Anexo 2
Análisis Estructural

Estado actual del paciente
Memorias propuesta I
Planos arquitectónicos propuesta I
Memorias propuestas II

Anexo 2
Análisis Estructural

Estado actual del paciente

1.0 ESPECIFICACIONES DE LOS MATERIALES

1.1	Concreto	F'c =	21	Mpa
1.2	Acero de Refuerzo	Fy =	420	Mpa

2.0 DESCRIPCION DE LA ESTRUCTURA

2.1	Grupo de uso	I	(importancia =1.00)
2.2	Sisterma estructural	Porticos de concreto	
2.3	Tipo de placa	Aligerada en viguetas	e=50 cm
2.4	Numero de placas	4	
2.5	Numero de unidades tipicas	1	
2.6	Tipo cimentacion	zapatas y vigas de cimentacion	
2.7	Capacidad portante	7.5 Ton / M2	

3.0 CARGAS

3.1	Carga muerta	300	kg/m2	Fachada y particiones
		110	kg/m2	Acabado de piso
		230	kg/m2	placa
3.2	Carga muerta cubierta	35	kg/m2	acabados
3.3	Carga muerta escalera	300	kg/m2	
3.4	Carga viva piso	180	kg/m2	
3.5	Carga viva escalera	500	kg/m2	
3.6	Carga viva voladizo	500	kg/m2	
3.7	Carga viva cubierta	50	kg/m2	

4.0 PREDIMENSIONAMIENTO

4.1	Piso 1	columnas	50x50 cm - 65x70 cm -80x90 cm
		vigas	50x 50 cm- 30 x50 cm- 40x50 cm
4.2	Piso 2	Columnas	50x50 cm - 65x70 cm -80x90 cm
		vigas	50x 60 cm- 30 x50 cm- 40x50 cm
4.3	Piso 3	Columnas	50x50 cm - 65x70 cm -80x90 cm
		vigas	50x 60 cm- 30 x50 cm- 40x50 cm
4.4	Piso4	Columnas	40x40 cm - 60x70 cm -60x80 cm
		vigas	50x 60 cm- 30 x50 cm- 40x50 cm
4.5	Piso 5	Columnas	40x40 cm
		vigas	30x 50 cm

5.0 FACTORES DE DISEÑO SISMICO

5.1	Localizacion	Pereira		
5.2	Zona de amenaza sismica	Alta		
5.3	Aceleracion pico efectiva	Aa=	0.25	
5.4	Velocidad pico efectiva	Av=	0.25	
5.5	Espectro	Fa=	1.60	
		Fv=	1.67	
		I=	II	
5.6	Excentricidades	Ex=	0.05	
		Ey=	0.05	
5.7	Capacidad de disipacion de energia	**DES**		
5.8	Cortante sismico en la base	2.103.568	Ton	
5.9	Coeficiente de capacidad de energia	Ro=	7.0	

6.0 GRADO DE IRREGULARIDAD DE LA ESTRUCTURA

R=Φa *Φp * Φr * R0

Φa=	0.80	irregularidad en altura
Φp=	0.90	irregularidad en planta
Φr=	0.75	Redundancia
R0=	7.00	Portico de concreto

Utilizar R = 3.78

7.0 PERIODO FUNDAMENTAL DE LA EDIFICACION

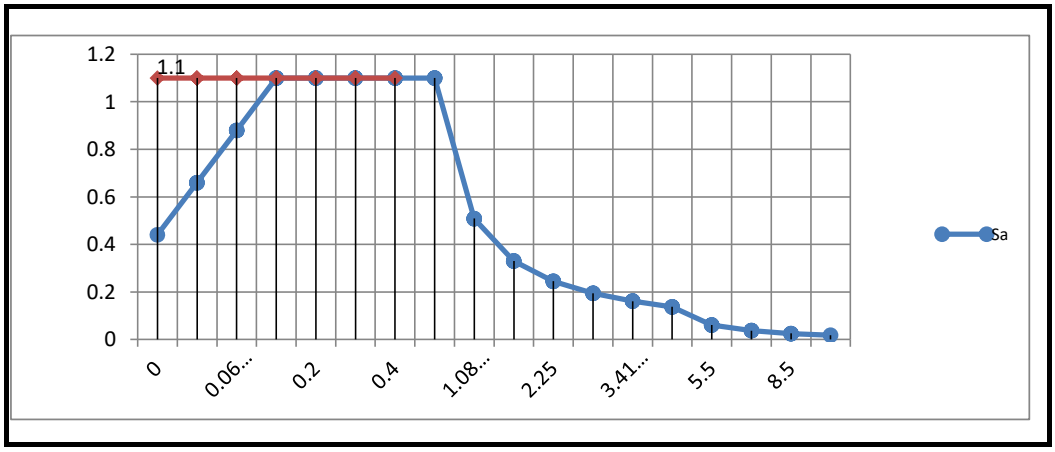
Según A.4.2.2 (NSR10) el valor del periodo puede ser igual al periodo fundamental Ta que se obtiene por medio de la siguiente ecuacion

$$T_a = C_t h^{\alpha}$$

Ct =	0.047	tabla A.4.2-1
α =	0.900	tabla A.4.2-1
h=	**17.10**	m

T_a = **0.61**

8 ESPECTRO DE DISEÑO



Entonces para el calculo de la maxima aceleracion horizontal de diseño se utiliza

Sa = 2.5.Aa.Fa.I

Sa = 1.100

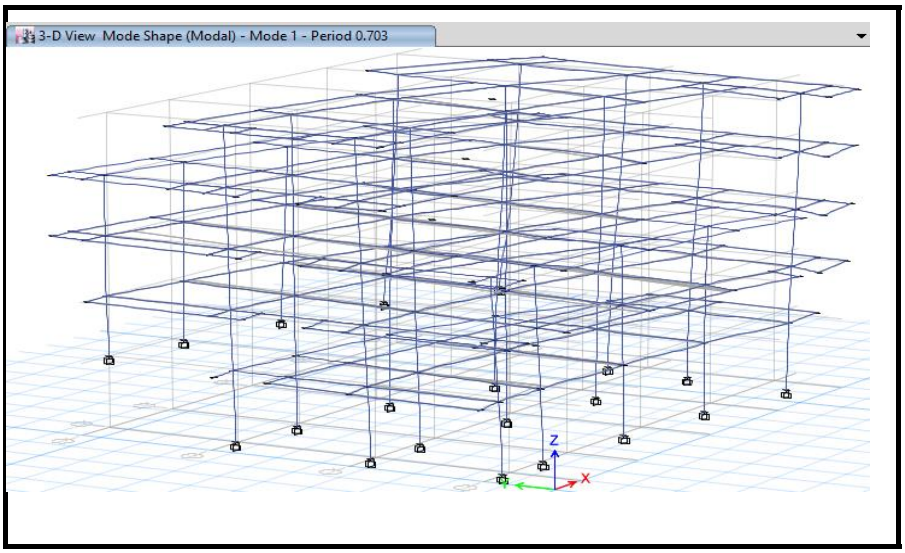
9 AJUSTE DE RE4SULTADOS

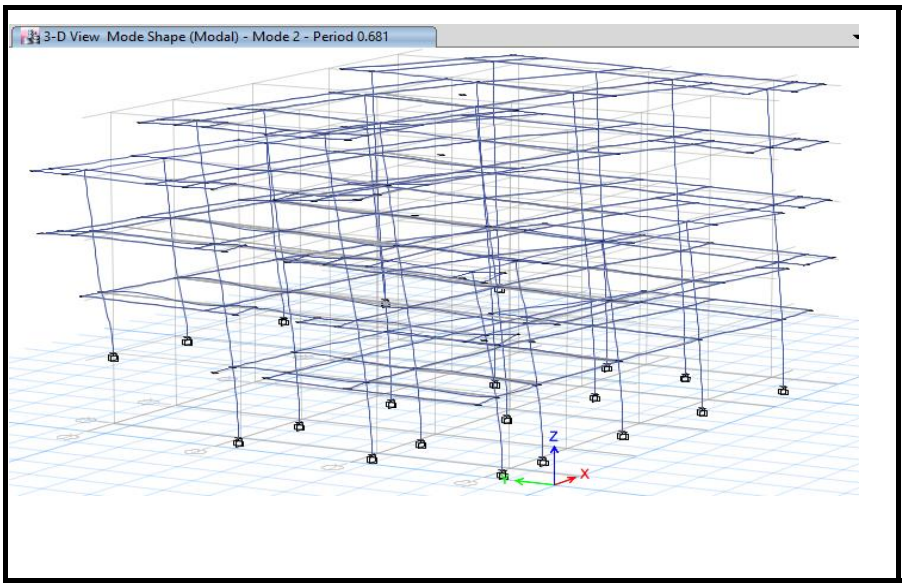
a) Según numeral A.5.4.5 (a) NSR-10: "(a) Para efectos de calcular este valor de Vs el período fundamental de la estructura obtenido en el análisis dinámico, T en segundos no debe exceder CuTa, de acuerdo con los requisitos del Capítulo A.4, y cuando se utilicen los esta razón". interacción suelo-estructura se permite utilizar el valor de Vs reducido por procedimientos de interacción suelo-estructura se permite utilizar el valor de Vs reducido por esta razón".

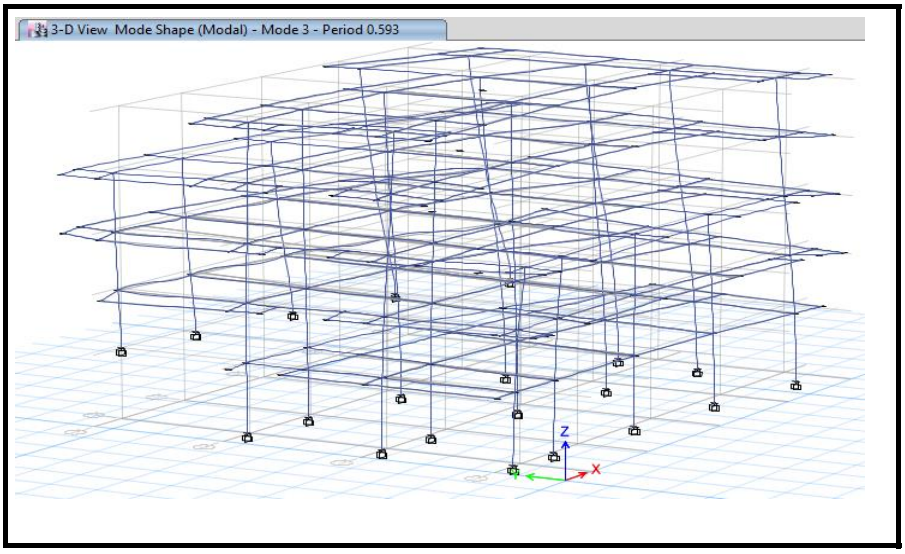
De analisis sismico de la edificacion extraemos la siguiente tabla

Table 3.10 - Modal Periods and Frequencies

Case	Mode	Period sec	Frequency cyc/sec	Circular Frequency rad/sec	Eigenvalue rad²/sec²
Modal	1	0.703	1.422	8.933	79.7981
Modal	2	0.681	1.469	9.23	85.1935
Modal	3	0.593	1.686	10.5942	112.2378
Modal	4	0.275	3.632	22.8181	520.6638
Modal	5	0.251	3.988	25.0561	627.8105
Modal	6	0.227	4.397	27.6267	763.2338
Modal	7	0.161	6.21	39.0184	1522.4363
Modal	8	0.154	6.49	40.7787	1662.8991
Modal	9	0.144	6.924	43.5071	1892.8683
Modal	10	0.136	7.354	46.2091	2135.2822
Modal	11	0.103	9.663	60.7115	3685.892
Modal	12	0.101	9.926	62.3677	3889.7312







Calculo de Cu:

Cu x Ta > T

Cu = 1.75-1.2.Av.Fv

Cu = 1.25

Cu = no debe ser menor de 1.20, entonces

Cu = 1.25

Cu x Ta = 0.76

Verificacion

Cu x Ta > T

0.756 > 0.703 " cumple"

b) Según numeral A.5.4.5 (b) NSR-10: “Cuando el valor del cortante dinámico total en la base, Vtj, obtenido después de realizar la combinación modal, para cualquiera de las direcciones de análisis, j , sea menor que el 80 por ciento para estructuras regulares, o que el 90 por ciento para estructura irregulares, del cortante sísmico en la base, Vs , calculado como se indicó en (a), todos los parámetros de la respuesta dinámica, tales como deflexiones, derivas, fuerzas en los pisos, cortantes de piso, cortante en la base y fuerzas en los elementos de la correspondiente dirección j deben multiplicarse por el siguiente factor de modificación”.

Fuerzas (Ton-m) según modelo Etabs

Base Reactions

1 de 55 Reload Apply

Load Case/Combo	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m
PESOPROPIO	0.29	1.84	1120306.37	14856986.05	-17202858.42	34.7
SOBRECARGAI...	0.55	3.44	1148135.28	15067729.22	-17641735.78	64.83
VIVA	0.59	3.67	1209741.36	15876568.06	-18573454.92	69.09
SISMOXESTAT	-2103568.09	-122.42	0	876.96	-22086428.02	29427706.16
SISMOYESTAT	-59.15	-2103969.52	7.911E-05	22089303.4	-421.89	-32429880.2
SISMOXMODAL ...	1311196.5	324320.25	0	3630305.1	13952098.77	25467411.48
SISMOYMODAL ...	324195.86	1456268.93	7.023E-05	15656123.85	3466417.8	23710395.82

$0{,}90 * \frac{Vs}{Vtj}$ Para estructuras irregulares

Entonces

Factor de correccionen X=	Vs=	2103568
	Vtj=	1311196
Factor de correccionen X=	**1.444**	
	Vs=	2103568
	Vtj=	1456268
Factor de correccionen Y=	**1.300**	

Se realiza ajuste a las combinaciones SISMOXCOR y SISMOYCOR de acuerdo a lo factores de corrección calculados, obteniendo los siguientes resultados

Base Reactions

1 de 55 | Reload Apply

Load Case/Combo	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m
PESOPROPIO	0.29	1.84	1120306.37	14856986.05	-17202858.42	34.7
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SISMOXCOR Max	1893367.75	468318.44	0	5242160.57	20146830.63	36774942.18
SISMOXCOR Min	-1893367.75	-468318.44	0	-5242160.57	-20146830.63	-36774942.18
SISMOYCOR Max	421778.81	1894605.87	9.137E-05	20368617.13	4509809.56	30847224.96
SISMOYCOR Min	-421778.81	-1894605.87	-9.137E-05	-20368617.13	-4509809.56	-30847224.96

10 VERIFICACION DERIVAS

Según los desplazamientos obtenidos con base en el modelo se verifica que las el Capítulo A.6.4.1 (NSR-10) **límites de deriva**, los cuales son:

Para el caso de la estructura en estudio la deriva máxima permitida es del 1% $(\Delta^i \max \leq 0.010\ hpi)$

a) Deriva en X. OK CUMPLE

TABLE: Story Drifts

Story	Load Case/Combo	Direction	Drift	Label	X m	Y m	Z m
Story5	DERIVA X EST	X	0.012129	9	29.65	0	17.1
Story5	DERIVA X EST	Y	0.004751	73	32.474	20.322	17.1
Story4	DERIVA X EST	X	0.012911	9	29.65	0	13.8
Story4	DERIVA X EST	Y	0.006137	9	29.65	0	13.8
Story3	DERIVA X EST	X	0.014152	9	29.65	0	10.5
Story3	DERIVA X EST	Y	0.006498	8	32.2	18.35	10.5
Story2	DERIVA X EST	X	0.018671	7	29.65	19.78	7.2
Story2	DERIVA X EST	Y	0.012646	7	29.65	19.78	7.2
Story1	DERIVA X EST	X	0.009423	23	27.6	2	3.9
Story1	DERIVA X EST	Y	0.004415	44	28.8565	12.8975	3.9

a) Deriva en Y OK CUMPLE

TABLE: Story Drifts

Story	Load Case/Combo	Direction	Drift	Label	X m	Y m	Z m
Story5	DERIVA Y EST	X	0.004051	6	22.65	22.62	17.1
Story5	DERIVA Y EST	Y	0.011837	61	0.2154	8.5	17.1
Story4	DERIVA Y EST	X	0.004911	94	0.8669	28.0018	13.8
Story4	DERIVA Y EST	Y	0.014487	61	0.2154	8.5	13.8
Story3	DERIVA Y EST	X	0.005072	3	2.4	26	10.5
Story3	DERIVA Y EST	Y	0.016949	1	0	2.05	10.5
Story2	DERIVA Y EST	X	0.006525	7	29.65	19.78	7.2
Story2	DERIVA Y EST	Y	0.022004	7	29.65	19.78	7.2
Story1	DERIVA Y EST	X	0.002992	23	27.6	2	3.9
Story1	DERIVA Y EST	Y	0.007175	44	28.8565	12.8975	3.9

PACIENTE CENTRO COMERCIAL CUBA- ESTADO ORIGINAL

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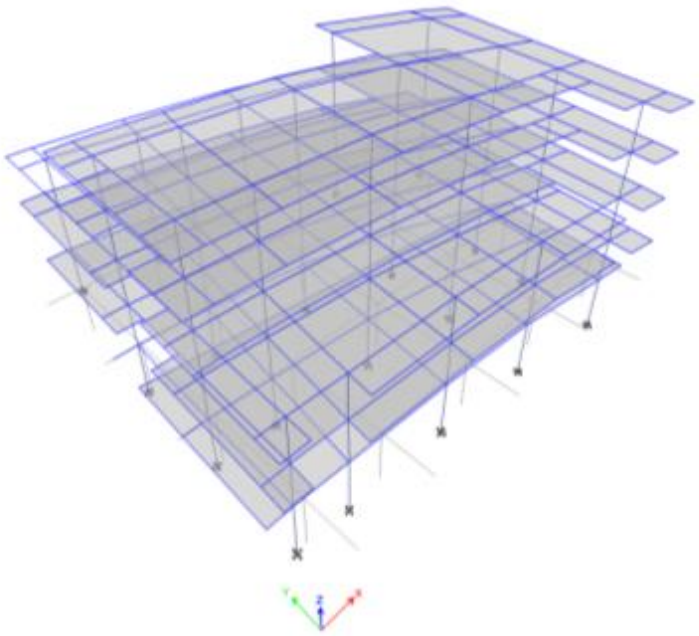
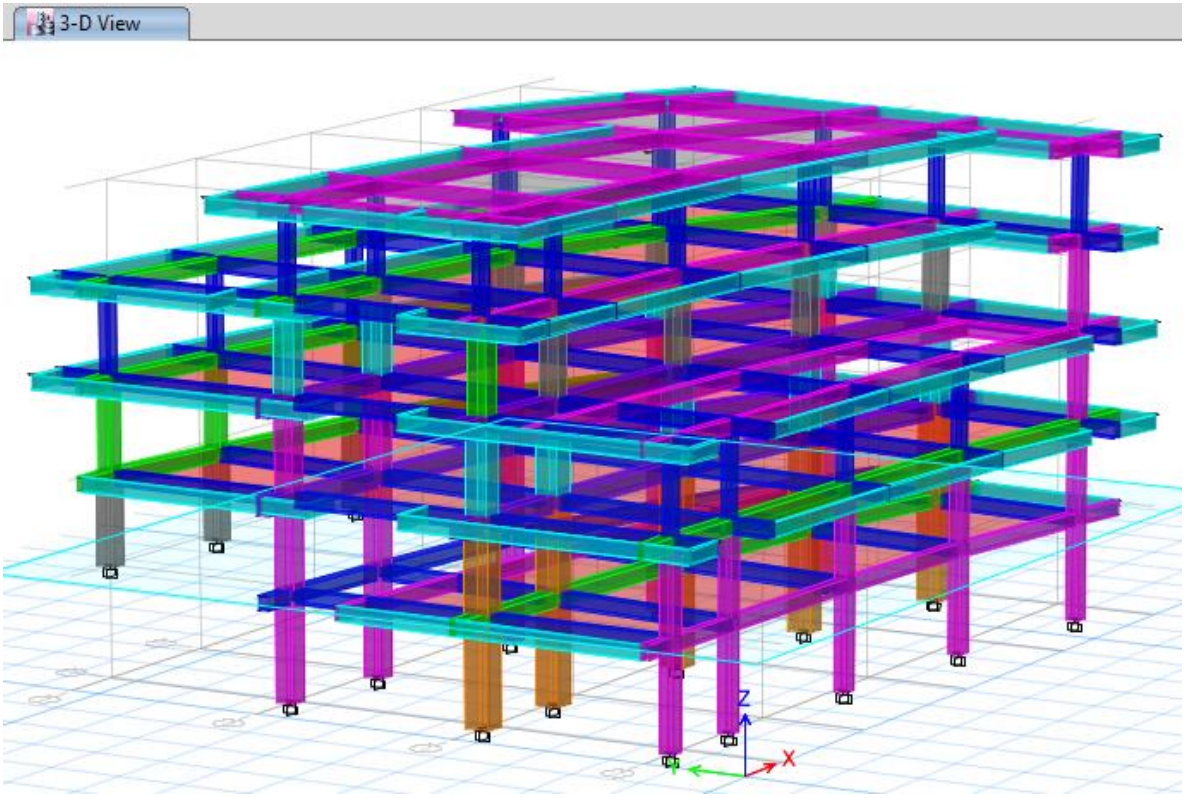
Integrated Building Design Software



Summary Report

ISOMETRIA CENTRO COMERCIAL CUBA- ESTADO ORIGINAL



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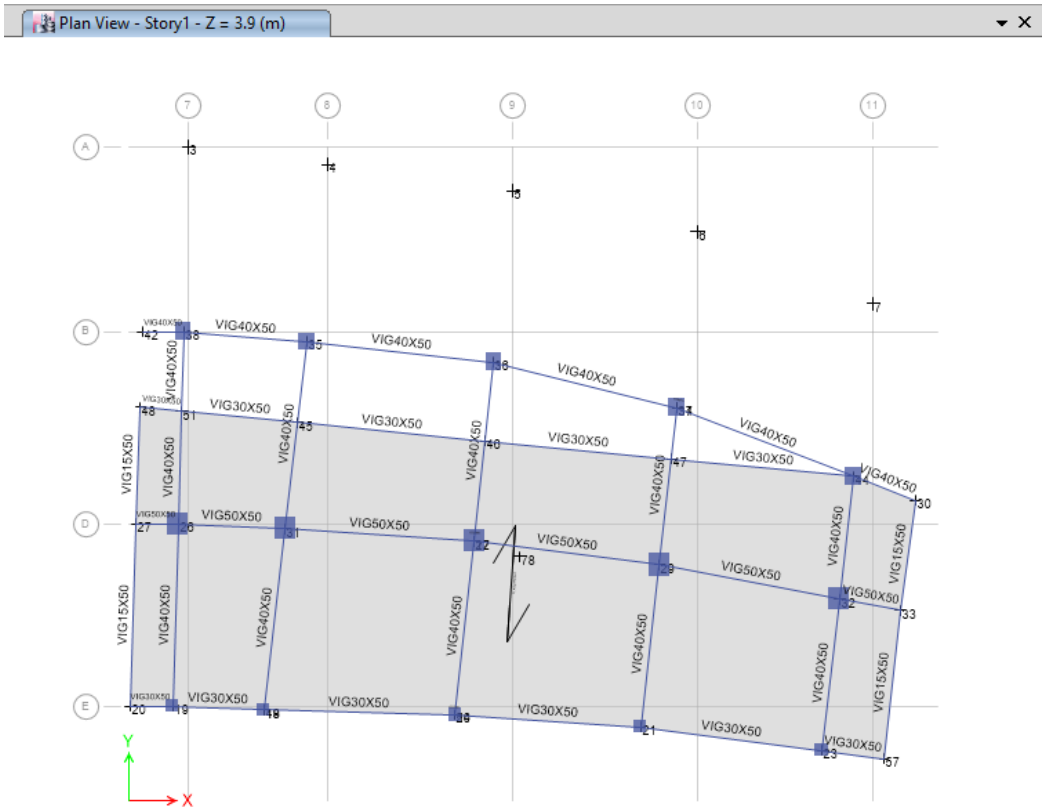
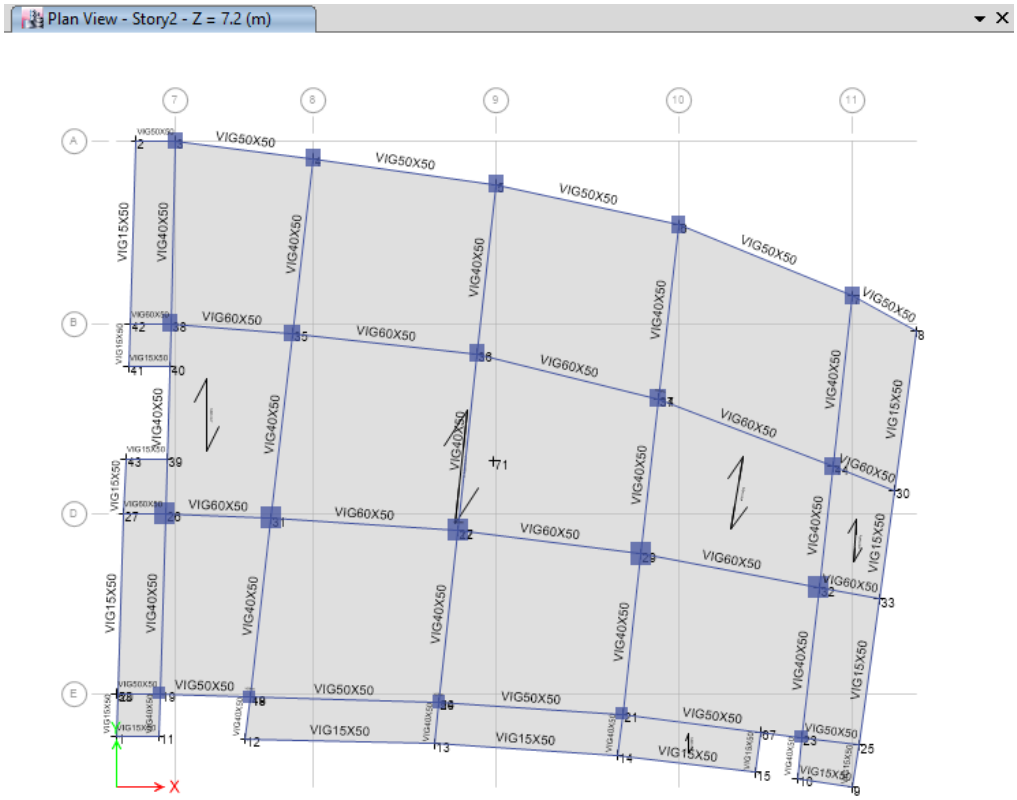
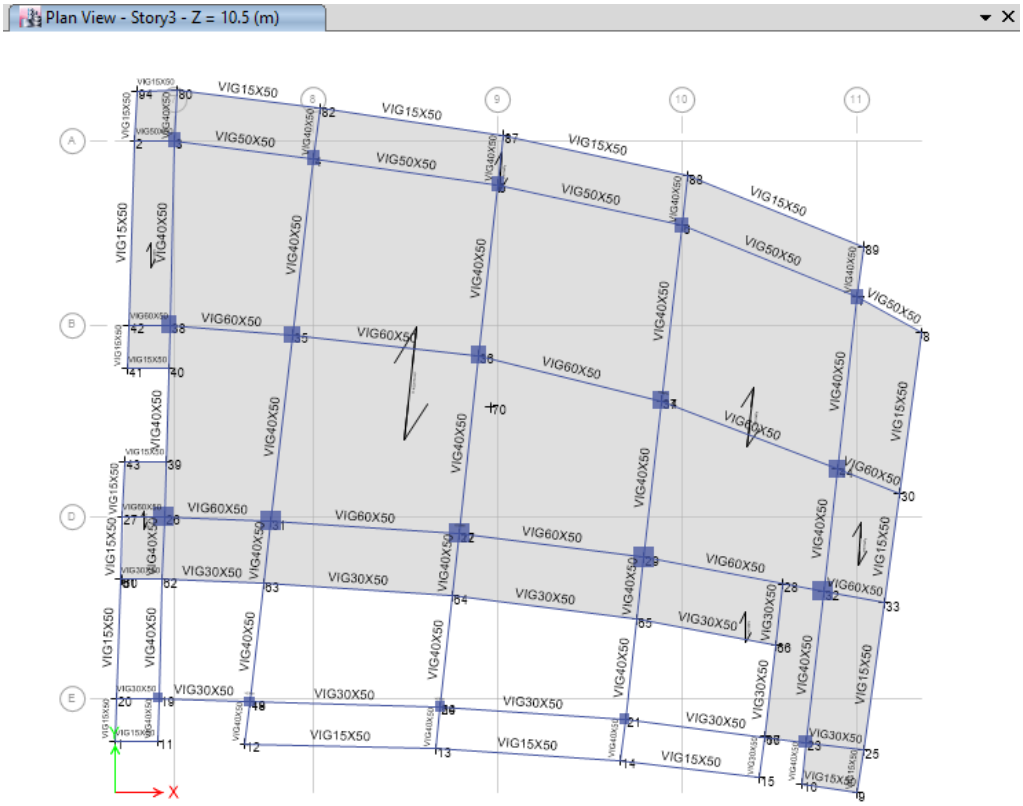

