.3	6	0.63 Eq H1-1	0.0	30	W14X43
L14	88.7	5.2	0.3	6	0.77 Eq H1-1	0.0	30	W14X43
L13	100.4	11.4	0.3	15	0.91 Eq H1-1	0.0	30	W14X43
L12	130.6	11.3	0.2	3	0.80 Eq H1-1	0.0	30	W14X43
L11	147.8	3.9	0.2	6	0.82 Eq H1-1	0.0	30	W14X43

Column Line A.2 - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	80.8	20.1	8.7	11	0.90 Eq H1-1	0.0	30	W14X48
L14	148.4	4.1	3.2	1	0.77 Eq H1-1	0.0	30	W14X61
L13	159.5	15.9	3.2	1	0.88 Eq H1-1	0.0	30	W14X61
L12	199.3	15.8	0.3	3	0.78 Eq H1-1	0.0	30	W14X61
L11	214.2	3.3	0.3	6	0.78 Eq H1-1	0.0	30	W14X61

Column Line 4.42ft - 155.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	5.4	1.4	0.2	15	0.14 Eq H1-3	90.0	30	HSS8X8X3/16

Column Line 5.75ft - 26.00ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	9.3	1.7	2.9	1	0.17 Eq H1-3	0.0	46	HSS8X8X1/4

Column Line 5.75ft - 155.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	9.3	1.7	2.9	1	0.17 Eq H1-3	0.0	46	HSS8X8X1/4

Column Line B - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	92.1	4.0	6.6	5	0.92 Eq H1-1	0.0	30	W14X48
L14	196.0	7.0	11.5	8	0.56 Eq H1-2	0.0	30	W14X90
L13	212.0	1.6	6.2	1	0.52 Eq H1-2	0.0	30	W14X90
L12	272.0	10.4	3.0	2	0.74 Eq H1-1	0.0	30	W14X90
L11	320.9	10.3	3.0	3	0.88 Eq H1-1	0.0	30	W14X90
L10	382.2	2.3	7.4	4	0.69 Eq H1-1	0.0	30	W14X120
L9	451.2	1.7	6.7	5	0.81 Eq H1-1	0.0	30	W14X120
L8	517.2	0.9	5.2	3	0.96 Eq H1-1	0.0	30	W14X120
L7	599.7	0.5	6.6	2	0.88 Eq H1-1	0.0	30	W14X145
L6	667.9	0.6	1.6	5	0.95 Eq H1-1	0.0	30	W14X145
L5	734.3	0.5	1.6	4	0.88 Eq H1-1	0.0	30	W14X176
L4	806.1	0.5	1.6	4	0.98 Eq H1-1	0.0	30	W14X176
L3	877.9	0.6	5.3	4	0.92 Eq H1-1	0.0	30	W14X211
L2	953.3	0.6	7.0	2	0.95 Eq H1-1	0.0	30	W14X211
L1	1019.7	0.2	6.0	1	0.94 Eq H1-1	0.0	30	W14X233

Column Line B - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	88.4	21.3	16.9	16	0.85 Eq H1-2	90.0	30	W14X61
L14	166.0	1.4	3.0	3	0.65 Eq H1-1	90.0	30	W14X74
L13	166.0	1.4	3.0	3	0.65 Eq H1-1	90.0	30	W14X74
L12	232.0	1.2	3.0	3	0.97 Eq H1-1	90.0	30	W14X74
L11	232.0	1.2	3.0	3	0.97 Eq H1-1	90.0	30	W14X74
L10	284.7	2.7	2.9	6	0.69 Eq H1-1	90.0	30	W14X90
L9	324.9	2.3	6.6	2	0.83 Eq H1-1	90.0	30	W14X90
L8	387.4	1.2	5.2	6	0.98 Eq H1-1	90.0	30	W14X90
L7	438.7	0.9	3.4	7	0.86 Eq H1-1	90.0	30	W14X109
L6	494.1	1.3	0.9	4	0.95 Eq H1-1	90.0	30	W14X109
L5	548.4	1.3	1.1	3	0.88 Eq H1-1	90.0	30	W14X132
L4	602.6	1.3	1.1	3	0.99 Eq H1-1	90.0	30	W14X132
L3	656.9	1.1	3.6	3	0.92 Eq H1-1	90.0	30	W14X159
L2	710.0	1.3	4.7	6	0.95 Eq H1-1	90.0	30	W14X159
L1	764.2	0.4	4.0	6	0.93 Eq H1-1	90.0	30	W14X176

Column Line B - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	49.1	6.2	0.6	5	0.33 Eq H1-1	90.0	30	C34L11L14
L13	49.1	6.2	0.6	5	0.33 Eq H1-1	90.0	30	C34L11L14
L12	97.0	2.9	4.6	5	0.78 Eq H1-1	90.0	30	C34L11L14
L11	97.0	2.9	4.6	5	0.78 Eq H1-1	90.0	30	C34L11L14
L10	187.7	4.0	7.5	2	0.69 Eq H1-1	90.0	30	W14X74
L9	223.5	5.1	1.3	6	0.74 Eq H1-1	90.0	30	W14X74
L8	267.2	3.7	1.0	10	0.94 Eq H1-1	90.0	30	W14X74

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	310.1	3.1	1.4	6	0.88 Eq H1-1	90.0	30	W14X82
L6	355.4	3.3	0.5	4	0.99 Eq H1-1	90.0	30	W14X82
L5	398.9	3.3	0.7	3	0.86 Eq H1-1	90.0	30	W14X99
L4	442.4	3.3	0.7	3	0.98 Eq H1-1	90.0	30	W14X99
L3	485.9	2.6	2.3	2	0.92 Eq H1-1	90.0	30	W14X120
L2	528.2	3.1	3.0	7	0.94 Eq H1-1	90.0	30	W14X120
L1	571.8	2.3	2.9	6	0.94 Eq H1-1	90.0	30	W14X132

Column Line B - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	35.5	2.3	0.8	6	0.41 Eq H1-1	90.0	30	C50L11L14
L13	35.5	2.3	0.8	6	0.41 Eq H1-1	90.0	30	C50L11L14
L12	75.6	1.0	3.7	4	1.16 Eq H1-1	90.0	30	C50L11L14
L11	75.6	1.0	3.7	4	1.16 Eq H1-1	90.0	30	C50L11L14
L10	145.4	1.3	5.9	3	0.66 Eq H1-1	90.0	30	W14X61
L9	176.2	0.9	0.9	7	0.69 Eq H1-1	90.0	30	W14X61
L8	207.8	0.3	0.7	11	0.88 Eq H1-1	90.0	30	W14X61
L7	244.2	0.9	0.9	7	0.83 Eq H1-1	90.0	30	W14X68
L6	280.6	0.9	0.2	5	0.94 Eq H1-1	90.0	30	W14X68
L5	315.2	0.9	0.4	2	0.75 Eq H1-1	90.0	30	W14X90
L4	349.8	0.9	0.4	2	0.85 Eq H1-1	90.0	30	W14X90
L3	384.4	0.8	1.2	2	0.96 Eq H1-1	90.0	30	W14X90
L2	416.8	0.6	1.8	11	0.99 Eq H1-1	90.0	30	W14X90
L1	452.5	0.1	1.7	6	0.99 Eq H1-1	90.0	30	W14X99

Column Line B - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	181.4	15.2	9.8	14	0.81 Eq H1-2	90.0	30	W14X68
L9	211.0	4.6	2.8	7	0.77 Eq H1-1	90.0	30	W14X68
L8	260.4	3.3	2.3	6	1.00 Eq H1-1	90.0	30	W14X68
L7	310.3	4.1	3.7	6	0.75 Eq H1-1	90.0	30	W14X90
L6	364.1	4.7	0.8	5	0.85 Eq H1-1	90.0	30	W14X90
L5	416.6	4.8	1.0	2	0.82 Eq H1-1	90.0	30	W14X109
L4	469.1	4.8	1.0	2	0.94 Eq H1-1	90.0	30	W14X109
L3	521.6	3.9	3.2	3	0.90 Eq H1-1	90.0	30	W14X132
L2	572.8	4.7	4.2	6	0.94 Eq H1-1	90.0	30	W14X132
L1	625.3	4.0	3.7	6	0.93 Eq H1-1	90.0	30	W14X145

Column Line B - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L8	226.1	0.7	150.0	6	0.99 Eq H1-2	90.0	30	W14X176
L7	292.6	1.0	5.7	6	0.72 Eq H1-1	90.0	30	W14X90
L6	364.0	1.1	1.3	4	0.85 Eq H1-1	90.0	30	W14X90
L5	434.0	1.1	1.5	2	0.77 Eq H1-1	90.0	30	W14X120
L4	504.0	1.1	1.5	2	0.91 Eq H1-1	90.0	30	W14X120

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L3	574.0	3.0	3.9	3	0.89 Eq H1-1	90.0	30	W14X145
L2	628.9	4.8	5.1	6	0.93 Eq H1-1	90.0	30	W14X145
L1	682.4	4.1	4.1	6	0.93 Eq H1-1	90.0	30	W14X159

Column Line 19.33ft - 90.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L2	41.7	1.1	3.2	10	0.37 Eq H1-1	90.0	30	W14X43
L1	73.3	0.0	1.2	10	0.51 Eq H1-1	90.0	30	W14X43

Column Line B - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	66.0	19.1	4.7	6	0.43 Eq H1-2	90.0	30	C78L11L14
L13	66.0	19.1	4.7	6	0.43 Eq H1-2	90.0	30	C78L11L14
L12	134.0	8.6	12.6	4	0.86 Eq H1-1	90.0	30	C78L11L14
L11	134.0	8.6	12.6	4	0.86 Eq H1-1	90.0	30	C78L11L14
L10	269.1	6.8	21.3	10	0.82 Eq H1-2	90.0	30	W14X90
L9	313.2	6.0	5.4	6	0.77 Eq H1-1	90.0	30	W14X90
L8	379.3	0.7	4.6	6	0.95 Eq H1-1	90.0	30	W14X90
L7	445.8	1.1	5.7	6	0.80 Eq H1-1	90.0	30	W14X120
L6	517.2	1.1	1.3	4	0.90 Eq H1-1	90.0	30	W14X120
L5	587.2	1.2	1.5	2	0.85 Eq H1-1	90.0	30	W14X145
L4	657.2	1.2	1.5	2	0.97 Eq H1-1	90.0	30	W14X145
L3	727.2	3.1	3.9	2	0.92 Eq H1-1	90.0	30	W14X176
L2	782.1	4.9	5.1	7	0.94 Eq H1-1	90.0	30	W14X176
L1	835.6	4.2	4.1	6	0.93 Eq H1-1	90.0	30	W14X193

Column Line B - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	56.4	12.1	0.7	5	0.41 Eq H1-1	90.0	30	C66L11L14
L13	56.4	12.1	0.7	5	0.41 Eq H1-1	90.0	30	C66L11L14
L12	111.1	5.5	4.8	5	0.91 Eq H1-1	90.0	30	C66L11L14
L11	111.1	5.5	4.8	5	0.91 Eq H1-1	90.0	30	C66L11L14
L10	209.9	8.9	7.9	2	0.72 Eq H1-1	90.0	30	W14X82
L9	256.4	4.6	3.0	11	0.75 Eq H1-1	90.0	30	W14X82
L8	308.1	3.4	2.3	7	0.97 Eq H1-1	90.0	30	W14X82
L7	358.0	4.1	3.7	7	0.86 Eq H1-1	90.0	30	W14X90
L6	411.7	4.7	0.8	4	0.96 Eq H1-1	90.0	30	W14X90
L5	464.2	4.9	1.0	3	0.83 Eq H1-1	90.0	30	W14X120
L4	516.7	4.9	1.0	3	0.94 Eq H1-1	90.0	30	W14X120
L3	569.2	3.9	3.4	2	0.88 Eq H1-1	90.0	30	W14X145
L2	620.5	4.7	4.4	7	0.91 Eq H1-1	90.0	30	W14X145
L1	673.0	4.1	3.8	6	0.92 Eq H1-1	90.0	30	W14X159

Column Line B - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	35.5	2.3	0.8	7	0.41 Eq H1-1	90.0	30	C50L11L14
L13	35.5	2.3	0.8	7	0.41 Eq H1-1	90.0	30	C50L11L14
L12	75.6	1.0	3.4	5	1.14 Eq H1-1	90.0	30	C50L11L14
L11	75.6	1.0	3.4	5	1.14 Eq H1-1	90.0	30	C50L11L14
L10	145.4	0.8	5.5	2	0.65 Eq H1-1	90.0	30	W14X61
L9	174.7	1.2	1.4	7	0.69 Eq H1-1	90.0	30	W14X61
L8	206.6	0.6	1.0	6	0.87 Eq H1-1	90.0	30	W14X61
L7	242.8	0.7	1.2	6	0.83 Eq H1-1	90.0	30	W14X68
L6	279.0	0.5	0.3	4	0.93 Eq H1-1	90.0	30	W14X68
L5	313.6	0.5	0.5	3	0.74 Eq H1-1	90.0	30	W14X90
L4	348.2	0.5	0.5	3	0.84 Eq H1-1	90.0	30	W14X90
L3	382.8	0.4	1.5	3	0.96 Eq H1-1	90.0	30	W14X90
L2	416.3	0.7	2.0	6	0.99 Eq H1-1	90.0	30	W14X90
L1	449.2	0.3	1.3	6	0.98 Eq H1-1	90.0	30	W14X99

Column Line B - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	49.1	6.2	0.6	4	0.33 Eq H1-1	90.0	30	C34L11L14
L13	49.1	6.2	0.6	4	0.33 Eq H1-1	90.0	30	C34L11L14
L12	97.0	2.9	4.4	4	0.77 Eq H1-1	90.0	30	C34L11L14
L11	97.0	2.9	4.4	4	0.77 Eq H1-1	90.0	30	C34L11L14
L10	187.9	2.8	7.1	3	0.69 Eq H1-1	90.0	30	W14X74
L9	222.3	4.4	1.7	7	0.73 Eq H1-1	90.0	30	W14X74
L8	265.7	2.9	1.3	11	0.93 Eq H1-1	90.0	30	W14X74
L7	309.0	2.8	1.8	7	0.88 Eq H1-1	90.0	30	W14X82
L6	354.0	3.0	0.7	5	0.99 Eq H1-1	90.0	30	W14X82
L5	397.5	3.0	0.8	2	0.86 Eq H1-1	90.0	30	W14X99
L4	441.0	3.0	0.8	2	0.97 Eq H1-1	90.0	30	W14X99
L3	484.5	2.3	2.7	3	0.91 Eq H1-1	90.0	30	W14X120
L2	527.0	2.7	3.5	6	0.95 Eq H1-1	90.0	30	W14X120
L1	564.5	2.1	2.1	6	0.93 Eq H1-1	90.0	30	W14X132

Column Line B - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	88.4	21.3	16.9	17	0.85 Eq H1-2	90.0	30	W14X61
L14	166.0	1.4	3.0	2	0.56 Eq H1-1	90.0	30	C18L11L14
L13	166.0	1.4	3.0	2	0.56 Eq H1-1	90.0	30	C18L11L14
L12	232.0	1.2	3.0	2	0.83 Eq H1-1	90.0	30	C18L11L14
L11	232.0	1.2	3.0	2	0.83 Eq H1-1	90.0	30	C18L11L14
L10	284.7	2.5	3.1	7	0.69 Eq H1-1	90.0	30	W14X90
L9	324.9	2.2	6.6	3	0.83 Eq H1-1	90.0	30	W14X90
L8	387.3	1.2	5.2	7	0.98 Eq H1-1	90.0	30	W14X90
L7	438.7	0.9	3.4	6	0.86 Eq H1-1	90.0	30	W14X109

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L6	494.1	1.3	0.9	5	0.95 Eq H1-1	90.0	30	W14X109
L5	548.4	1.3	1.1	2	0.88 Eq H1-1	90.0	30	W14X132
L4	602.6	1.3	1.1	2	0.99 Eq H1-1	90.0	30	W14X132
L3	656.9	1.1	3.6	2	0.92 Eq H1-1	90.0	30	W14X159
L2	709.9	2.7	4.7	7	0.95 Eq H1-1	90.0	30	W14X159
L1	759.8	1.0	3.5	6	0.92 Eq H1-1	90.0	30	W14X176

Column Line B - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	92.1	4.0	6.6	2	0.92 Eq H1-1	0.0	30	W14X48
L14	196.0	7.0	11.5	8	0.56 Eq H1-2	0.0	30	W14X90
L13	212.0	1.6	6.2	1	0.52 Eq H1-2	0.0	30	W14X90
L12	272.0	10.4	3.0	5	0.74 Eq H1-1	0.0	30	W14X90
L11	320.9	10.3	3.0	4	0.88 Eq H1-1	0.0	30	W14X90
L10	382.2	2.3	7.4	3	0.69 Eq H1-1	0.0	30	W14X120
L9	451.2	1.7	6.7	2	0.81 Eq H1-1	0.0	30	W14X120
L8	517.2	0.9	5.2	4	0.96 Eq H1-1	0.0	30	W14X120
L7	599.8	0.5	6.6	5	0.88 Eq H1-1	0.0	30	W14X145
L6	668.0	0.6	1.6	2	0.95 Eq H1-1	0.0	30	W14X145
L5	734.4	0.5	1.6	3	0.88 Eq H1-1	0.0	30	W14X176
L4	806.1	0.5	1.6	3	0.98 Eq H1-1	0.0	30	W14X176
L3	877.9	0.6	5.3	3	0.92 Eq H1-1	0.0	30	W14X211
L2	953.3	2.3	7.0	4	0.95 Eq H1-1	0.0	30	W14X211
L1	1075.2	1.7	6.0	1	0.99 Eq H1-1	0.0	30	W14X233

Column Line B.2 - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	52.7	15.7	2.9	10	0.44 Eq H1-2	90.0	30	C219L11L14
L13	52.7	15.7	2.9	10	0.44 Eq H1-2	90.0	30	C219L11L14
L12	106.9	7.2	1.6	1	0.65 Eq H1-1	90.0	30	C219L11L14
L11	106.9	7.2	1.6	1	0.65 Eq H1-1	90.0	30	C219L11L14

Column Line B.2 - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	72.1	1.5	1.5	10	0.65 Eq H1-1	90.0	30	C230L13L14
L13	72.1	1.5	1.5	10	0.65 Eq H1-1	90.0	30	C230L13L14
L12	142.3	0.0	1.1	1	0.59 Eq H1-1	90.0	30	C230L11L12
L11	142.3	0.0	1.1	1	0.59 Eq H1-1	90.0	30	C230L11L12

Column Line 25.83ft - 79.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	238.0	0.8	112.7	10	1.00 Eq H1-2	90.0	30	W14X145
L9	265.6	0.0	3.0	1	0.39 Eq H1-1	90.0	30	W14X145

Column Line 26.00ft - 0.00ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	24.8	9.7	1.9	1	0.80 Eq H1-2	0.0	30	HSS10.000X0.188
L13	32.2	1.5	1.0	1	0.45 Eq H1-2	0.0	30	HSS10.000X0.188
L12	43.2	1.5	0.6	1	0.55 Eq H1-1	0.0	30	HSS10.000X0.188

Column Line 26.00ft - 4.42ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	5.5	0.3	1.4	14	0.15 Eq H1-3	90.0	30	HSS8X8X3/16

Column Line 26.00ft - 5.75ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	9.3	1.7	2.9	1	0.17 Eq H1-3	90.0	46	HSS8X8X1/4

Column Line 26.00ft - 175.42ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	9.3	1.7	2.9	1	0.17 Eq H1-3	90.0	46	HSS8X8X1/4

Column Line 26.00ft - 176.75ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	5.4	0.2	1.4	15	0.14 Eq H1-3	90.0	30	HSS8X8X3/16

Column Line 26.00ft - 181.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	24.8	9.7	1.9	1	0.80 Eq H1-2	0.0	30	HSS10.000X0.188
L13	32.2	1.5	1.0	1	0.45 Eq H1-2	0.0	30	HSS10.000X0.188
L12	43.2	1.5	0.6	1	0.55 Eq H1-1	0.0	30	HSS10.000X0.188

Column Line 26.83ft - 14.33ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	18.3	0.0	0.0	1	0.54 Eq H1-1	90.0	30	STRUT

Column Line 26.83ft - 21.33ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	15.6	0.0	0.0	1	0.46 Eq H1-1	90.0	30	STRUT

Column Line 26.83ft - 159.83ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	15.4	0.0	0.0	1	0.45 Eq H1-1	90.0	30	STRUT

Column Line 26.83ft - 166.83ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	18.5	0.0	0.0	1	0.54 Eq H1-1	90.0	30	STRUT

Column Line 30.33ft - 90.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L2	37.4	1.1	2.5	7	0.32 Eq H1-1	90.0	30	W14X43
L1	66.6	0.0	0.9	6	0.45 Eq H1-1	90.0	30	W14X43

Column Line C - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	122.8	17.5	38.7	12	0.68 Eq H1-2	0.0	30	W14X99
L10	416.0	5.1	5.9	4	0.61 Eq H1-1	0.0	30	W14X145
L9	467.2	6.1	5.0	3	0.68 Eq H1-1	0.0	30	W14X145
L8	542.4	4.6	3.2	2	0.81 Eq H1-1	0.0	30	W14X145
L7	605.1	5.9	3.9	2	0.88 Eq H1-1	0.0	30	W14X145
L6	657.0	4.9	0.9	4	0.94 Eq H1-1	0.0	30	W14X145
L5	707.5	5.4	0.9	4	0.85 Eq H1-1	0.0	30	W14X176
L4	762.1	5.4	0.9	4	0.93 Eq H1-1	0.0	30	W14X176
L3	816.7	4.6	3.1	5	0.93 Eq H1-1	0.0	30	W14X193
L2	874.0	5.8	4.1	2	0.95 Eq H1-1	0.0	30	W14X193
L1	924.5	4.4	3.5	1	0.94 Eq H1-1	0.0	30	W14X211

Column Line 35.83ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.3	3.9	3.2	1	0.32 Eq H1-1	90.0	30	W14X43
L14	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61
L13	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61
L12	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61

Column Line C - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	80.8	20.1	8.7	11	0.89 Eq H1-1	90.0	30	W14X48
L14	154.5	4.2	3.6	1	0.82 Eq H1-1	90.0	30	W14X61
L13	165.8	18.5	3.6	1	0.94 Eq H1-1	90.0	30	W14X61
L12	211.3	18.2	0.3	3	0.83 Eq H1-1	90.0	30	W14X61
L11	226.1	3.3	0.3	6	0.82 Eq H1-1	90.0	30	W14X61

Column Line C - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	37.5	8.1	1.5	6	0.36 Eq H1-1	0.0	30	W14X43
L8	48.2	5.4	0.6	2	0.38 Eq H1-1	0.0	30	W14X43
L7	81.0	4.6	0.4	6	0.47 Eq H1-1	0.0	30	C19L6L7
L6	122.2	4.7	0.3	11	0.68 Eq H1-1	0.0	30	C19L6L7
L5	166.7	4.8	0.3	4	0.76 Eq H1-1	0.0	30	C19L4L5
L4	209.1	4.8	0.3	11	1.02 Eq H1-1	0.0	30	C19L4L5

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L3	253.6	3.8	0.9	5	0.78 Eq H1-1	0.0	30	C19L2L3
L2	296.0	4.6	1.2	10	0.83 Eq H1-1	0.0	30	C19L2L3
L1	339.5	4.1	1.1	10	0.65 Eq H1-1	0.0	30	C19L1

Column Line C - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	45.4	7.6	1.1	7	0.45 Eq H1-1	0.0	30	W14X43
L13	45.4	7.6	1.1	7	0.45 Eq H1-1	0.0	30	W14X43
L12	92.6	3.5	0.8	1	0.86 Eq H1-1	0.0	30	W14X43
L11	92.6	3.5	0.8	1	0.86 Eq H1-1	0.0	30	W14X43

Column Line C - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	53.8	13.2	8.9	7	0.83 Eq H1-1	0.0	30	W14X43
L14	89.6	3.4	0.3	3	0.53 Eq H1-1	0.0	30	C34L11L14
L13	89.6	3.4	0.3	3	0.53 Eq H1-1	0.0	30	C34L11L14
L12	121.5	2.7	0.2	7	0.72 Eq H1-1	0.0	30	C34L11L14
L11	121.5	2.7	0.2	7	0.72 Eq H1-1	0.0	30	C34L11L14
L10	258.0	3.0	2.5	2	0.61 Eq H1-1	0.0	30	W14X90
L9	290.9	2.5	3.5	2	0.70 Eq H1-1	0.0	30	W14X90
L8	344.8	2.8	2.7	6	0.86 Eq H1-1	0.0	30	W14X90
L7	377.6	4.0	1.5	6	0.89 Eq H1-1	0.0	30	W14X90
L6	412.1	3.8	0.5	5	0.96 Eq H1-1	0.0	30	W14X90
L5	445.5	4.4	0.6	3	0.87 Eq H1-1	0.0	30	W14X109
L4	478.8	4.4	0.6	3	0.96 Eq H1-1	0.0	30	W14X109
L3	512.2	3.7	1.9	2	0.96 Eq H1-1	0.0	30	W14X120
L2	544.9	4.4	2.5	7	0.97 Eq H1-1	0.0	30	W14X120
L1	578.3	3.8	2.1	6	0.95 Eq H1-1	0.0	30	W14X132

Column Line C - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	30.2	1.4	8.9	10	0.66 Eq H1-2	90.0	30	C50L11L14
L14	63.5	1.3	0.7	5	0.64 Eq H1-1	90.0	30	C50L11L14
L13	63.5	1.3	0.7	5	0.64 Eq H1-1	90.0	30	C50L11L14
L12	93.4	0.7	0.7	11	1.06 Eq H1-1	90.0	30	C50L11L14
L11	93.4	0.7	0.7	11	1.06 Eq H1-1	90.0	30	C50L11L14
L10	124.1	1.7	3.8	5	0.52 Eq H1-1	90.0	30	W14X61
L9	152.4	0.9	3.2	11	0.62 Eq H1-1	90.0	30	W14X61
L8	178.2	0.3	2.3	10	0.77 Eq H1-1	90.0	30	W14X61
L7	201.4	0.3	2.5	10	0.79 Eq H1-1	90.0	30	W14X61
L6	227.2	0.3	0.7	2	0.85 Eq H1-1	90.0	30	W14X61
L5	252.6	0.3	0.8	5	0.80 Eq H1-1	90.0	30	W14X74
L4	278.1	0.3	0.8	5	0.92 Eq H1-1	90.0	30	W14X74
L3	303.5	0.2	2.0	5	0.99 Eq H1-1	90.0	30	W14X82
L2	328.3	0.3	2.6	10	0.96 Eq H1-1	90.0	30	W14X82

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	353.7	0.0	2.8	10	0.86 Eq H1-1	90.0	30	W14X90

Column Line C - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.3	12.2	10	0.84 Eq H1-2	90.0	30	W14X43
L14	91.4	4.9	0.3	5	0.54 Eq H1-1	90.0	30	C66L11L14
L13	91.4	4.9	0.3	5	0.54 Eq H1-1	90.0	30	C66L11L14
L12	132.1	4.0	2.9	4	0.97 Eq H1-1	90.0	30	C66L11L14
L11	132.1	4.0	2.9	4	0.97 Eq H1-1	90.0	30	C66L11L14
L10	196.2	6.4	4.5	3	0.64 Eq H1-1	90.0	30	W14X74
L9	228.6	3.5	4.5	7	0.75 Eq H1-1	90.0	30	W14X74
L8	272.0	2.5	3.6	11	0.96 Eq H1-1	90.0	30	W14X74
L7	313.1	3.0	4.3	11	0.93 Eq H1-1	90.0	30	W14X82
L6	352.4	3.0	1.2	2	0.98 Eq H1-1	90.0	30	W14X82
L5	391.0	3.0	1.4	5	0.84 Eq H1-1	90.0	30	W14X99
L4	429.5	3.0	1.4	5	0.95 Eq H1-1	90.0	30	W14X99
L3	468.1	2.4	4.4	4	0.89 Eq H1-1	90.0	30	W14X120
L2	506.0	2.9	5.7	11	0.91 Eq H1-1	90.0	30	W14X120
L1	544.6	2.5	4.9	10	0.91 Eq H1-1	90.0	30	W14X132

Column Line C - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	62.0	1.8	16.5	10	0.88 Eq H1-1	90.0	30	W14X53
L14	119.0	1.5	0.3	4	0.41 Eq H1-1	90.0	30	C67L11L14
L13	119.0	1.5	0.3	4	0.41 Eq H1-1	90.0	30	C67L11L14
L12	170.0	1.0	0.3	2	0.59 Eq H1-1	90.0	30	C67L11L14
L11	170.0	1.0	0.3	2	0.59 Eq H1-1	90.0	30	C67L11L14
L10	219.0	1.2	1.0	4	0.35 Eq H1-1	90.0	30	W14X132
L9	257.0	0.9	56.2	4	0.77 Eq H1-2	90.0	30	W14X132
L8	415.2	0.7	44.4	10	0.91 Eq H1-2	90.0	30	W14X132
L7	470.1	0.6	8.1	10	0.86 Eq H1-1	90.0	30	W14X120
L6	522.3	0.6	1.7	2	0.91 Eq H1-1	90.0	30	W14X120
L5	573.8	0.6	1.9	4	0.83 Eq H1-1	90.0	30	W14X145
L4	625.2	0.6	1.9	4	0.93 Eq H1-1	90.0	30	W14X145
L3	676.6	4.0	6.3	4	0.96 Eq H1-1	90.0	30	W14X159
L2	713.4	5.3	8.2	10	0.96 Eq H1-1	90.0	30	W14X159
L1	750.0	4.5	6.3	10	0.93 Eq H1-1	90.0	30	W14X176

Column Line C - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	60.5	8.8	25.8	10	0.89 Eq H1-2	90.0	30	W14X61
L14	129.1	3.2	1.2	2	0.39 Eq H1-1	90.0	30	C79L11L14
L13	129.1	3.2	1.2	2	0.39 Eq H1-1	90.0	30	C79L11L14
L12	189.1	1.7	1.1	3	0.57 Eq H1-1	90.0	30	C79L11L14
L11	189.1	1.7	1.1	3	0.57 Eq H1-1	90.0	30	C79L11L14

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	240.3	1.7	7.9	5	0.61 Eq H1-1	90.0	30	W14X90
L9	293.5	1.3	7.0	11	0.71 Eq H1-1	90.0	30	W14X90
L8	347.9	1.0	6.2	11	0.87 Eq H1-1	90.0	30	W14X90
L7	402.8	1.0	7.6	11	0.90 Eq H1-1	90.0	30	W14X99
L6	455.1	1.0	1.6	3	0.97 Eq H1-1	90.0	30	W14X99
L5	506.5	1.0	1.8	4	0.82 Eq H1-1	90.0	30	W14X132
L4	558.0	1.0	1.8	4	0.92 Eq H1-1	90.0	30	W14X132
L3	609.4	4.0	6.2	5	0.95 Eq H1-1	90.0	30	W14X145
L2	646.1	5.2	8.2	11	0.96 Eq H1-1	90.0	30	W14X145
L1	682.8	4.5	6.2	10	0.94 Eq H1-1	90.0	30	W14X159

Column Line C - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	45.5	6.9	18.0	11	0.99 Eq H1-2	90.0	30	W14X48
L14	95.7	6.2	0.7	4	0.34 Eq H1-1	90.0	30	C67L11L14
L13	95.7	6.2	0.7	4	0.34 Eq H1-1	90.0	30	C67L11L14
L12	141.3	5.2	1.1	5	0.50 Eq H1-1	90.0	30	C67L11L14
L11	141.3	5.2	1.1	5	0.50 Eq H1-1	90.0	30	C67L11L14
L10	181.2	6.5	6.4	7	0.70 Eq H1-1	90.0	30	W14X68
L9	217.9	2.9	5.2	2	0.80 Eq H1-1	90.0	30	W14X68
L8	258.2	1.6	3.2	10	1.00 Eq H1-1	90.0	30	W14X68
L7	299.3	2.0	3.9	10	0.88 Eq H1-1	90.0	30	W14X82
L6	338.8	1.9	1.0	3	0.94 Eq H1-1	90.0	30	W14X82
L5	377.4	1.9	1.2	4	0.81 Eq H1-1	90.0	30	W14X99
L4	415.9	1.9	1.2	4	0.92 Eq H1-1	90.0	30	W14X99
L3	454.5	2.4	4.4	4	0.96 Eq H1-1	90.0	30	W14X109
L2	492.4	2.9	5.7	10	0.98 Eq H1-1	90.0	30	W14X109
L1	531.0	2.5	4.9	10	0.98 Eq H1-1	90.0	30	W14X120

Column Line C - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	30.2	1.1	8.7	11	0.56 Eq H1-2	90.0	30	W14X43
L14	63.5	1.1	0.6	4	0.63 Eq H1-1	90.0	30	C50L11L14
L13	63.5	1.1	0.6	4	0.63 Eq H1-1	90.0	30	C50L11L14
L12	93.3	0.5	0.6	10	1.05 Eq H1-1	90.0	30	C50L11L14
L11	93.3	0.5	0.6	10	1.05 Eq H1-1	90.0	30	C50L11L14
L10	124.1	1.7	3.8	4	0.52 Eq H1-1	90.0	30	W14X61
L9	152.3	1.1	3.2	10	0.62 Eq H1-1	90.0	30	W14X61
L8	178.1	0.4	2.2	11	0.77 Eq H1-1	90.0	30	W14X61
L7	201.3	0.4	2.4	11	0.79 Eq H1-1	90.0	30	W14X61
L6	227.2	0.4	0.6	2	0.85 Eq H1-1	90.0	30	W14X61
L5	252.6	0.4	0.8	5	0.80 Eq H1-1	90.0	30	W14X74
L4	278.0	0.4	0.8	5	0.92 Eq H1-1	90.0	30	W14X74
L3	303.5	0.2	2.0	4	1.00 Eq H1-1	90.0	30	W14X82
L2	328.3	0.5	2.6	11	0.96 Eq H1-1	90.0	30	W14X82

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	352.3	0.1	2.7	10	0.86 Eq H1-1	90.0	30	W14X90

Column Line C - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	53.8	13.2	8.9	10	0.83 Eq H1-1	0.0	30	W14X43
L14	89.6	3.4	0.3	4	0.53 Eq H1-1	0.0	30	C34L11L14
L13	89.6	3.4	0.3	4	0.53 Eq H1-1	0.0	30	C34L11L14
L12	121.5	2.7	0.2	10	0.72 Eq H1-1	0.0	30	C34L11L14
L11	121.5	2.7	0.2	10	0.72 Eq H1-1	0.0	30	C34L11L14
L10	258.0	3.0	2.5	5	0.51 Eq H1-1	0.0	30	W14X109
L9	290.9	2.6	3.6	5	0.58 Eq H1-1	0.0	30	W14X109
L8	343.8	2.9	2.9	11	0.71 Eq H1-1	0.0	30	W14X109
L7	376.6	4.1	1.6	11	0.89 Eq H1-1	0.0	30	W14X90
L6	411.2	3.9	0.5	2	0.96 Eq H1-1	0.0	30	W14X90
L5	444.6	4.4	0.6	4	0.87 Eq H1-1	0.0	30	W14X109
L4	478.1	4.4	0.6	4	0.96 Eq H1-1	0.0	30	W14X109
L3	511.5	3.7	2.0	5	0.96 Eq H1-1	0.0	30	W14X120
L2	544.3	4.5	2.6	10	0.98 Eq H1-1	0.0	30	W14X120
L1	572.9	2.9	1.8	10	0.94 Eq H1-1	0.0	30	W14X132

Column Line C - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	45.4	6.1	1.1	10	0.44 Eq H1-1	0.0	30	C217L11L14
L13	45.4	6.1	1.1	10	0.44 Eq H1-1	0.0	30	C217L11L14
L12	91.3	2.8	0.9	10	0.85 Eq H1-1	0.0	30	C217L11L14
L11	91.3	2.8	0.9	10	0.85 Eq H1-1	0.0	30	C217L11L14

Column Line C - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	37.5	8.1	1.5	11	0.36 Eq H1-1	0.0	30	W14X43
L8	50.2	5.4	0.6	5	0.40 Eq H1-1	0.0	30	W14X43
L7	83.0	4.6	0.4	11	0.48 Eq H1-1	0.0	30	C19L6L7
L6	124.2	4.7	0.3	6	0.69 Eq H1-1	0.0	30	C19L6L7
L5	168.7	4.7	0.3	3	0.77 Eq H1-1	0.0	30	C19L4L5
L4	211.2	4.7	0.3	6	1.03 Eq H1-1	0.0	30	C19L4L5
L3	255.7	3.8	0.9	2	0.79 Eq H1-1	0.0	30	C19L2L3
L2	298.1	4.6	1.2	7	0.85 Eq H1-1	0.0	30	C19L2L3
L1	335.1	3.5	1.1	10	0.64 Eq H1-1	0.0	30	C19L1

Column Line C - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	80.8	20.1	8.7	10	0.89 Eq H1-1	90.0	30	W14X48
L14	154.5	4.2	3.6	1	0.82 Eq H1-1	90.0	30	W14X61
L13	165.8	18.5	3.6	1	0.94 Eq H1-1	90.0	30	W14X61

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L12	211.3	18.2	0.3	2	0.83 Eq H1-1	90.0	30	W14X61
L11	226.1	3.3	0.3	6	0.82 Eq H1-1	90.0	30	W14X61

Column Line 35.83ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.3	3.9	3.2	1	0.32 Eq H1-1	90.0	30	W14X43
L14	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61
L13	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61
L12	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61

Column Line C - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	122.8	17.5	38.7	12	0.68 Eq H1-2	0.0	30	W14X99
L10	416.0	5.1	5.9	3	0.61 Eq H1-1	0.0	30	W14X145
L9	467.2	6.1	5.0	4	0.68 Eq H1-1	0.0	30	W14X145
L8	541.4	4.6	3.2	5	0.81 Eq H1-1	0.0	30	W14X145
L7	604.1	5.9	3.9	5	0.88 Eq H1-1	0.0	30	W14X145
L6	656.0	4.9	0.9	3	0.94 Eq H1-1	0.0	30	W14X145
L5	706.5	5.4	0.9	3	0.84 Eq H1-1	0.0	30	W14X176
L4	761.1	5.4	0.9	3	0.93 Eq H1-1	0.0	30	W14X176
L3	815.7	4.6	3.1	2	0.93 Eq H1-1	0.0	30	W14X193
L2	873.0	8.9	4.1	4	0.96 Eq H1-1	0.0	30	W14X193
L1	965.7	8.1	3.5	1	0.98 Eq H1-1	0.0	30	W14X211

Column Line D - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	112.2	0.8	46.5	2	0.74 Eq H1-2	0.0	30	W14X90
L10	328.0	0.5	29.2	2	0.83 Eq H1-2	0.0	30	W14X109
L9	360.1	0.6	11.0	5	0.76 Eq H1-1	0.0	30	W14X109
L8	410.7	0.4	8.3	2	0.87 Eq H1-1	0.0	30	W14X109
L7	459.7	0.2	3.7	3	0.90 Eq H1-1	0.0	30	W14X109
L6	501.0	0.4	0.9	5	0.96 Eq H1-1	0.0	30	W14X109
L5	541.4	0.4	0.9	5	0.87 Eq H1-1	0.0	30	W14X132
L4	584.9	0.4	0.9	5	0.96 Eq H1-1	0.0	30	W14X132
L3	628.5	0.4	3.1	5	0.96 Eq H1-1	0.0	30	W14X145
L2	674.2	0.4	4.1	2	0.98 Eq H1-1	0.0	30	W14X145
L1	714.5	0.1	3.5	1	0.96 Eq H1-1	0.0	30	W14X159

Column Line 46.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.2	0.0	0.2	2	0.16 Eq H1-3	90.0	30	W14X43
L14	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61
L13	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61
L12	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61

Column Line D - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	65.5	17.2	1.3	6	0.63 Eq H1-1	90.0	30	W14X43
L14	92.9	5.7	0.2	6	0.80 Eq H1-1	90.0	30	W14X43
L13	105.0	13.3	0.2	15	0.96 Eq H1-1	90.0	30	W14X43
L12	140.3	13.2	0.2	3	0.86 Eq H1-1	90.0	30	W14X43
L11	157.4	3.9	0.2	6	0.87 Eq H1-1	90.0	30	W14X43

Column Line D - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	34.1	1.0	2.0	11	0.27 Eq H1-1	0.0	30	W14X43
L6	75.3	1.0	0.5	2	0.46 Eq H1-1	0.0	30	W14X43
L5	109.7	0.8	0.6	5	0.61 Eq H1-1	0.0	30	W14X48
L4	139.8	0.6	0.6	5	0.83 Eq H1-1	0.0	30	W14X48
L3	169.4	0.4	1.2	5	0.75 Eq H1-1	0.0	30	W14X61
L2	202.9	0.5	1.6	10	0.80 Eq H1-1	0.0	30	W14X61
L1	237.5	0.1	1.3	10	0.96 Eq H1-1	0.0	30	W14X61

Column Line D - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	37.8	0.7	0.8	4	0.34 Eq H1-1	0.0	30	W14X43
L13	37.8	0.7	0.8	4	0.34 Eq H1-1	0.0	30	W14X43
L12	75.1	0.1	0.7	1	0.66 Eq H1-1	0.0	30	W14X43
L11	75.1	0.1	0.7	1	0.66 Eq H1-1	0.0	30	W14X43

Column Line D - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	29.5	2.0	7.4	14	0.50 Eq H1-2	0.0	30	W14X43
L14	58.7	0.7	0.3	2	0.57 Eq H1-1	0.0	30	C36L11L14
L13	58.7	0.7	0.3	2	0.57 Eq H1-1	0.0	30	C36L11L14
L12	85.9	0.6	3.0	2	1.35 Eq H1-1	0.0	30	C36L11L14
L11	85.9	0.6	3.0	2	1.35 Eq H1-1	0.0	30	C36L11L14
L10	194.7	0.4	4.6	4	0.61 Eq H1-1	0.0	30	W14X82
L9	207.9	0.5	7.6	2	0.70 Eq H1-1	0.0	30	W14X82
L8	248.0	0.3	6.0	7	0.85 Eq H1-1	0.0	30	W14X82
L7	274.2	0.3	1.5	7	0.85 Eq H1-1	0.0	30	W14X74
L6	300.7	0.3	0.7	5	0.92 Eq H1-1	0.0	30	W14X74
L5	326.1	0.3	0.8	2	0.77 Eq H1-1	0.0	30	W14X90
L4	351.4	0.3	0.8	2	0.85 Eq H1-1	0.0	30	W14X90
L3	376.8	0.2	2.4	2	0.95 Eq H1-1	0.0	30	W14X90
L2	401.5	0.3	3.2	7	0.96 Eq H1-1	0.0	30	W14X90
L1	426.9	0.0	2.7	6	0.94 Eq H1-1	0.0	30	W14X99

Column Line D - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.0	2.7	1.8	4	0.24 Eq H1-3	0.0	30	W14X43
L14	58.2	2.4	3.1	10	0.43 Eq H1-2	0.0	30	W14X43
L13	70.0	2.5	2.6	1	0.46 Eq H1-2	0.0	30	W14X43
L12	102.1	2.5	2.6	2	0.61 Eq H1-1	0.0	30	W14X43
L11	112.4	2.5	3.8	4	0.70 Eq H1-2	0.0	30	W14X43
L10	141.1	3.6	3.8	10	0.59 Eq H1-1	0.0	30	W14X61
L9	173.1	3.3	2.3	10	0.69 Eq H1-1	0.0	30	W14X61
L8	208.7	3.1	2.1	7	0.90 Eq H1-1	0.0	30	W14X61
L7	244.7	3.5	2.8	11	0.86 Eq H1-1	0.0	30	W14X68
L6	273.9	2.6	0.7	5	0.92 Eq H1-1	0.0	30	W14X68
L5	300.5	3.1	0.8	5	0.87 Eq H1-1	0.0	30	W14X82
L4	328.6	3.6	0.9	5	0.99 Eq H1-1	0.0	30	W14X82
L3	362.6	3.4	3.5	5	0.93 Eq H1-1	0.0	30	W14X90
L2	399.3	4.2	4.5	11	0.96 Eq H1-1	0.0	30	W14X90
L1	436.0	3.0	4.3	10	0.98 Eq H1-1	0.0	30	W14X99

Column Line D - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.3	8	0.34 Eq H1-3	90.0	30	W14X43
L14	74.8	0.0	5.8	6	0.54 Eq H1-2	90.0	30	W14X48
L13	94.0	0.0	4.4	1	0.55 Eq H1-2	90.0	30	W14X48
L12	135.4	0.0	4.4	1	0.72 Eq H1-1	90.0	30	W14X48
L11	152.8	0.0	7.7	2	0.92 Eq H1-2	90.0	30	W14X48
L10	189.7	4.5	7.6	7	0.70 Eq H1-1	90.0	30	W14X74
L9	226.9	6.1	2.2	7	0.74 Eq H1-1	90.0	30	W14X74
L8	266.5	5.1	1.7	2	0.91 Eq H1-1	90.0	30	W14X74
L7	311.0	6.4	2.0	3	0.89 Eq H1-1	90.0	30	W14X82
L6	346.4	5.3	0.6	2	0.97 Eq H1-1	90.0	30	W14X82
L5	381.0	5.7	0.6	5	0.82 Eq H1-1	90.0	30	W14X99
L4	420.0	6.2	0.6	5	0.93 Eq H1-1	90.0	30	W14X99
L3	464.9	5.6	2.0	5	0.88 Eq H1-1	90.0	30	W14X120
L2	513.9	9.4	2.6	2	0.94 Eq H1-1	90.0	30	W14X120
L1	579.5	8.4	1.9	6	0.96 Eq H1-1	90.0	30	W14X132

Column Line D - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	25.1	0.0	4.4	2	0.39 Eq H1-1	90.0	30	W14X43
L14	96.8	0.0	7.7	6	0.49 Eq H1-2	90.0	30	W14X61
L13	120.8	0.0	6.4	1	0.53 Eq H1-2	90.0	30	W14X61
L12	173.1	0.0	6.4	1	0.70 Eq H1-2	90.0	30	W14X61
L11	195.1	0.0	11.9	2	0.90 Eq H1-2	90.0	30	W14X61
L10	242.0	0.8	13.1	6	0.66 Eq H1-1	90.0	30	W14X90
L9	290.8	0.7	3.1	4	0.69 Eq H1-1	90.0	30	W14X90

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L8	340.9	0.5	2.4	2	0.84 Eq H1-1	90.0	30	W14X90
L7	398.3	0.5	2.8	2	0.86 Eq H1-1	90.0	30	W14X99
L6	446.2	0.4	0.7	4	0.94 Eq H1-1	90.0	30	W14X99
L5	496.2	0.4	0.7	4	0.80 Eq H1-1	90.0	30	W14X132
L4	550.5	7.4	3.3	3	0.94 Eq H1-1	90.0	30	W14X132
L3	629.7	7.1	9.3	3	0.90 Eq H1-1	90.0	30	W14X159
L2	705.1	12.5	12.2	6	0.96 Eq H1-1	90.0	30	W14X159
L1	780.4	11.3	8.4	6	0.98 Eq H1-1	90.0	30	W14X176

Column Line 46.58ft - 90.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L2	45.8	4.5	5.8	14	0.52 Eq H1-2	90.0	30	W14X43
L1	86.7	0.0	1.2	6	0.59 Eq H1-1	90.0	30	W14X43

Column Line D - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.5	1.7	4.6	2	0.41 Eq H1-1	90.0	30	W14X43
L14	98.5	0.0	8.0	6	0.51 Eq H1-2	90.0	30	W14X61
L13	122.2	0.0	6.4	1	0.54 Eq H1-2	90.0	30	W14X61
L12	174.5	0.0	6.4	1	0.70 Eq H1-2	90.0	30	W14X61
L11	196.5	0.0	10.9	2	0.88 Eq H1-2	90.0	30	W14X61
L10	241.8	2.3	12.1	7	0.65 Eq H1-1	90.0	30	W14X90
L9	290.9	1.3	3.7	4	0.70 Eq H1-1	90.0	30	W14X90
L8	341.1	0.8	2.8	3	0.84 Eq H1-1	90.0	30	W14X90
L7	398.5	0.9	3.3	3	0.86 Eq H1-1	90.0	30	W14X99
L6	446.2	0.9	0.8	4	0.94 Eq H1-1	90.0	30	W14X99
L5	496.1	0.9	0.8	4	0.80 Eq H1-1	90.0	30	W14X132
L4	550.5	6.9	0.9	2	0.92 Eq H1-1	90.0	30	W14X132
L3	609.8	7.1	3.8	2	0.94 Eq H1-1	90.0	30	W14X145
L2	670.5	9.0	5.0	7	0.99 Eq H1-1	90.0	30	W14X145
L1	725.3	8.0	3.1	6	0.99 Eq H1-1	90.0	30	W14X159

Column Line D - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	19.7	6.0	3.5	13	0.37 Eq H1-3	90.0	30	W14X43
L14	76.4	0.0	6.2	6	0.56 Eq H1-2	90.0	30	W14X48
L13	95.2	0.0	4.4	1	0.56 Eq H1-2	90.0	30	W14X48
L12	136.6	0.0	4.4	1	0.72 Eq H1-1	90.0	30	W14X48
L11	154.0	0.0	8.1	2	0.94 Eq H1-2	90.0	30	W14X48
L10	190.4	6.0	8.0	6	0.70 Eq H1-1	90.0	30	W14X74
L9	228.1	4.8	2.8	5	0.75 Eq H1-1	90.0	30	W14X74
L8	266.9	4.3	2.2	3	0.92 Eq H1-1	90.0	30	W14X74
L7	311.5	5.3	2.5	2	0.90 Eq H1-1	90.0	30	W14X82
L6	347.0	4.2	0.8	3	0.97 Eq H1-1	90.0	30	W14X82
L5	381.5	4.6	0.8	4	0.82 Eq H1-1	90.0	30	W14X99

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L4	420.5	5.2	0.8	4	0.93 Eq H1-1	90.0	30	W14X99
L3	465.3	5.6	2.0	4	0.88 Eq H1-1	90.0	30	W14X120
L2	514.3	7.2	2.6	2	0.92 Eq H1-1	90.0	30	W14X120
L1	564.8	6.4	0.5	10	0.93 Eq H1-1	90.0	30	W14X132

Column Line D - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.0	2.9	1.8	3	0.24 Eq H1-3	0.0	30	W14X43
L14	58.2	2.8	3.1	6	0.43 Eq H1-2	0.0	30	W14X43
L13	70.0	2.8	2.6	1	0.46 Eq H1-2	0.0	30	W14X43
L12	102.1	2.7	2.6	2	0.62 Eq H1-1	0.0	30	W14X43
L11	112.4	2.7	3.7	2	0.70 Eq H1-2	0.0	30	W14X43
L10	141.1	3.6	3.6	7	0.59 Eq H1-1	0.0	30	W14X61
L9	173.1	2.7	2.3	6	0.69 Eq H1-1	0.0	30	W14X61
L8	208.8	3.0	2.0	10	0.90 Eq H1-1	0.0	30	W14X61
L7	244.6	3.3	2.6	6	0.86 Eq H1-1	0.0	30	W14X68
L6	273.9	2.4	0.6	2	0.92 Eq H1-1	0.0	30	W14X68
L5	300.5	2.9	0.7	2	0.87 Eq H1-1	0.0	30	W14X82
L4	328.6	3.5	0.9	2	0.99 Eq H1-1	0.0	30	W14X82
L3	362.6	3.4	3.5	2	0.93 Eq H1-1	0.0	30	W14X90
L2	399.3	4.2	4.5	6	0.96 Eq H1-1	0.0	30	W14X90
L1	432.1	2.9	3.6	6	0.97 Eq H1-1	0.0	30	W14X99

Column Line D - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	29.5	2.0	7.4	17	0.50 Eq H1-2	0.0	30	W14X43
L14	58.7	0.7	0.3	5	0.57 Eq H1-1	0.0	30	C36L11L14
L13	58.7	0.7	0.3	5	0.57 Eq H1-1	0.0	30	C36L11L14
L12	85.9	0.6	3.0	5	1.35 Eq H1-1	0.0	30	C36L11L14
L11	85.9	0.6	3.0	5	1.35 Eq H1-1	0.0	30	C36L11L14
L10	194.7	0.4	4.6	3	0.61 Eq H1-1	0.0	30	W14X82
L9	207.9	0.5	7.7	5	0.70 Eq H1-1	0.0	30	W14X82
L8	248.0	0.3	6.0	10	0.85 Eq H1-1	0.0	30	W14X82
L7	274.2	0.3	1.6	10	0.85 Eq H1-1	0.0	30	W14X74
L6	300.8	0.3	0.7	2	0.92 Eq H1-1	0.0	30	W14X74
L5	326.2	0.3	0.8	5	0.77 Eq H1-1	0.0	30	W14X90
L4	351.7	0.3	0.8	5	0.85 Eq H1-1	0.0	30	W14X90
L3	377.1	0.2	2.5	5	0.95 Eq H1-1	0.0	30	W14X90
L2	401.9	0.6	3.3	10	0.97 Eq H1-1	0.0	30	W14X90
L1	424.0	0.0	2.4	10	0.93 Eq H1-1	0.0	30	W14X99

Column Line D - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	36.1	0.6	1.2	11	0.33 Eq H1-1	0.0	30	C217L11L14
L13	36.1	0.6	1.2	11	0.33 Eq H1-1	0.0	30	C217L11L14

L12	75.1	0.1	0.7	1	0.65 Eq H1-1	0.0	30	C217L11L14
L11	75.1	0.1	0.7	1	0.65 Eq H1-1	0.0	30	C217L11L14

Column Line D - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	34.1	1.0	1.9	6	0.27 Eq H1-1	0.0	30	W14X43
L6	75.4	1.0	0.5	5	0.46 Eq H1-1	0.0	30	W14X43
L5	109.8	0.8	0.6	2	0.61 Eq H1-1	0.0	30	W14X48
L4	139.9	0.6	0.5	2	0.83 Eq H1-1	0.0	30	W14X48
L3	169.6	0.4	1.2	2	0.75 Eq H1-1	0.0	30	W14X61
L2	203.1	0.6	1.5	7	0.82 Eq H1-1	0.0	30	W14X61
L1	233.9	0.1	0.6	6	0.93 Eq H1-1	0.0	30	W14X61

Column Line D - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	65.5	17.2	1.3	7	0.63 Eq H1-1	90.0	30	W14X43
L14	92.9	5.7	0.2	6	0.80 Eq H1-1	90.0	30	W14X43
L13	105.0	13.3	0.2	6	0.96 Eq H1-1	90.0	30	W14X43
L12	140.3	13.2	0.2	2	0.86 Eq H1-1	90.0	30	W14X43
L11	157.4	3.9	0.2	6	0.87 Eq H1-1	90.0	30	W14X43

Column Line 46.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.2	0.0	0.2	2	0.16 Eq H1-3	90.0	30	W14X43
L14	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61
L13	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61
L12	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61

Column Line D - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	112.2	0.8	46.5	2	0.74 Eq H1-2	0.0	30	W14X90
L10	328.0	0.5	29.2	2	0.83 Eq H1-2	0.0	30	W14X109
L9	360.1	0.6	11.0	2	0.76 Eq H1-1	0.0	30	W14X109
L8	410.7	0.4	8.3	5	0.87 Eq H1-1	0.0	30	W14X109
L7	459.7	0.2	3.7	4	0.90 Eq H1-1	0.0	30	W14X109
L6	501.0	0.4	0.9	2	0.96 Eq H1-1	0.0	30	W14X109
L5	541.4	0.4	0.9	2	0.87 Eq H1-1	0.0	30	W14X132
L4	584.9	0.4	0.9	2	0.96 Eq H1-1	0.0	30	W14X132
L3	628.5	0.4	3.1	2	0.96 Eq H1-1	0.0	30	W14X145
L2	674.2	0.6	4.1	5	0.98 Eq H1-1	0.0	30	W14X145
L1	748.3	0.3	3.5	1	0.91 Eq H1-1	0.0	30	W14X176

Column Line E - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size

L11	168.8	41.6	50.7	8	0.73 Eq H1-2	0.0	30	W14X132
L10	485.3	10.3	5.7	5	0.65 Eq H1-1	0.0	30	W14X159
L9	553.9	9.0	5.1	3	0.74 Eq H1-1	0.0	30	W14X159
L8	616.7	8.4	3.8	2	0.85 Eq H1-1	0.0	30	W14X159
L7	692.7	10.8	4.6	3	0.92 Eq H1-1	0.0	30	W14X159
L6	755.5	8.6	1.1	5	0.99 Eq H1-1	0.0	30	W14X159
L5	816.7	9.6	1.1	5	0.89 Eq H1-1	0.0	30	W14X193
L4	882.8	9.6	1.1	5	0.98 Eq H1-1	0.0	30	W14X193
L3	948.9	8.5	3.7	4	0.90 Eq H1-1	0.0	30	W14X233
L2	1017.1	10.2	4.9	3	0.92 Eq H1-1	0.0	30	W14X233
L1	1077.1	7.5	4.2	1	0.99 Eq H1-1	0.0	30	W14X233

Column Line 57.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line E - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	6	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	3	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	6	0.90 Eq H1-1	90.0	30	W14X61

Column Line E - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	41.6	16.7	1.7	5	0.44 Eq H1-2	0.0	30	W14X43
L8	112.9	11.2	2.2	4	1.04 Eq H1-1	0.0	30	C21L6L8
L7	156.0	4.4	2.5	11	1.03 Eq H1-1	0.0	30	C21L6L8
L6	208.4	4.6	1.0	10	1.21 Eq H1-1	0.0	30	C21L6L8
L5	262.1	4.6	1.0	5	0.75 Eq H1-1	0.0	30	C21L4L5
L4	314.5	4.6	1.0	5	0.94 Eq H1-1	0.0	30	C21L4L5
L3	367.0	3.6	3.3	4	0.71 Eq H1-1	0.0	30	C21L1L3
L2	416.2	3.6	4.3	11	0.74 Eq H1-1	0.0	30	C21L1L3
L1	466.7	3.0	3.7	10	0.85 Eq H1-1	0.0	30	C21L1L3

Column Line E - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	12.3	1.3	6	0.49 Eq H1-1	0.0	30	W14X48
L13	54.6	12.3	1.3	6	0.49 Eq H1-1	0.0	30	W14X48
L12	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48

Column Line E - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.7	12.2	7	0.84 Eq H1-2	0.0	30	W14X43
L14	90.3	5.2	0.3	2	0.54 Eq H1-1	0.0	30	C34L11L14
L13	90.3	5.2	0.3	2	0.54 Eq H1-1	0.0	30	C34L11L14
L12	128.7	4.4	0.3	6	0.77 Eq H1-1	0.0	30	C34L11L14
L11	128.7	4.4	0.3	6	0.77 Eq H1-1	0.0	30	C34L11L14
L10	291.0	6.2	2.2	3	0.63 Eq H1-1	0.0	30	W14X99
L9	331.5	4.9	5.1	3	0.74 Eq H1-1	0.0	30	W14X99
L8	373.8	3.1	4.0	6	0.85 Eq H1-1	0.0	30	W14X99
L7	417.5	3.8	4.9	6	0.91 Eq H1-1	0.0	30	W14X99
L6	457.3	3.0	1.2	5	0.97 Eq H1-1	0.0	30	W14X99
L5	495.8	3.1	1.3	2	0.88 Eq H1-1	0.0	30	W14X120
L4	534.2	3.1	1.3	2	0.97 Eq H1-1	0.0	30	W14X120
L3	572.7	2.5	4.2	3	0.99 Eq H1-1	0.0	30	W14X132
L2	610.4	3.0	5.5	6	1.00 Eq H1-1	0.0	30	W14X132
L1	648.9	2.6	4.9	6	0.97 Eq H1-1	0.0	30	W14X145

Column Line E - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.1	9	0.32 Eq H1-3	0.0	30	W14X43
L14	71.0	0.0	5.3	10	0.56 Eq H1-2	0.0	30	W14X43
L13	88.5	0.0	4.0	1	0.58 Eq H1-2	0.0	30	W14X43
L12	127.6	0.0	4.0	1	0.76 Eq H1-1	0.0	30	W14X43
L11	143.4	0.0	7.0	4	0.96 Eq H1-2	0.0	30	W14X43
L10	178.2	6.3	7.0	10	0.68 Eq H1-1	0.0	30	W14X74
L9	219.0	7.0	2.9	10	0.71 Eq H1-1	0.0	30	W14X74
L8	265.4	5.7	2.2	5	0.92 Eq H1-1	0.0	30	W14X74
L7	314.1	7.0	2.6	4	0.91 Eq H1-1	0.0	30	W14X82
L6	348.5	5.3	0.6	5	0.97 Eq H1-1	0.0	30	W14X82
L5	382.0	5.7	0.6	2	0.83 Eq H1-1	0.0	30	W14X99
L4	420.1	6.2	0.6	2	0.93 Eq H1-1	0.0	30	W14X99
L3	464.9	5.6	2.0	2	0.88 Eq H1-1	0.0	30	W14X120
L2	513.9	10.3	2.6	5	0.92 Eq H1-1	0.0	30	W14X120
L1	568.2	9.4	2.2	1	0.95 Eq H1-1	0.0	30	W14X132

Column Line E - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L3	43.8	3.4	5.2	4	0.60 Eq H1-1	0.0	30	W14X43
L2	89.1	3.4	6.7	3	0.75 Eq H1-2	0.0	30	W14X43
L1	128.3	2.2	5.4	1	0.98 Eq H1-1	0.0	30	W14X48

Column Line 57.58ft - 118.08ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L2	51.0	6.7	0.8	6	0.40 Eq H1-1	0.0	30	W14X43
L1	104.4	1.5	0.7	10	0.70 Eq H1-1	0.0	30	W14X43

Column Line E - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.1	8	0.32 Eq H1-3	0.0	30	W14X43
L14	71.0	0.0	5.3	6	0.56 Eq H1-2	0.0	30	W14X43
L13	88.5	0.0	4.0	1	0.58 Eq H1-2	0.0	30	W14X43
L12	127.6	0.0	4.0	1	0.76 Eq H1-1	0.0	30	W14X43
L11	143.4	0.0	7.0	2	0.96 Eq H1-2	0.0	30	W14X43
L10	178.2	6.3	7.0	7	0.68 Eq H1-1	0.0	30	W14X74
L9	219.0	7.0	2.9	7	0.71 Eq H1-1	0.0	30	W14X74
L8	265.4	5.7	2.2	2	0.92 Eq H1-1	0.0	30	W14X74
L7	314.1	7.0	2.6	3	0.91 Eq H1-1	0.0	30	W14X82
L6	348.5	5.3	0.6	2	0.97 Eq H1-1	0.0	30	W14X82
L5	382.0	5.7	0.6	5	0.83 Eq H1-1	0.0	30	W14X99
L4	420.1	6.2	0.6	5	0.93 Eq H1-1	0.0	30	W14X99
L3	464.9	5.4	6.0	3	0.92 Eq H1-1	0.0	30	W14X120
L2	510.1	3.7	7.9	7	0.92 Eq H1-1	0.0	30	W14X120
L1	550.8	2.7	6.4	6	0.93 Eq H1-1	0.0	30	W14X132

Column Line E - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.7	12.2	10	0.84 Eq H1-2	0.0	30	W14X43
L14	90.3	5.2	0.3	5	0.54 Eq H1-1	0.0	30	C34L11L14
L13	90.3	5.2	0.3	5	0.54 Eq H1-1	0.0	30	C34L11L14
L12	128.7	4.4	0.3	11	0.77 Eq H1-1	0.0	30	C34L11L14
L11	128.7	4.4	0.3	11	0.77 Eq H1-1	0.0	30	C34L11L14
L10	291.0	6.2	2.2	4	0.63 Eq H1-1	0.0	30	W14X99
L9	330.7	4.7	5.2	4	0.74 Eq H1-1	0.0	30	W14X99
L8	373.0	3.1	4.1	11	0.85 Eq H1-1	0.0	30	W14X99
L7	416.7	3.8	5.1	11	0.91 Eq H1-1	0.0	30	W14X99
L6	456.7	2.9	1.2	2	0.97 Eq H1-1	0.0	30	W14X99
L5	495.3	3.0	1.4	5	0.88 Eq H1-1	0.0	30	W14X120
L4	533.8	3.0	1.4	5	0.97 Eq H1-1	0.0	30	W14X120
L3	572.4	2.8	4.6	5	0.99 Eq H1-1	0.0	30	W14X132
L2	610.4	3.3	6.0	11	1.00 Eq H1-1	0.0	30	W14X132
L1	644.6	2.7	4.6	10	0.96 Eq H1-1	0.0	30	W14X145

Column Line E - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	9.8	1.3	11	0.36 Eq H1-1	0.0	30	C219L11L14

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	54.6	9.8	1.3	11	0.36 Eq H1-1	0.0	30	C219L11L14
L12	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14
L11	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14

Column Line E - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	41.6	16.7	1.7	2	0.44 Eq H1-2	0.0	30	W14X43
L8	112.7	11.1	2.2	3	1.03 Eq H1-1	0.0	30	C21L6L8
L7	155.8	4.5	2.5	6	1.02 Eq H1-1	0.0	30	C21L6L8
L6	208.3	4.6	0.9	7	1.21 Eq H1-1	0.0	30	C21L6L8
L5	262.1	4.6	1.0	2	0.75 Eq H1-1	0.0	30	C21L4L5
L4	314.6	4.6	1.0	2	0.94 Eq H1-1	0.0	30	C21L4L5
L3	367.1	3.7	3.2	3	0.71 Eq H1-1	0.0	30	C21L1L3
L2	418.3	4.4	4.2	6	0.75 Eq H1-1	0.0	30	C21L1L3
L1	465.6	4.1	2.7	6	0.85 Eq H1-1	0.0	30	C21L1L3

Column Line E - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	6	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	2	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	6	0.90 Eq H1-1	90.0	30	W14X61

Column Line 57.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line E - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	41.6	50.7	8	0.73 Eq H1-2	0.0	30	W14X132
L10	485.3	10.3	5.7	2	0.65 Eq H1-1	0.0	30	W14X159
L9	553.9	9.0	5.1	4	0.74 Eq H1-1	0.0	30	W14X159
L8	616.7	8.4	3.8	5	0.85 Eq H1-1	0.0	30	W14X159
L7	692.7	10.8	4.6	4	0.92 Eq H1-1	0.0	30	W14X159
L6	755.5	8.6	1.1	2	0.99 Eq H1-1	0.0	30	W14X159
L5	816.7	9.6	1.1	2	0.89 Eq H1-1	0.0	30	W14X193
L4	882.8	9.6	1.1	2	0.98 Eq H1-1	0.0	30	W14X193
L3	948.9	8.5	3.7	3	0.90 Eq H1-1	0.0	30	W14X233
L2	1018.3	17.3	4.9	5	0.93 Eq H1-1	0.0	30	W14X233
L1	1130.6	16.1	3.6	1	0.95 Eq H1-1	0.0	30	W14X257

Column Line 66.83ft - 19.33ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	41.6	0.0	0.0	1	0.00 Euler	90.0	30	STRUT

Column Line 66.83ft - 161.83ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	41.1	0.0	0.0	1	0.00 Euler	90.0	30	STRUT

Column Line 68.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	6	0.10 Eq H1-3	90.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48

Column Line 68.58ft - 63.08ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	60.9	0.0	2.7	6	0.48 Eq H1-1	0.0	30	W14X43

Column Line 68.58ft - 79.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L3	81.7	3.7	12.5	9	0.53 Eq H1-2	0.0	30	W14X68
L2	186.6	0.9	15.0	2	0.89 Eq H1-1	0.0	30	W14X68
L1	271.3	0.0	3.7	10	0.94 Eq H1-1	0.0	30	W14X74

Column Line 68.58ft - 101.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L3	63.6	18.5	7.2	8	0.51 Eq H1-2	0.0	30	W14X61
L2	164.3	10.2	7.9	6	0.81 Eq H1-1	0.0	30	W14X61
L1	237.4	7.2	2.1	6	0.90 Eq H1-1	0.0	30	W14X68

Column Line 68.58ft - 118.08ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L2	51.0	6.7	1.0	7	0.41 Eq H1-1	0.0	30	W14X43
L1	117.1	0.4	0.7	10	0.78 Eq H1-1	0.0	30	W14X43

Column Line 68.58ft - 134.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L2	45.9	7.3	9.7	14	0.74 Eq H1-2	0.0	30	W14X43
L1	97.7	2.1	5.7	6	0.90 Eq H1-1	0.0	30	W14X43

Gravity Column Design Summary

Column Line 68.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	6	0.10 Eq H1-3	90.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48

Column Line F - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	226.2	38.3	53.3	5	0.99 Eq H1-2	0.0	30	W14X109
L10	552.9	30.3	43.3	1	0.97 Eq H1-2	0.0	30	W14X159
L9	628.2	3.8	4.8	5	0.84 Eq H1-1	0.0	30	W14X159
L8	711.9	1.0	3.8	2	0.97 Eq H1-1	0.0	30	W14X159
L7	813.2	1.3	4.6	2	0.88 Eq H1-1	0.0	30	W14X193
L6	897.0	1.4	1.1	5	0.96 Eq H1-1	0.0	30	W14X193
L5	978.5	1.4	1.1	5	0.88 Eq H1-1	0.0	30	W14X233
L4	1066.7	1.4	1.1	5	0.98 Eq H1-1	0.0	30	W14X233
L3	1154.8	14.6	2.2	1	1.00 Eq H1-1	0.0	30	W14X257
L2	1198.5	19.1	4.4	5	1.00 Eq H1-1	0.0	30	W14X257
L1	1280.6	3.3	4.1	1	0.96 Eq H1-1	0.0	30	W14X283

Column Line 79.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line F - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	10	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	4	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	10	0.90 Eq H1-1	90.0	30	W14X61

Column Line F - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	166.9	17.2	8.6	16	0.75 Eq H1-2	0.0	30	W14X68
L9	190.5	6.8	1.0	6	0.67 Eq H1-1	0.0	30	W14X68
L8	256.5	4.2	0.8	7	0.98 Eq H1-1	0.0	30	W14X68
L7	314.3	1.9	1.2	6	0.74 Eq H1-1	0.0	30	W14X90
L6	374.1	2.9	0.3	2	0.87 Eq H1-1	0.0	30	W14X90
L5	432.1	3.0	0.3	2	0.85 Eq H1-1	0.0	30	W14X109

Gravity Column Design Summary

L4	490.1	3.0	0.3	2	0.98 Eq H1-1	0.0	30	W14X109
L3	548.2	1.7	1.7	4	0.94 Eq H1-1	0.0	30	W14X132
L2	585.3	6.0	2.2	10	0.96 Eq H1-1	0.0	30	W14X132
L1	640.4	4.8	0.8	10	0.94 Eq H1-1	0.0	30	W14X145

Column Line F - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	12.3	1.3	7	0.49 Eq H1-1	0.0	30	W14X48
L13	54.6	12.3	1.3	7	0.49 Eq H1-1	0.0	30	W14X48
L12	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48
L11	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48

Column Line F - 10.3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	154.7	5.5	34.3	10	0.71 Eq H1-2	0.0	30	W14X90
L9	189.4	3.1	7.8	11	0.50 Eq H1-1	0.0	30	W14X90
L8	229.4	1.9	3.5	10	0.58 Eq H1-1	0.0	30	W14X90
L7	274.7	2.1	3.1	10	0.89 Eq H1-1	0.0	30	W14X74
L6	316.3	2.3	0.6	4	0.97 Eq H1-1	0.0	30	W14X74
L5	356.1	1.7	0.6	5	0.84 Eq H1-1	0.0	30	W14X90
L4	397.9	2.8	0.8	4	0.97 Eq H1-1	0.0	30	W14X90
L3	437.8	2.2	2.1	5	0.91 Eq H1-1	0.0	30	W14X109
L2	477.4	2.3	2.7	11	0.94 Eq H1-1	0.0	30	W14X109
L1	517.2	1.7	2.3	10	0.94 Eq H1-1	0.0	30	W14X120

Column Line F - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.7	12.2	6	0.84 Eq H1-2	0.0	30	W14X43
L14	90.3	4.2	0.3	3	0.48 Eq H1-1	0.0	30	C251L11L14
L13	90.3	4.2	0.3	3	0.48 Eq H1-1	0.0	30	C251L11L14
L12	130.1	3.6	0.1	1	0.69 Eq H1-1	0.0	30	C251L11L14
L11	130.1	3.6	0.1	1	0.69 Eq H1-1	0.0	30	C251L11L14

Column Line F - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.1	12	0.32 Eq H1-3	0.0	30	W14X43
L14	71.0	0.0	5.3	10	0.35 Eq H1-2	0.0	30	W14X61
L13	88.5	0.0	4.6	1	0.39 Eq H1-2	0.0	30	W14X61
L12	127.6	0.0	4.6	1	0.51 Eq H1-2	0.0	30	W14X61
L11	143.4	0.0	15.5	2	0.83 Eq H1-2	0.0	30	W14X61
L10	233.3	5.4	16.3	6	0.69 Eq H1-2	0.0	30	W14X90
L9	285.8	6.0	7.4	3	0.70 Eq H1-2	0.0	30	W14X90
L8	334.2	4.9	5.5	4	0.84 Eq H1-1	0.0	30	W14X90
L7	390.3	6.0	6.6	5	0.87 Eq H1-1	0.0	30	W14X99

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L6	435.3	4.6	1.3	3	0.92 Eq H1-1	0.0	30	W14X99
L5	480.4	4.0	1.3	2	0.85 Eq H1-1	0.0	30	W14X120
L4	532.2	7.2	2.0	3	0.98 Eq H1-1	0.0	30	W14X120
L3	587.5	6.4	4.4	2	0.91 Eq H1-1	0.0	30	W14X145
L2	647.1	9.9	5.7	4	0.95 Eq H1-1	0.0	30	W14X145
L1	708.9	9.0	4.9	1	0.98 Eq H1-1	0.0	30	W14X159

Column Line F - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.1	13	0.32 Eq H1-3	0.0	30	W14X43
L14	71.0	0.0	5.3	6	0.56 Eq H1-2	0.0	30	W14X43
L13	88.5	0.0	4.0	1	0.58 Eq H1-2	0.0	30	W14X43
L12	127.6	0.0	4.0	1	0.76 Eq H1-1	0.0	30	W14X43
L11	143.4	0.0	7.0	2	0.96 Eq H1-2	0.0	30	W14X43
L10	178.2	6.3	7.0	6	0.68 Eq H1-1	0.0	30	W14X74
L9	219.0	7.0	2.9	6	0.71 Eq H1-1	0.0	30	W14X74
L8	265.4	5.7	2.2	3	0.92 Eq H1-1	0.0	30	W14X74
L7	314.1	7.0	2.6	2	0.91 Eq H1-1	0.0	30	W14X82
L6	348.5	5.3	0.6	3	0.97 Eq H1-1	0.0	30	W14X82
L5	382.0	5.7	0.6	4	0.83 Eq H1-1	0.0	30	W14X99
L4	420.1	6.2	0.6	4	0.93 Eq H1-1	0.0	30	W14X99
L3	464.9	5.3	1.7	5	0.97 Eq H1-1	0.0	30	W14X109
L2	497.6	0.2	2.2	2	0.97 Eq H1-1	0.0	30	W14X109
L1	526.9	0.0	1.9	1	0.95 Eq H1-1	0.0	30	W14X120

Column Line F - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.7	12.2	11	0.84 Eq H1-2	0.0	30	W14X43
L14	90.3	5.2	0.3	4	0.54 Eq H1-1	0.0	30	C34L11L14
L13	90.3	5.2	0.3	4	0.54 Eq H1-1	0.0	30	C34L11L14
L12	130.1	4.4	3.0	5	0.96 Eq H1-1	0.0	30	C34L11L14
L11	130.1	4.4	3.0	5	0.96 Eq H1-1	0.0	30	C34L11L14
L10	195.3	6.4	4.6	2	0.66 Eq H1-1	0.0	30	W14X74
L9	228.5	4.1	4.0	7	0.77 Eq H1-1	0.0	30	W14X74
L8	272.1	3.1	3.2	10	0.96 Eq H1-1	0.0	30	W14X74
L7	315.8	3.8	3.8	10	0.93 Eq H1-1	0.0	30	W14X82
L6	355.7	3.0	1.2	3	0.99 Eq H1-1	0.0	30	W14X82
L5	394.3	3.0	1.4	4	0.85 Eq H1-1	0.0	30	W14X99
L4	432.9	3.0	1.4	4	0.96 Eq H1-1	0.0	30	W14X99
L3	471.4	2.7	4.6	4	0.90 Eq H1-1	0.0	30	W14X120
L2	509.4	3.3	6.0	10	0.92 Eq H1-1	0.0	30	W14X120
L1	545.1	2.7	4.1	10	1.00 Eq H1-1	0.0	30	W14X120

Column Line F - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	9.8	1.3	10	0.36 Eq H1-1	0.0	30	C219L11L14
L13	54.6	9.8	1.3	10	0.36 Eq H1-1	0.0	30	C219L11L14
L12	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14
L11	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14

Column Line F - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	183.5	15.4	10.8	15	0.70 Eq H1-2	0.0	30	W14X82
L9	221.0	11.7	3.0	3	0.69 Eq H1-1	0.0	30	W14X82
L8	285.4	9.0	2.3	7	0.92 Eq H1-1	0.0	30	W14X82
L7	336.6	4.6	3.7	7	0.81 Eq H1-1	0.0	30	W14X90
L6	390.3	4.7	0.8	4	0.91 Eq H1-1	0.0	30	W14X90
L5	442.8	4.8	1.0	3	0.87 Eq H1-1	0.0	30	W14X109
L4	495.3	4.8	1.0	3	0.99 Eq H1-1	0.0	30	W14X109
L3	547.8	3.9	3.2	2	0.94 Eq H1-1	0.0	30	W14X132
L2	599.1	4.7	4.2	7	0.98 Eq H1-1	0.0	30	W14X132
L1	646.6	4.3	2.9	6	0.96 Eq H1-1	0.0	30	W14X145

Column Line F - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	10	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	5	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	10	0.90 Eq H1-1	90.0	30	W14X61

Column Line 79.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line F - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	41.1	53.3	13	0.82 Eq H1-2	0.0	30	W14X120
L10	407.2	10.1	44.3	3	0.93 Eq H1-2	0.0	30	W14X132
L9	472.1	9.5	4.7	3	0.77 Eq H1-1	0.0	30	W14X132
L8	530.5	8.3	3.6	4	0.89 Eq H1-1	0.0	30	W14X132
L7	606.5	10.6	4.6	5	0.89 Eq H1-1	0.0	30	W14X145
L6	669.3	8.5	1.1	3	0.96 Eq H1-1	0.0	30	W14X145
L5	730.4	9.5	1.1	3	0.88 Eq H1-1	0.0	30	W14X176

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L4	796.6	9.5	1.1	3	0.97 Eq H1-1	0.0	30	W14X176
L3	862.7	8.3	3.7	2	0.91 Eq H1-1	0.0	30	W14X211
L2	932.1	17.0	4.9	4	0.94 Eq H1-1	0.0	30	W14X211
L1	1044.4	15.8	3.6	1	0.97 Eq H1-1	0.0	30	W14X233

Column Line 90.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.5	0.0	0.1	2	0.15 Eq H1-1	90.0	30	W14X43
L14	71.9	0.0	0.0	1	0.53 Eq H1-1	90.0	30	W14X61
L13	71.9	0.0	0.0	1	0.53 Eq H1-1	90.0	30	W14X61
L12	71.9	0.0	0.0	1	0.53 Eq H1-1	90.0	30	W14X61

Column Line G - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	66.2	17.4	1.0	6	0.63 Eq H1-1	90.0	30	W14X43
L14	94.0	5.7	0.2	6	0.80 Eq H1-1	90.0	30	W14X43
L13	106.1	13.5	0.2	10	0.97 Eq H1-1	90.0	30	W14X43
L12	141.9	13.4	0.2	3	0.87 Eq H1-1	90.0	30	W14X43
L11	159.1	4.0	0.2	6	0.88 Eq H1-1	90.0	30	W14X43

Column Line G - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	38.2	0.8	0.8	4	0.34 Eq H1-1	0.0	30	W14X43
L13	38.2	0.8	0.8	4	0.34 Eq H1-1	0.0	30	W14X43
L12	75.9	0.0	0.7	1	0.66 Eq H1-1	0.0	30	W14X43
L11	75.9	0.0	0.7	1	0.66 Eq H1-1	0.0	30	W14X43

Column Line G - 10.3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	173.8	0.6	23.0	6	0.99 Eq H1-2	0.0	30	W14X68
L9	200.5	0.6	2.8	2	0.71 Eq H1-1	0.0	30	W14X68
L8	225.3	0.5	1.4	10	0.85 Eq H1-1	0.0	30	W14X68
L7	255.2	0.4	1.5	10	0.87 Eq H1-1	0.0	30	W14X68
L6	282.9	0.4	0.3	4	0.94 Eq H1-1	0.0	30	W14X68
L5	309.4	1.3	0.3	4	0.73 Eq H1-1	0.0	30	W14X90
L4	337.9	0.7	0.2	2	0.82 Eq H1-1	0.0	30	W14X90
L3	359.2	0.7	0.7	5	0.90 Eq H1-1	0.0	30	W14X90
L2	388.3	2.7	4.3	7	0.95 Eq H1-1	0.0	30	W14X90
L1	427.9	2.1	4.0	10	0.96 Eq H1-1	0.0	30	W14X99

Column Line G - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	31.6	0.7	7.8	6	0.52 Eq H1-2	0.0	30	W14X43
L14	60.7	0.5	0.3	3	0.59 Eq H1-1	0.0	30	C252L11L14

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	60.7	0.5	0.3	3	0.59 Eq H1-1	0.0	30	C252L11L14
L12	86.8	0.0	0.2	6	0.87 Eq H1-1	0.0	30	C252L11L14
L11	86.8	0.0	0.2	6	0.87 Eq H1-1	0.0	30	C252L11L14

Column Line G - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	17.0	2.6	1.8	5	0.23 Eq H1-3	0.0	30	W14X43
L14	56.6	2.4	3.1	10	0.37 Eq H1-2	0.0	30	W14X48
L13	68.4	2.4	2.6	1	0.40 Eq H1-2	0.0	30	W14X48
L12	99.8	2.4	2.6	3	0.53 Eq H1-1	0.0	30	W14X48
L11	110.1	2.4	9.9	3	0.89 Eq H1-1	0.0	30	W14X48
L10	174.1	2.9	9.4	6	0.74 Eq H1-1	0.0	30	W14X68
L9	212.9	3.4	1.3	6	0.75 Eq H1-1	0.0	30	W14X68
L8	251.4	3.2	1.4	6	0.96 Eq H1-1	0.0	30	W14X68
L7	290.3	3.5	1.9	10	0.92 Eq H1-1	0.0	30	W14X74
L6	323.6	2.6	0.4	4	0.99 Eq H1-1	0.0	30	W14X74
L5	358.5	4.5	0.5	4	0.85 Eq H1-1	0.0	30	W14X90
L4	399.1	3.7	1.4	5	0.97 Eq H1-1	0.0	30	W14X90
L3	424.4	5.5	1.2	3	0.88 Eq H1-1	0.0	30	W14X109
L2	470.9	6.9	1.9	10	0.94 Eq H1-1	0.0	30	W14X109
L1	524.5	2.2	0.9	10	0.94 Eq H1-1	0.0	30	W14X120

Column Line G - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	19.0	5.2	3.3	9	0.35 Eq H1-3	90.0	30	W14X43
L14	72.9	0.0	5.8	10	0.53 Eq H1-2	90.0	30	W14X48
L13	92.1	0.0	4.4	1	0.54 Eq H1-2	90.0	30	W14X48
L12	131.3	0.0	4.4	1	0.70 Eq H1-1	90.0	30	W14X48
L11	148.7	0.0	7.5	4	0.90 Eq H1-2	90.0	30	W14X48
L10	183.0	5.4	7.4	10	0.76 Eq H1-1	90.0	30	W14X68
L9	219.9	6.1	2.2	10	0.77 Eq H1-1	90.0	30	W14X68
L8	260.3	5.1	1.7	5	0.98 Eq H1-1	90.0	30	W14X68
L7	305.1	6.4	2.0	4	0.88 Eq H1-1	90.0	30	W14X82
L6	340.7	5.3	0.6	5	0.95 Eq H1-1	90.0	30	W14X82
L5	375.3	5.7	0.6	2	0.81 Eq H1-1	90.0	30	W14X99
L4	415.3	6.2	0.6	2	0.92 Eq H1-1	90.0	30	W14X99
L3	460.5	6.5	2.2	2	0.87 Eq H1-1	90.0	30	W14X120
L2	513.7	8.2	2.9	4	0.92 Eq H1-1	90.0	30	W14X120
L1	585.1	7.5	1.5	6	0.97 Eq H1-1	90.0	30	W14X132

Column Line G - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	25.9	0.3	4.3	4	0.40 Eq H1-1	90.0	30	W14X43
L14	94.4	0.0	7.6	10	0.48 Eq H1-2	90.0	30	W14X61
L13	118.4	0.0	6.4	1	0.53 Eq H1-2	90.0	30	W14X61

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L12	167.5	0.0	6.4	1	0.68 Eq H1-2	90.0	30	W14X61
L11	189.5	0.0	11.5	4	0.87 Eq H1-2	90.0	30	W14X61
L10	233.2	1.4	12.8	11	0.64 Eq H1-1	90.0	30	W14X90
L9	282.3	1.4	4.0	3	0.67 Eq H1-1	90.0	30	W14X90
L8	332.7	0.6	3.0	5	0.82 Eq H1-1	90.0	30	W14X90
L7	390.2	0.7	3.6	5	0.84 Eq H1-1	90.0	30	W14X99
L6	439.1	1.0	0.9	3	0.93 Eq H1-1	90.0	30	W14X99
L5	489.5	1.1	0.9	3	0.79 Eq H1-1	90.0	30	W14X132
L4	544.3	8.0	3.1	4	0.93 Eq H1-1	90.0	30	W14X132
L3	623.9	6.7	9.1	5	0.90 Eq H1-1	90.0	30	W14X159
L2	718.3	7.7	11.9	11	0.98 Eq H1-1	90.0	30	W14X159
L1	807.1	6.3	6.9	10	0.91 Eq H1-1	90.0	30	W14X193

Column Line G - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PH1	17.3	0.6	1.5	3	0.15 Eq H1-3	90.0	50	W10X33
RF	41.3	0.2	4.4	4	0.37 Eq H1-1	90.0	30	C81RF
L14	111.2	0.0	7.7	1	0.37 Eq H1-2	90.0	30	C81L11L14
L13	133.2	0.0	7.7	1	0.42 Eq H1-2	90.0	30	C81L11L14
L12	182.4	0.0	7.7	1	0.51 Eq H1-2	90.0	30	C81L11L14
L11	204.4	0.0	14.3	4	0.69 Eq H1-2	90.0	30	C81L11L14
L10	248.3	1.8	13.0	10	0.40 Eq H1-1	90.0	30	C81L8L10
L9	295.8	1.8	3.5	10	0.40 Eq H1-1	90.0	30	C81L8L10
L8	347.7	0.9	2.7	4	0.49 Eq H1-1	90.0	30	C81L8L10
L7	405.3	1.1	3.1	4	0.47 Eq H1-1	90.0	30	C81L6L7
L6	454.1	1.4	0.8	2	0.51 Eq H1-1	90.0	30	C81L6L7
L5	504.5	1.5	0.8	2	0.46 Eq H1-1	90.0	30	C81L4L5
L4	559.2	8.9	3.2	5	0.54 Eq H1-1	90.0	30	C81L4L5
L3	638.9	7.8	8.4	4	0.52 Eq H1-1	90.0	30	C81L2L3
L2	732.6	9.1	11.0	10	0.56 Eq H1-1	90.0	30	C81L2L3
L1	820.3	7.4	7.0	10	0.63 Eq H1-1	90.0	30	C81L2L3

Column Line G - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PHRF	1.3	1.4	1.0	1	0.06 Eq H1-3	90.0	50	W10X33
PH2	8.7	1.8	0.8	1	0.09 Eq H1-3	90.0	50	W10X33
PH1	18.8	2.2	1.0	3	0.16 Eq H1-3	90.0	50	W10X33
RF	139.7	1.9	3.0	4	0.91 Eq H1-1	90.0	30	C69RF
L14	186.4	0.0	5.9	1	0.57 Eq H1-2	90.0	30	C69L11L14
L13	203.8	0.0	5.9	2	0.62 Eq H1-1	90.0	30	C69L11L14
L12	243.2	0.0	5.9	1	0.73 Eq H1-1	90.0	30	C69L11L14
L11	260.6	0.0	7.5	4	0.79 Eq H1-2	90.0	30	C69L11L14
L10	294.4	3.6	7.2	11	0.55 Eq H1-1	90.0	30	C69L8L10
L9	332.8	4.2	2.5	11	0.57 Eq H1-1	90.0	30	C69L8L10
L8	373.5	3.7	1.9	4	0.67 Eq H1-1	90.0	30	C69L8L10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	418.6	4.6	2.2	5	0.66 Eq H1-1	90.0	30	C69L6L7
L6	454.6	3.7	0.5	4	0.70 Eq H1-1	90.0	30	C69L6L7
L5	489.6	4.2	0.5	3	0.71 Eq H1-1	90.0	30	C69L4L5
L4	528.1	4.7	0.5	3	0.79 Eq H1-1	90.0	30	C69L4L5
L3	573.3	5.1	1.1	3	0.76 Eq H1-1	90.0	30	C69L2L3
L2	623.3	8.1	2.5	4	0.79 Eq H1-1	90.0	30	C69L2L3
L1	687.4	7.4	2.3	10	0.72 Eq H1-1	90.0	30	C69L1

