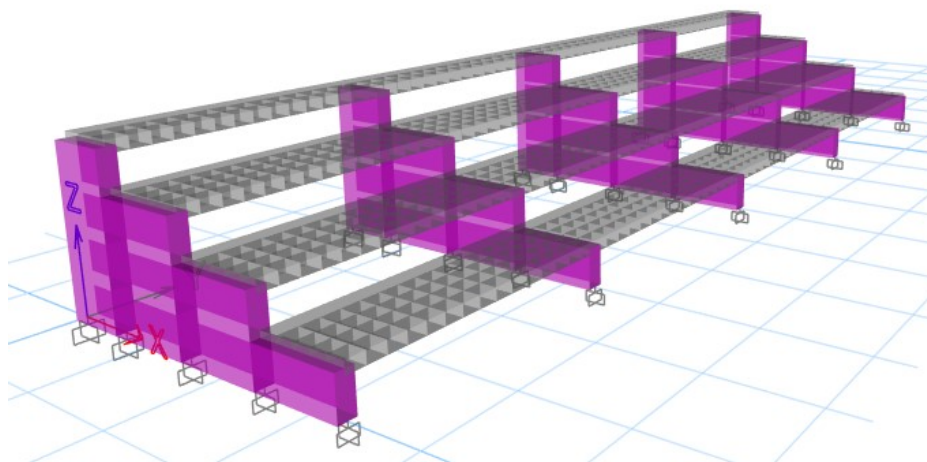


ANÁLISIS Y DISEÑO ESTRUCTURAL GRADERIAS DEL PROYECTO REMODELACION PARQUE PRINCIPAL DEL MUNICIPIO DE SANTA ROSA DEL SUR DEPARTAMENTO DEL BOLIVAR.



CALCULO



ING. DIEGO F. QUIROGA SANTIAGO

ESPECIALISTA EN ESTRUCTURAS UNINORTE

MP. 68202092070 STD.

VALLEDUPAR, MAYO DE 2025

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LISTA DE DISTRIBUCIÓN

El ORIGINAL del presente documento será entregado a la dependencia y entidad correspondiente, según se indica a continuación:

DEPENDENCIA

No. DE COPIAS

MUNICIPIO DE ST. ROSA DEL SUR

Original

1

Ing. Diego Quiroga

1

Las observaciones que resulten de su revisión y aplicación deben ser informadas para proceder a realizar sus modificaciones pertinentes.

ÍNDICE DE MODIFICACIONES

Índice Revisión	Capítulo Modificado	Fecha de Modificación	Observaciones
0	-	-	VERSIÓN ORIGINAL

ESTADO DE REVISIÓN Y APROBACIÓN

Título Documento	ANÁLISIS Y DISEÑO ESTRUCTURAL DE EDIFICIOS DE 1 PISO PARA LOCAL COMERCIAL DEL PROYECTO REMODELACION PARQUE PRINCIPAL DEL MUNICIPIO DE SANTA ROSA DEL SUR DEPARTAMENTO DEL BOLIVAR.
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REVISIÓN		0	1
RESPONSABLE ELABORACIÓN	Nombre	DIEGO QUIROGA	
	Firma		
	Fecha	MAYO DE 2025	
RESPONSABLE REVISIÓN	Nombre		
	Firma		
	Fecha		
RESPONSABLE APROBACIÓN	Nombre		
	Firma		
	Fecha		



INTRODUCCIÓN Y ALCANCE

En el presente informe se pretende mostrar el diseño estructural de GRADERIAS EN CONCRETO REFORZADO PARA LOCAL COMERCIAL DEL PROYECTO REMODELACION PARQUE PRINCIPAL DEL MUNICIPIO DE SANTA ROSA DEL SUR DEPARTAMENTO DEL BOLIVAR, realizado por el INGENIERO DIEGO FERNANDO QUIROGA SANTIAGO, el cual es una estructura en Mampostería Confinada.

Estas memorias de diseño estructural están realizadas con base en todos los requerimientos legales y normativos aplicables a las construcciones sismorresistentes para la Republica de Colombia, de acuerdo al el "Reglamento Colombiano de Construcción Sismorresistente" NSR-10.



1. ASPECTOS GENERALES

1.1. CRITERIOS DE DISEÑO

La metodología de análisis estructural a emplear en el modelo para el diseño de la estructura está basado en el LRFD Load Factor and Resisting Desing, bajo la Noma AISC360-05/IBC2016 AIS114-17, ACI318-08.

Los elementos en concreto reforzado se diseñaron basados en los requerimientos del título C de la Norma NSR-10.

Las unidades utilizadas en el diseño corresponden al sistema métrico Internacional, de acuerdo con lo exigido en NSR-10 A.1.7.1.

1.2 NORMAS Y CÓDIGOS APLICADOS

Para el cálculo y diseño se emplearon las siguientes normas:

Reglamento colombiano de Construcción Sismo Resistente "NSR-10" y DECRETOS AIS 114-17 para el cálculo de cargas, consideraciones para diseño sísmico de elementos, diseño de elementos en concreto reforzado, estructura metálica y conexiones AISC, para diseño de elementos metálicos.

Código AIS 360 IBC 2010, para diseño de elementos metálicos. Manual AISC, para diseño de conexiones. Estructural Welding Code-Steel AWS D1.1/D1.1, requerimientos de soldadura

1.3 DESCRIPCIÓN DE LA ESTRUCTURA

1.3.2 Estructura Graderías:

La gradería está dispuesta con losas macizas y viguetas en concreto reforzado, las cuales se apoyan en muros escalonados en concreto reforzado de las graderías.

Sistema Estructural: Muros estructurales en concreto reforzado.

Altura Total de la Estructura: 6.20m medidos desde el nivel de la losa de piso contrapiso hasta la parte superior de la ultima grada es de 1.60m.

Método de análisis sísmico: Fuerzas Horizontales Equivalentes.

1.5 MATERIALES

Características de los materiales empleados.

Las siguientes son las especificaciones mínimas establecidas para los materiales utilizables en la construcción:

(a) Concreto Estructura- El concreto debe tener una resistencia a la compresión a los 28 días, f'_c igual o superior a 21.0 MPa, el cual será utilizado en, viga de cimentación, Muros y Losas de Graderías.

Los solados de limpieza deben tener una resistencia a la compresión de 14 MPa.

CONCRETO ESTRUCTURA		
MATERIAL	RESISTENCIA	OBSERVACIÓN
Concreto Estructura	210 Kg/cm ²	$f'_c = 3000$ psi
	21 MPA	
Concreto de Limpieza	1400 Kg/cm ²	$f'_c = 1400$ psi
	14 MPA	

$$E_c = 3900 \sqrt{f'_c} \text{ en MPa}$$

Módulo de elasticidad $E_c = 3900 * 21^{0.5} = 17872$ Mpa.

(b) Acero de refuerzo - El acero de refuerzo longitudinal debe ser corrugado. En ningún caso, el acero de refuerzo puede tener un límite de fluencia, f_y , inferior a 420 MPa.

ACEROS DE REFUERZO		
MATERIAL	RESISTENCIA	OBSERVACIÓN
Acero $\varnothing > 3/8"$	4200 Kg/cm ²	$F'y = 60000$ psi
Acero $\varnothing \leq 3/8"$	4200Kg/cm ²	$F'y = 60000$ psi
	420 MPA	

2. ANÁLISIS Y AVALÚOS DE CARGAS

2.1 CARGA MUERTA

2.1.1 Carga Muerta Graderías:

TIPO DE CARGA	DETALLE CALCULOS	CARGA APLICADA (Kg/m2)
CARGA MUERTA		
LOSA $e=0.12m$	$0.12m \times 1.0m \times 1.0m \times 2400Kg/m^3$	288.00
BARANDA	50Kg/m2	50.00
CARGA MUERTA SOBRE IMPUESTA	200Kg/m2	200.00
TOTAL CARGA MUERTA		538.00

NOTA: Cargas como el peso propio de los elementos estructurales como los son Muros de concreto y Losas de Graderías, son tenidos en cuenta automáticamente por el programa Etabs y se identifica con el tipo de carga Dead.

2.2 CARGA VIVA

2.2.1 Carga Viva estructura Losas Graderías

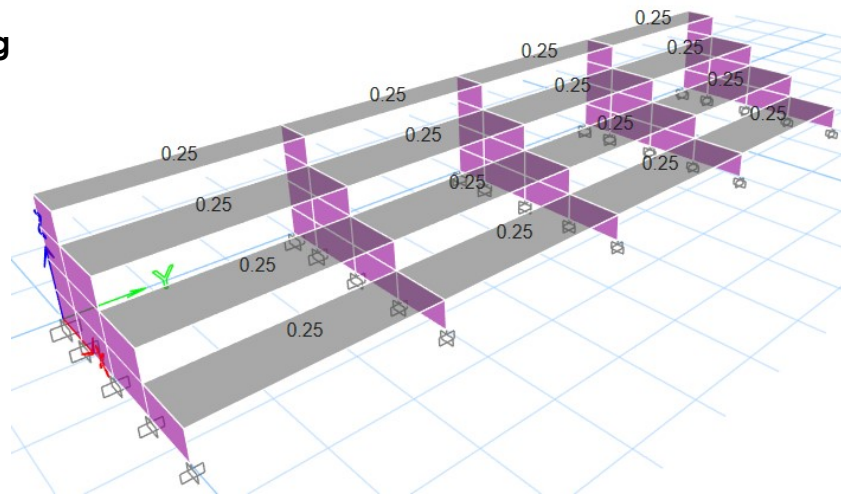
Tabla B.4.2.1-1
Cargas vivas mínimas uniformemente distribuidas

Ocupación o uso		Carga uniforme (kN/m ²) m ² de área en planta	Carga uniforme (kgf/m ²) m ² de área en planta
Reunión	Balcones	5.0	500
	Corredores y escaleras	5.0	500
	Silletería fija (fijada al piso)	3.0	300
	Gimnasios	5.0	500
	Vestíbulos	5.0	500
	Silletería móvil	5.0	500
	Áreas recreativas	5.0	500
	Plataformas	5.0	500
	Escenarios	7.5	750
Oficinas	Corredores y escaleras	3.0	300
	Oficinas	2.0	200
	Restaurantes	5.0	500
Educativos	Salones de clase	2.0	200
	Corredores y escaleras	5.0	500
	Bibliotecas		
	Salones de lectura	2.0	200
	Estanterías	7.0	700
Fábricas	Industrias livianas	5.0	500
	Industrias pesadas	10.0	1000
Institucional	Cuartos de cirugía, laboratorios	4.0	400
	Cuartos privados	2.0	200
	Corredores y escaleras	5.0	500
Comercio	Minorista	5.0	500
	Mayorista	6.0	600
Residencial	Balcones	5.0	500
	Cuartos privados y sus corredores	1.8	180
	Escaleras	3.0	300
Almacenamiento	Liviano	6.0	600
	Pesado	12.0	1200
Garajes	Garajes para automóviles de pasajeros	2.5	250
	Garajes para vehículos de carga de hasta 2.000 kg de capacidad.	5.0	500
Coliseos y Estadios	Graderías	5.0	500
	Escaleras	5.0	500

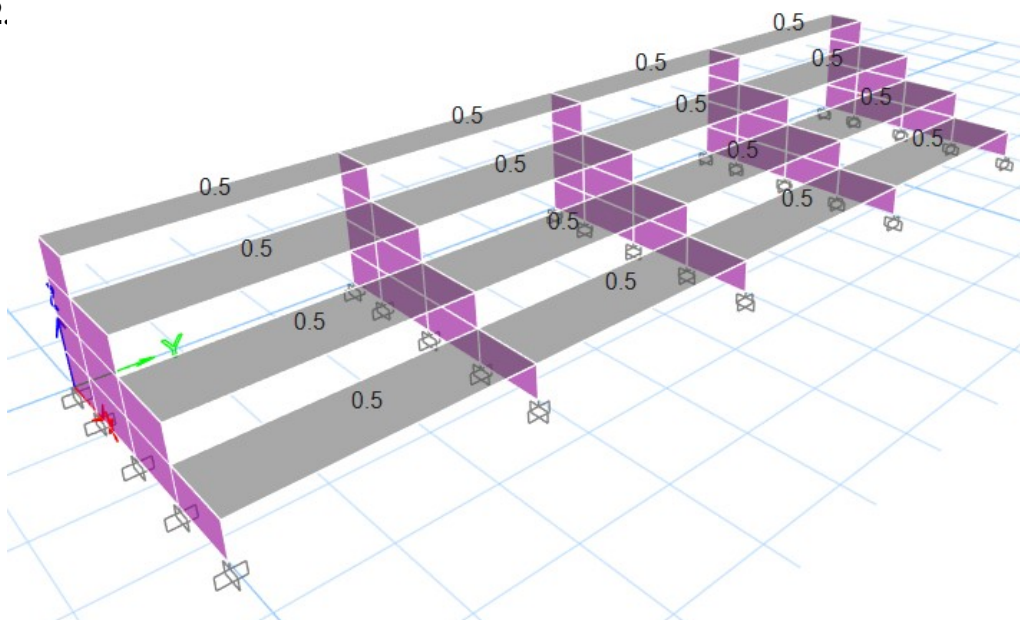
La carga Viva utilizada en las losas de la gradería es de **500Kg/m² = 0.50Ton/m²**

2.4 ESQUEMA DE CARGAS APLICADAS AL MODELO ESTRUCTURAL

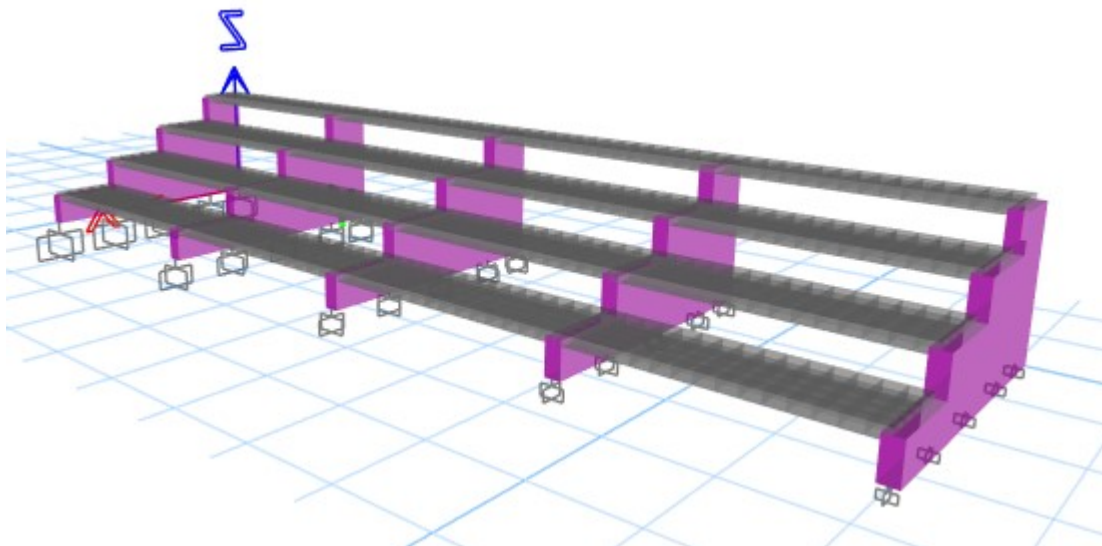
2.4.1 Carg



2.



2.5 CRITERIO DE MODELACIÓN PARA LA ESTRUCTURA LAS EN



2.5 CRITERIO DE MODELACIÓN PARA LA ESTRUCTURA LAS EN CONCRETO REFORZADO DE LAS GRADERIAS.

Para las cargas se utilizó un modelo tridimensional en ETABS con muros ortogonales que aportan rigidez a la estructura. Las cargas fueron transmitidas a los muros escalonados inclinadas de los pórticos principales, a través de cargas por m2 aplicadas a losas Shell del modelo y estas a su vez a los muros de apoyo. Estas losas se diseñaron por aparte como elementos que no aportan rigidez a la estructura de las graderías.

De igual manera la estructura para la gradería está dispuesta para resistir cargas verticales y laterales (Sísmicas y Viento); cuyo uso está definido en el decreto 926 de 2010, Norma Colombiana de Diseño y Construcción Sismo Resistente para zonas de amenaza sísmica Baja. El diseño se ajusta en un todo a la mencionada norma, en especial lo concerniente al diseño sísmico.

3. SISTEMA ESTRUCTURAL

MUROS ESTRUCTURALES EN CONCRETO REFORZADO CON CAPACIDAD MODERADA DE DISIPACIÓN DE ENERGÍA (DMO).

4. ANÁLISIS SISMICO

4.1 PARÁMETROS SÍSMICOS

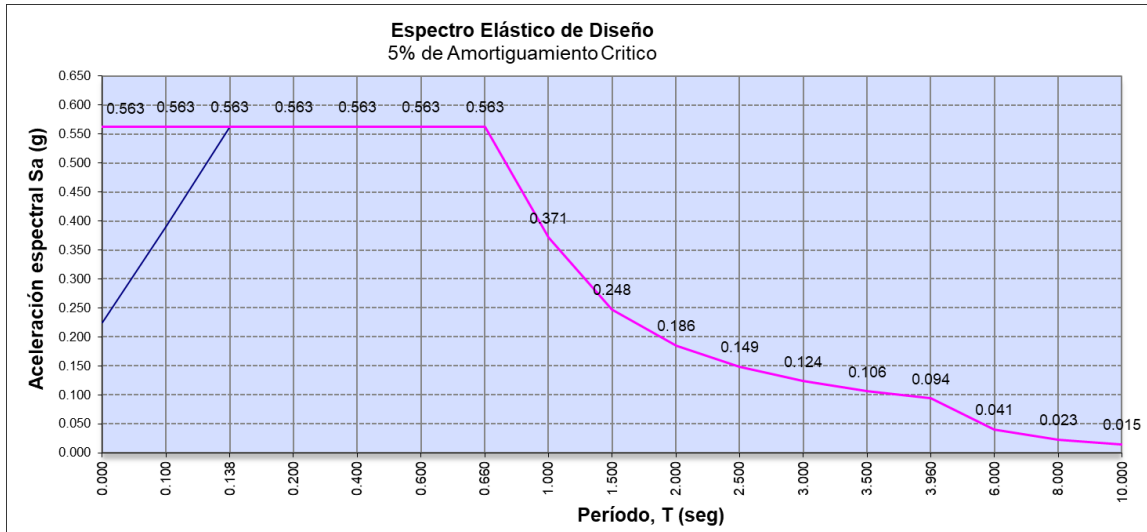
PERFIL DEL SUELO	Tipo C	Obtenido de Estudio de suelos
ZONA DE AMENAZA SISMICA	INTERMEDIA	Amenaza sísmica (Tabla A.2-2).
$A_a=$	0.15	Aceleración pico efectiva (Tabla A.2.3-2).
$A_v=$	0.15	Velocidad horizontal pico efectiva (Tabla A.2.3-2).
$F_a=$	1.2	Aceleración periodos cortos (Tabla A.2.4-4.)
$F_v=$	1.65	Aceleración periodos intermedios (Tabla A.2.4-4.)
GRUPO DE USO	I	Grupo de uso (Sección A.2.5.1)
$I=$	1.0	Coeficiente de Importancia (Tabla A.2-4)

4.2 FUERZAS HORIZONTALES EQUIVALENTES PARA ESTRUCTURA SISTEMA MUROS ESTRCUTURALES EN CONCRETO:

ALTURA DEL EDIFICIO H_n (m).	1.60	Altura del edificio desde la base.
$C_t =$	0.049	pórticos de concreto reforzado
$\alpha =$	0.75	pórticos de concreto reforzado
$T_a = C_t(H_n)^\alpha$ (Seg)	0.070	Período de vibración fundamental aproximado.
$T_c = 0.48(A_v F_v / A_a F_a)$ (Seg)	0.66	
$T_o = 0.10(A_v F_v / A_a F_a)$ (Seg)	0.138	
$T_L = 2.4 F_v$ (Seg)	3.96	
$S_a = 2.5 \times A_a \times F_a \times I$ (g)	0.56	Espectro de aceleración de diseño.
$K = 0.75 + 0.5 T$	1.00	

4.3 ESPECTRO ELÁSTICO DE DISEÑO

	<u>T_p (seg)</u>	<u>S_a (AD)</u>	<u>S_a (g)</u>	<u>FORMULAS</u>
	0.000	0.225	0.563	$S_a = 2.5 \times A_a \times F_a \times I$
	0.100	0.390	0.563	$S_a = 2.5 \times A_a \times F_a \times I$
T_o	0.138	0.563	0.563	$S_a = 2.5 \times A_a \times F_a \times I$
	0.200		0.563	$S_a = 2.5 \times A_a \times F_a \times I$
	0.400		0.563	$S_a = 2.5 \times A_a \times F_a \times I$
	0.600		0.563	$S_a = 2.5 \times A_a \times F_a \times I$
T_c	0.660		0.563	Para $T_c < T_p < T_L$, $S_a = 1.2 A_v F_v x l / T$
	1.000		0.371	$S_a = 1.2 \times A_v \times F_v \times I / T$
	1.500		0.248	$S_a = 1.2 \times A_v \times F_v \times I / T$
	2.000		0.186	$S_a = 1.2 \times A_v \times F_v \times I / T$
	2.500		0.149	$S_a = 1.2 \times A_v \times F_v \times I / T$
	3.000		0.124	$S_a = 1.2 \times A_v \times F_v \times I / T$
	3.500		0.106	$S_a = 1.2 \times A_v \times F_v \times I / T$
T_L	3.960		0.094	$S_a = (1.2 \times A_v \times F_v \times T_l \times I) / T^2$
	6.000		0.041	$S_a = (1.2 \times A_v \times F_v \times T_l \times I) / T^2$
	8.000		0.023	$S_a = (1.2 \times A_v \times F_v \times T_l \times I) / T^2$
	10.000		0.015	$S_a = (1.2 \times A_v \times F_v \times T_l \times I) / T^2$



3. ANÁLISIS ESTÁTICO

Para el cálculo de las fuerzas sísmicas, se realizó el método de las Fuerzas Horizontales Equivalentes, según lo establecido el capítulo A.4 de la Norma NSR-10. Teniendo en cuenta esto, se elaboró el análisis estático mediante un modelo matemático tridimensional en el programa ETABS.

4.4 CAPTURA SISMOS ESTÁTICOS

E Seismic Load Pattern - User Defined

Direction and Eccentricity		Factors	
☐ X Dir	☐ Y Dir	Base Shear Coefficient, C	0.563
☒ X Dir + Eccentricity	☐ Y Dir + Eccentricity	Building Height Exp., K	1
☐ X Dir - Eccentricity	☐ Y Dir - Eccentricity	Story Range	
Ecc. Ratio (All Diaph.)	0.05	Top Story	STORY1
Overwrite Eccentricities	Overwrite...	Bottom Story	BASE

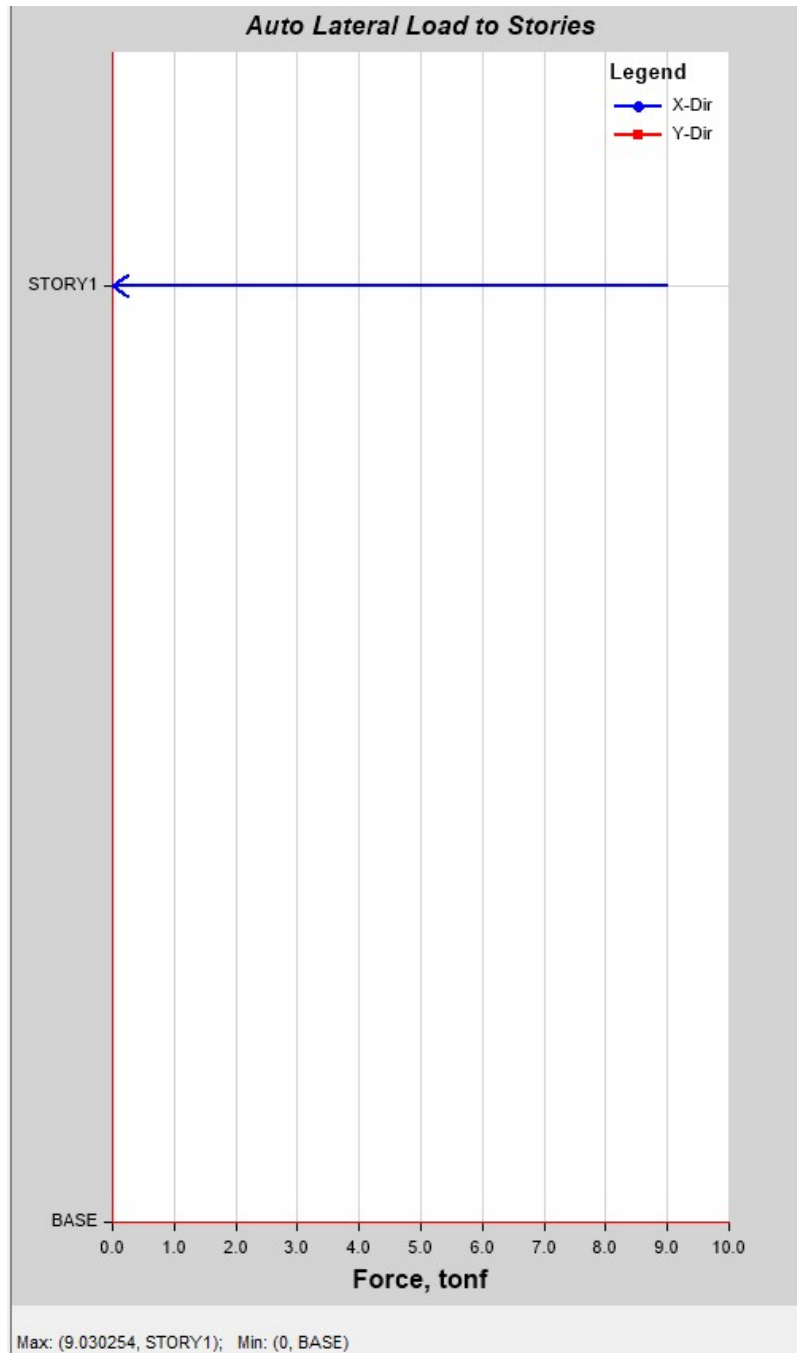
E Seismic Load Pattern - User Defined

Direction and Eccentricity		Factors	
☐ X Dir	☐ Y Dir	Base Shear Coefficient, C	0.563
☐ X Dir + Eccentricity	☒ Y Dir + Eccentricity	Building Height Exp., K	1
☐ X Dir - Eccentricity	☐ Y Dir - Eccentricity	Story Range	
Ecc. Ratio (All Diaph.)	0.05	Top Story	STORY1
Overwrite Eccentricities	Overwrite...	Bottom Story	BASE

4.5 CORTANTE BASAL ESTÁTICO DE LAS ESTRUCTURAS

Para $S_a=0.563$

Cortante Basal Estático Sismo X



Cortante Basal Estático Sismo Y

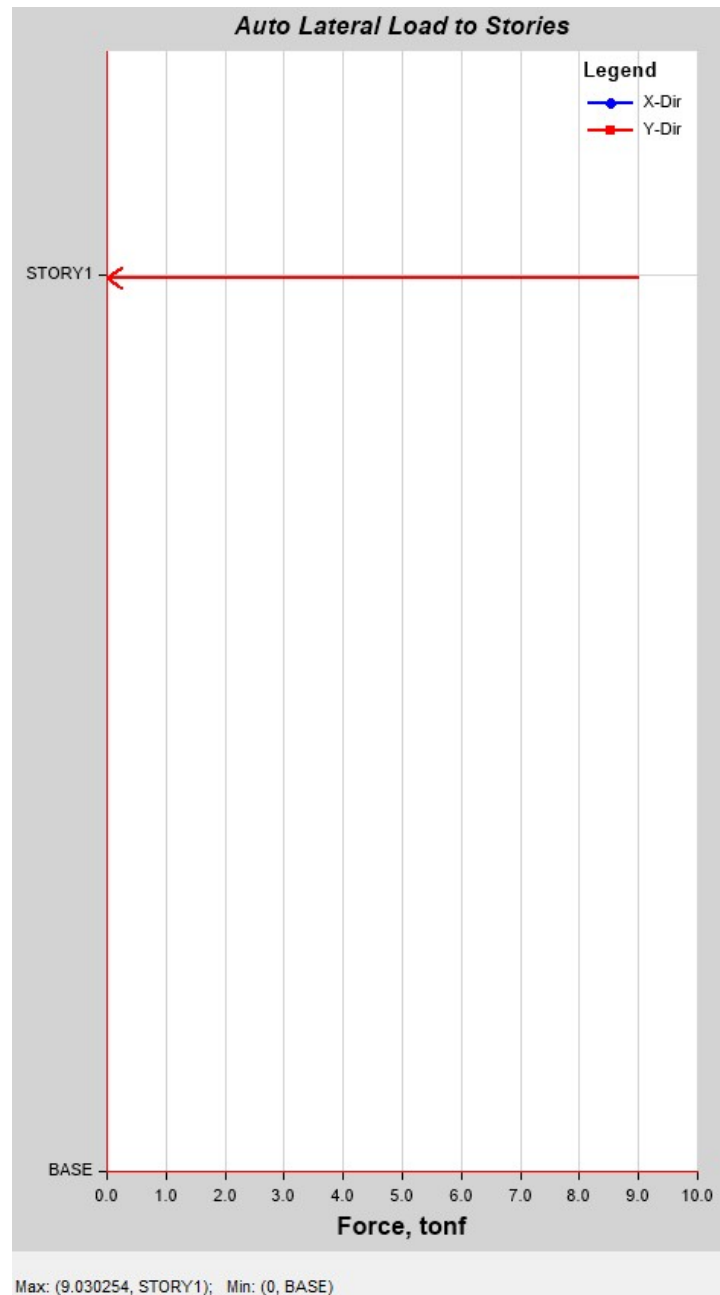




TABLE: Joint Reactions					
Story	Label	Output Case	FX	FY	FZ
			tonf	tonf	tonf
BASE	3	DEAD	0.1514	0.1979	0.9747
BASE	3	SISMOX	-0.1698	-0.0245	-0.1946
BASE	3	SISMOY	0.022	-0.3084	-0.0108
BASE	4	DEAD	-0.0069	0.1109	0.3966
BASE	4	SISMOX	-0.0815	-0.0194	-0.3198
BASE	4	SISMOY	0.0274	-0.049	0.0263
BASE	12	DEAD	-0.2724	0.281	1.0799
BASE	12	SISMOX	-0.3145	-0.0398	0.1908
BASE	12	SISMOY	0.1029	-0.3811	-0.0645
BASE	15	DEAD	0.138	0.4421	1.034
BASE	15	SISMOX	-0.3425	-0.0624	0.2007
BASE	15	SISMOY	0.0981	-0.5066	-0.0771
BASE	16	DEAD	-0.328	0.3581	0.48
BASE	16	SISMOX	-0.163	0.066	0.127
BASE	16	SISMOY	0.095	-0.3576	-0.0819
BASE	20	DEAD	0.4608	-0.0226	1.7184
BASE	20	SISMOX	-0.3761	0.0053	-0.4121
BASE	20	SISMOY	-0.0054	-0.3485	-0.0002
BASE	21	DEAD	0.047	-0.0093	0.8429
BASE	21	SISMOX	-0.1754	0.0019	-0.6505
BASE	21	SISMOY	-0.0018	-0.0749	-0.0005
BASE	29	DEAD	-0.2322	-0.0515	1.6999
BASE	29	SISMOX	-0.6641	0.0105	0.3588
BASE	29	SISMOY	-0.0083	-0.4267	-0.0017
BASE	32	DEAD	0.57	-0.1331	1.674
BASE	32	SISMOX	-0.7503	0.0264	0.4087
BASE	32	SISMOY	-0.0111	-0.5863	0.0017
BASE	33	DEAD	-0.489	-0.0521	0.7837
BASE	33	SISMOX	-0.3661	0.0072	0.2906
BASE	33	SISMOY	-0.0057	-0.4904	0.0041
BASE	37	DEAD	0.3759	0	1.6305
BASE	37	SISMOX	-0.3587	0	-0.3915
BASE	37	SISMOY	0	-0.3504	0
BASE	38	DEAD	0.0107	0	0.7215





BASE	38	SISMOX	-0.1675	0	-0.6188
BASE	38	SISMOY	0	-0.0731	0
BASE	46	DEAD	-0.3533	0	1.749
BASE	46	SISMOX	-0.6333	0	0.3426
BASE	46	SISMOY	0	-0.4351	0
BASE	49	DEAD	0.4367	0	1.7494
BASE	49	SISMOX	-0.7146	0	0.3908
BASE	49	SISMOY	0	-0.6126	0
BASE	50	DEAD	-0.5478	0	0.8256
BASE	50	SISMOX	-0.3495	0	0.2778
BASE	50	SISMOY	0	-0.5001	0
BASE	54	DEAD	0.4608	0.0226	1.7184
BASE	54	SISMOX	-0.3761	-0.0053	-0.4121
BASE	54	SISMOY	0.0054	-0.3485	0.0002
BASE	55	DEAD	0.047	0.0093	0.8429
BASE	55	SISMOX	-0.1754	-0.0019	-0.6505
BASE	55	SISMOY	0.0018	-0.0749	0.0005
BASE	63	DEAD	-0.2322	0.0515	1.6999
BASE	63	SISMOX	-0.6641	-0.0105	0.3588
BASE	63	SISMOY	0.0083	-0.4267	0.0017
BASE	66	DEAD	0.57	0.1331	1.674
BASE	66	SISMOX	-0.7503	-0.0264	0.4087
BASE	66	SISMOY	0.0111	-0.5863	-0.0017
BASE	67	DEAD	-0.489	0.0521	0.7837
BASE	67	SISMOX	-0.3661	-0.0072	0.2906
BASE	67	SISMOY	0.0057	-0.4904	-0.0041
BASE	71	DEAD	0.1514	-0.1979	0.9747
BASE	71	SISMOX	-0.1698	0.0245	-0.1946
BASE	71	SISMOY	-0.022	-0.3084	0.0108
BASE	72	DEAD	-0.0069	-0.1109	0.3966
BASE	72	SISMOX	-0.0815	0.0194	-0.3198
BASE	72	SISMOY	-0.0274	-0.049	-0.0263
BASE	80	DEAD	-0.2724	-0.281	1.0799
BASE	80	SISMOY	-0.1029	-0.3811	0.0645
BASE	83	DEAD	0.138	-0.4421	1.034
BASE	83	SISMOX	-0.3425	0.0624	0.2007
BASE	83	SISMOY	-0.0981	-0.5066	0.0771
BASE	84	DEAD	-0.328	-0.3581	0.48
BASE	84	SISMOX	-0.163	-0.066	0.127
BASE	84	SISMOY	-0.095	-0.3576	0.0819
			-9.0306	-9.0303	28.0443



Del programa de diseño de análisis estructural se obtiene la siguiente tabla con los valores de los cortantes basales en las direcciones X y Y, y el valor del aporte de masas participantes en el sismo:

Aporte de masa participante en el sismo: 28.04 Ton

Cortante Basal en X = 9.03 Ton

Cortante Basal en Y = 9.03 Ton

5. COMBINACIONES DE CARGA

Las estructuras de concreto, sus componentes y su cimentación deben diseñarse de tal manera que sus resistencias de diseño excedan los efectos de las cargas mayoradas de acuerdo con las siguientes combinaciones:

DEAD = Carga Muerta

LIVE = Carga Viva

LR = Carga Viva Cubierta

SX = Fuerza Sísmica Espectro de Diseño Sentido X.