Plan View - Story1 - Z = 3.9 (m)
VIG40X50
VIG30X50
VIG50X50
VIG15X50
Y
X

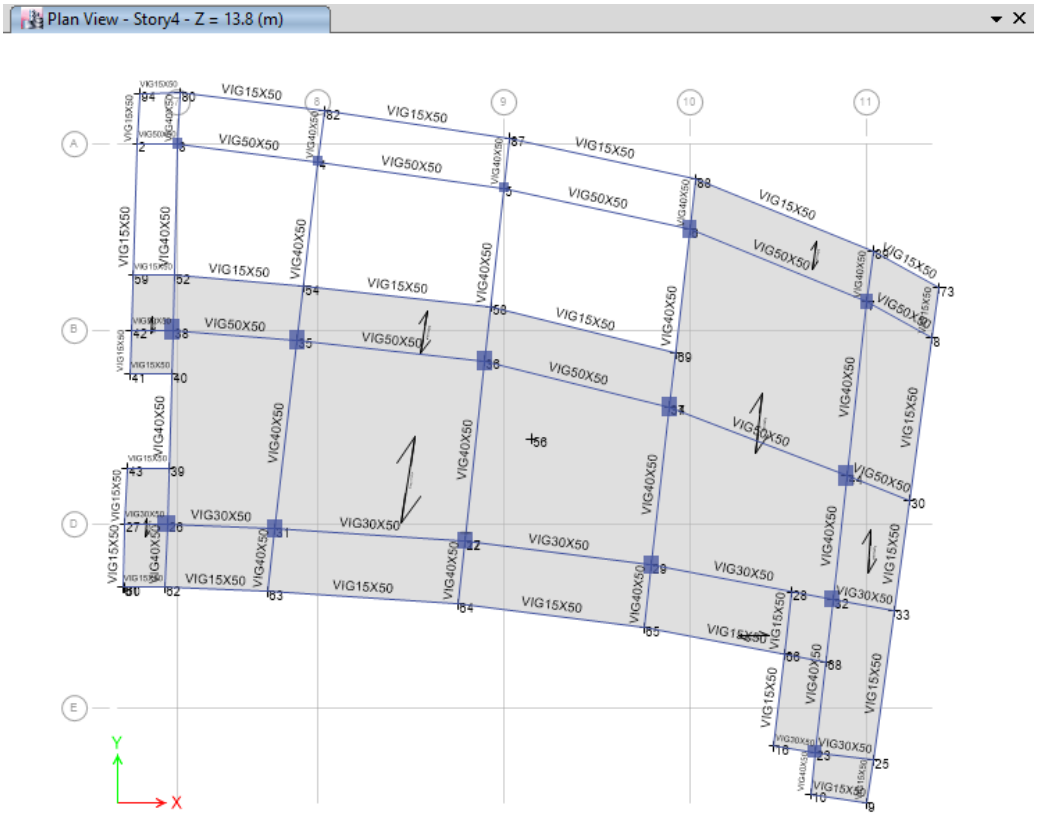
Piso 2


Plan View - Story2 - Z = 7.2 (m)
VIG50X50
VIG60X50
VIG40X50
VIG15X50
Y
X

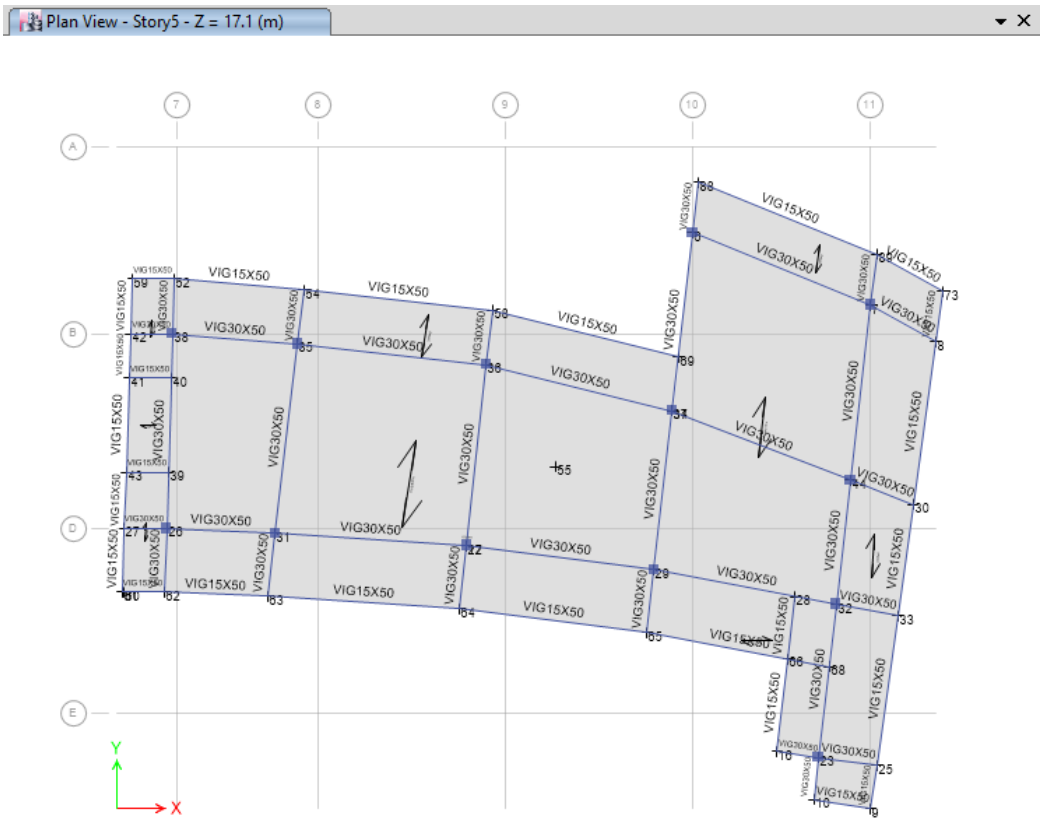
PISO 3


Plan View - Story3 - Z = 10.5 (m)
VIG15X50
VIG50X50
VIG40X50
VIG60X50
VIG30X50
A
B
D
E
8
9
10
11
X

PISO 4


Plan View - Story4 - Z = 13.8 (m)
VIG15X50
VIG50X50
VIG40X50
VIG30X50
A
B
D
E
8
9
10
11
Y
X

PISO 5



INDICE SOBRE ESFUERZO PACIENTE ORIGINAL, CENTRO COMERCIAL CUBA

TABLE: Concrete Joint Summary - ACI 318-11

Story	Label	Unique Name	Design Section	Status	B/C Major Combo	B/C Major Ratio	/C Minor Comb	3/C Minor Ratio	S Major Comb	JS Major Ratio	S Minor Comb	JS Minor Ratio	Warnings	Errors
Story5	C5	402	COL40X40	See ErrMsg/WarnMsg	COMB4	1.326	COMB4	1.594	COMB4	0.362	COMB4	0.44	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C7	403	COL40X40	See ErrMsg/WarnMsg	COMB4	1.688	COMB4	2.483	COMB4	0.466	COMB4	0.715	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C8	404	COL40X40	See ErrMsg/WarnMsg	COMB4	2.095	COMB4	2.428	COMB4	0.613	COMB4	0.73	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C9	405	COL40X40	Joint check not done.									No Message	No Message
Story5	C10	406	COL40X40	See ErrMsg/WarnMsg	COMB4	2.064	COMB4	2.275	COMB4	0.614	COMB4	0.683	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C11	407	COL40X40	See ErrMsg/WarnMsg	COMB4	2.585	COMB4	2.307	COMB4	0.782	COMB4	0.684	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C12	408	COL40X40	See ErrMsg/WarnMsg	COMB4	1.65	COMB4	2.258	COMB4	0.449	COMB4	0.624	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C13	409	COL40X40	See ErrMsg/WarnMsg	COMB4	1.803	COMB4	2.202	COMB4	0.522	COMB4	0.644	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C14	410	COL40X40	See ErrMsg/WarnMsg	COMB4	1.952	COMB4	2.032	COMB4	0.592	COMB4	0.618	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C15	411	COL40X40	No Message	COMB7	0.931			COMB4	0.429			No Message	No Message
Story5	C16	412	COL40X40	See ErrMsg/WarnMsg	COMB4	1.971	COMB4	2.424	COMB4	0.572	COMB4	0.698	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C20	416	COL40X40	See ErrMsg/WarnMsg	COMB4	1.048	COMB4	1.906	COMB4	0.374	COMB4	0.683	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story5	C21	417	COL40X40	See ErrMsg/WarnMsg	COMB4	2.065	COMB4	2.648	COMB4	0.609	COMB4	0.776	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C5	350	COL50X50	See ErrMsg/WarnMsg	COMB6	0.967	COMB4	1.905	COMB4	1.101	COMB4	1.977	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story4	C7	352	COL70X70	See ErrMsg/WarnMsg	COMB6	0.783	COMB4	1.379	COMB6	0.571	COMB4	1.17	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story4	C8	353	COL60X70	See ErrMsg/WarnMsg	COMB4	1.053	COMB4	1.053	COMB4	1.275	COMB4	1.462	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C9	354	COL60X70	Joint check not done.									No Message	No Message
Story4	C10	355	COL60X70	See ErrMsg/WarnMsg	COMB4	1.006	COMB4	1.107	COMB4	1.259	COMB4	1.573	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C11	356	COL60X70	See ErrMsg/WarnMsg	COMB6	1.066	COMB4	1.189	COMB4	1.215	COMB4	1.647	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C12	361	COL60X80	See ErrMsg/WarnMsg	COMB4	1.403	COMB4	1.211	COMB4	1.182	COMB4	1.345	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C13	362	COL60X80	See ErrMsg/WarnMsg	COMB4	1.358	COMB4	1.076	COMB4	1.281	COMB4	1.331	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C14	363	COL60X80	See ErrMsg/WarnMsg	COMB4	1.303	COMB4	1.027	COMB4	1.325	COMB4	1.358	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C15	364	COL60X80	No Message	COMB7	0.789			COMB7	0.668			No Message	No Message
Story4	C16	365	COL60X80	See ErrMsg/WarnMsg	COMB4	1.368	COMB4	1.521	COMB4	1.22	COMB4	1.784	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C17	378	COL40X40	See ErrMsg/WarnMsg	COMB4	8.069	COMB4	8.215	COMB4	2.363	COMB4	2.472	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C18	390	COL40X40	See ErrMsg/WarnMsg	COMB4	8.593	COMB4	8.551	COMB4	2.537	COMB4	2.583	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C19	392	COL40X40	See ErrMsg/WarnMsg	COMB4	8.121	COMB4	8.577	COMB4	2.507	COMB4	2.709	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C20	394	COL60X70	See ErrMsg/WarnMsg	COMB4	1.471	COMB4	1.528	COMB4	1.514	COMB4	1.863	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story4	C21	396	COL50X60	See ErrMsg/WarnMsg	COMB4	1.874	COMB4	2.201	COMB4	1.207	COMB4	1.72	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story3	C1	209	COL40X40	See ErrMsg/WarnMsg	COMB4	2.509	COMB4	7.751	COMB4	0.688	COMB4	2.306	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story3	C2	210	COL40X40	See ErrMsg/WarnMsg	COMB4	2.547			COMB4	1.039			Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story3	C3	211	COL40X40	See ErrMsg/WarnMsg	COMB4	1.996			COMB4	0.893			Beam/Column capacity ratio exceeds limit	No Message
Story3	C4	212	COL40X40	See ErrMsg/WarnMsg	COMB4	3.163	COMB4	7.068	COMB4	0.983	COMB4	2.35	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story3	C5	213	COL50X50	See ErrMsg/WarnMsg	COMB7	0.875	COMB4	1.447	COMB4	1.446	COMB4	2.221	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story3	C7	214	COL80X80	See ErrMsg/WarnMsg	COMB4	1.015	COMB6	0.724	COMB4	1.212	COMB6	0.983	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story3	C8	215	COL80X80	Joint check not done.									No Message	No Message
Story3	C9	216	COL80X80	Joint check not done.									No Message	No Message
Story3	C10	217	COL80X80	Joint check not done.									No Message	No Message
Story3	C11	218	COL80X80	See ErrMsg/WarnMsg	COMB6	0.917	COMB6	0.801	COMB4	1.163	COMB4	1.148	Joint shear ratio exceeds limitJoint shear ratio exceeds lin	No Message
Story3	C12	219	COL65X70	See ErrMsg/WarnMsg	COMB4	1.13	COMB6	0.898	COMB4	1.468	COMB4	1.565	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story3	C13	220	COL65X70	See ErrMsg/WarnMsg	COMB4	1.214	COMB6	0.838	COMB4	1.938	COMB4	1.598	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story3	C14	221	COL65X70	See ErrMsg/WarnMsg	COMB4	1.059	COMB7	0.813	COMB4	1.824	COMB4	1.616	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story3	C15	222	COL65X70	Joint check not done.									No Message	No Message
Story3	C16	223	COL65X70	See ErrMsg/WarnMsg	COMB4	1.068	COMB4	1.049	COMB4	1.58	COMB4	2.106	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story3	C17	224	COL50X60	See ErrMsg/WarnMsg	COMB4	2.037	COMB4	1.81	COMB4	1.296	COMB4	1.376	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story3	C18	225	COL50X60	See ErrMsg/WarnMsg	COMB4	2.3	COMB4	1.655	COMB4	1.766	COMB4	1.449	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story3	C19	226	COL50X60	See ErrMsg/WarnMsg	COMB4	2.428	COMB4	1.66	COMB4	1.955	COMB4	1.539	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story3	C20	227	COL50X60	See ErrMsg/WarnMsg	COMB4	1.256	COMB4	1.038	COMB4	1.62	COMB4	1.522	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story3	C21	228	COL50X60	See ErrMsg/WarnMsg	COMB4	1.273	COMB4	1.413	COMB4	1.257	COMB4	1.741	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story2	C1	135	COL50X50	See ErrMsg/WarnMsg	COMB4	2.465	COMB4	2.067	COMB4	1.738	COMB4	1.496	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story2	C2	136	COL50X50	See ErrMsg/WarnMsg	COMB4	1.826			COMB4	2.136			Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story2	C3	137	COL50X50	See ErrMsg/WarnMsg	COMB4	1.89			COMB4	2.523			Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story2	C4	138	COL50X50	Joint check not done.									No Message	No Message
Story2	C5	139	COL50X50	See ErrMsg/WarnMsg	COMB4	1.351	COMB4	1.367	COMB4	1.696	COMB4	1.705	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story2	C7	140	COL80X90	See ErrMsg/WarnMsg	COMB6	0.888	COMB6	0.52	COMB4	1.035	COMB4	0.85	Joint shear ratio exceeds limit	No Message
Story2	C8	141	COL80X90	See ErrMsg/WarnMsg	COMB6	0.949	COMB6	0.467	COMB4	1.411	COMB4	0.889	Joint shear ratio exceeds limit	No Message
Story2	C9	142	COL80X90	Joint check not done.									No Message	No Message
Story2	C10	143	COL80X90	See ErrMsg/WarnMsg	COMB7	0.652	COMB7	0.496	COMB4	1.095	COMB4	1.005	Joint shear ratio exceeds limitJoint shear ratio exceeds lin	No Message
Story2	C11	144	COL80X90	No Message	COMB6	0.661	COMB6	0.547	COMB4	0.991	COMB4	0.989	No Message	No Message
Story2	C12	145	COL65X70	See ErrMsg/WarnMsg	COMB6	1.167	COMB6	0.907	COMB4	1.388	COMB4	1.515	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story2	C13	146	COL65X70	See ErrMsg/WarnMsg	COMB6	1.121	COMB6	0.765	COMB4	1.663	COMB4	1.499	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story2	C14	147	COL65X70	See ErrMsg/WarnMsg	COMB6	1.059	COMB7	0.757	COMB4	1.754	COMB4	1.582	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story2	C15	148	COL65X70	Joint check not done.									No Message	No Message
Story2	C16	149	COL65X70	See ErrMsg/WarnMsg	COMB6	1.068	COMB6	1.153	COMB4	1.531	COMB4	2.088	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story2	C17	150	COL60X70	See ErrMsg/WarnMsg	COMB4	1.368	COMB6	0.78	COMB4	1.964	COMB4	1.088	Beam/Column capacity ratio exceeds limitJoint shear ratio	No Message
Story2	C18	151	COL60X70	Joint check not done.									No Message	No Message
Story2	C19	152	COL60X70	Joint check not done.									No Message	No Message
Story2	C20	153	COL60X70	Joint check not done.									No Message	No Message
Story2	C21	154	COL60X70	See ErrMsg/WarnMsg	COMB6	1.155	COMB6	1.014	COMB4	1.694	COMB4	1.665	Beam/Column capacity ratio exceeds limitBeam/Column (	No Message
Story1	C1	8	COL50X50	See ErrMsg/WarnMsg	COMB6	0.866	COMB6	0.894	COMB4	1.235	COMB4	1.447	Joint shear ratio exceeds limitJoint shear ratio exceeds lin	No Message
Story1	C2	32	COL50X50	No Message	COMB6	0.336			COMB4	0.551			No Message	No Message
Story1	C3	42	COL50X50	Joint check not done.									No Message	No Message
Story1	C4	60	COL50X50	See ErrMsg/WarnMsg	COMB7	0.957	COMB7	0.767	COMB4	1.9	COMB4	1.554	Joint shear ratio exceeds limitJoint shear ratio exceeds lin	No Message
Story1	C5	62	COL50X50	See ErrMsg/WarnMsg	COMB7	0.793	COMB7	0.83	COMB4	1.49	COMB4	1.584	Joint shear ratio exceeds limitJoint shear ratio exceeds lin	No Message
Story1	C7	64	COL80X90	No Message	COMB6	0.575	COMB6	0.407	COMB4	0.861	COMB4	0.723	No Message	No Message
Story1	C8	65	COL80X90	See ErrMsg/WarnMsg	COMB6	0.562	COMB6	0.343	COMB4	1.073	COMB4	0.752	Joint shear ratio exceeds limit	No Message
Story1	C9	66	COL80X90	Joint check not done.									No Message	No Message
Story1	C10	67	COL80X90	No Message	COMB7	0.43	COMB7	0.335	COMB4	0.971	COMB4	0.838	No Message	No Message
Story1	C11	68	COL80X90	No Message	COMB6	0.452	COMB6	0.402	COMB4	0.887	COMB4	0.888	No Message	No Message
Story1	C12	69	COL65X70	See ErrMsg/WarnMsg	COMB6	0.76	COMB6	0.462	COMB4	1.219	COMB4	0.839	Joint shear ratio exceeds limit	No Message
Story1	C13	70	COL65X70	See ErrMsg/WarnMsg	COMB6	0.654	COMB6	0.402	COMB4	1.285	COMB4	0.891	Joint shear ratio exceeds limit	No Message
Story1	C14	71	COL65X70	See ErrMsg/WarnMsg	COMB7	0.586	COMB7	0.414	COMB4	1.268	COMB4	1.005	Joint shear ratio exceeds limitJoint shear ratio exceeds lin	No Message
Story1	C15	72	COL65X70	Joint check not done.									No Message	No Message
Story1	C16	73	COL65X70	See ErrMsg/WarnMsg	COMB6	0.842	COMB6	0.587	COMB4	1.555	COMB4	1.221	Joint shear ratio exceeds limitJoint shear ratio exceeds lin	No Message

Anexo 2
Análisis Estructural

Memorias propuesta I

1.0 ESPECIFICACIONES DE LOS MATERIALES

1.1	Concreto	F'c =	21	Mpa
1.2	Acero de Refuerzo	Fy =	420	Mpa

2.0 DESCRIPCION DE LA ESTRUCTURA

2.1	Grupo de uso	II	
2.2	Sisterma estructural	Porticos de concreto	
2.3	Tipo de placa	Aligerada en viguetas	e=50 cm
2.4	Numero de placas	4	
2.5	Numero de unidades tipicas	1	
2.6	Tipo cimentacion	zapatas y vigas de cimentacion	
2.7	Capacidad portante	7.5 Ton / M2	

3.0 CARGAS

3.1	Carga muerta	300	kg/m2	Fachada y particiones
		110	kg/m2	Acabado de piso
		230	kg/m2	placa
3.2	Carga muerta cubierta	35	kg/m2	acabados
3.3	Carga muerta escalera	300	kg/m2	
3.4	Carga viva piso	180	kg/m2	
3.5	Carga viva escalera	500	kg/m2	
3.6	Carga viva voladizo	500	kg/m2	
3.7	Carga viva cubierta	50	kg/m2	

4.0 PREDIMENSIONAMIENTO

4.1	Piso 1	columnas	80x90 cm
		vigas	50x 50 cm- 40x50 cm
4.2	Piso 2	Columnas	60x70 cm -80x90 cm
		vigas	50x 60 cm- 30 x50 cm- 40x50 cm
4.3	Piso 3	Columnas	60x70 cm -80x90 cm
		vigas	50x 60 cm- 30 x50 cm- 40x50 cm
4.4	Piso4	Columnas	60x70 cm -60x80 cm
		vigas	50x 60 cm- 30 x50 cm- 40x50 cm
4.5	Piso 5	Columnas	50x50 cm
		vigas	30x 50 cm

5.0 FACTORES DE DISEÑO SISMICO

5.1	Localizacion	Pereira		
5.2	Zona de amenaza sismica	Alta		
5.3	Aceleracion pico efectiva	Aa=	0.25	
5.4	Velocidad pico efectiva	Av=	0.25	
5.5	Espectro	Fa=	1.60	
		Fv=	1.67	
		I=	II	
5.6	Excentricidades	Ex=	0.05	
		Ey=	0.05	
5.7	Capacidad de disipacion de energia	**DES**		
5.8	Cortante sismico en la base	2248474	Ton	
5.9	Coeficiente de capacidad de energia	Ro=	7.0	

6.0 GRADO DE IRREGULARIDAD DE LA ESTRUCTURA

R=Φa *Φp * Φr * R0

Φa=	0.80	irregularidad en altura
Φp=	0.90	irregularidad en planta
Φr=	0.75	Redundancia
R0=	7.00	Portico de concreto

