

## **ANEXO E-1**

**CAMINERIAS (ESTADO ACTUAL). PROPIEDADES  
DINAMICAS, DESPLAZAMIENTOS Y  
FUERZAS EN MIEMBROS**

## PORTICOS DE SOPORTE DE PASILLOS DEL HOSPITAL CENTRAL DE VALENCIA

E I G E N V A L U E S   A N D   F R E Q U E N C I E S

MODE NUMBER	EIGENVALUE (RAD/SEC)**2	CIRCULAR FREQ (RAD/SEC)	FREQUENCY (CYCLES/SEC)	PERIOD (SEC)
1	.740829E+01	.272182E+01	.433191	2.308452
2	.342588E+03	.185091E+02	2.945819	.339464
3	.388752E+03	.197168E+02	3.138025	.318672
4	.478404E+03	.218724E+02	3.481107	.287265
5	.671510E+04	.819457E+02	13.042068	.076675
6	.737085E+04	.858536E+02	13.664031	.073185
7	.836450E+04	.914577E+02	14.555939	.068700
8	.673643E+05	.259546E+03	41.308084	.024208
9	.757969E+05	.275312E+03	43.817329	.022822
10	.118407E+06	.344103E+03	54.765695	.018260
11	.124142E+06	.352338E+03	56.076319	.017833
12	.194610E+06	.441147E+03	70.210685	.014243
13	.201106E+06	.448448E+03	71.372771	.014011
14	.492599E+06	.701854E+03	111.703540	.008952
15	.106698E+07	.103295E+04	164.398348	.006083

P A R T I C I P A T I N G   M A S S - (percent)

MODE	X-DIR	Y-DIR	Z-DIR	X-SUM	Y-SUM	Z-SUM
1	.000	96.037	.000	.000	96.037	.000
2	.000	3.777	.000	.000	99.814	.000
3	99.771	.000	.000	99.771	99.814	.000
4	.000	.000	.000	99.771	99.814	.000
5	.000	.182	.000	99.771	99.996	.000
6	.000	.000	.000	99.771	99.996	.000
7	.000	.000	23.224	99.771	99.996	23.224
8	.221	.000	.000	99.993	99.996	23.224
9	.000	.000	28.845	99.993	99.996	52.068
10	.000	.004	.000	99.993	100.000	52.068
11	.000	.000	.000	99.993	100.000	52.068
12	.000	.000	45.412	99.993	100.000	97.480
13	.005	.000	.000	99.998	100.000	97.480
14	.000	.000	2.340	99.998	100.000	99.820
15	.000	.000	.000	99.998	100.000	99.820

## PORTICOS DE SOPORTE DE PASILLOS DEL HOSPITAL CENTRAL DE VALENCIA

J O I N T   D I S P L A C E M E N T S

## LOAD COMBINATION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)
1	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000
3	.000000	.000000	.000000	.000000	.000000
4	.000000	.000000	.000000	.000000	.000000
5	-.4395E-03	.0000E+00	.1842E-03	.0000E+00	.3986E-03
6	-.3650E-03	.0000E+00	-.4863E-05	.0000E+00	.4503E-03
7	-.3042E-03	.0000E+00	-.1572E-03	.0000E+00	.6729E-03
8	.000000	.000000	-.001022	.000000	.000000
9	.3042E-03	.0000E+00	-.1572E-03	.0000E+00	-.6729E-03
10	.3650E-03	.0000E+00	-.4863E-05	.0000E+00	-.4503E-03
11	.4395E-03	.0000E+00	.1842E-03	.0000E+00	-.3986E-03

## LOAD COMBINATION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)
1	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000
3	.000000	.000000	.000000	.000000	.000000
4	.000000	.000000	.000000	.000000	.000000
5	.014675	.216789	.001900	.197365	.003115
6	.015235	.252342	.000465	.198001	.003126
7	.015539	.274461	.000320	.204011	.002336
8	.015440	.384423	.000249	.235395	.001511
9	.015539	.274461	.000320	.204011	.002336
10	.015235	.252342	.000465	.198001	.003126
11	.014675	.216789	.001900	.197365	.003115

## LOAD COMBINATION 3 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)
1	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000
3	.000000	.000000	.000000	.000000	.000000
4	.000000	.000000	.000000	.000000	.000000
5	.014235	.216789	.002084	.197365	.003514
6	.014870	.252342	.000460	.198001	.003577
7	.015235	.274461	.000163	.204011	.003009
8	.015440	.384423	-.000773	.235395	.001511
9	.015843	.274461	.000163	.204011	.001663
10	.015600	.252342	.000460	.198001	.002676
11	.015114	.216789	.002084	.197365	.002717

## PORTICOS DE SOPORTE DE PASILLOS DEL HOSPITAL CENTRAL DE VALENCIA

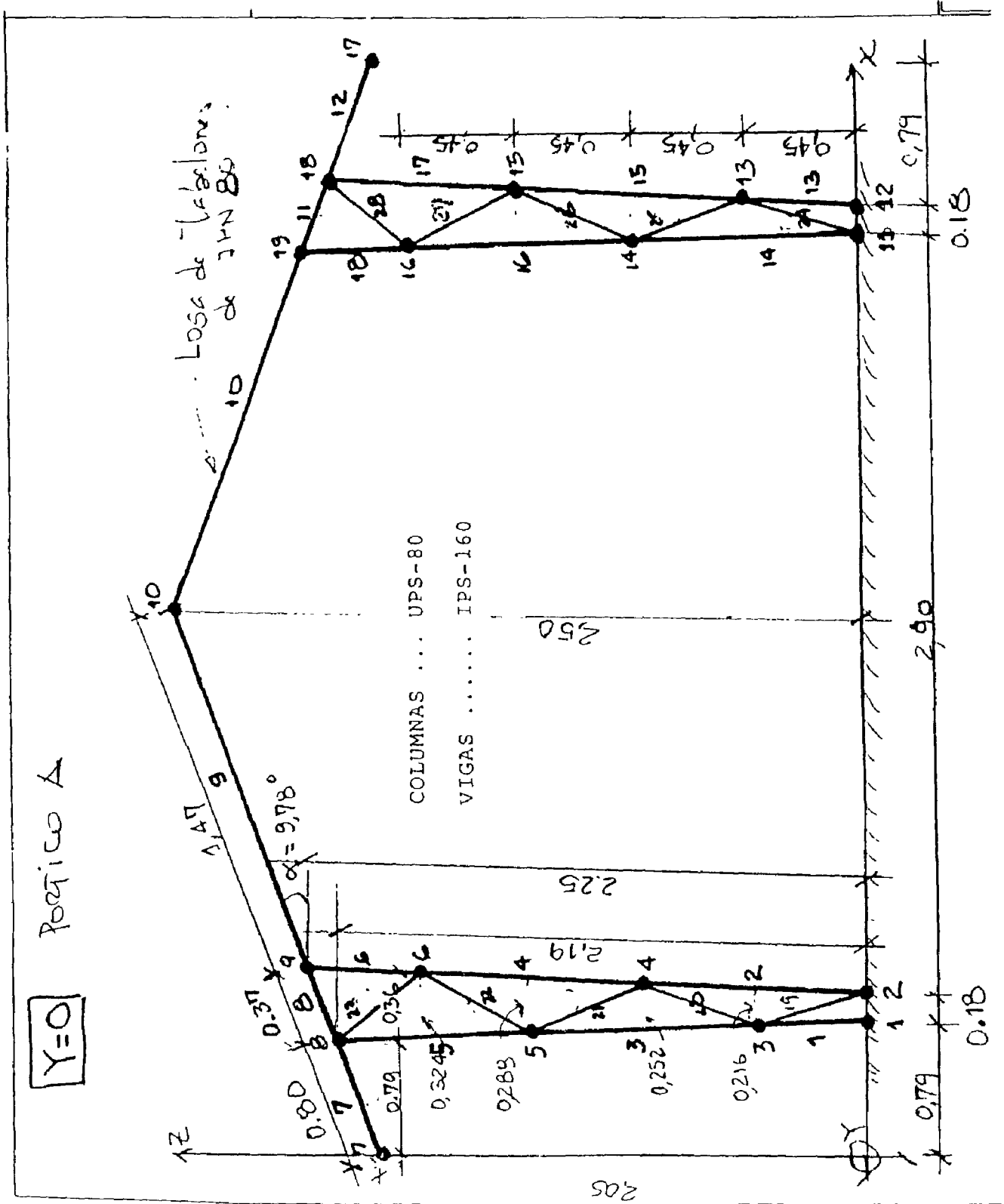
## FRAME ELEMENT FORCES

ELT ID	LOAD COMB	AXIAL FORCE	DIST ENDI	1-2 PLANE (x) SHEAR	MOMENT	1-3 PLANE (y) SHEAR	MOMENT	AXIAL TORQ
1 -----								
1	1	94.99	.0	19.67	-15.93			
			2.0	19.11	22.89			
	2	1825.61	.0	288.04	313.11	144.59	319.46	
			2.0	288.04	263.57	144.59	34.24	
	3	1920.60	.0	307.71	297.18	144.59	319.46	
			2.0	307.15	286.46	144.59	34.24	
2 -----								
2	1	-1325.29	.0	20.13	-16.39			
			2.1	20.69	26.71			
	2	2688.17	.0	264.90	297.24	134.67	312.57	
			2.1	264.90	262.22	134.67	35.53	
	3	1362.88	.0	285.03	280.85	134.67	312.57	
			2.1	285.59	288.94	134.67	35.53	
3 -----								
3	1	-1325.29	.0	-20.13	16.39			
			2.1	-20.69	-26.71			
	2	2688.17	.0	264.90	297.24	134.67	312.57	
			2.1	264.90	262.22	134.67	35.53	
	3	1362.88	.0	244.77	313.63	134.67	312.57	
			2.1	244.22	235.51	134.67	35.53	
4 -----								
4	1	94.99	.0	-19.67	15.93			
			2.0	-19.11	-22.89			
	2	1825.61	.0	288.04	313.11	144.59	319.46	
			2.0	288.04	263.57	144.59	34.24	
	3	1920.60	.0	268.37	329.03	144.59	319.46	
			2.0	268.93	240.67	144.59	34.24	
5 -----								
5	1	48.87	.0	.00	.00			
			.5	249.78	61.69			
	2	77.11	.0	47.08	.00	28.07	.00	
			.5	47.08	23.26	28.07	13.86	
	3	125.98	.0	47.08	.00	28.07	.00	
			.5	296.86	84.95	28.07	13.86	
6 -----								
6	1	142.57	.0	351.54	84.58			
			.3	503.58	213.21			
	2	523.30	.0	175.00	254.77	84.40	100.60	
			.7	17.236	11.13	4.40	75.33	

