
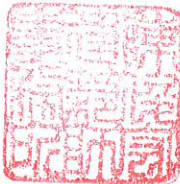


新竹縣原住民族地區建築標準圖說 2-SC-1-1

結構計算書

Job No. 2208A

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 - SAFE 輸出檔



建築結構設計基本資料表

一、構造種類

- 鋼筋混凝土構造
- 鋼骨構造
- 鋼骨鋼筋混凝土構造
- 其他

二、結構系統之規劃及分析

- 韌性抗彎矩構架系統
- 二元系統
- 其他
具對角斜撐之輕型構架

三、結構材料

1. 混凝土
 $f_c' = 280 \text{ kgf/cm}^2$
2. 鋼筋
#4(D13)以上： $f_y = 4200 \text{ kgf/cm}^2$
(CNS 560 A2006 SD420W)
#3(D10)以下： $f_y = 2800 \text{ kgf/cm}^2$
(CNS 560 A2006 SD280W)
3. 鋼結構
SGC440 3400 kgf/cm^2

四、設計載重

活載重 LL		kgf/m ²
1F	住宅	200
PRF	屋頂	60

五、水平側向力、風力檢核分析

(一) 地震力

1. 新竹縣五峰鄉

$$S_S^D = 0.7, S_1^D = 0.4$$

$$S_S^M = 0.9, S_1^M = 0.5$$

$$I = 1.10$$

$$R_x = 3, R_y = 3$$

$$\alpha_y = 1.0$$

$$6. \text{建築物基本震動週期 } T_x = 0.05 h_n^{3/4}$$

$$T_y = 0.05 h_n^{3/4}$$

$$7. V_x / W = 0.268$$

$$V_y / W = 0.265$$

(二) 風力

基本設計風速每秒 32.5 公尺區

$$I = 1.1, \text{地況: B}$$

六、層間最大變位與層間變位角

(X-Dir.)

1. 最大層間變位角 = 0.020‰

2. 最大位移 = 0.011cm

(Y-Dir.)

1. 最大層間變位角 = 0.018‰

2. 最大位移 = 0.007cm

七、結構設計

- ASD
- USD
- LRFD

八、基礎設計

- 獨立基腳或聯合基腳
- 筏式基礎
- 樁基礎
- 其他
版式基礎



九、基礎開挖擋土支保措施

- 斜坡明挖
- 預壘排樁
- 地下連續壁
- 其他



1.0 建築概要

本案為標準圖說，工程可能位於新竹縣五峰鄉/尖石鄉/關西鎮，為地上 1 樓之輕型鋼構造，樓高約 3.9 公尺。

建築基地：新竹縣五峰鄉/尖石鄉/關西鎮

建築規模：地上 1 層

開挖深度：0.4m



2.0 結構系統說明

地震力分析：法規靜力分析

基本資料：

建築種類：鋼筋混凝土構造(RC)\鋼骨構造(SS)

結構系統：其他\具對角斜撐之輕型構架

樓層概述：

樓層	高度(cm)	用途
1F	390	住宅

樓版厚度：

基礎版 40cm RC 版

PRF 彩浪鋼版

開挖方式：

斜坡明挖

分析程式： ETABS V9.5



3.0 結構材料

3.1 混凝土

材料特性:

波松比	0.2
彈性模數(楊式係數)	$15000 \sqrt{fc'}$ kgf/cm ²
線性熱膨脹係數	1.2×10^{-5} 1/ °C
混凝土規定抗壓強度 fc'	同建築結構設計基本資料表
單位重	2400 kgf/m ³

3.2 鋼筋

彈性模數(楊式係數)	2.04×10^6 kgf/cm ²
鋼筋規定降伏強度 fy	同建築結構設計基本資料表
點焊鋼線網	ASTM A706, $Fy=5000$ kgf/cm ²

3.3 結構鋼

材料特性:

波松比	0.3
彈性模數(楊式係數)	2.04×10^6 kgf/cm ²
線性熱膨脹係數	1.2×10^{-5} 1/ °C
標稱降伏應力 fy	同建築結構設計基本資料表
單位重	7850 kgf/m ³

螺栓及焊材

高拉力螺栓	F10T
錨定螺栓	ASTM A307, ASTM A325
焊材	E80xx



4.0 設計載重

4.1 靜載重及活載重

靜載重

PRF

載重種類	數量	單位重	總重
設備管線	1 式	40 kgf/m ²	40 kgf/m ²

外加靜載重(SDL) 40 kgf/m²

2F~R1F 室內

載重種類	數量	單位重	總重
鋪面裝修	1 式	40 kgf/m ²	40 kgf/m ²

外加靜載重(SDL) 40 kgf/m²

活載重 (kgf/m²)

同建築結構設計基本資料表

樓層載重資料

樓層	面積(m ²)	重量(tf)	單位重(tf/m ²)
PRF	66.00	0.37	0.006
1F	66.00	7.87	0.119



4.2 設計地震力及分析結果

依據「建築物耐震設計規範及解說，內政部」，設計地震力為：

$$V = \frac{I}{1.4\alpha_y} \left(\frac{S_{aD}}{F_u} \right)_m W$$

式中

$$\left(\frac{S_{aD}}{F_u} \right)_m = \begin{cases} \frac{S_{aD}}{F_u} & \frac{S_{aD}}{F_u} \leq 0.3 \\ 0.52 \frac{S_{aD}}{F_u} + 0.144 & 0.3 < \frac{S_{aD}}{F_u} < 0.8 \\ 0.70 \frac{S_{aD}}{F_u} & \frac{S_{aD}}{F_u} \geq 0.8 \end{cases}$$

S_{aD} 工址設計水平譜加速度係數，為工址水平加速度與重力加速度 g 之比值。

W 建築物全部靜載重。活動隔間應計入 75kg/m^2 之重量；一般倉庫、書庫應計入至少四分之一活載重；水箱、水池等容器，應計入全部內容物之重量。

I 用途係數。

α_y 起始降伏地震力放大倍數，依耐震設計規範第一章第 9 節規定，鋼結構採容許應力法設計可取 1.2，採極限設計法取 1.0。就鋼筋混凝土結構而言，以極限強度設計法可採 1.0。

F_u 結構系統地震力折減係數，依耐震設計規範第二章第 9 節規定。

※本案為一般建築物，由於本案為泛用之標準圖說，設立之位置較廣，考量其變異性用途係數保守採用 1.1。

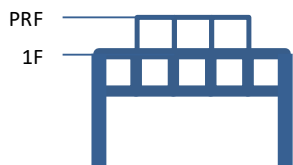


地震力計算詳下表

基地基本資料					斷層資料	
縣市	鄉鎮市區	里	震區種類	地盤種類	附近斷層	距離斷層
新竹縣	五峰鄉	所有里	一般震區	第一類地盤(自行決定地盤種類)	獅潭與神卓山(一般情況)	10(km)

譜加速度係數		近斷層因子		工址放大因子		修正譜加速度係數		分界週期	
S_S^D	0.7	設計	N_a	1	F_a	1	$S_{DS}=F_a \times N_a \times S_S^D$	0.7	$T_0^D=S_{D1}/S_{DS}$
S_1^D	0.4		N_v	1	F_v	1	$S_{D1}=F_v \times N_v \times S_1^D$	0.4	0.571
S_S^M	0.9	最大	N_a	1	F_a	1	$S_{MS}=F_a \times N_a \times S_S^M$	0.9	$T_0^M=S_{M1}/S_{MS}$
S_1^M	0.5		N_v	1	F_v	1	$S_{M1}=F_v \times N_v \times S_1^M$	0.5	0.556

建築基本資料							
屋頂層數	樓層數	地下層數	1F抬高	屋頂高度	建築高度	地下高度	h_n (基面至屋頂)
0 F	1 F	0 F	0(m)	0(m)	3.9(m)	0(m)	3.9(m)



	建築結構系統	
	X方向	Y方向
結構阻尼比	0.02	
結構系統	其他構造	其他構造
T_{code} (法規週期)	$0.05 \times h_n^{3/4} = 0.139(s)$	$0.05 \times h_n^{3/4} = 0.139(s)$
T_{max} (上限週期)	$1.4 \times T_{code} = 0.194(s)$	$1.4 \times T_{code} = 0.194(s)$
I(用途係數)	1.1	
設計規範	鋼構(LRFD)	
α_y	1	

各方向地震力計算		X方向	Y方向
1. 建築結構系統 相關資料	T_{dyna} (動力週期)	0.03(s)	0.017(s)
	T_{design} (設計週期)	0.03(s)	0.017(s)
	R(結構系統韌性容量)	3	3
	R_a (結構系統容許韌性容量)	2.333	2.333



各方向地震力計算		X方向	Y方向
2. 最小設計水平總橫力	S_{aD} (工址設計水平譜加速度)	0.438	0.371
	F_u (系統折減係數)	1.243	1.140
	$(S_{aD}/F_u)_m$	0.327	0.313
	V (最小設計水平總橫力)	0.257	0.246
3. 避免最大考量地震崩塌之設計地震力	S_{aM} (工址最大水平譜加速度)	0.507	0.445
	F_{uM} (系統最大折減係數)	1.337	1.194
	$(S_{aM}/F_{uM})_m$	0.341	0.338
	V_M (最大考量地震水平總橫力)	0.268	0.265
4. 避免中小度地震降伏之設計地震力	V^* (中小度地震水平總橫力)	0.107	0.093
5. 層間相對位移地震力	V_{drift} (層間相對位移地震力)	0.097	0.085

各方向地震力計算		Z方向
6. 垂直地震力	D_{DL+SDL} (垂直自重變位)	0.001(cm)
	T_{ver} (垂直週期) $=2\pi(D_{DL+SDL}/g)^{0.5}$	0.007(s)
	$S_{aD,v}$ (垂直設計譜加速度係數)	0.159
	F_{uv} (垂直地震系統折減係數)	1.059
	$(S_{aD,v}/F_{uv})_m$	0.150
	V_{ZD} (垂直設計地震力)	0.118
	$S_{aM,v}$ (垂直最大加速度係數)	0.198
	$F_{uv,M}$ (垂直最大地震系統折減係數)	1.081
	V_{ZM} (避免最大考量垂直地震崩塌)	0.131
	V_{Z^*} (避免中小度垂直地震降伏)	0.042

地震力統整		X方向	Y方向
1. 水平地震力	$V_{design} = \max(V, V_M, V^*)$	0.268	0.265
2. 層間位移地震力	V_{drift}	0.097	0.085
地震力統整		Z方向	
3. 垂直地震力	$V_{z,Design} = \max(V_{ZD}, V_{ZM}, V_{Z^*})$	0.131	



意外扭矩放大係數

Floor	Load Case	δ_{max} (cm)	δ_{avg} (cm)	$A_x=(\delta_{max}/1.2\delta_{avg})^2$	備註
PRF	EXP	0.011(節點 56)	0.009	0.989	
PRF	EYP	0.007(節點 56)	0.007	0.832	
PRF	EXN	0.011(節點 56)	0.009	0.906	
PRF	EYN	0.007(節點 51)	0.007	0.832	
1F	EXP	0.007(節點 50)	0.004	1.871	X 最大值
1F	EYP	0.003(節點 14)	0.002	0.930	
1F	EXN	0.007(節點 50)	0.004	1.828	
1F	EYN	0.003(節點 11)	0.002	0.930	Y 最大值

X 向最大意外扭矩放大係數 $A_x=1.871(1F-EXP)$ ，故質心偏移比例取 $Ecc=0.05$
 $*1.871=0.094$ 進行分析

Y 向最大意外扭矩放大係數 A_x 小於 1，故質心偏移比例取 $Ecc=0.05$ 進行分析



樓層地震力

(單位 tf)

	EXP	EXP	EYP	EYP	EXN	EXN	EYN	EYN
	VX	VY	VX	VY	VX	VY	VX	VY
PRF	-0.69	0.00	0.00	-0.69	-0.69	0.00	0.00	-0.69
1F	-1.78	0.00	0.00	-1.78	-1.78	0.00	0.00	-1.78
SUM	-2.47	0.00	0.00	-2.47	-2.47	0.00	0.00	-2.47

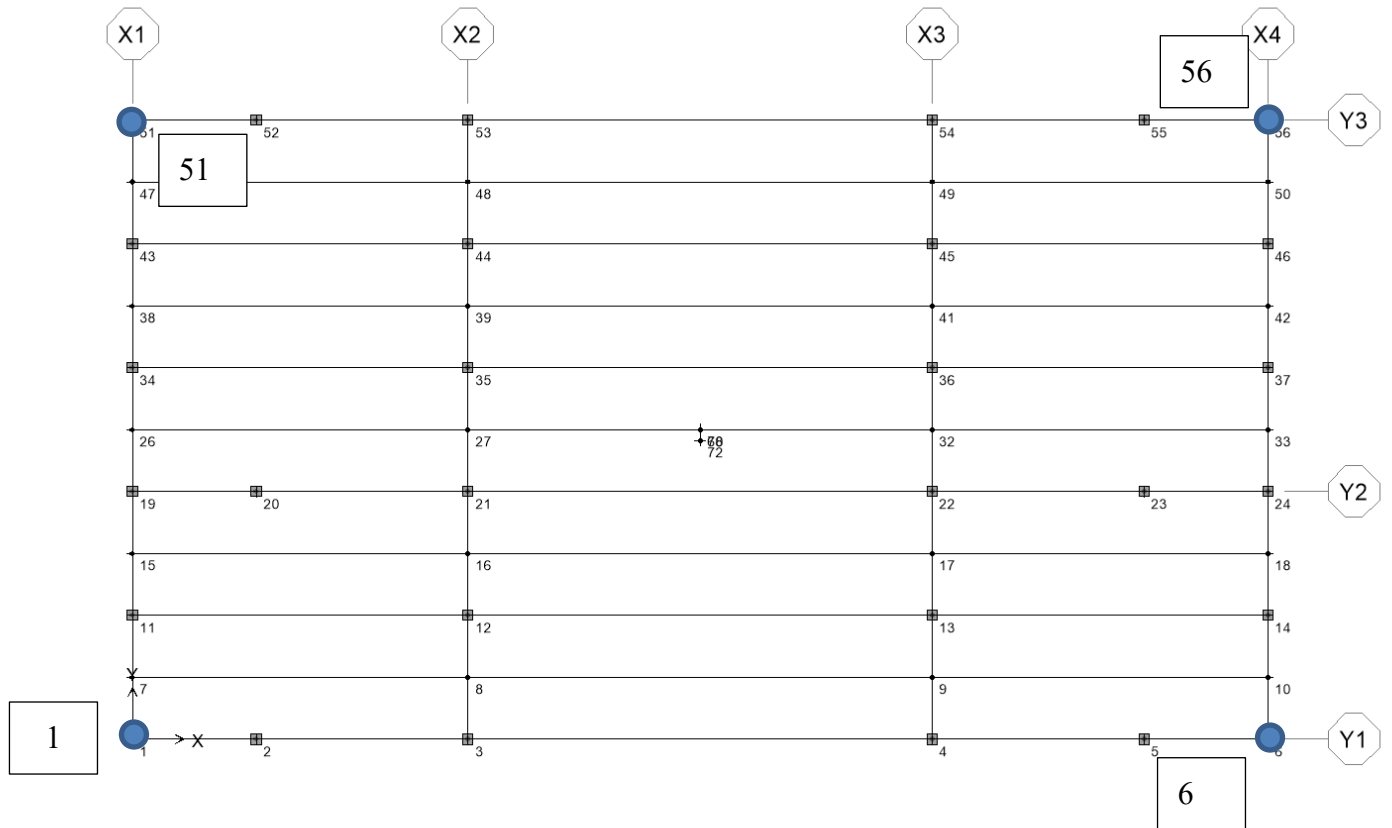
樓層層間變位角

	U _x		U _y	
	EXP	EXN	EYP	EYN
PRF	0.013‰(D21)	0.012‰(D3)	0.011‰(D2)	0.011‰(D1)
1F	0.020‰(C29)	0.019‰(C26)	0.018‰(C10)	0.018‰(C7)



碰撞距離檢討

依建築物耐震設計規範，為避免地震時所引起的變形造成鄰棟建築物間的相互碰撞，建築物應自留設設計地震力作用下產生位移乘以 $0.6 \times 1.4 \times \alpha_y \times R_a$ 倍之距離。



	節點 1		節點 6		節點 56		節點 51	
	X 向	Y 向	X 向	Y 向	X 向	Y 向	X 向	Y 向
475 年地震 側向位移 (cm)	0.008	0.007	0.008	0.007	0.010	0.007	0.010	0.007
安全 碰撞距離 (cm)	0.015	0.013	0.015	0.013	0.020	0.013	0.020	0.013
備註：位移放大倍數 X 向為 1.960，Y 向為 1.960								



4.3 設計風力

依據”建築物耐風設計規範及解說”，本建築基本設計風速為
每秒 37.5 公尺

封閉式建築主抗風系統屋頂風壓計算							
Enclosed Building Main Wind Force Resistance System Design Roof Pressure(TBC2006)							
Job:				Job No.			
				Made by: JWLI		Date: 2004/12/13	
1.1	Input data			尺寸			
	Exp=	C	V10=	37.5	m/sec	I=	1.1
	Z=	3.9	m	θ=	17	Degree	
	T=	0.03	sec	Beta=	0.02	B=	20 m
						L=	30 m
2.1	Basic Constant						
	Exposure=	C	α=	0.15	Zg=	300.00	m
	Design wind speed=	37.50	m/sec	Building width=	20.00	Ave. roof height=	3.90 m
	Do=	0.005	Damping ratio=	0.020			
2.2	Wind pressure						
	$K(h)=2.774(Z/Zg)^{2\alpha}$	h>5m	Average level	=	0.0000		
	$K(h)=2.774(5/Zg)^{2\alpha}$	h<5m		=	0.8122		
	$q(h)=0.0625*K(z)*(V_{10}(c))^2$			=	86.38	kg/m ²	
2.3	Roof design wind pressure						
	Direction	Width	Length	G(h)	Wind ward	Leeward	
					Cp	q(h)G(h)Cp	Cp
							q(h)G(h)Cp
	Wx	20	30	1.867	-0.46	-74	-0.7
	Wy	30	20	1.845	-0.70	-112	-0.7
							-113
							-112
2.4	Positive pressure under ROOF OVERHANG for main wind force resistance system						
	Direction	G(h)	Wind ward		Leeward		
			Cp	q(h)G(h)Cp	Cp	q(h)G(h)Cp	
	Wx	1.867	0.8	129	0.5	81	
	Wy	1.845	0.8	128	0.5	80	

Elevation View

Plan View

	WX	WX	WY	WY
	VX	VY	VX	VY
PRF	-2.57	0.00	0.00	-4.71
1F	-2.93	0.00	0.00	-5.36
SUM	-5.49	0.00	0.00	-10.07

X 向設計風力為 5.49tf，小於 X 向設計地震力 2.47tf
Y 向設計風力為 10.07tf，大於 Y 向設計地震力 2.47tf
故側向力由設計地震力控制，不須檢核風力。



4.4 載重組合

DL=Dead load (include member self weight)

LL=Live load

EXP,EXN=Code static seismic load x-direction (± 0.05 offset)

EYP,EYN=Code static seismic load y-direction (± 0.05 offset)