Column Line G - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PHRF	1.3	1.1	1.3	1	0.06 Eq H1-3	0.0	50	W10X33
PH2	8.7	0.9	1.0	1	0.09 Eq H1-3	0.0	50	W10X33
PH1	9.5	0.6	0.6	5	0.08 Eq H1-3	0.0	50	W10X33
RF	134.7	1.7	1.6	10	0.79 Eq H1-1	0.0	30	C55RF
L14	172.0	1.5	3.1	3	0.65 Eq H1-1	0.0	30	C55L11L14
L13	182.3	1.5	3.1	4	0.71 Eq H1-1	0.0	30	C55L11L14
L12	213.9	1.6	3.1	3	0.82 Eq H1-1	0.0	30	C55L11L14
L11	224.2	1.6	5.1	3	0.88 Eq H1-1	0.0	30	C55L11L14
L10	252.3	3.5	5.5	6	0.58 Eq H1-1	0.0	30	C55L8L10
L9	285.7	4.1	4.1	11	0.64 Eq H1-1	0.0	30	C55L8L10
L8	320.2	3.7	3.7	11	0.75 Eq H1-1	0.0	30	C55L8L10
L7	357.1	4.4	4.8	7	0.74 Eq H1-1	0.0	30	C55L6L7
L6	386.7	3.4	1.0	3	0.76 Eq H1-1	0.0	30	C55L6L7
L5	413.5	3.8	1.1	3	0.72 Eq H1-1	0.0	30	C55L4L5
L4	441.8	4.3	1.2	3	0.80 Eq H1-1	0.0	30	C55L4L5
L3	475.7	4.2	4.2	3	0.70 Eq H1-1	0.0	30	C55L2L3
L2	512.6	5.3	5.5	7	0.70 Eq H1-1	0.0	30	C55L2L3
L1	549.0	3.9	4.9	6	0.77 Eq H1-1	0.0	30	C55L1

Column Line G - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	31.6	0.7	7.8	11	0.52 Eq H1-2	0.0	30	W14X43
L14	60.7	0.7	0.3	4	0.59 Eq H1-1	0.0	30	C36L11L14
L13	60.7	0.7	0.3	4	0.59 Eq H1-1	0.0	30	C36L11L14
L12	88.1	0.5	2.2	5	1.27 Eq H1-1	0.0	30	C36L11L14
L11	88.1	0.5	2.2	5	1.27 Eq H1-1	0.0	30	C36L11L14
L10	135.0	1.2	3.4	2	0.55 Eq H1-1	0.0	30	W14X61
L9	160.7	0.6	1.9	4	0.63 Eq H1-1	0.0	30	W14X61
L8	182.5	0.6	1.6	7	0.78 Eq H1-1	0.0	30	W14X61
L7	207.3	0.3	2.0	11	0.81 Eq H1-1	0.0	30	W14X61
L6	234.2	0.2	0.7	2	0.88 Eq H1-1	0.0	30	W14X61
L5	259.9	0.3	0.8	4	0.82 Eq H1-1	0.0	30	W14X74
L4	285.6	0.3	0.8	4	0.94 Eq H1-1	0.0	30	W14X74
L3	311.3	0.2	2.6	4	0.79 Eq H1-1	0.0	30	W14X90
L2	336.4	0.2	3.3	10	0.81 Eq H1-1	0.0	30	W14X90

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	360.4	0.0	2.2	10	0.87 Eq H1-1	0.0	30	W14X90

Column Line G - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	36.5	0.6	1.2	10	0.33 Eq H1-1	0.0	30	C217L11L14
L13	36.5	0.6	1.2	10	0.33 Eq H1-1	0.0	30	C217L11L14
L12	75.9	0.0	0.7	1	0.65 Eq H1-1	0.0	30	C217L11L14
L11	75.9	0.0	0.7	1	0.65 Eq H1-1	0.0	30	C217L11L14

Column Line G - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	126.9	1.2	7.9	7	0.61 Eq H1-1	0.0	30	W14X61
L9	161.4	0.5	0.9	3	0.63 Eq H1-1	0.0	30	W14X61
L8	186.5	0.5	0.9	10	0.78 Eq H1-1	0.0	30	W14X61
L7	220.1	0.4	1.2	6	0.84 Eq H1-1	0.0	30	W14X61
L6	256.2	0.5	0.3	4	0.96 Eq H1-1	0.0	30	W14X61
L5	291.2	0.5	0.5	2	0.83 Eq H1-1	0.0	30	W14X82
L4	326.2	0.5	0.5	2	0.98 Eq H1-1	0.0	30	W14X82
L3	361.2	0.4	1.6	2	0.91 Eq H1-1	0.0	30	W14X90
L2	395.1	0.3	2.0	6	0.94 Eq H1-1	0.0	30	W14X90
L1	426.6	0.0	0.9	6	0.93 Eq H1-1	0.0	30	W14X99

Column Line G - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	66.2	17.4	1.0	7	0.63 Eq H1-1	90.0	30	W14X43
L14	94.0	5.7	0.2	6	0.80 Eq H1-1	90.0	30	W14X43
L13	106.1	13.5	0.2	6	0.97 Eq H1-1	90.0	30	W14X43
L12	141.9	13.4	0.2	2	0.87 Eq H1-1	90.0	30	W14X43
L11	159.1	4.0	0.2	6	0.88 Eq H1-1	90.0	30	W14X43

Column Line 90.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.5	0.0	0.1	2	0.15 Eq H1-1	90.0	30	W14X43
L14	71.1	0.0	0.1	6	1.00 Eq H1-1	90.0	30	W14X53
L13	71.1	0.0	0.1	6	1.00 Eq H1-1	90.0	30	W14X53
L12	71.1	0.0	0.1	6	1.00 Eq H1-1	90.0	30	W14X53

Column Line G - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	113.1	0.7	36.6	2	0.93 Eq H1-2	0.0	30	W14X82
L10	275.1	0.5	31.0	2	0.91 Eq H1-2	0.0	30	W14X90
L9	320.9	0.5	4.2	2	0.76 Eq H1-1	0.0	30	W14X90
L8	361.7	0.3	3.3	4	0.89 Eq H1-1	0.0	30	W14X90
L7	410.3	0.3	3.9	4	0.89 Eq H1-1	0.0	30	W14X99

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L6	448.9	0.3	0.9	4	0.95 Eq H1-1	0.0	30	W14X99
L5	488.1	0.3	0.9	2	0.86 Eq H1-1	0.0	30	W14X120
L4	532.1	0.3	0.9	2	0.96 Eq H1-1	0.0	30	W14X120
L3	576.2	0.2	3.1	2	0.88 Eq H1-1	0.0	30	W14X145
L2	622.5	0.3	4.1	4	0.91 Eq H1-1	0.0	30	W14X145
L1	697.3	0.0	3.5	1	0.94 Eq H1-1	0.0	30	W14X159

Column Line H - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	226.2	39.1	71.0	4	0.95 Eq H1-2	0.0	30	W14X132
L10	609.3	30.9	56.6	1	0.91 Eq H1-2	0.0	30	W14X193
L9	670.3	1.5	13.9	4	0.76 Eq H1-1	0.0	30	W14X193
L8	772.9	1.1	11.0	3	0.89 Eq H1-1	0.0	30	W14X193
L7	874.3	1.3	4.7	3	0.87 Eq H1-1	0.0	30	W14X211
L6	958.0	1.4	1.1	4	0.94 Eq H1-1	0.0	30	W14X211
L5	1039.6	1.4	1.1	4	0.85 Eq H1-1	0.0	30	W14X257
L4	1127.7	4.8	2.2	4	0.94 Eq H1-1	0.0	30	W14X257
L3	1215.9	2.2	3.6	5	0.94 Eq H1-1	0.0	30	W14X342
L2	1215.9	2.2	3.6	5	0.94 Eq H1-1	0.0	30	W14X342
L1	1306.5	1.1	7.5	1	0.99 Eq H1-1	0.0	30	W14X283

Column Line 101.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	76.7	0.0	0.0	1	0.22 Eq H1-1	90.0	30	C56L11L14
L13	76.7	0.0	0.0	1	0.22 Eq H1-1	90.0	30	C56L11L14
L12	76.7	0.0	0.0	1	0.22 Eq H1-1	90.0	30	C56L11L14

Column Line H - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	6	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	3	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	6	0.90 Eq H1-1	90.0	30	W14X61

Column Line H - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	62.3	4.0	3.1	7	0.50 Eq H1-1	0.0	30	W14X43
L6	121.5	2.9	0.5	3	0.73 Eq H1-1	0.0	30	W14X43
L5	171.5	2.3	0.5	3	0.60 Eq H1-1	0.0	30	W14X68
L4	229.6	5.0	0.9	3	0.86 Eq H1-1	0.0	30	W14X68
L3	287.6	3.8	1.1	5	0.95 Eq H1-1	0.0	30	W14X82
L2	302.5	4.9	2.3	2	0.93 Eq H1-1	0.0	30	W14X82

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	368.2	1.1	2.7	6	0.90 Eq H1-1	0.0	30	W14X90

Column Line H - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	12.3	1.3	6	0.49 Eq H1-1	0.0	30	W14X48
L13	54.6	12.3	1.3	6	0.49 Eq H1-1	0.0	30	W14X48
L12	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48
L11	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48

Column Line H - 10.3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	255.2	10.6	34.6	14	0.86 Eq H1-2	0.0	30	W14X99
L9	296.4	5.7	14.1	2	0.75 Eq H1-1	0.0	30	W14X99
L8	370.1	4.1	11.2	6	0.91 Eq H1-1	0.0	30	W14X99
L7	414.4	5.9	2.5	10	0.90 Eq H1-1	0.0	30	W14X99
L6	459.0	5.5	0.5	4	0.98 Eq H1-1	0.0	30	W14X99
L5	502.7	6.4	0.5	5	0.81 Eq H1-1	0.0	30	W14X132
L4	546.4	5.3	1.3	4	0.91 Eq H1-1	0.0	30	W14X132
L3	591.9	2.6	2.8	4	0.91 Eq H1-1	0.0	30	W14X145
L2	628.6	1.9	3.7	11	0.92 Eq H1-1	0.0	30	W14X145
L1	670.4	0.8	3.0	10	0.91 Eq H1-1	0.0	30	W14X159

Column Line H - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	46.9	5.6	11.5	7	0.81 Eq H1-2	0.0	30	W14X43
L14	89.9	4.2	0.3	2	0.47 Eq H1-1	0.0	30	C251L11L14
L13	89.9	4.2	0.3	2	0.47 Eq H1-1	0.0	30	C251L11L14
L12	129.2	3.5	0.1	1	0.69 Eq H1-1	0.0	30	C251L11L14
L11	129.2	3.5	0.1	1	0.69 Eq H1-1	0.0	30	C251L11L14

Column Line H - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	23.8	4.8	3.7	6	0.33 Eq H1-2	90.0	30	W14X43
L14	61.5	0.8	1.2	3	0.29 Eq H1-1	90.0	30	C120L11L14
L13	61.5	0.8	1.2	3	0.29 Eq H1-1	90.0	30	C120L11L14
L12	95.7	15.9	4.5	3	0.60 Eq H1-1	90.0	30	C120L11L14
L11	95.7	15.9	4.5	3	0.60 Eq H1-1	90.0	30	C120L11L14
L10	174.6	27.0	7.0	15	0.73 Eq H1-2	90.0	30	W14X74
L9	215.4	2.4	5.1	3	0.70 Eq H1-1	90.0	30	W14X74
L8	258.9	1.5	4.1	7	0.92 Eq H1-1	90.0	30	W14X74
L7	303.7	1.8	4.9	7	0.90 Eq H1-1	90.0	30	W14X82
L6	347.7	1.9	1.5	4	0.97 Eq H1-1	90.0	30	W14X82
L5	390.5	1.9	1.7	3	0.84 Eq H1-1	90.0	30	W14X99
L4	433.3	7.8	1.4	4	0.97 Eq H1-1	90.0	30	W14X99

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L3	481.9	10.5	1.1	4	0.92 Eq H1-1	90.0	30	W14X120
L2	526.6	13.2	1.6	2	0.97 Eq H1-1	90.0	30	W14X120
L1	568.3	0.5	1.5	6	0.93 Eq H1-1	90.0	30	W14X132

Column Line H - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	36.4	13.0	4.1	6	0.49 Eq H1-2	90.0	30	W14X43
L14	88.0	5.6	1.0	3	0.27 Eq H1-1	90.0	30	C79L11L14
L13	88.0	5.6	1.0	3	0.27 Eq H1-1	90.0	30	C79L11L14
L12	132.7	5.6	3.4	3	0.44 Eq H1-1	90.0	30	C79L11L14
L11	132.7	5.6	3.4	3	0.44 Eq H1-1	90.0	30	C79L11L14
L10	170.3	9.0	4.6	14	0.57 Eq H1-2	90.0	30	W14X74
L9	217.0	7.8	4.0	10	0.72 Eq H1-1	90.0	30	W14X74
L8	270.9	5.8	3.2	6	0.96 Eq H1-1	90.0	30	W14X74
L7	322.3	7.0	5.0	6	0.79 Eq H1-1	90.0	30	W14X90
L6	374.4	6.5	1.1	4	0.88 Eq H1-1	90.0	30	W14X90
L5	425.7	7.4	1.3	2	0.84 Eq H1-1	90.0	30	W14X109
L4	477.1	6.2	1.0	4	0.96 Eq H1-1	90.0	30	W14X109
L3	528.4	5.5	0.8	4	0.90 Eq H1-1	90.0	30	W14X132
L2	583.2	6.8	5.7	11	0.98 Eq H1-1	90.0	30	W14X132
L1	644.9	0.6	5.5	6	0.96 Eq H1-1	90.0	30	W14X145

Column Line H - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	50.5	2.6	3.3	6	0.50 Eq H1-1	90.0	30	W14X43
L14	117.6	2.0	0.9	2	0.30 Eq H1-1	90.0	30	C83L11L14
L13	117.6	2.0	0.9	2	0.30 Eq H1-1	90.0	30	C83L11L14
L12	173.3	0.9	2.3	2	0.45 Eq H1-1	90.0	30	C83L11L14
L11	173.3	0.9	2.3	2	0.45 Eq H1-1	90.0	30	C83L11L14
L10	226.2	2.3	3.7	6	0.54 Eq H1-1	90.0	30	W14X90
L9	295.5	2.4	4.2	3	0.71 Eq H1-1	90.0	30	W14X90
L8	363.0	1.8	3.3	6	0.90 Eq H1-1	90.0	30	W14X90
L7	431.5	2.2	4.1	6	0.85 Eq H1-1	90.0	30	W14X109
L6	501.0	2.3	0.9	4	0.97 Eq H1-1	90.0	30	W14X109
L5	569.5	2.4	1.0	3	0.83 Eq H1-1	90.0	30	W14X145
L4	637.9	2.4	1.0	3	0.95 Eq H1-1	90.0	30	W14X145
L3	706.4	2.1	1.8	2	0.89 Eq H1-1	90.0	30	W14X176
L2	780.1	4.5	7.2	2	0.95 Eq H1-1	90.0	30	W14X176
L1	847.4	3.4	6.7	6	0.95 Eq H1-1	90.0	30	W14X193

Column Line H - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PH1	49.1	2.3	2.6	3	0.33 Eq H1-1	90.0	50	W10X33
RF	94.9	3.7	2.1	6	0.56 Eq H1-1	90.0	30	C82RF
L14	156.5	1.5	1.0	2	0.57 Eq H1-1	90.0	30	C82L11L14

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	156.5	1.5	1.0	2	0.57 Eq H1-1	90.0	30	C82L11L14
L12	209.2	1.2	2.3	3	0.80 Eq H1-1	90.0	30	C82L11L14
L11	209.2	1.2	2.3	3	0.80 Eq H1-1	90.0	30	C82L11L14
L10	258.4	1.7	4.0	7	0.35 Eq H1-1	90.0	30	C82L8L10
L9	322.0	1.7	4.4	10	0.44 Eq H1-1	90.0	30	C82L8L10
L8	390.4	1.3	3.5	7	0.55 Eq H1-1	90.0	30	C82L8L10
L7	456.5	1.6	4.3	7	0.50 Eq H1-1	90.0	30	C82L6L7
L6	523.5	1.7	0.9	5	0.56 Eq H1-1	90.0	30	C82L6L7
L5	589.6	1.8	1.1	2	0.53 Eq H1-1	90.0	30	C82L4L5
L4	655.7	1.8	1.1	2	0.60 Eq H1-1	90.0	30	C82L4L5
L3	721.8	2.4	1.7	3	0.59 Eq H1-1	90.0	30	C82L2L3
L2	794.9	4.7	8.3	3	0.63 Eq H1-1	90.0	30	C82L2L3
L1	862.4	3.4	7.7	6	0.69 Eq H1-1	90.0	30	C82L2L3

Column Line H - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PHRF	12.7	2.8	2.2	2	0.16 Eq H1-3	90.0	50	W10X33
PH2	29.4	2.3	3.1	11	0.28 Eq H1-3	90.0	50	W10X33
PH1	62.6	2.1	2.8	6	0.38 Eq H1-1	90.0	50	W10X33
RF	164.6	3.8	1.8	6	0.94 Eq H1-1	90.0	30	C70RF
L14	197.6	5.0	0.9	4	0.40 Eq H1-1	90.0	30	C70L11L14
L13	197.6	5.0	0.9	4	0.40 Eq H1-1	90.0	30	C70L11L14
L12	239.1	4.1	0.7	2	0.47 Eq H1-1	90.0	30	C70L11L14
L11	239.1	4.1	0.7	2	0.47 Eq H1-1	90.0	30	C70L11L14
L10	274.3	5.2	4.3	10	0.38 Eq H1-1	90.0	30	C70L8L10
L9	311.7	4.6	4.0	11	0.42 Eq H1-1	90.0	30	C70L8L10
L8	358.3	3.1	3.2	7	0.51 Eq H1-1	90.0	30	C70L8L10
L7	403.1	3.9	3.9	7	0.47 Eq H1-1	90.0	30	C70L6L7
L6	448.5	4.4	0.9	4	0.51 Eq H1-1	90.0	30	C70L6L7
L5	493.3	4.6	1.0	3	0.49 Eq H1-1	90.0	30	C70L4L5
L4	538.0	3.5	0.8	5	0.55 Eq H1-1	90.0	30	C70L4L5
L3	582.8	6.9	2.6	3	0.49 Eq H1-1	90.0	30	C70L2L3
L2	634.8	7.9	10.8	2	0.52 Eq H1-1	90.0	30	C70L2L3
L1	686.0	2.8	10.0	6	0.57 Eq H1-1	90.0	30	C70L1

Column Line H - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PHRF	12.7	2.8	1.4	3	0.13 Eq H1-3	90.0	50	W10X33
PH2	29.8	2.2	2.3	1	0.25 Eq H1-3	90.0	50	W10X33
PH1	44.0	1.8	2.6	2	0.27 Eq H1-1	90.0	50	W10X33
RF	153.0	0.9	2.2	6	0.88 Eq H1-1	90.0	30	C56RF
L14	187.8	1.8	1.0	4	0.42 Eq H1-1	90.0	30	C56L11L14
L13	187.8	1.8	1.0	4	0.42 Eq H1-1	90.0	30	C56L11L14
L12	222.1	1.1	3.2	2	0.52 Eq H1-1	90.0	30	C56L11L14
L11	222.1	1.1	3.2	2	0.52 Eq H1-1	90.0	30	C56L11L14

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	253.9	1.8	7.0	3	0.43 Eq H1-2	90.0	30	C56L8L10
L9	283.4	1.7	6.9	11	0.48 Eq H1-1	90.0	30	C56L8L10
L8	316.4	1.1	5.0	6	0.55 Eq H1-1	90.0	30	C56L8L10
L7	350.8	1.4	5.5	6	0.67 Eq H1-1	90.0	30	C56L6L7
L6	385.3	1.5	1.4	4	0.69 Eq H1-1	90.0	30	C56L6L7
L5	419.1	1.6	1.6	3	0.56 Eq H1-1	90.0	30	C56L4L5
L4	453.0	1.8	1.4	4	0.63 Eq H1-1	90.0	30	C56L4L5
L3	486.8	1.3	1.7	2	0.63 Eq H1-1	90.0	30	C56L2L3
L2	522.1	1.6	5.8	11	0.64 Eq H1-1	90.0	30	C56L2L3
L1	554.5	1.3	5.4	6	0.61 Eq H1-1	90.0	30	C56L1

Column Line H - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	46.9	5.6	11.5	10	0.81 Eq H1-2	0.0	30	W14X43
L14	89.9	5.1	0.3	5	0.53 Eq H1-1	0.0	30	C34L11L14
L13	89.9	5.1	0.3	5	0.53 Eq H1-1	0.0	30	C34L11L14
L12	129.2	4.4	3.0	4	0.96 Eq H1-1	0.0	30	C34L11L14
L11	129.2	4.4	3.0	4	0.96 Eq H1-1	0.0	30	C34L11L14
L10	194.1	6.3	4.6	3	0.66 Eq H1-1	0.0	30	W14X74
L9	224.2	3.7	3.1	7	0.74 Eq H1-1	0.0	30	W14X74
L8	263.8	2.6	2.6	6	0.92 Eq H1-1	0.0	30	W14X74
L7	306.0	4.0	3.4	10	0.89 Eq H1-1	0.0	30	W14X82
L6	350.6	3.8	1.2	3	0.98 Eq H1-1	0.0	30	W14X82
L5	393.9	4.2	1.4	5	0.85 Eq H1-1	0.0	30	W14X99
L4	437.2	4.1	1.1	2	0.97 Eq H1-1	0.0	30	W14X99
L3	480.7	3.4	7.5	4	0.95 Eq H1-1	0.0	30	W14X120
L2	518.6	3.3	9.9	10	0.96 Eq H1-1	0.0	30	W14X120
L1	555.3	2.8	4.1	10	0.93 Eq H1-1	0.0	30	W14X132

Column Line H - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	9.8	1.3	11	0.36 Eq H1-1	0.0	30	C219L11L14
L13	54.6	9.8	1.3	11	0.36 Eq H1-1	0.0	30	C219L11L14
L12	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14
L11	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14

Column Line H - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	184.8	14.3	10.8	6	0.77 Eq H1-1	0.0	30	W14X74
L9	225.7	4.6	2.0	10	0.75 Eq H1-1	0.0	30	W14X74
L8	272.8	3.4	1.8	11	0.94 Eq H1-1	0.0	30	W14X74
L7	322.6	4.5	3.1	7	0.77 Eq H1-1	0.0	30	W14X90
L6	376.8	4.7	0.9	5	0.88 Eq H1-1	0.0	30	W14X90
L5	429.7	4.9	1.1	2	0.77 Eq H1-1	0.0	30	W14X120
L4	482.7	3.9	2.4	3	0.89 Eq H1-1	0.0	30	W14X120

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L3	522.5	2.8	8.0	2	0.92 Eq H1-1	0.0	30	W14X132
L2	577.9	5.0	10.4	7	0.99 Eq H1-1	0.0	30	W14X132
L1	626.9	4.3	2.9	6	0.93 Eq H1-1	0.0	30	W14X145

Column Line H - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	6	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	2	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	6	0.90 Eq H1-1	90.0	30	W14X61

Column Line 101.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line H - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	40.7	53.3	8	0.90 Eq H1-2	0.0	30	W14X109
L10	407.2	7.5	44.3	1	0.92 Eq H1-2	0.0	30	W14X132
L9	469.1	9.5	5.3	5	0.77 Eq H1-1	0.0	30	W14X132
L8	527.4	8.3	3.6	5	0.89 Eq H1-1	0.0	30	W14X132
L7	603.4	10.6	4.6	4	0.88 Eq H1-1	0.0	30	W14X145
L6	666.2	8.5	1.1	2	0.95 Eq H1-1	0.0	30	W14X145
L5	727.4	9.5	1.1	2	0.87 Eq H1-1	0.0	30	W14X176
L4	793.5	8.1	1.0	4	0.98 Eq H1-1	0.0	30	W14X176
L3	817.1	7.2	8.2	2	0.88 Eq H1-1	0.0	30	W14X211
L2	891.6	17.0	10.7	5	0.92 Eq H1-1	0.0	30	W14X211
L1	1003.9	15.8	3.6	1	0.93 Eq H1-1	0.0	30	W14X233

Column Line 112.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	6	0.10 Eq H1-3	90.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48

Column Line 112.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	6	0.10 Eq H1-3	90.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48

Column Line I - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	226.2	39.3	71.0	5	0.83 Eq H1-2	0.0	30	W14X145
L10	609.3	30.9	56.6	1	0.91 Eq H1-2	0.0	30	W14X193
L9	670.3	1.5	13.9	5	0.76 Eq H1-1	0.0	30	W14X193
L8	772.9	1.1	11.0	2	0.89 Eq H1-1	0.0	30	W14X193
L7	874.3	1.3	4.7	2	0.87 Eq H1-1	0.0	30	W14X211
L6	958.0	1.4	1.1	5	0.94 Eq H1-1	0.0	30	W14X211
L5	1039.6	1.4	1.1	5	0.85 Eq H1-1	0.0	30	W14X257
L4	1127.7	4.8	2.2	5	0.94 Eq H1-1	0.0	30	W14X257
L3	1215.9	2.2	3.6	4	0.94 Eq H1-1	0.0	30	W14X342
L2	1215.9	2.2	3.6	4	0.94 Eq H1-1	0.0	30	W14X342
L1	1306.5	1.1	7.5	1	0.99 Eq H1-1	0.0	30	W14X283

Column Line 123.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line I - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	10	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	4	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	10	0.90 Eq H1-1	90.0	30	W14X61

Column Line I - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	59.0	1.9	3.3	6	0.47 Eq H1-1	0.0	30	W14X43
L6	118.4	2.9	0.5	2	0.71 Eq H1-1	0.0	30	W14X43
L5	169.0	2.3	0.5	2	0.66 Eq H1-1	0.0	30	W14X61
L4	227.0	5.0	0.9	2	0.95 Eq H1-1	0.0	30	W14X61
L3	285.1	3.8	1.1	4	0.94 Eq H1-1	0.0	30	W14X82
L2	299.9	4.9	2.3	3	0.92 Eq H1-1	0.0	30	W14X82
L1	365.7	1.1	2.7	6	0.89 Eq H1-1	0.0	30	W14X90

Column Line I - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	12.3	1.3	7	0.49 Eq H1-1	0.0	30	W14X48
L13	54.6	12.3	1.3	7	0.49 Eq H1-1	0.0.	30	W14X48
L12	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48
L11	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48

Column Line I - 10.3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	255.2	10.6	34.6	15	0.86 Eq H1-2	0.0	30	W14X99
L9	296.4	5.7	14.1	3	0.75 Eq H1-1	0.0	30	W14X99
L8	370.1	4.1	11.2	7	0.91 Eq H1-1	0.0	30	W14X99
L7	413.4	5.9	2.6	11	0.89 Eq H1-1	0.0	30	W14X99
L6	457.8	5.5	0.5	5	0.97 Eq H1-1	0.0	30	W14X99
L5	501.4	6.4	0.5	4	0.81 Eq H1-1	0.0	30	W14X132
L4	545.1	5.3	1.0	5	0.91 Eq H1-1	0.0	30	W14X132
L3	588.8	2.8	3.0	4	0.90 Eq H1-1	0.0	30	W14X145
L2	623.5	3.1	4.0	10	0.92 Eq H1-1	0.0	30	W14X145
L1	652.7	1.4	1.0	6	0.96 Eq H1-1	0.0	30	W14X145

Column Line I - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	46.9	5.6	11.5	6	0.81 Eq H1-2	0.0	30	W14X43
L14	89.9	4.2	0.3	3	0.47 Eq H1-1	0.0	30	C251L11L14
L13	89.9	4.2	0.3	3	0.47 Eq H1-1	0.0	30	C251L11L14
L12	129.2	3.5	0.1	1	0.69 Eq H1-1	0.0	30	C251L11L14
L11	129.2	3.5	0.1	1	0.69 Eq H1-1	0.0	30	C251L11L14

Column Line I - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	24.0	2.0	3.8	16	0.31 Eq H1-2	90.0	30	W14X43
L14	61.9	1.3	1.1	3	0.29 Eq H1-1	90.0	30	C120L11L14
L13	61.9	1.3	1.1	3	0.29 Eq H1-1	90.0	30	C120L11L14
L12	96.1	15.9	4.5	4	0.60 Eq H1-1	90.0	30	C120L11L14
L11	96.1	15.9	4.5	4	0.60 Eq H1-1	90.0	30	C120L11L14
L10	175.0	27.0	7.0	16	0.73 Eq H1-2	90.0	30	W14X74
L9	215.8	2.4	5.1	4	0.71 Eq H1-1	90.0	30	W14X74
L8	259.3	1.5	4.1	10	0.92 Eq H1-1	90.0	30	W14X74
L7	304.1	1.8	4.9	10	0.91 Eq H1-1	90.0	30	W14X82
L6	348.1	1.9	1.5	3	0.97 Eq H1-1	90.0	30	W14X82
L5	390.9	1.9	1.7	4	0.84 Eq H1-1	90.0	30	W14X99
L4	433.7	3.8	1.4	3	0.97 Eq H1-1	90.0	30	W14X99
L3	476.5	8.7	2.2	3	0.91 Eq H1-1	90.0	30	W14X120
L2	517.9	10.9	2.8	5	0.96 Eq H1-1	90.0	30	W14X120
L1	545.5	0.5	2.0	10	0.89 Eq H1-1	90.0	30	W14X132

Column Line I - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	36.5	10.2	4.2	17	0.47 Eq H1-2	90.0	30	W14X43
L14	88.4	6.1	1.1	4	0.27 Eq H1-1	90.0	30	C79L11L14
L13	88.4	6.1	1.1	4	0.27 Eq H1-1	90.0	30	C79L11L14
L12	133.2	6.2	3.0	4	0.43 Eq H1-1	90.0	30	C79L11L14
L11	133.2	6.2	3.0	4	0.43 Eq H1-1	90.0	30	C79L11L14
L10	170.8	8.0	4.0	11	0.56 Eq H1-1	90.0	30	W14X74
L9	217.4	7.1	3.5	7	0.72 Eq H1-1	90.0	30	W14X74
L8	271.1	5.2	2.8	11	0.95 Eq H1-1	90.0	30	W14X74
L7	322.4	6.3	4.4	11	0.78 Eq H1-1	90.0	30	W14X90
L6	374.7	5.8	0.9	3	0.88 Eq H1-1	90.0	30	W14X90
L5	426.1	6.8	1.1	5	0.84 Eq H1-1	90.0	30	W14X109
L4	477.4	5.5	0.9	3	0.96 Eq H1-1	90.0	30	W14X109
L3	528.8	4.9	1.2	4	0.90 Eq H1-1	90.0	30	W14X132
L2	581.0	6.5	9.0	4	0.98 Eq H1-1	90.0	30	W14X132
L1	631.8	3.9	8.7	10	0.96 Eq H1-1	90.0	30	W14X145

Column Line I - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	49.4	2.6	3.3	11	0.49 Eq H1-1	90.0	30	W14X43
L14	116.6	2.0	0.9	4	0.30 Eq H1-1	90.0	30	C83L11L14
L13	116.6	2.0	0.9	4	0.30 Eq H1-1	90.0	30	C83L11L14
L12	172.3	0.8	1.5	4	0.44 Eq H1-1	90.0	30	C83L11L14
L11	172.3	0.8	1.5	4	0.44 Eq H1-1	90.0	30	C83L11L14
L10	224.2	1.6	3.4	6	0.54 Eq H1-1	90.0	30	W14X90
L9	294.3	1.7	3.6	4	0.70 Eq H1-1	90.0	30	W14X90
L8	361.6	1.2	2.8	10	0.90 Eq H1-1	90.0	30	W14X90
L7	430.1	1.5	3.5	10	0.85 Eq H1-1	90.0	30	W14X109
L6	499.8	1.6	0.7	2	0.96 Eq H1-1	90.0	30	W14X109
L5	568.3	1.7	0.9	4	0.83 Eq H1-1	90.0	30	W14X145
L4	636.7	1.7	0.9	4	0.94 Eq H1-1	90.0	30	W14X145
L3	705.2	1.8	2.6	4	0.89 Eq H1-1	90.0	30	W14X176
L2	773.7	4.7	9.7	5	0.95 Eq H1-1	90.0	30	W14X176
L1	841.8	3.4	9.0	10	0.95 Eq H1-1	90.0	30	W14X193

Column Line I - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PH2	48.8	6.6	7.5	5	0.50 Eq H1-2	90.0	50	W10X33
PH1	96.6	6.1	6.9	11	0.73 Eq H1-1	90.0	50	W10X33
RF	222.5	4.5	3.1	11	0.56 Eq H1-1	90.0	30	C83RF
L14	277.7	2.2	1.0	2	0.70 Eq H1-1	90.0	30	C83L11L14
L13	277.7	2.2	1.0	2	0.70 Eq H1-1	90.0	30	C83L11L14
L12	327.1	1.0	1.5	4	0.82 Eq H1-1	90.0	30	C83L11L14
L11	327.1	1.0	1.5	4	0.82 Eq H1-1	90.0	30	C83L11L14

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	373.2	1.8	3.3	6	0.50 Eq H1-1	90.0	30	C83L8L10
L9	439.5	1.9	3.5	6	0.59 Eq H1-1	90.0	30	C83L8L10
L8	509.5	1.4	2.8	11	0.72 Eq H1-1	90.0	30	C83L8L10
L7	577.4	1.8	3.4	11	0.67 Eq H1-1	90.0	30	C83L6L7
L6	646.6	1.9	0.7	3	0.73 Eq H1-1	90.0	30	C83L6L7
L5	714.5	2.0	0.9	4	0.65 Eq H1-1	90.0	30	C83L4L5
L4	782.5	2.0	0.9	4	0.73 Eq H1-1	90.0	30	C83L4L5
L3	850.4	1.9	2.4	5	0.70 Eq H1-1	90.0	30	C83L2L3
L2	917.0	5.9	9.8	6	0.73 Eq H1-1	90.0	30	C83L2L3
L1	987.0	4.5	9.1	10	0.79 Eq H1-1	90.0	30	C83L1

Column Line I - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PH2	23.7	3.6	4.2	3	0.30 Eq H1-3	90.0	50	W10X33
PH1	60.6	2.8	2.8	4	0.35 Eq H1-1	90.0	50	W10X33
RF	85.9	4.7	2.4	11	0.52 Eq H1-1	90.0	30	C70RF
L14	122.4	6.9	1.2	3	0.25 Eq H1-1	90.0	30	C70L11L14
L13	122.4	6.9	1.2	3	0.25 Eq H1-1	90.0	30	C70L11L14
L12	167.7	6.0	1.1	5	0.34 Eq H1-1	90.0	30	C70L11L14
L11	167.7	6.0	1.1	5	0.34 Eq H1-1	90.0	30	C70L11L14
L10	205.4	6.6	5.0	7	0.30 Eq H1-1	90.0	30	C70L8L10
L9	251.4	7.7	4.0	11	0.35 Eq H1-1	90.0	30	C70L8L10
L8	300.8	5.8	2.6	10	0.43 Eq H1-1	90.0	30	C70L8L10
L7	350.7	7.2	3.1	10	0.41 Eq H1-1	90.0	30	C70L6L7
L6	401.8	6.7	0.6	2	0.46 Eq H1-1	90.0	30	C70L6L7
L5	451.7	7.7	0.8	4	0.45 Eq H1-1	90.0	30	C70L4L5
L4	501.6	6.5	0.6	2	0.51 Eq H1-1	90.0	30	C70L4L5
L3	551.5	6.0	2.3	5	0.47 Eq H1-1	90.0	30	C70L2L3
L2	602.8	8.0	10.4	5	0.50 Eq H1-1	90.0	30	C70L2L3
L1	653.9	3.2	9.7	10	0.55 Eq H1-1	90.0	30	C70L1

Column Line I - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PH2	11.2	3.7	2.6	11	0.19 Eq H1-3	90.0	50	W10X33
PH1	26.4	3.4	2.5	6	0.26 Eq H1-3	90.0	50	W10X33
RF	59.4	1.1	2.1	10	0.36 Eq H1-1	90.0	30	C56RF
L14	93.4	1.3	0.9	2	0.22 Eq H1-1	90.0	30	C56L11L14
L13	93.4	1.3	0.9	2	0.22 Eq H1-1	90.0	30	C56L11L14
L12	127.8	0.7	2.1	4	0.30 Eq H1-1	90.0	30	C56L11L14
L11	127.8	0.7	2.1	4	0.30 Eq H1-1	90.0	30	C56L11L14
L10	159.6	1.3	6.7	4	0.29 Eq H1-2	90.0	30	C56L8L10
L9	192.6	1.8	5.5	10	0.34 Eq H1-1	90.0	30	C56L8L10
L8	221.6	1.0	3.5	11	0.39 Eq H1-1	90.0	30	C56L8L10
L7	255.9	1.2	3.8	11	0.49 Eq H1-1	90.0	30	C56L6L7
L6	290.9	1.3	0.9	2	0.52 Eq H1-1	90.0	30	C56L6L7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L5	324.8	1.3	1.1	5	0.43 Eq H1-1	90.0	30	C56L4L5
L4	358.6	1.5	0.9	2	0.50 Eq H1-1	90.0	30	C56L4L5
L3	392.5	1.6	1.4	5	0.50 Eq H1-1	90.0	30	C56L2L3
L2	427.8	3.0	5.9	6	0.54 Eq H1-1	90.0	30	C56L2L3
L1	458.5	2.8	5.5	10	0.51 Eq H1-1	90.0	30	C56L1

Column Line I - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	46.9	5.6	11.5	11	0.81 Eq H1-2	0.0	30	W14X43
L14	89.9	5.1	0.3	4	0.53 Eq H1-1	0.0	30	C34L11L14
L13	89.9	5.1	0.3	4	0.53 Eq H1-1	0.0	30	C34L11L14
L12	127.8	4.4	0.3	10	0.76 Eq H1-1	0.0	30	C34L11L14
L11	127.8	4.4	0.3	10	0.76 Eq H1-1	0.0	30	C34L11L14
L10	289.6	6.1	4.1	5	0.64 Eq H1-1	0.0	30	W14X99
L9	328.4	3.7	4.1	4	0.71 Eq H1-1	0.0	30	W14X99
L8	387.3	2.6	3.2	10	0.87 Eq H1-1	0.0	30	W14X99
L7	427.1	3.9	3.9	11	0.84 Eq H1-1	0.0	30	W14X109
L6	472.6	4.2	1.2	3	0.91 Eq H1-1	0.0	30	W14X109
L5	515.9	4.3	1.4	4	0.83 Eq H1-1	0.0	30	W14X132
L4	559.2	4.2	1.1	3	0.92 Eq H1-1	0.0	30	W14X132
L3	602.7	3.5	7.8	5	0.95 Eq H1-1	0.0	30	W14X145
L2	640.7	3.8	10.3	11	0.96 Eq H1-1	0.0	30	W14X145
L1	677.2	3.0	6.0	1	0.93 Eq H1-1	0.0	30	W14X159

Column Line I - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	9.8	1.3	10	0.36 Eq H1-1	0.0	30	C219L11L14
L13	54.6	9.8	1.3	10	0.36 Eq H1-1	0.0	30	C219L11L14
L12	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14
L11	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14

Column Line I - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	52.4	5.4	2.0	11	0.43 Eq H1-1	0.0	30	W14X43
L8	61.4	3.4	1.4	2	0.47 Eq H1-1	0.0	30	W14X43
L7	101.6	4.5	1.7	6	0.63 Eq H1-1	0.0	30	C25L6L7
L6	153.7	4.2	1.0	7	0.88 Eq H1-1	0.0	30	C25L6L7
L5	207.9	4.6	1.1	3	0.77 Eq H1-1	0.0	30	C25L4L5
L4	260.8	3.7	2.4	2	1.10 Eq H1-1	0.0	30	C25L4L5
L3	300.7	2.6	8.0	3	0.64 Eq H1-1	0.0	30	C25L1L3
L2	356.1	4.7	10.4	6	0.73 Eq H1-1	0.0	30	C25L1L3
L1	405.1	4.1	2.8	6	0.77 Eq H1-1	0.0	30	C25L1L3

Column Line I - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	10	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	5	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	10	0.90 Eq H1-1	90.0	30	W14X61

Column Line 123.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line I - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	41.6	50.7	12	0.73 Eq H1-2	0.0	30	W14X132
L10	485.3	7.3	8.0	2	0.66 Eq H1-1	0.0	30	W14X159
L9	552.8	9.4	7.2	4	0.75 Eq H1-1	0.0	30	W14X159
L8	636.1	8.4	3.8	4	0.87 Eq H1-1	0.0	30	W14X159
L7	712.1	10.9	4.6	5	0.86 Eq H1-1	0.0	30	W14X176
L6	774.9	8.7	1.1	3	0.91 Eq H1-1	0.0	30	W14X176
L5	836.0	9.7	1.1	3	0.84 Eq H1-1	0.0	30	W14X211
L4	902.2	8.3	1.0	5	0.93 Eq H1-1	0.0	30	W14X211
L3	925.7	7.3	8.2	3	0.90 Eq H1-1	0.0	30	W14X233
L2	1000.3	17.3	10.8	4	0.93 Eq H1-1	0.0	30	W14X233
L1	1112.6	16.1	3.6	1	0.93 Eq H1-1	0.0	30	W14X257

Column Line 134.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.5	0.0	0.1	2	0.15 Eq H1-1	90.0	30	W14X43
L14	71.9	0.0	0.0	1	0.53 Eq H1-1	90.0	30	W14X61
L13	71.9	0.0	0.0	1	0.53 Eq H1-1	90.0	30	W14X61
L12	71.9	0.0	0.0	1	0.53 Eq H1-1	90.0	30	W14X61

Column Line J - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	66.2	17.4	1.0	6	0.63 Eq H1-1	90.0	30	W14X43
L14	94.0	5.7	0.2	6	0.80 Eq H1-1	90.0	30	W14X43
L13	106.1	13.5	0.2	10	0.97 Eq H1-1	90.0	30	W14X43
L12	141.9	13.4	0.2	3	0.87 Eq H1-1	90.0	30	W14X43
L11	159.1	4.0	0.2	6	0.88 Eq H1-1	90.0	30	W14X43

Column Line J - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	38.2	0.8	0.8	4	0.34 Eq H1-1	0.0	30	W14X43
L13	38.2	0.8	0.8	4	0.34 Eq H1-1	0.0	30	W14X43
L12	75.9	0.0	0.7	1	0.66 Eq H1-1	0.0	30	W14X43
L11	75.9	0.0	0.7	1	0.66 Eq H1-1	0.0	30	W14X43

Column Line J - 10.3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	173.9	0.6	22.9	6	0.99 Eq H1-2	0.0	30	W14X68
L9	200.6	0.6	2.8	2	0.71 Eq H1-1	0.0	30	W14X68
L8	225.4	0.4	1.4	10	0.84 Eq H1-1	0.0	30	W14X68
L7	253.3	0.4	1.7	10	0.87 Eq H1-1	0.0	30	W14X68
L6	280.4	0.4	0.3	4	0.93 Eq H1-1	0.0	30	W14X68
L5	306.9	0.4	0.3	4	0.88 Eq H1-1	0.0	30	W14X82
L4	333.5	0.4	0.3	4	1.00 Eq H1-1	0.0	30	W14X82
L3	360.0	0.4	0.9	4	0.90 Eq H1-1	0.0	30	W14X90
L2	385.3	0.4	1.1	10	0.91 Eq H1-1	0.0	30	W14X90
L1	411.8	0.0	1.0	10	0.99 Eq H1-1	0.0	30	W14X90

Column Line J - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	31.6	0.7	7.8	7	0.52 Eq H1-2	0.0	30	W14X43
L14	60.7	0.5	0.3	2	0.59 Eq H1-1	0.0	30	C252L11L14
L13	60.7	0.5	0.3	2	0.59 Eq H1-1	0.0	30	C252L11L14
L12	86.8	0.0	0.2	6	0.87 Eq H1-1	0.0	30	C252L11L14
L11	86.8	0.0	0.2	6	0.87 Eq H1-1	0.0	30	C252L11L14

Column Line J - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	16.8	2.6	1.8	4	0.23 Eq H1-3	0.0	30	W14X43
L14	56.4	2.2	3.1	10	0.42 Eq H1-2	0.0	30	W14X43
L13	68.2	2.4	2.6	1	0.45 Eq H1-2	0.0	30	W14X43
L12	99.6	2.4	2.6	2	0.60 Eq H1-1	0.0	30	W14X43
L11	109.9	2.4	8.0	2	0.94 Eq H1-1	0.0	30	W14X43
L10	174.0	2.9	7.6	7	0.71 Eq H1-1	0.0	30	W14X68
L9	213.4	3.4	1.3	7	0.75 Eq H1-1	0.0	30	W14X68
L8	251.9	3.1	1.4	7	0.96 Eq H1-1	0.0	30	W14X68
L7	290.7	3.5	1.9	11	0.92 Eq H1-1	0.0	30	W14X74
L6	324.2	2.6	0.4	5	0.99 Eq H1-1	0.0	30	W14X74
L5	359.1	3.0	0.5	5	0.85 Eq H1-1	0.0	30	W14X90
L4	396.2	3.6	0.7	5	0.96 Eq H1-1	0.0	30	W14X90
L3	436.0	3.5	2.7	5	0.91 Eq H1-1	0.0	30	W14X109
L2	478.1	4.2	3.6	6	0.94 Eq H1-1	0.0	30	W14X109

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	519.7	3.0	3.4	10	0.95 Eq H1-1	0.0	30	W14X120

Column Line J - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.7	4.7	3.3	8	0.34 Eq H1-3	90.0	30	W14X43
L14	72.7	0.0	5.8	6	0.59 Eq H1-2	90.0	30	W14X43
L13	91.9	0.0	4.4	1	0.61 Eq H1-2	90.0	30	W14X43
L12	130.9	0.0	4.4	1	0.79 Eq H1-1	90.0	30	W14X43
L11	148.3	0.0	7.1	2	0.99 Eq H1-2	90.0	30	W14X43
L10	184.1	4.6	7.0	7	0.76 Eq H1-1	90.0	30	W14X68
L9	220.9	5.3	2.8	7	0.78 Eq H1-1	90.0	30	W14X68
L8	261.7	4.5	2.2	2	0.99 Eq H1-1	90.0	30	W14X68
L7	306.4	5.7	2.6	3	0.89 Eq H1-1	90.0	30	W14X82
L6	341.9	4.6	0.8	2	0.95 Eq H1-1	90.0	30	W14X82
L5	376.5	5.0	0.8	5	0.81 Eq H1-1	90.0	30	W14X99
L4	416.7	5.6	0.8	5	0.92 Eq H1-1	90.0	30	W14X99
L3	461.9	5.7	2.0	5	0.87 Eq H1-1	90.0	30	W14X120
L2	511.2	8.7	2.7	2	0.93 Eq H1-1	90.0	30	W14X120
L1	577.2	7.8	2.5	6	0.96 Eq H1-1	90.0	30	W14X132

Column Line J - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	25.5	0.0	4.3	2	0.39 Eq H1-1	90.0	30	W14X43
L14	94.0	0.0	7.6	6	0.48 Eq H1-2	90.0	30	W14X61
L13	118.1	0.0	6.4	1	0.53 Eq H1-2	90.0	30	W14X61
L12	167.1	0.0	6.4	1	0.68 Eq H1-2	90.0	30	W14X61
L11	189.1	0.0	10.1	2	0.84 Eq H1-2	90.0	30	W14X61
L10	234.0	0.7	11.2	6	0.64 Eq H1-1	90.0	30	W14X90
L9	283.8	0.6	4.7	4	0.68 Eq H1-1	90.0	30	W14X90
L8	334.1	0.4	3.6	2	0.83 Eq H1-1	90.0	30	W14X90
L7	391.5	0.4	4.3	2	0.85 Eq H1-1	90.0	30	W14X99
L6	440.7	0.3	1.1	4	0.93 Eq H1-1	90.0	30	W14X99
L5	491.1	0.4	1.1	4	0.87 Eq H1-1	90.0	30	W14X120
L4	545.9	0.4	1.1	4	0.99 Eq H1-1	90.0	30	W14X120
L3	606.2	0.4	2.4	4	0.92 Eq H1-1	90.0	30	W14X145
L2	671.9	1.0	3.2	2	0.99 Eq H1-1	90.0	30	W14X145
L1	760.0	0.0	3.0	6	0.92 Eq H1-1	90.0	30	W14X176

Column Line J - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PH2	-10.4	4.1	9.2	18	0.40 Eq H1-3	90.0	50	W10X33
PH1	15.8	4.4	1.7	1	0.19 Eq H1-3	90.0	50	W10X33
RF	112.4	2.5	3.7	2	0.44 Eq H1-1	90.0	30	C84RF
L14	169.9	0.0	8.6	1	0.35 Eq H1-2	90.0	30	C84L11L14
L13	191.9	0.0	8.6	1	0.38 Eq H1-2	90.0	30	C84L11L14

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L12	241.9	0.0	8.6	1	0.45 Eq H1-2	90.0	30	C84L11L14
L11	263.9	0.0	13.4	2	0.54 Eq H1-2	90.0	30	C84L11L14
L10	309.4	0.7	11.0	6	0.52 Eq H1-1	90.0	30	C84L8L10
L9	358.0	0.7	4.7	6	0.53 Eq H1-1	90.0	30	C84L8L10
L8	411.1	0.4	3.6	2	0.63 Eq H1-1	90.0	30	C84L8L10
L7	469.3	0.4	4.2	2	0.58 Eq H1-1	90.0	30	C84L6L7
L6	516.5	0.4	1.1	4	0.62 Eq H1-1	90.0	30	C84L6L7
L5	566.9	0.4	1.1	4	0.56 Eq H1-1	90.0	30	C84L4L5
L4	621.7	0.4	1.1	4	0.63 Eq H1-1	90.0	30	C84L4L5
L3	682.0	0.4	2.2	4	0.72 Eq H1-1	90.0	30	C84L2L3
L2	747.7	1.1	3.0	2	0.75 Eq H1-1	90.0	30	C84L2L3
L1	835.8	0.0	2.8	6	0.84 Eq H1-1	90.0	30	C84L1

Column Line J - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PH2	12.1	3.8	0.0	3	0.10 Eq H1-3	90.0	50	W10X33
PH1	34.4	2.2	0.8	1	0.21 Eq H1-1	90.0	50	W10X33
RF	149.9	0.1	2.5	2	0.93 Eq H1-1	90.0	30	C69RF
L14	188.7	0.0	5.9	1	0.58 Eq H1-2	90.0	30	C69L11L14
L13	206.1	0.0	5.9	4	0.63 Eq H1-1	90.0	30	C69L11L14
L12	245.7	0.0	5.9	1	0.73 Eq H1-1	90.0	30	C69L11L14
L11	263.1	0.0	7.6	2	0.80 Eq H1-2	90.0	30	C69L11L14
L10	298.9	5.0	7.4	6	0.57 Eq H1-1	90.0	30	C69L8L10
L9	336.8	6.1	5.0	6	0.59 Eq H1-1	90.0	30	C69L8L10
L8	378.8	5.1	3.9	3	0.69 Eq H1-1	90.0	30	C69L8L10
L7	424.2	6.8	4.5	2	0.69 Eq H1-1	90.0	30	C69L6L7
L6	460.4	5.5	1.1	3	0.71 Eq H1-1	90.0	30	C69L6L7
L5	495.7	6.0	1.1	4	0.72 Eq H1-1	90.0	30	C69L4L5
L4	533.4	6.6	1.1	4	0.80 Eq H1-1	90.0	30	C69L4L5
L3	578.6	6.1	2.4	4	0.77 Eq H1-1	90.0	30	C69L2L3
L2	627.9	9.3	3.2	3	0.80 Eq H1-1	90.0	30	C69L2L3
L1	693.7	8.7	1.9	6	0.73 Eq H1-1	90.0	30	C69L1

Column Line J - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
PH2	4.5	0.3	2.2	1	0.10 Eq H1-3	0.0	50	W10X33
PH1	13.0	1.0	1.9	3	0.15 Eq H1-3	0.0	50	W10X33
RF	138.8	2.8	1.5	11	0.82 Eq H1-1	0.0	30	C55RF
L14	177.8	3.5	3.1	1	0.68 Eq H1-1	0.0	30	C55L11L14
L13	188.1	3.5	3.1	4	0.74 Eq H1-1	0.0	30	C55L11L14
L12	219.5	3.5	3.1	2	0.86 Eq H1-1	0.0	30	C55L11L14
L11	229.9	3.5	3.8	2	0.88 Eq H1-1	0.0	30	C55L11L14
L10	259.0	4.3	4.1	7	0.59 Eq H1-1	0.0	30	C55L8L10
L9	293.1	2.3	1.6	10	0.64 Eq H1-1	0.0	30	C55L8L10
L8	327.6	2.3	1.9	10	0.76 Eq H1-1	0.0	30	C55L8L10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	363.3	2.2	2.5	6	0.73 Eq H1-1	0.0	30	C55L6L7
L6	392.7	1.6	0.4	2	0.77 Eq H1-1	0.0	30	C55L6L7
L5	419.5	2.0	0.5	2	0.73 Eq H1-1	0.0	30	C55L4L5
L4	447.6	2.6	0.7	2	0.80 Eq H1-1	0.0	30	C55L4L5
L3	482.1	3.0	2.9	2	0.70 Eq H1-1	0.0	30	C55L2L3
L2	519.4	3.5	5.6	11	0.71 Eq H1-1	0.0	30	C55L2L3
L1	555.7	2.4	5.2	1	0.78 Eq H1-1	0.0	30	C55L1

Column Line J - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	31.6	0.7	7.8	10	0.52 Eq H1-2	0.0	30	W14X43
L14	60.7	0.7	0.3	5	0.59 Eq H1-1	0.0	30	C36L11L14
L13	60.7	0.7	0.3	5	0.59 Eq H1-1	0.0	30	C36L11L14
L12	88.1	0.5	3.0	4	1.45 Eq H1-1	0.0	30	C36L11L14
L11	88.1	0.5	3.0	4	1.45 Eq H1-1	0.0	30	C36L11L14
L10	198.0	0.5	4.7	3	0.62 Eq H1-1	0.0	30	W14X82
L9	211.2	0.4	7.8	4	0.71 Eq H1-1	0.0	30	W14X82
L8	252.2	0.3	6.1	10	0.87 Eq H1-1	0.0	30	W14X82
L7	278.7	0.4	1.6	10	0.87 Eq H1-1	0.0	30	W14X74
L6	307.3	0.3	0.7	2	0.94 Eq H1-1	0.0	30	W14X74
L5	333.0	0.3	0.8	4	0.79 Eq H1-1	0.0	30	W14X90
L4	358.7	0.3	0.8	4	0.87 Eq H1-1	0.0	30	W14X90
L3	384.4	0.2	2.6	4	0.97 Eq H1-1	0.0	30	W14X90
L2	408.1	0.6	4.1	6	0.98 Eq H1-1	0.0	30	W14X90
L1	433.2	0.0	3.8	1	0.96 Eq H1-1	0.0	30	W14X99

Column Line J - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	36.5	0.6	1.2	10	0.33 Eq H1-1	0.0	30	C217L11L14
L13	36.5	0.6	1.2	10	0.33 Eq H1-1	0.0	30	C217L11L14
L12	75.9	0.0	0.7	1	0.65 Eq H1-1	0.0	30	C217L11L14
L11	75.9	0.0	0.7	1	0.65 Eq H1-1	0.0	30	C217L11L14

Column Line J - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	34.5	0.8	2.0	6	0.27 Eq H1-1	0.0	30	W14X43
L6	73.6	0.9	0.7	2	0.45 Eq H1-1	0.0	30	W14X43
L5	108.6	0.8	0.6	2	0.68 Eq H1-1	0.0	30	W14X43
L4	139.2	0.6	0.5	2	0.94 Eq H1-1	0.0	30	W14X43
L3	169.8	0.4	1.2	2	0.75 Eq H1-1	0.0	30	W14X61
L2	203.7	0.3	1.6	6	0.81 Eq H1-1	0.0	30	W14X61
L1	235.3	0.0	0.7	6	0.94 Eq H1-1	0.0	30	W14X61

Column Line J - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	66.2	17.4	1.0	7	0.63 Eq H1-1	90.0	30	W14X43
L14	94.0	5.7	0.2	6	0.80 Eq H1-1	90.0	30	W14X43
L13	106.1	13.5	0.2	6	0.97 Eq H1-1	90.0	30	W14X43
L12	141.9	13.4	0.2	2	0.87 Eq H1-1	90.0	30	W14X43
L11	159.1	4.0	0.2	6	0.88 Eq H1-1	90.0	30	W14X43

Column Line 134.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.5	0.0	0.1	2	0.15 Eq H1-1	90.0	30	W14X43
L14	71.1	0.0	0.1	6	1.00 Eq H1-1	90.0	30	W14X53
L13	71.1	0.0	0.1	6	1.00 Eq H1-1	90.0	30	W14X53
L12	71.1	0.0	0.1	6	1.00 Eq H1-1	90.0	30	W14X53

Column Line J - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	113.1	0.7	47.1	2	0.74 Eq H1-2	0.0	30	W14X90
L10	331.3	0.3	29.5	2	0.83 Eq H1-2	0.0	30	W14X109
L9	363.7	0.4	11.1	2	0.77 Eq H1-1	0.0	30	W14X109
L8	414.7	0.2	8.4	4	0.88 Eq H1-1	0.0	30	W14X109
L7	464.6	0.3	3.7	4	0.91 Eq H1-1	0.0	30	W14X109
L6	506.4	0.3	0.9	2	0.97 Eq H1-1	0.0	30	W14X109
L5	547.2	0.3	0.9	2	0.88 Eq H1-1	0.0	30	W14X132
L4	591.3	0.3	0.9	2	0.97 Eq H1-1	0.0	30	W14X132
L3	635.3	0.2	3.1	2	0.97 Eq H1-1	0.0	30	W14X145
L2	681.6	0.3	4.1	4	0.99 Eq H1-1	0.0	30	W14X145
L1	756.5	0.0	3.5	1	0.92 Eq H1-1	0.0	30	W14X176

Column Line K - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	226.2	38.3	53.3	4	0.99 Eq H1-2	0.0	30	W14X109
L10	552.9	30.3	43.3	1	0.97 Eq H1-2	0.0	30	W14X159
L9	628.2	3.8	4.8	4	0.84 Eq H1-1	0.0	30	W14X159
L8	711.9	1.0	3.8	3	0.97 Eq H1-1	0.0	30	W14X159
L7	813.2	1.3	4.6	3	0.88 Eq H1-1	0.0	30	W14X193
L6	897.0	1.4	1.1	4	0.96 Eq H1-1	0.0	30	W14X193
L5	978.5	1.4	1.1	4	0.88 Eq H1-1	0.0	30	W14X233
L4	1066.7	1.4	1.1	4	0.98 Eq H1-1	0.0	30	W14X233
L3	1154.8	15.7	2.7	1	1.00 Eq H1-1	0.0	30	W14X257
L2	1202.6	20.5	5.0	4	1.00 Eq H1-1	0.0	30	W14X257
L1	1288.7	2.1	4.7	1	0.97 Eq H1-1	0.0	30	W14X283

Column Line 145.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line K - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	6	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	3	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	6	0.90 Eq H1-1	90.0	30	W14X61

Column Line K - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	166.9	17.2	8.6	17	0.75 Eq H1-2	0.0	30	W14X68
L9	190.5	6.8	1.0	7	0.67 Eq H1-1	0.0	30	W14X68
L8	256.5	4.2	0.8	6	0.98 Eq H1-1	0.0	30	W14X68
L7	312.0	2.8	1.3	6	0.74 Eq H1-1	0.0	30	W14X90
L6	371.5	2.9	0.3	3	0.87 Eq H1-1	0.0	30	W14X90
L5	429.6	3.0	0.3	3	0.84 Eq H1-1	0.0	30	W14X109
L4	487.6	3.0	0.3	3	0.98 Eq H1-1	0.0	30	W14X109
L3	545.6	3.1	1.0	5	0.93 Eq H1-1	0.0	30	W14X132
L2	589.0	4.4	1.6	11	0.97 Eq H1-1	0.0	30	W14X132
L1	650.8	3.1	1.6	6	0.96 Eq H1-1	0.0	30	W14X145

Column Line K - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	12.3	1.3	6	0.49 Eq H1-1	0.0	30	W14X48
L13	54.6	12.3	1.3	6	0.49 Eq H1-1	0.0	30	W14X48
L12	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48
L11	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48

Column Line K - 10.3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	154.7	5.5	34.4	10	0.72 Eq H1-2	0.0	30	W14X90
L9	189.5	3.1	7.8	10	0.50 Eq H1-1	0.0	30	W14X90
L8	229.5	1.9	3.5	11	0.58 Eq H1-1	0.0	30	W14X90
L7	273.8	2.3	3.2	11	0.89 Eq H1-1	0.0	30	W14X74
L6	315.1	3.0	0.4	2	0.97 Eq H1-1	0.0	30	W14X74
L5	354.9	2.9	0.5	5	0.84 Eq H1-1	0.0	30	W14X90
L4	394.7	3.0	0.5	5	0.96 Eq H1-1	0.0	30	W14X90

L3	434.4	2.3	1.5	4	0.90 Eq H1-1	0.0	30	W14X109
L2	472.5	2.7	2.0	11	0.93 Eq H1-1	0.0	30	W14X109
L1	512.2	2.3	1.7	10	0.93 Eq H1-1	0.0	30	W14X120

Column Line K - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.7	12.2	7	0.84 Eq H1-2	0.0	30	W14X43
L14	90.3	4.2	0.3	2	0.48 Eq H1-1	0.0	30	C251L11L14
L13	90.3	4.2	0.3	2	0.48 Eq H1-1	0.0	30	C251L11L14
L12	130.1	3.6	0.1	1	0.69 Eq H1-1	0.0	30	C251L11L14
L11	130.1	3.6	0.1	1	0.69 Eq H1-1	0.0	30	C251L11L14

Column Line K - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.1	9	0.32 Eq H1-3	0.0	30	W14X43
L14	71.0	0.0	5.3	10	0.35 Eq H1-2	0.0	30	W14X61
L13	88.5	0.0	4.6	1	0.39 Eq H1-2	0.0	30	W14X61
L12	127.6	0.0	4.6	1	0.51 Eq H1-2	0.0	30	W14X61
L11	143.4	0.0	13.2	2	0.78 Eq H1-1	0.0	30	W14X61
L10	233.8	5.4	13.8	7	0.66 Eq H1-2	0.0	30	W14X90
L9	287.0	6.0	7.4	2	0.71 Eq H1-2	0.0	30	W14X90
L8	335.2	4.9	5.5	5	0.84 Eq H1-1	0.0	30	W14X90
L7	391.6	6.0	6.6	4	0.87 Eq H1-1	0.0	30	W14X99
L6	436.7	4.2	1.2	4	0.94 Eq H1-1	0.0	30	W14X99
L5	468.0	1.3	1.3	3	0.83 Eq H1-1	0.0	30	W14X120
L4	501.7	1.2	1.3	3	0.91 Eq H1-1	0.0	30	W14X120
L3	538.3	1.0	4.1	2	0.93 Eq H1-1	0.0	30	W14X132
L2	577.7	1.2	5.4	5	0.94 Eq H1-1	0.0	30	W14X132
L1	614.9	0.8	4.7	1	0.92 Eq H1-1	0.0	30	W14X145

Column Line K - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.1	8	0.32 Eq H1-3	0.0	30	W14X43
L14	71.0	0.0	5.3	6	0.56 Eq H1-2	0.0	30	W14X43
L13	88.5	0.0	4.0	1	0.58 Eq H1-2	0.0	30	W14X43
L12	127.6	0.0	4.0	1	0.76 Eq H1-1	0.0	30	W14X43
L11	143.4	0.0	7.5	2	0.99 Eq H1-2	0.0	30	W14X43
L10	179.8	6.3	7.4	7	0.69 Eq H1-1	0.0	30	W14X74
L9	220.6	7.0	2.9	7	0.72 Eq H1-1	0.0	30	W14X74
L8	266.9	5.7	2.2	2	0.93 Eq H1-1	0.0	30	W14X74
L7	315.4	7.0	2.6	3	0.92 Eq H1-1	0.0	30	W14X82
L6	349.7	5.3	0.6	2	0.97 Eq H1-1	0.0	30	W14X82
L5	383.2	5.7	0.6	5	0.83 Eq H1-1	0.0	30	W14X99
L4	421.6	6.2	0.6	5	0.93 Eq H1-1	0.0	30	W14X99
L3	466.5	5.6	2.0	5	0.88 Eq H1-1	0.0	30	W14X120

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L2	515.5	8.0	2.6	2	0.92 Eq H1-1	0.0	30	W14X120
L1	564.4	6.9	1.5	1	0.93 Eq H1-1	0.0	30	W14X132

Column Line K - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.7	12.2	10	0.84 Eq H1-2	0.0	30	W14X43
L14	90.3	5.2	0.3	5	0.54 Eq H1-1	0.0	30	C34L11L14
L13	90.3	5.2	0.3	5	0.54 Eq H1-1	0.0	30	C34L11L14
L12	130.1	4.4	3.0	4	0.96 Eq H1-1	0.0	30	C34L11L14
L11	130.1	4.4	3.0	4	0.96 Eq H1-1	0.0	30	C34L11L14
L10	195.3	6.4	4.6	3	0.65 Eq H1-1	0.0	30	W14X74
L9	230.2	4.9	4.0	6	0.77 Eq H1-1	0.0	30	W14X74
L8	274.3	3.1	3.2	11	0.97 Eq H1-1	0.0	30	W14X74
L7	318.0	3.7	5.0	11	0.77 Eq H1-1	0.0	30	W14X90
L6	360.5	2.8	1.3	3	0.84 Eq H1-1	0.0	30	W14X90
L5	399.1	3.0	1.4	5	0.86 Eq H1-1	0.0	30	W14X99
L4	437.7	3.0	1.4	5	0.97 Eq H1-1	0.0	30	W14X99
L3	476.2	2.4	4.4	4	0.91 Eq H1-1	0.0	30	W14X120
L2	514.1	2.9	5.7	11	0.93 Eq H1-1	0.0	30	W14X120
L1	549.8	2.0	4.5	10	0.92 Eq H1-1	0.0	30	W14X132

Column Line K - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	9.8	1.3	11	0.36 Eq H1-1	0.0	30	C219L11L14
L13	54.6	9.8	1.3	11	0.36 Eq H1-1	0.0	30	C219L11L14
L12	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14
L11	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14

Column Line K - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	183.5	15.4	10.8	14	0.70 Eq H1-2	0.0	30	W14X82
L9	229.8	11.7	3.0	2	0.73 Eq H1-1	0.0	30	W14X82
L8	294.3	9.0	2.3	6	0.95 Eq H1-1	0.0	30	W14X82
L7	345.5	4.6	3.7	6	0.83 Eq H1-1	0.0	30	W14X90
L6	396.6	4.7	1.0	2	0.93 Eq H1-1	0.0	30	W14X90
L5	449.1	4.8	1.0	2	0.88 Eq H1-1	0.0	30	W14X109
L4	501.6	4.8	1.0	2	1.01 Eq H1-1	0.0	30	W14X109
L3	554.1	3.9	3.2	3	0.95 Eq H1-1	0.0	30	W14X132
L2	605.4	4.7	4.2	6	0.99 Eq H1-1	0.0	30	W14X132
L1	652.9	4.3	2.9	6	0.97 Eq H1-1	0.0	30	W14X145

Column Line K - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	6	0.94 Eq H1-2	90.0	30	W14X61

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	2	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	6	0.90 Eq H1-1	90.0	30	W14X61

Column Line 145.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line K - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	40.7	53.3	8	0.90 Eq H1-2	0.0	30	W14X109
L10	407.2	10.9	44.3	2	0.93 Eq H1-2	0.0	30	W14X132
L9	473.8	9.2	5.5	4	0.77 Eq H1-1	0.0	30	W14X132
L8	533.0	8.3	3.6	5	0.90 Eq H1-1	0.0	30	W14X132
L7	609.1	10.6	4.6	4	0.89 Eq H1-1	0.0	30	W14X145
L6	671.9	8.5	1.1	2	0.96 Eq H1-1	0.0	30	W14X145
L5	733.0	9.5	1.1	2	0.88 Eq H1-1	0.0	30	W14X176
L4	799.1	9.5	1.1	2	0.98 Eq H1-1	0.0	30	W14X176
L3	865.2	8.3	3.7	3	0.91 Eq H1-1	0.0	30	W14X211
L2	934.6	17.0	4.9	5	0.94 Eq H1-1	0.0	30	W14X211
L1	1046.9	15.8	3.6	1	0.97 Eq H1-1	0.0	30	W14X233

Column Line 156.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	6	0.10 Eq H1-3	90.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48

Column Line 156.58ft - 57.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	63.4	0.0	11.3	10	0.83 Eq H1-1	0.0	30	W14X43

Column Line 156.58ft - 79.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	79.6	0.0	3.2	6	0.63 Eq H1-1	0.0	30	W14X43

Column Line 156.58ft - 101.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	79.6	0.0	3.2	6	0.63 Eq H1-1	0.0	30	W14X43

Column Line 156.58ft - 123.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	63.4	0.0	11.3	6	0.83 Eq H1-1	0.0	30	W14X43

Column Line 156.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	6	0.10 Eq H1-3	90.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	90.0	30	W14X48

Column Line K.6 - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L5	32.8	2.2	2.8	8	0.30 Eq H1-2	0.0	30	W14X43
L4	67.9	0.8	1.5	3	0.47 Eq H1-1	0.0	30	W14X43
L3	104.5	0.7	3.0	3	0.80 Eq H1-1	0.0	30	W14X48
L2	143.0	3.9	3.9	4	0.88 Eq H1-1	0.0	30	W14X48
L1	186.0	3.0	3.6	1	0.82 Eq H1-1	0.0	30	W14X61

Column Line 158.33ft - 19.33ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	41.6	0.0	0.0	1	0.00 Euler	90.0	30	STRUT

Column Line 158.33ft - 161.83ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	41.1	0.0	0.0	1	0.00 Euler	90.0	30	STRUT

Column Line L - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	41.6	50.7	12	0.73 Eq H1-2	0.0	30	W14X132
L10	485.3	10.3	5.7	4	0.65 Eq H1-1	0.0	30	W14X159
L9	553.9	9.0	5.1	2	0.74 Eq H1-1	0.0	30	W14X159
L8	616.7	8.4	3.8	3	0.85 Eq H1-1	0.0	30	W14X159
L7	692.7	10.8	4.6	2	0.92 Eq H1-1	0.0	30	W14X159
L6	755.5	8.6	1.1	4	0.99 Eq H1-1	0.0	30	W14X159
L5	816.7	9.6	1.1	4	0.89 Eq H1-1	0.0	30	W14X193
L4	882.8	9.6	1.1	4	0.98 Eq H1-1	0.0	30	W14X193
L3	948.9	8.5	3.7	5	0.90 Eq H1-1	0.0	30	W14X233
L2	1018.3	10.8	4.9	2	0.92 Eq H1-1	0.0	30	W14X233
L1	1079.5	8.0	4.2	1	0.99 Eq H1-1	0.0	30	W14X233

Column Line 167.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line L - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	10	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	4	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	10	0.90 Eq H1-1	90.0	30	W14X61

Column Line L - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	41.6	16.7	1.7	4	0.44 Eq H1-2	0.0	30	W14X43
L8	112.9	11.2	2.2	5	1.04 Eq H1-1	0.0	30	C21L6L8
L7	156.0	4.4	2.5	10	1.03 Eq H1-1	0.0	30	C21L6L8
L6	206.3	4.6	1.3	6	1.25 Eq H1-1	0.0	30	C21L6L8
L5	264.7	4.6	1.3	4	0.76 Eq H1-1	0.0	30	C21L4L5
L4	319.6	4.6	1.3	4	0.96 Eq H1-1	0.0	30	C21L4L5
L3	374.6	3.6	4.2	5	0.73 Eq H1-1	0.0	30	C21L1L3
L2	428.4	4.4	5.5	10	0.77 Eq H1-1	0.0	30	C21L1L3
L1	483.4	3.7	4.7	10	0.89 Eq H1-1	0.0	30	C21L1L3

Column Line L - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	12.3	1.3	7	0.49 Eq H1-1	0.0	30	W14X48
L13	54.6	12.3	1.3	7	0.49 Eq H1-1	0.0	30	W14X48
L12	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48
L11	108.9	5.6	1.0	6	0.92 Eq H1-1	0.0	30	W14X48

Column Line L - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.7	12.2	6	0.84 Eq H1-2	0.0	30	W14X43
L14	90.3	5.2	0.3	3	0.54 Eq H1-1	0.0	30	C34L11L14
L13	90.3	5.2	0.3	3	0.54 Eq H1-1	0.0	30	C34L11L14
L12	128.7	4.4	0.3	7	0.77 Eq H1-1	0.0	30	C34L11L14
L11	128.7	4.4	0.3	7	0.77 Eq H1-1	0.0	30	C34L11L14
L10	291.0	6.2	2.2	2	0.63 Eq H1-1	0.0	30	W14X99
L9	331.5	4.9	5.1	2	0.74 Eq H1-1	0.0	30	W14X99
L8	373.8	3.1	4.0	7	0.85 Eq H1-1	0.0	30	W14X99
L7	417.5	3.8	4.9	7	0.91 Eq H1-1	0.0	30	W14X99
L6	457.3	2.6	2.1	2	0.98 Eq H1-1	0.0	30	W14X99

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L5	489.3	2.1	2.1	2	0.87 Eq H1-1	0.0	30	W14X120
L4	521.3	2.1	2.1	2	0.95 Eq H1-1	0.0	30	W14X120
L3	553.3	1.9	6.6	3	0.97 Eq H1-1	0.0	30	W14X132
L2	584.7	2.3	8.7	6	0.96 Eq H1-1	0.0	30	W14X132
L1	616.7	1.9	7.7	6	0.94 Eq H1-1	0.0	30	W14X145

Column Line L - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.1	12	0.32 Eq H1-3	0.0	30	W14X43
L14	71.0	0.0	5.3	10	0.56 Eq H1-2	0.0	30	W14X43
L13	88.5	0.0	4.0	1	0.58 Eq H1-2	0.0	30	W14X43
L12	127.6	0.0	4.0	1	0.76 Eq H1-1	0.0	30	W14X43
L11	143.4	0.0	7.5	4	0.99 Eq H1-2	0.0	30	W14X43
L10	179.8	6.3	7.4	11	0.69 Eq H1-1	0.0	30	W14X74
L9	220.6	7.0	2.9	11	0.72 Eq H1-1	0.0	30	W14X74
L8	266.9	5.7	2.2	4	0.93 Eq H1-1	0.0	30	W14X74
L7	315.4	7.0	2.6	5	0.92 Eq H1-1	0.0	30	W14X82
L6	349.7	4.8	0.6	5	0.99 Eq H1-1	0.0	30	W14X82
L5	372.0	0.2	0.5	2	0.88 Eq H1-1	0.0	30	W14X90
L4	395.9	0.2	0.5	2	0.95 Eq H1-1	0.0	30	W14X90
L3	425.2	0.2	1.6	2	0.97 Eq H1-1	0.0	30	W14X99
L2	457.5	0.3	2.1	4	0.98 Eq H1-1	0.0	30	W14X99
L1	487.0	0.0	1.8	1	0.97 Eq H1-1	0.0	30	W14X109

Column Line L - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.1	13	0.32 Eq H1-3	0.0	30	W14X43
L14	71.0	0.0	5.3	6	0.56 Eq H1-2	0.0	30	W14X43
L13	88.5	0.0	4.0	1	0.58 Eq H1-2	0.0	30	W14X43
L12	127.6	0.0	4.0	1	0.76 Eq H1-1	0.0	30	W14X43
L11	143.4	0.0	7.5	2	0.99 Eq H1-2	0.0	30	W14X43
L10	179.8	6.3	7.4	6	0.69 Eq H1-1	0.0	30	W14X74
L9	220.6	7.0	2.9	6	0.72 Eq H1-1	0.0	30	W14X74
L8	266.9	5.7	2.2	3	0.93 Eq H1-1	0.0	30	W14X74
L7	315.4	7.0	2.6	2	0.92 Eq H1-1	0.0	30	W14X82
L6	349.7	5.3	0.6	3	0.97 Eq H1-1	0.0	30	W14X82
L5	383.2	5.7	0.6	4	0.83 Eq H1-1	0.0	30	W14X99
L4	421.6	6.2	0.6	4	0.93 Eq H1-1	0.0	30	W14X99
L3	466.5	5.6	2.0	4	0.88 Eq H1-1	0.0	30	W14X120
L2	515.5	8.2	2.6	3	0.92 Eq H1-1	0.0	30	W14X120
L1	564.9	7.5	2.2	1	0.94 Eq H1-1	0.0	30	W14X132

Column Line L - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.7	12.2	11	0.84 Eq H1-2	0.0	30	W14X43

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	90.3	5.2	0.3	4	0.54 Eq H1-1	0.0	30	C34L11L14
L13	90.3	5.2	0.3	4	0.54 Eq H1-1	0.0	30	C34L11L14
L12	128.7	4.4	0.3	10	0.77 Eq H1-1	0.0	30	C34L11L14
L11	128.7	4.4	0.3	10	0.77 Eq H1-1	0.0	30	C34L11L14
L10	291.0	6.2	2.2	5	0.63 Eq H1-1	0.0	30	W14X99
L9	330.7	4.7	5.2	5	0.74 Eq H1-1	0.0	30	W14X99
L8	373.0	3.1	4.1	10	0.85 Eq H1-1	0.0	30	W14X99
L7	416.7	3.8	5.1	10	0.91 Eq H1-1	0.0	30	W14X99
L6	459.3	2.8	1.3	2	0.98 Eq H1-1	0.0	30	W14X99
L5	497.9	3.0	1.4	4	0.88 Eq H1-1	0.0	30	W14X120
L4	536.4	3.0	1.4	4	0.97 Eq H1-1	0.0	30	W14X120
L3	575.0	2.5	4.5	5	0.89 Eq H1-1	0.0	30	W14X145
L2	612.9	3.0	5.9	10	0.90 Eq H1-1	0.0	30	W14X145
L1	648.8	2.5	4.0	10	0.97 Eq H1-1	0.0	30	W14X145

Column Line L - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	54.6	9.8	1.3	10	0.36 Eq H1-1	0.0	30	C219L11L14
L13	54.6	9.8	1.3	10	0.36 Eq H1-1	0.0	30	C219L11L14
L12	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14
L11	110.3	4.5	0.9	1	0.63 Eq H1-1	0.0	30	C219L11L14

Column Line L - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	37.8	16.7	3.3	11	0.50 Eq H1-2	0.0	30	W14X43
L8	112.7	11.1	2.2	2	1.03 Eq H1-1	0.0	30	C21L6L8
L7	155.8	4.5	2.5	7	1.03 Eq H1-1	0.0	30	C21L6L8
L6	203.9	4.6	1.0	11	1.20 Eq H1-1	0.0	30	C21L6L8
L5	259.5	4.6	1.0	3	0.75 Eq H1-1	0.0	30	C21L4L5
L4	312.0	4.6	1.0	3	0.93 Eq H1-1	0.0	30	C21L4L5
L3	364.5	3.7	3.2	2	0.70 Eq H1-1	0.0	30	C21L1L3
L2	415.7	4.4	4.2	7	0.74 Eq H1-1	0.0	30	C21L1L3
L1	463.2	4.1	2.8	6	0.84 Eq H1-1	0.0	30	C21L1L3

Column Line L - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	10	0.94 Eq H1-2	90.0	30	W14X61
L14	142.6	6.8	1.1	1	0.69 Eq H1-1	90.0	30	W14X61
L13	160.9	20.4	1.1	1	0.84 Eq H1-1	90.0	30	W14X61
L12	210.5	20.0	2.7	5	0.88 Eq H1-1	90.0	30	W14X61
L11	236.3	4.3	2.7	10	0.90 Eq H1-1	90.0	30	W14X61

Column Line 167.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.2	0.0	0.1	2	0.20 Eq H1-1	90.0	30	C19L6L7
L14	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L13	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5
L12	75.9	0.0	0.1	6	0.86 Eq H1-1	90.0	30	C19L4L5

Column Line L - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	168.8	41.6	50.7	12	0.73 Eq H1-2	0.0	30	W14X132
L10	485.3	10.3	5.7	3	0.65 Eq H1-1	0.0	30	W14X159
L9	553.9	9.0	5.1	5	0.74 Eq H1-1	0.0	30	W14X159
L8	616.7	8.4	3.8	4	0.85 Eq H1-1	0.0	30	W14X159
L7	692.7	10.8	4.6	5	0.92 Eq H1-1	0.0	30	W14X159
L6	755.5	8.6	1.1	3	0.99 Eq H1-1	0.0	30	W14X159
L5	816.7	9.6	1.1	3	0.89 Eq H1-1	0.0	30	W14X193
L4	882.8	9.6	1.1	3	0.98 Eq H1-1	0.0	30	W14X193
L3	948.9	8.5	3.7	2	0.90 Eq H1-1	0.0	30	W14X233
L2	1018.3	17.3	4.9	4	0.93 Eq H1-1	0.0	30	W14X233
L1	1130.6	16.1	3.6	1	0.95 Eq H1-1	0.0	30	W14X257

Column Line M - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	112.2	0.8	46.5	3	0.74 Eq H1-2	0.0	30	W14X90
L10	328.0	0.5	29.2	3	0.83 Eq H1-2	0.0	30	W14X109
L9	360.1	0.6	11.0	4	0.76 Eq H1-1	0.0	30	W14X109
L8	410.7	0.4	8.3	3	0.87 Eq H1-1	0.0	30	W14X109
L7	459.7	0.2	3.7	2	0.90 Eq H1-1	0.0	30	W14X109
L6	501.0	0.4	0.9	4	0.96 Eq H1-1	0.0	30	W14X109
L5	541.4	0.4	0.9	4	0.87 Eq H1-1	0.0	30	W14X132
L4	584.9	0.4	0.9	4	0.96 Eq H1-1	0.0	30	W14X132
L3	628.5	0.4	3.1	4	0.96 Eq H1-1	0.0	30	W14X145
L2	674.2	0.4	4.1	3	0.98 Eq H1-1	0.0	30	W14X145
L1	714.5	0.1	3.5	1	0.96 Eq H1-1	0.0	30	W14X159

Column Line 178.58ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.2	0.0	0.2	4	0.16 Eq H1-3	90.0	30	W14X43
L14	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61
L13	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61
L12	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61

Column Line M - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	65.5	17.2	1.3	11	0.63 Eq H1-1	90.0	30	W14X43
L14	92.9	5.7	0.2	10	0.80 Eq H1-1	90.0	30	W14X43

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	105.0	13.3	0.2	10	0.96 Eq H1-1	90.0	30	W14X43
L12	140.3	13.2	0.2	4	0.86 Eq H1-1	90.0	30	W14X43
L11	157.4	3.9	0.2	10	0.87 Eq H1-1	90.0	30	W14X43

Column Line M - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	34.1	1.0	2.0	10	0.27 Eq H1-1	0.0	30	W14X43
L6	75.3	1.0	0.5	3	0.46 Eq H1-1	0.0	30	W14X43
L5	109.7	0.8	0.7	4	0.61 Eq H1-1	0.0	30	W14X48
L4	140.0	0.6	0.6	4	0.84 Eq H1-1	0.0	30	W14X48
L3	169.9	0.4	1.2	4	0.75 Eq H1-1	0.0	30	W14X61
L2	203.4	0.5	1.6	11	0.81 Eq H1-1	0.0	30	W14X61
L1	238.0	0.1	1.3	10	0.96 Eq H1-1	0.0	30	W14X61

Column Line M - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	37.8	0.7	0.8	5	0.34 Eq H1-1	0.0	30	W14X43
L13	37.8	0.7	0.8	5	0.34 Eq H1-1	0.0	30	W14X43
L12	75.1	0.1	0.7	1	0.66 Eq H1-1	0.0	30	W14X43
L11	75.1	0.1	0.7	1	0.66 Eq H1-1	0.0	30	W14X43

Column Line M - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	29.5	2.0	7.4	15	0.50 Eq H1-2	0.0	30	W14X43
L14	58.7	0.7	0.3	3	0.57 Eq H1-1	0.0	30	C36L11L14
L13	58.7	0.7	0.3	3	0.57 Eq H1-1	0.0	30	C36L11L14
L12	85.9	0.6	3.0	3	1.35 Eq H1-1	0.0	30	C36L11L14
L11	85.9	0.6	3.0	3	1.35 Eq H1-1	0.0	30	C36L11L14
L10	194.7	0.4	4.6	5	0.61 Eq H1-1	0.0	30	W14X82
L9	207.9	0.5	7.6	3	0.70 Eq H1-1	0.0	30	W14X82
L8	248.0	0.3	6.0	6	0.85 Eq H1-1	0.0	30	W14X82
L7	274.2	0.3	1.5	6	0.85 Eq H1-1	0.0	30	W14X74
L6	300.7	0.3	0.7	4	0.92 Eq H1-1	0.0	30	W14X74
L5	326.1	0.8	0.8	2	0.77 Eq H1-1	0.0	30	W14X90
L4	353.8	0.8	0.8	2	0.86 Eq H1-1	0.0	30	W14X90
L3	381.4	0.4	2.4	3	0.96 Eq H1-1	0.0	30	W14X90
L2	406.2	0.3	3.2	6	0.97 Eq H1-1	0.0	30	W14X90
L1	431.6	0.0	2.7	6	0.95 Eq H1-1	0.0	30	W14X99

Column Line M - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.0	2.7	1.8	5	0.24 Eq H1-3	0.0	30	W14X43
L14	58.2	2.5	3.1	10	0.43 Eq H1-2	0.0	30	W14X43
L13	70.0	2.5	2.6	1	0.46 Eq H1-2	0.0	30	W14X43

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L12	102.1	2.5	2.6	3	0.61 Eq H1-1	0.0	30	W14X43
L11	112.4	2.5	4.2	4	0.72 Eq H1-2	0.0	30	W14X43
L10	142.2	3.1	4.1	11	0.60 Eq H1-1	0.0	30	W14X61
L9	176.9	3.2	2.5	6	0.71 Eq H1-1	0.0	30	W14X61
L8	212.6	3.0	2.3	6	0.92 Eq H1-1	0.0	30	W14X61
L7	250.5	3.1	3.0	10	0.89 Eq H1-1	0.0	30	W14X68
L6	279.3	2.6	0.7	4	0.94 Eq H1-1	0.0	30	W14X68
L5	305.5	2.7	0.8	4	0.73 Eq H1-1	0.0	30	W14X90
L4	335.7	3.3	1.0	4	0.82 Eq H1-1	0.0	30	W14X90
L3	372.4	3.4	3.5	4	0.95 Eq H1-1	0.0	30	W14X90
L2	409.1	4.2	4.5	10	0.98 Eq H1-1	0.0	30	W14X90
L1	445.9	3.0	4.3	10	0.91 Eq H1-1	0.0	30	W14X109

Column Line M - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.3	9	0.34 Eq H1-3	90.0	30	W14X43
L14	74.8	0.0	5.8	10	0.54 Eq H1-2	90.0	30	W14X48
L13	94.0	0.0	4.4	1	0.55 Eq H1-2	90.0	30	W14X48
L12	135.4	0.0	4.4	1	0.72 Eq H1-1	90.0	30	W14X48
L11	152.8	0.0	8.2	4	0.94 Eq H1-2	90.0	30	W14X48
L10	191.5	6.3	8.1	10	0.74 Eq H1-1	90.0	30	W14X74
L9	232.1	7.0	2.9	10	0.75 Eq H1-1	90.0	30	W14X74
L8	278.3	5.7	2.2	5	0.96 Eq H1-1	90.0	30	W14X74
L7	326.7	6.8	3.4	4	0.79 Eq H1-1	90.0	30	W14X90
L6	360.9	5.2	0.6	5	0.84 Eq H1-1	90.0	30	W14X90
L5	394.3	6.2	0.8	2	0.86 Eq H1-1	90.0	30	W14X99
L4	437.0	6.8	0.8	2	0.97 Eq H1-1	90.0	30	W14X99
L3	485.7	5.8	2.0	3	0.91 Eq H1-1	90.0	30	W14X120
L2	534.7	8.7	2.8	5	0.97 Eq H1-1	90.0	30	W14X120
L1	600.3	7.8	2.6	10	1.00 Eq H1-1	90.0	30	W14X132