	3	665.88		4/4			
			.0	2104.50	339.35	84.40	100.60
			.3	2256.54	994.34	84.40	75.33
7	-----						
	1	-227.59					
			.0	-704.41	239.92		
			1.4	.00	-245.73		
			1.4	34.07	-244.59		
	2	518.53					
			.0	726.95	1043.26	127.60	184.46
			1.4	726.95	88.95	127.60	.00
	3	290.94					
			.0	22.54	1283.18	127.60	184.46
			1.4	761.02	-155.64	127.60	.00
8	-----						
	1	-227.59					
			.0	-34.07	-244.59		
			.1	.00	-245.73		
			1.4	704.41	239.92		
	2	518.53					
			.0	726.95	88.95	127.60	.00
			1.4	726.95	1043.26	127.60	184.46
	3	290.94					
			.0	692.88	-155.64	127.60	.00
			1.4	1431.36	1283.18	127.60	184.46
9	-----						
	1	142.57					
			.0	-503.58	213.21		
			.3	-351.54	84.58		
	2	523.30					
			.0	1752.96	781.13	84.40	75.33
			.3	1752.96	254.77	84.40	100.60
	3	665.88					
			.0	1249.38	994.34	84.40	75.33
			.3	1401.42	339.35	84.40	100.60
10	-----						
	1	48.87					
			.0	-249.78	61.69		
			.5	.00	.00		
	2	77.11					
			.0	47.08	23.26	28.07	13.86
			.5	47.08	.00	28.07	.00
	3	125.98					
			.0	-202.70	84.95	28.07	13.86
			.4	.00	6.57	28.07	2.61
			.5	47.08	.00	28.07	.00

## **ANEXO E-2**

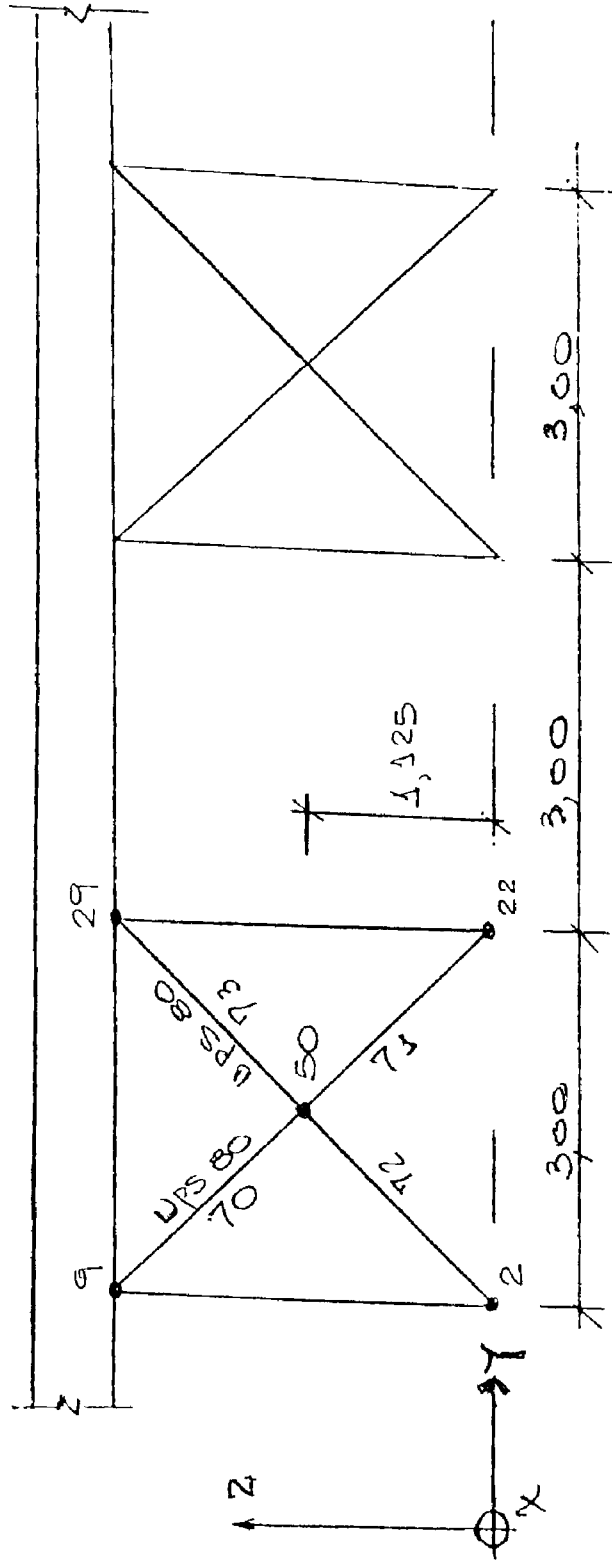
**CAMINERIAS. MODELO ESTRUCTURA  
REFORZADA: ENUMERACION DE  
JUNTAS Y ELEMENTOS**



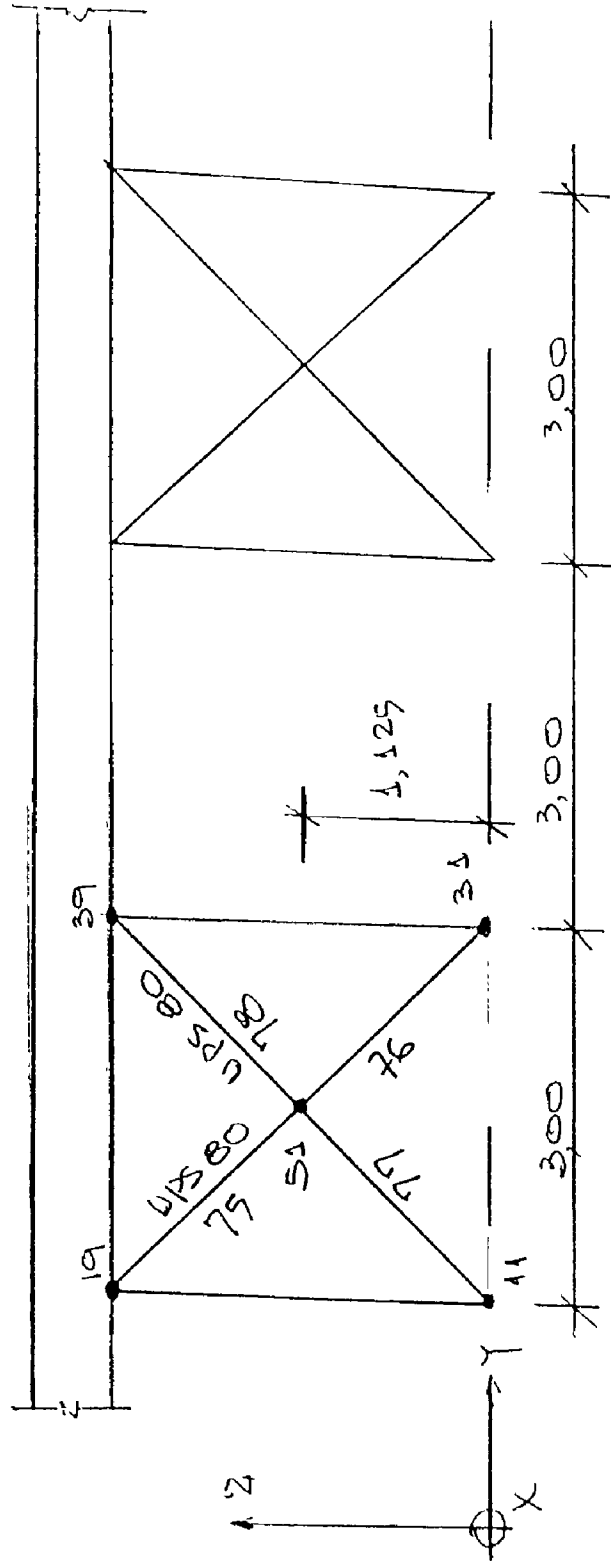




$\chi = 0,997 \text{ m}$  Problema 1



$\lambda = 3,87 \text{ m}$  Portico 2



## **ANEXO E-3**

**CAMINERIAS (REFUERZO TRANSVERSAL),  
ANALISIS DINAMICO, SOLICITACIONES  
EN ELEMENTOS, DESPLAZAMIENTOS  
Y REACCIONES**

## MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## E I G E N V A L U E S   A N D   F R E Q U E N C I E S

MODE NUMBER	EIGENVALUE (RAD/SEC)**2	CIRCULAR FREQ (RAD/SEC)	FREQUENCY (CYCLES/SEC)	PERIOD (SEC)
1	.511886E+03	.226249E+02	3.600866	.277711
2	.568224E+03	.238374E+02	3.793847	.263585
3	.418761E+05	.204637E+03	32.568918	.030704

## B A S E   F O R C E   R E A C T I O N   F A C T O R S

MODE	PERIOD T <sub>n</sub> (sec)	X DIRECTION	Y DIRECTION	Z DIRECTION	X MOMENT	Y MOMENT	Z MOMENT
1	.278	.415E-17	.782E-01	.000E+00	-.172E+00	.912E-17	-.275E+02
2	.264	-.162E-15	-.168E+02	.000E+00	.370E+02	-.357E-15	-.409E+02
3	.031	.168E+02	-.475E-13	.000E+00	.104E-12	.370E+02	.165E-12

## P A R T I C I P A T I N G   M A S S - (percent)

MODE	X-DIR	Y-DIR	Z-DIR	X-SUM	Y-SUM	Z-SUM
1	.000	.002	00.000	.000	.002	00.000
2	.000	99.998	00.000	.000	100.000	00.000
3	100.000	.000	00.000	100.000	100.000	00.000

## MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## FRAME ELEMENT FORCES

ELT	LOAD	AXIAL	DISP	1-2 PLANE		1-3 PLANE		AXIAL
ID	COMB	FORCE	END1	SHEAR	MOMENT	SHEAR	MOMENT	TORQ
1								
1	1	-516.01	.0	1.01	-1.32			
			.5	.79	.09			
	2	19.55	.0	3.76	.57	13.51	2.03	
			.5	3.76	1.12	13.51	4.07	
	3	-496.46	.0	4.78	.25	13.51	2.03	
			.5	4.56	1.21	13.51	4.07	
2								
1	1	-534.74	.0	1.56	-1.47			
			.9	1.56	.94			
	2	12.41	.0	3.91	1.17	22.82	6.85	
			.9	3.91	2.34	22.82	13.69	
	3	-522.33	.0	5.47	.70	22.82	6.85	
			.9	5.47	3.28	22.82	13.69	
3								
1	1	-495.27	.0	.15	.01			
			.3	.00	.02			
			.9	-1.30	-1.06			
	2	50.99	.0	5.08	1.24	29.80	7.95	
			.9	5.08	3.34	29.80	18.96	
	3	-444.28	.0	5.23	1.26	29.80	7.95	
			.9	4.78	3.29	29.80	18.96	
4								
1	1	-615.11	.0	-5.20	1.09			
			.9	-5.20	-3.59			
	2	90.47	.0	12.31	2.52	89.33	19.95	
			.9	12.31	8.56	89.33	60.44	
	3	-504.63	.0	7.11	3.61	89.33	19.95	
			.9	7.11	4.97	89.33	60.44	
5								
1	1	-356.95	.0	1.23	-1.29			
			.8	.79	.57			
	2	233.22	.0	9.17	3.78	79.11	28.39	
			.0	9.17	3.95	79.11	28.31	
	3	-123.73	.0	10.40	3.49	79.11	28.39	
			.0	9.96	4.51	79.11	28.31	

## MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## FRAME ELEMENT FORCES

EIT LOAD ID COMB	AXIAL DIST FORCE ENDI	1-2 PLANE		1-3 PLANE		AXIAL TORO	
		SHEAR	MOMENT	SHEAR	MOMENT		
6							
1	-944.11	.0	53.66	-3.96			
		.5	53.66	20.18			
	2	184.88	.0	51.85	8.93	259.62	65.90
			.5	51.85	14.40	259.62	50.95
	3	-759.22	.0	105.51	4.97	259.62	65.90
			.5	105.51	34.59	259.62	50.95
7							
1	315.71	.0	-64.22	.00			
		.1	.00	-4.12			
		.6	248.65	57.71			
	2	194.34	.0	44.60	.00	97.40	.00
			.6	44.60	27.92	97.40	60.96
	3	510.05	.0	-19.61	.00	97.40	.00
.0			.00	-3.38	97.40	3.82	
.6			293.25	85.63	97.40	60.96	
8							
1	-623.07	.0	107.37	58.13			
		.4	292.01	131.01			
	2	471.07	.0	91.95	23.71	1307.63	210.30
			.4	91.95	9.85	1307.63	266.94
	3	-152.00	.0	199.32	81.84	1307.63	210.30
			.4	383.96	140.85	1307.63	266.94
9							
1	-1566.24	.0	-484.62	151.19			
		1.0	.00	-81.14			
		1.5	259.08	-14.74			
	2	3.01	.0	16.47	24.25	28.17	41.47
			1.5	16.47	.01	28.17	.08
	3	-1563.23	.0	-468.15	175.44	28.17	41.47
.9			.00	-71.88	28.17	15.38	
1.5	275.56	-14.73	28.17	.08			
10							
1	-1566.69	.0	-258.97	-14.74			
		.5	.00	-81.08			
		1.5	484.74	151.36			
	2	2.68	.0	16.53	.01	28.25	.08
			1.5	16.53	24.31	28.25	41.54

## MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## FRAME ELEMENT FORCES

ELT LOAD	AXIAL DIST	1-2 PLANE		1-3 PLANE		AXIAL
ID COMP	FORCL ENDI	SHEAR	MOMENT	SHEAR	MOMENT	TORQ
3	-1564.01	.0	-242.44	-14.73	28.25	.08
		.5	.00	-72.89	28.25	13.53
		1.5	501.27	175.67	28.25	41.54
-----						
11						
1	-619.90	.0	-292.75	131.11		
		.4	-108.11	57.96		
2	472.72	.0	92.48	9.93	1309.58	267.33
		.4	92.48	23.82	1309.58	210.62
3	-147.26	.0	-200.27	141.04	1309.58	267.33
		.4	-15.63	81.78	1309.58	210.62
-----						
12						
1	317.01	.0	-248.35	57.53		
		.5	.00	-4.16		
		.6	64.52	.00		
2	195.04	.0	44.76	28.02	97.56	61.06
		.6	44.76	.00	97.56	.00
3	512.05	.0	-203.59	85.54	97.56	61.06
		.4	.00	7.63	97.56	21.33
		.6	109.28	.00	97.56	.00
-----						
13						
1	-516.15	.0	-1.07	.33		
		.5	-.85	-.10		
2	19.30	.0	3.76	.57	13.45	2.02
		.5	3.76	1.13	13.45	4.05
3	-496.85	.0	2.70	.90	13.45	2.02
		.5	2.92	1.02	13.45	4.05
-----						
14						
1	-534.70	.0	-1.58	.47		
		.9	-1.58	-.95		
2	12.03	.0	3.91	1.17	22.80	6.84
		.9	3.91	2.34	22.80	13.68
3	-522.67	.0	2.33	1.65	22.80	6.84
		.9	2.33	1.40	22.80	13.68
-----						
15						
1	-495.42	.0	-.08	-.03		
		.2	.00	-.04		
		.9	.34	.08		
2	50.10					

## MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## FRAME ELEMENT FORCES

ELT ID	LOAD COMB	AXIAL FORCE	DIST END1	1-2 PLANE		1-3 PLANE		AXIAL TORQ
				SHEAR	MOMENT	SHEAR	MOMENT	
16	3	-445.32	.0	5.08	1.24	29.70	7.92	
			.9	5.08	3.34	29.70	18.88	
			.0	5.00	1.21	29.70	7.92	
	1	-612.94	.9	5.42	3.43	29.70	18.88	
			.0	5.26	-1.11			
			.9	5.26	3.63			
17	2	89.19	.0	12.30	2.52	89.32	19.96	
			.9	12.30	8.55	89.32	60.43	
			.0	17.57	1.41	89.32	19.96	
	3	-523.75	.9	17.57	12.19	89.32	60.43	
			.0	-1.31	.32			
			.8	-1.84	-1.59			
18	2	231.41	.0	9.16	3.78	79.30	38.52	
			.8	9.16	3.94	79.30	28.37	
			.0	7.85	4.10	79.30	38.52	
	3	-125.98	.8	8.32	3.35	79.30	28.37	
			.0	-53.90	4.01			
			.5	-53.90	-20.25			
19	2	185.68	.0	51.80	8.93	260.25	66.11	
			.5	51.80	14.38	260.25	51.01	
			.0	-2.11	12.92	260.25	66.11	
	3	-759.85	.5	-2.11	-5.87	260.25	51.01	
			.0	.65	-1.09			
			.4	.00	.02			
20	2	10.34	.5	-1.21	.62			
			.0	.09	.02	2.42	.40	
			.5	.09	.02	2.42	.80	
	3	-262.60	.0	.74	-1.08	2.42	.40	
			.4	.00	.05	2.42	.64	
			.5	-1.12	.05	2.42	.80	
1	-289.16	.0	-1.59	.09				
		.3	.00	-1.01				
		.5	.26	.01				



## MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## FRAME ELEMENT FORCLS

ELT LOAD	AXIAL DIST	1-2 PLANE		1-3 PLANE		AXIAL		
ID COMB	FORCE END1	SHEAR	MOMENT	SHEAR	MOMENT	TORQ		
2	23.28	.0	.45	.09	18.58	3.49		
		.5	.45	.13	18.58	5.78		
		.0	-.15	.18	18.58	3.49		
	3	-265.78	.1	.00	.10	18.58	1.89	
			.5	.71	.14	18.58	5.78	
			.0	-.15	.18	18.58	3.49	
	-----							
	21	1	-204.94	.0	.89	-.15		
				.4	.00	.04		
.5				-.25	.02			
2		67.49	.0	.09	.04	6.17	1.25	
			.5	.09	.09	6.17	4.55	
			.0	.99	-.11	6.17	1.25	
3		-137.45	.5	.00	.12	6.17	4.09	
			.5	-.16	.12	6.17	4.55	
			.0	-.15	.18	18.58	3.49	
-----								
22	1	-359.44	.0	-1.50	.25			
			.5	-.25	-.24			
			.0	1.54	.34	84.14	18.43	
	2	150.50	.5	1.54	.48	84.14	26.52	
			.0	.04	.60	84.14	18.43	
			.5	1.19	.24	84.14	26.52	
	3	-208.94	.0	.04	.60	84.14	18.43	
			.5	1.19	.24	84.14	26.52	
			.0	.17	.13			
-----								
23	1	43.08	.1	.00	.14			
			.5	-1.25	-.15			
			.0	.69	.11	94.58	22.97	
	2	546.75	.5	.69	.26	94.58	27.23	
			.0	.86	.24	94.58	22.97	
			.3	.00	.16	94.58	7.38	
	3	589.84	.5	-.57	.10	94.58	27.23	
			.0	-.65	.09			
			.4	.00	-.03			
-----								
24	1	-273.02	.5	.21	-.02			
			.0	.09	.02	2.40	.40	
			.5	.09	.03	2.40	.80	
	2	10.21	.0	.09	.02	2.40	.40	
			.5	.09	.03	2.40	.80	
			.0	-.56	.11	2.40	.40	
	3	262.81	.3	.00	-.01	2.40	.39	

## MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## FRAME ELEMENT FORCES

ELEM ID	LOAD COMB	AXIAL FORCE	DIST END1	1-2 PLANE		1-3 PLANE		AXIAL TORQ
				SHEAR	MOMENT	SHEAR	MOMENT	
25			.5	.70	.01	2.40	.80	
1	-209.05		.0	.59	-.09			
			.3	.00	.01			
			.5	-.27	-.01			
2	22.85		.0	.44	.09	18.55	3.49	
			.5	.44	.12	18.55	5.77	
3	-266.19		.0	1.03	.00	18.55	3.49	
			.5	.18	.12	18.55	5.77	
26								
1	-206.52		.0	-.88	.15			
			.4	.00	-.04			
			.5	.24	-.02			
2	66.71		.0	.10	.04	6.17	1.27	
			.5	.10	.09	6.17	4.55	
3	-179.81		.0	-.79	.19	6.17	1.27	
			.4	.00	.04	6.17	3.56	
			.5	.34	.07	6.17	4.55	
27								
1	-360.43		.0	1.50	-.26			
			.5	.38	.24			
2	149.21		.0	1.56	.35	85.06	18.55	
			.5	1.56	.48	85.06	26.72	
3	-211.22		.0	3.06	.09	85.06	18.55	
			.5	1.93	.73	85.06	26.72	
28								
1	45.17		.0	-.18	-.13			
			.1	.00	-.14			
			.5	1.25	.15			
2	545.30		.0	.69	.11	94.76	23.03	
			.5	.69	.26	94.76	27.26	
3	590.47		.0	.51	-.02	94.76	23.03	
			.5	1.94	.41	94.76	27.26	

MODELO MATEMATICO PORTICO SIMPLE REFORZADO

MODE SHAPES

MODE SHAPE NUMBER 1 PERIOD = .277711 SECONDS

DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.000000	.000000	.000000	.003402	.000000	.000000
4	.000000	.000000	.000000	.017774	.000000	.000000
5	.000000	.000000	.000000	-.031638	.000000	.000000
6	.000000	.000000	.000000	-.086022	.000000	.000000
7	.000000	.087713	.000000	.029550	.000000	-.036131
8	.000000	.065673	.000000	-.059117	.000000	-.036131
9	.000000	.052666	.000000	-.099142	.000000	-.036131
10	.000000	.000276	.000000	.000255	.000000	-.036131
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.000000	.000000	.000000	-.003355	.000000	.000000
14	.000000	.000000	.000000	-.017564	.000000	.000000
15	.000000	.000000	.000000	.031188	.000000	.000000
16	.000000	.000000	.000000	.085036	.000000	.000000
17	.000000	-.087161	.000000	-.029272	.000000	-.036131
18	.000000	-.065121	.000000	.058544	.000000	-.036131
19	.000000	-.052114	.000000	.098120	.000000	-.036131
100	.000000	.000276	.000000	.000000	.000000	-.036131

MODELO MATEMATICO PORTICO SIMPLE REFORZADO

M O D E L O S H A P E S

MODE SHAPE NUMBER 2 PERIOD = .261585 SECONDS

DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.000000	.000000	.000000	-.002851	.000000	.000000
4	.000000	.000000	.000000	-.019091	.000000	.000000
5	.000000	.000000	.000000	.028008	.000000	.000000
6	.000000	.000000	.000000	.093839	.000000	.000000
7	.000000	-.058988	.000000	-.027217	.000000	-.000168
8	.000000	-.059090	.000000	.054434	.000000	-.000168
9	.000000	-.059150	.000000	.114738	.000000	-.000168
10	.000000	-.059394	.000000	-.057610	.000000	-.000168
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.000000	.000000	.000000	-.002865	.000000	.000000
14	.000000	.000000	.000000	-.019218	.000000	.000000
15	.000000	.000000	.000000	.028134	.000000	.000000
16	.000000	.000000	.000000	.094513	.000000	.000000
17	.000000	-.059800	.000000	-.027500	.000000	-.000168
18	.000000	-.059698	.000000	.055001	.000000	-.000168
19	.000000	-.059637	.000000	.115700	.000000	-.000168
100	.000000	-.059394	.000000	.000000	.000000	-.000168

MODELO MATEMATICO POR FICHO SIMPLE REFORZADO

M O D E L S H A P E S

MODE SHAPE NUMBER 3 PERIOD = .020704 SECONDS

DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.000000	.000000	.000461	.000000	-.006726	.000000
4	.000000	.000000	-.000581	.000000	-.028427	.000000
5	.000000	.000000	.002864	.000000	.044370	.000000
6	.000000	.000000	-.004819	.000000	.118011	.000000
7	.059395	.000000	.027956	.000000	.002433	.000000
8	.059795	.000000	.018225	.000000	.040594	.000000
9	.059395	.000000	-.000489	.000000	.051648	.000000
10	.059395	.000000	-.000022	.000000	-.028306	.000000
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.000000	.000000	-.000455	.000000	-.006730	.000000
14	.000000	.000000	.000564	.000000	-.028424	.000000
15	.000000	.000000	-.002815	.000000	.044328	.000000
16	.000000	.000000	.004741	.000000	.117947	.000000
17	.059395	.000000	-.028152	.000000	.002442	.000000
18	.059395	.000000	-.018387	.000000	.040739	.000000
19	.059395	.000000	.000392	.000000	.051807	.000000
100	.059395	.000000	.000000	.000000	.000000	.000000

MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## JOINT DISPLACEMENTS

LOAD COMBINATION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.0000E+00	.0000E+00	-.1419E-04	.0000E+00	-.3084E-05	.0000E+00
4	.0000E+00	.0000E+00	-.2923E-04	.0000E+00	.1324E-04	.0000E+00
5	.0000E+00	.0000E+00	-.4144E-04	.0000E+00	-.2380E-05	.0000E+00
6	.0000E+00	.0000E+00	-.6286E-04	.0000E+00	-.5744E-04	.0000E+00
7	.1753E-06	.0000E+00	-.7822E-04	.0000E+00	-.3339E-04	.0000E+00
8	.1753E-06	.0000E+00	-.5977E-04	.0000E+00	.6623E-05	.0000E+00
9	.1753E-06	.0000E+00	-.8866E-04	.0000E+00	.1721E-03	.0000E+00
10	.1753E-06	.0000E+00	-.3719E-03	.0000E+00	-.1339E-06	.0000E+00
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.0000E+00	.0000E+00	-.1420E-04	.0000E+00	.2969E-05	.0000E+00
14	.0000E+00	.0000E+00	-.2923E-04	.0000E+00	-.1341E-04	.0000E+00
15	.0000E+00	.0000E+00	-.4143E-04	.0000E+00	.2656E-05	.0000E+00
16	.0000E+00	.0000E+00	-.6274E-04	.0000E+00	.5811E-04	.0000E+00
17	.1753E-06	.0000E+00	-.7836E-04	.0000E+00	.3341E-04	.0000E+00
18	.1753E-06	.0000E+00	-.5983E-04	.0000E+00	-.6305E-05	.0000E+00
19	.1753E-06	.0000E+00	-.8858E-04	.0000E+00	-.1718E-03	.0000E+00
100	.1753E-06	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00

MODELO MATEMATICO PORTICO SIMPLE REFORZADO

## JOINT DISPLACEMENTS

LOAD COMBINATION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.00000100	.0000E+00	.5378E-06	.2598E-03	.7850E-05	.0000E+00
4	.000000	.000000	.000001	.001738	.000033	.000000
5	.000000	.000000	.000001	.002552	.000052	.000000
6	.000000	.000000	.000006	.008542	.000138	.000000
7	.000069	.005382	.000033	.002479	.000003	.000011
8	.000069	.005383	.000021	.004958	.000047	.000011
9	.000069	.005384	.000001	.010442	.000060	.000011
10	.000069	.005386	.000000	.005225	.000031	.000011
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.0000E+00	.0000E+00	.5308E-06	.2586E-03	.7855E-05	.0000E+00
14	.000000	.000000	.000001	.001736	.000033	.000000
15	.000000	.000000	.000003	.002540	.000052	.000000
16	.000000	.000000	.000006	.008540	.000138	.000000
17	.000069	.005391	.000033	.002483	.000003	.000011
18	.000069	.005390	.000021	.004966	.000048	.000011
19	.000069	.005389	.000000	.010457	.000060	.000011
100	.000069	.005386	.000000	.000000	.000000	.000011

MODELO MATEMATICO PORTICO SIMPLIC REFORZADO

## JOINT DISPLACEMENTS

LOAD COMBINATION 3 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.0000E+00	.0000E+00	-.1366E-04	.2598E-03	.4766E-05	.0000E+00
4	.000000	.000000	-.000029	.001738	.000046	.000000
5	.000000	.000000	-.000038	.002552	.000049	.000000
6	.000000	.000000	-.000057	.008542	.000080	.000000
7	.000069	.005382	-.000046	.002479	-.000031	.000011
8	.000069	.005383	-.000039	.004958	.000054	.000011
9	.000069	.005384	-.000088	.010442	.000232	.000011
10	.000069	.005386	-.000372	.005225	.000071	.000011
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.0000E+00	.0000E+00	-.1367E-04	.2586E-03	.1082E-04	.0000E+00
14	.000000	.000000	-.000029	.001736	.000020	.000000
15	.000000	.000000	-.000038	.002540	.000054	.000000
16	.000000	.000000	-.000057	.008540	.000196	.000000
17	.000069	.005391	-.000046	.002483	.000036	.000011
18	.000069	.005390	-.000038	.004966	.000041	.000011
19	.000069	.005389	-.000088	.010457	-.000111	.000011
100	.000069	.005386	.000000	.000000	.000000	.000011



MODELO MATEMATICO PORTICO SIMPLE REFORZADO

REACTIONS AND APPLIED FORCES

LOAD COMBINATION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Z)	M(Y)
1	-40.2485	515.8259	.3209
2	-116.3510	704.6594	.5616
3	243.5678	.0000	.0000
4	-241.9491	.0000	.0000
5	313.2802	.0000	.0000
6	-105.2918	.0000	.0000
7	-287.0797	.0000	.0000
8	935.1503	.0000	.0000
9	823.2327	.0000	.0000
10	.4232	.0000	.0000
11	116.3621	784.6897	-.5678
12	40.2052	515.9694	-.3292
13	-245.6297	.0000	.0000
14	241.7270	.0000	.0000
15	-307.8357	.0000	.0000
16	102.1676	.0000	.0000
17	288.4192	.0000	.0000
18	-933.8082	.0000	.0000
19	-826.3375	.0000	.0000
100	.0000	.0000	.0000





