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Anexo 1 – Características da resistência e da deformação do betão (Quadro 3.1 do EC2)

CLASSES DE RESISTÊNCIA DO BETÃO															EXPRESSÃO ANALÍTICA/COMENTÁRIOS
f_{ck} (MPa)	12	16	20	25	30	35	40	45	50	55	60	70	80	90	
$f_{ck,cube}$ (MPa)	15	20	25	30	37	45	50	55	60	67	75	85	95	105	
f_{cm} (MPa)	20	24	28	33	38	43	48	53	58	63	68	78	88	98	$f_{cm} = f_{ck} + 8$ (Mpa)
f_{ctm} (MPa)	1.6	1.9	2.2	2.6	2.9	3.2	3.5	3.6	4.1	4.2	4.4	4.6	4.8	5	$f_{ctm} = 0,3 \times f_{ck}^{(2/3)} \leq C50/60$ $f_{ctm} = 2,12 \cdot \ln(1 + (f_{cm}/10)) > C50/60$
$f_{ctm,0,05}$ (MPa)	1.1	1.3	1.5	1.8	2	2.2	2.5	2.7	2.9	3	3.1	3.2	3.4	3.5	$f_{ctk;0,05} = 0,7 \times f_{ctm}$ quantilho de 5%
$f_{ctm,0,95}$ (MPa)	2	2.5	2.9	3.3	3.8	4.2	4.6	4.9	5.3	5.5	5.7	6	6.3	6.6	$f_{ctk;0,95} = 1,3 \times f_{ctm}$ quantilho de 95%
E_{cm} (GPa)	27	29	30	31	33	34	35	36	37	38	39	41	42	44	$E_{cm} = 22[(f_{cm})/10]^{0,3}$ (f_{cm} em Mpa)
ϵ_{c1} (‰)	1.8	1.9	2	2.1	2.2	2.25	2.3	2.4	2.45	2.5	2.6	2.7	2.8	2.8	ver a Figura 3.2 $\epsilon_{c1} (\text{‰}) = 0,7 f_{cm}^{0,31} \leq 2,8$
ϵ_{cu1} (‰)	3.5									3.2	3	2.8	2.8	2.8	ver a Figura 3.2 para $f_{ck} \geq 50$ MPa $\epsilon_{cu1} (\text{‰}) = 2,8 + 27[(98 - f_{cm})/100]^4$
ϵ_{c2} (‰)	2									2.2	2.3	2.4	2.5	2.6	ver a Figura 3.3 para $f_{ck} \geq 50$ MPa $\epsilon_{c2} (\text{‰}) = 2,0 + 0,085[f_{ck} - 50]^{0,53}$
ϵ_{cu2} (‰)	3.5									3.1	2.9	2.7	2.6	2.6	ver a Figura 3.3 para $f_{ck} \geq 50$ MPa $\epsilon_{cu2} (\text{‰}) = 2,6 + 35[(90 - f_{ck})/100]^4$
n	2									1.75	1.6	1.45	1.4	1.4	para $f_{ck} \geq 50$ MPa $n = 1,4 + 23,4[(90 - f_{ck})/100]^4$
ϵ_{c3} (‰)	1.75									1.8	1.9	2	2.2	2.3	ver a Figura 3.4 para $f_{ck} \geq 50$ MPa $\epsilon_{c3} (\text{‰}) = 1,75 + 0,55[(f_{ck} - 50)/40]$
ϵ_{cu3} (‰)	3.5									3.1	2.9	2.7	2.6	2.6	ver a Figura 3.4 para $f_{ck} \geq 50$ MPa $\epsilon_{cu3} (\text{‰}) = 2,6 + 35[(90 - f_{ck})/100]^4$

Anexo 2 – Classes de exposição em função das condições ambientais de acordo com a EN 206-1 (Quadro 4.1 do EC2)

Designação da classe	Descrição do ambiente	Exemplos informativos de condições em que poderão ocorrer as classes de exposição
1 – Nenhum risco de corrosão ou ataque		
X0	Para betão sem armadura ou elementos metálicos embebidos: todas as exposições excepto em situações de gelo/degelo, abrasão ou ataque químico. Para betão com armadura ou elementos metálicos embebidos: muito seco.	Betão no interior de edifícios com uma humidade do ar ambiente muito baixa
2 – Corrosão induzida por carbonatação		
XC1	Seco ou permanente húmido	Betão no interior de edifícios com uma humidade do ar ambiente baixa Betão permanentemente submerso em água
XC2	Húmido, raramente seco	Superfícies de betão sujeitas a contacto prolongado com água Um grande número de fundações
XC3	Humidade moderada	Betão no interior de edifícios com uma humidade do ar ambiente moderada ou elevada Betão exterior protegido da chuva
XC4	Alternadamente húmido e seco	Superfícies de betão sujeitas a contacto com água, não incluídas na classe de exposição XC2
3 – Corrosão induzida por cloretos presentes na água do mar		
XD1	Humidade moderada	Superfícies de betão expostas a cloretos transportados pelo ar
XD2	Húmido, raramente seco	Piscinas Elementos de betão expostos a águas industriais contendo cloretos
XD3	Alternadamente húmido e seco	Elementos de pontes expostos a pulverização contendo cloretos Pavimentos Lajes de parques de estacionamento
4 – Corrosão induzida por cloretos presentes na água do mar		
XS1	Exposto ao sal transportado pelo ar mas não em contacto directo com a água do mar	Estruturas próximas da costa ou na costa
XS2	Permanentemente submerso	Elementos de estruturas marítimas
XS3	Zonas sujeitas aos efeitos dos mares, da rebentação e da neblina marítima	Elementos de estruturas marítimas
5 – Ataque de gelo/degelo		
XF1	Saturação moderada em água, sem produto descongelante	Superfícies verticais de betão expostas à chuva e ao gelo
XF2	Saturação moderada em água, com produto descongelante	Superfícies verticais de betão de estruturas rodoviárias expostas ao gelo e a produtos descongelantes transportados pelo ar
XF3	Saturação elevada em água, sem produtos descongelantes	Superfícies horizontais de betão expostas à chuva e ao gelo
XF4	Saturação elevada em água, com produtos descongelantes ou com água do mar	Estradas e tabuleiros de pontes expostas a produtos descongelantes Superfícies de betão expostas a pulverizações directas contendo produtos descongelantes e expostas ao gelo Zonas sujeitas aos efeitos da rebentação de estruturas marítimas expostas ao gelo
6 – Ataque químico		
XA1	Ambiente químico ligeiramente agressivo, de acordo com a EN 206-1, ver Quadro 2	Terrenos naturais e água do terreno
XA2	Ambiente químico moderadamente agressivo, de acordo com a EN 206-1, ver Quadro 2	Terrenos naturais e água do terreno
XA3	Ambiente químico altamente agressivo, de acordo com a EN 206-1, ver Quadro 2	Terrenos naturais e água do terreno

Notas ao Quadro 4.3N

1. Considera-se que a classe de resistência e a razão água-cimento estão relacionadas. Poderá considerar-se uma composição especial (tipo de cimento, razão água-cimento, enchimento de finos) a fim de obter uma baixa permeabilidade.
2. O limite pode ser reduzido de uma classe de resistência se a introdução de ar for superior a 4%.

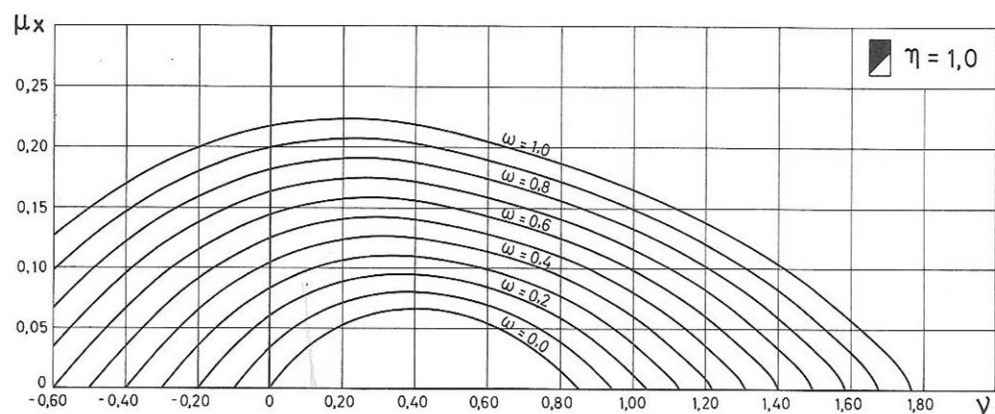
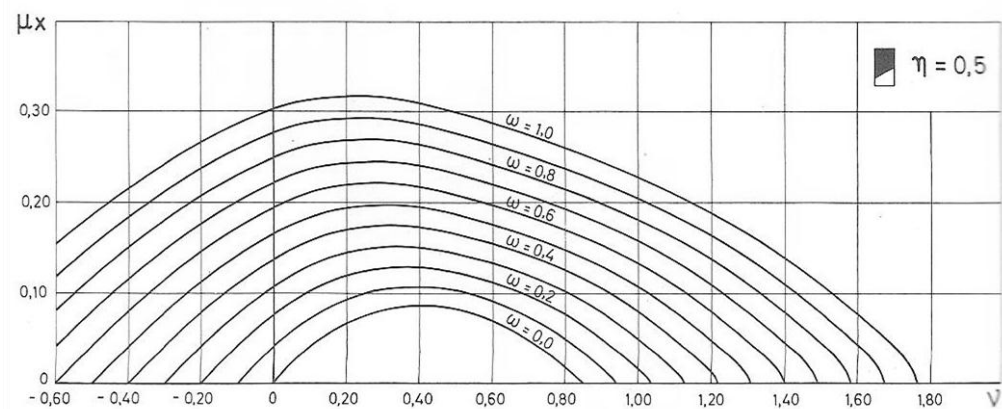
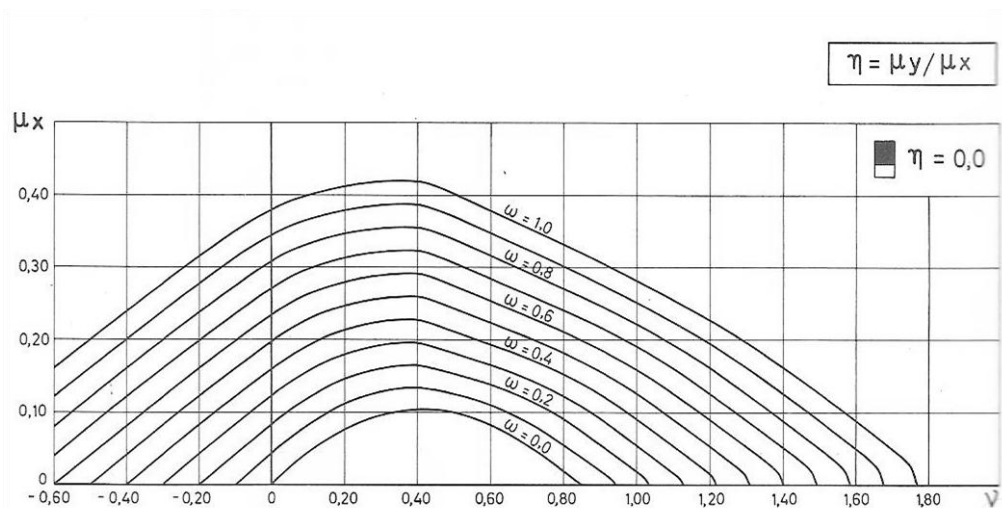
Quadro A. 4 - Recobrimento nominal mínimo a garantir consoante a classe de exposição considerada (Quadro 6 da E464)

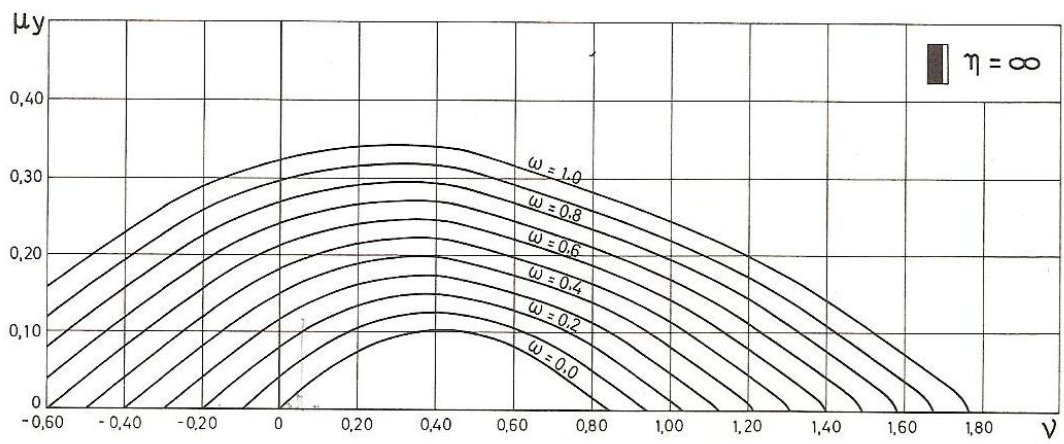
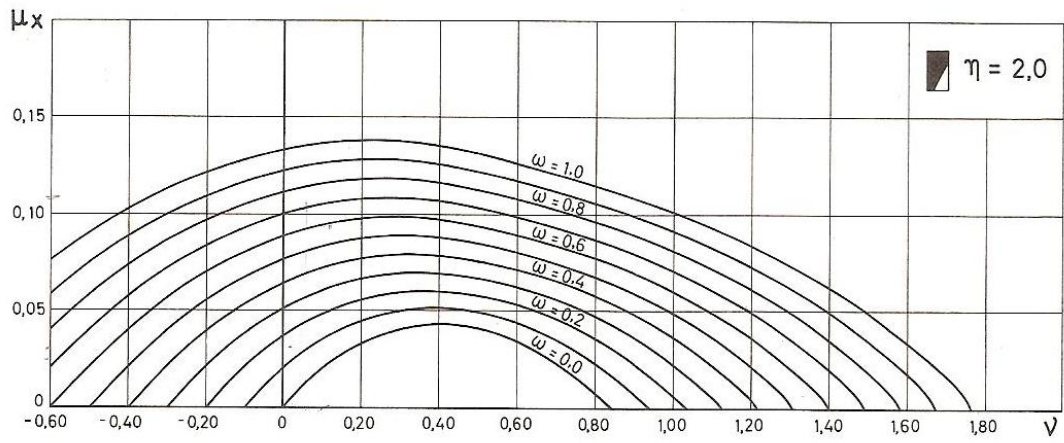
Tipo de cimento	CEM I (Referência); CEM II/A ⁽¹⁾				CEM II/B ⁽¹⁾ ; CEM III/A ⁽²⁾ ; CEM IV ⁽²⁾ ; CEM V/A ⁽²⁾			
	XC1	XC2	XC3	XC4	XC1	XC2	XC3	XC4
Mínimo recobrimento nominal (mm)	25	35	35	40	25	35	35	40
Máxima razão água/cimento	0,65	0,65	0,60	0,60	0,65	0,65	0,55	0,55
Mínima dosagem de cimento, C (kg/ m ³)	240	240	280	280	260	260	300	300
Mínima classe de resistência	C25/30 LC25/28	C25/30 LC25/28	C30/37 LC30/33	C30/37 LC30/33	C25/30 LC25/28	C25/30 LC25/28	C30/37 LC30/33	C30/37 LC30/33
⁽¹⁾ Não aplicável aos cimentos II/A e II/A-W e aos cimentos II/B-T e II/B-W, respectivamente.								
⁽²⁾ Não aplicável aos cimentos com percentagem inferior a 50% de clínquer portland, em massa.								

Anexo 4 – Propriedades das armaduras (Quadro C.1 do EC2)

Forma do produto		Varões e fios			Redes electrosoldadas			Requisito ou valor do quantilho (%)
Classe		A	B	C	A	B	C	-
Valor característico da tensão de cedência f_{yk} ou $f_{0,2k}$ (MPa)		400 a 600						5.0
Valor mínimo de $k=(f_t/f_y)_k$		≥ 1.05	≥ 1.08	≥ 1.15 <1.35	≥ 1.05	≥ 1.08	≥ 1.15 <1.35	10.0
Valor característico da extensão à tensão máxima, ϵ_{uk} (%)		≥ 2.5	≥ 5.0	≥ 7.5	≥ 2.5	≥ 5.0	≥ 7.5	10.0
Aptidão à dobragem		Ensaio de dobragem/desdobragem			-			
Resistência ao corte		-			0.3 A f_{yk} (A é a área do fio)			Mínimo
Tolerância máxima da massa nominal (varão ou fio) (%)	Dimensão nominal do varão (mm) ≤ 8 > 8	± 6.0 ± 4.5						5.0

Anexo 5 – Ábaco 65: Flexão Desviada, Secções rectangulares (BETÃO ARMADO, Esforços Normais e de Flexão)



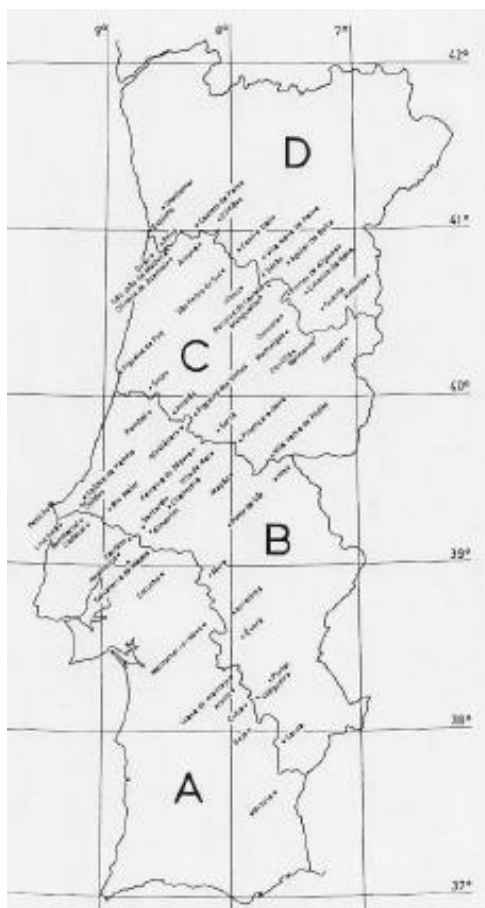


Anexo 6 – Natureza de terreno (Art.º.29 do RSA)

Tipo I	Rochas e solos coerentes rijos
Tipo II	Solos coerentes muito duros; duros e de consistência média; solos incoerentes compactos
Tipo III	Solos coerentes moles e muito moles; solos incoerentes soltos

Anexo 7 – Zonamento do território continental (Anexo III do RSA)

Mapa com a delimitação das zonas sísmicas do território continental:



Anexo 8 – Espectros de aceleração (RSA)

Acção Tipo 1 – Terreno tipo II ($\xi = 5\%$)

T [s]	Aceleração [m/s^2]
0.04	1.791
0.045	2.056
0.05	2.609
0.055	3.146
0.06	3.404
0.07	3.683
0.08	3.948
0.09	4.091
0.1	4.138
0.12	4.101
0.14	4.075
0.16	4.146
0.18	4.165
0.2	4.124
0.25	3.9
0.3	3.589
0.4	3.002
0.5	2.59
0.8	1.746
1	1.426
2	0.635
3	0.377
4	0.255
5	0.186
10	0.115

Acção Tipo 2 – Terreno tipo II ($\xi = 5\%$)

T [s]	Aceleração [m/s^2]
0.04	1.185
0.045	1.275
0.05	1.471
0.055	1.729
0.06	1.944
0.07	2.182
0.08	2.267
0.09	2.291
0.1	2.287
0.12	2.27
0.14	2.339
0.16	2.391
0.18	2.397
0.2	2.377
0.25	2.346
0.3	2.417
0.4	2.394
0.5	2.351
0.8	2.363
1	2.156
2	1.06
3	0.655
4	0.459
5	0.345
10	0.103

Anexo 9 – Análise Modal

Modo de Vibração	Período	Frequência	Segundo X		Segundo Y		Movimento Condicionante
	(s)	(Hz)	Taxa de participação da massa	Taxa acumulada	Taxa de participação da massa	Taxa acumulada	
1	0.9432	1.0602	0.2000	0.2000	0.0002	0.0002	1º modo de translação segundo x
2	0.9034	1.1070	0.2057	0.4057	0.4473	0.4475	1º modo de translação segundo y
3	0.8849	1.1301	0.1625	0.5682	0.1155	0.5630	1º modo de translação segundo z
4	0.5775	1.7317	0.0331	0.6013	0.0583	0.6213	2º modo de translação segundo x
5	0.4658	2.1468	0.0725	0.6737	0.0181	0.6394	2º modo de translação segundo y
6	0.3994	2.5036	0.0849	0.7586	0.0113	0.6508	2º modo de translação segundo z
7	0.3361	2.9749	0.0041	0.7628	0.0959	0.7467	
8	0.2550	3.9208	0.0054	0.7681	0.0209	0.7676	
9	0.2369	4.2207	0.0012	0.7693	0.0003	0.7679	
10	0.2254	4.4359	0.0020	0.7713	0.0274	0.7952	
11	0.2127	4.7005	0.0066	0.7779	0.0001	0.7953	
12	0.1920	5.2083	0.0002	0.7781	0.0000	0.7953	
13	0.1794	5.5742	0.0001	0.7782	0.0001	0.7954	
14	0.1594	6.2731	0.0000	0.7782	0.0004	0.7958	
15	0.1512	6.6138	0.0000	0.7782	0.0132	0.8090	
16	0.1497	6.6813	0.0000	0.7783	0.0000	0.8090	
17	0.1449	6.9037	0.0000	0.7783	0.0000	0.8090	
18	0.1423	7.0288	0.0000	0.7783	0.0000	0.8090	
19	0.1374	7.2760	0.0000	0.7783	0.0000	0.8090	
20	0.1267	7.8921	0.0001	0.7784	0.0003	0.8094	
21	0.1244	8.0395	0.0000	0.7784	0.0000	0.8094	
22	0.1185	8.4381	0.0000	0.7784	0.0000	0.8094	
23	0.1176	8.5017	0.0000	0.7785	0.0000	0.8094	
24	0.1156	8.6534	0.0001	0.7785	0.0000	0.8094	
25	0.1143	8.7484	0.0000	0.7785	0.0000	0.8094	

Anexo 10 – Propriedades das secções

Quadro A. 5 - Propriedades das secções do tipo “Shell”

TABLE: Area Section Properties						
Section	Material	MatAngle	AreaType	Type	Thickness	BendThick
Text	Text	Degrees	Text	Text	m	m
banda mac	C30/35	0	Shell	Shell-Thin	0.525	0.525
cob-garagens	C30/35	0	Shell	Shell-Thin	0.250	0.250
consola	C30/35	0	Shell	Shell-Thin	0.350	0.350
laje	C30/35	0	Shell	Shell-Thin	0.284	0.343
laje-cob	C30/35	0	Shell	Shell-Thin	0.250	0.250
laje-cob-E4	C30/35	0	Shell	Shell-Thin	0.150	0.150
MS1	C30/35	0	Shell	Shell-Thin	0.300	0.300
MS2	C30/35	0	Shell	Shell-Thin	0.300	0.300
MS3	C30/35	0	Shell	Shell-Thin	0.300	0.300
parede/consola	C30/35	0	Shell	Shell-Thin	0.350	0.350

Quadro A. 6 - Propriedades das secções do tipo “Frame”

TABLE: Frame Section Properties 01 - General				
SectionName	Material	Shape	t3	t2
Text	Text	Text	m	m
P12	C30/37	Rectangular	1.45	0.30
P2-quad	C30/37	Rectangular	0.30	0.30
P3-rect	C30/37	Rectangular	0.30	0.70
P4-rect-deitado	C30/37	Rectangular	0.70	0.30
P5-rect	C30/37	Rectangular	0.20	0.30
P7	C30/37	Rectangular	0.30	0.30
V1	C30/37	Rectangular	0.94	0.30
V10	C30/37	Rectangular	0.45	0.20
V11	C30/37	Rectangular	0.45	0.20
V12	C30/37	Rectangular	0.45	0.20
V13	C30/37	Rectangular	0.45	0.20
V14	C30/37	Rectangular	1.50	0.30
V15	C30/37	Rectangular	0.65	0.20
V16	C30/37	Rectangular	0.65	0.20
V17	C30/37	Rectangular	0.65	0.30
V18	C30/37	Rectangular	0.65	0.30
V19	C30/37	Rectangular	0.65	0.30
V2	C30/37	Rectangular	0.65	0.20
V20	C30/37	Rectangular	0.65	0.30
V20.A	C30/37	Rectangular	1.48	0.30
V21	C30/37	Rectangular	0.65	0.30
V22	C30/37	Rectangular	1.50	0.30
V23	C30/37	Rectangular	1.50	0.30
V24	C30/37	Rectangular	1.33	0.30

V25	C30/37	Rectangular	1.33	0.30
V26	C30/37	Rectangular	1.33	0.25
V27	C30/37	Rectangular	1.33	0.25
V28	C30/37	Rectangular	1.33	0.30
V29	C30/37	Rectangular	0.51	0.30
V29.A	C30/37	Rectangular	0.65	0.30
V3	C30/37	Rectangular	0.65	0.20
V30	C30/37	Rectangular	1.33	0.30
V31	C30/37	Rectangular	1.33	0.30
V32	C30/37	Rectangular	1.97	0.30
V33	C30/37	Rectangular	0.72	0.30
V34	C30/37	Rectangular	0.65	0.30
V35	C30/37	Rectangular	0.65	0.30
V36	C30/37	Rectangular	0.65	0.30
V37	C30/37	Rectangular	0.65	0.30
V38	C30/37	Rectangular	0.65	0.30
V4	C30/37	Rectangular	0.65	0.20
V5	C30/37	Rectangular	0.65	0.30
V6	C30/37	Rectangular	0.65	0.30
V7	C30/37	Rectangular	0.94	0.30
V8	C30/37	Rectangular	0.65	0.30
V9	C30/37	Rectangular	0.94	0.30
V9.1	C30/37	Rectangular	0.52	0.30

Anexo 11– Armaduras de flexão e esforço transverso das vigas

Quadro A. 7 - Armadura de flexão

VIGA	Frame	Station	b [m]	h [m]	d [m]	M3 [kN.m]		As máx. cm ² /m	As mín. cm ² /m	Armadura Superior						Armadura Inferior									
						sup	inf			As sup. cm ² /m	nº φ		nº φ		As sup. cm ² /m	As inf. cm ² /m	nº φ		nº φ		As inf. cm ² /m				
											1ª camada	2ª camada	1ª camada	2ª camada			1ª camada	2ª camada							
V1	158	0	0.30	0.94	0.91	-17.03	36.68	112.80	4.09	0.43	3	12	2	10	4.96	0.94	3	12			3.39				
	158	2.57	0.30	0.94	0.91	108.97	202.93			2.80	3	12			3.39	5.27	5	12			5.65				
	158	5.14	0.30	0.94	0.91	-76.39	-42.63			1.93	3	12	2	10	4.96	1.08	3	12			3.39				
V2	127	0	0.20	0.65	0.62	-218.34	208.81	52.00	1.85	7.64	2	16	1	16	2	16	10.05	8.46	2	16	1	16	2	16	10.05
	127	1.6875	0.20	0.65	0.60	-28.68	28.19			1.09	2	16			4.02	1.09	2	16			4.02				
	127	3.375	0.20	0.65	0.60	-29.57	25.38			1.12	2	16			4.02	0.98	2	16			4.02				
	128	0	0.20	0.65	0.60	-3.92	-0.20			0.15	2	16			4.02	0.01	2	16			4.02				
	128	1.6875	0.20	0.65	0.60	0.01	3.09			0.00	2	16			4.02	0.12	2	16			4.02				
	128	3.375	0.20	0.65	0.60	-7.41	-1.62			0.28	2	16			4.02	0.06	2	16			4.02				
	129	0	0.20	0.65	0.60	-34.61	24.48			1.31	2	16			4.02	0.95	2	16			4.02				
	129	1.6875	0.20	0.65	0.60	-11.75	21.14			0.45	2	16			4.02	0.82	2	16			4.02				
	129	3.375	0.20	0.65	0.60	-205.08	200.05			7.36	2	16	1	16	2	16	10.05	8.31	2	16	1	16	2	16	10.05
V3	140	0	0.30	0.94	0.91	-70.31	-25.48	112.80	4.09	1.77	3	12	2	12	5.65	0.65	3	12			3.39				
	140	2.475	0.30	0.94	0.91	68.66	110.48			1.76	3	12			3.39	2.84	3	12	2	10	4.96				
	140	4.95	0.30	0.94	0.91	-219.28	-121.78			5.45	3	12	2	12	5.65	3.06	3	12			3.39				
	141	0	0.30	0.94	0.91	-217.02	-122.72			5.40	3	12	2	12	5.65	3.08	3	12			3.39				
	141	2.525	0.30	0.94	0.91	73.17	117.15			1.87	3	12			3.39	3.01	3	12	2	10	4.96				
	141	5.05	0.30	0.94	0.91	-221.78	-122.37			5.51	3	12	2	12	5.65	3.07	3	12			3.39				
	142	0	0.30	0.94	0.91	-219.09	-124.04			5.45	3	12	2	12	5.65	3.11	3	12			3.39				
	142	2.5	0.30	0.94	0.91	69.02	109.87			1.77	3	12			3.39	2.83	3	12	2	10	4.96				
	142	5	0.30	0.94	0.91	-211.79	-117.08			5.27	3	12	2	12	5.65	2.94	3	12			3.39				
	143	0	0.30	0.94	0.91	-209.03	-116.30			5.20	3	12	2	12	5.65	2.92	3	12			3.39				
	143	2.475	0.30	0.94	0.91	64.90	103.47			1.66	3	12			3.39	2.66	3	12	2	10	4.96				
	143	4.95	0.30	0.94	0.91	-212.45	-117.23			5.28	3	12	2	12	5.65	2.94	3	12			3.39				
	144	0	0.30	0.94	0.91	-210.18	-116.98			5.23	3	12	2	12	5.65	2.94	3	12			3.39				
	144	2.525	0.30	0.94	0.91	69.96	112.31			1.79	3	12			3.39	2.89	3	12	2	10	4.96				
	144	5.05	0.30	0.94	0.91	-217.11	-120.52			5.40	3	12	2	12	5.65	3.03	3	12			3.39				
	145	0	0.30	0.94	0.91	-214.44	-118.93			5.33	3	12	2	12	5.65	2.99	3	12			3.39				
	145	2.5	0.30	0.94	0.91	66.51	108.13			1.70	3	12			3.39	2.78	3	12	2	10	4.96				
	145	5	0.30	0.94	0.91	-218.65	66.51			5.44	3	12	2	12	5.65	1.70	3	12			3.39				
	146	0	0.30	0.94	0.91	-216.07	-116.01			5.37	3	12	2	12	5.65	2.91	3	12			3.39				
	146	2.5	0.30	0.94	0.91	70.90	120.94			1.82	3	12			3.39	3.11	3	12	2	10	4.96				
	146	5	0.30	0.94	0.91	-177.42	-82.49			4.43	3	12	2	12	5.65	2.08	3	12			3.39				
147	0	0.30	0.94	0.91	-175.71	-105.36	4.39	3	12	2	12	5.65	2.65	3	12			3.39							
147	0.9	0.30	0.94	0.91	-29.44	-17.86	0.75	3	12	2	12	5.65	0.45	3	12	2	10	4.96							
147	1.8	0.30	0.94	0.91	2.15	4.05	0.05	3	12	2	12	5.65	0.10	3	12			3.39							
V4	130	0	0.30	0.94	0.91	-0.88	-0.13	112.80	4.09	0.02	2	12	2	12	4.52	0.00	2	12			2.26				