SY = Fuerza Sísmica Espectro de Diseño Sentido Y.

5.1 COMBINACIONES MÉTODO DE DISEÑO DE ESFUERZOS ADMISIBLES Y PARA VERIFICACIONES DEL ESTADO LIMITE DE SERVICIO:

NOMBRE	COMBINACION DEFINIDA NSR-10	ETABS
(B.2.3-1)	D+F	S1=1.0(DEAD)
(B.2.3-2)	D+H+F+L+T	S2=1.0(DEAD)+1.0(LIVE)
(B.2.3-3)	D+H+F+(Lr ó G ó Le)	S3=1.0(DEAD)+1.0(LR)
(B.2.3-4)	D+H+F+0.75(L+T)+0.75(Lr ó G ó Le)	S4=1.0(DEAD)+0.75(LIVE)+0.75(LR)
(B.2.3-5)	D+H+F+W	S5=1.0(DEAD)+1.0(W1)
		S6=1.0(DEAD)+1.0(W2)
		S7=1.0(DEAD)+0.7(SX)
		S8=1.0(DEAD)-0.7(SX)
(B.2.3-6)	D+H+F+0.7E	S9=1.0(DEAD)+0.7(SY)
		S10=1.0(DEAD)-0.7(SY)
		S11=1.0(DEAD)+0.75(W1)+0.75(LIVE)+0.75(LR)
		S12=1.0(DEAD)+0.75(W2)+0.75(LIVE)+0.75(LR)
(B.2.3-7)	D+H+F+0.75W+0.75L+0.75(Lr ó G ó Le)	S13=1.0(DEAD)+0.525(SX)+0.75(LIVE)+0.75(LR)
		S14=1.0(DEAD)-0.525(SX)+0.75(LIVE)+0.75(LR)
		S15=1.0(DEAD)+0.525(SY)+0.75(LIVE)+0.75(LR)
		S16=1.0(DEAD)-0.525(SY)+0.75(LIVE)+0.75(LR)
(B.2.3-8)	D+H+F+0.75(0.7E)+0.75L+0.75(Lr ó G ó Le)	S17=0.6(DEAD)+1.0(W1)
		S18=0.6(DEAD)+1.0(W2)
(B.2.3-9)	0.6D+W+H	S19=0.6(DEAD)+0.7(SX)
		S20=0.6(DEAD)-0.7(SX)
		S21=0.6(DEAD)+0.7(SY)
		S22=0.6(DEAD)-0.7(SY)

5.2 COMBINACIONES PARA EL METODO DE DISEÑO DE RESISTENCIA ÚLTIMA:

NOMBRE	COMBINACION DEFINIDA NSR-10	ETABS
(B.2.4-1)	1.4(D+F)	U1=1.4(DEAD)
(B.2.4-2)	1.2(D+F+T)+1.6(L+H)+0.5(Lr ó G ó Le)	U2=1.2(DEAD)+1.6(LIVE)+0.5(LR)
(B.2.4-3)	1.2D+1.6(Lr ó G ó Le)+(L ó 0.8W)	U3=1.2(DEAD)+1.6(LR)+0.8(W1)
		U4=1.2(DEAD)+1.6(LR)+0.8(W2)
(B.2.4-4)	1.2D+1.6W+1.0L+0.5(Lr ó G ó Le)	U5=1.2(DEAD)+1.6(W1)+1.0(LIVE)+0.5(LR)
		U6=1.2(DEAD)+1.6(W2)+1.0(LIVE)+0.5(LR)
(B.2.4-5)	1.2D+1.0E+1.0L	U7=1.2(DEAD)+1.0(LIVE)+1.0(SX)+0.3(SY)
		U8=1.2(DEAD)+1.0(LIVE)-1.0(SX)-0.3(SY)
		U9=1.2(DEAD)+1.0(LIVE)+1.0(SX)-0.3(SY)
		U10=1.2(DEAD)+1.0(LIVE)-1.0(SX)+0.3(SY)
		U11=1.2(DEAD)+1.0(LIVE)+0.3(SX)+1.0(SY)
		U12=1.2(DEAD)+1.0(LIVE)-0.3(SX)-1.0(SY)
		U13=1.2(DEAD)+1.0(LIVE)-0.3(SX)+1.0(SY)
		U14=1.2(DEAD)+1.0(LIVE)+0.3(SX)-1.0(SY)
(B.2.4-6)	0.9D+1.6W+1.0L+0.5(Lr ó G ó Le)	U15=0.9(DEAD)+1.6(W1)
		U16=0.9(DEAD)+1.6(W2)
(B.2.4-7)	0.9D+1.0E+1.6H	U17=0.9(DEAD)+1.0(SX)+0.3(SY)
		U18=0.9(DEAD)-1.0(SX)-0.3(SY)
		U19=0.9(DEAD)+1.0(SX)-0.3(SY)
		U20=0.9(DEAD)-1.0(SX)+0.3(SY)
		U21=0.9(DEAD)+0.3(SX)+1.0(SY)
		U22=0.9(DEAD)-0.3(SX)-1.0(SY)
		U23=0.9(DEAD)-0.3(SX)+1.0(SY)
		U24=0.9(DEAD)+0.3(SX)-1.0(SY)

6.0 DISEÑO DE LOS ELEMENTOS ESTRUCTURALES

Cuando se trate de análisis dinámico elástico, se dividen por el valor del coeficiente de capacidad de disipación de energía, R , del sistema de resistencia sísmica, modificado de acuerdo con la irregularidad según los requisitos A.3.3.3, para obtener las fuerzas sísmicas reducidas de diseño E , y se combinan con las otras cargas prescritas por este reglamento, de acuerdo con los requisitos del título B.

El valor del Coeficiente de capacidad de disipación de energía para ser empleado en el diseño, corresponde al coeficiente de disipación de energía básico R_o , multiplicado Por los coeficientes de reducción de capacidad de disipación de energía y las irregularidades de la estructura

6.1 COEFICIENTE DE CAPACIDAD DE DISIPACIÓN DE ENERGÍA PARA ESTRUCTURA MUROS GRADERÍAS.

El sistema estructural utilizado es Muros estructurales en Concreto Reforzado, con capacidad de disipación de energía DMO según A.3-1 caso C.3.b.

$\Omega_o =$	2.50	Coeficiente de Sobre resistencia Tabla (A.3.1) Muros de concreto con capacidad de disipación de energía DMO
$R_o =$	4.00	Coef. de capacidad de disipación de energía básico (Tabla A-3-1). Muros en concreto con capacidad de disipación de energía DMO

6.1.1 Chequeo de irregularidades en planta Tabla A.3-6 NSR-10

El coeficiente de reducción por irregularidad en planta para las dos direcciones X y Y es el siguiente:

$$\phi_p = 0.90$$

6.1.2 Chequeo de irregularidades en Altura A.3-7 NSR-10

Por ser una edificación de un solo nivel con Irregularidades en altura por variaciones en rigideces de piso, por lo tanto el coeficiente de reducción por irregularidad en altura para las dos direcciones X y Y es el siguiente:

$$\phi_a = 0.90$$

6.1.3 Chequeo Por Ausencia de Redundancia A.3.3.8 NSR-10

Por ser una estructura con un solo eje de columnas el valor del factor de reducción de resistencia por ausencia de redundancia en el sistema estructural de resistencia sísmica, ϕ_r , se le asigna un valor de la unidad ($\phi_r = 0.75$)

Por lo tanto el coeficiente de reducción por ausencia de redundancia para las dos direcciones X y Y es el siguiente:

$$\phi_r = 0.75$$



COEFICIENTE DE CAPACIDAD DE DISIPACIÓN DE ENERGÍA PARA ESTRUCTURA EN MUROS EN CONCRETO REFORZADO GRADERIAS		
CDE	DMO	Capacidad de disipación de energía (A.3-1).
$\Omega_o=$	3.00	Coeficiente de Sobre resistencia Tabla (A.3-1) Muros estructurales en concreto reforzado con capacidad de disipación de energía DMO
$R_o=$	5.00	Coef. de capacidad de disipación de energía básico (Tabla A-3-1). Muros estructurales en concreto reforzado con capacidad de disipación de energía DMO
CE	I Regular	Configuración estructural de la edificación (A.3.3).
$\phi_a=$	0.9	Coef. de reducción de C.D.E. por irregularidades en altura.
$\phi_p=$	0.9	Coef. de reducción de C.D.E. por irregularidades en planta.
$\phi_r=$	0.75	Coef. de reducción de la C.D.E por ausencia de redundancia.

Por lo tanto, el coeficiente de disipación de energía para la estructura en pórticos en concreto reforzado de las graderías, tanto para el sentido X como Y, será igual a:

$$R = \phi_a * \phi_p * \phi_r * R_o \text{ (A.3-1).}$$

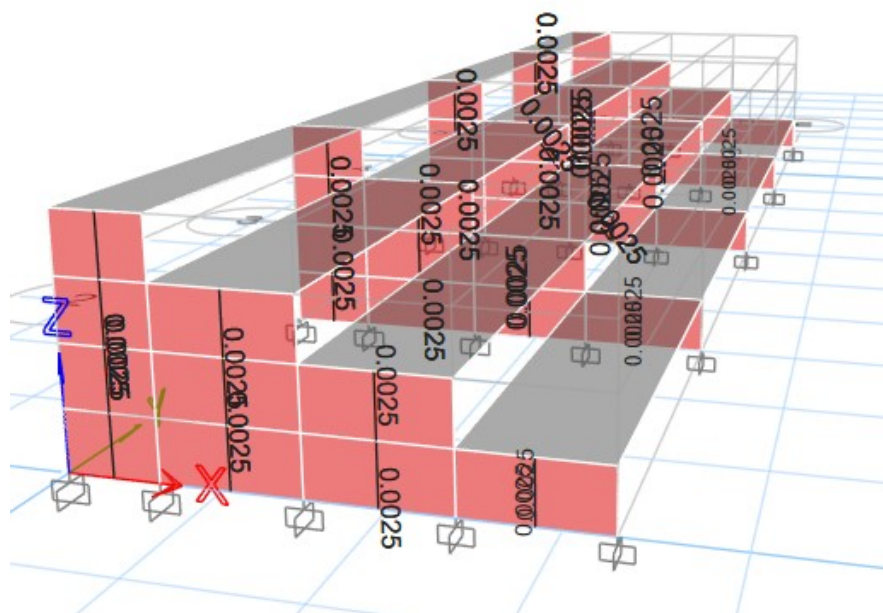
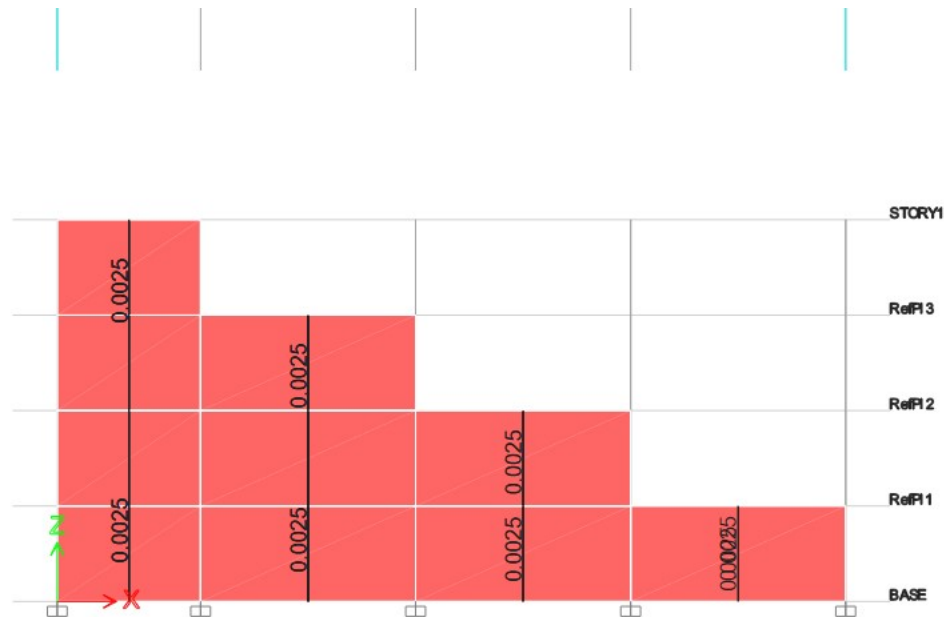
$$R = (0.90) * (0.90) * (0.75) * 4.00 = 2.43$$



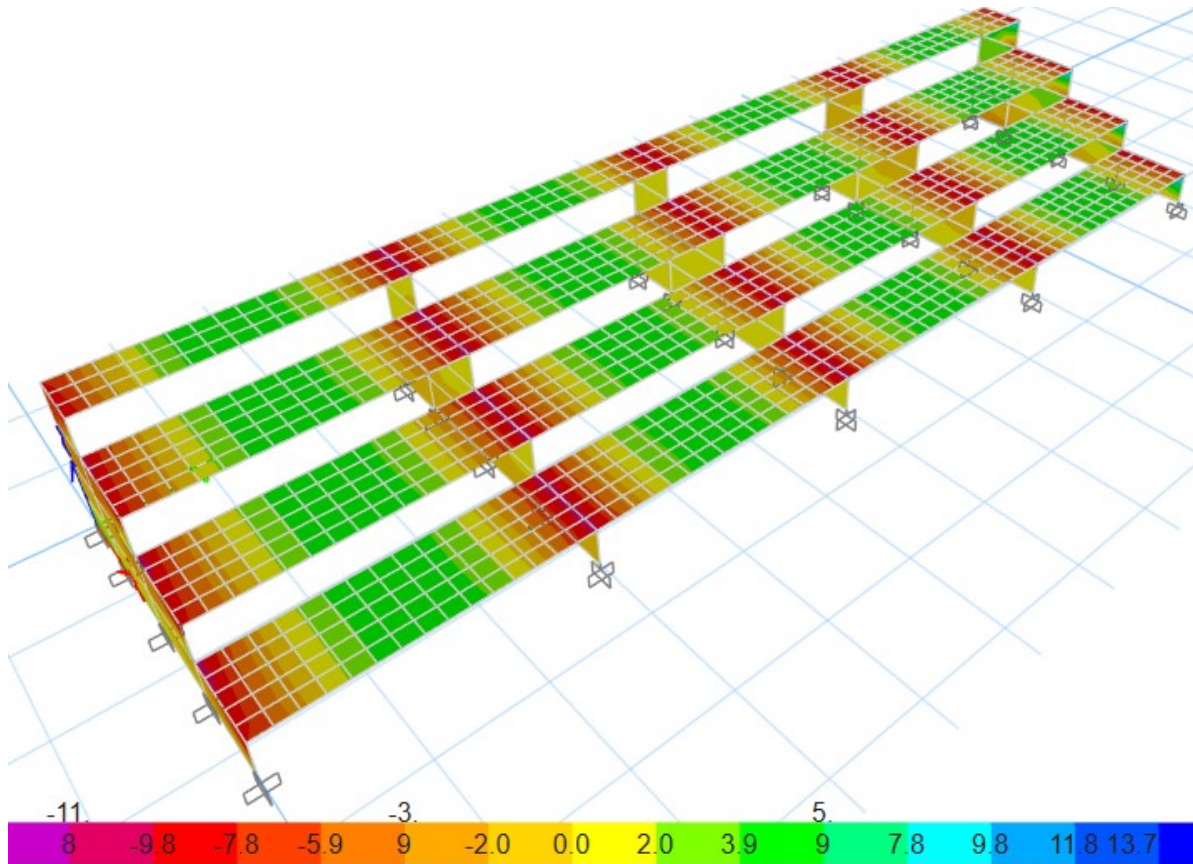


6.2 DISEÑO DE EMENTOS ESTRUCTURALES EN CONCRETO REFORZADO

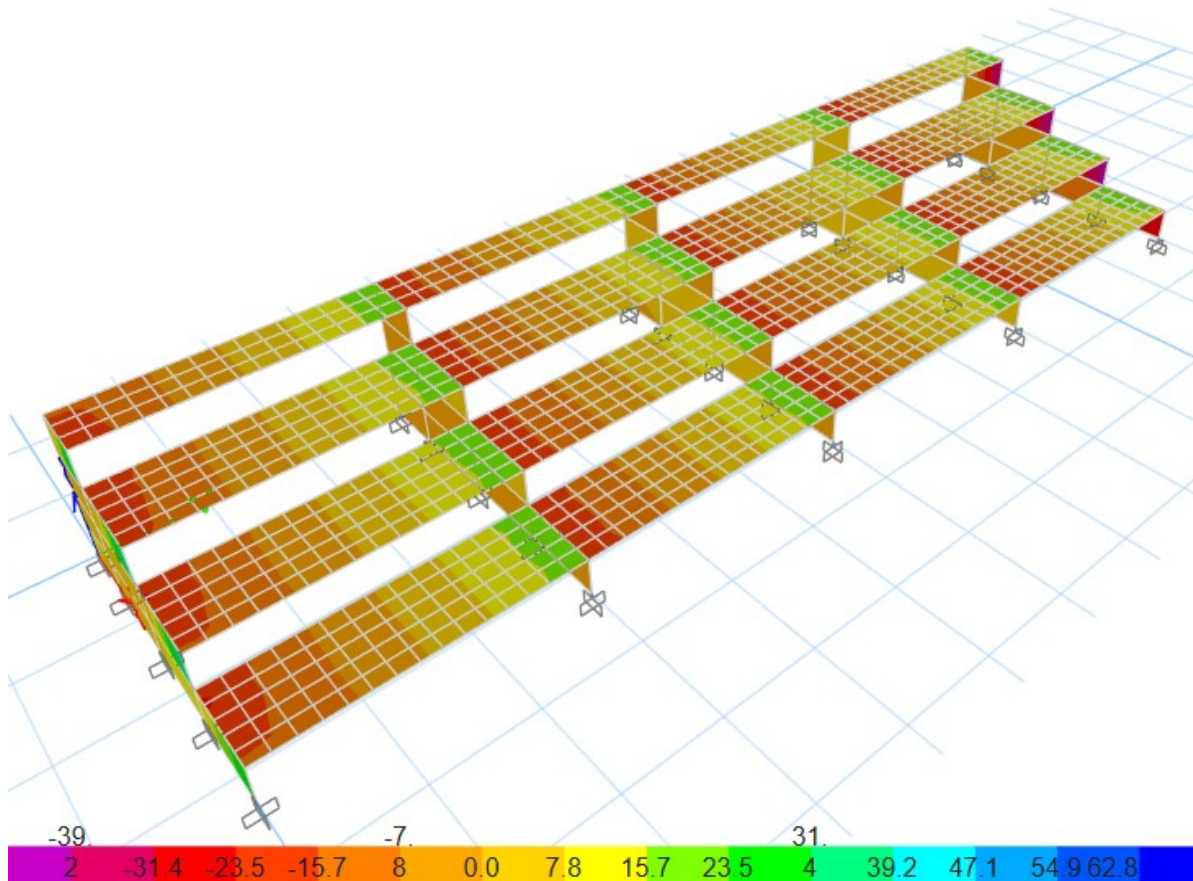
6.2.1 Cuantías de Acero de refuerzo Elementos Muros Graderías para a mayor combinación en (KN-m).



6.2.2 Diagrama de Momentos Losa Graderías para mayor combinación (kN-m).



6.2.3 Diagrama de Cortantes Losa Graderías para mayor combinación (kN-m).





DISEÑO A FLEXION

f'_c (MPa)	21.00
f_y (Mpa)	420.00
ϕ	0.90
b (m)	0.90
h (m)	0.12
Recubrimiento (m)	0.025
d (m)	0.0950
M_u (KN/m)	10.70
M_n (KN/m)	11.89
R_n (KN/m ²)	1463.70
ρ	0.0036
A_s (cm ²)	3.11

ϕ mayor colocado (8vos. de pulg.)	4
A_s colocado (cm ²)	2.54 ok
Numero de Varillas	2
d definitivo	8.55
a	0.66
β_1	0.85
C	0.78
ϵ_t	0.0298 ok Trabaja a Tracción

DISEÑO A CORTANTE

V_u (KN)	23.00
ϕ Estribos	
Numero de Ramas	
V_u (KN/m ²)	298.90
V_{uc} (KN/m ²)	584.28
V_{us} (KN/m ²)	-285.38

S (cm)	0.00
--------	------



7.0 CALCULO DE DESPLAZAMIENTOS Y DERIVAS

Según A.6.4.1.5 no hay límites de deriva en estructuras de un piso. De forma informativa presentamos desplazamientos. Para el chequeo de derivas, se trabaja con la tabla de resultados (Joint drifts). Y se analizarán con los casos de carga, para los nodos ubicados en un mismo eje vertical Z, en este caso tomaremos los nodos más alto de los pórticos, asumiendo que todos los nudos en el mismo nivel se mueven igual y tienen los mismos desplazamientos.

7.2 DERIVAS ESTRUCTURA GRADERIAS

TABLE: Story Drifts							
Story	Output Case	Direction	Drift	Label	X	Y	Z
					m	m	m
STORY1	SISMOX	X	0.00%	20	0.6	3	1.6
STORY1	SISMOY	Y	0.03%	21	0	3	1.6

La deriva máxima calculada como la raíz cuadrada de la suma de los cuadrados es de 0.03% < 1.0% por tanto cumple.

8.0 ESTUDIO GEOTÉCNICO

El estudio de suelos del proyecto, lo realizó el ingeniero JORGE ALFREDO CAMARGO, el cual observo que acuerdo con las condiciones específicas encontradas durante el programa de exploración de campo, concluyó que el perfil del suelo del sitio es tipo C, según lo establecido por la NSR-10.

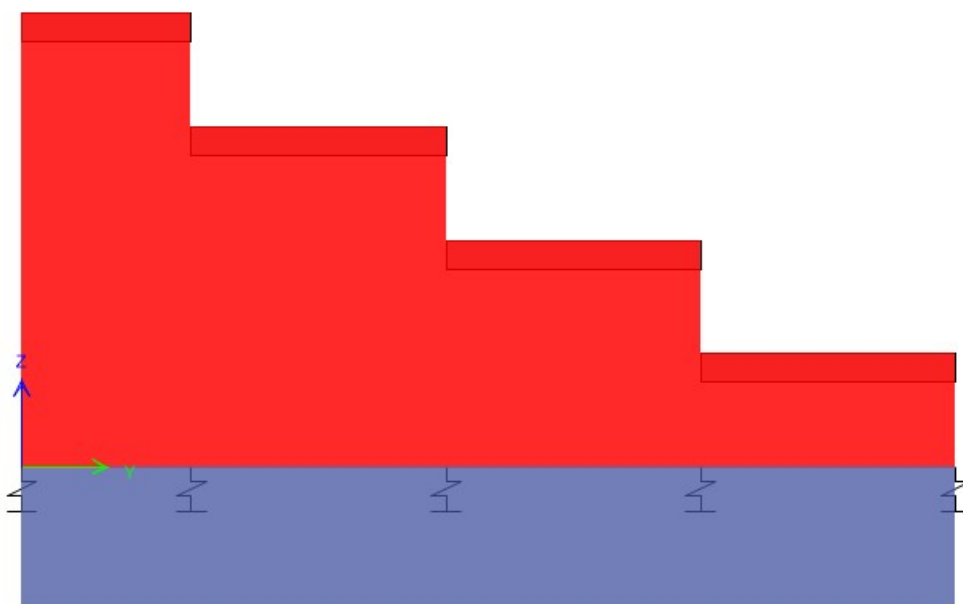
El documento de estudio de suelo La Empresa describió: el tipo de cimentación que se recomienda para el proyecto que se desea realizar es superficial debido a la calidad del suelo, el cual es un suelo de normales condiciones de capacidad portante. Para este caso se sugiere realizar la fundación del proyecto con vigas corridas de cimentación desplantadas a mínimo $D=1.00\text{m}$, las cuales estarán unidas para evitar los asentamientos diferenciales que pueda afectar la construcción de algunos elementos constructivos.

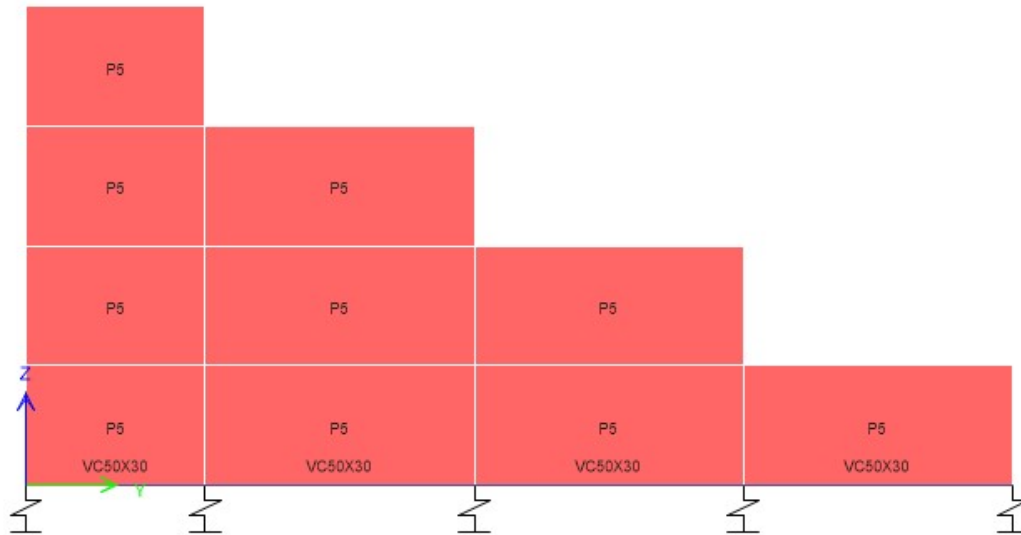
El nivel de desplante de la cimentación se definió en $D=1.0\text{m}$, ya que en esa profundidad la capacidad geotécnica es la suficiente para alcanzar el suelo de optimas condiciones, la cual según el estudio de suelos es de $q_a=40.0\text{ Ton/m}^2$.

9.0 DISEÑO CIMENTACIÓN

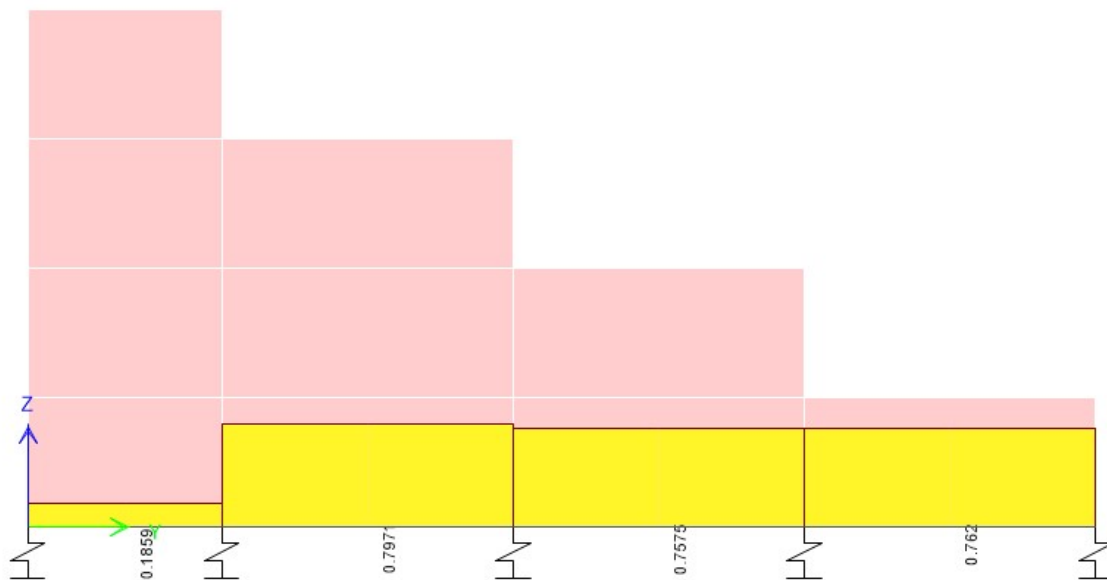
9.1 CARGAS BAJANTES A LA CIMENTACIÓN EN LOS APOYOS DE LOS MUROS DE LAS GRADERIAS.