Ez=Code static vertical seismic load

$E_x = EXP \cdot EXN$

$E_y = EYP \cdot EYN$

W=Wind load

設計

1.4DL

1.2DL+1.6LL

1.2DL+1.0LL \pm 1.0E_x \pm 0.3E_z

1.2DL+1.0LL \pm 1.0E_y \pm 0.3E_z

1.2DL+1.0LL \pm 1.0E_z \pm 0.3E_x

1.2DL+1.0LL \pm 1.0E_z \pm 0.3E_y

0.9DL \pm 1.0E_x \pm 0.3E_z

0.9DL \pm 1.0E_y \pm 0.3E_z

0.9DL \pm 1.0E_z \pm 0.3E_x

0.9DL \pm 1.0E_z \pm 0.3E_y

1.2DL+1.0LL \pm 1.6W

0.9DL \pm 1.6W



	DL	SDL	LL	EXP	EYP	EXN	EYN	EZ	WX	WY
02RC01	1.400	1.400								
02RC02	1.200	1.200	1.600							
02RC03	1.200	1.200	1.000	1.000				0.300		
02RC04	1.200	1.200	1.000	1.000				-0.300		
02RC05	1.200	1.200	1.000		1.000			0.300		
02RC06	1.200	1.200	1.000		1.000			-0.300		
02RC07	1.200	1.200	1.000			1.000		0.300		
02RC08	1.200	1.200	1.000			1.000		-0.300		
02RC09	1.200	1.200	1.000				1.000	0.300		
02RC10	1.200	1.200	1.000				1.000	-0.300		
02RC11	1.200	1.200	1.000	-1.000				0.300		
02RC12	1.200	1.200	1.000	-1.000				-0.300		
02RC13	1.200	1.200	1.000		-1.000			0.300		
02RC14	1.200	1.200	1.000		-1.000			-0.300		
02RC15	1.200	1.200	1.000			-1.000		0.300		
02RC16	1.200	1.200	1.000			-1.000		-0.300		
02RC17	1.200	1.200	1.000				-1.000	0.300		
02RC18	1.200	1.200	1.000				-1.000	-0.300		
02RC19	1.200	1.200	1.000	0.300				1.000		
02RC20	1.200	1.200	1.000	0.300				-1.000		
02RC21	1.200	1.200	1.000		0.300			1.000		
02RC22	1.200	1.200	1.000		0.300			-1.000		
02RC23	1.200	1.200	1.000			0.300		1.000		
02RC24	1.200	1.200	1.000			0.300		-1.000		
02RC25	1.200	1.200	1.000				0.300	1.000		
02RC26	1.200	1.200	1.000				0.300	-1.000		
02RC27	1.200	1.200	1.000	-0.300				1.000		
02RC28	1.200	1.200	1.000	-0.300				-1.000		
02RC29	1.200	1.200	1.000		-0.300			1.000		
02RC30	1.200	1.200	1.000		-0.300			-1.000		
02RC31	1.200	1.200	1.000			-0.300		1.000		
02RC32	1.200	1.200	1.000			-0.300		-1.000		
02RC33	1.200	1.200	1.000				-0.300	1.000		
02RC34	1.200	1.200	1.000				-0.300	-1.000		
02RC35	0.900	0.900		1.000				0.300		
02RC36	0.900	0.900		1.000				-0.300		
02RC37	0.900	0.900			1.000			0.300		
02RC38	0.900	0.900			1.000			-0.300		
02RC39	0.900	0.900				1.000		0.300		
02RC40	0.900	0.900				1.000		-0.300		



02RC41	0.900	0.900					1.000	0.300		
02RC42	0.900	0.900					1.000	-0.300		
02RC43	0.900	0.900		-1.000				0.300		
02RC44	0.900	0.900		-1.000				-0.300		
02RC45	0.900	0.900			-1.000			0.300		
02RC46	0.900	0.900			-1.000			-0.300		
02RC47	0.900	0.900				-1.000		0.300		
02RC48	0.900	0.900				-1.000		-0.300		
02RC49	0.900	0.900					-1.000	0.300		
02RC50	0.900	0.900					-1.000	-0.300		
02RC51	0.900	0.900		0.300				1.000		
02RC52	0.900	0.900		0.300				-1.000		
02RC53	0.900	0.900			0.300			1.000		
02RC54	0.900	0.900			0.300			-1.000		
02RC55	0.900	0.900				0.300		1.000		
02RC56	0.900	0.900				0.300		-1.000		
02RC57	0.900	0.900					0.300	1.000		
02RC58	0.900	0.900					0.300	-1.000		
02RC59	0.900	0.900		-0.300				1.000		
02RC60	0.900	0.900		-0.300				-1.000		
02RC61	0.900	0.900			-0.300			1.000		
02RC62	0.900	0.900			-0.300			-1.000		
02RC63	0.900	0.900				-0.300		1.000		
02RC64	0.900	0.900				-0.300		-1.000		
02RC65	0.900	0.900					-0.300	1.000		
02RC66	0.900	0.900					-0.300	-1.000		
02RC67	1.200	1.200	1.000						1.600	
02RC68	1.200	1.200	1.000							1.600
02RC69	1.200	1.200	1.000						-1.600	
02RC70	1.200	1.200	1.000							-1.600
02RC71	0.900	0.900							1.600	
02RC72	0.900	0.900								1.600
02RC73	0.900	0.900							-1.600	
02RC74	0.900	0.900								-1.600



5.0 工作載重結構行為限制

A. 梁變形限制

靜載重加活載重 L/240

活載重 L/360

B. 地震力側向變形角限制

最大變形角 5/1000

C. 結構受風力側向加速度限制

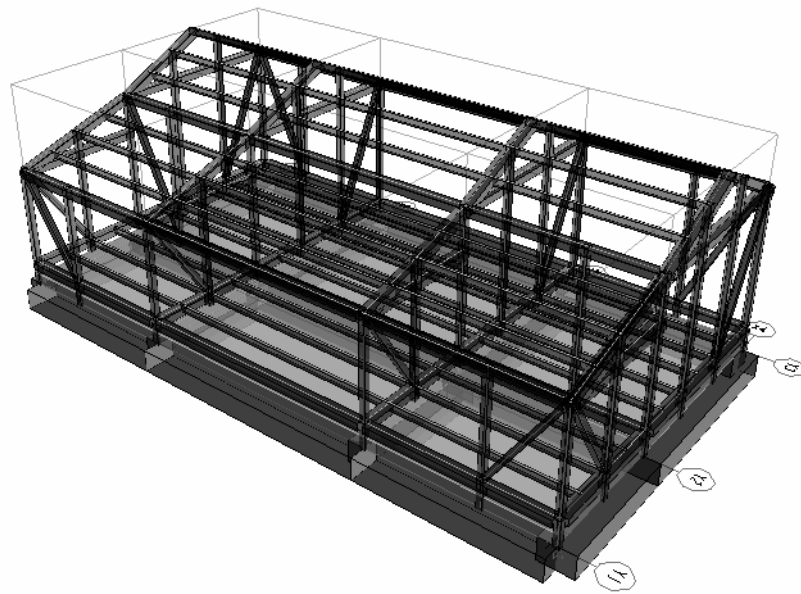
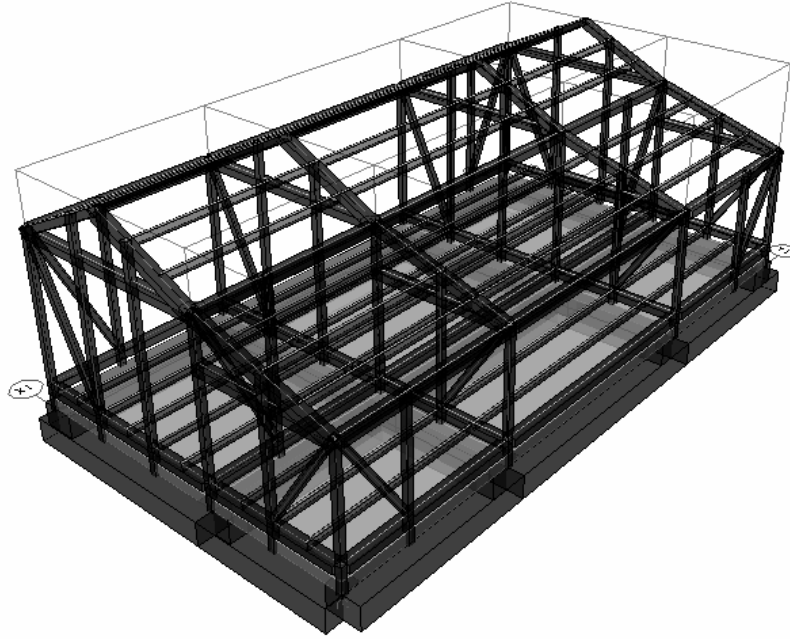
最大加速度 0.005g (0.05 m/sec²)

6.0 設計規範

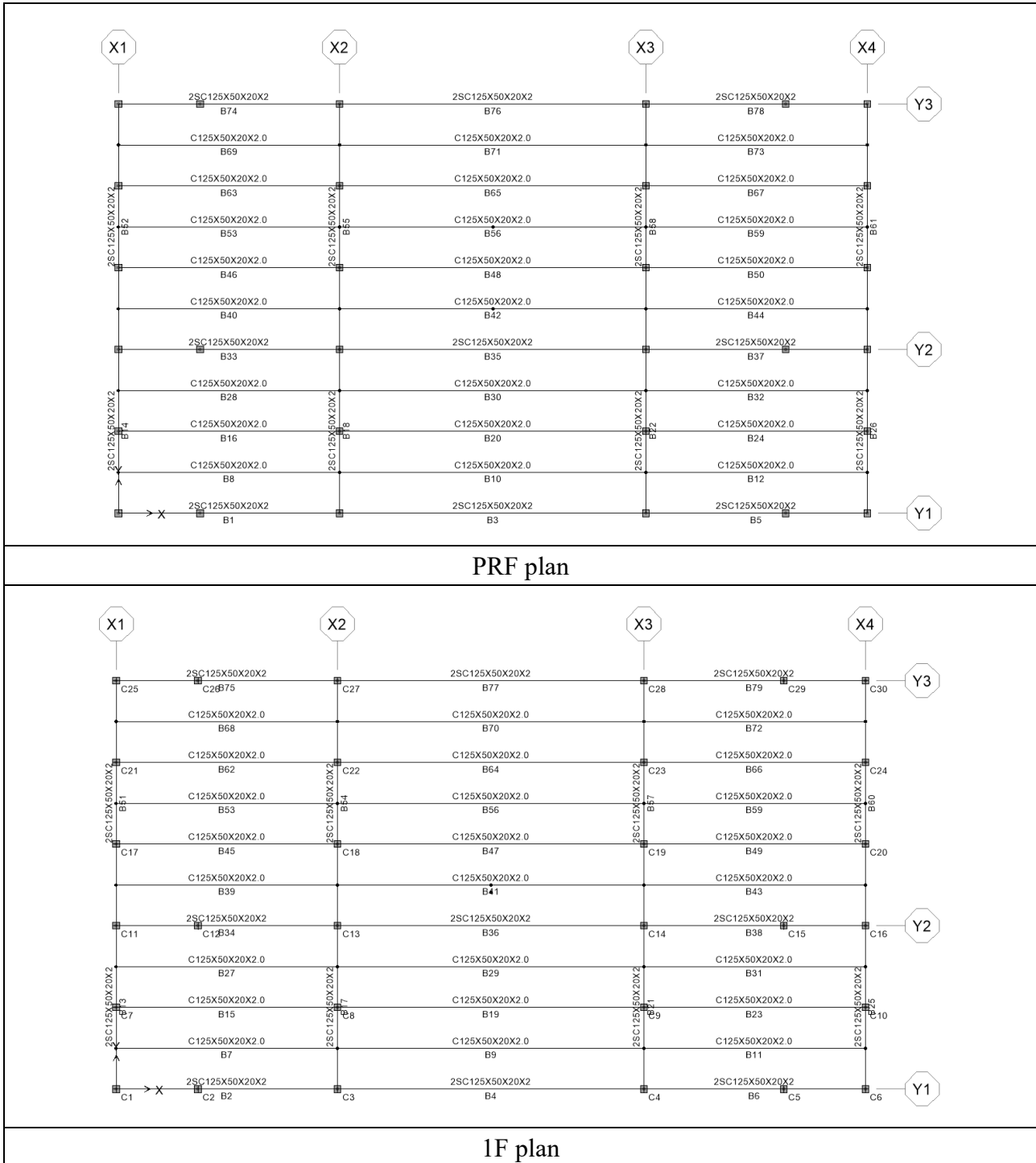
- (1) 建築技術規則, 內政部, 最新版。
- (2) 建築物耐震設計規範及解說, 內政部, 2011/07。
- (3) 建築物基礎構造設計規範, 內政部, 2001/10。
- (4) 混凝土結構設計規範, 內政部, 2011/07。
- (5) 建築物耐風設計規範及解說, 內政部, 2017/01。
- (6) 冷軋型鋼構造建築物結構設計規範及解說, 內政部, 2015/10
- (7) ACI 318-05。