	22	1.85	0.30	1.97	1.94	-286.36	118.26			3.38	5 16			10.05	1.41	5 16			10.05
	25	0	0.30	1.97	1.94	-366.96	183.49			4.33	5 16			10.05	2.19	5 16			10.05
	25	3.5625	0.30	1.97	1.94	-88.90	380.17			1.05	5 16			10.05	4.56	5 16			10.05
	25	7.125	0.30	1.97	1.94	-762.65	687.27			8.91	5 16			10.05	8.30	5 16			10.05
	31	0	0.30	1.97	1.94	-388.61	344.89			4.58	5 16			10.05	4.13	5 16			10.05
	31	1.48255	0.30	1.97	1.94	-276.39	315.04			3.26	5 16			10.05	3.77	5 16			10.05
	31	2.9651	0.30	1.97	1.94	-197.53	186.55			2.34	5 16			10.05	2.23	5 16			10.05
V7	12	0	0.30	1.48	1.45	-114.62	146.28	177.60	5.86	1.82	3 16			6.03	2.34	3 16			6.03
	12	1.5825	0.30	1.48	1.45	-205.01	101.12			3.24	3 16			6.03	1.62	3 16			6.03
	12	3.165	0.30	1.48	1.45	-329.32	34.27			5.17	3 16			6.03	0.55	3 16			6.03
V8	8	0	0.30	1.97	1.94	-618.01	251.86	236.40	7.85	7.24	5 16			10.05	3.01	4 16			8.04
	8	1.6875	0.30	1.97	1.94	-401.65	262.33			4.73	5 16			10.05	3.14	4 16			8.04
	8	3.375	0.30	1.97	1.94	-275.59	188.57			3.26	5 16			10.05	2.25	4 16			8.04
	9	0	0.30	1.97	1.94	-288.29	203.18			3.40	5 16			10.05	2.43	4 16			8.04
	9	1.9	0.30	1.97	1.94	-22.06	116.71			0.26	5 16			10.05	1.39	4 16			8.04
	9	3.8	0.30	1.97	1.94	-164.79	198.35			1.95	5 16			10.05	2.37	4 16			8.04
	10	0	0.30	1.97	1.94	-153.66	185.55			1.82	5 16			10.05	2.21	4 16			8.04
	10	2.0875	0.30	1.97	1.94	-345.51	342.08			4.07	5 16			10.05	4.10	4 16			8.04
	10	4.175	0.30	1.97	1.94	-699.27	360.48			8.18	5 16			10.05	4.32	4 16			8.04
	11	0	0.30	1.97	1.94	-544.81	206.81			6.40	5 16			10.05	2.47	4 16			8.04
	11	1.48255	0.30	1.97	1.94	-332.44	242.74			3.92	5 16			10.05	2.90	4 16			8.04
11	2.9651	0.30	1.97	1.94	-200.89	219.64	2.38	5 16			10.05	2.62	4 16			8.04			
V9	7	0	0.30	1.48	1.45	-177.30	224.32	177.60	5.86	2.80	4 16			8.04	3.60	3 16			6.03
	7	1.5825	0.30	1.48	1.45	-256.71	113.23			4.04	4 16			8.04	1.81	3 16			6.03
	7	3.165	0.30	1.48	1.45	-392.57	3.00			6.15	4 16			8.04	0.05	3 16			6.03
V10	826	0	0.30	0.51	0.48	-54.72	47.83	57.00	1.93	2.60	3 12			3.39	2.36	3 12			3.39
	826	2.175	0.30	0.51	0.48	-1.44	18.68			0.07	3 12			3.39	0.91	3 12			3.39
	826	4.35	0.30	0.51	0.48	-62.22	46.17			2.94	3 12			3.39	2.28	3 12			3.39
V11	33	0	0.30	0.65	0.62	-74.90	58.47	78.00	2.49	2.76	3 12			3.39	2.22	3 12			3.39
	33	2.175	0.30	0.65	0.62	17.33	33.88			0.65	3 12			3.39	1.28	3 12			3.39
	33	4.35	0.30	0.65	0.62	-89.23	73.87			3.27	3 12			3.39	2.81	3 12			3.39
V12	803	0	0.30	0.65	0.62	-126.04	113.23	78.00	2.78	4.59	3 16			6.03	4.35	3 16			6.03
	803	2.175	0.30	0.65	0.62	-7.60	36.54			0.28	3 16			6.03	1.38	3 16			6.03
	803	4.35	0.30	0.65	0.62	-141.44	128.31			5.13	3 16			6.03	4.95	3 16			6.03
V13	445	0	0.30	0.65	0.62	-7.47	3.52	78.00	2.49	0.28	3 12			3.39	0.13	3 12			3.39
	445	1.5825	0.30	0.65	0.62	3.87	19.48			0.14	3 12			3.39	0.73	3 12			3.39
	445	3.165	0.30	0.65	0.62	-28.39	16.62			1.05	3 12			3.39	0.62	3 12			3.39
V14	448	0	0.30	0.65	0.62	-9.75	7.72	78.00	2.49	0.36	3 12			3.39	0.29	3 12			3.39
	448	1.5825	0.30	0.65	0.62	2.25	20.61			0.08	3 12			3.39	0.77	3 12			3.39
	448	3.165	0.30	0.65	0.62	-39.45	24.35			1.46	3 12			3.39	0.92	3 12			3.39
V15	374	0	0.30	0.65	0.62	-13.37	3.73	78.00	2.49	0.50	3 12			3.39	0.92	3 12			3.39
	374	2.175	0.30	0.65	0.62	21.19	34.94			0.80	3 12			3.39	0.92	3 12			3.39
	374	4.35	0.30	0.65	0.62	-8.79	1.71			0.33	3 12			3.39	0.92	3 12			3.39
V16	340	0	0.30	0.65	0.62	-41.98	25.31	78.00	2.49	1.56	3 12			3.39	0.95	3 12			3.39
	340	2.175	0.30	0.65	0.62	19.73	32.05			0.74	3 12			3.39	1.21	3 12			3.39
	340	4.35	0.30	0.65	0.62	-40.46	21.58			1.50	3 12			3.39	0.81	3 12			3.39

Quadro A. 8 – Armadura de esforço transverso

Viga	Frame	Station	b [m]	h [m]	d [m]	V2 [kN]		Esforço transverso						
						min	max	Vrd,máx [kN]	Asw/s [cm ² /m]	Asw/s [cm ² /m]			V _{Rd} [kN]	
										Est.2R	φ	//		
V1	158	0	0.30	0.94	0.91	128.25	81.73	1117.32	2.63	Est.2R	φ6	// 0.20	2.83	173.43
	158	2.57	0.30	0.94	0.91	5.66	1.39	1117.32	2.63	Est.2R	φ6	// 0.20	2.83	173.43
	158	5.14	0.30	0.94	0.91	77.57	147.17	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
V2	127	0	0.20	0.65	0.62	162.07	157.40	506.19	3.89	Est.2R	φ 6	// 0.10	5.65	235.71
	127	1.6875	0.20	0.65	0.60	16.34	17.05	493.84	1.75	Est.2R	φ 6	// 0.25	2.26	91.98
	127	3.375	0.20	0.65	0.60	20.06	22.10	493.84	1.75	Est.2R	φ 6	// 0.25	2.26	91.98
	128	0	0.20	0.65	0.60	3.88	1.37	493.84	1.75	Est.2R	φ 6	// 0.25	2.26	91.98
	128	1.6875	0.20	0.65	0.60	0.13	1.12	493.84	1.75	Est.2R	φ 6	// 0.25	2.26	91.98
	128	3.375	0.20	0.65	0.60	1.89	8.81	493.84	1.75	Est.2R	φ 6	// 0.25	2.26	91.98
	129	0	0.20	0.65	0.60	26.63	17.80	493.84	1.75	Est.2R	φ 6	// 0.25	2.26	91.98
	129	1.6875	0.20	0.65	0.60	12.68	12.53	493.84	1.75	Est.2R	φ 6	// 0.25	2.26	91.98
	129	3.375	0.20	0.65	0.60	156.72	161.98	493.84	3.98	Est.2R	φ 6	// 0.10	5.65	229.96
V3	140	0	0.30	0.94	0.91	115.15	61.16	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	140	2.475	0.30	0.94	0.91	15.51	4.73	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	140	4.95	0.30	0.94	0.91	133.62	220.52	1117.32	3.60	Est.2R	φ 6	// 0.15	3.77	231.24
	141	0	0.30	0.94	0.91	223.88	137.56	1117.32	3.65	Est.2R	φ 6	// 0.15	3.77	231.24
	141	2.525	0.30	0.94	0.91	13.70	30.96	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	141	5.05	0.30	0.94	0.91	136.97	230.62	1117.32	3.76	Est.2R	φ 6	// 0.15	3.77	231.24
	142	0	0.30	0.94	0.91	225.79	136.02	1117.32	3.68	Est.2R	φ 6	// 0.15	3.77	231.24
	142	2.5	0.30	0.94	0.91	30.42	14.98	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	142	5	0.30	0.94	0.91	129.66	218.18	1117.32	3.56	Est.2R	φ 6	// 0.15	3.77	231.24
	143	0	0.30	0.94	0.91	214.87	129.49	1117.32	3.50	Est.2R	φ 6	// 0.15	3.77	231.24
	143	2.475	0.30	0.94	0.91	29.88	13.80	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	143	4.95	0.30	0.94	0.91	128.67	216.77	1117.32	3.53	Est.2R	φ 6	// 0.15	3.77	231.24
	144	0	0.30	0.94	0.91	218.42	130.77	1117.32	3.56	Est.2R	φ 6	// 0.15	3.77	231.24
	144	2.525	0.30	0.94	0.91	29.98	13.96	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	144	5.05	0.30	0.94	0.91	132.81	222.00	1117.32	3.62	Est.2R	φ 6	// 0.15	3.77	231.24
	145	0	0.30	0.94	0.91	219.05	155.55	1117.32	3.57	Est.2R	φ 6	// 0.15	3.77	231.24
	145	2.5	0.30	0.94	0.91	31.42	15.71	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	145	5	0.30	0.94	0.91	135.64	223.75	1117.32	3.65	Est.2R	φ 6	// 0.15	3.77	231.24
	146	0	0.30	0.94	0.91	226.04	130.58	1117.32	3.69	Est.2R	φ 6	// 0.15	3.77	231.24
	146	2.5	0.30	0.94	0.91	8.54	25.14	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	146	5	0.30	0.94	0.91	120.99	206.27	1117.32	3.36	Est.2R	φ 6	// 0.15	3.77	231.24
147	0	0.30	0.94	0.91	157.61	94.76	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43	
147	0.9	0.30	0.94	0.91	41.49	25.44	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43	
147	1.8	0.30	0.94	0.91	32.93	19.10	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43	
V4	130	0	0.30	0.94	0.91	19.20	31.98	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	130	0.9	0.30	0.94	0.91	25.54	40.55	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	130	1.8	0.30	0.94	0.91	60.83	97.43	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	131	0	0.30	0.94	0.91	136.52	74.09	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	131	2.5	0.30	0.94	0.91	24.29	0.70	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	131	5	0.30	0.94	0.91	78.85	142.69	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	132	0	0.30	0.94	0.91	141.40	83.07	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	132	2.5	0.30	0.94	0.91	21.71	7.17	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	132	5	0.30	0.94	0.91	82.58	140.54	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	133	0	0.30	0.94	0.91	143.83	83.58	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	133	2.525	0.30	0.94	0.91	6.06	21.08	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	133	5.05	0.30	0.94	0.91	82.60	141.97	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	134	0	0.30	0.94	0.91	141.24	81.94	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	134	2.475	0.30	0.94	0.91	5.50	20.74	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	134	4.95	0.30	0.94	0.91	80.22	138.53	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	135	0	0.30	0.94	0.91	140.63	104.36	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	135	2.5	0.30	0.94	0.91	21.00	6.05	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	135	5	0.30	0.94	0.91	81.74	140.44	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	136	0	0.30	0.94	0.91	142.91	83.06	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	136	2.525	0.30	0.94	0.91	6.04	21.25	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	136	5.05	0.30	0.94	0.91	83.03	142.67	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
137	0	0.30	0.94	0.91	145.21	85.99	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43	
137	2.475	0.30	0.94	0.91	3.73	17.48	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43	
137	4.95	0.30	0.94	0.91	54.53	96.95	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43	
138	0	0.30	0.94	0.91	71.86	32.65	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43	
138	2.5	0.30	0.94	0.91	13.15	10.45	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43	

	138	5	0.30	0.94	0.91	27.77	66.90	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	139	0	0.30	0.94	0.91	38.09	22.81	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	139	3.1035	0.30	0.94	0.91	9.49	11.13	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	139	6.207	0.30	0.94	0.91	12.39	33.00	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	486	0	0.30	0.94	0.91	92.92	57.82	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	486	3.1022	0.30	0.94	0.91	71.05	79.69	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
	486	6.2044	0.30	0.94	0.91	49.18	101.56	1117.32	2.63	Est.2R	φ 6	// 0.20	2.83	173.43
V5	124	0	0.20	0.65	0.62	49.27	35.27	2530.94	1.75	Est.2R	φ 6	// 0.25	2.26	94.28
	124	2.0875	0.20	0.65	0.62	5.76	4.91	2530.94	1.75	Est.2R	φ 6	// 0.25	2.26	94.28
	124	4.175	0.20	0.65	0.62	7.48	11.65	2530.94	1.75	Est.2R	φ 6	// 0.25	2.26	94.28
	125	0	0.20	0.65	0.62	12.96	3.38	2530.94	1.75	Est.2R	φ 6	// 0.25	2.26	94.28
	125	1.9	0.20	0.65	0.62	2.44	1.85	2530.94	1.75	Est.2R	φ 6	// 0.25	2.26	94.28
	125	3.8	0.20	0.65	0.62	0.77	8.31	2530.94	1.75	Est.2R	φ 6	// 0.25	2.26	94.28
	126	0	0.20	0.65	0.62	12.60	13.36	2530.94	1.75	Est.2R	φ 6	// 0.25	2.26	94.28
	126	1.6875	0.20	0.65	0.62	11.20	9.19	2530.94	1.75	Est.2R	φ 6	// 0.25	2.26	94.28
V6	13	0	0.30	1.97	1.94	95.19	84.75	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	13	1.1875	0.30	1.97	1.94	58.55	109.88	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	13	2.375	0.30	1.97	1.94	24.07	138.17	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	22	0	0.30	1.97	1.94	211.42	53.72	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	22	0.925	0.30	1.97	1.94	197.75	67.39	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	22	1.85	0.30	1.97	1.94	161.02	96.63	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	25	0	0.30	1.97	1.94	255.98	24.07	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	25	3.5625	0.30	1.97	1.94	148.03	121.52	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	25	7.125	0.30	1.97	1.94	36.15	237.07	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	31	0	0.30	1.97	1.94	111.33	22.80	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	31	1.48255	0.30	1.97	1.94	69.61	60.05	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	31	2.9651	0.30	1.97	1.94	55.34	120.78	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
V7	12	0	0.30	1.48	1.45	8.75	59.35	2059.99	2.63	Est.2R	φ 6	// 0.20	2.83	159.87
	12	1.5825	0.30	1.48	1.45	26.31	78.15	2059.99	2.63	Est.2R	φ 6	// 0.20	2.83	159.87
	12	3.165	0.30	1.48	1.45	43.88	101.86	2059.99	2.63	Est.2R	φ 6	// 0.20	2.83	159.87
V8	8	0	0.30	1.97	1.94	147.06	22.27	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	8	1.6875	0.30	1.97	1.94	107.22	12.20	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	8	3.375	0.30	1.97	1.94	55.19	67.53	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	9	0	0.30	1.97	1.94	171.53	33.82	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	9	1.9	0.30	1.97	1.94	113.40	96.90	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	9	3.8	0.30	1.97	1.94	69.27	145.10	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	10	0	0.30	1.97	1.94	104.34	59.66	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	10	2.0875	0.30	1.97	1.94	42.83	126.21	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	10	4.175	0.30	1.97	1.94	17.26	197.00	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	11	0	0.30	1.97	1.94	201.53	1.43	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
	11	1.48255	0.30	1.97	1.94	149.59	31.86	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81
11	2.9651	0.30	1.97	1.94	115.67	77.63	2388.96	2.63	Est.2R	φ 6	// 0.20	2.83	370.81	
V9	7	0	0.30	1.48	1.45	4.51	98.30	1784.01	2.63	Est.2R	φ 6	// 0.20	2.83	276.91
	7	1.5825	0.30	1.48	1.45	22.07	115.87	1784.01	2.63	Est.2R	φ 6	// 0.20	2.83	276.91
	7	3.165	0.30	1.48	1.45	39.64	133.43	1784.01	2.63	Est.2R	φ 6	// 0.20	2.83	276.91
V10	826	0	0.30	0.51	0.48	24.60	4.93	677.16	2.63	Est.2R	φ 6	// 0.20	2.83	52.55
	826	2.175	0.30	0.51	0.48	31.32	33.92	677.16	2.63	Est.2R	φ 6	// 0.20	2.83	52.55
	826	4.35	0.30	0.51	0.48	5.75	16.34	677.16	2.63	Est.2R	φ 6	// 0.20	2.83	52.55
V11	33	0	0.30	0.65	0.62	53.91	9.24	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	33	2.175	0.30	0.65	0.62	29.72	28.40	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	33	4.35	0.30	0.65	0.62	17.06	63.78	876.74	2.65	Est.2R	φ 6	// 0.20	2.83	68.04
V12	803	0	0.30	0.65	0.62	47.23	16.81	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	803	2.175	0.30	0.65	0.62	81.32	81.58	876.74	3.39	Est.2R	φ 6	// 0.15	3.77	90.72
	803	4.35	0.30	0.65	0.62	5.80	23.90	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
V13	445	0	0.30	0.65	0.62	22.57	7.83	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	445	1.5825	0.30	0.65	0.62	5.76	7.93	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	445	3.165	0.30	0.65	0.62	7.03	28.22	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
V14	448	0	0.30	0.65	0.62	25.27	3.41	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	448	1.5825	0.30	0.65	0.62	8.65	12.19	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	448	3.165	0.30	0.65	0.62	2.62	34.59	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
V15	374	0	0.30	0.65	0.62	33.02	17.56	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	374	2.175	0.30	0.65	0.62	3.15	2.78	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	374	4.35	0.30	0.65	0.62	18.83	31.67	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
V16	340	0	0.30	0.65	0.62	41.28	5.65	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	340	2.175	0.30	0.65	0.62	10.66	11.00	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04
	340	4.35	0.30	0.65	0.62	6.61	41.59	876.74	2.63	Est.2R	φ 6	// 0.20	2.83	68.04

Anexo 12 – Áreas de armaduras necessárias nos pilares (programa “Biaxial”)

Quadro A. 9 – Pilares da família “P1” (0.30x0.20)

FRAME	COMBINATION	N	M ₂	M ₃	A _{s,total}	%A _{s,total}	A _{s31}	A _{s32}	A _{s21}	A _{s22}
628	E.L.U-1	-216.65	0.45	0.71	0.00	0.00	0.00	0.00	0.00	0.00
628	E.L.U-1	-208.50	-0.54	-0.94	0.00	0.00	0.00	0.00	0.00	0.00
628	E.L.U-2	2.93	29.41	6.39	6.10	1.00	1.90	1.90	1.10	1.10
628	E.L.U-2	8.96	29.26	5.22	6.10	1.00	1.90	1.90	1.10	1.10
628	E.L.U-2	-290.63	-28.82	-5.56	0.50	0.00	0.10	0.10	0.00	0.00
628	E.L.U-2	-284.60	-29.97	-6.30	0.50	0.00	0.10	0.10	0.00	0.00
628	E.L.U-3	62.56	39.88	8.48	10.00	1.60	3.10	3.10	1.80	1.80
628	E.L.U-3	68.59	39.98	7.21	10.00	1.60	3.10	3.10	1.80	1.80
628	E.L.U-3	-350.26	-39.29	-7.65	2.80	0.40	0.80	0.80	0.50	0.50
628	E.L.U-3	-344.23	-40.69	-8.29	3.50	0.50	1.10	1.10	0.60	0.60
629	E.L.U-1	-176.03	1.78	2.03	0.00	0.00	0.00	0.00	0.00	0.00
629	E.L.U-1	-167.73	-1.98	-2.04	0.00	0.00	0.00	0.00	0.00	0.00
629	E.L.U-2	-68.87	37.49	8.10	6.80	1.10	2.10	2.10	1.20	1.20
629	E.L.U-2	-62.72	34.97	5.68	5.90	0.90	1.80	1.80	1.00	1.00
629	E.L.U-2	-165.78	-35.23	-5.73	4.00	0.60	1.20	1.20	0.70	0.70
629	E.L.U-2	-159.63	-37.51	-8.04	5.10	0.80	1.60	1.60	0.90	0.90
629	E.L.U-3	-60.82	51.95	10.88	11.20	1.80	3.50	3.50	2.00	2.00
629	E.L.U-3	-54.67	49.36	8.42	10.10	1.60	3.20	3.20	1.80	1.80
629	E.L.U-3	-173.82	-49.69	-8.51	8.30	1.30	2.60	2.60	1.40	1.40
629	E.L.U-3	-167.67	-51.89	-10.79	9.50	1.50	3.00	3.00	1.70	1.70
631	E.L.U-1	-262.46	0.60	0.99	0.00	0.00	0.00	0.00	0.00	0.00
631	E.L.U-1	-254.32	-0.83	-1.41	0.00	0.00	0.00	0.00	0.00	0.00
631	E.L.U-2	-71.27	29.32	7.09	4.60	0.70	1.40	1.40	0.80	0.80
631	E.L.U-2	-65.24	28.82	5.58	4.40	0.70	1.40	1.40	0.70	0.70
631	E.L.U-2	-270.96	-28.59	-5.93	0.30	0.00	0.00	0.00	0.00	0.00
631	E.L.U-2	-264.93	-29.81	-7.20	1.00	0.10	0.30	0.30	0.10	0.10
631	E.L.U-3	-30.33	39.72	9.33	8.30	1.30	2.60	2.60	1.40	1.40
631	E.L.U-3	-24.30	39.41	7.76	8.10	1.30	2.50	2.50	1.40	1.40
631	E.L.U-3	-311.90	-38.99	-8.17	3.30	0.50	1.00	1.00	0.50	0.50
631	E.L.U-3	-305.87	-40.40	-9.38	4.10	0.60	1.30	1.30	0.70	0.70
632	E.L.U-1	-198.37	1.96	2.90	0.00	0.00	0.00	0.00	0.00	0.00
632	E.L.U-1	-190.06	-1.78	-2.94	0.00	0.00	0.00	0.00	0.00	0.00
632	E.L.U-2	-101.25	37.46	9.26	6.40	1.00	2.00	2.00	1.10	1.10
632	E.L.U-2	-95.10	35.46	5.62	5.40	0.80	1.70	1.70	0.90	0.90
632	E.L.U-2	-162.31	-35.17	-5.87	4.00	0.60	1.20	1.20	0.70	0.70
632	E.L.U-2	-156.16	-37.49	-9.06	5.30	0.80	1.60	1.60	0.90	0.90
632	E.L.U-3	-94.53	51.87	12.27	10.90	1.80	3.40	3.40	1.90	1.90
632	E.L.U-3	-88.38	49.92	8.52	9.70	1.60	3.00	3.00	1.70	1.70
632	E.L.U-3	-169.03	-49.58	-8.88	8.40	1.30	2.60	2.60	1.50	1.50
632	E.L.U-3	-162.88	-51.96	-11.97	9.90	1.60	3.10	3.10	1.70	1.70
638	E.L.U-1	-153.44	0.50	1.51	0.00	0.00	0.00	0.00	0.00	0.00
638	E.L.U-1	-142.66	-0.37	-2.41	0.00	0.00	0.00	0.00	0.00	0.00
638	E.L.U-2	-66.36	13.45	8.69	1.60	0.20	0.50	0.50	0.20	0.20
638	E.L.U-2	-58.38	12.81	6.31	1.20	0.10	0.30	0.30	0.20	0.20
638	E.L.U-2	-140.11	-12.80	-6.88	0.20	0.00	0.00	0.00	0.00	0.00
638	E.L.U-2	-132.12	-13.26	-9.29	0.20	0.00	0.00	0.00	0.00	0.00
638	E.L.U-3	-54.75	16.63	10.99	3.00	0.40	0.90	0.90	0.50	0.50
638	E.L.U-3	-46.76	15.93	8.65	2.40	0.30	0.70	0.70	0.40	0.40
638	E.L.U-3	-151.72	-15.98	-9.17	0.20	0.00	0.00	0.00	0.00	0.00
638	E.L.U-3	-143.74	-16.38	-11.62	1.20	0.10	0.30	0.30	0.20	0.20
639	E.L.U-1	-131.25	-0.09	2.04	0.00	0.00	0.00	0.00	0.00	0.00
639	E.L.U-1	-120.47	0.16	-3.03	0.00	0.00	0.00	0.00	0.00	0.00
639	E.L.U-2	-68.47	13.31	9.28	1.70	0.20	0.50	0.50	0.30	0.30
639	E.L.U-2	-60.48	13.51	6.23	1.30	0.20	0.40	0.40	0.20	0.20
639	E.L.U-2	-110.53	-13.59	-6.81	0.20	0.00	0.00	0.00	0.00	0.00
639	E.L.U-2	-102.54	-13.18	-9.98	1.10	0.10	0.30	0.30	0.10	0.10
639	E.L.U-3	-61.15	16.66	11.78	3.00	0.40	0.90	0.90	0.50	0.50
639	E.L.U-3	-53.16	16.77	8.78	2.50	0.40	0.70	0.70	0.40	0.40
639	E.L.U-3	-117.85	-16.93	-9.31	1.20	0.10	0.30	0.30	0.20	0.20
639	E.L.U-3	-109.86	-16.44	-12.52	2.20	0.30	0.70	0.70	0.30	0.30

Quadro A. 10 - Pilares da família “P2” (0.30x0.20)

FRAME	COMBINATION	N	M ₂	M ₃	A _{s,total}	%A _{s,total}	A _{s31}	A _{s32}	A _{s21}	A _{s22}
149	E.L.U-1	-253.26	0.41	0.82	0.00	0.00	0.00	0.00	0.00	0.00
149	E.L.U-1	-245.12	-0.53	-1.15	0.00	0.00	0.00	0.00	0.00	0.00
149	E.L.U-2	-51.38	27.71	6.63	4.50	0.70	1.40	1.40	0.80	0.80
149	E.L.U-2	-45.35	27.08	5.40	4.40	0.70	1.40	1.40	0.70	0.70
149	E.L.U-2	-263.18	-27.23	-5.65	0.00	0.00	0.00	0.00	0.00	0.00
149	E.L.U-2	-257.15	-27.66	-6.78	0.40	0.00	0.10	0.10	0.00	0.00
149	E.L.U-3	-7.92	37.53	8.79	8.10	1.30	2.50	2.50	1.40	1.40
149	E.L.U-3	-1.89	36.88	7.55	7.90	1.30	2.50	2.50	1.40	1.40
149	E.L.U-3	-306.64	-37.06	-7.81	2.70	0.40	0.80	0.80	0.40	0.40
149	E.L.U-3	-300.61	-37.45	-8.92	3.10	0.50	0.90	0.90	0.50	0.50
150	E.L.U-1	-135.83	1.44	2.47	0.00	0.00	0.00	0.00	0.00	0.00

150	E.L.U-1	-127.53	-1.40	-2.62	0.00	0.00	0.00	0.00	0.00	0.00
150	E.L.U-2	-43.06	34.27	8.94	6.60	1.00	2.10	2.10	1.10	1.10
150	E.L.U-2	-36.91	32.89	5.89	6.00	0.90	1.90	1.90	1.00	1.00
150	E.L.U-2	-127.53	-32.68	-5.96	4.10	0.60	1.30	1.30	0.70	0.70
150	E.L.U-2	-121.38	-34.39	-9.06	5.20	0.80	1.60	1.60	0.90	0.90
150	E.L.U-3	-30.00	47.55	11.97	10.80	1.70	3.40	3.40	1.90	1.90
150	E.L.U-3	-23.85	46.23	8.93	10.00	1.60	3.10	3.10	1.80	1.80
150	E.L.U-3	-140.58	-45.95	-8.98	7.90	1.30	2.50	2.50	1.40	1.40
150	E.L.U-3	-134.43	-47.74	-12.10	9.10	1.50	2.90	2.90	1.60	1.60
153	E.L.U-1	-464.32	0.74	1.36	0.00	0.00	0.00	0.00	0.00	0.00
153	E.L.U-1	-456.18	-1.19	-2.16	0.00	0.00	0.00	0.00	0.00	0.00
153	E.L.U-2	-184.47	28.08	7.33	2.00	0.30	0.60	0.60	0.30	0.30
153	E.L.U-2	-178.44	26.91	5.14	1.50	0.20	0.40	0.40	0.20	0.20
153	E.L.U-2	-381.87	-27.13	-5.71	0.10	0.00	0.00	0.00	0.00	0.00
153	E.L.U-2	-375.84	-28.43	-7.69	0.30	0.00	0.00	0.00	0.00	0.00
153	E.L.U-3	-144.03	37.97	9.57	5.80	0.90	1.80	1.80	1.00	1.00
153	E.L.U-3	-138.00	36.86	7.33	5.20	0.80	1.60	1.60	0.90	0.90
153	E.L.U-3	-422.31	-37.03	-7.96	1.60	0.20	0.50	0.50	0.20	0.20
153	E.L.U-3	-416.28	-38.38	-9.88	2.80	0.40	0.80	0.80	0.50	0.50
154	E.L.U-1	-184.07	2.68	4.23	0.00	0.00	0.00	0.00	0.00	0.00
154	E.L.U-1	-175.77	-2.82	-4.54	0.00	0.00	0.00	0.00	0.00	0.00
154	E.L.U-2	-70.46	35.90	10.30	6.70	1.10	2.10	2.10	1.20	1.20
154	E.L.U-2	-64.31	32.82	5.08	5.30	0.80	1.60	1.60	0.90	0.90
154	E.L.U-2	-152.72	-32.55	-5.24	3.40	0.50	1.00	1.00	0.60	0.60
154	E.L.U-2	-146.57	-36.35	-10.53	5.50	0.90	1.70	1.70	0.90	0.90
154	E.L.U-3	-56.91	49.49	13.42	11.20	1.80	3.50	3.50	2.00	2.00
154	E.L.U-3	-50.76	46.55	8.22	9.40	1.50	3.00	3.00	1.60	1.60
154	E.L.U-3	-166.27	-46.13	-8.37	7.40	1.20	2.30	2.30	1.30	1.30
154	E.L.U-3	-160.12	-50.08	-13.67	9.90	1.60	3.10	3.10	1.70	1.70