## **ANEXO E-4**

**CAMINERIAS (REFUERZO EN LAS DOS  
DIRECCIONES), ANALISIS DINAMICO,  
SOLICITACIONES EN ELEMENTOS,  
DESPLAZAMIENTOS Y REACCIONES**

**DOCUMENTO ORIGINAL EN MAL ESTADO**

MODELO MATEMATICO CAMINERIAS REFORZADAS

## E I G E N V A L U E S   A N D   F R E Q U E N C I E S

MODEL NUMBER	EIGENVALUE (RAD/SEC)**2	CIRCULAR FREQ (RAD/SEC)	FREQUENCY (CYCLES/SEC)	PERIOD (SEC)
1	.186558E+05	.136505E+03	21.730256	.046002
2	.418776E+05	.204640E+03	32.569492	.030704
3	.494718E+05	.222310E+03	35.381759	.028263

MODELO MATEMATICO CAMINERIAS REFORZADAS

## P A R T I C I P A T I N G   M A S S   (percent)

MODE	X-DIR	Y-DIR	Z-DIR	X-SUM	Y-SUM	Z-SUM
1	.000	100.000	00.000	.000	100.000	00.000
2	100.000	.000	00.000	100.000	100.000	00.000
3	.000	.000	00.000	100.000	100.000	00.000

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT	LOAD	AXIAL	DIST	1-2 PLANE		1-3 PLANE		AXIAL
ID	COMB	FORCE	ENDI	SHEAR	MOMENT	SHEAR	MOMENT	TORQ
1								
1	-469.67	.0	.83	-.29	-.00	.00		
		.5	.61	.05	-.00	-.00		
2	119.07	.0	3.79	.58	.33	.05		
		.5	3.79	1.13	.33	.10		
3	-350.60	.0	4.62	.31	.32	.05		
		.5	4.40	1.18	.32	.10		
2								
1	-486.45	.0	1.49	-.45	.01	-.00		
		.9	1.49	.90	.01	.01		
2	122.93	.0	3.91	1.17	.77	.23		
		.9	3.91	2.35	.77	.46		
3	-363.52	.0	5.41	.73	.78	.23		
		.9	5.41	3.24	.78	.47		
3								
1	-450.48	.0	.30	-.03	.00	.00		
		.6	.00	.06	.00	.00		
		.9	-.15	.04	.00	.00		
2	124.56	.0	5.10	1.25	.80	.22		
		.9	5.10	3.35	.80	.50		
3	-325.92	.0	5.39	1.22	.80	.21		
		.9	4.95	3.40	.80	.51		
4								
1	-558.69	.0	-5.01	1.05	-.04	.01		
		.9	-5.01	-3.45	-.04	-.02		
2	168.91	.0	12.32	2.52	3.08	.69		
		.9	12.32	8.57	3.08	2.08		
3	-389.78	.0	7.31	3.58	3.04	.70		
		.9	7.31	5.11	3.04	2.06		
5								
1	-324.81	.0	.62	-.17	-.01	.00		
		.8	.18	.16	-.01	-.01		
2	247.28	.0	9.30	3.79	2.11	1.08		
		.8	9.30	4.08	2.11	.70		
3	-77.53	.0	9.92	3.62	2.10	1.08		
		.8	9.48	4.24	2.10	.69		

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT	LOAD	AXIAL	DIST	1-2 PLANE		1-3 PLANE		AXIAL	
ID	COMB	FORCE	END1	SHEAR	MOMENT	SHEAR	MOMENT	TORQ	
6									
1	-856.14	.0	51.57	-1.81	.44	-1.04			
		.5	51.57	19.40	.44	.16			
		2	289.60	.0	52.12	8.94	13.63	2.44	
				.5	52.12	14.54	13.63	3.70	
		3	-566.53	.0	103.69	5.13	14.08	2.40	
				.5	103.69	33.94	14.08	3.86	
7									
1	340.05	.0	-69.80	.00	-1.02	.00			
		.1	.00	-4.87	-1.02	-1.00			
		.6	243.06	54.22	-1.02	-1.01			
		2	203.73	.0	46.76	.00	3.12	.00	
				.6	46.76	29.26	3.12	1.95	
		3	543.78	.0	-23.05	.00	3.09	.00	
.0	.00			-1.53	3.09	.14			
.6	289.82			83.48	3.09	1.94			
8									
1	-563.99	.0	126.54	54.21	.91	-1.10			
		.4	311.19	134.09	.91	.23			
		2	493.73	.0	104.13	25.67	24.84	4.66	
				.4	104.13	12.68	24.84	4.40	
		3	-70.27	.0	230.67	79.89	25.75	4.56	
				.4	415.31	146.78	25.75	4.64	
9									
1	-1554.34	.0	-486.69	153.60	.03	-1.05			
		1.0	.00	-80.71	.03	-1.02			
		1.5	257.02	-15.36	.03	.00			
		2	29.94	.0	17.25	24.96	.36	.53	
				1.5	17.25	1.56	.36	.00	
		3	-1524.40	.0	-469.44	178.57	.39	.48	
.9	.00			-71.39	.39	.18			
1.5	274.27			-13.80	.39	.00			
10									
1	-1554.71	.0	-256.93	-15.36	-1.03	.00			
		.5	.00	-80.64	-1.03	-1.02			
		1.5	486.79	153.76	-1.03	-1.05			
		2	29.97	.0	17.29	1.56	.36	.00	
				1.5	17.29	25.02	.36	.53	



## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT LOAD ID COMB	AXIAL DIST FORCE ENDI	1-2 PLANE SHEAR	MOMENT	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
3	-1524.64	.0	-239.62	-13.80	.33	.00
		.5	.00	-72.49	.33	.16
		1.5	504.08	178.77	.33	.48
11 -----						
1	-861.23	.0	-311.84	134.18	-.91	.23
		.4	-127.19	54.07	-.91	-.10
2	495.11	.0	104.51	12.73	24.83	4.40
		.4	104.51	25.76	24.83	4.66
3	-66.12	.0	-207.33	146.92	23.92	4.64
		.4	-22.68	79.83	23.92	4.56
12 -----						
1	341.22	.0	-242.80	54.05	.02	-.01
		.5	.00	-4.91	.02	-.00
		.6	70.07	.00	.02	.00
2	204.31	.0	46.89	29.35	3.11	1.95
		.6	46.89	.00	3.11	.00
3	545.52	.0	-195.91	83.40	3.14	1.94
		.4	.00	8.26	3.14	.72
		.6	116.96	.00	3.14	.00
13 -----						
1	-469.84	.0	-.88	.28	-.00	.00
		.5	-.66	-.06	-.00	-.00
2	119.01	.0	3.80	.58	.32	.05
		.5	3.80	1.13	.32	.10
3	-350.83	.0	2.91	.87	.32	.05
		.5	3.14	1.07	.32	.10
14 -----						
1	-486.46	.0	-1.51	.45	.01	-.00
		.9	-1.51	-.91	.01	.01
2	122.82	.0	3.91	1.17	.77	.23
		.9	3.91	2.35	.77	.46
3	-363.63	.0	2.40	1.63	.78	.23
		.9	2.40	1.44	.78	.47
15 -----						
1	-450.65	.0	-.24	.01	.00	.00
		.5	.00	-.05	.00	.00
		.9	.18	-.02	.00	.00
2	124.17					

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELEM ID	LOAD COMB	AXIAL DISPL FORCE INDI	1-2 PLANE		1-3 PLANE		AXIAL TORQ
			SHEAR	MOMENT	SHEAR	MOMENT	
16	3	-426.48	.0	5.10	1.25	.79	.21
			.9	5.10	3.35	.79	.50
			.0	4.86	1.26	.80	.21
	1	-556.77	.9	5.28	3.34	.80	.50
			.0	5.06	-1.07	-1.04	.01
			.9	5.06	3.49	-1.04	-1.02
17	2	167.77	.0	12.31	3.52	3.08	.69
			.9	12.31	8.56	3.08	2.00
			.0	17.38	1.46	3.04	.70
	3	-389.00	.9	17.38	12.05	3.04	2.05
			.0	-1.69	.20	-1.01	.00
			.8	-1.22	-1.18	-1.01	-1.01
18	1	-325.23	.0	9.29	3.80	2.12	1.08
			.8	9.29	4.07	2.12	.70
			.0	8.60	3.99	2.10	1.08
	2	245.56	.8	9.07	3.89	2.10	.69
			.0	-51.79	3.85	.44	-1.04
			.5	-51.79	-19.46	.44	.16
19	3	-567.25	.0	52.07	8.94	13.64	2.44
			.5	52.07	14.52	13.64	3.70
			.0	.28	12.78	14.08	2.40
	1	-248.43	.5	.28	-4.94	14.08	3.86
			.0	.63	-1.09	.00	.00
			.4	.00	.03	.00	.00
20	2	62.98	.5	-1.23	.01	.00	.00
			.0	.11	.02	.06	.01
			.5	.11	.03	.06	.02
	3	-185.45	.0	.74	-1.07	.06	.01
			.4	.00	.05	.06	.02
			.5	-1.12	.04	.06	.02
1	-262.91	.0	-1.57	.09	.01	.00	
		.3	.00	-1.01	.01	.00	
		.5	.28	.01	.01	.00	