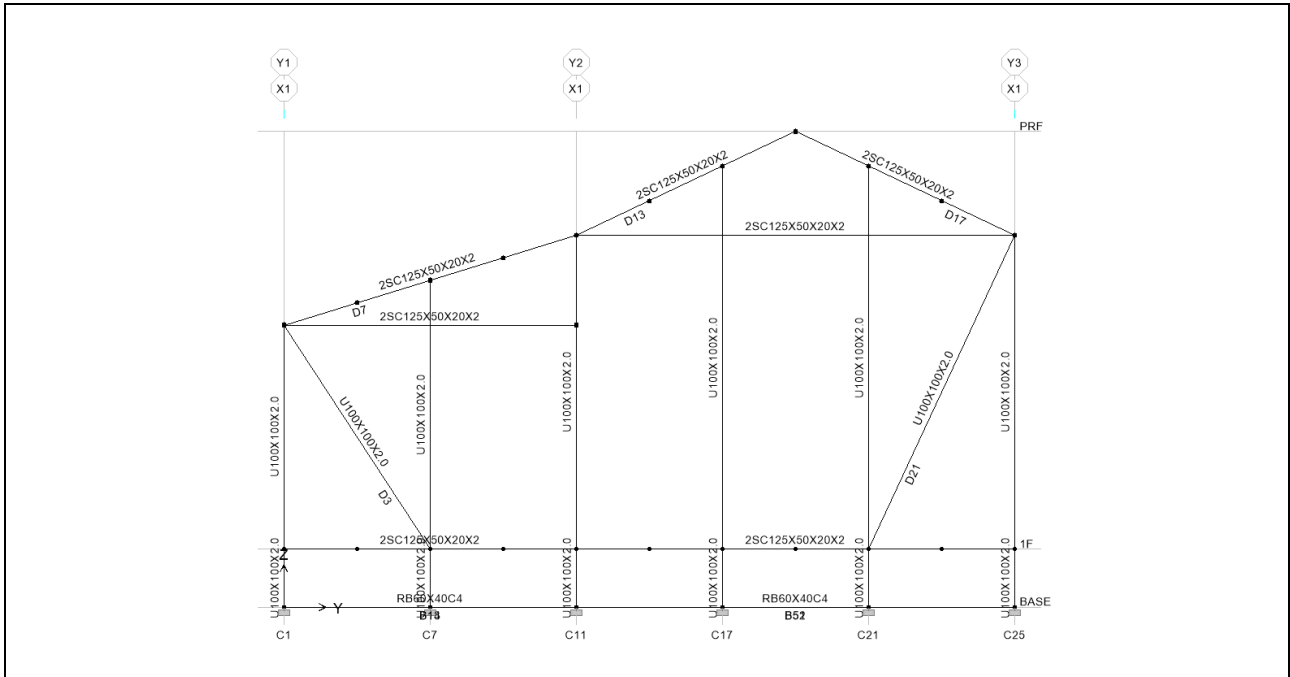
7.0 結構分析程序

7.1 結構模型

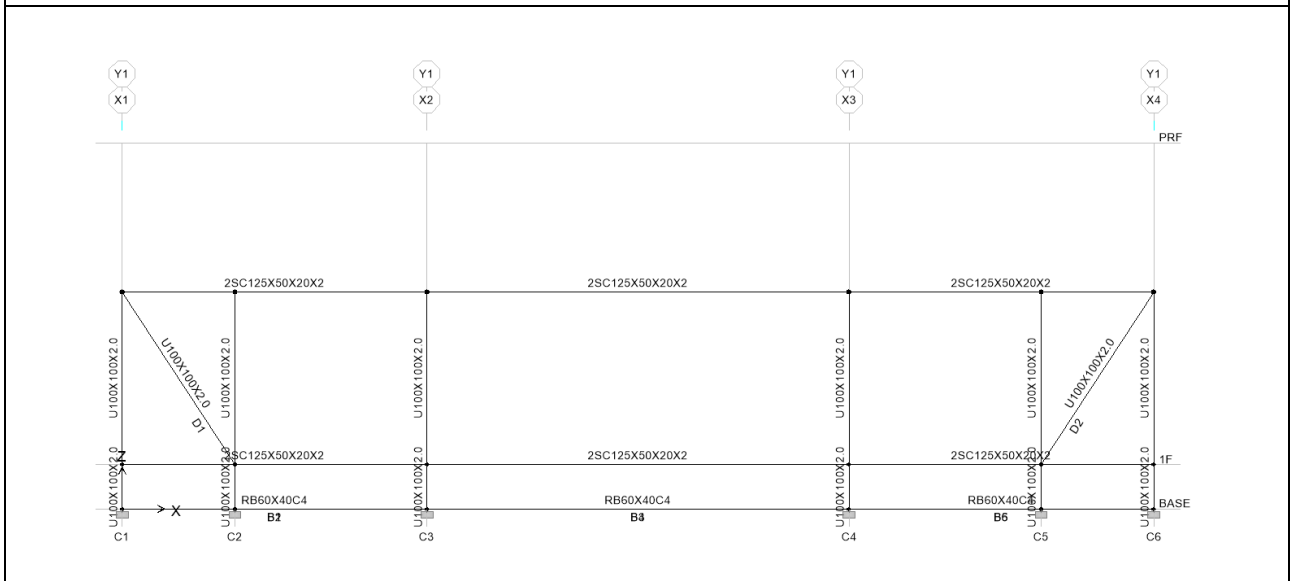


3D view

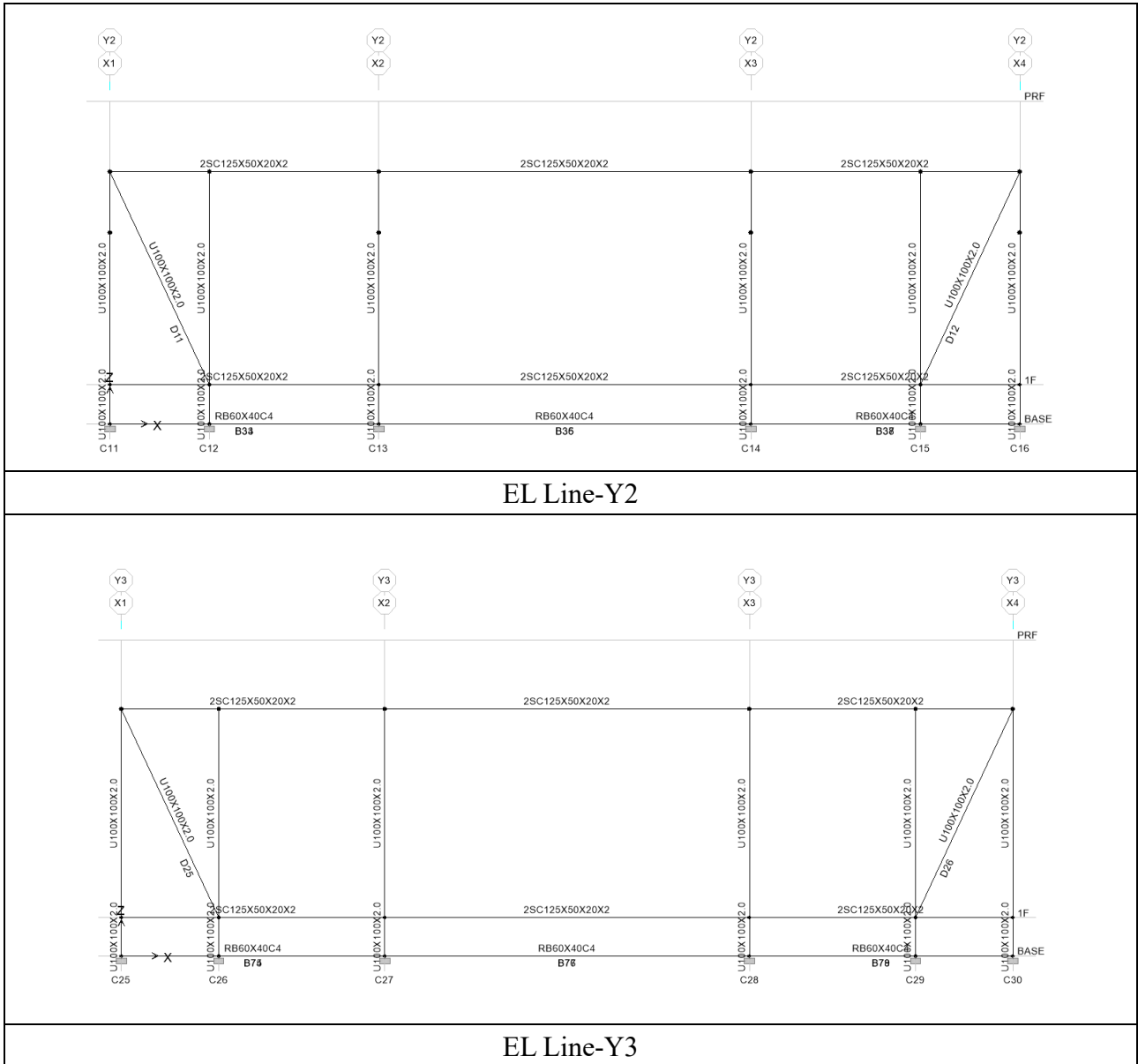




EL Line-X1~X4



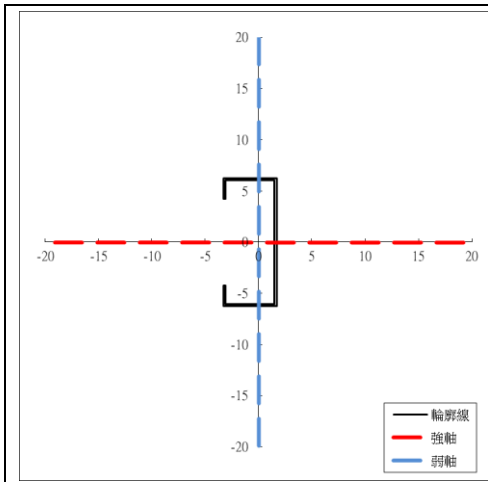
EL Line-Y1





斷面性質

C125x50x20x2.0



斷面積： $A= 5.140 \text{ (cm}^2\text{)}$

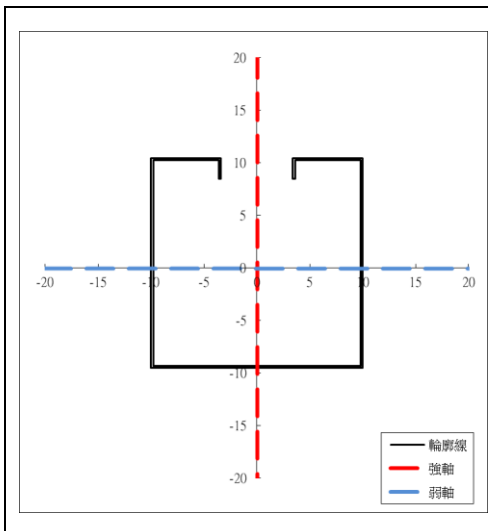
慣性矩： $I_x= 124.468 \text{ (cm}^4\text{)}$

$I_y= 19.025 \text{ (cm}^4\text{)}$

斷面模數： $S_x= 19.915 \text{ (cm}^3\text{)}$

$S_y= 5.776 \text{ (cm}^3\text{)}$

U100x100x2.0



斷面積： $A= 15.200 \text{ (cm}^2\text{)}$

慣性矩： $I_x= 955.743 \text{ (cm}^4\text{)}$

$I_y= 1038.673 \text{ (cm}^4\text{)}$

斷面模數： $S_x= 91.334 \text{ (cm}^3\text{)}$

$S_y= 103.867 \text{ (cm}^3\text{)}$

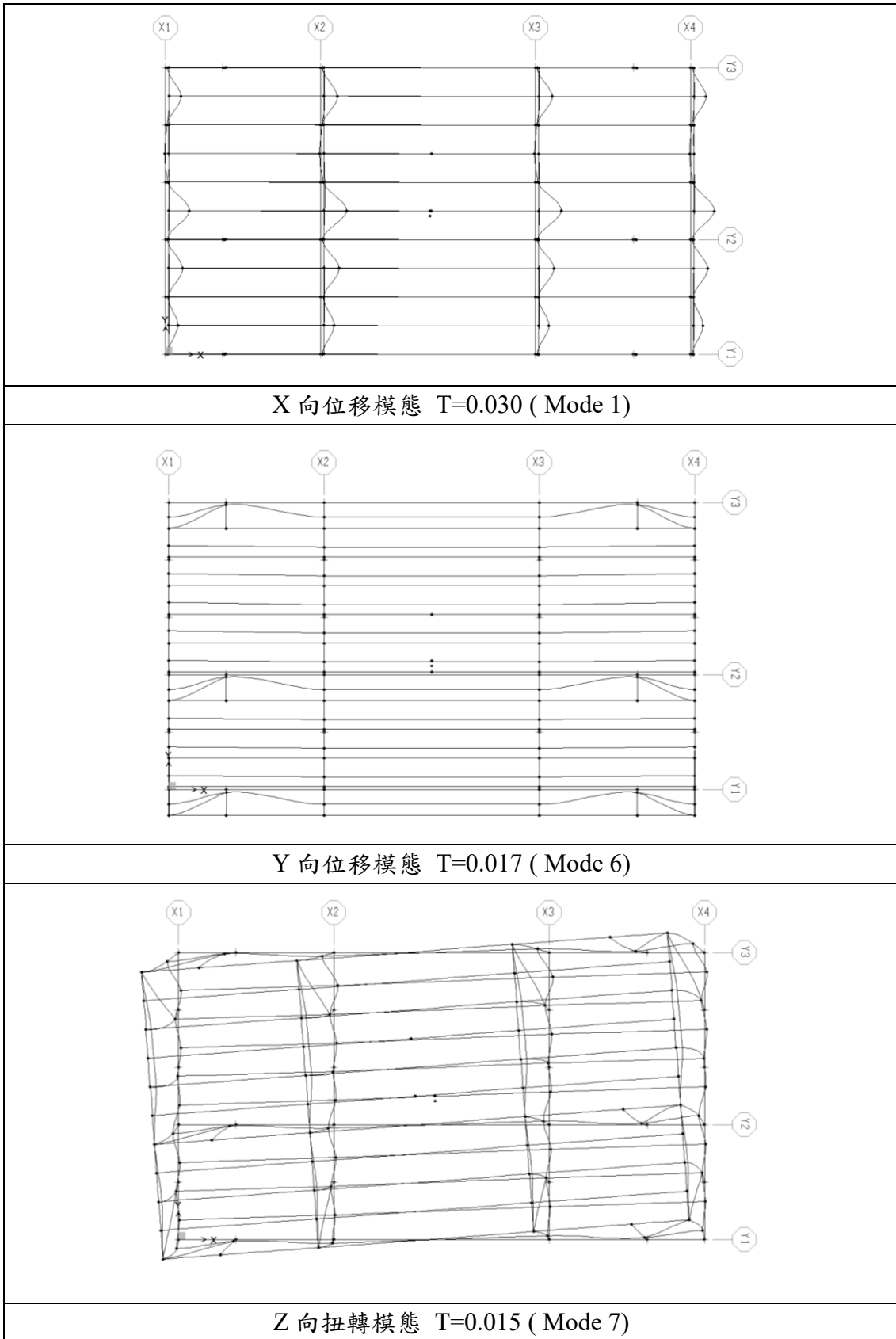


2-C125x50x20x2.0

	<p>彈性係數：</p> $E = 2100000 \quad (\text{kgf/cm}^2)$ <p>斷面積：</p> $A = \frac{\Sigma E \cdot A}{E} = 10.280 \quad (\text{cm}^2)$ <p>慣性矩：</p> $I_x = \frac{\Sigma E \cdot I_x}{E} = 248.937 \quad (\text{cm}^4)$ $I_y = \frac{\Sigma E \cdot I_y}{E} = 38.050 \quad (\text{cm}^4)$ <p>斷面模數：</p> $S_x = \frac{\Sigma E \cdot I_x}{E_i \cdot y_i} = 39.830 \quad (\text{cm}^3)$ $S_y = \frac{\Sigma E \cdot I_y}{E_i \cdot x_i} = 11.552 \quad (\text{cm}^3)$
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7.2 模態分析



有效累積振態質量



Mode	Period	UX	UY	RZ	SumUX	SumUY	SumRZ	Remark
1	0.030	42.938	0.000	0.024	42.938	0.000	0.024	X-Dir
2	0.030	1.277	0.000	0.102	44.215	0.000	0.126	
3	0.029	0.409	0.000	3.912	44.623	0.000	4.038	
4	0.029	0.872	0.000	4.962	45.496	0.000	9.000	
5	0.023	9.312	0.000	0.891	54.807	0.000	9.891	
6	0.017	0.000	95.407	0.000	54.807	95.407	9.891	Y-Dir
7	0.015	11.383	0.000	42.356	66.191	95.407	52.247	Z-Tor
8	0.015	0.000	0.000	0.000	66.191	95.407	52.247	
9	0.015	0.000	0.000	0.000	66.191	95.407	52.247	
10	0.015	0.000	0.000	0.000	66.191	95.407	52.247	
11	0.015	0.000	0.000	0.000	66.191	95.407	52.247	
12	0.014	14.258	0.000	40.530	80.448	95.407	92.777	
13	0.013	2.207	0.000	1.058	82.655	95.407	93.835	
14	0.013	3.082	0.000	2.227	85.737	95.407	96.062	
15	0.012	1.613	0.000	0.020	87.350	95.407	96.082	



7.2 鋼結構設計：

根據鋼構造建築物鋼結構設計技術規範，鋼結構極限設計法之相關規定，對稱構材承受彎矩及軸力交互作用時，須滿足公式(8.2-1a)或(8.2-1b)之規定。

當 $\frac{P_u}{\phi P_n} \geq 0.2$ 時

$$\frac{P_u}{\phi P_n} + \frac{8}{9} \left[\frac{M_{ux}}{\phi_b M_{nx}} + \frac{M_{uy}}{\phi_b M_{ny}} \right] \leq 1.0 \quad (8.2-1a)$$

當 $\frac{P_u}{\phi P_n} < 0.2$ 時

$$\frac{P_u}{2\phi P_n} + \left[\frac{M_{ux}}{\phi_b M_{nx}} + \frac{M_{uy}}{\phi_b M_{ny}} \right] \leq 1.0 \quad (8.2-1b)$$

其中

P_u = 所需之軸拉力或軸壓力強度

P_n = 標稱抗拉強度或標稱抗壓強度

M_u = 所需之撓曲強度

M_n = 標稱之撓曲強度

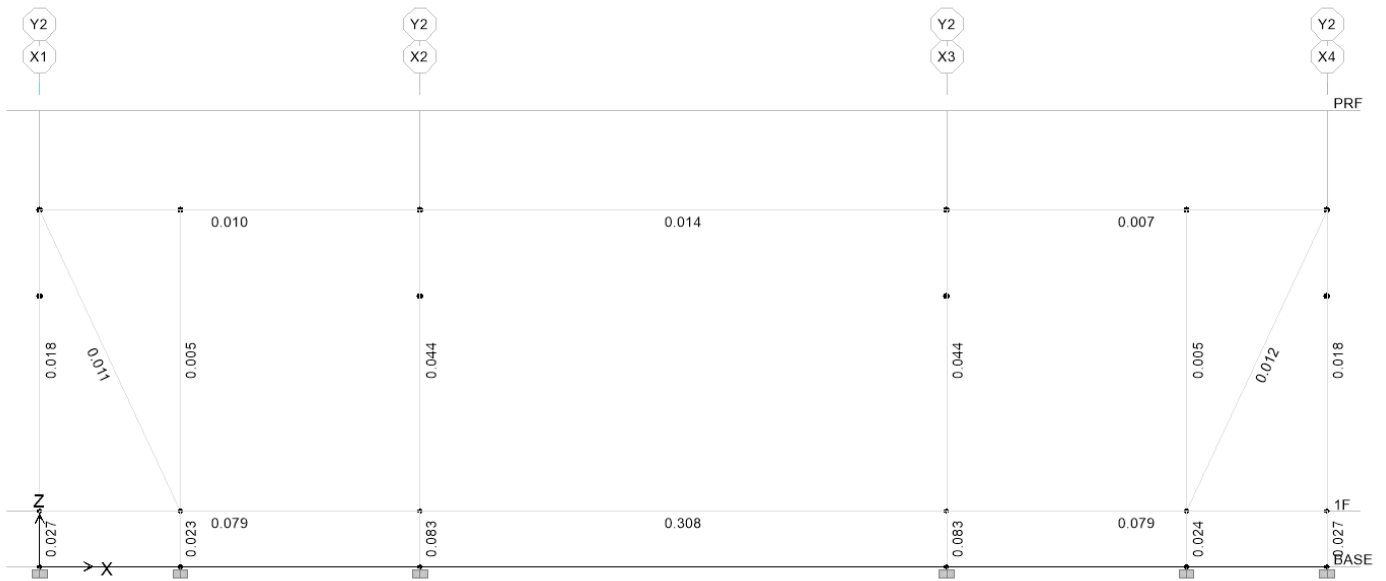
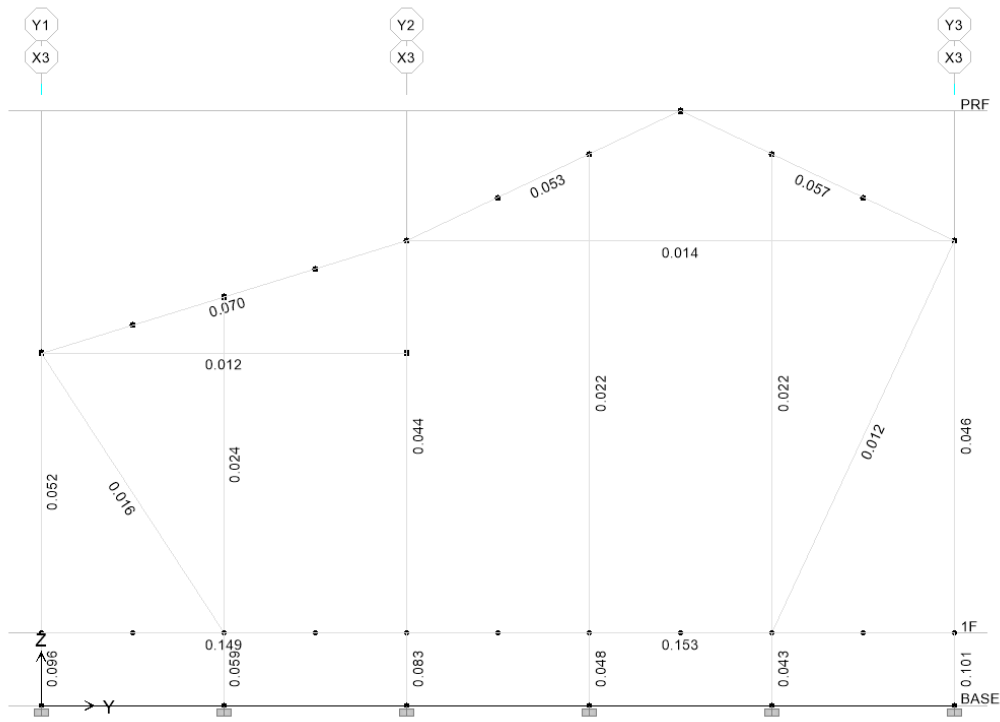
x = 強軸

y = 弱軸

ϕ = 軸力載重下之強度折減係數

ϕ_b = 撓曲載重下之強度折減係數

分析模型各桿件的應力比皆小於1.....OK!





9.0 基礎設計 / Foundation Design

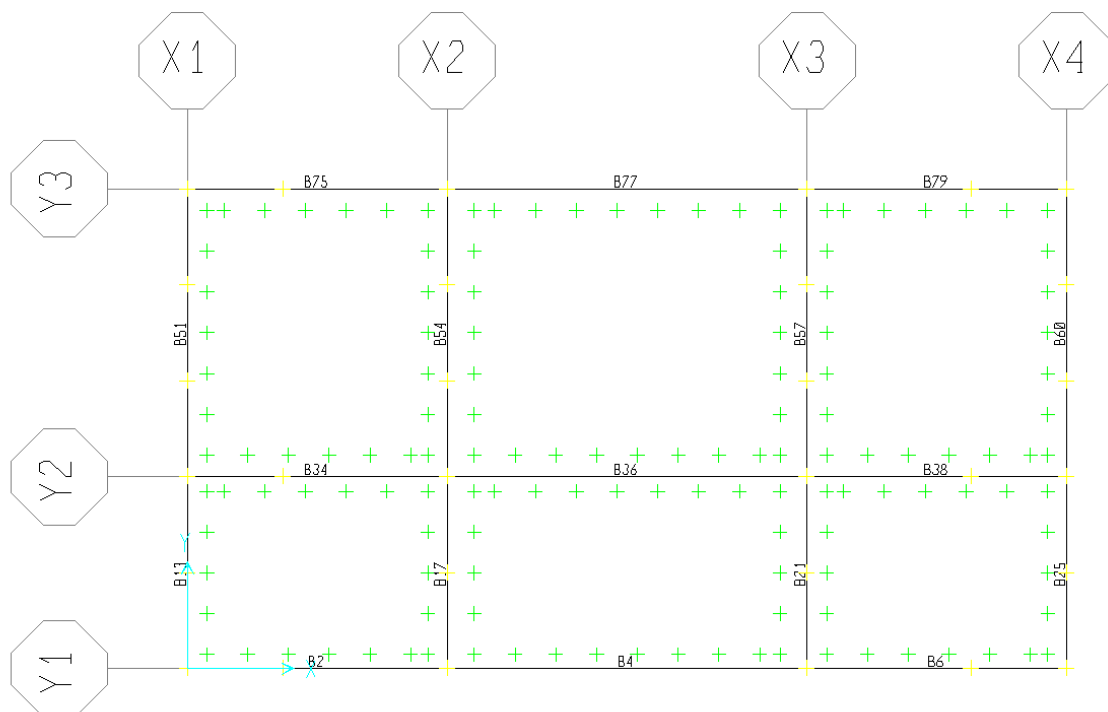
9.1 基礎設計說明

本案基礎設計採 CSI 公司之 2-D 分析軟體”SAFE V8.01”，分析元素包含基礎版、及地梁，版元素下方承受地下水壓上舉水浮力，版元素上方則於柱位置處承受結構傳遞之垂直載重，包含靜載重、活載重及地震力等。將基礎為一柔性體，應用土壤彈簧（Soil Spring）之觀念，將土壤模擬成無受拉彈簧，同時合併基礎地梁、版之勁度進行分析並設計。

9.1.1 分析基本資料

依據鄰近地質鑽探報告，各設計數據如下：

地盤垂直反力係數	$K_v = 1000(\text{tf}/\text{m}^3)$
常時水位(WAN)	GL -10m
高水位(WAH)	GL -7m
土壤容許乘載力	$q_a > 10 (\text{tf}/\text{m}^2)$



基礎結構平面圖



9.1.2 基礎設計載重組合

地震力分析採用法規靜力地震力，將上部結構桿件力傳至基礎。配筋設計採用設計地震力之 $1.4\alpha y$ 倍作為設計載重。分析及配筋設計之載重組合如下：

DL：靜載重(包含自重)

LL：活載重

E：法規地震載重 (EXP、EXN、EYP、EYN)

EXP、EXN：X 向法規靜力地震載重(含正負 5% 質心偏移，P 為正，N 為負)

EYP、EYN：Y 向法規靜力地震載重(含正負 5% 質心偏移，P 為正，N 為負)

WA：水浮力 (WAH、WAN)