Quadro A. 11 - Pilares da família "P3" (0.30x0.30)

FRAME	COMBINATION	N	M ₂	M ₃	A _{s,total}	%A _{s,total}	A _{s31}	A _{s32}	A _{s21}	A _{s22}
1	E.L.U-1	-78.91	-2.31	3.20	0.00	0.00	0.00	0.00	0.00	0.00
1	E.L.U-1	-66.69	3.72	-3.32	0.00	0.00	0.00	0.00	0.00	0.00
1	E.L.U-2	10.76	22.08	40.12	8.80	0.90	2.20	2.20	2.20	2.20
1	E.L.U-2	19.81	17.11	37.53	8.10	0.80	2.00	2.00	2.00	2.00
1	E.L.U-2	-126.63	-24.92	-36.22	5.50	0.60	1.30	1.30	1.30	1.30
1	E.L.U-2	-117.58	-12.50	-41.58	5.70	0.60	1.40	1.40	1.40	1.40
1	E.L.U-3	26.87	22.48	52.98	11.90	1.30	2.90	2.90	2.90	2.90
1	E.L.U-3	35.92	14.89	50.89	11.10	1.20	2.70	2.70	2.70	2.70
1	E.L.U-3	-142.74	-25.32	-49.07	8.00	0.80	2.00	2.00	2.00	2.00
1	E.L.U-3	-133.69	-10.28	-54.94	8.10	0.80	2.00	2.00	2.00	2.00
2	E.L.U-1	-624.90	1.53	0.99	0.00	0.00	0.00	0.00	0.00	0.00
2	E.L.U-1	-612.69	-5.26	0.87	0.00	0.00	0.00	0.00	0.00	0.00
2	E.L.U-2	-374.76	25.42	32.81	0.20	0.00	0.00	0.00	0.00	0.00
2	E.L.U-2	-365.72	21.14	33.03	0.40	0.00	0.10	0.10	0.10	0.10
2	E.L.U-2	-432.96	-23.15	-31.85	0.10	0.00	0.00	0.00	0.00	0.00
2	E.L.U-2	-423.91	-28.32	-31.49	0.70	0.00	0.10	0.10	0.10	0.10
2	E.L.U-3	-362.84	33.94	43.72	4.60	0.50	1.10	1.10	1.10	1.10
2	E.L.U-3	-353.79	29.88	43.94	4.00	0.40	1.00	1.00	1.00	1.00
2	E.L.U-3	-444.88	-31.68	-42.76	2.90	0.30	0.70	0.70	0.70	0.70
2	E.L.U-3	-435.84	-37.07	-42.40	4.10	0.40	1.00	1.00	1.00	1.00
3	E.L.U-1	-369.11	-8.04	2.37	0.00	0.00	0.00	0.00	0.00	0.00
3	E.L.U-1	-356.90	14.01	-1.55	0.00	0.00	0.00	0.00	0.00	0.00
3	E.L.U-2	-237.42	18.07	38.95	3.10	0.30	0.70	0.70	0.70	0.70
3	E.L.U-2	-228.38	31.53	36.59	4.70	0.50	1.10	1.10	1.10	1.10
3	E.L.U-2	-252.48	-28.32	-36.19	3.60	0.30	0.80	0.80	0.80	0.80
3	E.L.U-2	-243.44	-13.52	-38.24	2.40	0.20	0.60	0.60	0.60	0.60
3	E.L.U-3	-236.29	26.11	51.52	7.10	0.70	1.70	1.70	1.70	1.70
3	E.L.U-3	-227.24	39.31	49.12	8.90	0.90	2.20	2.20	2.20	2.20
3	E.L.U-3	-253.62	-36.36	-48.77	7.90	0.80	1.90	1.90	1.90	1.90
3	E.L.U-3	-244.58	-21.30	-50.77	6.10	0.60	1.50	1.50	1.50	1.50
46	E.L.U-1	-181.57	-7.44	2.73	0.00	0.00	0.00	0.00	0.00	0.00
46	E.L.U-1	-169.36	12.44	-2.30	0.00	0.00	0.00	0.00	0.00	0.00
46	E.L.U-2	-104.19	19.94	38.55	5.90	0.60	1.40	1.40	1.40	1.40
46	E.L.U-2	-95.14	29.72	34.87	6.50	0.70	1.60	1.60	1.60	1.60
46	E.L.U-2	-138.23	-29.22	-35.23	5.60	0.60	1.30	1.30	1.30	1.30
46	E.L.U-2	-129.18	-14.11	-37.69	4.70	0.50	1.10	1.10	1.10	1.10
46	E.L.U-3	-98.59	28.24	50.88	9.60	1.00	2.40	2.40	2.40	2.40
46	E.L.U-3	-89.55	36.99	46.98	10.30	1.10	2.50	2.50	2.50	2.50
46	E.L.U-3	-143.82	-37.52	-47.56	9.60	1.00	2.40	2.40	2.40	2.40
46	E.L.U-3	-134.78	-21.38	-49.80	7.90	0.80	1.90	1.90	1.90	1.90
62	E.L.U-1	-767.45	3.20	2.65	0.00	0.00	0.00	0.00	0.00	0.00
62	E.L.U-1	-755.24	-8.25	-2.47	0.00	0.00	0.00	0.00	0.00	0.00
62	E.L.U-2	-492.62	24.11	33.83	0.20	0.00	0.00	0.00	0.00	0.00
62	E.L.U-2	-483.57	16.40	30.50	1.30	0.10	0.30	0.30	0.30	0.30
62	E.L.U-2	-508.09	-19.65	-30.62	1.50	0.10	0.30	0.30	0.30	0.30
62	E.L.U-2	-499.05	-27.55	-33.50	0.10	0.00	0.00	0.00	0.00	0.00
62	E.L.U-3	-489.87	31.96	44.67	2.90	0.30	0.70	0.70	0.70	0.70
62	E.L.U-3	-480.82	24.34	41.27	0.60	0.00	0.10	0.10	0.10	0.10
62	E.L.U-3	-510.84	-27.51	-41.46	0.80	0.00	0.20	0.20	0.20	0.20
62	E.L.U-3	-501.80	-35.49	-44.26	3.40	0.30	0.80	0.80	0.80	0.80
63	E.L.U-1	-439.97	-13.72	3.15	0.00	0.00	0.00	0.00	0.00	0.00
63	E.L.U-1	-427.75	25.81	-3.12	0.00	0.00	0.00	0.00	0.00	0.00

63	E.L.U-2	-287.81	11.89	39.52	1.60	0.10	0.40	0.40	0.40	0.40
63	E.L.U-2	-278.76	36.40	35.45	4.50	0.40	1.10	1.10	1.10	1.10
63	E.L.U-2	-295.41	-29.59	-35.68	2.90	0.30	0.70	0.70	0.70	0.70
63	E.L.U-2	-286.36	-2.97	-39.25	1.20	0.10	0.30	0.30	0.30	0.30
63	E.L.U-3	-287.43	19.25	52.10	5.40	0.50	1.30	1.30	1.30	1.30
63	E.L.U-3	-278.38	43.37	47.95	8.70	0.90	2.10	2.10	2.10	2.10
63	E.L.U-3	-295.79	-36.95	-48.27	7.30	0.80	1.80	1.80	1.80	1.80
63	E.L.U-3	-286.74	-9.93	-51.75	4.40	0.40	1.10	1.10	1.10	1.10
68	E.L.U-1	-433.15	-14.60	3.23	0.00	0.00	0.00	0.00	0.00	0.00
68	E.L.U-1	-420.94	27.94	-3.25	0.00	0.00	0.00	0.00	0.00	0.00
68	E.L.U-2	-281.66	11.04	39.66	1.80	0.10	0.40	0.40	0.40	0.40
68	E.L.U-2	-272.61	37.51	35.50	4.90	0.50	1.20	1.20	1.20	1.20
68	E.L.U-2	-291.84	-29.90	-35.75	3.10	0.30	0.70	0.70	0.70	0.70
68	E.L.U-2	-282.80	-1.28	-39.45	1.20	0.10	0.30	0.30	0.30	0.30
68	E.L.U-3	-281.05	18.44	52.28	5.50	0.60	1.30	1.30	1.30	1.30
68	E.L.U-3	-272.00	44.51	48.05	9.10	1.00	2.20	2.20	2.20	2.20
68	E.L.U-3	-292.46	-37.30	-48.37	7.40	0.80	1.80	1.80	1.80	1.80
68	E.L.U-3	-283.41	-8.28	-51.99	4.40	0.40	1.10	1.10	1.10	1.10
69	E.L.U-1	-792.97	3.69	2.92	0.00	0.00	0.00	0.00	0.00	0.00
69	E.L.U-1	-780.76	-8.87	-3.01	0.00	0.00	0.00	0.00	0.00	0.00
69	E.L.U-2	-507.59	24.11	34.10	0.10	0.00	0.00	0.00	0.00	0.00
69	E.L.U-2	-498.54	15.59	30.35	0.90	0.00	0.20	0.20	0.20	0.20
69	E.L.U-2	-522.97	-19.01	-30.56	1.30	0.10	0.30	0.30	0.30	0.30
69	E.L.U-2	-513.92	-27.59	-34.00	0.00	0.00	0.00	0.00	0.00	0.00
69	E.L.U-3	-505.10	31.98	44.98	2.80	0.30	0.60	0.60	0.60	0.60
69	E.L.U-3	-496.05	23.53	41.17	0.20	0.00	0.00	0.00	0.00	0.00
69	E.L.U-3	-525.46	-26.88	-41.44	0.60	0.00	0.10	0.10	0.10	0.10
69	E.L.U-3	-516.41	-35.53	-44.83	3.50	0.30	0.80	0.80	0.80	0.80
93	E.L.U-1	-428.07	-14.54	3.22	0.00	0.00	0.00	0.00	0.00	0.00
93	E.L.U-1	-415.86	28.19	-3.23	0.00	0.00	0.00	0.00	0.00	0.00
93	E.L.U-2	-278.55	12.62	39.72	1.90	0.20	0.40	0.40	0.40	0.40
93	E.L.U-2	-269.51	39.12	35.57	5.30	0.50	1.30	1.30	1.30	1.30
93	E.L.U-2	-288.19	-31.42	-35.81	3.40	0.30	0.80	0.80	0.80	0.80
93	E.L.U-2	-279.14	-2.57	-39.49	1.40	0.10	0.30	0.30	0.30	0.30
93	E.L.U-3	-277.95	20.64	52.35	5.80	0.60	1.40	1.40	1.40	1.40
93	E.L.U-3	-268.91	46.68	48.13	9.60	1.00	2.40	2.40	2.40	2.40
93	E.L.U-3	-288.78	-39.44	-48.45	7.90	0.80	1.90	1.90	1.90	1.90
93	E.L.U-3	-279.74	-10.13	-52.05	4.60	0.50	1.10	1.10	1.10	1.10
101	E.L.U-1	-749.85	5.00	2.92	0.00	0.00	0.00	0.00	0.00	0.00
101	E.L.U-1	-737.64	-11.13	-3.01	0.00	0.00	0.00	0.00	0.00	0.00
101	E.L.U-2	-476.22	26.68	34.11	0.20	0.00	0.00	0.00	0.00	0.00
101	E.L.U-2	-467.18	16.08	30.32	1.50	0.10	0.30	0.30	0.30	0.30
101	E.L.U-2	-500.72	-19.97	-30.57	1.50	0.10	0.30	0.30	0.30	0.30
101	E.L.U-2	-491.68	-30.87	-33.98	0.20	0.00	0.00	0.00	0.00	0.00
101	E.L.U-3	-471.82	35.28	44.98	3.90	0.40	0.90	0.90	0.90	0.90
101	E.L.U-3	-462.78	24.79	41.12	0.90	0.00	0.20	0.20	0.20	0.20
101	E.L.U-3	-505.13	-28.56	-41.43	1.10	0.10	0.20	0.20	0.20	0.20
101	E.L.U-3	-496.08	-39.58	-44.78	4.60	0.50	1.10	1.10	1.10	1.10
109	E.L.U-1	-433.56	-14.32	3.11	0.00	0.00	0.00	0.00	0.00	0.00
109	E.L.U-1	-421.35	28.12	-3.01	0.00	0.00	0.00	0.00	0.00	0.00
109	E.L.U-2	-282.04	15.77	39.68	2.10	0.20	0.50	0.50	0.50	0.50
109	E.L.U-2	-272.99	41.94	35.76	5.90	0.60	1.40	1.40	1.40	1.40
109	E.L.U-2	-291.77	-34.31	-35.92	4.00	0.40	1.00	1.00	1.00	1.00
109	E.L.U-2	-282.73	-5.46	-39.38	1.30	0.10	0.30	0.30	0.30	0.30
109	E.L.U-3	-281.12	24.86	52.32	6.30	0.60	1.50	1.50	1.50	1.50
109	E.L.U-3	-272.07	50.50	48.32	10.50	1.10	2.60	2.60	2.60	2.60
109	E.L.U-3	-292.69	-43.40	-48.56	8.70	0.90	2.10	2.10	2.10	2.10
109	E.L.U-3	-283.65	-14.02	-51.95	4.90	0.50	1.20	1.20	1.20	1.20
116	E.L.U-1	-753.83	5.57	2.70	0.00	0.00	0.00	0.00	0.00	0.00
116	E.L.U-1	-741.62	-11.91	-2.55	0.00	0.00	0.00	0.00	0.00	0.00
116	E.L.U-2	-476.79	30.25	34.01	0.00	0.00	0.00	0.00	0.00	0.00
116	E.L.U-2	-467.74	18.86	30.68	0.30	0.00	0.00	0.00	0.00	0.00
116	E.L.U-2	-505.53	-22.84	-30.76	1.40	0.10	0.30	0.30	0.30	0.30
116	E.L.U-2	-496.49	-34.61	-33.75	0.60	0.00	0.10	0.10	0.10	0.10
116	E.L.U-3	-471.13	40.01	44.89	5.00	0.50	1.20	1.20	1.20	1.20
116	E.L.U-3	-462.08	28.77	41.49	1.80	0.10	0.40	0.40	0.40	0.40
116	E.L.U-3	-511.20	-32.60	-41.63	2.00	0.20	0.50	0.50	0.50	0.50
116	E.L.U-3	-502.15	-44.51	-44.56	5.80	0.60	1.40	1.40	1.40	1.40
117	E.L.U-1	-434.94	-13.93	3.26	0.00	0.00	0.00	0.00	0.00	0.00
117	E.L.U-1	-422.73	27.73	-3.30	0.00	0.00	0.00	0.00	0.00	0.00
117	E.L.U-2	-282.26	20.14	39.79	2.70	0.20	0.60	0.60	0.60	0.60
117	E.L.U-2	-273.22	45.64	35.55	6.70	0.70	1.60	1.60	1.60	1.60
117	E.L.U-2	-293.46	-38.21	-35.83	4.80	0.50	1.20	1.20	1.20	1.20
117	E.L.U-2	-284.42	-9.64	-39.57	1.60	0.10	0.40	0.40	0.40	0.40
117	E.L.U-3	-280.92	30.65	52.42	7.20	0.70	1.70	1.70	1.70	1.70
117	E.L.U-3	-271.87	55.55	48.10	11.50	1.20	2.80	2.80	2.80	2.80
117	E.L.U-3	-294.81	-48.71	-48.46	9.80	1.00	2.40	2.40	2.40	2.40
117	E.L.U-3	-285.76	-19.55	-52.12	5.50	0.60	1.30	1.30	1.30	1.30
118	E.L.U-1	-763.17	5.79	2.87	0.00	0.00	0.00	0.00	0.00	0.00
118	E.L.U-1	-750.96	-11.98	-2.90	0.00	0.00	0.00	0.00	0.00	0.00
118	E.L.U-2	-480.61	34.69	34.13	1.00	0.10	0.20	0.20	0.20	0.20
118	E.L.U-2	-471.57	23.10	30.45	0.00	0.00	0.00	0.00	0.00	0.00
118	E.L.U-2	-513.42	-27.01	-30.66	0.10	0.00	0.00	0.00	0.00	0.00
118	E.L.U-2	-504.38	-38.93	-33.96	1.70	0.10	0.40	0.40	0.40	0.40
118	E.L.U-3	-474.14	45.95	45.00	6.50	0.70	1.60	1.60	1.60	1.60
118	E.L.U-3	-465.10	34.52	41.25	2.90	0.30	0.70	0.70	0.70	0.70
118	E.L.U-3	-519.89	-38.27	-41.52	3.40	0.30	0.80	0.80	0.80	0.80
118	E.L.U-3	-510.85	-50.34	-44.77	7.30	0.80	1.80	1.80	1.80	1.80
119	E.L.U-1	-434.15	-13.45	3.16	0.00	0.00	0.00	0.00	0.00	0.00
119	E.L.U-1	-421.94	27.14	-3.10	0.00	0.00	0.00	0.00	0.00	0.00

119	E.L.U-2	-276.90	25.18	39.82	3.40	0.30	0.80	0.80	0.80	0.80
119	E.L.U-2	-267.86	49.80	35.88	7.80	0.80	1.90	1.90	1.90	1.90
119	E.L.U-2	-298.04	-42.66	-36.00	5.70	0.60	1.40	1.40	1.40	1.40
119	E.L.U-2	-288.99	-14.52	-39.62	1.90	0.20	0.40	0.40	0.40	0.40
119	E.L.U-3	-273.90	37.30	52.48	8.60	0.90	2.10	2.10	2.10	2.10
119	E.L.U-3	-264.86	61.26	48.49	13.00	1.40	3.20	3.20	3.20	3.20
119	E.L.U-3	-301.04	-54.78	-48.66	11.10	1.20	2.70	2.70	2.70	2.70
119	E.L.U-3	-291.99	-25.98	-52.23	6.30	0.60	1.50	1.50	1.50	1.50
120	E.L.U-1	-779.22	5.78	2.74	0.00	0.00	0.00	0.00	0.00	0.00
120	E.L.U-1	-767.00	-11.58	-2.64	0.00	0.00	0.00	0.00	0.00	0.00
120	E.L.U-2	-493.41	39.46	34.13	2.00	0.20	0.50	0.50	0.50	0.50
120	E.L.U-2	-484.36	27.96	30.77	0.00	0.00	0.00	0.00	0.00	0.00
120	E.L.U-2	-520.70	-31.80	-30.82	0.50	0.00	0.10	0.10	0.10	0.10
120	E.L.U-2	-511.65	-43.28	-33.95	2.80	0.30	0.60	0.60	0.60	0.60
120	E.L.U-3	-488.41	52.34	45.02	8.00	0.80	2.00	2.00	2.00	2.00
120	E.L.U-3	-479.37	40.94	41.63	4.40	0.40	1.10	1.10	1.10	1.10
120	E.L.U-3	-525.69	-44.68	-41.71	5.00	0.50	1.20	1.20	1.20	1.20
120	E.L.U-3	-516.65	-56.25	-44.81	8.80	0.90	2.20	2.20	2.20	2.20
121	E.L.U-1	-368.60	-12.92	3.64	0.00	0.00	0.00	0.00	0.00	0.00
121	E.L.U-1	-356.39	26.44	-4.07	0.00	0.00	0.00	0.00	0.00	0.00
121	E.L.U-2	-233.08	30.55	39.70	5.10	0.50	1.20	1.20	1.20	1.20
121	E.L.U-2	-224.04	54.05	34.35	9.10	1.00	2.20	2.20	2.20	2.20
121	E.L.U-2	-255.07	-47.36	-35.24	7.30	0.80	1.80	1.80	1.80	1.80
121	E.L.U-2	-246.03	-19.65	-39.39	3.20	0.30	0.80	0.80	0.80	0.80
121	E.L.U-3	-229.38	44.37	52.21	10.50	1.10	2.60	2.60	2.60	2.60
121	E.L.U-3	-220.33	67.09	46.65	14.60	1.60	3.60	3.60	3.60	3.60
121	E.L.U-3	-258.78	-61.19	-47.74	12.90	1.40	3.20	3.20	3.20	3.20
121	E.L.U-3	-249.73	-32.69	-51.69	7.90	0.80	1.90	1.90	1.90	1.90
122	E.L.U-1	-653.79	6.20	3.80	0.00	0.00	0.00	0.00	0.00	0.00
122	E.L.U-1	-641.58	-12.05	-4.78	0.00	0.00	0.00	0.00	0.00	0.00
122	E.L.U-2	-411.86	45.15	34.50	4.50	0.40	1.10	1.10	1.10	1.10
122	E.L.U-2	-402.81	33.19	28.72	0.40	0.00	0.10	0.10	0.10	0.10
122	E.L.U-2	-439.71	-36.99	-29.80	1.10	0.10	0.20	0.20	0.20	0.20
122	E.L.U-2	-430.67	-49.05	-34.68	5.30	0.50	1.30	1.30	1.30	1.30
122	E.L.U-3	-406.58	59.87	45.24	10.60	1.10	2.60	2.60	2.60	2.60
122	E.L.U-3	-397.54	48.00	39.28	6.40	0.70	1.60	1.60	1.60	1.60
122	E.L.U-3	-444.98	-51.70	-40.55	7.10	0.70	1.70	1.70	1.70	1.70
122	E.L.U-3	-435.94	-63.87	-45.24	11.50	1.20	2.80	2.80	2.80	2.80
371	E.L.U-1	-343.63	-2.31	0.57	0.00	0.00	0.00	0.00	0.00	0.00
371	E.L.U-1	-331.42	2.13	1.71	0.00	0.00	0.00	0.00	0.00	0.00
371	E.L.U-2	-176.71	27.35	30.33	3.60	0.30	0.80	0.80	0.80	0.80
371	E.L.U-2	-167.66	31.42	28.78	4.30	0.40	1.00	1.00	1.00	1.00
371	E.L.U-2	-257.76	-30.08	-29.73	2.50	0.20	0.60	0.60	0.60	0.60
371	E.L.U-2	-248.71	-28.97	-26.54	1.90	0.20	0.40	0.40	0.40	0.40
371	E.L.U-3	-160.81	37.40	40.36	7.70	0.80	1.90	1.90	1.90	1.90
371	E.L.U-3	-151.76	42.21	37.92	8.40	0.90	2.00	2.00	2.00	2.00
371	E.L.U-3	-273.66	-40.13	-39.75	6.30	0.60	1.50	1.50	1.50	1.50
371	E.L.U-3	-264.61	-39.76	-35.68	5.50	0.60	1.30	1.30	1.30	1.30

Quadro A. 12 - Pilares da família "P4" (0.30x0.30)

FRAME	COMBINATION	N	M ₂	M ₃	A _{s,total}	%A _{s,total}	A _{s31}	A _{s32}	A _{s21}	A _{s22}
6	E.L.U-1	-161.20	19.48	8.93	0.90	0.00	0.20	0.20	0.20	0.20
6	E.L.U-1	-159.77	1.73	12.19	0.00	0.00	0.00	0.00	0.00	0.00
6	E.L.U-1	-158.33	-16.02	15.46	1.40	0.10	0.30	0.30	0.30	0.30
6	E.L.U-2	-81.65	72.63	37.09	16.20	1.70	4.00	4.00	4.00	4.00
6	E.L.U-2	-80.59	2.20	8.46	0.60	0.00	0.10	0.10	0.10	0.10
6	E.L.U-2	-79.53	52.29	42.31	12.50	1.30	3.10	3.10	3.10	3.10
6	E.L.U-2	-136.01	-47.92	-25.78	7.90	0.80	1.90	1.90	1.90	1.90
6	E.L.U-2	-134.94	0.08	7.01	0.00	0.00	0.00	0.00	0.00	0.00
6	E.L.U-2	-133.88	-72.46	-22.67	13.40	1.40	3.30	3.30	3.30	3.30
6	E.L.U-3	-73.56	89.28	46.53	21.60	2.30	5.40	5.40	5.40	5.40
6	E.L.U-3	-72.49	2.46	8.64	0.90	0.00	0.20	0.20	0.20	0.20
6	E.L.U-3	-71.43	69.46	52.25	18.10	2.00	4.50	4.50	4.50	4.50
6	E.L.U-3	-144.10	-64.57	-35.22	12.90	1.40	3.20	3.20	3.20	3.20
6	E.L.U-3	-143.04	-0.19	6.84	0.00	0.00	0.00	0.00	0.00	0.00
6	E.L.U-3	-141.98	-89.63	-32.61	18.60	2.00	4.60	4.60	4.60	4.60
15	E.L.U-1	-82.64	1.34	-6.96	0.00	0.00	0.00	0.00	0.00	0.00
15	E.L.U-1	-75.27	-2.73	9.41	1.10	0.10	0.20	0.20	0.20	0.20
15	E.L.U-2	-42.92	4.27	6.86	0.10	0.00	0.00	0.00	0.00	0.00
15	E.L.U-2	-37.47	2.32	19.29	2.50	0.20	0.60	0.60	0.60	0.60
15	E.L.U-2	-67.78	-2.54	-15.71	1.20	0.10	0.30	0.30	0.30	0.30
15	E.L.U-2	-62.32	-5.86	-7.16	0.80	0.00	0.20	0.20	0.20	0.20
15	E.L.U-3	-42.31	4.59	6.92	0.20	0.00	0.00	0.00	0.00	0.00
15	E.L.U-3	-36.85	2.73	20.00	2.70	0.20	0.60	0.60	0.60	0.60
15	E.L.U-3	-68.40	-2.86	-15.78	1.10	0.10	0.20	0.20	0.20	0.20
15	E.L.U-3	-62.94	-6.27	-7.87	0.90	0.00	0.20	0.20	0.20	0.20
18	E.L.U-1	-59.90	-0.01	-0.08	0.00	0.00	0.00	0.00	0.00	0.00
18	E.L.U-1	-56.18	-2.48	-1.44	0.00	0.00	0.00	0.00	0.00	0.00
18	E.L.U-2	-5.49	0.18	0.77	1.00	0.10	0.20	0.20	0.20	0.20
18	E.L.U-2	-2.73	7.15	3.29	1.10	0.10	0.20	0.20	0.20	0.20
18	E.L.U-2	-75.53	-0.21	-0.94	0.00	0.00	0.00	0.00	0.00	0.00
18	E.L.U-2	-72.77	-10.42	-5.11	0.10	0.00	0.00	0.00	0.00	0.00
18	E.L.U-3	2.40	0.20	0.90	0.20	0.00	0.00	0.00	0.00	0.00