Utilizar R = 3.78

7.0 PERIODO FUNDAMENTAL DE LA EDIFICACION

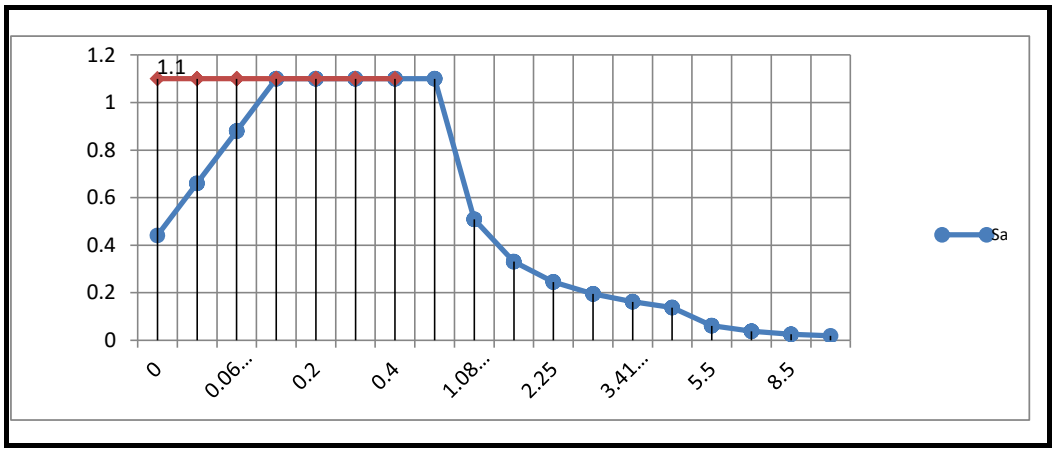
Según A.4.2.2 (NSR10) el valor del periodo puede ser igual al periodo fundamental Ta que se obtiene por medio de la siguiente ecuacion

$$T_a = C_t h^{\alpha}$$

Ct =	0.047	tabla A.4.2-1
α =	0.900	tabla A.4.2-1
h=	**17.10**	m

T_a = **0.61**

8 ESPECTRO DE DISEÑO



Entonces para el calculo de la maxima aceleracion horizontal de diseño se utiliza

Sa = 2.5.Aa.Fa.I

Sa = 1.100

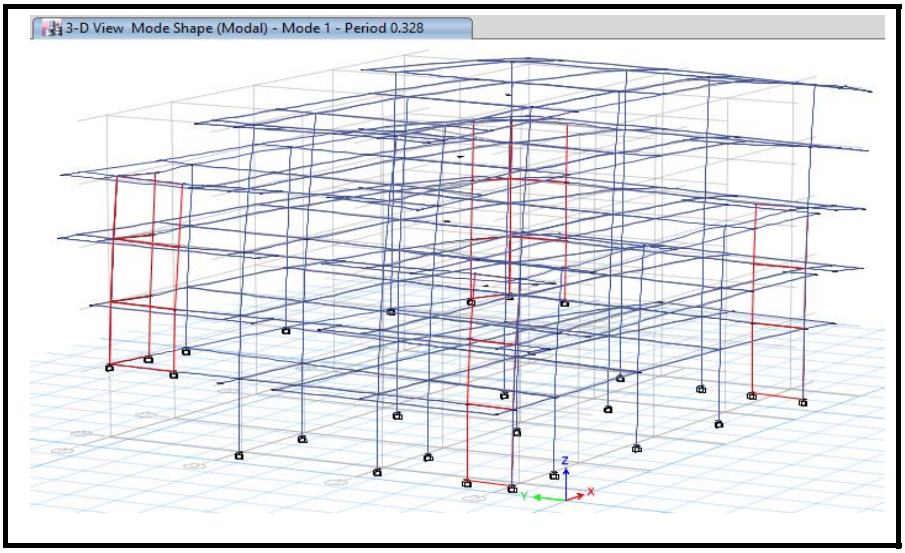
9 AJUSTE DE RE4SULTADOS

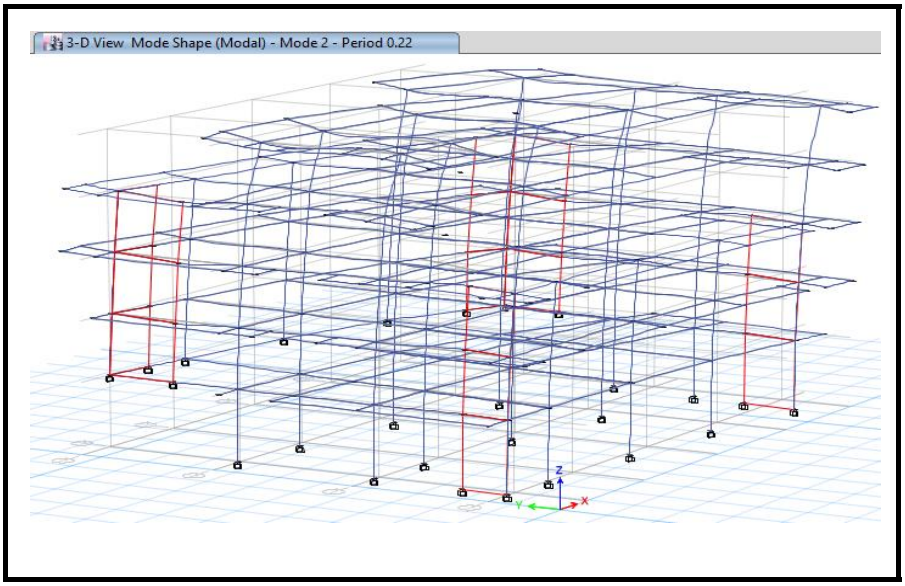
a) Según numeral A.5.4.5 (a) NSR-10: "(a) Para efectos de calcular este valor de Vs el período fundamental de la estructura obtenido en el análisis dinámico, T en segundos no debe exceder CuTa, de acuerdo con los requisitos del Capítulo A.4, y cuando se utilicen los esta razón". interacción suelo-estructura se permite utilizar el valor de Vs reducido por procedimientos de interacción suelo-estructura se permite utilizar el valor de Vs reducido por esta razón".

De analisis sismico de la edificacion extraemos la siguiente tabla

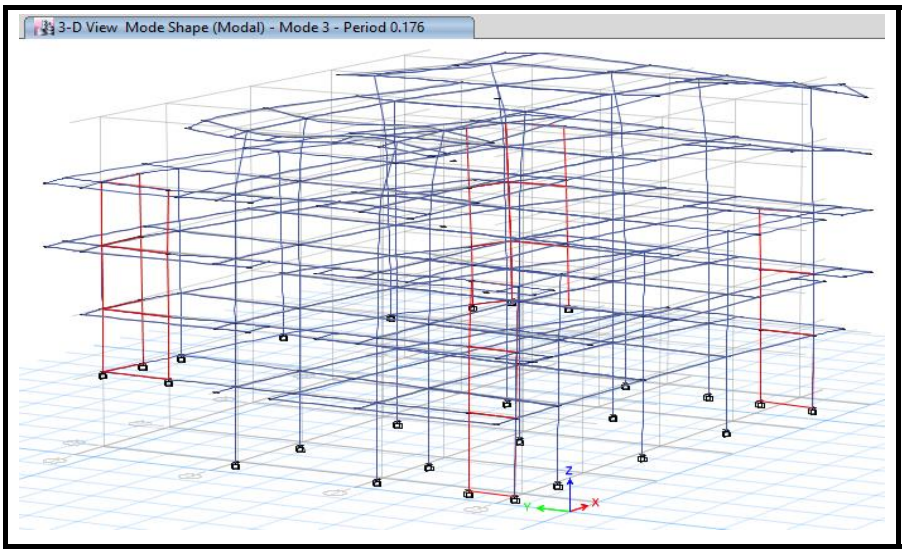
Table 3.10 - Modal Periods and Frequencies

Case	Mode	Period sec	Frequency cyc/sec	Circular Frequency rad/sec	Eigenvalue rad²/sec²
Modal	1	0.328	3.053	19.1833	368.0007
Modal	2	0.22	4.548	28.5785	816.7308
Modal	3	0.176	5.678	35.6763	1272.8008
Modal	4	0.144	6.932	43.5558	1897.1107
Modal	5	0.125	8.013	50.3442	2534.5409
Modal	6	0.116	8.63	54.225	2940.3458
Modal	7	0.11	9.131	57.3692	3291.2255
Modal	8	0.088	11.374	71.4628	5106.9289
Modal	9	0.085	11.806	74.1805	5502.7394
Modal	10	0.076	13.095	82.2776	6769.6022
Modal	11	0.064	15.533	97.5941	9524.6074
Modal	12	0.06	16.664	104.7036	10962.84
Modal	13	0.053	18.703	117.5129	13809.2782
Modal	14	0.053	18.827	118.2926	13993.15
Modal	15	0.041	24.102	151.4342	22932.3245





Elaboracion propia



Calculo de Cu:

Cu x Ta > T

Cu = 1.75-1.2.Av.Fv

Cu = 1.25

Cu = no debe ser menor de 1.20, entonces

Cu = 1.25

Cu x Ta = 0.76

Verificacion

Cu x Ta > T

0.756 > 0.328 " cumple"

b) Según numeral A.5.4.5 (b) NSR-10: “Cuando el valor del cortante dinámico total en la base, Vtj, obtenido después de realizar la combinación modal, para cualquiera de las direcciones de análisis, j , sea menor que el 80 por ciento para estructuras regulares, o que el 90 por ciento para estructura irregulares, del cortante sísmico en la base, Vs , calculado como se indicó en (a), todos los parámetros de la respuesta dinámica, tales como deflexiones, derivas, fuerzas en los pisos, cortantes de piso, cortante en la base y fuerzas en los elementos de la correspondiente dirección j deben multiplicarse por el siguiente factor de modificación”.

Fuerzas (Ton-m) según modelo Etabs

Base Reactions

1 de 55 Reload Apply

Load Case/Combo	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m
PESOPROPIO	0	0	1390017.34	18819899.04	-21394844.42	0
SOBRECARGAI...	0	0	712501.82	9658744.72	-10978247.32	0
VIVA	0	0	823927.57	11178238.9	-12509117.11	5.511E-05
SISMOXESTAT	-2248474.35	-0.0004682	0	0.003403	-23722860.95	31963496.41
SISMOYESTAT	-0.0001678	-2248474.35	0	23722860.95	-0.001225	-35335682.5
SISMOXMODAL ...	1357060.73	70300.54	0	565442.1	15021320.73	18524678.08
SISMOYMODAL ...	70300.54	1298771.28	0	14692793.09	607018.33	22689628.77

$0{,}90 * \frac{Vs}{Vtj}$ Para estructuras irregulares

Entonces

Factor de correccionen X=	Vs=	2248474
	Vtj=	1357060
Factor de correccionen X=	**1.491**	
	Vs=	2248474
	Vtj=	1298771
Factor de correccionen Y=	**1.558**	

Se realiza ajuste a las combinaciones SISMOXCOR y SISMOYCOR de acuerdo a lo factores de corrección calculados, obteniendo los siguientes resultados

Base Reactions

1 de 55 Reload Apply

Load Case/Combo	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m
PESOPROPIO	0	0	1390017.34	18819899.04	-21394844.42	0
SOBRECARGAI...	0	0	712501.82	9658744.72	-10978247.32	0
VIVA	0	0	823927.57	11178238.9	-12509117.11	5.511E-05
SISMOXESTAT	-2248474.35	-0.0004682	0	0.003403	-23722860.95	31963496.41
SISMOYESTAT	-0.0001678	-2248474.35	0	23722860.95	-0.001225	-35335682.5
SISMOXMODAL ...	1357060.73	70300.54	0	565442.1	15021320.73	18524678.08
SISMOXCOR Max	2024734.61	104888.4	0	843639.61	22411810.53	27638819.69
SISMOXCOR Min	-2024734.61	-104888.4	0	-843639.61	-22411810.53	-27638819.69
SISMOYCOR Max	109598.54	2024784.42	0	22906064.43	946341.57	35373131.25
SISMOYCOR Min	-109598.54	-2024784.42	0	-22906064.43	-946341.57	-35373131.25

10 VERIFICACION DERIVAS

Según los desplazamientos obtenidos con base en el modelo se verifica que las el Capítulo A.6.4.1 (NSR-10) **límites de deriva**, los cuales son:

Para el caso de la estructura en estudio la deriva máxima permitida es del 1% $(\Delta^i \max \leq 0.010\ hpi)$

a) Deriva en X. OK CUMPLE

TABLE: Story Drifts

Story	Load Case/Combo	Direction	Drift	Label	X m	Y m	Z m
Story5	DERIVA X EST	X	0.008747	9	29.65	0	17.1
Story5	DERIVA X EST	Y	0.002568	73	32.474	20.322	17.1
Story4	DERIVA X EST	X	0.007251	9	29.65	0	13.8
Story4	DERIVA X EST	Y	0.002228	9	29.65	0	13.8
Story3	DERIVA X EST	X	0.005951	9	29.65	0	10.5
Story3	DERIVA X EST	Y	0.001878	8	32.2	18.35	10.5
Story2	DERIVA X EST	X	0.003401	70	29.2533	16.3387	7.2
Story2	DERIVA X EST	Y	0.001528	7	29.65	19.78	7.2
Story1	DERIVA X EST	X	0.001161	23	27.6	2	3.9

a) Deriva en Y OK CUMPLE

TABLE: Story Drifts

Story	Load Case/Combo	Direction	Drift	Label	X m	Y m	Z m
Story5	DERIVA Y EST	X	0.002456	9	29.65	0	17.1
Story5	DERIVA Y EST	Y	0.004517	22	13.77	10.33	17.1
Story4	DERIVA Y EST	X	0.002138	9	29.65	0	13.8
Story4	DERIVA Y EST	Y	0.002879	9	29.65	0	13.8
Story3	DERIVA Y EST	X	0.001686	9	29.65	0	10.5
Story3	DERIVA Y EST	Y	0.002402	8	32.2	18.35	10.5
Story2	DERIVA Y EST	X	0.001066	70	29.2533	16.3387	7.2
Story2	DERIVA Y EST	Y	0.001811	7	29.65	19.78	7.2
Story1	DERIVA Y EST	X	0.000349	23	27.6	2	3.9
Story1	DERIVA Y EST	Y	0.000364	44	28.8565	12.8975	3.9

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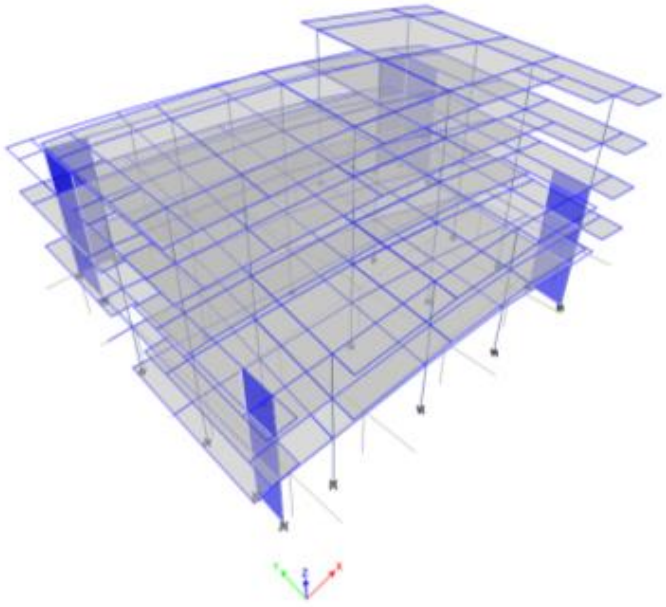
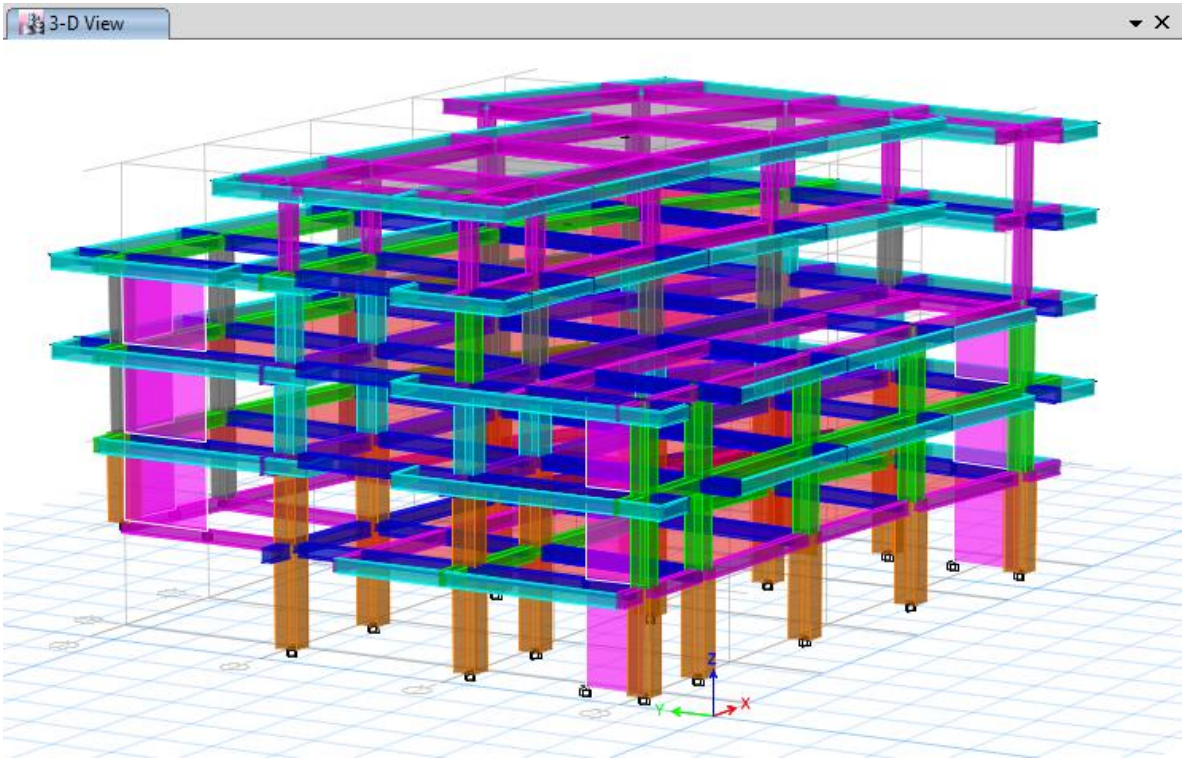


Summary Report

ISOMETRIA



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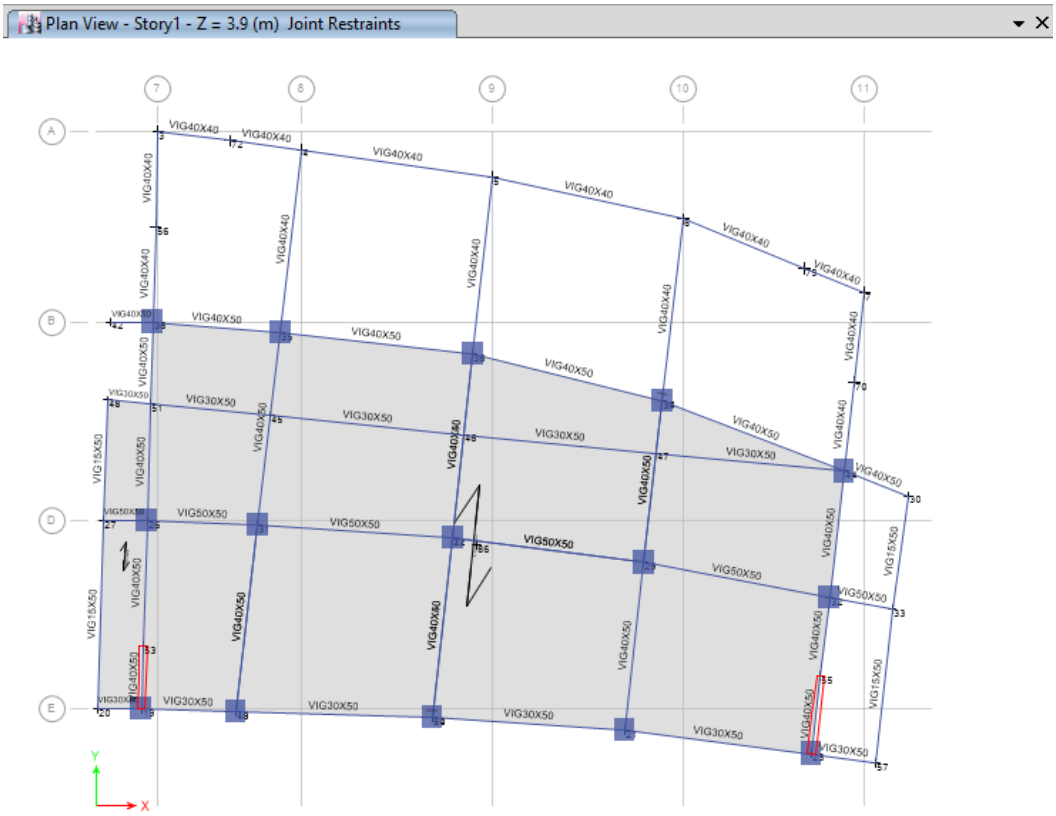
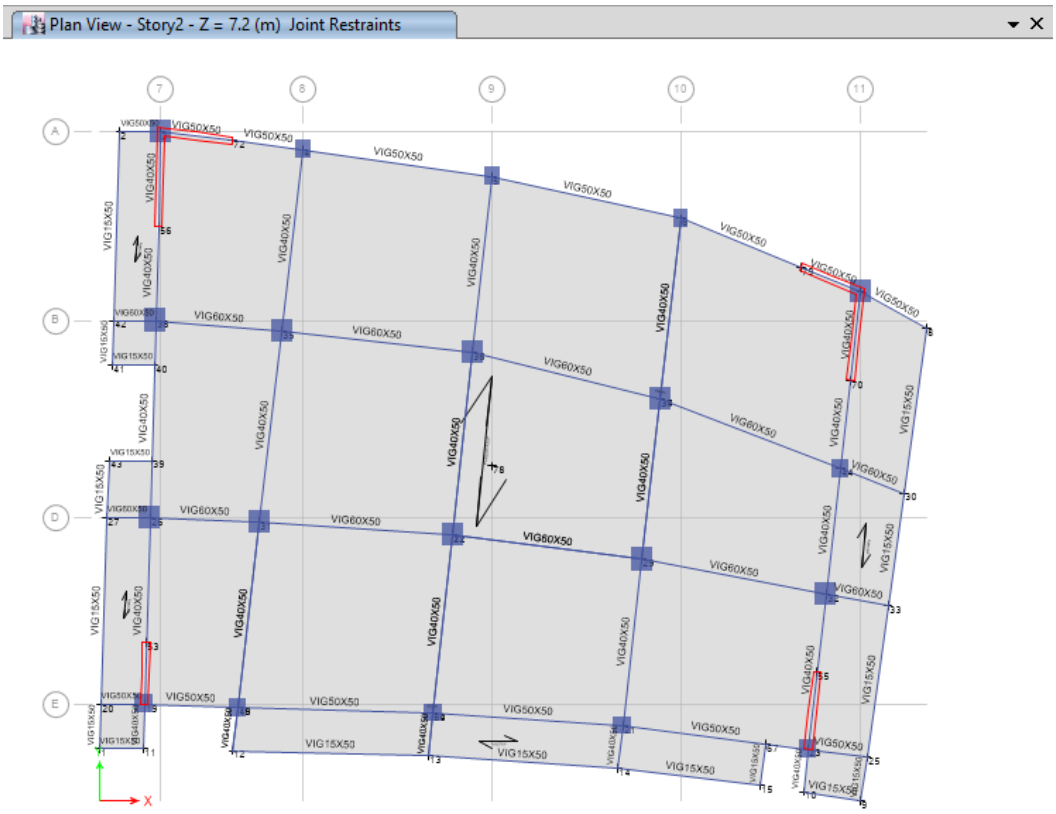
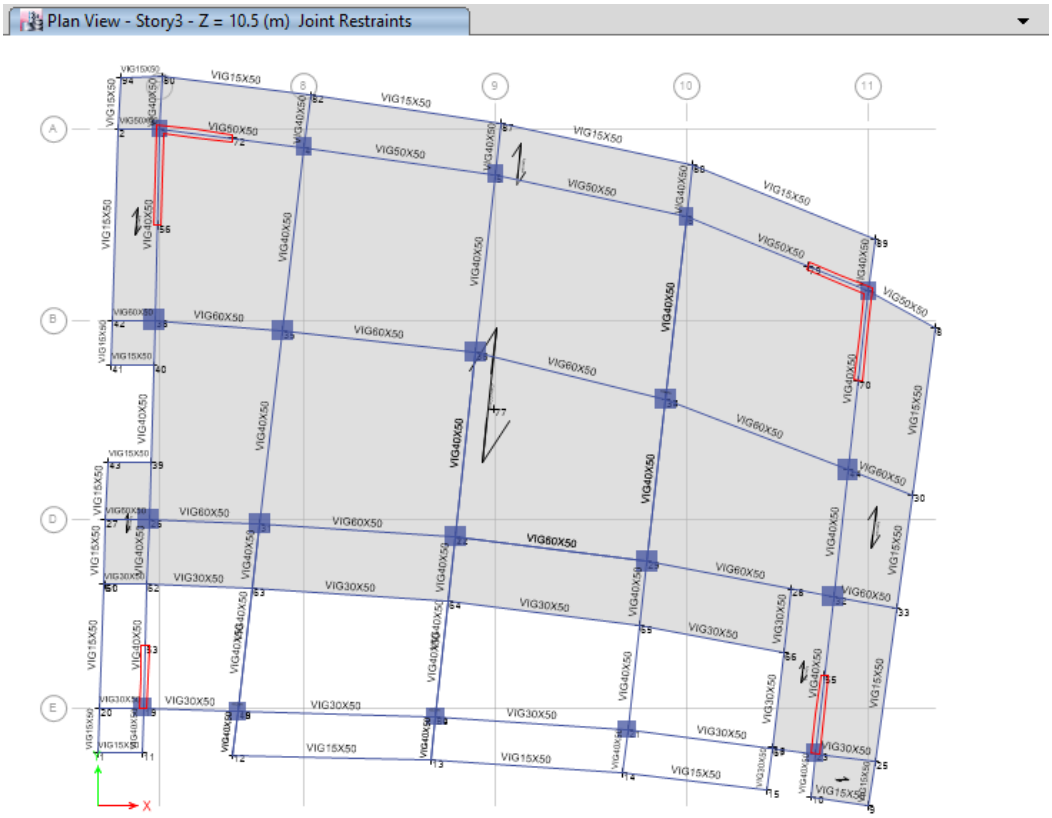