Esquema Alzado gradería con apoyos de acuerdo al modelo de Winkler





Cargas axiales bajantes a la viga de cimentación, de acuerdo ala mayor combinación



Presiones de contacto en Viga de cimentación gradería:

El esfuerzo dado al terreno de fundación será el siguiente.

$$\sigma = P/A ;$$

P = Carga total de servicio aplicada = 0.80Ton/ml

A = es el área de contacto en donde es transmitida, en este caso es
 $0.60\text{m} \times 1.0\text{m} = 0.60\text{m}^2/\text{ml}$

$$\sigma = 40.0 \text{ Ton}/\text{m}^2;$$

$\sigma_{\text{max}} = 1.33/\text{m}^2$; luego no es superado el esfuerzo neto.

Procedemos a la modelación para calcular los esfuerzos internos que se generan en la losa de contrapiso, corriendo el modelo con el coeficiente de balasto para asumir la losa apoyada en resortes que asemejan la condición de apoyo de la viga, el cual según el estudio de suelos es de, es de $K_v = 8000 \text{ Ton}/\text{m}^3$.

Diagrama de momentos Viga de cimentación gradería (KN-m):

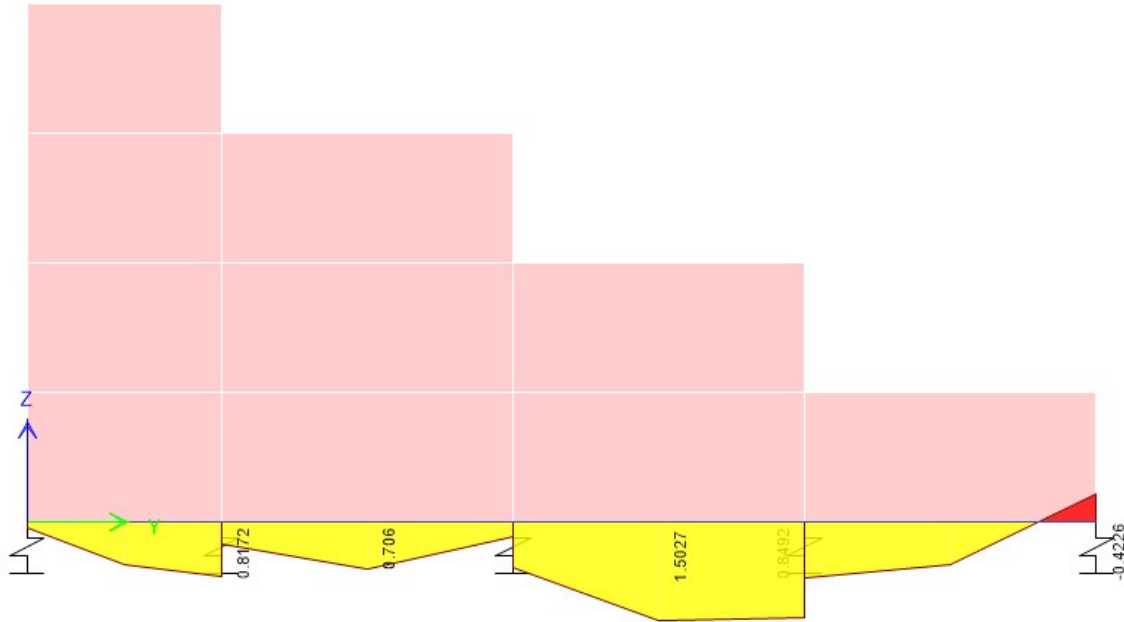
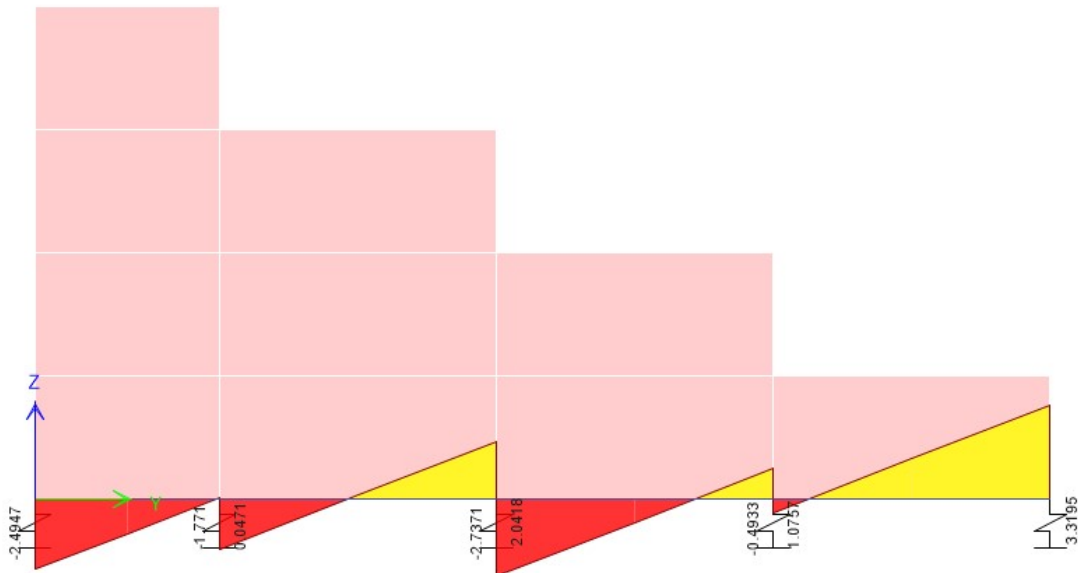
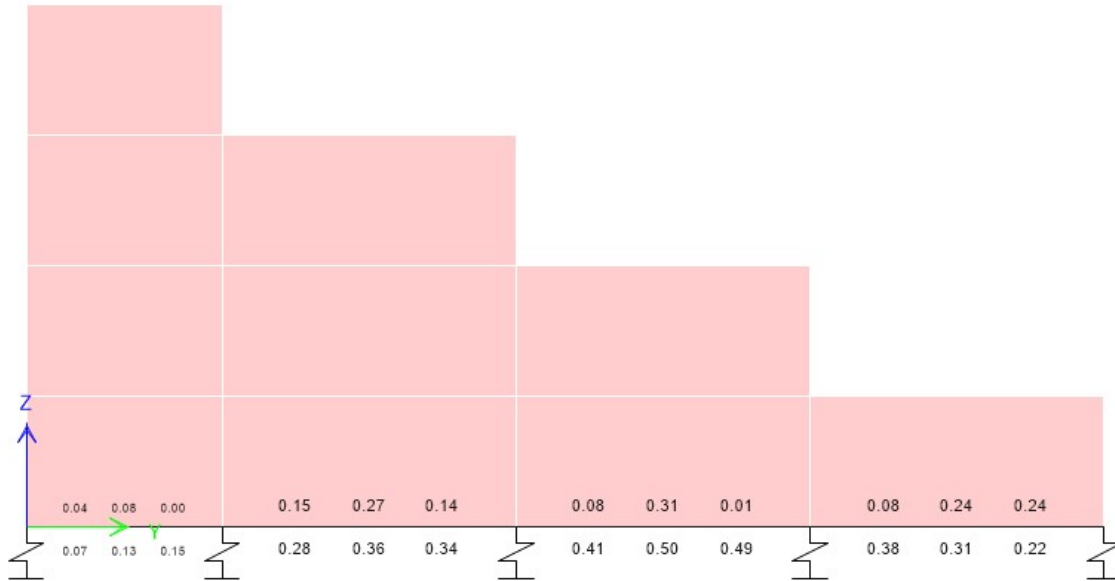


Diagrama de Cortantes Viga de cimentación gradería (KN-m):



Cuantías de Acero de refuerzo Viga de cimentación gradería (cm2):



De acuerdo a los nudos que llegan a la cimentación presentados en las imágenes anteriores, en la siguiente tabla se relacionan las cargas de servicio que llegan a cada uno de ellos, con las cuales se diseñaran los elementos de cimentación.

Cargas en Ton – m

TABLE: Joint Design Reactions					
Story	Label	Output Case	FZ	MX	MY
			tonf	tonf-m	tonf-m
BASE	3	S1	0.9747	-0.0791	0.0169
BASE	3	S2	1.4772	-0.1527	0.0321
BASE	3	S3	0.9747	-0.0791	0.0169
BASE	3	S4	1.3516	-0.1343	0.0283
BASE	3	S5	0.9747	-0.0791	0.0169
BASE	3	S6	0.9747	-0.0791	0.0169
BASE	3	S7	0.783	-0.067	0.0126
BASE	3	S8	1.1664	-0.0913	0.0211
BASE	3	S9	0.9641	0.2133	0.0142
BASE	3	S10	0.9853	-0.3715	0.0195
BASE	3	S11	1.3516	-0.1343	0.0283
BASE	3	S12	1.3516	-0.1343	0.0283
BASE	3	S13	1.2078	-0.1252	0.0251
BASE	3	S14	1.3595	-0.3536	0.0303
BASE	3	S15	1.3436	0.085	0.0263
BASE	3	S16	1.3595	-0.3536	0.0303
BASE	3	S17	0.5848	-0.0475	0.0101
BASE	3	S18	0.5848	-0.0475	0.0101
BASE	3	S19	0.3931	-0.0353	0.0058
BASE	3	S20	0.7765	-0.0596	0.0144
BASE	3	S21	0.5742	0.2449	0.0074
BASE	3	S22	0.5954	-0.3399	0.0128
BASE	4	S1	0.3966	-0.0403	-0.0054
BASE	4	S2	0.5649	-0.0777	-0.011
BASE	4	S3	0.3966	-0.0403	-0.0054



BASE	4	S4	0.5228	-0.0684	-0.0096
BASE	4	S5	0.3966	-0.0403	-0.0054
BASE	4	S6	0.3966	-0.0403	-0.0054
BASE	4	S7	0.0816	-0.033	-0.0078
BASE	4	S8	0.7116	-0.0475	-0.003
BASE	4	S9	0.4225	0.0667	-0.0036
BASE	4	S10	0.3707	-0.1473	-0.0072
BASE	4	S11	0.5228	-0.0684	-0.0096
BASE	4	S12	0.5228	-0.0684	-0.0096
BASE	4	S13	0.2865	-0.0629	-0.0114
BASE	4	S14	0.5034	-0.1486	-0.0109
BASE	4	S15	0.5422	0.0119	-0.0082
BASE	4	S16	0.5034	-0.1486	-0.0109
BASE	4	S17	0.238	-0.0242	-0.0032
BASE	4	S18	0.238	-0.0242	-0.0032
BASE	4	S19	-0.0771	-0.0169	-0.0057
BASE	4	S20	0.553	-0.0314	-0.0008
BASE	4	S21	0.2639	0.0828	-0.0014
BASE	4	S22	0.2121	-0.1311	-0.005
BASE	12	S1	1.0799	-0.0676	-0.0289
BASE	12	S2	1.7283	-0.1304	-0.0558
BASE	12	S3	1.0799	-0.0676	-0.0289
BASE	12	S4	1.5662	-0.1147	-0.0491
BASE	12	S5	1.0799	-0.0676	-0.0289
BASE	12	S6	1.0799	-0.0676	-0.0289
BASE	12	S7	1.2678	-0.0568	-0.0354
BASE	12	S8	0.8919	-0.0783	-0.0225
BASE	12	S9	1.0163	0.2788	-0.0215
BASE	12	S10	1.1434	-0.4139	-0.0363
BASE	12	S11	1.5662	-0.1147	-0.0491
BASE	12	S12	1.5662	-0.1147	-0.0491
BASE	12	S13	1.7072	-0.1066	-0.0539
BASE	12	S14	1.6139	-0.3744	-0.0547
BASE	12	S15	1.5185	0.1451	-0.0435
BASE	12	S16	1.6139	-0.3744	-0.0547
BASE	12	S17	0.6479	-0.0405	-0.0174
BASE	12	S18	0.6479	-0.0405	-0.0174
BASE	12	S19	0.8359	-0.0298	-0.0238
BASE	12	S20	0.4599	-0.0513	-0.0109
BASE	12	S21	0.5844	0.3058	-0.0099
BASE	12	S22	0.7115	-0.3869	-0.0248





BASE	15	S1	1.034	-0.0195	0.0432
BASE	15	S2	1.7762	-0.0376	0.0833
BASE	15	S3	1.034	-0.0195	0.0432
BASE	15	S4	1.5907	-0.0331	0.0733
BASE	15	S5	1.034	-0.0195	0.0432
BASE	15	S6	1.034	-0.0195	0.0432
BASE	15	S7	1.2317	-0.0171	0.0347
BASE	15	S8	0.8363	-0.0218	0.0518
BASE	15	S9	0.958	0.2907	0.0384
BASE	15	S10	1.11	-0.3296	0.048
BASE	15	S11	1.5907	-0.0331	0.0733
BASE	15	S12	1.5907	-0.0331	0.0733
BASE	15	S13	1.7389	-0.0313	0.0669
BASE	15	S14	1.6477	-0.2657	0.0769
BASE	15	S15	1.5337	0.1995	0.0697
BASE	15	S16	1.6477	-0.2657	0.0769
BASE	15	S17	0.6204	-0.0117	0.0259
BASE	15	S18	0.6204	-0.0117	0.0259
BASE	15	S19	0.8181	-0.0094	0.0174
BASE	15	S20	0.4227	-0.014	0.0345
BASE	15	S21	0.5444	0.2985	0.0211
BASE	15	S22	0.6964	-0.3219	0.0307
BASE	16	S1	0.48	-0.0006	-0.0367
BASE	16	S2	0.8509	-0.0012	-0.071
BASE	16	S3	0.48	-0.0006	-0.0367
BASE	16	S4	0.7581	-0.0011	-0.0624
BASE	16	S5	0.48	-0.0006	-0.0367
BASE	16	S6	0.48	-0.0006	-0.0367
BASE	16	S7	0.6051	-0.019	-0.0395
BASE	16	S8	0.3548	0.0177	-0.034
BASE	16	S9	0.3993	0.1469	-0.0322
BASE	16	S10	0.5606	-0.1481	-0.0413
BASE	16	S11	0.7581	-0.0011	-0.0624
BASE	16	S12	0.7581	-0.0011	-0.0624
BASE	16	S13	0.852	-0.0148	-0.0645
BASE	16	S14	0.8186	-0.1117	-0.0658
BASE	16	S15	0.6976	0.1095	-0.059
BASE	16	S16	0.8186	-0.1117	-0.0658
BASE	16	S17	0.288	-0.0004	-0.022
BASE	16	S18	0.288	-0.0004	-0.022
BASE	16	S19	0.4131	-0.0187	-0.0248





BASE	16	S20	0.1628	0.018	-0.0193
BASE	16	S21	0.2073	0.1471	-0.0175
BASE	16	S22	0.3686	-0.1479	-0.0266
BASE	20	S1	1.7184	0.0153	0.0359
BASE	20	S2	2.9121	0.0296	0.0689
BASE	20	S3	1.7184	0.0153	0.0359
BASE	20	S4	2.6137	0.026	0.0607
BASE	20	S5	1.7184	0.0153	0.0359
BASE	20	S6	1.7184	0.0153	0.0359
BASE	20	S7	1.3124	0.013	0.0267
BASE	20	S8	2.1245	0.0177	0.0451
BASE	20	S9	1.7183	0.3279	0.0358
BASE	20	S10	1.7186	-0.2972	0.0361
BASE	20	S11	2.6137	0.026	0.0607
BASE	20	S12	2.6137	0.026	0.0607
BASE	20	S13	2.3092	0.0243	0.0538
BASE	20	S14	2.6138	-0.2084	0.0608
BASE	20	S15	2.6136	0.2605	0.0606
BASE	20	S16	2.6138	-0.2084	0.0608
BASE	20	S17	1.0311	0.0092	0.0216
BASE	20	S18	1.0311	0.0092	0.0216
BASE	20	S19	0.625	0.0068	0.0123
BASE	20	S20	1.4371	0.0116	0.0308
BASE	20	S21	1.0309	0.3218	0.0214
BASE	20	S22	1.0312	-0.3033	0.0217
BASE	21	S1	0.8429	0.0062	-0.0084
BASE	21	S2	1.4261	0.0119	-0.0168
BASE	21	S3	0.8429	0.0062	-0.0084
BASE	21	S4	1.2803	0.0105	-0.0147
BASE	21	S5	0.8429	0.0062	-0.0084
BASE	21	S6	0.8429	0.0062	-0.0084
BASE	21	S7	0.2019	0.0053	-0.0135
BASE	21	S8	1.4838	0.007	-0.0033
BASE	21	S9	0.8423	0.1235	-0.0084
BASE	21	S10	0.8434	-0.1111	-0.0084
BASE	21	S11	1.2803	0.0105	-0.0147
BASE	21	S12	1.2803	0.0105	-0.0147
BASE	21	S13	0.7995	0.0099	-0.0186
BASE	21	S14	1.2807	-0.0775	-0.0147
BASE	21	S15	1.2799	0.0985	-0.0147
BASE	21	S16	1.2807	-0.0775	-0.0147





BASE	21	S17	0.5057	0.0037	-0.005
BASE	21	S18	0.5057	0.0037	-0.005
BASE	21	S19	-0.1352	0.0029	-0.0102
BASE	21	S20	1.1467	0.0046	0.0001
BASE	21	S21	0.5052	0.121	-0.0051
BASE	21	S22	0.5062	-0.1136	-0.005
BASE	29	S1	1.6999	0.0241	-0.0484
BASE	29	S2	2.9243	0.0465	-0.0934
BASE	29	S3	1.6999	0.0241	-0.0484
BASE	29	S4	2.6182	0.0409	-0.0822
BASE	29	S5	1.6999	0.0241	-0.0484
BASE	29	S6	1.6999	0.0241	-0.0484
BASE	29	S7	2.0534	0.0198	-0.0627
BASE	29	S8	1.3464	0.0284	-0.0341
BASE	29	S9	1.6983	0.3908	-0.0484
BASE	29	S10	1.7016	-0.3426	-0.0484
BASE	29	S11	2.6182	0.0409	-0.0822
BASE	29	S12	2.6182	0.0409	-0.0822
BASE	29	S13	2.8833	0.0377	-0.0929
BASE	29	S14	2.6194	-0.2341	-0.0822
BASE	29	S15	2.617	0.3159	-0.0822
BASE	29	S16	2.6194	-0.2341	-0.0822
BASE	29	S17	1.02	0.0145	-0.029
BASE	29	S18	1.02	0.0145	-0.029
BASE	29	S19	1.3735	0.0102	-0.0433
BASE	29	S20	0.6664	0.0187	-0.0147
BASE	29	S21	1.0183	0.3811	-0.029
BASE	29	S22	1.0216	-0.3522	-0.029
BASE	32	S1	1.674	0.0368	0.0893
BASE	32	S2	3.0111	0.0709	0.1724
BASE	32	S3	1.674	0.0368	0.0893
BASE	32	S4	2.6768	0.0624	0.1516
BASE	32	S5	1.674	0.0368	0.0893
BASE	32	S6	1.674	0.0368	0.0893
BASE	32	S7	2.0766	0.0298	0.0717
BASE	32	S8	1.2713	0.0437	0.107
BASE	32	S9	1.6756	0.3778	0.0889
BASE	32	S10	1.6723	-0.3043	0.0898
BASE	32	S11	2.6768	0.0624	0.1516
BASE	32	S12	2.6768	0.0624	0.1516
BASE	32	S13	2.9788	0.0572	0.1383





BASE	32	S14	2.6755	-0.1934	0.152
BASE	32	S15	2.678	0.3182	0.1512
BASE	32	S16	2.6755	-0.1934	0.152
BASE	32	S17	1.0044	0.0221	0.0536
BASE	32	S18	1.0044	0.0221	0.0536
BASE	32	S19	1.4071	0.0151	0.0359
BASE	32	S20	0.6017	0.029	0.0713
BASE	32	S21	1.006	0.3631	0.0531
BASE	32	S22	1.0027	-0.319	0.0541
BASE	33	S1	0.7837	0.0156	-0.0709
BASE	33	S2	1.4369	0.0302	-0.1368
BASE	33	S3	0.7837	0.0156	-0.0709
BASE	33	S4	1.2736	0.0265	-0.1203
BASE	33	S5	0.7837	0.0156	-0.0709
BASE	33	S6	0.7837	0.0156	-0.0709
BASE	33	S7	1.07	0.0132	-0.0778
BASE	33	S8	0.4974	0.018	-0.0639
BASE	33	S9	0.7877	0.1954	-0.0708
BASE	33	S10	0.7796	-0.1642	-0.0709
BASE	33	S11	1.2736	0.0265	-0.1203
BASE	33	S12	1.2736	0.0265	-0.1203
BASE	33	S13	1.4883	0.0247	-0.1255
BASE	33	S14	1.2706	-0.1083	-0.1203
BASE	33	S15	1.2766	0.1614	-0.1203
BASE	33	S16	1.2706	-0.1083	-0.1203
BASE	33	S17	0.4702	0.0094	-0.0425
BASE	33	S18	0.4702	0.0094	-0.0425
BASE	33	S19	0.7565	0.007	-0.0495
BASE	33	S20	0.1839	0.0118	-0.0356
BASE	33	S21	0.4742	0.1892	-0.0425
BASE	33	S22	0.4662	-0.1704	-0.0425
BASE	37	S1	1.6305	0	0.0334
BASE	37	S2	2.7425	0	0.0641
BASE	37	S3	1.6305	0	0.0334
BASE	37	S4	2.4645	0	0.0564
BASE	37	S5	1.6305	0	0.0334
BASE	37	S6	1.6305	0	0.0334
BASE	37	S7	1.2448	0	0.0247
BASE	37	S8	2.0162	0	0.0422
BASE	37	S9	1.6305	0.3135	0.0334
BASE	37	S10	1.6305	-0.3135	0.0334





BASE	37	S11	2.4645	0	0.0564
BASE	37	S12	2.4645	0	0.0564
BASE	37	S13	2.1752	0	0.0499
BASE	37	S14	2.4645	-0.2351	0.0564
BASE	37	S15	2.4645	0.2351	0.0564
BASE	37	S16	2.4645	-0.2351	0.0564
BASE	37	S17	0.9783	0	0.0201
BASE	37	S18	0.9783	0	0.0201
BASE	37	S19	0.5926	0	0.0113
BASE	37	S20	1.364	0	0.0288
BASE	37	S21	0.9783	0.3135	0.0201
BASE	37	S22	0.9783	-0.3135	0.0201
BASE	38	S1	0.7215	0	-0.0093
BASE	38	S2	1.1919	0	-0.0185
BASE	38	S3	0.7215	0	-0.0093
BASE	38	S4	1.0743	0	-0.0162
BASE	38	S5	0.7215	0	-0.0093
BASE	38	S6	0.7215	0	-0.0093
BASE	38	S7	0.1118	0	-0.0142
BASE	38	S8	1.3312	0	-0.0044
BASE	38	S9	0.7215	0.117	-0.0093
BASE	38	S10	0.7215	-0.117	-0.0093
BASE	38	S11	1.0743	0	-0.0162
BASE	38	S12	1.0743	0	-0.0162
BASE	38	S13	0.617	0	-0.0199
BASE	38	S14	1.0743	-0.0878	-0.0162
BASE	38	S15	1.0743	0.0878	-0.0162
BASE	38	S16	1.0743	-0.0878	-0.0162
BASE	38	S17	0.4329	0	-0.0056
BASE	38	S18	0.4329	0	-0.0056
BASE	38	S19	-0.1768	0	-0.0105
BASE	38	S20	1.0426	0	-0.0007
BASE	38	S21	0.4329	0.117	-0.0056
BASE	38	S22	0.4329	-0.117	-0.0056
BASE	46	S1	1.749	0	-0.0507
BASE	46	S2	3.019	0	-0.0979
BASE	46	S3	1.749	0	-0.0507
BASE	46	S4	2.7015	0	-0.0861
BASE	46	S5	1.749	0	-0.0507
BASE	46	S6	1.749	0	-0.0507
BASE	46	S7	2.0866	0	-0.0644





BASE	46	S8	1.4115	0	-0.037
BASE	46	S9	1.749	0.3705	-0.0507
BASE	46	S10	1.749	-0.3705	-0.0507
BASE	46	S11	2.7015	0	-0.0861
BASE	46	S12	2.7015	0	-0.0861
BASE	46	S13	2.9547	0	-0.0964
BASE	46	S14	2.7015	-0.2779	-0.0861
BASE	46	S15	2.7015	0.2779	-0.0861
BASE	46	S16	2.7015	-0.2779	-0.0861
BASE	46	S17	1.0494	0	-0.0304
BASE	46	S18	1.0494	0	-0.0304
BASE	46	S19	1.387	0	-0.0441
BASE	46	S20	0.7119	0	-0.0167
BASE	46	S21	1.0494	0.3705	-0.0304
BASE	46	S22	1.0494	-0.3705	-0.0304
BASE	49	S1	1.7494	0	0.0856
BASE	49	S2	3.1567	0	0.1652
BASE	49	S3	1.7494	0	0.0856
BASE	49	S4	2.8049	0	0.1453
BASE	49	S5	1.7494	0	0.0856
BASE	49	S6	1.7494	0	0.0856
BASE	49	S7	2.1345	0	0.0689
BASE	49	S8	1.3644	0	0.1024
BASE	49	S9	1.7494	0.3485	0.0856
BASE	49	S10	1.7494	-0.3485	0.0856
BASE	49	S11	2.8049	0	0.1453
BASE	49	S12	2.8049	0	0.1453
BASE	49	S13	3.0936	0	0.1328
BASE	49	S14	2.8049	-0.2614	0.1453
BASE	49	S15	2.8049	0.2614	0.1453
BASE	49	S16	2.8049	-0.2614	0.1453
BASE	49	S17	1.0497	0	0.0514
BASE	49	S18	1.0497	0	0.0514
BASE	49	S19	1.4347	0	0.0346
BASE	49	S20	0.6646	0	0.0681
BASE	49	S21	1.0497	0.3485	0.0514
BASE	49	S22	1.0497	-0.3485	0.0514
BASE	50	S1	0.8256	0	-0.0712
BASE	50	S2	1.5179	0	-0.1375
BASE	50	S3	0.8256	0	-0.0712
BASE	50	S4	1.3448	0	-0.1209





BASE	50	S5	0.8256	0	-0.0712
BASE	50	S6	0.8256	0	-0.0712
BASE	50	S7	1.0993	0	-0.0779
BASE	50	S8	0.5519	0	-0.0645
BASE	50	S9	0.8256	0.183	-0.0712
BASE	50	S10	0.8256	-0.183	-0.0712
BASE	50	S11	1.3448	0	-0.1209
BASE	50	S12	1.3448	0	-0.1209
BASE	50	S13	1.5501	0	-0.126
BASE	50	S14	1.3448	-0.1372	-0.1209
BASE	50	S15	1.3448	0.1372	-0.1209
BASE	50	S16	1.3448	-0.1372	-0.1209
BASE	50	S17	0.4954	0	-0.0427
BASE	50	S18	0.4954	0	-0.0427
BASE	50	S19	0.7691	0	-0.0494
BASE	50	S20	0.2217	0	-0.036
BASE	50	S21	0.4954	0.183	-0.0427
BASE	50	S22	0.4954	-0.183	-0.0427
BASE	54	S1	1.7184	-0.0153	0.0359
BASE	54	S2	2.9121	-0.0296	0.0689
BASE	54	S3	1.7184	-0.0153	0.0359
BASE	54	S4	2.6137	-0.026	0.0607
BASE	54	S5	1.7184	-0.0153	0.0359
BASE	54	S6	1.7184	-0.0153	0.0359
BASE	54	S7	1.3124	-0.013	0.0267
BASE	54	S8	2.1245	-0.0177	0.0451
BASE	54	S9	1.7186	0.2972	0.0361
BASE	54	S10	1.7183	-0.3279	0.0358
BASE	54	S11	2.6137	-0.026	0.0607
BASE	54	S12	2.6137	-0.026	0.0607
BASE	54	S13	2.3092	-0.0243	0.0538
BASE	54	S14	2.6136	-0.2605	0.0606
BASE	54	S15	2.6138	0.2084	0.0608
BASE	54	S16	2.6136	-0.2605	0.0606
BASE	54	S17	1.0311	-0.0092	0.0216
BASE	54	S18	1.0311	-0.0092	0.0216
BASE	54	S19	0.625	-0.0068	0.0123
BASE	54	S20	1.4371	-0.0116	0.0308
BASE	54	S21	1.0312	0.3033	0.0217
BASE	54	S22	1.0309	-0.3218	0.0214
BASE	55	S1	0.8429	-0.0062	-0.0084





BASE	55	S2	1.4261	-0.0119	-0.0168
BASE	55	S3	0.8429	-0.0062	-0.0084
BASE	55	S4	1.2803	-0.0105	-0.0147
BASE	55	S5	0.8429	-0.0062	-0.0084
BASE	55	S6	0.8429	-0.0062	-0.0084
BASE	55	S7	0.2019	-0.0053	-0.0135
BASE	55	S8	1.4838	-0.007	-0.0033
BASE	55	S9	0.8434	0.1111	-0.0084
BASE	55	S10	0.8423	-0.1235	-0.0084
BASE	55	S11	1.2803	-0.0105	-0.0147
BASE	55	S12	1.2803	-0.0105	-0.0147
BASE	55	S13	0.7995	-0.0099	-0.0186
BASE	55	S14	1.2799	-0.0985	-0.0147
BASE	55	S15	1.2807	0.0775	-0.0147
BASE	55	S16	1.2799	-0.0985	-0.0147
BASE	55	S17	0.5057	-0.0037	-0.005
BASE	55	S18	0.5057	-0.0037	-0.005
BASE	55	S19	-0.1352	-0.0029	-0.0102
BASE	55	S20	1.1467	-0.0046	0.0001
BASE	55	S21	0.5062	0.1136	-0.005
BASE	55	S22	0.5052	-0.121	-0.0051
BASE	63	S1	1.6999	-0.0241	-0.0484
BASE	63	S2	2.9243	-0.0465	-0.0934
BASE	63	S3	1.6999	-0.0241	-0.0484
BASE	63	S4	2.6182	-0.0409	-0.0822
BASE	63	S5	1.6999	-0.0241	-0.0484
BASE	63	S6	1.6999	-0.0241	-0.0484
BASE	63	S7	2.0534	-0.0198	-0.0627
BASE	63	S8	1.3464	-0.0284	-0.0341
BASE	63	S9	1.7016	0.3426	-0.0484
BASE	63	S10	1.6983	-0.3908	-0.0484
BASE	63	S11	2.6182	-0.0409	-0.0822
BASE	63	S12	2.6182	-0.0409	-0.0822
BASE	63	S13	2.8833	-0.0377	-0.0929
BASE	63	S14	2.617	-0.3159	-0.0822
BASE	63	S15	2.6194	0.2341	-0.0822
BASE	63	S16	2.617	-0.3159	-0.0822
BASE	63	S17	1.02	-0.0145	-0.029
BASE	63	S18	1.02	-0.0145	-0.029
BASE	63	S19	1.3735	-0.0102	-0.0433
BASE	63	S20	0.6664	-0.0187	-0.0147