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT LOAD ID COMB	AXIAL DIST FORCE END1		1-2 PLANE SHEAR	MOMENT	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ	
2	70.42	.0	.45	.09	.61	.11		
		.5	.45	.13	.61	.19		
	3	-192.49	.0	-.13	.18	.61	.11	
			.1	.00	.11	.61	.07	
			.5	.73	.15	.61	.19	
-----								
21	1	-186.50	.0	.88	-.14	.01	-.00	
			.4	.00	.04	.01	.00	
			.5	-.26	.02	.01	.00	
	2	82.22	.0	.10	.04	.07	.07	
			.5	.10	.09	.07	.10	
	3	-104.27	.0	.98	-.10	.07	.07	
			.5	.00	.12	.07	.10	
			.5	-.16	.11	.07	.11	
	-----							
	22	1	-126.12	.0	-1.43	.24	-.02	.00
				.5	-.29	-.20	-.02	-.01
2		172.32	.0	1.55	.25	2.74	.58	
			.5	1.55	.48	2.74	.88	
3		-153.81	.0	.13	.58	2.72	.58	
			.5	1.27	.26	2.72	.88	
-----								
23		1	38.36	.0	.15	.13	-.03	.01
				.1	.00	.14	-.03	.01
	.5			-1.28	-.17	-.03	-.01	
	2	546.88	.0	.69	.11	2.28	.53	
			.5	.69	.26	2.28	.69	
	3	585.25	.0	.84	.24	2.25	.54	
			.3	.00	.15	2.25	.19	
			.5	-.59	.09	2.25	.68	
	-----							
	24	1	-248.52	.0	-.63	.09	.00	.00
				.4	.00	-.03	.00	.00
.5				.23	-.01	.00	.00	
2		62.95	.0	.11	.02	.06	.01	
			.5	.11	.03	.06	.02	
3		-185.57	.0	-.52	.11	.06	.01	
			.3	.00	-.01	.06	.01	

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELEM ID	LOAD COMB	AXIAL DIST			1-2 PLANE		1-3 PLANE		AXIAL TORG
		FORCE	ENDJ	.5	SHEAR	MOMENT	SHEAR	MOMENT	
25				.5	.31	.00	.06	.00	
1	-262.83			.0	.57	.00	.01	.00	
				.3	.00	.01	.01	.00	
				.5	-.29	-.01	.01	.00	
2	70.20			.0	.45	.09	.60	.11	
				.5	.45	.13	.60	.19	
3	-192.63			.0	1.02	.01	.61	.11	
				.5	.16	.12	.61	.19	
26									
1	-187.94			.0	-.87	.14	.01	-.00	
				.4	.00	-.04	.01	.00	
				.5	.25	-.02	.01	.00	
2	81.77			.0	.10	.04	.07	.07	
				.5	.10	.09	.07	.10	
3	106.17			.0	-.77	.19	.07	.07	
				.4	.00	.04	.07	.09	
				.5	.35	.02	.07	.10	
27									
1	-327.04			.0	1.43	-.24	-.02	.00	
				.5	.30	.23	-.02	-.01	
2	171.30			.0	1.57	.35	2.76	.58	
				.5	1.57	.49	2.76	.89	
3	-155.74			.0	3.00	.11	2.74	.59	
				.5	1.87	.71	2.74	.88	
28									
1	40.26			.0	-.15	-.13	-.03	.01	
				.1	.00	-.14	-.03	.01	
				.5	1.28	.17	-.03	-.01	
2	545.44			.0	.69	.11	2.28	.53	
				.5	.69	.26	2.28	.69	
3	585.70			.0	.54	-.02	2.25	.54	
				.5	1.97	.43	2.25	.68	
29									
1	462.62			.0	.83	-.28	.00	.00	
				.3	.61	.05	.00	.00	
2	119.07			.0	3.79	.58	.33	.05	
				.5	3.79	1.13	.33	.10	

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAMUT ELEMENT FORCES

ULT LOAD ID COMB	AXIAL DIST FORCE END1	1-2 PLANE SHEAR	MOMENT	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
7	750.60	.0	4.62	.31	.33	.05
		.5	4.40	1.18	.33	.10
-----						
32						
1	-486.45	.0	1.49	-.45	-.01	.00
		.9	1.49	.90	-.01	-.01
2	122.93	.0	3.91	1.17	.77	.23
		.9	3.91	2.35	.77	.46
3	-163.50	.0	5.41	.73	.75	.23
		.9	5.41	3.24	.75	.46
-----						
13						
1	-450.48	.0	.30	-.03	-.00	.00
		.6	.00	.06	-.00	-.00
		.9	-.15	.04	-.00	-.00
2	124.56	.0	5.10	1.25	.80	.22
		.9	5.10	3.35	.80	.50
3	-335.92	.0	5.39	1.22	.79	.22
		.9	4.95	3.40	.79	.50
-----						
34						
1	-558.69	.0	-5.01	1.05	.04	-.01
		.9	-5.01	-3.45	.04	.02
2	168.91	.0	12.32	2.52	3.08	.69
		.9	12.32	8.57	3.08	2.08
3	-389.78	.0	7.31	3.58	3.12	.68
		.9	7.31	5.11	3.12	2.11
-----						
35						
1	-324.81	.0	.62	-.17	.01	-.00
		.8	.18	.16	.01	.01
2	247.28	.0	9.30	3.79	2.11	1.08
		.8	9.30	4.08	2.11	.70
3	-77.53	.0	9.92	3.62	2.13	1.08
		.8	9.48	4.24	2.13	.71
-----						
36						
1	-856.14	.0	51.57	-3.81	-.44	.04
		.5	51.57	19.40	-.44	-.16
2	289.60	.0	52.12	8.94	13.63	3.44
		.5	52.12	14.54	13.63	3.70
3	-566.53	.0				

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT ID	LOAD COMB	AXIAL FORCE	DIST ENDI	1-2 PLANE		1-3 PLANE		AXIAL TORQ
				SHEAR	MOMENT	SHEAR	MOMENT	
			.0	103.69	5.13	13.19	2.48	
			.5	103.69	33.94	13.19	3.54	
37								
1	340.05		.0	-69.80	.00	.02	.00	
			.1	.00	-4.87	.02	.00	
			.6	243.06	54.22	.02	.01	
2	203.73		.0	46.76	.00	3.12	.00	
			.6	46.76	29.26	3.12	1.95	
3	543.78		.0	-23.05	.00	3.14	.00	
			.0	.00	-.53	3.14	.14	
			.6	289.82	83.48	3.14	1.96	
38								
1	-563.99		.0	126.54	54.21	-.91	.10	
			.4	311.19	134.09	-.91	-.23	
2	493.73		.0	104.13	25.67	24.84	4.66	
			.4	104.13	12.68	24.84	4.40	
3	-70.27		.0	230.67	79.89	23.93	4.76	
			.4	415.31	146.78	23.93	4.17	
39								
1	-1554.34		.0	-486.69	153.60	-.03	.05	
			1.0	.00	-80.71	-.03	.02	
			1.5	257.02	-15.36	-.03	.00	
2	29.94		.0	17.25	24.96	.36	.53	
			1.5	17.25	1.56	.36	.00	
3	-1524.40		.0	-469.44	178.57	.33	.58	
			.9	.00	-71.39	.33	.21	
			1.5	274.27	-13.80	.33	.00	
40								
1	-1554.71		.0	-256.92	-15.36	.03	.00	
			.5	.00	-80.66	.03	.02	
			1.5	486.79	153.76	.03	.05	
2	30.07		.0	17.29	1.56	.36	.00	
			1.5	17.29	25.02	.36	.53	
3	-1524.64		.0	-239.62	-13.80	.39	.00	
			.5	.00	-72.49	.39	.19	
			1.5	504.08	178.77	.39	.58	
41								
1	-561.23		.0	-311.84	134.18	.91	-.23	
			.4	-127.19	54.07	.91	.10	

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT	LOAD	AXIAL	DIST	1-2 PLANE		1-3 PLANE		AXIAL
ID	COMB	FORCE	ENDI	SHEAR	MOMENT	SHEAR	MOMENT	TORQ
	2	495.11						
			.0	104.51	12.73	24.83	4.40	
			.4	104.51	25.76	24.83	4.65	
	3	-66.12						
			.0	-207.33	146.92	25.74	4.17	
			.4	-22.68	79.83	25.74	4.76	
42								
	1	341.22						
			.0	-242.80	54.05	-1.02	.01	
			.5	.00	-4.91	-1.02	.00	
			.6	70.07	.00	-1.02	.00	
	2	204.31						
			.0	46.89	29.35	3.11	1.95	
			.6	46.89	.00	3.11	.00	
	3	545.52						
			.0	-195.91	83.40	3.09	1.96	
			.4	.00	8.26	3.09	.73	
			.6	116.96	.00	3.09	.00	
43								
	1	-469.84						
			.0	-.88	.28	.00	.00	
			.5	-.66	-1.06	.00	.00	
	2	119.01						
			.0	3.80	.58	.32	.05	
			.5	3.80	1.13	.32	.10	
	3	-350.83						
			.0	2.91	.87	.33	.05	
			.5	3.14	1.07	.33	.10	
44								
	1	-486.46						
			.0	-1.51	.45	-1.01	.00	
			.9	-1.51	-1.91	-1.01	-1.01	
	2	122.82						
			.0	3.91	1.17	.77	.23	
			.9	3.91	2.35	.77	.46	
	3	-363.63						
			.0	2.40	1.63	.76	.23	
			.9	2.40	1.44	.76	.46	
45								
	1	-450.65						
			.0	-.24	.01	-1.00	.00	
			.5	.00	-1.05	-1.00	-1.00	
			.9	.18	-1.02	-1.00	-1.00	
	2	124.17						
			.0	5.10	1.25	.79	.21	
			.9	5.10	3.35	.79	.50	
	3	-326.48						
			.0	4.86	1.26	.79	.22	
			.9	5.28	3.34	.79	.50	
46								
	1	-556.77						
			.0	5.06	-1.07	.04	-1.01	