18	E.L.U-3	5.15	8.99	4.22	1.70	0.10	0.40	0.40	0.40	0.40
18	E.L.U-3	-83.41	-0.23	-1.06	0.00	0.00	0.00	0.00	0.00	0.00
18	E.L.U-3	-80.65	-12.26	-6.04	0.20	0.00	0.00	0.00	0.00	0.00
34	E.L.U-1	-78.05	0.13	4.63	0.00	0.00	0.00	0.00	0.00	0.00
34	E.L.U-1	-70.69	-1.61	-7.37	0.00	0.00	0.00	0.00	0.00	0.00
34	E.L.U-2	-36.88	6.30	11.36	1.10	0.10	0.20	0.20	0.20	0.20
34	E.L.U-2	-31.43	6.03	3.68	0.20	0.00	0.00	0.00	0.00	0.00
34	E.L.U-2	-68.47	-6.07	-5.09	0.20	0.00	0.00	0.00	0.00	0.00
34	E.L.U-2	-63.02	-8.18	-13.52	1.00	0.10	0.20	0.20	0.20	0.20
34	E.L.U-3	-34.49	6.86	11.18	1.20	0.10	0.30	0.30	0.30	0.30
34	E.L.U-3	-29.04	6.76	2.63	0.40	0.00	0.10	0.10	0.10	0.10
34	E.L.U-3	-70.86	-6.64	-4.91	0.20	0.00	0.00	0.00	0.00	0.00
34	E.L.U-3	-65.41	-8.91	-12.46	0.80	0.00	0.20	0.20	0.20	0.20
35	E.L.U-1	-502.52	-0.04	1.97	0.00	0.00	0.00	0.00	0.00	0.00
35	E.L.U-1	-490.31	0.33	-2.38	0.00	0.00	0.00	0.00	0.00	0.00
35	E.L.U-2	-172.57	37.95	21.35	4.50	0.40	1.10	1.10	1.10	1.10
35	E.L.U-2	-163.52	37.99	18.27	4.30	0.40	1.00	1.00	1.00	1.00
35	E.L.U-2	-462.72	-37.98	-18.94	0.70	0.00	0.10	0.10	0.10	0.10
35	E.L.U-2	-453.67	-37.62	-21.20	0.40	0.00	0.10	0.10	0.10	0.10
35	E.L.U-3	-112.65	51.55	28.47	9.50	1.00	2.30	2.30	2.30	2.30
35	E.L.U-3	-103.60	51.49	25.19	9.30	1.00	2.30	2.30	2.30	2.30
35	E.L.U-3	-522.64	-51.58	-26.06	3.20	0.30	0.80	0.80	0.80	0.80
35	E.L.U-3	-513.59	-51.13	-28.13	3.60	0.30	0.80	0.80	0.80	0.80
36	E.L.U-1	-394.48	0.32	6.19	0.00	0.00	0.00	0.00	0.00	0.00
36	E.L.U-1	-382.02	-0.39	-6.83	0.00	0.00	0.00	0.00	0.00	0.00
36	E.L.U-2	-206.18	45.76	27.57	6.40	0.70	1.60	1.60	1.60	1.60
36	E.L.U-2	-196.96	45.18	19.37	5.40	0.50	1.30	1.30	1.30	1.30
36	E.L.U-2	-296.71	-45.36	-19.97	3.70	0.40	0.90	0.90	0.90	0.90
36	E.L.U-2	-287.48	-45.66	-27.77	5.00	0.50	1.20	1.20	1.20	1.20
36	E.L.U-3	-199.58	63.92	37.19	12.20	1.30	3.00	3.00	3.00	3.00
36	E.L.U-3	-190.36	63.28	28.88	11.00	1.20	2.70	2.70	2.70	2.70
36	E.L.U-3	-303.31	-63.52	-29.59	9.50	1.00	2.30	2.30	2.30	2.30
36	E.L.U-3	-294.08	-63.76	-37.29	11.00	1.20	2.70	2.70	2.70	2.70
37	E.L.U-1	-243.57	0.08	5.17	0.00	0.00	0.00	0.00	0.00	0.00
37	E.L.U-1	-230.27	-0.43	-6.64	0.00	0.00	0.00	0.00	0.00	0.00
37	E.L.U-2	-131.15	21.95	39.26	5.70	0.60	1.40	1.40	1.40	1.40
37	E.L.U-2	-121.30	21.76	31.12	4.20	0.40	1.00	1.00	1.00	1.00
37	E.L.U-2	-186.60	-21.94	-32.80	3.10	0.30	0.70	0.70	0.70	0.70
37	E.L.U-2	-176.75	-22.18	-39.36	4.80	0.50	1.20	1.20	1.20	1.20
37	E.L.U-3	-127.81	27.72	49.68	8.70	0.90	2.10	2.10	2.10	2.10
37	E.L.U-3	-117.95	27.57	41.33	7.00	0.70	1.70	1.70	1.70	1.70
37	E.L.U-3	-189.95	-27.71	-43.22	6.20	0.60	1.50	1.50	1.50	1.50
37	E.L.U-3	-180.09	-27.99	-49.57	7.80	0.80	1.90	1.90	1.90	1.90
38	E.L.U-1	-250.02	4.46	8.78	0.00	0.00	0.00	0.00	0.00	0.00
38	E.L.U-1	-247.15	-5.50	13.07	0.00	0.00	0.00	0.00	0.00	0.00
38	E.L.U-2	-113.21	57.34	35.60	11.90	1.30	2.90	2.90	2.90	2.90
38	E.L.U-2	-111.08	52.00	37.97	11.10	1.20	2.70	2.70	2.70	2.70
38	E.L.U-2	-215.91	-52.15	-24.81	7.30	0.80	1.80	1.80	1.80	1.80
38	E.L.U-2	-213.79	-58.52	-21.19	8.40	0.90	2.00	2.00	2.00	2.00
38	E.L.U-3	-93.89	71.92	44.67	17.00	1.80	4.20	4.20	4.20	4.20
38	E.L.U-3	-91.76	66.75	47.00	16.30	1.80	4.00	4.00	4.00	4.00
38	E.L.U-3	-235.23	-66.73	-33.87	11.90	1.30	2.90	2.90	2.90	2.90
38	E.L.U-3	-233.10	-73.27	-30.21	13.00	1.40	3.20	3.20	3.20	3.20
39	E.L.U-1	-714.67	2.84	1.91	0.00	0.00	0.00	0.00	0.00	0.00
39	E.L.U-1	-702.46	-5.48	-2.11	0.00	0.00	0.00	0.00	0.00	0.00
39	E.L.U-2	-403.83	39.67	21.70	0.70	0.00	0.10	0.10	0.10	0.10
39	E.L.U-2	-394.79	34.59	18.66	0.00	0.00	0.00	0.00	0.00	0.00
39	E.L.U-2	-482.60	-36.28	-19.33	0.50	0.00	0.10	0.10	0.10	0.10
39	E.L.U-2	-473.55	-41.09	-21.36	0.00	0.00	0.00	0.00	0.00	0.00
39	E.L.U-3	-388.08	53.32	28.86	5.60	0.60	1.30	1.30	1.30	1.30
39	E.L.U-3	-379.04	48.23	25.57	3.90	0.40	0.90	0.90	0.90	0.90
39	E.L.U-3	-498.35	-49.93	-26.48	3.10	0.30	0.70	0.70	0.70	0.70
39	E.L.U-3	-489.30	-54.73	-28.27	4.90	0.50	1.20	1.20	1.20	1.20
40	E.L.U-1	-461.58	9.16	6.04	0.00	0.00	0.00	0.00	0.00	0.00
40	E.L.U-1	-449.13	-9.47	-6.76	0.00	0.00	0.00	0.00	0.00	0.00
40	E.L.U-2	-264.39	51.82	27.66	6.80	0.70	1.70	1.70	1.70	1.70
40	E.L.U-2	-255.16	41.08	19.43	3.40	0.30	0.80	0.80	0.80	0.80
40	E.L.U-2	-321.53	-40.96	-20.09	2.20	0.20	0.50	0.50	0.50	0.50
40	E.L.U-2	-312.30	-52.31	-27.91	6.30	0.60	1.50	1.50	1.50	1.50
40	E.L.U-3	-255.57	70.28	37.27	13.10	1.40	3.20	3.20	3.20	3.20
40	E.L.U-3	-246.34	59.69	28.92	9.20	1.00	2.20	2.20	2.20	2.20
40	E.L.U-3	-330.35	-59.41	-29.70	8.10	0.80	2.00	2.00	2.00	2.00
40	E.L.U-3	-321.12	-70.92	-37.41	12.50	1.30	3.10	3.10	3.10	3.10
41	E.L.U-1	-199.39	7.35	4.97	0.00	0.00	0.00	0.00	0.00	0.00
41	E.L.U-1	-186.08	-6.36	-6.73	0.00	0.00	0.00	0.00	0.00	0.00
41	E.L.U-2	-115.66	27.71	39.92	6.80	0.70	1.70	1.70	1.70	1.70
41	E.L.U-2	-105.81	19.28	31.61	4.30	0.40	1.00	1.00	1.00	1.00
41	E.L.U-2	-162.62	-18.93	-33.54	3.50	0.30	0.80	0.80	0.80	0.80
41	E.L.U-2	-152.76	-27.08	-40.13	6.10	0.60	1.50	1.50	1.50	1.50
41	E.L.U-3	-110.98	34.05	50.99	10.30	1.10	2.50	2.50	2.50	2.50
41	E.L.U-3	-101.13	25.59	42.45	7.40	0.80	1.80	1.80	1.80	1.80
41	E.L.U-3	-167.30	-25.27	-44.61	6.60	0.70	1.60	1.60	1.60	1.60
41	E.L.U-3	-157.45	-33.39	-50.97	9.40	1.00	2.30	2.30	2.30	2.30
43	E.L.U-1	-955.32	0.01	5.65	0.00	0.00	0.00	0.00	0.00	0.00
43	E.L.U-1	-943.10	0.09	-9.79	0.00	0.00	0.00	0.00	0.00	0.00
43	E.L.U-2	-462.90	35.57	23.23	0.60	0.00	0.10	0.10	0.10	0.10
43	E.L.U-2	-453.85	34.89	13.51	0.00	0.00	0.00	0.00	0.00	0.00
43	E.L.U-2	-709.99	-35.53	-16.57	1.60	0.10	0.40	0.40	0.40	0.40
43	E.L.U-2	-700.94	-34.82	-25.01	0.20	0.00	0.00	0.00	0.00	0.00
43	E.L.U-3	-414.39	48.27	30.25	4.40	0.40	1.10	1.10	1.10	1.10

43	E.L.U-3	-405.34	47.22	20.23	2.50	0.20	0.60	0.60	0.60	0.60
43	E.L.U-3	-758.50	-48.22	-23.59	0.80	0.00	0.20	0.20	0.20	0.20
43	E.L.U-3	-749.45	-47.15	-31.73	2.50	0.20	0.60	0.60	0.60	0.60
44	E.L.U-1	-603.59	0.70	17.25	0.00	0.00	0.00	0.00	0.00	0.00
44	E.L.U-1	-591.14	-1.00	-18.08	0.00	0.00	0.00	0.00	0.00	0.00
44	E.L.U-2	-316.00	41.92	33.27	4.70	0.50	1.10	1.10	1.10	1.10
44	E.L.U-2	-306.77	40.79	12.18	1.60	0.10	0.40	0.40	0.40	0.40
44	E.L.U-2	-444.62	-41.04	-12.90	0.90	0.00	0.20	0.20	0.20	0.20
44	E.L.U-2	-435.40	-42.05	-33.56	3.20	0.30	0.80	0.80	0.80	0.80
44	E.L.U-3	-299.86	58.44	42.59	10.70	1.10	2.60	2.60	2.60	2.60
44	E.L.U-3	-290.64	57.32	21.36	6.90	0.70	1.70	1.70	1.70	1.70
44	E.L.U-3	-460.76	-57.57	-22.22	4.80	0.50	1.20	1.20	1.20	1.20
44	E.L.U-3	-451.53	-58.57	-42.75	9.40	1.00	2.30	2.30	2.30	2.30
45	E.L.U-1	-287.26	1.06	13.23	0.00	0.00	0.00	0.00	0.00	0.00
45	E.L.U-1	-273.95	-1.04	-12.01	0.00	0.00	0.00	0.00	0.00	0.00
45	E.L.U-2	-139.52	21.93	44.29	6.60	0.70	1.60	1.60	1.60	1.60
45	E.L.U-2	-129.66	21.41	29.37	3.60	0.30	0.80	0.80	0.80	0.80
45	E.L.U-2	-253.90	-20.71	-28.41	0.70	0.00	0.10	0.10	0.10	0.10
45	E.L.U-2	-244.04	-22.59	-44.06	4.70	0.50	1.10	1.10	1.10	1.10
45	E.L.U-3	-121.03	27.66	54.80	10.00	1.10	2.50	2.50	2.50	2.50
45	E.L.U-3	-111.17	27.46	40.06	6.90	0.70	1.70	1.70	1.70	1.70
45	E.L.U-3	-272.39	-26.44	-38.92	3.50	0.30	0.80	0.80	0.80	0.80
45	E.L.U-3	-262.53	-28.64	-54.74	7.70	0.80	1.90	1.90	1.90	1.90
47	E.L.U-1	-818.39	4.56	2.03	0.00	0.00	0.00	0.00	0.00	0.00
47	E.L.U-1	-806.18	-9.05	-2.36	0.00	0.00	0.00	0.00	0.00	0.00
47	E.L.U-2	-437.95	38.26	21.41	0.50	0.00	0.10	0.10	0.10	0.10
47	E.L.U-2	-428.90	29.57	17.82	0.50	0.00	0.10	0.10	0.10	0.10
47	E.L.U-2	-589.36	-32.86	-18.91	0.70	0.00	0.10	0.10	0.10	0.10
47	E.L.U-2	-580.31	-40.29	-20.78	0.10	0.00	0.00	0.00	0.00	0.00
47	E.L.U-3	-407.23	51.03	28.40	4.70	0.50	1.10	1.10	1.10	1.10
47	E.L.U-3	-398.18	42.08	24.37	1.90	0.20	0.40	0.40	0.40	0.40
47	E.L.U-3	-620.07	-45.62	-25.89	0.80	0.00	0.20	0.20	0.20	0.20
47	E.L.U-3	-611.03	-52.80	-27.33	3.40	0.30	0.80	0.80	0.80	0.80
48	E.L.U-1	-661.21	14.05	6.51	0.00	0.00	0.00	0.00	0.00	0.00
48	E.L.U-1	-648.76	-14.14	-7.34	0.00	0.00	0.00	0.00	0.00	0.00
48	E.L.U-2	-363.97	50.94	26.60	5.00	0.50	1.20	1.20	1.20	1.20
48	E.L.U-2	-354.75	34.66	17.64	0.60	0.00	0.10	0.10	0.10	0.10
48	E.L.U-2	-473.30	-34.33	-18.54	0.30	0.00	0.00	0.00	0.00	0.00
48	E.L.U-2	-464.08	-51.36	-26.74	3.90	0.40	0.90	0.90	0.90	0.90
48	E.L.U-3	-347.32	67.88	35.60	11.10	1.20	2.70	2.70	2.70	2.70
48	E.L.U-3	-338.09	51.81	26.42	5.60	0.60	1.30	1.30	1.30	1.30
48	E.L.U-3	-489.96	-51.28	-27.54	3.80	0.40	0.90	0.90	0.90	0.90
48	E.L.U-3	-480.73	-68.51	-35.52	10.20	1.10	2.50	2.50	2.50	2.50
61	E.L.U-1	-519.84	10.58	5.51	0.00	0.00	0.00	0.00	0.00	0.00
61	E.L.U-1	-506.53	-8.21	-7.15	0.00	0.00	0.00	0.00	0.00	0.00
61	E.L.U-2	-290.51	29.13	39.82	3.90	0.40	0.90	0.90	0.90	0.90
61	E.L.U-2	-280.65	18.49	32.32	0.80	0.00	0.20	0.20	0.20	0.20
61	E.L.U-2	-376.12	-16.54	-32.86	0.90	0.00	0.20	0.20	0.20	0.20
61	E.L.U-2	-366.26	-28.52	-41.30	3.00	0.30	0.70	0.70	0.70	0.70
61	E.L.U-3	-278.13	35.46	50.68	7.80	0.80	1.90	1.90	1.90	1.90
61	E.L.U-3	-268.28	25.11	43.44	4.40	0.40	1.10	1.10	1.10	1.10
61	E.L.U-3	-388.49	-22.87	-43.72	2.20	0.20	0.50	0.50	0.50	0.50
61	E.L.U-3	-378.64	-35.14	-52.42	6.80	0.70	1.70	1.70	1.70	1.70
98	E.L.U-1	-875.30	-0.02	1.27	0.00	0.00	0.00	0.00	0.00	0.00
98	E.L.U-1	-863.09	0.28	-1.37	0.00	0.00	0.00	0.00	0.00	0.00
98	E.L.U-2	-38.59	37.60	21.25	7.10	0.70	1.70	1.70	1.70	1.70
98	E.L.U-2	-29.54	37.45	19.32	7.10	0.70	1.70	1.70	1.70	1.70
98	E.L.U-2	-1079.02	-37.71	-19.77	0.20	0.00	0.00	0.00	0.00	0.00
98	E.L.U-2	-1069.98	-36.92	-20.89	0.10	0.00	0.00	0.00	0.00	0.00
98	E.L.U-3	129.39	50.87	28.67	14.20	1.50	3.50	3.50	3.50	3.50
98	E.L.U-3	138.44	50.28	26.53	14.00	1.50	3.50	3.50	3.50	3.50
98	E.L.U-3	-1247.00	-50.98	-27.18	8.50	0.90	2.10	2.10	2.10	2.10
98	E.L.U-3	-1237.96	-49.74	-28.11	8.20	0.90	2.00	2.00	2.00	2.00
99	E.L.U-1	-695.45	-0.55	3.28	0.00	0.00	0.00	0.00	0.00	0.00
99	E.L.U-1	-683.00	1.33	-2.98	0.00	0.00	0.00	0.00	0.00	0.00
99	E.L.U-2	-1.55	40.01	25.91	8.90	0.90	2.20	2.20	2.20	2.20
99	E.L.U-2	7.68	38.04	21.43	8.20	0.90	2.00	2.00	2.00	2.00
99	E.L.U-2	-906.23	-41.05	-22.02	0.70	0.00	0.10	0.10	0.10	0.10
99	E.L.U-2	-897.00	-36.00	-24.98	1.10	0.10	0.20	0.20	0.20	0.20
99	E.L.U-3	104.14	56.18	35.49	15.60	1.70	3.90	3.90	3.90	3.90
99	E.L.U-3	113.36	52.64	30.49	14.40	1.50	3.50	3.50	3.50	3.50
99	E.L.U-3	-1011.91	-57.23	-31.60	7.80	0.80	1.90	1.90	1.90	1.90
99	E.L.U-3	-1002.68	-50.61	-34.04	6.30	0.60	1.50	1.50	1.50	1.50
106	E.L.U-1	-712.33	0.00	2.20	0.00	0.00	0.00	0.00	0.00	0.00
106	E.L.U-1	-700.12	0.55	-3.24	0.00	0.00	0.00	0.00	0.00	0.00
106	E.L.U-2	-68.91	42.56	21.09	7.50	0.80	1.80	1.80	1.80	1.80
106	E.L.U-2	-59.87	42.65	16.77	7.40	0.80	1.80	1.80	1.80	1.80
106	E.L.U-2	-860.82	-42.63	-18.49	0.60	0.00	0.10	0.10	0.10	0.10
106	E.L.U-2	-851.77	-41.81	-20.58	1.20	0.10	0.30	0.30	0.30	0.30
106	E.L.U-3	57.13	57.58	28.11	14.10	1.50	3.50	3.50	3.50	3.50
106	E.L.U-3	66.18	57.33	23.18	13.70	1.50	3.40	3.40	3.40	3.40
106	E.L.U-3	-986.86	-57.65	-25.52	6.30	0.60	1.50	1.50	1.50	1.50
106	E.L.U-3	-977.81	-56.49	-26.99	6.10	0.60	1.50	1.50	1.50	1.50
107	E.L.U-1	-627.12	-0.53	6.29	0.00	0.00	0.00	0.00	0.00	0.00
107	E.L.U-1	-614.67	1.20	-6.25	0.00	0.00	0.00	0.00	0.00	0.00
107	E.L.U-2	-83.33	46.25	24.76	8.50	0.90	2.10	2.10	2.10	2.10
107	E.L.U-2	-74.10	43.67	16.06	7.20	0.70	1.70	1.70	1.70	1.70
107	E.L.U-2	-742.70	-47.23	-17.35	0.20	0.00	0.00	0.00	0.00	0.00
107	E.L.U-2	-733.48	-41.84	-23.36	0.30	0.00	0.00	0.00	0.00	0.00
107	E.L.U-3	-8.46	64.88	33.00	15.00	1.60	3.70	3.70	3.70	3.70

107	E.L.U-3	0.77	60.60	23.39	13.20	1.40	3.20	3.20	3.20	3.20
107	E.L.U-3	-817.57	-65.86	-25.60	7.40	0.80	1.80	1.80	1.80	1.80
107	E.L.U-3	-808.35	-58.78	-30.69	6.20	0.60	1.50	1.50	1.50	1.50
184	E.L.U-1	5.79	-1.45	-1.02	0.30	0.00	0.00	0.00	0.00	0.00
184	E.L.U-1	9.52	7.43	-3.94	1.50	0.10	0.30	0.30	0.30	0.30
184	E.L.U-2	168.70	3.79	0.64	4.50	0.40	1.10	1.10	1.10	1.10
184	E.L.U-2	171.46	36.36	15.68	11.10	1.20	2.70	2.70	2.70	2.70
184	E.L.U-2	-163.82	-5.71	-1.96	0.00	0.00	0.00	0.00	0.00	0.00
184	E.L.U-2	-161.06	-26.56	-20.44	2.30	0.20	0.50	0.50	0.50	0.50
184	E.L.U-3	200.73	4.78	0.82	5.50	0.60	1.30	1.30	1.30	1.30
184	E.L.U-3	203.49	43.03	20.18	13.40	1.40	3.30	3.30	3.30	3.30
184	E.L.U-3	-195.85	-6.70	-2.15	0.00	0.00	0.00	0.00	0.00	0.00
184	E.L.U-3	-193.09	-33.23	-24.93	3.50	0.30	0.80	0.80	0.80	0.80
194	E.L.U-1	-45.87	-0.02	-0.83	0.00	0.00	0.00	0.00	0.00	0.00
194	E.L.U-1	-41.29	-1.22	-0.63	0.00	0.00	0.00	0.00	0.00	0.00
194	E.L.U-2	108.15	0.22	11.43	4.50	0.40	1.10	1.10	1.10	1.10
194	E.L.U-2	111.54	6.54	13.86	5.10	0.50	1.20	1.20	1.20	1.20
194	E.L.U-2	-171.23	-0.25	-12.54	0.00	0.00	0.00	0.00	0.00	0.00
194	E.L.U-2	-167.83	-8.22	-14.62	1.00	0.10	0.20	0.20	0.20	0.20
194	E.L.U-3	142.27	0.29	14.07	5.80	0.60	1.40	1.40	1.40	1.40
194	E.L.U-3	145.66	8.40	17.00	6.50	0.70	1.60	1.60	1.60	1.60
194	E.L.U-3	-205.35	-0.31	-15.18	0.00	0.00	0.00	0.00	0.00	0.00
194	E.L.U-3	-201.96	-10.08	-17.76	0.90	0.00	0.20	0.20	0.20	0.20
291	E.L.U-1	-0.77	-0.68	-0.38	0.00	0.00	0.00	0.00	0.00	0.00
291	E.L.U-1	2.10	6.29	2.02	1.10	0.10	0.20	0.20	0.20	0.20
291	E.L.U-2	192.41	8.39	16.89	7.60	0.80	1.80	1.80	1.80	1.80
291	E.L.U-2	194.54	27.68	4.20	9.70	1.00	2.40	2.40	2.40	2.40
291	E.L.U-2	-194.89	-9.22	-17.35	0.90	0.00	0.20	0.20	0.20	0.20
291	E.L.U-2	-192.76	-19.20	-1.51	0.00	0.00	0.00	0.00	0.00	0.00
291	E.L.U-3	240.36	10.64	20.69	9.50	1.00	2.30	2.30	2.30	2.30
291	E.L.U-3	242.49	33.68	4.02	12.00	1.30	3.00	3.00	3.00	3.00
291	E.L.U-3	-242.84	-11.47	-21.14	0.60	0.00	0.10	0.10	0.10	0.10
291	E.L.U-3	-240.71	-25.20	-1.34	0.00	0.00	0.00	0.00	0.00	0.00
821	E.L.U-1	-223.65	-4.34	1.97	0.00	0.00	0.00	0.00	0.00	0.00
821	E.L.U-1	-220.74	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
821	E.L.U-2	114.55	14.48	38.06	10.20	1.10	2.50	2.50	2.50	2.50
821	E.L.U-2	116.70	2.64	12.18	4.90	0.50	1.20	1.20	1.20	1.20
821	E.L.U-2	-425.19	-20.67	-35.69	0.00	0.00	0.00	0.00	0.00	0.00
821	E.L.U-2	-423.04	-1.74	-12.13	0.00	0.00	0.00	0.00	0.00	0.00
821	E.L.U-3	190.38	19.16	46.78	13.80	1.50	3.40	3.40	3.40	3.40
821	E.L.U-3	192.53	3.23	14.87	7.20	0.70	1.70	1.70	1.70	1.70
821	E.L.U-3	-501.02	-25.35	-44.40	1.30	0.10	0.30	0.30	0.30	0.30
821	E.L.U-3	-498.87	-2.33	-14.82	0.00	0.00	0.00	0.00	0.00	0.00
822	E.L.U-1	-109.77	0.29	0.04	0.00	0.00	0.00	0.00	0.00	0.00
822	E.L.U-1	-106.86	-0.32	-0.25	0.00	0.00	0.00	0.00	0.00	0.00
822	E.L.U-2	-39.62	4.24	10.32	0.80	0.00	0.20	0.20	0.20	0.20
822	E.L.U-2	-37.47	2.01	2.91	0.00	0.00	0.00	0.00	0.00	0.00
822	E.L.U-2	-111.62	-3.79	-10.24	0.00	0.00	0.00	0.00	0.00	0.00
822	E.L.U-2	-109.47	-2.46	-3.19	0.00	0.00	0.00	0.00	0.00	0.00
822	E.L.U-3	-36.42	5.29	12.57	1.30	0.10	0.30	0.30	0.30	0.30
822	E.L.U-3	-34.27	2.59	3.53	0.70	0.00	0.10	0.10	0.10	0.10
822	E.L.U-3	-114.82	-4.85	-12.49	0.50	0.00	0.10	0.10	0.10	0.10
822	E.L.U-3	-112.67	-3.03	-3.80	0.00	0.00	0.00	0.00	0.00	0.00
823	E.L.U-1	-75.86	-0.26	-0.25	0.00	0.00	0.00	0.00	0.00	0.00
823	E.L.U-1	-72.95	0.63	-0.41	0.00	0.00	0.00	0.00	0.00	0.00
823	E.L.U-2	-7.56	0.80	2.39	0.20	0.00	0.00	0.00	0.00	0.00
823	E.L.U-2	-5.41	6.42	5.69	1.00	0.10	0.20	0.20	0.20	0.20
823	E.L.U-2	-97.27	-1.16	-2.68	0.00	0.00	0.00	0.00	0.00	0.00
823	E.L.U-2	-95.11	-5.54	-6.20	0.00	0.00	0.00	0.00	0.00	0.00
823	E.L.U-3	-0.20	1.05	2.89	0.40	0.00	0.10	0.10	0.10	0.10
823	E.L.U-3	1.95	7.93	6.96	1.50	0.10	0.30	0.30	0.30	0.30
823	E.L.U-3	-104.63	-1.41	-3.18	0.00	0.00	0.00	0.00	0.00	0.00
823	E.L.U-3	-102.47	-7.04	-7.46	1.10	0.10	0.20	0.20	0.20	0.20
831	E.L.U-1	-237.42	-5.77	2.65	0.00	0.00	0.00	0.00	0.00	0.00
831	E.L.U-1	-234.51	1.15	1.90	0.00	0.00	0.00	0.00	0.00	0.00
831	E.L.U-2	131.30	12.17	18.89	6.70	0.70	1.60	1.60	1.60	1.60
831	E.L.U-2	133.45	4.33	11.10	5.10	0.50	1.20	1.20	1.20	1.20
831	E.L.U-2	-450.53	-19.94	-15.75	0.00	0.00	0.00	0.00	0.00	0.00
831	E.L.U-2	-448.37	-2.77	-8.88	0.00	0.00	0.00	0.00	0.00	0.00
831	E.L.U-3	195.80	15.53	23.38	9.20	1.00	2.20	2.20	2.20	2.20
831	E.L.U-3	197.95	5.07	13.30	7.00	0.70	1.70	1.70	1.70	1.70
831	E.L.U-3	-515.03	-23.30	-20.24	0.00	0.00	0.00	0.00	0.00	0.00
831	E.L.U-3	-512.87	-3.52	-11.08	0.00	0.00	0.00	0.00	0.00	0.00
832	E.L.U-1	-103.69	0.32	1.88	0.00	0.00	0.00	0.00	0.00	0.00
832	E.L.U-1	-100.78	-0.69	0.96	0.00	0.00	0.00	0.00	0.00	0.00
832	E.L.U-2	-24.02	2.15	10.95	1.30	0.10	0.30	0.30	0.30	0.30
832	E.L.U-2	-21.86	1.58	5.70	0.40	0.00	0.10	0.10	0.10	0.10
832	E.L.U-2	-115.73	-1.71	-8.74	0.00	0.00	0.00	0.00	0.00	0.00
832	E.L.U-2	-113.58	-2.51	-4.60	0.00	0.00	0.00	0.00	0.00	0.00
832	E.L.U-3	-14.43	2.53	13.14	2.00	0.20	0.50	0.50	0.50	0.50
832	E.L.U-3	-12.27	2.02	6.76	0.80	0.00	0.20	0.20	0.20	0.20
832	E.L.U-3	-125.32	-2.09	-10.93	0.00	0.00	0.00	0.00	0.00	0.00
832	E.L.U-3	-123.17	-2.94	-5.66	0.00	0.00	0.00	0.00	0.00	0.00
833	E.L.U-1	-72.09	0.07	0.91	0.00	0.00	0.00	0.00	0.00	0.00
833	E.L.U-1	-69.18	1.04	-0.06	0.00	0.00	0.00	0.00	0.00	0.00
833	E.L.U-2	-21.28	0.55	5.49	0.40	0.00	0.10	0.10	0.10	0.10
833	E.L.U-2	-19.13	4.49	0.93	0.30	0.00	0.00	0.00	0.00	0.00
833	E.L.U-2	-76.34	-0.44	-4.46	0.00	0.00	0.00	0.00	0.00	0.00
833	E.L.U-2	-74.19	-3.11	-1.07	0.00	0.00	0.00	0.00	0.00	0.00
833	E.L.U-3	-15.70	0.67	6.51	0.70	0.00	0.10	0.10	0.10	0.10

833	E.L.U-3	-13.55	5.30	1.08	0.50	0.00	0.10	0.10	0.10	0.10
833	E.L.U-3	-81.92	-0.57	-5.48	0.00	0.00	0.00	0.00	0.00	0.00
833	E.L.U-3	-79.76	-3.92	-1.22	0.00	0.00	0.00	0.00	0.00	0.00

Quadro A. 13 - Pilares da família "P5" (0.30x0.30)

FRAME	COMBINATION	N	M ₂	M ₃	A _{S,total}	%A _{S,total}	A _{S31}	A _{S32}	A _{S21}	A _{S22}
286	E.L.U-1	-645.24	3.82	10.84	0.00	0.00	0.00	0.00	0.00	0.00
286	E.L.U-1	-632.79	-4.63	-11.15	0.00	0.00	0.00	0.00	0.00	0.00
286	E.L.U-2	144.17	42.23	34.71	13.50	1.40	3.30	3.30	3,3	3,3
286	E.L.U-2	153.39	35.67	19.75	10.80	1.10	2.70	2.70	2,7	2,7
286	E.L.U-2	-995.14	-37.40	-21.67	0.20	0.00	0.00	0.00	0.00	0.00
286	E.L.U-2	-985.92	-41.60	-33.13	3.00	0.30	0.70	0.70	0,7	0,7
286	E.L.U-3	324.68	56.90	45.55	21.40	2.30	5.30	5.30	5,3	5,3
286	E.L.U-3	333.90	50.43	29.69	18.50	2.00	4.60	4.60	4,6	4,6
286	E.L.U-3	-1175.65	-52.07	-32.51	8.80	0.90	2.20	2.20	2,2	2,2
286	E.L.U-3	-1166.42	-56.37	-43.07	12.50	1.30	3.10	3.10	3,1	3,1
288	E.L.U-1	-908.08	1.52	8.83	0.00	0.00	0.00	0.00	0.00	0.00
288	E.L.U-1	-895.62	-2.24	-8.49	0.00	0.00	0.00	0.00	0.00	0.00
288	E.L.U-2	-95.16	37.39	35.57	8.00	0.80	2.00	2.00	2.00	2.00
288	E.L.U-2	-85.94	33.07	23.12	5.40	0.50	1.30	1.30	1,3	1,3
288	E.L.U-2	-1076.74	-35.32	-24.91	0.60	0.00	0.10	0.10	0,1	0,1
288	E.L.U-2	-1067.52	-36.14	-33.37	2.80	0.30	0.60	0.60	0,6	0,6
288	E.L.U-3	3.28	51.29	47.22	14.60	1.60	3.60	3.60	3,6	3,6
288	E.L.U-3	12.50	46.48	33.54	11.50	1.20	2.80	2.80	2,8	2,8
288	E.L.U-3	-1175.18	-49.22	-36.56	9.00	0.90	2.20	2.20	2,2	2,2
288	E.L.U-3	-1165.96	-49.55	-43.79	10.70	1.10	2.60	2.60	2,6	2,6
492	E.L.U-1	-226.67	4.23	3.58	0.00	0.00	0.00	0.00	0.00	0.00
492	E.L.U-1	-223.97	-1.01	1.93	0.00	0.00	0.00	0.00	0.00	0.00
492	E.L.U-2	139.38	16.09	25.03	8.20	0.90	2.00	2.00	2.00	2.00
492	E.L.U-2	141.38	0.94	15.50	6.00	0.60	1.50	1.50	1,5	1,5
492	E.L.U-2	-440.06	-10.53	-20.64	0.00	0.00	0.00	0.00	0.00	0.00
492	E.L.U-2	-438.06	-2.28	-13.23	0.00	0.00	0.00	0.00	0.00	0.00
492	E.L.U-3	213.45	18.77	32.59	11.50	1.20	2.80	2.80	2,8	2,8
492	E.L.U-3	215.45	1.36	20.27	8.70	0.90	2.10	2.10	2,1	2,1
492	E.L.U-3	-514.13	-13.21	-28.20	0.00	0.00	0.00	0.00	0.00	0.00
492	E.L.U-3	-512.13	-2.70	-18.00	0.00	0.00	0.00	0.00	0.00	0.00
713	E.L.U-1	-74.56	0.05	0.85	0.00	0.00	0.00	0.00	0.00	0.00
713	E.L.U-1	-71.86	0.03	-0.10	0.00	0.00	0.00	0.00	0.00	0.00
713	E.L.U-2	0.05	0.78	7.90	1.30	0.10	0.30	0.30	0,3	0,3
713	E.L.U-2	2.05	2.34	2.20	0.40	0.00	0.10	0.10	0,1	0,1
713	E.L.U-2	-99.52	-0.72	-6.94	0.00	0.00	0.00	0.00	0.00	0.00
713	E.L.U-2	-97.53	-2.31	-2.39	0.00	0.00	0.00	0.00	0.00	0.00
713	E.L.U-3	15.99	0.91	10.30	2.10	0.20	0.50	0.50	0,5	0,5
713	E.L.U-3	17.99	2.81	2.87	0.90	0.00	0.20	0.20	0,2	0,2
713	E.L.U-3	-115.46	-0.85	-9.33	0.00	0.00	0.00	0.00	0.00	0.00
713	E.L.U-3	-113.46	-2.78	-3.07	0.00	0.00	0.00	0.00	0.00	0.00
742	E.L.U-1	-51.69	0.28	-0.19	0.00	0.00	0.00	0.00	0.00	0.00
742	E.L.U-1	-49.00	-0.36	-1.24	0.00	0.00	0.00	0.00	0.00	0.00
742	E.L.U-2	-1.81	1.12	1.68	0.20	0.00	0.00	0.00	0.00	0.00
742	E.L.U-2	0.19	4.00	2.35	0.60	0.00	0.10	0.10	0,1	0,1
742	E.L.U-2	-67.16	-0.76	-1.99	0.00	0.00	0.00	0.00	0.00	0.00
742	E.L.U-2	-65.16	-4.46	-3.94	0.00	0.00	0.00	0.00	0.00	0.00
742	E.L.U-3	8.65	1.31	2.21	0.50	0.00	0.10	0.10	0,1	0,1
742	E.L.U-3	10.64	4.87	3.45	1.00	0.10	0.20	0.20	0,2	0,2
742	E.L.U-3	-77.62	-0.95	-2.51	0.00	0.00	0.00	0.00	0.00	0.00
742	E.L.U-3	-75.62	-5.33	-5.04	0.10	0.00	0.00	0.00	0.00	0.00
759	E.L.U-1	-35.45	-0.03	-1.39	0.00	0.00	0.00	0.00	0.00	0.00
759	E.L.U-1	-32.75	1.16	-2.32	0.00	0.00	0.00	0.00	0.00	0.00
759	E.L.U-2	3.34	0.97	2.84	0.50	0.00	0.10	0.10	0,1	0,1
759	E.L.U-2	5.34	11.16	6.38	2.10	0.20	0.50	0.50	0,5	0,5
759	E.L.U-2	-50.62	-1.01	-4.62	0.00	0.00	0.00	0.00	0.00	0.00
759	E.L.U-2	-48.63	-9.67	-9.29	0.70	0.00	0.10	0.10	0,1	0,1
759	E.L.U-3	8.65	1.15	4.13	0.90	0.00	0.20	0.20	0,2	0,2
759	E.L.U-3	10.64	13.33	9.01	2.70	0.20	0.60	0.60	0,6	0,6
759	E.L.U-3	-55.93	-1.20	-5.91	0.00	0.00	0.00	0.00	0.00	0.00
759	E.L.U-3	-53.93	-11.83	-11.91	1.20	0.10	0.30	0.30	0,3	0,3
817	E.L.U-1	-146.99	0.70	-0.02	0.00	0.00	0.00	0.00	0.00	0.00
817	E.L.U-1	-144.33	0.08	-0.28	0.00	0.00	0.00	0.00	0.00	0.00
817	E.L.U-2	-45.51	1.22	19.46	2.40	0.20	0.60	0.60	0,6	0,6
817	E.L.U-2	-43.54	0.33	5.05	0.00	0.00	0.00	0.00	0.00	0.00
817	E.L.U-2	-149.77	-0.31	-19.48	1.10	0.10	0.20	0.20	0,2	0,2
817	E.L.U-2	-147.80	-0.23	-5.38	0.00	0.00	0.00	0.00	0.00	0.00
817	E.L.U-3	-28.57	1.43	25.88	4.00	0.40	1.00	1.00	1.00	1.00