BASE	63	S21	1.0216	0.3522	-0.029
BASE	63	S22	1.0183	-0.3811	-0.029
BASE	66	S1	1.674	-0.0368	0.0893
BASE	66	S2	3.0111	-0.0709	0.1724
BASE	66	S3	1.674	-0.0368	0.0893
BASE	66	S4	2.6768	-0.0624	0.1516
BASE	66	S5	1.674	-0.0368	0.0893
BASE	66	S6	1.674	-0.0368	0.0893
BASE	66	S7	2.0766	-0.0298	0.0717
BASE	66	S8	1.2713	-0.0437	0.107
BASE	66	S9	1.6723	0.3043	0.0898
BASE	66	S10	1.6756	-0.3778	0.0889
BASE	66	S11	2.6768	-0.0624	0.1516
BASE	66	S12	2.6768	-0.0624	0.1516
BASE	66	S13	2.9788	-0.0572	0.1383
BASE	66	S14	2.678	-0.3182	0.1512
BASE	66	S15	2.6755	0.1934	0.152
BASE	66	S16	2.678	-0.3182	0.1512
BASE	66	S17	1.0044	-0.0221	0.0536
BASE	66	S18	1.0044	-0.0221	0.0536
BASE	66	S19	1.4071	-0.0151	0.0359
BASE	66	S20	0.6017	-0.029	0.0713
BASE	66	S21	1.0027	0.319	0.0541
BASE	66	S22	1.006	-0.3631	0.0531
BASE	67	S1	0.7837	-0.0156	-0.0709
BASE	67	S2	1.4369	-0.0302	-0.1368
BASE	67	S3	0.7837	-0.0156	-0.0709
BASE	67	S4	1.2736	-0.0265	-0.1203
BASE	67	S5	0.7837	-0.0156	-0.0709
BASE	67	S6	0.7837	-0.0156	-0.0709
BASE	67	S7	1.07	-0.0132	-0.0778
BASE	67	S8	0.4974	-0.018	-0.0639
BASE	67	S9	0.7796	0.1642	-0.0709
BASE	67	S10	0.7877	-0.1954	-0.0708
BASE	67	S11	1.2736	-0.0265	-0.1203
BASE	67	S12	1.2736	-0.0265	-0.1203
BASE	67	S13	1.4883	-0.0247	-0.1255
BASE	67	S14	1.2766	-0.1614	-0.1203
BASE	67	S15	1.2706	0.1083	-0.1203
BASE	67	S16	1.2766	-0.1614	-0.1203
BASE	67	S17	0.4702	-0.0094	-0.0425





BASE	67	S18	0.4702	-0.0094	-0.0425
BASE	67	S19	0.7565	-0.007	-0.0495
BASE	67	S20	0.1839	-0.0118	-0.0356
BASE	67	S21	0.4662	0.1704	-0.0425
BASE	67	S22	0.4742	-0.1892	-0.0425
BASE	71	S1	0.9747	0.0791	0.0169
BASE	71	S2	1.4772	0.1527	0.0321
BASE	71	S3	0.9747	0.0791	0.0169
BASE	71	S4	1.3516	0.1343	0.0283
BASE	71	S5	0.9747	0.0791	0.0169
BASE	71	S6	0.9747	0.0791	0.0169
BASE	71	S7	0.783	0.067	0.0126
BASE	71	S8	1.1664	0.0913	0.0211
BASE	71	S9	0.9853	0.3715	0.0195
BASE	71	S10	0.9641	-0.2133	0.0142
BASE	71	S11	1.3516	0.1343	0.0283
BASE	71	S12	1.3516	0.1343	0.0283
BASE	71	S13	1.2078	0.1252	0.0251
BASE	71	S14	1.3436	-0.085	0.0263
BASE	71	S15	1.3595	0.3536	0.0303
BASE	71	S16	1.3436	-0.085	0.0263
BASE	71	S17	0.5848	0.0475	0.0101
BASE	71	S18	0.5848	0.0475	0.0101
BASE	71	S19	0.3931	0.0353	0.0058
BASE	71	S20	0.7765	0.0596	0.0144
BASE	71	S21	0.5954	0.3399	0.0128
BASE	71	S22	0.5742	-0.2449	0.0074
BASE	72	S1	0.3966	0.0403	-0.0054
BASE	72	S2	0.5649	0.0777	-0.011
BASE	72	S3	0.3966	0.0403	-0.0054
BASE	72	S4	0.5228	0.0684	-0.0096
BASE	72	S5	0.3966	0.0403	-0.0054
BASE	72	S6	0.3966	0.0403	-0.0054
BASE	72	S7	0.0816	0.033	-0.0078
BASE	72	S8	0.7116	0.0475	-0.003
BASE	72	S9	0.3707	0.1473	-0.0072
BASE	72	S10	0.4225	-0.0667	-0.0036
BASE	72	S11	0.5228	0.0684	-0.0096
BASE	72	S12	0.5228	0.0684	-0.0096
BASE	72	S13	0.2865	0.0629	-0.0114
BASE	72	S14	0.5422	-0.0119	-0.0082





BASE	72	S15	0.5034	0.1486	-0.0109
BASE	72	S16	0.5422	-0.0119	-0.0082
BASE	72	S17	0.238	0.0242	-0.0032
BASE	72	S18	0.238	0.0242	-0.0032
BASE	72	S19	-0.0771	0.0169	-0.0057
BASE	72	S20	0.553	0.0314	-0.0008
BASE	72	S21	0.2121	0.1311	-0.005
BASE	72	S22	0.2639	-0.0828	-0.0014
BASE	80	S1	1.0799	0.0676	-0.0289
BASE	80	S2	1.7283	0.1304	-0.0558
BASE	80	S3	1.0799	0.0676	-0.0289
BASE	80	S4	1.5662	0.1147	-0.0491
BASE	80	S5	1.0799	0.0676	-0.0289
BASE	80	S6	1.0799	0.0676	-0.0289
BASE	80	S7	1.2678	0.0568	-0.0354
BASE	80	S8	0.8919	0.0783	-0.0225
BASE	80	S9	1.1434	0.4139	-0.0363
BASE	80	S10	1.0163	-0.2788	-0.0215
BASE	80	S11	1.5662	0.1147	-0.0491
BASE	80	S12	1.5662	0.1147	-0.0491
BASE	80	S13	1.7072	0.1066	-0.0539
BASE	80	S14	1.5185	-0.1451	-0.0435
BASE	80	S15	1.6139	0.3744	-0.0547
BASE	80	S16	1.5185	-0.1451	-0.0435
BASE	80	S17	0.6479	0.0405	-0.0174
BASE	80	S18	0.6479	0.0405	-0.0174
BASE	80	S19	0.8359	0.0298	-0.0238
BASE	80	S20	0.4599	0.0513	-0.0109
BASE	80	S21	0.7115	0.3869	-0.0248
BASE	80	S22	0.5844	-0.3058	-0.0099
BASE	83	S1	1.034	0.0195	0.0432
BASE	83	S2	1.7762	0.0376	0.0833
BASE	83	S3	1.034	0.0195	0.0432
BASE	83	S4	1.5907	0.0331	0.0733
BASE	83	S5	1.034	0.0195	0.0432
BASE	83	S6	1.034	0.0195	0.0432
BASE	83	S7	1.2317	0.0171	0.0347
BASE	83	S8	0.8363	0.0218	0.0518
BASE	83	S9	1.11	0.3296	0.048
BASE	83	S10	0.958	-0.2907	0.0384
BASE	83	S11	1.5907	0.0331	0.0733





BASE	83	S12	1.5907	0.0331	0.0733
BASE	83	S13	1.7389	0.0313	0.0669
BASE	83	S14	1.5337	-0.1995	0.0697
BASE	83	S15	1.6477	0.2657	0.0769
BASE	83	S16	1.5337	-0.1995	0.0697
BASE	83	S17	0.6204	0.0117	0.0259
BASE	83	S18	0.6204	0.0117	0.0259
BASE	83	S19	0.8181	0.0094	0.0174
BASE	83	S20	0.4227	0.014	0.0345
BASE	83	S21	0.6964	0.3219	0.0307
BASE	83	S22	0.5444	-0.2985	0.0211
BASE	84	S1	0.48	0.0006	-0.0367
BASE	84	S2	0.8509	0.0012	-0.071
BASE	84	S3	0.48	0.0006	-0.0367
BASE	84	S4	0.7581	0.0011	-0.0624
BASE	84	S5	0.48	0.0006	-0.0367
BASE	84	S6	0.48	0.0006	-0.0367
BASE	84	S7	0.6051	0.019	-0.0395
BASE	84	S8	0.3548	-0.0177	-0.034
BASE	84	S9	0.5606	0.1481	-0.0413
BASE	84	S10	0.3993	-0.1469	-0.0322
BASE	84	S11	0.7581	0.0011	-0.0624
BASE	84	S12	0.7581	0.0011	-0.0624
BASE	84	S13	0.852	0.0148	-0.0645
BASE	84	S14	0.6976	-0.1095	-0.059
BASE	84	S15	0.8186	0.1117	-0.0658
BASE	84	S16	0.6976	-0.1095	-0.059
BASE	84	S17	0.288	0.0004	-0.022
BASE	84	S18	0.288	0.0004	-0.022
BASE	84	S19	0.4131	0.0187	-0.0248
BASE	84	S20	0.1628	-0.018	-0.0193
BASE	84	S21	0.3686	0.1479	-0.0266
BASE	84	S22	0.2073	-0.1471	-0.0175

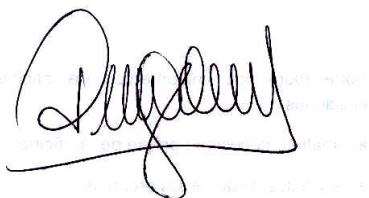


CONCLUSIONES Y RECOMENDACIONES

La estructura para el las Graderías, del Proyecto Remodelación del Parque Principal de Santa Rosa del Sur Departamento de Bolívar, están diseñadas en cumplimiento con las normativas nacionales NSR-10, con complemento de normativas internacionales, especialmente la AISC-2010 y 2016.

Se debe cumplir a cabalidad con las indicaciones realizadas en las especificaciones técnicas en los planos estructurales.

Se solicita al constructor, cumplir con las normativas NTC o ASTM equivalentes) necesarias para el control de calidad, con el propósito de garantizar las especificaciones técnicas de los materiales a utilizar.



ING. DIEGO F. QUIROGA S.
ESPECIALISTA EN ESTRUCTURAS UNINORTE
MP. 682020-92070 STD.



ING. DIEGO QUIROGA

ING. DIEGO FERNANDO QUIROGA SANTIAGO

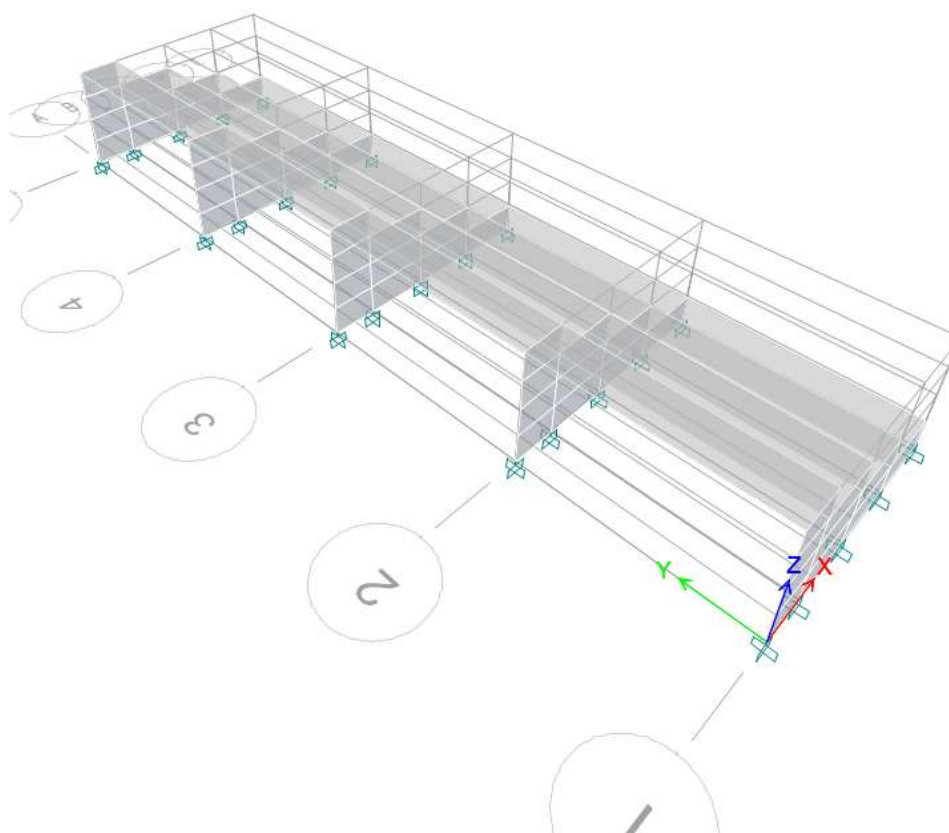
ESPECIALISTA EN ESTRUCTURAS UNINORTE

MP. 682020-92070 STD CONSULTORIAS DE OBRAS CIVILES

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ANEXOS





User Report 1

Model File: ES-GRADERIA_DEF, Revision 0
23/01/2026

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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 Definitions

Tower	Name	Height m	Master Story	Similar To	Splice Story	Splice Height m	Color
T1	STORY1	1.6	No	None	No		Red

1.2 Grid Data

Table 1.2 - Grid Definitions - General

Tower	Name	Type	Ux m	Uy m	Rz deg	Story Range	User Top Story	User Bottom Story	Bubble Size m	Color
T1	G1	Cartesian	0	0	0	Default			1.25	Gray6

Table 1.3 - Grid Definitions - Grid Lines

Name	Grid Line Type	ID	Ordinate m	Angle m	X1 m	Y1 m	X2 m	Y2 m	Bubble Location	Visible
G1	X (Cartesian)	A	0						End	Yes
G1	X (Cartesian)	B	0.6						End	Yes
G1	X (Cartesian)	C	1.5						End	Yes
G1	X (Cartesian)	D	2.4						End	Yes
G1	X (Cartesian)	E	3.3						End	Yes
G1	Y (Cartesian)	1	0						Start	Yes
G1	Y (Cartesian)	2	3						Start	Yes
G1	Y (Cartesian)	3	6						Start	Yes
G1	Y (Cartesian)	4	9						Start	Yes
G1	Y (Cartesian)	5	12						Start	Yes

1.3 Point Coordinates

Table 1.4 - Point Bays

Label	Is Auto Point	X m	Y m	DZBelow m
1	No	0	0	0.4
2	No	0.6	0	0.4
3	No	0.6	0	0
4	No	0	0	0
5	No	0	0	0.8
6	No	0.6	0	0.8
7	No	0	0	1.2
8	No	0.6	0	1.2
9	No	1.5	0	0.8
10	No	1.5	0	0.4
11	No	1.5	0	1.2

Table 1.4 - Point Bays (continued)

Label	Is Auto Point	X m	Y m	DZBelow m
12	No	1.5	0	0
13	No	2.4	0	1.2
14	No	2.4	0	0.8
15	No	2.4	0	0
16	No	3.3	0	0
17	No	3.3	0	1.2
18	No	0	3	0.4
19	No	0.6	3	0.4
20	No	0.6	3	0
21	No	0	3	0
22	No	0	3	0.8
23	No	0.6	3	0.8
24	No	0	3	1.2
25	No	0.6	3	1.2
26	No	1.5	3	0.8
27	No	1.5	3	0.4
28	No	1.5	3	1.2
29	No	1.5	3	0
30	No	2.4	3	1.2
31	No	2.4	3	0.8
32	No	2.4	3	0
33	No	3.3	3	0
34	No	3.3	3	1.2
35	No	0	6	0.4
36	No	0.6	6	0.4
37	No	0.6	6	0
38	No	0	6	0
39	No	0	6	0.8
40	No	0.6	6	0.8
41	No	0	6	1.2
42	No	0.6	6	1.2
43	No	1.5	6	0.8
44	No	1.5	6	0.4
45	No	1.5	6	1.2
46	No	1.5	6	0
47	No	2.4	6	1.2
48	No	2.4	6	0.8
49	No	2.4	6	0
50	No	3.3	6	0
51	No	3.3	6	1.2
52	No	0	9	0.4
53	No	0.6	9	0.4
54	No	0.6	9	0
55	No	0	9	0
56	No	0	9	0.8

Table 1.4 - Point Bays (continued)

Label	Is Auto Point	X m	Y m	DZBelow m
57	No	0.6	9	0.8
58	No	0	9	1.2
59	No	0.6	9	1.2
60	No	1.5	9	0.8
61	No	1.5	9	0.4
62	No	1.5	9	1.2
63	No	1.5	9	0
64	No	2.4	9	1.2
65	No	2.4	9	0.8
66	No	2.4	9	0
67	No	3.3	9	0
68	No	3.3	9	1.2
69	No	0	12	0.4
70	No	0.6	12	0.4
71	No	0.6	12	0
72	No	0	12	0
73	No	0	12	0.8
74	No	0.6	12	0.8
75	No	0	12	1.2
76	No	0.6	12	1.2
77	No	1.5	12	0.8
78	No	1.5	12	0.4
79	No	1.5	12	1.2
80	No	1.5	12	0
81	No	2.4	12	1.2
82	No	2.4	12	0.8
83	No	2.4	12	0
84	No	3.3	12	0
85	No	3.3	12	1.2

1.4 Area Connectivity**Table 1.5 - Floor Bays**

Label	NumPoints	PointNumber	PointBay
F17	4	1	3
F17		2	20
F17		3	21
F17		4	4
F18	4	1	10
F18		2	27
F18		3	19
F18		4	2
F19	4	1	14
F19		2	31
F19		3	26
F19		4	9

Table 1.5 - Floor Bays (continued)

Label	NumPoints	PointNumber	PointBay
F20	4	1	17
F20		2	34
F20		3	30
F20		4	13
F21	4	1	20
F21		2	37
F21		3	38
F21		4	21
F22	4	1	27
F22		2	44
F22		3	36
F22		4	19
F23	4	1	31
F23		2	48
F23		3	43
F23		4	26
F24	4	1	34
F24		2	51
F24		3	47
F24		4	30
F25	4	1	37
F25		2	54
F25		3	55
F25		4	38
F26	4	1	44
F26		2	61
F26		3	53
F26		4	36
F27	4	1	48
F27		2	65
F27		3	60
F27		4	43
F28	4	1	51
F28		2	68
F28		3	64
F28		4	47
F29	4	1	54
F29		2	71
F29		3	72
F29		4	55
F30	4	1	61
F30		2	78
F30		3	70
F30		4	53
F31	4	1	65
F31		2	82

Table 1.5 - Floor Bays (continued)

Label	NumPoints	PointNumber	PointBay
F31		3	77
F31		4	60
F32	4	1	68
F32		2	85
F32		3	81
F32		4	64

Table 1.6 - Wall Bays

Label	NumPoints	PointNumber	PointBay	PointStory
W1	4	1	1	Same
W1		2	2	Same
W1		3	3	Same
W1		4	4	Same
W2	4	1	5	Same
W2		2	6	Same
W2		3	2	Same
W2		4	1	Same
W3	4	1	7	Same
W3		2	8	Same
W3		3	6	Same
W3		4	5	Same
W4	4	1	4	Below
W4		2	3	Below
W4		3	8	Same
W4		4	7	Same
W5	4	1	6	Same
W5		2	9	Same
W5		3	10	Same
W5		4	2	Same
W6	4	1	8	Same
W6		2	11	Same
W6		3	9	Same
W6		4	6	Same
W7	4	1	3	Below
W7		2	12	Below
W7		3	11	Same
W7		4	8	Same
W8	4	1	11	Same
W8		2	13	Same
W8		3	14	Same
W8		4	9	Same
W9	4	1	12	Below
W9		2	15	Below
W9		3	13	Same
W9		4	11	Same
W10	4	1	15	Below

Table 1.6 - Wall Bays (continued)

Label	NumPoints	PointNumber	PointBay	PointStory
W10		2	16	Below
W10		3	17	Same
W10		4	13	Same
W11	4	1	18	Same
W11		2	19	Same
W11		3	20	Same
W11		4	21	Same
W12	4	1	22	Same
W12		2	23	Same
W12		3	19	Same
W12		4	18	Same
W13	4	1	24	Same
W13		2	25	Same
W13		3	23	Same
W13		4	22	Same
W14	4	1	21	Below
W14		2	20	Below
W14		3	25	Same
W14		4	24	Same
W15	4	1	23	Same
W15		2	26	Same
W15		3	27	Same
W15		4	19	Same
W16	4	1	25	Same
W16		2	28	Same
W16		3	26	Same
W16		4	23	Same
W17	4	1	20	Below
W17		2	29	Below
W17		3	28	Same
W17		4	25	Same
W18	4	1	28	Same
W18		2	30	Same
W18		3	31	Same
W18		4	26	Same
W19	4	1	29	Below
W19		2	32	Below
W19		3	30	Same
W19		4	28	Same
W20	4	1	32	Below
W20		2	33	Below
W20		3	34	Same
W20		4	30	Same
W21	4	1	35	Same
W21		2	36	Same
W21		3	37	Same

Table 1.6 - Wall Bays (continued)

Label	NumPoints	PointNumber	PointBay	PointStory
W21		4	38	Same
W22	4	1	39	Same
W22		2	40	Same
W22		3	36	Same
W22		4	35	Same
W23	4	1	41	Same
W23		2	42	Same
W23		3	40	Same
W23		4	39	Same
W24	4	1	38	Below
W24		2	37	Below
W24		3	42	Same
W24		4	41	Same
W25	4	1	40	Same
W25		2	43	Same
W25		3	44	Same
W25		4	36	Same
W26	4	1	42	Same
W26		2	45	Same
W26		3	43	Same
W26		4	40	Same
W27	4	1	37	Below
W27		2	46	Below
W27		3	45	Same
W27		4	42	Same
W28	4	1	45	Same
W28		2	47	Same
W28		3	48	Same
W28		4	43	Same
W29	4	1	46	Below
W29		2	49	Below
W29		3	47	Same
W29		4	45	Same
W30	4	1	49	Below
W30		2	50	Below
W30		3	51	Same
W30		4	47	Same
W31	4	1	52	Same
W31		2	53	Same
W31		3	54	Same
W31		4	55	Same
W32	4	1	56	Same
W32		2	57	Same
W32		3	53	Same
W32		4	52	Same
W33	4	1	58	Same

Table 1.6 - Wall Bays (continued)

Label	NumPoints	PointNumber	PointBay	PointStory
W33		2	59	Same
W33		3	57	Same
W33		4	56	Same
W34	4	1	55	Below
W34		2	54	Below
W34		3	59	Same
W34		4	58	Same
W35	4	1	57	Same
W35		2	60	Same
W35		3	61	Same
W35		4	53	Same
W36	4	1	59	Same
W36		2	62	Same
W36		3	60	Same
W36		4	57	Same
W37	4	1	54	Below
W37		2	63	Below
W37		3	62	Same
W37		4	59	Same
W38	4	1	62	Same
W38		2	64	Same
W38		3	65	Same
W38		4	60	Same
W39	4	1	63	Below
W39		2	66	Below
W39		3	64	Same
W39		4	62	Same
W40	4	1	66	Below
W40		2	67	Below
W40		3	68	Same
W40		4	64	Same
W41	4	1	69	Same
W41		2	70	Same
W41		3	71	Same
W41		4	72	Same
W42	4	1	73	Same
W42		2	74	Same
W42		3	70	Same
W42		4	69	Same
W43	4	1	75	Same
W43		2	76	Same
W43		3	74	Same
W43		4	73	Same
W44	4	1	72	Below
W44		2	71	Below
W44		3	76	Same

Table 1.6 - Wall Bays (continued)

Label	NumPoints	PointNumber	PointBay	PointStory
W44		4	75	Same
W45	4	1	74	Same
W45		2	77	Same
W45		3	78	Same
W45		4	70	Same
W46	4	1	76	Same
W46		2	79	Same
W46		3	77	Same
W46		4	74	Same
W47	4	1	71	Below
W47		2	80	Below
W47		3	79	Same
W47		4	76	Same
W48	4	1	79	Same
W48		2	81	Same
W48		3	82	Same
W48		4	77	Same
W49	4	1	80	Below
W49		2	83	Below
W49		3	81	Same
W49		4	79	Same
W50	4	1	83	Below
W50		2	84	Below
W50		3	85	Same
W50		4	81	Same

1.5 Mass

Table 1.7 - Mass Source Definition

Name	Is Default	Include Lateral Mass?	Include Vertical Mass?	Lump Mass?	Source Self Mass?	Source Added Mass?	Source Load Patterns?	Move Mass Centroid?	Move Ratio X	Move Ratio Y	Load Pattern	Multiplier
MsSrc1	Yes	Yes	No	Yes	No	No	Yes	No			DEAD	1

Table 1.8 - Mass Summary by Story

Story	UX tonf-s2/m	UY tonf-s2/m	UZ tonf-s2/m
STORY1	2.30207	2.30207	0
BASE	0.55762	0.55762	0

Table 1.9 - Mass Summary by Group

Group	Self Mass tonf-s2/m	Self Weight tonf	Mass X tonf-s2/m	Mass Y tonf-s2/m	Mass Z tonf-s2/m
ALL	0	18.144	2.85969	2.85969	0

1.6 Groups

Table 1.10 - Group Definitions

Name	Color	Steel Design?	Concrete Design?	Composite Design?
ALL	Yellow	No	No	No

2 Properties

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

2.1 Materials

Table 2.1 - Material Properties - General

Material	Type	SymType	Grade	Color	Notes
A416Gr270	Tendon	Uniaxial	Grade 270	Blue	
A615Gr60	Rebar	Uniaxial	Grade 60	Green	
CONC	Concrete	Isotropic	Unknown	Cyan	
OTHER	Other	Isotropic	Unknown	Red	
STEEL	Steel	Isotropic	Unknown	Green	

2.2 Frame Sections

Table 2.2 - Frame Section Property Definitions - Summary (Part 1 of 4)

Name	Material	Shape	Color	Area m2	J m4	I33 m4	I22 m4	I23 m4	IMajor m4	IMinor m4
C50X25	CONC	Concrete Rectangular	Magenta	0.1375	0.002047	0.003466	0.000716			
C55X50	CONC	Concrete Rectangular	White	0.275	0.010539	0.006932	0.005729			

Table 2.2 - Frame Section Property Definitions - Summary (Part 2 of 4)

MajorAngle deg	As2 m2	As3 m2	S33Pos m3	S33Neg m3	S22Pos m3	S22Neg m3	Z33 m3	Z22 m3	R33 m	R22 m	Cw m6
	0.1146	0.1146	0.012604	0.012604	0.005729	0.005729	0.018906	0.008594	0.15877	0.07217	
	0.2292	0.2292	0.025208	0.025208	0.022917	0.022917	0.037813	0.034375	0.15877	0.14434	

Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 4)

CG Offset 3 m	CG Offset 2 m	PNA Offset 3 m	PNA Offset 2 m	SC Offset 3 m	SC Offset 2 m	Area Modifier	As2 Modifier	As3 Modifier	J Modifier	I33 Modifier	I22 Modifier
0	0	0	0			1	1	1	1	1	1
0	0	0	0			1	1	1	1	1	1

Table 2.2 - Frame Section Property Definitions - Summary (Part 4 of 4)

Weight Modifier
1
1

2.3 Shell Sections

Table 2.3 - Area Section Property Definitions - Summary

Name	Type	Element Type	Material	Total Thickness m	Deck Material	Deck Depth m
LOSA12	Slab	Shell-Thin	CONC	0.12		
LOSA18	Slab	Membrane	CONC	0.18		
MURO18	Wall	Shell-Thin	CONC	0.18		

2.4 Reinforcement Sizes**Table 2.4 - Reinforcing Bar Sizes**

Name	Diameter m	Area m2
#2	0.00635	3.226E-05
#3	0.00953	0.0001
#4	0.0127	0.0001
#5	0.01588	0.0002
#6	0.01905	0.0003
#7	0.02223	0.0004
#8	0.0254	0.0005
#9	0.02865	0.0006
#10	0.03226	0.0008
#11	0.03581	0.001
#14	0.043	0.0015
#18	0.05733	0.0026
10M	0.0113	0.0001
15M	0.016	0.0002
20M	0.0195	0.0003
25M	0.0252	0.0005
30M	0.0299	0.0007
35M	0.0357	0.001
45M	0.0437	0.0015
55M	0.0564	0.0025
6d	0.006	2.83E-05
8d	0.008	0.0001
10d	0.01	0.0001
12d	0.012	0.0001
14d	0.014	0.0002
16d	0.016	0.0002
20d	0.02	0.0003
25d	0.025	0.0005
26d	0.026	0.0005
28d	0.028	0.0006
N12	0.012	0.0001
N16	0.016	0.0002
N20	0.02	0.0003
N24	0.024	0.0005
N28	0.028	0.0006
N32	0.032	0.0008

Table 2.4 - Reinforcing Bar Sizes (continued)

Name	Diameter m	Area m2
N36	0.036	0.001

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	UniqueName	Diaphragm	Restraints	Spring	Added Mass	Panel Zone	Include in Mesh
STORY1	1	17	From Area					
STORY1	2	18	From Area					
STORY1	3	19	From Area					
STORY1	4	20	From Area					
STORY1	5	21	From Area					
STORY1	6	22	From Area					
STORY1	7	23	From Area					
STORY1	8	24	From Area					
STORY1	9	27	From Area					
STORY1	10	28	From Area					
STORY1	11	29	From Area					
STORY1	13	31	From Area					
STORY1	14	32	From Area					
STORY1	17	35	From Area					
STORY1	18	36	From Area					
STORY1	19	37	From Area					
STORY1	20	38	From Area					
STORY1	21	39	From Area					
STORY1	22	40	From Area					
STORY1	23	41	From Area					
STORY1	24	42	From Area					
STORY1	25	43	From Area					
STORY1	26	46	From Area					
STORY1	27	47	From Area					
STORY1	28	48	From Area					
STORY1	30	50	From Area					
STORY1	31	51	From Area					
STORY1	34	54	From Area					
STORY1	35	55	From Area					
STORY1	36	56	From Area					
STORY1	37	57	From Area					
STORY1	38	58	From Area					
STORY1	39	59	From Area					
STORY1	40	60	From Area					
STORY1	41	61	From Area					
STORY1	42	62	From Area					
STORY1	43	65	From Area					
STORY1	44	66	From Area					
STORY1	45	67	From Area					
STORY1	47	69	From Area					

Table 3.1 - Joint Assignments - Summary (continued)

Story	Label	UniqueName	Diaphragm	Restraints	Spring	Added Mass	Panel Zone	Include in Mesh
STORY1	48	70	From Area					
STORY1	51	73	From Area					
STORY1	52	74	From Area					
STORY1	53	75	From Area					
STORY1	54	76	From Area					
STORY1	55	77	From Area					
STORY1	56	78	From Area					
STORY1	57	79	From Area					
STORY1	58	80	From Area					
STORY1	59	81	From Area					
STORY1	60	84	From Area					
STORY1	61	85	From Area					
STORY1	62	86	From Area					
STORY1	64	88	From Area					
STORY1	65	89	From Area					
STORY1	68	92	From Area					
STORY1	69	93	From Area					
STORY1	70	94	From Area					
STORY1	71	95	From Area					
STORY1	72	96	From Area					
STORY1	73	97	From Area					
STORY1	74	98	From Area					
STORY1	75	99	From Area					
STORY1	76	100	From Area					
STORY1	77	103	From Area					
STORY1	78	104	From Area					
STORY1	79	105	From Area					
STORY1	81	107	From Area					
STORY1	82	108	From Area					
STORY1	85	111	From Area					
BASE	3	26	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	4	25	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	12	30	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	15	33	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	16	34	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	20	45	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	21	44	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	29	49	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	32	52	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	33	53	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	37	64	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	38	63	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	46	68	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	49	71	From Area	UX; UY; UZ; RX; RY; RZ				

Table 3.1 - Joint Assignments - Summary (continued)

Story	Label	UniqueName	Diaphragm	Restraints	Spring	Added Mass	Panel Zone	Include in Mesh
BASE	50	72	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	54	83	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	55	82	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	63	87	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	66	90	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	67	91	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	71	102	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	72	101	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	80	106	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	83	109	From Area	UX; UY; UZ; RX; RY; RZ				
BASE	84	110	From Area	UX; UY; UZ; RX; RY; RZ				

3.2 Shell Assignments

Table 3.2 - Area Assignments - Summary (Part 1 of 2)

Story	Label	UniqueName	Section Property	Property Type	Diaphragm	Axis Angle deg	Added Mass tonf-s2/m3	Pier	Spandrel	Spandrel Story
STORY1	F17	51	LOSA12	Slab						
STORY1	F18	52	LOSA12	Slab						
STORY1	F19	53	LOSA12	Slab						
STORY1	F20	54	LOSA12	Slab						
STORY1	F21	55	LOSA12	Slab						
STORY1	F22	56	LOSA12	Slab						
STORY1	F23	57	LOSA12	Slab						
STORY1	F24	58	LOSA12	Slab						
STORY1	F25	59	LOSA12	Slab						
STORY1	F26	60	LOSA12	Slab						
STORY1	F27	61	LOSA12	Slab						
STORY1	F28	62	LOSA12	Slab						
STORY1	F29	63	LOSA12	Slab						
STORY1	F30	64	LOSA12	Slab						
STORY1	F31	65	LOSA12	Slab						
STORY1	F32	66	LOSA12	Slab						
STORY1	W1	1	MURO18	Wall				P1		
STORY1	W2	2	MURO18	Wall				P1		
STORY1	W3	3	MURO18	Wall				P1		
STORY1	W4	4	MURO18	Wall				P1		
STORY1	W5	5	MURO18	Wall				P2		
STORY1	W6	6	MURO18	Wall				P2		
STORY1	W7	7	MURO18	Wall				P2		
STORY1	W8	8	MURO18	Wall				P3		
STORY1	W9	9	MURO18	Wall				P3		
STORY1	W10	10	MURO18	Wall				P4		
STORY1	W11	11	MURO18	Wall				P5		

Table 3.2 - Area Assignments - Summary (Part 1 of 2, continued)

Story	Label	UniqueName	Section Property	Property Type	Diaphragm	Axis Angle deg	Added Mass tonf-s2/m3	Pier	Spandrel	Spandrel Story
STORY1	W12	12	MURO18	Wall				P5		
STORY1	W13	13	MURO18	Wall				P5		
STORY1	W14	14	MURO18	Wall				P5		
STORY1	W15	15	MURO18	Wall				P6		
STORY1	W16	16	MURO18	Wall				P6		
STORY1	W17	17	MURO18	Wall				P6		
STORY1	W18	18	MURO18	Wall				P7		
STORY1	W19	19	MURO18	Wall				P7		
STORY1	W20	20	MURO18	Wall				P8		
STORY1	W21	21	MURO18	Wall				P9		
STORY1	W22	22	MURO18	Wall				P9		
STORY1	W23	23	MURO18	Wall				P9		
STORY1	W24	24	MURO18	Wall				P9		
STORY1	W25	25	MURO18	Wall				P10		
STORY1	W26	26	MURO18	Wall				P10		
STORY1	W27	27	MURO18	Wall				P10		
STORY1	W28	28	MURO18	Wall				P11		
STORY1	W29	29	MURO18	Wall				P11		
STORY1	W30	30	MURO18	Wall				P10		
STORY1	W31	31	MURO18	Wall				P13		
STORY1	W32	32	MURO18	Wall				P13		
STORY1	W33	33	MURO18	Wall				P13		
STORY1	W34	34	MURO18	Wall				P13		
STORY1	W35	35	MURO18	Wall				P14		
STORY1	W36	36	MURO18	Wall				P14		
STORY1	W37	37	MURO18	Wall				P14		
STORY1	W38	38	MURO18	Wall				P15		
STORY1	W39	39	MURO18	Wall				P15		
STORY1	W40	40	MURO18	Wall				P16		
STORY1	W41	41	MURO18	Wall						
STORY1	W42	42	MURO18	Wall						
STORY1	W43	43	MURO18	Wall						
STORY1	W44	44	MURO18	Wall						
STORY1	W45	45	MURO18	Wall						
STORY1	W46	46	MURO18	Wall						
STORY1	W47	47	MURO18	Wall						
STORY1	W48	48	MURO18	Wall						
STORY1	W49	49	MURO18	Wall						
STORY1	W50	50	MURO18	Wall						

Table 3.2 - Area Assignments - Summary (Part 2 of 2)

[illegible]

Table 3.2 - Area Assignments - Summary (Part 2 of 2, continued)

Spring	Modifiers

4 Loads

This chapter provides loading information as applied to the model.