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT ID	LOAD COMB	AXIAL FORCE	DIST END1	1-2 PLANE		1-3 PLANE		AXIAL TORQ
				SHEAR	MOMENT	SHEAR	MOMENT	
2	167.77		.9	5.06	3.49	.04	.02	
			.0	12.31	2.52	3.08	.69	
			.9	12.31	8.56	3.08	2.08	
3	-389.00		.0	17.38	1.46	3.11	.68	
			.9	17.38	12.05	3.11	2.10	
-----								
47	1	-325.23	.0	-.69	.20	.01	-.00	
			.8	-.22	-.18	.01	.01	
2	245.56		.0	9.29	3.80	2.12	1.08	
			.8	9.29	4.07	2.12	.70	
3	-79.67		.0	8.60	3.99	2.13	1.08	
			.8	9.07	3.89	2.13	.71	
-----								
48	1	-857.50	.0	-51.79	3.85	-.44	.04	
			.5	-51.79	-19.46	-.44	-.16	
2	290.25		.0	52.07	8.94	13.64	2.44	
			.5	52.07	14.52	13.64	3.70	
3	-567.25		.0	.28	12.78	13.20	2.48	
			.5	.28	-4.94	13.20	3.54	
-----								
49	1	-248.43	.0	.63	-.09	.00	.00	
			.4	.00	.03	.00	.00	
			.5	-.23	.01	.00	.00	
2	62.98		.0	.11	.02	.06	.01	
			.5	.11	.03	.06	.02	
3	-185.45		.0	.74	-.07	.06	.01	
			.4	.00	.05	.06	.02	
			.5	-.12	.04	.06	.02	
-----								
50	1	-262.91	.0	-.57	.09	-.01	.00	
			.3	.00	-.01	-.01	.00	
			.5	.28	.01	-.01	-.00	
2	70.42		.0	.45	.09	.61	.11	
			.5	.45	.13	.61	.19	
3	-192.49		.0	-.13	.18	.60	.11	
			.1	.00	.11	.60	.07	
			.5	.73	.15	.60	.19	



## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT LOAD ID COMB	AXIAL DIST FORCE ENDI	1-2 PLANE SHEAR	MOMENT	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
51						
1	-186.50	.0	.88	-.14	-.01	.00
		.4	.00	.04	-.01	.00
		.5	-.26	.02	-.01	-.00
2	82.22	.0	.10	.04	.07	.07
		.5	.10	.09	.07	.10
3	-104.27	.0	.98	-.10	.06	.07
		.5	.00	.12	.06	.10
		.5	-.16	.11	.06	.10
52						
1	-326.12	.0	-1.43	.24	.02	-.00
		.5	-.29	-.22	.02	.01
2	172.32	.0	1.55	.35	2.74	.58
		.5	1.55	.48	2.74	.88
3	-153.81	.0	.13	.58	2.76	.58
		.5	1.27	.26	2.76	.89
53						
1	38.36	.0	.15	.13	.03	-.01
		.1	.00	.14	.03	-.01
		.5	-1.28	-.17	.03	.01
2	546.88	.0	.69	.11	2.28	.53
		.5	.69	.26	2.28	.69
3	585.25	.0	.84	.24	2.31	.52
		.3	.00	.15	2.31	.19
		.5	-.59	.09	2.31	.69
54						
1	-248.52	.0	-.63	.09	.00	.00
		.4	.00	-.03	.00	.00
		.5	.23	-.01	.00	.00
2	62.95	.0	.11	.02	.06	.01
		.5	.11	.03	.06	.02
3	-185.57	.0	-.52	.11	.06	.01
		.3	.00	-.01	.06	.01
		.5	.33	.02	.06	.02
55						
1	-262.83	.0	.57	-.08	-.01	.00
		.3	.00	.01	-.01	.00
		.5	-.29	-.01	-.01	-.00
2	70.20					

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT ID	LOAD COMB	AXIAL FORCE	DIST ENDI	1-2 PLANE		1-3 PLANE		AXIAL TORQ
				SHEAR	MOMENT	SHEAR	MOMENT	
			.0	.45	.09	.60	.11	
			.5	.45	.13	.60	.19	
3	-192.63		.0	1.02	.01	.60	.11	
			.5	.16	.12	.60	.19	
-----								
56	1	-187.94	.0	-.87	.14	-.01	.00	
			.4	.00	-.04	-.01	-.00	
			.5	.25	-.02	-.01	-.00	
	2	81.77	.0	.10	.04	.07	.07	
			.5	.10	.09	.07	.10	
	3	-106.17	.0	-.77	.19	.06	.07	
			.4	.00	.04	.06	.09	
			.5	.35	.07	.06	.10	
-----								
57	1	-327.04	.0	1.43	-.24	.02	-.00	
			.5	.30	.23	.02	.01	
	2	171.30	.0	1.57	.35	2.76	.58	
			.5	1.57	.49	2.76	.89	
	3	-155.74	.0	3.00	.11	2.79	.58	
			.5	1.87	.71	2.79	.90	
-----								
58	1	40.26	.0	-.15	-.13	.03	-.01	
			.1	.00	-.14	.03	-.01	
			.5	1.28	.17	.03	.01	
	2	545.44	.0	.69	.11	2.28	.53	
			.5	.69	.26	2.28	.69	
	3	585.70	.0	.54	-.02	2.31	.52	
			.5	1.97	.43	2.31	.69	
-----								
70	1	-202.36	.0	3.41	-.21	-.07	.19	
			.7	.00	.97	-.07	.14	
			1.9	-5.83	-2.48	-.07	.05	
	2	489.80	.0	1.95	2.88	.02	.04	
			1.9	1.95	.78	.02	.02	
	3	287.44	.0	5.36	2.67	-.05	.22	
			1.1	.00	1.34	-.05	.12	
			1.9	-3.88	-1.70	-.05	.07	
-----								
71	1	-221.92						

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT LOAD ID COMB	AXIAL DIST FORCE INDI	1-2 PLANE		1-3 PLANE		AXIAL TORQ	
		SHEAR	MOMENT	SHEAR	MOMENT		
2	487.64	.0	3.64	-.53	-.07	.05	
		.7	.00	.82	-.07	-.01	
		1.9	5.60	2.36	-.07	-.09	
3	265.72	.0	.93	.78	.01	.02	
		1.9	.93	.96	.01	.02	
		.0	4.57	.25	-.07	.07	
		.9	.00	.81	-.07	-.00	
		1.9	-4.67	-1.40	-.07	-.07	
		-----					
72	1	221.92	.0	5.60	-2.36	.07	-.09
			1.1	.00	.82	.07	-.01
			1.9	-3.64	-.53	.07	.05
2	487.64	.0	.93	.96	.01	.02	
		1.9	.93	.78	.01	.02	
		.0	6.52	-1.40	.08	-.07	
3	265.72	1.3	.00	1.00	.08	.02	
		1.9	-2.72	.25	.08	.07	
		-----					
73	1	202.36	.0	5.82	-2.48	.07	.05
			1.2	.00	.97	.07	.14
			1.9	-3.41	-.21	.07	.19
2	489.80	.0	1.95	.78	.02	.02	
		1.9	1.95	2.88	.02	.04	
		.0	7.79	-1.70	.10	.07	
3	287.44	1.6	.00	2.89	.10	.20	
		1.9	-1.45	2.67	.10	.22	
		-----					
75	1	-202.18	.0	3.41	-.21	.07	-.19
			.7	.00	.97	.07	-.14
			1.9	-5.82	-2.48	.07	-.05
2	489.54	.0	1.95	2.88	.02	.04	
		1.9	1.95	.78	.02	.02	
		.0	5.36	2.67	.10	-.15	
3	287.36	1.1	.00	1.71	.10	-.09	
		1.9	-3.88	-1.69	.10	-.03	
		-----					
76	1	-221.76	.0	3.65	-.53	.07	-.05
			.7	.00	.82	.07	.01
			1.9	-5.59	-2.36	.07	.09
2	487.38						

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## FRAME ELEMENT FORCES

ELT LOAD ID COMB	AXIAL FORCE	DIST END1	1-2 PLANE		1-3 PLANE		AXIAL TORQ
			SHEAR	MOMENT	SHEAR	MOMENT	
3	265.62	.0	.93	.70	.01	.02	
		1.9	.93	.96	.01	.02	
		.0	4.57	.25	.08	-.03	
77		.9	.00	.81	.08	.04	
		1.9	-4.67	-1.40	.08	.11	
		1	-221.75				
		.0	5.59	-2.06	-.07	.09	
		1.1	.00	.82	-.07	.01	
		1.9	-3.65	-.53	-.07	-.05	
2	487.58						
		.0	.93	.96	.01	.02	
		1.9	.93	.78	.01	.02	
		3	265.63				
		.0	6.52	-1.40	-.07	.11	
		1.3	.00	1.00	-.07	.01	
		1.9	-2.72	.15	-.07	-.03	
78							
1	-207.18						
		.0	5.83	-2.48	-.07	-.05	
		1.2	.00	.97	-.07	-.14	
		1.9	-3.41	-.21	-.07	-.19	
2	489.54						
		.0	1.95	.78	.02	.02	
		1.9	1.95	2.88	.02	.04	
		3	287.36				
		.0	7.79	-1.69	-.05	-.03	
		1.6	.00	2.89	-.05	-.13	
		1.9	-1.45	2.67	-.05	-.15	