817	E.L.U-3	-26.60	0.42	6.73	0.50	0.00	0.10	0.10	0,1	0,1
817	E.L.U-3	-166.72	-0.52	-25.90	0.80	0.00	0.20	0.20	0,2	0,2
817	E.L.U-3	-164.75	-0.31	-7.06	0.00	0.00	0.00	0.00	0.00	0.00
818	E.L.U-1	-111.07	0.05	-0.29	0.00	0.00	0.00	0.00	0.00	0.00
818	E.L.U-1	-108.41	-0.10	-0.49	0.00	0.00	0.00	0.00	0.00	0.00
818	E.L.U-2	-21.10	0.28	4.09	0.10	0.00	0.00	0.00	0.00	0.00
818	E.L.U-2	-19.13	0.64	9.14	1.10	0.10	0.20	0.20	0,2	0,2
818	E.L.U-2	-125.21	-0.22	-4.44	0.00	0.00	0.00	0.00	0.00	0.00
818	E.L.U-2	-123.24	-0.78	-9.76	0.00	0.00	0.00	0.00	0.00	0.00
818	E.L.U-3	-14.28	0.35	5.45	0.50	0.00	0.10	0.10	0,1	0,1
818	E.L.U-3	-12.31	0.83	12.32	1.80	0.10	0.40	0.40	0,4	0,4
818	E.L.U-3	-132.03	-0.28	-5.80	0.00	0.00	0.00	0.00	0.00	0.00
818	E.L.U-3	-130.06	-0.96	-12.93	0.00	0.00	0.00	0.00	0.00	0.00
819	E.L.U-1	-89.85	0.35	-0.55	0.00	0.00	0.00	0.00	0.00	0.00
819	E.L.U-1	-87.19	-0.07	-0.38	0.00	0.00	0.00	0.00	0.00	0.00
819	E.L.U-2	43.14	0.33	10.95	2.90	0.30	0.70	0.70	0,7	0,7
819	E.L.U-2	45.11	1.84	15.97	3.90	0.40	0.90	0.90	0,9	0,9
819	E.L.U-2	-160.00	0.13	-11.64	0.00	0.00	0.00	0.00	0.00	0.00
819	E.L.U-2	-158.03	-1.92	-16.48	0.00	0.00	0.00	0.00	0.00	0.00
819	E.L.U-3	65.88	0.36	14.73	4.10	0.40	1.00	1.00	1.00	1.00
819	E.L.U-3	67.85	2.29	21.34	5.50	0.60	1.30	1.30	1,3	1,3
819	E.L.U-3	-182.74	0.10	-15.43	0.00	0.00	0.00	0.00	0.00	0.00
819	E.L.U-3	-180.77	-2.37	-21.85	0.90	0.00	0.20	0.20	0,2	0,2
820	E.L.U-1	-83.90	0.01	-0.51	0.00	0.00	0.00	0.00	0.00	0.00
820	E.L.U-1	-81.24	0.58	-3.67	0.00	0.00	0.00	0.00	0.00	0.00
820	E.L.U-2	236.98	4.11	20.54	9.30	1.00	2.30	2.30	2,3	2,3
820	E.L.U-2	238.95	14.32	24.25	10.30	1.10	2.50	2.50	2,5	2,5
820	E.L.U-2	-342.68	-4.05	-21.23	0.00	0.00	0.00	0.00	0.00	0.00
820	E.L.U-2	-340.70	-13.74	-28.88	0.40	0.00	0.10	0.10	0,1	0,1
820	E.L.U-3	311.72	5.24	27.44	12.40	1.30	3.00	3.00	3.00	3.00
820	E.L.U-3	313.69	17.99	33.23	13.90	1.50	3.40	3.40	3,4	3,4
820	E.L.U-3	-417.42	-5.18	-28.13	0.00	0.00	0.00	0.00	0.00	0.00
820	E.L.U-3	-415.45	-17.41	-37.85	0.40	0.00	0.10	0.10	0,1	0,1

Quadro A. 14 - Pilares da família "P5" (0.30x0.70)

FRAME	COMBINATION	N	M ₂	M ₃	A _{S,total}	%A _{S,total}	A _{S31}	A _{S32}	A _{S21}	A _{S22}
92	E.L.U-1	-1336.65	7.34	0.70	0.00	0.00	0.00	0.00	0.00	0.00
92	E.L.U-1	-1308.16	-9.01	1.60	0.00	0.00	0.00	0.00	0.00	0.00
92	E.L.U-2	-212.76	67.07	429.71	36.70	1.70	4.90	4.90	13.40	13.40
92	E.L.U-2	-191.66	56.00	389.41	32.10	1.50	4.20	4.20	11.70	11.70
92	E.L.U-2	-1483.91	-58.20	-428.21	23.70	1.10	3.10	3.10	8.60	8.60
92	E.L.U-2	-1462.81	-66.87	-388.48	20.50	0.90	2.70	2.70	7.50	7.50
92	E.L.U-3	11.44	88.08	581.73	58.10	2.70	7.70	7.70	21.20	21.20
92	E.L.U-3	32.55	76.42	525.35	51.40	2.40	6.80	6.80	18.80	18.80
92	E.L.U-3	-1708.12	-79.22	-580.23	47.20	2.20	6.30	6.30	17.20	17.20
92	E.L.U-3	-1687.01	-87.28	-524.42	41.80	1.90	5.50	5.50	15.30	15.30
100	E.L.U-1	-790.40	8.43	9.00	0.00	0.00	0.00	0.00	0.00	0.00
100	E.L.U-1	-761.90	-11.19	-11.35	0.00	0.00	0.00	0.00	0.00	0.00
100	E.L.U-2	205.62	65.81	474.99	48.00	2.20	6.40	6.40	17.50	17.50
100	E.L.U-2	226.73	50.93	403.02	40.20	1.90	5.30	5.30	14.70	14.70
100	E.L.U-2	-1239.96	-55.66	-463.64	28.30	1.30	3.70	3.70	10.30	10.30
100	E.L.U-2	-1218.86	-64.38	-417.34	24.30	1.10	3.20	3.20	8.90	8.90
100	E.L.U-3	481.68	85.82	641.11	71.20	3.30	9.50	9.50	26.00	26.00
100	E.L.U-3	502.78	69.33	546.97	60.30	2.80	8.00	8.00	22.00	22.00
100	E.L.U-3	-1516.01	-75.67	-629.76	51.50	2.40	6.80	6.80	18.80	18.80
100	E.L.U-3	-1494.91	-82.78	-561.28	44.40	2.10	5.90	5.90	16.20	16.20

Quadro A. 15 - Pilares da família "P6" (0.30x0.30)

FRAME	COMBINATION	N	M ₂	M ₃	A _{S,total}	%A _{S,total}	A _{S11}	A _{S12}	A _{S21}	A _{S22}
19	E.L.U-1	15.46	8.19	-1.53	1.70	0.10	0.40	0.40	0.40	0.40
19	E.L.U-1	28.77	-10.92	2.28	2.50	0.20	0.60	0.60	0.60	0.60
19	E.L.U-2	29.32	30.63	36.09	9.40	1.00	2.30	2.30	2.30	2.30
19	E.L.U-2	39.17	20.48	38.78	9.00	0.90	2.20	2.20	2.20	2.20
19	E.L.U-2	-14.78	-20.56	-37.97	7.70	0.80	1.90	1.90	1.90	1.90
19	E.L.U-2	-4.92	-33.73	-36.00	9.20	1.00	2.20	2.20	2.20	2.20
19	E.L.U-3	27.32	34.44	44.85	11.70	1.20	2.90	2.90	2.90	2.90
19	E.L.U-3	37.18	25.39	47.68	11.30	1.20	2.80	2.80	2.80	2.80
19	E.L.U-3	-12.78	-24.37	-46.73	10.00	1.10	2.50	2.50	2.50	2.50
19	E.L.U-3	-2.92	-38.64	-44.90	11.70	1.20	2.90	2.90	2.90	2.90
450	E.L.U-1	-523.05	22.80	-1.78	0.00	0.00	0.00	0.00	0.00	0.00

450	E.L.U-1	-509.75	-23.24	2.20	0.00	0.00	0.00	0.00	0.00	0.00
450	E.L.U-2	-315.67	41.98	37.28	5.60	0.60	1.30	1.30	1.30	1.30
450	E.L.U-2	-305.81	14.56	39.64	1.60	0.10	0.40	0.40	0.40	0.40
450	E.L.U-2	-374.50	-14.52	-39.33	0.20	0.00	0.00	0.00	0.00	0.00
450	E.L.U-2	-364.65	-43.15	-37.05	5.00	0.50	1.20	1.20	1.20	1.20
450	E.L.U-3	-312.62	47.61	47.60	9.10	1.00	2.20	2.20	2.20	2.20
450	E.L.U-3	-302.76	20.64	50.01	4.80	0.50	1.20	1.20	1.20	1.20
450	E.L.U-3	-377.55	-20.15	-49.66	3.50	0.30	0.80	0.80	0.80	0.80
450	E.L.U-3	-367.70	-49.24	-47.42	8.80	0.90	2.20	2.20	2.20	2.20
478	E.L.U-1	-285.90	3.47	-0.54	0.00	0.00	0.00	0.00	0.00	0.00
478	E.L.U-1	-272.59	-3.93	0.68	0.00	0.00	0.00	0.00	0.00	0.00
478	E.L.U-2	-88.22	52.65	49.13	13.70	1.50	3.40	3.40	3.40	3.40
478	E.L.U-2	-78.36	48.65	48.74	13.00	1.40	3.20	3.20	3.20	3.20
478	E.L.U-2	-292.20	-48.20	-49.67	10.00	1.10	2.50	2.50	2.50	2.50
478	E.L.U-2	-282.35	-53.76	-48.03	11.00	1.20	2.70	2.70	2.70	2.70
478	E.L.U-3	-71.58	59.93	66.25	18.90	2.00	4.70	4.70	4.70	4.70
478	E.L.U-3	-61.73	56.76	65.29	18.20	2.00	4.50	4.50	4.50	4.50
478	E.L.U-3	-308.83	-55.48	-66.78	15.40	1.70	3.80	3.80	3.80	3.80
478	E.L.U-3	-298.98	-61.87	-64.58	16.40	1.80	4.00	4.00	4.00	4.00
482	E.L.U-1	-232.64	-6.79	1.67	0.00	0.00	0.00	0.00	0.00	0.00
482	E.L.U-1	-219.34	7.67	-1.92	0.00	0.00	0.00	0.00	0.00	0.00
482	E.L.U-2	-74.08	26.71	46.51	9.00	0.90	2.20	2.20	2.20	2.20
482	E.L.U-2	-64.22	36.02	44.74	10.10	1.10	2.50	2.50	2.50	2.50
482	E.L.U-2	-224.14	-34.87	-44.41	7.00	0.70	1.70	1.70	1.70	1.70
482	E.L.U-2	-214.28	-26.94	-47.19	6.50	0.70	1.60	1.60	1.60	1.60
482	E.L.U-3	-70.46	32.20	61.46	13.10	1.40	3.20	3.20	3.20	3.20
482	E.L.U-3	-60.61	42.21	59.97	14.50	1.60	3.60	3.60	3.60	3.60
482	E.L.U-3	-227.75	-40.36	-59.36	11.40	1.20	2.80	2.80	2.80	2.80
482	E.L.U-3	-217.90	-33.13	-62.42	10.90	1.20	2.70	2.70	2.70	2.70
484	E.L.U-1	-312.59	-2.48	-0.99	0.00	0.00	0.00	0.00	0.00	0.00
484	E.L.U-1	-299.29	2.08	1.01	0.00	0.00	0.00	0.00	0.00	0.00
484	E.L.U-2	-107.58	41.75	44.75	10.40	1.10	2.50	2.50	2.50	2.50
484	E.L.U-2	-97.73	44.80	46.74	11.50	1.20	2.80	2.80	2.80	2.80
484	E.L.U-2	-298.94	-44.51	-46.09	8.30	0.90	2.00	2.00	2.00	2.00
484	E.L.U-2	-289.08	-42.54	-45.44	7.90	0.80	1.90	1.90	1.90	1.90
484	E.L.U-3	-80.62	48.66	59.87	15.20	1.60	3.70	3.70	3.70	3.70
484	E.L.U-3	-70.77	52.42	62.25	16.60	1.80	4.10	4.10	4.10	4.10
484	E.L.U-3	-325.90	-51.42	-61.21	13.00	1.40	3.20	3.20	3.20	3.20
484	E.L.U-3	-316.04	-50.16	-60.95	12.70	1.40	3.10	3.10	3.10	3.10
488	E.L.U-1	-169.23	-8.60	-0.88	0.00	0.00	0.00	0.00	0.00	0.00
488	E.L.U-1	-155.93	9.70	0.76	0.00	0.00	0.00	0.00	0.00	0.00
488	E.L.U-2	-59.55	18.35	43.88	7.80	0.80	1.90	1.90	1.90	1.90
488	E.L.U-2	-49.69	30.24	45.26	9.60	1.00	2.40	2.40	2.40	2.40
488	E.L.U-2	-155.22	-28.69	-44.93	7.30	0.80	1.80	1.80	1.80	1.80
488	E.L.U-2	-145.36	-18.71	-44.34	6.20	0.60	1.50	1.50	1.50	1.50
488	E.L.U-3	-57.04	22.85	58.47	11.50	1.20	2.80	2.80	2.80	2.80
488	E.L.U-3	-47.18	35.48	60.09	13.60	1.50	3.40	3.40	3.40	3.40
488	E.L.U-3	-157.73	-33.19	-59.53	11.30	1.20	2.80	2.80	2.80	2.80
488	E.L.U-3	-147.87	-23.95	-59.18	10.10	1.10	2.50	2.50	2.50	2.50
496	E.L.U-1	-289.58	-7.60	-3.45	0.00	0.00	0.00	0.00	0.00	0.00
496	E.L.U-1	-276.27	8.15	3.63	0.00	0.00	0.00	0.00	0.00	0.00
496	E.L.U-2	-82.85	12.83	44.99	7.20	0.70	1.70	1.70	1.70	1.70
496	E.L.U-2	-73.00	23.47	50.64	9.50	1.00	2.30	2.30	2.30	2.30
496	E.L.U-2	-289.07	-21.99	-49.39	5.10	0.50	1.20	1.20	1.20	1.20
496	E.L.U-2	-279.22	-13.74	-45.96	3.50	0.30	0.80	0.80	0.80	0.80
496	E.L.U-3	-62.05	16.23	60.45	11.30	1.20	2.80	2.80	2.80	2.80
496	E.L.U-3	-52.20	27.78	66.57	14.00	1.50	3.50	3.50	3.50	3.50
496	E.L.U-3	-309.88	-25.39	-64.85	9.10	1.00	2.20	2.20	2.20	2.20
496	E.L.U-3	-300.02	-18.06	-61.88	7.50	0.80	1.80	1.80	1.80	1.80
506	E.L.U-1	-382.40	8.05	-0.27	0.00	0.00	0.00	0.00	0.00	0.00
506	E.L.U-1	-369.09	-8.50	0.57	0.00	0.00	0.00	0.00	0.00	0.00
506	E.L.U-2	-148.68	22.36	38.20	5.20	0.50	1.20	1.20	1.20	1.20
506	E.L.U-2	-138.83	13.69	39.54	4.80	0.50	1.20	1.20	1.20	1.20
506	E.L.U-2	-349.17	-12.77	-38.69	0.40	0.00	0.10	0.10	0.10	0.10
506	E.L.U-2	-339.32	-23.74	-38.68	1.90	0.20	0.40	0.40	0.40	0.40
506	E.L.U-3	-132.40	25.69	47.04	7.80	0.80	1.90	1.90	1.90	1.90
506	E.L.U-3	-122.54	17.88	48.68	7.60	0.80	1.80	1.80	1.80	1.80
506	E.L.U-3	-365.46	-16.10	-47.54	2.60	0.20	0.60	0.60	0.60	0.60
506	E.L.U-3	-355.61	-27.93	-47.82	4.60	0.50	1.10	1.10	1.10	1.10
507	E.L.U-1	-145.98	10.41	-3.10	0.00	0.00	0.00	0.00	0.00	0.00
507	E.L.U-1	-132.68	-11.78	3.05	0.00	0.00	0.00	0.00	0.00	0.00
507	E.L.U-2	-70.63	29.80	34.77	7.00	0.70	1.70	1.70	1.70	1.70
507	E.L.U-2	-60.77	17.37	38.79	6.60	0.70	1.60	1.60	1.60	1.60
507	E.L.U-2	-122.18	-17.18	-38.42	5.20	0.50	1.20	1.20	1.20	1.20
507	E.L.U-2	-112.32	-31.54	-35.09	6.50	0.70	1.60	1.60	1.60	1.60
507	E.L.U-3	-71.68	34.07	43.23	9.30	1.00	2.30	2.30	2.30	2.30
507	E.L.U-3	-61.82	22.40	47.44	8.90	0.90	2.20	2.20	2.20	2.20
507	E.L.U-3	-121.13	-21.45	-46.88	7.50	0.80	1.80	1.80	1.80	1.80
507	E.L.U-3	-111.27	-36.57	-43.74	9.10	1.00	2.20	2.20	2.20	2.20

Quadro A. 16 - Pilares da família "P6" (0.30x0.70)

FRAME	COMBINATION	N	M ₂	M ₃	A _{S,total}	%A _{S,total}	A _{S31}	A _{S32}	A _{S21}	A _{S22}
49	E.L.U-1	-1193.88	6.41	-14.60	0.00	0.00	0.00	0.00	0.00	0.00
49	E.L.U-1	-1165.39	-7.14	2.37	0.00	0.00	0.00	0.00	0.00	0.00
49	E.L.U-2	93.26	70.61	240.80	24.90	1.10	3.30	3.30	9.10	9.10
49	E.L.U-2	114.36	65.44	207.66	22.10	1.00	2.90	2.90	8.00	8.00
49	E.L.U-2	-1580.43	-62.76	-257.72	2.90	0.10	0.30	0.30	1.00	1.00
49	E.L.U-2	-1559.33	-74.26	-206.26	0.30	0.00	0.00	0.00	0.10	0.10
49	E.L.U-3	440.92	93.65	324.16	41.20	1.90	5.50	5.50	15.00	15.00
49	E.L.U-3	462.03	89.83	271.56	37.00	1.70	4.90	4.90	13.50	13.50
49	E.L.U-3	-1928.10	-85.81	-341.08	20.00	0.90	2.60	2.60	7.30	7.30
49	E.L.U-3	-1906.99	-98.65	-270.16	14.10	0.60	1.80	1.80	5.10	5.10
50	E.L.U-1	-629.89	17.61	-49.55	0.00	0.00	0.00	0.00	0.00	0.00
50	E.L.U-1	-600.83	-16.89	63.89	0.00	0.00	0.00	0.00	0.00	0.00
50	E.L.U-2	46.39	94.59	200.35	24.50	1.10	3.20	3.20	8.90	8.90
50	E.L.U-2	67.91	73.46	279.38	28.00	1.30	3.70	3.70	10.20	10.20
50	E.L.U-2	-843.53	-72.99	-258.38	11.40	0.50	1.50	1.50	4.10	4.10
50	E.L.U-2	-822.00	-94.20	-203.82	10.40	0.40	1.30	1.30	3.80	3.80
50	E.L.U-3	215.06	128.30	290.11	39.80	1.80	5.30	5.30	14.50	14.50
50	E.L.U-3	236.59	106.98	375.94	44.10	2.00	5.80	5.80	16.10	16.10
50	E.L.U-3	-1012.20	-106.70	-348.15	25.50	1.20	3.40	3.40	9.30	9.30
50	E.L.U-3	-990.68	-127.73	-300.38	25.10	1.10	3.30	3.30	9.10	9.10
57	E.L.U-1	-1204.59	3.98	-20.41	0.00	0.00	0.00	0.00	0.00	0.00
57	E.L.U-1	-1176.10	-2.25	18.61	0.00	0.00	0.00	0.00	0.00	0.00
57	E.L.U-2	-449.30	63.51	221.17	12.20	0.50	1.60	1.60	4.40	4.40
57	E.L.U-2	-428.20	57.49	206.64	10.60	0.50	1.40	1.40	3.80	3.80
57	E.L.U-2	-1042.98	-58.84	-244.62	4.70	0.20	0.60	0.60	1.70	1.70
57	E.L.U-2	-1021.87	-59.94	-186.58	1.40	0.00	0.10	0.10	0.50	0.50
57	E.L.U-3	-334.10	84.18	301.51	24.70	1.10	3.30	3.30	9.00	9.00
57	E.L.U-3	-312.99	77.11	270.72	21.00	0.90	2.80	2.80	7.60	7.60
57	E.L.U-3	-1158.18	-79.50	-324.96	16.70	0.70	2.20	2.20	6.10	6.10
57	E.L.U-3	-1137.07	-79.56	-250.66	8.40	0.30	1.10	1.10	3.00	3.00
58	E.L.U-1	-651.27	12.38	-80.69	0.00	0.00	0.00	0.00	0.00	0.00
58	E.L.U-1	-622.21	-13.60	109.64	0.00	0.00	0.00	0.00	0.00	0.00
58	E.L.U-2	-186.84	75.81	171.65	15.00	0.70	2.00	2.00	5.40	5.40
58	E.L.U-2	-165.32	60.92	293.56	23.80	1.10	3.10	3.10	8.70	8.70
58	E.L.U-2	-631.24	-61.26	-266.00	13.20	0.60	1.70	1.70	4.80	4.80
58	E.L.U-2	-609.72	-76.92	-163.93	6.90	0.30	0.90	0.90	2.50	2.50
58	E.L.U-3	-111.83	102.89	258.75	27.30	1.20	3.60	3.60	9.90	9.90
58	E.L.U-3	-90.31	88.17	385.59	36.90	1.70	4.90	4.90	13.50	13.50
58	E.L.U-3	-706.25	-88.35	-353.11	25.50	1.20	3.40	3.40	9.30	9.30
58	E.L.U-3	-684.72	-104.17	-255.96	18.90	0.80	2.50	2.50	6.90	6.90
66	E.L.U-1	-2062.62	1.97	39.04	0.00	0.00	0.00	0.00	0.00	0.00
66	E.L.U-1	-2034.12	-0.71	-91.88	0.00	0.00	0.00	0.00	0.00	0.00
66	E.L.U-2	-892.29	47.54	288.13	9.80	0.40	1.30	1.30	3.50	3.50
66	E.L.U-2	-871.18	44.93	178.81	1.30	0.00	0.10	0.10	0.40	0.40
66	E.L.U-2	-1623.83	-45.13	-242.85	1.40	0.00	0.10	0.10	0.50	0.50
66	E.L.U-2	-1602.72	-45.84	-285.73	2.90	0.10	0.30	0.30	1.00	1.00
66	E.L.U-3	-737.55	64.14	382.48	24.20	1.10	3.20	3.20	8.80	8.80
66	E.L.U-3	-716.45	61.05	257.54	11.00	0.50	1.40	1.40	4.00	4.00
66	E.L.U-3	-1778.56	-61.74	-337.21	13.30	0.60	1.70	1.70	4.80	4.80
66	E.L.U-3	-1757.45	-61.96	-364.46	16.90	0.80	2.20	2.20	6.10	6.10
67	E.L.U-1	-1381.33	4.58	160.41	0.00	0.00	0.00	0.00	0.00	0.00
67	E.L.U-1	-1352.27	-3.81	-201.98	0.00	0.00	0.00	0.00	0.00	0.00
67	E.L.U-2	-675.25	58.72	357.31	21.60	1.00	2.80	2.80	7.90	7.90
67	E.L.U-2	-653.72	54.21	155.29	1.40	0.00	0.10	0.10	0.50	0.50
67	E.L.U-2	-1036.78	-53.08	-170.42	1.60	0.00	0.20	0.20	0.50	0.50
67	E.L.U-2	-1015.26	-58.94	-391.53	21.60	1.00	2.80	2.80	7.90	7.90
67	E.L.U-3	-602.89	81.57	463.03	37.00	1.70	4.90	4.90	13.50	13.50
67	E.L.U-3	-581.37	77.36	265.82	16.50	0.70	2.20	2.20	6.00	6.00
67	E.L.U-3	-1109.14	-75.94	-276.14	10.90	0.50	1.40	1.40	3.90	3.90
67	E.L.U-3	-1087.62	-82.09	-502.06	37.80	1.70	5.00	5.00	13.80	13.80
71	E.L.U-1	117.43	2.62	1.32	5.80	0.20	0.70	0.70	2.10	2.10
71	E.L.U-1	145.92	-2.55	-14.03	4.30	0.20	0.50	0.50	1.50	1.50
71	E.L.U-2	416.21	50.07	256.39	30.90	1.40	4.10	4.10	11.30	11.30
71	E.L.U-2	437.31	47.09	202.59	26.90	1.20	3.50	3.50	9.80	9.80
71	E.L.U-2	-327.03	-46.91	-254.23	15.60	0.70	2.00	2.00	5.70	5.70
71	E.L.U-2	-305.93	-50.15	-220.53	13.30	0.60	1.70	1.70	4.80	4.80
71	E.L.U-3	571.98	67.71	346.34	43.10	2.00	5.70	5.70	15.70	15.70
71	E.L.U-3	593.08	64.73	272.04	36.90	1.70	4.90	4.90	13.50	13.50
71	E.L.U-3	-482.80	-64.56	-344.17	23.90	1.10	3.10	3.10	8.70	8.70
71	E.L.U-3	-461.70	-67.79	-289.97	19.10	0.90	2.50	2.50	6.90	6.90
73	E.L.U-1	-905.16	7.54	-17.05	0.00	0.00	0.00	0.00	0.00	0.00
73	E.L.U-1	-876.67	-9.42	20.20	0.00	0.00	0.00	0.00	0.00	0.00
73	E.L.U-2	-188.66	66.18	233.21	18.50	0.80	2.40	2.40	6.70	6.70
73	E.L.U-2	-167.56	53.71	218.52	16.00	0.70	2.10	2.10	5.80	5.80
73	E.L.U-2	-955.79	-57.01	-253.46	6.70	0.30	0.80	0.80	2.40	2.40
73	E.L.U-2	-934.68	-65.20	-194.67	2.20	0.10	0.20	0.20	0.80	0.80
73	E.L.U-3	-35.41	86.85	319.15	31.50	1.40	4.20	4.20	11.50	11.50
73	E.L.U-3	-14.31	73.40	287.27	27.30	1.20	3.60	3.60	9.90	9.90
73	E.L.U-3	-1109.04	-77.68	-339.40	18.20	0.80	2.40	2.40	6.60	6.60
73	E.L.U-3	-1087.94	-84.88	-263.42	11.30	0.50	1.50	1.50	4.10	4.10
74	E.L.U-1	-441.71	21.48	-75.05	4.40	0.20	0.50	0.50	1.60	1.60
74	E.L.U-1	-412.65	-21.19	108.91	2.60	0.10	0.30	0.30	0.90	0.90
74	E.L.U-2	-51.47	83.26	180.96	19.40	0.90	2.50	2.50	7.10	7.10
74	E.L.U-2	-29.95	57.59	298.68	26.10	1.20	3.40	3.40	9.50	9.50
74	E.L.U-2	-514.26	-57.16	-271.57	15.10	0.70	2.00	2.00	5.50	5.50