Column Line M - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	25.1	0.0	4.4	4	0.39 Eq H1-1	90.0	30	W14X43
L14	96.8	0.0	7.7	10	0.49 Eq H1-2	90.0	30	W14X61
L13	120.8	0.0	6.4	1	0.53 Eq H1-2	90.0	30	W14X61
L12	173.1	0.0	6.4	1	0.70 Eq H1-2	90.0	30	W14X61
L11	195.1	0.0	12.6	4	0.92 Eq H1-2	90.0	30	W14X61
L10	244.1	1.5	14.0	10	0.68 Eq H1-1	90.0	30	W14X90
L9	299.4	1.3	4.1	3	0.71 Eq H1-1	90.0	30	W14X90
L8	354.7	0.8	3.1	4	0.88 Eq H1-1	90.0	30	W14X90
L7	416.0	0.4	3.6	4	0.90 Eq H1-1	90.0	30	W14X99
L6	463.5	0.4	0.7	2	0.98 Eq H1-1	90.0	30	W14X99
L5	513.5	0.8	0.9	2	0.83 Eq H1-1	90.0	30	W14X132
L4	572.9	0.8	0.9	2	0.94 Eq H1-1	90.0	30	W14X132

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L3	637.8	0.4	2.3	2	0.89 Eq H1-1	90.0	30	W14X159
L2	703.2	1.0	3.3	4	0.95 Eq H1-1	90.0	30	W14X159
L1	790.8	0.0	3.1	10	0.96 Eq H1-1	90.0	30	W14X176

Column Line M - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	25.1	0.0	4.4	4	0.39 Eq H1-1	90.0	30	W14X43
L14	96.7	0.0	7.7	10	0.49 Eq H1-2	90.0	30	W14X61
L13	120.7	0.0	6.4	1	0.53 Eq H1-2	90.0	30	W14X61
L12	173.0	0.0	6.4	1	0.70 Eq H1-2	90.0	30	W14X61
L11	195.0	0.0	12.6	4	0.92 Eq H1-2	90.0	30	W14X61
L10	244.0	1.5	14.0	10	0.68 Eq H1-1	90.0	30	W14X90
L9	299.3	1.3	4.1	2	0.71 Eq H1-1	90.0	30	W14X90
L8	354.7	0.8	3.1	4	0.88 Eq H1-1	90.0	30	W14X90
L7	415.9	0.4	3.6	4	0.90 Eq H1-1	90.0	30	W14X99
L6	463.5	0.4	0.7	2	0.98 Eq H1-1	90.0	30	W14X99
L5	513.4	0.8	0.9	2	0.83 Eq H1-1	90.0	30	W14X132
L4	572.8	0.8	0.9	2	0.94 Eq H1-1	90.0	30	W14X132
L3	637.7	0.4	2.3	2	0.89 Eq H1-1	90.0	30	W14X159
L2	703.1	1.0	3.3	4	0.95 Eq H1-1	90.0	30	W14X159
L1	790.7	0.0	3.1	10	0.96 Eq H1-1	90.0	30	W14X176

Column Line M - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.4	4.7	3.4	12	0.34 Eq H1-3	90.0	30	W14X43
L14	75.6	0.0	5.9	10	0.55 Eq H1-2	90.0	30	W14X48
L13	94.7	0.0	4.4	1	0.55 Eq H1-2	90.0	30	W14X48
L12	136.1	0.0	4.4	1	0.73 Eq H1-1	90.0	30	W14X48
L11	153.5	0.0	8.2	4	0.95 Eq H1-2	90.0	30	W14X48
L10	192.2	6.3	8.1	11	0.74 Eq H1-1	90.0	30	W14X74
L9	232.8	7.0	2.9	11	0.76 Eq H1-1	90.0	30	W14X74
L8	279.0	5.7	2.2	4	0.97 Eq H1-1	90.0	30	W14X74
L7	327.4	6.8	3.4	5	0.79 Eq H1-1	90.0	30	W14X90
L6	361.6	5.2	0.6	4	0.84 Eq H1-1	90.0	30	W14X90
L5	395.0	6.2	0.8	3	0.86 Eq H1-1	90.0	30	W14X99
L4	437.7	6.8	0.8	3	0.97 Eq H1-1	90.0	30	W14X99
L3	486.4	5.8	2.0	2	0.92 Eq H1-1	90.0	30	W14X120
L2	535.4	8.7	2.8	4	0.97 Eq H1-1	90.0	30	W14X120
L1	601.0	7.8	2.7	10	0.90 Eq H1-1	90.0	30	W14X145

Column Line M - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.0	2.7	1.8	2	0.24 Eq H1-3	0.0	30	W14X43
L14	58.2	2.4	3.1	6	0.43 Eq H1-2	0.0	30	W14X43
L13	70.0	2.5	2.6	1	0.46 Eq H1-2	0.0	30	W14X43

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L12	102.1	2.5	2.6	3	0.61 Eq H1-1	0.0	30	W14X43
L11	112.4	2.5	4.2	2	0.72 Eq H1-2	0.0	30	W14X43
L10	142.2	3.1	4.1	6	0.60 Eq H1-1	0.0	30	W14X61
L9	176.9	3.2	2.5	11	0.71 Eq H1-1	0.0	30	W14X61
L8	212.6	3.0	2.3	11	0.92 Eq H1-1	0.0	30	W14X61
L7	250.5	3.1	3.0	7	0.89 Eq H1-1	0.0	30	W14X68
L6	279.3	2.6	0.7	3	0.94 Eq H1-1	0.0	30	W14X68
L5	305.5	2.7	0.8	3	0.73 Eq H1-1	0.0	30	W14X90
L4	335.7	3.3	1.0	3	0.82 Eq H1-1	0.0	30	W14X90
L3	372.4	3.4	3.5	3	0.95 Eq H1-1	0.0	30	W14X90
L2	409.1	4.2	4.5	7	0.98 Eq H1-1	0.0	30	W14X90
L1	445.9	3.0	4.3	6	0.91 Eq H1-1	0.0	30	W14X109

Column Line M - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	29.5	2.0	7.4	16	0.50 Eq H1-2	0.0	30	W14X43
L14	58.7	0.7	0.3	4	0.57 Eq H1-1	0.0	30	C36L11L14
L13	58.7	0.7	0.3	4	0.57 Eq H1-1	0.0	30	C36L11L14
L12	85.9	0.6	3.0	4	1.35 Eq H1-1	0.0	30	C36L11L14
L11	85.9	0.6	3.0	4	1.35 Eq H1-1	0.0	30	C36L11L14
L10	194.7	0.4	4.6	2	0.61 Eq H1-1	0.0	30	W14X82
L9	207.9	0.5	7.7	4	0.70 Eq H1-1	0.0	30	W14X82
L8	248.0	0.3	6.0	11	0.85 Eq H1-1	0.0	30	W14X82
L7	274.2	0.4	1.6	11	0.85 Eq H1-1	0.0	30	W14X74
L6	302.5	0.3	0.7	3	0.93 Eq H1-1	0.0	30	W14X74
L5	328.0	0.7	0.8	5	0.78 Eq H1-1	0.0	30	W14X90
L4	355.7	0.7	0.8	5	0.86 Eq H1-1	0.0	30	W14X90
L3	383.4	0.4	2.5	4	0.97 Eq H1-1	0.0	30	W14X90
L2	408.2	0.3	3.3	11	0.98 Eq H1-1	0.0	30	W14X90
L1	431.9	0.0	2.2	10	0.95 Eq H1-1	0.0	30	W14X99

Column Line M - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	36.1	0.6	1.2	10	0.33 Eq H1-1	0.0	30	C217L11L14
L13	36.1	0.6	1.2	10	0.33 Eq H1-1	0.0	30	C217L11L14
L12	75.1	0.1	0.7	1	0.65 Eq H1-1	0.0	30	C217L11L14
L11	75.1	0.1	0.7	1	0.65 Eq H1-1	0.0	30	C217L11L14

Column Line M - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	34.1	0.7	1.9	7	0.26 Eq H1-1	0.0	30	W14X43
L6	72.8	1.0	0.7	3	0.44 Eq H1-1	0.0	30	W14X43
L5	107.5	0.8	0.7	3	0.68 Eq H1-1	0.0	30	W14X43
L4	136.9	0.6	0.5	6	0.93 Eq H1-1	0.0	30	W14X43
L3	168.3	0.4	1.2	3	0.74 Eq H1-1	0.0	30	W14X61

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L2	201.8	0.4	1.5	6	0.80 Eq H1-1	0.0	30	W14X61
L1	233.0	0.1	0.7	6	0.93 Eq H1-1	0.0	30	W14X61

Column Line M - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	65.5	17.2	1.3	10	0.63 Eq H1-1	90.0	30	W14X43
L14	92.9	5.7	0.2	10	0.80 Eq H1-1	90.0	30	W14X43
L13	105.0	13.3	0.2	17	0.96 Eq H1-1	90.0	30	W14X43
L12	140.3	13.2	0.2	5	0.86 Eq H1-1	90.0	30	W14X43
L11	157.4	3.9	0.2	10	0.87 Eq H1-1	90.0	30	W14X43

Column Line 178.58ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	21.2	0.0	0.2	4	0.16 Eq H1-3	90.0	30	W14X43
L14	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61
L13	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61
L12	71.1	0.0	0.0	1	0.52 Eq H1-1	90.0	30	W14X61

Column Line M - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	112.2	0.8	46.5	3	0.74 Eq H1-2	0.0	30	W14X90
L10	328.0	0.5	29.2	3	0.83 Eq H1-2	0.0	30	W14X109
L9	360.1	0.6	11.0	3	0.76 Eq H1-1	0.0	30	W14X109
L8	410.7	0.4	8.3	4	0.87 Eq H1-1	0.0	30	W14X109
L7	459.7	0.2	3.7	5	0.90 Eq H1-1	0.0	30	W14X109
L6	501.0	0.4	0.9	3	0.96 Eq H1-1	0.0	30	W14X109
L5	541.4	0.4	0.9	3	0.87 Eq H1-1	0.0	30	W14X132
L4	584.9	0.4	0.9	3	0.96 Eq H1-1	0.0	30	W14X132
L3	628.5	0.4	3.1	3	0.96 Eq H1-1	0.0	30	W14X145
L2	674.2	0.6	4.1	4	0.98 Eq H1-1	0.0	30	W14X145
L1	748.3	0.3	3.5	1	0.91 Eq H1-1	0.0	30	W14X176

Column Line N - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	122.8	17.5	38.7	8	0.68 Eq H1-2	0.0	30	W14X99
L10	416.0	5.1	5.9	5	0.61 Eq H1-1	0.0	30	W14X145
L9	467.2	6.1	5.0	2	0.68 Eq H1-1	0.0	30	W14X145
L8	541.4	4.6	3.2	3	0.81 Eq H1-1	0.0	30	W14X145
L7	604.1	5.9	3.9	3	0.88 Eq H1-1	0.0	30	W14X145
L6	656.0	4.9	0.9	5	0.94 Eq H1-1	0.0	30	W14X145
L5	706.5	5.4	0.9	5	0.84 Eq H1-1	0.0	30	W14X176
L4	761.1	5.4	0.9	5	0.93 Eq H1-1	0.0	30	W14X176
L3	815.7	4.6	3.1	4	0.93 Eq H1-1	0.0	30	W14X193
L2	873.0	5.8	4.1	3	0.95 Eq H1-1	0.0	30	W14X193

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	923.5	4.4	3.5	1	0.94 Eq H1-1	0.0	30	W14X211

Column Line 189.33ft - 0.67ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.3	3.9	3.2	1	0.32 Eq H1-1	90.0	30	W14X43
L14	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61
L13	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61
L12	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61

Column Line N - 11.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	80.8	20.1	8.7	6	0.89 Eq H1-1	90.0	30	W14X48
L14	154.5	4.2	3.6	1	0.82 Eq H1-1	90.0	30	W14X61
L13	165.8	18.5	3.6	1	0.94 Eq H1-1	90.0	30	W14X61
L12	211.3	18.2	0.3	4	0.83 Eq H1-1	90.0	30	W14X61
L11	226.1	3.3	0.3	10	0.82 Eq H1-1	90.0	30	W14X61

Column Line N - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	37.5	8.1	1.5	7	0.36 Eq H1-1	0.0	30	W14X43
L8	50.2	5.4	0.6	3	0.40 Eq H1-1	0.0	30	W14X43
L7	83.0	4.6	0.4	7	0.48 Eq H1-1	0.0	30	C19L6L7
L6	124.2	4.7	0.3	10	0.69 Eq H1-1	0.0	30	C19L6L7
L5	168.7	3.8	0.2	3	0.77 Eq H1-1	0.0	30	C19L4L5
L4	208.6	4.0	0.2	10	1.02 Eq H1-1	0.0	30	C19L4L5
L3	250.6	3.9	0.9	5	0.78 Eq H1-1	0.0	30	C19L2L3
L2	293.0	4.6	1.2	11	0.83 Eq H1-1	0.0	30	C19L2L3
L1	336.5	4.1	1.1	10	0.64 Eq H1-1	0.0	30	C19L1

Column Line N - 10.8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	45.4	7.6	1.1	6	0.45 Eq H1-1	0.0	30	W14X43
L13	45.4	7.6	1.1	6	0.45 Eq H1-1	0.0	30	W14X43
L12	92.6	3.5	0.8	1	0.86 Eq H1-1	0.0	30	W14X43
L11	92.6	3.5	0.8	1	0.86 Eq H1-1	0.0	30	W14X43

Column Line N - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	53.8	13.2	8.9	6	0.83 Eq H1-1	0.0	30	W14X43
L14	89.6	3.4	0.3	2	0.53 Eq H1-1	0.0	30	C34L11L14
L13	89.6	3.4	0.3	2	0.53 Eq H1-1	0.0	30	C34L11L14
L12	121.5	2.7	0.2	6	0.72 Eq H1-1	0.0	30	C34L11L14
L11	121.5	2.7	0.2	6	0.72 Eq H1-1	0.0	30	C34L11L14
L10	258.0	3.0	2.5	3	0.61 Eq H1-1	0.0	30	W14X90

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	290.9	3.2	3.5	2	0.70 Eq H1-1	0.0	30	W14X90
L8	345.7	2.8	2.7	7	0.86 Eq H1-1	0.0	30	W14X90
L7	378.5	4.0	1.5	7	0.89 Eq H1-1	0.0	30	W14X90
L6	413.1	3.8	0.5	4	0.96 Eq H1-1	0.0	30	W14X90
L5	446.4	3.7	0.5	4	0.88 Eq H1-1	0.0	30	W14X109
L4	479.3	3.0	0.6	2	0.96 Eq H1-1	0.0	30	W14X109
L3	512.1	3.6	1.9	2	0.96 Eq H1-1	0.0	30	W14X120
L2	544.9	4.4	2.5	6	0.97 Eq H1-1	0.0	30	W14X120
L1	578.2	3.8	2.1	6	0.95 Eq H1-1	0.0	30	W14X132

Column Line N - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	30.2	1.4	8.7	7	0.56 Eq H1-2	90.0	30	W14X43
L14	63.5	1.3	0.7	2	0.64 Eq H1-1	90.0	30	C50L11L14
L13	63.5	1.3	0.7	2	0.64 Eq H1-1	90.0	30	C50L11L14
L12	93.4	0.7	0.7	6	1.06 Eq H1-1	90.0	30	C50L11L14
L11	93.4	0.7	0.7	6	1.06 Eq H1-1	90.0	30	C50L11L14
L10	124.1	0.9	3.2	3	0.51 Eq H1-1	90.0	30	W14X61
L9	155.2	0.9	3.1	3	0.62 Eq H1-1	90.0	30	W14X61
L8	180.3	0.3	2.3	7	0.78 Eq H1-1	90.0	30	W14X61
L7	202.9	0.3	2.0	7	0.79 Eq H1-1	90.0	30	W14X61
L6	229.3	0.3	0.7	5	0.86 Eq H1-1	90.0	30	W14X61
L5	254.8	0.4	0.6	5	0.81 Eq H1-1	90.0	30	W14X74
L4	281.0	0.4	0.5	2	0.93 Eq H1-1	90.0	30	W14X74
L3	307.2	0.2	2.5	2	0.78 Eq H1-1	90.0	30	W14X90
L2	332.0	0.3	3.3	7	0.79 Eq H1-1	90.0	30	W14X90
L1	357.4	0.0	2.8	6	0.87 Eq H1-1	90.0	30	W14X90

Column Line N - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.3	12.2	7	0.84 Eq H1-2	90.0	30	W14X43
L14	91.4	4.9	0.3	2	0.54 Eq H1-1	90.0	30	C66L11L14
L13	91.4	4.9	0.3	2	0.54 Eq H1-1	90.0	30	C66L11L14
L12	132.1	4.0	2.9	3	0.97 Eq H1-1	90.0	30	C66L11L14
L11	132.1	4.0	2.9	3	0.97 Eq H1-1	90.0	30	C66L11L14
L10	196.2	6.4	4.5	4	0.65 Eq H1-1	90.0	30	W14X74
L9	232.0	3.7	3.0	7	0.75 Eq H1-1	90.0	30	W14X74
L8	271.8	2.6	2.5	6	0.94 Eq H1-1	90.0	30	W14X74
L7	311.6	3.2	3.0	6	0.90 Eq H1-1	90.0	30	W14X82
L6	351.5	3.0	1.2	5	0.98 Eq H1-1	90.0	30	W14X82
L5	390.1	3.5	1.1	5	0.84 Eq H1-1	90.0	30	W14X99
L4	429.9	3.5	1.0	2	0.95 Eq H1-1	90.0	30	W14X99
L3	469.6	2.8	4.4	3	0.90 Eq H1-1	90.0	30	W14X120
L2	507.5	2.9	5.7	6	0.91 Eq H1-1	90.0	30	W14X120
L1	546.1	2.5	4.9	6	0.91 Eq H1-1	90.0	30	W14X132

Gravity Column Design Summary

Column Line N - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	62.0	1.8	16.5	6	0.88 Eq H1-1	90.0	30	W14X53
L14	119.0	1.5	0.3	2	0.35 Eq H1-1	90.0	30	C79L11L14
L13	119.0	1.5	0.3	2	0.35 Eq H1-1	90.0	30	C79L11L14
L12	170.0	1.0	7.6	2	0.62 Eq H1-1	90.0	30	C79L11L14
L11	170.0	1.0	7.6	2	0.62 Eq H1-1	90.0	30	C79L11L14
L10	252.6	1.4	12.0	6	0.66 Eq H1-2	90.0	30	W14X90
L9	303.3	1.0	5.9	2	0.73 Eq H1-1	90.0	30	W14X90
L8	354.7	0.7	4.6	6	0.88 Eq H1-1	90.0	30	W14X90
L7	407.8	1.1	5.7	7	0.89 Eq H1-1	90.0	30	W14X99
L6	462.5	0.6	1.8	4	0.98 Eq H1-1	90.0	30	W14X99
L5	513.9	1.0	1.6	4	0.83 Eq H1-1	90.0	30	W14X132
L4	567.0	1.0	1.4	2	0.93 Eq H1-1	90.0	30	W14X132
L3	620.0	0.5	6.4	2	0.96 Eq H1-1	90.0	30	W14X145
L2	670.6	0.6	8.4	6	0.99 Eq H1-1	90.0	30	W14X145
L1	722.1	0.0	7.2	6	0.99 Eq H1-1	90.0	30	W14X159

Column Line N - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	62.0	1.8	16.5	6	0.88 Eq H1-1	90.0	30	W14X53
L14	119.0	1.5	0.3	2	0.44 Eq H1-1	90.0	30	C86L11L14
L13	119.0	1.5	0.3	2	0.44 Eq H1-1	90.0	30	C86L11L14
L12	170.0	1.0	0.1	2	0.63 Eq H1-1	90.0	30	C86L11L14
L11	170.0	1.0	0.1	2	0.63 Eq H1-1	90.0	30	C86L11L14
L10	387.5	0.9	3.8	2	0.62 Eq H1-1	90.0	30	W14X132
L9	434.2	1.0	5.9	2	0.71 Eq H1-1	90.0	30	W14X132
L8	513.3	0.7	4.7	6	0.86 Eq H1-1	90.0	30	W14X132
L7	566.4	0.8	5.7	6	0.92 Eq H1-1	90.0	30	W14X132
L6	622.8	0.6	1.8	4	0.99 Eq H1-1	90.0	30	W14X132
L5	674.3	1.0	1.6	4	0.89 Eq H1-1	90.0	30	W14X159
L4	727.3	1.0	1.4	2	0.98 Eq H1-1	90.0	30	W14X159
L3	780.3	0.5	6.5	2	0.90 Eq H1-1	90.0	30	W14X193
L2	831.0	0.6	8.5	6	0.91 Eq H1-1	90.0	30	W14X193
L1	882.4	0.0	7.2	6	0.99 Eq H1-1	90.0	30	W14X193

Column Line N - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	47.0	5.3	12.2	6	0.84 Eq H1-2	90.0	30	W14X43
L14	91.4	4.9	0.3	3	0.54 Eq H1-1	90.0	30	C66L11L14
L13	91.4	4.9	0.3	3	0.54 Eq H1-1	90.0	30	C66L11L14
L12	132.1	4.0	2.9	2	0.97 Eq H1-1	90.0	30	C66L11L14
L11	132.1	4.0	2.9	2	0.97 Eq H1-1	90.0	30	C66L11L14
L10	196.2	6.4	4.5	5	0.66 Eq H1-1	90.0	30	W14X74
L9	226.4	3.6	3.6	11	0.75 Eq H1-1	90.0	30	W14X74

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L8	268.6	2.4	2.8	7	0.94 Eq H1-1	90.0	30	W14X74
L7	308.4	3.2	3.0	7	0.89 Eq H1-1	90.0	30	W14X82
L6	350.9	2.8	1.3	5	0.98 Eq H1-1	90.0	30	W14X82
L5	389.5	3.5	1.1	4	0.84 Eq H1-1	90.0	30	W14X99
L4	429.3	3.5	1.0	3	0.95 Eq H1-1	90.0	30	W14X99
L3	469.1	2.8	4.4	2	0.90 Eq H1-1	90.0	30	W14X120
L2	506.9	2.9	5.7	7	0.91 Eq H1-1	90.0	30	W14X120
L1	545.5	2.5	4.9	6	0.91 Eq H1-1	90.0	30	W14X132

Column Line N - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	30.2	1.4	8.7	6	0.56 Eq H1-2	90.0	30	W14X43
L14	63.5	1.3	0.7	3	0.64 Eq H1-1	90.0	30	C50L11L14
L13	63.5	1.3	0.7	3	0.64 Eq H1-1	90.0	30	C50L11L14
L12	93.4	0.7	0.7	7	1.06 Eq H1-1	90.0	30	C50L11L14
L11	93.4	0.7	0.7	7	1.06 Eq H1-1	90.0	30	C50L11L14
L10	124.1	1.0	2.5	2	0.50 Eq H1-1	90.0	30	W14X61
L9	152.7	0.9	3.1	3	0.62 Eq H1-1	90.0	30	W14X61
L8	179.0	0.6	2.2	7	0.78 Eq H1-1	90.0	30	W14X61
L7	201.7	0.4	2.0	6	0.78 Eq H1-1	90.0	30	W14X61
L6	229.5	0.3	0.7	4	0.86 Eq H1-1	90.0	30	W14X61
L5	254.9	0.4	0.6	4	0.81 Eq H1-1	90.0	30	W14X74
L4	281.1	0.4	0.5	3	0.93 Eq H1-1	90.0	30	W14X74
L3	307.3	0.2	2.5	3	0.78 Eq H1-1	90.0	30	W14X90
L2	332.2	0.3	3.3	6	0.80 Eq H1-1	90.0	30	W14X90
L1	357.6	0.0	2.8	6	0.87 Eq H1-1	90.0	30	W14X90

Column Line N - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	53.8	13.2	8.9	11	0.83 Eq H1-1	0.0	30	W14X43
L14	89.6	3.4	0.3	5	0.53 Eq H1-1	0.0	30	C34L11L14
L13	89.6	3.4	0.3	5	0.53 Eq H1-1	0.0	30	C34L11L14
L12	121.5	2.7	0.2	11	0.72 Eq H1-1	0.0	30	C34L11L14
L11	121.5	2.7	0.2	11	0.72 Eq H1-1	0.0	30	C34L11L14
L10	258.0	3.0	2.5	4	0.61 Eq H1-1	0.0	30	W14X90
L9	290.9	2.5	3.6	4	0.70 Eq H1-1	0.0	30	W14X90
L8	344.8	2.9	2.8	10	0.86 Eq H1-1	0.0	30	W14X90
L7	377.6	4.0	1.6	10	0.89 Eq H1-1	0.0	30	W14X90
L6	414.2	4.3	0.5	2	0.97 Eq H1-1	0.0	30	W14X90
L5	447.6	3.7	0.5	3	0.88 Eq H1-1	0.0	30	W14X109
L4	480.5	3.1	0.6	5	0.96 Eq H1-1	0.0	30	W14X109
L3	513.3	3.6	2.0	5	0.97 Eq H1-1	0.0	30	W14X120
L2	546.1	4.5	2.6	11	0.98 Eq H1-1	0.0	30	W14X120
L1	578.0	3.7	1.7	10	0.95 Eq H1-1	0.0	30	W14X132

Column Line N - 2.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	45.4	6.1	1.1	11	0.44 Eq H1-1	0.0	30	C217L11L14
L13	45.4	6.1	1.1	11	0.44 Eq H1-1	0.0	30	C217L11L14
L12	91.3	2.8	0.9	10	0.85 Eq H1-1	0.0	30	C217L11L14
L11	91.3	2.8	0.9	10	0.85 Eq H1-1	0.0	30	C217L11L14

Column Line N - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	37.5	8.1	3.2	10	0.42 Eq H1-1	0.0	30	W14X43
L8	48.2	5.4	0.6	4	0.38 Eq H1-1	0.0	30	W14X43
L7	81.0	3.9	0.4	11	0.47 Eq H1-1	0.0	30	C19L6L7
L6	120.8	4.7	0.3	2	0.67 Eq H1-1	0.0	30	C19L6L7
L5	164.3	3.8	0.2	4	0.75 Eq H1-1	0.0	30	C19L4L5
L4	204.2	4.0	0.2	7	0.99 Eq H1-1	0.0	30	C19L4L5
L3	246.2	3.9	0.9	2	0.76 Eq H1-1	0.0	30	C19L2L3
L2	288.7	4.6	2.0	6	0.84 Eq H1-1	0.0	30	C19L2L3
L1	329.0	2.4	2.0	10	0.63 Eq H1-1	0.0	30	C19L1

Column Line N - 1.2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	80.8	20.1	8.7	7	0.89 Eq H1-1	90.0	30	W14X48
L14	154.5	4.2	3.6	1	0.82 Eq H1-1	90.0	30	W14X61
L13	165.8	18.5	3.6	1	0.94 Eq H1-1	90.0	30	W14X61
L12	211.3	18.2	0.3	5	0.83 Eq H1-1	90.0	30	W14X61
L11	226.1	3.3	0.3	10	0.82 Eq H1-1	90.0	30	W14X61

Column Line 189.33ft - 180.50ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.3	3.9	3.2	1	0.32 Eq H1-1	90.0	30	W14X43
L14	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61
L13	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61
L12	58.8	2.3	1.9	1	0.49 Eq H1-1	90.0	30	W14X61

Column Line N - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	122.8	17.5	38.7	8	0.68 Eq H1-2	0.0	30	W14X99
L10	416.0	5.1	5.9	2	0.61 Eq H1-1	0.0	30	W14X145
L9	467.2	6.1	5.0	5	0.68 Eq H1-1	0.0	30	W14X145
L8	542.4	4.6	3.2	4	0.81 Eq H1-1	0.0	30	W14X145
L7	605.1	5.9	3.9	4	0.88 Eq H1-1	0.0	30	W14X145
L6	657.0	4.9	0.9	2	0.94 Eq H1-1	0.0	30	W14X145
L5	707.5	5.4	0.9	2	0.85 Eq H1-1	0.0	30	W14X176
L4	762.1	5.4	0.9	2	0.93 Eq H1-1	0.0	30	W14X176

L3	816.7	4.6	3.1	3	0.93 Eq H1-1	0.0	30	W14X193
L2	874.0	7.0	5.7	2	0.96 Eq H1-1	0.0	30	W14X193
L1	966.7	6.3	5.3	1	0.99 Eq H1-1	0.0	30	W14X211

Column Line 198.33ft - 14.33ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	18.3	0.0	0.0	1	0.54 Eq H1-1	90.0	30	STRUT

Column Line 198.33ft - 21.33ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	15.6	0.0	0.0	1	0.46 Eq H1-1	90.0	30	STRUT

Column Line 198.33ft - 159.83ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	15.6	0.0	0.0	1	0.46 Eq H1-1	90.0	30	STRUT

Column Line 198.33ft - 166.83ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	18.3	0.0	0.0	1	0.54 Eq H1-1	90.0	30	STRUT

Column Line 199.17ft - 0.00ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	24.8	9.7	1.9	1	0.80 Eq H1-2	0.0	30	HSS10.000X0.188
L13	32.2	1.5	1.0	1	0.45 Eq H1-2	0.0	30	HSS10.000X0.188
L12	43.2	1.5	0.6	1	0.55 Eq H1-1	0.0	30	HSS10.000X0.188

Column Line 199.17ft - 4.42ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	5.4	0.2	1.4	17	0.14 Eq H1-3	90.0	30	HSS8X8X3/16

Column Line 199.17ft - 5.75ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	9.3	1.7	2.9	1	0.17 Eq H1-3	90.0	46	HSS8X8X1/4

Column Line 199.17ft - 175.42ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	9.3	1.7	2.9	1	0.17 Eq H1-3	90.0	46	HSS8X8X1/4

Column Line 199.17ft - 176.75ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	5.4	0.2	1.4	16	0.14 Eq H1-3	90.0	30	HSS8X8X3/16

Gravity Column Design Summary

Column Line 199.17ft - 181.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	24.8	9.7	1.9	1	0.80 Eq H1-2	0.0	30	HSS10.000X0.188
L13	32.2	1.5	1.0	1	0.45 Eq H1-2	0.0	30	HSS10.000X0.188
L12	43.2	1.5	0.6	1	0.55 Eq H1-1	0.0	30	HSS10.000X0.188

Column Line N.8 - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	52.7	15.7	2.9	6	0.44 Eq H1-2	90.0	30	C219L11L14
L13	52.7	15.7	2.9	6	0.44 Eq H1-2	90.0	30	C219L11L14
L12	106.9	7.2	1.6	1	0.65 Eq H1-1	90.0	30	C219L11L14
L11	106.9	7.2	1.6	1	0.65 Eq H1-1	90.0	30	C219L11L14

Column Line N.8 - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	72.1	1.5	1.5	6	0.65 Eq H1-1	90.0	30	C230L13L14
L13	72.1	1.5	1.5	6	0.65 Eq H1-1	90.0	30	C230L13L14
L12	142.3	0.0	1.1	1	0.59 Eq H1-1	90.0	30	C230L11L12
L11	142.3	0.0	1.1	1	0.59 Eq H1-1	90.0	30	C230L11L12

Column Line N.8 - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	72.1	1.5	1.5	6	0.65 Eq H1-1	90.0	30	C230L13L14
L13	72.1	1.5	1.5	6	0.65 Eq H1-1	90.0	30	C230L13L14
L12	142.3	0.0	1.1	1	0.59 Eq H1-1	90.0	30	C230L11L12
L11	142.3	0.0	1.1	1	0.59 Eq H1-1	90.0	30	C230L11L12

Column Line N.8 - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	52.7	15.7	2.9	6	0.44 Eq H1-2	90.0	30	C219L11L14
L13	52.7	15.7	2.9	6	0.44 Eq H1-2	90.0	30	C219L11L14
L12	106.9	7.2	1.6	1	0.65 Eq H1-1	90.0	30	C219L11L14
L11	106.9	7.2	1.6	1	0.65 Eq H1-1	90.0	30	C219L11L14

Column Line O - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	92.1	4.0	6.6	4	0.92 Eq H1-1	0.0	30	W14X48
L14	196.0	7.0	11.5	12	0.56 Eq H1-2	0.0	30	W14X90
L13	212.0	1.6	6.2	1	0.52 Eq H1-2	0.0	30	W14X90
L12	272.0	10.4	3.0	3	0.74 Eq H1-1	0.0	30	W14X90
L11	320.9	10.3	3.0	2	0.88 Eq H1-1	0.0	30	W14X90
L10	382.2	2.3	7.4	5	0.69 Eq H1-1	0.0	30	W14X120
L9	451.2	1.7	6.7	4	0.81 Eq H1-1	0.0	30	W14X120
L8	517.2	0.9	5.2	2	0.96 Eq H1-1	0.0	30	W14X120

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L7	599.7	0.5	6.6	3	0.88 Eq H1-1	0.0	30	W14X145
L6	667.9	0.6	1.6	4	0.95 Eq H1-1	0.0	30	W14X145
L5	734.3	0.5	1.6	5	0.88 Eq H1-1	0.0	30	W14X176
L4	806.1	0.5	1.6	5	0.98 Eq H1-1	0.0	30	W14X176
L3	877.9	0.6	5.3	5	0.92 Eq H1-1	0.0	30	W14X211
L2	953.3	0.6	7.0	3	0.95 Eq H1-1	0.0	30	W14X211
L1	1019.7	0.2	6.0	1	0.94 Eq H1-1	0.0	30	W14X233

Column Line O - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	88.4	21.3	16.9	15	0.85 Eq H1-2	90.0	30	W14X61
L14	166.0	1.4	3.0	4	0.56 Eq H1-1	90.0	30	C18L11L14
L13	166.0	1.4	3.0	4	0.56 Eq H1-1	90.0	30	C18L11L14
L12	232.0	1.2	3.0	4	0.83 Eq H1-1	90.0	30	C18L11L14
L11	232.0	1.2	3.0	4	0.83 Eq H1-1	90.0	30	C18L11L14
L10	284.7	2.7	2.9	11	0.69 Eq H1-1	90.0	30	W14X90
L9	325.0	2.3	6.6	5	0.83 Eq H1-1	90.0	30	W14X90
L8	387.4	1.2	5.2	11	0.98 Eq H1-1	90.0	30	W14X90
L7	438.8	0.9	3.4	10	0.86 Eq H1-1	90.0	30	W14X109
L6	494.2	1.3	0.9	3	0.95 Eq H1-1	90.0	30	W14X109
L5	548.4	1.5	0.8	3	0.88 Eq H1-1	90.0	30	W14X132
L4	599.8	1.5	0.9	4	0.99 Eq H1-1	90.0	30	W14X132
L3	651.1	0.8	3.6	5	0.91 Eq H1-1	90.0	30	W14X159
L2	704.2	1.3	4.7	11	0.94 Eq H1-1	90.0	30	W14X159
L1	758.5	0.4	4.0	10	0.92 Eq H1-1	90.0	30	W14X176

Column Line O - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	49.1	6.2	0.6	2	0.33 Eq H1-1	90.0	30	C34L11L14
L13	49.1	6.2	0.6	2	0.33 Eq H1-1	90.0	30	C34L11L14
L12	97.0	2.9	4.4	2	0.77 Eq H1-1	90.0	30	C34L11L14
L11	97.0	2.9	4.4	2	0.77 Eq H1-1	90.0	30	C34L11L14
L10	187.9	2.8	7.1	5	0.63 Eq H1-1	90.0	30	W14X82
L9	223.3	7.3	6.3	4	0.72 Eq H1-1	90.0	30	W14X82
L8	272.9	5.8	5.0	10	0.93 Eq H1-1	90.0	30	W14X82
L7	316.1	2.6	2.5	11	0.75 Eq H1-1	90.0	30	W14X90
L6	361.1	2.9	0.7	3	0.84 Eq H1-1	90.0	30	W14X90
L5	404.6	2.6	0.6	3	0.87 Eq H1-1	90.0	30	W14X99
L4	443.6	2.7	0.5	4	0.98 Eq H1-1	90.0	30	W14X99
L3	482.7	2.1	2.6	5	0.91 Eq H1-1	90.0	30	W14X120
L2	525.1	2.7	3.4	10	0.94 Eq H1-1	90.0	30	W14X120
L1	568.6	2.3	2.9	10	0.94 Eq H1-1	90.0	30	W14X132

Gravity Column Design Summary

Column Line O - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	35.5	2.3	0.8	11	0.41 Eq H1-1	90.0	30	C50L11L14
L13	35.5	2.3	0.8	11	0.41 Eq H1-1	90.0	30	C50L11L14
L12	75.6	1.0	3.4	3	1.14 Eq H1-1	90.0	30	C50L11L14
L11	75.6	1.0	3.4	3	1.14 Eq H1-1	90.0	30	C50L11L14
L10	145.5	1.0	5.5	5	0.58 Eq H1-1	90.0	30	W14X68
L9	177.3	3.0	5.8	5	0.69 Eq H1-1	90.0	30	W14X68
L8	212.3	2.3	4.3	11	0.88 Eq H1-1	90.0	30	W14X68
L7	247.6	0.7	0.8	10	0.84 Eq H1-1	90.0	30	W14X68
L6	283.9	0.4	0.5	4	0.95 Eq H1-1	90.0	30	W14X68
L5	318.5	0.4	0.3	2	0.75 Eq H1-1	90.0	30	W14X90
L4	349.7	0.4	0.2	5	0.84 Eq H1-1	90.0	30	W14X90
L3	380.9	0.4	1.5	5	0.87 Eq H1-1	90.0	30	W14X99
L2	414.4	0.5	2.0	10	0.90 Eq H1-1	90.0	30	W14X99
L1	449.0	0.1	1.7	10	0.89 Eq H1-1	90.0	30	W14X109

Column Line O - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	181.5	15.4	14.7	17	0.84 Eq H1-2	90.0	30	W14X74
L9	232.8	4.6	2.1	10	0.75 Eq H1-1	90.0	30	W14X74
L8	280.1	3.4	1.6	11	0.97 Eq H1-1	90.0	30	W14X74
L7	327.4	4.1	2.6	11	0.78 Eq H1-1	90.0	30	W14X90
L6	381.1	4.7	0.8	2	0.89 Eq H1-1	90.0	30	W14X90
L5	433.6	4.4	0.8	2	0.85 Eq H1-1	90.0	30	W14X109
L4	480.9	4.4	0.6	5	0.96 Eq H1-1	90.0	30	W14X109
L3	528.2	3.7	3.2	4	0.91 Eq H1-1	90.0	30	W14X132
L2	579.5	4.7	4.2	11	0.95 Eq H1-1	90.0	30	W14X132
L1	632.0	4.0	3.7	10	0.94 Eq H1-1	90.0	30	W14X145

Column Line O - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	243.5	3.9	20.2	11	0.74 Eq H1-2	90.0	30	W14X90
L9	306.3	3.0	4.3	5	0.75 Eq H1-1	90.0	30	W14X90
L8	367.9	0.7	3.4	10	0.91 Eq H1-1	90.0	30	W14X90
L7	431.0	1.3	4.2	11	0.85 Eq H1-1	90.0	30	W14X109
L6	500.7	1.1	1.5	5	0.97 Eq H1-1	90.0	30	W14X109
L5	570.7	0.9	1.2	2	0.83 Eq H1-1	90.0	30	W14X145
L4	633.7	0.9	1.0	4	0.94 Eq H1-1	90.0	30	W14X145
L3	696.8	1.0	5.1	4	0.88 Eq H1-1	90.0	30	W14X176
L2	765.4	1.1	6.7	10	0.92 Eq H1-1	90.0	30	W14X176
L1	835.4	0.0	5.7	10	0.93 Eq H1-1	90.0	30	W14X193

Gravity Column Design Summary

Column Line O - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L9	52.4	1.8	2.0	6	0.42 Eq H1-1	90.0	30	W14X43
L8	62.0	0.8	2.2	4	0.49 Eq H1-1	90.0	30	W14X43
L7	118.6	0.8	3.2	10	0.60 Eq H1-1	90.0	30	C87L6L7
L6	186.5	1.1	1.5	4	0.83 Eq H1-1	90.0	30	C87L6L7
L5	256.5	0.8	1.2	2	0.66 Eq H1-1	90.0	30	C87L4L5
L4	319.6	0.8	1.0	4	0.84 Eq H1-1	90.0	30	C87L4L5
L3	382.7	0.9	4.7	4	0.61 Eq H1-1	90.0	30	C87L1L3
L2	451.2	1.1	6.2	10	0.67 Eq H1-1	90.0	30	C87L1L3
L1	521.2	0.0	5.2	10	0.79 Eq H1-1	90.0	30	C87L1L3

Column Line O - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L10	182.1	15.4	14.4	16	0.84 Eq H1-2	90.0	30	W14X74
L9	223.8	4.5	2.5	6	0.75 Eq H1-1	90.0	30	W14X74
L8	273.6	3.1	2.0	10	0.95 Eq H1-1	90.0	30	W14X74
L7	320.9	4.1	2.6	10	0.76 Eq H1-1	90.0	30	W14X90
L6	372.1	4.7	1.0	4	0.87 Eq H1-1	90.0	30	W14X90
L5	424.6	4.4	0.8	3	0.83 Eq H1-1	90.0	30	W14X109
L4	471.9	4.4	0.6	4	0.95 Eq H1-1	90.0	30	W14X109
L3	519.2	3.7	3.2	5	0.89 Eq H1-1	90.0	30	W14X132
L2	570.4	4.7	4.2	10	0.93 Eq H1-1	90.0	30	W14X132
L1	622.9	4.0	3.7	10	0.93 Eq H1-1	90.0	30	W14X145

Column Line O - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	35.5	2.3	0.8	10	0.41 Eq H1-1	90.0	30	C50L11L14
L13	35.5	2.3	0.8	10	0.41 Eq H1-1	90.0	30	C50L11L14
L12	75.6	1.0	3.7	2	1.16 Eq H1-1	90.0	30	C50L11L14
L11	75.6	1.0	3.7	2	1.16 Eq H1-1	90.0	30	C50L11L14
L10	145.6	1.3	5.9	5	0.65 Eq H1-1	90.0	30	W14X61
L9	175.0	1.3	1.1	6	0.69 Eq H1-1	90.0	30	W14X61
L8	208.1	0.5	0.7	10	0.88 Eq H1-1	90.0	30	W14X61
L7	243.0	1.0	0.8	6	0.83 Eq H1-1	90.0	30	W14X68
L6	277.7	1.2	0.3	4	0.93 Eq H1-1	90.0	30	W14X68
L5	312.3	1.1	0.2	3	0.74 Eq H1-1	90.0	30	W14X90
L4	343.4	1.1	0.2	3	0.83 Eq H1-1	90.0	30	W14X90
L3	374.6	0.8	1.0	5	0.94 Eq H1-1	90.0	30	W14X90
L2	407.0	0.9	1.8	7	0.97 Eq H1-1	90.0	30	W14X90
L1	442.8	0.1	1.7	10	0.97 Eq H1-1	90.0	30	W14X99

Column Line O - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	49.1	6.2	0.6	3	0.33 Eq H1-1	90.0	30	C34L11L14
L13	49.1	6.2	0.6	3	0.33 Eq H1-1	90.0	30	C34L11L14
L12	97.0	2.9	4.6	3	0.78 Eq H1-1	90.0	30	C34L11L14
L11	97.0	2.9	4.6	3	0.78 Eq H1-1	90.0	30	C34L11L14
L10	187.9	4.0	7.5	4	0.69 Eq H1-1	90.0	30	W14X74
L9	223.2	5.3	1.2	10	0.73 Eq H1-1	90.0	30	W14X74
L8	267.0	3.8	1.0	6	0.93 Eq H1-1	90.0	30	W14X74
L7	309.6	3.2	1.2	10	0.87 Eq H1-1	90.0	30	W14X82
L6	352.4	3.7	0.6	5	0.98 Eq H1-1	90.0	30	W14X82
L5	395.9	3.4	0.4	2	0.85 Eq H1-1	90.0	30	W14X99
L4	435.0	3.4	0.3	5	0.96 Eq H1-1	90.0	30	W14X99
L3	474.1	2.9	2.1	4	0.89 Eq H1-1	90.0	30	W14X120
L2	514.7	3.6	3.1	6	0.92 Eq H1-1	90.0	30	W14X120
L1	559.8	2.4	2.9	10	0.93 Eq H1-1	90.0	30	W14X132

Column Line O - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	88.4	21.3	16.9	14	0.85 Eq H1-2	90.0	30	W14X61
L14	166.0	1.4	3.0	5	0.56 Eq H1-1	90.0	30	C18L11L14
L13	166.0	1.4	3.0	5	0.56 Eq H1-1	90.0	30	C18L11L14
L12	232.0	1.2	3.0	5	0.83 Eq H1-1	90.0	30	C18L11L14
L11	232.0	1.2	3.0	5	0.83 Eq H1-1	90.0	30	C18L11L14
L10	284.7	2.7	2.9	10	0.69 Eq H1-1	90.0	30	W14X90
L9	324.9	2.2	6.6	4	0.83 Eq H1-1	90.0	30	W14X90
L8	387.4	1.2	5.2	10	0.98 Eq H1-1	90.0	30	W14X90
L7	438.7	1.4	3.4	10	0.86 Eq H1-1	90.0	30	W14X109
L6	491.8	0.8	1.1	4	0.95 Eq H1-1	90.0	30	W14X109
L5	546.1	1.6	0.8	2	0.88 Eq H1-1	90.0	30	W14X132
L4	597.4	1.6	0.9	5	0.98 Eq H1-1	90.0	30	W14X132
L3	648.8	0.8	3.6	4	0.91 Eq H1-1	90.0	30	W14X159
L2	701.9	3.2	4.7	10	0.94 Eq H1-1	90.0	30	W14X159
L1	755.9	2.2	2.1	10	0.92 Eq H1-1	90.0	30	W14X176

Column Line O - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	92.1	4.0	6.6	3	0.92 Eq H1-1	0.0	30	W14X48
L14	196.0	7.0	11.5	12	0.56 Eq H1-2	0.0	30	W14X90
L13	212.0	1.6	6.2	1	0.52 Eq H1-2	0.0	30	W14X90
L12	272.0	10.4	3.0	4	0.74 Eq H1-1	0.0	30	W14X90
L11	320.9	10.3	3.0	5	0.88 Eq H1-1	0.0	30	W14X90
L10	382.2	2.3	7.4	2	0.69 Eq H1-1	0.0	30	W14X120
L9	451.2	1.7	6.7	3	0.81 Eq H1-1	0.0	30	W14X120
L8	517.2	0.9	5.2	5	0.96 Eq H1-1	0.0	30	W14X120
L7	599.7	0.5	6.6	4	0.88 Eq H1-1	0.0	30	W14X145
L6	667.9	0.6	1.6	3	0.95 Eq H1-1	0.0	30	W14X145

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L5	734.3	0.5	1.6	2	0.88 Eq H1-1	0.0	30	W14X176
L4	806.1	0.5	1.6	2	0.98 Eq H1-1	0.0	30	W14X176
L3	877.9	0.6	5.3	2	0.92 Eq H1-1	0.0	30	W14X211
L2	953.3	4.0	8.3	2	0.96 Eq H1-1	0.0	30	W14X211
L1	1075.2	3.4	7.7	1	1.00 Eq H1-1	0.0	30	W14X233

Column Line 219.42ft - 26.00ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	9.3	1.7	2.9	1	0.17 Eq H1-3	0.0	46	HSS8X8X1/4

Column Line 219.42ft - 155.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L13	9.3	1.7	2.9	1	0.17 Eq H1-3	0.0	46	HSS8X8X1/4

Column Line 220.75ft - 26.00ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	5.4	1.4	0.2	17	0.14 Eq H1-3	90.0	30	HSS8X8X3/16

Column Line O.8 - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	80.7	20.2	8.7	7	0.90 Eq H1-1	0.0	30	W14X48
L14	148.3	4.4	3.1	1	0.77 Eq H1-1	0.0	30	W14X61
L13	159.4	15.9	3.1	1	0.88 Eq H1-1	0.0	30	W14X61
L12	199.2	15.8	0.3	5	0.78 Eq H1-1	0.0	30	W14X61
L11	214.3	3.4	0.3	10	0.78 Eq H1-1	0.0	30	W14X61

Column Line O.8 - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	65.5	17.2	1.3	10	0.62 Eq H1-1	0.0	30	W14X43
L14	88.8	5.5	0.3	10	0.77 Eq H1-1	0.0	30	W14X43
L13	100.5	11.4	0.3	17	0.92 Eq H1-1	0.0	30	W14X43
L12	130.6	11.3	0.2	5	0.80 Eq H1-1	0.0	30	W14X43
L11	148.2	4.1	0.2	10	0.82 Eq H1-1	0.0	30	W14X43

Column Line O.8 - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	99.7	26.1	17.9	10	0.94 Eq H1-2	0.0	30	W14X61
L14	143.4	7.7	1.3	1	0.70 Eq H1-1	0.0	30	W14X61
L13	161.7	20.7	1.3	1	0.84 Eq H1-1	0.0	30	W14X61
L12	212.0	20.3	2.7	5	0.89 Eq H1-1	0.0	30	W14X61
L11	238.3	4.5	2.7	10	0.91 Eq H1-1	0.0	30	W14X61

Gravity Column Design Summary

Column Line O.8 - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	136.7	30.0	2.0	7	0.75 Eq H1-1	0.0	30	W14X61
L14	194.2	9.2	0.0	1	0.73 Eq H1-1	0.0	30	W14X74
L13	218.5	27.4	0.0	1	0.88 Eq H1-1	0.0	30	W14X74
L12	283.3	26.7	0.4	2	0.92 Eq H1-1	0.0	30	W14X74
L11	314.5	3.9	0.4	6	0.93 Eq H1-1	0.0	30	W14X74

Column Line O.8 - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	136.7	30.0	2.0	7	0.75 Eq H1-1	0.0	30	W14X61
L14	194.2	9.2	0.0	1	0.73 Eq H1-1	0.0	30	W14X74
L13	218.5	27.4	0.0	1	0.88 Eq H1-1	0.0	30	W14X74
L12	283.3	26.7	0.4	2	0.92 Eq H1-1	0.0	30	W14X74
L11	314.5	3.9	0.4	6	0.93 Eq H1-1	0.0	30	W14X74

Column Line O.8 - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	103.9	22.8	17.9	6	0.93 Eq H1-2	0.0	30	W14X61
L14	147.6	7.7	1.3	1	0.72 Eq H1-1	0.0	30	W14X61
L13	165.9	20.7	1.3	1	0.87 Eq H1-1	0.0	30	W14X61
L12	216.2	20.3	2.7	2	0.90 Eq H1-1	0.0	30	W14X61
L11	240.5	3.7	2.7	6	0.91 Eq H1-1	0.0	30	W14X61

Column Line O.8 - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	66.9	16.1	1.3	7	0.63 Eq H1-1	0.0	30	W14X43
L14	90.3	5.5	0.3	6	0.78 Eq H1-1	0.0	30	W14X43
L13	102.0	11.4	0.3	6	0.93 Eq H1-1	0.0	30	W14X43
L12	132.0	11.3	0.2	2	0.80 Eq H1-1	0.0	30	W14X43
L11	148.7	3.8	0.2	6	0.82 Eq H1-1	0.0	30	W14X43

Column Line O.8 - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	80.8	20.1	8.7	10	0.90 Eq H1-1	0.0	30	W14X48
L14	148.4	4.4	3.1	1	0.77 Eq H1-1	0.0	30	W14X61
L13	159.5	15.9	3.1	1	0.88 Eq H1-1	0.0	30	W14X61
L12	199.3	15.8	0.3	2	0.78 Eq H1-1	0.0	30	W14X61
L11	214.2	3.3	0.3	6	0.78 Eq H1-1	0.0	30	W14X61

Column Line 220.75ft - 155.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	5.4	1.4	0.2	16	0.14 Eq H1-3	90.0	30	HSS8X8X3/16

Gravity Column Design Summary

Column Line 224.50ft - 35.83ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	27.8	3.9	3.2	1	0.33 Eq H1-1	0.0	30	W14X43
L14	60.3	2.3	1.9	1	0.50 Eq H1-1	0.0	30	W14X61
L13	60.3	2.3	1.9	1	0.50 Eq H1-1	0.0	30	W14X61
L12	60.3	2.3	1.9	1	0.50 Eq H1-1	0.0	30	W14X61

Column Line 224.50ft - 46.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	24.3	0.0	0.2	4	0.19 Eq H1-1	0.0	30	C19L6L7
L14	74.1	0.0	0.0	1	0.84 Eq H1-1	0.0	30	C19L4L5
L13	74.1	0.0	0.0	1	0.84 Eq H1-1	0.0	30	C19L4L5
L12	74.1	0.0	0.0	1	0.84 Eq H1-1	0.0	30	C19L4L5

Column Line 224.50ft - 57.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	30.8	0.0	0.1	2	0.23 Eq H1-1	0.0	30	C19L6L7
L14	80.5	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5
L13	80.5	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5
L12	80.5	0.0	0.1	6	0.92 Eq H1-1	0.0	30	C19L4L5

Column Line 224.50ft - 68.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	10	0.10 Eq H1-3	0.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48

Column Line 224.50ft - 79.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.3	0.0	0.1	2	0.13 Eq H1-3	0.0	30	W14X43
L14	68.7	0.0	0.0	1	0.39 Eq H1-1	0.0	30	C192L13L14
L13	68.7	0.0	0.0	1	0.39 Eq H1-1	0.0	30	C192L13L14
L12	68.7	0.0	0.0	1	0.18 Eq H1-1	0.0	30	C192L11L12

Column Line 224.50ft - 90.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	10	0.10 Eq H1-3	0.0	30	W14X43
L14	62.4	0.0	0.0	1	0.85 Eq H1-1	0.0	30	W14X53
L13	62.4	0.0	0.0	1	0.85 Eq H1-1	0.0	30	W14X53
L12	62.4	0.0	0.0	1	0.85 Eq H1-1	0.0	30	W14X53

Gravity Column Design Summary

Column Line 224.50ft - 101.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.3	0.0	0.1	2	0.13 Eq H1-3	0.0	30	W14X43
L14	67.9	0.0	0.1	6	0.94 Eq H1-1	0.0	30	W14X53
L13	67.9	0.0	0.1	6	0.94 Eq H1-1	0.0	30	W14X53
L12	67.9	0.0	0.1	6	0.94 Eq H1-1	0.0	30	W14X53

Column Line 224.50ft - 112.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	11.3	0.0	0.4	10	0.10 Eq H1-3	0.0	30	W14X43
L14	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L13	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48
L12	61.6	0.0	0.1	6	0.96 Eq H1-1	0.0	30	W14X48

Column Line 224.50ft - 123.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	16.7	0.0	0.1	2	0.12 Eq H1-3	0.0	30	W14X43
L14	66.4	0.0	0.1	6	0.91 Eq H1-1	0.0	30	W14X53
L13	66.4	0.0	0.1	6	0.91 Eq H1-1	0.0	30	W14X53
L12	66.4	0.0	0.1	6	0.91 Eq H1-1	0.0	30	W14X53

Column Line 224.50ft - 134.58ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	18.0	0.0	0.2	2	0.14 Eq H1-3	0.0	30	W14X43
L14	67.1	0.0	0.1	6	0.94 Eq H1-1	0.0	30	W14X53
L13	67.1	0.0	0.1	6	0.94 Eq H1-1	0.0	30	W14X53
L12	67.1	0.0	0.1	6	0.94 Eq H1-1	0.0	30	W14X53

Column Line 224.50ft - 145.33ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	26.3	3.9	3.2	1	0.32 Eq H1-1	0.0	30	W14X43
L14	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61
L13	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61
L12	58.8	2.3	1.9	1	0.49 Eq H1-1	0.0	30	W14X61

Column Line P - 12

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	89.4	26.0	0.2	1	0.65 Eq H1-1	90.0	30	W14X53
L14	182.3	44.5	0.3	1	0.63 Eq H1-2	90.0	30	C1L11L14
L13	203.3	16.4	0.2	1	0.52 Eq H1-1	90.0	30	C1L11L14
L12	247.5	16.3	1.0	1	0.64 Eq H1-1	90.0	30	C1L11L14
L11	270.7	9.3	3.9	1	0.71 Eq H1-1	90.0	30	C1L11L14
L10	321.1	15.7	13.4	1	0.73 Eq H1-2	90.0	30	W14X109
L9	387.1	14.9	12.6	1	0.83 Eq H1-2	90.0	30	W14X109

Gravity Column Design Summary

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L8	445.3	13.3	11.8	1	0.94 Eq H1-1	90.0	30	W14X109
L7	518.0	17.8	15.5	1	0.90 Eq H1-2	90.0	30	W14X132
L6	574.2	13.5	2.9	1	0.92 Eq H1-1	90.0	30	W14X132
L5	627.4	14.9	3.2	1	0.84 Eq H1-1	90.0	30	W14X159
L4	689.6	14.9	3.2	1	0.94 Eq H1-1	90.0	30	W14X159
L3	752.1	13.5	11.5	4	0.89 Eq H1-1	90.0	30	W14X193
L2	818.5	17.3	15.0	3	0.92 Eq H1-1	90.0	30	W14X193
L1	875.2	12.8	10.8	1	0.92 Eq H1-1	90.0	30	W14X211

Column Line P - 11

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	91.8	3.2	6.2	5	0.89 Eq H1-1	90.0	30	W14X48
L14	193.8	5.6	10.8	8	0.55 Eq H1-2	90.0	30	W14X90
L13	209.9	1.6	5.6	5	0.51 Eq H1-2	90.0	30	W14X90
L12	268.4	10.4	2.8	2	0.73 Eq H1-1	90.0	30	W14X90
L11	317.4	10.4	2.7	3	0.86 Eq H1-1	90.0	30	W14X90
L10	378.9	3.2	4.3	4	0.67 Eq H1-1	90.0	30	W14X120
L9	450.2	2.8	4.3	4	0.80 Eq H1-1	90.0	30	W14X120
L8	514.0	2.3	3.3	3	0.95 Eq H1-1	90.0	30	W14X120
L7	596.5	2.5	4.2	2	0.87 Eq H1-1	90.0	30	W14X145
L6	664.7	2.5	1.0	4	0.95 Eq H1-1	90.0	30	W14X145
L5	731.1	2.7	1.0	4	0.87 Eq H1-1	90.0	30	W14X176
L4	802.9	2.7	1.0	4	0.98 Eq H1-1	90.0	30	W14X176
L3	874.7	2.4	3.4	4	0.91 Eq H1-1	90.0	30	W14X211
L2	950.1	2.5	4.5	2	0.95 Eq H1-1	90.0	30	W14X211
L1	1016.5	1.9	3.8	1	0.93 Eq H1-1	90.0	30	W14X233

Column Line 225.17ft - 26.00ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	24.8	5.8	3.2	1	0.68 Eq H1-2	0.0	30	HSS10.000X0.188
L13	32.2	1.3	1.2	1	0.45 Eq H1-2	0.0	30	HSS10.000X0.188
L12	43.2	1.3	0.7	1	0.54 Eq H1-1	0.0	30	HSS10.000X0.188

Column Line P - 10

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	124.0	17.6	78.4	12	0.96 Eq H1-2	90.0	30	W14X109
L10	338.3	5.8	66.8	3	0.98 Eq H1-2	90.0	30	W14X132
L9	394.5	4.5	4.6	5	0.64 Eq H1-1	90.0	30	W14X132
L8	447.5	4.4	3.5	3	0.75 Eq H1-1	90.0	30	W14X132
L7	508.4	4.9	4.1	2	0.91 Eq H1-1	90.0	30	W14X120
L6	558.4	4.7	0.9	4	0.97 Eq H1-1	90.0	30	W14X120
L5	608.9	5.2	1.0	4	0.89 Eq H1-1	90.0	30	W14X145
L4	663.5	5.2	1.0	4	0.98 Eq H1-1	90.0	30	W14X145
L3	718.1	4.4	3.2	5	0.90 Eq H1-1	90.0	30	W14X176
L2	775.4	5.6	4.2	2	0.93 Eq H1-1	90.0	30	W14X176

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L1	825.9	4.3	3.6	1	0.92 Eq H1-1	90.0	30	W14X193

Column Line P - 9

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	114.7	0.8	48.5	2	0.76 Eq H1-2	90.0	30	W14X90
L10	268.1	0.9	19.3	2	0.70 Eq H1-2	90.0	30	W14X99
L9	313.7	1.0	5.3	4	0.69 Eq H1-1	90.0	30	W14X99
L8	357.9	0.5	4.0	2	0.81 Eq H1-1	90.0	30	W14X99
L7	408.6	0.7	4.8	2	0.89 Eq H1-1	90.0	30	W14X99
L6	446.7	0.4	0.9	3	0.94 Eq H1-1	90.0	30	W14X99
L5	483.8	0.4	0.9	5	0.86 Eq H1-1	90.0	30	W14X120
L4	527.4	0.4	0.9	5	0.95 Eq H1-1	90.0	30	W14X120
L3	570.9	0.4	3.0	5	0.98 Eq H1-1	90.0	30	W14X132
L2	616.7	0.4	3.9	2	1.00 Eq H1-1	90.0	30	W14X132
L1	657.0	0.1	3.5	1	0.97 Eq H1-1	90.0	30	W14X145

Column Line P - 8

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	172.7	40.7	53.8	9	0.91 Eq H1-2	90.0	30	W14X109
L10	412.3	10.0	44.7	2	0.94 Eq H1-2	90.0	30	W14X132
L9	477.8	9.5	4.7	5	0.77 Eq H1-1	90.0	30	W14X132
L8	536.3	8.3	3.6	2	0.90 Eq H1-1	90.0	30	W14X132
L7	612.3	10.6	4.6	3	0.90 Eq H1-1	90.0	30	W14X145
L6	675.1	8.5	1.1	5	0.97 Eq H1-1	90.0	30	W14X145
L5	736.2	9.5	1.1	5	0.88 Eq H1-1	90.0	30	W14X176
L4	802.3	9.5	1.1	5	0.98 Eq H1-1	90.0	30	W14X176
L3	868.5	8.3	3.7	4	0.91 Eq H1-1	90.0	30	W14X211
L2	937.9	10.6	4.9	3	0.94 Eq H1-1	90.0	30	W14X211
L1	999.0	8.0	4.2	1	0.92 Eq H1-1	90.0	30	W14X233

Column Line P - 7

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	215.4	2.0	70.8	4	1.00 Eq H1-2	90.0	30	W14X109
L10	528.6	3.6	58.0	3	0.96 Eq H1-2	90.0	30	W14X159
L9	612.3	2.7	5.9	2	0.82 Eq H1-1	90.0	30	W14X159
L8	696.0	0.6	4.3	2	0.95 Eq H1-1	90.0	30	W14X159
L7	797.4	0.7	5.3	2	0.87 Eq H1-1	90.0	30	W14X193
L6	881.1	0.7	1.2	4	0.94 Eq H1-1	90.0	30	W14X193
L5	962.7	0.8	1.3	4	0.87 Eq H1-1	90.0	30	W14X233
L4	1050.8	0.8	1.3	4	0.96 Eq H1-1	90.0	30	W14X233
L3	1139.0	0.6	4.3	4	0.88 Eq H1-1	90.0	30	W14X283
L2	1231.5	0.8	5.7	2	0.91 Eq H1-1	90.0	30	W14X283
L1	1313.0	0.0	4.8	1	0.98 Eq H1-1	90.0	30	W14X283

Column Line P - 6

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	215.4	2.0	47.4	2	0.58 Eq H1-2	90.0	30	W14X145
L10	638.9	0.4	8.1	4	0.70 Eq H1-1	90.0	30	W14X193
L9	722.9	0.8	7.2	2	0.79 Eq H1-1	90.0	30	W14X193
L8	834.4	0.6	4.3	2	0.93 Eq H1-1	90.0	30	W14X193
L7	935.7	0.7	5.3	2	0.93 Eq H1-1	90.0	30	W14X211
L6	1019.5	0.7	1.2	4	1.00 Eq H1-1	90.0	30	W14X211
L5	1101.0	0.8	1.3	4	0.90 Eq H1-1	90.0	30	W14X257
L4	1189.2	0.8	1.3	4	0.98 Eq H1-1	90.0	30	W14X257
L3	1277.3	0.7	4.3	4	0.90 Eq H1-1	90.0	30	W14X311
L2	1369.8	0.8	5.7	2	0.92 Eq H1-1	90.0	30	W14X311
L1	1451.4	0.0	4.8	1	0.99 Eq H1-1	90.0	30	W14X311

Column Line P - 5

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	160.7	40.7	54.2	12	0.89 Eq H1-2	90.0	30	W14X109
L10	402.7	7.5	45.1	1	0.92 Eq H1-2	90.0	30	W14X132
L9	464.5	9.5	5.3	3	0.76 Eq H1-1	90.0	30	W14X132
L8	523.0	8.3	3.6	3	0.88 Eq H1-1	90.0	30	W14X132
L7	599.0	10.6	4.6	2	0.88 Eq H1-1	90.0	30	W14X145
L6	661.8	8.5	1.1	4	0.95 Eq H1-1	90.0	30	W14X145
L5	722.9	9.5	1.1	4	0.87 Eq H1-1	90.0	30	W14X176
L4	789.1	9.5	1.1	4	0.96 Eq H1-1	90.0	30	W14X176
L3	855.2	8.3	3.7	5	0.90 Eq H1-1	90.0	30	W14X211
L2	924.6	10.6	4.9	2	0.93 Eq H1-1	90.0	30	W14X211
L1	985.7	8.0	4.2	1	0.91 Eq H1-1	90.0	30	W14X233

Column Line P - 4

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L11	109.5	2.7	44.5	3	0.72 Eq H1-2	90.0	30	W14X90
L10	263.4	2.3	20.3	3	0.71 Eq H1-2	90.0	30	W14X99
L9	310.0	2.3	6.8	4	0.68 Eq H1-1	90.0	30	W14X99
L8	351.5	1.7	5.2	2	0.80 Eq H1-1	90.0	30	W14X99
L7	400.6	2.1	6.2	2	0.88 Eq H1-1	90.0	30	W14X99
L6	438.9	2.0	1.3	3	0.93 Eq H1-1	90.0	30	W14X99
L5	476.2	2.0	1.4	4	0.84 Eq H1-1	90.0	30	W14X120
L4	519.7	2.0	1.4	4	0.94 Eq H1-1	90.0	30	W14X120
L3	563.3	1.8	4.5	5	0.97 Eq H1-1	90.0	30	W14X132
L2	609.0	2.1	5.8	2	1.00 Eq H1-1	90.0	30	W14X132
L1	649.4	0.1	3.5	1	0.96 Eq H1-1	90.0	30	W14X145

Column Line P - 3

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size

Gravity Column Design Summary

L11	122.8	17.6	80.9	9	0.98 Eq H1-2	90.0	30	W14X109
L10	337.0	7.5	68.9	2	1.00 Eq H1-2	90.0	30	W14X132
L9	394.1	7.3	6.7	5	0.64 Eq H1-1	90.0	30	W14X132
L8	444.6	6.0	5.1	2	0.75 Eq H1-1	90.0	30	W14X132
L7	504.1	7.6	5.9	3	0.91 Eq H1-1	90.0	30	W14X120
L6	554.1	6.4	1.4	5	0.97 Eq H1-1	90.0	30	W14X120
L5	604.6	6.9	1.4	5	0.88 Eq H1-1	90.0	30	W14X145
L4	659.2	6.9	1.4	5	0.98 Eq H1-1	90.0	30	W14X145
L3	713.8	6.1	4.7	4	0.90 Eq H1-1	90.0	30	W14X176
L2	771.1	7.7	6.1	3	0.93 Eq H1-1	90.0	30	W14X176
L1	821.6	4.3	3.5	1	0.91 Eq H1-1	90.0	30	W14X193

Column Line 225.17ft - 155.17ft

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
L14	24.8	5.8	3.2	1	0.68 Eq H1-2	0.0	30	HSS10.000X0.188
L13	32.2	1.3	1.2	1	0.45 Eq H1-2	0.0	30	HSS10.000X0.188
L12	43.2	1.3	0.7	1	0.54 Eq H1-1	0.0	30	HSS10.000X0.188

Column Line P - 2

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	92.1	3.2	6.2	4	0.89 Eq H1-1	90.0	30	W14X48
L14	194.0	5.6	10.8	12	0.55 Eq H1-2	90.0	30	W14X90
L13	210.2	1.6	5.6	4	0.51 Eq H1-2	90.0	30	W14X90
L12	268.7	10.4	2.8	3	0.73 Eq H1-1	90.0	30	W14X90
L11	317.7	10.4	2.7	2	0.86 Eq H1-1	90.0	30	W14X90
L10	379.2	3.2	4.3	5	0.67 Eq H1-1	90.0	30	W14X120
L9	450.5	2.9	4.4	5	0.80 Eq H1-1	90.0	30	W14X120
L8	514.3	2.3	3.3	2	0.95 Eq H1-1	90.0	30	W14X120
L7	596.8	2.6	4.3	3	0.87 Eq H1-1	90.0	30	W14X145
L6	665.0	2.5	1.0	5	0.95 Eq H1-1	90.0	30	W14X145
L5	731.4	2.8	1.0	5	0.87 Eq H1-1	90.0	30	W14X176
L4	803.2	2.8	1.0	5	0.98 Eq H1-1	90.0	30	W14X176
L3	875.0	2.4	3.5	5	0.92 Eq H1-1	90.0	30	W14X211
L2	950.3	2.6	4.5	3	0.95 Eq H1-1	90.0	30	W14X211
L1	1016.7	1.9	3.9	1	0.93 Eq H1-1	90.0	30	W14X233

Column Line P - 1

Level	P	Mx	My	LC	Interaction Eq.	Angle	Fy	Size
RF	89.4	26.0	0.2	1	0.65 Eq H1-1	90.0	30	W14X53
L14	182.3	44.5	0.3	1	0.63 Eq H1-2	90.0	30	C1L11L14
L13	203.3	16.4	0.2	1	0.52 Eq H1-1	90.0	30	C1L11L14
L12	247.5	16.3	1.0	1	0.64 Eq H1-1	90.0	30	C1L11L14
L11	270.7	9.3	3.9	1	0.71 Eq H1-1	90.0	30	C1L11L14
L10	321.1	15.7	13.4	1	0.73 Eq H1-2	90.0	30	W14X109
L9	387.1	14.9	12.6	1	0.83 Eq H1-2	90.0	30	W14X109

Gravity Column Design Summary

L8	445.3	13.3	11.8	1	0.94 Eq H1-1	90.0	30	W14X109
L7	518.0	17.8	15.5	1	0.90 Eq H1-2	90.0	30	W14X132
L6	574.2	13.5	2.9	1	0.92 Eq H1-1	90.0	30	W14X132
L5	627.4	14.9	3.2	1	0.84 Eq H1-1	90.0	30	W14X159
L4	689.6	14.9	3.2	1	0.94 Eq H1-1	90.0	30	W14X159
L3	752.1	13.5	11.5	5	0.89 Eq H1-1	90.0	30	W14X193
L2	818.5	17.3	25.0	1	0.95 Eq H1-2	90.0	30	W14X193
L1	905.2	12.8	23.3	1	0.99 Eq H1-1	90.0	30	W14X211

D: Column Strengthening Design

HALL OF JUSTICE
COLUMN STRENGTHENING

Cc= 138.1
k= 1 Cm= 1

x strong axis Fb= 19.8
y weak axis 22.5

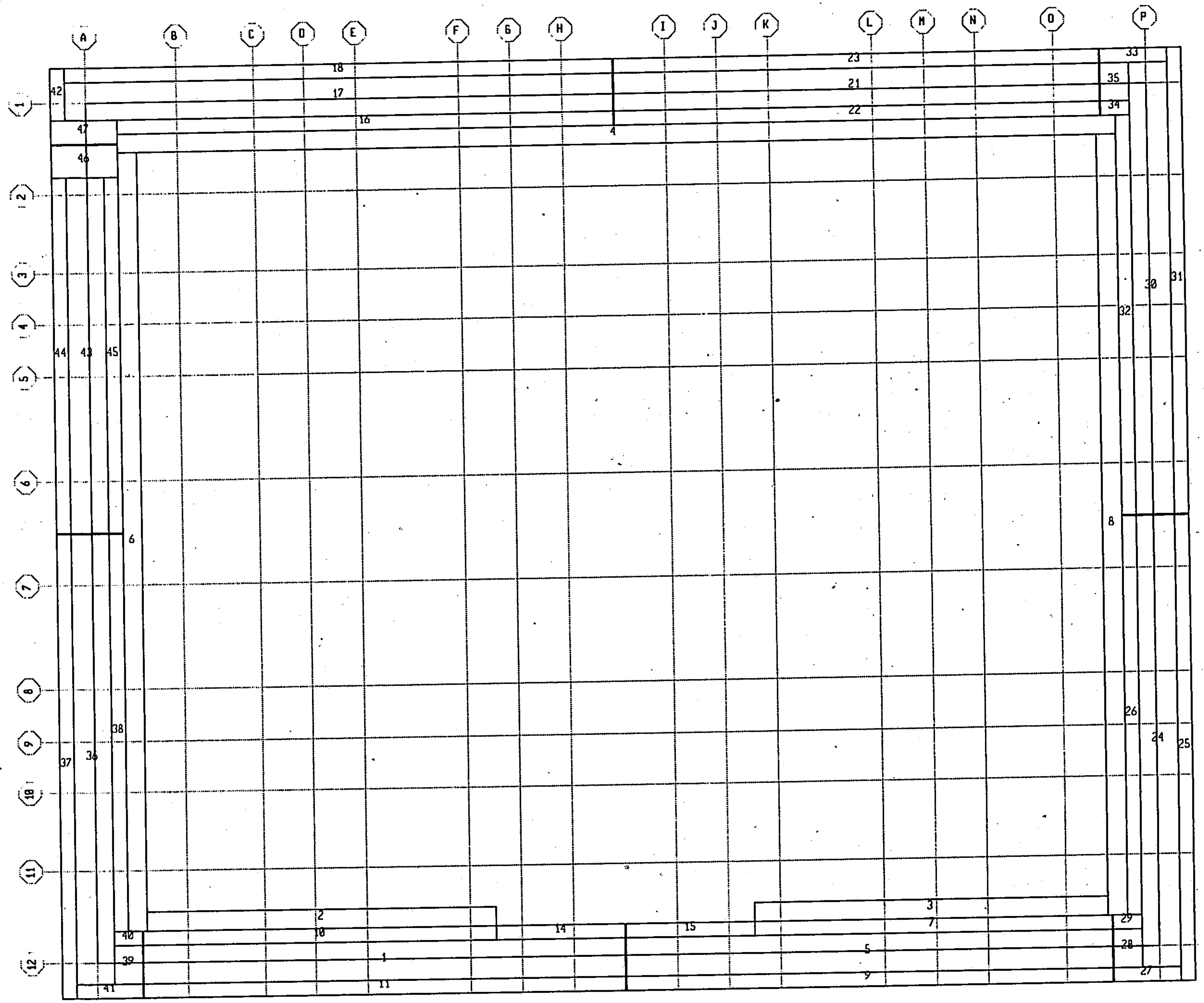
Level	Intrction Eq.	Fy	Size	Stress Ratio	d (in)	bf top (in)	tw (in)	tf top (in)	A (in^2)	Iy (in^4)	Sx top (in^3)	Sy (in^3)	ht l (in)	rx	E (ksi)	tnew (in)	F'ex	F'ey
Column Line I - 2 L4	1.10 Eq H1-1	30	C25L4L5	1.10	13.5	10.375	0.375	0.500	20.063	94.180	93	18.16	159	5.591	29000	0.5	184.66	53.75648
Column Line E - 11 L6	1.21 Eq H1-1	30	C21L6L8	1.21	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	142	5.407	29000	0.5	216.51	46.20794
Column Line E - 2 L6	1.21 Eq H1-1	30	C21L6L8	1.21	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	142	5.407	29000	0.5	216.51	46.20794
Column Line L - 11 L6	1.25 Eq H1-1	30	C21L6L8	1.25	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	142	5.407	29000	0.5	216.51	46.20794
Column Line L - 2 L6	1.20 Eq H1-1	30	C21L6L8	1.20	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	142	5.407	29000	0.5	216.51	46.20794
Column Line 66.83ft - 19.33ft L9	0.00 Euler	30	STRUT	0.00	6.0	4.313	0.313	0.313	7.734	4.546	11	2.108	132	2.095	29000	0.5	37.62	15.18234
Column Line 66.83ft - 161.83ft L9	0.00 Euler	30	STRUT	0.00	6.0	4.313	0.313	0.313	7.734	4.546	11	2.108	132	2.095	29000	0.5	37.62	15.18234
Column Line 158.33ft - 19.33ft L9	0.00 Euler	30	STRUT	0.00	6.0	4.313	0.313	0.313	7.734	4.546	11	2.108	132	2.095	29000	0.5	37.62	15.18234
Column Line 158.33ft - 161.83ft L9	0.00 Euler	30	STRUT	0.00	6.0	4.313	0.313	0.313	7.734	4.546	11	2.108	132	2.095	29000	0.5	37.62	15.18234
Column Line B - 9 L11	1.16 Eq H1-1	30	C50L11L'	1.16	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line B - 4 L11	1.14 Eq H1-1	30	C50L11L'	1.14	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line C - 9 L11	1.06 Eq H1-1	30	C50L11L'	1.06	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line D - 10 L11	1.35 Eq H1-1	30	C38L11L'	1.35	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line D - 3 L11	1.35 Eq H1-1	30	C38L11L'	1.35	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line G - 3 L11	1.27 Eq H1-1	30	C38L11L'	1.27	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line J - 3 L11	1.45 Eq H1-1	30	C38L11L'	1.45	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line M - 10 L11	1.35 Eq H1-1	30	C38L11L'	1.35	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line M - 3 L11	1.35 Eq H1-1	30	C38L11L'	1.35	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line N - 9 L11	1.06 Eq H1-1	30	C50L11L'	1.06	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line N - 4 L11	1.06 Eq H1-1	30	C50L11L'	1.06	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line O - 9 L11	1.14 Eq H1-1	30	C50L11L'	1.14	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353
Column Line O - 4 L11	1.16 Eq H1-1	30	C50L11L'	1.16	13.5	8.375	0.375	0.375	15.000	37.370	65	8.924	228	5.407	29000	0.5	83.983	17.92353

Level	NEW! Iy (IN^4)	NEW! A (IN^2)	ry comp	kl/ry	kl/ry < Cc Eq. E2-1 Fa (ksi)	CAPACITY Fa*Aexist	>	P	fa (ksi)	Mx allow	>	Mx	fbx (ksi)	My allow	>	My	fby (ksi)	COMBINED STRESS Eq. H1-1	Eq. H1-2
Column Line I - 2 L4	229.5	15.5	3.016733	52.71	15.429	309.55257	>	261	13	1840	>	3.7	0.04	408	>	2.4	0.13	0.85	0.73
Column Line E - 11 L6	152.9	15.5	2.497877	56.85	15.152	227.27834	>	208	13.9	1288	>	4.6	0.07	201	>	1	0.11	0.93	0.78
Column Line E - 2 L6	152.9	15.5	2.497877	56.85	15.152	227.27834	>	208	13.9	1288	>	4.6	0.07	201	>	0.9	0.10	0.93	0.78
Column Line L - 11 L6	152.9	15.5	2.497877	56.85	15.152	227.27834	>	206	13.8	1288	>	4.6	0.07	201	>	1.3	0.15	0.92	0.77
Column Line L - 2 L6	152.9	15.5	2.497877	56.85	15.152	227.27834	>	204	13.6	1288	>	4.6	0.07	201	>	1	0.11	0.91	0.78
Column Line 66.83ft - 19.33ft L9	23.33	8	1.330968	99.18	11.784	91.14366	>	41.6	5.38	224	>	0	0.00	47.4	>	0	0.00	0.46	0.30
Column Line 66.83ft - 161.83ft L9	23.33	8	1.330968	99.18	11.784	91.14366	>	41.1	5.31	224	>	0	0.00	47.4	>	0	0.00	0.45	0.30
Column Line 158.33ft - 19.33ft L9	23.33	8	1.330968	99.18	11.784	91.14366	>	41.6	5.38	224	>	0	0.00	47.4	>	0	0.00	0.46	0.30
Column Line 158.33ft - 161.83ft L9	23.33	8	1.330968	99.18	11.784	91.14366	>	41.1	5.31	224	>	0	0.00	47.4	>	0	0.00	0.45	0.30
Column Line B - 9 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	75.6	5.04	1288	>	1	0.02	201	>	3.7	0.41	0.43	0.30
Column Line B - 4 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	75.6	5.04	1288	>	1	0.02	201	>	3.4	0.38	0.43	0.30
Column Line C - 9 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	93.4	6.23	1288	>	0.7	0.01	201	>	0.7	0.08	0.51	0.35
Column Line D - 10 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	85.9	5.73	1288	>	0.6	0.01	201	>	3	0.34	0.48	0.33
Column Line D - 3 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	85.9	5.73	1288	>	0.6	0.01	201	>	3	0.34	0.48	0.33
Column Line G - 3 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	88.1	5.87	1288	>	0.5	0.01	201	>	2.2	0.25	0.49	0.34
Column Line J - 3 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	88.1	5.87	1288	>	0.5	0.01	201	>	3	0.34	0.50	0.34
Column Line M - 10 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	85.9	5.73	1288	>	0.6	0.01	201	>	3	0.34	0.48	0.33
Column Line M - 3 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	85.9	5.73	1288	>	0.6	0.01	201	>	3	0.34	0.48	0.33
Column Line N - 9 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	93.4	6.23	1288	>	0.7	0.01	201	>	0.7	0.08	0.51	0.35
Column Line N - 4 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	93.4	6.23	1288	>	0.7	0.01	201	>	0.7	0.08	0.51	0.35
Column Line O - 9 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	75.6	5.04	1288	>	1	0.02	201	>	3.4	0.38	0.43	0.30
Column Line O - 4 L11	152.9	15.5	2.497877	91.28	12.484	187.28435	>	75.6	5.04	1288	>	1	0.02	201	>	3.7	0.41	0.43	0.30
																		<1.0	<1.0

E: Foundation Analysis SAFE Input & Output

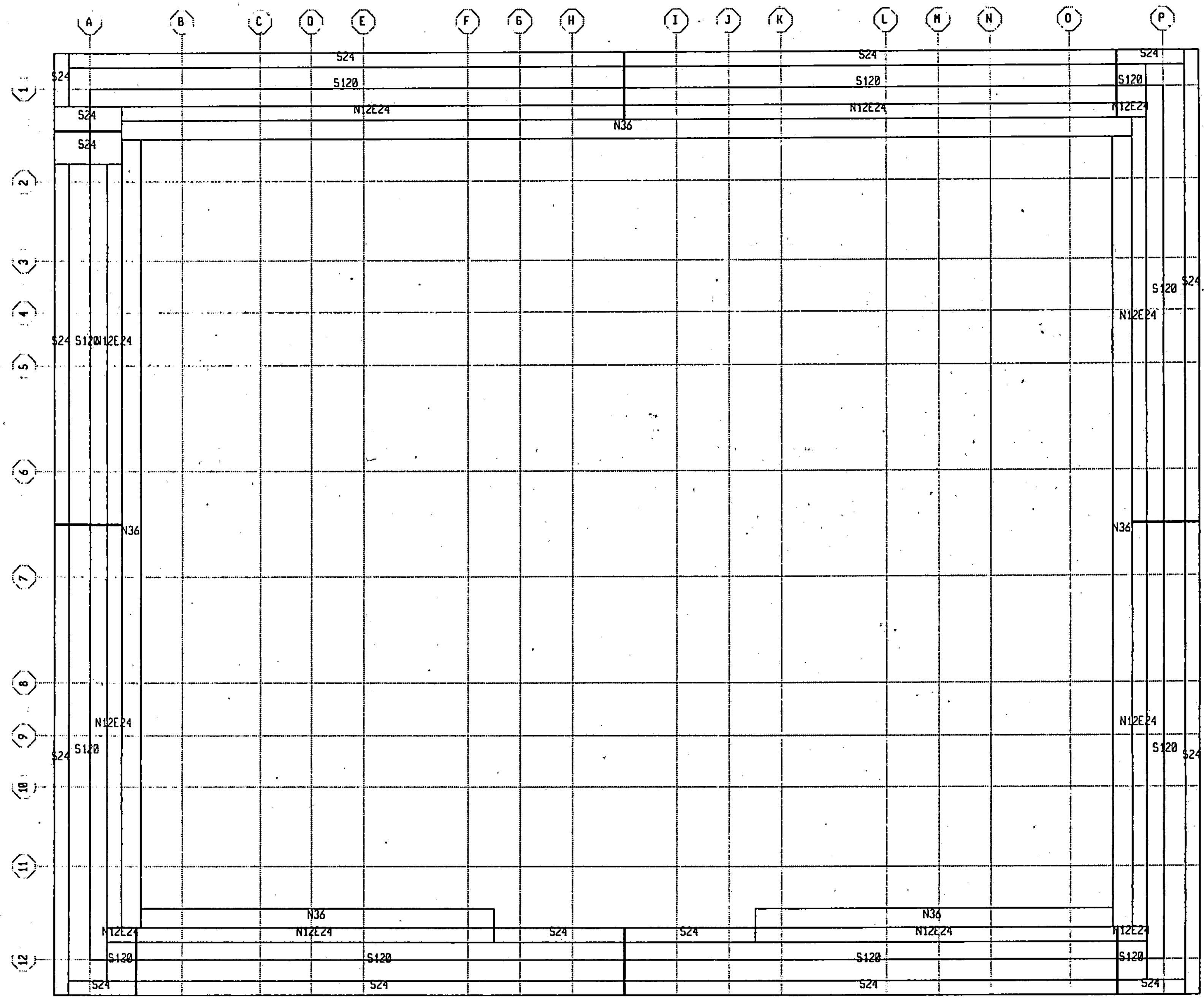
E.1: Plots

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:09 - Scale: Fit to Page
Structural Layer Plan View - Kip-in Units

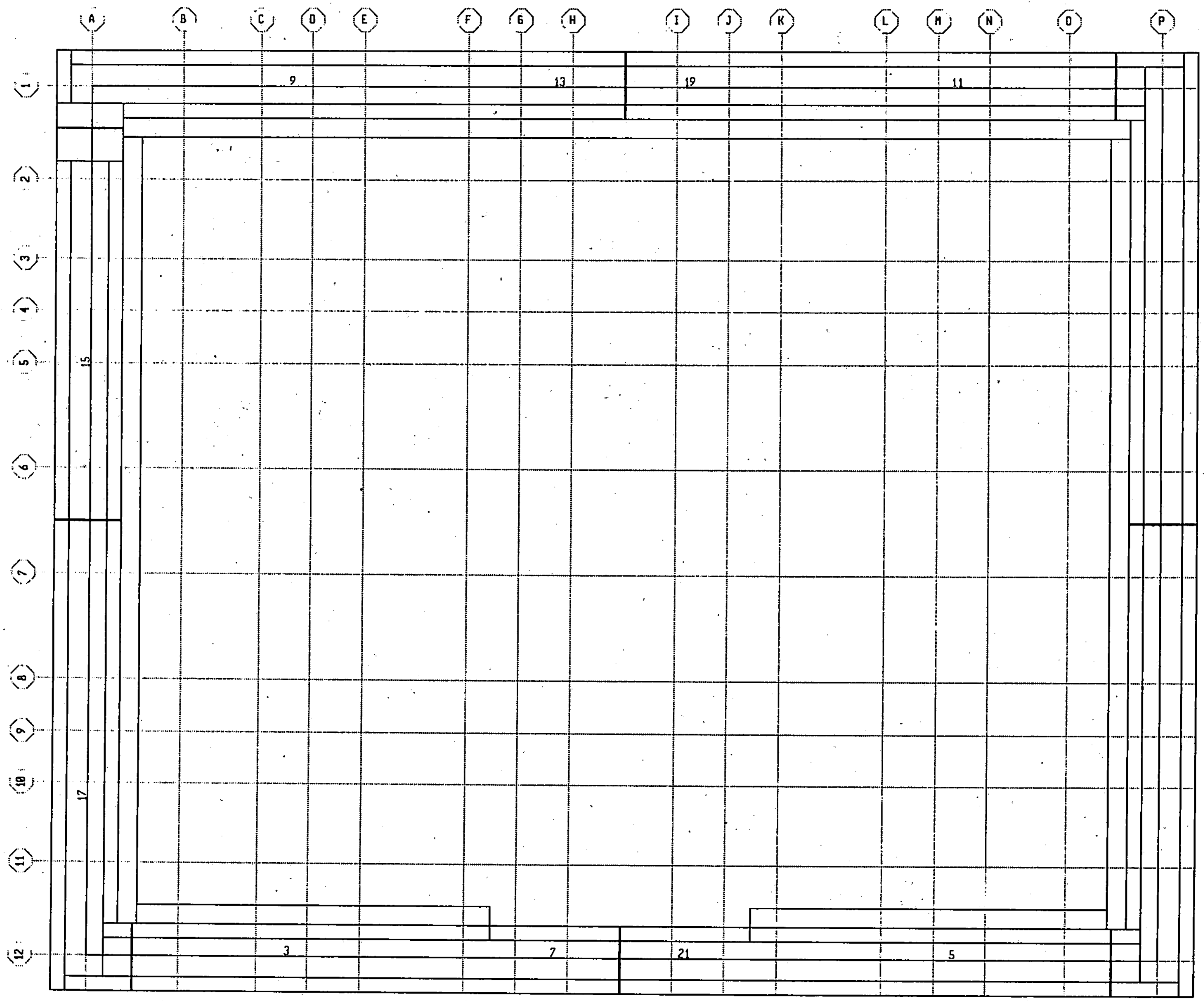
SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:10 - Scale: Fit to Page
Structural Layer Plan View - Kip-in Units