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## JOINT DISPLACEMENTS

## LOAD COMBINATION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.00000E+00	.00000E+00	-.1292E-04	.8530E-07	-.3028E-05	.0000E+00
4	.00000E+00	.00000E+00	-.2659E-04	-.6381E-06	.1270E-04	.0000E+00
5	.00000E+00	.00000E+00	-.3770E-04	-.4056E-06	-.7081E-06	.0000E+00
6	.00000E+00	.00000E+00	-.5717E-04	.3460E-05	-.5524E-04	.0000E+00
7	.1593E-06	.00000E+00	-.7425E-04	-.5814E-06	-.3375E-04	.0000E+00
8	.1593E-06	.00000E+00	-.5438E-04	.1163E-05	.6890E-06	.0000E+00
9	.1593E-06	.00000E+00	-.8053E-04	-.1190E-04	.1654E-03	.0000E+00
10	.1593E-06	.00000E+00	-.3617E-03	.5952E-05	-.1172E-06	.0000E+00
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.00000E+00	.00000E+00	-.1292E-04	.8543E-07	.2922E-05	.0000E+00
14	.00000E+00	.00000E+00	-.2659E-04	-.6370E-06	-.1285E-04	.0000E+00
15	.00000E+00	.00000E+00	-.3770E-04	-.4068E-06	.9639E-06	.0000E+00
16	.00000E+00	.00000E+00	-.5703E-04	.3461E-05	.5585E-04	.0000E+00
17	.1593E-06	.00000E+00	-.7438E-04	-.5825E-06	.3376E-04	.0000E+00
18	.1593E-06	.00000E+00	-.5444E-04	.1165E-05	-.4047E-06	.0000E+00
19	.1593E-06	.00000E+00	-.8047E-04	-.1191E-04	-.1651E-03	.0000E+00
21	.000000	.000000	.000000	.000000	.000000	.000000
22	.000000	.000000	.000000	.000000	.000000	.000000
23	.00000E+00	.00000E+00	-.1292E-04	-.8530E-07	-.3028E-05	.0000E+00
24	.00000E+00	.00000E+00	-.2659E-04	.6381E-06	.1270E-04	.0000E+00
25	.00000E+00	.00000E+00	-.3770E-04	.4056E-06	-.7081E-06	.0000E+00
26	.00000E+00	.00000E+00	-.5713E-04	-.3460E-05	-.5524E-04	.0000E+00
27	.1593E-06	.00000E+00	-.7425E-04	.5814E-06	-.3375E-04	.0000E+00
28	.1593E-06	.00000E+00	-.5438E-04	-.1163E-05	.6890E-06	.0000E+00
29	.1593E-06	.00000E+00	-.8053E-04	.1190E-04	.1654E-03	.0000E+00
30	.1593E-06	.00000E+00	-.3617E-03	-.5952E-05	-.1172E-06	.0000E+00
31	.000000	.000000	.000000	.000000	.000000	.000000
32	.000000	.000000	.000000	.000000	.000000	.000000
33	.00000E+00	.00000E+00	-.1292E-04	-.8543E-07	.2922E-05	.0000E+00
34	.00000E+00	.00000E+00	-.2659E-04	.6370E-06	-.1285E-04	.0000E+00
35	.00000E+00	.00000E+00	-.3770E-04	.4068E-06	.9639E-06	.0000E+00
36	.00000E+00	.00000E+00	-.5703E-04	-.3461E-05	.5585E-04	.0000E+00
37	.1593E-06	.00000E+00	-.7438E-04	.5825E-06	.3376E-04	.0000E+00
38	.1593E-06	.00000E+00	-.5444E-04	-.1165E-05	-.4047E-06	.0000E+00
39	.1593E-06	.00000E+00	-.8047E-04	.1191E-04	-.1651E-03	.0000E+00
50	-.4645E-04	.00000E+00	-.4212E-04	.00000E+00	-.4125E-04	.0000E+00
51	.4651E-04	.00000E+00	-.4209E-04	.00000E+00	.4138E-04	.0000E+00
100	.1593E-06	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.0000E+00

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## JOINT DISPLACEMENTS

## LOAD COMBINATION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.0000E+00	.0000E+00	.3275E-05	.6271E-05	.7851E-05	.0000E+00
4	.0000E+00	.0000E+00	.6720E-05	.5880E-04	.3322E-04	.0000E+00
5	.0000E+00	.0000E+00	.1006E-04	.6762E-04	.5197E-04	.0000E+00
6	.0000E+00	.0000E+00	.1554E-04	.2935E-03	.1378E-03	.0000E+00
7	.6932E-04	.1546E-03	.3417E-04	.7930E-04	.2977E-05	.3558E-07
8	.6932E-04	.1546E-03	.2531E-04	.1586E-03	.4967E-04	.3558E-07
9	.6932E-04	.1546E-03	.2058E-04	.1339E-03	.6253E-04	.3558E-07
10	.6932E-04	.1545E-03	.2597E-04	.6694E-04	.3064E-04	.3558E-07
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.0000E+00	.0000E+00	.3274E-05	.6220E-05	.7855E-05	.0000E+00
14	.0000E+00	.0000E+00	.6714E-05	.5864E-04	.3321E-04	.0000E+00
15	.0000E+00	.0000E+00	.1003E-04	.6713E-04	.5192E-04	.0000E+00
16	.0000E+00	.0000E+00	.1547E-04	.2930E-03	.1378E-03	.0000E+00
17	.6932E-04	.1544E-03	.3439E-04	.7928E-04	.2985E-05	.3558E-07
18	.6932E-04	.1545E-03	.2547E-04	.1586E-03	.4981E-04	.3558E-07
19	.6932E-04	.1545E-03	.2055E-04	.1339E-03	.6269E-04	.3558E-07
21	.000000	.000000	.000000	.000000	.000000	.000000
22	.000000	.000000	.000000	.000000	.000000	.000000
23	.0000E+00	.0000E+00	.3275E-05	.6271E-05	.7851E-05	.0000E+00
24	.0000E+00	.0000E+00	.6720E-05	.5880E-04	.3322E-04	.0000E+00
25	.0000E+00	.0000E+00	.1006E-04	.6762E-04	.5197E-04	.0000E+00
26	.0000E+00	.0000E+00	.1554E-04	.2935E-03	.1378E-03	.0000E+00
27	.6932E-04	.1546E-03	.3417E-04	.7930E-04	.2977E-05	.3558E-07
28	.6932E-04	.1546E-03	.2531E-04	.1586E-03	.4967E-04	.3558E-07
29	.6932E-04	.1546E-03	.2058E-04	.1339E-03	.6253E-04	.3558E-07
30	.6932E-04	.1545E-03	.2597E-04	.6694E-04	.3064E-04	.3558E-07
31	.000000	.000000	.000000	.000000	.000000	.000000
32	.000000	.000000	.000000	.000000	.000000	.000000
33	.0000E+00	.0000E+00	.3274E-05	.6220E-05	.7855E-05	.0000E+00
34	.0000E+00	.0000E+00	.6714E-05	.5864E-04	.3321E-04	.0000E+00
35	.0000E+00	.0000E+00	.1003E-04	.6713E-04	.5192E-04	.0000E+00
36	.0000E+00	.0000E+00	.1547E-04	.2930E-03	.1378E-03	.0000E+00
37	.6932E-04	.1544E-03	.3439E-04	.7928E-04	.2985E-05	.3558E-07
38	.6932E-04	.1545E-03	.2547E-04	.1586E-03	.4981E-04	.3558E-07
39	.6932E-04	.1545E-03	.2055E-04	.1339E-03	.6269E-04	.3558E-07
50	.1772E-04	.6942E-04	.2585E-06	.1021E-04	.3115E-04	.3129E-05
51	.1766E-04	.6938E-04	.2081E-06	.1018E-04	.3110E-04	.3142E-05
100	.6932E-04	.1545E-03	.0000E+00	.0000E+00	.0000E+00	.3558E-07

## MODELO MATEMATICO CAMINERIAS REFORZADAS

## JOINT DISPLACEMENTS

## LOAD COMBINATION 3 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.0000E+00	.0000E+00	-.9644E-05	.6356E-05	.4822E-05	.0000E+00
4	.0000E+00	.0000E+00	-.1987E-04	.5816E-04	.4591E-04	.0000E+00
5	.0000E+00	.0000E+00	-.2765E-04	.6722E-04	.5126E-04	.0000E+00
6	.0000E+00	.0000E+00	-.4160E-04	.2970E-03	.8261E-04	.0000E+00
7	.6948E-04	.1546E-03	-.4009E-04	.7872E-04	-.3077E-04	.3558E-07
8	.6948E-04	.1546E-03	-.2907E-04	.1598E-03	.5035E-04	.3558E-07
9	.6948E-04	.1546E-03	-.5995E-04	.1220E-03	.2280E-03	.3558E-07
10	.6948E-04	.1545E-03	-.3357E-03	.7290E-04	.3052E-04	.3558E-07
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.0000E+00	.0000E+00	-.9650E-05	.6305E-05	.1078E-04	.0000E+00
14	.0000E+00	.0000E+00	-.1988E-04	.5801E-04	.2036E-04	.0000E+00
15	.0000E+00	.0000E+00	-.2767E-04	.6673E-04	.5288E-04	.0000E+00
16	.0000E+00	.0000E+00	-.4155E-04	.2964E-03	.1936E-03	.0000E+00
17	.6948E-04	.1544E-03	-.3999E-04	.7870E-04	.3675E-04	.3558E-07
18	.6948E-04	.1545E-03	-.2897E-04	.1597E-03	.4940E-04	.3558E-07
19	.6948E-04	.1545E-03	-.5991E-04	.1220E-03	-.1024E-03	.3558E-07
21	.000000	.000000	.000000	.000000	.000000	.000000
22	.000000	.000000	.000000	.000000	.000000	.000000
23	.0000E+00	.0000E+00	-.9644E-05	.6186E-05	.4822E-05	.0000E+00
24	.0000E+00	.0000E+00	-.1987E-04	.5944E-04	.4591E-04	.0000E+00
25	.0000E+00	.0000E+00	-.2765E-04	.6803E-04	.5126E-04	.0000E+00
26	.0000E+00	.0000E+00	-.4160E-04	.2901E-03	.8261E-04	.0000E+00
27	.6948E-04	.1546E-03	-.4009E-04	.7980E-04	-.3077E-04	.3558E-07
28	.6948E-04	.1546E-03	-.2907E-04	.1574E-03	.5035E-04	.3558E-07
29	.6948E-04	.1546E-03	-.5995E-04	.1458E-03	.2280E-03	.3558E-07
30	.6948E-04	.1545E-03	-.3357E-03	.6099E-04	.3052E-04	.3558E-07
31	.000000	.000000	.000000	.000000	.000000	.000000
32	.000000	.000000	.000000	.000000	.000000	.000000
33	.0000E+00	.0000E+00	-.9650E-05	.6135E-05	.1078E-04	.0000E+00
34	.0000E+00	.0000E+00	-.1988E-04	.5928E-04	.2036E-04	.0000E+00
35	.0000E+00	.0000E+00	-.2767E-04	.6754E-04	.5288E-04	.0000E+00
36	.0000E+00	.0000E+00	-.4155E-04	.2895E-03	.1936E-03	.0000E+00
37	.6948E-04	.1544E-03	-.3999E-04	.7986E-04	.3675E-04	.3558E-07
38	.6948E-04	.1545E-03	-.2897E-04	.1574E-03	.4940E-04	.3558E-07
39	.6948E-04	.1545E-03	-.5991E-04	.1458E-03	-.1024E-03	.3558E-07
50	-.2873E-04	.6942E-04	-.4186E-04	.1021E-04	-.1010E-04	.3129E-05
51	.6418E-04	.6933E-04	-.4188E-04	.1018E-04	.7249E-04	.3142E-05
100	.6948E-04	.1545E-03	.0000E+00	.0000E+00	.0000E+00	.3558E-07