WAH：高水位時之水浮力

WAN：常時水位之水浮力

檢核(乘載力檢核)

$$1.0DL+1.0WA$$

$$1.0DL+1.0LL+1.0WA$$

$$1.0DL+1.0LL\pm 1.0E+1.0WA$$

設計

$$1.4DL+1.4WA$$

$$1.2DL+1.6LL+1.2WA$$

$$1.2DL+1.0LL\pm 1.4E$$

$$0.9DL\pm 1.4E$$



	DL	SDL	LL	EXP	EYP	EXN	EYN	WAH	WAN	備註
BASE01	1.000	1.000						1.000		檢核(乘載力檢核)
BASE02	1.000	1.000							1.000	
BASE03	1.000	1.000	1.000					1.000		
BASE04	1.000	1.000	1.000						1.000	
BASE05	1.000	1.000	1.000	1.000				1.000		
BASE06	1.000	1.000	1.000	1.000					1.000	
BASE07	1.000	1.000	1.000		1.000			1.000		
BASE08	1.000	1.000	1.000		1.000				1.000	
BASE09	1.000	1.000	1.000			1.000		1.000		
BASE10	1.000	1.000	1.000			1.000			1.000	
BASE11	1.000	1.000	1.000				1.000	1.000		
BASE12	1.000	1.000	1.000				1.000		1.000	
BASE13	1.000	1.000	1.000	-1.000				1.000		
BASE14	1.000	1.000	1.000	-1.000					1.000	
BASE15	1.000	1.000	1.000		-1.000			1.000		
BASE16	1.000	1.000	1.000		-1.000				1.000	
BASE17	1.000	1.000	1.000			-1.000		1.000		
BASE18	1.000	1.000	1.000			-1.000			1.000	
BASE19	1.000	1.000	1.000				-1.000	1.000		
BASE20	1.000	1.000	1.000				-1.000		1.000	
BASE21	1.400	1.400						1.400		設計
BASE22	1.400	1.400							1.400	
BASE23	1.200	1.200	1.600					1.200		
BASE24	1.200	1.200	1.600						1.200	
BASE25	1.200	1.200	1.000	1.400						
BASE26	1.200	1.200	1.000		1.400					
BASE27	1.200	1.200	1.000			1.400				
BASE28	1.200	1.200	1.000				1.400			
BASE29	1.200	1.200	1.000	-1.400						
BASE30	1.200	1.200	1.000		-1.400					
BASE31	1.200	1.200	1.000			-1.400				
BASE32	1.200	1.200	1.000				-1.400			
BASE33	0.900	0.900		1.400						
BASE34	0.900	0.900			1.400					
BASE35	0.900	0.900				1.400				
BASE36	0.900	0.900					1.400			



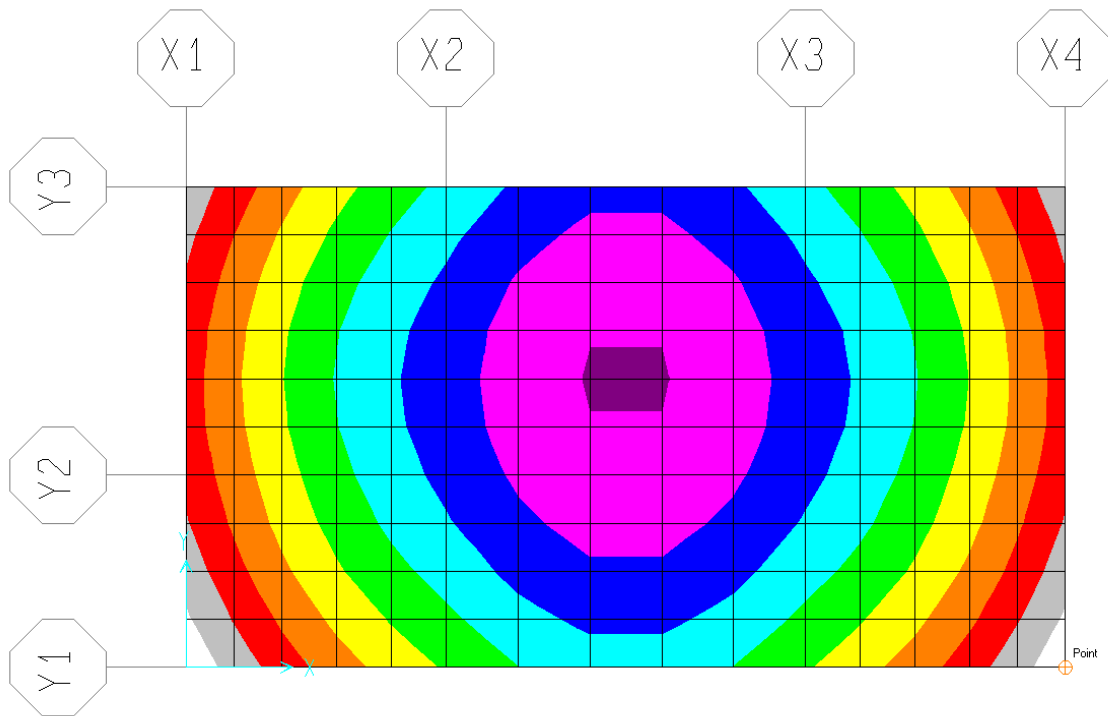
BASE37	0.900	0.900		-1.400					
BASE38	0.900	0.900			-1.400				
BASE39	0.900	0.900				-1.400			
BASE40	0.900	0.900					-1.400		

9.2 基礎分析

9.2.1 分析基本資料

1. 容許承载力檢核：

承载力檢核考慮載重組合為 BASE04



土壤最大反力為 $3.584(\text{tf}/\text{m}^2) < q_a = 10(\text{tf}/\text{m}^2) \dots \text{OK}$



2. 角變量檢核：

載重組合	基礎最大角變量 η	最大角變量桿件	檢核角變量 η
BASE01	<1 /100000	B77	$\eta < 1/500 \dots OK$
BASE02	<1 /100000	B77	$\eta < 1/500 \dots OK$
BASE03	<1 /100000	B77	$\eta < 1/500 \dots OK$
BASE04	<1 /100000	B77	$\eta < 1/500 \dots OK$
BASE05	1 /9020	B75	$\eta < 1/333 \dots OK$
BASE06	1 /9020	B75	$\eta < 1/333 \dots OK$
BASE07	1 /8534	B75	$\eta < 1/333 \dots OK$
BASE08	1 /8534	B75	$\eta < 1/333 \dots OK$
BASE09	1 /9035	B75	$\eta < 1/333 \dots OK$
BASE10	1 /9035	B75	$\eta < 1/333 \dots OK$
BASE11	1 /8510	B75	$\eta < 1/333 \dots OK$
BASE12	1 /8510	B75	$\eta < 1/333 \dots OK$
BASE13	1 /8239	B34	$\eta < 1/333 \dots OK$
BASE14	1 /8239	B34	$\eta < 1/333 \dots OK$
BASE15	1 /8695	B34	$\eta < 1/333 \dots OK$
BASE16	1 /8695	B34	$\eta < 1/333 \dots OK$
BASE17	1 /8240	B34	$\eta < 1/333 \dots OK$
BASE18	1 /8240	B34	$\eta < 1/333 \dots OK$
BASE19	1 /8693	B34	$\eta < 1/333 \dots OK$
BASE20	1 /8693	B34	$\eta < 1/333 \dots OK$



3. 基礎最大沉陷量檢核

載重組合	基礎最大沉陷變位 δ (cm)	最大沉陷點	檢核沉陷變位
BASE01	-0.224	1	$\delta < 5.000(\text{cm}) \dots \text{OK}$
BASE02	-0.224	1	$\delta < 5.000(\text{cm}) \dots \text{OK}$
BASE03	-0.358	1	$\delta < 5.000(\text{cm}) \dots \text{OK}$
BASE04	-0.358	1	$\delta < 5.000(\text{cm}) \dots \text{OK}$
BASE05	-0.364	6	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE06	-0.364	6	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE07	-0.355	56	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE08	-0.355	56	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE09	-0.363	6	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE10	-0.363	6	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE11	-0.355	51	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE12	-0.355	51	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE13	-0.364	1	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE14	-0.364	1	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE15	-0.363	6	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE16	-0.363	6	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE17	-0.363	1	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE18	-0.363	1	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE19	-0.363	1	$\delta < 7.500(\text{cm}) \dots \text{OK}$
BASE20	-0.363	1	$\delta < 7.500(\text{cm}) \dots \text{OK}$



9.3 基礎結構設計

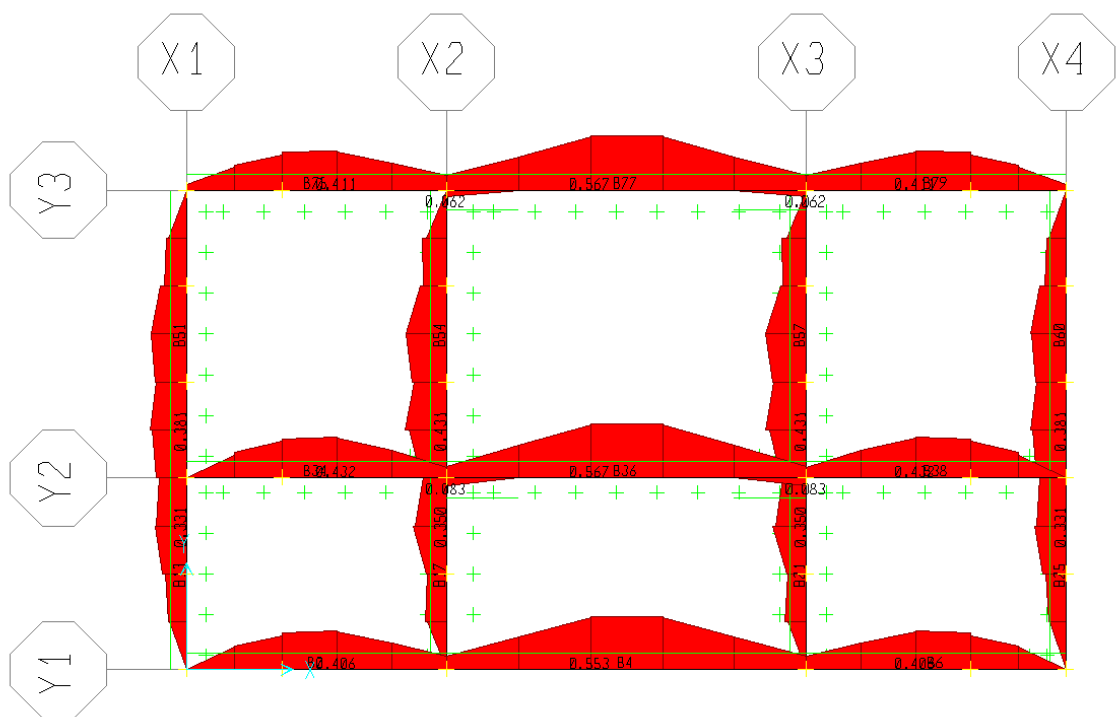
1. 材料強度

混凝土抗壓強度： 280 kgf/cm²

鋼筋降伏強度： 2800kgf/cm² (#3 及以下)

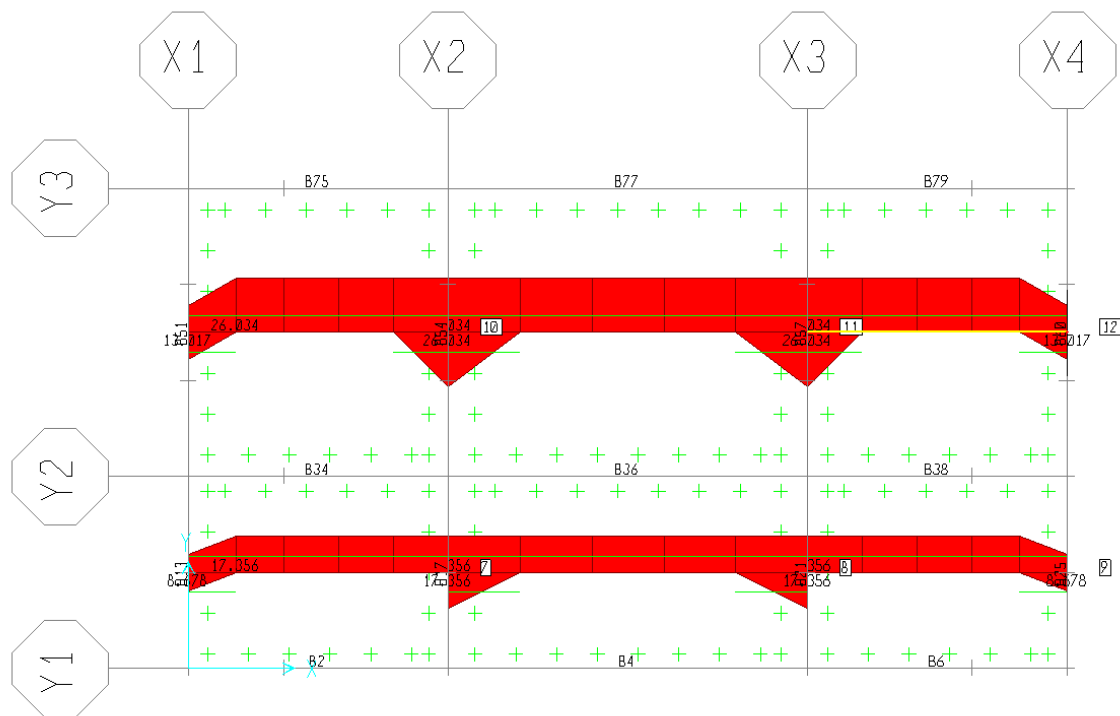
4200kgf/cm² (#4 及以上)

2. 地樑設計



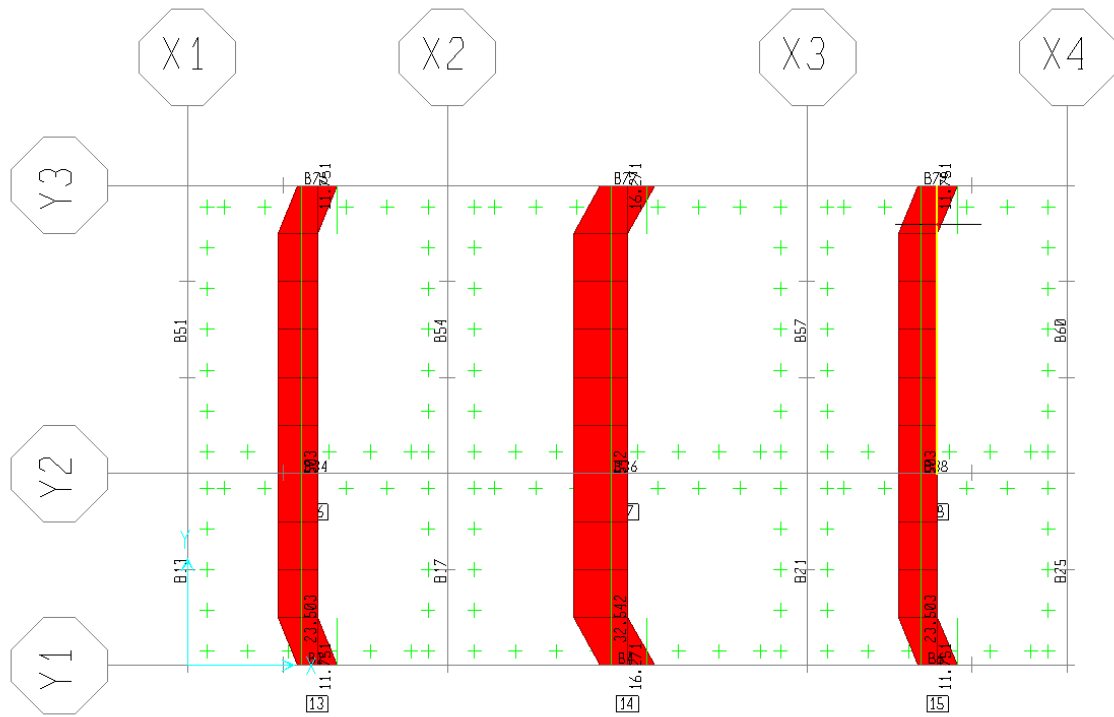


3. 基版 X 向鋼筋需求





4. 基版 Y 向鋼筋需求





附錄

5 FILE E:\WORK\2022\2022\REPORTS\SC1-1\220811\附件\2208A.SCI-1\220804-001.czk saved 8/11/22 17:48:27

5 PROGRAM INFORMATION
PROGRAM 'ETABS' VERSION '9.5.0'

5 CONTROLS
UNITS 'KGF' 'CM'

TITLE 'Lo-La Structure Studio'
REFERENCE MERGETOL 1
RL3 METHOD 'TRIBAREAUC97' USEDEFAULTMIN 'YES'

5 STORIES - IN SEQUENCE FROM TOP
STORY 'PR1' HEIGHT 342.5 MASTERSTORY 'Yes'
STORY '1F' HEIGHT 47.5
STORY 'BASE' ELEV 0

5 DIAPHRAGM NAMES
DIAPHRAGM 'D1' TYPE RIGID
DIAPHRAGM 'D2' TYPE RIGID
DIAPHRAGM 'D3' TYPE RIGID

5 GRIDS
COORDSYSTEM 'GLOBAL' TYPE 'CARTESIAN' BUBBLESIZE 50
GRID 'GLOBAL' LABEL 'X1' DIR 'X' COORD 0 GRIDTYPE 'PRIMARY' BUBBLELOC 'DEFAULT' GRIDHIDE 'NO'
GRID 'GLOBAL' LABEL 'X2' DIR 'X' COORD 325 GRIDTYPE 'PRIMARY' BUBBLELOC 'DEFAULT' GRIDHIDE 'NO'
GRID 'GLOBAL' LABEL 'X3' DIR 'X' COORD 650 GRIDTYPE 'PRIMARY' BUBBLELOC 'DEFAULT' GRIDHIDE 'NO'
GRID 'GLOBAL' LABEL 'X4' DIR 'X' COORD 1000 GRIDTYPE 'PRIMARY' BUBBLELOC 'DEFAULT' GRIDHIDE 'NO'
GRID 'GLOBAL' LABEL 'Y1' DIR 'Y' COORD 0 GRIDTYPE 'PRIMARY' BUBBLELOC 'DEFAULT' GRIDHIDE 'NO'
GRID 'GLOBAL' LABEL 'Y2' DIR 'Y' COORD 240 GRIDTYPE 'PRIMARY' BUBBLELOC 'DEFAULT' GRIDHIDE 'NO'
GRID 'GLOBAL' LABEL 'Y3' DIR 'Y' COORD 480 GRIDTYPE 'PRIMARY' BUBBLELOC 'DEFAULT' GRIDHIDE 'NO'

5 MATERIAL PROPERTIES
MATERIAL 'STEEL' M 8.010E-06 W 0.00785 TYPE 'ISOTROPIC' E 2040000 U 0.3 A 1.16999999590917E-05
MATERIAL 'STEEL' DESKNTYPE 'STEEL' FY 2500 FU 4000 PRICE 35
MATERIAL 'CONC' M 2.448012E-06 W 0.0024 TYPE 'ISOTROPIC' E 25098 U 0.2 A 9.89999989542412E-06
MATERIAL 'CONC' DESKNTYPE 'CONCRETE' FY 4200 FC 280 FYS 2800
MATERIAL 'OTHER' M 7.324016E-12 W 2.83E-07 TYPE 'ISOTROPIC' E 2900 U 0.3 A 6.49999992674566E-06
MATERIAL 'OTHER' DESKNTYPE 'OTHER'
MATERIAL 'SGC440' M 8.01E-06 W 0.00785 TYPE 'ISOTROPIC' E 2100000 U 0.3 A 1.16999999590917E-05
MATERIAL 'SGC440' DESKNTYPE 'STEEL' FY 3400 FU 4000 PRICE 45
MATERIAL 'GR50' M 8.01E-06 W 0.00785 TYPE 'ISOTROPIC' E 2100000 U 0.3 A 1.16999999590917E-05
MATERIAL 'GR50' DESKNTYPE 'STEEL' FY 3500 FU 4000 PRICE 45
MATERIAL '60R35' M 8.255E-06 W 0.0027 TYPE 'ISOTROPIC' E 73000 U 0.3 A 1.16999999590917E-05
MATERIAL '60R35' DESKNTYPE 'STEEL' FY 1120 FU 4000 PRICE 45
MATERIAL 'C280' M 2.448E-06 W 0.0024 TYPE 'ISOTROPIC' E 25098 U 0.2 A 9.99999974737875E-06
MATERIAL 'C280' DESKNTYPE 'CONCRETE' FY 4200 FC 280 FYS 4200
MATERIAL 'MAT1' M 8.01E-06 W 0.00785 TYPE 'ISOTROPIC' E 2100000 U 0.3 A 1.16999999590917E-05
MATERIAL 'MAT1' DESKNTYPE 'STEEL' FY 2400 FU 4000 PRICE 45