2

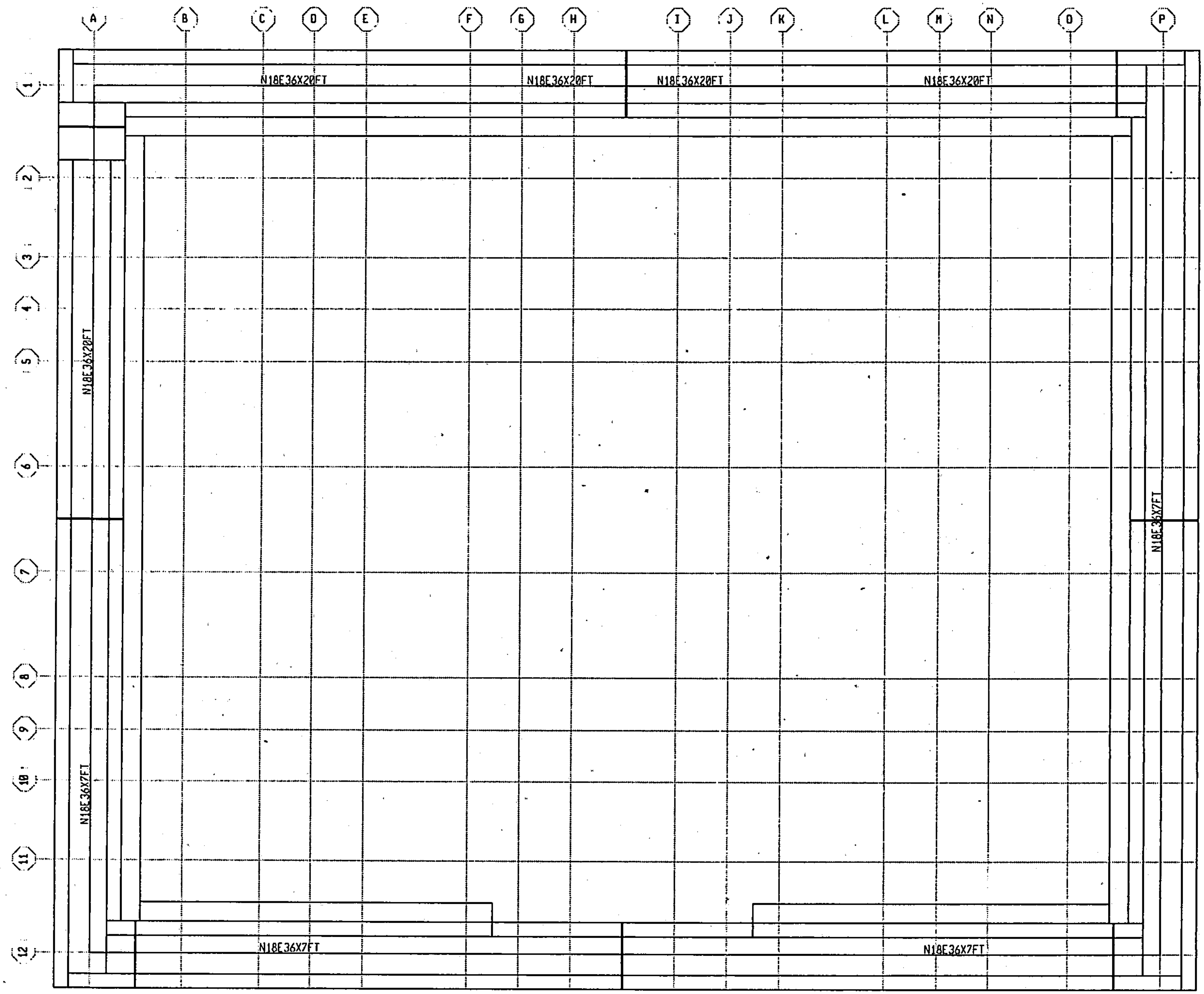
SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:10 - Scale: Fit to Page
Structural Layer Plan View - Kip-in Units

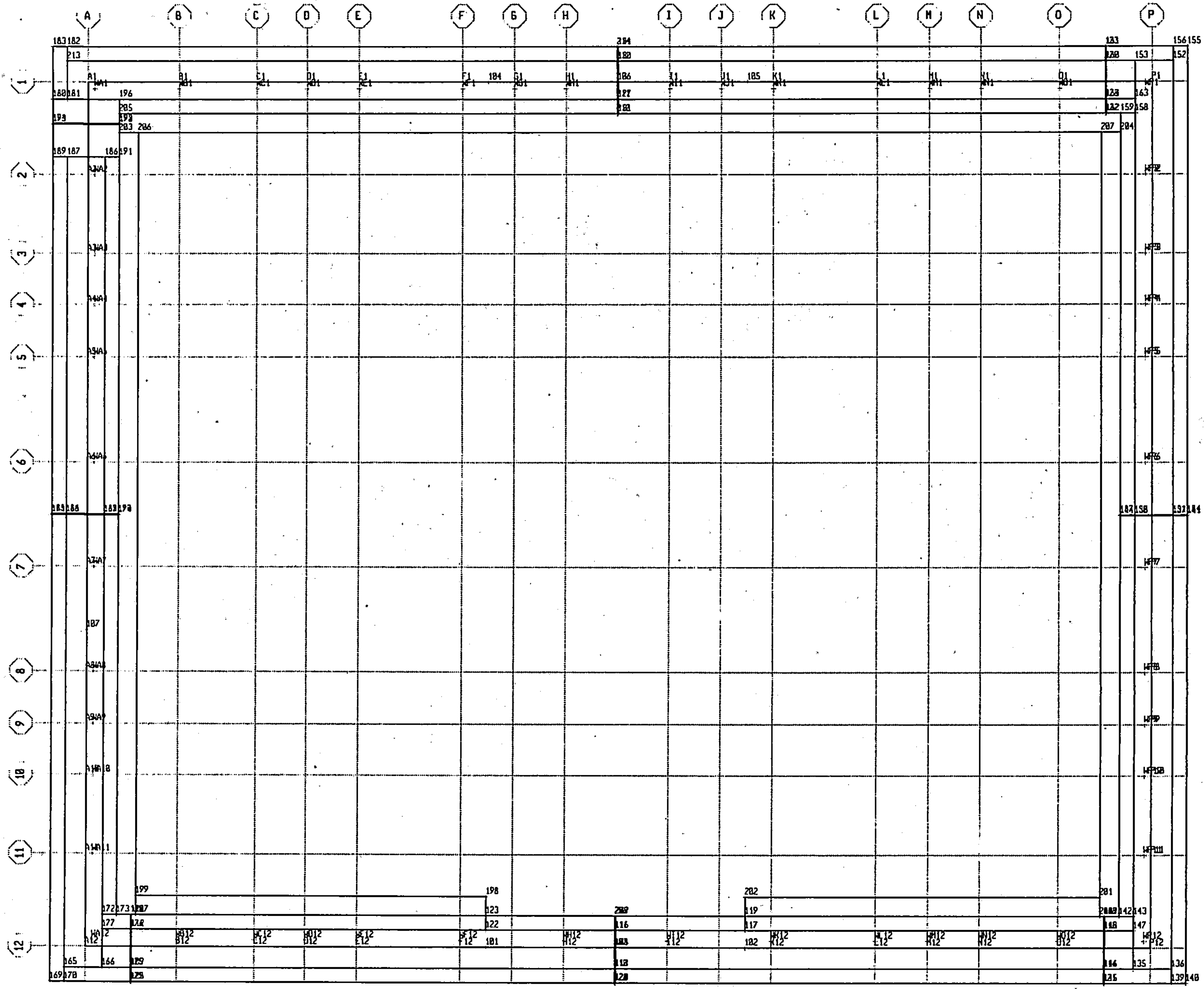
3

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:10 - Scale: Fit to Page
Structural Layer Plan View - Kip-in Units

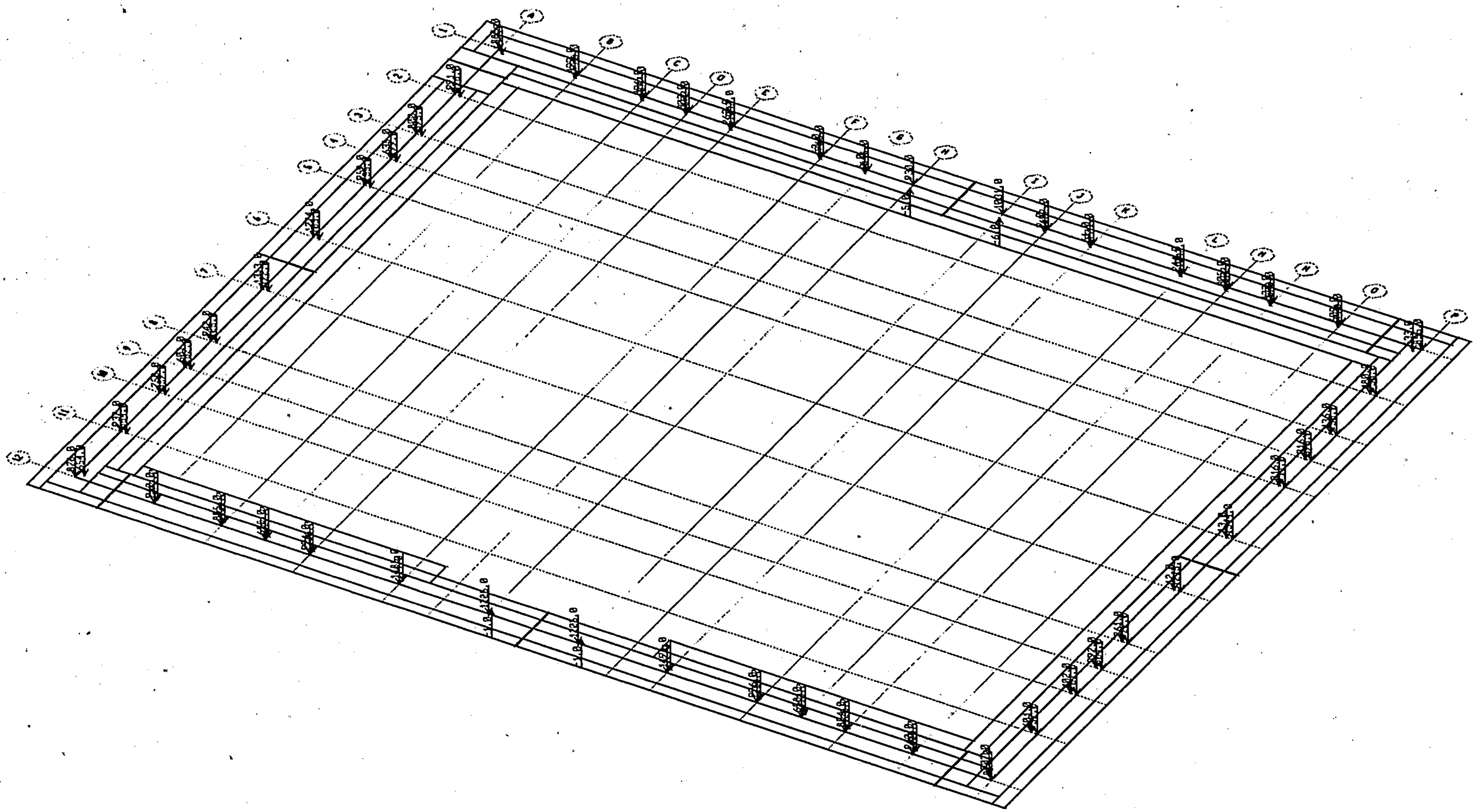
SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:10 - Scale: Fit to Page
Structural Layer Plan View - Kip-in Units

5

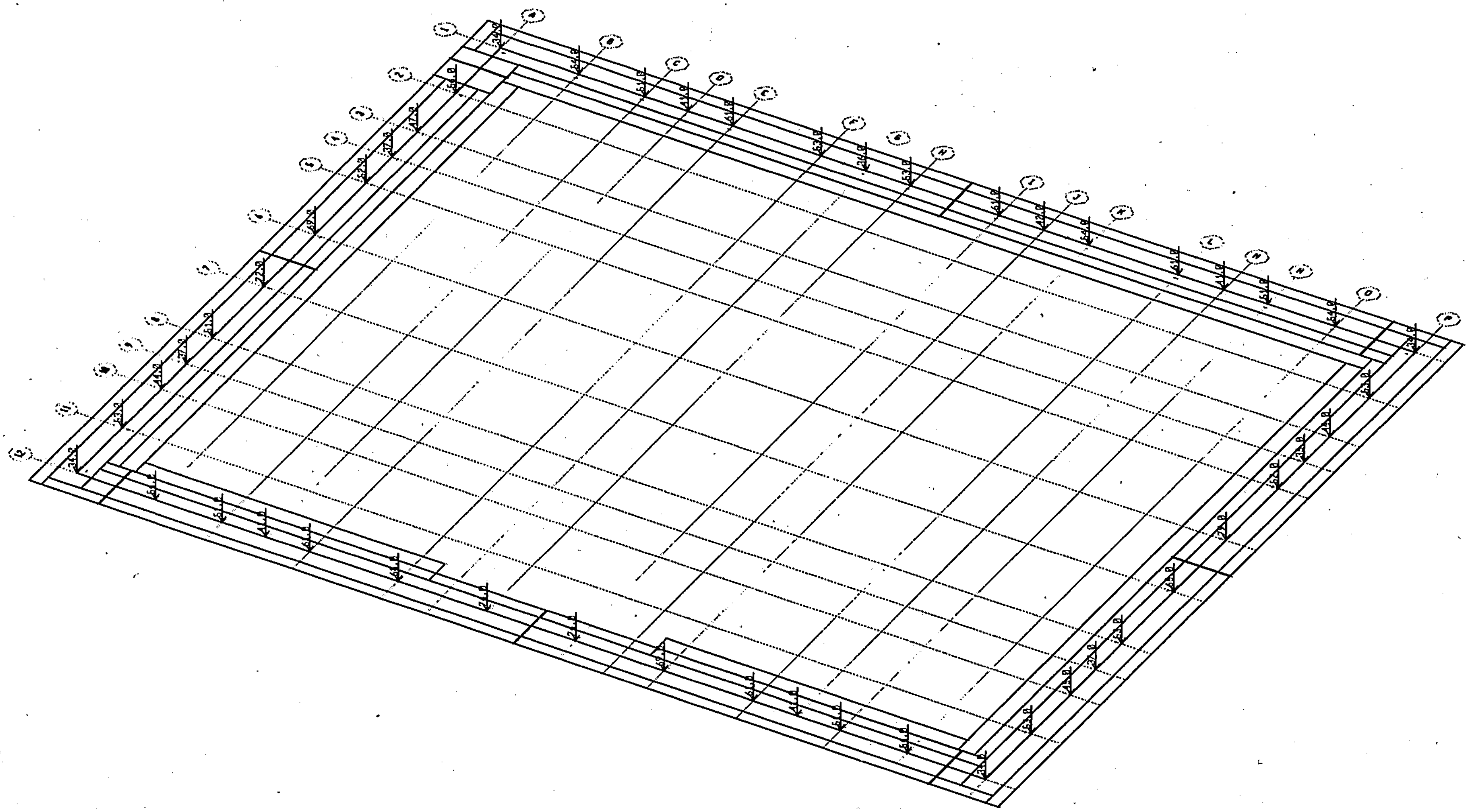
SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:10 - Scale: Fit to Page
Point Loading (DL) - Kip-in Units

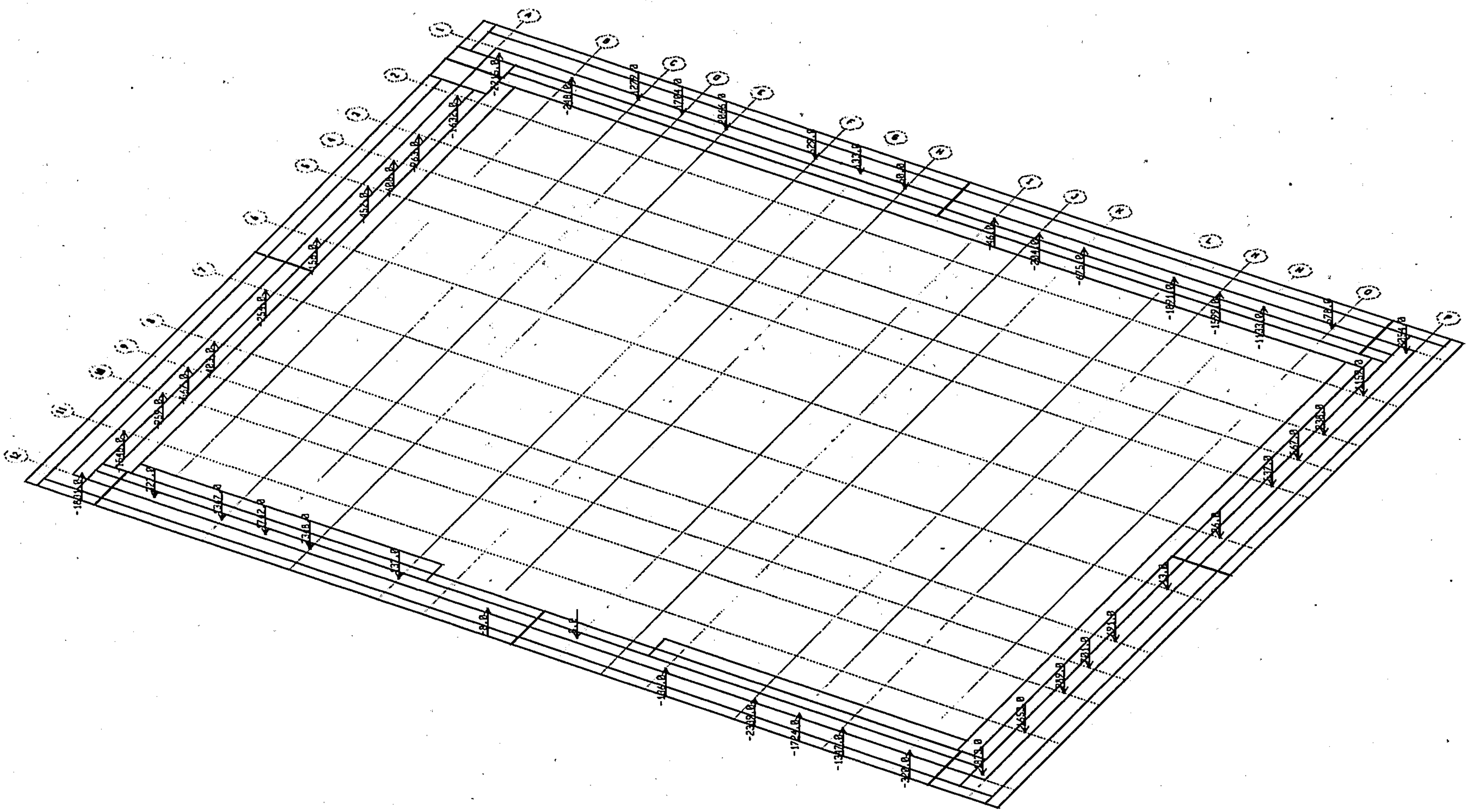
6

SAFE



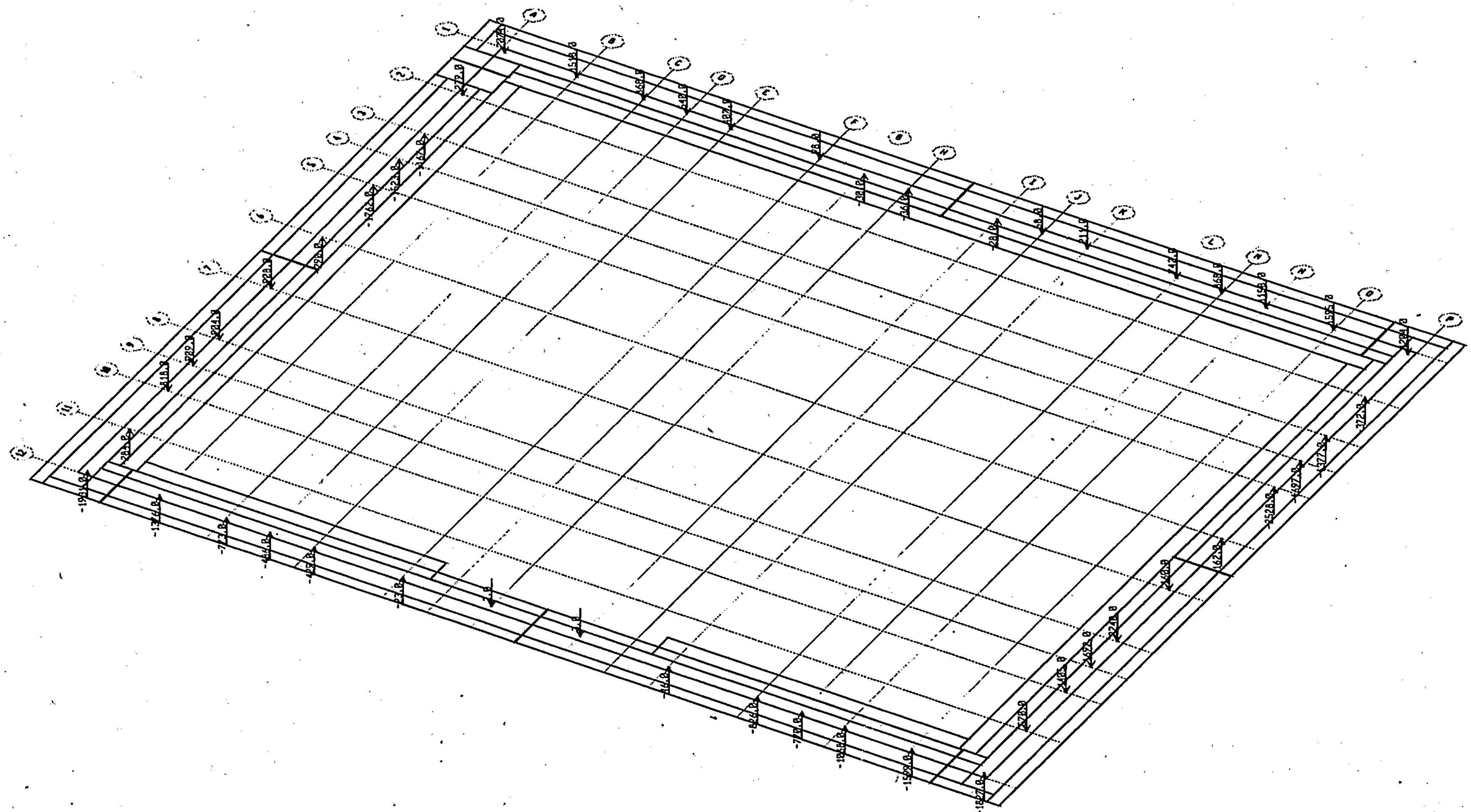
SAFE v8.0.7 - File: HOJ - April 18,2007 20:10 - Scale: Fit to Page
Point Loading (LL) - Kip-in Units

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:10 - Scale: Fit to Page
Point Loading (EX) - Kip-in Units

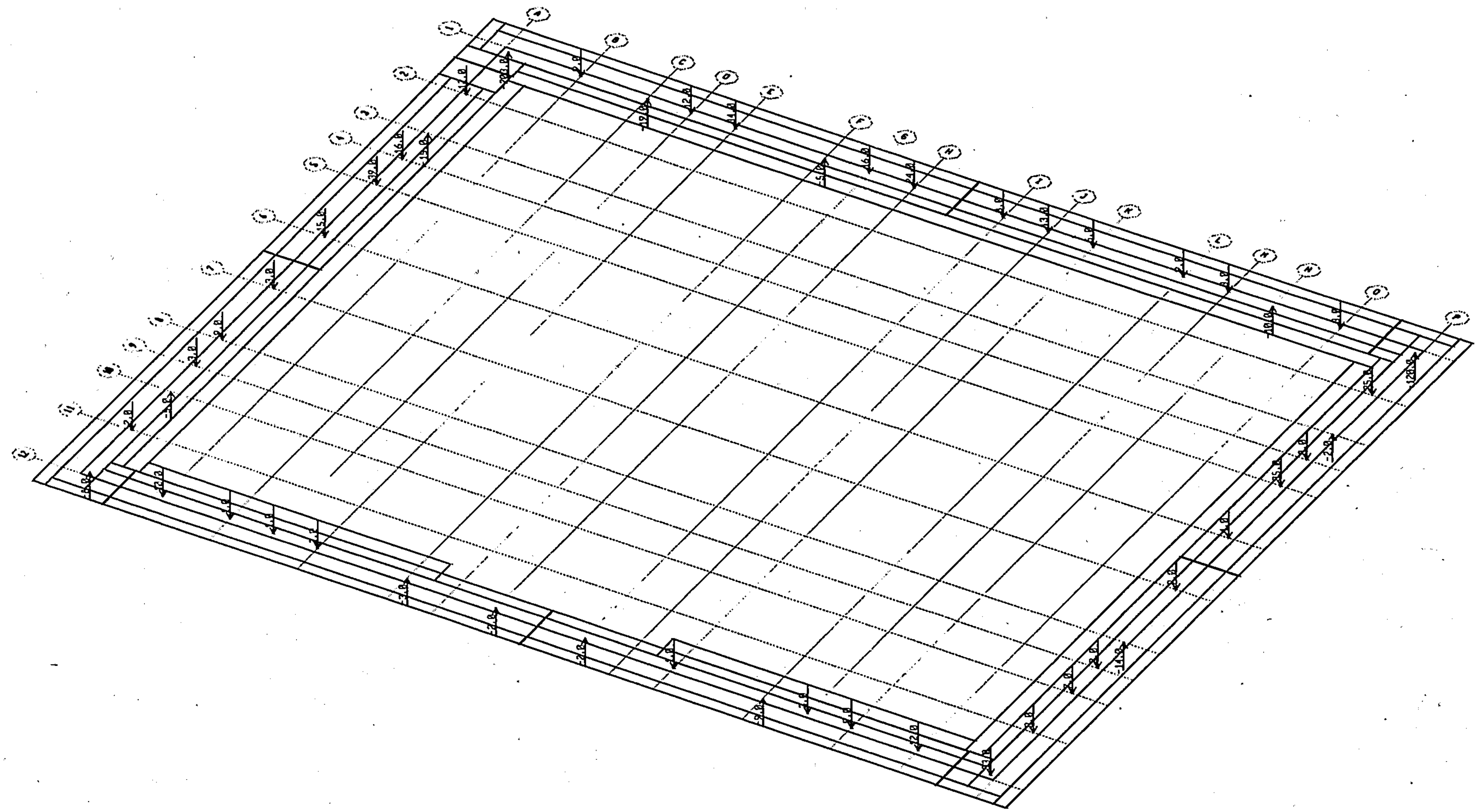
SAFE



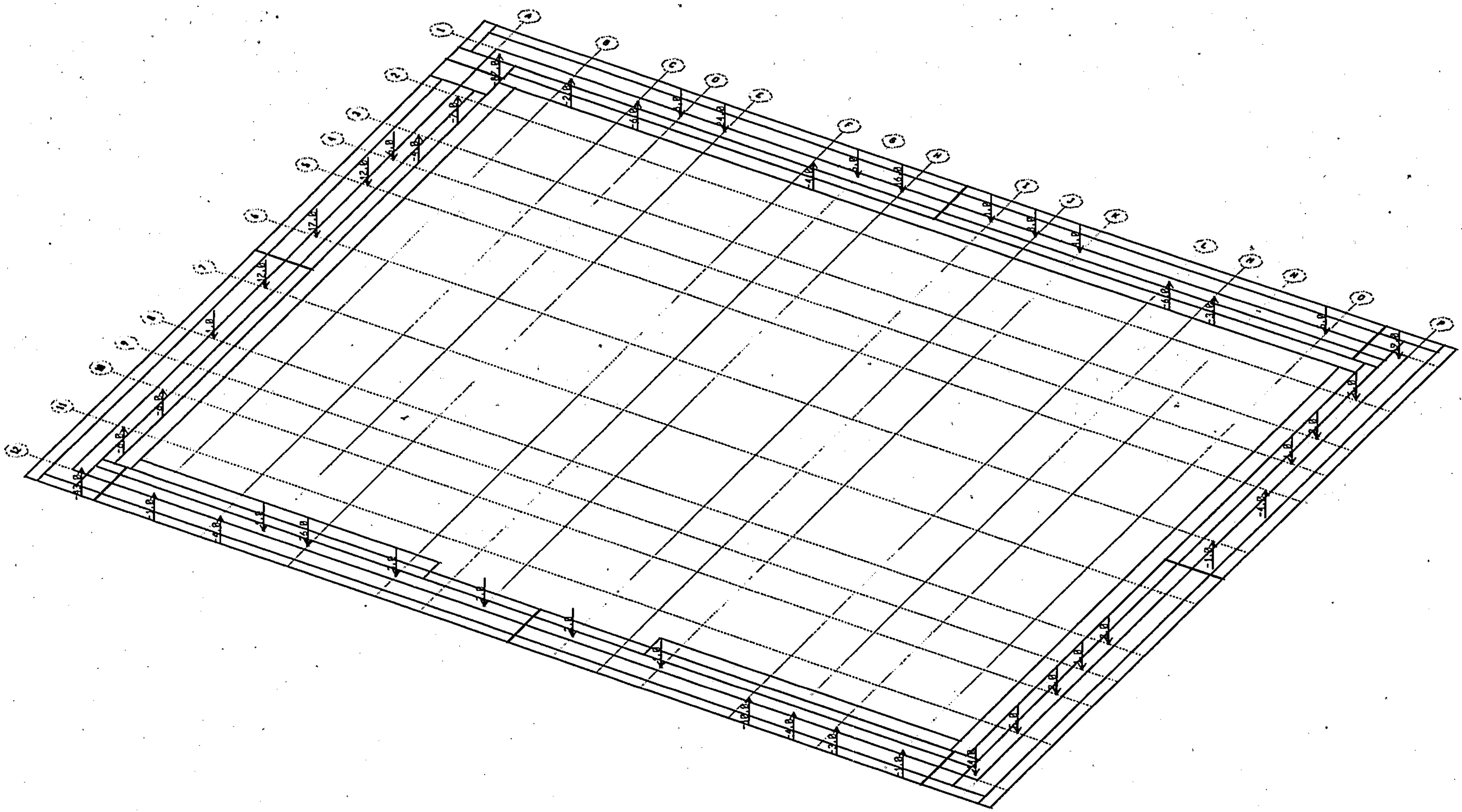
SAFE v8.0.7 - File: HOJ - April 18,2007 20:10 - Scale: Fit to Page
Point Loading (EY) - Kip-in Units

9

SAFE

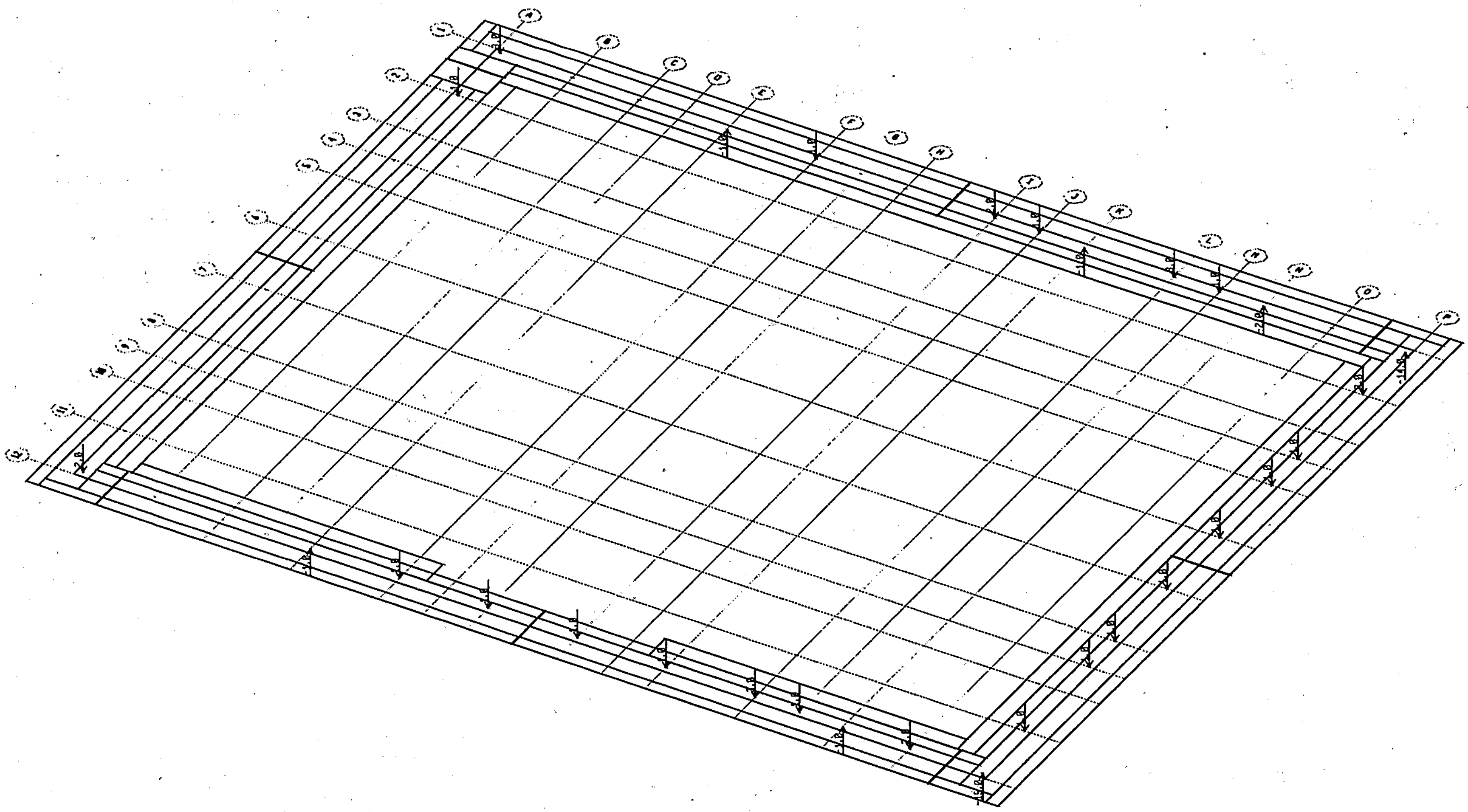


SAFE v8.0.7 - File: HOJ - April 18,2007 20:11 - Scale: Fit to Page
Point Loading (SOIL) - Kip-in Units



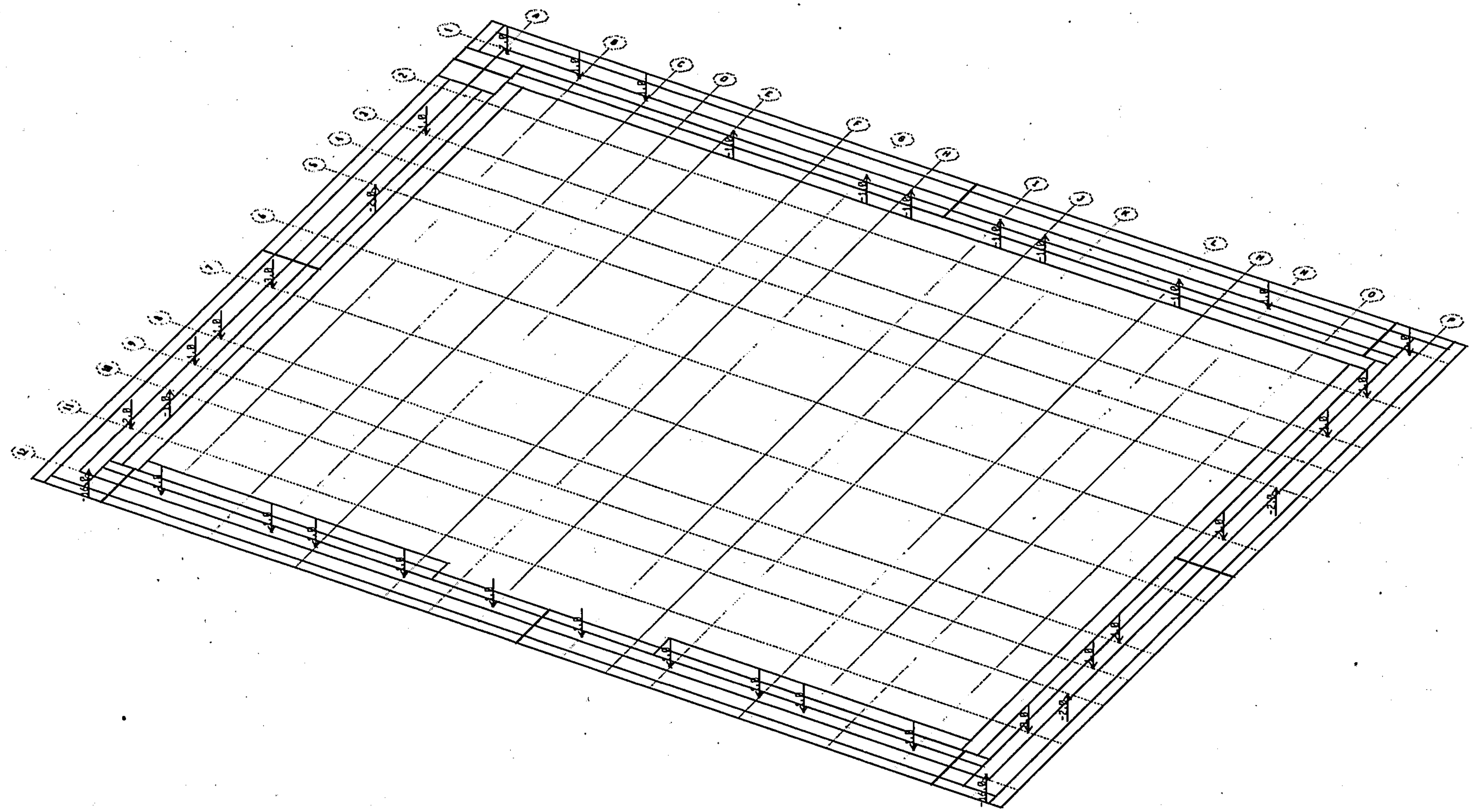
SAFE v8.0.7 - File: HOJ - April 18,2007 20:11 - Scale: Fit to Page
Point Loading (SOILX1) - Kip-in Units

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:11 - Scale: Fit to Page
Point Loading (SOILX2) - Kip-in Units

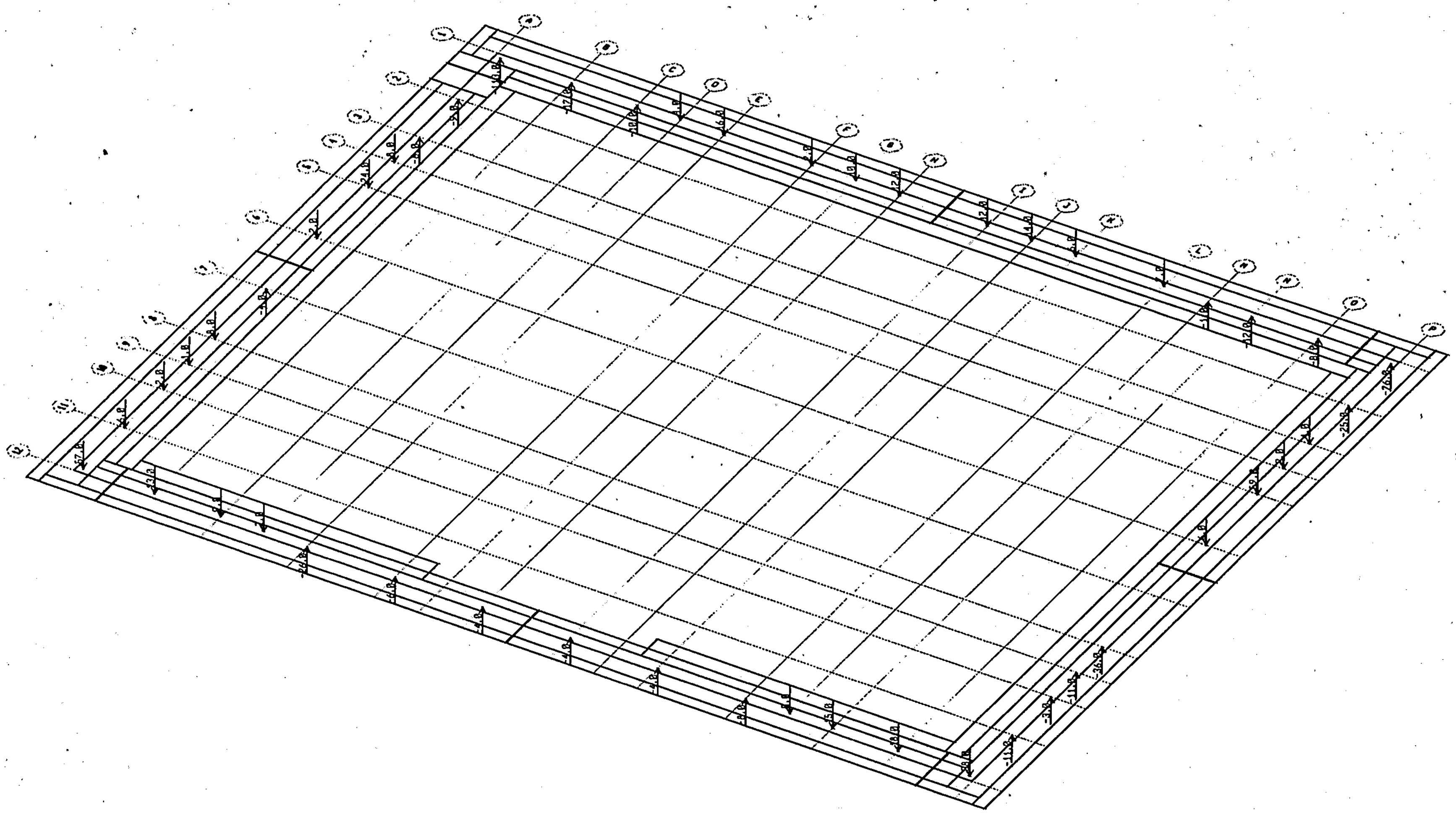
SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:11 - Scale: Fit to Page
Point Loading (SOILY1) - Kip-in Units

13

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:11 - Scale: Fit to Page
Point Loading (SOILY2) - Kip-in Units

E.2: Input

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 1
April 18,2007 20:06

A R E A   O B J E C T   D A T A

AREA	JNT-1	JNT-2	JNT-3	JNT-4	SECTION	SUPPORT	X-STRIP	Y-STRIP	AREA
1	109	110	111	112	S120	SOIL	NO	NO	118368.000
2	197	123	198	199	N36	SOIL	NO	NO	42912.000
3	119	200	201	202	N36	SOIL	NO	NO	42912.000
4	203	204	159	205	N36	SOIL	NO	NO	122112.000
5	113	114	115	116	S120	SOIL	NO	NO	118368.000
6	173	197	206	203	N36	SOIL	NO	NO	94464.000
7	117	115	118	119	N12E24	SOIL	NO	NO	32544.000
8	200	142	204	207	N36	SOIL	NO	NO	94464.000
9	120	121	114	113	S24	SOIL	NO	NO	44388.000
10	112	122	123	124	N12E24	SOIL	NO	NO	32544.000
11	125	126	110	109	S24	SOIL	NO	NO	44388.000
14	122	111	208	123	S24	SOIL	NO	NO	11844.000
15	116	117	119	209	S24	SOIL	NO	NO	11844.000
16	205	210	211	196	N12E24	SOIL	NO	NO	45756.000
17	181	211	212	213	S120	SOIL	NO	NO	134688.000
18	213	212	214	182	S24	SOIL	NO	NO	50508.000
21	127	128	129	130	S120	SOIL	NO	NO	118368.000
22	131	132	128	127	N12E24	SOIL	NO	NO	44388.000
23	130	129	133	134	S24	SOIL	NO	NO	44388.000
24	135	136	137	138	S120	SOIL	NO	NO	109344.000
25	139	140	141	137	S24	SOIL	NO	NO	42300.000
26	142	143	138	144	N12E24	SOIL	NO	NO	36252.000
27	145	139	136	146	S24	SOIL	NO	NO	6048.000
28	146	135	147	148	S120	SOIL	NO	NO	6912.000
29	148	147	143	149	N12E24	SOIL	NO	NO	2592.000
30	150	151	152	153	S120	SOIL	NO	NO	109344.000
31	151	154	155	156	S24	SOIL	NO	NO	42300.000
32	157	150	158	159	N12E24	SOIL	NO	NO	36252.000
33	160	152	156	161	S24	SOIL	NO	NO	6048.000
34	162	158	163	164	N12E24	SOIL	NO	NO	2592.000
35	164	163	153	160	S120	SOIL	NO	NO	6912.000
36	165	166	167	168	S120	SOIL	NO	NO	109344.000
37	169	170	168	171	S24	SOIL	NO	NO	42300.000
38	172	173	174	167	N12E24	SOIL	NO	NO	36252.000
39	166	175	176	177	S120	SOIL	NO	NO	6912.000
40	177	176	178	172	N12E24	SOIL	NO	NO	2592.000
41	170	179	175	165	S24	SOIL	NO	NO	6048.000
42	180	181	182	183	S24	SOIL	NO	NO	4752.000
43	184	185	186	187	S120	SOIL	NO	NO	86208.000
44	188	184	187	189	S24	SOIL	NO	NO	32328.000
45	185	190	191	186	N12E24	SOIL	NO	NO	32328.000
46	189	191	192	193	S24	SOIL	NO	NO	13776.000
47	194	195	196	180	S24	SOIL	NO	NO	10248.000
48	215	216	217	218			YES	NO	622080.000
49	219	220	221	222			YES	NO	622080.000
52	218	223	224	225			YES	NO	207152.543
54	226	227	228	219			YES	NO	207144.000
58	229	217	230	231			YES	NO	207144.000
59	232	233	220	234			YES	NO	207144.000
60	235	236	237	238			NO	YES	508032.000
61	239	240	241	242			NO	YES	508032.000
63	236	243	244	245			NO	YES	264168.000
64	246	239	247	248			NO	YES	264168.000
66	249	250	242	251			NO	YES	264168.000
68	252	253	254	237			NO	YES	264168.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 2
April 18,2007 20:06

L I N E   O B J E C T   D A T A

LINE	JNT-1	JNT-2	SECTION	SUPPORT	RELEASES	LENGTH
1	P12	P1	N18E36X7FT			2174.000
3	A12	101	N18E36X7FT			1021.000
5	102	P12	N18E36X7FT			1021.000
7	101	103				329.000
9	A1	104	N18E36X20F			1021.000
11	105	P1	N18E36X20F			1021.000
13	104	106	N18E36X20F			331.000
15	107	A1	N18E36X20F			1378.000
17	A12	107	N18E36X7FT			796.000
19	106	105	N18E36X20F			329.000
21	108	102				329.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 3
April 18,2007 20:06

P O I N T   O B J E C T   D A T A

POINT	GLOBAL-X	GLOBAL-Y	SUPPORTSPRING	RESTRAINT	RES DIM X	RES DIM Y
A1	0.000	2174.000				
A2	0.000	1942.000				
A3	0.000	1744.000				
A4	0.000	1615.000				
A5	0.000	1483.000				
A6	0.000	1219.000				
A7	0.000	955.000				
A8	0.000	691.000				
A9	0.000	559.000				
B1	232.000	2174.000				
C1	430.000	2174.000				
D1	559.000	2174.000				
E1	691.000	2174.000				
F1	955.000	2174.000				
G1	1087.000	2174.000				
H1	1219.000	2174.000				
I1	1483.000	2174.000				
J1	1615.000	2174.000				
K1	1747.000	2174.000				
L1	2011.000	2174.000				
M1	2143.000	2174.000				
N1	2272.000	2174.000				
O1	2470.000	2174.000				
P1	2702.000	2174.000				
P2	2702.000	1942.000				
P3	2702.000	1744.000				
P4	2702.000	1615.000				
P5	2702.000	1483.000				
P6	2702.000	1219.000				
P7	2702.000	955.000				
P8	2702.000	691.000				
P9	2702.000	559.000				
101	1021.000	0.000				
102	1681.000	0.000				
103	1350.000	0.000				
104	1021.000	2174.000				
105	1681.000	2174.000				
106	1352.000	2174.000				
107	0.000	796.000				
108	1352.000	0.000				
109	117.000	-53.000				
110	1350.000	-53.000				
111	1350.000	43.000				
112	117.000	43.000				
113	1352.000	-53.000				
114	2585.000	-53.000				
115	2585.000	43.000				
116	1352.000	43.000				
117	1681.000	43.000				
118	2585.000	79.000				
119	1681.000	79.000				
120	1352.000	-89.000				
121	2585.000	-89.000				
122	1021.000	43.000				
123	1021.000	79.000				
124	117.000	79.000				
125	117.000	-89.000				
126	1350.000	-89.000				
127	1352.000	2131.000				
128	2585.000	2131.000				
129	2585.000	2227.000				
130	1352.000	2227.000				
131	1352.000	2095.000				
132	2585.000	2095.000				
133	2585.000	2263.000				
134	1352.000	2263.000				
135	2659.000	-53.000				
136	2755.000	-53.000				
137	2755.000	1086.000				
138	2659.000	1086.000				
139	2755.000	-89.000				
140	2791.000	-89.000				
141	2791.000	1086.000				
142	2623.000	79.000				
143	2659.000	79.000				
144	2623.000	1086.000				
145	2587.000	-89.000				

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 4
April 18,2007 20:06

P O I N T   O B J E C T   D A T A

POINT	GLOBAL-X	GLOBAL-Y	SUPPORTSPRING	RESTRAINT	RES DIM X	RES DIM Y
146	2587.000	-53.000				
147	2659.000	43.000				
148	2587.000	43.000				
149	2587.000	79.000				
150	2659.000	1088.000				
151	2755.000	1088.000				
152	2755.000	2227.000				
153	2659.000	2227.000				
154	2791.000	1088.000				
155	2791.000	2263.000				
156	2755.000	2263.000				
157	2623.000	1088.000				
158	2659.000	2095.000				
159	2623.000	2095.000				
160	2587.000	2227.000				
161	2587.000	2263.000				
162	2587.000	2095.000				
163	2659.000	2131.000				
164	2587.000	2131.000				
165	-53.000	-53.000				
166	43.000	-53.000				
167	43.000	1086.000				
168	-53.000	1086.000				
169	-89.000	-89.000				
170	-53.000	-89.000				
171	-89.000	1086.000				
172	43.000	79.000				
173	79.000	79.000				
174	79.000	1086.000				
175	115.000	-53.000				
176	115.000	43.000				
177	43.000	43.000				
178	115.000	79.000				
179	115.000	-89.000				
180	-89.000	2131.000				
181	-53.000	2131.000				
182	-53.000	2263.000				
183	-89.000	2263.000				
184	-53.000	1088.000				
185	43.000	1088.000				
186	43.000	1986.000				
187	-53.000	1986.000				
188	-89.000	1088.000				
189	-89.000	1986.000				
190	79.000	1088.000				
191	79.000	1986.000				
192	79.000	2068.000				
193	-89.000	2068.000				
194	-89.000	2070.000				
195	79.000	2070.000				
196	79.000	2131.000				
197	127.000	79.000				
198	1021.000	127.000				
199	127.000	127.000				
200	2575.000	79.000				
201	2575.000	127.000				
202	1681.000	127.000				
203	79.000	2047.000				
204	2623.000	2047.000				
205	79.000	2095.000				
206	127.000	2047.000				
207	2575.000	2047.000				
208	1350.000	79.000				
209	1352.000	79.000				
210	1350.000	2095.000				
211	1350.000	2131.000				
212	1350.000	2227.000				
213	-53.000	2227.000				
214	1350.000	2263.000				
215	-89.000	-89.000				
216	2791.000	-89.000				
217	2791.000	127.000				
218	-89.000	127.000				
219	-89.000	2047.000				
220	2791.000	2047.000				
221	2791.000	2263.000				
222	-89.000	2263.000				

P O I N T   O B J E C T   D A T A

POINT	GLOBAL-X	GLOBAL-Y	SUPPORTSPRING	RESTRAINT	RES DIM X	RES DIM Y
223	127.000	126.921				
224	127.000	1086.000				
225	-89.000	1086.000				
226	-89.000	1088.000				
227	127.000	1088.000				
228	127.000	2047.000				
229	2575.000	127.000				
230	2791.000	1086.000				
231	2575.000	1086.000				
232	2575.000	1088.000				
233	2791.000	1088.000				
234	2575.000	2047.000				
235	-89.000	-89.000				
236	127.000	-89.000				
237	127.000	2263.000				
238	-89.000	2263.000				
239	2575.000	-89.000				
240	2791.000	-89.000				
241	2791.000	2263.000				
242	2575.000	2263.000				
243	1350.000	-89.000				
244	1350.000	127.000				
245	127.000	127.000				
246	1352.000	-89.000				
247	2575.000	127.000				
248	1352.000	127.000				
249	1352.000	2047.000				
250	2575.000	2047.000				
251	1352.000	2263.000				
252	127.000	2047.000				
253	1350.000	2047.000				
254	1350.000	2263.000				
A10	0.000	430.000				
A11	0.000	232.000				
A12	0.000	0.000				
B12	232.000	0.000				
C12	430.000	0.000				
D12	559.000	0.000				
E12	691.000	0.000				
F12	955.000	0.000				
H12	1219.000	0.000				
I12	1483.000	0.000				
K12	1747.000	0.000				
L12	2011.000	0.000				
M12	2143.000	0.000				
N12	2272.000	0.000				
O12	2470.000	0.000				
P10	2702.000	430.000				
P11	2702.000	232.000				
P12	2702.000	0.000				
WA1	17.000	2157.000				
WA2	17.000	1942.000				
WA3	17.000	1744.000				
WA4	17.000	1615.000				
WA5	17.000	1483.000				
WA6	17.000	1219.000				
WA7	17.000	955.000				
WA8	17.000	691.000				
WA9	17.000	559.000				
WB1	232.000	2157.000				
WC1	430.000	2157.000				
WD1	559.000	2157.000				
WE1	691.000	2157.000				
WF1	955.000	2157.000				
WG1	1087.000	2157.000				
WH1	1219.000	2157.000				
WI1	1483.000	2157.000				
WJ1	1615.000	2157.000				
WK1	1747.000	2157.000				
WL1	2011.000	2157.000				
WM1	2143.000	2157.000				
WN1	2272.000	2157.000				
WO1	2470.000	2157.000				
WP1	2685.000	2157.000				
WP2	2685.000	1942.000				
WP3	2685.000	1744.000				
WP4	2685.000	1615.000				

P O I N T   O B J E C T   D A T A

POINT	GLOBAL-X	GLOBAL-Y	SUPPORTSPRING	RESTRAINT	RES DIM X	RES DIM Y
WP5	2685.000	1483.000				
WP6	2685.000	1219.000				
WP7	2685.000	955.000				
WP8	2685.000	691.000				
WP9	2685.000	559.000				
WA10	17.000	430.000				
WA11	17.000	232.000				
WA12	17.000	17.000				
WB12	232.000	17.000				
WC12	430.000	17.000				
WD12	559.000	17.000				
WE12	691.000	17.000				
WF12	955.000	17.000				
WH12	1219.000	17.000				
WI12	1483.000	17.000				
WK12	1747.000	17.000				
WL12	2011.000	17.000				
WM12	2143.000	17.000				
WN12	2272.000	17.000				
WO12	2470.000	17.000				
WP10	2685.000	430.000				
WP11	2685.000	232.000				
WP12	2685.000	17.000				

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 7
April 18,2007 20:06

P O I N T   L O A D S   Load Case DL

POINT	VERTICAL	MOMENT-X	MOMENT-Y
A12	826.0	0.000	0.000
A11	937.0	0.000	0.000
A10	758.0	0.000	0.000
A9	601.0	0.000	0.000
A8	942.0	0.000	0.000
A7	1313.0	0.000	0.000
A6	1274.0	0.000	0.000
A5	959.0	0.000	0.000
A4	635.0	0.000	0.000
A3	800.0	0.000	0.000
A2	991.0	0.000	0.000
A1	885.0	0.000	0.000
P12	826.0	0.000	0.000
P11	937.0	0.000	0.000
P10	761.0	0.000	0.000
P9	604.0	0.000	0.000
P8	922.0	0.000	0.000
P7	1215.0	0.000	0.000
P6	1344.0	0.000	0.000
P5	911.0	0.000	0.000
P4	598.0	0.000	0.000
P3	758.0	0.000	0.000
P2	938.0	0.000	0.000
P1	855.0	0.000	0.000
B12	940.0	0.000	0.000
C12	855.0	0.000	0.000
D12	658.0	0.000	0.000
E12	994.0	0.000	0.000
F12	1185.0	0.000	0.000
H12	1205.0	0.000	0.000
I12	1205.0	0.000	0.000
K12	1191.0	0.000	0.000
L12	996.0	0.000	0.000
M12	658.0	0.000	0.000
N12	854.0	0.000	0.000
O12	940.0	0.000	0.000
B1	996.0	0.000	0.000
C1	897.0	0.000	0.000
D1	692.0	0.000	0.000
E1	1047.0	0.000	0.000
F1	968.0	0.000	0.000
G1	646.0	0.000	0.000
H1	930.0	0.000	0.000
I1	1031.0	0.000	0.000
J1	699.0	0.000	0.000
K1	971.0	0.000	0.000
L1	1047.0	0.000	0.000
M1	692.0	0.000	0.000
N1	898.0	0.000	0.000
O1	996.0	0.000	0.000
WA12	654.0	0.000	0.000
WA11	564.0	0.000	0.000
WA10	389.0	0.000	0.000
WA9	262.0	0.000	0.000
WA8	208.0	0.000	0.000
WA7	122.0	0.000	0.000
WA6	103.0	0.000	0.000
WA5	255.0	0.000	0.000
WA4	299.0	0.000	0.000
WA3	395.0	0.000	0.000
WA2	496.0	0.000	0.000
WA1	549.0	0.000	0.000
WP12	707.0	0.000	0.000
WP11	601.0	0.000	0.000
WP10	402.0	0.000	0.000
WP9	292.0	0.000	0.000
WP8	261.0	0.000	0.000
WP7	12.0	0.000	0.000
WP6	13.0	0.000	0.000
WP5	316.0	0.000	0.000
WP4	316.0	0.000	0.000
WP3	436.0	0.000	0.000
WP2	480.0	0.000	0.000
WP1	533.0	0.000	0.000
WB12	592.0	0.000	0.000
WC12	434.0	0.000	0.000
WD12	327.0	0.000	0.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 8
April 18,2007 20:06

P O I N T   L O A D S   Load Case DL

POINT	VERTICAL	MOMENT-X	MOMENT-Y
WE12	308.0	0.000	0.000
WF12	14.0	0.000	0.000
WH12	-1.0	0.000	0.000
WI12	-1.0	0.000	0.000
WK12	12.0	0.000	0.000
WL12	286.0	0.000	0.000
WM12	313.0	0.000	0.000
WN12	428.0	0.000	0.000
WO12	608.0	0.000	0.000
WB1	499.0	0.000	0.000
WC1	396.0	0.000	0.000
WD1	303.0	0.000	0.000
WE1	263.0	0.000	0.000
WF1	63.0	0.000	0.000
WG1	6.0	0.000	0.000
WH1	-5.0	0.000	0.000
WI1	-6.0	0.000	0.000
WJ1	9.0	0.000	0.000
WK1	61.0	0.000	0.000
WL1	244.0	0.000	0.000
WM1	305.0	0.000	0.000
WN1	432.0	0.000	0.000
WO1	609.0	0.000	0.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 9
April 18,2007 20:06

P O I N T L O A D S Load Case LL

POINT	VERTICAL	MOMENT-X	MOMENT-Y
A12	34.0	0.000	0.000
A11	53.0	0.000	0.000
A10	44.0	0.000	0.000
A9	37.0	0.000	0.000
A8	51.0	0.000	0.000
A7	72.0	0.000	0.000
A6	69.0	0.000	0.000
A5	52.0	0.000	0.000
A4	37.0	0.000	0.000
A3	47.0	0.000	0.000
A2	56.0	0.000	0.000
A1	34.0	0.000	0.000
P12	34.0	0.000	0.000
P11	53.0	0.000	0.000
P10	45.0	0.000	0.000
P9	37.0	0.000	0.000
P8	53.0	0.000	0.000
P7	68.0	0.000	0.000
P6	79.0	0.000	0.000
P5	52.0	0.000	0.000
P4	35.0	0.000	0.000
P3	44.0	0.000	0.000
P2	53.0	0.000	0.000
P1	34.0	0.000	0.000
B12	54.0	0.000	0.000
C12	51.0	0.000	0.000
D12	41.0	0.000	0.000
E12	61.0	0.000	0.000
F12	68.0	0.000	0.000
H12	74.0	0.000	0.000
I12	74.0	0.000	0.000
K12	69.0	0.000	0.000
L12	61.0	0.000	0.000
M12	41.0	0.000	0.000
N12	51.0	0.000	0.000
O12	54.0	0.000	0.000
B1	54.0	0.000	0.000
C1	51.0	0.000	0.000
D1	41.0	0.000	0.000
E1	61.0	0.000	0.000
F1	53.0	0.000	0.000
G1	36.0	0.000	0.000
H1	53.0	0.000	0.000
I1	61.0	0.000	0.000
J1	42.0	0.000	0.000
K1	54.0	0.000	0.000
L1	61.0	0.000	0.000
M1	41.0	0.000	0.000
N1	51.0	0.000	0.000
O1	54.0	0.000	0.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 10
April 18,2007 20:06

P O I N T L O A D S Load Case EX

POINT	VERTICAL	MOMENT-X	MOMENT-Y
WA12	-1831.0	0.000	0.000
WA11	-1548.0	0.000	0.000
WA10	-959.0	0.000	0.000
WA9	-567.0	0.000	0.000
WA8	-403.0	0.000	0.000
WA7	-254.0	0.000	0.000
WA6	-156.0	0.000	0.000
WA5	-452.0	0.000	0.000
WA4	-608.0	0.000	0.000
WA3	-963.0	0.000	0.000
WA2	-1632.0	0.000	0.000
WA1	-2215.0	0.000	0.000
WP12	1873.0	0.000	0.000
WP11	1653.0	0.000	0.000
WP10	989.0	0.000	0.000
WP9	701.0	0.000	0.000
WP8	691.0	0.000	0.000
WP7	43.0	0.000	0.000
WP6	26.0	0.000	0.000
WP5	537.0	0.000	0.000
WP4	567.0	0.000	0.000
WP3	938.0	0.000	0.000
WP2	1159.0	0.000	0.000
WP1	2054.0	0.000	0.000
WB12	327.0	0.000	0.000
WC12	1367.0	0.000	0.000
WD12	1742.0	0.000	0.000
WE12	2348.0	0.000	0.000
WF12	137.0	0.000	0.000
WH12	-8.0	0.000	0.000
WI12	8.0	0.000	0.000
WK12	-136.0	0.000	0.000
WL12	-2339.0	0.000	0.000
WM12	-1724.0	0.000	0.000
WN12	-1347.0	0.000	0.000
WO12	-320.0	0.000	0.000
WB1	-248.0	0.000	0.000
WC1	1279.0	0.000	0.000
WD1	1704.0	0.000	0.000
WE1	2066.0	0.000	0.000
WF1	629.0	0.000	0.000
WG1	133.0	0.000	0.000
WH1	60.0	0.000	0.000
WI1	-46.0	0.000	0.000
WJ1	-204.0	0.000	0.000
WK1	-675.0	0.000	0.000
WL1	-1891.0	0.000	0.000
WM1	-1599.0	0.000	0.000
WN1	-1133.0	0.000	0.000
WO1	578.0	0.000	0.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 11
April 18,2007 20:06

P O I N T L O A D S Load Case EY

POINT	VERTICAL	MOMENT-X	MOMENT-Y
WA12	-1931.0	0.000	0.000
WA11	-284.0	0.000	0.000
WA10	818.0	0.000	0.000
WA9	909.0	0.000	0.000
WA8	904.0	0.000	0.000
WA7	908.0	0.000	0.000
WA6	-290.0	0.000	0.000
WA5	-1762.0	0.000	0.000
WA4	-1523.0	0.000	0.000
WA3	-1167.0	0.000	0.000
WA2	279.0	0.000	0.000
WA1	2074.0	0.000	0.000
WP12	-1827.0	0.000	0.000
WP11	570.0	0.000	0.000
WP10	1405.0	0.000	0.000
WP9	1692.0	0.000	0.000
WP8	2240.0	0.000	0.000
WP7	160.0	0.000	0.000
WP6	-162.0	0.000	0.000
WP5	-2528.0	0.000	0.000
WP4	-1697.0	0.000	0.000
WP3	-1377.0	0.000	0.000
WP2	-372.0	0.000	0.000
WP1	1204.0	0.000	0.000
WB12	-1376.0	0.000	0.000
WC12	-773.0	0.000	0.000
WD12	-486.0	0.000	0.000
WE12	-429.0	0.000	0.000
WF12	-23.0	0.000	0.000
WH12	2.0	0.000	0.000
WI12	3.0	0.000	0.000
WK12	-46.0	0.000	0.000
WL12	-826.0	0.000	0.000
WM12	-770.0	0.000	0.000
WN12	-1068.0	0.000	0.000
WO12	-1599.0	0.000	0.000
WB1	1518.0	0.000	0.000
WC1	868.0	0.000	0.000
WD1	540.0	0.000	0.000
WE1	407.0	0.000	0.000
WF1	98.0	0.000	0.000
WG1	-30.0	0.000	0.000
WH1	-36.0	0.000	0.000
WI1	-28.0	0.000	0.000
WJ1	58.0	0.000	0.000
WK1	211.0	0.000	0.000
WL1	742.0	0.000	0.000
WM1	866.0	0.000	0.000
WN1	1158.0	0.000	0.000
WO1	1595.0	0.000	0.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 12
April 18,2007 20:06

P O I N T L O A D S Load Case SOIL

POINT	VERTICAL	MOMENT-X	MOMENT-Y
WA12	-8.0	0.000	0.000
WA11	2.0	0.000	0.000
WA10	-5.0	0.000	0.000
WA9	3.0	0.000	0.000
WA8	9.0	0.000	0.000
WA7	3.0	0.000	0.000
WA6	15.0	0.000	0.000
WA5	39.0	0.000	0.000
WA4	16.0	0.000	0.000
WA3	-15.0	0.000	0.000
WA2	12.0	0.000	0.000
WA1	-203.0	0.000	0.000
WP12	33.0	0.000	0.000
WP11	3.0	0.000	0.000
WP10	7.0	0.000	0.000
WP9	2.0	0.000	0.000
WP8	-14.0	0.000	0.000
WP7	9.0	0.000	0.000
WP6	4.0	0.000	0.000
WP5	35.0	0.000	0.000
WP4	8.0	0.000	0.000
WP3	-2.0	0.000	0.000
WP2	25.0	0.000	0.000
WP1	-120.0	0.000	0.000
WB12	10.0	0.000	0.000
WC12	1.0	0.000	0.000
WD12	1.0	0.000	0.000
WE12	2.0	0.000	0.000
WF12	-3.0	0.000	0.000
WH12	-2.0	0.000	0.000
WI12	-2.0	0.000	0.000
WK12	1.0	0.000	0.000
WL12	-9.0	0.000	0.000
WM12	3.0	0.000	0.000
WN12	9.0	0.000	0.000
WO12	12.0	0.000	0.000
WB1	9.0	0.000	0.000
WC1	-19.0	0.000	0.000
WD1	12.0	0.000	0.000
WE1	34.0	0.000	0.000
WF1	-5.0	0.000	0.000
WG1	16.0	0.000	0.000
WH1	24.0	0.000	0.000
WI1	8.0	0.000	0.000
WJ1	13.0	0.000	0.000
WK1	6.0	0.000	0.000
WL1	9.0	0.000	0.000
WM1	3.0	0.000	0.000
WN1	-10.0	0.000	0.000
WO1	3.0	0.000	0.000

P O I N T L O A D S Load Case SOILX1

POINT	VERTICAL	MOMENT-X	MOMENT-Y
WA12	-43.0	0.000	0.000
WA11	-6.0	0.000	0.000
WA10	-6.0	0.000	0.000
WA8	1.0	0.000	0.000
WA7	12.0	0.000	0.000
WA6	17.0	0.000	0.000
WA5	12.0	0.000	0.000
WA4	6.0	0.000	0.000
WA3	-4.0	0.000	0.000
WA2	-7.0	0.000	0.000
WA1	-87.0	0.000	0.000
WP12	14.0	0.000	0.000
WP11	5.0	0.000	0.000
WP10	2.0	0.000	0.000
WP9	1.0	0.000	0.000
WP8	2.0	0.000	0.000
WP6	-1.0	0.000	0.000
WP5	-4.0	0.000	0.000
WP4	1.0	0.000	0.000
WP3	2.0	0.000	0.000
WP2	5.0	0.000	0.000
WP1	19.0	0.000	0.000
WB12	-1.0	0.000	0.000
WC12	-4.0	0.000	0.000
WD12	1.0	0.000	0.000
WE12	26.0	0.000	0.000
WF12	3.0	0.000	0.000
WH12	2.0	0.000	0.000
WI12	2.0	0.000	0.000
WK12	1.0	0.000	0.000
WL12	-10.0	0.000	0.000
WM12	-4.0	0.000	0.000
WN12	-3.0	0.000	0.000
WO12	-1.0	0.000	0.000
WB1	-2.0	0.000	0.000
WC1	-6.0	0.000	0.000
WD1	8.0	0.000	0.000
WE1	24.0	0.000	0.000
WF1	-4.0	0.000	0.000
WG1	6.0	0.000	0.000
WH1	16.0	0.000	0.000
WI1	1.0	0.000	0.000
WJ1	3.0	0.000	0.000
WK1	4.0	0.000	0.000
WL1	-6.0	0.000	0.000
WM1	-3.0	0.000	0.000
WO1	5.0	0.000	0.000

P O I N T L O A D S Load Case SOILX2

POINT	VERTICAL	MOMENT-X	MOMENT-Y
WA12	2.0	0.000	0.000
WA2	1.0	0.000	0.000
WA1	3.0	0.000	0.000
WP12	-15.0	0.000	0.000
WP11	1.0	0.000	0.000
WP9	1.0	0.000	0.000
WP8	1.0	0.000	0.000
WP7	1.0	0.000	0.000
WP6	1.0	0.000	0.000
WP5	1.0	0.000	0.000
WP4	1.0	0.000	0.000
WP2	2.0	0.000	0.000
WP1	-14.0	0.000	0.000
WE12	-1.0	0.000	0.000
WF12	1.0	0.000	0.000
WH12	1.0	0.000	0.000
WI12	1.0	0.000	0.000
WK12	1.0	0.000	0.000
WL12	3.0	0.000	0.000
WM12	1.0	0.000	0.000
WN12	-1.0	0.000	0.000
WO12	2.0	0.000	0.000
WE1	-1.0	0.000	0.000
WF1	1.0	0.000	0.000
WI1	2.0	0.000	0.000
WJ1	1.0	0.000	0.000
WK1	-1.0	0.000	0.000
WL1	3.0	0.000	0.000
WM1	1.0	0.000	0.000
WN1	-2.0	0.000	0.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 15
April 18,2007 20:06

P O I N T L O A D S Load Case SOILY1

POINT	VERTICAL	MOMENT-X	MOMENT-Y
WA12	-16.0	0.000	0.000
WA11	2.0	0.000	0.000
WA10	-1.0	0.000	0.000
WA9	1.0	0.000	0.000
WA8	1.0	0.000	0.000
WA7	3.0	0.000	0.000
WA5	-2.0	0.000	0.000
WA3	1.0	0.000	0.000
WA1	7.0	0.000	0.000
WP12	-16.0	0.000	0.000
WP11	3.0	0.000	0.000
WP10	-2.0	0.000	0.000
WP9	1.0	0.000	0.000
WP8	4.0	0.000	0.000
WP6	1.0	0.000	0.000
WP5	-2.0	0.000	0.000
WP3	1.0	0.000	0.000
WP2	1.0	0.000	0.000
WP1	5.0	0.000	0.000
WB12	1.0	0.000	0.000
WD12	1.0	0.000	0.000
WE12	1.0	0.000	0.000
WF12	1.0	0.000	0.000
WH12	1.0	0.000	0.000
WI12	1.0	0.000	0.000
WK12	1.0	0.000	0.000
WL12	1.0	0.000	0.000
WM12	1.0	0.000	0.000
WO12	1.0	0.000	0.000
WB1	1.0	0.000	0.000
WC1	1.0	0.000	0.000
WE1	-1.0	0.000	0.000
WG1	-1.0	0.000	0.000
WH1	-1.0	0.000	0.000
WI1	-1.0	0.000	0.000
WJ1	-1.0	0.000	0.000
WL1	-1.0	0.000	0.000
WN1	1.0	0.000	0.000

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 16
April 18,2007 20:06

P O I N T L O A D S Load Case SOILY2

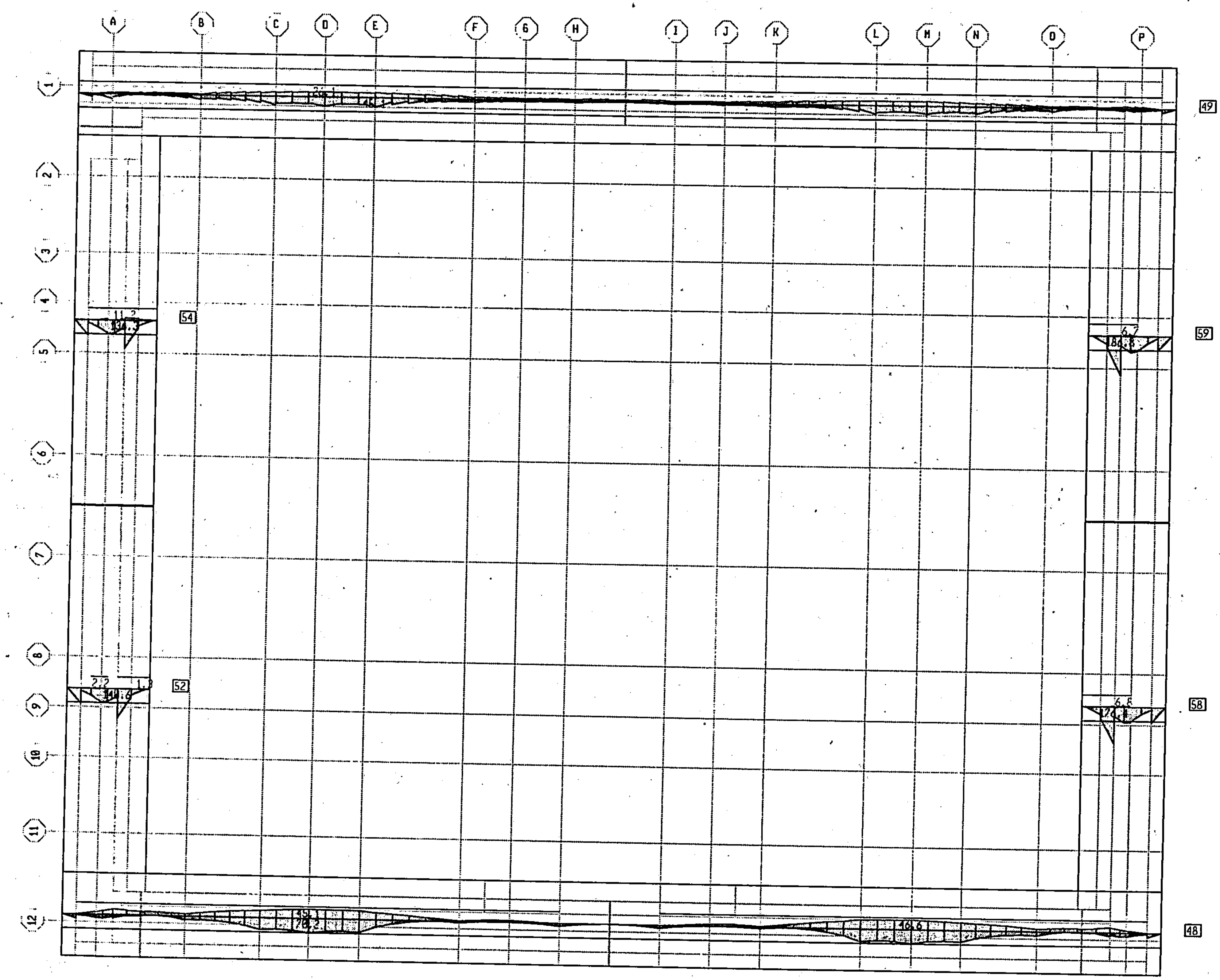
POINT	VERTICAL	MOMENT-X	MOMENT-Y
WA12	57.0	0.000	0.000
WA11	6.0	0.000	0.000
WA10	2.0	0.000	0.000
WA9	1.0	0.000	0.000
WA8	8.0	0.000	0.000
WA7	-4.0	0.000	0.000
WA6	2.0	0.000	0.000
WA5	24.0	0.000	0.000
WA4	8.0	0.000	0.000
WA3	-8.0	0.000	0.000
WA2	-9.0	0.000	0.000
WA1	-113.0	0.000	0.000
WP12	58.0	0.000	0.000
WP11	-11.0	0.000	0.000
WP10	-3.0	0.000	0.000
WP9	-11.0	0.000	0.000
WP8	-36.0	0.000	0.000
WP6	6.0	0.000	0.000
WP5	59.0	0.000	0.000
WP4	2.0	0.000	0.000
WP3	4.0	0.000	0.000
WP2	-25.0	0.000	0.000
WP1	-76.0	0.000	0.000
WB12	13.0	0.000	0.000
WC12	9.0	0.000	0.000
WD12	2.0	0.000	0.000
WE12	-26.0	0.000	0.000
WF12	-6.0	0.000	0.000
WH12	-4.0	0.000	0.000
WI12	-4.0	0.000	0.000
WK12	-4.0	0.000	0.000
WL12	-8.0	0.000	0.000
WM12	8.0	0.000	0.000
WN12	15.0	0.000	0.000
WO12	18.0	0.000	0.000
WB1	-17.0	0.000	0.000
WC1	-10.0	0.000	0.000
WD1	4.0	0.000	0.000
WE1	16.0	0.000	0.000
WF1	2.0	0.000	0.000
WG1	10.0	0.000	0.000
WH1	12.0	0.000	0.000
WI1	12.0	0.000	0.000
WJ1	14.0	0.000	0.000
WK1	6.0	0.000	0.000
WL1	7.0	0.000	0.000
WM1	-1.0	0.000	0.000
WN1	-12.0	0.000	0.000
WO1	-8.0	0.000	0.000

E.3: Slab Strip Design Moments and Reinforcing

Hall of Justice
SAFE Design Load Combinations

	Combo		DL	LL	EX	EY	SOIL	SOILX1	SOILX2	SOILY1	SOILY2
Service Loads											
D+L	S1	A	1	1	0	0	1	0	0	0	0
.75(D+L+.8E/1.4+H)	S2	A	0.75	0.75	0.43	0	0.75	1	0	0	0
	S2	B	0.75	0.75	-0.43	0	0.75	0	1	0	0
	S2	C	0.75	0.75	0	0.43	0.75	0	0	1	0
	S2	D	0.75	0.75	0	-0.43	0.75	0	0	0	1
.75(.9D+.8E/1.4+H)	S3	A	0.75	0	0.43	0	0.75	1	0	0	0
	S3	B	0.75	0	-0.43	0	0.75	0	1	0	0
	S3	C	0.75	0	0	0.43	0.75	0	0	1	0
	S3	D	0.75	0	0	-0.43	0.75	0	0	0	1
Factored Loads											
1.4D+1.7L	F1	A	1.4	1.7	0	0	1.6	0	0	0	0
1.4D+.5L+.8E+1.6H	F2	A	1.4	0.5	0.8	0	1.6	1.6	0	0	0
	F2	B	1.4	0.5	-0.8	0	1.6	0	1.6	0	0
	F2	C	1.4	0.5	0	0.8	1.6	0	0	1.6	0
	F2	D	1.4	0.5	0	-0.8	1.6	0	0	0	1.6
.9D+.8E+1.6H	F3	A	0.9	0	0.8	0	1.6	1.6	0	0	0
	F3	B	0.9	0	-0.8	0	1.6	0	1.6	0	0
	F3	C	0.9	0	0	0.8	1.6	0	0	1.6	0
	F3	D	0.9	0	0	-0.8	1.6	0	0	0	1.6

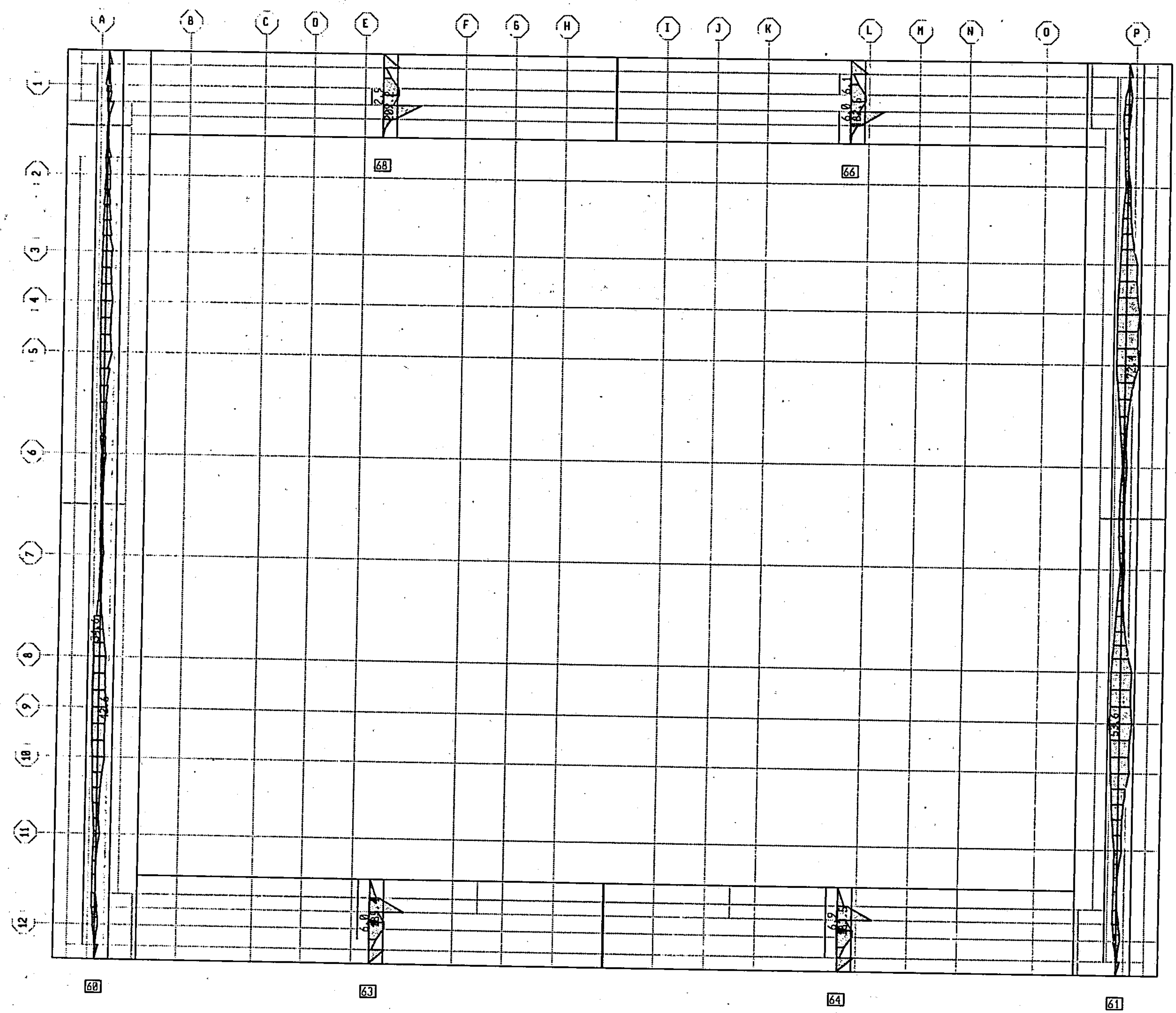
Using a .8 load factor for seismic load to scale dynamic force to 80% of static base shear.