4.1 Load Patterns

Table 4.1 - Load Pattern Definitions

Name	Is Auto Load	Type	Self Weight Multiplier	Auto Load
~LLRF	Yes	Other	0	
DEAD	No	Dead	1	
LIVE	No	Live	0	
LR	No	Live	0	
SISMOX	No	Seismic	0	User Coefficient
SISMOY	No	Seismic	0	User Coefficient
W1	No	Other	0	
W2	No	Other	0	

4.2 Auto Seismic Loading

User Coefficient Auto Seismic Load Calculation

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

Direction and Eccentricity

Direction = X + Eccentricity Y

Eccentricity Ratio = 5% for all diaphragms

Factors and Coefficients

Equivalent Lateral Forces

Base Shear Coefficient, C

$$C = 0.563$$

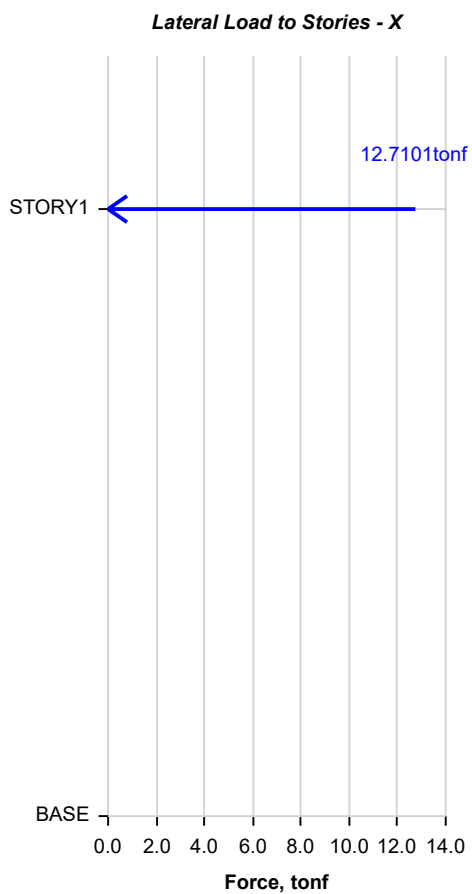
Base Shear, V

$$V = CW$$

Calculated Base Shear

Direction	Period Used (sec)	C	W (tonf)	V (tonf)
X + Ecc. Y	0	0	22.57564	12.7101

Applied Story Forces



Story	Elevation	X-Dir	Y-Dir
	m	tonf	tonf
STORY1	1.6	12.7101	0
BASE	0	0	0

User Coefficient Auto Seismic Load Calculation

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

Direction and Eccentricity

Direction = Y + Eccentricity X

Eccentricity Ratio = 5% for all diaphragms

Factors and Coefficients

Equivalent Lateral Forces

Base Shear Coefficient, C

$$C = 0.563$$

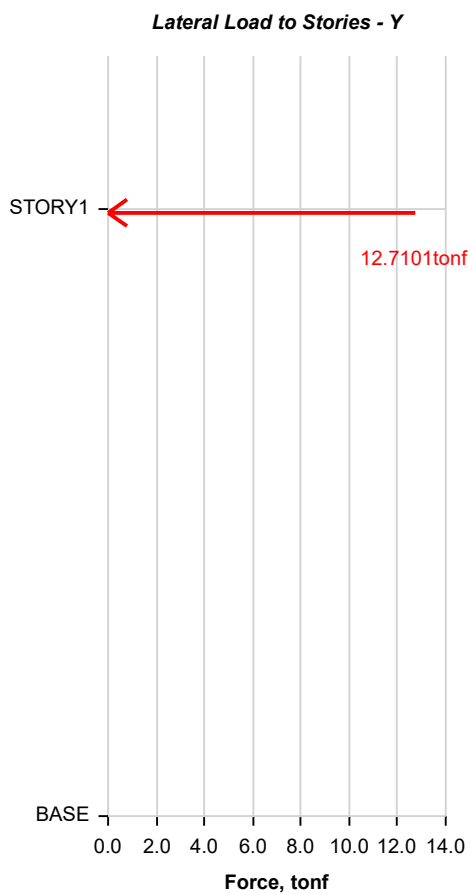
Base Shear, V

$$V = CW$$

Calculated Base Shear

Direction	Period Used (sec)	C	W (tonf)	V (tonf)
Y + Ecc. X	0	0	22.57564	12.7101

Applied Story Forces



Story	Elevation	X-Dir	Y-Dir
	m	tonf	tonf
STORY1	1.6	0	12.7101
BASE	0	0	0

4.3 Applied Loads

4.3.1 Area Loads

Table 4.4 - Area Load Assignments - Uniform

Story	Label	UniqueName	Load Pattern	Direction	Load tonf/m2
STORY1	F17	51	DEAD	Gravity	0.25
STORY1	F18	52	DEAD	Gravity	0.25
STORY1	F19	53	DEAD	Gravity	0.25
STORY1	F20	54	DEAD	Gravity	0.25
STORY1	F21	55	DEAD	Gravity	0.25
STORY1	F22	56	DEAD	Gravity	0.25
STORY1	F23	57	DEAD	Gravity	0.25
STORY1	F24	58	DEAD	Gravity	0.25
STORY1	F25	59	DEAD	Gravity	0.25
STORY1	F26	60	DEAD	Gravity	0.25
STORY1	F27	61	DEAD	Gravity	0.25
STORY1	F28	62	DEAD	Gravity	0.25
STORY1	F29	63	DEAD	Gravity	0.25
STORY1	F30	64	DEAD	Gravity	0.25
STORY1	F31	65	DEAD	Gravity	0.25
STORY1	F32	66	DEAD	Gravity	0.25
STORY1	F17	51	LIVE	Gravity	0.5
STORY1	F18	52	LIVE	Gravity	0.5
STORY1	F19	53	LIVE	Gravity	0.5
STORY1	F20	54	LIVE	Gravity	0.5
STORY1	F21	55	LIVE	Gravity	0.5
STORY1	F22	56	LIVE	Gravity	0.5
STORY1	F23	57	LIVE	Gravity	0.5
STORY1	F24	58	LIVE	Gravity	0.5
STORY1	F25	59	LIVE	Gravity	0.5
STORY1	F26	60	LIVE	Gravity	0.5
STORY1	F27	61	LIVE	Gravity	0.5
STORY1	F28	62	LIVE	Gravity	0.5
STORY1	F29	63	LIVE	Gravity	0.5
STORY1	F30	64	LIVE	Gravity	0.5
STORY1	F31	65	LIVE	Gravity	0.5
STORY1	F32	66	LIVE	Gravity	0.5

4.4 Load Cases

Table 4.5 - Load Case Definitions - Summary

Name	Type	Notes
DEAD	Linear Static	
LIVE	Linear Static	
LR	Linear Static	
W1	Linear Static	
W2	Linear Static	
SISMOX	Linear Static	

Table 4.5 - Load Case Definitions - Summary (continued)

Name	Type	Notes
SISMOY	Linear Static	
Modal	Modal - Eigen	

4.5 Load Combinations**Table 4.6 - Load Combination Definitions**

Name	Type	Is Auto	Load Name	Mode	SF	Notes
S1	Linear Add	No	DEAD		1	
S2	Linear Add	No	DEAD		1	
S2			LIVE		1	
S3	Linear Add	No	DEAD		1	
S3			LR		1	
S4	Linear Add	No	DEAD		1	
S4			LIVE		0.75	
S4			LR		0.75	
S5	Linear Add	No	DEAD		1	
S5			W1		1	
S6	Linear Add	No	DEAD		1	
S6			W2		1	
S7	Linear Add	No	DEAD		1	
S7			SISMOX		0.7	
S8	Linear Add	No	DEAD		1	
S8			SISMOX		-0.7	
S9	Linear Add	No	DEAD		1	
S9			SISMOY		0.7	
S10	Linear Add	No	DEAD		1	
S10			SISMOY		-0.7	
S11	Linear Add	No	DEAD		1	
S11			W1		0.75	
S11			LIVE		0.75	
S11			LR		0.75	
S12	Linear Add	No	DEAD		1	
S12			W2		0.75	
S12			LIVE		0.75	
S12			LR		0.75	
S13	Linear Add	No	DEAD		1	
S13			SISMOX		0.525	
S13			LIVE		0.75	
S13			LR		0.75	
S14	Linear Add	No	DEAD		1	
S14			SISMOY		-0.525	
S14			LIVE		0.75	
S14			LR		0.75	
S15	Linear Add	No	DEAD		1	
S15			SISMOY		0.525	
S15			LIVE		0.75	

Table 4.6 - Load Combination Definitions (continued)

Name	Type	Is Auto	Load Name	Mode	SF	Notes
S15			LR		0.75	
S16	Linear Add	No	DEAD		1	
S16			SISMOY		-0.525	
S16			LIVE		0.75	
S16			LR		0.75	
S17	Linear Add	No	DEAD		0.6	
S17			W1		1	
S18	Linear Add	No	DEAD		0.6	
S18			W2		1	
S19	Linear Add	No	DEAD		0.6	
S19			SISMOX		0.7	
S20	Linear Add	No	DEAD		0.6	
S20			SISMOX		-0.7	
S21	Linear Add	No	DEAD		0.6	
S21			SISMOY		0.7	
S22	Linear Add	No	DEAD		0.6	
S22			SISMOY		-0.7	
U1	Linear Add	No	DEAD		1.4	
U2	Linear Add	No	DEAD		1.2	
U2			LIVE		1.6	
U2			LR		0.5	
U3	Linear Add	No	DEAD		1.2	
U3			LR		1.6	
U3			W1		0.8	
U4	Linear Add	No	DEAD		1.2	
U4			LR		1.6	
U4			W2		0.8	
U5	Linear Add	No	DEAD		1.2	
U5			W1		1.6	
U5			LIVE		1	
U5			LR		0.5	
U6	Linear Add	No	DEAD		1.2	
U6			W2		1.6	
U6			LIVE		1	
U6			LR		0.5	
U7	Linear Add	No	DEAD		1.2	
U7			LIVE		1	
U7			SISMOX		1	
U7			SISMOY		0.3	
U8	Linear Add	No	DEAD		1.2	
U8			LIVE		1	
U8			SISMOX		-1	
U8			SISMOY		-0.3	
U9	Linear Add	No	DEAD		1.2	
U9			LIVE		1	

Table 4.6 - Load Combination Definitions (continued)

Name	Type	Is Auto	Load Name	Mode	SF	Notes
U9			SISMOX		1	
U9			SISMOY		-0.3	
U10	Linear Add	No	DEAD		1.2	
U10			LIVE		1	
U10			SISMOX		-1	
U10			SISMOY		0.3	
U11	Linear Add	No	DEAD		1.2	
U11			LIVE		1	
U11			SISMOX		0.3	
U11			SISMOY		1	
U12	Linear Add	No	DEAD		1.2	
U12			LIVE		1	
U12			SISMOX		-0.3	
U12			SISMOY		-1	
U13	Linear Add	No	DEAD		1.2	
U13			LIVE		1	
U13			SISMOX		-0.3	
U13			SISMOY		1	
U14	Linear Add	No	DEAD		1.2	
U14			LIVE		1	
U14			SISMOX		0.3	
U14			SISMOY		-1	
U15	Linear Add	No	DEAD		0.9	
U15			W1		1.6	
U16	Linear Add	No	DEAD		0.9	
U16			W2		1.6	
U17	Linear Add	No	DEAD		0.9	
U17			SISMOX		1	
U17			SISMOY		0.3	
U18	Linear Add	No	DEAD		0.9	
U18			SISMOX		-1	
U18			SISMOY		-0.3	
U19	Linear Add	No	DEAD		0.9	
U19			SISMOX		1	
U19			SISMOY		-0.3	
U20	Linear Add	No	DEAD		0.9	
U20			SISMOX		-1	
U20			SISMOY		0.3	
U21	Linear Add	No	DEAD		0.9	
U21			SISMOX		0.3	
U21			SISMOY		1	
U22	Linear Add	No	DEAD		0.9	
U22			SISMOX		-0.3	
U22			SISMOY		-1	
U23	Linear Add	No	DEAD		0.9	

Table 4.6 - Load Combination Definitions (continued)

Name	Type	Is Auto	Load Name	Mode	SF	Notes
U23			SISMOX		-0.3	
U23			SISMOY		1	
U24	Linear Add	No	DEAD		0.9	
U24			SISMOX		0.3	
U24			SISMOY		-1	

5 Analysis Results

This chapter provides analysis results.

5.1 Structure Results

Table 5.1 - Base Reactions

Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m	MY tonf-m	MZ tonf-m	X m	Y m	Z m
DEAD	LinStatic				0	0	28.044	168.264	-43.4732	0	0	0	0
LIVE	LinStatic				0	0	19.8	118.8	-32.67	0	0	0	0
LR	LinStatic				0	0	0	0	0	0	0	0	0
W1	LinStatic				0	0	0	0	0	0	0	0	0
W2	LinStatic				0	0	0	0	0	0	0	0	0
SISMOX	LinStatic				-12.7101	0	0	0	-12.5898	76.2605	0	0	0
SISMOY	LinStatic				0	-12.7101	0	12.5898	0	-19.8686	0	0	0
U1	Combination				0	0	39.2616	235.5696	-60.8625	0	0	0	0
U2	Combination				0	0	65.3328	391.9968	-104.4399	0	0	0	0
U3	Combination				0	0	33.6528	201.9168	-52.1679	0	0	0	0
U4	Combination				0	0	33.6528	201.9168	-52.1679	0	0	0	0
U5	Combination				0	0	53.4528	320.7168	-84.8379	0	0	0	0
U6	Combination				0	0	53.4528	320.7168	-84.8379	0	0	0	0
U7	Combination				-12.7101	-3.813	53.4528	324.4937	-97.4277	70.2999	0	0	0
U8	Combination				12.7101	3.813	53.4528	316.9399	-72.2481	-70.2999	0	0	0
U9	Combination				-12.7101	3.813	53.4528	316.9399	-97.4277	82.2211	0	0	0
U10	Combination				12.7101	-3.813	53.4528	324.4937	-72.2481	-82.2211	0	0	0
U11	Combination				-3.813	-12.7101	53.4528	333.3066	-88.6148	3.0095	0	0	0
U12	Combination				3.813	12.7101	53.4528	308.127	-81.0609	-3.0095	0	0	0
U13	Combination				3.813	-12.7101	53.4528	333.3066	-81.0609	-42.7468	0	0	0
U14	Combination				-3.813	12.7101	53.4528	308.127	-88.6148	42.7468	0	0	0
U15	Combination				0	0	25.2396	151.4376	-39.1259	0	0	0	0
U16	Combination				0	0	25.2396	151.4376	-39.1259	0	0	0	0

Table 5.1 - Base Reactions (continued)

Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m	MY tonf-m	MZ tonf-m	X m	Y m	Z m
U17	Combination				-12.7101	-3.813	25.2396	155.2145	-51.7157	70.2999	0	0	0
U18	Combination				12.7101	3.813	25.2396	147.6607	-26.5361	-70.2999	0	0	0
U19	Combination				-12.7101	3.813	25.2396	147.6607	-51.7157	82.2211	0	0	0
U20	Combination				12.7101	-3.813	25.2396	155.2145	-26.5361	-82.2211	0	0	0
U21	Combination				-3.813	-12.7101	25.2396	164.0274	-42.9029	3.0095	0	0	0
U22	Combination				3.813	12.7101	25.2396	138.8478	-35.349	-3.0095	0	0	0
U23	Combination				3.813	-12.7101	25.2396	164.0274	-35.349	-42.7468	0	0	0
U24	Combination				-3.813	12.7101	25.2396	138.8478	-42.9029	42.7468	0	0	0

5.2 Story Results

Table 5.2 - Story Drifts

Story	Output Case	Case Type	Step Type	Step Number	Step Label	Direction	Drift	Drift/	Label	X m	Y m	Z m
STORY1	DEAD	LinStatic				X	2E-06		21	0	3	1.6
STORY1	LIVE	LinStatic				X	2E-06		71	0.6	12	1.6
STORY1	SISMOX	LinStatic				X	1.8E-05		20	0.6	3	1.6
STORY1	SISMOY	LinStatic				Y	0.00027		21	0	3	1.6
STORY1	U1	Combination				X	2E-06		21	0	3	1.6
STORY1	U2	Combination				X	4E-06		71	0.6	12	1.6
STORY1	U3	Combination				X	2E-06		21	0	3	1.6
STORY1	U4	Combination				X	2E-06		21	0	3	1.6
STORY1	U5	Combination				X	3E-06		71	0.6	12	1.6
STORY1	U6	Combination				X	3E-06		71	0.6	12	1.6
STORY1	U7	Combination				X	1.9E-05		37	0.6	6	1.6
STORY1	U7	Combination				Y	0.000113		3	0.6	0	1.6
STORY1	U8	Combination				X	2.1E-05		55	0	9	1.6
STORY1	U8	Combination				Y	0.000119		71	0.6	12	1.6
STORY1	U9	Combination				X	1.9E-05		37	0.6	6	1.6
STORY1	U9	Combination				Y	0.000113		71	0.6	12	1.6
STORY1	U10	Combination				X	2.1E-05		21	0	3	1.6
STORY1	U10	Combination				Y	0.000119		3	0.6	0	1.6
STORY1	U11	Combination				Y	0.000303		3	0.6	0	1.6

Table 5.2 - Story Drifts (continued)

Story	Output Case	Case Type	Step Type	Step Number	Step Label	Direction	Drift	Drift/	Label	X m	Y m	Z m
STORY1	U12	Combination				Y	0.000305		71	0.6	12	1.6
STORY1	U13	Combination				Y	0.000305		3	0.6	0	1.6
STORY1	U14	Combination				Y	0.000303		71	0.6	12	1.6
STORY1	U15	Combination				X	1E-06		21	0	3	1.6
STORY1	U16	Combination				X	1E-06		21	0	3	1.6
STORY1	U17	Combination				X	1.8E-05		37	0.6	6	1.6
STORY1	U17	Combination				Y	9.6E-05		4	0	0	1.6
STORY1	U18	Combination				X	2E-05		54	0.6	9	1.6
STORY1	U18	Combination				Y	9.8E-05		71	0.6	12	1.6
STORY1	U19	Combination				X	1.8E-05		37	0.6	6	1.6
STORY1	U19	Combination				Y	9.6E-05		72	0	12	1.6
STORY1	U20	Combination				X	2E-05		20	0.6	3	1.6
STORY1	U20	Combination				Y	9.8E-05		3	0.6	0	1.6
STORY1	U21	Combination				Y	0.000283		3	0.6	0	1.6
STORY1	U22	Combination				Y	0.000284		71	0.6	12	1.6
STORY1	U23	Combination				Y	0.000284		3	0.6	0	1.6
STORY1	U24	Combination				Y	0.000283		71	0.6	12	1.6

Table 5.3 - Story Forces

Story	Output Case	Case Type	Step Type	Step Number	Step Label	Location	P tonf	VX tonf	VY tonf	T tonf-m	MX tonf-m	MY tonf-m
STORY1	DEAD	LinStatic				Top	3.8736	0	0	0	23.2416	-1.1621
STORY1	DEAD	LinStatic				Bottom	28.044	0	0	0	168.264	-43.4732
STORY1	LIVE	LinStatic				Top	3.6	0	0	0	21.6	-1.08
STORY1	LIVE	LinStatic				Bottom	19.8	0	0	0	118.8	-32.67
STORY1	LR	LinStatic				Top	0	0	0	0	0	0
STORY1	LR	LinStatic				Bottom	0	0	0	0	0	0
STORY1	W1	LinStatic				Top	0	0	0	0	0	0
STORY1	W1	LinStatic				Bottom	0	0	0	0	0	0
STORY1	W2	LinStatic				Top	0	0	0	0	0	0
STORY1	W2	LinStatic				Bottom	0	0	0	0	0	0
STORY1	SISMOX	LinStatic				Top	0	-3.0272	0	18.163	0	0
STORY1	SISMOX	LinStatic				Bottom	0	-12.7101	0	76.2605	0	-12.5898
STORY1	SISMOY	LinStatic				Top	0	0	-3.0272	-0.9869	0	0
STORY1	SISMOY	LinStatic				Bottom	0	0	-12.7101	-19.8686	12.5898	0
STORY1	U1	Combination				Top	5.423	0	0	0	32.5382	-1.6269
STORY1	U1	Combination				Bottom	39.2616	0	0	0	235.5696	-60.8625
STORY1	U2	Combination				Top	10.4083	0	0	0	62.4499	-3.1225

Table 5.3 - Story Forces (continued)

Story	Output Case	Case Type	Step Type	Step Number	Step Label	Location	P tonf	VX tonf	VY tonf	T tonf-m	MX tonf-m	MY tonf-m
STORY1	U2	Combination				Bottom	65.3328	0	0	0	391.9968	-104.4399
STORY1	U3	Combination				Top	4.6483	0	0	0	27.8899	-1.3945
STORY1	U3	Combination				Bottom	33.6528	0	0	0	201.9168	-52.1679
STORY1	U4	Combination				Top	4.6483	0	0	0	27.8899	-1.3945
STORY1	U4	Combination				Bottom	33.6528	0	0	0	201.9168	-52.1679
STORY1	U5	Combination				Top	8.2483	0	0	0	49.4899	-2.4745
STORY1	U5	Combination				Bottom	53.4528	0	0	0	320.7168	-84.8379
STORY1	U6	Combination				Top	8.2483	0	0	0	49.4899	-2.4745
STORY1	U6	Combination				Bottom	53.4528	0	0	0	320.7168	-84.8379
STORY1	U7	Combination				Top	8.2483	-3.0272	-0.9082	17.8669	49.4899	-2.4745
STORY1	U7	Combination				Bottom	53.4528	-12.7101	-3.813	70.2999	324.4937	-97.4277
STORY1	U8	Combination				Top	8.2483	3.0272	0.9082	-17.8669	49.4899	-2.4745
STORY1	U8	Combination				Bottom	53.4528	12.7101	3.813	-70.2999	316.9399	-72.2481
STORY1	U9	Combination				Top	8.2483	-3.0272	0.9082	18.4591	49.4899	-2.4745
STORY1	U9	Combination				Bottom	53.4528	-12.7101	3.813	82.2211	316.9399	-97.4277
STORY1	U10	Combination				Top	8.2483	3.0272	-0.9082	-18.4591	49.4899	-2.4745
STORY1	U10	Combination				Bottom	53.4528	12.7101	-3.813	-82.2211	324.4937	-72.2481
STORY1	U11	Combination				Top	8.2483	-0.9082	-3.0272	4.462	49.4899	-2.4745
STORY1	U11	Combination				Bottom	53.4528	-3.813	-12.7101	3.0095	333.3066	-88.6148
STORY1	U12	Combination				Top	8.2483	0.9082	3.0272	-4.462	49.4899	-2.4745
STORY1	U12	Combination				Bottom	53.4528	3.813	12.7101	-3.0095	308.127	-81.0609
STORY1	U13	Combination				Top	8.2483	0.9082	-3.0272	-6.4358	49.4899	-2.4745
STORY1	U13	Combination				Bottom	53.4528	3.813	-12.7101	-42.7468	333.3066	-81.0609
STORY1	U14	Combination				Top	8.2483	-0.9082	3.0272	6.4358	49.4899	-2.4745
STORY1	U14	Combination				Bottom	53.4528	-3.813	12.7101	42.7468	308.127	-88.6148
STORY1	U15	Combination				Top	3.4862	0	0	0	20.9174	-1.0459
STORY1	U15	Combination				Bottom	25.2396	0	0	0	151.4376	-39.1259
STORY1	U16	Combination				Top	3.4862	0	0	0	20.9174	-1.0459
STORY1	U16	Combination				Bottom	25.2396	0	0	0	151.4376	-39.1259
STORY1	U17	Combination				Top	3.4862	-3.0272	-0.9082	17.8669	20.9174	-1.0459
STORY1	U17	Combination				Bottom	25.2396	-12.7101	-3.813	70.2999	155.2145	-51.7157
STORY1	U18	Combination				Top	3.4862	3.0272	0.9082	-17.8669	20.9174	-1.0459

Table 5.3 - Story Forces (continued)

Story	Output Case	Case Type	Step Type	Step Number	Step Label	Location	P tonf	VX tonf	VY tonf	T tonf-m	MX tonf-m	MY tonf-m
STORY1	U18	Combination				Bottom	25.2396	12.7101	3.813	-70.2999	147.6607	-26.5361
STORY1	U19	Combination				Top	3.4862	-3.0272	0.9082	18.4591	20.9174	-1.0459
STORY1	U19	Combination				Bottom	25.2396	-12.7101	3.813	82.2211	147.6607	-51.7157
STORY1	U20	Combination				Top	3.4862	3.0272	-0.9082	-18.4591	20.9174	-1.0459
STORY1	U20	Combination				Bottom	25.2396	12.7101	-3.813	-82.2211	155.2145	-26.5361
STORY1	U21	Combination				Top	3.4862	-0.9082	-3.0272	4.462	20.9174	-1.0459
STORY1	U21	Combination				Bottom	25.2396	-3.813	-12.7101	3.0095	164.0274	-42.9029
STORY1	U22	Combination				Top	3.4862	0.9082	3.0272	-4.462	20.9174	-1.0459
STORY1	U22	Combination				Bottom	25.2396	3.813	12.7101	-3.0095	138.8478	-35.349
STORY1	U23	Combination				Top	3.4862	0.9082	-3.0272	-6.4358	20.9174	-1.0459
STORY1	U23	Combination				Bottom	25.2396	3.813	-12.7101	-42.7468	164.0274	-35.349
STORY1	U24	Combination				Top	3.4862	-0.9082	3.0272	6.4358	20.9174	-1.0459
STORY1	U24	Combination				Bottom	25.2396	-3.813	12.7101	42.7468	138.8478	-42.9029

5.3 Point Results

Table 5.4 - Joint Reactions (Part 1 of 2)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	3	26	DEAD	LinStatic				0.1514	0.1979	0.9747	-0.0791
BASE	3	26	LIVE	LinStatic				0.1343	0.184	0.5025	-0.0736
BASE	3	26	LR	LinStatic				0	0	0	0
BASE	3	26	W1	LinStatic				0	0	0	0
BASE	3	26	W2	LinStatic				0	0	0	0
BASE	3	26	SISMOX	LinStatic				-0.2389	-0.0346	-0.2738	0.0174
BASE	3	26	SISMOY	LinStatic				0.0309	-0.434	-0.0151	0.4177
BASE	3	26	U1	Combination				0.2119	0.2771	1.3645	-0.1108
BASE	3	26	U2	Combination				0.3966	0.5319	1.9737	-0.2127
BASE	3	26	U3	Combination				0.1817	0.2375	1.1696	-0.095
BASE	3	26	U4	Combination				0.1817	0.2375	1.1696	-0.095
BASE	3	26	U5	Combination				0.316	0.4215	1.6722	-0.1685
BASE	3	26	U6	Combination				0.316	0.4215	1.6722	-0.1685
BASE	3	26	U7	Combination				0.0863	0.2568	1.3938	-0.0259
BASE	3	26	U8	Combination				0.5456	0.5863	1.9505	-0.3112
BASE	3	26	U9	Combination				0.0677	0.5172	1.4029	-0.2765
BASE	3	26	U10	Combination				0.5642	0.3259	1.9415	-0.0606
BASE	3	26	U11	Combination				0.2752	-0.0229	1.5749	0.2544
BASE	3	26	U12	Combination				0.3567	0.8659	1.7694	-0.5914
BASE	3	26	U13	Combination				0.4186	-0.0022	1.7392	0.244