74	E.L.U-2	-492.73	-83.35	-166.62	10.20	0.40	1.30	1.30	3.70	3.70
74	E.L.U-3	15.38	111.04	271.41	32.00	1.50	4.20	4.20	11.70	11.70
74	E.L.U-3	36.91	85.54	392.85	39.50	1.80	5.20	5.20	14.40	14.40
74	E.L.U-3	-581.11	-84.94	-362.02	27.00	1.20	3.60	3.60	9.80	9.80
74	E.L.U-3	-559.58	-111.30	-260.78	22.20	1.00	2.90	2.90	8.10	8.10
75	E.L.U-1	164.79	5.60	12.09	4.80	0.20	0.60	0.60	1.70	1.70
75	E.L.U-1	193.85	-3.88	-16.18	7.90	0.30	1.00	1.00	2.80	2.80
75	E.L.U-2	263.58	62.83	227.50	26.40	1.20	3.50	3.50	9.60	9.60
75	E.L.U-2	285.11	56.53	202.22	24.10	1.10	3.20	3.20	8.80	8.80
75	E.L.U-2	-94.01	-56.14	-210.70	17.10	0.80	2.20	2.20	6.20	6.20
75	E.L.U-2	-72.49	-61.07	-224.97	19.20	0.90	2.50	2.50	7.00	7.00
75	E.L.U-3	334.52	87.18	313.78	37.50	1.70	5.00	5.00	13.70	13.70
75	E.L.U-3	356.04	80.56	287.91	35.10	1.60	4.60	4.60	12.80	12.80
75	E.L.U-3	-164.95	-80.48	-296.97	26.40	1.20	3.50	3.50	9.60	9.60
75	E.L.U-3	-143.42	-85.10	-310.66	28.60	1.30	3.80	3.80	10.40	10.40
76	E.L.U-1	-657.00	5.01	-13.16	0.00	0.00	0.00	0.00	0.00	0.00
76	E.L.U-1	-628.51	-4.33	17.95	0.00	0.00	0.00	0.00	0.00	0.00
76	E.L.U-2	4.95	64.87	275.05	25.50	1.20	3.40	3.40	9.30	9.30
76	E.L.U-2	26.05	57.27	250.74	23.10	1.00	3.00	3.00	8.40	8.40
76	E.L.U-2	-844.27	-58.80	-290.55	12.40	0.50	1.60	1.60	4.50	4.50
76	E.L.U-2	-823.17	-62.51	-229.63	6.90	0.30	0.90	0.90	2.50	2.50
76	E.L.U-3	182.27	85.64	374.25	40.30	1.90	5.30	5.30	14.70	14.70
76	E.L.U-3	203.37	77.16	329.45	35.40	1.60	4.70	4.70	12.90	12.90
76	E.L.U-3	-1021.59	-79.57	-389.75	24.70	1.10	3.30	3.30	9.00	9.00
76	E.L.U-3	-1000.49	-82.40	-308.35	16.40	0.70	2.10	2.10	6.00	6.00
77	E.L.U-1	-315.36	14.51	-66.20	1.10	0.00	0.10	0.10	0.40	0.40
77	E.L.U-1	-286.30	-14.73	102.81	1.20	0.00	0.10	0.10	0.40	0.40
77	E.L.U-2	11.58	79.90	224.57	23.20	1.10	3.10	3.10	8.40	8.40
77	E.L.U-2	33.10	61.99	333.07	30.90	1.40	4.10	4.10	11.30	11.30
77	E.L.U-2	-418.11	-62.34	-304.36	20.50	0.90	2.70	2.70	7.50	7.50
77	E.L.U-2	-396.59	-79.85	-208.65	14.60	0.60	1.90	1.90	5.30	5.30
77	E.L.U-3	87.80	108.01	328.51	37.40	1.70	5.00	5.00	13.60	13.60
77	E.L.U-3	109.33	90.00	441.44	45.90	2.10	6.10	6.10	16.80	16.80
77	E.L.U-3	-494.34	-90.45	-408.29	33.80	1.60	4.50	4.50	12.30	12.30
77	E.L.U-3	-472.81	-107.86	-317.02	27.90	1.30	3.70	3.70	10.20	10.20
82	E.L.U-1	-365.75	0.02	5.67	0.00	0.00	0.00	0.00	0.00	0.00
82	E.L.U-1	-337.25	2.71	-20.00	0.00	0.00	0.00	0.00	0.00	0.00
82	E.L.U-2	174.97	46.77	281.58	27.80	1.30	3.70	3.70	10.10	10.10
82	E.L.U-2	196.07	46.53	218.49	22.80	1.00	3.00	3.00	8.30	8.30
82	E.L.U-2	-663.82	-46.68	-274.32	11.70	0.50	1.50	1.50	4.20	4.20
82	E.L.U-2	-642.71	-43.41	-243.30	8.50	0.40	1.10	1.10	3.10	3.10
82	E.L.U-3	349.96	63.69	378.87	41.40	1.90	5.50	5.50	15.10	15.10
82	E.L.U-3	371.06	62.67	293.10	34.10	1.60	4.50	4.50	12.40	12.40
82	E.L.U-3	-838.81	-63.60	-371.61	22.00	1.00	2.90	2.90	8.00	8.00
82	E.L.U-3	-817.70	-59.56	-317.91	15.70	0.70	2.00	2.00	5.70	5.70
83	E.L.U-1	-287.95	-1.50	39.84	0.00	0.00	0.00	0.00	0.00	0.00
83	E.L.U-1	-258.89	2.58	-60.08	0.00	0.00	0.00	0.00	0.00	0.00
83	E.L.U-2	-18.11	54.40	279.06	24.30	1.10	3.20	3.20	8.90	8.90
83	E.L.U-2	3.41	56.84	226.34	20.50	0.90	2.70	2.70	7.50	7.50
83	E.L.U-2	-362.36	-55.94	-229.62	13.70	0.60	1.80	1.80	5.00	5.00
83	E.L.U-2	-340.84	-54.02	-300.82	20.50	0.90	2.70	2.70	7.50	7.50
83	E.L.U-3	42.14	76.83	378.58	37.30	1.70	4.90	4.90	13.60	13.60
83	E.L.U-3	63.67	79.39	331.69	33.50	1.50	4.40	4.40	12.20	12.20
83	E.L.U-3	-422.62	-78.37	-329.14	25.10	1.10	3.30	3.30	9.10	9.10
83	E.L.U-3	-401.10	-76.56	-406.17	33.10	1.50	4.40	4.40	12.10	12.10
84	E.L.U-1	-924.96	4.36	-7.62	0.00	0.00	0.00	0.00	0.00	0.00
84	E.L.U-1	-896.47	-3.01	12.43	0.00	0.00	0.00	0.00	0.00	0.00
84	E.L.U-2	-93.64	64.44	335.46	29.30	1.30	3.90	3.90	10.70	10.70
84	E.L.U-2	-72.54	58.02	296.99	25.30	1.20	3.30	3.30	9.20	9.20
84	E.L.U-2	-1077.55	-59.20	-344.21	15.60	0.70	2.00	2.00	5.70	5.70
84	E.L.U-2	-1056.44	-61.59	-282.65	9.20	0.40	1.20	1.20	3.30	3.30
84	E.L.U-3	103.09	85.21	453.01	46.40	2.20	6.20	6.20	16.90	16.90
84	E.L.U-3	124.19	77.93	389.80	39.80	1.80	5.30	5.30	14.50	14.50
84	E.L.U-3	-1274.27	-79.97	-461.75	32.10	1.50	4.20	4.20	11.70	11.70
84	E.L.U-3	-1253.17	-81.51	-375.45	22.20	1.00	2.90	2.90	8.10	8.10
85	E.L.U-1	-525.68	11.44	-45.50	0.00	0.00	0.00	0.00	0.00	0.00
85	E.L.U-1	-496.62	-10.48	77.00	0.00	0.00	0.00	0.00	0.00	0.00
85	E.L.U-2	-74.43	80.38	295.64	27.90	1.30	3.70	3.70	10.20	10.20
85	E.L.U-2	-52.91	68.88	375.55	34.30	1.60	4.50	4.50	12.50	12.50
85	E.L.U-2	-597.78	-66.75	-350.26	23.10	1.00	3.00	3.00	8.40	8.40
85	E.L.U-2	-576.25	-81.24	-282.51	18.80	0.80	2.50	2.50	6.80	6.80
85	E.L.U-3	4.51	109.61	420.55	44.70	2.10	5.90	5.90	16.30	16.30
85	E.L.U-3	26.04	98.85	505.75	52.00	2.40	6.90	6.90	19.00	19.00
85	E.L.U-3	-676.72	-95.97	-475.18	40.10	1.90	5.30	5.30	14.60	14.60
85	E.L.U-3	-655.20	-111.21	-412.71	36.40	1.70	4.80	4.80	13.30	13.30
90	E.L.U-1	-834.62	2.03	8.87	0.00	0.00	0.00	0.00	0.00	0.00
90	E.L.U-1	-806.13	-1.31	-20.94	0.00	0.00	0.00	0.00	0.00	0.00
90	E.L.U-2	59.37	48.20	341.51	31.10	1.40	4.10	4.10	11.30	11.30
90	E.L.U-2	80.47	44.69	269.55	24.70	1.10	3.30	3.30	9.00	9.00
90	E.L.U-2	-1125.41	-45.84	-330.66	11.50	0.50	1.50	1.50	4.20	4.20
90	E.L.U-2	-1104.30	-46.10	-294.85	7.60	0.30	1.00	1.00	2.70	2.70
90	E.L.U-3	304.06	65.28	457.55	47.90	2.20	6.40	6.40	17.50	17.50
90	E.L.U-3	325.17	61.13	358.76	38.90	1.80	5.20	5.20	14.20	14.20
90	E.L.U-3	-1370.10	-62.92	-446.71	26.90	1.20	3.50	3.50	9.80	9.80
90	E.L.U-3	-1349.00	-62.55	-384.06	19.30	0.90	2.50	2.50	7.00	7.00
91	E.L.U-1	-642.25	5.12	48.13	0.00	0.00	0.00	0.00	0.00	0.00
91	E.L.U-1	-613.20	-4.77	-66.81	0.00	0.00	0.00	0.00	0.00	0.00
91	E.L.U-2	-113.84	59.84	343.61	29.20	1.30	3.90	3.90	10.60	10.60
91	E.L.U-2	-92.31	55.32	284.96	23.50	1.10	3.10	3.10	8.60	8.60
91	E.L.U-2	-710.21	-53.97	-285.57	13.10	0.60	1.70	1.70	4.70	4.70

91	E.L.U-2	-688.69	-60.66	-365.74	22.60	1.00	3.00	3.00	8.20	8.20
91	E.L.U-3	-12.72	82.97	464.81	45.30	2.10	6.00	6.00	16.50	16.50
91	E.L.U-3	8.80	78.94	413.49	40.30	1.90	5.30	5.30	14.70	14.70
91	E.L.U-3	-811.32	-77.10	-406.76	28.30	1.30	3.70	3.70	10.30	10.30
91	E.L.U-3	-789.80	-84.29	-494.27	39.40	1.80	5.20	5.20	14.40	14.40

Quadro A. 17 - Pilares da família "P7" (0.30x0.30)

FRAME	COMBINATION	N	M ₂	M ₃	A _{s,total}	%A _{s,total}	A _{s31}	A _{s32}	A _{s21}	A _{s22}
53	E.L.U-1	-231.07	-0.45	0.20	0.00	0.00	0.00	0.00	0.00	0.00
53	E.L.U-1	-218.86	-2.50	-0.61	0.00	0.00	0.00	0.00	0.00	0.00
53	E.L.U-2	215.96	30.42	1.22	10.70	1.10	2.60	2.60	2.60	2.60
53	E.L.U-2	225.00	22.82	0.37	9.40	1.00	2.30	2.30	2.30	2.30
53	E.L.U-2	-507.09	-30.93	-0.97	0.00	0.00	0.00	0.00	0.00	0.00
53	E.L.U-2	-498.04	-25.92	-1.12	0.00	0.00	0.00	0.00	0.00	0.00
53	E.L.U-3	362.94	40.24	1.50	16.00	1.70	4.00	4.00	4.00	4.00
53	E.L.U-3	371.99	29.58	0.50	14.10	1.50	3.50	3.50	3.50	3.50
53	E.L.U-3	-654.07	-40.75	-1.25	0.00	0.00	0.00	0.00	0.00	0.00
53	E.L.U-3	-645.02	-32.68	-1.26	0.00	0.00	0.00	0.00	0.00	0.00
54	E.L.U-1	-103.29	-0.26	0.63	0.00	0.00	0.00	0.00	0.00	0.00
54	E.L.U-1	-90.83	-0.33	-0.55	0.00	0.00	0.00	0.00	0.00	0.00
54	E.L.U-2	29.61	24.20	1.20	5.10	0.50	1.20	1.20	1.20	1.20
54	E.L.U-2	38.83	23.82	0.41	5.20	0.50	1.20	1.20	1.20	1.20
54	E.L.U-2	-165.85	-24.37	-0.42	0.50	0.00	0.10	0.10	0.10	0.10
54	E.L.U-2	-156.63	-24.42	-1.09	0.70	0.00	0.10	0.10	0.10	0.10
54	E.L.U-3	14.68	33.28	1.48	6.50	0.70	1.60	1.60	1.60	1.60
54	E.L.U-3	23.90	33.18	0.69	6.70	0.70	1.60	1.60	1.60	1.60
54	E.L.U-3	-150.92	-33.45	-0.70	2.70	0.20	0.60	0.60	0.60	0.60
54	E.L.U-3	-141.70	-33.78	-1.38	3.00	0.30	0.70	0.70	0.70	0.70
55	E.L.U-1	-214.44	-0.40	-0.26	0.00	0.00	0.00	0.00	0.00	0.00
55	E.L.U-1	-202.23	-2.15	0.35	0.00	0.00	0.00	0.00	0.00	0.00
55	E.L.U-2	78.84	28.52	1.69	7.10	0.70	1.70	1.70	1.70	1.70
55	E.L.U-2	87.89	23.48	2.15	6.30	0.60	1.50	1.50	1.50	1.50
55	E.L.U-2	-342.25	-29.06	-1.99	0.00	0.00	0.00	0.00	0.00	0.00
55	E.L.U-2	-333.21	-25.95	-1.76	0.00	0.00	0.00	0.00	0.00	0.00
55	E.L.U-3	163.71	38.17	2.33	11.00	1.20	2.70	2.70	2.70	2.70
55	E.L.U-3	172.75	31.21	2.83	9.80	1.00	2.40	2.40	2.40	2.40
55	E.L.U-3	-427.12	-38.71	-2.63	0.00	0.00	0.00	0.00	0.00	0.00
55	E.L.U-3	-418.07	-33.68	-2.44	0.00	0.00	0.00	0.00	0.00	0.00
56	E.L.U-1	-157.80	0.98	-0.70	0.00	0.00	0.00	0.00	0.00	0.00
56	E.L.U-1	-145.34	-2.66	0.79	0.00	0.00	0.00	0.00	0.00	0.00
56	E.L.U-2	-12.64	27.38	1.88	4.70	0.50	1.10	1.10	1.10	1.10
56	E.L.U-2	-3.41	25.87	2.73	4.60	0.50	1.10	1.10	1.10	1.10
56	E.L.U-2	-186.01	-26.36	-2.69	0.50	0.00	0.10	0.10	0.10	0.10
56	E.L.U-2	-176.78	-28.95	-1.82	1.20	0.10	0.30	0.30	0.30	0.30
56	E.L.U-3	12.94	37.98	2.82	7.50	0.80	1.80	1.80	1.80	1.80
56	E.L.U-3	22.17	36.83	3.67	7.50	0.80	1.80	1.80	1.80	1.80
56	E.L.U-3	-211.58	-36.96	-3.63	2.20	0.20	0.50	0.50	0.50	0.50
56	E.L.U-3	-202.36	-39.91	-2.76	3.00	0.30	0.70	0.70	0.70	0.70
59	E.L.U-1	-356.28	2.47	0.12	0.00	0.00	0.00	0.00	0.00	0.00
59	E.L.U-1	-344.07	-7.42	-0.37	0.00	0.00	0.00	0.00	0.00	0.00
59	E.L.U-2	88.84	26.26	1.45	6.90	0.70	1.70	1.70	1.70	1.70
59	E.L.U-2	97.89	15.20	0.88	5.00	0.50	1.20	1.20	1.20	1.20
59	E.L.U-2	-520.66	-23.40	-1.33	0.00	0.00	0.00	0.00	0.00	0.00
59	E.L.U-2	-511.62	-23.92	-1.29	0.00	0.00	0.00	0.00	0.00	0.00
59	E.L.U-3	211.81	34.67	1.90	11.40	1.20	2.80	2.80	2.80	2.80
59	E.L.U-3	220.85	21.19	1.20	9.00	0.90	2.20	2.20	2.20	2.20
59	E.L.U-3	-643.63	-31.81	-1.78	0.00	0.00	0.00	0.00	0.00	0.00
59	E.L.U-3	-634.59	-29.91	-1.61	0.00	0.00	0.00	0.00	0.00	0.00
60	E.L.U-1	-259.60	10.72	0.60	0.00	0.00	0.00	0.00	0.00	0.00
60	E.L.U-1	-247.15	-13.90	-0.74	0.00	0.00	0.00	0.00	0.00	0.00
60	E.L.U-2	-78.76	27.13	1.42	3.10	0.30	0.70	0.70	0.70	0.70
60	E.L.U-2	-69.54	13.36	0.70	0.60	0.00	0.10	0.10	0.10	0.10
60	E.L.U-2	-243.22	-14.52	-0.74	0.00	0.00	0.00	0.00	0.00	0.00
60	E.L.U-2	-234.00	-29.84	-1.54	0.10	0.00	0.00	0.00	0.00	0.00
60	E.L.U-3	-63.90	35.29	1.83	5.10	0.50	1.20	1.20	1.20	1.20
60	E.L.U-3	-54.67	22.05	1.15	2.60	0.20	0.60	0.60	0.60	0.60
60	E.L.U-3	-258.09	-22.68	-1.15	0.00	0.00	0.00	0.00	0.00	0.00
60	E.L.U-3	-248.86	-38.53	-1.99	1.70	0.10	0.40	0.40	0.40	0.40
465	E.L.U-1	-366.68	11.65	5.97	0.00	0.00	0.00	0.00	0.00	0.00
465	E.L.U-1	-353.37	-10.63	-8.27	0.00	0.00	0.00	0.00	0.00	0.00
465	E.L.U-2	-228.56	64.39	39.44	12.40	1.30	3.00	3.00	3.00	3.00
465	E.L.U-2	-218.71	53.37	29.75	8.20	0.90	2.00	2.00	2.00	2.00
465	E.L.U-2	-265.38	-49.89	-31.79	7.10	0.70	1.70	1.70	1.70	1.70
465	E.L.U-2	-255.53	-66.74	-40.54	12.90	1.40	3.20	3.20	3.20	3.20
465	E.L.U-3	-229.39	77.05	40.82	15.80	1.70	3.90	3.90	3.90	3.90
465	E.L.U-3	-219.54	68.43	31.05	12.10	1.30	3.00	3.00	3.00	3.00
465	E.L.U-3	-264.55	-62.55	-33.18	10.40	1.10	2.50	2.50	2.50	2.50
465	E.L.U-3	-254.70	-81.80	-41.85	16.90	1.80	4.20	4.20	4.20	4.20
508	E.L.U-1	-300.99	13.55	1.00	0.00	0.00	0.00	0.00	0.00	0.00
508	E.L.U-1	-287.68	-13.14	0.23	0.00	0.00	0.00	0.00	0.00	0.00
508	E.L.U-2	-84.45	61.44	36.11	13.40	1.40	3.30	3.30	3.30	3.30
508	E.L.U-2	-74.59	46.63	35.81	10.20	1.10	2.50	2.50	2.50	2.50
508	E.L.U-2	-308.38	-44.94	-34.96	5.90	0.60	1.40	1.40	1.40	1.40

508	E.L.U-2	-298.53	-62.84	-35.33	10.40	1.10	2.50	2.50	2.50	2.50
508	E.L.U-3	-79.08	75.33	37.37	16.90	1.80	4.20	4.20	4.20	4.20
508	E.L.U-3	-69.22	61.86	37.08	13.90	1.50	3.40	3.40	3.40	3.40
508	E.L.U-3	-313.75	-58.83	-36.21	9.40	1.00	2.30	2.30	2.30	2.30
508	E.L.U-3	-303.90	-78.06	-36.60	14.40	1.50	3.50	3.50	3.50	3.50
509	E.L.U-1	-420.98	24.15	4.62	0.00	0.00	0.00	0.00	0.00	0.00
509	E.L.U-1	-407.67	-24.14	-5.49	0.00	0.00	0.00	0.00	0.00	0.00
509	E.L.U-2	-218.43	58.84	37.98	11.00	1.20	2.70	2.70	2.70	2.70
509	E.L.U-2	-208.57	31.76	31.85	4.20	0.40	1.00	1.00	1.00	1.00
509	E.L.U-2	-329.62	-29.33	-32.23	1.60	0.10	0.40	0.40	0.40	0.40
509	E.L.U-2	-319.77	-61.88	-38.84	10.60	1.10	2.60	2.60	2.60	2.60
509	E.L.U-3	-202.66	70.78	39.36	14.30	1.50	3.50	3.50	3.50	3.50
509	E.L.U-3	-192.80	45.64	33.23	7.50	0.80	1.80	1.80	1.80	1.80
509	E.L.U-3	-345.39	-41.26	-33.61	4.20	0.40	1.00	1.00	1.00	1.00
509	E.L.U-3	-335.54	-75.76	-40.22	14.10	1.50	3.50	3.50	3.50	3.50

Quadro A. 18 - Pilares da família "P8 E P8.A" (0.30x0.70)

FRAME	COMBINATION	N	M ₂	M ₃	A _{s,total}	%A _{s,total}	A _{s31}	A _{s32}	A _{s21}	A _{s22}	FRAME
4	E.L.U-1	-3256.61	5.39	-70.55		3.10	0.10	0.40	0.40	1.10	1.10
4	E.L.U-1	-3228.12	-5.61	130.78		4.30	0.20	0.50	0.50	1.50	1.50
4	E.L.U-2	-1730.48	59.94	213.52		0.10	0.00	0.00	0.00	0.00	0.00
4	E.L.U-2	-1709.37	51.68	306.71		7.10	0.30	0.90	0.90	2.60	2.60
4	E.L.U-2	-2202.64	-53.32	-296.21		9.00	0.40	1.20	1.20	3.20	3.20
4	E.L.U-2	-2181.54	-58.68	-153.78		0.40	0.00	0.00	0.00	0.10	0.10
4	E.L.U-3	-1636.81	79.19	304.78		12.50	0.50	1.60	1.60	4.50	4.50
4	E.L.U-3	-1615.70	70.26	386.69		21.00	0.90	2.80	2.80	7.60	7.60
4	E.L.U-3	-2296.31	-72.57	-387.48		26.30	1.20	3.50	3.50	9.60	9.60
4	E.L.U-3	-2275.21	-77.26	-233.76		7.30	0.30	0.90	0.90	2.60	2.60
5	E.L.U-1	-95.95	-19.82	12.82		1.20	0.00	0.10	0.10	0.40	0.40
5	E.L.U-1	-78.76	19.56	13.40		1.50	0.00	0.20	0.20	0.50	0.50
5	E.L.U-2	-40.28	22.68	59.79		4.00	0.10	0.50	0.50	1.40	1.40
5	E.L.U-2	-27.55	50.29	35.32		8.70	0.40	1.10	1.10	3.10	3.10
5	E.L.U-2	-90.20	-48.49	-43.46		7.00	0.30	0.90	0.90	2.50	2.50
5	E.L.U-2	-77.46	-24.59	-17.59		2.50	0.10	0.30	0.30	0.90	0.90
5	E.L.U-3	-35.50	26.72	68.82		5.00	0.20	0.60	0.60	1.80	1.80
5	E.L.U-3	-22.77	55.57	39.53		9.90	0.40	1.30	1.30	3.60	3.60
5	E.L.U-3	-94.97	-52.53	-52.50		7.70	0.30	1.00	1.00	2.80	2.80
5	E.L.U-3	-82.24	-29.87	-21.79		3.40	0.10	0.40	0.40	1.20	1.20
14	E.L.U-1	-344.21	-13.24	53.62		0.00	0.00	0.00	0.00	0.00	0.00
14	E.L.U-1	-313.17	13.94	-50.40		0.00	0.00	0.00	0.00	0.00	0.00
14	E.L.U-2	-156.61	92.97	589.43		57.50	2.70	7.60	7.60	21.00	21.00
14	E.L.U-2	-133.62	109.22	522.75		53.30	2.50	7.10	7.10	19.50	19.50
14	E.L.U-2	-306.99	-108.94	-523.39		51.00	2.40	6.80	6.80	18.60	18.60
14	E.L.U-2	-283.99	-92.04	-584.61		55.30	2.60	7.30	7.30	20.20	20.20
14	E.L.U-3	-125.57	126.63	675.64		72.00	3.40	9.60	9.60	26.30	26.30
14	E.L.U-3	-102.57	142.90	611.32		67.80	3.20	9.00	9.00	24.80	24.80
14	E.L.U-3	-338.03	-142.61	-609.60		65.30	3.10	8.70	8.70	23.90	23.90
14	E.L.U-3	-315.04	-125.72	-673.18		69.60	3.30	9.30	9.30	25.40	25.40
21	E.L.U-1	-827.59	10.70	179.70		0.20	0.00	0.00	0.00	0.00	0.00
21	E.L.U-1	-796.54	-10.61	-176.14		3.60	0.10	0.40	0.40	1.30	1.30
21	E.L.U-2	-503.25	94.24	323.43		25.90	1.20	3.40	3.40	9.40	9.40
21	E.L.U-2	-480.25	82.62	118.67		7.50	0.30	1.00	1.00	2.70	2.70
21	E.L.U-2	-605.46	-81.70	-109.20		4.40	0.20	0.50	0.50	1.60	1.60
21	E.L.U-2	-582.46	-95.32	-333.52		26.00	1.20	3.40	3.40	9.50	9.50
21	E.L.U-3	-486.82	117.82	374.56		35.20	1.60	4.70	4.70	12.80	12.80
21	E.L.U-3	-463.82	106.69	176.36		16.10	0.70	2.10	2.10	5.80	5.80
21	E.L.U-3	-621.89	-105.28	-160.32		12.20	0.50	1.60	1.60	4.40	4.40
21	E.L.U-3	-598.89	-119.38	-391.21		36.20	1.70	4.80	4.80	13.20	13.20
23	E.L.U-1	-467.60	10.87	-19.62		0.00	0.00	0.00	0.00	0.00	0.00
23	E.L.U-1	-436.56	-13.51	17.16		0.00	0.00	0.00	0.00	0.00	0.00
23	E.L.U-2	-223.09	84.60	158.16		14.90	0.70	1.90	1.90	5.40	5.40
23	E.L.U-2	-200.09	66.42	170.77		13.20	0.60	1.70	1.70	4.80	4.80
23	E.L.U-2	-408.79	-71.16	-184.86		10.90	0.50	1.40	1.40	3.90	3.90
23	E.L.U-2	-385.79	-83.22	-147.14		10.90	0.50	1.40	1.40	3.90	3.90
23	E.L.U-3	-216.72	105.33	192.42		20.80	0.90	2.70	2.70	7.60	7.60
23	E.L.U-3	-193.72	86.30	207.70		19.20	0.90	2.50	2.50	7.00	7.00
23	E.L.U-3	-415.16	-91.89	-219.11		17.40	0.80	2.30	2.30	6.30	6.30
23	E.L.U-3	-392.17	-103.10	-184.07		17.00	0.80	2.20	2.20	6.20	6.20
24	E.L.U-1	-2163.93	15.25	-219.93		0.00	0.00	0.00	0.00	0.00	0.00
24	E.L.U-1	-2134.87	-15.11	236.30		5.80	0.20	0.70	0.70	2.10	2.10
24	E.L.U-2	-1220.58	74.56	123.71		2.10	0.00	0.20	0.20	0.70	0.70
24	E.L.U-2	-1199.06	55.66	389.33		19.50	0.90	2.60	2.60	7.10	7.10
24	E.L.U-2	-1448.36	-55.78	-382.08		17.60	0.80	2.30	2.30	6.40	6.40
24	E.L.U-2	-1426.84	-74.27	-111.36		3.30	0.10	0.40	0.40	1.20	1.20
24	E.L.U-3	-1201.42	100.51	224.94		9.80	0.40	1.30	1.30	3.50	3.50
24	E.L.U-3	-1179.89	81.49	487.99		35.80	1.70	4.70	4.70	13.10	13.10
24	E.L.U-3	-1467.53	-81.74	-483.32		34.80	1.60	4.60	4.60	12.70	12.70
24	E.L.U-3	-1446.00	-100.10	-210.03		7.00	0.30	0.90	0.90	2.50	2.50
27	E.L.U-1	-243.44	20.28	-25.55		1.30	0.00	0.10	0.10	0.40	0.40
27	E.L.U-1	-250.13	34.56	50.78		0.60	0.00	0.00	0.00	0.20	0.20
27	E.L.U-2	-22.38	71.22	284.39		26.60	1.20	3.50	3.50	9.70	9.70
27	E.L.U-2	-27.34	67.69	213.93		20.00	0.90	2.60	2.60	7.30	7.30
27	E.L.U-2	-321.18	-45.51	-317.56		21.70	1.00	2.90	2.90	7.90	7.90