SAFE v8.0.7 - File: HOJ - April 18,2007 20:09 - Scale: Fit to Page
X-Strip Reinforcement (Sq-in) - Kip-in Units

2

SAFE



3

X - S T R I P   R E I N F O R C I N G   (for whole strip in Sq-in)

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-REBAR LEFT OF X	TOP-REBAR RIGHT OF X	BOT-REBAR LEFT OF X	BOT-REBAR RIGHT OF X
49	216.000	-89.000		0.2		0.2
49	216.000	-53.000	0.6	0.5	16.5	5.2
49	216.000	-26.500	2.2	2.2	10.2	10.1
49	216.000	0.000	7.8	5.6	25.6	16.4
49	216.000	17.000	7.1	7.5	10.8	12.7
49	216.000	43.000	6.5	5.5	2.3	5.9
49	216.000	79.000	8.3	3.9	2.9	2.8
49	216.000	115.000	10.9	8.0	6.2	3.7
49	216.000	117.000	8.3	6.7	4.4	3.0
49	216.000	127.000	8.7	6.6	4.8	2.5
49	216.000	162.000	9.2	7.4	9.4	5.0
49	216.000	197.000	8.2	6.7	15.5	9.2
49	216.000	232.000	6.3	4.0	22.3	16.3
49	216.000	271.600	13.8	8.3	18.6	13.6
49	216.000	311.200	17.1	11.1	20.5	13.9
49	216.000	350.800	19.1	14.1	24.7	16.4
49	216.000	390.400	20.5	16.3	31.0	20.9
49	216.000	430.000	21.7	17.9	40.7	33.9
49	216.000	473.000	23.4	20.0	32.9	29.9
49	216.000	516.000	24.6	22.1	34.9	31.0
49	216.000	559.000	26.1	25.1	42.4	42.1
49	216.000	603.000	24.0	24.5	31.5	34.8
49	216.000	647.000	23.2	24.5	31.0	33.8
49	216.000	691.000	23.1	25.7	36.8	45.1
49	216.000	735.000	20.3	23.4	19.9	31.5
49	216.000	779.000	18.9	21.9	14.4	22.9
49	216.000	823.000	17.0	20.9	11.2	17.5
49	216.000	867.000	14.4	19.3	9.2	13.8
49	216.000	911.000	11.1	16.5	9.2	11.9
49	216.000	955.000	7.7	11.3	12.1	15.5
49	216.000	988.000	8.7	11.2	6.9	10.9
49	216.000	1021.000	8.7	10.9	5.2	8.3
49	216.000	1054.000	8.3	9.9	5.4	6.9
49	216.000	1087.000	6.7	6.8	6.7	7.7
49	216.000	1131.000	10.2	8.7	4.6	5.0
49	216.000	1175.000	9.8	9.4	5.1	4.9
49	216.000	1219.000	7.1	5.6	7.0	8.2
49	216.000	1262.667	12.3	8.7	3.3	4.9
49	216.000	1306.333	12.0	7.5	2.1	2.5
49	216.000	1350.000	7.6	0.8	1.5	0.2
49	216.000	1352.000	0.9	8.4	0.2	1.5
49	216.000	1395.667	7.5	12.3	2.6	2.1
49	216.000	1439.333	7.6	12.0	5.0	3.4
49	216.000	1483.000	4.4	6.1	8.9	7.6
49	216.000	1527.000	7.7	8.6	4.6	5.2
49	216.000	1571.000	7.9	8.7	5.3	4.5
49	216.000	1615.000	7.5	5.2	9.6	6.6
49	216.000	1648.000	10.3	7.1	7.9	5.4
49	216.000	1681.000	11.4	8.6	8.9	6.0
49	216.000	1714.000	11.7	9.2	11.3	7.6
49	216.000	1747.000	11.9	8.3	15.9	13.6
49	216.000	1791.000	16.8	11.6	11.3	9.8
49	216.000	1835.000	19.3	14.8	12.4	9.0
49	216.000	1879.000	20.7	17.3	15.5	10.2
49	216.000	1923.000	21.4	19.0	20.1	12.9
49	216.000	1967.000	22.5	20.2	27.6	17.5
49	216.000	2011.000	24.2	22.3	40.0	33.0
49	216.000	2055.000	23.0	22.3	29.2	27.3
49	216.000	2099.000	22.7	22.9	30.1	27.5
49	216.000	2143.000	22.8	24.5	36.8	37.6
49	216.000	2186.000	19.7	22.9	26.1	30.2
49	216.000	2229.000	17.3	21.3	24.8	28.2
49	216.000	2272.000	14.6	18.8	28.5	35.5
49	216.000	2311.600	13.5	17.9	16.6	25.9
49	216.000	2351.200	11.8	16.6	12.1	19.4
49	216.000	2390.800	9.2	14.8	9.4	15.0
49	216.000	2430.400	6.3	11.4	9.3	12.3
49	216.000	2470.000	6.3	6.9	16.0	19.3
49	216.000	2505.000	8.4	7.7	5.3	10.2
49	216.000	2540.000	10.0	8.6	2.4	5.2
49	216.000	2575.000	9.1	6.5	1.0	2.1
49	216.000	2585.000	7.1	1.2	2.2	0.0
49	216.000	2587.000	0.9	5.7	7.881E-02	3.0
49	216.000	2623.000	5.6	6.5	4.9	2.7
49	216.000	2659.000	10.1	11.3	11.0	3.1
49	216.000	2685.000	7.1	11.3	11.8	8.6

X - S T R I P   R E I N F O R C I N G   (for whole strip in Sq-in)

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-REBAR LEFT OF X	TOP-REBAR RIGHT OF X	BOT-REBAR LEFT OF X	BOT-REBAR RIGHT OF X
49	216.000	2702.000	6.4	10.6	9.1	10.3
49	216.000	2728.500	5.2	5.2	5.7	5.7
49	216.000	2755.000	0.0		4.1	18.6
49	216.000	2791.000	0.0		0.0	
59	959.000	2575.000		0.0		0.0
59	959.000	2585.000	0.7	0.7	1.5	1.5
59	959.000	2587.000	0.8	0.8	2.2	2.2
59	959.000	2623.000	1.2	1.8	39.4	56.5
59	959.000	2659.000	4.6	0.0	186.8	46.9
59	959.000	2685.000	6.6	6.7	77.2	77.2
59	959.000	2702.000	0.0	0.0	73.2	72.7
59	959.000	2728.500			36.6	36.6
59	959.000	2755.000			10.7	70.0
59	959.000	2791.000	0.0		0.0	
54	959.000	-89.000		0.0		0.0
54	959.000	-53.000	0.0	7.798E-02	73.9	13.8
54	959.000	-26.500	0.7	0.7	33.9	34.0
54	959.000	0.000	7.1	0.0	65.2	66.2
54	959.000	17.000	0.5	0.4	63.2	63.2
54	959.000	43.000	3.7	11.2	35.3	136.3
54	959.000	79.000	8.9	5.0	37.1	26.0
54	959.000	115.000	2.4	2.3	1.5	1.5
54	959.000	117.000	2.1	2.1	1.0	1.0
54	959.000	127.000	0.8		0.0	
58	959.000	2575.000		0.8		0.0
58	959.000	2585.000	1.1	1.0	1.4	1.4
58	959.000	2587.000	1.1	1.2	2.0	1.9
58	959.000	2623.000	1.6	2.2	37.1	53.3
58	959.000	2659.000	4.7	0.0	176.4	44.3
58	959.000	2685.000	6.7	6.8	74.8	74.8
58	959.000	2702.000	0.0	0.0	71.9	69.3
58	959.000	2728.500	0.0	0.0	35.0	35.0
58	959.000	2755.000	0.0		11.2	73.5
58	959.000	2791.000	0.0		0.0	
52	959.000	-89.000		0.0		0.0
52	959.000	-53.000		0.0	72.6	11.1
52	959.000	-26.500	0.0	0.0	32.4	32.4
52	959.000	0.000	2.2	2.2	64.1	64.9
52	959.000	17.000	0.0	0.0	62.3	62.3
52	959.000	43.000	0.0		35.6	140.6
52	959.000	79.000	1.0	0.7	40.6	28.4
52	959.000	115.000	1.3	1.1	1.6	1.5
52	959.000	117.000	1.0	1.1	1.1	1.1
52	959.000	127.000	0.9		0.0	
48	216.000	-89.000		0.0		0.0
48	216.000	-53.000		0.0	20.4	4.5
48	216.000	-26.500	6.4	6.3	8.7	8.7
48	216.000	0.000	12.9	11.8	16.2	15.0
48	216.000	17.000	19.5	18.5	16.8	16.9
48	216.000	43.000	27.5	28.6	9.5	15.4
48	216.000	79.000	23.7	21.0	2.8	3.7
48	216.000	115.000	18.3	2.6	2.5	
48	216.000	117.000	3.1	19.5		3.4
48	216.000	127.000	15.6	19.7	0.4	0.4
48	216.000	162.000	16.6	17.5	0.6	0.6
48	216.000	197.000	13.4	13.6	5.5	4.4
48	216.000	232.000	10.4	10.0	18.1	17.4
48	216.000	271.600	18.5	17.6	16.8	16.6
48	216.000	311.200	24.7	24.2	20.3	19.8
48	216.000	350.800	28.5	28.2	27.3	26.4
48	216.000	390.400	31.6	31.3	39.8	38.2
48	216.000	430.000	34.7	34.4	58.1	57.3
48	216.000	473.000	38.2	37.8	54.4	54.3
48	216.000	516.000	41.6	41.2	58.8	58.0
48	216.000	559.000	45.1	45.0	70.2	70.2
48	216.000	603.000	43.4	43.6	59.4	60.1
48	216.000	647.000	42.4	42.5	57.5	57.4
48	216.000	691.000	41.6	42.1	62.6	63.8
48	216.000	735.000	33.7	34.4	35.0	37.3
48	216.000	779.000	28.5	29.0	18.6	20.0
48	216.000	823.000	22.7	23.4	7.8	8.7

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 3
April 18,2007 20:07

X - S T R I P R E I N F O R C I N G (for whole strip in Sq-in)

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-REBAR LEFT OF X	TOP-REBAR RIGHT OF X	BOT-REBAR LEFT OF X	BOT-REBAR RIGHT OF X
48	216.000	867.000	15.5	16.3	1.7	2.2
48	216.000	911.000	9.5	10.1	1.9	1.5
48	216.000	955.000	2.9	3.0	7.3	7.2
48	216.000	988.000	6.5	6.2	2.7	3.0
48	216.000	1021.000	8.6	9.7	0.7	0.7
48	216.000	1054.000	10.2	10.2	0.3	0.3
48	216.000	1087.000	9.8	9.8	0.2	0.2
48	216.000	1131.000	6.4	6.4	1.9	1.9
48	216.000	1175.000	1.0	1.0	6.2	6.2
48	216.000	1219.000			14.0	14.0
48	216.000	1262.667			6.5	6.5
48	216.000	1306.333			1.9	1.9
48	216.000	1350.000	0.0		0.2	
48	216.000	1352.000		0.0		0.2
48	216.000	1395.667			1.9	1.9
48	216.000	1439.333			6.6	6.6
48	216.000	1483.000			14.1	14.1
48	216.000	1527.000	1.0	1.0	6.2	6.2
48	216.000	1571.000	6.3	6.3	1.9	1.9
48	216.000	1615.000	9.9	10.0	0.2	0.2
48	216.000	1648.000	11.0	11.0	0.5	0.5
48	216.000	1681.000	10.4	9.3	1.5	1.3
48	216.000	1714.000	6.7	7.0	3.5	3.2
48	216.000	1747.000	3.1	3.1	7.4	7.5
48	216.000	1791.000	10.1	9.5	1.2	1.5
48	216.000	1835.000	17.0	16.2	1.7	1.3
48	216.000	1879.000	24.3	23.6	7.9	7.0
48	216.000	1923.000	30.4	29.8	18.9	17.5
48	216.000	1967.000	35.9	35.1	35.3	33.2
48	216.000	2011.000	43.8	43.4	61.1	60.0
48	216.000	2055.000	44.1	44.0	55.1	55.2
48	216.000	2099.000	45.1	45.0	57.9	57.2
48	216.000	2143.000	46.5	46.6	68.1	68.1
48	216.000	2186.000	42.7	43.0	56.4	57.1
48	216.000	2229.000	39.2	39.6	53.0	53.0
48	216.000	2272.000	35.6	36.0	56.3	57.1
48	216.000	2311.600	32.6	32.9	37.5	39.1
48	216.000	2351.200	29.6	29.9	26.2	27.1
48	216.000	2390.800	25.4	26.0	19.9	20.4
48	216.000	2430.400	18.6	19.5	17.0	17.2
48	216.000	2470.000	12.7	12.7	20.5	20.8
48	216.000	2505.000	15.5	15.3	6.7	7.7
48	216.000	2540.000	18.7	18.0	1.0	0.9
48	216.000	2575.000	18.8	15.3	0.9	0.7
48	216.000	2585.000	17.4	2.8	3.0	
48	216.000	2587.000	2.4	16.2		2.5
48	216.000	2623.000	18.6	21.0	4.3	3.4
48	216.000	2659.000	25.1	24.4	17.2	10.8
48	216.000	2685.000	16.0	16.7	18.8	18.5
48	216.000	2702.000	10.3	11.2	16.6	18.0
48	216.000	2728.500	5.5	5.5	9.6	9.6
48	216.000	2755.000	0.0		4.6	21.3
48	216.000	2791.000	0.0		0.0	

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 4
April 18,2007 20:07

Y - S T R I P R E I N F O R C I N G (for whole strip in Sq-in)

Y-STRIP ID	STRIP WIDTH	STATION Y-ORDINATE	TOP-REBAR LEFT OF Y	TOP-REBAR RIGHT OF Y	BOT-REBAR LEFT OF Y	BOT-REBAR RIGHT OF Y
60	216.000	-89.000		0.0		0.0
60	216.000	-53.000		0.0	20.6	4.6
60	216.000	-26.500	3.7	3.3	9.4	9.3
60	216.000	0.000	13.3	9.4	18.1	17.1
60	216.000	17.000	13.7	12.7	16.4	17.1
60	216.000	43.000	17.3	19.7	7.7	12.3
60	216.000	79.000	20.0	19.0	1.7	1.2
60	216.000	127.000	18.9	18.8	0.8	0.5
60	216.000	162.000	18.0	18.0	1.2	0.8
60	216.000	197.000	15.8	16.1	8.0	7.1
60	216.000	232.000	13.5	13.6	19.2	19.1
60	216.000	271.600	16.9	15.9	10.9	10.7
60	216.000	311.200	23.9	23.3	13.4	13.0
60	216.000	350.800	27.7	27.4	18.3	17.6
60	216.000	390.400	28.4	28.5	25.8	24.8
60	216.000	430.000	28.8	28.6	38.3	37.8
60	216.000	473.000	31.9	31.6	34.2	34.3
60	216.000	516.000	33.4	33.3	35.9	35.5
60	216.000	559.000	33.8	33.8	42.5	42.6
60	216.000	603.000	33.7	33.7	34.3	34.8
60	216.000	647.000	32.5	32.7	32.4	32.3
60	216.000	691.000	30.6	30.7	35.3	35.9
60	216.000	726.000	33.0	32.8	23.9	24.9
60	216.000	761.000	34.6	33.1	16.5	16.8
60	216.000	796.000	32.7	19.8	10.9	7.6
60	216.000	835.750	14.8	11.6	4.3	3.2
60	216.000	875.500	9.6	9.8	4.5	2.7
60	216.000	915.250	6.3	8.3	6.1	4.0
60	216.000	955.000	2.8	4.2	10.7	12.3
60	216.000	998.667	10.1	6.1	4.9	5.9
60	216.000	1042.333	11.0	6.6	4.0	4.8
60	216.000	1086.000	7.4	0.7	3.0	0.4
60	216.000	1088.000	0.7	7.0	0.3	1.9
60	216.000	1131.667	7.5	11.0	5.7	3.2
60	216.000	1175.333	8.8	10.4	9.2	5.0
60	216.000	1219.000	8.1	5.1	17.0	11.5
60	216.000	1263.000	15.5	9.3	11.9	8.2
60	216.000	1307.000	19.2	12.9	13.4	8.8
60	216.000	1351.000	21.3	16.2	16.8	10.7
60	216.000	1395.000	22.5	18.8	21.7	13.7
60	216.000	1439.000	23.4	20.5	28.8	18.4
60	216.000	1483.000	25.2	22.4	40.8	33.6
60	216.000	1527.000	24.7	23.0	30.6	28.3
60	216.000	1571.000	24.7	24.1	31.4	28.7
60	216.000	1615.000	25.1	26.0	37.8	38.6
60	216.000	1658.000	22.5	24.8	27.4	31.5
60	216.000	1701.000	20.5	23.8	25.9	29.4
60	216.000	1744.000	18.4	22.1	29.2	36.2
60	216.000	1783.600	17.4	21.1	17.5	27.0
60	216.000	1823.200	15.7	20.2	13.6	21.1
60	216.000	1862.800	12.8	18.7	11.0	17.2
60	216.000	1902.400	9.3	14.8	9.3	14.5
60	216.000	1942.000	7.3	5.9	14.2	17.1
60	216.000	1986.000	12.3	11.5	6.8	18.0
60	216.000	2016.500	6.6	7.0	1.2	3.3
60	216.000	2047.000	7.2	6.7	1.0	3.2
60	216.000	2068.000	4.4	2.3	2.0	1.0
60	216.000	2070.000	2.1	2.7	1.1	3.0
60	216.000	2095.000	2.7	1.6	5.2	5.7
60	216.000	2131.000	4.8	7.7	28.4	7.9
60	216.000	2157.000	4.7	11.2	15.9	11.1
60	216.000	2174.000	7.0	15.5	11.9	9.5
60	216.000	2200.500	7.3	7.4	5.0	5.0
60	216.000	2227.000	0.0	0.0	3.9	18.0
60	216.000	2263.000	0.0		0.0	
63	1223.000	-89.000		0.0		0.0
63	1223.000	-53.000		0.0	85.2	12.9
63	1223.000	-26.500	0.0	3.6	39.2	39.2
63	1223.000	0.000	2.9	4.1	78.4	78.8
63	1223.000	17.000	6.0	5.9	81.2	80.5
63	1223.000	43.000	0.0	4.9	45.2	185.4
63	1223.000	79.000	1.6	1.1	51.5	35.8
63	1223.000	127.000	0.7		0.0	
68	1223.000	2047.000		0.0		0.0

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 5
April 18,2007 20:07

Y - S T R I P   R E I N F O R C I N G   (for whole strip in Sq-in)

Y-STRIP ID	STRIP WIDTH	STATION Y-ORDINATE	TOP-REBAR LEFT OF Y	TOP-REBAR RIGHT OF Y	BOT-REBAR LEFT OF Y	BOT-REBAR RIGHT OF Y
68	1223.000	2068.000	0.0	0.0	9.4	9.4
68	1223.000	2070.000	0.0	0.0	11.1	11.1
68	1223.000	2095.000	0.0	0.0	46.1	66.0
68	1223.000	2131.000	0.0	0.0	209.2	52.7
68	1223.000	2157.000	2.9	2.9	84.6	84.6
68	1223.000	2174.000	0.0	0.0	82.8	83.3
68	1223.000	2200.500			42.8	42.8
68	1223.000	2227.000			13.1	85.5
68	1223.000	2263.000	0.0		0.0	
64	1223.000	-89.000		0.0		0.0
64	1223.000	-53.000		0.0	90.2	13.7
64	1223.000	-26.500	3.4	4.5	39.5	39.8
64	1223.000	0.000	3.2	4.5	78.1	78.5
64	1223.000	17.000	6.0	6.0	80.5	79.9
64	1223.000	43.000	0.0	6.9	44.7	183.5
64	1223.000	79.000	2.0	1.4	50.8	35.3
64	1223.000	127.000	0.8		0.0	
66	1223.000	2047.000		0.0		0.0
66	1223.000	2068.000	1.7	1.6	6.3	6.3
66	1223.000	2070.000	1.7	1.6	7.7	7.7
66	1223.000	2095.000	1.4	1.9	38.1	54.5
66	1223.000	2131.000	6.0	0.0	182.5	46.3
66	1223.000	2157.000	0.0	0.0	79.9	80.5
66	1223.000	2174.000	0.0	4.2	79.5	77.5
66	1223.000	2200.500	6.1	4.8	40.0	40.1
66	1223.000	2227.000	0.0		14.0	91.5
66	1223.000	2263.000	0.0		0.0	
61	216.000	-89.000		0.0		0.0
61	216.000	-53.000		0.0	21.2	4.7
61	216.000	-26.500	4.0	3.5	9.7	9.5
61	216.000	0.000	15.1	11.6	19.7	18.3
61	216.000	17.000	15.0	13.8	19.3	19.7
61	216.000	43.000	18.9	21.9	10.2	14.9
61	216.000	79.000	21.2	20.0	2.6	2.6
61	216.000	127.000	18.4	18.2	0.9	0.6
61	216.000	162.000	18.0	17.7	1.6	1.1
61	216.000	197.000	18.0	18.1	10.8	9.6
61	216.000	232.000	16.9	16.5	23.7	23.0
61	216.000	271.600	25.2	24.3	20.5	20.4
61	216.000	311.200	31.8	31.2	22.8	22.4
61	216.000	350.800	36.0	35.7	28.7	27.9
61	216.000	390.400	38.9	38.4	38.9	37.4
61	216.000	430.000	42.7	42.3	55.7	55.0
61	216.000	473.000	46.0	45.6	51.7	51.7
61	216.000	516.000	49.5	49.2	55.6	54.9
61	216.000	559.000	53.6	53.4	66.3	66.2
61	216.000	603.000	52.0	52.1	56.3	56.9
61	216.000	647.000	51.3	51.4	54.7	54.5
61	216.000	691.000	51.0	51.4	59.7	60.6
61	216.000	726.000	44.2	44.9	39.7	41.3
61	216.000	761.000	39.2	39.7	27.1	28.3
61	216.000	796.000	35.0	35.5	17.6	18.5
61	216.000	835.750	29.3	29.9	10.3	10.9
61	216.000	875.500	22.6	23.4	6.6	6.8
61	216.000	915.250	15.9	16.4	7.0	6.6
61	216.000	955.000	10.6	10.6	12.4	12.3
61	216.000	998.667	18.2	17.6	7.8	8.1
61	216.000	1042.333	22.6	19.6	5.9	5.4
61	216.000	1086.000	23.2	2.8	5.4	0.7
61	216.000	1088.000	2.7	22.9	0.7	5.2
61	216.000	1131.667	17.8	20.9	6.1	6.5
61	216.000	1175.333	14.6	15.3	9.8	9.4
61	216.000	1219.000	7.7	7.8	16.5	16.5
61	216.000	1263.000	12.9	12.4	9.3	9.3
61	216.000	1307.000	20.9	20.1	11.7	11.2
61	216.000	1351.000	28.1	27.4	18.2	17.3
61	216.000	1395.000	34.1	33.5	29.4	28.1
61	216.000	1439.000	40.5	39.8	46.4	44.1
61	216.000	1483.000	48.6	48.2	72.4	71.4
61	216.000	1527.000	47.7	47.7	63.5	63.8
61	216.000	1571.000	47.8	47.8	63.7	63.3
61	216.000	1615.000	48.3	48.5	71.3	71.6
61	216.000	1658.000	43.8	44.2	57.9	58.9

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 6
April 18,2007 20:07

Y - S T R I P   R E I N F O R C I N G   (for whole strip in Sq-in)

Y-STRIP ID	STRIP WIDTH	STATION Y-ORDINATE	TOP-REBAR LEFT OF Y	TOP-REBAR RIGHT OF Y	BOT-REBAR LEFT OF Y	BOT-REBAR RIGHT OF Y
61	216.000	1701.000	39.9	40.3	52.9	53.1
61	216.000	1744.000	36.2	36.6	54.5	55.4
61	216.000	1783.600	32.4	32.8	35.4	37.0
61	216.000	1823.200	30.2	30.6	24.7	25.6
61	216.000	1862.800	26.2	26.7	17.8	18.4
61	216.000	1902.400	19.9	20.7	14.4	14.7
61	216.000	1942.000	11.4	11.7	13.8	14.6
61	216.000	1986.000	16.2	16.0	1.2	1.7
61	216.000	2016.500	18.1	17.9	0.4	0.4
61	216.000	2047.000	20.7	19.9	0.2	0.2
61	216.000	2068.000	22.4	22.2	9.227E-02	8.996E-02
61	216.000	2070.000	22.5	23.0	9.614E-02	0.5
61	216.000	2095.000	26.7	28.1	1.1	1.7
61	216.000	2131.000	28.9	26.1	11.2	6.5
61	216.000	2157.000	20.6	21.5	13.7	13.7
61	216.000	2174.000	20.2	21.2	15.3	16.8
61	216.000	2200.500	5.1	5.8	8.7	8.6
61	216.000	2227.000	0.0		4.2	19.1
61	216.000	2263.000	0.0		0.0	

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 7
April 18,2007 20:07

X - S T R I P   D E S I G N   M O M E N T S

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-MOMEMT LEFT OF X	TOP-MOMEMT RIGHT OF X	BOT-MOMEMT LEFT OF X	BOT-MOMEMT RIGHT OF X
49	216.000	-89.000		-117.689 F2B		131.490 F2B
49	216.000	-53.000	-403.474 F3A	-823.743 F3A	10855.249 F2B	10855.778 F2B
49	216.000	-26.500	-6471.798 F3A	-6483.110 F3A	32475.264 F2B	32412.546 F2B
49	216.000	0.000	-27485.380 F3A	-19309.214 F3A	66235.735 F2B	42022.009 F2B
49	216.000	17.000	-26680.383 F3A	-28285.703 F3A	37746.045 F2B	45549.834 F2B
49	216.000	43.000	-22578.174 F2D	-17434.523 F2A	8313.089 F3C	24041.327 F2B
49	216.000	79.000	-32323.900 F2B	-15358.106 F2D	11072.318 F3A	10386.134 F2B
49	216.000	115.000	-44100.078 F2B	-31740.838 F2B	24371.962 F3A	13668.110 F3A
49	216.000	117.000	-32563.859 F2B	-25957.746 F2B	16768.822 F3A	10816.350 F3A
49	216.000	127.000	-33397.972 F2B	-23135.646 F2B	18048.461 F3A	8534.285 F3A
49	216.000	162.000	-37178.852 F2B	-29403.029 F2B	36478.714 F3A	18136.834 F3A
49	216.000	197.000	-34125.102 F3B	-27565.556 F2B	58269.430 F2A	31808.170 F2A
49	216.000	232.000	-26176.164 F3B	-15935.829 F3B	85698.349 F2A	61246.956 F2C
49	216.000	271.600	-57343.478 F3B	-34061.871 F3B	70712.934 F2A	49897.630 F2A
49	216.000	311.200	-70207.845 F3B	-45193.966 F3B	79113.273 F2A	51635.096 F2A
49	216.000	350.800	-77907.972 F3B	-57862.606 F2B	95926.386 F2A	61287.699 F2A
49	216.000	390.400	-83134.153 F3B	-65431.606 F3B	120515.492 F2A	78567.469 F2A
49	216.000	430.000	-87135.292 F3B	-71379.134 F3B	158473.025 F2A	131041.434 F2A
49	216.000	473.000	-93872.916 F3B	-79749.484 F3B	126665.437 F2A	114274.354 F2A
49	216.000	516.000	-98400.310 F3B	-87987.898 F3B	134354.052 F2A	118591.832 F2A
49	216.000	559.000	-104176.427 F3B	-99945.180 F3B	163985.739 F2A	162921.336 F2A
49	216.000	603.000	-95674.749 F3B	-97470.887 F3B	120189.900 F2A	133863.483 F2A
49	216.000	647.000	-92009.470 F3B	-97681.344 F3B	118426.987 F2A	129603.074 F2A
49	216.000	691.000	-91542.241 F3B	-102459.759 F3B	142219.429 F2A	175661.431 F2A
49	216.000	735.000	-81683.002 F2B	-93652.308 F3B	74479.813 F2A	122449.619 F2A
49	216.000	779.000	-76015.718 F2B	-88342.846 F2B	54631.406 F3A	89787.284 F3A
49	216.000	823.000	-68336.118 F2B	-84718.592 F2B	42221.490 F3A	68608.465 F3A
49	216.000	867.000	-58261.134 F2B	-78404.461 F2B	34467.574 F3A	53419.377 F3A
49	216.000	911.000	-45101.075 F2B	-67831.054 F2B	34213.687 F3A	45652.095 F3A
49	216.000	955.000	-30419.717 F3B	-45881.907 F3B	46185.127 F2A	60304.183 F2A
49	216.000	988.000	-35759.411 F2B	-46399.170 F2B	25291.608 F3A	41898.752 F3A
49	216.000	1021.000	-36468.297 F2C	-45378.750 F2B	18644.587 F3A	31501.839 F3A
49	216.000	1054.000	-34874.920 F2C	-41164.847 F2B	20420.131 F3D	25992.639 F3A
49	216.000	1087.000	-28198.894 F2C	-28218.258 F2B	25994.402 F3D	29391.288 F2A
49	216.000	1131.000	-42728.222 F2C	-36375.386 F2C	17305.000 F3D	18811.923 F3D
49	216.000	1175.000	-41065.895 F2C	-39438.454 F2C	19158.239 F3D	18286.481 F3D
49	216.000	1219.000	-29620.302 F2C	-23148.459 F3C	27319.326 F3D	32034.223 F2D
49	216.000	1262.667	-51587.238 F2C	-36117.616 F2C	12070.160 F3D	18633.009 F3D

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 8
April 18,2007 20:07

X - S T R I P   D E S I G N   M O M E N T S

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-MOMEMT LEFT OF X	TOP-MOMEMT RIGHT OF X	BOT-MOMEMT LEFT OF X	BOT-MOMEMT RIGHT OF X
49	216.000	1306.333	-50237.297 F2C	-31321.896 F2C	7078.501 F3D	9048.390 F3D
49	216.000	1350.000	-30052.448 F2C	-1329.420 F2C	4951.870 F3D	334.100 F3D
49	216.000	1352.000	-1382.899 F2C	-33234.530 F2C	334.010 F3D	4811.941 F3D
49	216.000	1395.667	-30653.431 F2C	-51089.271 F2C	9267.274 F3D	7176.594 F3D
49	216.000	1439.333	-31677.567 F2C	-50246.776 F2C	18947.442 F3D	12358.636 F3D
49	216.000	1483.000	-18182.951 F3C	-25255.633 F3C	34913.554 F2D	29399.910 F2D
49	216.000	1527.000	-32467.316 F2C	-36079.721 F2C	17010.171 F3D	19751.679 F3D
49	216.000	1571.000	-33408.468 F2A	-36876.378 F2C	20024.520 F3B	16955.353 F3D
49	216.000	1615.000	-30863.305 F3A	-21241.538 F3A	36959.433 F2B	24195.484 F2B
49	216.000	1648.000	-42978.567 F2A	-29463.891 F2A	29897.710 F3B	19646.204 F3B
49	216.000	1681.000	-47223.871 F2A	-35580.014 F2A	34203.212 F3B	21756.125 F3B
49	216.000	1714.000	-48204.129 F2A	-37742.638 F2A	43591.477 F3B	27795.822 F3B
49	216.000	1747.000	-48066.239 F3A	-33200.560 F3A	61788.146 F2B	52325.718 F2B
49	216.000	1791.000	-68899.046 F2A	-47168.422 F2A	43135.230 F3B	36842.472 F3B
49	216.000	1835.000	-78735.498 F2A	-60029.169 F2A	48037.917 F3B	33638.782 F3B
49	216.000	1879.000	-84156.835 F2A	-69652.757 F2A	60458.211 F3B	38274.249 F3B
49	216.000	1923.000	-86684.273 F2A	-76679.478 F2A	78685.454 F3B	48544.882 F3B
49	216.000	1967.000	-89915.886 F3A	-81351.470 F2A	107308.067 F2B	65459.542 F2B
49	216.000	2011.000	-96685.769 F3A	-88606.360 F3A	155929.373 F2B	127566.298 F2B
49	216.000	2055.000	-91854.803 F3A	-88775.970 F3A	112190.918 F2B	104114.925 F2B
49	216.000	2099.000	-90431.338 F3A	-91473.071 F3A	115705.162 F2B	104846.666 F2B
49	216.000	2143.000	-90988.092 F3A	-97930.067 F3A	142803.078 F2B	145972.480 F2B
49	216.000	2186.000	-78822.394 F3A	-91799.822 F3A	99405.689 F2B	116589.141 F2B
49	216.000	2229.000	-69238.855 F3A	-86002.039 F3A	94587.512 F2B	108407.157 F2B
49	216.000	2272.000	-58497.876 F3A	-75837.236 F3A	110261.592 F2B	138907.635 F2B
49	216.000	2311.600	-54686.108 F3A	-72940.586 F3A	62050.513 F2B	100747.912 F2B
49	216.000	2351.200	-48490.009 F2A	-68044.184 F3A	45008.239 F2B	75517.111 F2B
49	216.000	2390.800	-37827.935 F2A	-61777.140 F2A	35645.023 F3B	59025.644 F3B
49	216.000	2430.400	-24702.674 F3D	-47523.586 F2A	33638.845 F2C	47472.240 F2B
49	216.000	2470.000	-23563.033 F3D	-25957.340 F3D	61247.171 F2C	75282.537 F2C
49	216.000	2505.000	-30589.892 F2D	-27793.688 F3D	18123.179 F3C	38407.010 F2C
49	216.000	2540.000	-33709.945 F2D	-28154.608 F2D	7379.906 F3C	19269.886 F2C
49	216.000	2575.000	-28358.554 F2D	-17564.752 F2D	1821.257 F3C	6610.723 F3C
49	216.000	2585.000	-23805.909 F2D	-1924.275 F2A	9232.389 F2D	9.230 F3D
49	216.000	2587.000	-1503.136 F2C	-22107.552 F2A	127.605 F3D	11727.283 F3B
49	216.000	2623.000	-24190.190 F2B	-27778.441 F2D	15059.720 F2A	2926.792 F2D
49	216.000	2659.000	-40256.108 F2B	-48665.140 F2B	24306.676 F2A	12722.837 F3A
49	216.000	2685.000	-30308.584 F3B	-48248.975 F2B	49471.803 F2A	36168.821 F2A

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 9
April 18,2007 20:07

X - STRIP DESIGN MOMENTS

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-MOMENT LEFT OF X	TOP-MOMENT RIGHT OF X	BOT-MOMENT LEFT OF X	BOT-MOMENT RIGHT OF X
49	216.000	2702.000	-27352.918 F3B	-45277.843 F3B	38133.117 F2A	42949.139 F2A
49	216.000	2728.500	-22104.201 F3B	-22108.981 F3B	22724.593 F2A	22707.835 F2A
49	216.000	2755.000	-78.645 F3B		12200.367 F2A	12198.658 F2A
49	216.000	2791.000	-31.401 F2C		30.077 F2C	
59	959.000	2575.000		-750.485 F2C		200.202 F2C
59	959.000	2585.000	-1123.526 F3C	-1140.241 F2C	2396.844 F2D	2397.588 F2D
59	959.000	2587.000	-1220.541 F3C	-1237.733 F3C	3553.787 F2D	3530.436 F2D
59	959.000	2623.000	-1989.584 F3C	-1996.524 F3C	63035.861 F2D	63058.967 F2D
59	959.000	2659.000	-5204.168 F3C	-5221.236 F3C	201227.558 F2D	201274.269 F2D
59	959.000	2685.000	-28614.540 F3C	-28659.015 F3C	330737.644 F2D	330666.340 F2D
59	959.000	2702.000	-2691.203 F3C	-4169.264 F3A	313631.369 F2D	311675.279 F2D
59	959.000	2728.500			157215.235 F2D	157234.693 F2D
59	959.000	2755.000			46167.662 F2D	46139.649 F2D
59	959.000	2791.000	-16.113 F2C		17.346 F2C	
54	959.000	-89.000		-146.853 F2B		133.148 F2B
54	959.000	-53.000	-58.407 F3A	-191.640 F3A	48629.564 F2B	48673.798 F2B
54	959.000	-26.500	-6574.409 F3A	-6441.640 F3A	138196.257 F2B	138244.175 F2B
54	959.000	0.000	-20770.642 F3A	-1053.199 F3A	265550.660 F2B	269096.621 F2B
54	959.000	17.000	-5770.867 F3A	-5743.506 F3A	265091.385 F2B	265082.133 F2B
54	959.000	43.000	-8874.676 F2A	-10661.741 F3A	147605.311 F2B	147589.310 F2B
54	959.000	79.000	-8155.569 F2A	-8149.589 F2A	41615.332 F2B	41715.590 F2B
54	959.000	115.000	-3808.113 F2A	-3644.251 F2A	2377.919 F2B	2378.605 F2B
54	959.000	117.000	-3401.741 F2A	-3342.149 F2A	1590.399 F2B	1621.771 F2B
54	959.000	127.000	-1362.002 F2A		403.223 F2A	
58	959.000	2575.000		-1334.430 F2D		357.828 F2D
58	959.000	2585.000	-1810.632 F2D	-1687.923 F2D	2205.868 F2C	2223.989 F2C
58	959.000	2587.000	-1751.672 F2D	-1869.060 F2D	3313.833 F2C	3095.511 F2C
58	959.000	2623.000	-2549.409 F3D	-2547.350 F3D	59369.576 F2C	59552.856 F2C
58	959.000	2659.000	-5334.795 F3D	-5356.867 F3D	190520.665 F2C	190249.590 F2C
58	959.000	2685.000	-29066.389 F3D	-29148.317 F3D	320710.043 F2C	320660.591 F2C
58	959.000	2702.000	-5662.208 F3A	-3078.115 F3A	308392.555 F2C	297210.574 F2C
58	959.000	2728.500	-1408.951 F3A	-1203.291 F3A	150302.500 F2C	150340.644 F2C
58	959.000	2755.000	-14.050 F3A		48350.421 F2A	48336.916 F2A
58	959.000	2791.000	-18.659 F2D		20.281 F2D	
52	959.000	-89.000		-14.222 F2D		15.375 F2D
52	959.000	-53.000		-119.945 F3D	47777.708 F2B	47811.691 F2B

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 10
April 18,2007 20:07

X - STRIP DESIGN MOMENTS

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-MOMENT LEFT OF X	TOP-MOMENT RIGHT OF X	BOT-MOMENT LEFT OF X	BOT-MOMENT RIGHT OF X
52	959.000	-26.500	-268.514 F3A	-290.861 F3A	139355.526 F2B	139330.834 F2B
52	959.000	0.000	-9474.143 F3D	-9624.819 F3D	274825.240 F2B	278444.936 F2B
52	959.000	17.000	-2176.511 F3A	-2097.041 F3A	267447.924 F2B	267486.070 F2B
52	959.000	43.000	-540.233 F3A		152948.650 F2C	153375.316 F2C
52	959.000	79.000	-1156.132 F3A	-1111.504 F3A	45548.189 F2B	45590.381 F2C
52	959.000	115.000	-2031.896 F2A	-1832.104 F2A	2599.039 F2C	2502.399 F2B
52	959.000	117.000	-1594.049 F2A	-1753.038 F2A	1717.216 F2B	1722.548 F2B
52	959.000	127.000	-1448.255 F2A		364.087 F2A	
48	216.000	-89.000		-29.780 F2D		28.568 F2D
48	216.000	-53.000		-63.945 F3A	13291.876 F2B	13270.532 F2B
48	216.000	-26.500	-27086.191 F3A	-27059.907 F3A	35312.704 F2B	35313.700 F2B
48	216.000	0.000	-54894.793 F3A	-50219.737 F3A	67853.361 F2B	62817.828 F2B
48	216.000	17.000	-82825.380 F2A	-78571.715 F2A	70893.793 F3B	71381.601 F3B
48	216.000	43.000	-116767.312 F2A	-111655.233 F2A	39972.031 F3B	42924.420 F3B
48	216.000	79.000	-96497.554 F2A	-86376.252 F2A	5101.153 F3B	10553.386 F3B
48	216.000	115.000	-70430.603 F2A	-4200.510 F2A	10136.115 F2C	
48	216.000	117.000	-4954.698 F2A	-71849.726 F2A		14635.425 F2A
48	216.000	127.000	-52386.905 F2C	-68766.392 F2C	335.777 F3D	403.868 F3D
48	216.000	162.000	-59376.031 F2C	-63403.678 F2C	572.635 F3D	582.153 F3D
48	216.000	197.000	-52662.246 F2B	-53718.890 F2B	21205.925 F3A	16749.561 F3A
48	216.000	232.000	-41113.812 F3B	-39527.897 F3B	71176.732 F2A	68359.467 F2A
48	216.000	271.600	-75486.255 F2B	-71832.163 F2B	64660.784 F3A	63869.864 F3A
48	216.000	311.200	-100015.158 F2B	-97806.727 F2B	78704.187 F3A	76379.466 F3A
48	216.000	350.800	-114581.183 F2B	-113306.158 F2B	105863.264 F3A	102094.901 F3A
48	216.000	390.400	-125713.880 F3B	-124316.450 F3B	153109.703 F2A	146437.752 F2A
48	216.000	430.000	-137256.155 F3B	-135857.957 F3B	223664.326 F2A	220352.911 F2A
48	216.000	473.000	-150776.882 F3B	-149239.544 F3B	207804.040 F2A	207644.668 F2A
48	216.000	516.000	-163508.780 F3B	-162194.535 F3B	224430.352 F2A	221222.985 F2A
48	216.000	559.000	-176796.936 F3B	-176388.406 F3B	268095.808 F2A	267822.672 F2A
48	216.000	603.000	-170294.872 F3B	-170738.929 F3B	226286.110 F2A	228898.090 F2A
48	216.000	647.000	-166019.086 F3B	-166555.521 F3B	219199.327 F2A	218645.013 F2A
48	216.000	691.000	-163395.040 F3B	-165174.736 F3B	240354.073 F2A	244776.137 F2A
48	216.000	735.000	-132776.190 F3B	-135837.401 F3B	133723.738 F2A	143157.216 F2A
48	216.000	779.000	-113608.306 F2B	-115892.640 F2B	71461.476 F3A	77257.317 F3A
48	216.000	823.000	-91123.230 F2B	-93875.830 F2B	28767.766 F3A	32562.994 F3A
48	216.000	867.000	-63138.282 F2B	-66401.651 F2B	4605.582 F3A	6535.790 F3A
48	216.000	911.000	-39750.524 F2D	-42441.488 F2D	6427.988 F3C	4903.857 F3C

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 11
April 18,2007 20:07

X - S T R I P   D E S I G N   M O M E N T S

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-MOMENT LEFT OF X	TOP-MOMENT RIGHT OF X	BOT-MOMENT LEFT OF X	BOT-MOMENT RIGHT OF X
48	216.000	955.000	-11962.930 F3D	-12450.271 F3D	28562.768 F2C	28168.234 F2C
48	216.000	988.000	-27464.662 F2D	-26276.991 F2D	9842.448 F3C	11115.696 F3C
48	216.000	1021.000	-36555.836 F2D	-40633.319 F2D	1913.034 F3C	2390.348 F3C
48	216.000	1054.000	-43361.044 F2A	-43350.959 F2A	195.196 F2C	191.354 F2C
48	216.000	1087.000	-41865.570 F2A	-41867.931 F2A	133.885 F2C	135.504 F2C
48	216.000	1131.000	-27375.999 F2A	-27377.030 F2A	7340.974 F3B	7340.568 F3B
48	216.000	1175.000	-4307.025 F3A	-4308.174 F3A	24687.198 F2B	24688.223 F2B
48	216.000	1219.000			57451.895 F2B	57451.778 F2B
48	216.000	1262.667			26013.051 F2B	26011.963 F2B
48	216.000	1306.333			6655.479 F2B	6655.589 F2B
48	216.000	1350.000	-131.877 F2B		131.539 F2B	
48	216.000	1352.000		-132.080 F2A		130.542 F2A
48	216.000	1395.667			6677.409 F2A	6676.312 F2A
48	216.000	1439.333			26077.883 F2A	26077.356 F2A
48	216.000	1483.000			57574.033 F2A	57573.879 F2A
48	216.000	1527.000	-4125.961 F3B	-4123.814 F3B	24783.431 F2A	24784.012 F2A
48	216.000	1571.000	-27095.516 F2B	-27095.560 F2B	7344.917 F3A	7344.317 F3A
48	216.000	1615.000	-42337.932 F2D	-42338.558 F2D	149.654 F2C	148.114 F2C
48	216.000	1648.000	-46698.827 F2D	-46708.267 F2D	1179.088 F3C	1178.903 F3C
48	216.000	1681.000	-43761.274 F2D	-39380.257 F2D	5555.534 F3C	4783.823 F3C
48	216.000	1714.000	-28339.935 F2D	-29602.799 F2D	13131.697 F3C	11949.360 F3C
48	216.000	1747.000	-13145.384 F3D	-12799.195 F3D	28785.403 F2C	29395.528 F2C
48	216.000	1791.000	-42306.091 F2D	-39797.482 F2D	3712.477 F3C	5124.241 F3C
48	216.000	1835.000	-69039.619 F2A	-65657.135 F2A	4693.192 F3B	3230.485 F3B
48	216.000	1879.000	-97687.739 F2A	-94799.537 F2A	29396.287 F3B	25739.332 F3B
48	216.000	1923.000	-121021.397 F2A	-118581.458 F2A	72684.262 F3B	67057.169 F3B
48	216.000	1967.000	-141250.707 F3A	-138056.339 F3A	135652.901 F2B	127777.843 F3B
48	216.000	2011.000	-171854.084 F3A	-170022.979 F3A	234993.587 F2B	230643.596 F2B
48	216.000	2055.000	-172817.649 F3A	-172309.663 F3A	209967.716 F2B	210442.219 F2B
48	216.000	2099.000	-176736.513 F3A	-176318.294 F3A	220863.111 F2B	218190.345 F2B
48	216.000	2143.000	-182172.702 F3A	-182605.680 F3A	260180.101 F2B	260355.650 F2B
48	216.000	2186.000	-167738.902 F3A	-169079.816 F3A	215000.224 F2B	218065.028 F2B
48	216.000	2229.000	-154513.916 F3A	-156082.054 F3A	202650.665 F2B	202679.073 F2B
48	216.000	2272.000	-140763.244 F3A	-142173.701 F3A	216498.596 F2B	219672.602 F2B
48	216.000	2311.600	-129387.464 F3A	-130783.367 F3A	143935.729 F2B	150450.370 F2B
48	216.000	2351.200	-118825.943 F2A	-120159.870 F2A	101457.581 F3B	105102.658 F3B
48	216.000	2390.800	-102636.286 F2A	-104945.748 F2A	76858.105 F3B	79049.170 F3B
48	216.000	2430.400	-75592.799 F2A	-79399.725 F2A	65585.874 F3B	66228.841 F3B

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 12
April 18,2007 20:07

X - S T R I P   D E S I G N   M O M E N T S

X-STRIP ID	STRIP WIDTH	STATION X-ORDINATE	TOP-MOMENT LEFT OF X	TOP-MOMENT RIGHT OF X	BOT-MOMENT LEFT OF X	BOT-MOMENT RIGHT OF X
48	216.000	2470.000	-48774.004 F3C	-48944.375 F3C	79095.296 F2D	80262.943 F2D
48	216.000	2505.000	-58367.589 F2C	-57397.224 F2C	22840.956 F3D	27239.514 F3D
48	216.000	2540.000	-66574.421 F2C	-63640.389 F2C	980.920 F3D	1629.735 F3D
48	216.000	2575.000	-64590.848 F2C	-50161.135 F2C	913.301 F3D	750.804 F3D
48	216.000	2585.000	-63941.928 F2B	-4458.209 F2B	12985.355 F2B	
48	216.000	2587.000	-3774.232 F2B	-62565.546 F2B		9562.940 F2C
48	216.000	2623.000	-77112.749 F2B	-86117.606 F2B	12540.072 F3A	7026.704 F3A
48	216.000	2659.000	-98743.204 F2B	-103581.661 F2B	48433.657 F3A	45329.365 F3A
48	216.000	2685.000	-68058.693 F3B	-70983.057 F3B	78957.381 F2A	77588.022 F2A
48	216.000	2702.000	-43669.560 F3B	-47736.169 F3B	69674.311 F2A	75314.349 F2A
48	216.000	2728.500	-23596.943 F3B	-23623.747 F3B	39072.612 F2A	39059.589 F2A
48	216.000	2755.000	-32.690 F3B		13849.091 F2A	13864.577 F2A
48	216.000	2791.000	-33.006 F2D		31.467 F2D	

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 13
April 18,2007 20:07

Y - S T R I P   D E S I G N   M O M E N T S

Y-STRIP ID	STRIP WIDTH	STATION Y-ORDINATE	TOP-MOMEMT LEFT OF Y	TOP-MOMEMT RIGHT OF Y	BOT-MOMEMT LEFT OF Y	BOT-MOMEMT RIGHT OF Y
60	216.000	-89.000		-28.526 F2B		29.243 F2B
60	216.000	-53.000		-260.067 F3C	13457.775 F2D	13838.103 F2D
60	216.000	-26.500	-15713.513 F3C	-14178.551 F3C	38046.510 F2D	37760.989 F2D
60	216.000	0.000	-56912.702 F2C	-39830.353 F3C	75888.553 F2D	71613.362 F2D
60	216.000	17.000	-58171.933 F3C	-53810.362 F3C	68960.268 F2D	71729.842 F2D
60	216.000	43.000	-73730.519 F2C	-71657.821 F2C	32118.528 F3D	34820.904 F3D
60	216.000	79.000	-69257.932 F2C	-69641.820 F2C	1916.695 F2C	1905.261 F2C
60	216.000	127.000	-72632.084 F2A	-71869.928 F2A	1020.869 F2B	519.884 F3B
60	216.000	162.000	-70778.880 F2A	-70863.523 F2A	2560.303 F3B	826.352 F2B
60	216.000	197.000	-62755.857 F2A	-63964.261 F2A	29263.849 F3B	25409.093 F3B
60	216.000	232.000	-53661.174 F3A	-53746.315 F3A	74405.317 F2B	73752.993 F2B
60	216.000	271.600	-69793.600 F2D	-65695.963 F2D	41811.898 F3C	41230.908 F3C
60	216.000	311.200	-97252.302 F2D	-94877.953 F2D	51832.792 F3C	50152.378 F3C
60	216.000	350.800	-111898.618 F2D	-110788.866 F2D	71025.672 F3C	68372.412 F3C
60	216.000	390.400	-114472.221 F2D	-114763.413 F2D	100374.553 F3C	96523.058 F3C
60	216.000	430.000	-115019.383 F3D	-114218.003 F3D	149135.526 F2C	147061.132 F2C
60	216.000	473.000	-126933.463 F3D	-125896.447 F3D	131618.091 F2C	132131.018 F2C
60	216.000	516.000	-132750.592 F3D	-132409.763 F3D	138337.519 F2C	136559.917 F2C
60	216.000	559.000	-134219.214 F3D	-134160.445 F3D	164824.962 F2C	165043.142 F2C
60	216.000	603.000	-133722.460 F3D	-133900.537 F3D	132173.139 F2C	134362.745 F2C
60	216.000	647.000	-129224.328 F3D	-130009.099 F3D	124689.661 F2C	124422.957 F2C
60	216.000	691.000	-121306.571 F3D	-121747.308 F3D	137576.956 F2C	139874.477 F2C
60	216.000	726.000	-131818.382 F2D	-130683.690 F2D	92736.017 F3C	96733.752 F3C
60	216.000	761.000	-138767.612 F2D	-132811.557 F2D	64156.041 F3C	65516.944 F3C
60	216.000	796.000	-132426.413 F2D	-79115.940 F2D	42272.268 F3C	28413.042 F3C
60	216.000	835.750	-61246.811 F2B	-47243.026 F2D	16427.383 F3A	10989.207 F3C
60	216.000	875.500	-40204.776 F2B	-41129.070 F2B	17324.045 F3A	9961.462 F3A
60	216.000	915.250	-26348.949 F2B	-34930.546 F2B	23246.254 F2A	14942.303 F3A
60	216.000	955.000	-11687.198 F3B	-17807.016 F3D	42090.355 F2A	48407.798 F2C
60	216.000	998.667	-42771.239 F2B	-25855.820 F2B	18348.716 F3A	22068.842 F2C
60	216.000	1042.333	-46191.186 F2B	-27189.297 F2B	14221.860 F3A	17996.071 F2C
60	216.000	1086.000	-29520.139 F2B	-1161.477 F2B	10625.983 F3A	593.204 F3A
60	216.000	1088.000	-1161.769 F2B	-28173.244 F2B	446.474 F3A	6759.761 F3A
60	216.000	1131.667	-30849.509 F2C	-46023.785 F2B	21864.999 F3D	12622.471 F3A
60	216.000	1175.333	-36714.970 F2C	-43893.238 F2B	35871.101 F3D	19158.343 F3A
60	216.000	1219.000	-33434.851 F3C	-20520.524 F3C	66975.929 F2D	43990.910 F2D
60	216.000	1263.000	-64517.103 F2C	-38247.129 F2C	46164.264 F3D	30715.003 F3D
60	216.000	1307.000	-78844.284 F2C	-52424.920 F2C	52491.056 F3D	33110.799 F3D

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 14
April 18,2007 20:07

Y - S T R I P   D E S I G N   M O M E N T S

Y-STRIP ID	STRIP WIDTH	STATION Y-ORDINATE	TOP-MOMEMT LEFT OF Y	TOP-MOMEMT RIGHT OF Y	BOT-MOMEMT LEFT OF Y	BOT-MOMEMT RIGHT OF Y
60	216.000	1351.000	-86853.246 F2C	-65753.413 F2C	66217.325 F3D	40654.674 F3D
60	216.000	1395.000	-91248.251 F2C	-75766.348 F2C	85326.546 F3D	52224.443 F3D
60	216.000	1439.000	-93868.832 F3C	-82706.199 F2C	112132.020 F2D	69984.245 F3D
60	216.000	1483.000	-100853.128 F3C	-89187.958 F3C	159452.001 F2D	129993.371 F2D
60	216.000	1527.000	-98680.094 F3C	-91851.794 F3C	117703.555 F2D	108558.519 F2D
60	216.000	1571.000	-98716.114 F3C	-96236.386 F3C	121009.633 F2D	109999.993 F2D
60	216.000	1615.000	-100269.037 F3C	-103747.100 F3C	146690.392 F2D	149740.950 F2D
60	216.000	1658.000	-89914.504 F3C	-99403.587 F3C	104697.171 F2D	121714.215 F2D
60	216.000	1701.000	-81983.055 F3C	-95523.364 F3C	99310.827 F2D	113601.485 F2D
60	216.000	1744.000	-73427.117 F3C	-88996.048 F3C	113127.787 F2D	141512.891 F2D
60	216.000	1783.600	-70708.300 F2C	-85330.790 F3C	65884.695 F2D	105261.357 F2D
60	216.000	1823.200	-63889.937 F2C	-82389.423 F2C	52097.618 F3D	83218.703 F3D
60	216.000	1862.800	-51968.893 F2C	-76559.141 F2C	42354.219 F3D	68145.590 F3D
60	216.000	1902.400	-37094.318 F2C	-60371.623 F2C	36097.648 F3D	57995.941 F3D
60	216.000	1942.000	-22571.887 F3A	-16808.583 F3A	52568.656 F2B	65630.047 F2B
60	216.000	1986.000	-31636.080 F2A	-12052.373 F2A	13512.880 F2B	11687.818 F2B
60	216.000	2016.500	-7733.629 F2C	-7981.193 F2C	784.163 F2D	2208.107 F2D
60	216.000	2047.000	-8211.769 F2B	-7469.335 F2B	710.865 F3C	2163.236 F2D
60	216.000	2068.000	-3812.155 F2D	-3743.570 F2B	1427.189 F3C	1555.108 F3A
60	216.000	2070.000	-3422.945 F2B	-3596.874 F2B	1806.990 F3A	2026.203 F2D
60	216.000	2095.000	-1826.145 F3D	-1064.720 F2C	5791.198 F2C	5649.006 F2A
60	216.000	2131.000	-3195.116 F3D	-32720.167 F2A	24042.522 F2C	27544.734 F2C
60	216.000	2157.000	-20354.921 F3D	-47852.159 F2D	65502.696 F2C	45216.778 F2C
60	216.000	2174.000	-29968.141 F2D	-66464.320 F2D	49397.495 F2C	39357.675 F3C
60	216.000	2200.500	-31520.723 F2D	-31609.505 F2D	19930.743 F3C	19972.211 F3C
60	216.000	2227.000	-315.955 F3D	-51.298 F3D	11841.667 F2C	11784.589 F2C
60	216.000	2263.000	-25.510 F2B		24.789 F2B	
63	1223.000	-89.000		-24.668 F2A		22.268 F2A
63	1223.000	-53.000		-230.401 F3C	56206.028 F2A	55675.532 F2A
63	1223.000	-26.500	-11599.991 F2C	-15323.515 F2C	168404.722 F2A	168747.015 F2A
63	1223.000	0.000	-12640.707 F3C	-17629.892 F2C	336279.570 F2A	337980.310 F2A
63	1223.000	17.000	-25661.135 F3B	-25570.835 F3B	348457.670 F2A	345282.803 F2A
63	1223.000	43.000	-6566.354 F2C	-5584.338 F3B	194353.344 F2A	194566.611 F2A
63	1223.000	79.000	-1824.765 F3B	-1792.276 F3B	57380.673 F2A	57338.659 F2A
63	1223.000	127.000	-1085.863 F2C		318.801 F2C	
68	1223.000	2047.000		-836.531 F2B		317.743 F3A
68	1223.000	2068.000	-1070.597 F3B	-993.589 F3B	15140.177 F2A	15185.153 F2A

Y - S T R I P   D E S I G N   M O M E N T S

Y-STRIP ID	STRIP WIDTH	STATION Y-ORDINATE	TOP-MOMENT LEFT OF Y	TOP-MOMENT RIGHT OF Y	BOT-MOMENT LEFT OF Y	BOT-MOMENT RIGHT OF Y
68	1223.000	2070.000	-978.792 F3B	-967.350 F3B	17920.858 F2A	17990.237 F2A
68	1223.000	2095.000	-31.816 F3B	-28.598 F3B	73800.012 F2A	73775.029 F2A
68	1223.000	2131.000	-29.435 F3B	-189.915 F3B	226759.857 F2A	226645.077 F2A
68	1223.000	2157.000	-12586.543 F3B	-12705.986 F3B	362670.293 F2A	362795.233 F2A
68	1223.000	2174.000	-2009.745 F3B	-1749.980 F3B	355247.511 F2A	357479.182 F2A
68	1223.000	2200.500			184194.286 F2A	184085.078 F2A
68	1223.000	2227.000			56347.328 F2C	56415.588 F2C
68	1223.000	2263.000	-13.491 F2A		12.578 F2A	
64	1223.000	-89.000		-23.949 F2B		21.521 F2B
64	1223.000	-53.000		-278.272 F3C	59439.409 F2D	59083.007 F2D
64	1223.000	-26.500	-14788.124 F2C	-19475.099 F2C	169767.512 F2D	171033.595 F2D
64	1223.000	0.000	-13994.229 F3C	-19453.409 F2C	335301.350 F2B	336803.474 F2B
64	1223.000	17.000	-25918.604 F3A	-25857.452 F3A	345504.151 F2B	342610.514 F2B
64	1223.000	43.000	-8748.774 F3C	-7833.738 F3C	192300.241 F2B	192665.338 F2B
64	1223.000	79.000	-2300.215 F3C	-2281.960 F3C	56590.724 F2B	56541.621 F2B
64	1223.000	127.000	-1301.455 F2C		375.256 F2C	
66	1223.000	2047.000		-1034.296 F2D		253.701 F2D
66	1223.000	2068.000	-2707.534 F2D	-2667.721 F2D	10173.312 F2B	10146.247 F2B
66	1223.000	2070.000	-2816.089 F2D	-2651.929 F2D	12448.367 F2B	12397.213 F2B
66	1223.000	2095.000	-2199.119 F3D	-2192.416 F3D	61174.318 F2B	61098.636 F2B
66	1223.000	2131.000	-6785.791 F3D	-7337.788 F3D	198980.021 F2B	198951.155 F2B
66	1223.000	2157.000	-9451.473 F3A	-9588.599 F3A	342656.732 F2B	345234.940 F2B
66	1223.000	2174.000	-9912.846 F3D	-17895.792 F3D	341253.499 F2C	332502.970 F2C
66	1223.000	2200.500	-26279.102 F2D	-20598.976 F2D	172088.195 F2C	172293.816 F2C
66	1223.000	2227.000	-142.736 F3D		60111.924 F2C	60276.625 F2C
66	1223.000	2263.000	-13.072 F2C		11.644 F2B	
61	216.000	-89.000		-29.903 F2A		30.497 F2A
61	216.000	-53.000		-153.575 F3C	13785.605 F2D	14152.305 F2D
61	216.000	-26.500	-17039.253 F3C	-15114.537 F3C	39480.791 F2D	38457.811 F2D
61	216.000	0.000	-64744.157 F2C	-49483.506 F3C	82770.155 F2D	76900.387 F2D
61	216.000	17.000	-63861.130 F3C	-58938.072 F3C	81202.977 F2D	82864.901 F2D
61	216.000	43.000	-80561.543 F2C	-78040.174 F2C	42677.535 F3D	45524.409 F3D
61	216.000	79.000	-71854.567 F2C	-72811.060 F2C	4571.523 F3D	6692.375 F3D
61	216.000	127.000	-70561.623 F2B	-69761.422 F2B	1423.172 F2C	571.636 F3A
61	216.000	162.000	-71456.562 F2D	-70191.452 F2D	4469.722 F3C	2011.920 F3A
61	216.000	197.000	-72081.308 F2D	-72486.684 F2D	40607.831 F3C	35785.177 F3C

Y - S T R I P   D E S I G N   M O M E N T S

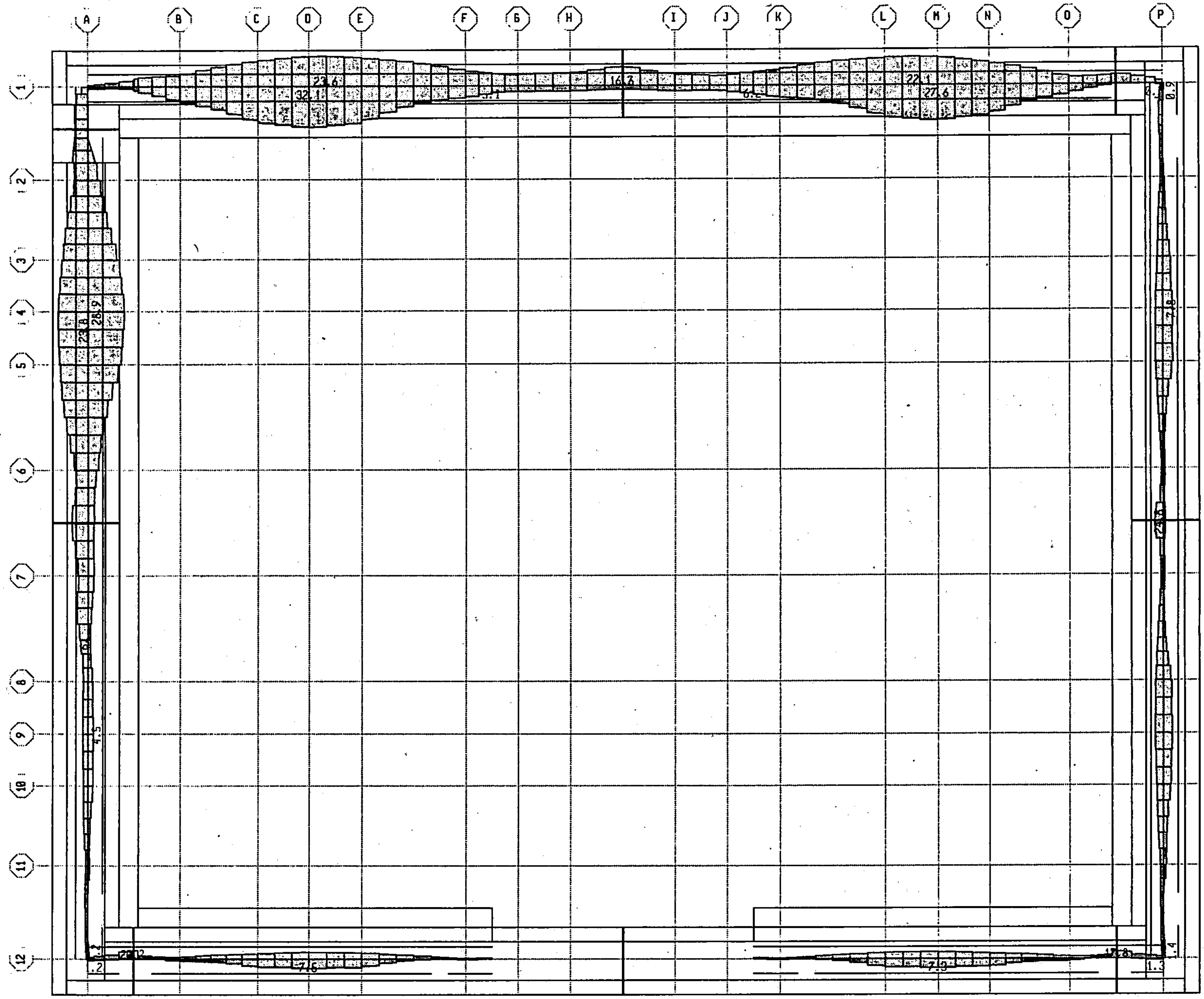
Y-STRIP ID	STRIP WIDTH	STATION Y-ORDINATE	TOP-MOMENT LEFT OF Y	TOP-MOMENT RIGHT OF Y	BOT-MOMENT LEFT OF Y	BOT-MOMENT RIGHT OF Y
61	216.000	232.000	-67255.621 F3D	-65412.495 F3D	91754.164 F2C	89085.795 F2C
61	216.000	271.600	-101763.517 F2D	-98061.066 F2D	78880.164 F3C	78581.385 F3C
61	216.000	311.200	-127303.451 F2D	-124948.961 F2D	88220.835 F3C	86366.188 F3C
61	216.000	350.800	-143691.607 F2D	-142171.284 F2D	111181.609 F3C	107850.793 F3C
61	216.000	390.400	-153468.027 F3D	-151803.282 F3D	149579.128 F2C	143533.018 F2C
61	216.000	430.000	-167913.682 F3D	-166396.434 F3D	214613.405 F2C	211675.616 F2C
61	216.000	473.000	-180374.629 F3D	-178856.643 F3D	197856.384 F2C	197841.960 F2C
61	216.000	516.000	-193750.390 F3D	-192302.731 F3D	212698.691 F2C	209731.584 F2C
61	216.000	559.000	-208834.198 F3D	-208295.905 F3D	253751.016 F2C	253464.767 F2C
61	216.000	603.000	-202793.227 F3D	-203137.988 F3D	214915.164 F2C	217292.863 F2C
61	216.000	647.000	-199820.022 F3D	-200164.482 F3D	209092.996 F2C	208373.580 F2C
61	216.000	691.000	-199103.339 F3D	-200593.854 F3D	229821.203 F2C	233079.763 F2C
61	216.000	726.000	-173176.857 F3D	-175863.590 F3D	153148.573 F3C	159601.172 F3C
61	216.000	761.000	-154961.444 F2D	-156858.078 F2D	104611.086 F3C	109602.867 F3C
61	216.000	796.000	-138747.141 F2D	-140932.230 F2D	67826.009 F3C	71611.328 F3C
61	216.000	835.750	-116958.014 F2D	-119593.041 F2D	39339.196 F3C	41864.515 F3C
61	216.000	875.500	-91181.717 F2D	-94204.432 F2D	24426.651 F3C	25617.688 F3C
61	216.000	915.250	-65645.475 F2A	-67712.232 F2A	27301.368 F3B	25356.759 F3B
61	216.000	955.000	-43230.035 F3A	-43053.008 F3A	48814.905 F2B	48539.157 F2B
61	216.000	998.667	-74695.055 F2A	-72078.998 F2A	30195.440 F3B	31507.972 F3B
61	216.000	1042.333	-90611.565 F2A	-78760.771 F2A	22105.254 F3B	20219.535 F3B
61	216.000	1086.000	-88760.082 F2A	-4462.018 F2A	19752.322 F3B	1105.428 F3B
61	216.000	1088.000	-4331.807 F2A	-88468.021 F2A	1075.253 F3B	19352.819 F3B
61	216.000	1131.667	-72688.381 F2A	-85099.131 F2A	23488.856 F3B	25065.719 F3B
61	216.000	1175.333	-60435.156 F2A	-63732.165 F2A	38229.524 F3B	36577.403 F3B
61	216.000	1219.000	-31895.061 F3A	-32279.808 F3A	65138.911 F2B	65226.734 F2B
61	216.000	1263.000	-53622.135 F2A	-51531.522 F2A	35511.066 F3D	35373.263 F3D
61	216.000	1307.000	-84602.117 F2C	-81323.790 F2C	44790.861 F3D	42840.000 F3D
61	216.000	1351.000	-112554.962 F2C	-109742.095 F2C	70425.795 F3D	66703.237 F3D
61	216.000	1395.000	-135484.236 F2C	-133082.143 F2C	114183.616 F3D	108513.444 F3D
61	216.000	1439.000	-159257.893 F3C	-156090.541 F3C	178097.885 F2D	168984.153 F2D
61	216.000	1483.000	-189897.264 F3C	-188299.724 F3C	276785.224 F2D	273014.698 F2D
61	216.000	1527.000	-186471.064 F3C	-186403.838 F3C	241523.065 F2D	243048.811 F2D
61	216.000	1571.000	-186727.973 F3C	-186681.211 F3C	242617.585 F2D	241035.534 F2D
61	216.000	1615.000	-189095.866 F3C	-189858.981 F3C	272111.566 F2D	273172.143 F2D
61	216.000	1658.000	-171870.842 F3C	-173475.650 F3C	221060.234 F2D	224808.376 F2D
61	216.000	1701.000	-156993.642 F3C	-158677.232 F3C	202483.159 F2D	203231.983 F2D
61	216.000	1744.000	-142972.218 F3C	-144577.388 F3C	209945.116 F2D	213608.348 F2D

Y - S T R I P D E S I G N M O M E N T S

Y-STRIP ID	STRIP WIDTH	STATION Y-ORDINATE	TOP-MOMENT LEFT OF Y	TOP-MOMENT RIGHT OF Y	BOT-MOMENT LEFT OF Y	BOT-MOMENT RIGHT OF Y
61	216.000	1783.600	-128463.994 F3C	-130126.759 F3C	136690.390 F3D	142214.572 F2D
61	216.000	1823.200	-121186.813 F2C	-122548.884 F2C	95394.270 F3D	99324.547 F3D
61	216.000	1862.800	-105549.187 F2C	-107682.381 F2C	68507.211 F3D	70992.784 F3D
61	216.000	1902.400	-80841.462 F2C	-84204.389 F2C	54964.525 F3D	55995.571 F3D
61	216.000	1942.000	-46073.583 F2C	-47204.349 F2C	53319.587 F3D	55782.529 F2D
61	216.000	1986.000	-65430.844 F2C	-64513.441 F2C	2385.033 F3D	4478.577 F3D
61	216.000	2016.500	-71446.302 F2B	-70673.649 F2B	355.399 F3A	366.364 F3A
61	216.000	2047.000	-78710.516 F2D	-77024.215 F2B	174.497 F3A	177.451 F3A
61	216.000	2068.000	-87987.530 F2D	-86968.620 F2D	79.727 F3A	69.118 F3A
61	216.000	2070.000	-88269.961 F2D	-88353.698 F2D	84.907 F3A	775.397 F2D
61	216.000	2095.000	-100228.891 F2D	-100177.283 F2D	1696.216 F2D	1936.679 F2D
61	216.000	2131.000	-106495.699 F2D	-110661.976 F2D	29601.163 F3C	27507.277 F3C
61	216.000	2157.000	-87157.215 F2D	-91268.263 F2D	58033.199 F3C	58006.206 F3C
61	216.000	2174.000	-85692.922 F2D	-90011.801 F2D	64378.692 F2C	72070.127 F2D
61	216.000	2200.500	-21812.113 F2D	-24732.877 F2D	35626.620 F2C	35399.629 F2C
61	216.000	2227.000	-191.899 F3D		12626.946 F2C	12484.263 F2C
61	216.000	2263.000	-26.122 F2A		26.771 F2A	

E.4: Beam Design Moments and Reinforcing

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:09 - Scale: Fit to Page
Beam Flexural Reinforcement (Sq-in) - Kip-in Units

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 1
April 18,2007 20:07

B E A M   R E I N F O R C I N G   (flexural in Sq-in and shear in Sq-in/ft)

LINE ID	STATION(S) X-ORDINATE	STATION(S) Y-ORDINATE	TOP-REBAR LEFT OF S	TOP-REBAR RIGHT OF S	BOT-REBAR LEFT OF S	BOT-REBAR RIGHT OF S	SHEAR-REBAR LEFT OF S	SHEAR-REBAR RIGHT OF S
1	2702.000	0.000		0.9		1.4		0.0
1	2702.000	17.000	0.9	1.6	1.4	1.2	0.0	0.0
1	2702.000	43.000	1.6	2.0	1.2	0.5	0.0	0.0
1	2702.000	79.000	2.0	1.8	0.4	0.0	0.0	0.0
1	2702.000	127.000	1.9	2.1	0.0	0.0	0.0	0.0
1	2702.000	162.000	2.1	2.2	0.0	0.4	0.0	0.0
1	2702.000	197.000	2.3	2.2	0.5	1.6	0.0	0.0
1	2702.000	232.000	2.1	2.5	1.8	2.4	0.0	0.0
1	2702.000	271.600	2.7	3.5	2.3	2.4	0.0	0.0
1	2702.000	311.200	3.6	4.2	2.4	2.9	0.0	0.0
1	2702.000	350.800	4.2	4.6	3.0	3.7	0.0	0.0
1	2702.000	390.400	4.6	4.9	3.9	5.2	0.0	0.0
1	2702.000	430.000	5.0	5.3	5.4	6.1	0.0	0.0
1	2702.000	473.000	5.4	5.8	6.1	6.1	0.0	0.0
1	2702.000	516.000	5.8	6.2	6.2	6.9	0.0	0.0
1	2702.000	559.000	6.2	6.3	7.0	7.1	0.0	0.0
1	2702.000	603.000	6.3	6.2	7.0	6.4	0.0	0.0
1	2702.000	647.000	6.2	6.2	6.3	6.5	0.0	0.0
1	2702.000	691.000	6.1	5.8	6.6	5.8	0.0	0.0
1	2702.000	726.000	5.7	5.1	5.6	4.0	0.0	0.0
1	2702.000	761.000	5.0	4.6	3.8	2.7	0.0	0.0
1	2702.000	796.000	4.5	4.0	2.5	1.7	0.0	0.0
1	2702.000	835.750	4.0	3.3	1.6	1.0	0.0	0.0
1	2702.000	875.500	3.2	2.5	0.9	0.6	0.0	0.0
1	2702.000	915.250	2.4	1.8	0.6	1.0	0.0	0.0
1	2702.000	955.000	1.7	1.8	1.1	1.1	0.0	0.0
1	2702.000	998.667	1.9	2.5	1.0	0.7	0.0	0.0
1	2702.000	1042.333	2.6	5.4	0.7	1.1	0.0	0.3
1	2702.000	1086.000	6.9	24.8	1.5	5.1	0.3	0.3
1	2702.000	1088.000	24.8	6.9	5.1	1.5	0.3	0.3
1	2702.000	1131.667	5.3	2.4	1.2	0.9	0.3	0.0
1	2702.000	1175.333	2.3	1.5	0.9	1.3	0.0	0.0
1	2702.000	1219.000	1.4	1.3	1.4	1.4	0.0	0.0
1	2702.000	1263.000	1.4	2.0	1.2	1.1	0.0	0.0
1	2702.000	1307.000	2.2	2.9	1.2	1.6	0.0	0.0
1	2702.000	1351.000	3.1	3.7	1.7	2.6	0.0	0.0
1	2702.000	1395.000	3.9	4.4	2.8	4.1	0.0	0.0
1	2702.000	1439.000	4.5	5.2	4.4	6.4	0.0	0.0
1	2702.000	1483.000	5.4	5.7	6.9	7.8	0.0	0.0
1	2702.000	1527.000	5.8	5.8	7.7	7.3	0.0	0.0
1	2702.000	1571.000	5.8	5.8	7.3	7.7	0.0	0.0
1	2702.000	1615.000	5.8	5.6	7.8	7.5	0.0	0.0
1	2702.000	1658.000	5.5	5.2	7.3	6.4	0.0	0.0
1	2702.000	1701.000	5.1	4.7	6.3	6.2	0.0	0.0
1	2702.000	1744.000	4.6	4.2	6.2	5.3	0.0	0.0
1	2702.000	1783.600	4.2	4.0	5.0	3.6	0.0	0.0
1	2702.000	1823.200	3.9	3.6	3.4	2.5	0.0	0.0
1	2702.000	1862.800	3.5	3.1	2.4	1.8	0.0	0.0
1	2702.000	1902.400	3.0	2.2	1.8	1.5	0.0	0.0
1	2702.000	1942.000	2.0	1.8	1.5	0.8	0.0	0.0
1	2702.000	1986.000	1.9	2.1	0.6	0.0	0.0	0.0
1	2702.000	2016.500	2.1	2.2	0.0	0.0	0.0	0.0
1	2702.000	2047.000	2.2	2.5	0.0	0.0	0.0	0.0
1	2702.000	2068.000	2.5	2.7	0.0	0.0	0.0	0.0
1	2702.000	2070.000	2.7	2.9	0.0	0.0	0.0	0.0
1	2702.000	2095.000	2.9	2.9	0.0	0.2	0.0	0.0
1	2702.000	2131.000	2.9	2.4	0.2	0.7	0.0	0.0
1	2702.000	2157.000	2.3	1.6	0.8	0.9	0.0	0.0
1	2702.000	2174.000	1.6		0.9		0.0	
3	0.000	0.000		1.5		1.2		0.0
3	17.000	0.000	1.5	2.5	1.2	1.1	0.0	0.0
3	43.000	0.000	2.5	3.1	1.1	0.5	0.0	0.0
3	79.000	0.000	3.2	5.6	0.4	0.0	0.0	0.0
3	115.000	0.000	6.4	20.2	0.0	0.0	0.0	2.5
3	117.000	0.000	19.7	6.8	0.0	0.0	2.5	0.0
3	127.000	0.000	6.7	2.7	0.0	0.0	0.0	0.0
3	162.000	0.000	2.5	1.7	0.0	0.0	0.0	0.0
3	197.000	0.000	1.7	1.4	0.1	1.1	0.0	0.0
3	232.000	0.000	1.4	1.7	1.3	1.9	0.0	0.0
3	271.600	0.000	1.9	2.7	1.9	2.0	0.0	0.0
3	311.200	0.000	2.8	3.3	2.1	2.6	0.0	0.0
3	350.800	0.000	3.4	3.7	2.7	3.6	0.0	0.0
3	390.400	0.000	3.7	4.0	3.8	5.4	0.0	0.0
3	430.000	0.000	4.1	4.4	5.6	6.4	0.0	0.0
3	473.000	0.000	4.5	4.8	6.4	6.4	0.0	0.0

SAFE v8.0.7 File: HOJ Kip-in Units PAGE 2
April 18,2007 20:07

B E A M   R E I N F O R C I N G   (flexural in Sq-in and shear in Sq-in/ft)

LINE ID	STATION(S) X-ORDINATE	STATION(S) Y-ORDINATE	TOP-REBAR LEFT OF S	TOP-REBAR RIGHT OF S	BOT-REBAR LEFT OF S	BOT-REBAR RIGHT OF S	SHEAR-REBAR LEFT OF S	SHEAR-REBAR RIGHT OF S
3	516.000	0.000	4.9	5.2	6.5	7.3	0.0	0.0
3	559.000	0.000	5.2	5.3	7.4	7.5	0.0	0.0
3	603.000	0.000	5.3	5.2	7.3	6.7	0.0	0.0
3	647.000	0.000	5.2	5.1	6.7	6.8	0.0	0.0
3	691.000	0.000	5.0	4.6	6.9	5.8	0.0	0.0
3	735.000	0.000	4.5	3.9	5.3	3.3	0.0	0.0
3	779.000	0.000	3.8	3.3	3.0	1.6	0.0	0.0
3	823.000	0.000	3.2	2.5	1.4	0.6	0.0	0.0
3	867.000	0.000	2.4	1.6	0.4	0.0	0.0	0.0
3	911.000	0.000	1.6	1.0	0.0	0.3	0.0	0.0
3	955.000	0.000	0.8	0.6	0.4	0.5	0.0	0.0
3	988.000	0.000	0.7	1.0	0.4	0.1	0.0	0.0
3	1021.000	0.000	1.0		0.1		0.0	
5	1681.000	0.000		1.0		0.2		0.0
5	1714.000	0.000	1.0	0.7	0.2	0.5	0.0	0.0
5	1747.000	0.000	0.7	0.8	0.5	0.4	0.0	0.0
5	1791.000	0.000	1.0	1.5	0.3	0.0	0.0	0.0
5	1835.000	0.000	1.7	2.5	0.0	0.4	0.0	0.0
5	1879.000	0.000	2.6	3.3	0.5	1.3	0.0	0.0
5	1923.000	0.000	3.4	4.0	1.5	2.8	0.0	0.0
5	1967.000	0.000	4.1	4.7	3.1	5.1	0.0	0.0
5	2011.000	0.000	4.8	5.2	5.6	6.6	0.0	0.0
5	2055.000	0.000	5.3	5.4	6.5	6.4	0.0	0.0
5	2099.000	0.000	5.4	5.5	6.5	7.1	0.0	0.0
5	2143.000	0.000	5.5	5.4	7.3	7.2	0.0	0.0
5	2186.000	0.000	5.4	5.1	7.0	6.3	0.0	0.0
5	2229.000	0.000	5.0	4.6	6.2	6.2	0.0	0.0
5	2272.000	0.000	4.5	4.2	6.3	5.5	0.0	0.0
5	2311.600	0.000	4.2	3.9	5.3	3.8	0.0	0.0
5	2351.200	0.000	3.8	3.5	3.6	2.7	0.0	0.0
5	2390.800	0.000	3.5	2.9	2.6	2.1	0.0	0.0
5	2430.400	0.000	2.8	1.9	2.1	1.9	0.0	0.0
5	2470.000	0.000	1.8	1.5	2.0	1.4	0.0	0.0
5	2505.000	0.000	1.5	1.7	1.2	0.2	0.0	0.0
5	2540.000	0.000	1.7	2.4	0.1	0.0	0.0	0.0
5	2575.000	0.000	2.6	5.9	0.0	0.0	0.0	0.0
5	2585.000	0.000	6.0	17.3	0.0	0.0	0.0	2.3
5	2587.000	0.000	17.8	5.7	0.0	0.0	2.3	0.0
5	2623.000	0.000	5.0	2.9	0.0	0.5	0.0	0.0
5	2659.000	0.000	2.8	2.2	0.6	1.2	0.0	0.0
5	2685.000	0.000	2.2	1.3	1.2	1.3	0.0	0.0
5	2702.000	0.000	1.2		1.3		0.0	
9	0.000	2174.000		1.1		1.5		0.0
9	17.000	2174.000	1.2	1.8	1.6	1.7	0.0	0.0
9	43.000	2174.000	1.9	2.7	1.7	1.3	0.0	0.0
9	79.000	2174.000	2.9	4.1	1.2	1.4	0.0	0.0
9	115.000	2174.000	4.4	5.5	1.7	2.5	0.0	0.0
9	117.000	2174.000	5.5	6.1	2.5	3.3	0.0	0.0
9	127.000	2174.000	6.1	7.1	3.3	4.8	0.0	0.0
9	162.000	2174.000	7.2	7.9	5.1	7.3	0.0	0.0
9	197.000	2174.000	7.9	8.2	7.7	10.3	0.0	0.0
9	232.000	2174.000	8.4	9.8	10.8	13.1	0.0	0.0
9	271.600	2174.000	10.3	12.4	13.5	15.2	0.0	0.0
9	311.200	2174.000	12.9	14.9	15.6	17.8	0.0	0.0
9	350.800	2174.000	15.4	17.1	18.4	21.4	0.0	0.0
9	390.400	2174.000	17.5	18.9	22.2	25.7	0.0	0.0
9	430.000	2174.000	19.2	20.5	26.4	28.7	0.0	0.0
9	473.000	2174.000	20.8	22.0	29.0	30.0	0.0	0.0
9	516.000	2174.000	22.2	23.1	30.3	31.7	0.0	0.0
9	559.000	2174.000	23.3	23.6	32.0	32.1	0.0	0.0
9	603.000	2174.000	23.6	23.5	31.8	30.6	0.0	0.0
9	647.000	2174.000	23.4	22.9	30.4	29.4	0.0	0.0
9	691.000	2174.000	22.7	21.8	29.1	26.3	0.0	0.0
9	735.000	2174.000	21.5	20.6	25.1	21.0	0.0	0.0
9	779.000	2174.000	20.4	19.4	20.0	16.6	0.0	0.0
9	823.000	2174.000	19.1	17.7	15.8	13.3	0.0	0.0
9	867.000	2174.000	17.3	15.7	12.7	11.1	0.0	0.0
9	911.000	2174.000	15.2	13.4	10.8	9.9	0.0	0.0
9	955.000	2174.000	12.9	11.5	9.7	8.5	0.0	0.0
9	988.000	2174.000	11.4	10.5	8.2	6.6	0.0	0.0
9	1021.000	2174.000	10.4		6.4		0.0	
11	1681.000	2174.000		10.8		7.3		0.0
11	1714.000	2174.000	11.0	11.8	7.5	8.8	0.0	0.0

B E A M   R E I N F O R C I N G   (flexural in Sq-in and shear in Sq-in/ft)

LINE ID	STATION(S) X-ORDINATE	STATION(S) Y-ORDINATE	TOP-REBAR LEFT OF S	TOP-REBAR RIGHT OF S	BOT-REBAR LEFT OF S	BOT-REBAR RIGHT OF S	SHEAR-REBAR LEFT OF S	SHEAR-REBAR RIGHT OF S
11	1747.000	2174.000	11.9	13.2	9.0	9.9	0.0	0.0
11	1791.000	2174.000	13.7	15.5	10.0	10.5	0.0	0.0
11	1835.000	2174.000	15.9	17.4	10.7	11.8	0.0	0.0
11	1879.000	2174.000	17.8	19.0	12.3	14.2	0.0	0.0
11	1923.000	2174.000	19.3	20.1	14.9	17.7	0.0	0.0
11	1967.000	2174.000	20.3	20.8	18.6	22.0	0.0	0.0
11	2011.000	2174.000	21.1	21.7	23.1	25.4	0.0	0.0
11	2055.000	2174.000	21.9	22.1	25.6	26.3	0.0	0.0
11	2099.000	2174.000	22.1	22.1	26.5	27.4	0.0	0.0
11	2143.000	2174.000	22.0	21.4	27.6	27.4	0.0	0.0
11	2186.000	2174.000	21.2	20.1	27.0	25.6	0.0	0.0
11	2229.000	2174.000	19.8	18.4	25.3	24.1	0.0	0.0
11	2272.000	2174.000	18.0	16.6	23.8	21.5	0.0	0.0
11	2311.600	2174.000	16.3	14.9	20.7	17.1	0.0	0.0
11	2351.200	2174.000	14.5	12.8	16.4	13.4	0.0	0.0
11	2390.800	2174.000	12.4	10.3	12.8	10.6	0.0	0.0
11	2430.400	2174.000	9.8	7.5	10.2	8.4	0.0	0.0
11	2470.000	2174.000	7.0	5.8	8.1	6.0	0.0	0.0
11	2505.000	2174.000	5.8	6.1	5.6	3.5	0.0	0.0
11	2540.000	2174.000	6.2	6.6	3.1	1.4	0.0	0.0
11	2575.000	2174.000	6.7	7.6	1.1	0.0	0.0	0.0
11	2585.000	2174.000	7.6	8.6	0.0	0.0	0.0	0.6
11	2587.000	2174.000	8.7	7.7	0.0	0.0	0.6	0.0
11	2623.000	2174.000	7.4	6.0	0.0	0.0	0.0	0.0
11	2659.000	2174.000	5.8	4.5	0.0	0.0	0.0	0.0
11	2685.000	2174.000	4.4	2.6	0.0	0.7	0.0	0.0
11	2702.000	2174.000	2.5		0.7		0.0	
13	1021.000	2174.000		9.5		5.1		0.0
13	1054.000	2174.000	9.3	8.6	4.9	4.4	0.0	0.0
13	1087.000	2174.000	8.7	9.0	4.4	4.5	0.0	0.0
13	1131.000	2174.000	9.2	9.7	4.4	4.3	0.0	0.0
13	1175.000	2174.000	9.8	9.9	4.3	4.4	0.0	0.0
13	1219.000	2174.000	10.0	10.6	4.4	4.1	0.0	0.0
13	1262.667	2174.000	10.9	12.1	3.9	3.3	0.0	0.0
13	1306.333	2174.000	12.5	14.1	3.2	3.1	0.0	0.0
13	1350.000	2174.000	14.8	16.7	3.1	3.4	0.0	0.0
13	1352.000	2174.000	16.7		3.4		0.0	
15	0.000	796.000		6.8		1.8		0.0
15	0.000	835.750	7.3	8.6	1.9	2.5	0.0	0.0
15	0.000	875.500	8.7	8.6	2.7	3.4	0.0	0.0
15	0.000	915.250	8.5	7.8	3.6	4.4	0.0	0.0
15	0.000	955.000	7.7	8.0	4.6	4.8	0.0	0.0
15	0.000	998.667	8.4	9.9	4.7	4.4	0.0	0.0
15	0.000	1042.333	10.3	12.2	4.4	4.6	0.0	0.0
15	0.000	1086.000	12.9	14.8	4.8	5.4	0.0	0.3
15	0.000	1088.000	14.8	13.0	5.4	5.0	0.3	0.0
15	0.000	1131.667	12.3	10.6	4.9	5.0	0.0	0.0
15	0.000	1175.333	10.2	9.2	5.1	5.9	0.0	0.0
15	0.000	1219.000	9.4	10.9	6.6	8.4	0.0	0.0
15	0.000	1263.000	11.5	13.9	8.7	10.0	0.0	0.0
15	0.000	1307.000	14.6	16.7	10.4	12.1	0.0	0.0
15	0.000	1351.000	17.3	19.0	12.6	15.0	0.0	0.0
15	0.000	1395.000	19.4	20.6	15.8	18.9	0.0	0.0
15	0.000	1439.000	20.9	21.7	19.8	23.3	0.0	0.0
15	0.000	1483.000	21.9	22.7	24.2	26.5	0.0	0.0
15	0.000	1527.000	22.9	23.5	26.8	27.6	0.0	0.0
15	0.000	1571.000	23.6	23.8	27.8	28.7	0.0	0.0
15	0.000	1615.000	23.8	23.5	28.9	28.7	0.0	0.0
15	0.000	1658.000	23.4	22.6	28.3	26.9	0.0	0.0
15	0.000	1701.000	22.3	21.2	26.6	25.4	0.0	0.0
15	0.000	1744.000	20.9	19.6	25.1	22.7	0.0	0.0
15	0.000	1783.600	19.3	18.3	22.0	18.9	0.0	0.0
15	0.000	1823.200	18.0	16.6	18.3	15.5	0.0	0.0
15	0.000	1862.800	16.1	14.2	15.0	12.7	0.0	0.0
15	0.000	1902.400	13.7	11.6	12.2	10.2	0.0	0.0
15	0.000	1942.000	11.1	10.7	9.8	7.6	0.0	0.0
15	0.000	1986.000	11.0	12.2	7.0	6.0	0.0	0.7
15	0.000	2016.500	11.6	11.6	3.1	2.9	0.7	0.7
15	0.000	2047.000	10.6	10.5	0.0	0.0	0.7	0.5
15	0.000	2068.000	10.2	10.2	0.0	0.0	0.5	0.6
15	0.000	2070.000	10.2	10.3	0.0	0.0	0.6	0.4
15	0.000	2095.000	10.6	10.6	0.0	0.0	0.4	0.3
15	0.000	2131.000	10.8	9.0	0.0	0.0	0.3	0.0
15	0.000	2157.000	8.7	5.2	0.0	0.0	0.0	0.0

B E A M   R E I N F O R C I N G   (flexural in Sq-in and shear in Sq-in/ft)

LINE ID	STATION(S) X-ORDINATE	STATION(S) Y-ORDINATE	TOP-REBAR LEFT OF S	TOP-REBAR RIGHT OF S	BOT-REBAR LEFT OF S	BOT-REBAR RIGHT OF S	SHEAR-REBAR LEFT OF S	SHEAR-REBAR RIGHT OF S
15	0.000	2174.000	5.0		0.0		0.0	
17	0.000	0.000		0.8		1.2		0.0
17	0.000	17.000	0.9	1.5	1.2	1.0	0.0	0.0
17	0.000	43.000	1.5	1.9	0.9	0.3	0.0	0.0
17	0.000	79.000	1.9	1.8	0.2	0.0	0.0	0.0
17	0.000	127.000	1.9	2.1	0.0	0.0	0.0	0.0
17	0.000	162.000	2.1	2.1	0.0	0.3	0.0	0.0
17	0.000	197.000	2.1	1.8	0.3	1.2	0.0	0.0
17	0.000	232.000	1.7	1.7	1.3	1.4	0.0	0.0
17	0.000	271.600	1.7	2.6	1.3	1.3	0.0	0.0
17	0.000	311.200	2.7	3.2	1.3	1.7	0.0	0.0
17	0.000	350.800	3.3	3.6	1.8	2.4	0.0	0.0
17	0.000	390.400	3.6	3.5	2.5	3.5	0.0	0.0
17	0.000	430.000	3.5	3.7	3.7	4.1	0.0	0.0
17	0.000	473.000	3.8	4.0	4.1	4.0	0.0	0.0
17	0.000	516.000	4.0	4.1	4.0	4.4	0.0	0.0
17	0.000	559.000	4.1	4.1	4.5	4.5	0.0	0.0
17	0.000	603.000	4.1	4.2	4.3	3.9	0.0	0.0
17	0.000	647.000	4.1	3.9	3.8	3.8	0.0	0.0
17	0.000	691.000	3.9	3.8	3.9	3.4	0.0	0.0
17	0.000	726.000	3.9	4.1	3.3	2.4	0.0	0.0
17	0.000	761.000	4.2	5.5	2.3	2.0	0.0	0.0
17	0.000	796.000	6.0		2.0		0.0	
19	1352.000	2174.000		14.6		3.1		0.0
19	1395.667	2174.000	13.8	11.8	3.1	3.3	0.0	0.0
19	1439.333	2174.000	11.4	9.9	3.4	3.9	0.0	0.0
19	1483.000	2174.000	9.4	8.6	4.1	4.3	0.0	0.0
19	1527.000	2174.000	8.6	8.3	4.3	4.0	0.0	0.0
19	1571.000	2174.000	8.1	7.6	4.0	4.0	0.0	0.0
19	1615.000	2174.000	7.7	8.5	4.1	5.1	0.0	0.0
19	1648.000	2174.000	8.7	9.7	5.2	6.0	0.0	0.0
19	1681.000	2174.000	9.9		6.2		0.0	