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	3	26	U14	Combination				0.2133	0.8452	1.6051	-0.581
BASE	3	26	U15	Combination				0.1362	0.1781	0.8772	-0.0712
BASE	3	26	U16	Combination				0.1362	0.1781	0.8772	-0.0712
BASE	3	26	U17	Combination				-0.0934	0.0134	0.5988	0.0714
BASE	3	26	U18	Combination				0.3659	0.3429	1.1556	-0.2139
BASE	3	26	U19	Combination				-0.112	0.2738	0.6079	-0.1792
BASE	3	26	U20	Combination				0.3845	0.0825	1.1465	0.0367
BASE	3	26	U21	Combination				0.0955	-0.2663	0.7799	0.3517
BASE	3	26	U22	Combination				0.177	0.6226	0.9745	-0.4941
BASE	3	26	U23	Combination				0.2389	-0.2455	0.9442	0.3413
BASE	3	26	U24	Combination				0.0336	0.6018	0.8102	-0.4837
BASE	4	25	DEAD	LinStatic				-0.0069	0.1109	0.3966	-0.0403
BASE	4	25	LIVE	LinStatic				-0.0329	0.1031	0.1683	-0.0374
BASE	4	25	LR	LinStatic				0	0	0	0
BASE	4	25	W1	LinStatic				0	0	0	0
BASE	4	25	W2	LinStatic				0	0	0	0
BASE	4	25	SISMOX	LinStatic				-0.1147	-0.0274	-0.4501	0.0103
BASE	4	25	SISMOY	LinStatic				0.0386	-0.069	0.037	0.1528
BASE	4	25	U1	Combination				-0.0096	0.1553	0.5553	-0.0564
BASE	4	25	U2	Combination				-0.061	0.2981	0.7452	-0.1083
BASE	4	25	U3	Combination				-0.0082	0.1331	0.4759	-0.0483
BASE	4	25	U4	Combination				-0.0082	0.1331	0.4759	-0.0483
BASE	4	25	U5	Combination				-0.0412	0.2363	0.6442	-0.0858
BASE	4	25	U6	Combination				-0.0412	0.2363	0.6442	-0.0858
BASE	4	25	U7	Combination				-0.1443	0.1882	0.2053	-0.0296
BASE	4	25	U8	Combination				0.062	0.2843	1.0832	-0.142
BASE	4	25	U9	Combination				-0.1675	0.2296	0.1831	-0.1213
BASE	4	25	U10	Combination				0.0851	0.2429	1.1054	-0.0503
BASE	4	25	U11	Combination				-0.037	0.1591	0.5462	0.0702
BASE	4	25	U12	Combination				-0.0454	0.3135	0.7422	-0.2417
BASE	4	25	U13	Combination				0.0318	0.1755	0.8162	0.0639
BASE	4	25	U14	Combination				-0.1142	0.297	0.4722	-0.2355
BASE	4	25	U15	Combination				-0.0062	0.0999	0.3569	-0.0363
BASE	4	25	U16	Combination				-0.0062	0.0999	0.3569	-0.0363
BASE	4	25	U17	Combination				-0.1093	0.0518	-0.082	0.0199
BASE	4	25	U18	Combination				0.097	0.1479	0.7959	-0.0925
BASE	4	25	U19	Combination				-0.1325	0.0932	-0.1042	-0.0718
BASE	4	25	U20	Combination				0.1201	0.1065	0.8181	-0.0008
BASE	4	25	U21	Combination				-0.002	0.0227	0.2589	0.1197
BASE	4	25	U22	Combination				-0.0104	0.177	0.455	-0.1922
BASE	4	25	U23	Combination				0.0668	0.0391	0.529	0.1135
BASE	4	25	U24	Combination				-0.0792	0.1606	0.1849	-0.186
BASE	12	30	DEAD	LinStatic				-0.2724	0.281	1.0799	-0.0676
BASE	12	30	LIVE	LinStatic				-0.2414	0.2612	0.6485	-0.0628
BASE	12	30	LR	LinStatic				0	0	0	0

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	12	30	W1	LinStatic				0	0	0	0
BASE	12	30	W2	LinStatic				0	0	0	0
BASE	12	30	SISMOX	LinStatic				-0.4427	-0.0561	0.2685	0.0154
BASE	12	30	SISMOY	LinStatic				0.1448	-0.5365	-0.0908	0.4948
BASE	12	30	U1	Combination				-0.3813	0.3934	1.5118	-0.0946
BASE	12	30	U2	Combination				-0.7131	0.7552	2.3334	-0.1815
BASE	12	30	U3	Combination				-0.3269	0.3372	1.2958	-0.0811
BASE	12	30	U4	Combination				-0.3269	0.3372	1.2958	-0.0811
BASE	12	30	U5	Combination				-0.5682	0.5984	1.9443	-0.1439
BASE	12	30	U6	Combination				-0.5682	0.5984	1.9443	-0.1439
BASE	12	30	U7	Combination				-0.9675	0.3814	2.1856	0.0199
BASE	12	30	U8	Combination				-0.169	0.8154	1.703	-0.3077
BASE	12	30	U9	Combination				-1.0544	0.7033	2.2401	-0.2769
BASE	12	30	U10	Combination				-0.0821	0.4936	1.6485	-0.0108
BASE	12	30	U11	Combination				-0.5562	0.0451	1.934	0.3555
BASE	12	30	U12	Combination				-0.5803	1.1517	1.9545	-0.6433
BASE	12	30	U13	Combination				-0.2906	0.0788	1.7729	0.3463
BASE	12	30	U14	Combination				-0.8459	1.1181	2.1156	-0.634
BASE	12	30	U15	Combination				-0.2451	0.2529	0.9719	-0.0608
BASE	12	30	U16	Combination				-0.2451	0.2529	0.9719	-0.0608
BASE	12	30	U17	Combination				-0.6444	0.0359	1.2132	0.103
BASE	12	30	U18	Combination				0.1541	0.4699	0.7306	-0.2246
BASE	12	30	U19	Combination				-0.7313	0.3578	1.2676	-0.1939
BASE	12	30	U20	Combination				0.241	0.1481	0.6761	0.0723
BASE	12	30	U21	Combination				-0.2331	-0.3004	0.9616	0.4386
BASE	12	30	U22	Combination				-0.2572	0.8062	0.9821	-0.5602
BASE	12	30	U23	Combination				0.0325	-0.2667	0.8005	0.4294
BASE	12	30	U24	Combination				-0.5228	0.7726	1.1432	-0.551
BASE	15	33	DEAD	LinStatic				0.138	0.4421	1.034	-0.0195
BASE	15	33	LIVE	LinStatic				0.1425	0.4109	0.7422	-0.0181
BASE	15	33	LR	LinStatic				0	0	0	0
BASE	15	33	W1	LinStatic				0	0	0	0
BASE	15	33	W2	LinStatic				0	0	0	0
BASE	15	33	SISMOX	LinStatic				-0.4821	-0.0878	0.2824	0.0033
BASE	15	33	SISMOY	LinStatic				0.138	-0.713	-0.1085	0.4431
BASE	15	33	U1	Combination				0.1933	0.619	1.4476	-0.0273
BASE	15	33	U2	Combination				0.3936	1.188	2.4284	-0.0524
BASE	15	33	U3	Combination				0.1657	0.5305	1.2408	-0.0234
BASE	15	33	U4	Combination				0.1657	0.5305	1.2408	-0.0234
BASE	15	33	U5	Combination				0.3081	0.9415	1.983	-0.0415
BASE	15	33	U6	Combination				0.3081	0.9415	1.983	-0.0415
BASE	15	33	U7	Combination				-0.1326	0.6398	2.2329	0.0947
BASE	15	33	U8	Combination				0.7488	1.2432	1.7332	-0.1778
BASE	15	33	U9	Combination				-0.2154	1.0676	2.298	-0.1711
BASE	15	33	U10	Combination				0.8317	0.8154	1.668	0.0881

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	15	33	U11	Combination				0.3015	0.2021	1.9592	0.4026
BASE	15	33	U12	Combination				0.3147	1.6808	2.0068	-0.4856
BASE	15	33	U13	Combination				0.5908	0.2548	1.7898	0.4006
BASE	15	33	U14	Combination				0.0255	1.6282	2.1763	-0.4836
BASE	15	33	U15	Combination				0.1242	0.3979	0.9306	-0.0175
BASE	15	33	U16	Combination				0.1242	0.3979	0.9306	-0.0175
BASE	15	33	U17	Combination				-0.3165	0.0962	1.1804	0.1187
BASE	15	33	U18	Combination				0.565	0.6996	0.6807	-0.1538
BASE	15	33	U19	Combination				-0.3993	0.524	1.2456	-0.1471
BASE	15	33	U20	Combination				0.6478	0.2718	0.6156	0.1121
BASE	15	33	U21	Combination				0.1176	-0.3415	0.9068	0.4266
BASE	15	33	U22	Combination				0.1309	1.1373	0.9544	-0.4616
BASE	15	33	U23	Combination				0.4069	-0.2888	0.7373	0.4246
BASE	15	33	U24	Combination				-0.1584	1.0846	1.1239	-0.4596
BASE	16	34	DEAD	LinStatic				-0.328	0.3581	0.48	-0.0006
BASE	16	34	LIVE	LinStatic				-0.2978	0.3329	0.3709	-0.0006
BASE	16	34	LR	LinStatic				0	0	0	0
BASE	16	34	W1	LinStatic				0	0	0	0
BASE	16	34	W2	LinStatic				0	0	0	0
BASE	16	34	SISMOX	LinStatic				-0.2294	0.0929	0.1788	-0.0262
BASE	16	34	SISMOY	LinStatic				0.1337	-0.5033	-0.1152	0.2107
BASE	16	34	U1	Combination				-0.4591	0.5014	0.672	-0.0009
BASE	16	34	U2	Combination				-0.87	0.9623	1.1694	-0.0017
BASE	16	34	U3	Combination				-0.3936	0.4297	0.576	-0.0008
BASE	16	34	U4	Combination				-0.3936	0.4297	0.576	-0.0008
BASE	16	34	U5	Combination				-0.6913	0.7626	0.9468	-0.0014
BASE	16	34	U6	Combination				-0.6913	0.7626	0.9468	-0.0014
BASE	16	34	U7	Combination				-0.8806	0.7045	1.0911	0.0356
BASE	16	34	U8	Combination				-0.5021	0.8207	0.8026	-0.0384
BASE	16	34	U9	Combination				-0.9608	1.0065	1.1602	-0.0908
BASE	16	34	U10	Combination				-0.4218	0.5187	0.7335	0.0881
BASE	16	34	U11	Combination				-0.6264	0.2871	0.8853	0.2015
BASE	16	34	U12	Combination				-0.7562	1.2381	1.0084	-0.2042
BASE	16	34	U13	Combination				-0.4888	0.2314	0.778	0.2172
BASE	16	34	U14	Combination				-0.8939	1.2938	1.1157	-0.2199
BASE	16	34	U15	Combination				-0.2952	0.3223	0.432	-0.0006
BASE	16	34	U16	Combination				-0.2952	0.3223	0.432	-0.0006
BASE	16	34	U17	Combination				-0.4844	0.2642	0.5762	0.0364
BASE	16	34	U18	Combination				-0.1059	0.3804	0.2878	-0.0376
BASE	16	34	U19	Combination				-0.5647	0.5662	0.6453	-0.09
BASE	16	34	U20	Combination				-0.0257	0.0784	0.2186	0.0888
BASE	16	34	U21	Combination				-0.2302	-0.1531	0.3704	0.2023
BASE	16	34	U22	Combination				-0.3601	0.7978	0.4936	-0.2034
BASE	16	34	U23	Combination				-0.0926	-0.2089	0.2631	0.218
BASE	16	34	U24	Combination				-0.4977	0.8535	0.6008	-0.2191

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	20	45	DEAD	LinStatic				0.4608	-0.0226	1.7184	0.0153
BASE	20	45	LIVE	LinStatic				0.4219	-0.021	1.1937	0.0143
BASE	20	45	LR	LinStatic				0	0	0	0
BASE	20	45	W1	LinStatic				0	0	0	0
BASE	20	45	W2	LinStatic				0	0	0	0
BASE	20	45	SISMOX	LinStatic				-0.5294	0.0074	-0.5801	-0.0034
BASE	20	45	SISMOY	LinStatic				-0.0075	-0.4905	-0.0003	0.4465
BASE	20	45	U1	Combination				0.6451	-0.0316	2.4058	0.0215
BASE	20	45	U2	Combination				1.228	-0.0606	3.972	0.0412
BASE	20	45	U3	Combination				0.5529	-0.0271	2.0621	0.0184
BASE	20	45	U4	Combination				0.5529	-0.0271	2.0621	0.0184
BASE	20	45	U5	Combination				0.9749	-0.0481	3.2558	0.0327
BASE	20	45	U6	Combination				0.9749	-0.0481	3.2558	0.0327
BASE	20	45	U7	Combination				0.4432	-0.1878	2.6757	0.1632
BASE	20	45	U8	Combination				1.5065	0.0917	3.8359	-0.0979
BASE	20	45	U9	Combination				0.4477	0.1065	2.6758	-0.1046
BASE	20	45	U10	Combination				1.502	-0.2026	3.8358	0.17
BASE	20	45	U11	Combination				0.8085	-0.5363	3.0815	0.4782
BASE	20	45	U12	Combination				1.1412	0.4402	3.4301	-0.4128
BASE	20	45	U13	Combination				1.1261	-0.5407	3.4296	0.4802
BASE	20	45	U14	Combination				0.8236	0.4446	3.082	-0.4148
BASE	20	45	U15	Combination				0.4147	-0.0203	1.5466	0.0138
BASE	20	45	U16	Combination				0.4147	-0.0203	1.5466	0.0138
BASE	20	45	U17	Combination				-0.1169	-0.1601	0.9664	0.1444
BASE	20	45	U18	Combination				0.9463	0.1194	2.1267	-0.1168
BASE	20	45	U19	Combination				-0.1124	0.1342	0.9666	-0.1235
BASE	20	45	U20	Combination				0.9418	-0.1748	2.1266	0.1511
BASE	20	45	U21	Combination				0.2483	-0.5086	1.3723	0.4593
BASE	20	45	U22	Combination				0.5811	0.4679	1.7209	-0.4317
BASE	20	45	U23	Combination				0.566	-0.513	1.7203	0.4613
BASE	20	45	U24	Combination				0.2634	0.4724	1.3728	-0.4337
BASE	21	44	DEAD	LinStatic				0.047	-0.0093	0.8429	0.0062
BASE	21	44	LIVE	LinStatic				0.0172	-0.0086	0.5832	0.0058
BASE	21	44	LR	LinStatic				0	0	0	0
BASE	21	44	W1	LinStatic				0	0	0	0
BASE	21	44	W2	LinStatic				0	0	0	0
BASE	21	44	SISMOX	LinStatic				-0.2469	0.0026	-0.9156	-0.0012
BASE	21	44	SISMOY	LinStatic				-0.0026	-0.1055	-0.0008	0.1676
BASE	21	44	U1	Combination				0.0659	-0.013	1.18	0.0087
BASE	21	44	U2	Combination				0.0839	-0.025	1.9445	0.0166
BASE	21	44	U3	Combination				0.0565	-0.0112	1.0114	0.0074
BASE	21	44	U4	Combination				0.0565	-0.0112	1.0114	0.0074
BASE	21	44	U5	Combination				0.0736	-0.0198	1.5946	0.0132
BASE	21	44	U6	Combination				0.0736	-0.0198	1.5946	0.0132
BASE	21	44	U7	Combination				-0.174	-0.0488	0.6788	0.0622

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	21	44	U8	Combination				0.3212	0.0092	2.5105	-0.0359
BASE	21	44	U9	Combination				-0.1725	0.0145	0.6792	-0.0383
BASE	21	44	U10	Combination				0.3197	-0.0541	2.51	0.0647
BASE	21	44	U11	Combination				-0.003	-0.1245	1.3192	0.1804
BASE	21	44	U12	Combination				0.1502	0.0849	1.8701	-0.154
BASE	21	44	U13	Combination				0.1451	-0.1261	1.8686	0.1811
BASE	21	44	U14	Combination				0.0021	0.0865	1.3207	-0.1547
BASE	21	44	U15	Combination				0.0423	-0.0084	0.7586	0.0056
BASE	21	44	U16	Combination				0.0423	-0.0084	0.7586	0.0056
BASE	21	44	U17	Combination				-0.2053	-0.0374	-0.1573	0.0546
BASE	21	44	U18	Combination				0.29	0.0206	1.6744	-0.0435
BASE	21	44	U19	Combination				-0.2038	0.0259	-0.1568	-0.0459
BASE	21	44	U20	Combination				0.2884	-0.0426	1.674	0.0571
BASE	21	44	U21	Combination				-0.0343	-0.1131	0.4831	0.1728
BASE	21	44	U22	Combination				0.119	0.0963	1.034	-0.1616
BASE	21	44	U23	Combination				0.1138	-0.1146	1.0325	0.1735
BASE	21	44	U24	Combination				-0.0292	0.0979	0.4846	-0.1624
BASE	29	49	DEAD	LinStatic				-0.2322	-0.0515	1.6999	0.0241
BASE	29	49	LIVE	LinStatic				-0.204	-0.0479	1.2244	0.0224
BASE	29	49	LR	LinStatic				0	0	0	0
BASE	29	49	W1	LinStatic				0	0	0	0
BASE	29	49	W2	LinStatic				0	0	0	0
BASE	29	49	SISMOX	LinStatic				-0.9347	0.0148	0.505	-0.0061
BASE	29	49	SISMOY	LinStatic				-0.0116	-0.6006	-0.0024	0.5238
BASE	29	49	U1	Combination				-0.3251	-0.0721	2.3799	0.0337
BASE	29	49	U2	Combination				-0.6051	-0.1384	3.9989	0.0647
BASE	29	49	U3	Combination				-0.2786	-0.0618	2.0399	0.0289
BASE	29	49	U4	Combination				-0.2786	-0.0618	2.0399	0.0289
BASE	29	49	U5	Combination				-0.4827	-0.1096	3.2643	0.0513
BASE	29	49	U6	Combination				-0.4827	-0.1096	3.2643	0.0513
BASE	29	49	U7	Combination				-1.4209	-0.275	3.7686	0.2024
BASE	29	49	U8	Combination				0.4555	0.0558	2.76	-0.0998
BASE	29	49	U9	Combination				-1.4139	0.0853	3.77	-0.1119
BASE	29	49	U10	Combination				0.4486	-0.3046	2.7585	0.2145
BASE	29	49	U11	Combination				-0.7747	-0.7058	3.4134	0.5733
BASE	29	49	U12	Combination				-0.1906	0.4865	3.1151	-0.4707
BASE	29	49	U13	Combination				-0.2139	-0.7146	3.1104	0.577
BASE	29	49	U14	Combination				-0.7515	0.4954	3.4181	-0.4743
BASE	29	49	U15	Combination				-0.209	-0.0463	1.5299	0.0217
BASE	29	49	U16	Combination				-0.209	-0.0463	1.5299	0.0217
BASE	29	49	U17	Combination				-1.1472	-0.2117	2.0342	0.1728
BASE	29	49	U18	Combination				0.7292	0.1191	1.0256	-0.1294
BASE	29	49	U19	Combination				-1.1402	0.1486	2.0356	-0.1415
BASE	29	49	U20	Combination				0.7222	-0.2413	1.0242	0.1849
BASE	29	49	U21	Combination				-0.501	-0.6425	1.6791	0.5437

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	29	49	U22	Combination				0.0831	0.5498	1.3808	-0.5003
BASE	29	49	U23	Combination				0.0598	-0.6513	1.3761	0.5473
BASE	29	49	U24	Combination				-0.4778	0.5586	1.6838	-0.504
BASE	32	52	DEAD	LinStatic				0.57	-0.1331	1.674	0.0368
BASE	32	52	LIVE	LinStatic				0.5439	-0.1237	1.3371	0.0342
BASE	32	52	LR	LinStatic				0	0	0	0
BASE	32	52	W1	LinStatic				0	0	0	0
BASE	32	52	W2	LinStatic				0	0	0	0
BASE	32	52	SISMOX	LinStatic				-1.056	0.0372	0.5753	-0.0099
BASE	32	52	SISMOY	LinStatic				-0.0156	-0.8252	0.0024	0.4873
BASE	32	52	U1	Combination				0.7981	-0.1863	2.3435	0.0515
BASE	32	52	U2	Combination				1.5543	-0.3575	4.1481	0.0988
BASE	32	52	U3	Combination				0.6841	-0.1597	2.0088	0.0441
BASE	32	52	U4	Combination				0.6841	-0.1597	2.0088	0.0441
BASE	32	52	U5	Combination				1.228	-0.2833	3.3459	0.0783
BASE	32	52	U6	Combination				1.228	-0.2833	3.3459	0.0783
BASE	32	52	U7	Combination				0.1673	-0.4938	3.9218	0.2146
BASE	32	52	U8	Combination				2.2887	-0.0729	2.7699	-0.058
BASE	32	52	U9	Combination				0.1766	0.0014	3.9204	-0.0778
BASE	32	52	U10	Combination				2.2793	-0.5681	2.7713	0.2343
BASE	32	52	U11	Combination				0.8956	-1.0974	3.5208	0.5626
BASE	32	52	U12	Combination				1.5603	0.5307	3.1709	-0.406
BASE	32	52	U13	Combination				1.5292	-1.1197	3.1757	0.5685
BASE	32	52	U14	Combination				0.9267	0.553	3.5161	-0.412
BASE	32	52	U15	Combination				0.513	-0.1198	1.5066	0.0331
BASE	32	52	U16	Combination				0.513	-0.1198	1.5066	0.0331
BASE	32	52	U17	Combination				-0.5476	-0.3302	2.0825	0.1694
BASE	32	52	U18	Combination				1.5737	0.0907	0.9306	-0.1032
BASE	32	52	U19	Combination				-0.5383	0.165	2.0811	-0.123
BASE	32	52	U20	Combination				1.5644	-0.4045	0.932	0.1891
BASE	32	52	U21	Combination				0.1807	-0.9338	1.6815	0.5174
BASE	32	52	U22	Combination				0.8454	0.6943	1.3316	-0.4512
BASE	32	52	U23	Combination				0.8143	-0.9561	1.3364	0.5233
BASE	32	52	U24	Combination				0.2118	0.7166	1.6768	-0.4572
BASE	33	53	DEAD	LinStatic				-0.489	-0.0521	0.7837	0.0156
BASE	33	53	LIVE	LinStatic				-0.4475	-0.0484	0.6533	0.0145
BASE	33	53	LR	LinStatic				0	0	0	0
BASE	33	53	W1	LinStatic				0	0	0	0
BASE	33	53	W2	LinStatic				0	0	0	0
BASE	33	53	SISMOX	LinStatic				-0.5153	0.0101	0.409	-0.0035
BASE	33	53	SISMOY	LinStatic				-0.0081	-0.6903	0.0058	0.2568
BASE	33	53	U1	Combination				-0.6846	-0.0729	1.0971	0.0219
BASE	33	53	U2	Combination				-1.3028	-0.1399	1.9856	0.042
BASE	33	53	U3	Combination				-0.5868	-0.0625	0.9404	0.0188
BASE	33	53	U4	Combination				-0.5868	-0.0625	0.9404	0.0188

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	33	53	U5	Combination				-1.0343	-0.1109	1.5937	0.0333
BASE	33	53	U6	Combination				-1.0343	-0.1109	1.5937	0.0333
BASE	33	53	U7	Combination				-1.552	-0.3079	2.0044	0.1069
BASE	33	53	U8	Combination				-0.5166	0.0861	1.183	-0.0403
BASE	33	53	U9	Combination				-1.5472	0.1063	2.0009	-0.0472
BASE	33	53	U10	Combination				-0.5214	-0.328	1.1864	0.1138
BASE	33	53	U11	Combination				-1.197	-0.7981	1.7221	0.2891
BASE	33	53	U12	Combination				-0.8717	0.5764	1.4652	-0.2225
BASE	33	53	U13	Combination				-0.8878	-0.8041	1.4767	0.2912
BASE	33	53	U14	Combination				-1.1808	0.5824	1.7106	-0.2246
BASE	33	53	U15	Combination				-0.4401	-0.0469	0.7053	0.0141
BASE	33	53	U16	Combination				-0.4401	-0.0469	0.7053	0.0141
BASE	33	53	U17	Combination				-0.9578	-0.2439	1.116	0.0877
BASE	33	53	U18	Combination				0.0776	0.1501	0.2946	-0.0595
BASE	33	53	U19	Combination				-0.953	0.1703	1.1126	-0.0664
BASE	33	53	U20	Combination				0.0728	-0.264	0.298	0.0946
BASE	33	53	U21	Combination				-0.6027	-0.7341	0.8338	0.2699
BASE	33	53	U22	Combination				-0.2774	0.6404	0.5769	-0.2417
BASE	33	53	U23	Combination				-0.2936	-0.7401	0.5884	0.2719
BASE	33	53	U24	Combination				-0.5866	0.6464	0.8222	-0.2438
BASE	37	64	DEAD	LinStatic				0.3759	0	1.6305	0
BASE	37	64	LIVE	LinStatic				0.3431	0	1.112	0
BASE	37	64	LR	LinStatic				0	0	0	0
BASE	37	64	W1	LinStatic				0	0	0	0
BASE	37	64	W2	LinStatic				0	0	0	0
BASE	37	64	SISMOX	LinStatic				-0.5049	0	-0.551	0
BASE	37	64	SISMOY	LinStatic				0	-0.4931	0	0.4479
BASE	37	64	U1	Combination				0.5263	0	2.2827	0
BASE	37	64	U2	Combination				1	0	3.7358	0
BASE	37	64	U3	Combination				0.4511	0	1.9566	0
BASE	37	64	U4	Combination				0.4511	0	1.9566	0
BASE	37	64	U5	Combination				0.7942	0	3.0686	0
BASE	37	64	U6	Combination				0.7942	0	3.0686	0
BASE	37	64	U7	Combination				0.2893	-0.1479	2.5176	0.1344
BASE	37	64	U8	Combination				1.299	0.1479	3.6196	-0.1344
BASE	37	64	U9	Combination				0.2893	0.1479	2.5176	-0.1344
BASE	37	64	U10	Combination				1.299	-0.1479	3.6196	0.1344
BASE	37	64	U11	Combination				0.6427	-0.4931	2.9033	0.4479
BASE	37	64	U12	Combination				0.9456	0.4931	3.2339	-0.4479
BASE	37	64	U13	Combination				0.9456	-0.4931	3.2339	0.4479
BASE	37	64	U14	Combination				0.6427	0.4931	2.9033	-0.4479
BASE	37	64	U15	Combination				0.3383	0	1.4675	0
BASE	37	64	U16	Combination				0.3383	0	1.4675	0
BASE	37	64	U17	Combination				-0.1666	-0.1479	0.9165	0.1344
BASE	37	64	U18	Combination				0.8432	0.1479	2.0185	-0.1344

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	37	64	U19	Combination				-0.1666	0.1479	0.9165	-0.1344
BASE	37	64	U20	Combination				0.8432	-0.1479	2.0185	0.1344
BASE	37	64	U21	Combination				0.1869	-0.4931	1.3022	0.4479
BASE	37	64	U22	Combination				0.4898	0.4931	1.6328	-0.4479
BASE	37	64	U23	Combination				0.4898	-0.4931	1.6328	0.4479
BASE	37	64	U24	Combination				0.1869	0.4931	1.3022	-0.4479
BASE	38	63	DEAD	LinStatic				0.0107	0	0.7215	0
BASE	38	63	LIVE	LinStatic				-0.0166	0	0.4704	0
BASE	38	63	LR	LinStatic				0	0	0	0
BASE	38	63	W1	LinStatic				0	0	0	0
BASE	38	63	W2	LinStatic				0	0	0	0
BASE	38	63	SISMOX	LinStatic				-0.2357	0	-0.871	0
BASE	38	63	SISMOY	LinStatic				0	-0.1028	0	0.1672
BASE	38	63	U1	Combination				0.015	0	1.0101	0
BASE	38	63	U2	Combination				-0.0137	0	1.6185	0
BASE	38	63	U3	Combination				0.0129	0	0.8658	0
BASE	38	63	U4	Combination				0.0129	0	0.8658	0
BASE	38	63	U5	Combination				-0.0037	0	1.3362	0
BASE	38	63	U6	Combination				-0.0037	0	1.3362	0
BASE	38	63	U7	Combination				-0.2395	-0.0309	0.4652	0.0502
BASE	38	63	U8	Combination				0.232	0.0309	2.2073	-0.0502
BASE	38	63	U9	Combination				-0.2395	0.0309	0.4652	-0.0502
BASE	38	63	U10	Combination				0.232	-0.0309	2.2073	0.0502
BASE	38	63	U11	Combination				-0.0744	-0.1028	1.0749	0.1672
BASE	38	63	U12	Combination				0.067	0.1028	1.5975	-0.1672
BASE	38	63	U13	Combination				0.067	-0.1028	1.5975	0.1672
BASE	38	63	U14	Combination				-0.0744	0.1028	1.0749	-0.1672
BASE	38	63	U15	Combination				0.0096	0	0.6493	0
BASE	38	63	U16	Combination				0.0096	0	0.6493	0
BASE	38	63	U17	Combination				-0.2261	-0.0309	-0.2217	0.0502
BASE	38	63	U18	Combination				0.2454	0.0309	1.5204	-0.0502
BASE	38	63	U19	Combination				-0.2261	0.0309	-0.2217	-0.0502
BASE	38	63	U20	Combination				0.2454	-0.0309	1.5204	0.0502
BASE	38	63	U21	Combination				-0.0611	-0.1028	0.388	0.1672
BASE	38	63	U22	Combination				0.0804	0.1028	0.9107	-0.1672
BASE	38	63	U23	Combination				0.0804	-0.1028	0.9107	0.1672
BASE	38	63	U24	Combination				-0.0611	0.1028	0.388	-0.1672
BASE	46	68	DEAD	LinStatic				-0.3533	0	1.749	0
BASE	46	68	LIVE	LinStatic				-0.3165	0	1.27	0
BASE	46	68	LR	LinStatic				0	0	0	0
BASE	46	68	W1	LinStatic				0	0	0	0
BASE	46	68	W2	LinStatic				0	0	0	0
BASE	46	68	SISMOX	LinStatic				-0.8914	0	0.4822	0
BASE	46	68	SISMOY	LinStatic				0	-0.6124	0	0.5293
BASE	46	68	U1	Combination				-0.4946	0	2.4487	0