5 FRAME SECTIONS
FRAMESECTION 'RB60X40C4' MATERIAL 'C280' SHAPE 'Rectangular' D 40 B 60
FRAMESECTION '28C125X30X20C2' MATERIAL 'SGC440' SHAPE 'General' D 12.5 B 20 AREA 10.28 TORSION 38.0499 I33 248.9366 I22 38.0499 AS2 2.5
FRAMESECTION 'U100X100X10' MATERIAL 'SGC440' SHAPE 'General' D 10 B 10 AREA 15.2 TORSION 95.7322 I33 95.7322 I22 103.673 AS2 4 AS3 4
FRAMESECTION 'C125X50X20X10' MATERIAL 'SGC440' SHAPE 'General' D 12.5 B 5 AREA 5.14 TORSION 19.02493 I33 124.4683 I22 19.02493 AS2 2.5 AS3

5 REBAR DEFINITIONS
REBARDEFINITION 'R3' AREA 0.7133 DIA 0.953
REBARDEFINITION 'R4' AREA 1.267 DIA 1.27
REBARDEFINITION 'R5' AREA 1.986 DIA 1.59
REBARDEFINITION 'R6' AREA 2.865 DIA 1.91
REBARDEFINITION 'R7' AREA 3.871 DIA 2.22
REBARDEFINITION 'R8' AREA 5.067 DIA 2.54
REBARDEFINITION 'R10' AREA 8.143 DIA 3.22

5 CONCRETE SECTIONS
CONCRETESECTION 'RB60X40C4' TYPE 'BEAM' COVER TOP 9 COVER BOTTOM 9 ATT 0 AB1 0 ATT 0 ABJ 0

5 WALL/SLAB/DECK PROPERTIES
SHELLPROP 'S15' MATERIAL 'C280' PROTOTYPE 'SLAB' TYPE 'MEMBRANE' TM 15 TB 15
SHELLPROP 'S40' MATERIAL 'C280' PROTOTYPE 'SLAB' TYPE 'MEMBRANE' TM 40 TB 40

5 PIER/SPANDREL NAMES
PIERNAME 'P1'
SPANDRELNAME 'S1'

5 POINT COORDINATES
POINT '1' 0 0
POINT '1-1' 0 158.7
POINT '2' 120 0
POINT '2-1' 120 0 158.7
POINT '3' 325 0
POINT '3-1' 325 0 158.7
POINT '4' 775 0
POINT '4-1' 775 0 158.7
POINT '5' 980 0
POINT '5-1' 980 0 158.7
POINT '6' 1100 0
POINT '6-1' 1100 0 158.7
POINT '7' 0 60.0000023841858
POINT '7-1' 0 60.0000023841858 140.325
POINT '8' 325 60.0000023841858
POINT '8-1' 325 60.0000023841858 140.325
POINT '9' 775 60.0000023841858
POINT '9-1' 775 60.0000023841858 140.325
POINT '10' 1100 60.0000023841858
POINT '10-1' 1100 60.0000023841858 140.325
POINT '11' 0 120.000004768372
POINT '11-1' 0 120.000004768372 121.95
POINT '12' 325 120.000004768372
POINT '12-1' 325 120.000004768372 121.95
POINT '13' 775 120.000004768372
POINT '13-1' 775 120.000004768372 121.95
POINT '14' 1100 120.000004768372
POINT '14-1' 1100 120.000004768372 121.95
POINT '15' 0 179.99995231628
POINT '15-1' 0 179.99995231628 103.575
POINT '16' 325 179.99995231628
POINT '16-1' 325 179.99995231628 103.575
POINT '17' 775 179.99995231628
POINT '17-1' 775 179.99995231628 103.575
POINT '18' 1100 179.99995231628
POINT '18-1' 1100 179.99995231628 103.575
POINT '19' 0 240.000009536743
POINT '19-1' 0 240.000009536743 85.2
POINT '20' 325 240.000009536743
POINT '20-1' 325 240.000009536743 85.2
POINT '21' 775 240.000009536743
POINT '21-1' 775 240.000009536743 85.2
POINT '22' 1100 240.000009536743
POINT '22-1' 1100 240.000009536743 85.2
POINT '23' 0 980.240.000009536743
POINT '23-1' 0 980.240.000009536743 85.2
POINT '24' 325 980.240.000009536743
POINT '24-1' 325 980.240.000009536743 85.2
POINT '25' 775 980.240.000009536743
POINT '25-1' 775 980.240.000009536743 85.2
POINT '26' 1100 980.240.000009536743
POINT '26-1' 1100 980.240.000009536743 85.2
POINT '27' 0 300
POINT '27-1' 0 300 56.8
POINT '28' 325 300
POINT '28-1' 325 300 56.8
POINT '29' 775 300
POINT '29-1' 775 300 56.8
POINT '30' 1100 300
POINT '30-1' 1100 300 56.8
POINT '31' 0 359.99990463257
POINT '31-1' 0 359.99990463257 28.4
POINT '32' 325 359.99990463257
POINT '32-1' 325 359.99990463257 28.4
POINT '33' 775 359.99990463257
POINT '33-1' 775 359.99990463257 28.4
POINT '34' 1100 359.99990463257
POINT '34-1' 1100 359.99990463257 28.4
POINT '35' 0 419.99998026514
POINT '35-1' 0 419.99998026514 26.514
POINT '36' 325 419.99998026514
POINT '36-1' 325 419.99998026514 26.514
POINT '37' 775 419.99998026514
POINT '37-1' 775 419.99998026514 26.514
POINT '38' 1100 419.99998026514
POINT '38-1' 1100 419.99998026514 26.514
POINT '39' 0 480.000019073486
POINT '39-1' 0 480.000019073486 28.4
POINT '40' 325 480.000019073486
POINT '40-1' 325 480.000019073486 28.4
POINT '41' 775 480.000019073486
POINT '41-1' 775 480.000019073486 28.4
POINT '42' 1100 480.000019073486
POINT '42-1' 1100 480.000019073486 28.4
POINT '43' 0 480.000019073486
POINT '43-1' 0 480.000019073486 28.4
POINT '44' 325 480.000019073486
POINT '44-1' 325 480.000019073486 28.4
POINT '45' 775 480.000019073486
POINT '45-1' 775 480.000019073486 28.4
POINT '46' 1100 480.000019073486
POINT '46-1' 1100 480.000019073486 28.4
POINT '47' 0 540.000009536743
POINT '47-1' 0 540.000009536743 56.8
POINT '48' 325 540.000009536743
POINT '48-1' 325 540.000009536743 56.8
POINT '49' 775 540.000009536743
POINT '49-1' 775 540.000009536743 56.8
POINT '50' 1100 540.000009536743
POINT '50-1' 1100 540.000009536743 56.8
POINT '51' 0 600
POINT '51-1' 0 600 85.2
POINT '52' 120 600
POINT '52-1' 120 600 85.2
POINT '53' 325 600
POINT '53-1' 325 600 85.2
POINT '54' 775 600
POINT '54-1' 775 600 85.2
POINT '55' 980 600
POINT '55-1' 980 600 85.2
POINT '56' 1100 600
POINT '56-1' 1100 600 85.2

5 LINE CONNECTIVITIES
LINE 'C1' COLUMN '1' '1' 1
LINE 'C1-1' COLUMN '1' '1' 1
LINE 'C2' COLUMN '2' '2' 1
LINE 'C2-1' COLUMN '2' '2' 1
LINE 'C3' COLUMN '3' '3' 1
LINE 'C3-1' COLUMN '3' '3' 1
LINE 'C4' COLUMN '4' '4' 1
LINE 'C4-1' COLUMN '4' '4' 1
LINE 'C5' COLUMN '5' '5' 1
LINE 'C5-1' COLUMN '5' '5' 1
LINE 'C6' COLUMN '6' '6' 1
LINE 'C6-1' COLUMN '6' '6' 1
LINE 'C7' COLUMN '11' '11' 1
LINE 'C7-1' COLUMN '11' '11' 1
LINE 'C8' COLUMN '12' '12' 1
LINE 'C8-1' COLUMN '12' '12' 1
LINE 'C9' COLUMN '13' '13' 1
LINE 'C9-1' COLUMN '13' '13' 1
LINE 'C10' COLUMN '14' '14' 1
LINE 'C10-1' COLUMN '14' '14' 1
LINE 'C11' COLUMN '19' '19' 1
LINE 'C11-1' COLUMN '19' '19' 1
LINE 'C12' COLUMN '20' '20' 1
LINE 'C12-1' COLUMN '20' '20' 1
LINE 'C13' COLUMN '21' '21' 1
LINE 'C13-1' COLUMN '21' '21' 1
LINE 'C14' COLUMN '22' '22' 1
LINE 'C14-1' COLUMN '22' '22' 1
LINE 'C15' COLUMN '23' '23' 1
LINE 'C15-1' COLUMN '23' '23' 1
LINE 'C16' COLUMN '24' '24' 1
LINE 'C16-1' COLUMN '24' '24' 1
LINE 'C17' COLUMN '34' '34' 1
LINE 'C17-1' COLUMN '34' '34' 1
LINE 'C18' COLUMN '35' '35' 1
LINE 'C18-1' COLUMN '35' '35' 1
LINE 'C19' COLUMN '36' '36' 1
LINE 'C19-1' COLUMN '36' '36' 1
LINE 'C20' COLUMN '37' '37' 1
LINE 'C20-1' COLUMN '37' '37' 1
LINE 'C21' COLUMN '43' '43' 1
LINE 'C21-1' COLUMN '43' '43' 1
LINE 'C22' COLUMN '44' '44' 1
LINE 'C22-1' COLUMN '44' '44' 1
LINE 'C23' COLUMN '45' '45' 1
LINE 'C23-1' COLUMN '45' '45' 1
LINE 'C24' COLUMN '46' '46' 1
LINE 'C24-1' COLUMN '46' '46' 1
LINE 'C25' COLUMN '51' '51' 1
LINE 'C25-1' COLUMN '51' '51' 1
LINE 'C26' COLUMN '52' '52' 1
LINE 'C26-1' COLUMN '52' '52' 1
LINE 'C27' COLUMN '53' '53' 1
LINE 'C27-1' COLUMN '53' '53' 1
LINE 'C28' COLUMN '54' '54' 1
LINE 'C28-1' COLUMN '54' '54' 1
LINE 'C29' COLUMN '55' '55' 1
LINE 'C29-1' COLUMN '55' '55' 1
LINE 'C30' COLUMN '56' '56' 1
LINE 'C30-1' COLUMN '56' '56' 1
LINE 'B1' BEAM '1-1' '3-1' 0
LINE 'B2' BEAM '1' '3' 0
LINE 'B3' BEAM '3-1' '4-1' 0
LINE 'B4' BEAM '3' '4' 0
LINE 'B5' BEAM '4-1' '6-1' 0
LINE 'B6' BEAM '4' '6' 0
LINE 'B7' BEAM '7' '8' 0
LINE 'B8' BEAM '7-1' '8-1' 0
LINE 'B9' BEAM '8' '9' 0
LINE 'B10' BEAM '8-1' '9-1' 0
LINE 'B11' BEAM '9' '10' 0
LINE 'B12' BEAM '9-1' '10-1' 0
LINE 'B13' BEAM '11' '19' 0
LINE 'B14' BEAM '11' '19-2' 0
LINE 'B15' BEAM '11' '12' 0
LINE 'B16' BEAM '11-1' '12-1' 0
LINE 'B17' BEAM '3' '21' 0
LINE 'B18' BEAM '3-1' '21-2' 0
LINE 'B19' BEAM '12' '13' 0
LINE 'B20' BEAM '12-1' '13-1' 0
LINE 'B21' BEAM '4' '22' 0
LINE 'B22' BEAM '4-1' '22-2' 0
LINE 'B23' BEAM '13' '14' 0
LINE 'B24' BEAM '13-1' '14-1' 0
LINE 'B25' BEAM '6' '24' 0
LINE 'B26' BEAM '6-1' '24-2' 0
LINE 'B27' BEAM '15' '16' 0
LINE 'B28' BEAM '15-1' '16-1' 0
LINE 'B29' BEAM '16' '17' 0
LINE 'B30' BEAM '16-1' '17-1' 0
LINE 'B31' BEAM '17' '18' 0
LINE 'B32' BEAM '17-1' '18-1' 0
LINE 'B33' BEAM '19' '21' 0
LINE 'B34' BEAM '19' '21' 0
LINE 'B35' BEAM '21-1' '22-1' 0
LINE 'B36' BEAM '21' '22' 0
LINE 'B37' BEAM '22-1' '24-1' 0
LINE 'B38' BEAM '22' '24' 0
LINE 'B39' BEAM '26' '27' 0
LINE 'B40' BEAM '26-1' '27-1' 0
LINE 'B41' BEAM '27' '32' 0
LINE 'B42' BEAM '27-1' '32-1' 0
LINE 'B43' BEAM '32' '33' 0
LINE 'B44' BEAM '32-1' '33-1' 0
LINE 'B45' BEAM '34' '35' 0
LINE 'B46' BEAM '34-1' '35-1' 0
LINE 'B47' BEAM '35' '36' 0
LINE 'B48' BEAM '35-1' '36-1' 0
LINE 'B49' BEAM '36' '37' 0
LINE 'B50' BEAM '36-1' '37-1' 0
LINE 'B51' BEAM '19' '31' 0
LINE 'B52' BEAM '19-1' '31-1' 0
LINE 'B53' BEAM '38' '39' 0
LINE 'B54' BEAM '21' '53' 0
LINE 'B55' BEAM '21-1' '53-1' 0
LINE 'B56' BEAM '39' '41' 0
LINE 'B57' BEAM '22' '54' 0
LINE 'B58' BEAM '22-1' '54-1' 0
LINE 'B59' BEAM '41' '42' 0
LINE 'B60' BEAM '24' '56' 0
LINE 'B61' BEAM '24-1' '56-1' 0
LINE 'B62' BEAM '43' '44' 0
LINE 'B63' BEAM '43-1' '44-1' 0
LINE 'B64' BEAM '44' '45' 0
LINE 'B65' BEAM '44-1' '45-1' 0
LINE 'B66' BEAM '45' '46' 0
LINE 'B67' BEAM '45-1' '46-1' 0
LINE 'B68' BEAM '47' '48' 0
LINE 'B69' BEAM '47-1' '48-1' 0
LINE 'B70' BEAM '48' '49' 0
LINE 'B71' BEAM '48-1' '49-1' 0
LINE 'B72' BEAM '49' '50' 0
LINE 'B73' BEAM '49-1' '50-1' 0
LINE 'B74' BEAM '51-1' '53-1' 0

STEELPREFERENCE CONSIDERDEFLECTION "NO" RELATIVEDEFLECTION "RATIO"
STEELPREFERENCE DLDEFLECTIONLIMIT 120 SLDEFLECTIONLIMIT 120 LLDEFLECTIONLIMIT 360 TLDEFLECTIONLIMIT 240 TLMCDDEFLECTIONLIMIT 240
STEELPREFERENCE DLDEFLECTIONLIMITABS 2.54 SLDEFLECTIONLIMITABS 2.54 LLDEFLECTIONLIMITABS 2.54 TLDEFLECTIONLIMITABS 2.54
STEELPREFERENCE CALCULATECAMBER "NO" PERCENTCAMBERWDL 1 CAMBERRELMAXLIMIT 180 CAMBERIGNORELIMIT 1.905
STEELPREFERENCE CAMBERABSMAXLIMIT 10.16 CAMBERINTERVAL 0.635 CAMBERROUNDDOWN "YES"
STEELPREFERENCE PATTERNLFL 0.75 MAXITERATION 1 SRLIMIT 1.05

5 CONCRETE DESIGN PREFERENCES

CONCRETEPREFERENCE CODE "ACI 318.4J" THIDESGN "EVERYSTHP" CONSIDERMINSCENTRICITY "YES"
CONCRETEPREFERENCE NUMINTERCURVES 24 NUMINTERPOINTS 11 PATTERNLFL 0.75 UFLIMIT 1
CONCRETEPREFERENCE SDC "D" PHTENSIONCTRL 0.9 PHICOMPRESSIONCTRLTIED 0.65 PHICOMPRESSIONCTRLSPIRAL 0.7 PHISHEARTORSION 0.75

5 COMPOSITE DESIGN PREFERENCES

COMPOSITEPREFERENCE CODE "ASCC LRFD93"
COMPOSITEPREFERENCE PHIB 0.9 PHIBCNE 0.9 PHIBCP 0.85 PHIBCE 0.9 PHIBCTP 0.85 PHIV 0.9
COMPOSITEPREFERENCE SHORED "NO" %MIDDLELRANGE 70 PATTERNLFL 0.75 SRLIMIT 1 SINGLESEGMENT "NO" STUDINCREASEFACTOR 1
COMPOSITEPREFERENCE DLLIMIT 0 SLLIMIT 240 LLLIMIT 360 TLLIMIT 240 CREEPFACTOR 1
COMPOSITEPREFERENCE %DLCAMBER 100 CAMBERIGNORE 1.905 CAMBERABSMAX 10.16 CAMBERRELMAX 180 CAMBERINTERVAL 0.635
COMPOSITEPREFERENCE %VIBLL 25 CONSIDERFREQ "NO" MINFREQ 8 CONSIDERDAMP "NO" %INHERENTDAMP 4
COMPOSITEPREFERENCE OPTIMIZEPRICE "NO" CONNECTORPRICE 0 CAMBERPRICE 0

5 WALL DESIGN PREFERENCES

WALLPREFERENCE CODE "URC97" THIDESGN "EVERYSTHP"
WALLPREFERENCE REBARUNITS "in" 2 REBARLENGTHUNITS "in" 2/8"
WALLPREFERENCE PHIB 0.9 PHIC 0.7 PHIVNS 0.85 PHIVS 0.6 PMAFACTOR 0.8
WALLPREFERENCE NUMCURVES 24 NUMPOINTS 11
WALLPREFERENCE PTMAX 0.06 PCMAX 0.04 IPMAX 0.02 IPMIN 0.0025
WALLPREFERENCE UFLIMIT 0.95

5 DIMENSION LINES

5 LOG

5 START COMMENTS

ETABS Display 9.5.0 File imported from E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.SET at 2022/8/4 上午 11:12:12
ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/4 上午 11:22:48
ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/4 下午 05:39:27
ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/4 下午 05:40:26
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ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/4 下午 05:50:36
ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/4 下午 05:51:35
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ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/4 下午 05:56:02
ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/11 下午 03:58:38
ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/11 下午 04:33:03
ETABS Nonlinear 9.5.0 File saved as E:\WORK\2022\2208A\MODEL\ETABS\SC1-1\220804\2208A.SCI-1-220804-001.EDB at 2022/8/11 下午 04:33:11

5 ENDCOMMENTS

5 END

5 END OF MODEL FILE

STEEL CODE PREFERENCES

Steel Design Code : AISC-LRFD93
Time History Type : Step-by-Step
Frame Type : Moment Frame
Phi(Bending) : 0.85
Phi(Compression) : 0.85
Phi(Tension) : 0.9
Phi(Shear) : 0.9
Phi(Compression, Angle) : 0.9
Consider Deflection? : No
Deflection Check Type : Ratio
DL Limit, L/ : 120
Super DL+LL Limit, L/ : 120
Live Load Limit, L/ : 240
Total Load Limit, L/ : 240
DL Limit, abs : 2.54
Super DL+LL Limit, abs : 2.54
Live Load Limit, abs : 2.54
Total Load Limit, abs : 2.54
Pattern Live Load Factor : 0.75
Stress Ratio Limit : 1.05
Maximum Auto Rotation : 1

COLUMN STEEL STRESS CHECK ELEMENT INFORMATION (AISC-LRFD93)

Table with columns: LEVEL, LINE ID, TYPE, FACTOR, MAJOR, MINOR, MAJOR, MINOR. Contains data for columns C1 through C30, listing various moment and load values.