Plan View - Story1 - Z = 3.9 (m) Joint Restraints
7
8
9
10
11
A
B
D
E
VIG40X40
VIG40X50
VIG30X50
VIG50X50
VIG15X50
Y
X

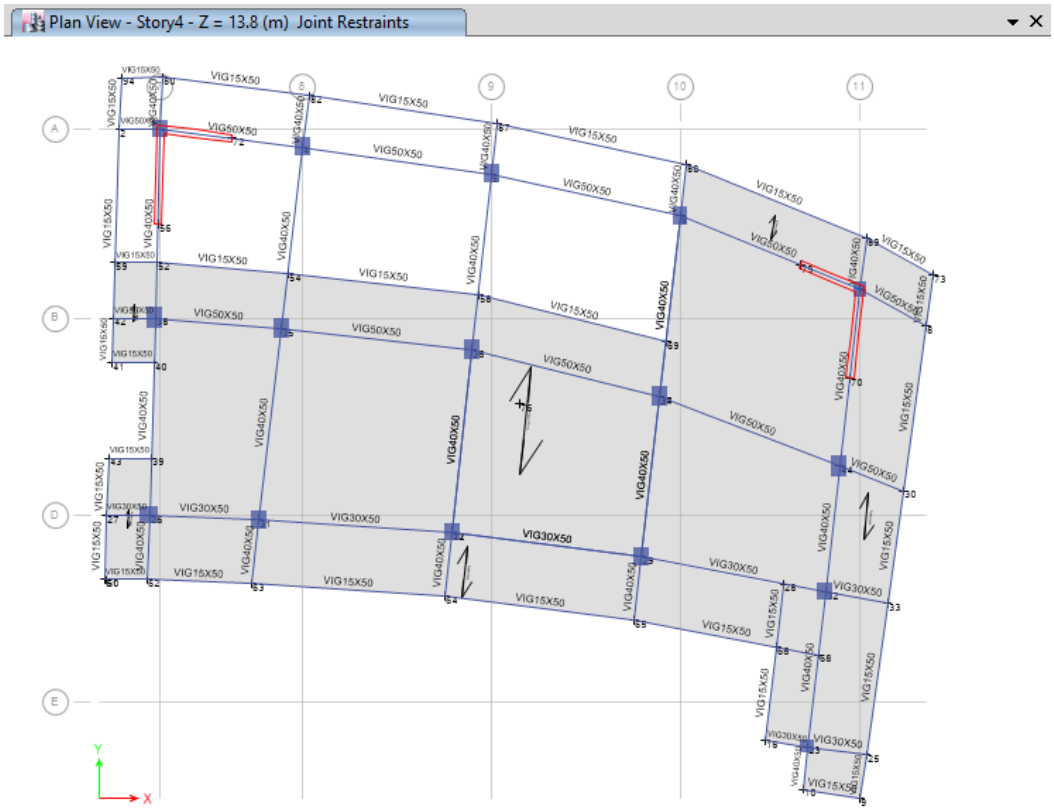
Piso 2


Plan View - Story2 - Z = 7.2 (m) Joint Restraints
7
8
9
10
11
A
B
D
E
VIG50X50
VIG60X50
VIG40X50
VIG15X50
X

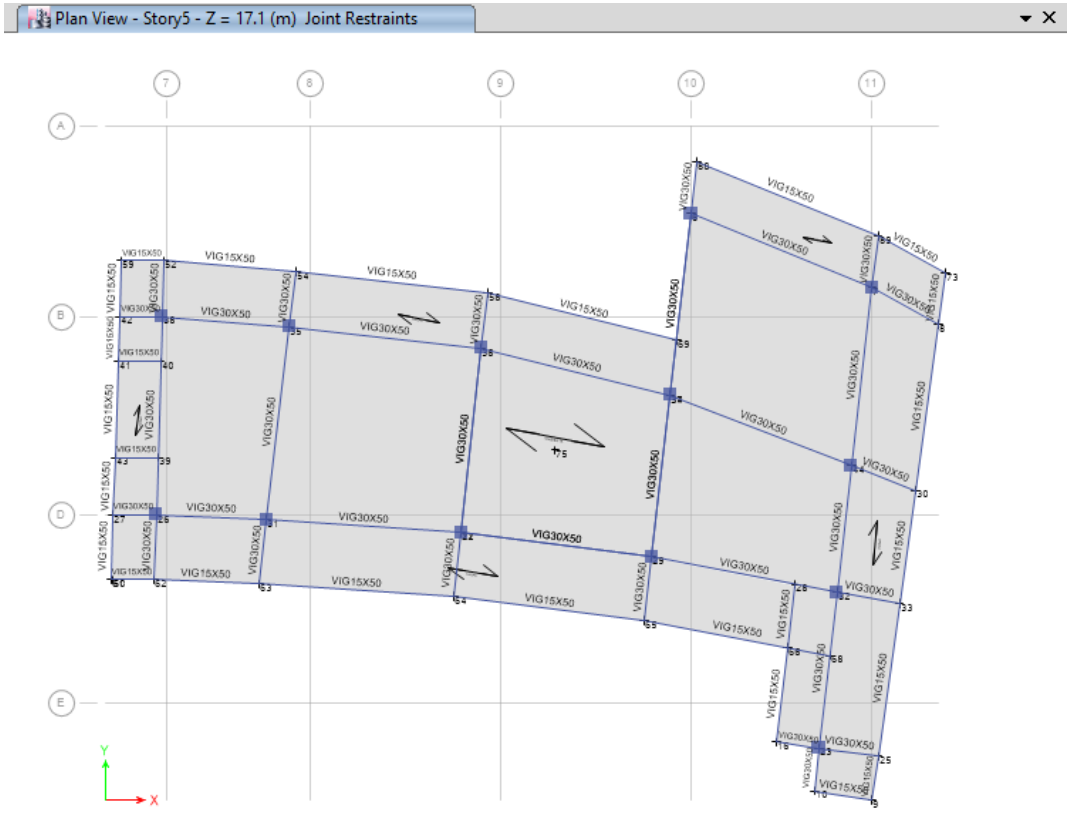
PISO 3

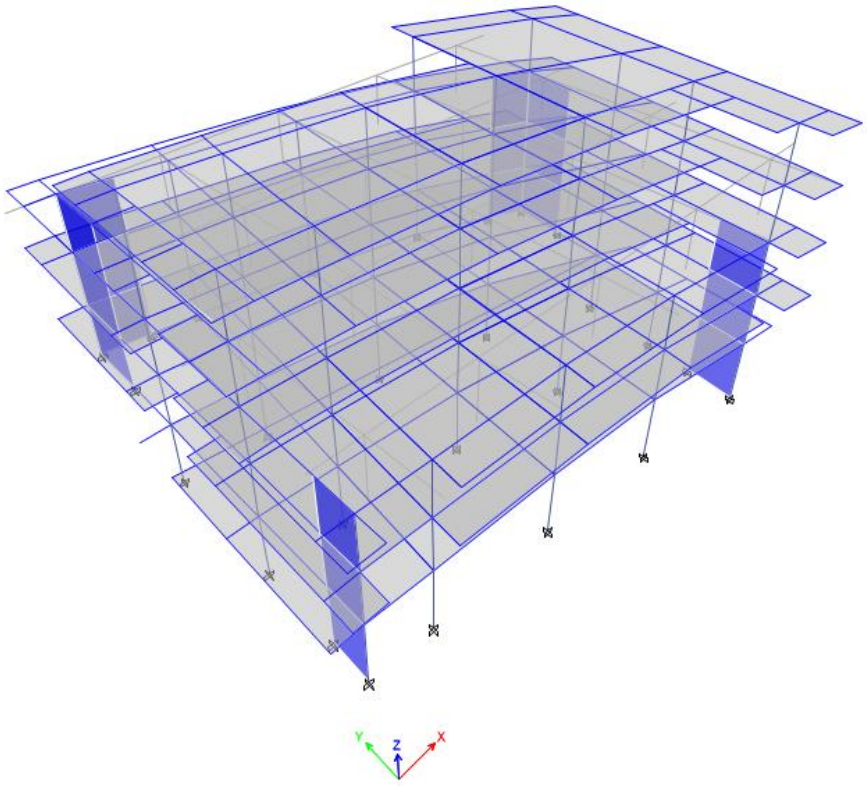

Plan View - Story3 - Z = 10.5 (m) Joint Restraints
VIG15X50
VIG50X50
VIG40X50
VIG60X50
VIG30X50
A
B
D
E
8
9
10
11
X

PISO 4


Plan View - Story4 - Z = 13.8 (m) Joint Restraints
VIG15X50
VIG50X50
VIG40X50
VIG30X50
A
B
D
E
8
9
10
11
Y
X

PISO 5


Plan View - Story5 - Z = 17.1 (m) Joint Restraints
7
8
9
10
11
A
B
D
E
VIG15X50
VIG30X50
Y
X



Project Report

Model File: PPP, Revision 0
30/08/2019

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1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Data

Name	Height m	Elevation m	Master Story	Similar To	Splice Story
Story5	3.3	17.1	Yes	None	No
Story4	3.3	13.8	No	Story5	No
Story3	3.3	10.5	No	Story5	No
Story2	3.3	7.2	No	Story5	No
Story1	3.9	3.9	No	Story5	No
Base	0	0	No	None	No

1.2 Grid Data

Table 1.2 - Grid Systems

Name	Type	Story Range	X Origin m	Y Origin m	Rotation deg	Bubble Size m	Color
G1	Cartesian	Default	0	0	0	1	ffa0a0a0

Table 1.3 - Grid Lines

Grid System	Grid Direction	Grid ID	Visible	Bubble Location	Ordinate m
G1	X		No	End	0
G1	X		No	End	0.8
G1	X		No	End	1.7
G1	X	7	Yes	End	2.4
G1	X		No	End	5.2
G1	X	8	Yes	End	7.95
G1	X		No	End	12.8
G1	X	9	Yes	End	15.3
G1	X		No	End	20.2
G1	X	10	Yes	End	22.65
G1	X		No	End	25.75
G1	X		No	End	25.95
G1	X		No	End	27.41
G1	X		No	End	27.6
G1	X	11	Yes	End	29.65
G1	X		No	End	32.2
G1	Y		No	Start	0
G1	Y		No	Start	0.35
G1	Y		No	Start	0.59
G1	Y		No	Start	1.27
G1	Y		No	Start	1.7
G1	Y		No	Start	1.74
G1	Y		No	Start	1.95
G1	Y		No	Start	2
G1	Y		No	Start	2.05
G1	Y		No	Start	2.24
G1	Y		No	Start	2.92
G1	Y		No	Start	3.41
G1	Y		No	Start	3.62
G1	Y	E	Yes	Start	3.75

Grid System	Grid Direction	Grid ID	Visible	Bubble Location	Ordinate m
G1	Y		No	Start	7.4
G1	Y	D	Yes	Start	11
G1	Y		No	Start	11.7
G1	Y		No	Start	13.21
G1	Y		No	Start	16.91
G1	Y		No	Start	18.35
G1	Y	B	Yes	Start	18.66
G1	Y		No	Start	19.78
G1	Y		No	Start	22.62
G1	Y		No	Start	24.25
G1	Y		No	Start	25.3
G1	Y	A	Yes	Start	26

1.3 Point Coordinates

Table 1.4 - Joint Coordinates Data

Label	X m	Y m	ΔZ Below m
1	0	2.05	0
2	0.8	26	0
3	2.4	26	0
4	7.95	25.3	0
5	15.3	24.25	0
6	22.65	22.62	0
7	29.65	19.78	0
8	32.2	18.35	0
9	29.65	0	0
10	27.41	0.35	0
11	1.7	2.05	0
12	5.2	1.95	0
13	12.8	1.74	0
14	20.2	1.27	0
15	25.75	0.59	0
16	25.95	2.24	0
19	1.74969	3.75	0
20	0.05678	3.75	0
18	5.39	3.62	0
24	12.99	3.41	0
21	20.39	2.92	0
23	27.6	2	0
25	29.88502	1.69121	0
26	1.96159	11	0
27	0.29896	11	0
31	6.24447	10.81854	0
22	13.77	10.33	0
17	13.75413	10.33103	0
29	21.13	9.38	0
32	28.29438	8.02124	0
33	30.70342	7.5805	0
38	2.18547	18.66	0
39	2.02618	13.21	0
40	2.13432	16.91	0
41	0.49637	16.91	0
42	0.55482	18.66	0
35	7.1202	18.25423	0
36	14.54289	17.433	0

Label	X m	Y m	ΔZ Below m
34	21.85	15.62	0
37	21.84648	15.62087	0
44	28.85654	12.89746	0
30	31.30982	11.94418	0
43	0.37278	13.21	0
45	6.74135	15.03748	0
46	14.19672	14.31604	0
47	21.61427	13.59827	0
48	0.45414	15.64587	0
49	5.39665	3.61976	0
50	12.98549	3.41012	0
57	30.07022	1.66619	0
51	2.09271	15.48636	0
80	2.45859	28.00447	0
82	8.18555	27.3	0
87	15.52004	26.23126	0
88	22.87936	24.61783	0
89	29.87944	21.77018	0
94	0.86686	28.00175	0
28	26.68769	8.32596	0
60	0.29896	8.5	0
61	0.21545	8.5	0
62	1.88852	8.5	0
63	5.9515	8.33095	0
64	13.47847	7.84893	0
65	20.8475	6.91646	0
66	26.39147	5.88213	0
52	2.24828	20.80908	0
54	7.37167	20.38947	0
58	14.78022	19.56986	0
59	0.6266	20.8088	0
69	22.09074	17.74853	0
73	32.47404	20.32199	0
67	25.94648	2.21099	0
68	28.0129	5.57963	0
55	27.94719	5.01062	0
56	2.29273	22.33	0
70	29.25327	16.33873	0
53	1.82032	6.16667	0
72	5.175	25.65	0
79	27.31667	20.72667	0
71	13.75425	10.33203	0

1.4 Line Connectivity

Table 1.5 - Column Connectivity Data

Column	I-End Point	J-End Point	I-End Story
C1	19	19	Below
C2	18	18	Below
C3	24	24	Below
C4	21	21	Below
C5	23	23	Below
C7	26	26	Below
C8	31	31	Below
C9	22	22	Below

Column	I-End Point	J-End Point	I-End Story
C10	29	29	Below
C11	32	32	Below
C12	38	38	Below
C13	35	35	Below
C14	36	36	Below
C15	34	34	Below
C16	44	44	Below
C17	3	3	Below
C18	4	4	Below
C19	5	5	Below
C20	6	6	Below
C21	7	7	Below

Table 1.6 - Beam Connectivity Data

Beam	I-End Point	J-End Point	Curve Type
B2	2	3	None
B3	3	4	None
B4	4	5	None
B5	5	6	None
B6	6	7	None
B7	7	8	None
B9	10	9	None
B11	1	11	None
B14	12	13	None
B16	13	14	None
B18	14	15	None
B21	11	19	None
B25	1	20	None
B28	20	19	None
B12	19	18	None
B20	24	21	None
B24	21	23	None
B29	23	25	None
B23	19	26	None
B31	20	27	None
B34	27	26	None
B39	26	31	None
B33	31	17	None
B17	29	32	None
B44	32	33	None
B45	26	38	None
B46	38	3	None
B51	41	40	None
B52	42	38	None
B13	38	35	None
B8	31	35	None
B10	35	4	None
B47	17	36	None
B48	36	5	None
B50	35	36	None
B37	29	37	None
B53	37	6	None
B54	36	37	None
B55	37	34	None
B42	34	44	None

Beam	I-End Point	J-End Point	Curve Type
B56	32	44	None
B57	44	7	None
B30	44	30	None
B38	33	30	None
B58	30	8	None
B26	27	43	None
B61	43	39	None
B66	45	46	None
B67	46	47	None
B68	47	44	None
B49	27	48	None
B60	19	49	None
B63	49	31	None
B64	18	50	None
B65	50	24	None
B70	50	17	None
B72	21	29	None
B74	23	32	None
B86	23	57	None
B32	26	51	None
B62	51	38	None
B69	48	51	None
B71	51	45	None
B88	3	80	None
B90	4	82	None
B96	5	87	None
B98	6	88	None
B100	7	89	None
B106	2	94	None
B43	94	80	None
B73	80	82	None
B75	82	87	None
B76	87	88	None
B77	88	89	None
B91	19	62	None
B92	62	26	None
B93	61	62	None
B97	63	31	None
B102	62	63	None
B104	64	17	None
B109	65	29	None
B112	64	65	None
B114	66	28	None
B117	65	66	None
B81	41	42	None
B82	42	2	None
B99	59	52	None
B107	52	54	None
B110	54	58	None
B115	58	69	None
B118	61	27	None
B119	16	23	None
B120	16	66	None
B123	8	73	None
B125	89	73	None
B78	38	52	None

Beam	I-End Point	J-End Point	Curve Type
B80	35	54	None
B89	36	58	None
B111	42	59	None
B121	43	41	None
B79	10	23	None
B94	57	33	None
B85	9	25	None
B116	25	33	None
B122	20	61	None
B127	15	67	None
B128	67	66	None
B59	65	68	None
B15	18	49	None
B84	12	49	None
B87	13	50	None
B113	49	50	None
B124	14	21	None
B36	49	63	None
B41	50	64	None
B83	21	65	None
B1	63	64	None
B19	23	55	None
B22	55	32	None
B27	38	56	None
B95	56	3	None
B101	44	70	None
B103	70	7	None
B105	19	53	None
B129	53	26	None
B108	3	72	None
B126	72	4	None
B132	79	7	None
B133	6	79	None
B130	34	6	None
B131	71	29	None
B134	22	36	None
B135	24	22	None
B136	13	24	None
B35	18	31	None
B40	12	18	None
B137	29	34	None
B138	22	29	None

1.5 Area Connectivity

Table 1.7 - Floor Connectivity Data

Floor	Number of Edges	Edge Number	Point 1	Point 2	Curve Type
F1	13	1	19	26	None
		2	26	51	None
		3	51	38	None
		4	38	35	None
		5	35	36	None
		6	36	34	None
		7	34	44	None

Floor	Number of Edges	Edge Number	Point 1	Point 2	Curve Type
		8	44	32	None
		9	32	23	None
		10	23	21	None
		11	21	24	None
		12	24	18	None
		13	18	19	None
F2	14	1	19	26	None
		2	26	38	None
		3	38	3	None
		4	3	4	None
		5	4	5	None
		6	5	6	None
		7	6	7	None
		8	7	44	None
		9	44	32	None
		10	32	23	None
		11	23	21	None
		12	21	24	None
		13	24	18	None
		14	18	19	None
F3	15	1	62	26	None
		2	26	38	None
		3	38	3	None
		4	3	4	None
		5	4	5	None
		6	5	6	None
		7	6	7	None
		8	7	44	None
		9	44	32	None
		10	32	28	None
		11	28	66	None
		12	66	65	None
		13	65	64	None
		14	64	63	None
		15	63	62	None
F5	17	1	26	38	None
		2	38	52	None
		3	52	54	None
		4	54	58	None
		5	58	69	None
		6	69	6	None
		7	6	7	None
		8	7	44	None
		9	44	32	None
		10	32	23	None
		11	23	16	None
		12	16	66	None
		13	66	28	None
		14	28	29	None
		15	29	22	None
		16	22	31	None
		17	31	26	None
F6	16	1	26	38	None
		2	38	35	None
		3	35	36	None

Floor	Number of Edges	Edge Number	Point 1	Point 2	Curve Type
		4	36	34	None
		5	34	6	None
		6	6	7	None
		7	7	44	None
		8	44	32	None
		9	32	23	None
		10	23	16	None
		11	16	66	None
		12	66	28	None
		13	28	29	None
		14	29	22	None
		15	22	31	None
		16	31	26	None
F7	12	1	60	27	None
		2	27	43	None
		3	43	41	None
		4	41	42	None
		5	42	59	None
		6	59	52	None
		7	52	38	None
		8	38	40	None
		9	40	39	None
		10	39	26	None
		11	26	62	None
		12	62	60	None
F8	10	1	62	26	None
		2	26	31	None
		3	31	22	None
		4	22	29	None
		5	29	28	None
		6	28	66	None
		7	66	65	None
		8	65	64	None
		9	64	63	None
		10	63	62	None
F9	11	1	10	23	None
		2	23	68	None
		3	68	32	None
		4	32	44	None
		5	44	7	None
		6	7	8	None
		7	8	30	None
		8	30	33	None
		9	33	25	None
		10	25	9	None
		11	9	10	None
F10	6	1	6	88	None
		2	88	89	None
		3	89	73	None
		4	73	8	None
		5	8	7	None
		6	7	6	None
F11	8	1	38	52	None
		2	52	54	None
		3	54	58	None

Floor	Number of Edges	Edge Number	Point 1	Point 2	Curve Type
		4	58	69	None
		5	69	34	None
		6	34	36	None
		7	36	35	None
		8	35	38	None
F12	6	1	27	43	None
		2	43	39	None
		3	39	26	None
		4	26	62	None
		5	62	60	None
		6	60	27	None
F14	10	1	3	80	None
		2	80	82	None
		3	82	87	None
		4	87	88	None
		5	88	89	None
		6	89	7	None
		7	7	6	None
		8	6	5	None
		9	5	4	None
		10	4	3	None
F16	13	1	10	23	None
		2	23	68	None
		3	68	32	None
		4	32	44	None
		5	44	7	None
		6	7	89	None
		7	89	73	None
		8	73	8	None
		9	8	30	None
		10	30	33	None
		11	33	25	None
		12	25	9	None
		13	9	10	None
F17	6	1	40	41	None
		2	41	42	None
		3	42	59	None
		4	59	52	None
		5	52	38	None
		6	38	40	None
F19	8	1	1	20	None
		2	20	27	None
		3	27	43	None
		4	43	39	None
		5	39	26	None
		6	26	19	None
		7	19	11	None
		8	11	1	None
F20	6	1	40	41	None
		2	41	42	None
		3	42	2	None
		4	2	3	None
		5	3	38	None
		6	38	40	None
F21	8	1	12	18	None

Floor	Number of Edges	Edge Number	Point 1	Point 2	Curve Type
		2	18	24	None
		3	24	21	None
		4	21	67	None
		5	67	15	None
		6	15	14	None
		7	14	13	None
		8	13	12	None
F22	10	1	10	23	None
		2	23	32	None
		3	32	44	None
		4	44	7	None
		5	7	8	None
		6	8	30	None
		7	30	33	None
		8	33	25	None
		9	25	9	None
		10	9	10	None
F23	6	1	19	20	None
		2	20	27	None
		3	27	48	None
		4	48	51	None
		5	51	26	None
		6	26	19	None
F25	6	1	62	60	None
		2	60	27	None
		3	27	43	None
		4	43	39	None
		5	39	26	None
		6	26	62	None
F26	8	1	40	41	None
		2	41	42	None
		3	42	2	None
		4	2	94	None
		5	94	80	None
		6	80	3	None
		7	3	38	None
		8	38	40	None
F32	8	1	23	32	None
		2	32	44	None
		3	44	7	None
		4	7	8	None
		5	8	30	None
		6	30	33	None
		7	33	25	None
		8	25	23	None
F35	4	1	7	89	None
		2	89	88	None
		3	88	6	None
		4	6	7	None
F36	4	1	9	25	None
		2	25	23	None
		3	23	10	None
		4	10	9	None
F37	4	1	23	32	None
		2	32	28	None

Floor	Number of Edges	Edge Number	Point 1	Point 2	Curve Type
		3	28	16	None
		4	16	23	None

Table 1.8 - Wall Connectivity Data

Label	Number of Edges	Edge Number	Point 1	Point 2	Curve Type	Point 1 Story	Point 2 Story
W1	4	1	56	3	None	Below	Below
		2	3	3	None	Below	Same
		3	3	56	None	Same	Same
		4	56	56	None	Same	Below
W2	4	1	70	7	None	Below	Below
		2	7	7	None	Below	Same
		3	7	70	None	Same	Same
		4	70	70	None	Same	Below
W3	4	1	19	53	None	Below	Below
		2	53	53	None	Below	Same
		3	53	19	None	Same	Same
		4	19	19	None	Same	Below
W4	4	1	23	55	None	Below	Below
		2	55	55	None	Below	Same
		3	55	23	None	Same	Same
		4	23	23	None	Same	Below
W5	4	1	3	72	None	Below	Below
		2	72	72	None	Below	Same
		3	72	3	None	Same	Same
		4	3	3	None	Same	Below
W6	4	1	79	7	None	Below	Below
		2	7	7	None	Below	Same
		3	7	79	None	Same	Same
		4	79	79	None	Same	Below

1.6 Mass

Table 1.9 - Mass Source

Name	Include Elements	Include Added Mass	Include Loads	Include Lateral	Include Vertical	Lump at Stories	IsDefault	Load Pattern	Multiplier
MsSrc1	No	No	Yes	Yes	No	Yes	Yes	PP	1
MsSrc1	No	No	Yes	Yes	No	Yes	Yes	SCP	1