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	46	68	U2	Combination				-0.9303	0	4.1308	0
BASE	46	68	U3	Combination				-0.4239	0	2.0988	0
BASE	46	68	U4	Combination				-0.4239	0	2.0988	0
BASE	46	68	U5	Combination				-0.7404	0	3.3688	0
BASE	46	68	U6	Combination				-0.7404	0	3.3688	0
BASE	46	68	U7	Combination				-1.6318	-0.1837	3.851	0.1588
BASE	46	68	U8	Combination				0.151	0.1837	2.8866	-0.1588
BASE	46	68	U9	Combination				-1.6318	0.1837	3.851	-0.1588
BASE	46	68	U10	Combination				0.151	-0.1837	2.8866	0.1588
BASE	46	68	U11	Combination				-1.0079	-0.6124	3.5135	0.5293
BASE	46	68	U12	Combination				-0.473	0.6124	3.2242	-0.5293
BASE	46	68	U13	Combination				-0.473	-0.6124	3.2242	0.5293
BASE	46	68	U14	Combination				-1.0079	0.6124	3.5135	-0.5293
BASE	46	68	U15	Combination				-0.3179	0	1.5741	0
BASE	46	68	U16	Combination				-0.3179	0	1.5741	0
BASE	46	68	U17	Combination				-1.2093	-0.1837	2.0564	0.1588
BASE	46	68	U18	Combination				0.5735	0.1837	1.0919	-0.1588
BASE	46	68	U19	Combination				-1.2093	0.1837	2.0564	-0.1588
BASE	46	68	U20	Combination				0.5735	-0.1837	1.0919	0.1588
BASE	46	68	U21	Combination				-0.5854	-0.6124	1.7188	0.5293
BASE	46	68	U22	Combination				-0.0505	0.6124	1.4295	-0.5293
BASE	46	68	U23	Combination				-0.0505	-0.6124	1.4295	0.5293
BASE	46	68	U24	Combination				-0.5854	0.6124	1.7188	-0.5293
BASE	49	71	DEAD	LinStatic				0.4367	0	1.7494	0
BASE	49	71	LIVE	LinStatic				0.42	0	1.4072	0
BASE	49	71	LR	LinStatic				0	0	0	0
BASE	49	71	W1	LinStatic				0	0	0	0
BASE	49	71	W2	LinStatic				0	0	0	0
BASE	49	71	SISMOX	LinStatic				-1.0059	0	0.55	0
BASE	49	71	SISMOY	LinStatic				0	-0.8622	0	0.4978
BASE	49	71	U1	Combination				0.6113	0	2.4492	0
BASE	49	71	U2	Combination				1.196	0	4.3509	0
BASE	49	71	U3	Combination				0.524	0	2.0993	0
BASE	49	71	U4	Combination				0.524	0	2.0993	0
BASE	49	71	U5	Combination				0.944	0	3.5066	0
BASE	49	71	U6	Combination				0.944	0	3.5066	0
BASE	49	71	U7	Combination				-0.0619	-0.2587	4.0566	0.1493
BASE	49	71	U8	Combination				1.9499	0.2587	2.9565	-0.1493
BASE	49	71	U9	Combination				-0.0619	0.2587	4.0566	-0.1493
BASE	49	71	U10	Combination				1.9499	-0.2587	2.9565	0.1493
BASE	49	71	U11	Combination				0.6422	-0.8622	3.6716	0.4978
BASE	49	71	U12	Combination				1.2457	0.8622	3.3416	-0.4978
BASE	49	71	U13	Combination				1.2457	-0.8622	3.3416	0.4978
BASE	49	71	U14	Combination				0.6422	0.8622	3.6716	-0.4978
BASE	49	71	U15	Combination				0.393	0	1.5745	0

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	49	71	U16	Combination				0.393	0	1.5745	0
BASE	49	71	U17	Combination				-0.6129	-0.2587	2.1245	0.1493
BASE	49	71	U18	Combination				1.3989	0.2587	1.0245	-0.1493
BASE	49	71	U19	Combination				-0.6129	0.2587	2.1245	-0.1493
BASE	49	71	U20	Combination				1.3989	-0.2587	1.0245	0.1493
BASE	49	71	U21	Combination				0.0912	-0.8622	1.7395	0.4978
BASE	49	71	U22	Combination				0.6948	0.8622	1.4095	-0.4978
BASE	49	71	U23	Combination				0.6948	-0.8622	1.4095	0.4978
BASE	49	71	U24	Combination				0.0912	0.8622	1.7395	-0.4978
BASE	50	72	DEAD	LinStatic				-0.5478	0	0.8256	0
BASE	50	72	LIVE	LinStatic				-0.5022	0	0.6923	0
BASE	50	72	LR	LinStatic				0	0	0	0
BASE	50	72	W1	LinStatic				0	0	0	0
BASE	50	72	W2	LinStatic				0	0	0	0
BASE	50	72	SISMOX	LinStatic				-0.492	0	0.391	0
BASE	50	72	SISMOY	LinStatic				0	-0.7039	0	0.2614
BASE	50	72	U1	Combination				-0.7669	0	1.1559	0
BASE	50	72	U2	Combination				-1.4609	0	2.0984	0
BASE	50	72	U3	Combination				-0.6574	0	0.9908	0
BASE	50	72	U4	Combination				-0.6574	0	0.9908	0
BASE	50	72	U5	Combination				-1.1596	0	1.683	0
BASE	50	72	U6	Combination				-1.1596	0	1.683	0
BASE	50	72	U7	Combination				-1.6515	-0.2112	2.074	0.0784
BASE	50	72	U8	Combination				-0.6676	0.2112	1.292	-0.0784
BASE	50	72	U9	Combination				-1.6515	0.2112	2.074	-0.0784
BASE	50	72	U10	Combination				-0.6676	-0.2112	1.292	0.0784
BASE	50	72	U11	Combination				-1.3072	-0.7039	1.8003	0.2614
BASE	50	72	U12	Combination				-1.012	0.7039	1.5657	-0.2614
BASE	50	72	U13	Combination				-1.012	-0.7039	1.5657	0.2614
BASE	50	72	U14	Combination				-1.3072	0.7039	1.8003	-0.2614
BASE	50	72	U15	Combination				-0.493	0	0.7431	0
BASE	50	72	U16	Combination				-0.493	0	0.7431	0
BASE	50	72	U17	Combination				-0.985	-0.2112	1.134	0.0784
BASE	50	72	U18	Combination				-0.0011	0.2112	0.3521	-0.0784
BASE	50	72	U19	Combination				-0.985	0.2112	1.134	-0.0784
BASE	50	72	U20	Combination				-0.0011	-0.2112	0.3521	0.0784
BASE	50	72	U21	Combination				-0.6406	-0.7039	0.8604	0.2614
BASE	50	72	U22	Combination				-0.3454	0.7039	0.6258	-0.2614
BASE	50	72	U23	Combination				-0.3454	-0.7039	0.6258	0.2614
BASE	50	72	U24	Combination				-0.6406	0.7039	0.8604	-0.2614
BASE	54	83	DEAD	LinStatic				0.4608	0.0226	1.7184	-0.0153
BASE	54	83	LIVE	LinStatic				0.4219	0.021	1.1937	-0.0143
BASE	54	83	LR	LinStatic				0	0	0	0
BASE	54	83	W1	LinStatic				0	0	0	0
BASE	54	83	W2	LinStatic				0	0	0	0

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	54	83	SISMOX	LinStatic				-0.5294	-0.0074	-0.5801	0.0034
BASE	54	83	SISMOY	LinStatic				0.0075	-0.4905	0.0003	0.4465
BASE	54	83	U1	Combination				0.6451	0.0316	2.4058	-0.0215
BASE	54	83	U2	Combination				1.228	0.0606	3.972	-0.0412
BASE	54	83	U3	Combination				0.5529	0.0271	2.0621	-0.0184
BASE	54	83	U4	Combination				0.5529	0.0271	2.0621	-0.0184
BASE	54	83	U5	Combination				0.9749	0.0481	3.2558	-0.0327
BASE	54	83	U6	Combination				0.9749	0.0481	3.2558	-0.0327
BASE	54	83	U7	Combination				0.4477	-0.1065	2.6758	0.1046
BASE	54	83	U8	Combination				1.502	0.2026	3.8358	-0.17
BASE	54	83	U9	Combination				0.4432	0.1878	2.6757	-0.1632
BASE	54	83	U10	Combination				1.5065	-0.0917	3.8359	0.0979
BASE	54	83	U11	Combination				0.8236	-0.4446	3.082	0.4148
BASE	54	83	U12	Combination				1.1261	0.5407	3.4296	-0.4802
BASE	54	83	U13	Combination				1.1412	-0.4402	3.4301	0.4128
BASE	54	83	U14	Combination				0.8085	0.5363	3.0815	-0.4782
BASE	54	83	U15	Combination				0.4147	0.0203	1.5466	-0.0138
BASE	54	83	U16	Combination				0.4147	0.0203	1.5466	-0.0138
BASE	54	83	U17	Combination				-0.1124	-0.1342	0.9666	0.1235
BASE	54	83	U18	Combination				0.9418	0.1748	2.1266	-0.1511
BASE	54	83	U19	Combination				-0.1169	0.1601	0.9664	-0.1444
BASE	54	83	U20	Combination				0.9463	-0.1194	2.1267	0.1168
BASE	54	83	U21	Combination				0.2634	-0.4724	1.3728	0.4337
BASE	54	83	U22	Combination				0.566	0.513	1.7203	-0.4613
BASE	54	83	U23	Combination				0.5811	-0.4679	1.7209	0.4317
BASE	54	83	U24	Combination				0.2483	0.5086	1.3723	-0.4593
BASE	55	82	DEAD	LinStatic				0.047	0.0093	0.8429	-0.0062
BASE	55	82	LIVE	LinStatic				0.0172	0.0086	0.5832	-0.0058
BASE	55	82	LR	LinStatic				0	0	0	0
BASE	55	82	W1	LinStatic				0	0	0	0
BASE	55	82	W2	LinStatic				0	0	0	0
BASE	55	82	SISMOX	LinStatic				-0.2469	-0.0026	-0.9156	0.0012
BASE	55	82	SISMOY	LinStatic				0.0026	-0.1055	0.0008	0.1676
BASE	55	82	U1	Combination				0.0659	0.013	1.18	-0.0087
BASE	55	82	U2	Combination				0.0839	0.025	1.9445	-0.0166
BASE	55	82	U3	Combination				0.0565	0.0112	1.0114	-0.0074
BASE	55	82	U4	Combination				0.0565	0.0112	1.0114	-0.0074
BASE	55	82	U5	Combination				0.0736	0.0198	1.5946	-0.0132
BASE	55	82	U6	Combination				0.0736	0.0198	1.5946	-0.0132
BASE	55	82	U7	Combination				-0.1725	-0.0145	0.6792	0.0383
BASE	55	82	U8	Combination				0.3197	0.0541	2.51	-0.0647
BASE	55	82	U9	Combination				-0.174	0.0488	0.6788	-0.0622
BASE	55	82	U10	Combination				0.3212	-0.0092	2.5105	0.0359
BASE	55	82	U11	Combination				0.0021	-0.0865	1.3207	0.1547
BASE	55	82	U12	Combination				0.1451	0.1261	1.8686	-0.1811

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	55	82	U13	Combination				0.1502	-0.0849	1.8701	0.154
BASE	55	82	U14	Combination				-0.003	0.1245	1.3192	-0.1804
BASE	55	82	U15	Combination				0.0423	0.0084	0.7586	-0.0056
BASE	55	82	U16	Combination				0.0423	0.0084	0.7586	-0.0056
BASE	55	82	U17	Combination				-0.2038	-0.0259	-0.1568	0.0459
BASE	55	82	U18	Combination				0.2884	0.0426	1.674	-0.0571
BASE	55	82	U19	Combination				-0.2053	0.0374	-0.1573	-0.0546
BASE	55	82	U20	Combination				0.29	-0.0206	1.6744	0.0435
BASE	55	82	U21	Combination				-0.0292	-0.0979	0.4846	0.1624
BASE	55	82	U22	Combination				0.1138	0.1146	1.0325	-0.1735
BASE	55	82	U23	Combination				0.119	-0.0963	1.034	0.1616
BASE	55	82	U24	Combination				-0.0343	0.1131	0.4831	-0.1728
BASE	63	87	DEAD	LinStatic				-0.2322	0.0515	1.6999	-0.0241
BASE	63	87	LIVE	LinStatic				-0.204	0.0479	1.2244	-0.0224
BASE	63	87	LR	LinStatic				0	0	0	0
BASE	63	87	W1	LinStatic				0	0	0	0
BASE	63	87	W2	LinStatic				0	0	0	0
BASE	63	87	SISMOX	LinStatic				-0.9347	-0.0148	0.505	0.0061
BASE	63	87	SISMOY	LinStatic				0.0116	-0.6006	0.0024	0.5238
BASE	63	87	U1	Combination				-0.3251	0.0721	2.3799	-0.0337
BASE	63	87	U2	Combination				-0.6051	0.1384	3.9989	-0.0647
BASE	63	87	U3	Combination				-0.2786	0.0618	2.0399	-0.0289
BASE	63	87	U4	Combination				-0.2786	0.0618	2.0399	-0.0289
BASE	63	87	U5	Combination				-0.4827	0.1096	3.2643	-0.0513
BASE	63	87	U6	Combination				-0.4827	0.1096	3.2643	-0.0513
BASE	63	87	U7	Combination				-1.4139	-0.0853	3.77	0.1119
BASE	63	87	U8	Combination				0.4486	0.3046	2.7585	-0.2145
BASE	63	87	U9	Combination				-1.4209	0.275	3.7686	-0.2024
BASE	63	87	U10	Combination				0.4555	-0.0558	2.76	0.0998
BASE	63	87	U11	Combination				-0.7515	-0.4954	3.4181	0.4743
BASE	63	87	U12	Combination				-0.2139	0.7146	3.1104	-0.577
BASE	63	87	U13	Combination				-0.1906	-0.4865	3.1151	0.4707
BASE	63	87	U14	Combination				-0.7747	0.7058	3.4134	-0.5733
BASE	63	87	U15	Combination				-0.209	0.0463	1.5299	-0.0217
BASE	63	87	U16	Combination				-0.209	0.0463	1.5299	-0.0217
BASE	63	87	U17	Combination				-1.1402	-0.1486	2.0356	0.1415
BASE	63	87	U18	Combination				0.7222	0.2413	1.0242	-0.1849
BASE	63	87	U19	Combination				-1.1472	0.2117	2.0342	-0.1728
BASE	63	87	U20	Combination				0.7292	-0.1191	1.0256	0.1294
BASE	63	87	U21	Combination				-0.4778	-0.5586	1.6838	0.504
BASE	63	87	U22	Combination				0.0598	0.6513	1.3761	-0.5473
BASE	63	87	U23	Combination				0.0831	-0.5498	1.3808	0.5003
BASE	63	87	U24	Combination				-0.501	0.6425	1.6791	-0.5437
BASE	66	90	DEAD	LinStatic				0.57	0.1331	1.674	-0.0368
BASE	66	90	LIVE	LinStatic				0.5439	0.1237	1.3371	-0.0342

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	66	90	LR	LinStatic				0	0	0	0
BASE	66	90	W1	LinStatic				0	0	0	0
BASE	66	90	W2	LinStatic				0	0	0	0
BASE	66	90	SISMOX	LinStatic				-1.056	-0.0372	0.5753	0.0099
BASE	66	90	SISMOY	LinStatic				0.0156	-0.8252	-0.0024	0.4873
BASE	66	90	U1	Combination				0.7981	0.1863	2.3435	-0.0515
BASE	66	90	U2	Combination				1.5543	0.3575	4.1481	-0.0988
BASE	66	90	U3	Combination				0.6841	0.1597	2.0088	-0.0441
BASE	66	90	U4	Combination				0.6841	0.1597	2.0088	-0.0441
BASE	66	90	U5	Combination				1.228	0.2833	3.3459	-0.0783
BASE	66	90	U6	Combination				1.228	0.2833	3.3459	-0.0783
BASE	66	90	U7	Combination				0.1766	-0.0014	3.9204	0.0778
BASE	66	90	U8	Combination				2.2793	0.5681	2.7713	-0.2343
BASE	66	90	U9	Combination				0.1673	0.4938	3.9218	-0.2146
BASE	66	90	U10	Combination				2.2887	0.0729	2.7699	0.058
BASE	66	90	U11	Combination				0.9267	-0.553	3.5161	0.412
BASE	66	90	U12	Combination				1.5292	1.1197	3.1757	-0.5685
BASE	66	90	U13	Combination				1.5603	-0.5307	3.1709	0.406
BASE	66	90	U14	Combination				0.8956	1.0974	3.5208	-0.5626
BASE	66	90	U15	Combination				0.513	0.1198	1.5066	-0.0331
BASE	66	90	U16	Combination				0.513	0.1198	1.5066	-0.0331
BASE	66	90	U17	Combination				-0.5383	-0.165	2.0811	0.123
BASE	66	90	U18	Combination				1.5644	0.4045	0.932	-0.1891
BASE	66	90	U19	Combination				-0.5476	0.3302	2.0825	-0.1694
BASE	66	90	U20	Combination				1.5737	-0.0907	0.9306	0.1032
BASE	66	90	U21	Combination				0.2118	-0.7166	1.6768	0.4572
BASE	66	90	U22	Combination				0.8143	0.9561	1.3364	-0.5233
BASE	66	90	U23	Combination				0.8454	-0.6943	1.3316	0.4512
BASE	66	90	U24	Combination				0.1807	0.9338	1.6815	-0.5174
BASE	67	91	DEAD	LinStatic				-0.489	0.0521	0.7837	-0.0156
BASE	67	91	LIVE	LinStatic				-0.4475	0.0484	0.6533	-0.0145
BASE	67	91	LR	LinStatic				0	0	0	0
BASE	67	91	W1	LinStatic				0	0	0	0
BASE	67	91	W2	LinStatic				0	0	0	0
BASE	67	91	SISMOX	LinStatic				-0.5153	-0.0101	0.409	0.0035
BASE	67	91	SISMOY	LinStatic				0.0081	-0.6903	-0.0058	0.2568
BASE	67	91	U1	Combination				-0.6846	0.0729	1.0971	-0.0219
BASE	67	91	U2	Combination				-1.3028	0.1399	1.9856	-0.042
BASE	67	91	U3	Combination				-0.5868	0.0625	0.9404	-0.0188
BASE	67	91	U4	Combination				-0.5868	0.0625	0.9404	-0.0188
BASE	67	91	U5	Combination				-1.0343	0.1109	1.5937	-0.0333
BASE	67	91	U6	Combination				-1.0343	0.1109	1.5937	-0.0333
BASE	67	91	U7	Combination				-1.5472	-0.1063	2.0009	0.0472
BASE	67	91	U8	Combination				-0.5214	0.328	1.1864	-0.1138
BASE	67	91	U9	Combination				-1.552	0.3079	2.0044	-0.1069

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	67	91	U10	Combination				-0.5166	-0.0861	1.183	0.0403
BASE	67	91	U11	Combination				-1.1808	-0.5824	1.7106	0.2246
BASE	67	91	U12	Combination				-0.8878	0.8041	1.4767	-0.2912
BASE	67	91	U13	Combination				-0.8717	-0.5764	1.4652	0.2225
BASE	67	91	U14	Combination				-1.197	0.7981	1.7221	-0.2891
BASE	67	91	U15	Combination				-0.4401	0.0469	0.7053	-0.0141
BASE	67	91	U16	Combination				-0.4401	0.0469	0.7053	-0.0141
BASE	67	91	U17	Combination				-0.953	-0.1703	1.1126	0.0664
BASE	67	91	U18	Combination				0.0728	0.264	0.298	-0.0946
BASE	67	91	U19	Combination				-0.9578	0.2439	1.116	-0.0877
BASE	67	91	U20	Combination				0.0776	-0.1501	0.2946	0.0595
BASE	67	91	U21	Combination				-0.5866	-0.6464	0.8222	0.2438
BASE	67	91	U22	Combination				-0.2936	0.7401	0.5884	-0.2719
BASE	67	91	U23	Combination				-0.2774	-0.6404	0.5769	0.2417
BASE	67	91	U24	Combination				-0.6027	0.7341	0.8338	-0.2699
BASE	71	102	DEAD	LinStatic				0.1514	-0.1979	0.9747	0.0791
BASE	71	102	LIVE	LinStatic				0.1343	-0.184	0.5025	0.0736
BASE	71	102	LR	LinStatic				0	0	0	0
BASE	71	102	W1	LinStatic				0	0	0	0
BASE	71	102	W2	LinStatic				0	0	0	0
BASE	71	102	SISMOX	LinStatic				-0.2389	0.0346	-0.2738	-0.0174
BASE	71	102	SISMOY	LinStatic				-0.0309	-0.434	0.0151	0.4177
BASE	71	102	U1	Combination				0.2119	-0.2771	1.3645	0.1108
BASE	71	102	U2	Combination				0.3966	-0.5319	1.9737	0.2127
BASE	71	102	U3	Combination				0.1817	-0.2375	1.1696	0.095
BASE	71	102	U4	Combination				0.1817	-0.2375	1.1696	0.095
BASE	71	102	U5	Combination				0.316	-0.4215	1.6722	0.1685
BASE	71	102	U6	Combination				0.316	-0.4215	1.6722	0.1685
BASE	71	102	U7	Combination				0.0677	-0.5172	1.4029	0.2765
BASE	71	102	U8	Combination				0.5642	-0.3259	1.9415	0.0606
BASE	71	102	U9	Combination				0.0863	-0.2568	1.3938	0.0259
BASE	71	102	U10	Combination				0.5456	-0.5863	1.9505	0.3112
BASE	71	102	U11	Combination				0.2133	-0.8452	1.6051	0.581
BASE	71	102	U12	Combination				0.4186	0.0022	1.7392	-0.244
BASE	71	102	U13	Combination				0.3567	-0.8659	1.7694	0.5914
BASE	71	102	U14	Combination				0.2752	0.0229	1.5749	-0.2544
BASE	71	102	U15	Combination				0.1362	-0.1781	0.8772	0.0712
BASE	71	102	U16	Combination				0.1362	-0.1781	0.8772	0.0712
BASE	71	102	U17	Combination				-0.112	-0.2738	0.6079	0.1792
BASE	71	102	U18	Combination				0.3845	-0.0825	1.1465	-0.0367
BASE	71	102	U19	Combination				-0.0934	-0.0134	0.5988	-0.0714
BASE	71	102	U20	Combination				0.3659	-0.3429	1.1556	0.2139
BASE	71	102	U21	Combination				0.0336	-0.6018	0.8102	0.4837
BASE	71	102	U22	Combination				0.2389	0.2455	0.9442	-0.3413
BASE	71	102	U23	Combination				0.177	-0.6226	0.9745	0.4941

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	71	102	U24	Combination				0.0955	0.2663	0.7799	-0.3517
BASE	72	101	DEAD	LinStatic				-0.0069	-0.1109	0.3966	0.0403
BASE	72	101	LIVE	LinStatic				-0.0329	-0.1031	0.1683	0.0374
BASE	72	101	LR	LinStatic				0	0	0	0
BASE	72	101	W1	LinStatic				0	0	0	0
BASE	72	101	W2	LinStatic				0	0	0	0
BASE	72	101	SISMOX	LinStatic				-0.1147	0.0274	-0.4501	-0.0103
BASE	72	101	SISMOY	LinStatic				-0.0386	-0.069	-0.037	0.1528
BASE	72	101	U1	Combination				-0.0096	-0.1553	0.5553	0.0564
BASE	72	101	U2	Combination				-0.061	-0.2981	0.7452	0.1083
BASE	72	101	U3	Combination				-0.0082	-0.1331	0.4759	0.0483
BASE	72	101	U4	Combination				-0.0082	-0.1331	0.4759	0.0483
BASE	72	101	U5	Combination				-0.0412	-0.2363	0.6442	0.0858
BASE	72	101	U6	Combination				-0.0412	-0.2363	0.6442	0.0858
BASE	72	101	U7	Combination				-0.1675	-0.2296	0.1831	0.1213
BASE	72	101	U8	Combination				0.0851	-0.2429	1.1054	0.0503
BASE	72	101	U9	Combination				-0.1443	-0.1882	0.2053	0.0296
BASE	72	101	U10	Combination				0.062	-0.2843	1.0832	0.142
BASE	72	101	U11	Combination				-0.1142	-0.297	0.4722	0.2355
BASE	72	101	U12	Combination				0.0318	-0.1755	0.8162	-0.0639
BASE	72	101	U13	Combination				-0.0454	-0.3135	0.7422	0.2417
BASE	72	101	U14	Combination				-0.037	-0.1591	0.5462	-0.0702
BASE	72	101	U15	Combination				-0.0062	-0.0999	0.3569	0.0363
BASE	72	101	U16	Combination				-0.0062	-0.0999	0.3569	0.0363
BASE	72	101	U17	Combination				-0.1325	-0.0932	-0.1042	0.0718
BASE	72	101	U18	Combination				0.1201	-0.1065	0.8181	0.0008
BASE	72	101	U19	Combination				-0.1093	-0.0518	-0.082	-0.0199
BASE	72	101	U20	Combination				0.097	-0.1479	0.7959	0.0925
BASE	72	101	U21	Combination				-0.0792	-0.1606	0.1849	0.186
BASE	72	101	U22	Combination				0.0668	-0.0391	0.529	-0.1135
BASE	72	101	U23	Combination				-0.0104	-0.177	0.455	0.1922
BASE	72	101	U24	Combination				-0.002	-0.0227	0.2589	-0.1197
BASE	80	106	DEAD	LinStatic				-0.2724	-0.281	1.0799	0.0676
BASE	80	106	LIVE	LinStatic				-0.2414	-0.2612	0.6485	0.0628
BASE	80	106	LR	LinStatic				0	0	0	0
BASE	80	106	W1	LinStatic				0	0	0	0
BASE	80	106	W2	LinStatic				0	0	0	0
BASE	80	106	SISMOX	LinStatic				-0.4427	0.0561	0.2685	-0.0154
BASE	80	106	SISMOY	LinStatic				-0.1448	-0.5365	0.0908	0.4948
BASE	80	106	U1	Combination				-0.3813	-0.3934	1.5118	0.0946
BASE	80	106	U2	Combination				-0.7131	-0.7552	2.3334	0.1815
BASE	80	106	U3	Combination				-0.3269	-0.3372	1.2958	0.0811
BASE	80	106	U4	Combination				-0.3269	-0.3372	1.2958	0.0811
BASE	80	106	U5	Combination				-0.5682	-0.5984	1.9443	0.1439
BASE	80	106	U6	Combination				-0.5682	-0.5984	1.9443	0.1439

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	80	106	U7	Combination				-1.0544	-0.7033	2.2401	0.2769
BASE	80	106	U8	Combination				-0.0821	-0.4936	1.6485	0.0108
BASE	80	106	U9	Combination				-0.9675	-0.3814	2.1856	-0.0199
BASE	80	106	U10	Combination				-0.169	-0.8154	1.703	0.3077
BASE	80	106	U11	Combination				-0.8459	-1.1181	2.1156	0.634
BASE	80	106	U12	Combination				-0.2906	-0.0788	1.7729	-0.3463
BASE	80	106	U13	Combination				-0.5803	-1.1517	1.9545	0.6433
BASE	80	106	U14	Combination				-0.5562	-0.0451	1.934	-0.3555
BASE	80	106	U15	Combination				-0.2451	-0.2529	0.9719	0.0608
BASE	80	106	U16	Combination				-0.2451	-0.2529	0.9719	0.0608
BASE	80	106	U17	Combination				-0.7313	-0.3578	1.2676	0.1939
BASE	80	106	U18	Combination				0.241	-0.1481	0.6761	-0.0723
BASE	80	106	U19	Combination				-0.6444	-0.0359	1.2132	-0.103
BASE	80	106	U20	Combination				0.1541	-0.4699	0.7306	0.2246
BASE	80	106	U21	Combination				-0.5228	-0.7726	1.1432	0.551
BASE	80	106	U22	Combination				0.0325	0.2667	0.8005	-0.4294
BASE	80	106	U23	Combination				-0.2572	-0.8062	0.9821	0.5602
BASE	80	106	U24	Combination				-0.2331	0.3004	0.9616	-0.4386
BASE	83	109	DEAD	LinStatic				0.138	-0.4421	1.034	0.0195
BASE	83	109	LIVE	LinStatic				0.1425	-0.4109	0.7422	0.0181
BASE	83	109	LR	LinStatic				0	0	0	0
BASE	83	109	W1	LinStatic				0	0	0	0
BASE	83	109	W2	LinStatic				0	0	0	0
BASE	83	109	SISMOX	LinStatic				-0.4821	0.0878	0.2824	-0.0033
BASE	83	109	SISMOY	LinStatic				-0.138	-0.713	0.1085	0.4431
BASE	83	109	U1	Combination				0.1933	-0.619	1.4476	0.0273
BASE	83	109	U2	Combination				0.3936	-1.188	2.4284	0.0524
BASE	83	109	U3	Combination				0.1657	-0.5305	1.2408	0.0234
BASE	83	109	U4	Combination				0.1657	-0.5305	1.2408	0.0234
BASE	83	109	U5	Combination				0.3081	-0.9415	1.983	0.0415
BASE	83	109	U6	Combination				0.3081	-0.9415	1.983	0.0415
BASE	83	109	U7	Combination				-0.2154	-1.0676	2.298	0.1711
BASE	83	109	U8	Combination				0.8317	-0.8154	1.668	-0.0881
BASE	83	109	U9	Combination				-0.1326	-0.6398	2.2329	-0.0947
BASE	83	109	U10	Combination				0.7488	-1.2432	1.7332	0.1778
BASE	83	109	U11	Combination				0.0255	-1.6282	2.1763	0.4836
BASE	83	109	U12	Combination				0.5908	-0.2548	1.7898	-0.4006
BASE	83	109	U13	Combination				0.3147	-1.6808	2.0068	0.4856
BASE	83	109	U14	Combination				0.3015	-0.2021	1.9592	-0.4026
BASE	83	109	U15	Combination				0.1242	-0.3979	0.9306	0.0175
BASE	83	109	U16	Combination				0.1242	-0.3979	0.9306	0.0175
BASE	83	109	U17	Combination				-0.3993	-0.524	1.2456	0.1471
BASE	83	109	U18	Combination				0.6478	-0.2718	0.6156	-0.1121
BASE	83	109	U19	Combination				-0.3165	-0.0962	1.1804	-0.1187
BASE	83	109	U20	Combination				0.565	-0.6996	0.6807	0.1538

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	Step Number	Step Label	FX tonf	FY tonf	FZ tonf	MX tonf-m
BASE	83	109	U21	Combination				-0.1584	-1.0846	1.1239	0.4596
BASE	83	109	U22	Combination				0.4069	0.2888	0.7373	-0.4246
BASE	83	109	U23	Combination				0.1309	-1.1373	0.9544	0.4616
BASE	83	109	U24	Combination				0.1176	0.3415	0.9068	-0.4266
BASE	84	110	DEAD	LinStatic				-0.328	-0.3581	0.48	0.0006
BASE	84	110	LIVE	LinStatic				-0.2978	-0.3329	0.3709	0.0006
BASE	84	110	LR	LinStatic				0	0	0	0
BASE	84	110	W1	LinStatic				0	0	0	0
BASE	84	110	W2	LinStatic				0	0	0	0
BASE	84	110	SISMOX	LinStatic				-0.2294	-0.0929	0.1788	0.0262
BASE	84	110	SISMOY	LinStatic				-0.1337	-0.5033	0.1152	0.2107
BASE	84	110	U1	Combination				-0.4591	-0.5014	0.672	0.0009
BASE	84	110	U2	Combination				-0.87	-0.9623	1.1694	0.0017
BASE	84	110	U3	Combination				-0.3936	-0.4297	0.576	0.0008
BASE	84	110	U4	Combination				-0.3936	-0.4297	0.576	0.0008
BASE	84	110	U5	Combination				-0.6913	-0.7626	0.9468	0.0014
BASE	84	110	U6	Combination				-0.6913	-0.7626	0.9468	0.0014
BASE	84	110	U7	Combination				-0.9608	-1.0065	1.1602	0.0908
BASE	84	110	U8	Combination				-0.4218	-0.5187	0.7335	-0.0881
BASE	84	110	U9	Combination				-0.8806	-0.7045	1.0911	-0.0356
BASE	84	110	U10	Combination				-0.5021	-0.8207	0.8026	0.0384
BASE	84	110	U11	Combination				-0.8939	-1.2938	1.1157	0.2199
BASE	84	110	U12	Combination				-0.4888	-0.2314	0.778	-0.2172
BASE	84	110	U13	Combination				-0.7562	-1.2381	1.0084	0.2042
BASE	84	110	U14	Combination				-0.6264	-0.2871	0.8853	-0.2015
BASE	84	110	U15	Combination				-0.2952	-0.3223	0.432	0.0006
BASE	84	110	U16	Combination				-0.2952	-0.3223	0.432	0.0006
BASE	84	110	U17	Combination				-0.5647	-0.5662	0.6453	0.09
BASE	84	110	U18	Combination				-0.0257	-0.0784	0.2186	-0.0888
BASE	84	110	U19	Combination				-0.4844	-0.2642	0.5762	-0.0364
BASE	84	110	U20	Combination				-0.1059	-0.3804	0.2878	0.0376
BASE	84	110	U21	Combination				-0.4977	-0.8535	0.6008	0.2191
BASE	84	110	U22	Combination				-0.0926	0.2089	0.2631	-0.218
BASE	84	110	U23	Combination				-0.3601	-0.7978	0.4936	0.2034
BASE	84	110	U24	Combination				-0.2302	0.1531	0.3704	-0.2023