B E A M   D E S I G N   M O M E N T S   &   S H E A R S

LINE ID	STATION(S) X-ORDINATE	STATION(S) Y-ORDINATE	TOP MOMENT LEFT OF S	TOP MOMENT RIGHT OF S	BOT MOMENT LEFT OF S	BOT MOMENT RIGHT OF S	SHEAR LEFT OF S	SHEAR RIGHT OF S
1	2702.000	0.000		-3965.066		5999.945		6.8
1	2702.000	17.000	-4061.796	-7021.445	6023.605	5351.973	6.8	9.8
1	2702.000	43.000	-7177.437	-8763.435	5188.595	2244.853	9.8	16.0
1	2702.000	79.000	-8785.518	-7869.779	1777.510	0.000	16.0	18.9
1	2702.000	127.000	-8060.331	-8960.906	0.000	0.000	18.9	12.3
1	2702.000	162.000	-9005.825	-9736.431	0.000	1900.402	12.3	17.0
1	2702.000	197.000	-9802.592	-9398.213	2396.681	7139.420	17.0	23.2
1	2702.000	232.000	-9248.147	-10866.304	7771.480	10205.843	23.2	17.5
1	2702.000	271.600	-11559.595	-15261.292	10149.017	10448.468	17.5	10.9
1	2702.000	311.200	-15694.330	-18047.344	10625.383	12478.661	10.9	10.6
1	2702.000	350.800	-18340.242	-19860.113	12874.085	16202.794	10.6	18.7
1	2702.000	390.400	-20043.678	-21231.299	16841.455	22340.457	18.7	27.3
1	2702.000	430.000	-21440.344	-22958.844	23422.740	26361.754	27.3	11.4
1	2702.000	473.000	-23265.195	-24782.092	26156.330	26171.967	11.4	6.5
1	2702.000	516.000	-25048.020	-26496.457	26451.074	29418.994	6.5	17.0
1	2702.000	559.000	-26728.393	-27266.051	30152.014	30435.488	17.0	15.0
1	2702.000	603.000	-27227.352	-26883.072	29775.770	27396.922	15.0	4.8
1	2702.000	647.000	-26827.588	-26483.973	27224.568	27945.375	4.8	8.3
1	2702.000	691.000	-26364.213	-24874.543	28310.619	25051.855	8.3	29.0
1	2702.000	726.000	-24596.727	-22029.031	24037.008	17268.469	29.0	22.7
1	2702.000	761.000	-21798.314	-19900.010	16581.104	11587.834	22.7	17.0
1	2702.000	796.000	-19663.086	-17479.211	11062.559	7277.416	17.0	13.4
1	2702.000	835.750	-17103.705	-14466.540	6779.154	4255.755	13.4	11.2
1	2702.000	875.500	-14021.854	-10998.489	3971.740	2781.502	11.2	12.4
1	2702.000	915.250	-10506.236	-7999.124	2690.786	4270.350	12.4	17.2
1	2702.000	955.000	-7541.883	-7704.743	4637.344	4897.658	17.2	18.2
1	2702.000	998.667	-8299.037	-10916.013	4548.986	3236.085	18.2	10.9
1	2702.000	1042.333	-11330.589	-23191.383	3118.775	5004.531	10.9	146.2
1	2702.000	1086.000	-29577.203	-101674.625	6339.408	22039.621	146.2	256.8
1	2702.000	1088.000	-101657.453	-29461.275	22152.299	6656.112	256.8	148.9
1	2702.000	1131.667	-22960.975	-10468.444	5378.167	3801.854	148.9	14.1
1	2702.000	1175.333	-9918.863	-6623.559	3970.967	5623.721	14.1	21.7
1	2702.000	1219.000	-6005.023	-5619.519	6138.580	6051.668	21.7	20.4
1	2702.000	1263.000	-6057.082	-8867.037	5438.537	4802.632	20.4	14.9
1	2702.000	1307.000	-9524.415	-12802.955	5023.399	6973.111	14.9	13.3
1	2702.000	1351.000	-13389.522	-16202.386	7503.688	11227.301	13.3	22.0
1	2702.000	1395.000	-16689.775	-19092.416	12118.634	17790.154	22.0	33.0
1	2702.000	1439.000	-19534.162	-22587.865	19070.766	27511.125	33.0	43.5
1	2702.000	1483.000	-23122.990	-24720.305	29427.107	33195.566	43.5	10.9
1	2702.000	1527.000	-24794.332	-24862.896	32718.115	31192.410	10.9	3.7
1	2702.000	1571.000	-24863.020	-24910.709	31201.674	32784.363	3.7	12.5
1	2702.000	1615.000	-24893.313	-24128.635	33300.660	32240.121	12.5	20.4
1	2702.000	1658.000	-23867.533	-22262.156	31360.809	27612.232	20.4	9.7
1	2702.000	1701.000	-21966.693	-20283.645	27195.695	26446.564	9.7	9.8
1	2702.000	1744.000	-19947.938	-18342.082	26521.479	22858.725	9.8	30.2
1	2702.000	1783.600	-18130.885	-17161.029	21662.893	15606.344	30.2	21.6
1	2702.000	1823.200	-16999.025	-15640.073	14875.669	10943.726	21.6	13.6
1	2702.000	1862.800	-15375.715	-13242.584	10454.063	7968.132	13.6	9.9
1	2702.000	1902.400	-12848.927	-9482.285	7688.653	6658.987	9.9	15.8
1	2702.000	1942.000	-8856.355	-7725.671	6590.977	3664.393	15.8	29.8
1	2702.000	1986.000	-8064.517	-8984.272	2643.629	0.000	29.8	12.7
1	2702.000	2016.500	-8978.209	-9732.356	0.000	0.000	12.7	8.5
1	2702.000	2047.000	-9776.124	-10832.760	0.000	0.000	8.5	3.4
1	2702.000	2068.000	-10902.474	-11789.921	0.000	0.000	3.4	0.1
1	2702.000	2070.000	-11790.130	-12410.043	0.000	0.000	0.1	5.8
1	2702.000	2095.000	-12473.784	-12523.512	0.000	718.012	5.8	12.1
1	2702.000	2131.000	-12424.743	-10256.468	1042.688	3156.497	12.1	9.6
1	2702.000	2157.000	-10070.019	-7079.580	3276.401	3757.650	9.6	4.8
1	2702.000	2174.000	-6998.461		3736.257		4.8	
3	0.000	0.000		-6371.878		5239.358		9.4
3	17.000	0.000	-6531.042	-10837.792	5274.141	4838.616	9.4	10.3
3	43.000	0.000	-11022.316	-13640.027	4692.823	2018.507	10.3	15.8
3	79.000	0.000	-13853.243	-24002.617	1594.907	0.000	15.8	96.4
3	115.000	0.000	-27398.861	-83644.414	0.000	0.000	96.4	1025.7
3	117.000	0.000	-81592.992	-29097.277	0.000	0.000	1025.7	25.3
3	127.000	0.000	-28844.584	-11673.423	0.000	0.000	25.3	38.6
3	162.000	0.000	-10695.702	-7362.395	0.000	7.424	38.6	16.0
3	197.000	0.000	-7343.983	-6282.499	464.009	4923.632	16.0	22.5
3	232.000	0.000	-6061.038	-7366.954	5527.021	8102.601	22.5	17.4
3	271.600	0.000	-8056.150	-11713.101	8083.710	8872.774	17.4	10.6
3	311.200	0.000	-12132.320	-14339.689	9126.049	11451.332	10.6	12.9
3	350.800	0.000	-14602.086	-15875.864	11916.962	15684.439	12.9	21.0
3	390.400	0.000	-16013.840	-17412.670	16388.109	23053.275	21.0	29.9
3	430.000	0.000	-17570.977	-18970.389	24235.771	27547.971	29.9	10.9
3	473.000	0.000	-19293.072	-20828.475	27360.553	27520.930	10.9	7.3

B E A M   D E S I G N   M O M E N T S   &   S H E A R S

LINE ID	STATION(S) X-ORDINATE	STATION(S) Y-ORDINATE	TOP MOMENT LEFT OF S	TOP MOMENT RIGHT OF S	BOT MOMENT LEFT OF S	BOT MOMENT RIGHT OF S	SHEAR LEFT OF S	SHEAR RIGHT OF S
3	516.000	0.000	-21082.346	-22395.113	27836.654	31046.705	7.3	18.2
3	559.000	0.000	-22590.783	-22999.596	31828.393	32102.061	18.2	16.2
3	603.000	0.000	-22950.084	-22507.395	31387.885	28772.949	16.2	4.6
3	647.000	0.000	-22423.902	-21886.857	28569.381	29123.100	4.6	7.0
3	691.000	0.000	-21721.336	-19942.355	29430.580	25007.893	7.0	45.4
3	735.000	0.000	-19429.500	-16840.465	23012.268	14240.601	45.4	34.1
3	779.000	0.000	-16426.963	-14141.433	12934.981	7140.021	34.1	22.9
3	823.000	0.000	-13670.368	-10918.091	6228.248	2431.914	22.9	13.2
3	867.000	0.000	-10338.653	-7132.353	1894.294	0.000	13.2	15.0
3	911.000	0.000	-6841.708	-4148.976	0.000	1441.663	15.0	20.7
3	955.000	0.000	-3436.837	-2753.732	1847.466	2047.112	20.7	11.3
3	988.000	0.000	-3010.538	-4200.479	1860.678	587.623	11.3	2.9
3	1021.000	0.000	-4162.051		505.634		2.9	
5	1681.000	0.000		-4457.031		797.383		2.8
5	1714.000	0.000	-4496.195	-3229.092	878.899	2062.037	2.8	11.1
5	1747.000	0.000	-2957.343	-3512.380	2231.599	1828.473	11.1	21.2
5	1791.000	0.000	-4201.382	-6711.071	1373.860	0.000	21.2	15.5
5	1835.000	0.000	-7363.953	-10748.490	0.000	1575.187	15.5	13.7
5	1879.000	0.000	-11352.681	-14241.790	2088.624	5745.070	13.7	22.1
5	1923.000	0.000	-14740.320	-17178.807	6627.854	12256.576	22.1	33.2
5	1967.000	0.000	-17623.359	-20204.975	13527.386	21923.861	33.2	44.4
5	2011.000	0.000	-20741.965	-22573.143	23877.021	28226.018	44.4	6.7
5	2055.000	0.000	-22734.521	-23242.756	27932.938	27460.742	6.7	4.9
5	2099.000	0.000	-23320.857	-23739.410	27677.840	30350.301	4.9	16.5
5	2143.000	0.000	-23784.686	-23352.348	31074.518	30898.469	16.5	17.6
5	2186.000	0.000	-23152.215	-21812.145	30142.799	27075.854	17.6	6.8
5	2229.000	0.000	-21552.729	-19983.775	26785.381	26757.061	6.8	11.6
5	2272.000	0.000	-19654.824	-18243.934	26967.650	23796.055	11.6	29.3
5	2311.600	0.000	-18087.240	-16788.188	22637.365	16219.826	29.3	20.4
5	2351.200	0.000	-16643.492	-15308.195	15534.685	11890.604	20.4	12.3
5	2390.800	0.000	-15033.646	-12725.945	11444.645	9252.198	12.3	11.1
5	2430.400	0.000	-12287.494	-8483.094	9020.519	8375.709	11.1	18.1
5	2470.000	0.000	-7837.592	-6321.122	8496.611	5959.515	18.1	22.1
5	2505.000	0.000	-6528.682	-7456.161	5366.961	998.918	22.1	15.6
5	2540.000	0.000	-7455.656	-10365.938	553.729	0.000	15.6	34.9
5	2575.000	0.000	-11171.128	-25549.063	0.000	0.000	34.9	22.5
5	2585.000	0.000	-25774.309	-72453.125	0.000	0.000	22.5	955.6
5	2587.000	0.000	-74364.266	-24443.029	0.000	0.000	955.6	91.6
5	2623.000	0.000	-21430.684	-12387.452	0.000	2020.093	91.6	16.4
5	2659.000	0.000	-12184.646	-9718.515	2467.533	5260.908	16.4	10.4
5	2685.000	0.000	-9543.600	-5573.301	5412.060	5757.754	10.4	8.5
5	2702.000	0.000	-5428.250		5715.945		8.5	
9	0.000	2174.000		-14534.746		19379.234		28.4
9	17.000	2174.000	-14883.315	-23153.844	19861.941	21906.852	28.4	83.1
9	43.000	2174.000	-23954.717	-35102.449	21187.869	16028.206	83.1	160.2
9	79.000	2174.000	-37167.328	-51988.426	14993.068	18488.469	160.2	126.1
9	115.000	2174.000	-56527.863	-69494.516	21767.156	31988.875	126.1	1.2
9	117.000	2174.000	-69496.422	-77934.719	31991.209	41733.281	1.2	23.3
9	127.000	2174.000	-78128.375	-90145.016	41966.102	61111.469	23.3	132.0
9	162.000	2174.000	-92085.492	-99881.945	65362.137	92451.484	132.0	178.7
9	197.000	2174.000	-100693.203	-104748.984	97821.516	129828.094	178.7	196.4
9	232.000	2174.000	-106550.234	-124448.273	136701.797	165580.750	196.4	162.2
9	271.600	2174.000	-130448.383	-157500.063	170089.672	190905.375	162.2	160.4
9	311.200	2174.000	-163643.453	-188657.578	196356.234	224158.953	160.4	187.3
9	350.800	2174.000	-194025.813	-215468.406	231577.953	268076.813	187.3	236.6
9	390.400	2174.000	-220006.922	-237708.266	277447.250	319748.531	236.6	241.6
9	430.000	2174.000	-241376.594	-257132.438	329316.719	356747.844	241.6	103.3
9	473.000	2174.000	-261378.281	-275503.719	360343.188	372731.000	103.3	89.7
9	516.000	2174.000	-278902.219	-289315.688	376589.250	392349.781	89.7	91.9
9	559.000	2174.000	-291429.281	-295659.938	396301.938	397366.531	91.9	109.0
9	603.000	2174.000	-295854.875	-294058.500	393820.500	380148.969	109.0	86.6
9	647.000	2174.000	-293005.938	-287334.750	376706.000	365529.750	86.6	91.6
9	691.000	2174.000	-285013.094	-274095.906	361499.188	328056.156	91.6	340.7
9	735.000	2174.000	-270209.031	-259093.391	313065.500	263096.156	340.7	340.0
9	779.000	2174.000	-256130.500	-243802.641	250176.625	209167.844	340.0	261.8
9	823.000	2174.000	-239727.969	-223345.672	198864.453	168091.219	261.8	170.3
9	867.000	2174.000	-218098.453	-197955.203	160875.016	140693.156	170.3	140.1
9	911.000	2174.000	-191789.125	-169058.906	136350.266	124913.195	140.1	145.6
9	955.000	2174.000	-162654.328	-145972.391	122341.164	107525.266	145.6	110.1
9	988.000	2174.000	-144184.406	-133534.922	104205.031	84344.570	110.1	96.8
9	1021.000	2174.000	-131786.297		81404.180		96.8	
11	1681.000	2174.000		-137331.031		92133.227		80.2
11	1714.000	2174.000	-139074.172	-149547.297	94618.891	111308.680	80.2	89.7

B E A M D E S I G N M O M E N T S & S H E A R S

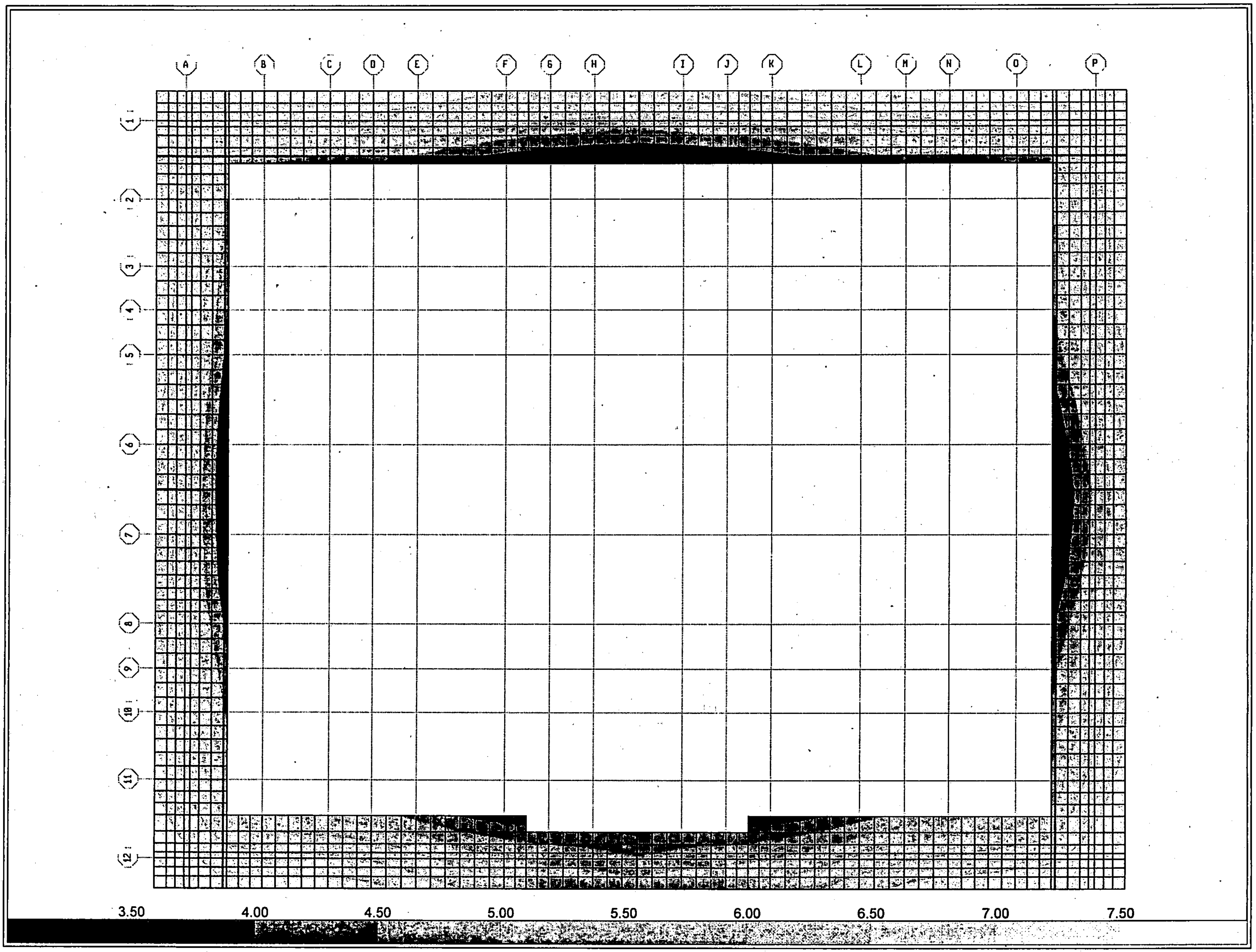
LINE ID	STATION(S) X-ORDINATE	STATION(S) Y-ORDINATE	TOP MOMENT LEFT OF S	TOP MOMENT RIGHT OF S	BOT MOMENT LEFT OF S	BOT MOMENT RIGHT OF S	SHEAR LEFT OF S	SHEAR RIGHT OF S
11	1747.000	2174.000	-151280.359	-167426.156	114052.070	124794.578	89.7	140.6
11	1791.000	2174.000	-173613.313	-195342.813	126046.555	132340.125	140.6	132.2
11	1835.000	2174.000	-201160.641	-219868.438	135112.438	149510.859	132.2	127.8
11	1879.000	2174.000	-224645.125	-239151.828	155008.766	179524.250	127.8	216.7
11	1923.000	2174.000	-242628.406	-252630.781	187984.031	222349.594	216.7	293.3
11	1967.000	2174.000	-254869.484	-261703.922	233339.031	275087.406	293.3	298.3
11	2011.000	2174.000	-264703.875	-272784.406	288212.688	316576.344	298.3	82.2
11	2055.000	2174.000	-274376.313	-277455.875	319579.688	327654.594	82.2	97.2
11	2099.000	2174.000	-277737.781	-276695.250	330278.625	341135.594	97.2	118.3
11	2143.000	2174.000	-275674.594	-268731.969	343925.781	340756.875	118.3	101.8
11	2186.000	2174.000	-265932.250	-252955.469	336380.000	319196.750	101.8	98.6
11	2229.000	2174.000	-248832.922	-232069.656	314957.344	301137.625	98.6	118.7
11	2272.000	2174.000	-227163.719	-209823.844	297159.094	268513.594	118.7	247.5
11	2311.600	2174.000	-205980.250	-187726.109	258711.797	215495.594	247.5	241.6
11	2351.200	2174.000	-183068.281	-161567.094	205929.078	169318.406	241.6	191.3
11	2390.800	2174.000	-156451.641	-130872.523	162202.078	134420.125	191.3	167.6
11	2430.400	2174.000	-124236.648	-94805.320	128699.023	106582.391	167.6	164.0
11	2470.000	2174.000	-88720.961	-74180.523	102227.242	76578.539	164.0	184.1
11	2505.000	2174.000	-74216.961	-77949.461	71512.422	44771.930	184.1	168.2
11	2540.000	2174.000	-78572.500	-84127.336	40022.559	17372.467	168.2	143.1
11	2575.000	2174.000	-85537.367	-96429.758	14050.860	532.896	143.1	31.5
11	2585.000	2174.000	-96635.070	-109440.883	392.591	0.000	31.5	1277.0
11	2587.000	2174.000	-110151.602	-98135.570	0.000	0.000	1277.0	152.4
11	2623.000	2174.000	-94385.930	-76798.141	0.000	0.000	152.4	142.9
11	2659.000	2174.000	-73468.648	-57962.352	0.000	13.969	142.9	86.1
11	2685.000	2174.000	-56507.141	-33530.277	1556.382	8947.356	86.1	76.5
11	2702.000	2174.000	-32229.580		8929.809		76.5	
13	1021.000	2174.000		-120196.750		65163.719		70.5
13	1054.000	2174.000	-118219.375	-109852.625	62896.801	55867.344	70.5	67.3
13	1087.000	2174.000	-110053.133	-114670.453	56411.734	57009.313	67.3	114.4
13	1131.000	2174.000	-116938.289	-123301.422	56377.250	54869.988	114.4	83.4
13	1175.000	2174.000	-124399.750	-126047.938	54805.949	55677.293	83.4	59.1
13	1219.000	2174.000	-126293.500	-133790.109	55966.590	52376.176	59.1	141.8
13	1262.667	2174.000	-137808.547	-153314.453	50096.473	42720.352	141.8	135.9
13	1306.333	2174.000	-157907.063	-178441.344	41219.285	39252.539	135.9	189.7
13	1350.000	2174.000	-186725.516	-210716.094	39907.523	43737.086	189.7	323.5
13	1352.000	2174.000	-210507.281		43745.645		323.5	
15	0.000	796.000		-85873.766		22594.646		206.8
15	0.000	835.750	-92826.891	-109124.383	23732.291	32502.156	206.8	54.5
15	0.000	875.500	-110480.344	-109556.344	34540.023	43782.336	54.5	78.8
15	0.000	915.250	-108050.297	-99458.711	46059.051	56195.930	78.8	102.2
15	0.000	955.000	-97519.938	-101598.242	58407.477	61251.879	102.2	183.9
15	0.000	998.667	-106335.023	-125562.867	60176.633	56617.492	183.9	214.0
15	0.000	1042.333	-131196.188	-154467.031	56137.898	58498.031	214.0	242.2
15	0.000	1086.000	-163069.938	-186542.453	60731.430	68886.563	242.2	756.4
15	0.000	1088.000	-186634.031	-164231.813	69138.875	63694.176	756.4	198.4
15	0.000	1131.667	-156132.781	-134436.500	62551.074	63449.418	198.4	217.5
15	0.000	1175.333	-129170.563	-117370.117	64648.020	75286.328	217.5	223.3
15	0.000	1219.000	-119545.156	-137954.063	83774.273	106364.195	223.3	187.7
15	0.000	1263.000	-146213.422	-176020.781	110634.797	126084.375	187.7	185.1
15	0.000	1307.000	-184164.844	-210585.156	131134.984	152477.594	185.1	163.5
15	0.000	1351.000	-217408.391	-238508.797	159673.453	189313.438	163.5	238.6
15	0.000	1395.000	-243696.313	-259178.375	199002.641	236957.359	238.6	305.3
15	0.000	1439.000	-262835.469	-272679.469	248771.641	291150.156	305.3	303.4
15	0.000	1483.000	-274734.625	-284824.813	302574.563	330453.375	303.4	77.5
15	0.000	1527.000	-287486.656	-294313.125	333861.344	343007.438	77.5	81.7
15	0.000	1571.000	-295634.625	-298115.125	345800.469	356808.938	81.7	104.9
15	0.000	1615.000	-298074.406	-294596.813	359552.063	356500.594	104.9	99.2
15	0.000	1658.000	-292749.375	-283260.500	352235.906	335218.531	99.2	99.7
15	0.000	1701.000	-280071.750	-266530.625	330930.813	316640.406	99.7	98.0
15	0.000	1744.000	-262398.531	-246830.094	312504.625	284119.438	98.0	241.1
15	0.000	1783.600	-243240.375	-230745.578	274679.250	237779.250	241.1	237.3
15	0.000	1823.200	-227204.625	-208703.516	229423.328	195670.359	237.3	192.3
15	0.000	1862.800	-203689.516	-179098.156	188486.266	159933.313	192.3	157.9
15	0.000	1902.400	-172845.391	-146312.688	153913.203	129600.781	157.9	137.1
15	0.000	1942.000	-140968.891	-135158.313	124172.688	97110.125	137.1	251.4
15	0.000	1986.000	-139416.625	-154450.656	88820.297	76453.141	251.4	1382.3
15	0.000	2016.500	-146991.031	-146380.000	39582.410	37185.273	1382.3	1393.2
15	0.000	2047.000	-134757.891	-133706.156	0.000	0.000	1393.2	1230.5
15	0.000	2068.000	-128947.477	-129355.563	0.000	0.000	1230.5	1325.7
15	0.000	2070.000	-129895.117	-130253.313	0.000	0.000	1325.7	1100.9
15	0.000	2095.000	-133920.969	-134160.906	0.000	0.000	1100.9	1020.6
15	0.000	2131.000	-136842.953	-114221.117	0.000	0.000	1020.6	174.1
15	0.000	2157.000	-110385.656	-65658.453	0.000	0.000	174.1	129.7

B E A M D E S I G N M O M E N T S & S H E A R S

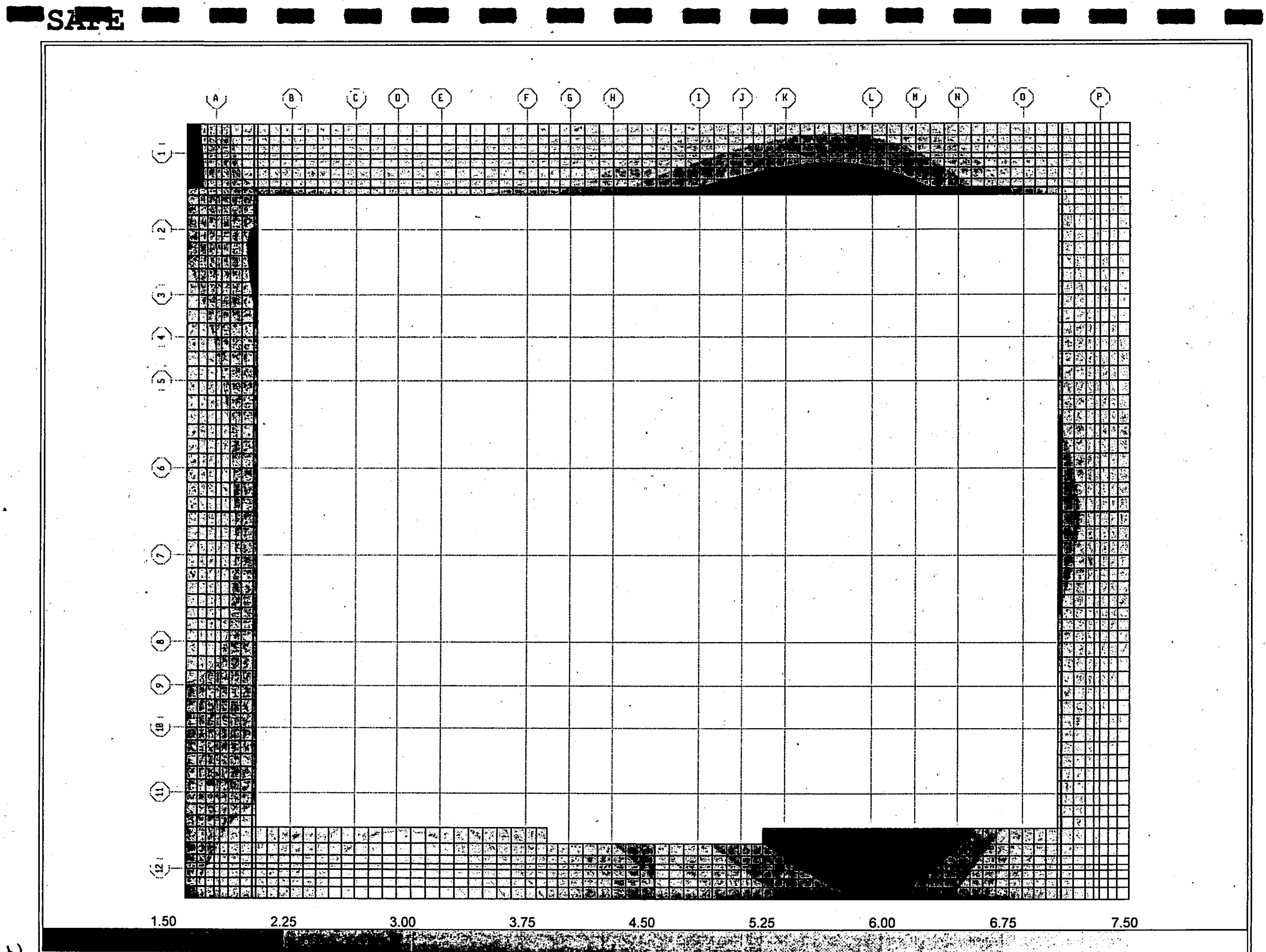
LINE ID	STATION(S) X-ORDINATE	STATION(S) Y-ORDINATE	TOP MOMENT LEFT OF S	TOP MOMENT RIGHT OF S	BOT MOMENT LEFT OF S	BOT MOMENT RIGHT OF S	SHEAR LEFT OF S	SHEAR RIGHT OF S
15	0.000	2174.000	-63452.820		0.000		129.7	
17	0.000	0.000		-3669.864		5219.458		6.5
17	0.000	17.000	-3761.398	-6535.257	5232.313	4259.393	6.5	9.3
17	0.000	43.000	-6673.119	-8142.254	4086.910	1186.609	9.3	14.5
17	0.000	79.000	-8186.882	-8029.130	765.547	0.000	14.5	14.4
17	0.000	127.000	-8331.434	-9161.097	0.000	0.000	14.4	8.3
17	0.000	162.000	-9198.377	-9097.675	0.000	1096.363	8.3	13.1
17	0.000	197.000	-9043.072	-7834.378	1462.754	5277.476	13.1	19.9
17	0.000	232.000	-7597.254	-7342.654	5803.107	6281.849	19.9	19.3
17	0.000	271.600	-7565.490	-11210.159	5753.961	5688.309	19.3	11.9
17	0.000	311.200	-11680.740	-14053.493	5879.488	7560.687	11.9	8.8
17	0.000	350.800	-14317.215	-15428.262	7891.238	10544.015	8.8	14.8
17	0.000	390.400	-15512.302	-15280.741	11035.985	14946.332	14.8	21.7
17	0.000	430.000	-15305.273	-16106.849	15805.570	17879.182	21.7	14.0
17	0.000	473.000	-16369.386	-17407.699	17621.715	17107.914	14.0	4.7
17	0.000	516.000	-17527.590	-17869.439	17228.799	19005.250	4.7	11.1
17	0.000	559.000	-17864.809	-17922.957	19484.576	19266.117	11.1	16.2
17	0.000	603.000	-17949.896	-17976.369	18681.197	16699.133	16.2	7.6
17	0.000	647.000	-17922.840	-16918.105	16527.633	16575.074	7.6	10.6
17	0.000	691.000	-16677.170	-16569.520	16815.463	14852.063	10.6	20.5
17	0.000	726.000	-16773.404	-17907.822	14303.227	10305.179	20.5	14.5
17	0.000	761.000	-17966.119	-23922.727	9901.972	8539.487	14.5	59.1
17	0.000	796.000	-25762.779		8733.545		59.1	
19	1352.000	2174.000		-184039.859		40027.496		217.4
19	1395.667	2174.000	-174545.109	-149942.516	39427.918	41516.461	217.4	145.1
19	1439.333	2174.000	-144285.688	-124974.711	43023.789	50279.547	145.1	152.4
19	1483.000	2174.000	-119921.297	-109541.836	52463.918	55096.266	152.4	58.7
19	1527.000	2174.000	-108702.617	-105059.266	54355.016	51613.457	58.7	82.5
19	1571.000	2174.000	-103383.531	-96500.656	51082.332	50357.598	82.5	110.1
19	1615.000	2174.000	-98052.766	-107871.211	52541.605	64799.047	110.1	69.0
19	1648.000	2174.000	-110148.570	-123679.602	66344.000	76681.047	69.0	60.6
19	1681.000	2174.000	-125680.961		78549.898		60.6	

E.5: Bearing Stress Check

SAFE



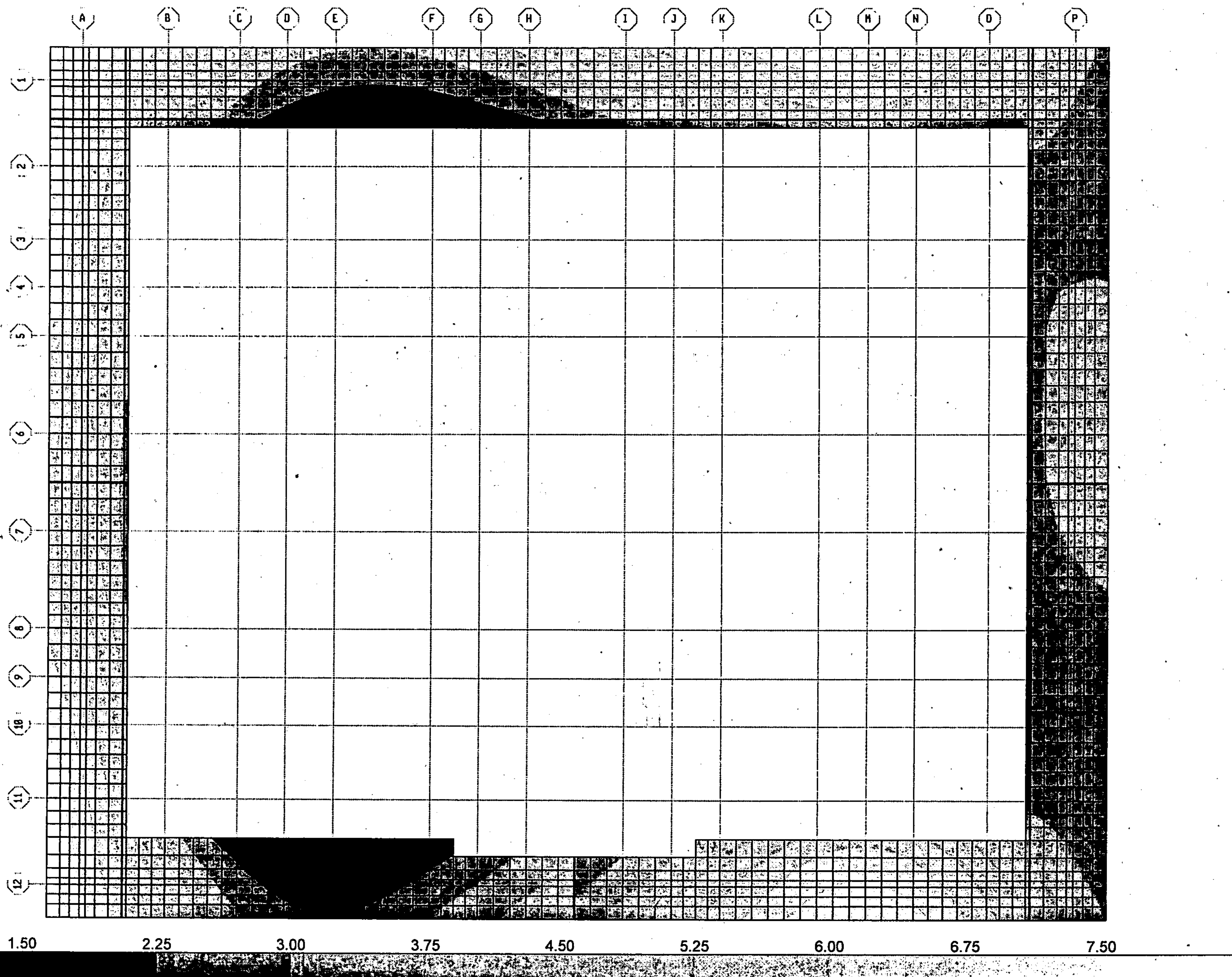
SAFE v8.0.7 - File: HOJ - April 18,2007 20:11 - Scale: Fit to Page
Soil Pressure Diagram - (S1A) - Kip-ft Units



SAFE v8.0.7 - File: HOJ - April 18,2007 20:11 - Scale: Fit to Page
Soil Pressure Diagram - (S2A) - Kip-ft Units

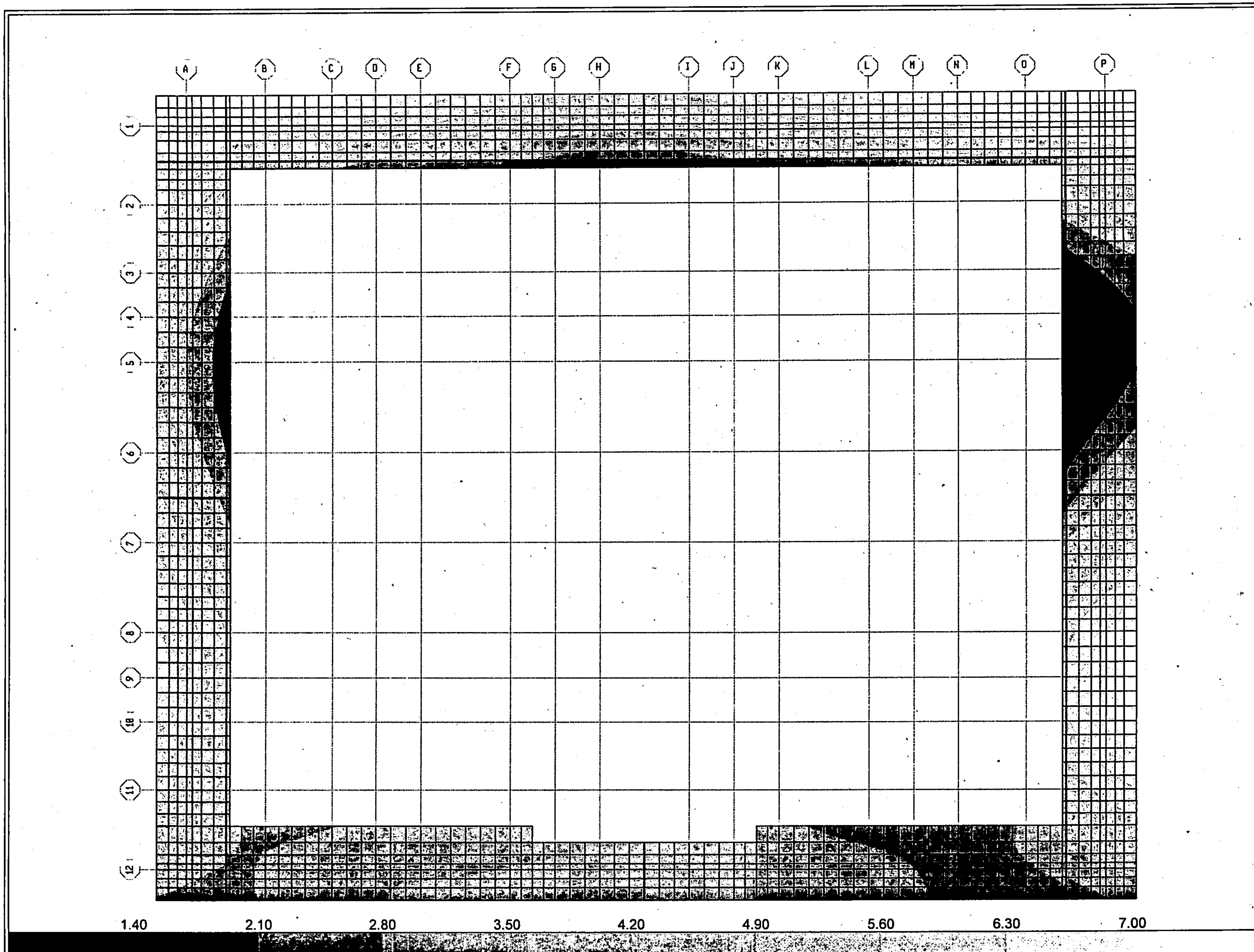
2

SAFE



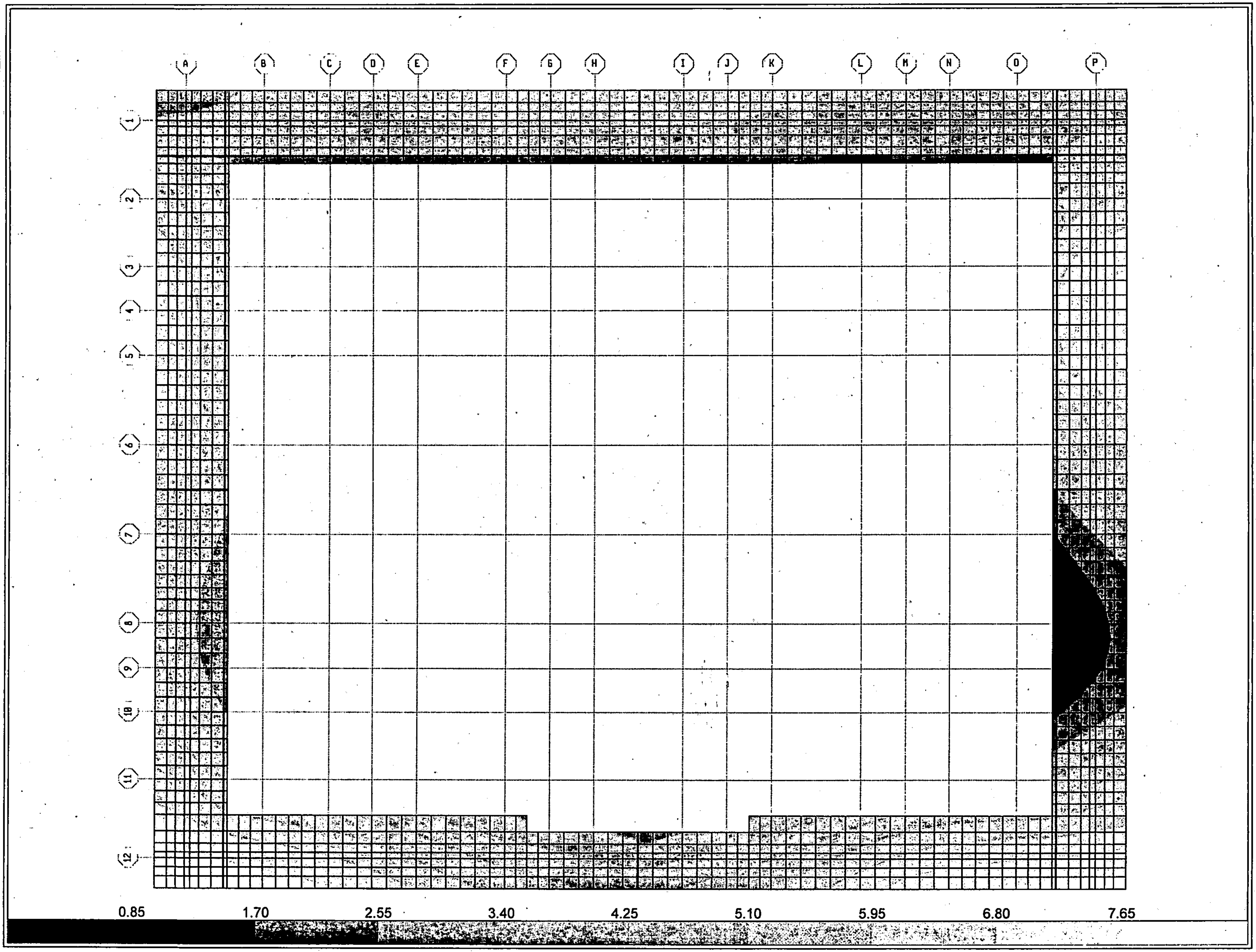
SAFE v8.0.7 - File: HOJ - April 18,2007 20:12 - Scale: Fit to Page
Soil Pressure Diagram - (S2B) - Kip-ft Units

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:12 - Scale: Fit to Page
Soil Pressure Diagram - (S2C) - Kip-ft Units

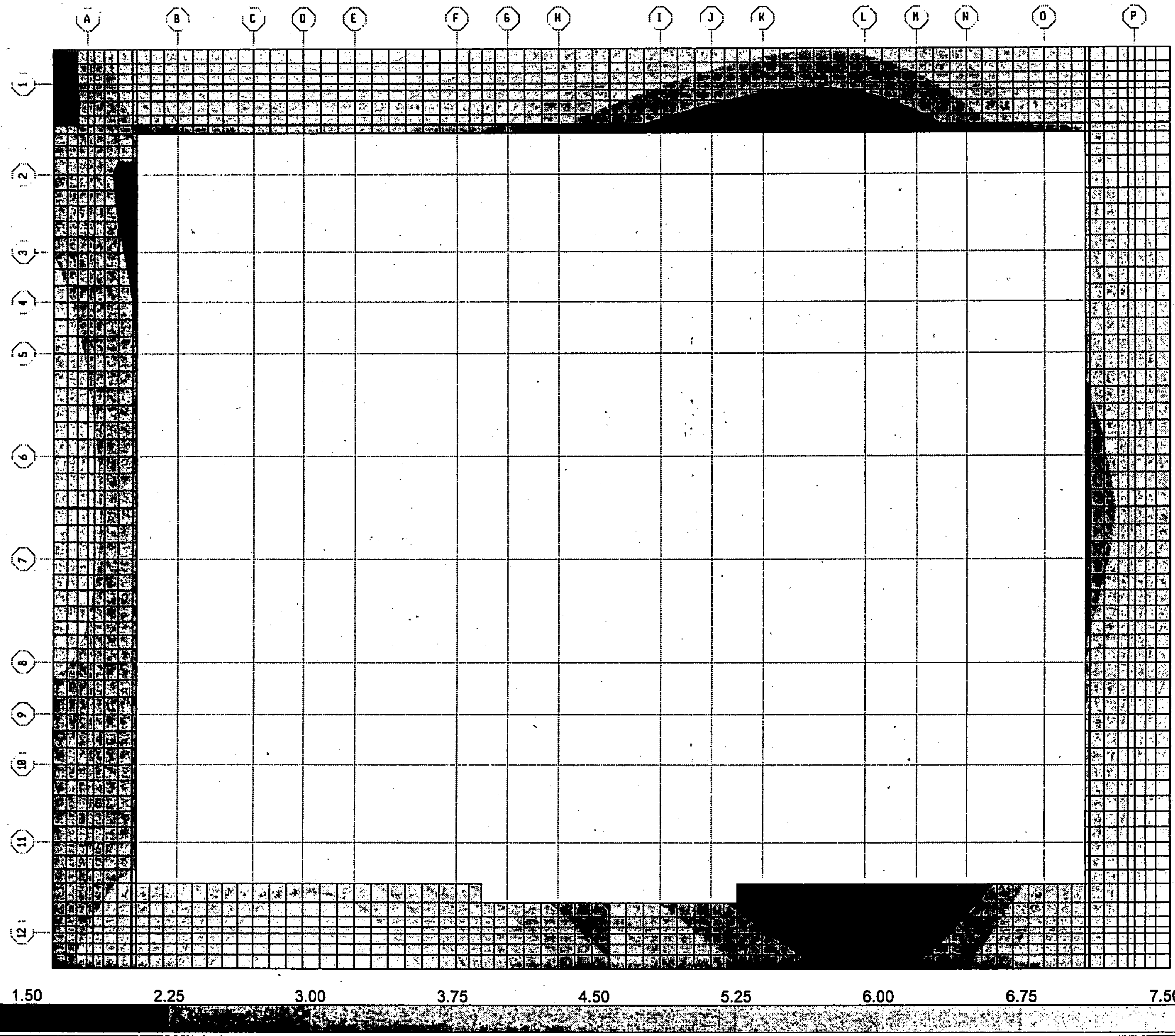
SAFE



5

SAFE v8.0.7 - File: HOJ - April 18,2007 20:12 - Scale: Fit to Page
Soil Pressure Diagram - (S2D) - Kip-ft Units

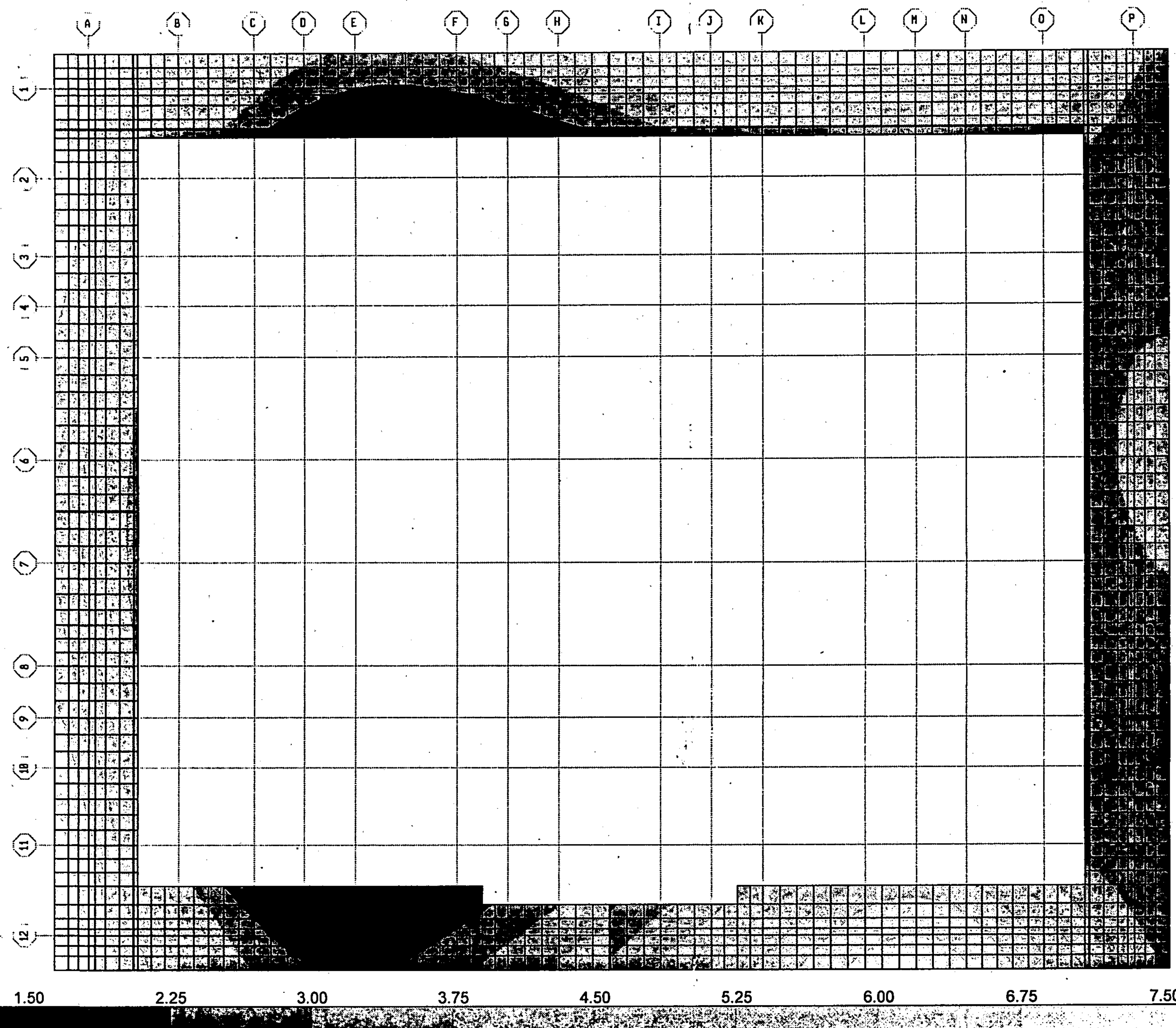
SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:12 - Scale: Fit to Page
Soil Pressure Diagram - (S3A) - Kip-ft Units

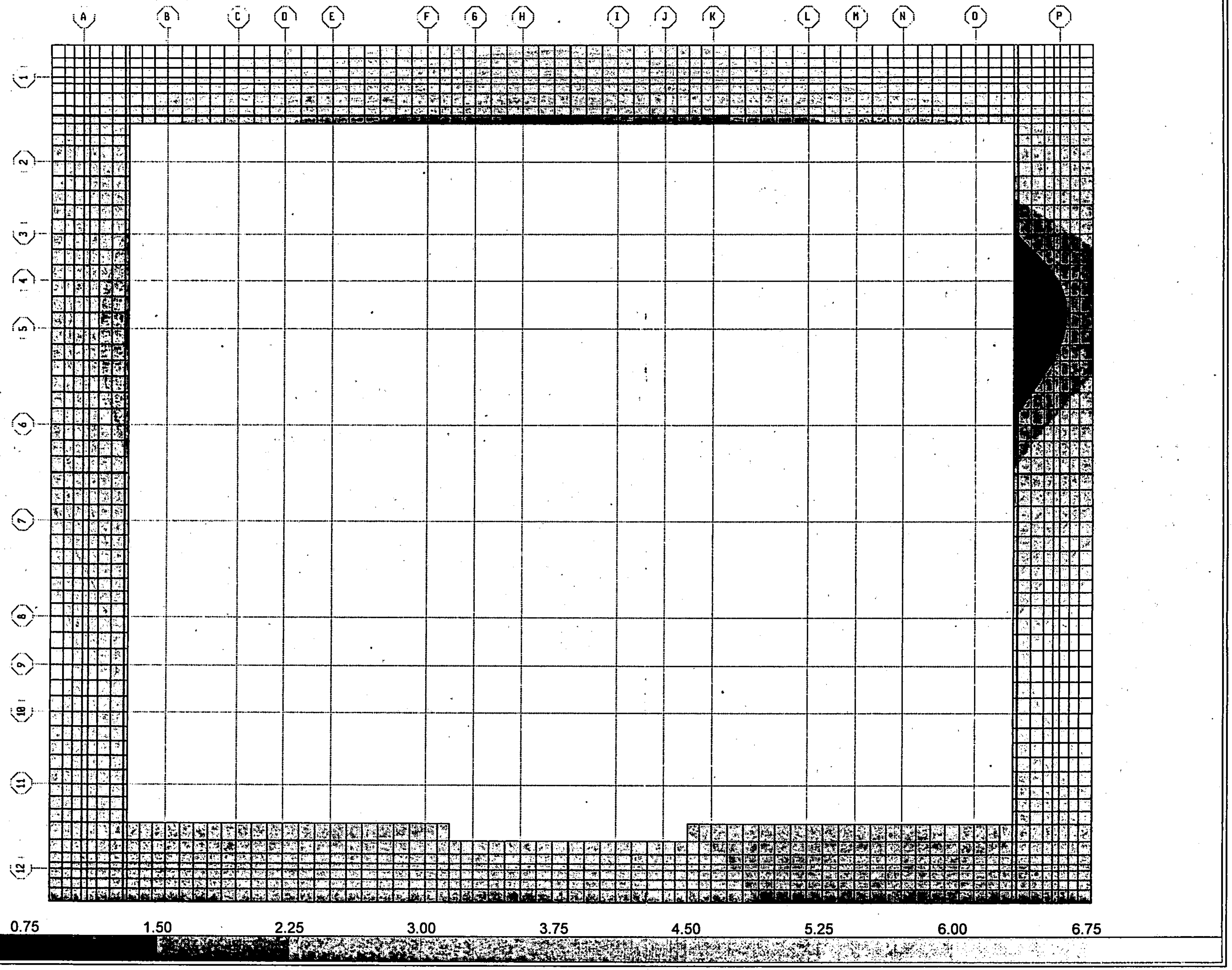
6

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:12 - Scale: Fit to Page
Soil Pressure Diagram - (S3B) - Kip-ft Units

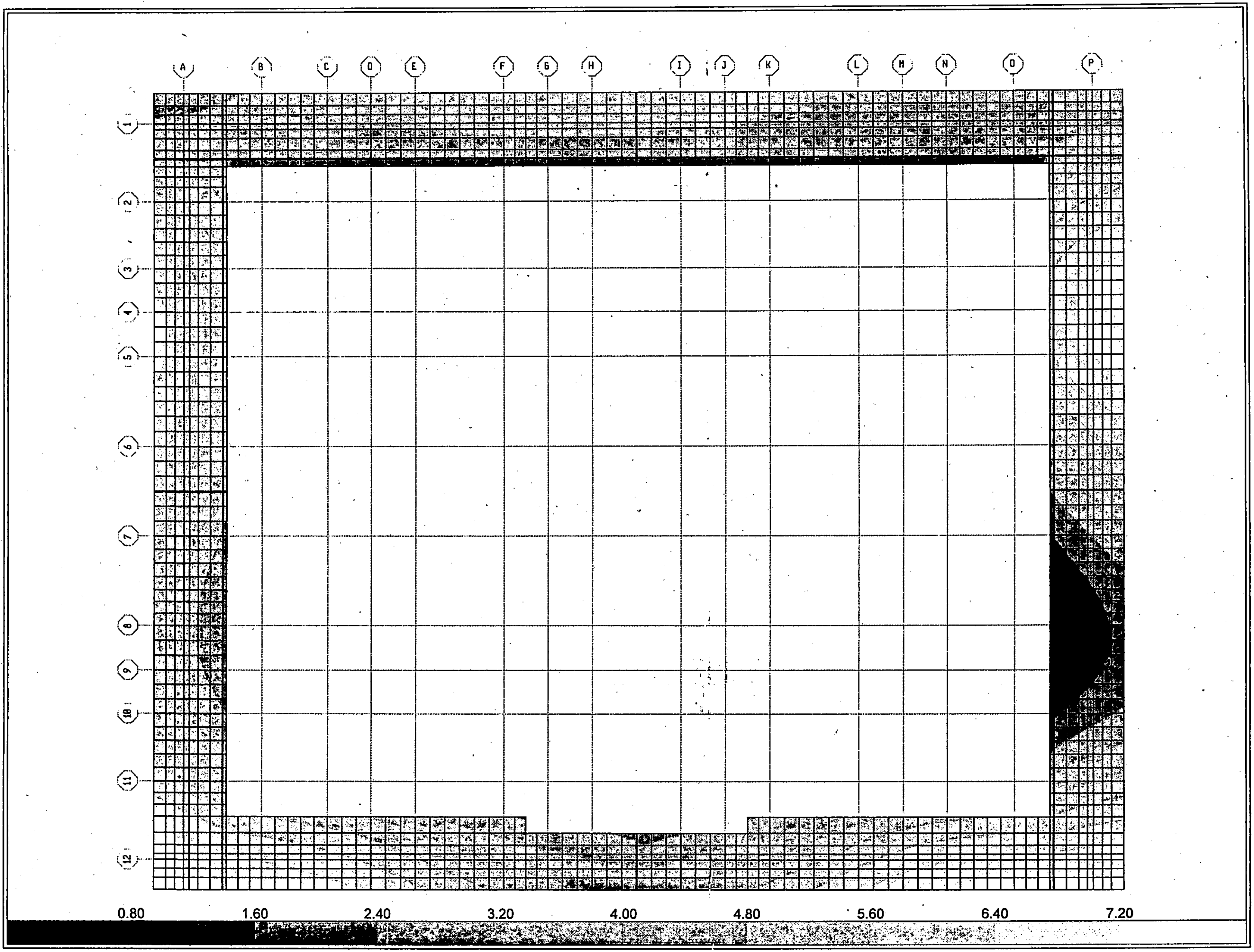
SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:12 - Scale: Fit to Page
Soil Pressure Diagram - (S3C) - Kip-ft Units

8

SAFE



SAFE v8.0.7 - File: HOJ - April 18,2007 20:12 - Scale: Fit to Page
Soil Pressure Diagram - (S3D) - Kip-ft Units

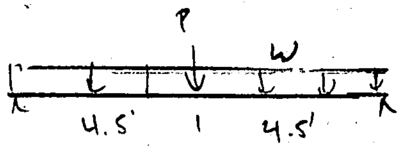
9

F: Penthouse Stair Framing

STAIR TO PENTHOUSE

DL = 50 PSF   LL = 100 PSF

(A) CHANNEL BELOW INTERMEDIATE LANDING (LOW)

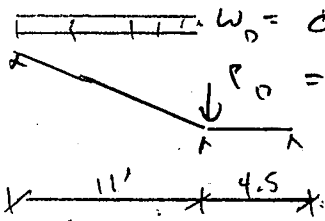


$P_D = \frac{11}{2} \times \frac{9}{2} \times 0.05 = 1.24^k$

$P_L = 2.48$

$w_D = \frac{4.5'}{2} \times 0.05 = 0.1125$ k/ft $w_L = 0.225$ k/ft

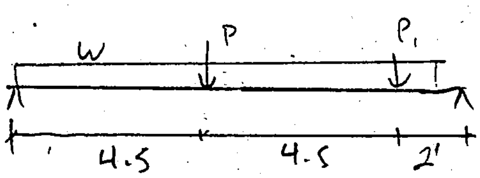
(B) NORTH STRINGER FROM LOW PH DOWN



$w_D = 0.1125$ $w_L = 0.225$

$P_D = 1.13^k$ $P_L = 2.26^k$

(C) CHANNEL BELOW LOW PH LANDING



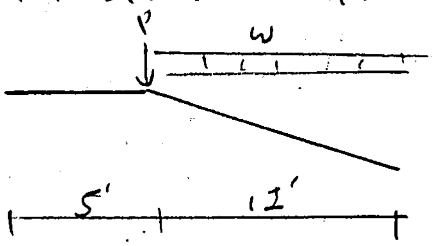
P. SAME AS INT LANDING

$P_{1_D} = 1.13$ $P_L = 2.26$

$w = \frac{6}{2} \times .05 = 0.15$ $w_L = .3$

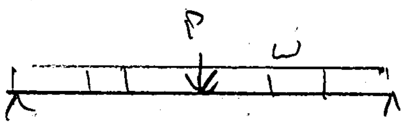
Project:	W. O. No.:	Date:
Calc. By:	Checked By:	Sheet 1 of

(D) SOUTH STRINGER FROM TOP LANDING



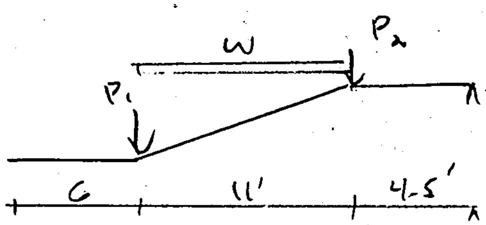
$P_D = \frac{5}{2} \times \frac{4.5}{2} \times .05 = .28^k$ $P_L = .56$

(E) CHANNEL BELOW UPPER INTERMED. LANDING



$P_D = \frac{1.34}{2} + .96 = 1.58^k$ $P_L = \frac{2.48}{2} + 1.93 = 3.17^k$

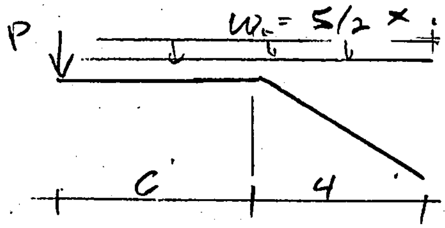
(F) OUTER STRINGER LOW PH TO UPPER INT LANDING



$P_{1D} = 1.77$ $P_{1L} = 3.53$ $P_{2D} = 1.3$ $P_{2L} = 3.46$

(G) CANTILEVER STRINGER AT TOP LANDING

$W_D = 5/2 \times .05 = .125$ $W_L = .25$



$P = .68$ $P_L = 1.34$

Project:	W. O. No.:	Date:
Calc. By:	Checked By:	Sheet 2 of

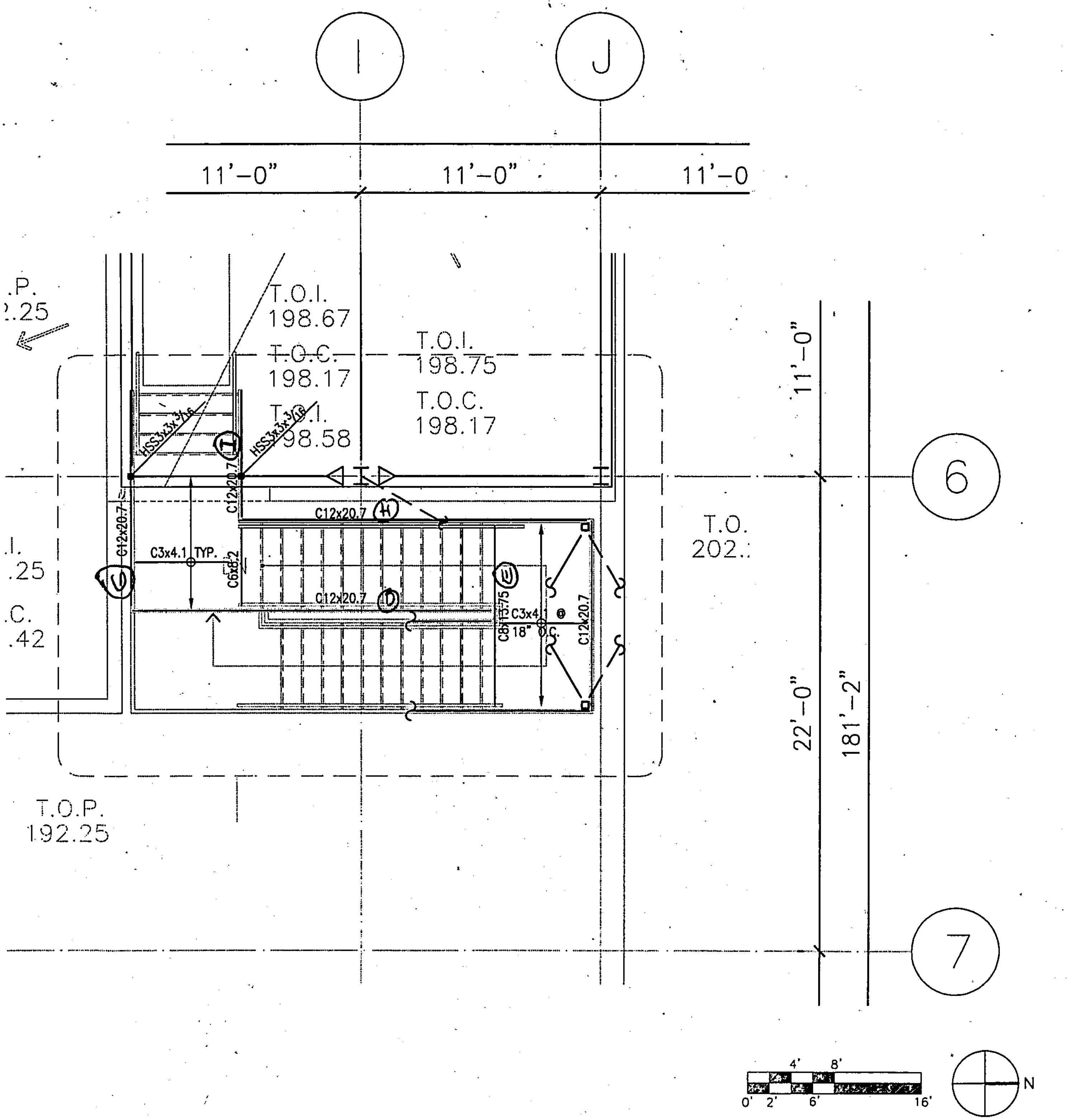
LANDING STIFFENER ANGLES AT 18" OC

$w = 1.5 \times .15 = .281$ KLF

$L = 6'$ $\quad m = .281 \times 6^2/8 \times 12 = 15.2$ "k

C3x4.1 $\quad s = 1.10 \quad f_b = 13.8$ ksi

Project:	W. O. No.:	Date:
Calc. By:	Checked By:	Sheet 3 of

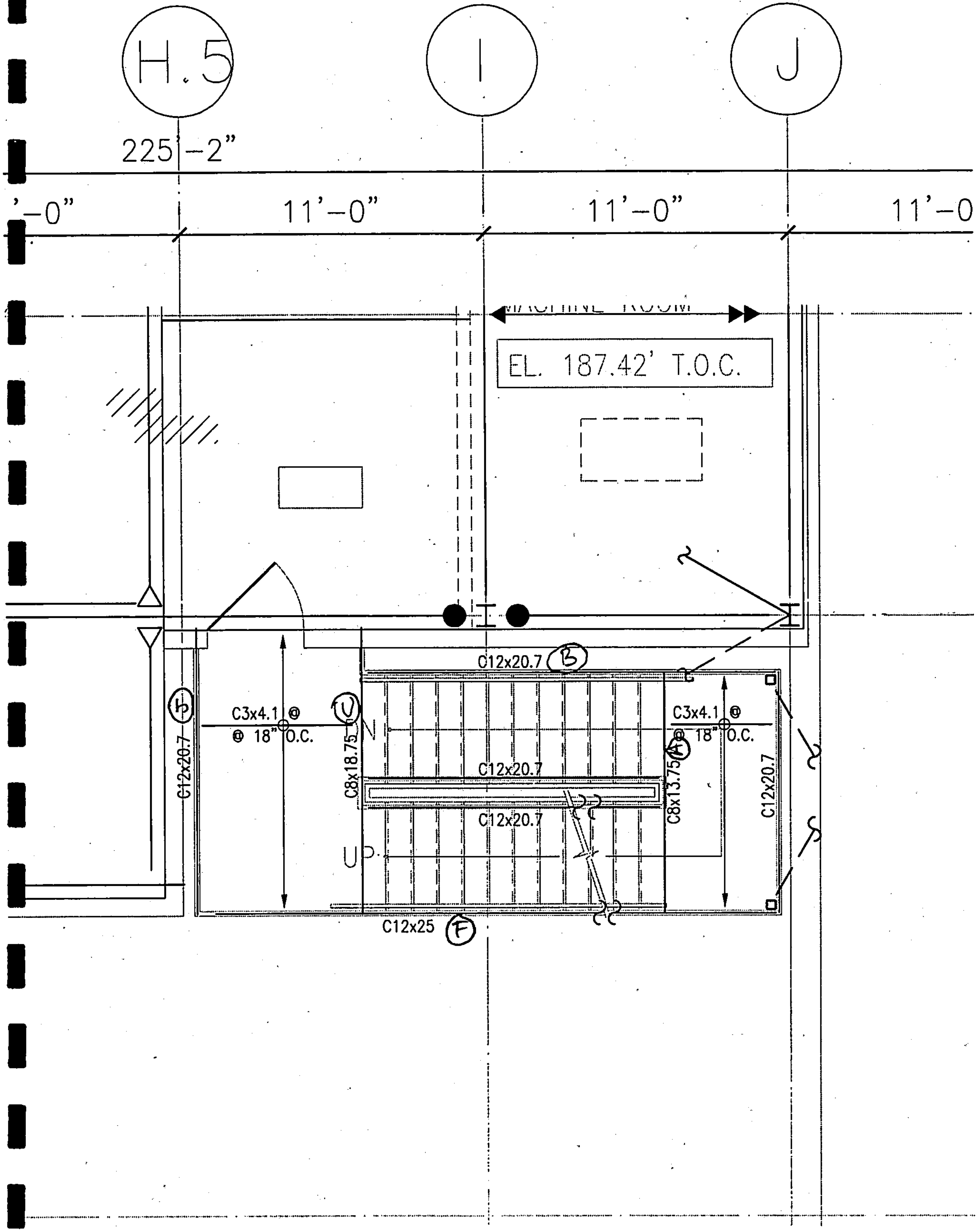


PARTIAL STAIR PLAN @ MACHINE ROOM 2

SCALE:
1/4"=1'-0"

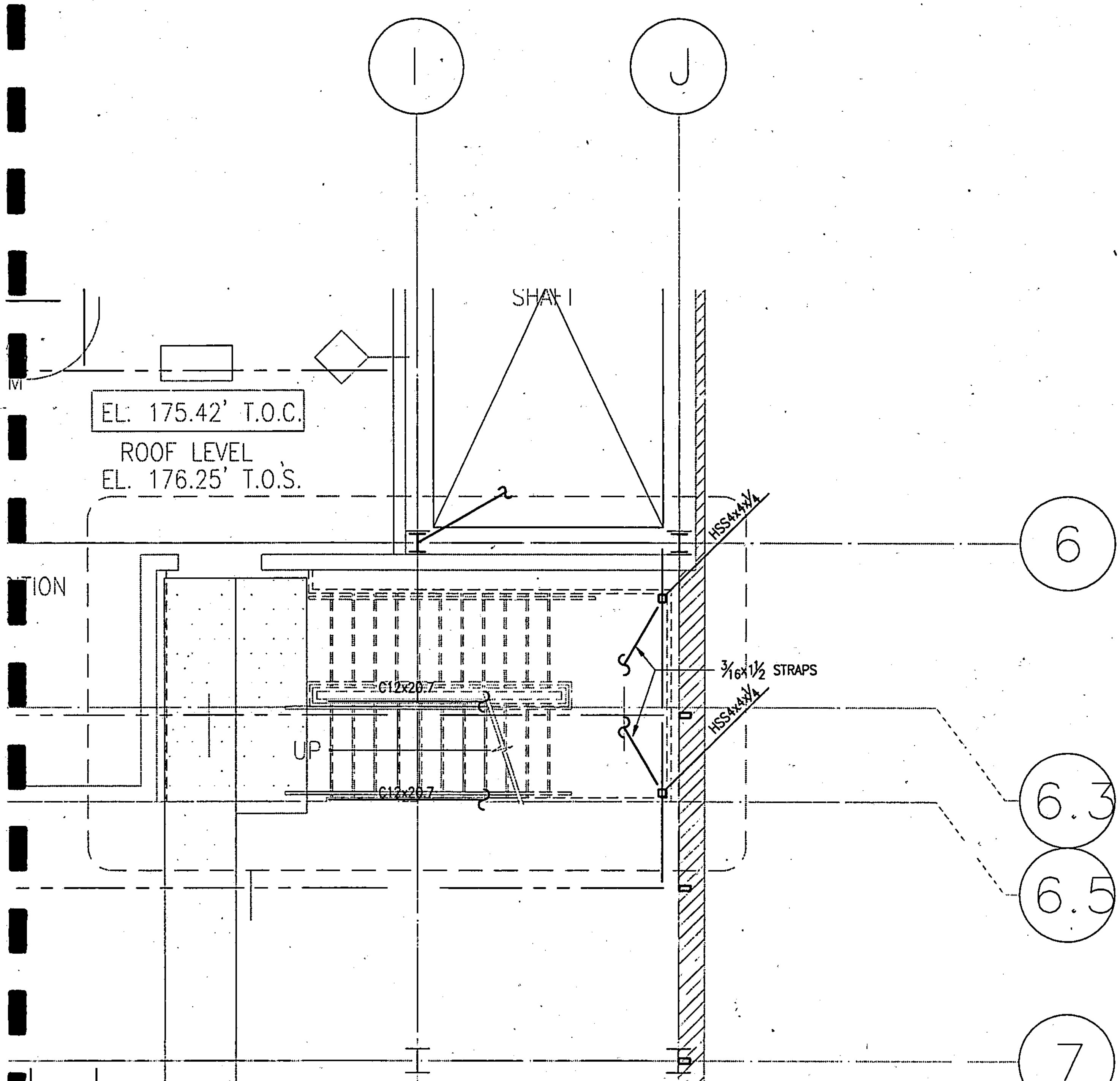
2

4



PARTIAL STAIR PLAN @ MACHINE ROOM 1

SCALE:	3
1/4"=1'-0"	



PARTIAL STAIR PLAN @ ROOF

SCALE:	
1/4"=1'-0"	1

Nabih Youssef & Associates
800 Wilshire Blvd., Los Angeles, CA

Title : Hall of Justice
Dsgnr:
Description :

Scope :

Job #
Date: 4:04PM, 19 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002
(c)1983-2002 ENERCALC Engineering Software

Steel Beam Design

Page 1
n:\2005\05121.00_hallofjustice\calcs\hoj.ecw:

Description (J) Penthouse stair Channel at Low PH Landing

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C8X18.75

Center Span	11.00 ft	Pinned-Pinned	Fy	36.00 ksi
Left Cant.	0.00 ft	LL & ST Act Together	Load Duration Factor	1.00
Right Cant	0.00 ft		Elastic Modulus	29,000.0 ksi
Lu : Unbraced Length	0.00 ft			

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.150							k/ft
LL	0.300							k/ft
ST								k/ft
Start Location								ft
End Location								ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	1.250	1.130						k
Live Load	2.480	2.260						k
Short Term								k
Location	4.500	9.000						ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C8X18.75 section, Span = 11.00ft, Fy = 36.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	19.258 k-ft	19.800 k-ft
fb : Bending Stress	21.009 ksi	21.600 ksi
fb / Fb	**0.973 : 1**	
Shear	6.775 k	56.102 k
fv : Shear Stress	1.739 ksi	14.400 ksi
fv / Fv	**0.121 : 1**	

Max. Deflection	-0.316 in
Length/DL Defl	1,250.0 : 1
Length/(DL+LL Defl)	417.6 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	19.26 k-ft	6.44	19.26				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	5.30 k	1.77	5.30				k
Shear @ Right	6.77 k	2.26	6.77				k
Center Defl.	-0.316 in	-0.106	-0.316	-0.316	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	5.30	1.77	5.30	5.30			k
Reaction @ Rt	6.77	2.26	6.77	6.77			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair Channel at Low PH Landing

Section Properties C8X18.75

Depth	8.000 in	Weight	18.72 #/ft	r-xx	2.826 in
Width	2.527in	I-xx	44.00 in4	r-yy	0.599 in
Web Thick	0.487 in	I-yy	1.98 in4		
Flange Thickness	0.390 in	S-xx	11.000 in3		
Area	5.51 in2	S-yy	1.009 in3		

8

Steel Beam Design

Description (K) Beam below stair post

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : W8X18

Center Span	7.50 ft	Pinned-Pinned	Fy	50.00 ksi
Left Cant.	0.00 ft	Bm Wt. Added to Loads	Load Duration Factor	1.33
Right Cant	0.00 ft	LL & ST Act Together	Elastic Modulus	29,000.0 ksi
Lu : Unbraced Length	0.00 ft			

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	4.440							k
Live Load	8.880							k
Short Term	3.760							k
Location	4.000							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: W8X18 section, Span = 7.50ft, Fy = 50.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.330

	Actual	Allowable
Moment	24.927 k-ft	41.824 k-ft
fb : Bending Stress	19.668 ksi	33.000 ksi
fb / Fb	**0.596 : 1**	
Shear	9.176 k	37.444 k
fv : Shear Stress	4.901 ksi	20.000 ksi
fv / Fv	**0.245 : 1**	

Max. Deflection	-0.144 in
Length/DL Defl	2,365.3 : 1
Length/(DL+LL Defl)	623.5 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	31.93 k-ft	8.39	24.93	31.93			k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	8.04 k	2.14	6.28	8.04			k
Shear @ Right	9.18 k	2.43	7.17	9.18			k
Center Defl.	-0.144 in	-0.038	-0.113	-0.144	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	8.04	2.14	6.28	8.04			k
Reaction @ Rt	9.18	2.43	7.17	9.18			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Section Properties W8X18

Depth	8.140 in	Weight	17.87 #/ft	r-xx	3.430 in
Width	5.250 in	I-xx	61.90 in4	r-yy	1.231 in
Web Thick	0.230 in	I-yy	7.97 in4	Rt	1.390 in
Flange Thickness	0.330 in	S-xx	15.209 in3		
Area	5.26 in2	S-yy	3.036 in3		

Steel Beam Design

Description (A) Penthouse stair Channel at Int Landing

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C8X13.75

Pinned-Pinned

LL & ST Act Together

Center Span	9.00	ft
Left Cant.	0.00	ft
Right Cant	0.00	ft
Lu : Unbraced Length	0.00	ft
Fy	36.00	ksi
Load Duration Factor	1.00	
Elastic Modulus	29,000.0	ksi

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.113							k/ft
LL	0.225							k/ft
ST								k/ft
Start Location								ft
End Location								ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	1.250							k
Live Load	2.480							k
Short Term								k
Location	4.500							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C8X13.75 section, Span = 9.00ft, Fy = 36.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	11.815 k-ft	16.245 k-ft
fb : Bending Stress	15.709 ksi	21.600 ksi
fb / Fb	**0.727 : 1**	
Shear	3.386 k	34.906 k
fv : Shear Stress	1.397 ksi	14.400 ksi
fv / Fv	**0.097 : 1**	

Max. Deflection	-0.141 in
Length/DL Defl	2,284.8 : 1
Length/(DL+LL Defl)	765.1 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	11.81 k-ft	3.96	11.81				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	3.39 k	1.13	3.39				k
Shear @ Right	3.39 k	1.13	3.39				k
Center Defl.	-0.141 in	-0.047	-0.141	-0.141	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	3.39	1.13	3.39	3.39			k
Reaction @ Rt	3.39	1.13	3.39	3.39			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair Channel at Int Landing

Section Properties C8X13.75

Depth	8.000 in	Weight	13.72 #/ft	r-xx	2.989 in
Width	2.343in	I-xx	36.10 in4	r-yy	0.615 in
Web Thick	0.303 in	I-yy	1.53 in4		
Flange Thickness	0.390 in	S-xx	9.025 in3		
Area	4.04 in2	S-yy	0.855 in3		

Nabih Youssef & Associates
800 Wilshire Blvd., Los Angeles, CA

Title : Hall of Justice
Dsgnr:
Description :

Scope :

Job #
Date: 4:04PM, 19 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002
(c)1983-2002 ENERCALC Engineering Software

Steel Beam Design

Page 1
n:\2005\05121.00_hallofjustice\calcs\hoj.ecw:

Description (B) Penthouse stair North Stringer from Low PH down

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C12X20.7

Pinned-Pinned

LL & ST Act Together

Center Span	15.50 ft	Fy	36.00 ksi
Left Cant.	0.00 ft	Load Duration Factor	1.00
Right Cant	0.00 ft	Elastic Modulus	29,000.0 ksi
Lu : Unbraced Length	0.00 ft		

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.113							k/ft
LL	0.225							k/ft
ST								k/ft
Start Location								ft
End Location	11.000							ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	1.130							k
Live Load	2.260							k
Short Term								k
Location	11.000							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C12X20.7 section, Span = 15.50ft, Fy = 36.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	16.929 k-ft	38.700 k-ft
fb : Bending Stress	9.449 ksi	21.600 ksi
fb / Fb	**0.437 : 1**	
Shear	3.725 k	48.730 k
fv : Shear Stress	1.101 ksi	14.400 ksi
fv / Fv	**0.076 : 1**	

Max. Deflection	-0.189 in
Length/DL Defl	2,945.5 : 1
Length/(DL+LL Defl)	983.3 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	16.93 k-ft	5.65	16.93				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	3.38 k	1.13	3.38				k
Shear @ Right	3.73 k	1.24	3.73				k
Center Defl.	-0.189 in	-0.063	-0.189	-0.189	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	3.38	1.13	3.38	3.38			k
Reaction @ Rt	3.73	1.24	3.73	3.73			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair North Stringer from Low PH down

Section Properties C12X20.7

Depth	12.000 in	Weight	20.69 #/ft	r-xx	4.602 in
Width	2.942in	I-xx	129.00 in4	r-yy	0.798 in
Web Thick	0.282 in	I-yy	3.88 in4		
Flange Thickness	0.501 in	S-xx	21.500 in3		
Area	6.09 in2	S-yy	1.729 in3		

Nabih Youssef & Associates
800 Wilshire Blvd., Los Angeles, CA

Title : Hall of Justice
Dsgnr:
Description :

Scope :

Job #
Date: 4:04PM, 19 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002
(c)1983-2002 ENERCALC Engineering Software

Steel Beam Design

Page 1
n:\2005\05121.00_hallofjustice\calcs\hoj.ecw:

Description (C) Penthouse stair Channel at Low PH Landing

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C8X18.75

		Pinned-Pinned	Fy	36.00ksi
Center Span	10.00 ft		Load Duration Factor	1.00
Left Cant.	1.00 ft	LL & ST Act Together	Elastic Modulus	29,000.0ksi
Right Cant	0.00 ft			
Lu : Unbraced Length	0.00 ft			

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.150							k/ft
LL	0.300							k/ft
ST								k/ft
Start Location								ft
End Location								ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	2.130							k
Live Load	4.260							k
Short Term								k
Location	-1.000							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C8X18.75 section, Span = 10.00ft, Fy = 36.0ksi, Left Cant. = 1.00ft, Right Cant. = 0.00ft
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	6.615 k-ft	19.800 k-ft
fb : Bending Stress	7.216 ksi	21.600 ksi
fb / Fb	**0.334 : 1**	
Shear	6.820 k	56.102 k
fv : Shear Stress	1.750 ksi	14.400 ksi
fv / Fv	**0.122 : 1**	

Max. Deflection	-0.061 in
Length/DL Defl	9,669.2 : 1
Length/(DL+LL Defl)	984.0 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	6.61 k-ft	0.93	4.58		0.03		k-ft
Max. M -		-2.20	-2.20		-6.61		k-ft
Max. M @ Left		-2.20	-2.20		-6.61		k-ft
Max. M @ Right							k-ft
Shear @ Left	6.82 k	2.27	2.47		6.82		k
Shear @ Right	2.03 k	0.53	2.03		0.09		k
Center Defl.	-0.061 in	-0.008	-0.061	-0.061	0.032	0.032	in
Left Cant Defl	0.024 in	-0.002	0.015	0.015	-0.024	-0.024	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	9.75	3.25	4.75	4.75	8.25	8.25	k
Reaction @ Rt	2.03	0.53	2.03	2.03	0.09	0.09	k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair Channel at Low PH Landing

Section Properties C8X18.75

Depth	8.000 in	Weight	18.72 #/ft	r-xx	2.826 in
Width	2.527in	I-xx	44.00 in4	r-yy	0.599 in
Web Thick	0.487 in	I-yy	1.98 in4		
Flange Thickness	0.390 in	S-xx	11.000 in3		
Area	5.51 in2	S-yy	1.009 in3		

Steel Beam Design

Description D Penthouse stair South Strringer from Top Landing

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C12X20.7

Center Span	17.00 ft	Pinned-Pinned	Fy	36.00ksi
Left Cant.	0.00 ft	LL & ST Act Together	Load Duration Factor	1.00
Right Cant	0.00 ft		Elastic Modulus	29,000.0ksi
Lu : Unbraced Length	0.00 ft			

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.113							k/ft
LL	0.226							k/ft
ST								k/ft
Start Location	5.000							ft
End Location	17.000							ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	0.280							k
Live Load	0.560							k
Short Term								k
Location	5.000							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C12X20.7 section, Span = 17.00ft, Fy = 36.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	12.227 k-ft	38.700 k-ft
fb : Bending Stress	6.825 ksi	21.600 ksi
fb / Fb	**0.316 : 1**	
Shear	2.879 k	48.730 k
fv : Shear Stress	0.851 ksi	14.400 ksi
fv / Fv	**0.059 : 1**	

Max. Deflection	-0.168 in
Length/DL Defl	3,643.5 : 1
Length/(DL+LL Defl)	1,214.5 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	12.23 k-ft	4.08	12.23				k-ft
Max. M -		-0.00	-0.00				k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	2.03 k	0.68	2.03				k
Shear @ Right	2.88 k	0.96	2.88				k
Center Defl.	-0.168 in	-0.056	-0.168	-0.168	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	2.03	0.68	2.03	2.03			k
Reaction @ Rt	2.88	0.96	2.88	2.88			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair South Strringer from Top Landing