Table 1.10 - Centers of Mass and Rigidity

Story	Diaphragm	Mass X kgf-s²/m	Mass Y kgf-s²/m	XCM m	YCM m	Cumulative X kgf-s²/m	Cumulative Y kgf-s²/m	XCCM m	YCCM m	XCR m	YCR m
Story1	D1	36745.72	36745.72	14.6788	10.0495	36745.72	36745.72	14.6788	10.0495	15.6116	12.2913
Story2	D2	62055.4	62055.4	15.2868	13.0118	62055.4	62055.4	15.2868	13.0118	16.2763	23.8425
Story3	D3	53768.09	53768.09	15.2193	15.2489	53768.09	53768.09	15.2193	15.2489	16.5026	23.1164
Story4	D4	33293.61	33293.61	16.3806	15.3424	33293.61	33293.61	16.3806	15.3424	16.5138	23.4028
Story5	D5	0	0	17.4008	13.5003	0	0	0	0		

Table 1.11 - Mass Summary by Diaphragm

Story	Diaphragm	Mass X kgf-s²/m	Mass Y kgf-s²/m	Mass Moment of Inertia kgf-m-s²	X Mass Center m	Y Mass Center m
Story5	D5	0	0	0	17.4008	13.5003
Story4	D4	33293.61	33293.61	4207291.12	16.3806	15.3424
Story3	D3	53768.09	53768.09	7387322.35	15.2193	15.2489
Story2	D2	62055.4	62055.4	8955868.23	15.2868	13.0118
Story1	D1	36745.72	36745.72	3972813.56	14.6788	10.0495

Table 1.12 - Mass Summary by Story

Story	UX kgf-s²/m	UY kgf-s²/m	UZ kgf-s²/m
Story5	10520.37	10520.37	0
Story4	34437.99	34437.99	0
Story3	55170.08	55170.08	0
Story2	64063.75	64063.75	0
Story1	44244.68	44244.68	0
Base	5940.92	5940.92	0

1.7 Groups

Table 1.13 - Group Definitions

Name	Color
All	Yellow

2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

2.1 Materials

Table 2.1 - Material Properties - Summary

Name	Type	E kgf/m²	v	Unit Weight kgf/m³	Design Strengths
2500Psi	Concrete	1800000000	0.2	2402.77	Fc=1800000 kgf/m²
3000Psi	Concrete	2187999935	0.2	2402.77	Fc=2100000 kgf/m²
4000Psi	Concrete	2526000000	0.2	2402.77	Fc=2800000 kgf/m²
A416Gr270	Tendon	20037484345	0	7849.05	Fy=172322365.37 kgf/m², Fu=189828799.06 kgf/m²
A615Gr60	Rebar	20389021320	0	7849.05	Fy=42184180.28 kgf/m², Fu=63276265.33 kgf/m²

2.2 Frame Sections

Table 2.2 - Frame Sections - Summary

Name	Material	Shape
COL50X50	2500Psi	Concrete Rectangular
COL50X60	2500Psi	Concrete Rectangular
COL60X70	2500Psi	Concrete Rectangular
COL60X80	3000Psi	Concrete Rectangular
COL65X70	2500Psi	Concrete Rectangular
COL70X70	3000Psi	Concrete Rectangular
COL80X80	3000Psi	Concrete Rectangular
COL80X90	3000Psi	Concrete Rectangular
VIG15X50	3000Psi	Concrete Rectangular
VIG30X50	3000Psi	Concrete Rectangular
VIG40X40	3000Psi	Concrete Rectangular
VIG40X50	3000Psi	Concrete Rectangular
VIG50X50	3000Psi	Concrete Rectangular
VIG60X50	3000Psi	Concrete Rectangular

2.3 Shell Sections

Table 2.3 - Shell Sections - Summary

Name	Design Type	Element Type	Material	Total Thickness m
CUBIERTA	Slab	Membrane	3000Psi	0.005
Muro30	Wall	Shell-Thin	3000Psi	0.3
PLAQUETASUP	Slab	Membrane	3000Psi	0.05

2.4 Reinforcement Sizes

Table 2.4 - Reinforcing Bar Sizes

Name	Diameter m	Area m²
10	0.01	7.9E-05
18	0.018	0.000255
20	0.02	0.000314
#10SM	0.00953	7.1E-05
#13SM	0.0127	0.000129
#16SM	0.01588	0.0002
#19SM	0.01905	0.000284
#22SM	0.02223	0.000387
#3	0.00953	7.1E-05
#4	0.0127	0.000129
#5	0.01588	0.0002
#6	0.01905	0.000284
#7	0.02223	0.000387

2.5 Tendon Sections

Table 2.5 - Tendon Section Properties

Name	Material	StrandArea m²	Color
Tendon1	A416Gr270	9.9E-05	Gray

3 Assignments

This chapter provides a listing of the assignments applied to the model.

3.1 Joint Assignments

Table 3.1 - Joint Assignments - Summary

Story	Label	Unique Name	Diaphragm	Restraints
Story5	6	168	D5	
Story5	7	169	D5	
Story5	8	171	D5	
Story5	9	173	D5	
Story5	10	175	D5	
Story5	16	176	D5	
Story5	23	177	D5	
Story5	25	223	D5	
Story5	26	224	D5	
Story5	27	226	D5	
Story5	31	227	D5	
Story5	22	228	D5	
Story5	17	230	D5	
Story5	29	231	D5	
Story5	32	232	D5	
Story5	33	233	D5	
Story5	38	234	D5	
Story5	39	235	D5	
Story5	40	236	D5	
Story5	41	237	D5	
Story5	42	238	D5	
Story5	35	239	D5	
Story5	36	240	D5	
Story5	34	241	D5	
Story5	37	242	D5	
Story5	44	243	D5	
Story5	30	244	D5	
Story5	43	245	D5	
Story5	88	249	D5	
Story5	89	250	D5	
Story5	28	252	D5	
Story5	60	254	D5	
Story5	61	255	D5	
Story5	62	256	D5	
Story5	63	257	D5	
Story5	64	258	D5	
Story5	65	259	D5	
Story5	66	260	D5	
Story5	52	261	D5	
Story5	54	262	D5	
Story5	58	263	D5	
Story5	59	264	D5	
Story5	69	265	D5	
Story5	73	266	D5	
Story5	68	61	D5	
Story5	71	286	From Area	
Story4	2	149	D4	
Story4	3	150	D4	
Story4	4	151	D4	

Story	Label	Unique Name	Diaphragm	Restraints
Story4	5	159	D4	
Story4	6	160	D4	
Story4	7	161	D4	
Story4	8	162	D4	
Story4	9	163	D4	
Story4	10	164	D4	
Story4	16	170	D4	
Story4	23	178	D4	
Story4	25	182	D4	
Story4	26	183	D4	
Story4	27	184	D4	
Story4	31	185	D4	
Story4	22	187	D4	
Story4	17	188	D4	
Story4	29	189	D4	
Story4	32	190	D4	
Story4	33	191	D4	
Story4	38	192	D4	
Story4	39	193	D4	
Story4	40	194	D4	
Story4	41	195	D4	
Story4	42	196	D4	
Story4	35	197	D4	
Story4	36	198	D4	
Story4	34	199	D4	
Story4	37	200	D4	
Story4	44	201	D4	
Story4	30	202	D4	
Story4	43	203	D4	
Story4	80	204	D4	
Story4	82	205	D4	
Story4	87	206	D4	
Story4	88	207	D4	
Story4	89	208	D4	
Story4	94	209	D4	
Story4	28	210	D4	
Story4	60	212	D4	
Story4	61	213	D4	
Story4	62	214	D4	
Story4	63	215	D4	
Story4	64	216	D4	
Story4	65	217	D4	
Story4	66	218	D4	
Story4	52	219	D4	
Story4	54	220	D4	
Story4	58	221	D4	
Story4	59	222	D4	
Story4	69	225	D4	
Story4	73	229	D4	
Story4	68	8	D4	
Story4	56	65	D4	
Story4	70	147	D4	
Story4	72	281	D4	
Story4	79	283	D4	
Story4	71	285	From Area	
Story3	1	1	D3	

Story	Label	Unique Name	Diaphragm	Restraints
Story3	2	12	D3	
Story3	3	13	D3	
Story3	4	14	D3	
Story3	5	15	D3	
Story3	6	16	D3	
Story3	7	24	D3	
Story3	8	41	D3	
Story3	9	107	D3	
Story3	10	112	D3	
Story3	11	113	D3	
Story3	12	114	D3	
Story3	13	115	D3	
Story3	14	116	D3	
Story3	15	117	D3	
Story3	16	118	D3	
Story3	19	119	D3	
Story3	20	120	D3	
Story3	18	121	D3	
Story3	24	122	D3	
Story3	21	123	D3	
Story3	23	124	D3	
Story3	25	125	D3	
Story3	26	126	D3	
Story3	27	127	D3	
Story3	31	128	D3	
Story3	22	129	D3	
Story3	17	130	D3	
Story3	29	131	D3	
Story3	32	132	D3	
Story3	33	133	D3	
Story3	38	134	D3	
Story3	39	135	D3	
Story3	40	136	D3	
Story3	41	137	D3	
Story3	42	138	D3	
Story3	35	139	D3	
Story3	36	140	D3	
Story3	34	141	D3	
Story3	37	142	D3	
Story3	44	143	D3	
Story3	30	144	D3	
Story3	43	145	D3	
Story3	49	62	D3	
Story3	50	63	D3	
Story3	80	172	D3	
Story3	82	174	D3	
Story3	87	179	D3	
Story3	88	180	D3	
Story3	89	181	D3	
Story3	94	186	D3	
Story3	28	146	D3	
Story3	60	152	D3	
Story3	61	153	D3	
Story3	62	154	D3	
Story3	63	155	D3	
Story3	64	156	D3	

Story	Label	Unique Name	Diaphragm	Restraints
Story3	65	157	D3	
Story3	66	158	D3	
Story3	67	2	D3	
Story3	55	275	D3	
Story3	56	64	D3	
Story3	70	79	D3	
Story3	53	273	D3	
Story3	72	280	D3	
Story3	79	282	D3	
Story3	71	284	From Area	
Story2	1	49	D2	
Story2	2	50	D2	
Story2	3	66	D2	
Story2	4	67	D2	
Story2	5	68	D2	
Story2	6	69	D2	
Story2	7	70	D2	
Story2	8	71	D2	
Story2	9	72	D2	
Story2	10	73	D2	
Story2	11	74	D2	
Story2	12	75	D2	
Story2	13	76	D2	
Story2	14	77	D2	
Story2	15	78	D2	
Story2	19	80	D2	
Story2	20	81	D2	
Story2	18	82	D2	
Story2	24	83	D2	
Story2	21	84	D2	
Story2	23	85	D2	
Story2	25	86	D2	
Story2	26	87	D2	
Story2	27	88	D2	
Story2	31	89	D2	
Story2	22	90	D2	
Story2	17	91	D2	
Story2	29	92	D2	
Story2	32	93	D2	
Story2	33	94	D2	
Story2	38	95	D2	
Story2	39	96	D2	
Story2	40	97	D2	
Story2	41	98	D2	
Story2	42	99	D2	
Story2	35	100	D2	
Story2	36	101	D2	
Story2	34	102	D2	
Story2	37	103	D2	
Story2	44	104	D2	
Story2	30	105	D2	
Story2	43	106	D2	
Story2	49	9	D2	
Story2	50	10	D2	
Story2	67	167	D2	
Story2	55	274	D2	

Story	Label	Unique Name	Diaphragm	Restraints
Story2	56	166	D2	
Story2	70	211	D2	
Story2	53	272	D2	
Story2	72	269	D2	
Story2	79	277	D2	
Story2	71	276	From Area	
Story1	3	3	Disconnected	UX; UY; UZ; RX; RY; RZ
Story1	4	4	Disconnected	UX; UY; UZ; RX; RY; RZ
Story1	5	5	Disconnected	UX; UY; UZ; RX; RY; RZ
Story1	6	6	Disconnected	UX; UY; UZ; RX; RY; RZ
Story1	7	7	Disconnected	UX; UY; UZ; RX; RZ
Story1	19	19	D1	
Story1	20	20	D1	
Story1	18	17	D1	
Story1	24	18	D1	
Story1	21	21	D1	
Story1	23	22	D1	
Story1	26	26	D1	
Story1	27	27	D1	
Story1	31	29	D1	
Story1	22	23	D1	
Story1	17	25	D1	
Story1	29	28	D1	
Story1	32	31	D1	
Story1	33	32	D1	
Story1	38	38	D1	
Story1	42	42	D1	
Story1	35	34	D1	
Story1	36	35	D1	
Story1	34	33	D1	
Story1	37	36	D1	
Story1	44	43	D1	
Story1	30	37	D1	
Story1	45	108	D1	
Story1	46	109	D1	
Story1	47	110	D1	
Story1	48	111	D1	
Story1	49	39	D1	
Story1	50	40	D1	
Story1	57	44	D1	
Story1	51	11	D1	
Story1	55	165	D1	
Story1	56	246	From Area	UX; UY; UZ; RX; RY; RZ
Story1	70	247	From Area	UX; UY; UZ; RX; RY; RZ
Story1	53	148	D1	
Story1	72	278	From Area	UX; UY; UZ; RX; RY; RZ
Story1	79	279	From Area	UX; UY; UZ; RX; RY; RZ
Story1	71	287	From Area	
Base	19	30	From Area	UX; UY; UZ; RX; RY; RZ

Story	Label	Unique Name	Diaphragm	Restraints
Base	18	45	From Area	UX; UY; UZ; RX; RY; RZ
Base	24	46	From Area	UX; UY; UZ; RX; RY; RZ
Base	21	47	From Area	UX; UY; UZ; RX; RY; RZ
Base	23	48	From Area	UX; UY; UZ; RX; RY; RZ
Base	26	51	From Area	UX; UY; UZ; RX; RY; RZ
Base	31	52	From Area	UX; UY; UZ; RX; RY; RZ
Base	22	53	From Area	UX; UY; UZ; RX; RY; RZ
Base	29	54	From Area	UX; UY; UZ; RX; RY; RZ
Base	32	55	From Area	UX; UY; UZ; RX; RY; RZ
Base	38	56	From Area	UX; UY; UZ; RX; RY; RZ
Base	35	57	From Area	UX; UY; UZ; RX; RY; RZ
Base	36	58	From Area	UX; UY; UZ; RX; RY; RZ
Base	34	59	From Area	UX; UY; UZ; RX; RY; RZ
Base	44	60	From Area	UX; UY; UZ; RX; RY; RZ
Base	55	271	From Area	UX; UY; UZ; RX; RY; RZ
Base	53	270	From Area	UX; UY; UZ; RX; RY; RZ

3.2 Frame Assignments

Table 3.2 - Frame Assignments - Summary

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story5	C5	402	Column	3.3	COL50X50	COL50X50		3	No
Story5	C7	403	Column	3.3	COL50X50	COL50X50		3	No
Story5	C8	404	Column	3.3	COL50X50	COL50X50		3	No
Story5	C9	405	Column	3.3	COL50X50	COL50X50		3	No
Story5	C10	406	Column	3.3	COL50X50	COL50X50		3	No
Story5	C11	407	Column	3.3	COL50X50	COL50X50		3	No
Story5	C12	408	Column	3.3	COL50X50	COL50X50		3	No
Story5	C13	409	Column	3.3	COL50X50	COL50X50		3	No
Story5	C14	410	Column	3.3	COL50X50	COL50X50		3	No
Story5	C15	411	Column	3.3	COL50X50	COL50X50		3	No
Story5	C16	412	Column	3.3	COL50X50	COL50X50		3	No
Story5	C20	416	Column	3.3	COL50X50	COL50X50		3	No
Story5	C21	417	Column	3.3	COL50X50	COL50X50		3	No
Story4	C5	350	Column	3.3	COL50X50	COL50X50		3	No
Story4	C7	352	Column	3.3	COL70X70	COL70X70		3	No
Story4	C8	353	Column	3.3	COL60X70	COL60X70		3	No
Story4	C9	354	Column	3.3	COL60X70	COL60X70		3	No
Story4	C10	355	Column	3.3	COL60X70	COL60X70		3	No
Story4	C11	356	Column	3.3	COL60X70	COL60X70		3	No
Story4	C12	361	Column	3.3	COL60X80	COL60X80		3	No

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story4	C13	362	Column	3.3	COL60X80	COL60X80		3	No
Story4	C14	363	Column	3.3	COL60X80	COL60X80		3	No
Story4	C15	364	Column	3.3	COL60X80	COL60X80		3	No
Story4	C16	365	Column	3.3	COL60X80	COL60X80		3	No
Story4	C17	378	Column	3.3	COL60X70	COL60X70		3	No
Story4	C18	390	Column	3.3	COL60X70	COL60X70		3	No
Story4	C19	392	Column	3.3	COL60X70	COL60X70		3	No
Story4	C20	394	Column	3.3	COL60X70	COL60X70		3	No
Story4	C21	396	Column	3.3	COL50X60	COL50X60		3	No
Story3	C1	209	Column	3.3	COL70X70	COL70X70		3	No
Story3	C2	210	Column	3.3	COL70X70	COL70X70		3	No
Story3	C3	211	Column	3.3	COL70X70	COL70X70		3	No
Story3	C4	212	Column	3.3	COL70X70	COL70X70		3	No
Story3	C5	213	Column	3.3	COL70X70	COL70X70		3	No
Story3	C7	214	Column	3.3	COL80X80	COL80X80		3	No
Story3	C8	215	Column	3.3	COL80X80	COL80X80		3	No
Story3	C9	216	Column	3.3	COL80X80	COL80X80		3	No
Story3	C10	217	Column	3.3	COL80X80	COL80X80		3	No
Story3	C11	218	Column	3.3	COL80X80	COL80X80		3	No
Story3	C12	219	Column	3.3	COL80X80	COL80X80		3	No
Story3	C13	220	Column	3.3	COL80X80	COL80X80		3	No
Story3	C14	221	Column	3.3	COL80X80	COL80X80		3	No
Story3	C15	222	Column	3.3	COL80X80	COL80X80		3	No
Story3	C16	223	Column	3.3	COL80X80	COL80X80		3	No
Story3	C17	224	Column	3.3	COL60X70	COL60X70		3	No
Story3	C18	225	Column	3.3	COL60X70	COL60X70		3	No
Story3	C19	226	Column	3.3	COL60X70	COL60X70		3	No
Story3	C20	227	Column	3.3	COL60X70	COL60X70		3	No
Story3	C21	228	Column	3.3	COL60X70	COL60X70		3	No
Story2	C1	135	Column	3.3	COL70X70	COL70X70		3	No
Story2	C2	136	Column	3.3	COL70X70	COL70X70		3	No
Story2	C3	137	Column	3.3	COL70X70	COL70X70		3	No
Story2	C4	138	Column	3.3	COL70X70	COL70X70		3	No
Story2	C5	139	Column	3.3	COL70X70	COL70X70		3	No
Story2	C7	140	Column	3.3	COL80X90	COL80X90		3	No
Story2	C8	141	Column	3.3	COL80X90	COL80X90		3	No
Story2	C9	142	Column	3.3	COL80X90	COL80X90		3	No
Story2	C10	143	Column	3.3	COL80X90	COL80X90		3	No
Story2	C11	144	Column	3.3	COL80X90	COL80X90		3	No
Story2	C12	145	Column	3.3	COL80X90	COL80X90		3	No
Story2	C13	146	Column	3.3	COL80X90	COL80X90		3	No
Story2	C14	147	Column	3.3	COL80X90	COL80X90		3	No
Story2	C15	148	Column	3.3	COL80X90	COL80X90		3	No
Story2	C16	149	Column	3.3	COL65X70	COL65X70		3	No
Story2	C17	150	Column	3.3	COL80X90	COL80X90		3	No
Story2	C18	151	Column	3.3	COL60X70	COL60X70		3	No
Story2	C19	152	Column	3.3	COL60X70	COL60X70		3	No
Story2	C20	153	Column	3.3	COL60X70	COL60X70		3	No
Story2	C21	154	Column	3.3	COL80X90	COL80X90		3	No
Story1	C1	8	Column	3.9	COL80X90	COL80X90		3	No
Story1	C2	32	Column	3.9	COL80X90	COL80X90		3	No
Story1	C3	42	Column	3.9	COL80X90	COL80X90		3	No
Story1	C4	60	Column	3.9	COL80X90	COL80X90		3	No
Story1	C5	62	Column	3.9	COL80X90	COL80X90		3	No

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story1	C7	64	Column	3.9	COL80X90	COL80X90		3	No
Story1	C8	65	Column	3.9	COL80X90	COL80X90		3	No
Story1	C9	66	Column	3.9	COL80X90	COL80X90		3	No
Story1	C10	67	Column	3.9	COL80X90	COL80X90		3	No
Story1	C11	68	Column	3.9	COL80X90	COL80X90		3	No
Story1	C12	69	Column	3.9	COL80X90	COL80X90		3	No
Story1	C13	70	Column	3.9	COL80X90	COL80X90		3	No
Story1	C14	71	Column	3.9	COL80X90	COL80X90		3	No
Story1	C15	72	Column	3.9	COL80X90	COL80X90		3	No
Story1	C16	73	Column	3.9	COL80X90	COL80X90		3	No
Story5	B6	238	Beam	7.55418	VIG30X50	VIG30X50	0.5		No
Story5	B7	244	Beam	2.92359	VIG30X50	VIG30X50	0.5		No
Story5	B9	253	Beam	2.26718	VIG15X50	VIG15X50	0.5		Yes
Story5	B29	256	Beam	2.30579	VIG30X50	VIG30X50	0.5		Yes
Story5	B34	263	Beam	1.66263	VIG30X50	VIG30X50	0.5		Yes
Story5	B39	266	Beam	4.28673	VIG30X50	VIG30X50	0.5		No
Story5	B33	268	Beam	7.52547	VIG30X50	VIG30X50	0.5		No
Story5	B17	294	Beam	7.29209	VIG30X50	VIG30X50	0.5		No
Story5	B44	314	Beam	2.44902	VIG30X50	VIG30X50	0.5		Yes
Story5	B45	319	Beam	7.66327	VIG30X50	VIG30X50	0.5		No
Story5	B51	317	Beam	1.63795	VIG15X50	VIG15X50	0.5		No
Story5	B52	321	Beam	1.63065	VIG30X50	VIG30X50	0.5		Yes
Story5	B13	324	Beam	4.95138	VIG30X50	VIG30X50	0.5		No
Story5	B8	327	Beam	7.48708	VIG30X50	VIG30X50	0.5		No
Story5	B47	330	Beam	7.14564	VIG30X50	VIG30X50	0.5		No
Story5	B50	331	Beam	7.46799	VIG30X50	VIG30X50	0.5		No
Story5	B37	332	Beam	6.28187	VIG30X50	VIG30X50	0.5		Yes
Story5	B53	358	Beam	7.0451	VIG30X50	VIG30X50	0.5		No
Story5	B54	335	Beam	7.52503	VIG30X50	VIG30X50	0.5		No
Story5	B42	337	Beam	7.51691	VIG30X50	VIG30X50	0.5		No
Story5	B56	336	Beam	4.90852	VIG30X50	VIG30X50	0.5		No
Story5	B57	360	Beam	6.92813	VIG30X50	VIG30X50	0.5		No
Story5	B30	342	Beam	2.63198	VIG30X50	VIG30X50	0.5		No
Story5	B38	345	Beam	4.40562	VIG15X50	VIG15X50	0.5		No
Story5	B58	387	Beam	6.46737	VIG15X50	VIG15X50	0.5		No
Story5	B26	241	Beam	2.21123	VIG15X50	VIG15X50	0.5		No
Story5	B61	347	Beam	1.6534	VIG15X50	VIG15X50	0.5		No
Story5	B74	3	Beam	6.06114	VIG30X50	VIG30X50	0.5		Yes
Story5	B98	357	Beam	2.01096	VIG30X50	VIG30X50	0.5		Yes
Story5	B100	359	Beam	2.00337	VIG30X50	VIG30X50	0.5		No
Story5	B77	366	Beam	7.55713	VIG15X50	VIG15X50	0.5		No
Story5	B92	367	Beam	2.50107	VIG30X50	VIG30X50	0.5		No
Story5	B93	368	Beam	1.67307	VIG15X50	VIG15X50	0.5		Yes
Story5	B97	369	Beam	2.50478	VIG30X50	VIG30X50	0.5		No
Story5	B102	370	Beam	4.0665	VIG15X50	VIG15X50	0.5		No
Story5	B104	371	Beam	2.49737	VIG30X50	VIG30X50	0.5		No
Story5	B109	373	Beam	2.47968	VIG30X50	VIG30X50	0.5		Yes
Story5	B112	374	Beam	7.42779	VIG15X50	VIG15X50	0.5		No
Story5	B114	375	Beam	2.46171	VIG15X50	VIG15X50	0.5		Yes
Story5	B81	377	Beam	1.75098	VIG15X50	VIG15X50	0.5		No
Story5	B99	379	Beam	1.62168	VIG15X50	VIG15X50	0.5		Yes
Story5	B107	380	Beam	5.14054	VIG15X50	VIG15X50	0.5		No
Story5	B110	381	Beam	7.45374	VIG15X50	VIG15X50	0.5		No
Story5	B115	382	Beam	7.53399	VIG15X50	VIG15X50	0.5		No