27	E.L.U-2	-326.14	-23.10	-148.07		4.30	0.20	0.50	0.50	1.50	1.50
27	E.L.U-3	23.85	89.76	366.03		37.20	1.70	4.90	4.90	13.60	13.60
27	E.L.U-3	18.89	82.06	264.95		27.10	1.20	3.60	3.60	9.90	9.90
27	E.L.U-3	-367.41	-64.05	-399.20		31.00	1.40	4.10	4.10	11.30	11.30
27	E.L.U-3	-372.37	-37.48	-199.08		8.70	0.40	1.10	1.10	3.10	3.10
28	E.L.U-1	-558.20	-18.58	-34.78		0.00	0.00	0.00	0.00	0.00	0.00
28	E.L.U-1	-589.24	15.07	40.05		0.00	0.00	0.00	0.00	0.00	0.00
28	E.L.U-2	-293.92	71.06	135.91		9.70	0.40	1.20	1.20	3.50	3.50
28	E.L.U-2	-316.91	96.81	191.66		17.50	0.80	2.30	2.30	6.40	6.40
28	E.L.U-2	-466.22	-94.49	-178.95		13.60	0.60	1.80	1.80	4.90	4.90
28	E.L.U-2	-489.22	-78.20	-143.98		7.80	0.30	1.00	1.00	2.80	2.80
28	E.L.U-3	-271.02	98.49	173.67		17.50	0.80	2.30	2.30	6.40	6.40
28	E.L.U-3	-294.01	125.57	225.41		25.80	1.20	3.40	3.40	9.40	9.40
28	E.L.U-3	-489.12	-121.92	-216.71		21.50	1.00	2.80	2.80	7.80	7.80
28	E.L.U-3	-512.11	-106.95	-177.73		15.40	0.70	2.00	2.00	5.60	5.60
29	E.L.U-1	-247.42	20.46	-30.45		1.40	0.00	0.10	0.10	0.50	0.50
29	E.L.U-1	-240.72	13.62	28.23		0.00	0.00	0.00	0.00	0.00	0.00
29	E.L.U-2	-58.84	57.37	134.99		12.30	0.50	1.60	1.60	4.50	4.50
29	E.L.U-2	-53.88	55.98	300.51		25.70	1.20	3.40	3.40	9.40	9.40
29	E.L.U-2	-280.57	-31.34	-177.27		8.30	0.30	1.10	1.10	3.00	3.00
29	E.L.U-2	-275.61	-38.48	-259.90		16.30	0.70	2.10	2.10	5.90	5.90
29	E.L.U-3	-36.34	70.35	175.48		17.20	0.80	2.30	2.30	6.30	6.30
29	E.L.U-3	-31.38	70.52	372.81		34.70	1.60	4.60	4.60	12.70	12.70
29	E.L.U-3	-303.07	-44.32	-217.76		12.40	0.50	1.60	1.60	4.50	4.50
29	E.L.U-3	-298.11	-53.03	-332.21		24.20	1.10	3.20	3.20	8.80	8.80
30	E.L.U-1	-395.48	15.81	-2.76		0.00	0.00	0.00	0.00	0.00	0.00
30	E.L.U-1	-357.73	-21.04	0.50		0.00	0.00	0.00	0.00	0.00	0.00
30	E.L.U-2	-124.34	70.86	136.58		13.10	0.60	1.70	1.70	4.70	4.70
30	E.L.U-2	-96.39	44.11	168.69		12.50	0.50	1.60	1.60	4.50	4.50
30	E.L.U-2	-410.50	-51.51	-140.20		4.60	0.20	0.60	0.60	1.60	1.60
30	E.L.U-2	-382.55	-70.26	-167.47		10.00	0.40	1.30	1.30	3.60	3.60
30	E.L.U-3	-74.69	90.55	145.95		18.20	0.80	2.40	2.40	6.60	6.60
30	E.L.U-3	-46.73	62.73	196.17		17.60	0.80	2.30	2.30	6.40	6.40
30	E.L.U-3	-460.16	-71.19	-149.56		7.30	0.30	0.90	0.90	2.60	2.60
30	E.L.U-3	-432.20	-88.87	-194.94		14.60	0.60	1.90	1.90	5.30	5.30
32	E.L.U-1	-100.48	22.27	11.18		1.50	0.00	0.20	0.20	0.50	0.50
32	E.L.U-1	-83.29	-21.48	16.41		1.80	0.00	0.20	0.20	0.60	0.60
32	E.L.U-2	-33.70	44.43	76.52		8.00	0.30	1.00	1.00	2.90	2.90
32	E.L.U-2	-20.97	22.10	48.34		3.80	0.10	0.50	0.50	1.30	1.30
32	E.L.U-2	-102.03	-15.83	-61.53		2.30	0.10	0.30	0.30	0.80	0.80
32	E.L.U-2	-89.30	-49.89	-27.10		7.10	0.30	0.90	0.90	2.60	2.60
32	E.L.U-3	-28.21	47.71	87.43		9.00	0.40	1.20	1.20	3.20	3.20
32	E.L.U-3	-15.48	27.23	53.23		4.90	0.20	0.60	0.60	1.70	1.70
32	E.L.U-3	-107.51	-19.10	-72.43		3.10	0.10	0.40	0.40	1.10	1.10
32	E.L.U-3	-94.78	-55.02	-31.99		8.10	0.30	1.00	1.00	2.90	2.90
51	E.L.U-1	-1181.16	2.71	-21.02		0.00	0.00	0.00	0.00	0.00	0.00
51	E.L.U-1	-1152.67	-0.20	15.71		0.00	0.00	0.00	0.00	0.00	0.00
51	E.L.U-2	141.48	59.99	260.64		26.50	1.20	3.50	3.50	9.70	9.70
51	E.L.U-2	162.59	58.28	265.16		27.20	1.20	3.60	3.60	9.90	9.90
51	E.L.U-2	-1584.43	-56.56	-285.83		5.20	0.20	0.60	0.60	1.90	1.90
51	E.L.U-2	-1563.33	-58.83	-246.59		0.60	0.00	0.00	0.00	0.20	0.20
51	E.L.U-3	499.30	80.07	354.50		43.60	2.00	5.80	5.80	15.90	15.90
51	E.L.U-3	520.40	78.42	351.00		43.60	2.00	5.80	5.80	15.90	15.90
51	E.L.U-3	-1942.25	-76.64	-379.69		22.90	1.00	3.00	3.00	8.30	8.30
51	E.L.U-3	-1921.14	-78.97	-332.43		17.30	0.80	2.30	2.30	6.30	6.30
52	E.L.U-1	-815.77	5.39	-56.09		0.00	0.00	0.00	0.00	0.00	0.00
52	E.L.U-1	-786.72	-3.43	56.47		0.00	0.00	0.00	0.00	0.00	0.00
52	E.L.U-2	-261.00	70.94	244.20		18.70	0.80	2.50	2.50	6.80	6.80
52	E.L.U-2	-239.48	63.96	302.00		23.60	1.10	3.10	3.10	8.60	8.60
52	E.L.U-2	-757.67	-63.98	-311.34		16.40	0.70	2.10	2.10	6.00	6.00
52	E.L.U-2	-736.14	-68.53	-234.54		9.60	0.40	1.20	1.20	3.50	3.50
52	E.L.U-3	-170.98	98.03	354.05		34.20	1.60	4.50	4.50	12.50	12.50
52	E.L.U-3	-149.45	90.40	404.50		38.20	1.80	5.10	5.10	13.90	13.90
52	E.L.U-3	-847.69	-91.07	-421.19		31.70	1.50	4.20	4.20	11.60	11.60
52	E.L.U-3	-826.17	-94.97	-337.05		23.70	1.10	3.10	3.10	8.60	8.60
64	E.L.U-1	-2921.58	1.32	-42.56		0.00	0.00	0.00	0.00	0.00	0.00
64	E.L.U-1	-2893.09	2.57	67.32		0.00	0.00	0.00	0.00	0.00	0.00
64	E.L.U-2	-1576.52	58.15	222.28		0.50	0.00	0.00	0.00	0.10	0.10
64	E.L.U-2	-1555.41	58.29	270.26		3.70	0.10	0.40	0.40	1.30	1.30
64	E.L.U-2	-1972.96	-56.59	-272.06		4.50	0.20	0.60	0.60	1.60	1.60
64	E.L.U-2	-1951.86	-55.10	-192.20		4.20	0.10	0.50	0.50	1.50	1.50
64	E.L.U-3	-1499.24	77.84	310.37		13.20	0.60	1.70	1.70	4.80	4.80
64	E.L.U-3	-1478.14	77.71	351.30		18.10	0.80	2.40	2.40	6.60	6.60
64	E.L.U-3	-2050.23	-76.28	-360.15		21.00	0.90	2.80	2.80	7.60	7.60
64	E.L.U-3	-2029.13	-74.52	-273.24		9.20	0.40	1.20	1.20	3.30	3.30
65	E.L.U-1	-1919.81	3.54	-138.46		0.00	0.00	0.00	0.00	0.00	0.00
65	E.L.U-1	-1890.75	-3.69	157.25		0.00	0.00	0.00	0.00	0.00	0.00
65	E.L.U-2	-1091.44	68.50	174.13		1.40	0.00	0.10	0.10	0.50	0.50
65	E.L.U-2	-1069.91	63.56	342.60		16.20	0.70	2.10	2.10	5.90	5.90
65	E.L.U-2	-1287.75	-64.34	-336.77		14.20	0.60	1.80	1.80	5.20	5.20
65	E.L.U-2	-1266.23	-67.91	-157.27		0.80	0.00	0.10	0.10	0.20	0.20
65	E.L.U-3	-1060.97	95.02	276.44		15.10	0.70	2.00	2.00	5.50	5.50
65	E.L.U-3	-1039.45	89.68	439.05		32.10	1.50	4.20	4.20	11.70	11.70
65	E.L.U-3	-1318.22	-90.86	-439.08		31.20	1.40	4.10	4.10	11.40	11.40
65	E.L.U-3	-1296.69	-94.02	-253.72		10.80	0.50	1.40	1.40	3.90	3.90
78	E.L.U-1	-3316.03	4.40	-75.67		1.20	0.00	0.10	0.10	0.40	0.40
78	E.L.U-1	-3287.54	-3.61	147.17		7.20	0.30	0.90	0.90	2.60	2.60
78	E.L.U-2	-1654.47	59.13	250.46		1.20	0.00	0.10	0.10	0.40	0.40
78	E.L.U-2	-1633.36	52.58	349.57		12.80	0.60	1.70	1.70	4.60	4.60
78	E.L.U-2	-2323.93	-53.79	-338.51		16.30	0.70	2.10	2.10	5.90	5.90

78	E.L.U-2	-2302.83	-56.99	-178.50		1.00	0.00	0.10	0.10	0.30	0.30
78	E.L.U-3	-1516.39	78.26	355.23		18.70	0.80	2.50	2.50	6.80	6.80
78	E.L.U-3	-1495.28	70.96	440.04		27.60	1.30	3.60	3.60	10.10	10.10
78	E.L.U-3	-2462.01	-72.92	-443.28		35.70	1.60	4.70	4.70	13.00	13.00
78	E.L.U-3	-2440.91	-75.37	-268.96		13.30	0.60	1.70	1.70	4.80	4.80
79	E.L.U-1	-2155.90	12.82	-232.87		0.00	0.00	0.00	0.00	0.00	0.00
79	E.L.U-1	-2126.84	-13.19	246.31		5.80	0.20	0.70	0.70	2.10	2.10
79	E.L.U-2	-1186.64	72.58	157.38		0.20	0.00	0.00	0.00	0.00	0.00
79	E.L.U-2	-1165.11	56.17	435.79		25.30	1.20	3.30	3.30	9.20	9.20
79	E.L.U-2	-1458.15	-56.99	-429.05		23.60	1.10	3.10	3.10	8.60	8.60
79	E.L.U-2	-1436.62	-72.22	-148.08		2.50	0.10	0.30	0.30	0.90	0.90
79	E.L.U-3	-1146.39	98.33	273.73		14.90	0.70	1.90	1.90	5.40	5.40
79	E.L.U-3	-1124.87	81.60	551.77		43.40	2.00	5.80	5.80	15.80	15.80
79	E.L.U-3	-1498.39	-82.74	-545.40		42.50	2.00	5.60	5.60	15.50	15.50
79	E.L.U-3	-1476.87	-97.64	-264.06		12.30	0.50	1.60	1.60	4.50	4.50
80	E.L.U-1	-2883.10	-1.01	54.25		0.00	0.00	0.00	0.00	0.00	0.00
80	E.L.U-1	-2854.61	5.30	-120.42		0.00	0.00	0.00	0.00	0.00	0.00
80	E.L.U-2	-1320.42	45.50	325.35		9.40	0.40	1.20	1.20	3.40	3.40
80	E.L.U-2	-1299.31	47.65	193.28		3.00	0.10	0.40	0.40	1.00	1.00
80	E.L.U-2	-2164.24	-46.52	-262.40		2.60	0.10	0.30	0.30	0.90	0.90
80	E.L.U-2	-2143.14	-41.66	-333.20		11.40	0.50	1.50	1.50	4.10	4.10
80	E.L.U-3	-1142.25	62.01	430.03		25.70	1.20	3.40	3.40	9.40	9.40
80	E.L.U-3	-1121.15	63.57	283.55		9.20	0.40	1.20	1.20	3.30	3.30
80	E.L.U-3	-2342.41	-63.03	-367.09		22.20	1.00	2.90	2.90	8.10	8.10
80	E.L.U-3	-2321.30	-57.58	-423.48		28.50	1.30	3.80	3.80	10.40	10.40
81	E.L.U-1	-1869.25	-4.32	181.80		0.00	0.00	0.00	0.00	0.00	0.00
81	E.L.U-1	-1840.20	5.15	-197.18		0.00	0.00	0.00	0.00	0.00	0.00
81	E.L.U-2	-988.28	51.82	396.85		21.50	1.00	2.80	2.80	7.80	7.80
81	E.L.U-2	-966.76	56.63	173.65		0.30	0.00	0.00	0.00	0.10	0.10
81	E.L.U-2	-1325.13	-56.41	-185.69		4.00	0.10	0.50	0.50	1.40	1.40
81	E.L.U-2	-1303.60	-51.02	-403.16		19.90	0.90	2.60	2.60	7.20	7.20
81	E.L.U-3	-926.46	73.82	512.65		38.50	1.80	5.10	5.10	14.10	14.10
81	E.L.U-3	-904.93	78.46	288.57		14.70	0.60	1.90	1.90	5.30	5.30
81	E.L.U-3	-1386.95	-78.42	-301.49		12.50	0.50	1.60	1.60	4.50	4.50
81	E.L.U-3	-1365.43	-72.85	-518.08		37.30	1.70	4.90	4.90	13.60	13.60
86	E.L.U-1	-3167.78	5.70	-61.15		0.00	0.00	0.00	0.00	0.00	0.00
86	E.L.U-1	-3139.29	-6.23	123.06		1.50	0.00	0.20	0.20	0.50	0.50
86	E.L.U-2	-1482.34	59.87	317.54		10.20	0.40	1.30	1.30	3.70	3.70
86	E.L.U-2	-1461.23	51.24	388.56		17.60	0.80	2.30	2.30	6.40	6.40
86	E.L.U-2	-2342.57	-53.15	-388.75		23.30	1.10	3.10	3.10	8.50	8.50
86	E.L.U-2	-2321.47	-58.43	-245.09		5.00	0.20	0.60	0.60	1.80	1.80
86	E.L.U-3	-1302.20	79.04	441.45		29.40	1.30	3.90	3.90	10.70	10.70
86	E.L.U-3	-1281.09	69.70	494.76		34.10	1.60	4.50	4.50	12.40	12.40
86	E.L.U-3	-2522.71	-72.32	-512.66		45.20	2.10	6.00	6.00	16.50	16.50
86	E.L.U-3	-2501.60	-76.89	-351.30		24.70	1.10	3.30	3.30	9.00	9.00
87	E.L.U-1	-2034.45	16.62	-185.30		0.00	0.00	0.00	0.00	0.00	0.00
87	E.L.U-1	-2005.39	-16.92	193.89		0.00	0.00	0.00	0.00	0.00	0.00
87	E.L.U-2	-1053.39	76.19	250.36		8.50	0.40	1.10	1.10	3.10	3.10
87	E.L.U-2	-1031.87	56.83	472.81		30.60	1.40	4.00	4.00	11.20	11.20
87	E.L.U-2	-1456.99	-56.66	-466.79		28.20	1.30	3.70	3.70	10.30	10.30
87	E.L.U-2	-1435.46	-76.67	-246.17		5.30	0.20	0.70	0.70	1.90	1.90
87	E.L.U-3	-985.72	102.74	391.23		29.60	1.40	3.90	3.90	10.80	10.80
87	E.L.U-3	-964.19	83.56	615.51		51.60	2.40	6.90	6.90	18.80	18.80
87	E.L.U-3	-1524.66	-83.21	-607.66		50.20	2.30	6.70	6.70	18.30	18.30
87	E.L.U-3	-1503.14	-103.41	-388.87		28.10	1.30	3.70	3.70	10.20	10.20
88	E.L.U-1	-2958.33	5.76	50.32		0.00	0.00	0.00	0.00	0.00	0.00
88	E.L.U-1	-2929.84	-8.31	-106.64		0.00	0.00	0.00	0.00	0.00	0.00
88	E.L.U-2	-1464.54	49.95	384.19		16.80	0.70	2.20	2.20	6.10	6.10
88	E.L.U-2	-1443.44	40.87	258.10		1.20	0.00	0.10	0.10	0.40	0.40
88	E.L.U-2	-2113.56	-43.22	-325.51		10.40	0.40	1.30	1.30	3.80	3.80
88	E.L.U-2	-2092.45	-50.46	-382.31		19.20	0.90	2.50	2.50	7.00	7.00
88	E.L.U-3	-1331.20	66.73	509.20		35.30	1.60	4.70	4.70	12.90	12.90
88	E.L.U-3	-1310.09	57.30	366.37		16.50	0.70	2.20	2.20	6.00	6.00
88	E.L.U-3	-2246.91	-60.00	-450.52		31.60	1.50	4.20	4.20	11.50	11.50
88	E.L.U-3	-2225.80	-66.89	-490.58		37.80	1.70	5.00	5.00	13.80	13.80
89	E.L.U-1	-1861.10	16.98	163.49		0.00	0.00	0.00	0.00	0.00	0.00
89	E.L.U-1	-1832.04	-17.49	-171.83		0.00	0.00	0.00	0.00	0.00	0.00
89	E.L.U-2	-1046.29	66.17	457.31		29.90	1.40	3.90	3.90	10.90	10.90
89	E.L.U-2	-1024.77	46.27	261.50		5.00	0.20	0.60	0.60	1.80	1.80
89	E.L.U-2	-1258.69	-46.34	-266.80		2.90	0.10	0.30	0.30	1.00	1.00
89	E.L.U-2	-1237.16	-66.67	-462.04		29.90	1.40	3.90	3.90	10.90	10.90
89	E.L.U-3	-1018.44	89.14	599.71		50.50	2.40	6.70	6.70	18.40	18.40
89	E.L.U-3	-996.92	69.33	405.14		25.00	1.10	3.30	3.30	9.10	9.10
89	E.L.U-3	-1286.54	-69.31	-409.20		23.90	1.10	3.10	3.10	8.70	8.70
89	E.L.U-3	-1265.01	-89.72	-605.68		51.00	2.40	6.80	6.80	18.60	18.60
94	E.L.U-1	-2170.09	8.70	-18.48		0.00	0.00	0.00	0.00	0.00	0.00
94	E.L.U-1	-2141.60	-12.26	41.25		0.00	0.00	0.00	0.00	0.00	0.00
94	E.L.U-2	-926.67	62.00	414.31		25.50	1.20	3.40	3.40	9.30	9.30
94	E.L.U-2	-905.57	47.99	405.21		22.80	1.00	3.00	3.00	8.30	8.30
94	E.L.U-2	-1754.46	-51.55	-435.80		24.10	1.10	3.20	3.20	8.80	8.80
94	E.L.U-2	-1733.35	-62.68	-356.77		15.90	0.70	2.10	2.10	5.80	5.80
94	E.L.U-3	-756.81	81.14	560.85		46.50	2.20	6.20	6.20	17.00	17.00
94	E.L.U-3	-735.70	66.39	529.00		41.00	1.90	5.40	5.40	15.00	15.00
94	E.L.U-3	-1924.32	-70.69	-582.34		47.20	2.20	6.30	6.30	17.20	17.20
94	E.L.U-3	-1903.22	-81.08	-480.56		36.30	1.70	4.80	4.80	13.20	13.20
95	E.L.U-1	-1426.66	25.93	-43.45		0.00	0.00	0.00	0.00	0.00	0.00
95	E.L.U-1	-1397.61	-26.73	37.93		0.00	0.00	0.00	0.00	0.00	0.00
95	E.L.U-2	-619.69	80.92	416.99		31.80	1.50	4.20	4.20	11.60	11.60
95	E.L.U-2	-598.17	47.83	468.76		33.30	1.50	4.40	4.40	12.10	12.10
95	E.L.U-2	-1183.85	-49.77	-466.81		28.00	1.30	3.70	3.70	10.20	10.20

95	E.L.U-2	-1162.32	-79.95	-426.44		28.40	1.30	3.70	3.70	10.40	10.40
95	E.L.U-3	-534.39	106.73	589.26		55.60	2.60	7.40	7.40	20.30	20.30
95	E.L.U-3	-512.87	72.83	645.83		56.90	2.70	7.60	7.60	20.80	20.80
95	E.L.U-3	-1269.15	-75.58	-639.08		52.70	2.50	7.00	7.00	19.30	19.30
95	E.L.U-3	-1247.62	-104.95	-603.50		53.60	2.50	7.10	7.10	19.60	19.60
96	E.L.U-1	-1400.47	4.57	-3.10		0.00	0.00	0.00	0.00	0.00	0.00
96	E.L.U-1	-1371.98	-5.89	9.53		0.00	0.00	0.00	0.00	0.00	0.00
96	E.L.U-2	-719.81	48.91	423.04		26.90	1.20	3.50	3.50	9.80	9.80
96	E.L.U-2	-698.71	41.23	385.57		22.30	1.00	2.90	2.90	8.10	8.10
96	E.L.U-2	-1045.27	-43.43	-426.72		23.30	1.10	3.10	3.10	8.50	8.50
96	E.L.U-2	-1024.16	-48.29	-373.87		18.00	0.80	2.40	2.40	6.50	6.50
96	E.L.U-3	-669.67	65.38	569.96		46.00	2.10	6.10	6.10	16.80	16.80
96	E.L.U-3	-648.56	57.03	509.46		38.30	1.80	5.10	5.10	14.00	14.00
96	E.L.U-3	-1095.41	-59.91	-573.63		42.50	2.00	5.60	5.60	15.50	15.50
96	E.L.U-3	-1074.31	-64.08	-497.76		34.20	1.60	4.50	4.50	12.50	12.50
97	E.L.U-1	-968.66	13.71	-8.52		0.00	0.00	0.00	0.00	0.00	0.00
97	E.L.U-1	-939.60	-14.52	11.95		0.00	0.00	0.00	0.00	0.00	0.00
97	E.L.U-2	-529.45	61.85	435.02		32.30	1.50	4.30	4.30	11.80	11.80
97	E.L.U-2	-507.92	43.98	457.56		32.90	1.50	4.30	4.30	12.00	12.00
97	E.L.U-2	-716.10	-45.34	-446.53		29.10	1.30	3.80	3.80	10.60	10.60
97	E.L.U-2	-694.58	-61.49	-441.36		30.70	1.40	4.10	4.10	11.20	11.20
97	E.L.U-3	-515.58	83.49	606.36		53.90	2.50	7.20	7.20	19.70	19.70
97	E.L.U-3	-494.05	65.15	635.00		54.90	2.60	7.30	7.30	20.10	20.10
97	E.L.U-3	-729.97	-66.99	-617.87		51.20	2.40	6.80	6.80	18.70	18.70
97	E.L.U-3	-708.45	-82.66	-618.81		53.80	2.50	7.10	7.10	19.70	19.70
102	E.L.U-1	-852.17	8.48	0.04		0.00	0.00	0.00	0.00	0.00	0.00
102	E.L.U-1	-823.68	-11.81	7.23		0.00	0.00	0.00	0.00	0.00	0.00
102	E.L.U-2	-186.43	60.54	457.69		39.40	1.80	5.20	5.20	14.40	14.40
102	E.L.U-2	-165.33	45.72	391.03		31.50	1.40	4.20	4.20	11.50	11.50
102	E.L.U-2	-919.69	-50.41	-457.48		29.00	1.30	3.80	3.80	10.60	10.60
102	E.L.U-2	-898.59	-59.75	-382.24		21.90	1.00	2.90	2.90	8.00	8.00
102	E.L.U-3	-45.02	78.97	611.74		59.50	2.80	7.90	7.90	21.70	21.70
102	E.L.U-3	-23.91	62.67	508.26		47.40	2.20	6.30	6.30	17.30	17.30
102	E.L.U-3	-1061.11	-68.84	-611.54		48.50	2.30	6.40	6.40	17.70	17.70
102	E.L.U-3	-1040.01	-76.70	-499.46		36.70	1.70	4.90	4.90	13.40	13.40
103	E.L.U-1	-643.77	26.14	14.54		0.00	0.00	0.00	0.00	0.00	0.00
103	E.L.U-1	-614.71	-27.81	-21.38		0.00	0.00	0.00	0.00	0.00	0.00
103	E.L.U-2	-153.73	77.69	453.09		41.20	1.90	5.50	5.50	15.00	15.00
103	E.L.U-2	-132.20	44.89	442.39		37.30	1.70	4.90	4.90	13.60	13.60
103	E.L.U-2	-691.85	-46.43	-434.80		28.30	1.30	3.70	3.70	10.30	10.30
103	E.L.U-2	-670.33	-78.20	-469.80		36.60	1.70	4.80	4.80	13.40	13.40
103	E.L.U-3	-80.91	102.09	620.86		63.10	3.00	8.40	8.40	23.10	23.10
103	E.L.U-3	-59.39	68.96	620.12		58.80	2.70	7.80	7.80	21.50	21.50
103	E.L.U-3	-764.67	-70.83	-602.57		49.80	2.30	6.60	6.60	18.20	18.20
103	E.L.U-3	-743.14	-102.27	-647.54		59.90	2.80	8.00	8.00	21.90	21.90
104	E.L.U-1	-899.09	5.54	0.87		0.00	0.00	0.00	0.00	0.00	0.00
104	E.L.U-1	-870.60	-7.85	5.44		0.00	0.00	0.00	0.00	0.00	0.00
104	E.L.U-2	-314.96	48.42	453.57		35.60	1.60	4.70	4.70	13.00	13.00
104	E.L.U-2	-293.86	38.05	379.33		27.60	1.30	3.60	3.60	10.10	10.10
104	E.L.U-2	-860.19	-41.85	-452.38		27.70	1.30	3.70	3.70	10.10	10.10
104	E.L.U-2	-839.08	-47.29	-372.69		19.70	0.90	2.60	2.60	7.20	7.20
104	E.L.U-3	-237.67	64.38	606.42		54.70	2.60	7.30	7.30	20.00	20.00
104	E.L.U-3	-216.57	52.79	493.04		41.70	1.90	5.50	5.50	15.20	15.20
104	E.L.U-3	-937.48	-57.81	-605.22		47.00	2.20	6.20	6.20	17.20	17.20
104	E.L.U-3	-916.37	-62.04	-486.40		33.90	1.60	4.50	4.50	12.40	12.40
105	E.L.U-1	-681.28	16.29	0.97		0.00	0.00	0.00	0.00	0.00	0.00
105	E.L.U-1	-652.22	-16.78	3.87		0.00	0.00	0.00	0.00	0.00	0.00
105	E.L.U-2	-206.15	60.86	436.57		36.90	1.70	4.90	4.90	13.50	13.50
105	E.L.U-2	-184.63	41.20	460.65		38.00	1.80	5.00	5.00	13.90	13.90
105	E.L.U-2	-697.20	-41.52	-436.59		27.90	1.30	3.70	3.70	10.20	10.20
105	E.L.U-2	-675.68	-61.11	-454.22		32.30	1.50	4.30	4.30	11.80	11.80
105	E.L.U-3	-147.76	81.45	600.17		57.40	2.70	7.60	7.60	21.00	21.00
105	E.L.U-3	-126.24	61.71	638.82		59.30	2.80	7.90	7.90	21.70	21.70
105	E.L.U-3	-755.59	-62.12	-600.18		48.30	2.20	6.40	6.40	17.60	17.60
105	E.L.U-3	-734.07	-81.62	-632.39		55.10	2.60	7.30	7.30	20.10	20.10
454	E.L.U-1	-893.71	-10.33	-88.81		0.00	0.00	0.00	0.00	0.00	0.00
454	E.L.U-1	-862.66	10.11	96.12		0.00	0.00	0.00	0.00	0.00	0.00
454	E.L.U-2	-564.23	93.69	379.25		30.50	1.40	4.00	4.00	11.10	11.10
454	E.L.U-2	-541.23	106.81	492.72		45.00	2.10	6.00	6.00	16.40	16.40
454	E.L.U-2	-619.24	-106.41	-486.28		43.50	2.00	5.80	5.80	15.90	15.90
454	E.L.U-2	-596.24	-94.20	-372.32		29.60	1.40	3.90	3.90	10.80	10.80
454	E.L.U-3	-563.58	127.11	462.72		45.40	2.10	6.00	6.00	16.60	16.60
454	E.L.U-3	-540.58	140.49	578.62		60.30	2.80	8.00	8.00	22.00	22.00
454	E.L.U-3	-619.89	-139.84	-569.74		58.60	2.70	7.80	7.80	21.40	21.40
454	E.L.U-3	-596.89	-127.88	-458.22		44.80	2.10	5.90	5.90	16.40	16.40
461	E.L.U-1	-918.74	1.67	-179.43		0.00	0.00	0.00	0.00	0.00	0.00
461	E.L.U-1	-887.69	-1.43	182.73		0.00	0.00	0.00	0.00	0.00	0.00
461	E.L.U-2	-544.97	101.58	105.99		9.40	0.40	1.20	1.20	3.40	3.40
461	E.L.U-2	-521.98	102.09	337.57		28.20	1.30	3.70	3.70	10.30	10.30
461	E.L.U-2	-673.51	-100.14	-322.08		24.70	1.10	3.30	3.30	9.00	9.00
461	E.L.U-2	-650.52	-103.28	-111.37		8.30	0.30	1.10	1.10	3.00	3.00
461	E.L.U-3	-533.43	134.63	157.37		19.60	0.90	2.60	2.60	7.10	7.10
461	E.L.U-3	-510.43	135.95	396.10		40.40	1.90	5.40	5.40	14.70	14.70
461	E.L.U-3	-685.05	-133.19	-373.45		36.00	1.70	4.80	4.80	13.10	13.10
461	E.L.U-3	-662.06	-137.13	-169.90		19.00	0.90	2.50	2.50	6.90	6.90
462	E.L.U-1	-963.33	-1.11	-215.18		0.00	0.00	0.00	0.00	0.00	0.00
462	E.L.U-1	-932.29	0.71	223.99		1.40	0.00	0.10	0.10	0.50	0.50
462	E.L.U-2	-591.74	96.14	140.71		9.50	0.40	1.20	1.20	3.40	3.40
462	E.L.U-2	-568.75	97.66	414.61		34.80	1.60	4.60	4.60	12.70	12.70
462	E.L.U-2	-680.44	-97.38	-398.95		32.10	1.50	4.20	4.20	11.70	11.70