Section Properties **C12X20.7**

Depth	12.000 in	Weight	20.69 #/ft	r-xx	4.602 in
Width	2.942in	I-xx	129.00 in4	r-yy	0.798 in
Web Thick	0.282 in	I-yy	3.88 in4		
Flange Thickness	0.501 in	S-xx	21.500 in3		
Area	6.09 in2	S-yy	1.729 in3		

17

Nabih Youssef & Associates
800 Wilshire Blvd., Los Angeles, CA

Title : Hall of Justice
Dsgnr:
Description :

Scope :

Job #
Date: 4:04PM, 19 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002
(c)1983-2002 ENERCALC Engineering Software

Steel Beam Design

Page 1
n:\2005\05121.00_hallofjustice\calcs\hoj.ecw:

Description (E) Penthouse stair Channel at Upper Int Landing

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C8X13.75

Center Span	9.00 ft	Pinned-Pinned	Fy	36.00ksi
Left Cant.	0.00 ft		Load Duration Factor	1.00
Right Cant	0.00 ft	LL & ST Act Together	Elastic Modulus	29,000.0ksi
Lu : Unbraced Length	0.00 ft			

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.113							k/ft
LL	0.225							k/ft
ST								k/ft
Start Location								ft
End Location								ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	1.580							k
Live Load	3.170							k
Short Term								k
Location	4.500							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C8X13.75 section, Span = 9.00ft, Fy = 36.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	14.110 k-ft	16.245 k-ft
fb : Bending Stress	18.761 ksi	21.600 ksi
fb / Fb	**0.869 : 1**	
Shear	3.896 k	34.906 k
fv : Shear Stress	1.607 ksi	14.400 ksi
fv / Fv	**0.112 : 1**	

Max. Deflection	-0.167 in
Length/DL Defl	1,944.5 : 1
Length/(DL+LL Defl)	647.7 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	14.11 k-ft	4.70	14.11				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	3.90 k	1.30	3.90				k
Shear @ Right	3.90 k	1.30	3.90				k
Center Defl.	-0.167 in	-0.056	-0.167	-0.167	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	3.90	1.30	3.90	3.90			k
Reaction @ Rt	3.90	1.30	3.90	3.90			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

18

Steel Beam Design

Description Penthouse stair Channel at Upper Int Landing

Section Properties C8X13.75

Depth	8.000 in	Weight	13.72 #/ft	r-xx	2.989 in
Width	2.343in	I-xx	36.10 in4	r-yy	0.615 in
Web Thick	0.303 in	I-yy	1.53 in4		
Flange Thickness	0.390 in	S-xx	9.025 in3		
Area	4.04 in2	S-yy	0.855 in3		

Nabih Youssef & Associates
800 Wilshire Blvd., Los Angeles, CA

Title : Hall of Justice
Dsgnr:
Description :

Scope :

Job #
Date: 4:04PM, 19 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002
(c)1983-2002 ENERCALC Engineering Software

Steel Beam Design

Page 1
n:\2005\05121.00_hallofjustice\calcs\hoj.ecw:

Description (F) Penthouse stair Outer Stringer from Low PH to Upper Intermediate Landing

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C12X25

Center Span	21.50 ft	Pinned-Pinned		Fy	36.00ksi
Left Cant.	0.00 ft			Load Duration Factor	1.00
Right Cant	0.00 ft	LL & ST Act Together		Elastic Modulus	29,000.0ksi
Lu : Unbraced Length	0.00 ft				

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.113							k/ft
LL	0.225							k/ft
ST								k/ft
Start Location	6.000							ft
End Location	17.000							ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	1.770	1.300						k
Live Load	3.530	2.600						k
Short Term								k
Location	6.000	17.000						ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C12X25 section, Span = 21.50ft, Fy = 36.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	39.881 k-ft	43.200 k-ft
fb : Bending Stress	19.941 ksi	21.600 ksi
fb / Fb	**0.923 : 1**	
Shear	6.551 k	66.874 k
fv : Shear Stress	1.411 ksi	14.400 ksi
fv / Fv	**0.098 : 1**	

Max. Deflection	-0.819 in
Length/DL Defl	943.6 : 1
Length/(DL+LL Defl)	315.1 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	39.88 k-ft	13.32	39.88				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	6.37 k	2.13	6.37				k
Shear @ Right	6.55 k	2.19	6.55				k
Center Defl.	-0.819 in	-0.273	-0.819	-0.819	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	6.37	2.13	6.37	6.37			k
Reaction @ Rt	6.55	2.19	6.55	6.55			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair Outer Stringer from Low PH to Upper Intermediate Landing

Section Properties C12X25

Depth	12.000 in	Weight	24.97 #/ft	r-xx	4.426 in
Width	3.047in	I-xx	144.00 in4	r-yy	0.780 in
Web Thick	0.387 in	I-yy	4.47 in4		
Flange Thickness	0.501 in	S-xx	24.000 in3		
Area	7.35 in2	S-yy	1.884 in3		

Steel Beam Design

Description G Penthouse stair Cantilever Stringer at Top landing

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C12X20.7

Center Span	4.00 ft	Pinned-Pinned	Fy	36.00ksi
Left Cant.	6.00 ft	LL & ST Act Together	Load Duration Factor	1.00
Right Cant	0.00 ft		Elastic Modulus	29,000.0ksi
Lu : Unbraced Length	0.00 ft			

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.125							k/ft
LL	0.250							k/ft
ST								k/ft
Start Location	-6.000							ft
End Location	4.000							ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	0.680							k
Live Load	1.340							k
Short Term								k
Location	-6.000							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C12X20.7 section, Span = 4.00ft, Fy = 36.0ksi, Left Cant. = 6.00ft, Right Cant. = 0.00ft
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	18.870 k-ft	38.700 k-ft
fb : Bending Stress	10.532 ksi	21.600 ksi
fb / Fb	**0.488 : 1**	
Shear	4.967 k	48.730 k
fv : Shear Stress	1.468 ksi	14.400 ksi
fv / Fv	**0.102 : 1**	

Max. Deflection	0.164 in
Length/DL Defl	2,639.9 : 1
Length/(DL+LL Defl)	878.3 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	18.87 k-ft						k-ft
Max. M -		-6.33	-6.33		-18.87		k-ft
Max. M @ Left		-6.33	-6.33		-18.87		k-ft
Max. M @ Right							k-ft
Shear @ Left	4.97 k	1.83	2.33		4.97		k
Shear @ Right	4.47 k	1.33	0.83		4.47		k
Center Defl.	0.009 in	0.003	0.002	0.002	0.009	0.009	in
Left Cant Defl	0.164 in	-0.055	-0.052	-0.052	-0.164	-0.164	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	9.74	3.26	3.76	3.76	9.24	9.24	k
Reaction @ Rt	-4.47	-1.33	-0.83	-0.83	-4.47	-4.47	k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair Cantilever Stringer at Top landing

Section Properties **C12X20.7**

Depth	12.000 in	Weight	20.69 #/ft	r-xx	4.602 in
Width	2.942in	I-xx	129.00 in4	r-yy	0.798 in
Web Thick	0.282 in	I-yy	3.88 in4		
Flange Thickness	0.501 in	S-xx	21.500 in3		
Area	6.09 in2	S-yy	1.729 in3		

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002

Steel Beam Design

Description (H) Penthouse stair North Stringer from High PH down

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C12X20.7

Center Span	16.50 ft	Pinned-Pinned	Fy	36.00ksi
Left Cant.	0.00 ft		Load Duration Factor	1.00
Right Cant	0.00 ft	LL & ST Act Together	Elastic Modulus	29,000.0ksi
Lu : Unbraced Length	0.00 ft			

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.113							k/ft
LL	0.225							k/ft
ST								k/ft
Start Location								ft
End Location	12.000							ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	1.130							k
Live Load	2.260							k
Short Term								k
Location	12.000							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C12X20.7 section, Span = 16.50ft, Fy = 36.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	18.180 k-ft	38.700 k-ft
fb : Bending Stress	10.147 ksi	21.600 ksi
fb / Fb	**0.470 : 1**	
Shear	3.940 k	48.730 k
fv : Shear Stress	1.164 ksi	14.400 ksi
fv / Fv	**0.081 : 1**	

Max. Deflection	-0.233 in
Length/DL Defl	2,540.0 : 1
Length/(DL+LL Defl)	848.0 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	18.18 k-ft	6.07	18.18				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	3.51 k	1.17	3.51				k
Shear @ Right	3.94 k	1.31	3.94				k
Center Defl.	-0.233 in	-0.078	-0.233	-0.233	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	3.51	1.17	3.51	3.51			k
Reaction @ Rt	3.94	1.31	3.94	3.94			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair North Stringer from High PH down

Section Properties C12X20.7

Depth	12.000 in	Weight	20.69 #/ft	r-xx	4.602 in
Width	2.942in	I-xx	129.00 in4	r-yy	0.798 in
Web Thick	0.282 in	I-yy	3.88 in4		
Flange Thickness	0.501 in	S-xx	21.500 in3		
Area	6.09 in2	S-yy	1.729 in3		

Nabih Youssef & Associates
800 Wilshire Blvd., Los Angeles, CA

Title : Hall of Justice
Dsgnr:
Description :

Scope :

Job #
Date: 4:04PM, 19 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002
(c)1983-2002 ENERCALC Engineering Software

Steel Beam Design

Page 1
n:\2005\05121.00_hallofjustice\calcs\hoj.ecw:

Description (I) Penthouse stair Cantilever Stringer at Top landing

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : C12X20.7

Center Span	4.00 ft	Pinned-Pinned	Fy	36.00ksi
Left Cant.	2.00 ft	LL & ST Act Together	Load Duration Factor	1.00
Right Cant	0.00 ft		Elastic Modulus	29,000.0ksi
Lu : Unbraced Length	0.00 ft			

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.125							k/ft
LL	0.250							k/ft
ST								k/ft
Start Location	-2.000							ft
End Location	4.000							ft

Point Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
Dead Load	1.170							k
Live Load	2.340							k
Short Term								k
Location	-2.000							ft

Summary

Beam OK
Static Load Case Governs Stress

Using: C12X20.7 section, Span = 4.00ft, Fy = 36.0ksi, Left Cant. = 2.00ft, Right Cant. = 0.00ft
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable		
Moment	7.770 k-ft	38.700 k-ft	Max. Deflection	0.014 in
fb : Bending Stress	4.337 ksi	21.600 ksi	Length/DL Defl	10,817.9 : 1
fb / Fb	**0.201 : 1**		Length/(DL+LL Defl)	3,441.2 : 1
Shear	4.251 k	48.730 k		
fv : Shear Stress	1.256 ksi	14.400 ksi		
fv / Fv	**0.087 : 1**			

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	7.77 k-ft		0.01				k-ft
Max. M -		-2.59	-2.59		-7.77		k-ft
Max. M @ Left		-2.59	-2.59		-7.77		k-ft
Max. M @ Right							k-ft
Shear @ Left	4.25 k	1.42	1.42		4.25		k
Shear @ Right	1.69 k	0.40	0.10		1.69		k
Center Defl.	0.003 in	0.001	0.001	0.001	0.003	0.003	in
Left Cant Defl	0.014 in	-0.004	-0.004	-0.004	-0.014	-0.014	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	6.95	2.32	2.82	2.82	6.45	6.45	k
Reaction @ Rt	-1.69	-0.40	0.10	0.10	-1.69	-1.69	k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Steel Beam Design

Description Penthouse stair Cantilever Stringer at Top landing

Section Properties C12X20.7

Depth	12.000 in	Weight	20.69 #/ft	r-xx	4.602 in
Width	2.942in	I-xx	129.00 in4	r-yy	0.798 in
Web Thick	0.282 in	I-yy	3.88 in4		
Flange Thickness	0.501 in	S-xx	21.500 in3		
Area	6.09 in2	S-yy	1.729 in3		

POST AT PH STAIR

SOUTH POST $P_D = 2.19 + 1.24 + \frac{9}{2} \times \frac{4.5}{2} \times .05 \times 2 = 4.44^k$

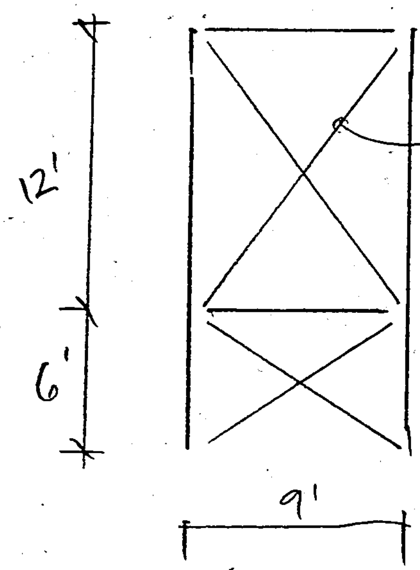
$P_L = 4.36 + 2.5 + \frac{9}{2}\ \frac{4.5}{2} \times .1 \times 2 = 8.88^k$

SEISMIC BRACING

$F_{p_s} = \frac{1.0 \times 0.4 \times 1.0}{3.0 \times 1.4}(1+3)\, W_p = 0.38\, W_p$

INTERMEDIATE LANDINGS:

$W_p = 0.05 \times 9' \times \frac{16.5'}{2} = 3.71^k$ EA LANDING



$\rightarrow F_p = 3.71 \times .38 = 1.41$

$L = 15'$ $T = 1.41 \times \frac{15}{9} = 2.35$

$\rightarrow F_p = 1.41^k$

$L = 10.8$ $T = 1.41 \times 2 \times \frac{10.8}{9}$ 3.38^k

$A_{REQ} = \frac{3.38}{.6 \times 36} = .157\ in^2$

3/16 × 1.5" STRAP = .28 in² ok

$P_{POST} = \frac{1.41 \times (18+6)}{9} = 3.76^k$

G: Miscellaneous Design

Hall of Justice
URM Wall Strongbacks

Ca	0.4
ap	1
Rp	3
Ip	1
w	130 psf

Level	H {ft}	Hr {ft}	Fp/W	Fp/Wmin	Fp/Wmax	Fp/W	Btrib {ft}	W {plf}	Fps {plf}	L {ft}	M {k-in}	Size	S {in^3}	Iy {in^4}	fb {ksi}	SR	del	L/
14th H	176	176	0.53	0.28	1.60	0.53	7.25	943	359	22	261	HSS18x6x5/8	35.6	158	7.32	0.24	0.41	639
14th L	176	176	0.53	0.28	1.60	0.53	4.00	520	198	22	144	HSS10x6x5/8	29.8	84.4	4.83	0.16	0.43	619
13th H	159	176	0.50	0.28	1.60	0.50	4	520	184	22	133	HSS10x6x5/8	29.8	84.4	4.48	0.15	0.40	667
13th L	159	176	0.50	0.28	1.60	0.50	4.25	553	195	22	142	HSS10x6x5/8	29.8	84.4	4.76	0.16	0.42	628
12th H	149	176	0.47	0.28	1.60	0.47	4.5	585	198	22	144	HSS10x6x5/8	29.8	84.4	4.82	0.16	0.43	620
12th L	149	176	0.47	0.28	1.60	0.47	3.75	488	165	22	120	HSS10x6x1/2	25.6	76.8	4.67	0.15	0.39	677
11th H	140	176	0.45	0.28	1.60	0.45	4	520	168	22	122	HSS10x6x1/2	25.6	76.8	4.76	0.16	0.40	665
11th L	140	176	0.45	0.28	1.60	0.45	4.75	618	199	22	145	HSS10x6x5/8	29.8	84.4	4.85	0.16	0.43	615
10th H	130	176	0.43	0.28	1.60	0.43	5.5	715	220	22	159	HSS12x6x5/8	35.6	107	4.48	0.15	0.37	708
10th L	130	176	0.43	0.28	1.60	0.43	3.75	488	150	22	109	HSS10x6x1/2	25.6	76.8	4.25	0.14	0.35	745
9th H	121	176	0.41	0.28	1.60	0.41	4.5	585	171	22	124	HSS10x6x1/2	25.6	76.8	4.84	0.16	0.40	654
9th L	121	176	0.41	0.28	1.60	0.41	4.25	553	161	22	117	HSS10x6x1/2	25.6	76.8	4.57	0.15	0.38	692
8th H	110	176	0.38	0.28	1.60	0.38	4.5	585	160	22	116	HSS10x6x1/2	25.6	76.8	4.54	0.15	0.38	696
8th L	110	176	0.38	0.28	1.60	0.38	4.25	553	151	22	110	HSS10x6x1/2	25.6	76.8	4.29	0.14	0.36	737
7th H	97	176	0.36	0.28	1.60	0.36	6.25	813	206	22	150	HSS10x6x5/8	29.8	84.4	5.02	0.17	0.44	594
7th L	97	176	0.36	0.28	1.60	0.36	4.25	553	140	22	102	HSS10x6x3/8	20.6	61.8	4.94	0.16	0.41	640
6th H	82	176	0.32	0.28	1.60	0.32	4.25	553	126	22	92	HSS10x6x3/8	20.6	61.8	4.45	0.15	0.37	711
6th L	82	176	0.32	0.28	1.60	0.32	4.25	553	126	22	92	HSS10x6x3/8	20.6	61.8	4.45	0.15	0.37	711
5th H	70	176	0.29	0.28	1.60	0.29	4.5	585	122	22	89	HSS10x6x3/8	20.6	61.8	4.31	0.14	0.36	733
5th L	70	176	0.29	0.28	1.60	0.29	4.25	553	116	22	84	HSS10x6x3/8	20.6	61.8	4.07	0.13	0.34	777
4th H	58	176	0.27	0.28	1.60	0.28	5	650	130	22	94	HSS10x6x3/8	20.6	61.8	4.58	0.15	0.38	691
4th L	58	176	0.27	0.28	1.60	0.28	4.5	585	117	22	85	HSS10x6x3/8	20.6	61.8	4.12	0.14	0.34	767
3rd H	45	176	0.24	0.28	1.60	0.28	6	780	156	22	113	HSS10x6x3/8	20.6	61.8	5.50	0.18	0.46	575
3rd L	45	176	0.24	0.28	1.60	0.28	4.5	585	117	22	85	HSS10x6x3/8	20.6	61.8	4.12	0.14	0.34	767
2nd H	30	176	0.20	0.28	1.60	0.28	7	910	182	22	132	HSS10x6x5/8	29.8	84.4	4.43	0.15	0.39	674
2nd L	30	176	0.20	0.28	1.60	0.28	4.5	585	117	22	85	HSS10x6x3/8	20.6	61.8	4.12	0.14	0.34	767
1st H	13	176	0.16	0.28	1.60	0.28	5	650	130	22	94	HSS10x6x3/8	20.6	61.8	4.58	0.15	0.38	691
1st L	13	176	0.16	0.28	1.60	0.28	4.5	585	117	22	85	HSS10x6x3/8	20.6	61.8	4.12	0.14	0.34	767

Hall of Justice
URM Wall Strongbacks

Level	H {ft}	Hr {ft}	Fp/W	Fp/Wmin	Fp/Wmax	Fp/W	Btrib {ft}	W {plf}	Fps {plf}	L {ft}	M {k-in}	Size	S {in^3}	Iy {in^4}	fb {ksi}	SR	del	L/
14th H	176	176	0.53	0.28	1.60	0.53	7.25	943	359	11	65	HSS6x6x1/4	9.53	28.6	6.84	0.23	0.14	926
14th L	176	176	0.53	0.28	1.60	0.53	4.00	520	198	11	36	HSS6x6x1/4	9.53	28.6	3.77	0.12	0.08	1678
13th H	159	176	0.50	0.28	1.60	0.50	4	520	184	11	33	HSS6x6x1/4	9.53	28.6	3.50	0.12	0.07	1808
13th L	159	176	0.50	0.28	1.60	0.50	4.25	553	195	11	35	HSS6x6x1/4	9.53	28.6	3.72	0.12	0.08	1701
12th H	149	176	0.47	0.28	1.60	0.47	4.5	585	198	11	36	HSS6x6x1/4	9.53	28.6	3.77	0.12	0.08	1680
12th L	149	176	0.47	0.28	1.60	0.47	3.75	488	165	11	30	HSS6x6x1/4	9.53	28.6	3.14	0.10	0.07	2016
11th H	140	176	0.45	0.28	1.60	0.45	4	520	168	11	30	HSS6x6x1/4	9.53	28.6	3.20	0.11	0.07	1981
11th L	140	176	0.45	0.28	1.60	0.45	4.75	618	199	11	36	HSS6x6x1/4	9.53	28.6	3.79	0.12	0.08	1668
10th H	130	176	0.43	0.28	1.60	0.43	5.5	715	220	11	40	HSS6x6x1/4	9.53	28.6	4.18	0.14	0.09	1513
10th L	130	176	0.43	0.28	1.60	0.43	3.75	488	150	11	27	HSS6x6x1/4	9.53	28.6	2.85	0.09	0.06	2219
9th H	121	176	0.41	0.28	1.60	0.41	4.5	585	171	11	31	HSS6x6x1/4	9.53	28.6	3.25	0.11	0.07	1947
9th L	121	176	0.41	0.28	1.60	0.41	4.25	553	161	11	29	HSS6x6x1/4	9.53	28.6	3.07	0.10	0.06	2062
8th H	110	176	0.38	0.28	1.60	0.38	4.5	585	160	11	29	HSS6x6x1/4	9.53	28.6	3.05	0.10	0.06	2074
8th L	110	176	0.38	0.28	1.60	0.38	4.25	553	151	11	27	HSS6x6x1/4	9.53	28.6	2.88	0.09	0.06	2196
7th H	97	176	0.36	0.28	1.60	0.36	6.25	813	206	11	37	HSS6x6x1/4	9.53	28.6	3.93	0.13	0.08	1612
7th L	97	176	0.36	0.28	1.60	0.36	4.25	553	140	11	25	HSS6x6x1/4	9.53	28.6	2.67	0.09	0.06	2370
6th H	82	176	0.32	0.28	1.60	0.32	4.25	553	126	11	23	HSS6x6x1/4	9.53	28.6	2.40	0.08	0.05	2633
6th L	82	176	0.32	0.28	1.60	0.32	4.25	553	126	11	23	HSS6x6x1/4	9.53	28.6	2.40	0.08	0.05	2633
5th H	70	176	0.29	0.28	1.60	0.29	4.5	585	122	11	22	HSS6x6x1/4	9.53	28.6	2.33	0.08	0.05	2715
5th L	70	176	0.29	0.28	1.60	0.29	4.25	553	116	11	21	HSS6x6x1/4	9.53	28.6	2.20	0.07	0.05	2875
4th H	58	176	0.27	0.28	1.60	0.28	5	650	130	11	24	HSS6x6x1/4	9.53	28.6	2.48	0.08	0.05	2556
4th L	58	176	0.27	0.28	1.60	0.28	4.5	585	117	11	21	HSS6x6x1/4	9.53	28.6	2.23	0.07	0.05	2841
3rd H	45	176	0.24	0.28	1.60	0.28	6	780	156	11	28	HSS6x6x1/4	9.53	28.6	2.97	0.10	0.06	2130
3rd L	45	176	0.24	0.28	1.60	0.28	4.5	585	117	11	21	HSS6x6x1/4	9.53	28.6	2.23	0.07	0.05	2841
2nd H	30	176	0.20	0.28	1.60	0.28	7	910	182	11	33	HSS6x6x1/4	9.53	28.6	3.47	0.11	0.07	1826
2nd L	30	176	0.20	0.28	1.60	0.28	4.5	585	117	11	21	HSS6x6x1/4	9.53	28.6	2.23	0.07	0.05	2841
1st H	13	176	0.16	0.28	1.60	0.28	5	650	130	11	24	HSS6x6x1/4	9.53	28.6	2.48	0.08	0.05	2556
1st L	13	176	0.16	0.28	1.60	0.28	4.5	585	117	11	21	HSS6x6x1/4	9.53	28.6	2.23	0.07	0.05	2841
2nd 11-12	13	176	0.16	0.28	1.60	0.28	5.67	1360	272	19.33	152	HSS10x6x5/8	29.8	84.4	5.12	0.17	0.35	664
1st L	13	176	0.16	0.28	1.60	0.28	4.5	585	117	11	21	HSS6x6x1/4	9.53	28.6	2.23	0.07	0.05	2841

DESIGN OF NEW MASONRY WALL IN LIGHT COURT
BET. 7TH & 8TH FLOORS

BLDG HT: 176
ELEM. HT: 97

WIND:

W.S. = 70 MPH
EXP. = C
$I_w = 1.0$

$q = C_e C_q q_s I_w$

$q = 27.5$ psf

$C_e = 1.82$
$C_q = 1.2$
$q_s = 12.6$
$I_w = 1.0$

SEISMIC:

$N_a = 1.0$
$C_a = 0.40$
$I_p = 1.0$

$$\frac{F_p}{W_p} = \frac{a_p C_a I_p}{R_p}\left(1 + 3\frac{h_x}{h_r}\right)$$

$a_p = 1.0, 1.5$ FOR ANCHORAGE
$C_a = 0.40$
$I_p = 1.0$
$R_p = 3.0$
$h_x = 97$
$h_r = 176$

$= 0.354$

ANCHORAGE: AT LEAST 420 lb/ft OUT-OF-PLANE

LOWER BOUND: $0.7 C_a I_p = 0.28$
UPPER BOUND: $4 C_a I_p = 1.6$ OK

$W_p = 30 + 3 = 33$ psf

BRICK STUD

SEISMIC PRESSURE = 33(0.354) = 11.7 psf
WIND PRESSURE = 27.5 psf ← CONTROLS

REACTIONS: SEISMIC = 8.33'(11.7)(1.5) = 146.2 # 420 lb/ft
WIND: 8.33'(27.5) = 229 lb/ft

l/600 DEF'N CRITERIA

STUDS: DIETRICH INDUSTRIES LARR 25132
CONNECTION: HILTI 0.145 × 1½" P.A.F. LARR 2532

Project:		W. O. No.:	Date:
Calc. By:	Checked By:		Sheet of

Hall of Justice
Granite/Terra Cotta Anchorage

Ca	0.4
ap	1
Rp	3
Ip	1
Anchor Tallow	400 lbs

Level	H {ft}	Hr {ft}	Fp/W	Fp/Wmin	Fp/Wmax	Fps/W	Wmax #anchor 2	3	4	Max panel area (ft^2) (9.5" thick, 175 pcf)		
14th	176	176	0.53	0.28	1.60	0.38	2100	3150	4200	15.2	22.7	30.3
8th	110	176	0.38	0.28	1.60	0.27	2921	4382	5842	21.1	31.6	42.2

Notes:
1. Tallow = 400 psf is based an ultimate load of 1600 lbs for anchorage into sandstone or terra cotta with a safety factor of 4.
2. See attached test data.
3. Anchors shall be tested per Anchor Testing Notes on S1.00A.
4. Maximm weight of terrra cotta pieces is much less than 2100 lbs; use 2 anchors per piece.

TEST DATE:	January 26, 1998
SME Project No.	PM29701
SME ID. No.	98-021
CLIENT:	Helifix, N. A.

10MM - HELIFIX WALL TIES
PROOF LOAD TESTING
RED SANDSTONE VENEER

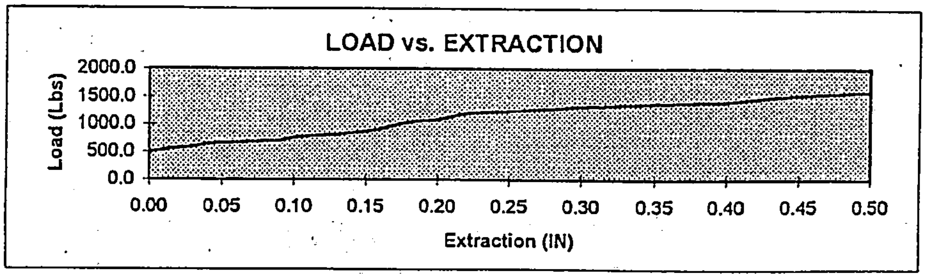
TEST SAMPLE:

10mm Helifix Ties set in Red Sandstone. Embed depth - 4.0" (102mm) with predrill of 8mm. Helifix wall ties installed by Client and witnessed by SME, Helifix ties supplied by Client. Red Sandstone supplied by Client

TEST PROCEDURE:

Testing was performed in accordance with Clients directions. Embedded wall ties were pull tested perpendicular to embed, using a digitally activated tensioning/compression hydraulic load-cell system (universal test machine) calibrated per ASTM and NIBS specifications. The embed sample was fixed to the lower platen and a mechanical clamp applied to the exposed Helifix wall tie. Failure criteria consisted of loss of resistance or slippage of embed tie in the panel The test load was applied uniformly to the embedded Helifix, using a self-centering assembly which prevents rotation. Loading was applied at a rate of approximately 100 pounds per minute.

LOAD		EXTRACTION OF EMBEDDED TIES					
		Sample 1	Sample 2	Sample 3	Average		TYPE
(LBS.)	(Kn)	(Inches)	(Inches)	(Inches)	(Inches)	(mm)	FAILURE
0.0	0.00	0.0000	0.0000	0.0000	0.00	0.00	Start of Test
81.6	0.36	0.0000	0.0000	0.0000	0.00	0.00	
136.0	0.60	0.0000	0.0000	0.0000	0.00	0.00	
217.6	0.97	0.0030	0.0000	0.0000	0.00	0.03	
272.0	1.21	0.0034	0.0000	0.0000	0.00	0.03	
326.4	1.45	0.0051	0.0000	0.0000	0.00	0.04	
380.8	1.69	0.0069	0.0000	0.0000	0.00	0.06	
435.2	1.94	0.0085	0.0000	0.0000	0.00	0.07	
489.6	2.18	0.0102	0.0001	0.0032	0.00	0.11	
544.0	2.42	0.0128	0.0006	0.0116	0.01	0.21	
598.4	2.66	0.0148	0.0008	0.0669	0.03	0.70	
652.8	2.90	0.0185	0.0008	0.0961	0.04	0.98	
707.2	3.15	0.0214	0.0011	0.2424	0.09	2.24	
761.6	3.39	0.0284	0.0011	0.2583	0.10	2.44	
816.0	3.63	0.1209	0.0011	0.2763	0.13	3.37	
870.4	3.87	0.1427	0.0018	0.3057	0.15	3.81	
924.8	4.11	0.1497	0.0020	0.3262	0.16	4.05	
979.2	4.36	0.1560	0.0021	0.3573	0.17	4.36	
1033.6	4.60	0.1634	0.0026	0.3729	0.18	4.56	
1088.0	4.84	0.1713	0.0033	0.4128	0.20	4.97	
1142.4	5.08	0.1797	0.0048	0.4371	0.21	5.26	
1196.8	5.32	0.1977	0.0063	0.4668	0.22	5.68	
1251.2	5.57	0.2344	0.0115	0.4898	0.25	6.23	
1305.6	5.81	0.3507	0.0191	0.5136	0.29	7.48	
1360.0	6.05	0.4236	0.0259	0.5837	0.34	8.75	
1414.4	6.29	0.5071	0.0378	0.6450	0.40	10.07	
1468.8	6.53	0.5354	0.0561	0.6595	0.42	10.59	
1523.2	6.78	0.5811	0.0580	0.6943	0.44	11.29	
1577.6	7.02	0.6017	0.0743	0.7682	0.48	12.23	
1604.8	7.14	0.6047	0.0827	0.8015	0.50	12.61	Slipage of Ties



SOIL AND MATERIALS ENGINEERS, INC.

John C. Zarzecki, C.E.T., C.W.I.
Senior Materials Consultant

H:/Helifix/98-21.doc

5

TEST DATE: January 26, 1998
SME Project No. PM29701
SME ID. No. 98-016
CLIENT: Helifix, N. A.

10MM - HELIFIX WALL TIES
PROOF LOAD TESTING
TERRA COTTA

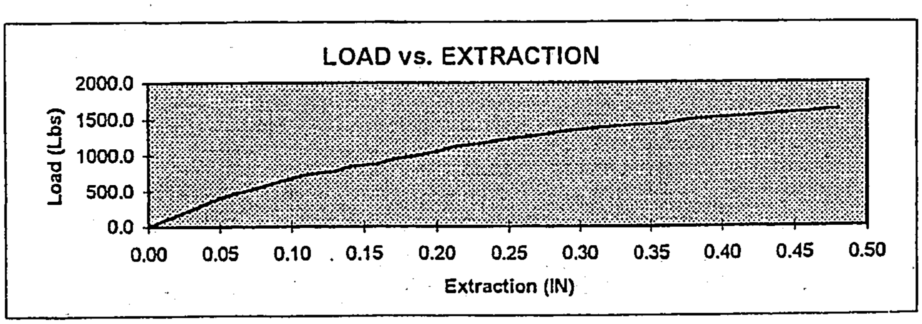
TEST SAMPLE:

10mm Helifix Ties set in clay Terra Cotta Panel. Embed depth - 1.25" (32mm) in face of panel with predrill of 6.5mm. Helifix wall ties installed by Client and witnessed by SME, Helifix ties supplied by Client. Clay Terra Cotta units supplied by SME (ASTM C-126, minimum 8,000 psi compressive strength).

TEST PROCEDURE:

Testing was performed in accordance with Clients directions. Embedded wall ties were pull tested perpendicular to embed, using a digitally activated tensioning/compression hydraulic load-cell system (universal test machine) calibrated per ASTM and NIBS specifications. The embed sample was fixed to the lower platen and a mechanical clamp applied to the exposed Helifix wall tie. Failure criteria consisted of loss of resistance or slippage of embed tie in the panel The test load was applied uniformly to the embedded Helifix, using a self-centering assembly which prevents rotation. Loading was applied at a rate of approximately 100 pounds per minute.

LOAD		EXTRACTION OF EMBEDDED TIES					
		Sample 1	Sample 2	Sample 3	Average		TYPE
(LBS.)	(Kn)	(Inches)	(Inches)	(Inches)	(Inches)	(mm)	FAILURE
0.0	0.00	0.0000	0.0000	0.0000	0.00	0.00	Start of Test
81.6	0.36	0.0165	0.0032	0.0000	0.01	0.17	
163.2	0.73	0.0287	0.0268	0.0000	0.02	0.47	
244.8	1.09	0.0383	0.0420	0.0000	0.03	0.68	
326.4	1.45	0.0489	0.0583	0.0000	0.04	0.91	
408.0	1.81	0.0562	0.0774	0.0186	0.05	1.29	
462.4	2.06	0.0613	0.0905	0.0267	0.06	1.51	
516.8	2.30	0.0660	0.1044	0.0360	0.07	1.75	
571.2	2.54	0.0678	0.1198	0.0491	0.08	2.00	
625.6	2.78	0.0698	0.1328	0.0647	0.09	2.26	
680.0	3.02	0.0728	0.1533	0.0760	0.10	2.56	
734.4	3.27	0.0785	0.1722	0.0849	0.11	2.84	
788.8	3.51	0.0850	0.1957	0.0947	0.13	3.18	
843.2	3.75	0.0915	0.2276	0.1022	0.14	3.57	
897.6	3.99	0.1000	0.2428	0.1328	0.16	4.03	
952.0	4.23	0.1102	0.2570	0.1559	0.17	4.43	
1006.4	4.48	0.1182	0.2741	0.1722	0.19	4.78	
1060.8	4.72	0.1291	0.2852	0.1817	0.20	5.05	
1115.2	4.96	0.1401	0.2954	0.2071	0.21	5.44	
1169.6	5.20	0.1513	0.3103	0.2285	0.23	5.84	
1224.0	5.44	0.1654	0.3362	0.2510	0.25	6.37	
1278.4	5.69	0.1815	0.3665	0.2636	0.27	6.87	
1332.8	5.93	0.2006	0.4000	0.2749	0.29	7.41	
1387.2	6.17	0.2176	0.4454	0.2868	0.32	8.04	
1441.6	6.41	0.2431	0.5234	0.3090	0.36	9.11	
1496.0	6.65	0.2633	0.5552	0.3313	0.38	9.73	
1550.4	6.90	0.3186	0.5917	0.3600	0.42	10.76	
1604.8	7.14	0.3833	0.6174	0.3841	0.46	11.72	
1632.0	7.26	0.4018	0.6354	0.3943	0.48	12.12	Slipage of Ties



SOIL AND MATERIALS ENGINEERS, INC.

John C. Zarzecki, C.E.T., C.W.I.
Senior Materials Consultant

H:/Helifix/98-16.doc

6

PARAPET AT LIGHTWELL (7/S4.03)

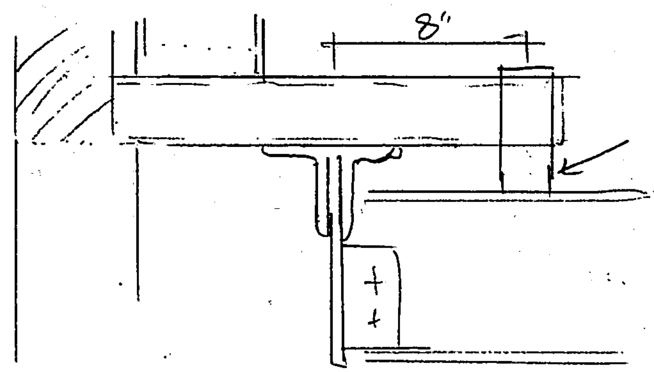
$w = 50$ PSF

$F_{p_s} = \frac{2.5 \times .4 \times 1.0}{3 \times 1.4}(1+3) w_p = 0.95\, w_p = 48$ PSF

HSS 6×3×3/16 @ 7.33' oc   h = 6'

$M = 0.048 \times 7.33 \times \frac{6^2}{2} \times 12 = 76$ k-in

$S = 4.47$ in³ $f_b = 76/4.47 = 17$ ksi



HSS 4×3×3/8 FLAT $S_y = 3.34$ in³ $f_b = 22.8$ ksi

REACTION AT GUSSET PL = 76/8 = 9.5ᵏ

WELD TO BEAM   3/16 × 4" × .707 × 21 = 11.1ᵏ

RELIEVING ANGLE

$w = 40$ PSF × 6' = 240 PLF   L6×6×3/8

4"

$M_{LEG} = .24 \times 4 = .96''^k$ $f_b = .96/(12 \times .375^2/6) = 3.41$ ksi

$M_{SPAN} = .24 \times \frac{7.33^2}{6} = 1.61'^k = 19.4$ ksi

$f_b = 19.4/3.57 = 5.5$ ksi

Project:	W. O. No.:	Date:
Calc. By:	Checked By:	Sheet 7 of

Title :
Dsgnr:
Description :

Scope :

Job #
Date: 3:52PM, 19 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002

Steel Beam Design

n:\2005\05121.00_hallofjustice\calcs\enercalc

Description Stail infill, S2.07, HSS

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : HSS10X6X1/2

Center Span	22.00 ft	Pinned-Pinned	Fy	45.00ksi
Left Cant.	0.00 ft	Bm Wt. Added to Loads	Load Duration Factor	1.00
Right Cant	0.00 ft	LL & ST Act Together	Elastic Modulus	29,000.0ksi
Lu : Unbraced Length	0.00 ft			

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.450							k/ft
LL	0.600							k/ft
ST								k/ft
Start Location								ft
End Location								ft

Summary

Beam OK
Static Load Case Governs Stress

Using: HSS10X6X1/2 section, Span = 22.00ft, Fy = 45.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	66.299 k-ft	84.645 k-ft
fb : Bending Stress	23.263 ksi	29.700 ksi
fb / Fb	**0.783 : 1**	
Shear	12.054 k	90.000 k
fv : Shear Stress	1.205 ksi	18.000 ksi
fv / Fv	**0.067 : 1**	

Max. Deflection	-1.165 in
Length/DL Defl	500.9 : 1
Length/(DL+LL Defl)	226.7 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	66.30 k-ft	30.00	66.30				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	12.05 k	5.45	12.05				k
Shear @ Right	12.05 k	5.45	12.05				k
Center Defl.	-1.165 in	-0.527	-1.165	-1.165	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	12.05	5.45	12.05	12.05			k
Reaction @ Rt	12.05	5.45	12.05	12.05			k

Fa calc'd per Eq. E2-1, K*L/r < Cc

Section Properties HSS10X6X1/2

Depth	10.000 in	Weight	45.86 #/ft	r-xx	3.559 in
Width	6.000in	I-xx	171.00 in4	r-yy	2.385 in
Web Thick	0.500 in	I-yy	76.80 in4	Rt	0.000 in
Flange Thickness	0.500 in	S-xx	34.200 in3		
Area	13.50 in2	S-yy	25.600 in3		

8

Title :
Dsgnr:
Description :

Scope :

Job #
Date: 3:52PM, 19 APR 07

Rev: 560100
User: KW-0602829, Ver 5.6.1, 25-Oct-2002
(c)1983-2002 ENERCALC Engineering Software

Steel Beam Design

Page 1
n:\2005\05121.00_hallofjustice\calcs\enercalc

Description Stail infill, S2.07

General Information

Calculations are designed to AISC 9th Edition ASD and 1997 UBC Requirements

Steel Section : W10X19

Center Span	17.00 ft	Pinned-Pinned		Fy	50.00ksi
Left Cant.	0.00 ft	Bm Wt. Added to Loads		Load Duration Factor	1.00
Right Cant	0.00 ft	LL & ST Act Together		Elastic Modulus	29,000.0ksi
Lu : Unbraced Length	0.00 ft				

Distributed Loads

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.560							k/ft
LL	0.750							k/ft
ST								k/ft
Start Location								ft
End Location								ft

Summary

Beam OK
Static Load Case Governs Stress

Using: W10X19 section, Span = 17.00ft, Fy = 50.0ksi
End Fixity = Pinned-Pinned, Lu = 0.00ft, LDF = 1.000

	Actual	Allowable
Moment	48.013 k-ft	51.724 k-ft
fb : Bending Stress	30.633 ksi	33.000 ksi
fb / Fb	**0.928 : 1**	
Shear	11.297 k	51.200 k
fv : Shear Stress	4.413 ksi	20.000 ksi
fv / Fv	**0.221 : 1**	

Max. Deflection	-0.894 in
Length/DL Defl	523.5 : 1
Length/(DL+LL Defl)	228.1 : 1

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	48.01 k-ft	20.92	48.01				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	11.30 k	4.92	11.30				k
Shear @ Right	11.30 k	4.92	11.30				k
Center Defl.	-0.894 in	-0.390	-0.894	-0.894	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	0.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	11.30	4.92	11.30	11.30			k
Reaction @ Rt	11.30	4.92	11.30	11.30			k

Fa calc'd per Eq. E2-1, K*L/r < Cc
I Beam Passes Table B5.1, Fb per Eq. F1-1, Fb = 0.66 Fy

Section Properties W10X19

Depth	10.240 in	Weight	19.09 #/ft	r-xx	4.139 in
Width	4.020 in	I-xx	96.30 in4	r-yy	0.874 in
Web Thick	0.250 in	I-yy	4.29 in4	Rt	1.030 in
Flange Thickness	0.395 in	S-xx	18.809 in3		
Area	5.62 in2	S-yy	2.134 in3		

H: Geotechnical Report

Converse Consultants

Over 50 Years of Dedication in Geotechnical Engineering and Environmental Sciences

GEOTECHNICAL INVESTIGATION REPORT

Los Angeles County Hall of Justice
Northerly Corner of Temple Street
and Spring Street
Los Angeles, California

PREPARED FOR

Hall of Justice Associates, Inc.
C/O Clark Construction
304 South Broadway, Suite 400
Los Angeles, California 90013

Converse Project No. 03-31-102-01

May 5, 2003

222 East Huntington Drive, Suite 211, Monrovia, California 91016-3500
Telephone: (626) 930-1200 ♦ Facsimile: (626) 930-1212 ♦ e-mail: converse@converseconsultants.com

Converse Consultants

Over 50 Years of Dedication in Geotechnical Engineering and Environmental Sciences

May 5, 2003

Mr. Fred Case
Hall of Justice Associates, Inc.
C/O Clark Construction
304 South Broadway, Suite 400
Los Angeles, California 90013

Subject: **GEOTECHNICAL INVESTIGATION REPORT**
Los Angeles County Hall of Justice
Northerly Corner of Temple Street and Spring Street
Los Angeles, California
Converse Project No. 03-31-102-01

Dear Mr. Case:

We are pleased to present this geotechnical investigation report for the Los Angeles County Hall of Justice and a proposed parking structure located at Northerly Corner of Temple Street and Spring Street, Los Angeles, California. This report was prepared in accordance with our February 11, 2003 revised proposal and your authorization and notice to proceed dated February 25, 2003.

The findings of the investigation and recommendations for the design and construction of the structures are presented in the attached report and are summarized in the Executive Summary Section following this letter.

Thank you for this opportunity to be of continued service. If you have any questions, or if we can be of additional service, please do not hesitate to contact us.

CONVERSE CONSULTANTS

J. Stanley Schweitzer, GE 758
Senior Geotechnical Engineer

REGISTERED PROFESSIONAL ENGINEER
J. STANLEY SCHWEITZER
G.E. NO. 758
EXP. 3-31-06
GEOTECHNICAL
STATE OF CALIFORNIA

Keyvan Fotoohi, PhD, P.E.
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
KEYVAN FOTOOHI
No. C 62135
Exp. 9-30-05
CIVIL
STATE OF CALIFORNIA

JSS/KF/dlr

Dist: 6/Addressee

EXECUTIVE SUMMARY

The following is a summary of our Geotechnical Investigation, findings, conclusions, and recommendations, as presented in the body of this report. This summary is presented for the cursory review of the investigation report and may not be adequate for other purposes. The summary should not be used separately for design and/or construction. Please refer to the appropriate sections of the report for complete conclusions and recommendations. In the event of a conflict between this summary and the report, or an omission in the summary, the report shall prevail.

- Field exploration consisted of drilling six 8-inch-diameter exploratory borings and two 24-inch-diameter borings. Subsurface conditions encountered in the borings were continuously logged and classified in the field by visual/manual examination in accordance with the Unified Soil Classification System. The internal surface of two 24-inch-diameter borings were also observed and examined to collect the geological data. Boring BH-2 was converted to monitoring well.
- Laboratory testing included moisture and density determinations, gradation, compaction, R-value, direct-shear strength, Expansion Index, consolidation, pH, resistivity, soluble sulfate, and chloride concentration testing.
- The subject site is considered suitable from a geotechnical engineering viewpoint for the construction of the proposed parking structure and renovation of the Hall of Justice, provided that the recommendations presented in the attached report are incorporated into the design and construction.
- The site is not within a currently designated State of California Fault Rupture Hazard Zone. The nearest special studies earthquake fault rupture zone is the Hollywood Fault Zone, located approximately 4.3 miles of the subject site. Due to the close proximity of the site to the fault, there is a high probability of strong shaking at the site during a strong seismic event on the Hollywood Fault. Site parameters for seismic design by the 1997 Uniform Building Code are provided in the report. A probabilistic site-specific acceleration design response spectra analysis has also been performed and the results presented in the report.
- Groundwater was encountered in five borings in depths ranging from 16 to 65 feet below the existing ground surface. This groundwater is believed to be a localized perched condition and not an indication of regional groundwater condition. The water needs to be considered in the design and construction of the proposed parking structure.
- According to available Hazard zone maps, the site is not within a liquefaction or flood hazard zone. Site soils are not susceptible to liquefaction under earthquake ground shaking, due to the existing dense bedrock below the ground water in the site.

- Site soils should be able to be excavated with conventional heavy-duty earthmoving equipment.

- Based upon the laboratory test result, a medium expansion potential has been found in fill material. Further expansion testing of bedrock material should be conducted during the construction to evaluate the expansion potential of the bedrock material below the foundations. Special design and/or construction for expansive soil conditions are considered necessary for this project and are presented inside the report under earthwork, foundation design, retaining walls and slab-on-grade.

- All fill and backfill soils placed below footings and slab and behind retaining walls should be moisture-conditioned 2 percent above optimum moisture, and compacted to 90 percent of the ASTM D1557-91 laboratory maximum density.

- The proposed parking structure and existing Hall of Justice building may be supported on conventional shallow footings with an allowable net soil bearing capacity of 7,000 and 9,000 pounds per square foot for wall footing and isolated footing, respectively. This value may be increased in accordance with the provisions presented in the report for design of footings to resist wind and/or seismic loads.

- Basement walls should be backfilled with on-site materials or non-expansive imported soils. Backfill should be moisture-conditioned 2 percent above optimum moisture, and compacted to 90 percent of the ASTM D1557-91 laboratory maximum density.

- Geological layers of sedimentary bedrock have adverse bedding at north wall of pit excavation. Further investigation and analysis related to potential adverse affects is on the progress and its results will be presented in a subsequent supplemental report.

- Surface drainage should be sloped away from the structures. Ponding of surface water should not be allowed adjacent to the structure.

- Site soils contain negligible concentrations of water-soluble sulfate. Accordingly special considerations for sulfate resistant concrete are not considered necessary for the subject project. Concrete in contact with soil should conform to the requirements of the Uniform Building Code for negligible sulfate conditions.

- The site soils have a severe corrosive potential for ferrous metals. A corrosive engineer should be retained to provide mitigation recommendations.

- Temporary construction slopes, greater than three feet in height, should be sloped or shored in accordance with the requirements of CAL-OSHA. Due to site constrains, it is believed that sloping of the excavation walls for the four subterranean levels of the parking structure will not be possible. As a result, shoring of the excavation is expected to be required.

TABLE OF CONTENTS

Los Angeles County Hall of Justice
Los Angeles, California

Converse Project No. 03-31-102-01

1.0 INTRODUCTION

This report presents results of a geotechnical investigation performed by Converse Consultants (Converse) for the seismic renovation of the existing Los Angeles County Hall of Justice and the design and construction of a proposed parking structure located at Northerly Corner of Temple Street and Spring Street, Los Angeles, California. The purposes of this investigation were to determine the nature and engineering properties of the earth materials at this site, and to provide geotechnical recommendations for renovation and seismic upgrade of Los Angeles County Hall of Justice and design and construction of the proposed parking structure.

This report is for the renovation of the Los Angeles County Hall of Justice and design and construction of the proposed parking structure described herein, and is intended for use by Hall of Justice Associates Inc, Los Angeles County, and their design professionals. Since this report is intended for use by the designer(s), it should be recognized that it is impossible to include all construction details in this report at this phase in the project. Additional consultation may be prudent to interpret these findings for contractors, or possibly refine these recommendations based upon the final design and actual conditions encountered during construction.

2.0 PROJECT DESCRIPTION

The Los Angeles County Hall of Justice was constructed in 1925 and is located at 211 West Temple (Northerly Corner of Temple Street and Spring Street) in the Downtown Area of the City of Los Angeles, California. The 14-story structure was constructed with a steel frame encased in concrete, concrete floor slabs, granite exterior veneer and hollow clay tile interior partition walls. It sustained major damage during the 1994 Northridge earthquake. As a result of the damage, the building has been closed since the earthquake.

The current renovation concept calls for converting the structure from a mixed use (office, court, and jail) to office for the Sheriff's Department and District Attorney and upgrading the structural seismic resistance to comply with current building codes. As part of the renovation, two of the upper level floors will be removed, increasing the floor-to-floor heights of the remaining upper floors, and decreasing the structural mass. The seismic upgrade is expected to include the construction of new shear walls and new footings.

Included in the project is the construction of a new parking structure to the north of the Hall of Justice. The parking structure will have four levels below grade and five levels above the existing ground surface. It is assumed that the parking structure will be constructed with a reinforced concrete frame.

In the absence of detailed structural footing load information we have for the purpose of analysis assumed that maximum column dead load plus live loads for the Hall of Justice will be on the order of 1,500 to 2,000 kips and maximum continuous wall loads (dead load plus live loads) to be on the order of 65 kips per lineal foot. For the parking structure, we have assumed that the maximum column dead load plus live loads will be on the order of 1,000 to 1,300 kips and maximum continuous wall loads (dead load plus live loads) to be on the order of 45 kips per lineal foot.

3.0 SCOPE OF WORK

The scope of geotechnical services performed for this project included exploratory borings, geotechnical laboratory testing of soil samples, geotechnical engineering analyses, and preparation of this written report. This report did *not* include an evaluation of the potential for soil and/or groundwater contamination at this site. The scope of work for this investigation included the following:

- Field exploration consisted of drilling six 8-inch-diameter exploratory borings (BH-1 through BH-6) to depths ranging from about 27 to 81.5 feet below the existing ground surface and two 24-inch-diameter borings (BH-7 and BH-8) to a depth about 45 feet below the existing ground surface at the locations shown on Drawing No. 1, *"Location of Borings"*. Subsurface conditions encountered in the borings were continuously logged and classified in the field by visual/manual examination in accordance with the Unified Soil Classification System. The internal surface of two 24-inch-diameter borings were also observed to collect the geological data. Boring BH-2 was converted to monitoring well to monitor fluctuation in groundwater conditions. Field exploration procedures and boring logs are presented in Appendix A, *Field Exploration.*

- Laboratory testing included moisture and density determinations, gradation, compaction, R-value, direct-shear strength, Expansion Index, consolidation, pH, resistivity, soluble sulfate, and chloride concentration testing. Descriptions of the individual tests and test results are presented in Appendix B, *Laboratory Test Program.*

- Engineering analyses and evaluation of results of the field exploration and laboratory testing were performed to develop design and construction recommendations for the Hall of Justice and proposed parking structure. Findings and recommendations are documented in this written report.

4.0 EXISTING SITE CONDITIONS

4.1 Surface Conditions

The northern and eastern areas of the site is currently used as an asphalt-paved parking lot that is relatively level in east area and has about 2% slope in north area. The Hall of Justice building is located within the southwest corner and central areas of the site. The hall of Justice is surrounded with metal fence. Landscaping planters and grass areas are located within and around the proposed site. A 20 feet high retaining wall is located at northwest corner of the Hall of Justice, in south-north direction. It is our understanding that a small building previously existed just northerly of the Hall of Justice and that a portion of the retaining wall is from that second building.

4.2 Subsurface Conditions

Asphalt pavements in ranging of 2.5 to 6 inches in thickness were encountered in six exploratory borings. Undocumented fill material encountered below the pavement in the borings have depths ranging from 2.5 feet to 15 feet and consist of clayey sand, sandy silt and silty sands material.

Sedimentary bedrock consisting of interbeded siltstone, claystone and sandstone was encountered below the near surface fill material. These natural materials are generally dense and stiff. Based upon down-hole observations of the geologic structure, the bedrock generally dips at an angle varying from 40 to 55 degrees from horizontal in a southerly direction with a strike generally in an east-west direction.

Groundwater was encountered at different depths ranging from 16 to 65 feet below the existing ground surface. This groundwater is believed to be a localized perched condition and not an indication of regional groundwater condition. However, this pouched water is expected to affect the designed construction of the subterranean portions of the parking structure.

Based on the results of subsurface exploration and experience, variations in the continuity and depth of subsurface conditions should be anticipated. Care should be exercised in interpolating or extrapolating subsurface conditions between or beyond borings. Fill depths should be expected to vary between borings.

5.0 CONCLUSIONS

The following conclusions are based on the results of the field investigation, laboratory testing and our understanding of the scope of the project.

- The site is suitable from a geotechnical viewpoint for the proposed renovation and development, provided that the recommendations presented in this report are incorporated into the design and construction of the project.

- Undocumented fill was encountered in six borings ranging from 2.5 feet to 15 feet below the existing ground surface. It is expected that the existing foundations for the Hall of Justice extend through this fill and into the underlying sedimentary bedrock. The subterranean portion of the parking structure is expected to extend through the existing fill material.

- The fill soils encountered during the field exploration are predominately clayey sand, silty sand and sandy silt and are generally dense and firm. The sedimentary bedrocks encountered below the fill consists of interbedded layers of siltstone, claystone and sandstone that are generally stiff to very stiff.

- Groundwater was encountered in five borings in depths ranging from 16 to 65 feet below the existing ground surface. This groundwater is believed to be a localized perched condition and not an indication of regional groundwater condition. The groundwater needs to be considered in the design and construction of the proposed parking structure.

- There are no active faults projecting toward or extending across the proposed site. The site is not located within a currently designated State of California Fault Rapture Hazard Zone. However, due to the close proximity of the site to the Hollywood Fault, very strong shaking could result from a major seismic event on this fault.

- Site soils are not susceptible to liquefaction under earthquake ground shaking, due to the existing dense bedrock below the ground water in the site.

- Site soils should be able to be excavated with conventional heavy-duty earthmoving equipment.

- Based upon the laboratory test result, a medium expansion potential, as defined in Table 18-1-B of the 1997 Uniform Building Code (UBC) is expected in site soil. Special design and/or construction for expansive soil conditions are considered necessary for this project and are incorporated into the recommendations for earthwork, foundations and slab-on-grade.

- The proposed parking structure and existing Hall of Justice building may be supported on conventional shallow footings with an allowable net soil bearing capacity of 7,000 and 9,000 pounds per square foot for wall footing and isolated footing, respectively. This value may be increased in accordance with the provisions presented in the report for design of footings to resist wind and/or seismic loads.

- Site soils contain negligible concentrations of water-soluble sulfate. Accordingly special considerations for sulfate resistant concrete are not considered necessary for the subject project. Concrete in contact with soil should conform to the requirements of the Uniform Building Code for negligible sulfate conditions.

- The site soils have a severe corrosive potential for ferrous metals. A corrosive engineer should be retained to provide mitigation recommendations.

- Based upon the findings of this investigation, we have concluded that the subject site is safe. For the renovation of the Hall of Justice and proposed parking structure against hazard from landslides, settlement or slippage. We have also concluded that the proposed parking structure will not have an adverse affect on the geotechnical stability of property outside of the building site.

6.0 SEISMICITY

6.1 General

The site, as is all of Southern California, is located within a seismically active area. However, it is not within a currently designed Fault-Rupture Hazard Zone. It is located approximately 6.8 km of the Hollywood Fault. Accordingly, strong ground shaking due to seismic activity is anticipated at this site. The provisions of the Uniform Building Code (UBC), County of Los Angeles Building Code, and the Structural Engineers Association of California (SEAOC) guidelines are considered appropriate for design of the facility.

6.2 UBC Near Source Parameters

Based on the available site data, it is our opinion that Soil Profile Type S_C, as defined in Section 1636 of the 1997 UBC, is appropriate for the site. Faults within 20 km of the site are given in Table 1, 1997 UBC Seismic Design Parameters. Fault information was taken from California Division of Mines and Geology - California Fault Parameters. According to Tables 16-S and 16-T of the 1997 UBC, faults more than 15 km from a site do not affect near-source factors. All faults closer than 30 km are Seismic Source Type B faults, based on parameters in Table 16-U. Based on Tables 16-S and 16-T, the recommended values of near-source factors N_a and N_v occur for the Hollywood Fault. Using a Seismic Zone Factor of 0.4, seismic coefficients C_a and C_v are 0.40 and 0.63, respectively.

TABLE NO. 1,

1997 UBC Seismic Design Parameters

Fault	Moment Magnitude M_w	Slip Rate Mm/year	Closest* Distance to Site (km)	Seismic Source Type	N_a	N_v
Hollywood	6.5	1.0	6.8	B	1.0	1.1
Raymond	6.5	0.5	7.5	B	1.0	1.1
Verdugo	6.7	0.5	11.1	B	1.0	1.0
Newport-Inglewood (L. A. Basin)	6.9	1.0	12.9	B	1.0	1.0
Santa Monica	6.6	1.0	15.5	B	1.0	1.0
Sierra Madre (Central)	7.0	3.0	18.2	B	1.0	1.0

*Closest distance to surface projection of the rupture area.

6.3 Response Spectra Analysis

As an alternate to the design of the structure in accordance with the UBC and SEAOC guidelines, a probabilistic site-specific response spectra analysis was performed. Two design levels were selected to represent a reasonable range of earthquake energy levels for design. The first level represents an upper bound earthquake that will have a ten percent chance of exceedence in 100 years. The second level is for a maximum probable earthquake that represents a ten percent chance of exceedence in 50 years.

This analysis was made using the computer program FRISKSP, Blake (2000), DMG Open File Report 96-08 fault file and the attenuation relationship proposed by the "Bozorgnia Campbell & Niazi (1999) Hor.-Soft Rock- Uncor." Output for FRISKSP is presented on Figure 3, *"Probability of Exceedance vs. Acceleration"*. As indicated in the figure, the FRISKSP analysis indicates that peak horizontal ground acceleration at the site during the upper bound earthquake is estimated to be on the order of 0.60g. The peak horizontal ground acceleration during the maximum probable earthquake is estimated to be on the order of 0.50g.

Site Specific Response Spectra for horizontal elastic response ground motion were also generated using the FRISKSP program and are presented on Figure 4 and 5 for the two design earthquakes. Figures 4 and 5 show the horizontal elastic single-degree-of-freedom systems with equivalent viscous damping of 5 percent of critical damping. The response spectra values for 2, 5 and 10 percent damping are presented in Table 2. These values were derived from the 5 percent damping curve developed by the "Bozorgnia Campbell & Niazi (1999) Hor.-Soft Rock- Uncor." attenuation relationship, using the spectral amplification factors developed by Newmark and Hall (1982).

When combining horizontal and vertical acceleration in the structural analysis, it should be noted that the vertical motion will have in general a 40 to 60 percent higher frequency than the horizontal motions, and the maximum vertical and horizontal accelerations seldom occur simultaneously. It is recommended that the vertical acceleration be reduced relative to the horizontal acceleration, as allowed by the provisions of the Uniform Building Code (Section 1629.2.5 of the 1997 Edition).

6.4 Liquefaction Evaluation

Liquefaction is the sudden decrease in shearing strength of cohesionless soils due to vibration. During dynamic or cyclic shaking, the soil mass is distorted, and interparticulate stresses are transferred from the sand grains to the pore water. When the pore water pressure increases to the point that the interparticulate effective stresses are reduced to zero, the soil behaves temporarily as a viscous fluid (liquefaction) and, consequently, loses its capacity to support the structures founded thereon.

Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within a depth of about 50 feet or less. The potential for liquefaction decreases with increasing grain size and clay and gravel content, but increases as the ground acceleration and duration of shaking increase.

Groundwater was encountered within a depth of 16 feet. However, the results of our standard penetration tests conducted during the site exploration indicate that materials deposits below the water are generally dense and stiff bedrock. As a result, it has been concluded that the potential for liquefaction at the site is considered very low to nil.

6.5 Secondary Seismic Effects

In addition to ground shaking and liquefaction, secondary effects of seismic activity that could impact the project site include surface fault rupture, differential settlement of the structure, ground lurching, landsliding, lateral spreading, earthquake-induced flooding, seiches, and Tsunamis. The results of a site-specific evaluation of the potential for these secondary effects affecting the project site are presented below:

- Surface Fault Rupture: The project site is located approximately 6.8 km from the Hollywood Fault, which is the nearest known active fault with historical ground rupture to the site. As a result, the potential for surface rupture resulting from the movement of this fault or other nearby faults, although not known with certainty, is considered to be low.

- Landslides: The potential for seismically induced landslides and/or other types of slope failures, such as lateral spreading on or adjacent to slope surfaces, adversely affecting the site is considered to be very low, due to the absence of slopes on or adjacent to the site. The parking structure will extend below the bottom of the northerly adjacent State Route 101 (Hollywood Freeway) and will not be adversely affected by movement of the retaining wall.

- Differential Settlement Due to Seismic Shaking: Seismically induced differential settlement occurs as the result of loose medium to coarse sands densifying during strong shaking from an earthquake. Field samples and sampling blow counts indicate that the materials underlying the footings are predominately sedimentary bedrock that are not sensitive to seismically induced settlement.

- Tsunamis/Seiches: Tsunamis and seiches are large seismic generated waves in the ocean (Tsunamis) or large enclosed bodies of water (Seiches). Based upon the distance of the site from the ocean and/or lakes and/or reservoirs, the potential of Tsunamis and/or Seiches affecting the site are considered to be very low.

- Earthquake-Induced Flooding: This is flooding caused by failure of dams or other water-retaining structures up gradient of the site as a result of an earthquake. Review of the area adjacent to the site indicates that there are no significant up gradient lakes or reservoirs with the potential of flooding the site.

7.0 DESIGN RECOMMENDATIONS

7.1 General

Seismic evaluation of existing foundations and design of remedial measures for the Hall of Justice building may be designed and constructed in accordance with the recommendations presented herein.

The proposed nine-story parking structure with four basement levels may be supported on conventional spread footings bearing on undisturbed native soils. Excavation for the subterranean portion of the structure is expected to remove any existing fill that may exist. In the subsections below, design recommendations for earthwork, foundations, slabs-on-grade, and corrosion and chemical attack resistance are provided. Construction considerations, such as temporary excavations, are discussed in the Construction Considerations section presented later in this report.

7.2 Earthwork

Earthwork is expected to consist of subgrade preparation for basement slab-on-grade, placement of backfill around to outside of basement walls, placement of utility trench backfill and limited fine grading around the perimeter of the parking structure in conjunction with the construction of walkways, driveways and landscaping. Earthwork recommendations are presented in Appendix C, *Recommended Earthwork Specifications*, and also in the following subsections.

<u>7.2.1 Removals</u>: Prior to the start of construction, the existing structures, asphalt concrete pavement, and landscaping should be removed from the site. Any undocumented fill extending below the bottom of the design excavation should be removed. Loose, disturbed, or otherwise unsuitable materials should be excavated. Excavation activities should not disturb adjacent utilities, buildings, and structures to remain. Existing utilities should be removed and adequately capped at the project boundary line, or salvaged/rerouted as designed.

<u>7.2.2 Subgrade Preparation and Compaction:</u> All exposed subgrade soil surfaces, including subgrade surfaces below the proposed basement floor slabs, should be observed by a Converse representative prior to placement of fill or placement of slabs. If soft, yielding, or unsuitable soils are exposed at the subgrade surface, then the unsuitable soils should be removed and replaced with properly compacted fill soils. In order to provide uniform support for the basement floor slabs, the subgrade soil surfaces following backfilling of any utility trench should be scarified to a depth of 6 to 8 inches, moisture-conditioned 2 percent above optimum moisture, and then compacted to 90 percent relative

compaction. The relative compaction should be based upon the maximum unit dry weight determined in accordance with ASTM Test Method D-1557.

7.2.3 Fill Compaction: All fill and backfill soils should be placed in lifts not exceeding eight inches in thickness, moisture-conditioned 2 percent above optimum moisture, and compacted to 90 percent of the ASTM D1557 laboratory maximum density. All fill and backfill should be placed and compacted under observation and testing performed by Converse.

7.2.4 Fill Materials: Fill soils should consist of site or imported non-expansive soils free of organics, cobbles, boulders, rubble, or rock larger than three inches in largest dimension. Any imported soils should be granular and non-expansive, with an EI less than 20. Import soils should be evaluated and possibly tested by Converse if the materials are questionable.

7.2.5 Site Grading: A grading plan was not available for review at the time of writing this report. However, final grades should slope at one (for pavement) to two (for landscaping) percent away from structures to prevent ponding and to reduce percolation of water into foundation soils. Any permanent slope to be included in the site grading should be designed for an inclination of 2:1 (horizontal to vertical) or flatter.

7.3 Foundations

7.3.1 Vertical Capacity: Conventional spread footings, founded on undisturbed bedrock, may be used to support the proposed parking structure and/or carry new loads for the existing Hall of Justice. Footings for the proposed parking structure should be founded at least 24 inches below lowest adjacent final grade. Continuous spread footings should have a minimum width of 80 inches. Pad footings supported by bedrock with the above minimum size and embedment depths may be designed for a net allowable vertical bearing pressure of 9,000 pounds-per-square-foot (psf) for dead-plus-live loads. Continuous wall foundation supported by bedrock with the above minimum size and embedment depths may be designed for a net allowable vertical bearing pressure of 7,000 pounds-per-square-foot (psf) for dead-plus-live loads. Bearing valves for existing footings not meeting the above minimum width or embedment depth should be evaluated on an individual case by the Geotechnical Engineer. Where new footings are located immediately adjacent to existing footings, the bottom of the new footing should be located at the same elevation as the bottom of the existing footing.

If possible, footings located at the ground surface that extend beyond the limits of the basement should be avoided. If such footings are needed, they should be designed to bridge over any basement wall backfill and/or designed for greater than normal differential settlement. Footings located at or near the ground surface should be designed for a net allowable vertical bearing pressure of 2500 pounds-per-square-foot (psf) for dead-plus-live loads. The minimum footing width and depth of 24 inches. Footings should be extended as necessary to extend at least 12 inches into natural bedrock. Anticipated differential settlement of at-grade footings with respect to basement wall depend on the actual design conditions and should be reviewed by the Geotechnical Engineer.

The maximum anticipated settlement of a square basement footing founded on undisturbed natural soils is estimated to be less than 1 inch for a column load of 1,300 kips. Differential settlements are expected to be on the order of 0.50 inch between adjacent footings.

7.3.2 Lateral Capacity: Resistance to lateral loads can be provided by friction acting at the base of the foundations and by passive earth pressure. A coefficient-of-friction of 0.30 may be assumed with the dead-load forces. An ultimate passive lateral earth pressure of 350 psf per foot of depth, up to a maximum of 3,500 psf, may be used for sides of footings or basement walls poured against undisturbed native soils or with compacted backfill.

7.3.3 Dynamic Increases: Bearing values and passive pressure indicated above are for total dead-load and frequently applied live loads. The above vertical bearing and passive pressure may be increased by 33 percent for a short duration of loading, which will include the effect of wind or seismic forces.

7.4 Slabs-on-Grade

Slabs-on-grade should be placed on properly compacted subgrade soils as described in Section 7.2.2. At the completion of subgrade preparation, the Expansion Index of the subgrade soils should be verified and recommendations should be re-evaluated as-needed.

Structural design elements such as thickness, reinforcement, joint spacing, etc., for the slab-on-grade should be selected based on the analysis performed by the project structural engineer considering anticipated loading conditions and the modulus of subgrade reaction of the supporting materials, as presented below. .

Slabs-on-grade should have a minimum thickness of four inches for support of nominal ground-floor live loads. Minimum reinforcement for slabs-on-grade should be No. 3 reinforcing bars, spaced at 12 inches on-center each way. The thickness and reinforcement of more heavily-loaded slabs will be dependent upon the anticipated loads and should be designed by a structural engineer. A static modulus of subgrade reaction equal to 100 pounds per square inch per inch may be used in structural design of concrete slabs-on-grade.

Care should be taken during concrete placement to avoid slab curling.

Slabs should be designed and constructed as promulgated by the American Concrete Institute (ACI) and the Portland Cement Association (PCA). Prior to the slab pour, all utility trenches should be properly backfilled and compacted.

In areas where a moisture-sensitive floor covering (such as vinyl tile or carpet) is used, slabs should be protected by at least a six-mil-thick polyethylene vapor barrier between the slab and compacted subgrade. Where a vapor barrier is used, it should be protected with two inches of sand placed above the barrier to reduce the potential for punctures and to aid concrete curing. Polyethylene sheets should be overlapped a minimum of six inches, and should be taped or otherwise sealed.

7.5 Retaining Walls

Basement wall footings that are a load carrying structural part of the basement structure may be designed in accordance with the vertical bearing value presented above. All fill and backfill soils used for retaining walls, should be moisture-conditioned 2 percent above optimum moisture, and compacted to 90 percent of the ASTM D1557 laboratory maximum density.

Retaining walls that are less than eight feet in height and are structurally independent from the basement may be designed using a vertical bearing pressure of 2,500 pounds per square foot. The minimum width and embedment depth of independent walls should be 24 inches.

Lateral bearing pressure and coefficient-of-friction given above may be used for design of retaining walls.

Freestanding cantilever retaining walls designed to retain level on-site or similar soil backfill should be designed to resist an equivalent fluid pressure of 40 pounds per cubic foot (pcf). Retaining walls and/or basement walls, which are top-restrained, and support level on-site or similar soil backfill may be designed using an equivalent fluid pressure of 55 pcf or a uniform load of 26H (H = height of wall). For walls designed to retain sloped backfill (up to an inclination of 2:1(horizontal to vertical) may be designed using equivalent fluid pressures of 43 pcf and 70 pcf for cantilever and braced walls respectively.

If any surcharge is possible within a distance equal to the height of the wall, its effect should be added to the equivalent fluid pressure. Surcharge coefficients of 30% and 45% of any surcharge may be used in the design of cantilever and braced walls, respectively.

Adequate provisions to drain the retained earth must be included in the design and construction of the walls greater than three feet in height. Drainage may be provided by a 4-inch-diameter perforated drainpipe installed in the middle of a 12-inch wide by 12-inch high zone of open-graded gravel encased by a layer of a non-woven geotextile filter fabric such as Mirafi 140N or equivalent. An alternate to the pipe and gravel drain would be a layer of composite drain material such as Miradrain. Drains for the basement walls should connect to a sump where any water collected can be conveyed to offsite storm drains. Where a wet wall condition is not desirable, the wall should be waterproofed.

Care must be exercised during construction to avoid over-stressing retaining walls during the compaction of backfill.

7.6 Corrosivity and Chemical Attack

In order to determine the potential affects of the soil on concrete and buried metal pipes, resistivity, pH, soluble chloride and soluble sulfate test results were performed on a portion of two bulk soil samples recovered at the site, and the results are presented below and in Appendix B.

A sulfate concentration of 0.070 and 0.012 (% by weight) were measured in the laboratory test. These sulfate concentration are defined as a negligible concentration by Table 19-A-3 of the UBC (1997 Edition). As a result, special sulfate-resisting concrete is not currently considered necessary for this project. However, additional testing during construction prior to the placement of footing should be performed to confirm this condition.

Tests performed on a portion of a two bulk samples representative of the near surface indicates that the near surface soils have a chloride content of 60 and 70 ppm, and a pH of 7.60 and 7.09. However, a low saturated resistivity of 490 and 1,000 ohms-centimeter were also measured. These results would indicate a severe corrosivity potential for ferrous metals in contact with these soils. Therefore, a corrosive engineer should be retained to provide mitigation recommendations.

7.7 Pavement Design

A representative sample of the site soils was tested to evaluate the Resistance (R) values in accordance with the State of California Standard Test Method 301-G. The test is designed to provide a relative measure of soil strength for use in pavement design.

The results of the laboratory testing indicates that the R-value of the site soils is 16. At the completion of earthwork, the R-value of the subgrade soils should be confirmed and the pavement structural sections should be reevaluated.

An analysis was performed to evaluate structural sections for asphalt concrete pavements corresponding to Traffic Indices (TIs) ranging from 4 to 6 and an R-values of 16. The analysis was based on Caltrans' design procedure for flexible pavement structural. The results of our analysis are summarized in the following table.

Recommended Pavement Sections

Area and Recommended Traffic Index (T.I.)		**Pavement Section**	
		A.C. (inch)	**A.B. (inch)**
Automobile access and parking	4	4.0	5.5
	5	4.5	5.5
Truck access drive ways	6	5.0	7.5

Prior to placement of base aggregate, at least the upper 12 inches of subgrade soils should be scarified, moisture-conditioned, if necessary, and recompacted to at least 90 percent relative compaction as defined by ASTM Standard D-1557 test method.

Base materials should conform to Section 200-2.2, "Proceed Miscellaneous Base," of the current Standard Specifications for Public Works Construction (SSPWC, 2000 edition) and should be placed in accordance with Section 301.2 of the SSPWC.

Asphaltic concrete materials should conform to Section 203 of the SSPWC (2000) and should be placed in accordance with Section 302.5 of the SSPWC.

Positive drainage should be provided away from all pavement areas to prevent seepage of surface and/or subsurface water into the pavement base and/or subgrade.

8.0 CONSTRUCTION CONSIDERATIONS

8.1 Temporary Excavations

Temporary slopes may be used during excavations where not constrained by adjacent utilities and structures. Where space is limited due to adjacent facilities and buried utilities to be salvaged and protected, shoring may be required. Recommendations for shoring design can be provided upon request.

Based upon the soils encountered in the borings, it is our opinion that sloped temporary excavations may be cut according to the slope ratios presented in the following table:

TEMPORARY EXCAVATION SLOPES

Maximum Depth of Cut (feet)	Maximum Slope Ratio (horizontal:vertical)
0 - 4	vertical
4 - 20	0.75 : 1
20 - 45	1.5 : 1

Slope ratios given above are assumed to be uniform from top to toe of slope. Surfaces exposed in sloped excavations should be kept moist, but not saturated, to retard raveling and sloughing during construction. Adequate provisions should be made by the contractor to protect slopes from erosion during periods of rainfall. Surcharge loads should not be permitted within a horizontal distance equal to the depth of the cut from the top of slopes. There is the potential that sandy strata may be encountered that will require temporary cut slopes to be less steep than tabulated above. As a result, the excavation slope should be observed on a periodic basis during the excavation of the subterranean portion of the structure, in order to verify soil conditions. Workers entering excavations should be protected from possible caving and raveling soils.

8.2 Temporary Shoring

Earth materials encountered in our borings generally consisted of bedrock consisting of interbedded layers of siltstone, claystone and sandstone. Due to the nature of the subsurface material, significant caving in the bedrock is not expected during installation of soldier piles and tie backs.

Cantilevered Shoring

Temporary shoring may be required for support of construction excavations. A soldier-pile shoring system may be used to maintain temporary support of vertical walled excavations. Due to the nature of the fill materials encountered during this investigation, caving during the drilling of soldier-pile borings inside the fill material might be expected. A soldier-pile system in fill materials will also most likely require continuous lagging to control caving and sloughing in the excavation between soldier piles. Shoring design must consider the support of adjacent underground utilities and/or structures, and should consider the effects of shoring deflection on supported improvements.

Temporary cantilever shoring should be designed to resist a lateral earth pressure equivalent to a fluid density of 30 pounds-per-cubic-foot (pcf). This equivalent fluid pressure is valid only for shoring retaining level ground. Temporary cantilevered shoring retaining slope ground with an inclination of 2 to 1 (horizontal to vertical) or flatter, should be designed to resist a lateral earth pressure equivalent to a fluid density of 55 pounds-per-cubic-foot (pcf). These values for active earth pressure are considered actual earth pressure with no increase for factors of safety. The shoring design engineer in designing the shoring system should add an appropriate factor of safety.

Surcharge pressures should be added to the above earth pressures for surcharges within a distance from the top of the shoring less than or equal to the shoring height. A surcharge coefficient of 30 percent of any uniform vertical surcharge should be added as a horizontal shoring pressure for cantilever shoring.

Lateral resistance for soldier piles may be assumed to be provided by passive pressure below the bottom of excavations. The allowable passive pressure for soldier piles spaced at least 3 diameters on center may be taken as 600 psf on the pile per foot of depth, measured below the bottom of excavation. Closer spaced soldier piles should be designed using a passive resistance of 350 psf. The allowable maximum passive resistance should not exceed 8,000 psf. It should be noted that the above values for passive earth pressure given for the design of soldier piles have been adjusted for potential arching between piles and no additional increases for arching should be assumed.

Caving soils should be anticipated between the piles in fill areas. To limit local sloughing, caving soils in fill areas can be supported by continuous lagging or guniting. The need for lagging between soldier piles in bedrock should be determined by the Geotechnical Engineer during construction based upon the condition of the bedrock exposed and the mount (if any) of seepage encountered. All lumber to be left in the ground should be treated in accordance with Section 204-2 of the "Standard Specifications for Public Works Construction" (Green Book).

It is recommended that Converse review plans and specifications for proposed shoring and that a Converse representative observe the installation of shoring. A licensed surveyor should be retained to establish monuments on shoring and the surrounding ground prior to excavation. Such monuments should be monitored for horizontal and vertical movement during construction. Results of the monitoring program should be provided immediately to the project Structural (shoring) Engineer and Converse for review and evaluation. Adjacent buildings should be photo-documented prior to construction.

Braced (Tie back) Shoring

A tie back soldier-pile shoring system may be used to maintain temporary support of deep vertical walled excavations. Braced or tie back shoring, retaining a level ground surface, should be designed for a uniform pressure of 20H psf, where H is the height of the retained cut in feet. Surcharge pressures should be added to this earth pressure for surcharges within a distance from the top of the shoring less than or equal to the shoring height. A surcharge coefficient of 45 percent of any uniform vertical surcharge should be added as a horizontal shoring pressure for braced shoring. Braced or tie back shoring, retaining a sloping ground surface with a inclination of 2 to 1 (horizontal to vertical) or flatter, should be designed for a uniform pressure of 25H psf, where H is the height of the retained cut at the back of the shoring in feet. These values for earth pressure are considered actual earth pressure with no increase for factors of safety. The shoring design engineer in designing the shoring system should add an appropriate factor of safety.

Tie Backs

For design of tie back shoring, it should be assumed that the potential wedge of failure is determined by a plane at 30 degrees from the vertical, through the bottom of the excavation. Tie back anchors may be installed at angles of 15 to 40 degrees below a horizontal plane. Tie back installation and testing guidelines and procedures are presented in Appendix D, *"Guide Specifications for Installation and Acceptance of Tie back Anchors"*. Soil friction values, for estimating the allowable capacity of drilled friction anchors, may be computed using the following equation:

$$q = 150+35H; \quad q \leq 800 \text{ pounds-per-square-foot (psf)}$$

where:

H = average depth of anchor below ground surface, shown on Figure 1,

q = anchor surface area resistance, in psf (excluding tip),

"Post Grouted" anchors should be designed in accordance with the Caltrans "Trenching and Shoring Manual" Criteria.

Only the frictional resistance developed beyond the assumed failure plane should be included in the tie back design for resisting lateral loads.

8.3 Geotechnical Services During Construction

This report has been prepared to aid in the evaluation of the existing Hall of Justice and the proposed parking structure and to assist architects and engineers in design of the proposed structures. It is recommended that this office be provided an opportunity to review final design drawings and specifications to determine if the recommendations of this report have been properly implemented.

Foundation recommendations in this report are based on the assumption that all structural foundations will be placed on undisturbed bedrock. All foundation excavations should be observed by Converse prior to placement of steel and concrete, to verify that foundation elements are founded on satisfactory materials and that excavations are free of loose and disturbed soils. All structural fill and backfill should be placed and compacted during observation and testing by Converse.

During construction, the geotechnical engineer and/or their authorized representatives are present at the site to provide a source of advice to the client regarding the geotechnical aspects of the project and to observe and test the earthwork performed. Their presence should not be construed as an acceptance of responsibility for the performance of the completed work, since it is the sole responsibility of the contractor performing the work to ensure that it complies with all applicable plans, specifications, ordinances, etc.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any recommended actions presented herein to be unsafe.

9.0 CLOSURE

The findings and recommendations of this report were prepared in accordance with generally accepted professional geotechnical engineering principles and practice for Southern California at this time. We make no other warranty, either expressed or implied. Conclusions and recommendations presented in this report are based on results of this field and laboratory investigation, combined with an interpolation and extrapolation of subsurface conditions between and beyond boring locations. If conditions encountered during construction appear to be different from those assumed in this report, this office should be notified immediately.

Reference: U.S.G.S. Los Angeles, California Photo Revised 1966

SCALE: 1: 24,000

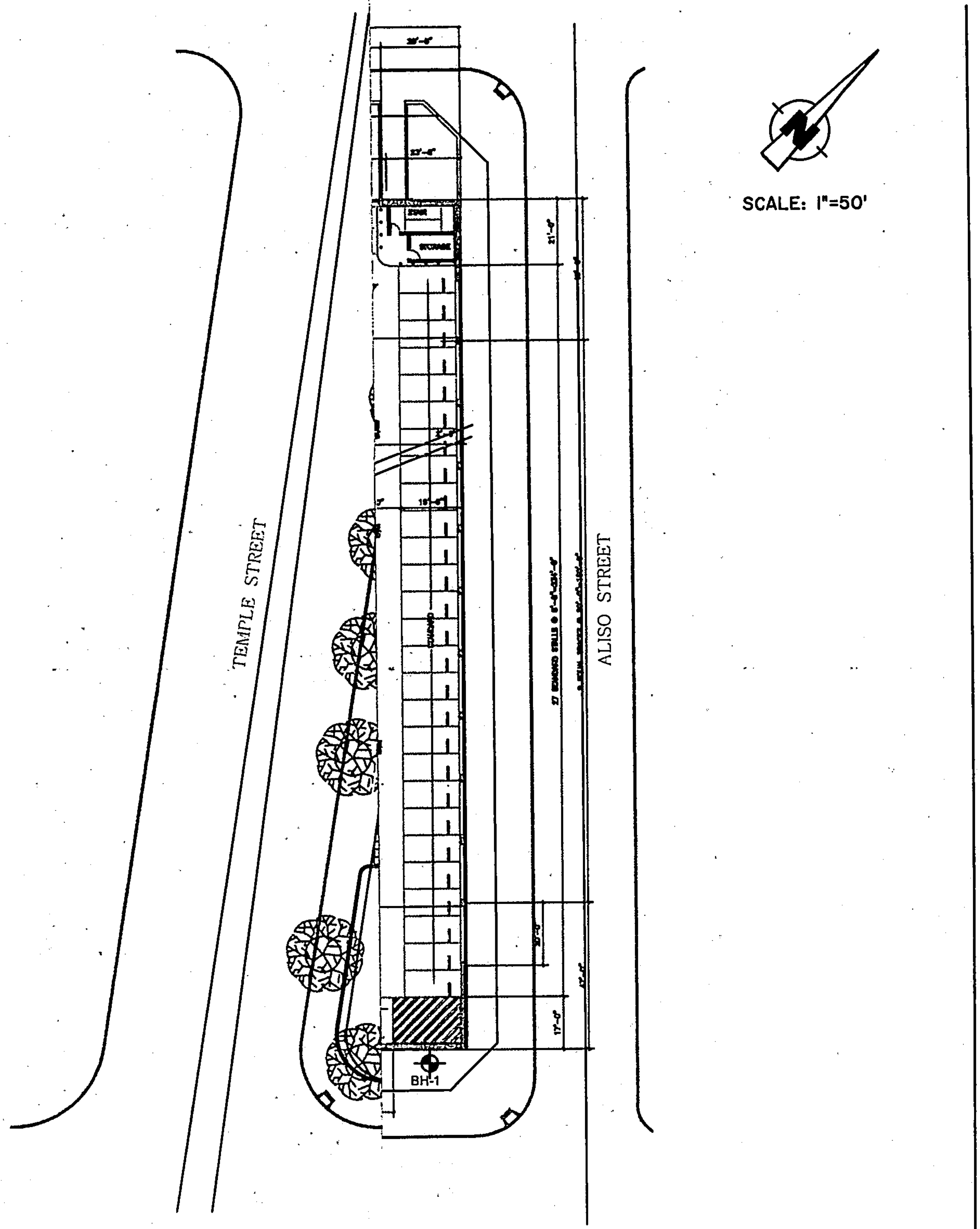
SITE LOCATION MAP

LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Converse Consultants

Figure No.
1



LEGEND

BH-8

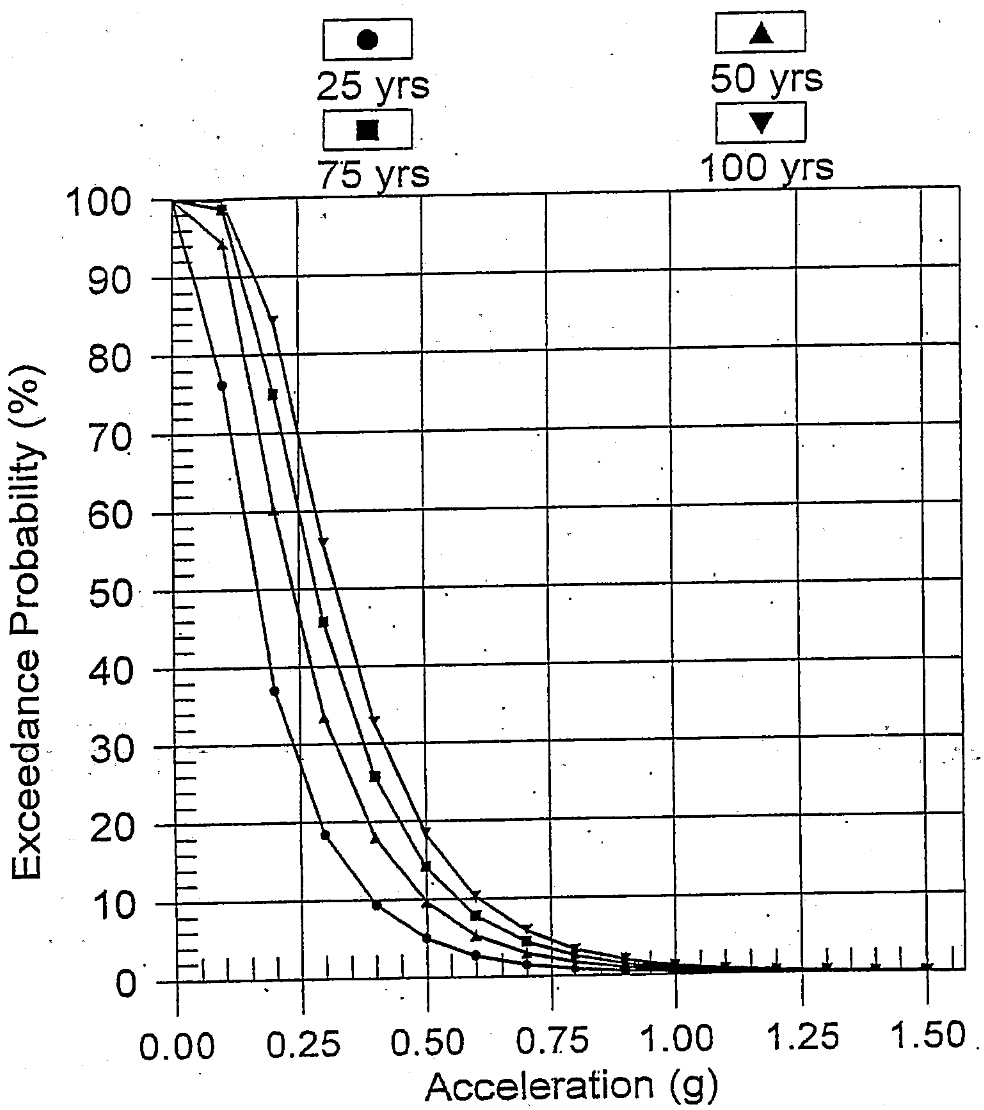
APPROXIMATE LOCATION OF B

ORINGS

Justice

e Associates, Inc.