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story5	B118	383	Beam	2.50139	VIG15X50	VIG15X50	0.5		Yes
Story5	B119	384	Beam	1.66736	VIG30X50	VIG30X50	0.5		Yes
Story5	B120	385	Beam	3.66879	VIG15X50	VIG15X50	0.5		Yes
Story5	B123	386	Beam	1.99094	VIG15X50	VIG15X50	0.5		Yes
Story5	B125	388	Beam	2.9714	VIG15X50	VIG15X50	0.5		Yes
Story5	B78	389	Beam	2.15	VIG30X50	VIG30X50	0.5		No
Story5	B80	391	Beam	2.15	VIG30X50	VIG30X50	0.5		No
Story5	B89	393	Beam	2.15	VIG30X50	VIG30X50	0.5		No
Story5	B111	395	Beam	2.15	VIG15X50	VIG15X50	0.5		Yes
Story5	B121	397	Beam	3.70206	VIG15X50	VIG15X50	0.5		No
Story5	B79	2	Beam	1.6609	VIG30X50	VIG30X50	0.5		Yes
Story5	B85	171	Beam	1.70747	VIG15X50	VIG15X50	0.5		Yes
Story5	B116	184	Beam	5.94588	VIG15X50	VIG15X50	0.5		Yes
Story5	B59	376	Beam	7.28904	VIG15X50	VIG15X50	0.5		Yes
Story5	B1	236	Beam	7.54238	VIG15X50	VIG15X50	0.5		No
Story5	B130	448	Beam	7.04557	VIG30X50	VIG30X50	0.5		No
Story5	B131	289	Beam	7.43694	VIG30X50	VIG30X50	0.5		No
Story5	B134	432	Beam	7.14493	VIG30X50	VIG30X50	0.5		No
Story5	B137	447	Beam	6.2814	VIG30X50	VIG30X50	0.5		No
Story5	B138	453	Beam	7.42106	VIG30X50	VIG30X50	0.5		No
Story4	B2	58	Beam	1.6	VIG50X50	VIG50X50	0.5		Yes
Story4	B3	169	Beam	5.59397	VIG50X50	VIG50X50	0.5		No
Story4	B4	174	Beam	7.42462	VIG50X50	VIG50X50	0.5		No
Story4	B5	177	Beam	7.52857	VIG50X50	VIG50X50	0.5		No
Story4	B6	181	Beam	7.55418	VIG50X50	VIG50X50	0.5		No
Story4	B7	205	Beam	2.92359	VIG50X50	VIG50X50	0.5		Yes
Story4	B9	207	Beam	2.26718	VIG15X50	VIG15X50	0.5		Yes
Story4	B29	269	Beam	2.30579	VIG30X50	VIG30X50	0.5		Yes
Story4	B34	271	Beam	1.66263	VIG30X50	VIG30X50	0.5		Yes
Story4	B39	272	Beam	4.28673	VIG30X50	VIG30X50	0.5		Yes
Story4	B33	273	Beam	7.52547	VIG30X50	VIG30X50	0.5		Yes
Story4	B17	276	Beam	7.29209	VIG30X50	VIG30X50	0.5		Yes
Story4	B44	279	Beam	2.44902	VIG30X50	VIG30X50	0.5		Yes
Story4	B45	281	Beam	7.66327	VIG40X50	VIG40X50	0.5		No
Story4	B46	296	Beam	7.34313	VIG40X50	VIG40X50	0.5		No
Story4	B51	280	Beam	1.63795	VIG15X50	VIG15X50	0.5		Yes
Story4	B52	282	Beam	1.63065	VIG50X50	VIG50X50	0.5		Yes
Story4	B13	283	Beam	4.95138	VIG50X50	VIG50X50	0.5		No
Story4	B8	284	Beam	7.48708	VIG40X50	VIG40X50	0.5		No
Story4	B10	299	Beam	7.09447	VIG40X50	VIG40X50	0.5		Yes
Story4	B47	285	Beam	7.14564	VIG40X50	VIG40X50	0.5		No
Story4	B48	301	Beam	6.85891	VIG40X50	VIG40X50	0.5		Yes
Story4	B50	286	Beam	7.46799	VIG50X50	VIG50X50	0.5		No
Story4	B37	287	Beam	6.28187	VIG40X50	VIG40X50	0.5		Yes
Story4	B53	303	Beam	7.0451	VIG40X50	VIG40X50	0.5		Yes
Story4	B54	288	Beam	7.52503	VIG50X50	VIG50X50	0.5		No
Story4	B42	291	Beam	7.51691	VIG50X50	VIG50X50	0.5		No
Story4	B56	290	Beam	4.90852	VIG40X50	VIG40X50	0.5		No
Story4	B57	305	Beam	6.92813	VIG40X50	VIG40X50	0.5		No
Story4	B30	292	Beam	2.63198	VIG50X50	VIG50X50	0.5		Yes
Story4	B38	293	Beam	4.40562	VIG15X50	VIG15X50	0.5		No
Story4	B58	349	Beam	6.46737	VIG15X50	VIG15X50	0.5		No
Story4	B26	4	Beam	2.21123	VIG15X50	VIG15X50	0.5		Yes
Story4	B61	295	Beam	1.6534	VIG15X50	VIG15X50	0.5		Yes

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story4	B74	183	Beam	6.06114	VIG40X50	VIG40X50	0.5		Yes
Story4	B88	297	Beam	2.00533	VIG40X50	VIG40X50	0.5		Yes
Story4	B90	298	Beam	2.01382	VIG40X50	VIG40X50	0.5		Yes
Story4	B96	300	Beam	1.99344	VIG40X50	VIG40X50	0.5		Yes
Story4	B98	302	Beam	2.01096	VIG40X50	VIG40X50	0.5		Yes
Story4	B100	304	Beam	2.00337	VIG40X50	VIG40X50	0.5		Yes
Story4	B106	307	Beam	2.00287	VIG15X50	VIG15X50	0.5		Yes
Story4	B43	309	Beam	1.59172	VIG15X50	VIG15X50	0.5		Yes
Story4	B73	310	Beam	5.77013	VIG15X50	VIG15X50	0.5		No
Story4	B75	311	Beam	7.41195	VIG15X50	VIG15X50	0.5		No
Story4	B76	312	Beam	7.5341	VIG15X50	VIG15X50	0.5		No
Story4	B77	313	Beam	7.55713	VIG15X50	VIG15X50	0.5		No
Story4	B92	315	Beam	2.50107	VIG40X50	VIG40X50	0.5		Yes
Story4	B93	316	Beam	1.67307	VIG15X50	VIG15X50	0.5		Yes
Story4	B97	318	Beam	2.50478	VIG40X50	VIG40X50	0.5		Yes
Story4	B102	320	Beam	4.0665	VIG15X50	VIG15X50	0.5		Yes
Story4	B104	322	Beam	2.49737	VIG40X50	VIG40X50	0.5		Yes
Story4	B109	325	Beam	2.47968	VIG40X50	VIG40X50	0.5		Yes
Story4	B112	326	Beam	7.42779	VIG15X50	VIG15X50	0.5		No
Story4	B114	328	Beam	2.46171	VIG15X50	VIG15X50	0.5		Yes
Story4	B81	333	Beam	1.75098	VIG15X50	VIG15X50	0.5		Yes
Story4	B82	334	Beam	7.34409	VIG15X50	VIG15X50	0.5		Yes
Story4	B99	338	Beam	1.62168	VIG15X50	VIG15X50	0.5		Yes
Story4	B107	339	Beam	5.14054	VIG15X50	VIG15X50	0.5		No
Story4	B110	340	Beam	7.45374	VIG15X50	VIG15X50	0.5		No
Story4	B115	341	Beam	7.53399	VIG15X50	VIG15X50	0.5		No
Story4	B118	343	Beam	2.50139	VIG15X50	VIG15X50	0.5		Yes
Story4	B119	344	Beam	1.66736	VIG30X50	VIG30X50	0.5		Yes
Story4	B120	346	Beam	3.66879	VIG15X50	VIG15X50	0.5		Yes
Story4	B123	348	Beam	1.99094	VIG15X50	VIG15X50	0.5		Yes
Story4	B125	351	Beam	2.9714	VIG15X50	VIG15X50	0.5		Yes
Story4	B79	102	Beam	1.6609	VIG40X50	VIG40X50	0.5		Yes
Story4	B85	133	Beam	1.70747	VIG15X50	VIG15X50	0.5		Yes
Story4	B116	167	Beam	5.94588	VIG15X50	VIG15X50	0.5		Yes
Story4	B59	329	Beam	7.28904	VIG15X50	VIG15X50	0.5		Yes
Story4	B1	246	Beam	7.54238	VIG15X50	VIG15X50	0.5		No
Story4	B130	446	Beam	7.04557	VIG40X50	VIG40X50	0.5		No
Story4	B131	275	Beam	7.43694	VIG30X50	VIG30X50	0.5		No
Story4	B134	431	Beam	7.14493	VIG40X50	VIG40X50	0.5		No
Story4	B137	445	Beam	6.2814	VIG40X50	VIG40X50	0.5		No
Story4	B138	452	Beam	7.42106	VIG30X50	VIG30X50	0.5		No
Story3	B2	15	Beam	1.6	VIG50X50	VIG50X50	0.5		Yes
Story3	B3	16	Beam	5.59397	VIG50X50	VIG50X50	0.5		No
Story3	B4	18	Beam	7.42462	VIG50X50	VIG50X50	0.5		No
Story3	B5	19	Beam	7.52857	VIG50X50	VIG50X50	0.5		No
Story3	B6	21	Beam	7.55418	VIG50X50	VIG50X50	0.5		No
Story3	B7	25	Beam	2.92359	VIG50X50	VIG50X50	0.5		Yes
Story3	B9	26	Beam	2.26718	VIG15X50	VIG15X50	0.5		Yes
Story3	B11	27	Beam	1.7	VIG15X50	VIG15X50	0.5		Yes
Story3	B14	37	Beam	7.6029	VIG15X50	VIG15X50	0.5		No
Story3	B16	40	Beam	7.41491	VIG15X50	VIG15X50	0.5		No
Story3	B18	45	Beam	5.5915	VIG15X50	VIG15X50	0.5		No
Story3	B21	61	Beam	1.70073	VIG40X50	VIG40X50	0.5		Yes
Story3	B25	157	Beam	1.70095	VIG15X50	VIG15X50	0.5		Yes

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story3	B28	159	Beam	1.6929	VIG30X50	VIG30X50	0.5		Yes
Story3	B12	161	Beam	3.64263	VIG30X50	VIG30X50	0.5		Yes
Story3	B20	166	Beam	7.41621	VIG30X50	VIG30X50	0.5		No
Story3	B24	75	Beam	7.26846	VIG30X50	VIG30X50	0.5		Yes
Story3	B29	168	Beam	2.30579	VIG30X50	VIG30X50	0.5		Yes
Story3	B34	172	Beam	1.66263	VIG60X50	VIG60X50	0.5		Yes
Story3	B39	173	Beam	4.28673	VIG60X50	VIG60X50	0.5		Yes
Story3	B33	175	Beam	7.52547	VIG60X50	VIG60X50	0.5		No
Story3	B17	182	Beam	7.29209	VIG60X50	VIG60X50	0.5		Yes
Story3	B44	185	Beam	2.44902	VIG60X50	VIG60X50	0.5		Yes
Story3	B45	187	Beam	7.66327	VIG40X50	VIG40X50	0.5		No
Story3	B46	245	Beam	7.34313	VIG40X50	VIG40X50	0.5		No
Story3	B51	186	Beam	1.63795	VIG15X50	VIG15X50	0.5		Yes
Story3	B52	189	Beam	1.63065	VIG60X50	VIG60X50	0.5		Yes
Story3	B13	190	Beam	4.95138	VIG60X50	VIG60X50	0.5		No
Story3	B8	191	Beam	7.48708	VIG40X50	VIG40X50	0.5		No
Story3	B10	249	Beam	7.09447	VIG40X50	VIG40X50	0.5		No
Story3	B47	193	Beam	7.14564	VIG40X50	VIG40X50	0.5		No
Story3	B48	252	Beam	6.85891	VIG40X50	VIG40X50	0.5		No
Story3	B50	195	Beam	7.46799	VIG60X50	VIG60X50	0.5		No
Story3	B37	196	Beam	6.28187	VIG40X50	VIG40X50	0.5		Yes
Story3	B53	255	Beam	7.0451	VIG40X50	VIG40X50	0.5		No
Story3	B54	198	Beam	7.52503	VIG60X50	VIG60X50	0.5		No
Story3	B55	199	Beam	0.00363	COL80X80	COL80X80	0.5		No
Story3	B42	202	Beam	7.51691	VIG60X50	VIG60X50	0.5		No
Story3	B56	200	Beam	4.90852	VIG40X50	VIG40X50	0.5		No
Story3	B57	258	Beam	6.92813	VIG40X50	VIG40X50	0.5		No
Story3	B30	203	Beam	2.63198	VIG60X50	VIG60X50	0.5		Yes
Story3	B38	204	Beam	4.40562	VIG15X50	VIG15X50	0.5		No
Story3	B58	261	Beam	6.46737	VIG15X50	VIG15X50	0.5		No
Story3	B26	206	Beam	2.21123	VIG15X50	VIG15X50	0.5		Yes
Story3	B61	208	Beam	1.6534	VIG15X50	VIG15X50	0.5		Yes
Story3	B65	230	Beam	0.00451	COL70X70	COL70X70	0.5		No
Story3	B74	400	Beam	6.06114	VIG40X50	VIG40X50	0.5		No
Story3	B88	247	Beam	2.00533	VIG40X50	VIG40X50	0.5		Yes
Story3	B90	248	Beam	2.01382	VIG40X50	VIG40X50	0.5		Yes
Story3	B96	251	Beam	1.99344	VIG40X50	VIG40X50	0.5		Yes
Story3	B98	254	Beam	2.01096	VIG40X50	VIG40X50	0.5		Yes
Story3	B100	257	Beam	2.00337	VIG40X50	VIG40X50	0.5		Yes
Story3	B106	264	Beam	2.00287	VIG15X50	VIG15X50	0.5		Yes
Story3	B43	188	Beam	1.59172	VIG15X50	VIG15X50	0.5		Yes
Story3	B73	192	Beam	5.77013	VIG15X50	VIG15X50	0.5		No
Story3	B75	194	Beam	7.41195	VIG15X50	VIG15X50	0.5		No
Story3	B76	197	Beam	7.5341	VIG15X50	VIG15X50	0.5		No
Story3	B77	201	Beam	7.55713	VIG15X50	VIG15X50	0.5		Yes
Story3	B91	232	Beam	4.75203	VIG40X50	VIG40X50	0.5		No
Story3	B92	233	Beam	2.50107	VIG40X50	VIG40X50	0.5		Yes
Story3	B93	234	Beam	1.67307	VIG30X50	VIG30X50	0.5		Yes
Story3	B97	237	Beam	2.50478	VIG40X50	VIG40X50	0.5		Yes
Story3	B102	240	Beam	4.0665	VIG30X50	VIG30X50	0.5		Yes
Story3	B104	242	Beam	2.49737	VIG40X50	VIG40X50	0.5		Yes
Story3	B109	250	Beam	2.47968	VIG40X50	VIG40X50	0.5		Yes
Story3	B112	259	Beam	7.42779	VIG30X50	VIG30X50	0.5		No
Story3	B114	262	Beam	2.46171	VIG30X50	VIG30X50	0.5		Yes

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story3	B117	267	Beam	5.63963	VIG30X50	VIG30X50	0.5		No
Story3	B81	76	Beam	1.75098	VIG15X50	VIG15X50	0.5		Yes
Story3	B82	110	Beam	7.34409	VIG15X50	VIG15X50	0.5		No
Story3	B118	52	Beam	2.50139	VIG15X50	VIG15X50	0.5		Yes
Story3	B79	399	Beam	1.6609	VIG40X50	VIG40X50	0.5		Yes
Story3	B85	55	Beam	1.70747	VIG15X50	VIG15X50	0.5		Yes
Story3	B116	74	Beam	5.94588	VIG15X50	VIG15X50	0.5		No
Story3	B122	50	Beam	4.75265	VIG15X50	VIG15X50	0.5		No
Story3	B127	77	Beam	1.63285	VIG30X50	VIG30X50	0.5		Yes
Story3	B128	78	Beam	3.69802	VIG30X50	VIG30X50	0.5		Yes
Story3	B15	9	Beam	0.00666	COL70X70	COL70X70	0.5		No
Story3	B84	105	Beam	1.6813	VIG40X50	VIG40X50	0.5		Yes
Story3	B87	109	Beam	1.68039	VIG40X50	VIG40X50	0.5		Yes
Story3	B113	229	Beam	7.59173	VIG30X50	VIG30X50	0.5		No
Story3	B124	278	Beam	1.6609	VIG40X50	VIG40X50	0.5		Yes
Story3	B36	107	Beam	4.74375	VIG40X50	VIG40X50	0.5		Yes
Story3	B41	162	Beam	4.46609	VIG40X50	VIG40X50	0.5		Yes
Story3	B83	306	Beam	4.02257	VIG40X50	VIG40X50	0.5		Yes
Story3	B1	277	Beam	7.54238	VIG30X50	VIG30X50	0.5		Yes
Story3	B130	444	Beam	7.04557	VIG40X50	VIG40X50	0.5		No
Story3	B131	180	Beam	7.43694	VIG60X50	VIG60X50	0.5		No
Story3	B134	176	Beam	7.14493	VIG40X50	VIG40X50	0.5		No
Story3	B135	270	Beam	6.96382	VIG40X50	VIG40X50	0.5		No
Story3	B136	274	Beam	1.68077	VIG40X50	VIG40X50	0.5		No
Story3	B35	438	Beam	7.24908	VIG40X50	VIG40X50	0.5		No
Story3	B40	439	Beam	1.68077	VIG40X50	VIG40X50	0.5		No
Story3	B137	443	Beam	6.2814	VIG40X50	VIG40X50	0.5		No
Story3	B138	451	Beam	7.42106	VIG50X50	VIG50X50	0.5		No
Story2	B2	63	Beam	1.6	VIG50X50	VIG50X50	0.5		Yes
Story2	B4	80	Beam	7.42462	VIG50X50	VIG50X50	0.5		Yes
Story2	B5	81	Beam	7.52857	VIG50X50	VIG50X50	0.5		Yes
Story2	B7	83	Beam	2.92359	VIG50X50	VIG50X50	0.5		Yes
Story2	B9	84	Beam	2.26718	VIG15X50	VIG15X50	0.5		Yes
Story2	B11	85	Beam	1.7	VIG15X50	VIG15X50	0.5		Yes
Story2	B14	86	Beam	7.6029	VIG15X50	VIG15X50	0.5		No
Story2	B16	87	Beam	7.41491	VIG15X50	VIG15X50	0.5		No
Story2	B18	88	Beam	5.5915	VIG15X50	VIG15X50	0.5		Yes
Story2	B21	90	Beam	1.70073	VIG40X50	VIG40X50	0.5		Yes
Story2	B25	91	Beam	1.70095	VIG15X50	VIG15X50	0.5		Yes
Story2	B28	92	Beam	1.6929	VIG50X50	VIG50X50	0.5		Yes
Story2	B12	93	Beam	3.64263	VIG50X50	VIG50X50	0.5		No
Story2	B20	95	Beam	7.41621	VIG50X50	VIG50X50	0.5		No
Story2	B24	96	Beam	7.26846	VIG50X50	VIG50X50	0.5		Yes
Story2	B29	97	Beam	2.30579	VIG50X50	VIG50X50	0.5		Yes
Story2	B23	98	Beam	7.2531	VIG40X50	VIG40X50	0.5		No
Story2	B31	99	Beam	7.25404	VIG15X50	VIG15X50	0.5		No
Story2	B34	100	Beam	1.66263	VIG60X50	VIG60X50	0.5		Yes
Story2	B39	101	Beam	4.28673	VIG60X50	VIG60X50	0.5		Yes
Story2	B33	103	Beam	7.52547	VIG60X50	VIG60X50	0.5		No
Story2	B17	108	Beam	7.29209	VIG60X50	VIG60X50	0.5		No
Story2	B44	111	Beam	2.44902	VIG60X50	VIG60X50	0.5		Yes
Story2	B45	113	Beam	7.66327	VIG40X50	VIG40X50	0.5		Yes
Story2	B51	112	Beam	1.63795	VIG15X50	VIG15X50	0.5		Yes
Story2	B52	115	Beam	1.63065	VIG60X50	VIG60X50	0.5		Yes

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story2	B13	116	Beam	4.95138	VIG60X50	VIG60X50	0.5		No
Story2	B8	117	Beam	7.48708	VIG40X50	VIG40X50	0.5		No
Story2	B10	118	Beam	7.09447	VIG40X50	VIG40X50	0.5		No
Story2	B47	119	Beam	7.14564	VIG40X50	VIG40X50	0.5		No
Story2	B48	120	Beam	6.85891	VIG40X50	VIG40X50	0.5		No
Story2	B50	121	Beam	7.46799	VIG60X50	VIG60X50	0.5		No
Story2	B37	122	Beam	6.28187	VIG40X50	VIG40X50	0.5		Yes
Story2	B53	123	Beam	7.0451	VIG40X50	VIG40X50	0.5		No
Story2	B54	124	Beam	7.52503	VIG60X50	VIG60X50	0.5		No
Story2	B55	125	Beam	0.00363	COL80X90	COL80X90	0.5		No
Story2	B42	128	Beam	7.51691	VIG60X50	VIG60X50	0.5		No
Story2	B56	126	Beam	4.90852	VIG40X50	VIG40X50	0.5		No
Story2	B30	129	Beam	2.63198	VIG60X50	VIG60X50	0.5		Yes
Story2	B38	130	Beam	4.40562	VIG15X50	VIG15X50	0.5		Yes
Story2	B58	131	Beam	6.46737	VIG15X50	VIG15X50	0.5		Yes
Story2	B26	132	Beam	2.21123	VIG15X50	VIG15X50	0.5		Yes
Story2	B61	134	Beam	1.6534	VIG15X50	VIG15X50	0.5		Yes
Story2	B63	178	Beam	7.24853	VIG40X50	VIG40X50	0.5		No
Story2	B65	265	Beam	0.00451	COL70X70	COL70X70	0.5		No
Story2	B70	235	Beam	6.96346	VIG40X50	VIG40X50	0.5		No
Story2	B72	398	Beam	6.50225	VIG40X50	VIG40X50	0.5		No
Story2	B74	413	Beam	6.06114	VIG40X50	VIG40X50	0.5		No
Story2	B81	7	Beam	1.75098	VIG15X50	VIG15X50	0.5		Yes
Story2	B82	22	Beam	7.34409	VIG15X50	VIG15X50	0.5		No
Story2	B79	401	Beam	1.6609	VIG40X50	VIG40X50	0.5		Yes
Story2	B85	46	Beam	1.70747	VIG15X50	VIG15X50	0.5		Yes
Story2	B116	48	Beam	5.94588	VIG15X50	VIG15X50	0.5		No
Story2	B127	89	Beam	1.63285	VIG15X50	VIG15X50	0.5		Yes
Story2	B84	94	Beam	1.6813	VIG40X50	VIG40X50	0.5		Yes
Story2	B87	231	Beam	1.68039	VIG40X50	VIG40X50	0.5		Yes
Story2	B113	260	Beam	7.59173	VIG50X50	VIG50X50	0.5		No
Story2	B124	308	Beam	1.6609	VIG40X50	VIG40X50	0.5		Yes
Story2	B27	179	Beam	3.67157	VIG40X50	VIG40X50	0.5		No
Story2	B95	239	Beam	3.67157	VIG40X50	VIG40X50	0.5		No
Story2	B101	243	Beam	3.46406	VIG40X50	VIG40X50	0.5		No
Story2	B103	372	Beam	3.46406	VIG40X50	VIG40X50	0.5		No
Story2	B108	29	Beam	2.79698	VIG50X50	VIG50X50	0.5		No
Story2	B126	415	Beam	2.79698	VIG50X50	VIG50X50	0.5		No
Story2	B132	420	Beam	2.51806	VIG50X50	VIG50X50	0.5		No
Story2	B133	418	Beam	5.03612	VIG50X50	VIG50X50	0.5		No
Story2	B130	442	Beam	7.04557	VIG40X50	VIG40X50	0.5		No
Story2	B131	106	Beam	7.43694	VIG60X50	VIG60X50	0.5		No
Story2	B134	5	Beam	7.14493	VIG40X50	VIG40X50	0.5		No
Story2	B135	35	Beam	6.96382	VIG40X50	VIG40X50	0.5		No
Story2	B136	104	Beam	1.68077	VIG40X50	VIG40X50	0.5		No
Story2	B35	436	Beam	7.24908	VIG40X50	VIG40X50	0.5		No
Story2	B40	437	Beam	1.68077	VIG40X50	VIG40X50	0.5		No
Story2	B137	441	Beam	6.2814	VIG40X50	VIG40X50	0.5		No
Story2	B138	450	Beam	7.42106	VIG50X50	VIG50X50	0.5		No
Story1	B4	422	Beam	7.42462	VIG40X40	VIG40X40	0.5		No
Story1	B5	428	Beam	7.52857	VIG40X40	VIG40X40	0.5		No
Story1	B28	28	Beam	1.6929	VIG30X50	VIG30X50	0.5		Yes
Story1	B20	20	Beam	7.41621	VIG30X50	VIG30X50	0.5		No
Story1	B24	23	Beam	7.26846	VIG30X50	VIG30X50	0.5		No