BEAM STEEL STRESS CHECK ELEMENT INFORMATION (AISC-LRFD93)

Table with columns: STORY, BEAM SECTION, FRAMING, RLFL, RATIO, L, RATIO, K, K. Contains data for beams B1 through B50, listing various moment and load values.

Table with columns: LEVEL, LINE ID, TYPE, FACTOR, MAJOR, MINOR, MAJOR, MINOR. Contains data for columns B51 through B79, listing various moment and load values.

BRACE STEEL STRESS CHECK ELEMENT INFORMATION (AISC-LRFD93)

Table with columns: STORY, BRACE SECTION, FRAMING, RLFL, RATIO, L, RATIO, K, K. Contains data for bracing members D1 through D26, listing various moment and load values.

COLUMN STEEL STRESS CHECK OUTPUT (AISC-LRFD93)

Table with columns: LEVEL, LINE ID, COMBO, RATIO = AXL + B33 + B22 COMBO, RATIO, COMBO, RATIO. Contains stress check results for columns C1 through C30, including interaction ratios and combination values.

BRACE STEEL STRESS CHECK OUTPUT (AISC-LRFD93)

STORY	BRACE SECTION	MOMENT INTERACTION CHECK		SHEAR22		SHEAR33	
LEVEL	BAY ID	COMBO	RATIO	AXL + B33 + B22	COMBO	RATIO	COMBO
PRF	D1	U100X100X2.0	0.2RC23	0.002	0.2RC72	0.001	
		0.2RC67(C)	0.010 = 0.007 + 0.002 + 0.001				
		0.2RC68(T)	0.008 = 0.002 + 0.002 + 0.004				
PRF	D2	U100X100X2.0	0.2RC11	0.002	0.2RC72	0.001	
		0.2RC15(C)	0.008 = 0.004 + 0.004 + 0.000				
		0.2RC71(T)	0.012 = 0.008 + 0.002 + 0.002				
PRF	D3	U100X100X2.0	0.2RC67	0.002	0.2RC71	0.001	
		0.2RC72(C)	0.014 = 0.012 + 0.002 + 0.001				
		0.2RC67(T)	0.008 = 0.002 + 0.004 + 0.002				
PRF	D4	U100X100X2.0	0.2RC67	0.003	0.2RC67	0.001	
		0.2RC68(C)	0.016 = 0.011 + 0.004 + 0.001				
		0.2RC67(T)	0.014 = 0.001 + 0.009 + 0.004				
PRF	D5	U100X100X2.0	0.2RC57	0.003	0.2RC71	0.001	
		0.2RC68(C)	0.016 = 0.011 + 0.004 + 0.001				
		0.2RC71(T)	0.015 = 0.002 + 0.009 + 0.003				
PRF	D6	U100X100X2.0	0.2RC68	0.002	0.2RC67	0.002	
		0.2RC72(C)	0.014 = 0.012 + 0.002 + 0.001				
		0.2RC13(T)	0.004 = 0.002 + 0.001 + 0.000				
PRF	D7	25C125X50X20X2	0.2RC71	0.015	0.2RC71	0.001	
		0.2RC71(C)	0.026 = 0.009 + 0.016 + 0.001				
		0.2RC71(T)	0.030 = 0.009 + 0.018 + 0.003				
PRF	D8	25C125X50X20X2	0.2RC71	0.034	0.2RC71	0.001	
		0.2RC71(C)	0.064 = 0.023 + 0.041 + 0.000				
		0.2RC71(T)	0.071 = 0.026 + 0.041 + 0.003				
PRF	D9	25C125X50X20X2	0.2RC71	0.034	0.2RC67	0.001	
		0.2RC71(C)	0.064 = 0.023 + 0.041 + 0.000				
		0.2RC71(T)	0.070 = 0.027 + 0.040 + 0.003				
PRF	D10	25C125X50X20X2	0.2RC71	0.017	0.2RC71	0.001	
		0.2RC71(C)	0.035 = 0.012 + 0.022 + 0.001				
		0.2RC71(T)	0.034 = 0.013 + 0.017 + 0.003				
PRF	D11	U100X100X2.0	0.2RC11	0.002	0.2RC68	0.002	
		0.2RC68(C)	0.011 = 0.003 + 0.004 + 0.005				
		0.2RC11(T)	0.005 = 0.000 + 0.004 + 0.000				
PRF	D12	U100X100X2.0	0.2RC67	0.002	0.2RC68	0.002	
		0.2RC68(C)	0.011 = 0.003 + 0.004 + 0.005				
		0.2RC67(T)	0.012 = 0.006 + 0.005 + 0.001				
PRF	D13	25C125X50X20X2	0.2RC71	0.009	0.2RC68	0.000	
		0.2RC68(C)	0.017 = 0.009 + 0.008 + 0.000				
		0.2RC71(T)	0.021 = 0.008 + 0.012 + 0.001				
PRF	D14	25C125X50X20X2	0.2RC71	0.021	0.2RC67	0.000	
		0.2RC68(C)	0.039 = 0.017 + 0.021 + 0.001				
		0.2RC71(T)	0.052 = 0.022 + 0.030 + 0.000				
PRF	D15	25C125X50X20X2	0.2RC71	0.021	0.2RC71	0.001	
		0.2RC68(C)	0.039 = 0.017 + 0.021 + 0.001				
		0.2RC71(T)	0.053 = 0.022 + 0.030 + 0.000				
PRF	D16	25C125X50X20X2	0.2RC71	0.010	0.2RC71	0.002	
		0.2RC68(C)	0.017 = 0.009 + 0.008 + 0.000				
		0.2RC71(T)	0.028 = 0.013 + 0.015 + 0.000				
PRF	D17	25C125X50X20X2	0.2RC68	0.010	0.2RC71	0.001	
		0.2RC68(C)	0.023 = 0.006 + 0.016 + 0.000				
		0.2RC71(T)	0.024 = 0.011 + 0.010 + 0.004				
PRF	D18	25C125X50X20X2	0.2RC71	0.019	0.2RC71	0.001	
		0.2RC68(C)	0.042 = 0.018 + 0.024 + 0.000				
		0.2RC71(T)	0.057 = 0.028 + 0.025 + 0.003				
PRF	D19	25C125X50X20X2	0.2RC71	0.019	0.2RC71	0.001	
		0.2RC68(C)	0.042 = 0.018 + 0.024 + 0.000				
		0.2RC71(T)	0.057 = 0.028 + 0.026 + 0.003				
PRF	D20	25C125X50X20X2	0.2RC68	0.010	0.2RC71	0.002	
		0.2RC68(C)	0.023 = 0.006 + 0.016 + 0.000				
		0.2RC71(T)	0.030 = 0.013 + 0.014 + 0.003				
PRF	D21	U100X100X2.0	0.2RC68	0.002	0.2RC71	0.000	
		0.2RC17(C)	0.006 = 0.002 + 0.003 + 0.001				
		0.2RC68(T)	0.009 = 0.006 + 0.003 + 0.000				
PRF	D22	U100X100X2.0	0.2RC67	0.002	0.2RC67	0.001	
		0.2RC17(C)	0.006 = 0.003 + 0.003 + 0.000				
		0.2RC67(T)	0.013 = 0.003 + 0.007 + 0.004				
PRF	D23	U100X100X2.0	0.2RC67	0.002	0.2RC71	0.001	
		0.2RC13(C)	0.006 = 0.003 + 0.003 + 0.000				
		0.2RC71(T)	0.012 = 0.002 + 0.007 + 0.003				
PRF	D24	U100X100X2.0	0.2RC68	0.002	0.2RC67	0.001	
		0.2RC71(C)	0.009 = 0.003 + 0.003 + 0.003				
		0.2RC68(T)	0.009 = 0.006 + 0.003 + 0.000				
PRF	D25	U100X100X2.0	0.2RC25	0.002	0.2RC68	0.001	
		0.2RC68(C)	0.012 = 0.005 + 0.004 + 0.004				
		0.2RC11(T)	0.005 = 0.002 + 0.003 + 0.000				
PRF	D26	U100X100X2.0	0.2RC21	0.002	0.2RC68	0.001	
		0.2RC68(C)	0.012 = 0.005 + 0.004 + 0.004				
		0.2RC67(T)	0.011 = 0.007 + 0.003 + 0.001				

5 FILE E:\WORK\2022\208A\MODELS\SAFE\SC1-122081\12208A.SCI-1-220804-001.UAS saved 8/11/22 17:49:02 in Kgf-cm
SAFE '8.1.0'
UNITS Kgf cm
5 TITLES
TITLE1 "Lo-Lat Structure Studio"
TITLE2 ""
5 GRIDS
GRID "GLOBAL" X "X1" 0
GRID "GLOBAL" X "X2" 325
GRID "GLOBAL" X "X3" 775
GRID "GLOBAL" X "X4" 1100
GRID "GLOBAL" Y "Y1" 0
GRID "GLOBAL" Y "Y2" 240
GRID "GLOBAL" Y "Y3" 600
MESH MAX 100
5 BEAM PROPERTIES
BEAMPROP "RB60X40C4" E 250998 U 0.2 W 0.0024
BEAMPROP "RB60X40C4" TYPE B 60 D 40
BEAMPROP "RB60X40C4" DSKN60 D DSKN60 40
BEAMPROP "RB60X40C4" CT 4 CB 4
BEAMPROP "RB60X40C4" FC 280 FY 4200 FYS 4200 FCS 280
5 SLAB PROPERTIES
SLABPROP "S40" T 220998 U 0.2 W 0.0024
SLABPROP "S40" T 40 TYPE THICK
SLABPROP "S40" CT1 8 CT2 8 CB1 8 CB2 8
SLABPROP "S40" FC 280 FY 4200
SLABPROP "Col_Slab" E 250998 U 0.2 W 0.0024
SLABPROP "Col_Slab" T 220 TYPE THICK
SLABPROP "Col_Slab" DSKN60
5 COLUMN PROPERTIES
5 WALL PROPERTIES
5 SOIL PROPERTIES
SOILPROP "F1" K 1
SOILPROP "F2" K 1
SOILPROP "F3" K 1
SOILPROP "F4" K 1
SOILPROP "F5" K 1
SOILPROP "F6" K 1
5 POINT COORDINATES
POINT "1" 0 0
POINT "3" 325 0
POINT "4" 775 0
POINT "6" 1100 0
POINT "19" 0 240
POINT "21" 325 240
POINT "22" 775 240
POINT "24" 1100 240
POINT "51" 0 600
POINT "53" 325 600
POINT "54" 775 600
POINT "56" 1100 600
POINT "11" 0 120
POINT "34" 0 360
POINT "43" 0 480
POINT "12" 325 120
POINT "35" 325 360
POINT "44" 325 480
POINT "13" 775 120
POINT "36" 775 360
POINT "45" 775 480
POINT "14" 1100 120
POINT "37" 1100 360
POINT "46" 1100 480
POINT "2" 120 0
POINT "5" 980 0
POINT "20" 325 240
POINT "23" 980 240
POINT "52" 120 600
POINT "55" 980 600
5 LINE CONNECTIVITY
LINE "B2" 0 0 325 0
LINE "B4" 325 0 775 0
LINE "B6" 775 0 1100 0
LINE "B13" 0 0 0 240
LINE "B34" 0 240 325 240
LINE "B36" 325 240 775 240
LINE "B38" 775 240 1100 240
LINE "B51" 0 240 0 600
LINE "B75" 0 600 325 600
LINE "B77" 325 600 775 600
LINE "B79" 775 600 1100 600
LINE "B17" 325 0 325 240
LINE "B54" 325 240 325 600
LINE "B21" 775 0 775 240
LINE "B25" 1100 0 1100 240
LINE "B60" 1100 240 1100 600
5 AREA CONNECTIVITY
AREA "F1" 4 0 325 0 325 240 240
AREA "F3" 4 325 0 775 0 775 240 240
AREA "F5" 4 775 0 1100 0 1100 240 240
AREA "F4" 4 0 240 325 240 325 600 600
AREA "F5" 4 325 240 775 240 775 600 600
AREA "F6" 4 775 240 1100 240 1100 600 600
5 BEAM ASSIGNS
BEAM "B2" "RB60X40C4"
BEAM "B4" "RB60X40C4"
BEAM "B6" "RB60X40C4"
BEAM "B13" "RB60X40C4"
BEAM "B34" "RB60X40C4"
BEAM "B36" "RB60X40C4"
BEAM "B38" "RB60X40C4"
BEAM "B51" "RB60X40C4"
BEAM "B75" "RB60X40C4"
BEAM "B77" "RB60X40C4"
BEAM "B79" "RB60X40C4"
BEAM "B17" "RB60X40C4"
BEAM "B54" "RB60X40C4"
BEAM "B21" "RB60X40C4"
BEAM "B57" "RB60X40C4"
BEAM "B25" "RB60X40C4"
BEAM "B60" "RB60X40C4"
5 SLAB ASSIGNS
SLAB "F1" "S40"
SLAB "F2" "S40"
SLAB "F3" "S40"
SLAB "F4" "S40"
SLAB "F5" "S40"
SLAB "F6" "S40"
5 COLUMN ASSIGNS
5 WALL ASSIGNS
5 SOIL ASSIGNS
SOIL "F1" "F1"
SOIL "F2" "F2"
SOIL "F3" "F3"
SOIL "F4" "F4"
SOIL "F5" "F5"
SOIL "F6" "F6"
5 RELEASE ASSIGNS
5 LOADS
LOAD "DL" TYPE DEAD SELFWEIGHT 1 LITFACTOR 3
POINTLOAD "DL" "1" F 60.83545 MX -29.53923 MY 5.765376
POINTLOAD "DL" "19" F 84.2687 MX -13.48536 MY 11.60707
POINTLOAD "DL" "51" F 70.02921 MX 8.123444 MY 5.821315
POINTLOAD "DL" "11" F 109.8769 MX 0.3637513 MY -25.23847
POINTLOAD "DL" "34" F 94.9012 MX -2.120787 MY 5.520991
POINTLOAD "DL" "43" F 125.6368 MX -29.53471 MY -34.23608
POINTLOAD "DL" "3" F 106.3044 MX -43.72831 MY 78.8758
POINTLOAD "DL" "21" F 150.0927 MX -13.02078 MY 103.5842
POINTLOAD "DL" "53" F 115.8025 MX 23.23111 MY 85.16999
POINTLOAD "DL" "12" F 158.8617 MX -17.48503 MY -43.56059
POINTLOAD "DL" "35" F 134.5543 MX 8.544495 MY 2.161287
POINTLOAD "DL" "44" F 175.4292 MX -6.368039 MY -55.06658
POINTLOAD "DL" "4" F 106.3044 MX -43.72831 MY -78.8758
POINTLOAD "DL" "22" F 150.0927 MX -13.02078 MY -103.5842
POINTLOAD "DL" "54" F 115.8025 MX 23.23111 MY -85.16999
POINTLOAD "DL" "13" F 158.8617 MX -17.48503 MY 43.56058
POINTLOAD "DL" "36" F 134.5543 MX 8.544495 MY -2.161287
POINTLOAD "DL" "45" F 175.4292 MX -6.368039 MY 55.06658
POINTLOAD "DL" "6" F 60.83545 MX -29.53923 MY -5.765376
POINTLOAD "DL" "24" F 84.2687 MX -13.48536 MY -11.60707
POINTLOAD "DL" "56" F 70.02921 MX 8.123444 MY -5.821315
POINTLOAD "DL" "14" F 109.8769 MX 0.3637513 MY 25.23847
POINTLOAD "DL" "37" F 94.9012 MX -2.120787 MY -5.520991
POINTLOAD "DL" "46" F 125.6368 MX -29.53471 MY 34.23608