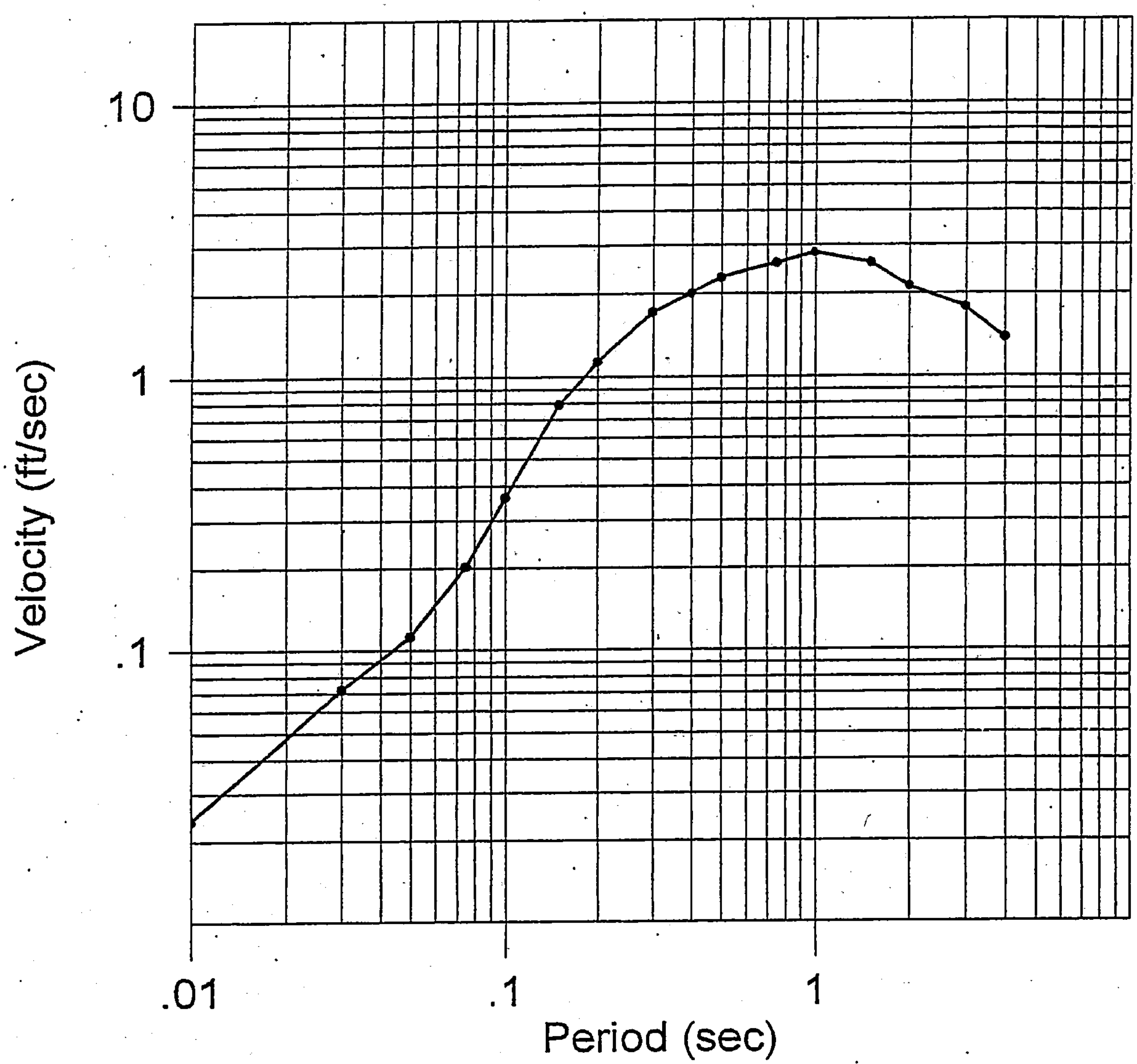
Project No.	Figure No.
03-31-102-01	**2**



BOZORGNIA CAMPBELL & NIAZI (1999) HOR.-SOFT ROCK-UNCOR. PGA

PROBABILITY OF EXCEEDANCE vs. ACCELERATION

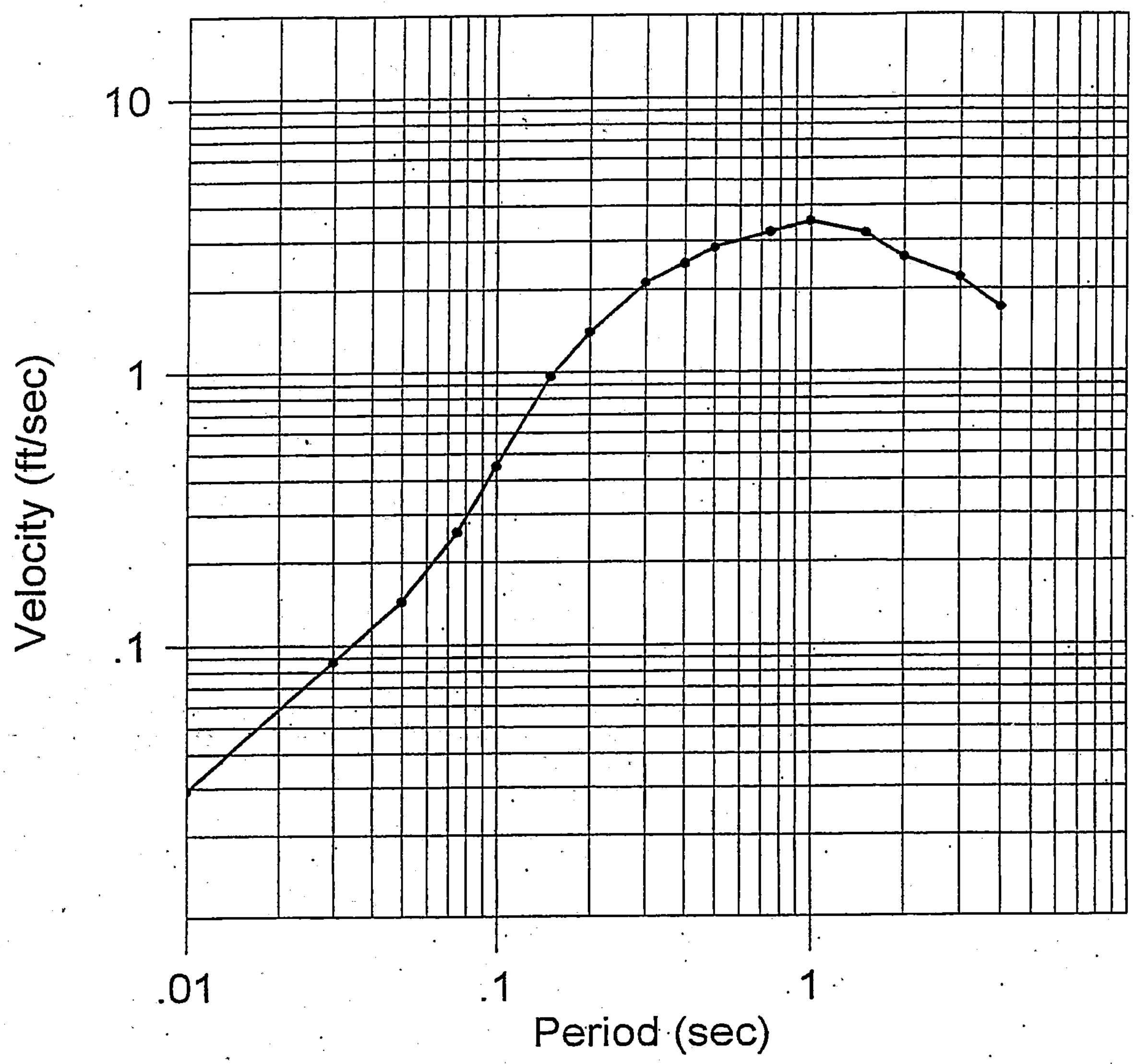
Converse Consultants	LA County Hall of Justice Los Angeles, California For: Hall of Justice Associates, Inc.	Project No. 03-31-102-01	Figure No. 3



5% CRITICAL DAMPING

EARTHQUAKE DESIGN SPECTRA
10% PROBABILITY OF EXCEEDANCE IN 50 YEARS
(RETUN PERIOD = 475 YEARS)

Converse Consultants	LA County Hall of Justice Los Angeles, California For: Hall of Justice Associates, Inc.	Project No. 03-31-102-01	Figure No. 4



5% CRITICAL DAMPING

EARTHQUAKE DESIGN SPECTRA
10% PROBABILITY OF EXCEEDANCE IN 100 YEARS
(RETUN PERIOD = 1000 YEARS)

Converse Consultants	LA County Hall of Justice Los Angeles, California For: Hall of Justice Associates, Inc.	Project No. 03-31-102-01	Figure No. 5

10% PROBABILITY OF EXCEEDANCE IN 50 YEARS

PERIOD (sec)	PSEUDO VELOCITY (ft./sec.)		
	2% Damping	5% Damping	10% Damping
0.01	0.029	0.024	0.020
0.03	0.088	0.072	0.060
0.10.	0.446	0.363	0.300
0.15	0.969	0.789	0.653
0.20	1.394	1.135	0.940
0.30	2.107	1.715	1.420
0.50	2.811	2.289	1.900
0.75	3.175	2.586	2.141
1.0	3.467	2.824	2.338
1.5	3.179	2.589	2.144
2.0	2.615	2.129	1.763
3.0	2.192	1.785	1.478

10% PROBABILITY OF EXCEEDANCE IN 100 YEARS

PERIOD (sec)	PSEUDO VELOCITY (ft./sec.)		
	2% Damping	5% Damping	10% Damping
0.01	0.036	0.029	0.024
0.03	0.107	0.087	0.072
0.10.	0.554	0.451	0.374
0.15.	1.190	0.969	0.802
0.20	1.720	1.400	1.160
0.30	2.600	2.116	1.752
0.50	3.482	2.836	2.348
0.75	3.953	3.219	2.665
1.0	4.318	3.516	2.911
1.5	3.919	3.191	2.642
2.0	3.202	2.608	2.160
3.0	2.703	2.201	1.823

SEISMIC RESPONSE SPECTRA
PSEUDO VELOCITY
FOR VARIOUS DAMPING RATIOS

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Field exploration included a site reconnaissance and subsurface drilling. During the site reconnaissance, surface conditions were noted, and the locations of the test borings were determined. Borings were approximately located using existing features as a guide.

Test borings included eight exploratory borings. Six exploratory borings were advanced using a truck-mounted, 8-inch-diameter, hollow-stem auger drill rig equipped for soil sampling. Soils were continuously logged and classified in the field by visual/manual examination, in accordance with the Unified Soil Classification System. Field descriptions have been modified, where appropriate, to reflect laboratory test results. Other two exploratory borings were advanced using a truck mounted, 24-inch-diameter bucket auger drill rig. The internal surface of the two 24-inch-diameter borings were observed to collect geological data.

Relatively undisturbed samples of the subsurface soils were obtained at frequent intervals in the borings using a drive sampler (2.4-inch inside diameter, 3-inch outside diameter) lined with sample rings and a Standard Penetrometer Test (SPT) sampler. The steel sampler was driven into the bottom of the borehole with successive 30-inch drops of a 140-pound drive weight. An automatic ("safety") hammer was used. Blows required to drive the sampler 1.5 feet are shown on the boring logs in the "blows" column. Samples were retained in brass rings (2.4 inches in diameter, 1.0 inch in height) and carefully sealed in waterproof plastic containers for shipment to the Converse geotechnical laboratory. Standard Penetration Tests (SPT) were performed in general accordance with the ASTM Standard Test Method D1586. Blow counts given for the three 6-inch increments are indicated in parentheses on the boring logs, which is the uncorrected SPT *"N"*-value. Bulk samples of the near surface soils were also obtained.

Drawing No. A-1, *Exploration Log Key,* describes the various symbols and nomenclature shown on the logs. Logs of the borings are presented on Drawings Nos. A-2 through A-9, which also include descriptions of the soils encountered, pertinent field data, and supplemental laboratory results.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BORING LOG SYMBOLS

SAMPLE TYPE

STANDARD PENETRATION TEST
Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method

DRIVE SAMPLE 2.42" I.D. sampler.

DRIVE SAMPLE No recovery

DISTURBED BULK SAMPLE

GROUNDWATER WHILE DRILLING

GROUNDWATER AFTER DRILLING

LABORATORY TESTING ABBREVIATIONS

TEST TYPE
(Results shown in Appendix B)

CLASSIFICATION	
Plasticity	pi
Grain Size Analysis	ma
Passing No. 200 Sieve	wa
Sand Equivalent	se
Expansion Index	ei
Compaction Curve	max
Hydrometer	h

STRENGTH	
Pocket Penetrometer	p
Direct Shear	ds
Direct Shear (single point)	ds*
Unconfined Compression	uc
Triaxial Compression	tx
Vane Shear	vs
Consolidation	c
Collapse Test	col
Resistance (R) Value	r
Chemical Analysis	ca
Electrical Resistivity	er

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Project Name	Project No.	Drawing No.
LA County Hall of Justice Los Angeles, California For: Hall of Justice Associates, Inc.	03-31-102-01	A-1

Log of Boring No. BH-1

Dates Drilled: 3/17/2003 Logged by: KF Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): 55

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3" ASPHALT						r
		FILL(Qaf): **CLAYEY SAND (SC):** fine-grained, asphalt debris, brown.			2/7/9	3	103	
5		**SANDY SILT (ML):** fine-grained sand, few clay, gravel up to 1" in max. dimension, light brown.			45/50(60")	1		dis.
10		-fine to medium-grained, yellow			36/50(6")	16	83	
15		**WEATHERED SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE,** Puente Formation, thinnly bedded to laminated, soft to moderately hard.			22,40,50(6")	27	90	ds
								ma,max h, ca, er
20		-olive gray to gray color, less weathered, thinnly bedded, moderately hard			14,18,26	30	86	ds
25		**SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE,** Puente Formation, thinnly bedded, moderately hard, dark olive gray to blackish gray color.			(12,15,22)	29		
30		-thin fine silty sand layers, yellow brown color			20/40/50(4")	33	79	ds

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-2a

Project ID: 03-31-102-01.GPJ; Template: LOG

Log of Boring No. BH-1

Dates Drilled: 3/17/2003 Logged by: KF Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): 55

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE, Puente Formation, thinnly bedded, moderately hard, dark olive gray to blackish gray color.			(14,22,32)	37		
40		-bedding dipping about 60 degrees, strike unknown, becoming less weathered with depth			20/39/50(4.5")	35		dis.
45		-fine grained layers			(11,18,32)			
50		-trace of white colored layers, fine grained			32,50 (5")	25	84	
55		-wet seepage			(20,28,43)	28		
60					17,42,50(4")			c
65					(15,40,50(4"))	26		

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-2b

Log of Boring No. BH-1

Dates Drilled: 3/17/2003 Logged by: KF Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): 55

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE, Puente Formation-(continued)			13,20,50(5")	23		dis.
75					(15,25,50(6")	30		
80					36,50(6")	41	69	
		End of boring at 81.5 feet. Groundwater encountered at 55 feet. Boring backfilled with soil cutting and surface patched with asphalt on 3/17/03.						

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-2c

Log of Boring No. BH-2

Dates Drilled: 3/18/2003 Logged by: KF Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer) /

Ground Surface Elevation (ft): N/A Depth to Water (ft): 65

SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

Depth (ft)	Summary of Subsurface Conditions	Samples: Drive	Samples: Bulk	Blows/Foot	Moisture (%)	Dry Unit Wt. (pcf)	Other	Summary of Well Installations
	2.5" ASPHALT		X					-Traffic rated well box set in concrete
	FILL(Qaf): SANDY SILT (ML): fine to medium-grained sand, geological layers, yellow to brown.		X					
	WEATHERED SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE, Puente Formation, yellowish brown to olive yellow, thinnly bedded, bedding dipping about 60 degrees strike unknown.	X	X	27,34,47	23	98	ma, h	
5		X		40,50(4")	29		dis.	-Bentonite Grout
10		X		34,50(4")	5	96		
15	-medium-grained sandstone layers, yellowish brown	X		29,50(3")	11	97		-Sand
20		X		21,50(4")	7	91		-4" Blank PVC Casing
25	-olive gray to olive brown, thinnly bedded to laminated	X		36,50(2")	15		dis.	-4" PVC, 0.2" slotted casing
30	-fine to medium-grained sandstone layers bedding dipping about 80 degrees	X		17,50(4")	24	99		
35	-fine-grained sandstone layers, yellow to brown	X		(9/13/29)	31			-Sand
								-4" PVC, 0.2" slotted casing

Converse Consultants

Project Name: LA County Hall of Justice, Los Angeles, California, For: Hall of Justice Associates, Inc.

Project No. 03-31-102-01

Drawing No. A-3a

Log of Boring No. BH-2

Dates Drilled: 3/18/2003 Logged by: KF Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer) /

Ground Surface Elevation (ft): N/A Depth to Water (ft): 65

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER	SUMMARY OF WELL INSTALLATIONS
		SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE, Puente Formation, becoming less weathered with depth, dark gray, moderately hard, fine grained.			9,17,32			c	
45					(12,16,21)	32			
50					41,33,34	38		dis.	
55		-dry			(11,14,22)	37			
60		-thinnly bedded, bedding dipping about 60 degrees, strike unknown			25,26,38	35	80		
65		-water seepage			(17,25,26)	29			
									-PVC cap
70					26,50(4")	24		dis.	-Benotnite Backfill
		End of boring at 71.5 feet. Groundwater encountered at 65 feet. Boring converted to monitoring well on 3/18/03.							

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-3b

Log of Boring No. BH-3

Dates Drilled: 3/18/2003 Logged by: KF Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

Depth (ft)	Summary of Subsurface Conditions	Samples: Drive	Samples: Bulk	Blows	Moisture (%)	Dry Unit Wt. (pcf)	Other
0	6" CONCRETE PAVEMENT OVER 1" BASE						
	<u>FILL</u>(Qaf): **CLAYEY SAND (SC):** fine to medium-grained, yellow to light brown.						
3		X	X	5,8,13	24	84	
5	**SANDY SILT (ML):** fine to medium-grained sand, silt, trace clay, yellow to light brown.	X	X	7,13,22	35	72	
10	<u>WEATHERED SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE,</u> Puente Formation, olive gray to olive brown, soft, thinnly bedded.	X		10,20,21	44	73	
15	-bedding dipping about 60 degrees, strike unknown	X		16,13,15	34	75	
20	-fine grained layers, brown, oxidized	X		5,9,9	48	69	
25		X		(10,30,32)	58		

Boring finished at 27 feet due to refusal.
Groundwater not encountered.
Boring backfilled with soil cutting and surface patched with asphalt on 3/18/03.

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-4

Project ID: 03-31-102-01.GPJ; Template: LOG

Log of Boring No. BH-4

Dates Drilled: 3/19/2003 Logged by: BK Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): 33

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3" THICK ASPHALT LAYER						
		FILL(Qaf): **SANDY SILT (ML):** light brown.						
					9/12/23	26	93	max,eih,ca,er
5					8/13/10	28	89	
10		**WEATHERED SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE,** Puente Formation, olive gray to olive brown, thinnly bedded, soft.			9/15/30	30	88	
15					14/23/50(5")	25		dis.
20		-trace of clay, yellowish brown, oxidized			3/11/10	21	98	
25					(6/12/44)	27		
30					17/54(4")	25	96	
		-water seepage						

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-5a

Project ID: 03-31-102-01.GPJ; Template: LOG

Log of Boring No. BH-4

Dates Drilled: 3/19/2003 Logged by: BK Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): 33

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		WEATHERED SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE, Puente Formation, thinly bedded, soft to moderately hard, olive gray to olive brown.			(18/19/28)	27		
40					12/42/50(3")	27	97	
45					(8/16/25)	31		
50		**SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE,** Puente Formation, less weathered with depth, blackish gray to gray, moderately hard, thinly bedded.			12/32/50(4")	29	92	
55					(9/15/22)	35		
60		-with some sandstone layers			10/21/27	30	91	
65					(7/17/26)	32		

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-5b

Log of Boring No. BH-4

Dates Drilled: 3/19/2003 Logged by: BK Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): 33

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE, Puente Formation			7/29/50(4")	27	97	
75					11/43/50(3")	26	97	
80					12/39/50(5")	26	100	
		End of boring at 81.5 feet. Groundwater encountered at 33 feet. Boring backfilled with soil cutting and surface patched with asphalt on 3/19/03.						

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-5c

Project ID: 03-31-102-01.GPJ; Template: LOG

Log of Boring No. BH-5

Dates Drilled: 3/19/2003 Logged by: BK Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		FILL(Qaf): **CLAYEY SAND (SC):** with some brick and concrete debris.						
5					5/9/9	25	96	
10		-light brownsilty sand, with some bricks			3/5/3	28	89	
15		**WEATHERED SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE,** Puente Formation, thinnly bedded, soft, olive gray.			6/12/25	16	92	
20					8/11/25	33	84	ds
25					7/12/21	28	87	
					50(6')	25		dis.
		End of boring at 29 feet, due to refusal. Groundwater not encountered. Boring backfilled with soil cutting and on 3/19/03.						

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-6

Project ID: 03-31-102-01.GPJ; Template: LOG

Log of Boring No. BH-6

Dates Drilled: 3/20/2003 Logged by: KF Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		FILL (Qaf): **CLAYEY SAND (SC):** fine to medium-grained, roots, brown.						
					7,15,23	18	89	
5		**WEATHERED SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE,** Puente Formation, thinnly bedded, soft.			6,13,18	29		dis.
		-fine grained, easily breaks along 45 to 55 degrees bedding layers, light brown, oxidized						
10		-yellow to light brown			13,21,29	23	93	
15					11,17,35	26	85	
20		-few clay layers light brown to light olive green to olive gray			9,14,26	22	98	
25		-light olive gray			7,9,19	30	84	
30		-fine grained, brown			7,10,24	32	90	

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-7a

Project ID: 03-31-102-01.GPJ; Template: LOG

Log of Boring No. BH-6

Dates Drilled: 3/20/2003 Logged by: KF Checked By: MBS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in (Automatic Hammer)

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		WEATHERED SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE, Puente Formation			(5,6,14)	29		
40		-bedding dipping 30 to 40 degrees, thinnly bedded, dark olive brown to dark gray			10,22,34	48	72	ds
45		-dark green to dark brown,			(5,9,18)	33		
50		**SEDIMENTARY BEDROCK-INTERBEDDED SILTSTONE, CLAYSTONE AND SANDSTONE** Puente Formation, becoming less weathered with depth, dark gray to blackish gray. -breaks easy bedding, bedding dipping 30 to 40 degrees, dark gray			9,16,50	35	86	
55					(7,5,(50")	15		
60					8,14,36	26	90	
		End of boring at 61.5 feet. Groundwater not encountered. Boring backfilled with soil cutting and on 3/20/03.						

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-7b

Log of Boring No. BH-7

Dates Drilled: 4/9/2003 Logged by: JR Checked By: MS

Equipment: 24" BUCKET AUGER Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A Depth to Water (ft): 23.2

SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

Depth (ft)	Description	Samples: Drive	Samples: Bulk	Blows	Moisture (%)	Dry Unit Wt. (pcf)	Other
	3" ASPHALT CONCRETE over FILL						
	FILL: **SANDY CLAY (CL):** some fine to coarse sand and concrete gravel fragments to 8", moist, olive grey.						
5	**3" ASPHALT CONCRETE** old parking lot or buried street surface, -BASE						20.9% oxygen
	PUENTE FORMATION (TERTIARY MARINE) **WEATHERED SEDIMENTARY BEDROCK** thinly interbedded layers of siltstone, claystone and sandstone, moderately hard,						
10	-oxidized, moist to very moist with depth, olive gray to olive brown -bedding contact N81W, 42S -bedding contact N82W, 42S -siltstone and claystone increasing with depth -bedding contact N70W, 52S						
15	-bedding contact N82W, 52S						
	PUENTE FORMATION UNWEATHERED SEDIMENTARY BEDROCK						
20	-bedding contact N88W, 56S						
	-bedding contact N87W, 47S seepage, low flow						
25	-bedding contact N78E, 52S, dark blackish grey						
	-seepage along weathered bedding planes -bedding contact N85W, 54S; oxidized layer producing seepage, some dripping						
30	-bedding contact N75W, 49S; dripping sidewalls, blackish grey						20.9% oxygen

Converse Consultants

Project Name	Project No.	Drawing No.
LA County Hall of Justice Los Angeles, California For: Hall of Justice Associates, Inc.	03-31-102-01	A-8a

Project ID: 03-31-102-01.GPJ; Template: LOG

Dates Drilled: 4/9/2003 Logged by: JR Checked By: MS

Equipment: 24" BUCKET AUGER Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A Depth to Water (ft): 23.2

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		-bedding contact N69W, 55S along bedding laminae						
		-bedding contact N81W, 49S						
40								
		-seepage water filling bottom of borehole to 43.3 feet						
45		End of boring @ 45.0' below ground surface Groundwater encountered @ 23.2 as seepage from sidewalls QRAE Multi-4 gas monitor used to detect presence of Hydrogen Sulfide, Oxygen, Carbon Monoxide and Lower Explosive Limit Boring backfilled with soil cuttings upon completion of logging on 4/9/2003.						

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
A-8b

Log of Boring No. BH-8

Dates Drilled: 4/9/2003 Logged by: JR Checked By: MS

Equipment: 24" BUCKET AUGER Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A Depth to Water (ft): 16

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3" ASPHALT CONCRETE over 4" AGGREGATE BASE						
		PUENTE FORMATION (TERTIARY MARINE) **WEATHERED SEDIMENTARY BEDROCK** thinly interbedded layers of laminated siltstone, claystone and sandstone; moderately hard, moist to very moist with increasing depth, oxidized, light brown to yellowish brown						
5		-bedding contact N85W, 51S						20.9% oxygen
		-steeply dipping black clay layer 9" thick						
10		-bedding contact N88W, 52S; clay laminae						
		-bedding contact N84W, 51S; clay laminae						
15		-bedding contact N88W, 48S; sandstone layer						
		-start of seepage, no drips, wet side walls occurring at basal portion of sandstone layer						
		-seepage on sandstone layer 3-4" thick, dripping along layer						
20		-bedding contact N85W, 52S						
		-bedding contact N89W, 54S; claystone laminae						
25								
		-bedding contact N84W, 48S; claystone laminae -steady seepage flow on side walls, rapid deterioration of sidewalls, estimate 1-2 Gpm						
30		-bedding contact N88E,55S						co 1-2ppm
		-bedding contact N88W,53S; steady flow down sidewalls						20.9% oxygen

Converse Consultants

Project Name: LA County Hall of Justice, Los Angeles, California, For: Hall of Justice Associates, Inc.

Project No. 03-31-102-01

Drawing No. A-9a

Log of Boring No. BH-8

Dates Drilled: 4/9/2003 Logged by: JR Checked By: MS

Equipment: 24" BUCKET AUGER Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A Depth to Water (ft): 16

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		▼ -seepage water clear, no odor, rising						20.9% oxygen
40								
45		End of boring @ 45.0' below ground surface Groundwater encountered @ 16.0 as seepage from sidewalls,water filled to 38.0 feet in bottom of boring. QRAE Multi-4 gas monitor used to detect presence of Hydrogen Sulfide, Oxygen, Carbon Monoxide and Lower Explosive Limit Boring backfilled with soil cuttings upon completion of logging on 4/9/2003.						

APPENDIX B

LABORATORY TEST PROGRAM

APPENDIX B

LABORATORY TEST PROGRAM

Laboratory tests were conducted in the Converse Consultants (Converse) geotechnical laboratory on representative soil samples for the purpose of evaluating the physical properties and engineering characteristics of the sampled materials. A summary of the various laboratory tests conducted is presented below.

<u>In-Situ Moisture Content and Dry Density</u>
Data obtained from these tests performed on relatively undisturbed ring samples obtained from the field were used to aid in the classification and correlation of the earth materials and to provide qualitative information regarding soil strength and compressibility. The percent of moisture as a function of dry weight and the encountered dry density in units of pounds-per-cubic-foot (pcf) are provided in the right-hand columns on the exploration logs.

<u>Grain Size Distribution</u>
Analyses of the distribution of grain sizes within the soils encountered were performed on portions of the samples recovered with the Standard Penetrometer Sampler and were performed in accordance with ASTM Test Method D-422. The results of these tests are presented on Drawings Nos. B-1 and B-2, *Grain Size Distribution Results.*

<u>Maximum Unit Weight and Optimum Moisture</u>
The maximum unit weight and optimum moisture content for two bulk samples were determined in accordance with ASTM Test Method D-1557-91. This test was performed to assist in the evaluation of the relative compaction of the near-surface soils. The results of this test are presented on Drawing Nos. B-3 and B-4, *Compaction Tests.*

<u>Consolidation Tests</u>
Consolidation tests were performed on relatively undisturbed ring samples. These tests were performed to evaluate the compressibility and moisture sensitivity of site soils under load. This test involved loading specimens into a consolidometer, which contained porous stones top and bottom to accommodate vertical drainage during testing. Normal vertical axial loads were applied through the porous stones, and the resulting deflections were recorded at various time periods. Normal loads were applied at a constant load-increment ratio, successive loads being generally twice the preceding load. Samples were tested at field and submerged moisture contents. Test results are shown on Drawing Nos. B-5 and B-6, *Consolidation Test Results.*

<u>Direct Shear Tests</u>
Direct shear tests were performed using relatively undisturbed ring samples. Specimens were soaked prior to shearing or tested at the natural moisture content. Individ-

ual specimens were prepared and different vertical normal stresses were applied. Samples were sheared at a constant rate of strain. Based upon the range of normal loads applied, the shear strength envelope was determined. Results of the tests are presented on Drawing Nos. B-7 through B-12, *Direct Shear Test Results*.

R-Value

R-Value test is used to measure the resistance of soils and base material under traffic loading for use in the design of structural pavement design. This test was performed in accordance with ASTM Test Method D-2844 on a portion of a bulk sample. Test results are presented as follows:

Boring Number	**Depth (feet)**	**Soil Description**	**R-Value**
BH-1	0 – 5	Clayey Sand (SC)	16

Expansion Index Test

One representative bulk sample was tested for expansion index to evaluate the expansion potential of material encountered at the site. The test was conducted in accordance with UBC Standard 29-2. Test result is presented in the following table:

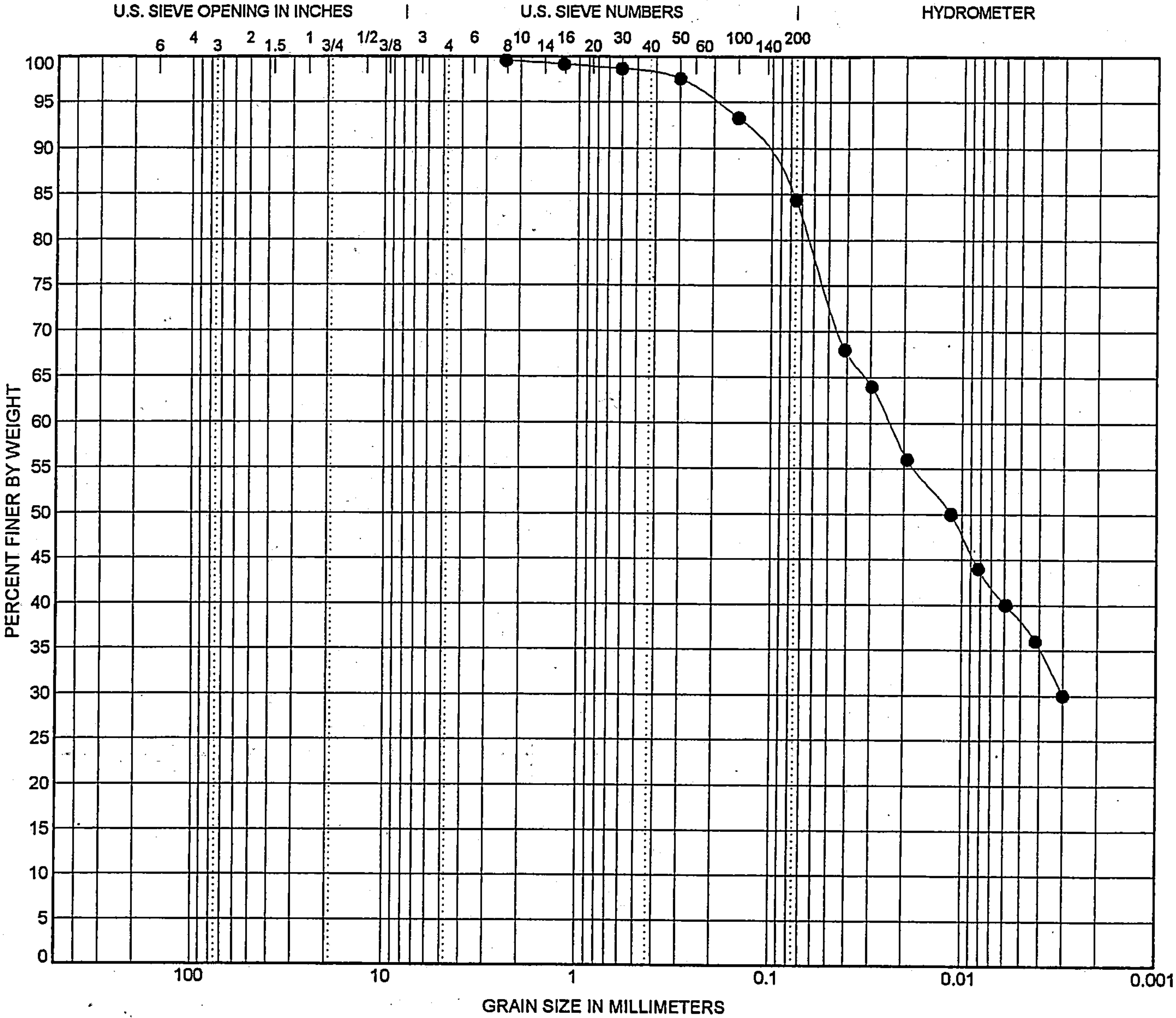
Boring Number	**Depth (feet)**	**Soil Description**	**Expansion Index**
BH-4	0 – 5	Sandy Silt (ML)	68

Soil Corrosivity

Resistivity, pH, soluble sulfate and chloride concentrations were determined for two bulk soil samples to evaluate the corrosion potential of common construction materials in contact with site soils. These tests were performed by Environmental Geotechnology Laboratory. Test results are enclosed at the end of this appendix on their letterhead.

Sample Storage

Samples presently stored in the Converse laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain samples for a longer period.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	BH-1	15-20	SANDY SILT (ML)					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	BH-1	15-20						15.2	84.8	

GRAIN SIZE DISTRIBUTION RESULTS

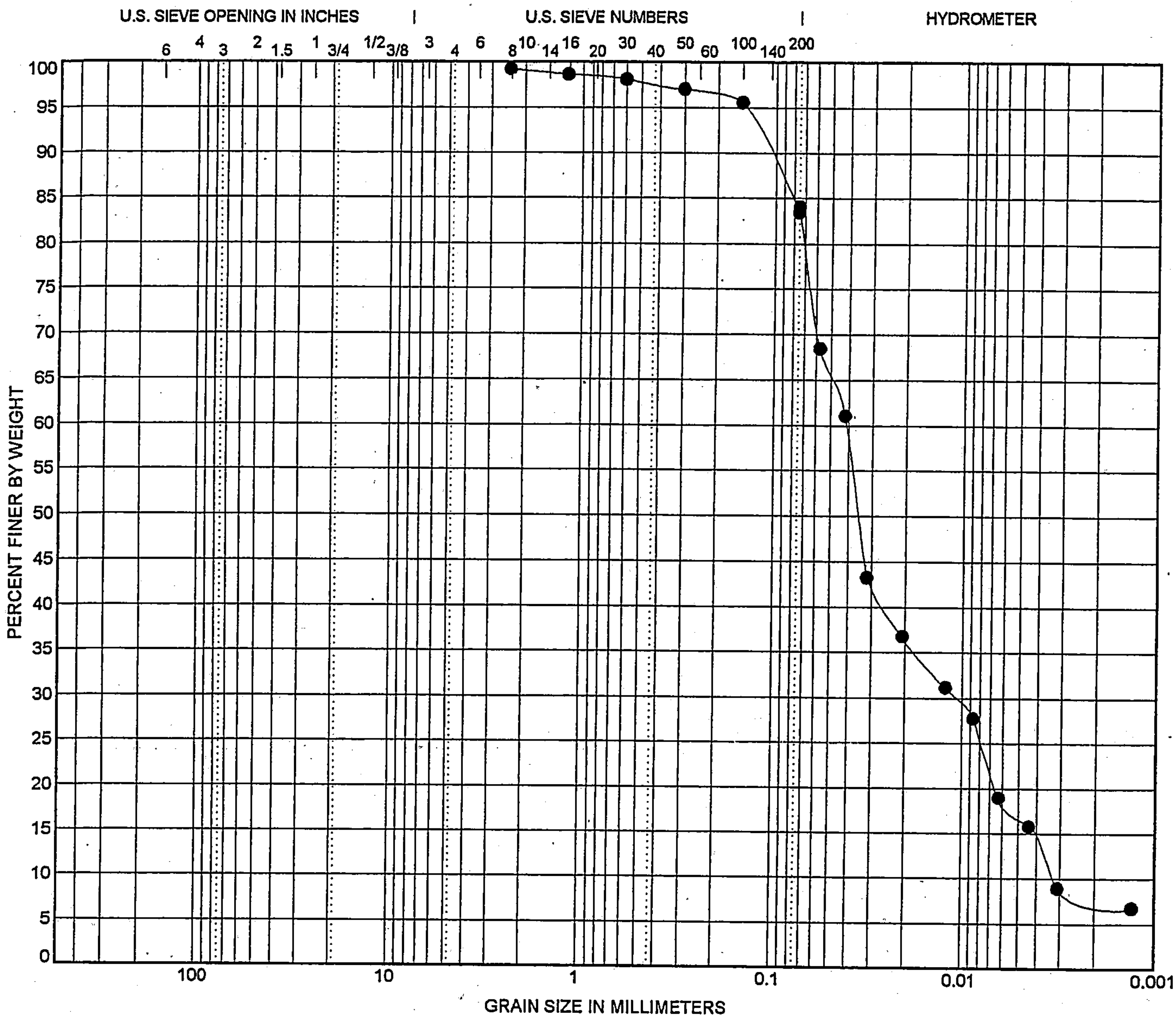
Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-1

Project ID: 03-31-102-01.GPJ; Template: GRAIN SIZE



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	BH-2	0-5	SANDY SILT (ML)					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	BH-2	0-5					0.0	15.1	84.7	

GRAIN SIZE DISTRIBUTION RESULTS

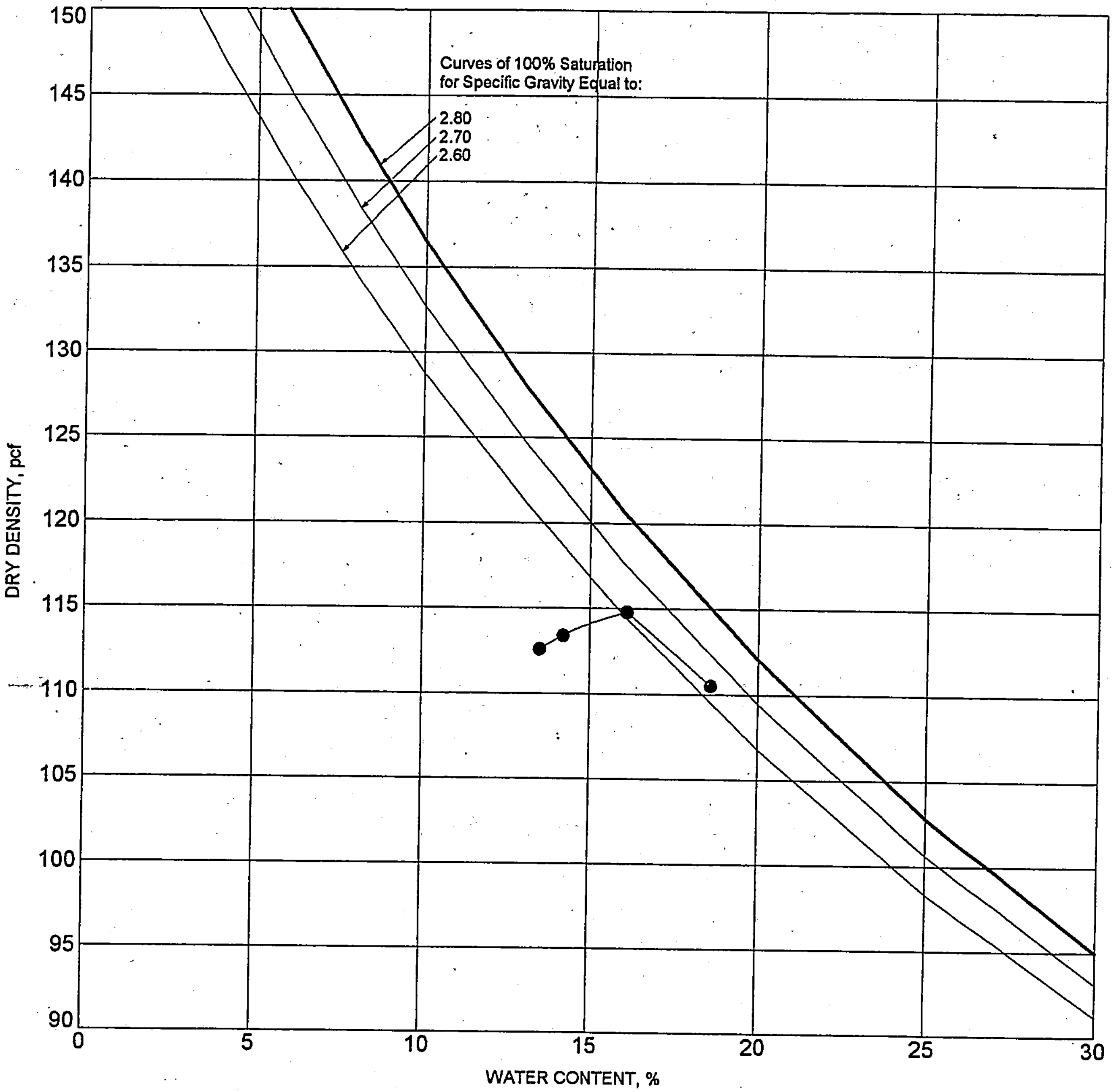
Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-2

Project ID: 03-31-102-01.GPJ; Template: GRAIN SIZE



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	BH-1	15-20	SANDY SILT (ML)	D1557 Method D	16.4	114.7

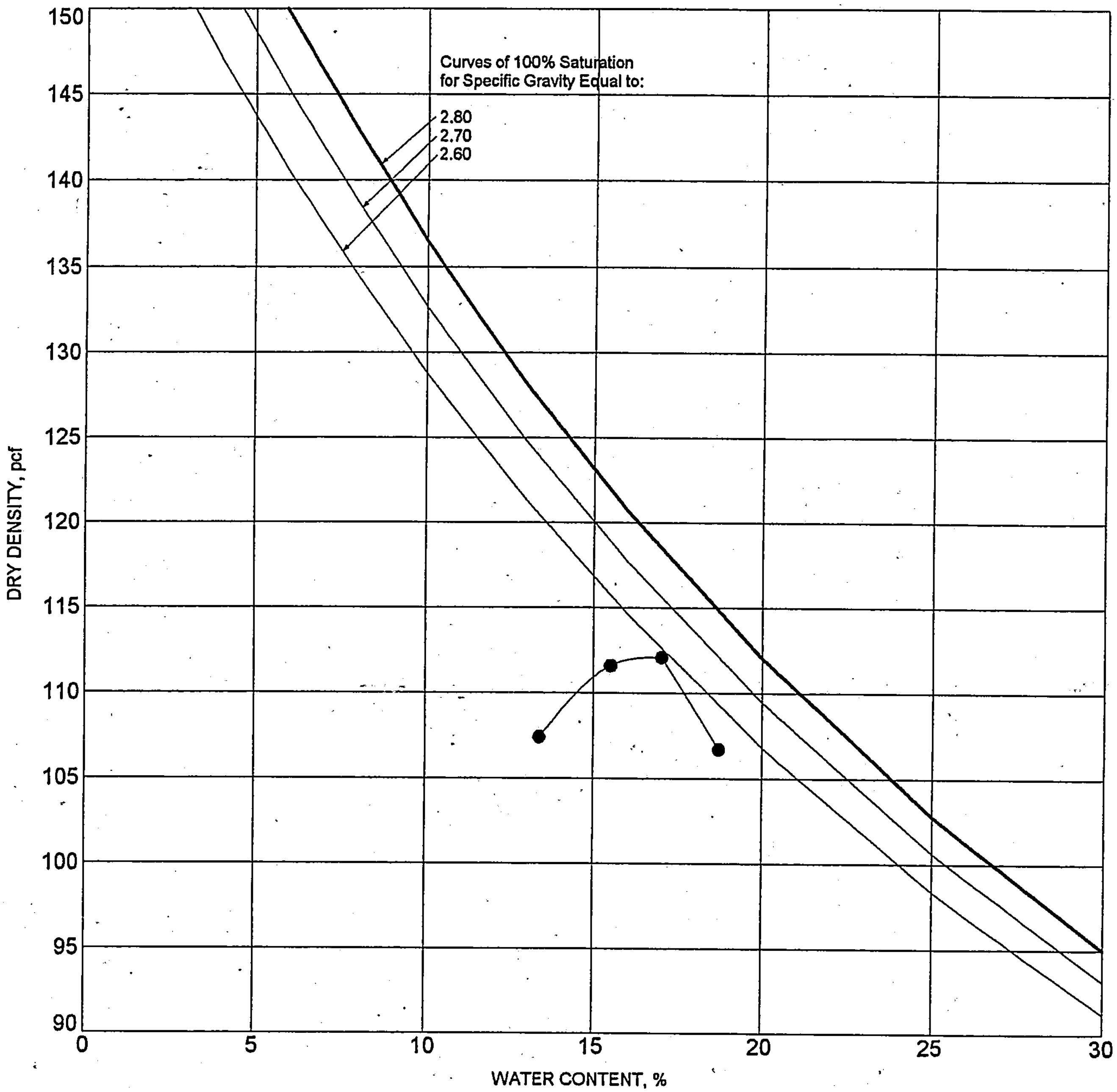
COMPACTION TESTS

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-3



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	BH-4	0-5	SANDY SILT (ML)	D1557 Method D	16.4	112.6

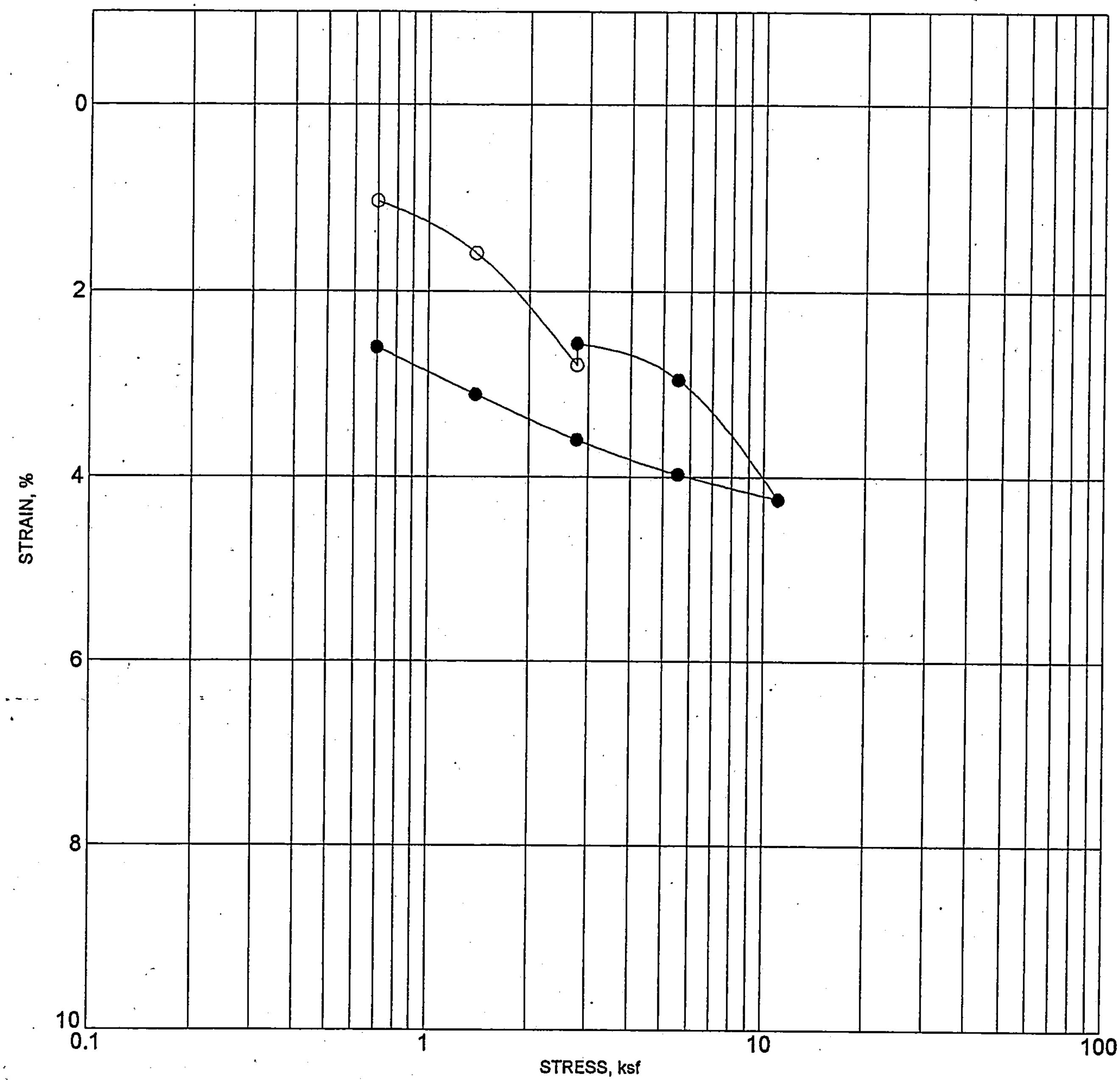
COMPACTION TESTS

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-4



BORING NO. :	BH-1	DEPTH (ft) :	60
DESCRIPTION :	SEDIMENTARY BEDROCK		
	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL				
FINAL				

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDTION OF WATER

CONSOLIDATION TEST RESULTS

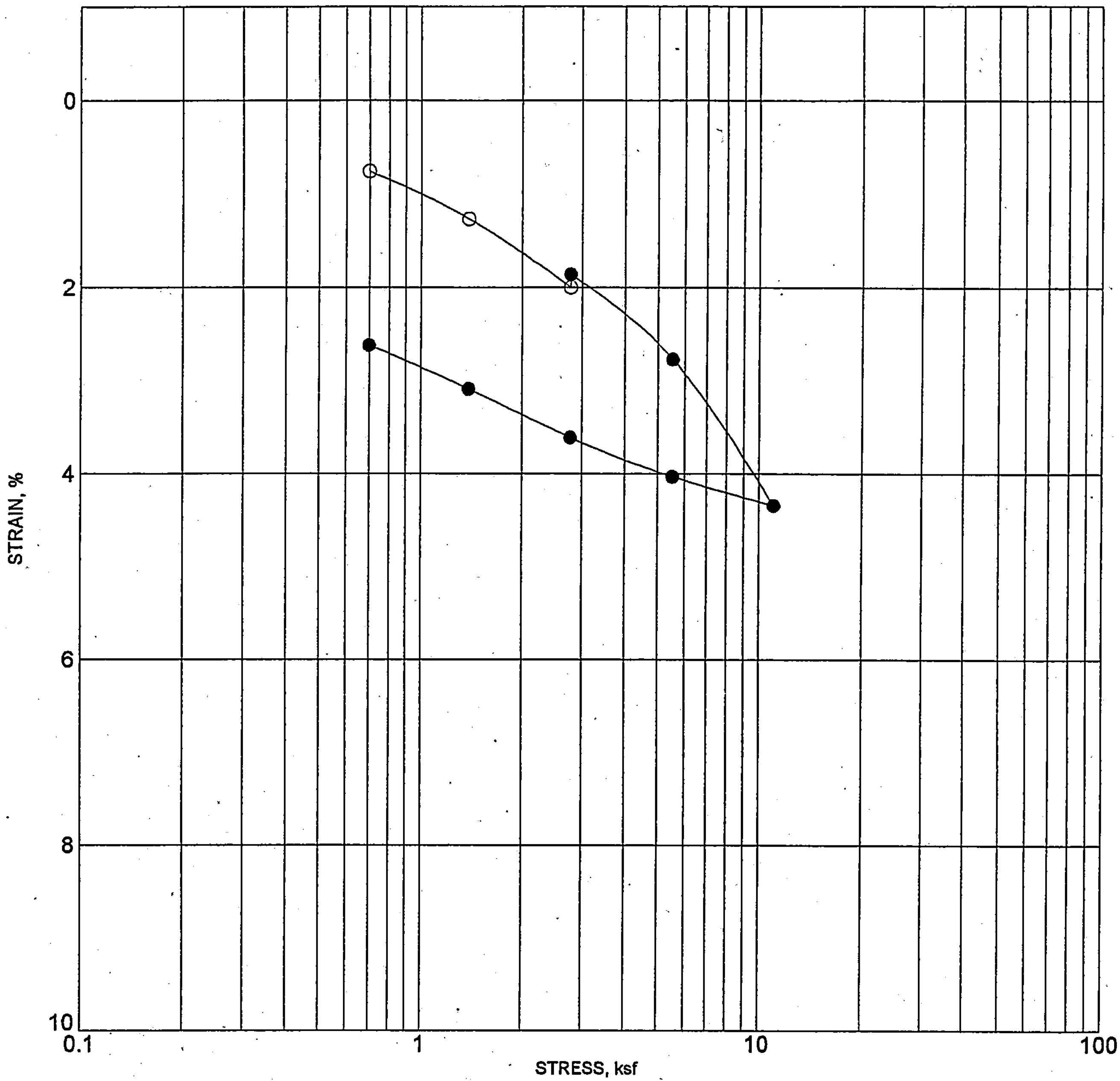
Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-5

Project ID: 03-31-102-01.GPJ; Template: CONSOLIDATION



BORING NO. :	BH-2	DEPTH (ft) :	40
DESCRIPTION :	WEATHERED SEDIMENTARY BEDROCK		

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL				
FINAL				

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDTION OF WATER

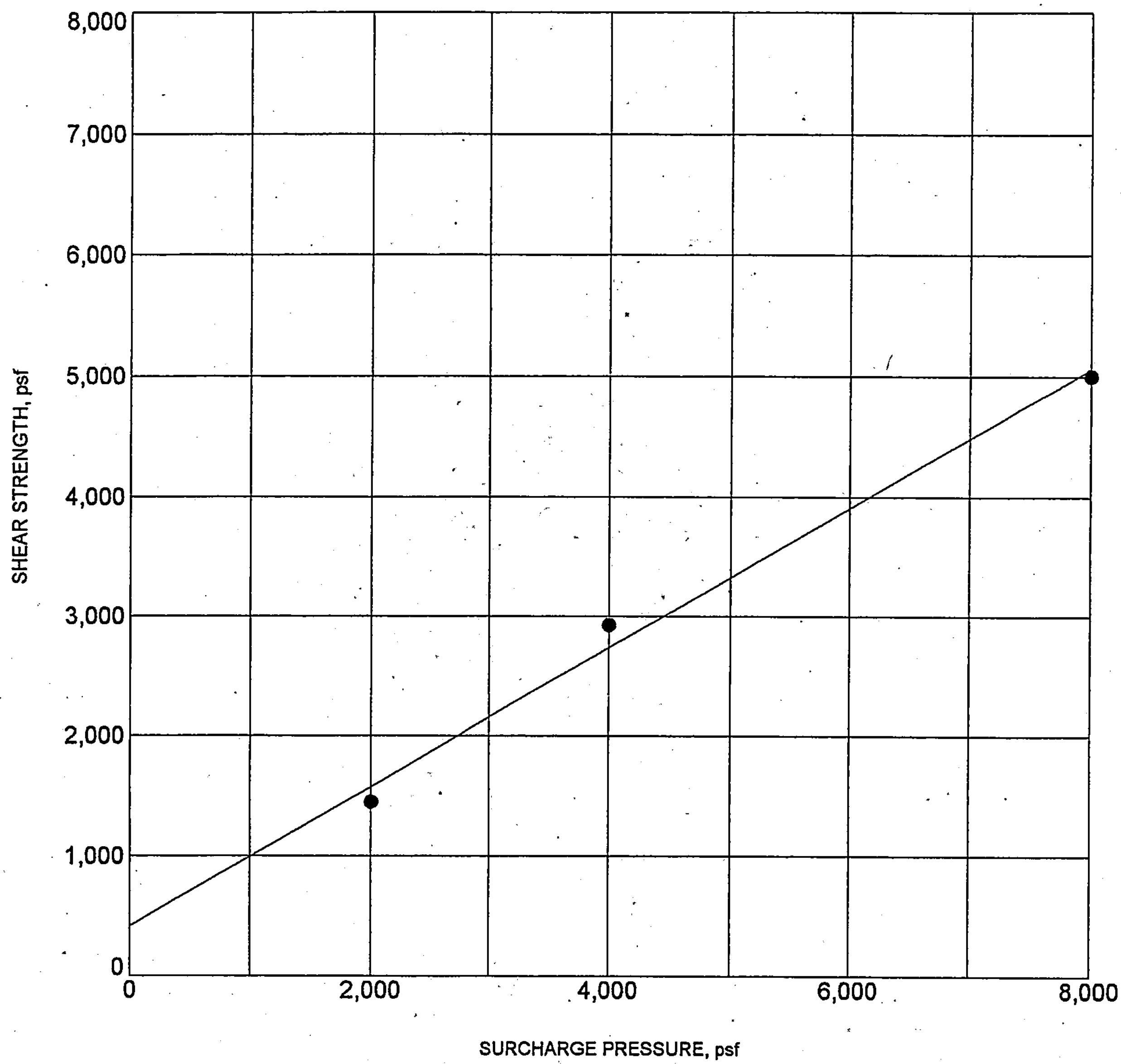
CONSOLIDATION TEST RESULTS

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-6



BORING NO.	:	BH-1	DEPTH (ft)	:	15
DESCRIPTION	:	SANDY SILT (ML)			
COHESION (psf)	:	400	FRICTION ANGLE (degrees)	:	30
MOISTURE CONTENT (%)	:	27.0	DRY DENSITY (pcf)	:	89.8

NOTE:

DIRECT SHEAR TEST RESULTS

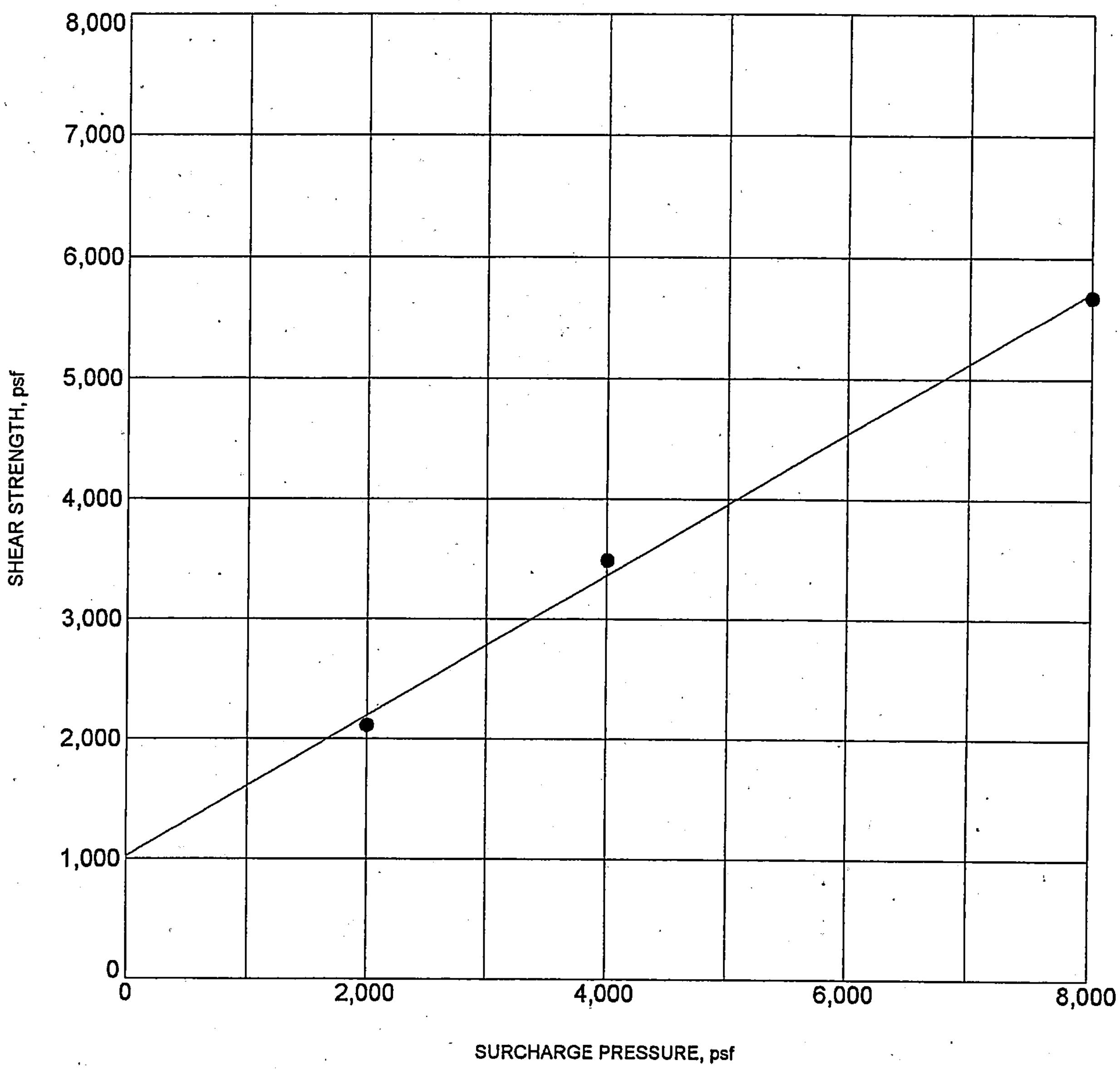
Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-7

Project ID: 03-31-102-01.GPJ; Template: DIRECT SHEAR



BORING NO.	:	BH-1	DEPTH (ft)	:	20
DESCRIPTION	:	WEATHERED SEDIMENTARY BEDROCK			
COHESION (psf)	:	1000	FRICTION ANGLE (degrees)	:	30
MOISTURE CONTENT (%)	:	30.4	DRY DENSITY (pcf)	:	85.8

NOTE:

DIRECT SHEAR TEST RESULTS

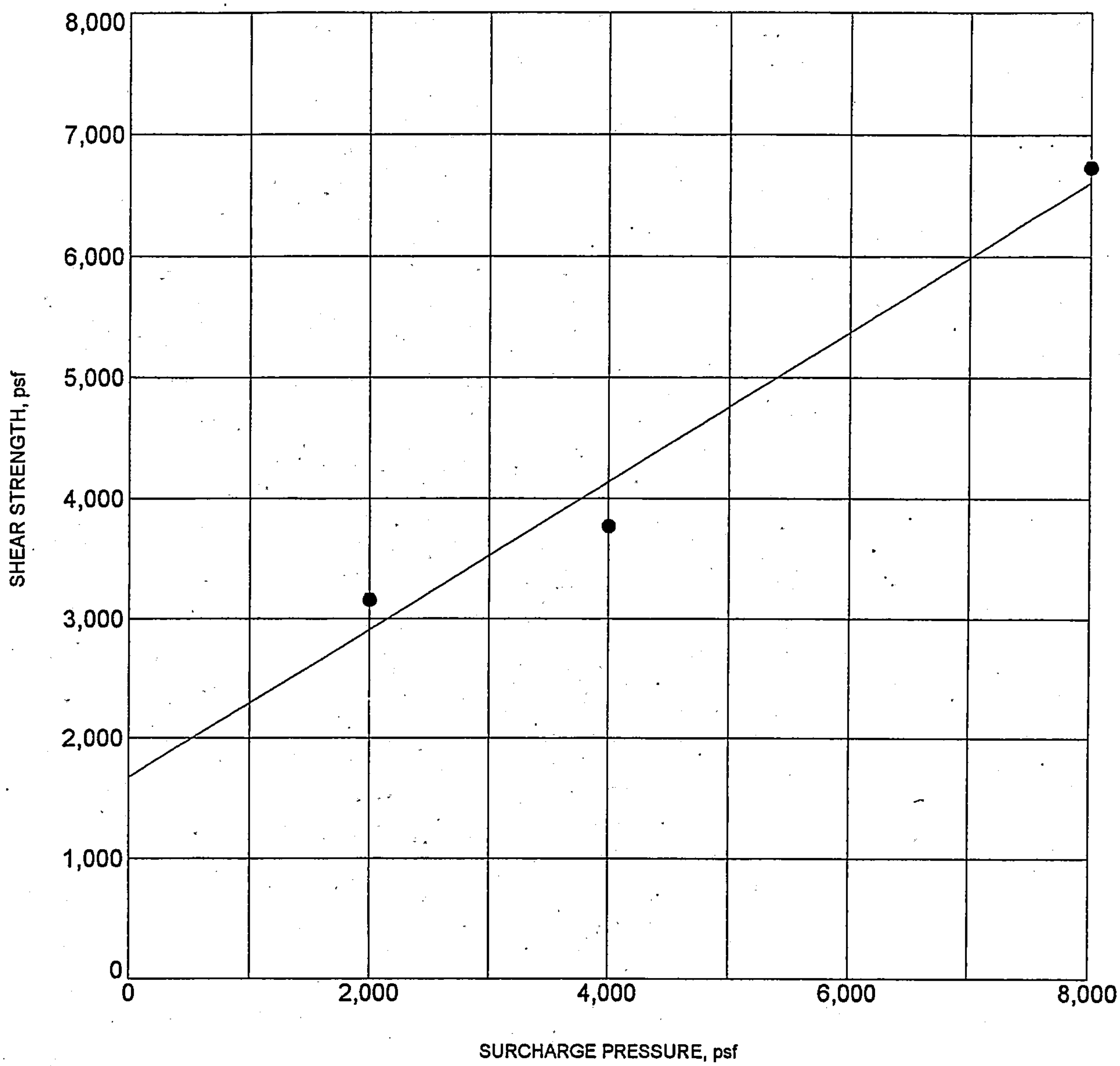
Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-8

Project ID: 03-31-102-01.GPJ; Template: DIRECT SHEAR



BORING NO. :	BH-1	DEPTH (ft) :	30
DESCRIPTION :	SEDIMENTARY BEDROCK		
COHESION (psf) :	1700	FRICTION ANGLE (degrees) :	32
MOISTURE CONTENT (%) :	33.2	DRY DENSITY (pcf) :	79.1

NOTE:

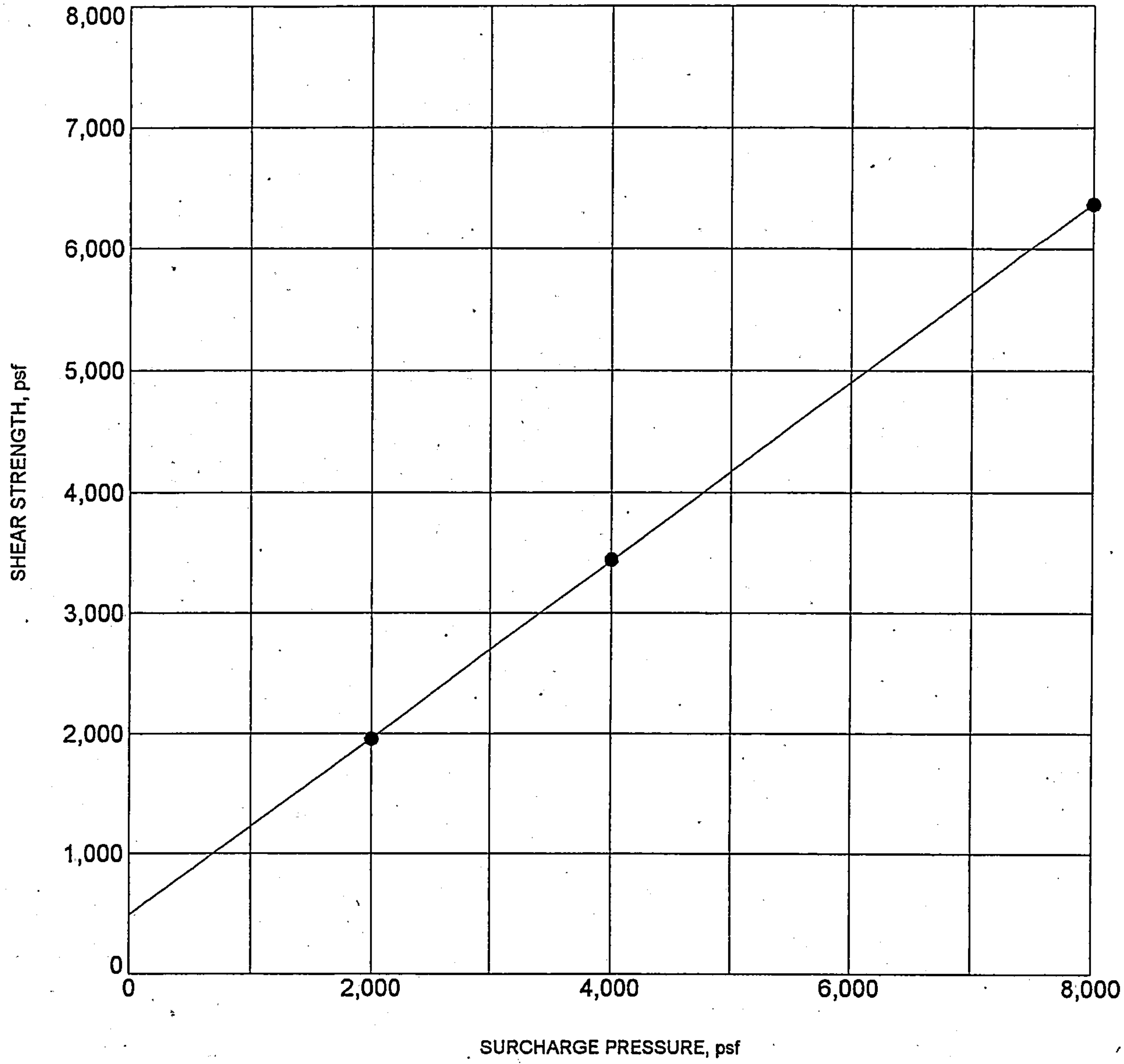
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-9



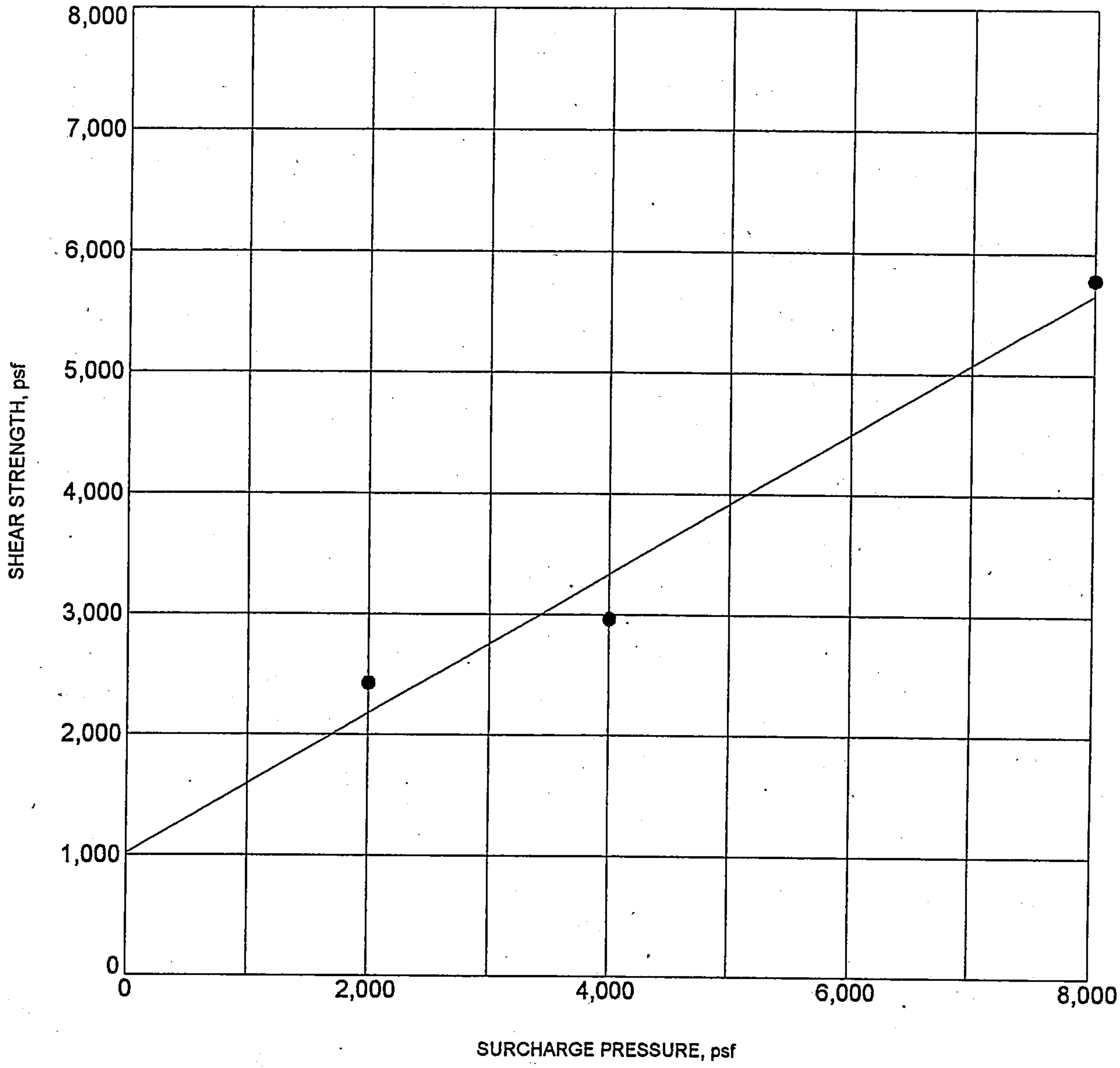
BORING NO.	:	BH-4	DEPTH (ft)	:	20
DESCRIPTION	:	WEATHERED SEDIMENTARY BEDROCK			
COHESION (psf)	:	500	FRICTION ANGLE (degrees)	:	36
MOISTURE CONTENT (%)	:	20.7	DRY DENSITY (pcf)	:	98.2

NOTE:

DIRECT SHEAR TEST RESULTS

Converse Consultants	Project Name LA County Hall of Justice Los Angeles, California For: Hall of Justice Associates, Inc.	Project No. 03-31-102-01	Drawing No. B-10

Project ID: 03-31-102-01.GPJ; Template: DIRECT SHEAR



BORING NO.	:	BH-5	DEPTH (ft)	:	20
DESCRIPTION	:	WEATHERED SEDIMENTARY BEDROCK			
COHESION (psf)	:	1000	FRICTION ANGLE (degrees)	:	30
MOISTURE CONTENT (%)	:	32.7	DRY DENSITY (pcf)	:	84.1

NOTE:

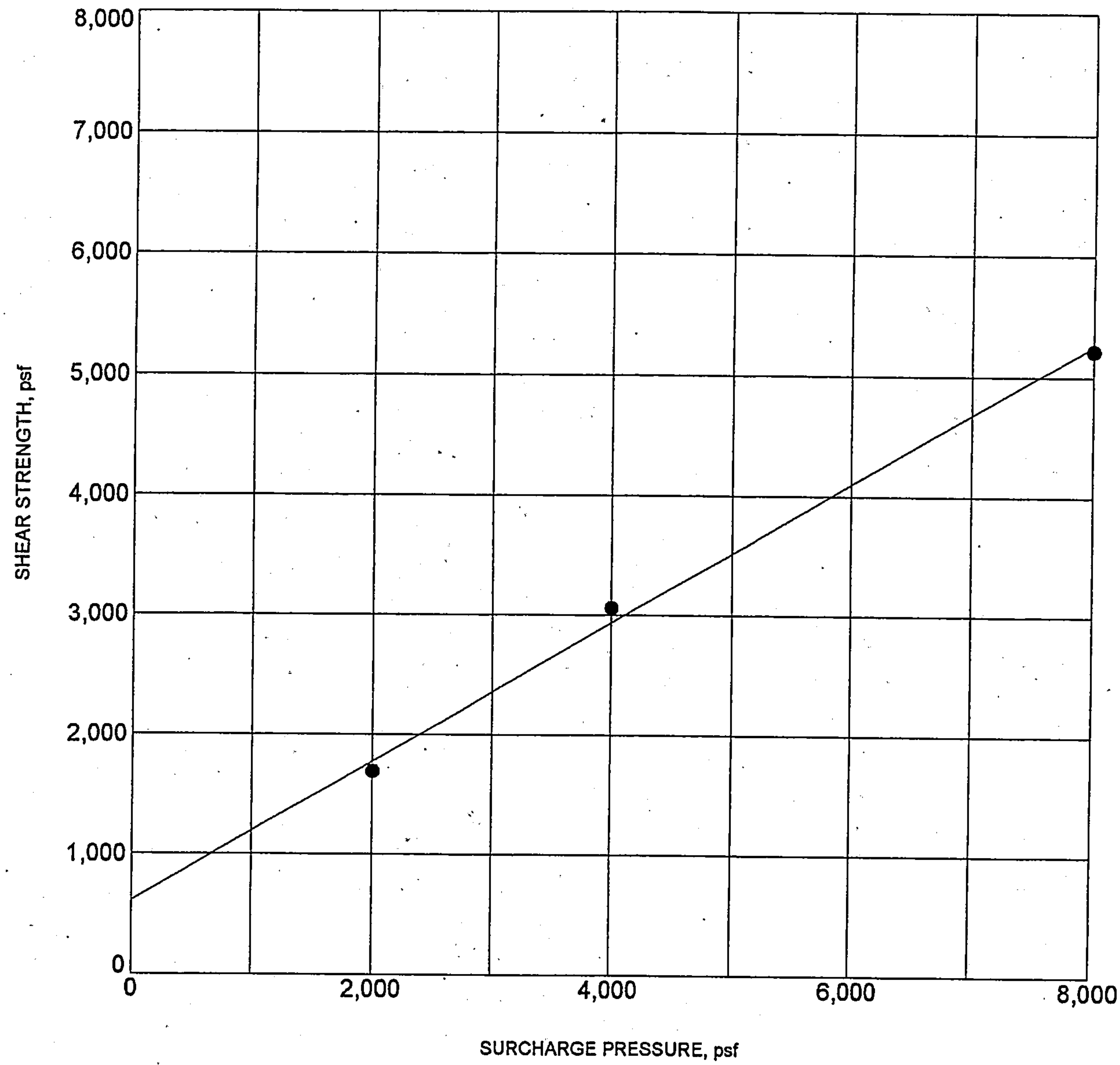
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-11



BORING NO.	:	BH-6	DEPTH (ft)	:	40
DESCRIPTION	:	WEATHERED SEDIMENTARY BEDROCK			
COHESION (psf)	:	600	FRICTION ANGLE (degrees)	:	30
MOISTURE CONTENT (%)	:	47.6	DRY DENSITY (pcf)	:	72.2

NOTE:

DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
LA County Hall of Justice
Los Angeles, California
For: Hall of Justice Associates, Inc.

Project No.
03-31-102-01

Drawing No.
B-12

SUMMARY OF CORROSION TEST RESULTS

PROJECT NAME: Los Angeles Hall of Justice

EGL JOB NO.: 03-118-004B

PROJECT NO.: 03-31-102-01

CLIENT: Converse Consultants

DATE: 04-14-03

SUMMARIZED BY: VW

BORING NO	SAMPLE NO	DEPTH (ft)	pH CALTRANS 643	CHLORIDE CONTENT CALTRANS 422 (ppm)	SULFATE CONTENT CALTRANS 417 (% by weight)	MINIMUM RESISTIVITY CALTRANS 532 (ohm-cm)
BH-1	N/A	15-20	7.60	60	0.070	1000
BH-4	N/A	0-5	7.09	70	0.012	490

APPENDIX C

RECOMMENDED EARTHWORK SPECIFICATIONS

APPENDIX C

RECOMMENDED EARTHWORK SPECIFICATIONS

The following specifications are recommended to provide a basis for quality control during the placement of compacted backfill.

1. Areas that are to receive compacted fill shall be observed by Converse Consultants (Converse) prior to placement of fill.
2. Any subsurface drainage devices shall be properly installed and observed by a Converse and/or owner's representative prior to placement of backfill. Loose soil, formwork and debris shall be removed prior to backfilling subterranean walls.
3. Fill and backfill shall be placed in controlled layers (lifts), the thickness of which is compatible with the type of compaction equipment used. The thickness of the compacted fill layer shall be adjusted to obtain proper compaction with the equipment used, and generally should not exceed the maximum allowable thickness of eight inches. Each layer shall be compacted to a minimum of 90 percent of the ASTM D1557-91 laboratory maximum density, at or near optimum moisture for granular soils and 2 to 3 percent above optimum moisture for clay soils. Density testing shall be performed by Converse to verify compaction. The contractor shall provide safe access and level areas for testing.
4. Where space limitations do not allow for conventional backfill compaction operations, special backfill materials and procedures may be required. Pea gravel or other select backfill can be used in areas of limited space. A sand-and-portland-cement slurry (two sacks per cubic-yard mix) shall be used in limited space areas for shallow backfill near final pad grade, and pea gravel shall be placed in deeper backfill near drainage systems.
5. Fill soils shall consist of imported soils or on-site soils essentially cleaned of organics, cobbles, boulders, and deleterious material, and shall be approved by Converse. Rocks larger than three inches in diameter shall not be used unless sufficiently broken down. All imported soil shall be granular and non-expansive, with an Expansion Index (EI) less than 20. Converse shall evaluate and/or test import material for conformance with the specifications prior to delivery to the site. The contractor shall notify Converse at least two working days prior to importing material to the site.
6. Converse shall observe placement of compacted fill and conduct in-place field density tests on compacted fill to check for adequate moisture content and the required relative compaction. Where less than the specified relative compaction is indicated, additional compactive effort shall be applied and the soil moisture-conditioned as necessary until adequate relative compaction is attained.

APPENDIX D

GUIDE SPECIFICATIONS FOR INSTALLATION AND ACCEPTANCE OF TIE BACK ANCHORS

APPENDIX D

GUIDE SPECIFICATIONS FOR INSTALLATION AND ACCEPTANCE OF TIE BACK ANCHORS

Installation

1. Tie back installation shall be performed during continuous observation by Converse Consultants (Converse) to confirm that the recommended earth materials are penetrated, that the dimensions of the installed anchors are at least as large as that indicated on the shoring plan, and that anchor installation has been performed as specified. The Contractor shall provide access and necessary facilities, including lighting, at their expense, to accommodate observations.

2. All anchors shall be installed at the specified locations, to the required depth, and at the specified angle of inclination. A tolerance of 3° will be permitted on the required angle of inclination.

3. After drilling, all holes shall be cleaned of loose soils. Concrete shall be placed by pumping from the tip of the anchor to the active wedge. Concrete placement shall begin within four hours after completion of drilling. The portion of the anchor within the active wedge shall be backfilled with sand-cement slurry after the anchor has been tested as specified below. However, if excessive caving occurs, the active wedge portion of the excavation can be filled with slurry as the casing is pulled. A zone of soft soil shall (in this case) be placed between the anchor and slurry (before testing).

4. If a hollow-stem auger or casing is used due to caving, concrete shall be placed by pumping as the auger or casing is withdrawn, while always maintaining a head of concrete inside the casing or auger.

5. Concrete placement shall be continuous without interruption, and at such a rate that fresh concrete will not be deposited on concrete hardened sufficiently to form seams and planes of weakness.

6. Any anchor deemed by the Owner or Converse to be defective shall be replaced with substitute anchor(s) as directed by the Owner or Shoring Designer. The cost of installation of such substitute anchors shall be borne by the Contractor. Costs associated with analysis and design of substitute anchor(s) shall also be borne by the Contractor.

Acceptance Criteria

1. Actual capacities of anchors shall be determined by testing designated Test Anchors and all Production Anchors. Testing of anchors will enable evaluation of the applicability of design values for the chosen method of tieback construction.

2. All anchors shall be check-tested to at least 150% of the designed working load in accordance with the following procedures:

    a. Test load anchors to 150% of the design working load, incrementally noting loads, tendon extensions and soldier pile deflections. Hold load for 15 minutes. After pulling slack, the anchor movement shall not exceed 0.10 inch during the 15-minute load period. If the deflection is acceptable, reduce load to 100% of the design load and lock off.

    b. Where an anchor shows excessive movement for additional 15-minute intervals, the load should be reduced until the rate of movement is 0.10 inch per 15 minutes or less. The load at which acceptable movement is attained should be divided by 1.5 to establish the working load of the anchor and additional measures taken to carry the required load.

3. Converse shall designate at least 5% of all proposed anchors as 200% Test Anchors. Additional anchor steel reinforcement will likely be required for the 200 percent load test anchors, and should be appropriately considered prior to anchor installation. Half of the 200% Test Anchors shall be tested for 30 minutes. The remaining Test Anchors shall be tested for a 24-hour period. Test anchors shall be tested in the following manner:

    a. For the 30-minute test anchors, incrementally load the anchors to 200% of the design-working load noting loads, tendon/bar extensions and soldier pile deflections. Hold load for 30 minutes. Anchor movement shall not exceed 0.3 inch during the 30-minute load period. If the deflection is acceptable, reduce load to design load and lock off; otherwise, reduce the test load by 50% and repeat this step.

    b. For 24-hour test anchors, incrementally load to 200% and hold for 24 hours; check load after 24 hours. If a pre-stress loss of 8% or less is recorded, restore load to 100% of working load and lock off. If loss of pre-stress exceeds 8%, restore load to 150% of working load and hold for an additional 24 hours. Check load after second 24-hour hold and, if loss of pre-stress is less than 8%; restore to 100% and lock off as before. Where an anchor shows a continuous loss of pre-stress during a subsequent 24-hour period, the test load shall continue to be reduced by 50% until loss of pre-stress is negligible. Then the test load shall be divided by 1.5 to establish the working load of that anchor and additional measures taken to carry the required shoring load.

4. Any anchor pulled more than 12 inches shall not be used.

5. Immediately after testing, the active wedge portion of tieback excavations should be filled with slurry.

REFERENCES

BLAKE, THOMAS F.: 1996, Computer Services and Software, *EQFAULT, Version 2.20,* a computer program for performing deterministic seismic analyses.

BLAKE, THOMAS F. Computer Services and Software, *FRISKSP: A Computer Program for the Probabilistic Estimation of Uniform Hazards Using Faults as Earthquake Sources*, August 1993.

BOORE, D. M., JOYNER, W. B. and FUMAL, T. E.; 1993, *Estimation of Response Spectra and Peak Accelerations from Western North America Earthquake*, an interim report, U. S. Geological Survey Open-File Report 93-509, updated coefficients.

CALIFORNIA DEPARTMENT OF CONSERVATION, *Reconnaissance Seismic Hazard Maps of Portions of Los Angeles and Ventura Counties, California, Los Angeles Quadrangle*, DMG Open-File Report 96-01.

CALIFORNIA DIVISION OF MINES AND GEOLOGY, *State of California Special Studies Zones, Los Angeles Quadrangle*, Official Map, effective November 1, 1991.

CALIFORNIA DIVISION OF MINES AND GEOLOGY, *State of California Special Studies Zones, Los Angeles Quadrangle,* Official Map, effective January 1, 1977.

CALIFORNIA DEPARTMENT OF CONSERVATION, DIVISION OF MINES AND GEOLOGY, *Probabilistic Seismic Hazard Assessment for the State of California*, Open File Report 96-08, 1996.

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS, *Uniform Building*

NEWMARK, N. M. and HALL, W. J.: Earthquake Spectra and Design, Earthquake Engineering Research Institute, 1982.

UNITED STATES GEOLOGICAL SURVEY, 1972, *7.5 Minute Los Angeles, California Quadrangle,* 1966 photo, revised 1972.