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story1	B31	31	Beam	7.25404	VIG15X50	VIG15X50	0.5		No
Story1	B34	34	Beam	1.66263	VIG50X50	VIG50X50	0.5		Yes
Story1	B39	36	Beam	4.28673	VIG50X50	VIG50X50	0.5		No
Story1	B33	33	Beam	7.52547	VIG50X50	VIG50X50	0.5		No
Story1	B17	13	Beam	7.29209	VIG50X50	VIG50X50	0.5		No
Story1	B44	43	Beam	2.44902	VIG50X50	VIG50X50	0.5		Yes
Story1	B52	47	Beam	1.63065	VIG40X50	VIG40X50	0.5		Yes
Story1	B13	30	Beam	4.95138	VIG40X50	VIG40X50	0.5		No
Story1	B8	156	Beam	7.48708	VIG40X50	VIG40X50	0.5		Yes
Story1	B10	430	Beam	7.09447	VIG40X40	VIG40X40	0.5		No
Story1	B47	323	Beam	7.14564	VIG40X50	VIG40X50	0.5		No
Story1	B48	429	Beam	6.85891	VIG40X40	VIG40X40	0.5		No
Story1	B50	51	Beam	7.46799	VIG40X50	VIG40X50	0.5		No
Story1	B37	414	Beam	6.28187	VIG40X50	VIG40X50	0.5		Yes
Story1	B54	53	Beam	7.52503	VIG40X50	VIG40X50	0.5		No
Story1	B55	54	Beam	0.00363	COL80X90	COL80X90	0.5		No
Story1	B42	17	Beam	7.51691	VIG40X50	VIG40X50	0.5		No
Story1	B56	41	Beam	4.90852	VIG40X50	VIG40X50	0.5		No
Story1	B30	56	Beam	2.63198	VIG40X50	VIG40X50	0.5		Yes
Story1	B38	57	Beam	4.40562	VIG15X50	VIG15X50	0.5		Yes
Story1	B66	163	Beam	7.49019	VIG30X50	VIG30X50	0.5		No
Story1	B67	164	Beam	7.4522	VIG30X50	VIG30X50	0.5		No
Story1	B68	165	Beam	7.2761	VIG30X50	VIG30X50	0.5		No
Story1	B49	44	Beam	4.64846	VIG15X50	VIG15X50	0.5		Yes
Story1	B60	1	Beam	3.64929	VIG30X50	VIG30X50	0.5		Yes
Story1	B63	38	Beam	7.24853	VIG40X50	VIG40X50	0.5		No
Story1	B64	49	Beam	7.59839	VIG30X50	VIG30X50	0.5		No
Story1	B65	59	Beam	0.00451	COL80X90	COL80X90	0.5		No
Story1	B70	155	Beam	6.96346	VIG40X50	VIG40X50	0.5		No
Story1	B72	170	Beam	6.50225	VIG40X50	VIG40X50	0.5		No
Story1	B86	24	Beam	2.49267	VIG30X50	VIG30X50	0.5		Yes
Story1	B32	10	Beam	4.48827	VIG40X50	VIG40X50	0.5		No
Story1	B62	11	Beam	3.175	VIG40X50	VIG40X50	0.5		No
Story1	B69	12	Beam	1.64632	VIG30X50	VIG30X50	0.5		Yes
Story1	B71	14	Beam	4.67026	VIG30X50	VIG30X50	0.5		No
Story1	B94	6	Beam	5.94811	VIG15X50	VIG15X50	0.5		No
Story1	B19	158	Beam	3.03057	VIG40X50	VIG40X50	0.5		No
Story1	B22	160	Beam	3.03057	VIG40X50	VIG40X50	0.5		No
Story1	B27	79	Beam	3.67157	VIG40X40	VIG40X40	0.5		No
Story1	B95	82	Beam	3.67157	VIG40X40	VIG40X40	0.5		No
Story1	B101	426	Beam	3.46406	VIG40X40	VIG40X40	0.5		No
Story1	B103	425	Beam	3.46406	VIG40X40	VIG40X40	0.5		No
Story1	B105	114	Beam	2.4177	VIG40X50	VIG40X50	0.5		No
Story1	B129	127	Beam	4.8354	VIG40X50	VIG40X50	0.5		No
Story1	B108	419	Beam	2.79698	VIG40X40	VIG40X40	0.5		No
Story1	B126	421	Beam	2.79698	VIG40X40	VIG40X40	0.5		No
Story1	B132	424	Beam	2.51806	VIG40X40	VIG40X40	0.5		No
Story1	B133	423	Beam	5.03612	VIG40X40	VIG40X40	0.5		No
Story1	B130	427	Beam	7.04557	VIG40X40	VIG40X40	0.5		No
Story1	B131	39	Beam	7.43694	VIG50X50	VIG50X50	0.5		No
Story1	B134	433	Beam	7.14493	VIG40X40	VIG40X40	0.5		No
Story1	B135	434	Beam	6.96382	VIG40X40	VIG40X40	0.5		No
Story1	B35	435	Beam	7.24908	VIG40X50	VIG40X50	0.5		No
Story1	B137	440	Beam	6.2814	VIG40X50	VIG40X50	0.5		No

Story	Label	Unique Name	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Modifiers
Story1	B138	449	Beam	7.42106	VIG50X50	VIG50X50	0.5		No

3.3 Shell Assignments

Table 3.3 - Shell Assignments - Summary

Story	Label	Unique Name	Section	Axis Angle deg	Pier
Story4	W1	3	Muro30		PW1
Story4	W2	4	Muro30		PW2
Story4	W5	15	Muro30		PW5
Story4	W6	16	Muro30		PW6
Story3	W1	5	Muro30		PW1
Story3	W2	6	Muro30		PW2
Story3	W3	9	Muro30		PW3
Story3	W4	10	Muro30		PW4
Story3	W5	17	Muro30		PW5
Story3	W6	18	Muro30		PW6
Story2	W1	1	Muro30		PW1
Story2	W2	2	Muro30		PW2
Story2	W3	11	Muro30		PW3
Story2	W4	12	Muro30		PW4
Story2	W5	13	Muro30		PW5
Story2	W6	14	Muro30		PW6
Story1	W3	7	Muro30		PW3
Story1	W4	8	Muro30		PW4
Story5	F6	25	CUBIERTA	172	
Story5	F7	26	CUBIERTA	82	
Story5	F8	27	CUBIERTA	172	
Story5	F9	28	CUBIERTA	82	
Story5	F10	29	CUBIERTA	172	
Story5	F11	30	CUBIERTA	172	
Story4	F5	24	PLAQUETASUP	82	
Story4	F8	32	PLAQUETASUP	82	
Story4	F12	31	PLAQUETASUP	82	
Story4	F16	37	PLAQUETASUP	82	
Story4	F17	38	PLAQUETASUP	82	
Story4	F35	39	PLAQUETASUP	82	
Story3	F3	21	PLAQUETASUP	82	
Story3	F14	49	PLAQUETASUP	82	
Story3	F25	47	PLAQUETASUP	82	
Story3	F26	48	PLAQUETASUP	82	
Story3	F32	57	PLAQUETASUP	82	
Story3	F36	56	PLAQUETASUP		
Story3	F37	59	PLAQUETASUP	82	
Story2	F2	20	PLAQUETASUP	82	
Story2	F19	41	PLAQUETASUP	82	
Story2	F20	42	PLAQUETASUP	82	
Story2	F21	43	PLAQUETASUP		
Story2	F22	44	PLAQUETASUP	82	
Story1	F1	19	PLAQUETASUP	82	
Story1	F23	45	PLAQUETASUP	82	

4 Loads

This chapter provides loading information as applied to the model.

4.1 Load Patterns

Table 4.1 - Load Patterns

Name	Type	Self Weight Multiplier	Auto Load
PP	Dead	1	
SCP	Superimposed Dead	0	
CV	Live	0	
SXESTAT	Seismic	0	User Coefficient
SYESTAT	Seismic	0	User Coefficient
CT	Other	0	
W	Wind	0	None
CVCUB	Live	0	

4.2 Auto Seismic Loading

User Coefficient Auto Seismic Load Calculation

This calculation presents the automatically generated lateral seismic loads for load pattern SXESTAT using the user input coefficients, as calculated by ETABS.

Direction and Eccentricity

Direction = X

Factors and Coefficients

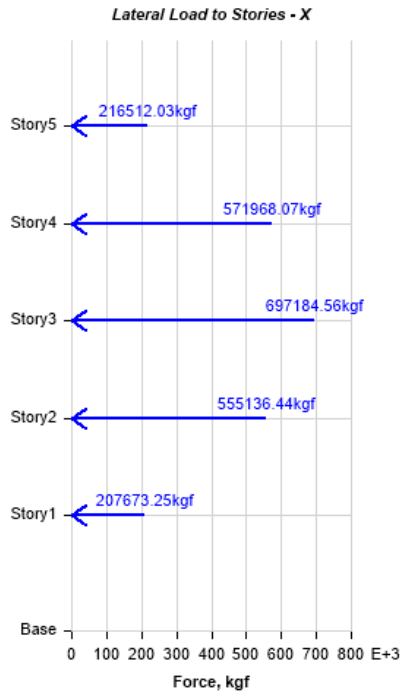
Equivalent Lateral Forces

Base Shear Coefficient, C	C = 1.1
Base Shear, V	V = CW

Calculated Base Shear

Direction	Period Used (sec)	C	W (kgf)	V (kgf)
X	0	0	2044067.59	2248474.35

Applied Story Forces



Story	Elevation	X-Dir	Y-Dir
	m	kgf	kgf
Story5	17.1	216512.03	0
Story4	13.8	571968.07	0
Story3	10.5	697184.56	0
Story2	7.2	555136.44	0
Story1	3.9	207673.25	0
Base	0	0	0

User Coefficient Auto Seismic Load Calculation

This calculation presents the automatically generated lateral seismic loads for load pattern SYESTAT using the user input coefficients, as calculated by ETABS.

Direction and Eccentricity

Direction = Y

Factors and Coefficients

Equivalent Lateral Forces

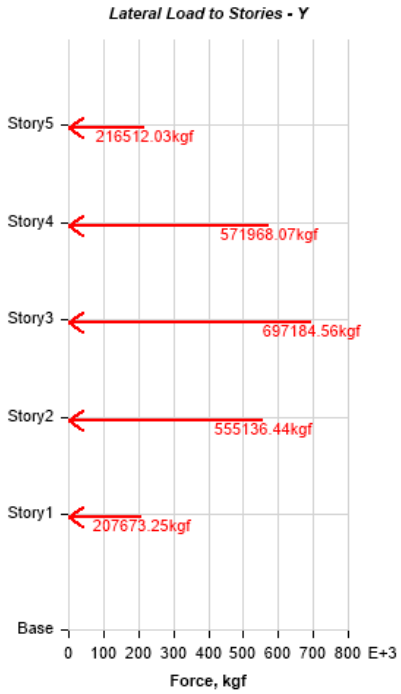
Base Shear Coefficient, C C = 1.1

Base Shear, V V = CW

Calculated Base Shear

Direction	Period Used (sec)	C	W (kgf)	V (kgf)
Y	0	0	2044067.59	2248474.35

Applied Story Forces



Story	Elevation	X-Dir	Y-Dir
	m	kgf	kgf
Story5	17.1	0	216512.03
Story4	13.8	0	571968.07
Story3	10.5	0	697184.56
Story2	7.2	0	555136.44
Story1	3.9	0	207673.25
Base	0	0	0

4.3 Applied Loads

4.3.1 Line Loads

Table 4.4 - Frame Loads - Distributed

Story	Label	Unique Name	Design Type	Load Pattern	LoadType	Direction	Relative Distance Start	Relative Distance End	Absolute Distance Start m	Absolute Distance End m	Force at Start kgf/m	Force at End kgf/m
Story5	B9	253	Beam	W	Force	Gravity	0	1	0	2.26718	50	50
Story5	B34	263	Beam	W	Force	Gravity	0	1	0	1.66263	200	200
Story5	B39	266	Beam	W	Force	Gravity	0	1	0	4.28673	200	200
Story5	B33	268	Beam	W	Force	Gravity	0	1	0	7.52547	200	200
Story5	B17	294	Beam	W	Force	Gravity	0	1	0	7.29209	200	200
Story5	B44	314	Beam	W	Force	Gravity	0	1	0	2.44902	200	200
Story5	B52	321	Beam	W	Force	Gravity	0	1	0	1.63065	200	200
Story5	B13	324	Beam	W	Force	Gravity	0	1	0	4.95138	200	200
Story5	B50	331	Beam	W	Force	Gravity	0	1	0	7.46799	200	200
Story5	B54	335	Beam	W	Force	Gravity	0	1	0	7.52503	200	200
Story5	B42	337	Beam	W	Force	Gravity	0	1	0	7.51691	266	266
Story5	B30	342	Beam	W	Force	Gravity	0	1	0	2.63198	266	266
Story5	B77	366	Beam	W	Force	Gravity	0	1	0	7.55713	50	50
Story5	B93	368	Beam	W	Force	Gravity	0	1	0	1.67307	50	50
Story5	B102	370	Beam	W	Force	Gravity	0	1	0	4.0665	50	50
Story5	B112	374	Beam	W	Force	Gravity	0	1	0	7.42779	50	50
Story5	B99	379	Beam	W	Force	Gravity	0	1	0	1.62168	50	50
Story5	B107	380	Beam	W	Force	Gravity	0	1	0	5.14054	50	50
Story5	B110	381	Beam	W	Force	Gravity	0	1	0	7.45374	50	50
Story5	B115	382	Beam	W	Force	Gravity	0	1	0	7.53399	50	50
Story5	B125	388	Beam	W	Force	Gravity	0	1	0	2.9714	50	50
Story5	B59	376	Beam	W	Force	Gravity	0	1	0	7.28904	50	50
Story5	B1	236	Beam	W	Force	Gravity	0	1	0	7.54238	50	50
Story5	B131	289	Beam	W	Force	Gravity	0	1	0	7.43694	200	200
Story5	B9	253	Beam	CVCUB	Force	Gravity	0	1	0	2.26718	62.5	62.5
Story5	B42	337	Beam	CVCUB	Force	Gravity	0	1	0	7.51691	332.5	332.5
Story5	B30	342	Beam	CVCUB	Force	Gravity	0	1	0	2.63198	332.5	332.5
Story5	B77	366	Beam	CVCUB	Force	Gravity	0	1	0	7.55713	62.5	62.5
Story5	B93	368	Beam	CVCUB	Force	Gravity	0	1	0	1.67307	62.5	62.5
Story5	B102	370	Beam	CVCUB	Force	Gravity	0	1	0	4.0665	62.5	62.5
Story5	B112	374	Beam	CVCUB	Force	Gravity	0	1	0	7.42779	62.5	62.5
Story5	B99	379	Beam	CVCUB	Force	Gravity	0	1	0	1.62168	62.5	62.5
Story5	B107	380	Beam	CVCUB	Force	Gravity	0	1	0	5.14054	62.5	62.5
Story5	B110	381	Beam	CVCUB	Force	Gravity	0	1	0	7.45374	62.5	62.5
Story5	B115	382	Beam	CVCUB	Force	Gravity	0	1	0	7.53399	62.5	62.5
Story5	B125	388	Beam	CVCUB	Force	Gravity	0	1	0	2.9714	62.5	62.5
Story5	B59	376	Beam	CVCUB	Force	Gravity	0	1	0	7.28904	62.5	62.5
Story5	B1	236	Beam	CVCUB	Force	Gravity	0	1	0	7.54238	62.5	62.5

4.3.2 Area Loads

Table 4.5 - Shell Loads - Uniform

Story	Label	Unique Name	Load Pattern	Direction	Load kgf/m²
Story5	F6	25	SCP	Gravity	35
Story4	F5	24	SCP	Gravity	390
Story3	F3	21	SCP	Gravity	390
Story3	F14	49	SCP	Gravity	390
Story3	F37	59	SCP	Gravity	390

Story	Label	Unique Name	Load Pattern	Direction	Load kgf/m²
Story2	F2	20	SCP	Gravity	390
Story2	F19	41	SCP	Gravity	390
Story2	F20	42	SCP	Gravity	390
Story2	F21	43	SCP	Gravity	390
Story2	F22	44	SCP	Gravity	390
Story1	F1	19	SCP	Gravity	390
Story5	F6	25	CV	Gravity	50
Story4	F5	24	CV	Gravity	500
Story3	F3	21	CV	Gravity	500
Story2	F2	20	CV	Gravity	500
Story1	F1	19	CV	Gravity	500

4.4 Load Cases

Table 4.6 - Load Cases - Summary

Name	Type
PESOPROPIO	Linear Static
SOBRECARGAIMP	Linear Static
VIVA	Linear Static
SISMOXESTAT	Linear Static
SISMOYESTAT	Linear Static
SISMOXMODAL	Response Spectrum
SISMOYMODAL	Response Spectrum
CT	Linear Static
W	Linear Static
CVCUB	Linear Static
~TorsionSISMOXMODAL	Linear Static
~TorsionSISMOYMODAL	Linear Static

4.5 Load Combinations

Table 4.7 - Load Combinations

Name	Load Case/Combo	Scale Factor	Type	Auto
SISMOXCOR	SISMOXMODAL	1.492	Linear Add	No
SISMOYCOR	SISMOYMODAL	1.559	Linear Add	No
SISMOXDIS	SISMOXCOR	0.264	Linear Add	No
SISMOYDIS	SISMOYCOR	0.264	Linear Add	No
SISMO X DINA	SISMOXCOR	1	Linear Add	No
SISMO X DINA	SISMOYCOR	0.3		No
SISMO Y DINA	SISMOXCOR	0.3	Linear Add	No
SISMO Y DINA	SISMOYCOR	1		No
DERIVA X EST	SISMOXESTAT	1	Linear Add	No
DERIVA X EST	SISMOYESTAT	0.3		No
DERIVA Y EST	SISMOXESTAT	0.3	Linear Add	No
DERIVA Y EST	SISMOYESTAT	1		No
SERV1	SOBRECARGAIMP	1	Linear Add	No
SERV1	PESOPROPIO	1		No
SERV2	SOBRECARGAIMP	1	Linear Add	No
SERV2	VIVA	1		No
SERV2	PESOPROPIO	1		No

Name	Load Case/Combo	Scale Factor	Type	Auto
SERV3	SOBRECARGAIMP	1	Linear Add	No
SERV3	SISMOXDIS	0.7		No
SERV3	PESOPROPIO	1		No
SERV4	SOBRECARGAIMP	1	Linear Add	No
SERV4	SISMOYDIS	0.7		No
SERV4	PESOPROPIO	1		No
SERV5	SOBRECARGAIMP	1	Linear Add	No
SERV5	VIVA	0.75		No
SERV5	SISMOXDIS	0.525		No
SERV5	PESOPROPIO	1		No
SERV6	SOBRECARGAIMP	1	Linear Add	No
SERV6	VIVA	0.75		No
SERV6	SISMOYDIS	0.525		No
SERV6	PESOPROPIO	1		No
SERV7	SOBRECARGAIMP	0.6	Linear Add	No
SERV7	PESOPROPIO	0.6		No
SERV8	SOBRECARGAIMP	0.6	Linear Add	No
SERV8	SISMOXDIS	0.7		No
SERV8	PESOPROPIO	0.6		No
SERV9	SOBRECARGAIMP	0.6	Linear Add	No
SERV9	SISMOYDIS	0.7		No
SERV9	PESOPROPIO	0.6		No
COMB1	SOBRECARGAIMP	1.4	Linear Add	No
COMB1	PESOPROPIO	1.4		No
COMB2	SOBRECARGAIMP	1.2	Linear Add	No
COMB2	VIVA	1.6		No
COMB2	PESOPROPIO	1.2		No
COMB2	CT	1.6		No
COMB2	CVCUB	0.5		No
COMB3	SOBRECARGAIMP	1.2	Linear Add	No
COMB3	VIVA	1		No
COMB3	PESOPROPIO	1.2		No
COMB3	CVCUB	1.6		No
COMB4	SOBRECARGAIMP	1.2	Linear Add	No
COMB4	VIVA	1		No
COMB4	SISMOXDIS	1		No
COMB4	SISMOYDIS	0.3		No
COMB4	PESOPROPIO	1.2		No
COMB4	CVCUB	1.6		No
COMB4	W	0.8		No
COMB5	SOBRECARGAIMP	1.2	Linear Add	No
COMB5	VIVA	1		No
COMB5	SISMOXDIS	0.3		No
COMB5	SISMOYDIS	1		No
COMB5	PESOPROPIO	1.2		No
COMB5	CVCUB	0.5		No
COMB5	W	1.6		No

Name	Load Case/Combo	Scale Factor	Type	Auto
COMB6	SOBRECARGAIMP	0.9	Linear Add	No
COMB6	SISMOXDIS	1		No
COMB6	SISMOYDIS	0.3		No
COMB6	PESOPROPIO	0.9		No
COMB6	CT	1.6		No
COMB7	SOBRECARGAIMP	0.9	Linear Add	No
COMB7	SISMOXDIS	0.3		No
COMB7	SISMOYDIS	1		No
COMB7	PESOPROPIO	0.9		No
COMB7	CT	1.6		No
COMB8	SOBRECARGAIMP	0.9	Linear Add	No
COMB8	PESOPROPIO	0.9		No
COMB8	W	1.6		No
COMB9	SOBRECARGAIMP	0.9	Linear Add	No
COMB9	SISMOXDIS	1		No
COMB9	SISMOYDIS	0.3		No
COMB9	PESOPROPIO	0.9		No
COMB10	SOBRECARGAIMP	0.9	Linear Add	No
COMB10	SISMOXDIS	0.3		No
COMB10	SISMOYDIS	1		No
COMB10	PESOPROPIO	0.9		No

5 Analysis Results

This chapter provides analysis results.

5.1 Structure Results

Table 5.1 - Base Reactions

Load Case/Combo	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m	X m	Y m	Z m
PESOPROPIO	0	0	1390017.34	18819899.04	-21394844.42	0	0	0	0
SOBRECARGAIMP	0	0	712501.82	9658744.72	-10978247.32	0	0	0	0
VIVA	0	0	823927.57	11178238.9	-12509117.11	5.511E-05	0	0	0
SISMOXESTAT	-2248474.35	-0.0004682	0	0.003403	-23722860.95	31963496.41	0	0	0
SISMOYESTAT	-0.0001678	-2248474.35	0	23722860.95	-0.001225	-35335682.5	0	0	0
SISMOXMODAL Max	1357060.73	70300.54	0	565442.1	15021320.73	18524678.08	0	0	0
SISMOYMODAL Max	70300.54	1298771.28	0	14692793.09	607018.33	22689628.77	0	0	0
CT	0	0	0	0	0	0	0	0	0
W	0	0	16272.41	217049.88	-265832.35	0	0	0	0
CVCUB	0	0	7283.53	101332.16	-152300.94	0	0	0	0
SISMOXCOR Max	2024734.61	104888.4	0	843639.61	22411810.53	27638819.69	0	0	0
SISMOXCOR Min	-2024734.61	-104888.4	0	-843639.61	-22411810.53	-27638819.69	0	0	0
SISMOYCOR Max	109598.54	2024784.42	0	22906064.43	946341.57	35373131.25	0	0	0
SISMOYCOR Min	-109598.54	-2024784.42	0	-22906064.43	-946341.57	-35373131.25	0	0	0
SISMOXDIS Max	534529.94	27690.54	0	222720.86	5916717.98	7296648.4	0	0	0
SISMOXDIS Min	-534529.94	-27690.54	0	-222720.86	-5916717.98	-7296648.4	0	0	0
SISMOYDIS Max	28934.01	534543.09	0	6047201.01	249834.18	9338506.65	0	0	0
SISMOYDIS Min	-28934.01	-534543.09	0	-6047201.01	-249834.18	-9338506.65	0	0	0
SISMO X DINA Max	2057614.17	712323.73	0	7715458.94	22695713	38250759.07	0	0	0
SISMO X DINA Min	-2057614.17	-712323.73	0	-7715458.94	-22695713	-38250759.07	0	0	0
SISMO Y DINA Max	717018.92	2056250.94	0	23159156.32	7669884.73	43664777.16	0	0	0
SISMO Y DINA Min	-717018.92	-2056250.94	0	-23159156.32	-7669884.73	-43664777.16	0	0	0
DERIVA X EST	-2248474.35	-674542.3	0	7116858.29	-23722860.95	21362791.66	0	0	0
DERIVA Y EST	-674542.3	-2248474.35	0	23722860.95	-7116858.29	-25746633.58	0	0	0
SERV1	0	0	2102519.16	28478643.77	-32373091.74	0	0	0	0
SERV2	0	0	2926446.73	39656882.67	-44882208.85	8.01E-05	0	0	0
SERV3 Max	374170.96	19383.38	2102519.16	28634548.37	-28231389.15	5107653.88	0	0	0
SERV3 Min	-374170.96	-19383.38	2102519.16	28322739.17	-36514794.33	-5107653.88	0	0	0
SERV4 Max	20253.81	374180.16	2102519.16	32711684.47	-32198207.82	6536954.65	0	0	0
SERV4 Min	-20253.81	-374180.16	2102519.16	24245603.06	-32547975.66	-6536954.65	0	0	0
SERV5 Max	280628.22	14537.53	2720464.83	36979251.39	-38648652.63	3830740.41	0	0	0
SERV5 Min	-280628.22	-14537.53	2720464.83	36745394.5	-44861206.51	-3830740.41	0	0	0
SERV6 Max	15190.36	280635.12	2720464.83	40037103.48	-41623766.63	4902715.99	0	0	0
SERV6 Min	-15190.36	-280635.12	2720464.83	33687542.41	-41886092.51	-4902715.99	0	0	0
SERV7	0	0	1261511.5	17087186.26	-19423855.04	0	0	0	0
SERV8 Max	374170.96	19383.38	1261511.5	17243090.86	-15282152.46	5107653.88	0	0	0
SERV8 Min	-374170.96	-19383.38	1261511.5	16931281.66	-23565557.63	-5107653.88	0	0	0
SERV9 Max	20253.81	374180.16	1261511.5	21320226.97	-19248971.12	6536954.65	0	0	0
SERV9 Min	-20253.81	-374180.16	1261511.5	12854145.55	-19598738.97	-6536954.65	0	0	0
COMB1	0	0	2943526.82	39870101.27	-45322328.44	0	0	0	0
COMB2	0	0	3844948.86	52110220.84	-58938447.93	0.0001182	0	0	0
COMB3	0	0	3358604.21	45514742.87	-51600508.7	8.519E-05	0	0	0
COMB4 Max	543210.14	188053.46	3371622.14	47725263.94	-45821506.35	10098200.39	0	0	0
COMB4 Min	-543210.14	-188053.46	3371622.14	43651501.62	-57804842.81	-10098200.39	0	0	0
COMB5 Max	189293	542850.25	3376628.18	51864574.58	-49833459.86	11527501.17	0	0	0
COMB5 Min	-189293	-542850.25	3376628.18	39636540.05	-53883159	-11527501.17	0	0	0
COMB6 Max	543210.14	188053.46	1892267.24	27667660.55	-23144114.33	10098200.39	0	0	0
COMB6 Min	-543210.14	-188053.46	1892267.24	23593898.23	-35127450.8	-10098200.39	0	0	0