POINTLOAD "DL" "2" F 80.01554 MX 17.36203 MY 11.09577
POINTLOAD "DL" "5" F 80.01554 MX 17.36203 MY -11.09577
POINTLOAD "DL" "20" F 105.0453 MX 0.3774792 MY 13.20897
POINTLOAD "DL" "23" F 105.0453 MX 0.3774792 MY -13.20897
POINTLOAD "DL" "52" F 99.82708 MX -37.52994 MY -4.813014
POINTLOAD "DL" "55" F 99.82708 MX -37.52994 MY 4.813014
LOAD "SDU" TYPE DEAD SELFWEIGHT 0 LITFACTOR 1
POINTLOAD "SDU" "1" F 49.45035 MX -75.16675 MY 27.58061
POINTLOAD "SDU" "19" F 37.04532 MX -8.568555 MY -25.66007
POINTLOAD "SDU" "51" F 55.50709 MX 65.92999 MY 29.31195
POINTLOAD "SDU" "11" F 144.3101 MX -12.30688 MY 20.59541
POINTLOAD "SDU" "34" F 139.8642 MX -13.30848 MY 33.41177
POINTLOAD "SDU" "43" F 138.2815 MX -13.56388 MY 32.55051
POINTLOAD "SDU" "3" F 180.0184 MX -165.6256 MY 300.4184
POINTLOAD "SDU" "21" F 297.0641 MX -8.632996 MY 300.2967
POINTLOAD "SDU" "53" F 192.482 MX 164.717 MY 318.7306
POINTLOAD "SDU" "12" F 357.8281 MX -18.70873 MY 23.5458
POINTLOAD "SDU" "35" F 344.8078 MX -15.70806 MY 15.97752
POINTLOAD "SDU" "44" F 355.3027 MX 18.31257 MY -27.3374
POINTLOAD "SDU" "4" F 180.0184 MX -165.6256 MY -300.4184
POINTLOAD "SDU" "22" F 297.0641 MX -8.632996 MY -300.2967
POINTLOAD "SDU" "54" F 192.482 MX 164.717 MY -318.7306
POINTLOAD "SDU" "13" F 357.8281 MX -18.70873 MY -23.5458
POINTLOAD "SDU" "36" F 344.8078 MX -15.70806 MY -15.97752
POINTLOAD "SDU" "45" F 355.3027 MX 18.31257 MY 27.3374
POINTLOAD "SDU" "6" F 49.45035 MX -75.16675 MY -27.58061
POINTLOAD "SDU" "24" F 87.04532 MX -8.568555 MY -25.66007
POINTLOAD "SDU" "56" F 55.50709 MX 65.92999 MY -29.31195
POINTLOAD "SDU" "14" F 144.3101 MX -12.30688 MY -20.59541
POINTLOAD "SDU" "37" F 139.8642 MX -13.30848 MY -33.41177
POINTLOAD "SDU" "46" F 138.2815 MX -13.56388 MY -32.55051
POINTLOAD "SDU" "2" F 46.95222 MX -7.377738 MY 62.34377
POINTLOAD "SDU" "19" F 46.95222 MX -7.377738 MY -62.34377
POINTLOAD "SDU" "20" F 64.90736 MX -16.80818 MY 94.62606
POINTLOAD "SDU" "23" F 64.90736 MX -16.80818 MY -94.62606
POINTLOAD "SDU" "52" F 54.1787 MX -23.81878 MY 75.73732
POINTLOAD "SDU" "55" F 54.1787 MX -23.81878 MY -75.73732
AREALOAD "SDU" "F1" W 0.03
AREALOAD "SDU" "F2" W 0.03
AREALOAD "SDU" "F3" W 0.03
AREALOAD "SDU" "F4" W 0.03
AREALOAD "SDU" "F5" W 0.03
AREALOAD "SDU" "F6" W 0.03
LOAD "LL" TYPE LIVE SELFWEIGHT 0 LITFACTOR 1
POINTLOAD "LL" "1" F 198.7989 MX -351.5329 MY 137.6037
POINTLOAD "LL" "19" F 319.1946 MX -5.756944 MY 129.8731
POINTLOAD "LL" "51" F 210.814 MX 369.6032 MY 145.711
POINTLOAD "LL" "11" F 475.5174 MX 2.959562 MY 262.3039
POINTLOAD "LL" "34" F 477.006 MX -41.6168 MY 361.6128
POINTLOAD "LL" "43" F 464.3601 MX -40.85741 MY 310.5338
POINTLOAD "LL" "3" F 727.3656 MX -826.7616 MY 1502.886
POINTLOAD "LL" "21" F 1063.135 MX -5.569609 MY 1498.026
POINTLOAD "LL" "53" F 750.6003 MX 878.667 MY 1595.41
POINTLOAD "LL" "12" F 1168.73 MX 4.445872 MY 192.909
POINTLOAD "LL" "35" F 1161.482 MX -38.59994 MY 167.1618
POINTLOAD "LL" "44" F 1167.036 MX 7.528563 MY 210.7172
POINTLOAD "LL" "4" F 727.3656 MX -826.7616 MY -1502.886
POINTLOAD "LL" "22" F 1063.135 MX -5.569609 MY -1498.026
POINTLOAD "LL" "54" F 750.6003 MX 878.667 MY -1595.41
POINTLOAD "LL" "13" F 1168.73 MX 4.445872 MY -192.909
POINTLOAD "LL" "36" F 1161.482 MX -38.59994 MY -167.1618
POINTLOAD "LL" "45" F 1167.036 MX 7.528563 MY -210.7172
POINTLOAD "LL" "6" F 198.7989 MX -351.5329 MY -137.6037
POINTLOAD "LL" "24" F 319.1946 MX -5.756944 MY -129.8731
POINTLOAD "LL" "56" F 210.814 MX 369.6032 MY -145.711
POINTLOAD "LL" "14" F 475.5174 MX 2.959562 MY -262.3039
POINTLOAD "LL" "37" F 477.006 MX -41.6168 MY -361.6128
POINTLOAD "LL" "46" F 464.3601 MX -40.85741 MY -310.5338
POINTLOAD "LL" "2" F 205.3193 MX -41.76654 MY 245.7134
POINTLOAD "LL" "5" F 205.3193 MX -41.76654 MY -245.7134
POINTLOAD "LL" "20" F 234.9876 MX -38.22113 MY 321.8591
POINTLOAD "LL" "23" F 234.9876 MX -38.22113 MY -321.8591
POINTLOAD "LL" "52" F 219.6528 MX -30.31923 MY 291.1915
POINTLOAD "LL" "55" F 219.6528 MX -30.31923 MY -291.1915
AREALOAD "LL" "F1" W 0.1
AREALOAD "LL" "F2" W 0.1
AREALOAD "LL" "F3" W 0.1
AREALOAD "LL" "F4" W 0.1
AREALOAD "LL" "F5" W 0.1
AREALOAD "LL" "F6" W 0.1
LOAD "EXP" TYPE QUAKE SELFWEIGHT 0 LITFACTOR 1
POINTLOAD "EXP" "1" F -207.1495 MX -613.702 MY 3259.643
POINTLOAD "EXP" "19" F -127.3058 MX -608.0511 MY 3537.058
POINTLOAD "EXP" "51" F -93.47883 MX -599.7933 MY 3852.147
POINTLOAD "EXP" "11" F -24.04731 MX -637.2034 MY 3254.68
POINTLOAD "EXP" "34" F -30.51971 MX -640.4379 MY 2913.57
POINTLOAD "EXP" "43" F -161.8428 MX -820.7974 MY 3067.107
POINTLOAD "EXP" "3" F -26.84564 MX -252.7057 MY 3256.029
POINTLOAD "EXP" "21" F 5.557112 MX -247.2574 MY 3528.987
POINTLOAD "EXP" "53" F 23.78437 MX -244.1545 MY 3849.771
POINTLOAD "EXP" "12" F 31.00668 MX -323.4425 MY 369.394
POINTLOAD "EXP" "35" F 0.9986143 MX -227.6845 MY 3324.633
POINTLOAD "EXP" "44" F -16.68088 MX -258.5208 MY 3456.837
POINTLOAD "EXP" "4" F 26.84564 MX 252.7057 MY 3256.029
POINTLOAD "EXP" "22" F -5.557112 MX 247.2574 MY 3528.987
POINTLOAD "EXP" "54" F -23.78437 MX -244.1545 MY 3849.771
POINTLOAD "EXP" "13" F -31.00668 MX 323.4426 MY 3639.394
POINTLOAD "EXP" "36" F -0.9986143 MX 227.6845 MY 3324.633
POINTLOAD "EXP" "45" F 16.68088 MX 258.5208 MY 3456.837
POINTLOAD "EXP" "6" F 207.1495 MX 613.702 MY 3259.643
POINTLOAD "EXP" "24" F 127.3058 MX 608.0511 MY 3537.058
POINTLOAD "EXP" "56" F 93.47883 MX 599.7933 MY 3852.147
POINTLOAD "EXP" "14" F 24.04731 MX 637.2034 MY 3254.68
POINTLOAD "EXP" "37" F 30.51971 MX 640.4379 MY 2913.57
POINTLOAD "EXP" "46" F 161.8428 MX 820.7974 MY 3067.107
POINTLOAD "EXP" "2" F 201.2545 MX 319.2825 MY 3258.139
POINTLOAD "EXP" "5" F -201.2545 MX 319.2825 MY 3258.139
POINTLOAD "EXP" "20" F 168.0592 MX -270.5443 MY 3236.279
POINTLOAD "EXP" "23" F -168.0592 MX 270.5443 MY 3236.279
POINTLOAD "EXP" "52" F 252.9377 MX -248.8659 MY 3692.943
POINTLOAD "EXP" "55" F -252.9377 MX 248.8659 MY 3692.943
LOAD "EYP" TYPE QUAKE SELFWEIGHT 0 LITFACTOR 1
POINTLOAD "EYP" "1" F -107.4747 MX -3275.342 MY 122.8489
POINTLOAD "EYP" "19" F 3.99455 MX -3219.968 MY 12.22489
POINTLOAD "EYP" "51" F 68.5815 MX -3257.124 MY -151.8038
POINTLOAD "EYP" "11" F 143.6259 MX -3426.725 MY 10.29032
POINTLOAD "EYP" "34" F 1.48334 MX -2999.748 MY -9.345546
POINTLOAD "EYP" "43" F -91.32948 MX -3111.006 MY -28.77382
POINTLOAD "EYP" "3" F -141.6016 MX -3439.059 MY 124.6241
POINTLOAD "EYP" "21" F 3.807141 MX -3373.449 MY 12.82974
POINTLOAD "EYP" "53" F 86.2665 MX -3417.908 MY -153.4414
POINTLOAD "EYP" "12" F 127.9715 MX -3745.624 MY 19.61944
POINTLOAD "EYP" "35" F 1.607487 MX -3440.572 MY -9.399228
POINTLOAD "EYP" "44" F -77.97931 MX -3536.167 MY -36.5162
POINTLOAD "EYP" "4" F -154.4877 MX -3658.87 MY 122.922
POINTLOAD "EYP" "22" F 4.221829 MX -3588.387 MY 12.32948
POINTLOAD "EYP" "54" F 94.42388 MX -3634.555 MY -151.6058
POINTLOAD "EYP" "13" F 139.9444 MX -3972.524 MY 17.40051
POINTLOAD "EYP" "36" F 1.935554 MX -3623.714 MY -9.331041
POINTLOAD "EYP" "45" F -85.1018 MX -3730.123 MY -33.52019
POINTLOAD "EYP" "6" F -123.1986 MX -3810.387 MY 125.8292
POINTLOAD "EYP" "24" F 3.043591 MX -3745.143 MY 12.36397
POINTLOAD "EYP" "56" F 72.07133 MX -3786.459 MY -153.8917
POINTLOAD "EYP" "14" F 181.3227 MX -3909.199 MY 27.32325
POINTLOAD "EYP" "37" F 0.7319233 MX -3456.803 MY -9.378607
POINTLOAD "EYP" "46" F -121.9571 MX -3605.847 MY -41.178
POINTLOAD "EYP" "2" F -52.11648 MX -1268.516 MY -20.56714
POINTLOAD "EYP" "5" F 77.25757 MX -1431.155 MY 285.9762
POINTLOAD "EYP" "20" F 1.823108E-03 MX -119.366 MY 8.790707
POINTLOAD "EYP" "23" F 2.79796 MX -1246.905 MY 3.886991
POINTLOAD "EYP" "52" F 33.17159 MX -1061.887 MY -68.24835
POINTLOAD "EYP" "55" F 62.12531 MX -1175.835 MY -237.886
LOAD "EXN" TYPE QUAKE SELFWEIGHT 0 LITFACTOR 1
POINTLOAD "EXN" "1" F -198.8728 MX -321.8591 MY 3395.085
POINTLOAD "EXN" "19" F -126.7871 MX -321.592 MY 3550.47
POINTLOAD "EXN" "51" F -95.37929 MX -311.0651 MY 3685.403
POINTLOAD "EXN" "11" F -44.6902 MX -324.9667 MY 3275.474
POINTLOAD "EXN" "34" F -30.10985 MX -391.135 MY 2803.357
POINTLOAD "EXN" "43" F -145.1368 MX -550.8838 MY 3028.951
POINTLOAD "EXN" "3" F -19.81687 MX -133.2433 MY 3391.054
POINTLOAD "EXN" "21" F 5.330918 MX -130.0186 MY 3542.466
POINTLOAD "EXN" "53" F 19.33489 MX -125.9835 MY 3683.382
POINTLOAD "EXN" "12" F 24.72151 MX -199.6792 MY 3659.587
POINTLOAD "EXN" "35" F 0.5134871 MX -127.789 MY 3314.437
POINTLOAD "EXN" "44" F -12.79098 MX -152.7265 MY 3418.635
POINTLOAD "EXN" "4" F 19.81687 MX 133.2433 MY 3391.054