Table 5.4 - Joint Reactions (Part 2 of 2)

MY tonf-m	MZ tonf-m
0.0169	0.0001
0.0153	0.0001
0	0
0	0
0	0
-0.0061	0.0001

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0038	0.0016
0.0236	0.0001
0.0447	0.0002
0.0202	0.0001
0.0202	0.0001
0.0355	0.0001
0.0355	0.0001
0.0282	0.0007
0.0427	-0.0004
0.0305	-0.0003
0.0404	0.0006
0.0298	0.0017
0.0411	-0.0015
0.0335	0.0017
0.0375	-0.0014
0.0152	0.0001
0.0152	0.0001
0.0079	0.0006
0.0224	-0.0005
0.0102	-0.0004
0.0201	0.0005
0.0095	0.0017
0.0208	-0.0015
0.0132	0.0016
0.0172	-0.0015
-0.0054	0.0036
-0.0056	0.0034
0	0
0	0
0	0
-0.0035	-0.0009
0.0026	-0.0129
-0.0075	0.0051
-0.0154	0.0097
-0.0065	0.0043
-0.0065	0.0043
-0.0121	0.0077
-0.0121	0.0077
-0.0148	0.0029
-0.0094	0.0125
-0.0163	0.0107
-0.0078	0.0047
-0.0105	-0.0055
-0.0136	0.0209
-0.0084	-0.0049

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0157	0.0204
-0.0048	0.0033
-0.0048	0.0033
-0.0075	-0.0015
-0.0021	0.008
-0.0091	0.0062
-0.0006	0.0003
-0.0033	-0.0099
-0.0064	0.0165
-0.0012	-0.0094
-0.0085	0.0159
-0.0289	-2.148E-05
-0.0269	-1.883E-05
0	0
0	0
0	0
-0.0092	-0.0001
0.0106	0.0005
-0.0405	-3.008E-05
-0.0778	-0.0001
-0.0347	-2.578E-05
-0.0347	-2.578E-05
-0.0616	-4.461E-05
-0.0616	-4.461E-05
-0.0677	-4.617E-05
-0.0556	-4.305E-05
-0.074	-0.0003
-0.0492	0.0002
-0.0538	0.0004
-0.0695	-0.0005
-0.0483	0.0005
-0.075	-0.0006
-0.026	-1.934E-05
-0.026	-1.934E-05
-0.0321	-2.09E-05
-0.02	-1.778E-05
-0.0384	-0.0003
-0.0136	0.0003
-0.0182	0.0004
-0.0339	-0.0004
-0.0127	0.0005
-0.0394	-0.0005
0.0432	-0.0003
0.0401	-0.0002
0	0

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
0	0
0	0
-0.0122	0.0015
-0.0069	-0.0039
0.0605	-0.0004
0.1161	-0.0007
0.0519	-0.0003
0.0519	-0.0003
0.092	-0.0005
0.092	-0.0005
0.0777	-0.0002
0.1062	-0.0009
0.0819	0.0021
0.1021	-0.0032
0.0815	-0.004
0.1025	0.0029
0.0888	-0.0049
0.0952	0.0038
0.0389	-0.0002
0.0389	-0.0002
0.0246	0.0001
0.0532	-0.0005
0.0288	0.0024
0.049	-0.0029
0.0284	-0.0037
0.0494	0.0032
0.0357	-0.0046
0.0421	0.0041
-0.0367	0.0069
-0.0342	0.0064
0	0
0	0
0	0
-0.0039	-0.0008
0.0066	0.0054
-0.0514	0.0096
-0.0988	0.0184
-0.0441	0.0082
-0.0441	0.0082
-0.0783	0.0146
-0.0783	0.0146
-0.0803	0.0154
-0.0763	0.0138
-0.0842	0.0121
-0.0724	0.017

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0729	0.0197
-0.0837	0.0095
-0.0706	0.0202
-0.086	0.009
-0.0331	0.0062
-0.0331	0.0062
-0.035	0.007
-0.0311	0.0054
-0.039	0.0037
-0.0272	0.0086
-0.0277	0.0113
-0.0384	0.001
-0.0253	0.0118
-0.0408	0.0005
0.0359	2.076E-05
0.033	1.93E-05
0	0
0	0
0	0
-0.0132	-1.483E-05
-0.0002	0.0018
0.0503	2.907E-05
0.0959	0.0001
0.0431	2.492E-05
0.0431	2.492E-05
0.0761	4.421E-05
0.0761	4.421E-05
0.0629	0.0006
0.0894	-0.0005
0.063	-0.0005
0.0892	0.0006
0.0719	0.0018
0.0803	-0.0017
0.0798	0.0018
0.0724	-0.0017
0.0323	1.869E-05
0.0323	1.869E-05
0.0191	0.0005
0.0456	-0.0005
0.0192	-0.0005
0.0454	0.0006
0.0281	0.0018
0.0365	-0.0017
0.036	0.0018
0.0286	-0.0018

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0084	-0.0005
-0.0084	-0.0005
0	0
0	0
0	0
-0.0073	0.0001
-3.487E-05	-0.0143
-0.0118	-0.0007
-0.0235	-0.0014
-0.0101	-0.0006
-0.0101	-0.0006
-0.0185	-0.0011
-0.0185	-0.0011
-0.0258	-0.0053
-0.0111	0.0031
-0.0258	0.0033
-0.0112	-0.0055
-0.0207	-0.0154
-0.0162	0.0131
-0.0163	-0.0154
-0.0206	0.0132
-0.0076	-0.0005
-0.0076	-0.0005
-0.0149	-0.0047
-0.0002	0.0037
-0.0149	0.0039
-0.0002	-0.0048
-0.0098	-0.0147
-0.0053	0.0138
-0.0054	-0.0148
-0.0097	0.0138
-0.0484	0.0001
-0.0451	0.0001
0	0
0	0
0	0
-0.0204	-2.748E-05
-8.05E-07	0.0001
-0.0677	0.0002
-0.1302	0.0004
-0.0581	0.0002
-0.0581	0.0002
-0.1031	0.0003
-0.1031	0.0003
-0.1235	0.0003

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0827	0.0003
-0.1235	0.0002
-0.0827	0.0003
-0.1092	0.0003
-0.097	0.0002
-0.097	0.0003
-0.1092	0.0002
-0.0436	0.0001
-0.0436	0.0001
-0.064	0.0001
-0.0231	0.0001
-0.064	0.0001
-0.0231	0.0002
-0.0497	0.0002
-0.0374	0.0001
-0.0374	0.0002
-0.0497	0.0001
0.0893	0.0004
0.083	0.0004
0	0
0	0
0	0
-0.0252	-0.0001
-0.0007	-0.0038
0.1251	0.0006
0.24	0.0012
0.1072	0.0005
0.1072	0.0005
0.1902	0.0009
0.1902	0.0009
0.1648	-0.0003
0.2157	0.0022
0.1652	0.0019
0.2153	-0.0001
0.1819	-0.0029
0.1985	0.0048
0.1971	-0.0028
0.1833	0.0047
0.0804	0.0004
0.0804	0.0004
0.055	-0.0009
0.1059	0.0017
0.0554	0.0014
0.1054	-0.0006
0.0721	-0.0035

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
0.0887	0.0042
0.0873	-0.0034
0.0735	0.0042
-0.0709	0.0008
-0.0659	0.0008
0	0
0	0
0	0
-0.0099	-0.0002
6.538E-06	0.0084
-0.0992	0.0011
-0.1905	0.0022
-0.085	0.001
-0.085	0.001
-0.1509	0.0017
-0.1509	0.0017
-0.1609	0.004
-0.141	-0.0006
-0.1609	-0.001
-0.141	0.0045
-0.1539	0.0101
-0.148	-0.0066
-0.1479	0.0102
-0.1539	-0.0067
-0.0638	0.0007
-0.0638	0.0007
-0.0737	0.003
-0.0538	-0.0016
-0.0737	-0.002
-0.0538	0.0035
-0.0667	0.0091
-0.0608	-0.0076
-0.0608	0.0092
-0.0668	-0.0077
0.0334	0
0.0307	0
0	0
0	0
0	0
-0.0125	0
0	0.0018
0.0468	0
0.0892	0
0.0401	0
0.0401	0

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
0.0708	0
0.0708	0
0.0583	0.0005
0.0833	-0.0005
0.0583	-0.0005
0.0833	0.0005
0.0671	0.0018
0.0746	-0.0018
0.0746	0.0018
0.0671	-0.0018
0.0301	0
0.0301	0
0.0176	0.0005
0.0426	-0.0005
0.0176	-0.0005
0.0426	0.0005
0.0263	0.0018
0.0338	-0.0018
0.0338	0.0018
0.0263	-0.0018
-0.0093	0
-0.0092	0
0	0
0	0
0	0
-0.007	0
0	-0.0142
-0.013	0
-0.0259	0
-0.0111	0
-0.0111	0
-0.0204	0
-0.0204	0
-0.0274	-0.0043
-0.0134	0.0043
-0.0274	0.0043
-0.0134	-0.0043
-0.0225	-0.0142
-0.0183	0.0142
-0.0183	-0.0142
-0.0225	0.0142
-0.0084	0
-0.0084	0
-0.0154	-0.0043
-0.0013	0.0043

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0154	0.0043
-0.0013	-0.0043
-0.0105	-0.0142
-0.0063	0.0142
-0.0063	-0.0142
-0.0105	0.0142
-0.0507	0
-0.0472	0
0	0
0	0
0	0
-0.0196	0
0	0.0001
-0.071	0
-0.1364	0
-0.0609	0
-0.0609	0
-0.1081	0
-0.1081	0
-0.1276	3.391E-05
-0.0885	-3.391E-05
-0.1276	-3.391E-05
-0.0885	3.391E-05
-0.1139	0.0001
-0.1022	-0.0001
-0.1022	0.0001
-0.1139	-0.0001
-0.0456	0
-0.0456	0
-0.0652	3.391E-05
-0.0261	-3.391E-05
-0.0652	-3.391E-05
-0.0261	3.391E-05
-0.0515	0.0001
-0.0398	-0.0001
-0.0398	0.0001
-0.0515	-0.0001
0.0856	0
0.0796	0
0	0
0	0
0	0
-0.0239	0
0	-0.0037
0.1199	0

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
0.2301	0
0.1028	0
0.1028	0
0.1823	0
0.1823	0
0.1584	-0.0011
0.2063	0.0011
0.1584	0.0011
0.2063	-0.0011
0.1752	-0.0037
0.1895	0.0037
0.1895	-0.0037
0.1752	0.0037
0.0771	0
0.0771	0
0.0532	-0.0011
0.101	0.0011
0.0532	0.0011
0.101	-0.0011
0.0699	-0.0037
0.0843	0.0037
0.0843	-0.0037
0.0699	0.0037
-0.0712	0
-0.0663	0
0	0
0	0
0	0
-0.0096	0
0	0.0086
-0.0997	0
-0.1915	0
-0.0855	0
-0.0855	0
-0.1517	0
-0.1517	0
-0.1613	0.0026
-0.1422	-0.0026
-0.1613	-0.0026
-0.1422	0.0026
-0.1546	0.0086
-0.1489	-0.0086
-0.1489	0.0086
-0.1546	-0.0086
-0.0641	0

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0641	0
-0.0737	0.0026
-0.0545	-0.0026
-0.0737	-0.0026
-0.0545	0.0026
-0.067	0.0086
-0.0612	-0.0086
-0.0612	0.0086
-0.067	-0.0086
0.0359	-2.076E-05
0.033	-1.93E-05
0	0
0	0
0	0
-0.0132	1.483E-05
0.0002	0.0018
0.0503	-2.907E-05
0.0959	-0.0001
0.0431	-2.492E-05
0.0431	-2.492E-05
0.0761	-4.421E-05
0.0761	-4.421E-05
0.063	0.0005
0.0892	-0.0006
0.0629	-0.0006
0.0894	0.0005
0.0724	0.0017
0.0798	-0.0018
0.0803	0.0017
0.0719	-0.0018
0.0323	-1.869E-05
0.0323	-1.869E-05
0.0192	0.0005
0.0454	-0.0006
0.0191	-0.0005
0.0456	0.0005
0.0286	0.0018
0.036	-0.0018
0.0365	0.0017
0.0281	-0.0018
-0.0084	0.0005
-0.0084	0.0005
0	0
0	0
0	0

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0073	-0.0001
3.487E-05	-0.0143
-0.0118	0.0007
-0.0235	0.0014
-0.0101	0.0006
-0.0101	0.0006
-0.0185	0.0011
-0.0185	0.0011
-0.0258	-0.0033
-0.0112	0.0055
-0.0258	0.0053
-0.0111	-0.0031
-0.0206	-0.0132
-0.0163	0.0154
-0.0162	-0.0131
-0.0207	0.0154
-0.0076	0.0005
-0.0076	0.0005
-0.0149	-0.0039
-0.0002	0.0048
-0.0149	0.0047
-0.0002	-0.0037
-0.0097	-0.0138
-0.0054	0.0148
-0.0053	-0.0138
-0.0098	0.0147
-0.0484	-0.0001
-0.0451	-0.0001
0	0
0	0
0	0
-0.0204	2.748E-05
8.05E-07	0.0001
-0.0677	-0.0002
-0.1302	-0.0004
-0.0581	-0.0002
-0.0581	-0.0002
-0.1031	-0.0003
-0.1031	-0.0003
-0.1235	-0.0002
-0.0827	-0.0003
-0.1235	-0.0003
-0.0827	-0.0003
-0.1092	-0.0002
-0.097	-0.0003

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.097	-0.0002
-0.1092	-0.0003
-0.0436	-0.0001
-0.0436	-0.0001
-0.064	-0.0001
-0.0231	-0.0002
-0.064	-0.0001
-0.0231	-0.0001
-0.0497	-0.0001
-0.0374	-0.0002
-0.0374	-0.0001
-0.0497	-0.0002
0.0893	-0.0004
0.083	-0.0004
0	0
0	0
0	0
-0.0252	0.0001
0.0007	-0.0038
0.1251	-0.0006
0.24	-0.0012
0.1072	-0.0005
0.1072	-0.0005
0.1902	-0.0009
0.1902	-0.0009
0.1652	-0.0019
0.2153	0.0001
0.1648	0.0003
0.2157	-0.0022
0.1833	-0.0047
0.1971	0.0028
0.1985	-0.0048
0.1819	0.0029
0.0804	-0.0004
0.0804	-0.0004
0.0554	-0.0014
0.1054	0.0006
0.055	0.0009
0.1059	-0.0017
0.0735	-0.0042
0.0873	0.0034
0.0887	-0.0042
0.0721	0.0035
-0.0709	-0.0008
-0.0659	-0.0008

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
0	0
0	0
0	0
-0.0099	0.0002
-6.539E-06	0.0084
-0.0992	-0.0011
-0.1905	-0.0022
-0.085	-0.001
-0.085	-0.001
-0.1509	-0.0017
-0.1509	-0.0017
-0.1609	0.001
-0.141	-0.0045
-0.1609	-0.004
-0.141	0.0006
-0.1539	0.0067
-0.1479	-0.0102
-0.148	0.0066
-0.1539	-0.0101
-0.0638	-0.0007
-0.0638	-0.0007
-0.0737	0.002
-0.0538	-0.0035
-0.0737	-0.003
-0.0538	0.0016
-0.0668	0.0077
-0.0608	-0.0092
-0.0608	0.0076
-0.0667	-0.0091
0.0169	-0.0001
0.0153	-0.0001
0	0
0	0
0	0
-0.0061	-0.0001
0.0038	0.0016
0.0236	-0.0001
0.0447	-0.0002
0.0202	-0.0001
0.0202	-0.0001
0.0355	-0.0001
0.0355	-0.0001
0.0305	0.0003
0.0404	-0.0006
0.0282	-0.0007

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
0.0427	0.0004
0.0375	0.0014
0.0335	-0.0017
0.0411	0.0015
0.0298	-0.0017
0.0152	-0.0001
0.0152	-0.0001
0.0102	0.0004
0.0201	-0.0005
0.0079	-0.0006
0.0224	0.0005
0.0172	0.0015
0.0132	-0.0016
0.0208	0.0015
0.0095	-0.0017
-0.0054	-0.0036
-0.0056	-0.0034
0	0
0	0
0	0
-0.0035	0.0009
-0.0026	-0.0129
-0.0075	-0.0051
-0.0154	-0.0097
-0.0065	-0.0043
-0.0065	-0.0043
-0.0121	-0.0077
-0.0121	-0.0077
-0.0163	-0.0107
-0.0078	-0.0047
-0.0148	-0.0029
-0.0094	-0.0125
-0.0157	-0.0204
-0.0084	0.0049
-0.0136	-0.0209
-0.0105	0.0055
-0.0048	-0.0033
-0.0048	-0.0033
-0.0091	-0.0062
-0.0006	-0.0003
-0.0075	0.0015
-0.0021	-0.008
-0.0085	-0.0159
-0.0012	0.0094
-0.0064	-0.0165

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0033	0.0099
-0.0289	2.148E-05
-0.0269	1.883E-05
0	0
0	0
0	0
-0.0092	0.0001
-0.0106	0.0005
-0.0405	3.008E-05
-0.0778	0.0001
-0.0347	2.578E-05
-0.0347	2.578E-05
-0.0616	4.461E-05
-0.0616	4.461E-05
-0.074	0.0003
-0.0492	-0.0002
-0.0677	4.617E-05
-0.0556	4.305E-05
-0.075	0.0006
-0.0483	-0.0005
-0.0695	0.0005
-0.0538	-0.0004
-0.026	1.934E-05
-0.026	1.934E-05
-0.0384	0.0003
-0.0136	-0.0003
-0.0321	2.09E-05
-0.02	1.778E-05
-0.0394	0.0005
-0.0127	-0.0005
-0.0339	0.0004
-0.0182	-0.0004
0.0432	0.0003
0.0401	0.0002
0	0
0	0
0	0
-0.0122	-0.0015
0.0069	-0.0039
0.0605	0.0004
0.1161	0.0007
0.0519	0.0003
0.0519	0.0003
0.092	0.0005
0.092	0.0005

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
0.0819	-0.0021
0.1021	0.0032
0.0777	0.0002
0.1062	0.0009
0.0952	-0.0038
0.0888	0.0049
0.1025	-0.0029
0.0815	0.004
0.0389	0.0002
0.0389	0.0002
0.0288	-0.0024
0.049	0.0029
0.0246	-0.0001
0.0532	0.0005
0.0421	-0.0041
0.0357	0.0046
0.0494	-0.0032
0.0284	0.0037
-0.0367	-0.0069
-0.0342	-0.0064
0	0
0	0
0	0
-0.0039	0.0008
-0.0066	0.0054
-0.0514	-0.0096
-0.0988	-0.0184
-0.0441	-0.0082
-0.0441	-0.0082
-0.0783	-0.0146
-0.0783	-0.0146
-0.0842	-0.0121
-0.0724	-0.017
-0.0803	-0.0154
-0.0763	-0.0138
-0.086	-0.009
-0.0706	-0.0202
-0.0837	-0.0095
-0.0729	-0.0197
-0.0331	-0.0062
-0.0331	-0.0062
-0.039	-0.0037
-0.0272	-0.0086
-0.035	-0.007
-0.0311	-0.0054

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

MY tonf-m	MZ tonf-m
-0.0408	-0.0005
-0.0253	-0.0118
-0.0384	-0.001
-0.0277	-0.0113

5.4 Modal Results

Table 5.5 - Modal Periods And Frequencies

Case	Mode	Period sec	Frequency cyc/sec	CircFreq rad/sec	Eigenvalue rad2/sec2
Modal	1	0.049	20.573	129.2634	16709.0323
Modal	2	0.016	60.787	381.9332	145872.9747
Modal	3	0.016	62.449	392.3793	153961.4885
Modal	4	0.015	65.17	409.475	167669.7718
Modal	5	0.015	66.526	417.9934	174718.5125
Modal	6	0.015	68.829	432.4665	187027.2785
Modal	7	0.013	75.252	472.8238	223562.3278
Modal	8	0.011	89.588	562.8958	316851.656
Modal	9	0.011	92.814	583.168	340084.9274
Modal	10	0.011	94.092	591.1976	349514.641
Modal	11	0.01	95.86	602.3051	362771.4562
Modal	12	0.01	98.295	617.6064	381437.6565

Table 5.6 - Modal Participating Mass Ratios (Part 1 of 2)

Case	Mode	Period sec	UX	UY	UZ	SumUX	SumUY	SumUZ	RX	RY	RZ	SumRX
Modal	1	0.049	0	0.6357	0	0	0.6357	0	0.7515	0	0.0224	0.7515
Modal	2	0.016	0	0.0002	0	0	0.6359	0	0.0001	0	0.0585	0.7516
Modal	3	0.016	0.0548	0	0	0.0548	0.6359	0	0	0.1192	0	0.7516
Modal	4	0.015	0	0.1772	0	0.0548	0.8131	0	0.0686	0	0.0013	0.8202
Modal	5	0.015	0	0.0064	0	0.0548	0.8195	0	0.0025	0	0.2197	0.8227
Modal	6	0.015	0.3278	0	0	0.3826	0.8195	0	0	0.5509	0	0.8227
Modal	7	0.013	0.0002	0	0	0.3828	0.8195	0	0	0.0021	0	0.8227
Modal	8	0.011	0	0.001	0	0.3828	0.8205	0	0.0006	0	0.0152	0.8233
Modal	9	0.011	0.0272	0	0	0.4101	0.8205	0	0	0.0183	0	0.8233
Modal	10	0.011	0	0.0049	0	0.4101	0.8254	0	0.0037	0	0.032	0.827
Modal	11	0.01	0	0.0532	0	0.4101	0.8786	0	0.0398	0	0.0131	0.8668
Modal	12	0.01	0.0165	0	0	0.4265	0.8786	0	0	0.0029	0	0.8668

Table 5.6 - Modal Participating Mass Ratios (Part 2 of 2)

SumRY	SumRZ
0	0.0224
0	0.0809
0.1192	0.0809
0.1192	0.0822
0.1192	0.3019

Table 5.6 - Modal Participating Mass Ratios (Part 2 of 2, continued)

SumRY	SumRZ
0.67	0.3019
0.6721	0.3019
0.6721	0.3171
0.6904	0.3171
0.6904	0.3491
0.6904	0.3622
0.6933	0.3622

Table 5.7 - Modal Load Participation Ratios

Case	ItemType	Item	Static %	Dynamic %
Modal	Acceleration	UX	70.44	42.65
Modal	Acceleration	UY	99.51	87.86
Modal	Acceleration	UZ	0	0

6 Design Data

This chapter provides design data and results.

6.1 Shear Wall Design

Table 6.1 - Shear Wall Design Preferences - ACI 318-08

Item	Value
Multi-Response Design	Step-by-Step
Rebar Material	A615Gr60
Rebar Shear Material	A615Gr60
Design System Rho	1
Design System Sds	1
Importance Factor	1
System Cd	5.5
Phi (Tension)	0.9
Phi (Compression)	0.65
Phi (Shear and Torsion)	0.75
Phi (Shear Seismic)	0.6
PMax Factor	0.8
# Interaction Curves	24
# Interaction Points	11
Edge Design PT-Max	0.06
Edge Design PC-Max	0.04
Section Design IP-Max	0.02
Section Design IP-Min	0.0025
Utilization Factor Limit	0.95

Table 6.2 - Shear Wall Pier Design Overwrites - ACI 318-08 (Part 1 of 3)

Story	Pier	Design?	LLRF	Seismic?	Pier Section Type	Pier Sec. Bottom	Pier Sec. Top
STORY1	P1	Program Determined	0	Program Determined	Program Determined		
STORY1	P2	Program Determined	0	Program Determined	Program Determined		
STORY1	P3	Program Determined	0	Program Determined	Program Determined		
STORY1	P4	Program Determined	0	Program Determined	Program Determined		
STORY1	P5	Program Determined	0	Program Determined	Program Determined		
STORY1	P6	Program Determined	0	Program Determined	Program Determined		
STORY1	P7	Program Determined	0	Program Determined	Program Determined		
STORY1	P8	Program Determined	0	Program Determined	Program Determined		
STORY1	P9	Program Determined	0	Program Determined	Program Determined		
STORY1	P10	Program Determined	0	Program Determined	Program Determined		
STORY1	P11	Program Determined	0	Program Determined	Program Determined		
STORY1	P13	Program Determined	0	Program Determined	Program Determined		
STORY1	P14	Program Determined	0	Program Determined	Program Determined		
STORY1	P15	Program Determined	0	Program Determined	Program Determined		
STORY1	P16	Program Determined	0	Program Determined	Program Determined		

Table 6.2 - Shear Wall Pier Design Overwrites - ACI 318-08 (Part 2 of 3)

End/Corner Bar Size	Edge Bar Size	Edge Bar Spacing m	Clear Cover m	Thickness Bottom m	Length Bottom m	DB1 Left Bottom m	DB2 Left Bottom m	DB1 Right Bottom m	DB2 Right Bottom m
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						
Program Determined	Program Determined	0	0						

Table 6.2 - Shear Wall Pier Design Overwrites - ACI 318-08 (Part 3 of 3)

Length Top m	DB1 Left Top m	DB2 Left Top m	DB1 Right Top m	DB2 Right Top m	Concrete Material	Design/Check	Check Comp Block Depth for BZ?	Edge PT-Max	Edge PC-Max
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		
					Program Determined	Design	No		

Table 6.3 - Shear Wall Pier Design Summary - ACI 318-08 (Part 1 of 4)

Story	Pier Label	Station	Design Type	Pier Section	Edge Rebar	End Rebar	Rebar Spacing m	Required Reinf. Percentage %	Current Reinf. Percentage %	D/C Ratio
STORY1	P1	Top	Uniform		8d	8d	0.25	0.25	0.37	
STORY1	P1	Bottom	Uniform		8d	8d	0.25	0.25	0.37	
STORY1	P2	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P2	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P3	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P3	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P4	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P4	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P5	Top	Uniform		8d	8d	0.25	0.25	0.37	
STORY1	P5	Bottom	Uniform		8d	8d	0.25	0.25	0.37	
STORY1	P6	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P6	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P7	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P7	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P8	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P8	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P9	Top	Uniform		8d	8d	0.25	0.25	0.37	
STORY1	P9	Bottom	Uniform		8d	8d	0.25	0.25	0.37	
STORY1	P10	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P10	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P10	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P11	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P11	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P13	Top	Uniform		8d	8d	0.25	0.25	0.37	
STORY1	P13	Bottom	Uniform		8d	8d	0.25	0.25	0.37	
STORY1	P14	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P14	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P15	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P15	Bottom	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P16	Top	Uniform		8d	8d	0.25	0.25	0.31	
STORY1	P16	Bottom	Uniform		8d	8d	0.25	0.25	0.31	

Table 6.3 - Shear Wall Pier Design Summary - ACI 318-08 (Part 2 of 4)

Pier Leg	Leg X1 m	Leg Y1 m	Leg X2 m	Leg Y2 m	Edge Member Left m	Edge Member Right m	As Left m2	As Right m2	Shear Rebar m2/m	Compressive Stress Left tonf/m2
Top Leg 1	0	0	0.6	0					0.00045	9.64
Bottom Leg 1	0	0	0.6	0					0.00045	26.6
Top Leg 1	0.6	0	1.5	0					0.00045	26.87
Bottom Leg 1	0.6	0	1.5	0					0.00045	7.77
Top Leg 1	1.5	0	2.4	0					0.00045	23.31
Bottom Leg 1	1.5	0	2.4	0					0.00045	7.98
Top Leg 1	2.4	0	3.3	0					0.00045	22.32

Table 6.3 - Shear Wall Pier Design Summary - ACI 318-08 (Part 2 of 4, continued)

Pier Leg	Leg X1 m	Leg Y1 m	Leg X2 m	Leg Y2 m	Edge Member Left m	Edge Member Right m	As Left m2	As Right m2	Shear Rebar m2/m	Compressive Stress Left tonf/m2
Bottom Leg 1	2.4	0	3.3	0					0.00045	7.6
Top Leg 1	0	3	0.6	3					0.00045	19.48
Bottom Leg 1	0	3	0.6	3					0.00045	64.99
Top Leg 1	0.6	3	1.5	3					0.00045	44.83
Bottom Leg 1	0.6	3	1.5	3					0.00045	18.35
Top Leg 1	1.5	3	2.4	3					0.00045	35.94
Bottom Leg 1	1.5	3	2.4	3					0.00045	16.78
Top Leg 1	2.4	3	3.3	3					0.00045	36.16
Bottom Leg 1	2.4	3	3.3	3					0.00045	15.86
Top Leg 1	0	6	0.6	6					0.00045	19.15
Bottom Leg 1	0	6	0.6	6					0.00045	55.6
Top Leg 1	0.6	6	1.5	6					0.00045	46.9
Bottom Leg 1	0.6	6	1.5	6					0.00045	15.56
Bottom Leg 2	2.4	6	3.3	6					0.00045	15.14
Top Leg 1	1.5	6	2.4	6					0.00045	39.42
Bottom Leg 1	1.5	6	2.4	6					0.00045	15.48
Top Leg 1	0	9	0.6	9					0.00045	19.48
Bottom Leg 1	0	9	0.6	9					0.00045	64.99
Top Leg 1	0.6	9	1.5	9					0.00045	44.83
Bottom Leg 1	0.6	9	1.5	9					0.00045	18.35
Top Leg 1	1.5	9	2.4	9					0.00045	35.94
Bottom Leg 1	1.5	9	2.4	9					0.00045	16.78
Top Leg 1	2.4	9	3.3	9					0.00045	36.16
Bottom Leg 1	2.4	9	3.3	9					0.00045	15.86

Table 6.3 - Shear Wall Pier Design Summary - ACI 318-08 (Part 3 of 4)

Compressive Stress Limit Left tonf/m2	Compressive Stress Limit Right tonf/m2	C Depth Left m	C Limit Left m	C Depth Right m	C Limit Right m	Inelastic Rotational Demand	Inelastic Rotational Capacity	Normalized Compressive Stress tonf/m2
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							

Table 6.3 - Shear Wall Pier Design Summary - ACI 318-08 (Part 3 of 4, continued)

Compressive Stress Limit Left tonf/m2	Compressive Stress Limit Right tonf/m2	C Depth Left m	C Limit Left m	C Depth Right m	C Limit Right m	Inelastic Rotational Demand	Inelastic Rotational Capacity	Normalized Compressive Stress tonf/m2
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
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428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							
428.28	428.28							

Table 6.3 - Shear Wall Pier Design Summary - ACI 318-08 (Part 4 of 4)

C Depth m	Boundary Zone Left m	Boundary Zone Right m	Boundary Zone Length m	Warnings	Errors
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message

Table 6.3 - Shear Wall Pier Design Summary - ACI 318-08 (Part 4 of 4, continued)

C Depth m	Boundary Zone Left m	Boundary Zone Right m	Boundary Zone Length m	Warnings	Errors
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message
				No Message	No Message