Load Case/Combo	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m	X m	Y m	Z m
COMB7 Max	189293	542850.25	1892267.24	31744796.66	-27110933	11527501.17	0	0	0
COMB7 Min	-189293	-542850.25	1892267.24	19516762.12	-31160632.14	-11527501.17	0	0	0
COMB8	0	0	1918303.1	25978059.2	-29561114.33	0	0	0	0
COMB9 Max	543210.14	188053.46	1892267.24	27667660.55	-23144114.33	10098200.39	0	0	0
COMB9 Min	-543210.14	-188053.46	1892267.24	23593898.23	-35127450.8	-10098200.39	0	0	0
COMB10 Max	189293	542850.25	1892267.24	31744796.66	-27110933	11527501.17	0	0	0
COMB10 Min	-189293	-542850.25	1892267.24	19516762.12	-31160632.14	-11527501.17	0	0	0

Table 5.2 - Centers of Mass and Rigidity

Story	Diaphragm	Mass X kgf-s²/m	Mass Y kgf-s²/m	XCM m	YCM m	Cumulative X kgf-s²/m	Cumulative Y kgf-s²/m	XCCM m	YCCM m	XCR m	YCR m
Story1	D1	36745.72	36745.72	14.6788	10.0495	36745.72	36745.72	14.6788	10.0495	15.6116	12.2913
Story2	D2	62055.4	62055.4	15.2868	13.0118	62055.4	62055.4	15.2868	13.0118	16.2763	23.8425
Story3	D3	53768.09	53768.09	15.2193	15.2489	53768.09	53768.09	15.2193	15.2489	16.5026	23.1164
Story4	D4	33293.61	33293.61	16.3806	15.3424	33293.61	33293.61	16.3806	15.3424	16.5138	23.4028
Story5	D5	0	0	17.4008	13.5003	0	0	0	0		

Table 5.3 - Diaphragm Center of Mass Displacements

Story	Diaphragm	Load Case/Combo	UX m	UY m	RZ rad	Point	X m	Y m	Z m
Story5	D5	PESOPROPIO	0.000244	-0.000288	1.8E-05	248	17.4008	13.5003	17.1
Story5	D5	SOBRECARGAIMP	-7.7E-05	6.2E-05	-6E-06	248	17.4008	13.5003	17.1
Story5	D5	VIVA	-0.000135	5.6E-05	-7E-06	248	17.4008	13.5003	17.1
Story5	D5	SISMOXESTAT	0.06709	0.000952	0.001158	248	17.4008	13.5003	17.1
Story5	D5	SISMOYESTAT	3.5E-05	0.034417	-0.000167	248	17.4008	13.5003	17.1
Story5	D5	SISMOXMODAL Max	0.054554	0.004184	0.002229	248	17.4008	13.5003	17.1
Story5	D5	SISMOYMODAL Max	0.003553	0.032354	0.001448	248	17.4008	13.5003	17.1
Story5	D5	CT	0	0	0	248	17.4008	13.5003	17.1
Story5	D5	W	6E-06	-1.4E-05	1E-06	248	17.4008	13.5003	17.1
Story5	D5	CVCUB	1.4E-05	-1E-05	1E-06	248	17.4008	13.5003	17.1
Story5	D5	SISMOXCOR Max	0.081395	0.006242	0.003325	248	17.4008	13.5003	17.1
Story5	D5	SISMOXCOR Min	-0.081395	-0.006242	-0.003325	248	17.4008	13.5003	17.1
Story5	D5	SISMOYCOR Max	0.005539	0.05044	0.002258	248	17.4008	13.5003	17.1
Story5	D5	SISMOYCOR Min	-0.005539	-0.05044	-0.002258	248	17.4008	13.5003	17.1
Story5	D5	SISMOXDIS Max	0.021488	0.001648	0.000878	248	17.4008	13.5003	17.1
Story5	D5	SISMOXDIS Min	-0.021488	-0.001648	-0.000878	248	17.4008	13.5003	17.1
Story5	D5	SISMOYDIS Max	0.001462	0.013316	0.000596	248	17.4008	13.5003	17.1
Story5	D5	SISMOYDIS Min	-0.001462	-0.013316	-0.000596	248	17.4008	13.5003	17.1
Story5	D5	SISMO X DINA Max	0.083056	0.021374	0.004003	248	17.4008	13.5003	17.1
Story5	D5	SISMO X DINA Min	-0.083056	-0.021374	-0.004003	248	17.4008	13.5003	17.1
Story5	D5	SISMO Y DINA Max	0.029957	0.052313	0.003255	248	17.4008	13.5003	17.1
Story5	D5	SISMO Y DINA Min	-0.029957	-0.052313	-0.003255	248	17.4008	13.5003	17.1
Story5	D5	DERIVA X EST	0.067101	0.011277	0.001108	248	17.4008	13.5003	17.1
Story5	D5	DERIVA Y EST	0.020162	0.034702	0.000181	248	17.4008	13.5003	17.1
Story5	D5	SERV1	0.000166	-0.000227	1.2E-05	248	17.4008	13.5003	17.1
Story5	D5	SERV2	3.2E-05	-0.00017	5E-06	248	17.4008	13.5003	17.1
Story5	D5	SERV3 Max	0.015208	0.000927	0.000626	248	17.4008	13.5003	17.1
Story5	D5	SERV3 Min	-0.014876	-0.00138	-0.000603	248	17.4008	13.5003	17.1
Story5	D5	SERV4 Max	0.00119	0.009095	0.000429	248	17.4008	13.5003	17.1
Story5	D5	SERV4 Min	-0.000857	-0.009548	-0.000405	248	17.4008	13.5003	17.1

CALCULO Y CHEQUEO DE ESFUERZOS EN LAS ZAPATAS, TPI

LEY DE NAVIER

LUZ MARINA OROZCO - RENE RESTREPO BARRERO

ING. CIVIL

		M3		KG
Concreto M3 =	240.44	C	233.24	1	11,744.39
kg acero cimentacion=	11,744.39				
Qadm (ton/m²)=	7.5				
f´c (kg/cm²) =	210				
fy (kg/cm²) =	4200				

		tn	tn	tn-m	tn-m	m	m	Zapata		
	Zap	Pels	Pelr	My	Mx	bc	hc	H (cm)	L1 (m)	L2 (m)
	20	20	20	20	20	20	20			
19	1	81.25	118.93	5.15	2.75	0.50	0.50	50	3.30	3.30
18	2	80.36	107.62	1.13	9.31	0.50	0.50	50	3.30	3.30
24	3	136.62	183.17	0.86	2.12	0.50	0.50	50	4.30	4.30
21	4	93.13	122.02	1.17	0.37	0.50	0.50	50	3.50	3.50
23	5	124.26	193.34	3.30	13.62	0.50	0.50	50	4.10	4.10
26	6	133.52	182.24	1.06	9.98	0.80	0.80	50	4.20	4.20
31	7	241.42	326.20	3.61	8.75	0.80	0.80	60	5.70	5.70
22	8	258.80	348.83	4.59	2.92	0.80	0.80	60	5.90	5.90
29	9	220.16	295.61	1.75	0.90	0.80	0.80	50	5.40	5.40
32	10	141.27	189.08	1.21	6.39	0.80	0.80	50	4.40	4.40
38	11	116.05	155.70	4.54	9.68	0.80	0.80	50	3.90	3.90
35	12	208.20	280.13	6.21	0.45	0.80	0.80	50	5.30	5.30
36	13	238.37	321.42	6.80	0.46	0.80	0.80	60	5.60	5.60
34	14	227.78	307.23	5.20	0.50	0.80	0.80	60	5.50	5.50
44	15	134.46	176.40	3.21	2.63	0.80	0.80	50	4.20	4.20
3	16	249.84	186.84	47.27	0.00	0.70	0.70	80	5.80	5.80
4	17	99.26	144.51	2.86	11.05	0.70	0.70	50	3.60	3.60
5	18	98.63	129.27	0.60	0.10	0.70	0.70	50	3.60	3.60
6	18	98.01	127.98	0.89	0.49	0.70	0.70	50	3.60	3.60
7	18	299.81	224.21	68.66	0.00	0.70	0.70	80	6.30	6.30

M3	Punzonamiento			Cortante			flexión	Paralelo a ambos lados					
208.95	Vu (ton)	d (cm)		Vu (ton)	d (cm)		Mu (ton.m)	As (cm²)	Ø				
	5.45	109.49	22	OK	34.96	16	OK	35.32	54.95	3/4	@	16	cm
	5.45	99.08	20	OK	31.63	15	OK	31.96	54.95	3/4	@	16	cm
	9.25	174.60	35	OK	62.62	22	OK	76.89	71.60	3/4	@	17	cm
	6.13	113.40	22	OK	37.30	16	OK	39.22	58.28	3/4	@	16	cm
	8.41	183.39	36	OK	64.60	24	OK	76.39	68.27	3/4	@	17	cm
	8.82	166.61	25	OK	55.10	20	OK	62.70	69.93	3/4	@	17	cm
	19.49	308.44	43	OK	109.88	30	OK	171.76	113.89	3/4	@	14	cm
	20.89	331.10	46	OK	119.43	31	OK	192.22	117.88	3/4	@	14	cm
	14.58	280.27	42	OK	102.37	29	OK	144.79	108.75	3/4	@	14	cm
	9.68	174.30	26	OK	58.87	20	OK	69.62	73.26	3/4	@	17	cm
	7.61	140.22	21	OK	44.71	18	OK	47.96	64.94	3/4	@	17	cm
	14.05	265.04	40	OK	96.19	28	OK	133.79	100.18	3/4	@	15	cm
	18.82	303.29	42	OK	107.33	29	OK	165.30	111.89	3/4	@	14	cm
	18.15	289.27	40	OK	101.67	28	OK	154.24	109.89	3/4	@	14	cm
	8.82	161.27	24	OK	53.34	19	OK	60.69	69.93	3/4	@	17	cm
	26.91	175.49	23	OK	58.63	15	OK	104.74	154.51	3/4	@	10	cm
	6.48	130.28	21	OK	40.95	17	OK	42.20	59.94	3/4	@	16	cm
	6.48	116.54	19	OK	36.63	16	OK	37.75	59.94	3/4	@	16	cm
	6.48	115.37	19	OK	36.26	15	OK	37.37	59.94	3/4	@	16	cm
	31.75	212.66	27	OK	73.67	18	OK	139.51	167.83	3/4	@	10	cm

CALCULO Y CHEQUEO DE ESFUERZOS EN LAS ZAPATAS

LEY DE NAVIER

RENE RESTREPO BARRERO

ING. CIVIL

Qadm (ton/m²)= 7.5
f´c (kq/cm²) = 210
fy (kg/cm²) = 4200

	tn	tn	tn-m	tn-m	m	m	Zapata			Esfuerzos				
Zap	Pels	Pelr	My	Mx	bc	hc	H (cm)	L1 (m)	L2 (m)	σ1	σ2	σ3	σ4	Chequeo
1	81.2488	118.9321	5.1501	2.746	0.5	0.5	50	3.30	3.30	5.107	4.706	4.095	5.207	Ok
2	80.3622	107.6226	1.1332	9.307	0.5	0.5	50	3.30	3.30	5.096	5.829	3.758	3.983	Ok
3	136.624	183.1677	0.86	2.117	0.5	0.5	50	4.30	4.30	4.943	4.989	4.776	4.831	Ok
4	93.1345	122.0199	1.1727	0.369	0.5	0.5	50	3.50	3.50	5.089	4.994	4.925	5.109	Ok
5	124.259	193.3374	3.3046	13.62	0.5	0.5	50	4.10	4.10	5.048	5.527	3.945	4.300	Ok
6	133.518	182.235	1.06	9.98	0.8	0.8	50	4.20	4.20	5.160	5.528	4.450	4.534	Ok
7	241.422	326.2027	3.61	8.752	0.8	0.8	60	5.70	5.70	4.991	5.065	4.687	4.811	Ok
8	258.803	348.8279	4.5925	2.921	0.8	0.8	60	5.90	5.90	4.976	4.924	4.810	4.956	Ok
9	220.16	295.6088	1.7524	0.899	0.8	0.8	50	5.40	5.40	5.043	5.012	4.966	5.022	Ok
10	141.268	189.0797	1.2134	6.392	0.8	0.8	50	4.40	4.40	4.930	5.108	4.507	4.591	Ok
11	116.047	155.7038	4.541	9.683	0.8	0.8	50	3.90	3.90	5.283	5.433	4.127	4.708	Ok
12	208.2	280.1276	6.2077	0.446	0.8	0.8	50	5.30	5.30	4.968	4.786	4.762	5.062	Ok
13	238.368	321.4221	6.7998	0.457	0.8	0.8	60	5.60	5.60	5.091	4.923	4.902	5.177	Ok
14	227.775	307.2307	5.2034	0.5	0.8	0.8	60	5.50	5.50	5.040	4.907	4.883	5.099	Ok
15	134.457	176.3971	3.2111	2.634	0.8	0.8	50	4.20	4.20	5.142	5.050	4.766	5.079	Ok
16	249.84	186.84456	47.268	0	0.7	0.7	80	5.80	5.80	5.068	3.982	3.982	5.881	Ok
17	99.2618	144.5141	2.8555	11.05	0.7	0.7	50	3.60	3.60	5.338	5.809	3.914	4.374	Ok
18	98.632	129.272	0.6017	0.103	0.7	0.7	50	3.60	3.60	5.085	5.031	5.013	5.083	Ok
18	98.0054	127.9843	0.8865	0.491	0.7	0.7	50	3.60	3.60	5.064	5.008	4.923	5.042	Ok
18	299.807	224.213472	68.663	0	0.7	0.7	80	6.30	6.30	5.158	3.937	3.937	6.094	Ok

INDICE DE SOBRE ESFUERZO- PECIENTE CENTRO COMERCIAL CUBA- PRIMERA PROPUESTA

TABLE: Concrete Joint Summary - ACI 318-11

Story	Label	Unique Name	Design Section	Status	B/C Major Combo	B/C Major Ratio	B/C Minor Combo	B/C Minor Ratio	JS Major Combo	JS Major Ratio	JS Minor Combo	JS Minor Ratio	Warnings	Errors
Story5	C5	402	COL50X50	No Message	COMB7	0.405	COMB7	0.554	COMB4	0.331	COMB4	0.462	No Message	No Message
Story5	C7	403	COL50X50	No Message	COMB6	0.76	COMB6	0.957	COMB4	0.63	COMB4	0.814	No Message	No Message
Story5	C8	404	COL50X50	No Message	COMB6	0.939	COMB6	0.938	COMB4	0.779	COMB4	0.796	No Message	No Message
Story5	C9	405	COL50X50	No Message	COMB7	0.379	COMB7	0.497	COMB4	0.317	COMB4	0.422	No Message	No Message
Story5	C10	406	COL50X50	No Message	COMB4	0.987	COMB4	0.976	COMB4	0.982	COMB4	0.981	No Message	No Message
Story5	C11	407	COL50X50	No Message	COMB6	0.888	COMB6	0.931	COMB4	0.761	COMB4	0.786	No Message	No Message
Story5	C12	408	COL50X50	No Message	COMB6	0.646	COMB6	0.943	COMB4	0.533	COMB4	0.801	No Message	No Message
Story5	C13	409	COL50X50	No Message	COMB7	0.763	COMB7	0.909	COMB4	0.632	COMB4	0.775	No Message	No Message
Story5	C14	410	COL50X50	No Message	COMB7	0.781	COMB4	0.968	COMB4	0.649	COMB4	0.968	No Message	No Message
Story5	C15	411	COL50X50	No Message	COMB7	0.478	COMB7	0.682	COMB4	0.408	COMB4	0.574	No Message	No Message
Story5	C16	412	COL50X50	No Message	COMB6	0.827	COMB6	0.974	COMB4	0.698	COMB4	0.839	No Message	No Message
Story5	C20	416	COL50X50	No Message	COMB7	0.417	COMB7	0.914	COMB4	0.342	COMB4	0.748	No Message	No Message
Story5	C21	417	COL50X50	No Message	COMB6	0.681	COMB6	0.959	COMB4	0.568	COMB4	0.801	No Message	No Message
Story4	C5	350	COL50X50	No Message	COMB7	0.374	COMB4	0.938	COMB4	0.573	COMB4	0.973	No Message	No Message
Story4	C7	352	COL70X70	No Message	COMB6	0.288	COMB6	0.784	COMB4	0.358	COMB4	0.962	No Message	No Message
Story4	C8	353	COL60X70	No Message	COMB6	0.723	COMB6	0.936	COMB4	0.895	COMB4	0.974	No Message	No Message
Story4	C9	354	COL60X70	No Message	COMB7	0.432	COMB7	0.559	COMB4	0.568	COMB4	0.855	No Message	No Message
Story4	C10	355	COL60X70	No Message	COMB7	0.858	COMB4	0.974	COMB4	0.946	COMB4	0.988	No Message	No Message
Story4	C11	356	COL60X70	No Message	COMB6	0.547	COMB6	0.958	COMB4	0.693	COMB4	0.972	No Message	No Message
Story4	C12	361	COL60X80	No Message	COMB4	0.976	COMB6	0.904	COMB4	0.938	COMB4	0.956	No Message	No Message
Story4	C13	362	COL60X80	No Message	COMB4	0.968	COMB6	0.901	COMB4	0.897	COMB4	0.928	No Message	No Message
Story4	C14	363	COL60X80	No Message	COMB4	0.957	COMB4	0.928	COMB4	0.927	COMB4	0.984	No Message	No Message
Story4	C15	364	COL60X80	No Message	COMB7	0.685	COMB7	0.964	COMB4	0.743	COMB4	0.958	No Message	No Message
Story4	C16	365	COL60X80	No Message	COMB4	0.982	COMB4	0.946	COMB4	0.962	COMB4	0.948	No Message	No Message
Story4	C17	378	COL60X70	No Message	COMB4	0.977	COMB4	0.975	COMB4	0.975	COMB4	0.967	No Message	No Message
Story4	C18	390	COL60X70	No Message	COMB4	0.969	COMB4	0.967	COMB4	0.946	COMB4	0.934	No Message	No Message
Story4	C19	392	COL60X70	No Message	COMB4	0.973	COMB4	0.958	COMB4	0.938	COMB4	0.975	No Message	No Message
Story4	C20	394	COL60X70	No Message	COMB4	0.961	COMB4	0.943	COMB4	0.951	COMB4	0.981	No Message	No Message
Story4	C21	396	COL50X60	No Message	COMB4	0.987	COMB4	0.965	COMB4	0.875	COMB4	0.977	No Message	No Message
Story3	C1	209	COL70X70	No Message	COMB5	0.41	COMB4	0.981	COMB4	0.338	COMB4	0.959	No Message	No Message
Story3	C4	212	COL70X70	No Message	COMB7	0.462	COMB4	0.973	COMB4	0.454	COMB4	0.892	No Message	No Message
Story3	C5	213	COL70X70	No Message	COMB7	0.353	COMB7	0.894	COMB4	0.387	COMB4	0.873	No Message	No Message
Story3	C7	214	COL80X80	No Message	COMB6	0.634	COMB6	0.497	COMB4	0.78	COMB4	0.801	No Message	No Message
Story3	C8	215	COL80X80	No Message	COMB6	0.791	COMB6	0.851	COMB6	0.928	COMB4	0.892	No Message	No Message
Story3	C9	216	COL80X80	No Message	COMB7	0.375	COMB7	0.508	COMB4	0.584	COMB4	0.84	No Message	No Message
Story3	C10	217	COL80X80	No Message	COMB6	0.984	COMB7	0.901	COMB4	0.886	COMB4	0.796	No Message	No Message
Story3	C11	218	COL80X80	No Message	COMB6	0.743	COMB6	0.624	COMB6	0.842	COMB4	0.914	No Message	No Message
Story3	C12	219	COL80X80	No Message	COMB6	0.735	COMB6	0.532	COMB6	0.795	COMB4	0.82	No Message	No Message
Story3	C13	220	COL80X80	No Message	COMB6	0.723	COMB6	0.521	COMB6	0.856	COMB4	0.851	No Message	No Message
Story3	C14	221	COL80X80	No Message	COMB7	0.716	COMB7	0.829	COMB7	0.898	COMB4	0.985	No Message	No Message
Story3	C16	223	COL80X80	No Message	COMB7	0.71	COMB7	0.708	COMB7	0.801	COMB4	0.928	No Message	No Message
Story3	C17	224	COL60X70	No Message	COMB4	0.985	COMB4	0.908	COMB4	0.928	COMB4	0.946	No Message	No Message
Story3	C18	225	COL60X70	No Message	COMB4	0.972	COMB6	0.889	COMB4	0.957	COMB4	0.867	No Message	No Message
Story3	C19	226	COL60X70	No Message	COMB7	0.89	COMB7	0.791	COMB4	0.967	COMB4	0.925	No Message	No Message
Story3	C20	227	COL60X70	No Message	COMB7	0.929	COMB4	0.924	COMB4	0.982	COMB4	0.966	No Message	No Message
Story3	C21	228	COL60X70	No Message	COMB4	0.956	COMB4	0.967	COMB4	0.938	COMB4	0.873	No Message	No Message
Story2	C1	135	COL70X70	No Message	COMB7	0.741	COMB7	0.711	COMB4	0.913	COMB4	0.883	No Message	No Message
Story2	C2	136	COL70X70	No Message	COMB6	0.418	COMB6	0.559	COMB4	0.773	COMB4	0.951	No Message	No Message
Story2	C4	138	COL70X70	No Message	COMB7	0.593	COMB7	0.573	COMB4	0.905	COMB4	0.948	No Message	No Message
Story2	C5	139	COL70X70	No Message	COMB7	0.816	COMB7	0.811	COMB4	0.897	COMB4	0.938	No Message	No Message
Story2	C7	140	COL80X90	No Message	COMB6	0.508	COMB6	0.37	COMB4	0.693	COMB4	0.712	No Message	No Message
Story2	C8	141	COL80X90	No Message	COMB6	0.52	COMB6	0.552	COMB4	0.801	COMB4	0.783	No Message	No Message

Story2	C9	142	COL80X90	No Message	COMB6	0.243	COMB6	0.324	COMB4	0.519	COMB4	0.747	No Message	No Message
Story2	C10	143	COL80X90	No Message	COMB7	0.684	COMB7	0.579	COMB4	0.879	COMB4	0.813	No Message	No Message
Story2	C11	144	COL80X90	No Message	COMB6	0.502	COMB6	0.417	COMB4	0.736	COMB4	0.812	No Message	No Message
Story2	C12	145	COL80X90	No Message	COMB6	0.485	COMB6	0.365	COMB4	0.692	COMB4	0.729	No Message	No Message
Story2	C13	146	COL80X90	No Message	COMB6	0.472	COMB6	0.352	COMB4	0.746	COMB4	0.756	No Message	No Message
Story2	C14	147	COL80X90	No Message	COMB7	0.464	COMB7	0.555	COMB4	0.783	COMB4	0.804	No Message	No Message
Story2	C16	149	COL65X70	No Message	COMB7	0.647	COMB7	0.696	COMB4	0.883	COMB4	0.813	No Message	No Message
Story2	C17	150	COL80X90	No Message	COMB5	0.981	COMB7	0.919	COMB6	0.742	COMB4	0.505	No Message	No Message
Story2	C18	151	COL60X70	No Message	COMB6	0.973	COMB6	0.594	COMB4	0.859	COMB4	0.926	No Message	No Message
Story2	C19	152	COL60X70	No Message	COMB7	0.79	COMB7	0.495	COMB4	0.837	COMB4	0.976	No Message	No Message
Story2	C20	153	COL60X70	No Message	COMB7	0.835	COMB7	0.966	COMB4	0.894	COMB4	0.892	No Message	No Message
Story2	C21	154	COL80X90	No Message	COMB4	0.987	COMB4	0.958	COMB6	0.705	COMB6	0.776	No Message	No Message
Story1	C1	8	COL80X90	No Message	COMB7	0.085	COMB7	0.299	COMB4	0.101	COMB4	0.455	No Message	No Message
Story1	C2	32	COL80X90	No Message	COMB6	0.066	COMB6	0.239	COMB4	0.104	COMB4	0.452	No Message	No Message
Story1	C4	60	COL80X90	No Message	COMB7	0.171	COMB7	0.234	COMB4	0.285	COMB4	0.472	No Message	No Message
Story1	C5	62	COL80X90	No Message	COMB7	0.168	COMB7	0.339	COMB4	0.19	COMB4	0.472	No Message	No Message
Story1	C7	64	COL80X90	No Message	COMB6	0.366	COMB6	0.309	COMB4	0.725	COMB4	0.72	No Message	No Message
Story1	C8	65	COL80X90	No Message	COMB6	0.374	COMB6	0.449	COMB4	0.833	COMB4	0.824	No Message	No Message
Story1	C9	66	COL80X90	No Message	COMB6	0.185	COMB6	0.055	COMB4	0.463	COMB4	0.174	No Message	No Message
Story1	C10	67	COL80X90	No Message	COMB7	0.52	COMB7	0.465	COMB4	0.981	COMB4	0.872	No Message	No Message
Story1	C11	68	COL80X90	No Message	COMB6	0.367	COMB6	0.338	COMB4	0.767	COMB4	0.826	No Message	No Message
Story1	C12	69	COL80X90	No Message	COMB6	0.335	COMB6	0.232	COMB4	0.717	COMB4	0.602	No Message	No Message
Story1	C13	70	COL80X90	No Message	COMB6	0.321	COMB6	0.21	COMB4	0.76	COMB4	0.591	No Message	No Message
Story1	C14	71	COL80X90	No Message	COMB7	0.305	COMB7	0.262	COMB4	0.765	COMB4	0.798	No Message	No Message
Story1	C16	73	COL80X90	No Message	COMB7	0.518	COMB7	0.431	COMB4	0.855	COMB4	0.845	No Message	No Message