POINTLOAD EXN" 22" F -5.330918 MX 1301086 MY 5542.466
POINTLOAD EXN" 54" F -19.33489 MX 1259835 MY 3683.382
POINTLOAD EXN" 13" F -24.72151 MX 199.6792 MY 3659.587
POINTLOAD EXN" 36" F -0.5134871 MX 127.789 MY 3314.437
POINTLOAD EXN" 45" F 12.79098 MX 152.7265 MY 5418.635
POINTLOAD EXN" 6" F 198.5728 MX 321.8591 MY 3395.085
POINTLOAD EXN" 24" F 126.7871 MX 321.592 MY 3550.47
POINTLOAD EXN" 56" F 95.37929 MX 311.0651 MY 3685.403
POINTLOAD EXN" 14" F 44.6099 MX 234.9667 MY 3275.474
POINTLOAD EXN" 37" F 30.19985 MX 391.135 MY 2903.357
POINTLOAD EXN" 46" F 145.1368 MX 550.8838 MY 3028.951
POINTLOAD EXN" 2" F 214.9678 MX -230.5714 MY 3401.816
POINTLOAD EXN" 5" F -214.9678 MX 230.5714 MY 3401.816
POINTLOAD EXN" 20" F 166.544 MX -200.9779 MY 3243.15
POINTLOAD EXN" 23" F -166.544 MX 200.9779 MY 3243.15
POINTLOAD EXN" 52" F 237.1447 MX -186.7126 MY 3525.961
POINTLOAD EXN" 55" F -237.1447 MX 186.7126 MY 3525.961
LOAD EYN" TYPE QUAKE SELFWEIGHT 0 LTFDFACTOR 1
POINTLOAD EYN" 1" F -121.1986 MX 3818.387 MY -125.8292
POINTLOAD EYN" 19" F 3043.591 MX -3745.143 MY -12.36397
POINTLOAD EYN" 51" F 72.07133 MX -3786.459 MY 153.8931
POINTLOAD EYN" 11" F 181.3227 MX -3999.159 MY -27.83235
POINTLOAD EYN" 34" F 0.7319233 MX -3456.803 MY 9.378607
POINTLOAD EYN" 42" F -121.9711 MX -3605.847 MY 41.176
POINTLOAD EYN" 3" F -154.4877 MX -3658.07 MY -122.922
POINTLOAD EYN" 21" F 4.221829 MX -3588.387 MY -12.32948
POINTLOAD EYN" 53" F 94.42388 MX -3634.555 MY 151.6058
POINTLOAD EYN" 12" F 139.4944 MX -3972.524 MY -17.40051
POINTLOAD EYN" 15" F 1.163354 MX -3623.714 MY 9.331041
POINTLOAD EYN" 44" F -85.1018 MX -3730.123 MY 33.52019
POINTLOAD EYN" 4" F -141.6016 MX -3439.059 MY -124.6241
POINTLOAD EYN" 22" F 3.807141 MX -3373.449 MY -12.38274
POINTLOAD EYN" 54" F 86.2665 MX -3417.908 MY 153.4414
POINTLOAD EYN" 17" F 121.9715 MX -3745.624 MY -19.61944
POINTLOAD EYN" 36" F 1.607487 MX -3440.572 MY 9.399228
POINTLOAD EYN" 45" F -77.97031 MX -3536.167 MY 36.5162
POINTLOAD EYN" 6" F -107.4747 MX -3275.34 MY -122.4819
POINTLOAD EYN" 24" F 3.99455 MX -3219.969 MY -12.22489
POINTLOAD EYN" 56" F 68.58715 MX -3257.124 MY 151.8038
POINTLOAD EYN" 14" F 143.6259 MX -3426.725 MY -10.29032
POINTLOAD EYN" 37" F 1.48334 MX -2999.748 MY 9.34546
POINTLOAD EYN" 46" F 91.32948 MX -3111.006 MY 28.77382
POINTLOAD EYN" 2" F -77.2575 MX -4431.153 MY -283.9762
POINTLOAD EYN" 5" F -52.11648 MX -1268.516 MY 20.56714
POINTLOAD EYN" 20" F 2.77976 MX -1246.905 MY -3.886591
POINTLOAD EYN" 23" F 1.823108E-03 MX -1119.366 MY -8.709707
POINTLOAD EYN" 52" F 62.12531 MX -1175.535 MY 237.886
POINTLOAD EYN" 55" F -31.17159 MX -1061.807 MY 68.28455
LOAD WX" TYPE WIND SELFWEIGHT 0 LTFDFACTOR 1
POINTLOAD WX" 1" F -372.8741 MX -111.5909 MY 2724.923
POINTLOAD WX" 19" F -416.2683 MX -92.75218 MY 2832.567
POINTLOAD WX" 51" F 279.2534 MX -73.20101 MY 281.282
POINTLOAD WX" 11" F -600.8303 MX -684.0961 MY 9354.093
POINTLOAD WX" 34" F -488.802 MX -241.4829 MY 1092.8
POINTLOAD WX" 42" F -638.5353 MX -431.8096 MY 1504.349
POINTLOAD WX" 3" F -362.2415 MX -65.29901 MY 2716.599
POINTLOAD WX" 24" F -838.2639 MX -932661.1 MY 2809.94
POINTLOAD WX" 54" F -404.6075 MX -693222.4 MY 2912.11
POINTLOAD WX" 12" F -1216.545 MX 54.62862 MY 1797.299
POINTLOAD WX" 35" F -1124.472 MX -136.5557 MY 878.8137
POINTLOAD WX" 44" F -1230.244 MX -266.8179 MY 1373.17
POINTLOAD WX" 4" F 328.9645 MX 3076.689 MY 2713.423
POINTLOAD WX" 22" F -850.477 MX 141.0541 MY 2823.77
POINTLOAD WX" 54" F -442.6319 MX 170.7954 MY 2805.085
POINTLOAD WX" 13" F -1265.097 MX 337.3295 MY 1496.579
POINTLOAD WX" 56" F -1125.756 MX 1537201.1 MY 529.7168
POINTLOAD WX" 45" F -130.7665 MX -69.31929 MY 1077.049
POINTLOAD WX" 6" F 179.0628 MX 208.7944 MY 2726.12
POINTLOAD WX" 24" F -47.85981 MX 241.0955 MY 2826.276
POINTLOAD WX" 56" F 8.367375 MX 233.0146 MY 2816.215
POINTLOAD WX" 14" F -383.3019 MX 209.3322 MY 1317.686
POINTLOAD WX" 37" F -400.4578 MX 341.2059 MY 3145.844
POINTLOAD WX" 46" F -269.6548 MX 539.6515 MY 913.2328
POINTLOAD WX" 2" F 288.1416 MX -201.9016 MY 3147.478
POINTLOAD WX" 5" F -405.9089 MX 182.3902 MY 3411.5
POINTLOAD WX" 20" F 64.88572 MX -85.40811 MY 2521.547
POINTLOAD WX" 23" F -423.8263 MX 260.6961 MY 3126.632
POINTLOAD WX" 52" F 218.567 MX 3.67994 MY 2845.856
POINTLOAD WX" 55" F -423.5297 MX 351.419 MY 3195.836
LOAD WY" TYPE WIND SELFWEIGHT 0 LTFDFACTOR 1
POINTLOAD WY" 1" F 271.8832 MX -3845.614 MY -4.660508
POINTLOAD WY" 19" F 9039103 MX -3780.46 MY -1.309426
POINTLOAD WY" 51" F 225.1366 MX -3790.576 MY 3.759845
POINTLOAD WY" 11" F 613.8165 MX -4778.956 MY -133.2345
POINTLOAD WY" 34" F 153.1223 MX -3453.412 MY -133.3621
POINTLOAD WY" 42" F -132.9344 MX -3897.764 MY 845.1254
POINTLOAD WY" 3" F -288.1342 MX -3835.969 MY 1.907906
POINTLOAD WY" 21" F 303.1507 MX -3781.679 MY 2.467947
POINTLOAD WY" 53" F 389.2144 MX -3767.433 MY -3.874832
POINTLOAD WY" 12" F 803.6022 MX -4684.361 MY -48.25428
POINTLOAD WY" 35" F 388.9004 MX -3375.075 MY 59.94022
POINTLOAD WY" 44" F 186.0931 MX -3738.34 MY -55.20344
POINTLOAD WY" 4" F -288.1342 MX -3835.969 MY -1.907906
POINTLOAD WY" 22" F 303.1507 MX -3781.679 MY 2.467947
POINTLOAD WY" 54" F 389.2144 MX -3767.433 MY 3.874832
POINTLOAD WY" 17" F 803.6022 MX -4684.361 MY 48.25428
POINTLOAD WY" 36" F 388.9004 MX -3375.075 MY 59.94032
POINTLOAD WY" 45" F 186.0931 MX -3738.34 MY 55.20344
POINTLOAD WY" 6" F 271.8832 MX -3845.614 MY 4.660508
POINTLOAD WY" 24" F 9039103 MX -3780.46 MY 1.309426
POINTLOAD WY" 56" F 225.1366 MX -3790.576 MY 3.759845
POINTLOAD WY" 14" F 613.8165 MX -4778.956 MY 133.2345
POINTLOAD WY" 37" F 153.1223 MX -3453.412 MY 133.3621
POINTLOAD WY" 46" F -132.9344 MX -3897.764 MY 845.1254
POINTLOAD WY" 2" F -156.9585 MX -2278.67 MY 371.736
POINTLOAD WY" 5" F -156.9585 MX -2278.67 MY 371.736
POINTLOAD WY" 20" F 65.51535 MX -1813.93 MY 110.8297
POINTLOAD WY" 23" F 65.51535 MX -1813.93 MY -110.8297
POINTLOAD WY" 52" F 164.7679 MX -1599.306 MY 290.7863
POINTLOAD WY" 55" F 164.7679 MX -1599.306 MY -290.7863
LOAD WAH" TYPE OTHER SELFWEIGHT 0 LTFDFACTOR 1
LOAD WAN" TYPE OTHER SELFWEIGHT 0 LTFDFACTOR 1
5 LOADING COMBINATIONS
COMBO "BASE01"
COMBOFACTOR "BASE01" "DL" 1
COMBOFACTOR "BASE01" "SDL" 1
COMBOFACTOR "BASE01" "WAH" 1
COMBO "BASE02"
COMBOFACTOR "BASE02" "DL" 1
COMBOFACTOR "BASE02" "SDL" 1
COMBOFACTOR "BASE02" "WAN" 1
COMBO "BASE03"
COMBOFACTOR "BASE03" "DL" 1
COMBOFACTOR "BASE03" "SDL" 1
COMBOFACTOR "BASE03" "LL" 1
COMBOFACTOR "BASE03" "WAH" 1
COMBO "BASE04"
COMBOFACTOR "BASE04" "DL" 1
COMBOFACTOR "BASE04" "SDL" 1
COMBOFACTOR "BASE04" "LL" 1
COMBOFACTOR "BASE04" "WAN" 1
COMBO "BASE05"
COMBOFACTOR "BASE05" "DL" 1
COMBOFACTOR "BASE05" "SDL" 1
COMBOFACTOR "BASE05" "LL" 1
COMBOFACTOR "BASE05" "EXP" 1
COMBOFACTOR "BASE05" "WAH" 1
COMBO "BASE06"
COMBOFACTOR "BASE06" "DL" 1
COMBOFACTOR "BASE06" "SDL" 1
COMBOFACTOR "BASE06" "LL" 1
COMBOFACTOR "BASE06" "EXP" 1
COMBOFACTOR "BASE06" "WAN" 1
COMBO "BASE07"
COMBOFACTOR "BASE07" "DL" 1
COMBOFACTOR "BASE07" "SDL" 1
COMBOFACTOR "BASE07" "LL" 1
COMBOFACTOR "BASE07" "EXP" 1
COMBOFACTOR "BASE07" "WAH" 1
COMBO "BASE08"
COMBOFACTOR "BASE08" "DL" 1
COMBOFACTOR "BASE08" "SDL" 1
COMBOFACTOR "BASE08" "LL" 1
COMBOFACTOR "BASE08" "EYYP" 1
COMBOFACTOR "BASE08" "WAN" 1
COMBO "BASE09"
COMBOFACTOR "BASE09" "DL" 1
COMBOFACTOR "BASE09" "SDL" 1
COMBOFACTOR "BASE09" "LL" 1
COMBOFACTOR "BASE09" "EXP" 1
COMBOFACTOR "BASE09" "EYYP" 1
COMBOFACTOR "BASE09" "WAN" 1
COMBOFACTOR "BASE09" "EYYP" 1
COMBOFACTOR "BASE09" "WAH" 1
COMBO "BASE10"
COMBOFACTOR "BASE10" "DL" 1
COMBOFACTOR "BASE10" "SDL" 1
COMBOFACTOR "BASE10" "LL" 1
COMBOFACTOR "BASE10" "EXP" 1
COMBOFACTOR "BASE10" "WAH" 1
COMBO "BASE11"
COMBOFACTOR "BASE11" "DL" 1
COMBOFACTOR "BASE11" "SDL" 1
COMBOFACTOR "BASE11" "LL" 1
COMBOFACTOR "BASE11" "EYYP" 1
COMBOFACTOR "BASE11" "WAN" 1
COMBO "BASE12"
COMBOFACTOR "BASE12" "DL" 1
COMBOFACTOR "BASE12" "SDL" 1
COMBOFACTOR "BASE12" "LL" 1
COMBOFACTOR "BASE12" "EYYP" 1
COMBOFACTOR "BASE12" "WAN" 1
COMBO "BASE13"
COMBOFACTOR "BASE13" "DL" 1
COMBOFACTOR "BASE13" "SDL" 1
COMBOFACTOR "BASE13" "LL" 1
COMBOFACTOR "BASE13" "EXP" 1
COMBOFACTOR "BASE13" "WAH" 1
COMBO "BASE14"
COMBOFACTOR "BASE14" "DL" 1
COMBOFACTOR "BASE14" "SDL" 1
COMBOFACTOR "BASE14" "LL" 1
COMBOFACTOR "BASE14" "EXP" 1
COMBOFACTOR "BASE14" "WAH" 1
COMBO "BASE15"
COMBOFACTOR "BASE15" "DL" 1
COMBOFACTOR "BASE15" "SDL" 1
COMBOFACTOR "BASE15" "LL" 1
COMBOFACTOR "BASE15" "EYYP" 1
COMBOFACTOR "BASE15" "WAH" 1
COMBO "BASE16"
COMBOFACTOR "BASE16" "DL" 1
COMBOFACTOR "BASE16" "SDL" 1
COMBOFACTOR "BASE16" "LL" 1
COMBOFACTOR "BASE16" "EYYP" 1
COMBOFACTOR "BASE16" "WAN" 1
COMBO "BASE17"
COMBOFACTOR "BASE17" "DL" 1
COMBOFACTOR "BASE17" "SDL" 1
COMBOFACTOR "BASE17" "LL" 1
COMBOFACTOR "BASE17" "EXP" 1
COMBOFACTOR "BASE17" "WAH" 1
COMBO "BASE18"
COMBOFACTOR "BASE18" "DL" 1
COMBOFACTOR "BASE18" "SDL" 1
COMBOFACTOR "BASE18" "LL" 1
COMBOFACTOR "BASE18" "WAN" 1
COMBO "BASE19"
COMBOFACTOR "BASE19" "DL" 1
COMBOFACTOR "BASE19" "SDL" 1
COMBOFACTOR "BASE19" "LL" 1
COMBOFACTOR "BASE19" "EYYP" 1
COMBOFACTOR "BASE19" "WAH" 1
COMBO "BASE20"
COMBOFACTOR "BASE20" "DL" 1
COMBOFACTOR "BASE20" "SDL" 1
COMBOFACTOR "BASE20" "LL" 1
COMBOFACTOR "BASE20" "EYYP" 1
COMBOFACTOR "BASE20" "WAN" 1
COMBO "BASE21" TYPE DESKIN
COMBOFACTOR "BASE21" "DL" 1.4
COMBOFACTOR "BASE21" "SDL" 1.4
COMBOFACTOR "BASE21" "WAH" 1.4
COMBO "BASE22" TYPE DESKIN
COMBOFACTOR "BASE22" "DL" 1.4
COMBOFACTOR "BASE22" "SDL" 1.4
COMBOFACTOR "BASE22" "WAN" 1.4
COMBO "BASE23" TYPE DESKIN
COMBOFACTOR "BASE23" "DL" 1.2
COMBOFACTOR "BASE23" "SDL" 1.2
COMBOFACTOR "BASE23" "LL" 1.6
COMBOFACTOR "BASE23" "WAH" 1.2
COMBO "BASE24" TYPE DESKIN
COMBOFACTOR "BASE24" "DL" 1.2
COMBOFACTOR "BASE24" "SDL" 1.2
COMBOFACTOR "BASE24" "LL" 1.6
COMBOFACTOR "BASE24" "WAN" 1.2
COMBO "BASE25" TYPE DESKIN
COMBOFACTOR "BASE25" "DL" 1.2
COMBOFACTOR "BASE25" "SDL" 1.2
COMBOFACTOR "BASE25" "LL" 1.6
COMBOFACTOR "BASE25" "WAN" 1.2
COMBO "BASE26" TYPE DESKIN
COMBOFACTOR "BASE26" "DL" 1.2
COMBOFACTOR "BASE26" "SDL" 1.2
COMBOFACTOR "BASE26" "LL" 1.6
COMBOFACTOR "BASE26" "EYYP" 1.4
COMBO "BASE27" TYPE DESKIN
COMBOFACTOR "BASE27" "DL" 1.2
COMBOFACTOR "BASE27" "SDL" 1.2
COMBOFACTOR "BASE27" "EXP" 1.4
COMBOFACTOR "BASE27" "EYYP" 1.4
COMBO "BASE28" TYPE DESKIN
COMBOFACTOR "BASE28" "DL" 1.2
COMBOFACTOR "BASE28" "SDL" 1.2
COMBOFACTOR "BASE28" "LL" 1.6
COMBOFACTOR "BASE28" "EYYP" 1.4
COMBO "BASE29" TYPE DESKIN
COMBOFACTOR "BASE29" "DL" 1.2
COMBOFACTOR "BASE29" "SDL" 1.2
COMBOFACTOR "BASE29" "LL" 1.6
COMBOFACTOR "BASE29" "EYYP" 1.4
COMBO "BASE30" TYPE DESKIN
COMBOFACTOR "BASE30" "DL" 1.2
COMBOFACTOR "BASE30" "SDL" 1.2
COMBOFACTOR "BASE30" "LL" 1.6
COMBOFACTOR "BASE30" "EYYP" 1.4
COMBO "BASE31" TYPE DESKIN
COMBOFACTOR "BASE31" "DL" 1.2
COMBOFACTOR "BASE31" "SDL" 1.2
COMBOFACTOR "BASE31" "LL" 1.6
COMBOFACTOR "BASE31" "EYYP" 1.4
COMBO "BASE32" TYPE DESKIN
COMBOFACTOR "BASE32" "DL" 1.2
COMBOFACTOR "BASE32" "SDL" 1.2
COMBOFACTOR "BASE32" "LL" 1.6
COMBOFACTOR "BASE32" "EYYP" 1.4
COMBO "BASE33" TYPE DESKIN
COMBOFACTOR "BASE33" "DL" 0.9
COMBOFACTOR "BASE33" "SDL" 0.9
COMBOFACTOR "BASE33" "EYYP" 1.4
COMBO "BASE34" TYPE DESKIN
COMBOFACTOR "BASE34" "DL" 0.9
COMBOFACTOR "BASE34" "SDL" 0.9
COMBOFACTOR "BASE34" "EYYP" 1.4
COMBO "BASE35" TYPE DESKIN
COMBOFACTOR "BASE35" "DL" 0.9
COMBOFACTOR "BASE35" "SDL" 0.9
COMBOFACTOR "BASE35" "EYYP" 1.4
COMBO "BASE36" TYPE DESKIN
COMBOFACTOR "BASE36" "DL" 0.9
COMBOFACTOR "BASE36" "SDL" 0.9
COMBOFACTOR "BASE36" "EYYP" 1.4
COMBO "BASE37" TYPE DESKIN
COMBOFACTOR "BASE37" "DL" 0.9
COMBOFACTOR "BASE37" "SDL" 0.9
COMBOFACTOR "BASE37" "EYYP" 1.4
COMBO "BASE38" TYPE DESKIN
COMBOFACTOR "BASE38" "DL" 0.9
COMBOFACTOR "BASE38" "SDL" 0.9
COMBOFACTOR "BASE38" "EYYP" 1.4
COMBO "BASE39" TYPE DESKIN
COMBOFACTOR "BASE39" "DL" 0.9
COMBOFACTOR "BASE39" "SDL" 0.9

```
COMBOFACTOR 'BASE39' 'EXN' -1.4
COMBO 'BASE40' TYPE DESIGN
COMBOFACTOR 'BASE40' 'DL' 0.9
COMBOFACTOR 'BASE40' 'SDL' 0.9
COMBOFACTOR 'BASE40' 'EYN' -1.4
$STRIP DEFINITIONS
XSTRIP '7' 0 0 325 0 325 240 0 240
XSTRIP '8' 325 0 775 0 775 240 325 240
XSTRIP '9' 775 0 1100 0 1100 240 775 240
XSTRIP '10' 0 240 325 240 325 600 0 600
XSTRIP '11' 325 240 775 240 775 600 325 600
XSTRIP '12' 775 240 1100 240 1100 600 775 600
YSTRIP '13' 0 0 325 0 325 240 0 240
YSTRIP '14' 325 0 775 0 775 240 325 240
YSTRIP '15' 775 0 1100 0 1100 240 775 240
YSTRIP '16' 0 240 325 240 325 600 0 600
YSTRIP '17' 325 240 775 240 775 600 325 600
YSTRIP '18' 775 240 1100 240 1100 600 775 600
$ GROUPS
END
$ END OF MODEL FILE
```

Lo-Lat Structure Studio

X - S T R I P R E I N F O R C I N G (for whole strip in Sq-cm)

X-STRIP STRIP STATION TOP-REBAR TOP-REBAR BOT-REBAR BOT-REBAR
ID WIDTH X-ORDINATE LEFT OF X RIGHT OF X LEFT OF X RIGHT OF X

Table with columns: ID, WIDTH, X-ORDINATE, TOP-REBAR, BOT-REBAR. Rows include data for stations 12, 11, 10, 9, 8, 7.

Lo-Lat Structure Studio

Y - S T R I P R E I N F O R C I N G (for whole strip in Sq-cm)

Y-STRIP STRIP STATION TOP-REBAR TOP-REBAR BOT-REBAR BOT-REBAR
ID WIDTH Y-ORDINATE LEFT OF Y RIGHT OF Y LEFT OF Y RIGHT OF Y

Table with columns: ID, WIDTH, Y-ORDINATE, TOP-REBAR, BOT-REBAR. Rows include data for stations 13, 16, 14, 17, 15, 18.

Lo-Lat Structure Studio

B E A M R E I N F O R C I N G (flexural in Sq-cm and shear in Sq-cm/meter)

LINE STATION(S) STATION(S) TOP-REBAR TOP-REBAR BOT-REBAR BOT-REBAR SHEAR-REBAR SHEAR-REBAR
ID X-ORDINATE Y-ORDINATE LEFT OF S RIGHT OF S LEFT OF S RIGHT OF S LEFT OF S RIGHT OF S

Table with columns: ID, X-ORDINATE, Y-ORDINATE, TOP-REBAR, BOT-REBAR, SHEAR-REBAR. Rows include data for stations B2, B4, B6, B13, B17, B21, B23.

Main table with columns: ID, WIDTH, X-ORDINATE, TOP-MOMENT, BOT-MOMENT. Rows include data for stations B21, B22, B23, B34, B36, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100.

ID	STATION	TOP-MOMENT	BOT-MOMENT	TOP-MOMENT	BOT-MOMENT	
ID	WIDTH	Y-ORDINATE	LEFT OF Y	RIGHT OF Y	LEFT OF Y	RIGHT OF Y
8	240.000	775.000	-57223.329	24027.405		
			BASE23	BASE23		
			BASE35	BASE31		
7	240.000	0.000	7737.491	17417.344		
			BASE29	BASE25		
7	240.000	60.000	-131179.558	-128911.192		
			BASE31	BASE31		
7	240.000	120.000	-187442.753	-189337.878	576.297	
			BASE31	BASE31	BASE35	
7	240.000	188.333	-193752.111	-196115.987		
			BASE31	BASE31		
7	240.000	256.667	-138252.451	-139138.758		
			BASE31	BASE31		
7	240.000	325.000	-49379.541	19906.152		
			BASE39	BASE23		

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Y-STRIP DESIGN MOMENTS

Y-STRIP STRIP STATION TOP-MOMENT TOP-MOMENT BOT-MOMENT BOT-MOMENT
ID WIDTH Y-ORDINATE LEFT OF Y RIGHT OF Y LEFT OF Y RIGHT OF Y

13	325.000	0.000	-6270.244	18281.054		
			BASE40	BASE26		
13	325.000	60.000	-141101.259	-135417.689		
			BASE32	BASE32		
13	325.000	120.000	-191083.116	-191358.043		
			BASE32	BASE32		
13	325.000	180.000	-206299.944	-207768.755		
			BASE32	BASE32		
13	325.000	240.000	-148940.201			
			BASE32			
16	325.000	240.000	-151514.932			
			BASE32			
16	325.000	300.000	-23590.428	231301.676		
			BASE23	BASE23		
16	325.000	360.000	-246189.180	-243488.570		
			BASE23	BASE23		
16	325.000	420.000	-251627.243	-252901.082		
			BASE23	BASE23		
16	325.000	480.000	-204225.963	-206303.382		
			BASE28	BASE28		
16	325.000	540.000	-136706.620	-144317.771		
			BASE28	BASE28		
16	325.000	600.000	-7339.395	21595.064		
			BASE25	BASE25		
14	450.000	0.000	-11979.207	15170.186		
			BASE30	BASE34		
14	450.000	60.000	-185467.505	-190634.547		
			BASE30	BASE30		
14	450.000	120.000	-255918.853	-263519.722		
			BASE30	BASE30		
14	450.000	180.000	-296079.421	-292990.896		
			BASE23	BASE30		
14	450.000	240.000	-229598.904			
			BASE23			
17	450.000	240.000	-227863.073			
			BASE30			
17	450.000	300.000	-342596.972	-338037.962		
			BASE23	BASE23		
17	450.000	360.000	-356247.640	-352240.506		
			BASE23	BASE23		
17	450.000	420.000	-366052.991	-364626.771		
			BASE23	BASE23		
17	450.000	480.000	-288931.662	-287253.487		
			BASE26	BASE21		
17	450.000	540.000	-196847.823	-197161.910		
			BASE23	BASE23		
17	450.000	600.000	-10895.539	12699.192		
			BASE25	BASE38		
15	325.000	0.000	-6270.244	18281.054		
			BASE38	BASE28		
15	325.000	60.000	-141101.259	-135417.689		
			BASE30	BASE30		
15	325.000	120.000	-191083.116	-191358.043		
			BASE30	BASE30		
15	325.000	180.000	-206299.944	-207768.755		
			BASE30	BASE30		
15	325.000	240.000	-148940.201			
			BASE30			
18	325.000	240.000	-151514.932			
			BASE30			
18	325.000	300.000	-23590.428	231301.676		
			BASE23	BASE23		
18	325.000	360.000	-246189.180	-243488.570		
			BASE23	BASE23		
18	325.000	420.000	-251627.243	-252901.082		
			BASE23	BASE23		
18	325.000	480.000	-204225.963	-206303.382		
			BASE26	BASE26		
18	325.000	540.000	-136706.620	-144317.771		
			BASE26	BASE26		
18	325.000	600.000	-7339.395	21595.064		
			BASE29	BASE29		

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B.E.A.M DESIGN MOMENTS & SHEARS

LINE STATION(S) STATIONS TOP-MOMENT TOP-MOMENT BOT-MOMENT BOT-MOMENT SHEAR SHEAR
ID X-ORDINATE Y-ORDINATE LEFT OF S RIGHT OF S LEFT OF S RIGHT OF S LEFT OF S RIGHT OF S

B2	0.000	0.000	0.000	335.39		
B2	60.000	0.000	-23872.854	-25683.117	0.000	335.39
B2	120.000	0.000	-36644.179	-39764.610	0.000	182.68
B2	188.333	0.000	-41386.837	-40335.396	0.000	130.50
B2	256.667	0.000	-29084.069	-28573.298	0.000	169.19
B2	325.000	0.000	-14861.214	815.339	350.76	
B4	325.000	0.000	-14763.872	4928.291	429.74	
B4	415.000	0.000	-34676.856	-35260.811	0.000	429.74
B4	505.000	0.000	-55530.292	-56386.799	0.000	225.22
B4	595.000	0.000	-56386.799	-55530.292	0.000	28.42
B4	685.000	0.000	-35260.811	-34676.856	0.000	225.22
B4	775.000	0.000	-14763.872	4928.291	429.74	
B6	775.000	0.000	-14861.214	815.339	350.76	
B6	843.333	0.000	-28573.298	-29084.069	0.000	350.76
B6	911.667	0.000	-40335.396	-41386.837	0.000	169.19
B6	980.000	0.000	-39764.610	-36644.179	0.000	130.50
B6	1040.000	0.000	-25683.117	-23872.854	0.000	182.68
B6	1100.000	0.000	0.000	335.39		
B13	0.000	0.000	-5731.198	580.477	241.34	
B13	0.000	60.000	-18188.781	-19327.836	0.000	241.34
B13	0.000	120.000	-22088.328	-25284.344	0.000	117.72
B13	0.000	180.000	-33697.587	-31839.520	0.000	263.03
B13	0.000	240.000	-28594.619	0.000	58.82	
B17	325.000	0.000	-602.694	1262.515	334.47	
B17	325.000	60.000	-20311.074	-22935.180	0.000	334.47
B17	325.000	120.000	-19822.226	-21184.674	0.000	169.35
B17	325.000	180.000	-35648.468	-33121.037	0.000	363.36
B17	325.000	240.000	-24992.773	0.000	135.47	
B21	775.000	0.000	-602.694	1262.515	334.47	
B21	775.000	60.000	-20311.074	-22935.180	0.000	334.47
B21	775.000	120.000	-19822.226	-21184.674	0.000	169.35
B21	775.000	180.000	-35648.468	-33121.037	0.000	363.36
B21	775.000	240.000	-24992.773	0.000	135.47	