462	E.L.U-2	-657.44	-96.89	-138.00		8.40	0.30	1.10	1.10	3.00	3.00
462	E.L.U-3	-585.35	127.94	201.89		20.20	0.90	2.70	2.70	7.30	7.30
462	E.L.U-3	-562.36	129.82	481.32		47.80	2.20	6.30	6.30	17.50	17.50
462	E.L.U-3	-686.83	-129.18	-460.13		44.40	2.10	5.90	5.90	16.20	16.20
462	E.L.U-3	-663.83	-129.05	-204.72		19.80	0.90	2.60	2.60	7.20	7.20
463	E.L.U-1	-986.28	0.14	-185.86		0.00	0.00	0.00	0.00	0.00	0.00
463	E.L.U-1	-955.24	-0.43	195.08		0.00	0.00	0.00	0.00	0.00	0.00
463	E.L.U-2	-604.67	99.59	232.46		16.80	0.70	2.20	2.20	6.10	6.10
463	E.L.U-2	-581.68	99.61	468.21		40.80	1.90	5.40	5.40	14.90	14.90
463	E.L.U-2	-699.52	-99.09	-456.66		38.40	1.80	5.10	5.10	14.00	14.00
463	E.L.U-2	-676.52	-100.46	-225.70		15.50	0.70	2.00	2.00	5.60	5.60
463	E.L.U-3	-602.62	132.56	304.33		30.10	1.40	4.00	4.00	11.00	11.00
463	E.L.U-3	-579.63	132.96	544.03		54.90	2.60	7.30	7.30	20.10	20.10
463	E.L.U-3	-701.57	-132.05	-528.53		52.10	2.40	6.90	6.90	19.00	19.00
463	E.L.U-3	-678.58	-133.81	-301.52		29.30	1.30	3.90	3.90	10.70	10.70
499	E.L.U-1	-919.66	-9.59	240.54		0.60	0.00	0.00	0.00	0.20	0.20
499	E.L.U-1	-888.61	7.53	-245.41		1.60	0.00	0.20	0.20	0.50	0.50
499	E.L.U-2	-571.43	79.72	416.42		32.10	1.50	4.20	4.20	11.70	11.70
499	E.L.U-2	-548.44	90.40	130.21		8.40	0.30	1.10	1.10	3.00	3.00
499	E.L.U-2	-654.10	-90.82	-128.13		6.60	0.30	0.80	0.80	2.40	2.40
499	E.L.U-2	-631.10	-81.57	-431.43		33.40	1.50	4.40	4.40	12.20	12.20
499	E.L.U-3	-568.30	102.49	474.61		42.10	2.00	5.60	5.60	15.40	15.40
499	E.L.U-3	-545.31	113.54	194.43		17.30	0.80	2.30	2.30	6.30	6.30
499	E.L.U-3	-657.23	-113.60	-186.32		15.10	0.70	2.00	2.00	5.50	5.50
499	E.L.U-3	-634.23	-104.71	-495.65		44.20	2.10	5.90	5.90	16.10	16.10
808	E.L.U-1	-434.75	9.92	-21.00		0.00	0.00	0.00	0.00	0.00	0.00
808	E.L.U-1	-397.01	-12.24	18.38		0.00	0.00	0.00	0.00	0.00	0.00
808	E.L.U-2	-189.87	60.38	129.16		9.60	0.40	1.20	1.20	3.50	3.50
808	E.L.U-2	-161.92	43.40	183.15		12.30	0.50	1.60	1.60	4.50	4.50
808	E.L.U-2	-401.93	-48.25	-156.94		5.70	0.20	0.70	0.70	2.00	2.00
808	E.L.U-2	-373.97	-58.67	-158.72		7.70	0.30	1.00	1.00	2.80	2.80
808	E.L.U-3	-168.58	75.19	141.68		13.30	0.60	1.70	1.70	4.80	4.80
808	E.L.U-3	-140.62	57.73	212.59		16.40	0.70	2.10	2.10	6.00	6.00
808	E.L.U-3	-423.22	-63.06	-169.45		8.20	0.30	1.00	1.00	3.00	3.00
808	E.L.U-3	-395.26	-73.00	-188.15		11.80	0.50	1.50	1.50	4.30	4.30

Quadro A. 19 - Pilares da família "P9" (0.70x0.30)

FRAME	COMBINATION	N	M ₂	M ₃	A _{S,total}	%A _{S,total}	A _{S31}	A _{S32}	A _{S21}	A _{S22}
16	E.L.U-1	-1838.92	8.28	8.17	0.00	0.00	0.00	0.00	0.00	0.00
16	E.L.U-1	-1810.43	1.15	-19.03	0.00	0.00	0.00	0.00	0.00	0.00
16	E.L.U-2	-741.86	228.50	56.24	7.00	0.30	2.50	2.50	0.90	0.90
16	E.L.U-2	-720.76	198.12	39.13	2.20	0.10	0.80	0.80	0.20	0.20
16	E.L.U-2	-1512.12	-218.52	-46.74	2.40	0.10	0.80	0.80	0.30	0.30
16	E.L.U-2	-1491.01	-196.77	-61.35	2.40	0.10	0.80	0.80	0.30	0.30
16	E.L.U-3	-589.29	307.34	74.88	19.90	0.90	7.20	7.20	2.60	2.60
16	E.L.U-3	-568.18	265.28	57.11	13.60	0.60	4.90	4.90	1.80	1.80
16	E.L.U-3	-1664.69	-297.37	-65.38	8.60	0.40	3.10	3.10	1.10	1.10
16	E.L.U-3	-1643.59	-263.92	-79.33	7.50	0.30	2.70	2.70	1.00	1.00
17	E.L.U-1	-1079.46	13.46	38.66	0.00	0.00	0.00	0.00	0.00	0.00
17	E.L.U-1	-1050.40	-5.04	-52.48	0.00	0.00	0.00	0.00	0.00	0.00
17	E.L.U-2	-640.05	220.63	76.29	11.00	0.50	4.00	4.00	1.40	1.40
17	E.L.U-2	-618.53	194.72	18.78	2.10	0.00	0.70	0.70	0.20	0.20
17	E.L.U-2	-727.16	-204.23	-31.32	1.80	0.00	0.60	0.60	0.20	0.20
17	E.L.U-2	-705.63	-200.97	-79.87	8.90	0.40	3.20	3.20	1.10	1.10
17	E.L.U-2	-630.97	304.22	98.27	23.00	1.00	8.40	8.40	3.00	3.00
17	E.L.U-3	-609.44	267.35	38.79	10.90	0.50	3.90	3.90	1.40	1.40
17	E.L.U-3	-736.24	-287.81	-53.30	12.70	0.60	4.60	4.60	1.60	1.60
17	E.L.U-3	-714.72	-273.61	-99.88	19.30	0.90	7.00	7.00	2.50	2.50
20	E.L.U-1	-656.71	-33.80	73.19	3.40	0.10	1.20	1.20	0.40	0.40
20	E.L.U-1	-625.67	32.47	-73.08	4.20	0.10	1.50	1.50	0.50	0.50
20	E.L.U-2	-421.08	325.47	115.11	30.60	1.40	11.20	11.20	4.00	4.00
20	E.L.U-2	-398.09	372.94	28.38	24.30	1.10	8.90	8.90	3.20	3.20
20	E.L.U-2	-448.34	-366.34	-26.86	22.70	1.00	8.30	8.30	3.00	3.00
20	E.L.U-2	-425.34	-332.75	-119.09	32.00	1.50	11.70	11.70	4.20	4.20
20	E.L.U-3	-419.13	411.28	127.64	41.30	1.90	15.10	15.10	5.50	5.50
20	E.L.U-3	-396.13	466.62	42.56	35.20	1.60	12.80	12.80	4.70	4.70
20	E.L.U-3	-450.30	-452.15	-39.39	32.50	1.50	11.90	11.90	4.30	4.30
20	E.L.U-3	-427.30	-426.44	-133.26	43.80	2.00	16.00	16.00	5.80	5.80
451	E.L.U-1	-1667.11	-18.01	6.53	0.00	0.00	0.00	0.00	0.00	0.00
451	E.L.U-1	-1638.62	57.49	-16.83	0.00	0.00	0.00	0.00	0.00	0.00
451	E.L.U-2	-240.92	211.28	47.77	13.30	0.60	4.80	4.80	1.70	1.70
451	E.L.U-2	-219.81	226.51	28.09	13.60	0.60	4.90	4.90	1.80	1.80
451	E.L.U-2	-1780.12	-232.61	-40.04	0.60	0.00	0.20	0.20	0.00	0.00
451	E.L.U-2	-1759.01	-158.03	-48.06	0.00	0.00	0.00	0.00	0.00	0.00
451	E.L.U-3	71.19	289.07	63.22	27.80	1.30	10.10	10.10	3.70	3.70
451	E.L.U-3	92.29	291.34	40.99	26.50	1.20	9.70	9.70	3.50	3.50
451	E.L.U-3	-2092.22	-310.40	-55.49	10.40	0.40	3.80	3.80	1.30	1.30
451	E.L.U-3	-2071.12	-222.87	-60.96	0.90	0.00	0.30	0.30	0.10	0.10
452	E.L.U-1	-1224.92	-78.86	25.48	0.00	0.00	0.00	0.00	0.00	0.00
452	E.L.U-1	-1195.87	101.67	-30.72	0.00	0.00	0.00	0.00	0.00	0.00
452	E.L.U-2	-619.45	162.61	56.44	3.00	0.10	1.00	1.00	0.40	0.40
452	E.L.U-2	-597.93	260.13	22.62	9.10	0.40	3.30	3.30	1.20	1.20
452	E.L.U-2	-898.44	-255.96	-26.27	3.80	0.10	1.30	1.30	0.50	0.50

452	E.L.U-2	-876.91	-139.64	-59.07	0.50	0.00	0.10	0.10	0.00	0.00
452	E.L.U-3	-593.20	245.22	73.04	13.60	0.60	4.90	4.90	1.80	1.80
452	E.L.U-3	-571.67	337.27	39.12	18.60	0.80	6.80	6.80	2.40	2.40
452	E.L.U-3	-924.69	-338.58	-42.87	14.30	0.60	5.20	5.20	1.90	1.90
452	E.L.U-3	-903.17	-216.77	-75.57	6.80	0.30	2.40	2.40	0.90	0.90
453	E.L.U-1	-576.71	-161.27	50.90	2.90	0.10	1.00	1.00	0.30	0.30
453	E.L.U-1	-545.67	166.20	-52.49	4.10	0.10	1.50	1.50	0.50	0.50
453	E.L.U-2	-322.50	292.48	123.74	30.70	1.40	11.20	11.20	4.10	4.10
453	E.L.U-2	-299.51	504.61	62.41	42.70	2.00	15.60	15.60	5.70	5.70
453	E.L.U-2	-456.22	-490.21	-61.40	39.00	1.80	14.20	14.20	5.20	5.20
453	E.L.U-2	-433.22	-294.60	-128.18	30.10	1.40	11.00	11.00	4.00	4.00
453	E.L.U-3	-297.05	395.30	137.35	42.80	2.00	15.60	15.60	5.70	5.70
453	E.L.U-3	-274.06	617.18	78.31	57.20	2.70	20.90	20.90	7.60	7.60
453	E.L.U-3	-481.67	-593.03	-75.01	51.70	2.40	18.90	18.90	6.90	6.90
453	E.L.U-3	-458.67	-407.17	-144.07	43.60	2.00	15.90	15.90	5.80	5.80

Quadro A. 20 - Pilares da família "P10" (0.70x0.30)

FRAME	COMBINATION	N	M ₂	M ₃	A _{s,total}	%A _{s,total}	A _{s31}	A _{s32}	A _{s21}	A _{s22}
70	E.L.U-1	-1048.01	3.63	4.75	0.00	0.00	0.00	0.00	0.00	0.00
70	E.L.U-1	-1019.52	10.71	-12.70	0.00	0.00	0.00	0.00	0.00	0.00
70	E.L.U-2	-113.75	230.09	51.23	17.90	0.80	6.50	6.50	2.30	2.30
70	E.L.U-2	-92.64	213.19	38.91	15.80	0.70	5.70	5.70	2.10	2.10
70	E.L.U-2	-1164.34	-225.75	-45.65	0.50	0.00	0.10	0.10	0.00	0.00
70	E.L.U-2	-1143.23	-200.24	-53.93	0.90	0.00	0.30	0.30	0.10	0.10
70	E.L.U-3	92.54	311.13	68.69	30.70	1.40	11.20	11.20	4.10	4.10
70	E.L.U-3	113.65	284.93	55.47	27.60	1.30	10.10	10.10	3.60	3.60
70	E.L.U-3	-1370.63	-306.79	-63.11	9.90	0.40	3.60	3.60	1.30	1.30
70	E.L.U-3	-1349.52	-271.98	-70.48	7.30	0.30	2.60	2.60	0.90	0.90
72	E.L.U-1	-341.10	0.08	29.61	0.00	0.00	0.00	0.00	0.00	0.00
72	E.L.U-1	-312.04	8.04	-44.43	0.50	0.00	0.10	0.10	0.00	0.00
72	E.L.U-2	-156.11	238.63	69.00	19.90	0.90	7.20	7.20	2.60	2.60
72	E.L.U-2	-134.58	240.08	22.80	16.30	0.70	5.90	5.90	2.10	2.10
72	E.L.U-2	-271.79	-238.81	-33.92	14.10	0.60	5.10	5.10	1.80	1.80
72	E.L.U-2	-250.27	-229.73	-75.59	18.20	0.80	6.60	6.60	2.40	2.40
72	E.L.U-3	-137.78	335.70	90.03	31.60	1.50	11.50	11.50	4.20	4.20
72	E.L.U-3	-116.25	336.34	42.88	26.70	1.20	9.70	9.70	3.50	3.50
72	E.L.U-3	-290.12	-335.88	-54.95	24.80	1.10	9.00	9.00	3.30	3.30
72	E.L.U-3	-268.60	-326.00	-95.68	29.70	1.40	10.80	10.80	3.90	3.90

Quadro A. 21 – Quadro resumo

PILAR	TIPO	f _{cd}	f _{syd}	B	H	rec	A _{s,total}	A _{s31}	A _{s21}	%A _{s,total}
P1	R	20	435	0.30	0.20	0.035	11.20	3.50	2.0	1.8
P2	R	20	435	0.30	0.20	0.035	11.20	3.50	2.00	1.80
P3	R	20	435	0.30	0.30	0.035	14.60	3.60	3.60	1.60
P4	R	20	435	0.30	0.30	0.035	21.60	5.40	5.40	2.30
P5	R	20	435	0.30	0.30	0.035	21.40	5.30	5.30	2.30
P5	R	20	435	0.30	0.70	0.035	71.20	9.50	26.00	3.30
P6	R	20	435	0.30	0.30	0.035	18.90	4.70	4.70	2.00
P6	R	20	435	0.30	0.70	0.035	44.10	5.80	16.10	2.00
P7	R	20	435	0.30	0.30	0.035	16.90	4.20	4.20	1.80
P8	R	20	435	0.30	0.70	0.035	63.10	8.40	23.10	3.00
P8.A	R	20	435	0.30	0.70	0.035	72.00	9.60	26.30	3.40
P9	R	20	435	0.70	0.30	0.035	57.20	20.90	7.60	2.70
P10	R	20	435	0.70	0.30	0.035	31.60	11.50	4.20	1.50

Anexo 13 – Dimensionamento das Sapatas

➤ Estudo da sapata S1

A sapata S1 é uma sapata agrupada tanto na direcção “x” como na direcção “y”. Tornou-se por isso necessário, achar uma “sapata tipo” para cada uma das direcções e fazer o estudo individual das mesmas.

— Segundo a direcção “x”

Quadro A. 22 - Estudo da tensão do solo segundo a direcção “x” [S1 (x)]

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N ₁ (KN)	N ₂ (KN)	V(y) ₁ (KN)	V(y) ₂ (KN)	M2(y) ₁ (KN.m)	M2(y) ₂ (KN.m)	N	M	e _r	a'	b'	σ _{solo}	VERIFICAÇÃO
152	1673	RARA-1	S1(x)	6.00	3.60	1.00	540.00	918.23	1263.00	73.04	68.87	150.07	144.64	2721.23	953.76	0.35	5.30	3.53	145.62	Verifica!
152	1673	RARA-1						217.84	749.50	-71.11	-70.73	-153.83	-153.38	1507.34	348.43	0.23	5.54	3.47	78.45	Verifica!
152	1673	RARA-2						1055.76	1364.72	98.38	93.08	204.10	197.20	2960.47	1056.19	0.36	5.29	3.51	159.63	Verifica!
152	1673	RARA-2						80.31	647.78	-96.45	-94.95	-207.85	-205.94	1268.10	246.01	0.19	5.61	3.39	66.69	Verifica!

Quadro A. 23 - Estudo da tensão do solo segundo a direcção “y” [S1 (x)]

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N ₁₊₂ (KN)	VY ₁₊₂ (KN)	M2(x) ₁₊₂ (KN.m)	e _y	a'	b'	σ _{solo}	VERIFICAÇÃO
152	1673	RARA-1	S1(x)	6.00	3.60	1.00	540.00	2181.23	26.98	73.12	0.04	5.93	3.53	130.21	Verifica!
152	1673	RARA-1						967.34	-38.22	-60.12	-0.07	5.87	3.47	74.02	Verifica!
152	1673	RARA-2						2420.47	38.70	97.19	0.05	5.91	3.51	142.83	Verifica!
152	1673	RARA-2						728.10	-49.93	-84.18	-0.11	5.79	3.39	64.65	Verifica!

Quadro A. 24 - Armadura necessária segundo a direcção “x” e “y” [S1 (x)]

JOINT		COMB	SAPATA	ARMADURA (X)								ARMADURA (Y)							
				e_x/a_0	k_x	$a'/4$	$tg\alpha_x$	$R1_x$	F_{tsdx}	AS_x [cm ² /m]	$AS_{x,max}$ [cm ² /m]	e_y/b_0	k_y	$b'/4$	$tg\alpha_y$	$R1_y$	F_{tsdy}	AS_y [cm ² /m]	$AS_{y,max}$ [cm ² /m]
152	1673	RARA-1	S1(x)	0.18	0.21	1.32	0.62	1540.60	2468.48	16.10	17.63	0.12	0.22	0.88	1.10	1389.00	1258.53	4.88	5.35
152	1673	RARA-1		0.33	0.19	1.38	0.63	816.59	1305.07	8.65		0.22	0.21	0.87	1.11	782.01	705.36	2.76	
152	1673	RARA-2		0.23	0.20	1.32	0.62	1680.03	2689.68	17.63		0.15	0.21	0.88	1.11	1518.97	1374.30	5.35	
152	1673	RARA-2		0.53	0.17	1.40	0.63	677.88	1079.44	7.33		0.35	0.19	0.85	1.12	673.63	603.67	2.40	

— Segundo a direcção “y”

Quadro A. 25 - Estudo da tensão do solo segundo a direcção “x” [S1 (y)]

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N_{1+2} (KN)	V_{x1+2} (KN)	$M2(x)_{1+2}$ (KN.m)	e_x	a'	b'	σ_{solo}	VERIFICAÇÃO
60	66	RARA-1	S1(y)	3.30	6.20	1.00	511.50	1588.62	30.27	60.77	0.06	3.19	5.06	130.33	Verifica!
60	66	RARA-1						605.43	-32.36	-65.66	-0.11	3.08	2.22	89.08	Verifica!
60	66	RARA-2						1795.62	41.55	83.61	0.05	3.21	5.32	105.52	Verifica!
60	66	RARA-2						398.43	-43.64	-88.49	-0.22	2.86	0.92	153.47	Verifica!
117	138	RARA-1						2332.79	31.28	62.16	0.03	3.25	5.21	138.03	Verifica!
117	138	RARA-1						1211.06	-29.20	-61.49	-0.05	3.20	3.28	115.74	Verifica!
117	138	RARA-2						2568.23	42.14	84.44	0.03	3.23	5.41	146.88	Verifica!
117	138	RARA-2						975.62	-40.06	-83.77	-0.09	3.13	2.56	122.27	Verifica!

Quadro A. 26 - Estudo da tensão do solo segundo a direcção “y” [S1 (y)]

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N_1 (KN)	N_2 (KN)	$V(y)_1$ (KN)	$V(y)_2$ (KN)	$M1(y)_1$ (KN.m)	$M1(y)_2$ (KN.m)	N	M	e_r	a'	b'	σ_{solo}	VERIFICAÇÃO
60	66	RARA-1	S1(y)	3.30	6.20	1.00	511.50	1363.59	225.02	66.27	75.03	196.41	171.40	2100.12	-1198.74	-0.57	3.19	5.06	130.33	Verifica!
60	66	RARA-1						875.90	-270.47	-98.78	-79.75	-157.57	-169.01	1116.93	-2224.68	-1.99	3.08	2.22	163.45	Verifica!
60	66	RARA-2						1466.75	328.87	94.99	101.48	259.32	231.36	2307.12	-1019.67	-0.44	3.21	5.32	135.33	Verifica!
60	66	RARA-2						772.74	-374.32	-127.50	-106.21	-220.48	-228.97	909.93	-2403.76	-2.64	2.86	0.92	347.62	Verifica!
117	138	RARA-1						1822.04	510.75	70.73	80.70	222.92	188.71	2844.29	-1403.89	-0.49	3.25	5.21	168.06	Verifica!
117	138	RARA-1						1259.49	-48.44	-114.02	-87.99	-168.92	-181.89	1722.56	-2514.71	-1.46	3.20	3.28	164.18	Verifica!
117	138	RARA-2						1940.82	627.41	103.07	109.23	292.70	253.57	3079.73	-1211.54	-0.39	3.23	5.41	175.91	Verifica!
117	138	RARA-2						1140.72	-165.10	-146.37	-116.52	-238.71	-246.75	1487.12	-2707.06	-1.82	3.13	2.56	185.75	Verifica!

Quadro A. 27 - Armadura necessária segundo a direcção “x” e “y” [S1 (y)]

JOINT		COMB	SAPATA	ARMADURA (X)							ARMADURA (Y)								
				e_x/a_0	k_x	$a'/4$	$tg\alpha_x$	$R1_x$	F_{tsdx}	As_x [cm ² /m]	$As_{x,max}$ [cm ² /m]	e_y/b_0	k_y	$b'/4$	$tg\alpha_y$	$R1_y$	F_{tsdy}	As_y [cm ² /m]	$As_{y,max}$ [cm ² /m]
60	66	RARA-1	S1(y)	0.19	0.21	0.80	1.22	1087.76	891.75	4.05	10.50	0.82	0.13	1.26	0.70	1287.04	1844.79	13.32	18.30
60	66	RARA-1		0.36	0.19	0.77	1.23	597.75	485.64	5.04		2.85	-0.13	0.55	0.81	1562.19	1921.19	14.33	
60	66	RARA-2		0.16	0.21	0.80	1.22	1187.06	974.96	4.22		0.63	0.15	1.33	0.69	1345.37	1953.30	14.01	
60	66	RARA-2		0.74	0.14	0.71	1.26	525.73	418.54	10.50		3.77	-0.25	0.23	0.88	3077.46	2137.26	17.21	
117	138	RARA-1		0.09	0.22	0.81	1.21	1445.49	1191.36	5.26		0.71	0.14	1.30	0.69	1691.46	2443.24	17.31	
117	138	RARA-1		0.17	0.21	0.80	1.22	888.62	729.31	5.11		2.09	-0.04	0.82	0.77	1627.90	2076.51	14.93	
117	138	RARA-2		0.11	0.22	0.81	1.21	1571.18	1293.54	5.50		0.56	0.16	1.35	0.69	1763.68	2572.94	18.30	
117	138	RARA-2		0.29	0.20	0.78	1.23	784.38	639.80	5.75		2.60	-0.10	0.64	0.80	1801.29	2311.29	16.99	

➤ Estudo da sapata S2 e S7

Quadro A. 28 - Estudo da tensão do solo segundo a direcção "x"

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N ₁₊₂ (KN)	V _{x1+2} (KN)	M2(x) ₁₊₂ (KN.m)	e _x	a'	b'	σ _{solo}	VERIFICAÇÃO
159	162	RARA-1	S2	3.30	5.10	1.00	420.75	2683.81	28.50	58.50	0.03	3.24	4.66	206.12	Verifica!
159	162	RARA-1						1461.28	-32.75	-66.30	-0.05	3.21	2.36	193.14	Verifica!
159	162	RARA-2						2935.84	39.56	81.08	0.03	3.24	4.89	185.07	Verifica!
159	162	RARA-2						1209.26	-43.82	-88.88	-0.07	3.15	1.52	253.59	Verifica!
171	174	RARA-1						1771.45	20.12	41.41	0.02	3.25	4.76	114.69	Verifica!
171	174	RARA-1						860.85	-23.51	-47.50	-0.06	3.19	3.15	85.89	Verifica!
171	174	RARA-2						1916.86	27.90	57.34	0.03	3.24	4.54	130.43	Verifica!
171	174	RARA-2						715.43	-31.29	-63.42	-0.09	3.12	2.42	94.99	Verifica!
183	186	RARA-1						1426.31	18.54	39.30	0.03	3.24	4.63	95.16	Verifica!
183	186	RARA-1						534.89	-23.33	-47.26	-0.09	3.12	3.48	49.57	Verifica!
183	186	RARA-2						1561.86	25.86	54.62	0.03	3.23	4.45	108.88	Verifica!
183	186	RARA-2						399.33	-30.65	-62.59	-0.16	2.99	2.70	50.01	Verifica!
7	156	RARA-1	S7	3.65	6.00	1.00	547.50	2672.81	34.81	71.79	0.03	3.58	5.51	163.20	Verifica!
7	156	RARA-1						1846.61	-42.42	-85.84	-0.05	3.54	5.41	96.59	Verifica!
7	156	RARA-2						2837.42	47.78	98.40	0.04	3.56	5.45	146.22	Verifica!
7	156	RARA-2						1682.00	-55.39	-112.46	-0.08	3.50	5.17	93.12	Verifica!
69	114	RARA-1						2641.05	36.31	73.81	0.03	3.58	5.51	133.95	Verifica!
69	114	RARA-1						1628.60	-40.96	-83.92	-0.06	3.54	5.28	87.39	Verifica!
69	114	RARA-2						2851.32	49.28	100.41	0.04	3.56	5.37	149.35	Verifica!
69	114	RARA-2						1418.33	-53.92	-110.52	-0.08	3.48	5.00	81.72	Verifica!
141	150	RARA-1						2839.18	36.18	73.66	0.03	3.59	5.43	146.03	Verifica!
141	150	RARA-1						1609.76	-41.09	-84.11	-0.06	3.53	5.13	89.03	Verifica!
141	150	RARA-2						3090.42	49.17	100.29	0.04	3.57	5.27	164.51	Verifica!
141	150	RARA-2						1358.51	-54.07	-110.74	-0.09	3.48	4.74	82.67	Verifica!
165	168	RARA-1						2678.56	34.26	71.10	0.03	3.58	5.23	142.94	Verifica!
165	168	RARA-1						1279.27	-44.08	-88.12	-0.07	3.51	4.76	76.93	Verifica!
165	168	RARA-2						2941.27	47.35	97.87	0.04	3.57	5.04	163.96	Verifica!
165	168	RARA-2						1016.56	-57.18	-114.89	-0.11	3.43	4.12	72.16	Verifica!
177	180	RARA-1						1721.82	32.37	68.57	0.04	3.56	4.87	99.59	Verifica!
177	180	RARA-1						269.26	-42.78	-86.38	-0.16	3.33	3.55	23.06	Verifica!
177	180	RARA-2						2000.14	44.61	94.20	0.05	3.54	4.62	122.44	Verifica!
177	180	RARA-2						-9.05	-55.02	-112.00	-0.31	3.03	1.92	-0.93	Verifica!
119	122	RARA-1	2448.22	39.68	78.24	0.04	3.57	5.51	124.51	Verifica!					
119	122	RARA-1	181.81	-44.35	-88.37	-0.18	3.29	4.42	12.76	Verifica!					
119	122	RARA-2	2918.54	54.22	106.99	0.05	3.56	5.42	151.46	Verifica!					
119	122	RARA-2	-288.51	-58.89	-117.12	-0.68	2.29	2.01	-61.94	Verifica!					

Quadro A. 29 - Estudo da tensão do solo segundo a direcção “y”

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N ₁ (KN)	N ₂ (KN)	V(y) ₁ (KN)	V(y) ₂ (KN)	M1(y) ₁ (KN.m)	M1(y) ₂ (KN.m)	N	M	e _r	a'	b'	σ _{solo}	VERIFICAÇÃO					
159	162	RARA-1	S2	3.30	5.10	1.00	420.75	1799.08	884.74	92.36	98.45	261.85	228.96	3104.56	-689.89	-0.22	3.24	4.66	206.12	Verifica!					
159	162	RARA-1						1366.40	94.88	-131.50	-106.49	-211.28	-219.15	1882.03	-2575.71	-1.37	3.21	2.36	248.19	Verifica!					
159	162	RARA-2						1887.98	1047.86	131.06	132.53	345.19	306.32	3356.59	-345.07	-0.10	3.24	4.89	211.36	Verifica!					
159	162	RARA-2						1277.50	-68.25	-170.20	-140.57	-294.62	-296.52	1630.01	-2920.53	-1.79	3.15	1.52	340.89	Verifica!					
171	174	RARA-1						911.66	859.78	135.05	12.50	281.73	25.04	2192.20	376.50	0.17	3.25	4.76	141.67	Verifica!					
171	174	RARA-1						694.69	166.16	-131.74	-12.32	-284.77	-25.17	1281.60	-1246.81	-0.97	3.19	3.15	127.38	Verifica!					
171	174	RARA-2						945.09	971.77	179.98	16.83	379.68	33.88	2337.61	650.38	0.28	3.24	4.54	158.78	Verifica!					
171	174	RARA-2						661.26	54.17	-176.67	-16.65	-382.72	-34.02	1136.18	-1520.69	-1.34	3.12	2.42	150.15	Verifica!					
183	186	RARA-1						729.43	696.88	137.92	14.18	302.64	28.35	1847.06	434.27	0.24	3.24	4.63	122.95	Verifica!					
183	186	RARA-1						365.94	168.95	-136.81	-13.95	-301.33	-28.44	955.64	-776.03	-0.81	3.12	3.48	88.03	Verifica!					
183	186	RARA-2						780.95	780.91	182.19	19.11	404.54	38.36	1982.61	644.13	0.32	3.23	4.45	137.93	Verifica!					
183	186	RARA-2						314.42	84.92	-181.08	-18.88	-403.22	-38.46	820.08	-985.88	-1.20	2.99	2.70	101.86	Verifica!					
7	156	RARA-1						S7	3.65	6.00	1.00	547.50	1895.80	777.01	105.69	79.40	134.26	153.35	0.10	0.18	0.25	3.58	5.51	163.20	Verifica!
7	156	RARA-1											1581.02	265.59	-55.20	-69.78	-205.56	-171.09	-0.10	-0.21	-0.30	3.54	5.41	124.99	Verifica!
7	156	RARA-2	1958.25	879.18	134.09	105.07	195.11						210.65	0.08	0.15	0.27	3.56	5.45	174.22	Verifica!					
7	156	RARA-2	1518.58	163.42	-83.60	-95.45	-266.40						-228.38	-0.13	-0.32	-0.41	3.50	5.17	123.16	Verifica!					
69	114	RARA-1	667.93	1973.13	90.67	120.23	181.79						158.59	0.15	0.06	0.24	3.58	5.51	161.49	Verifica!					
69	114	RARA-1	101.78	1526.82	-82.72	-64.99	-195.28						-234.06	-0.30	-0.11	-0.36	3.54	5.28	116.51	Verifica!					
69	114	RARA-2	786.14	2065.18	120.20	152.61	247.92						228.44	0.19	0.09	0.32	3.56	5.37	177.80	Verifica!					
69	114	RARA-2	-16.43	1434.77	-112.25	-97.38	-261.41						-303.90	-0.49	-0.15	-0.50	3.48	5.00	112.98	Verifica!					
141	150	RARA-1	862.14	1977.04	106.84	133.99	222.84						204.92	0.16	0.08	0.29	3.59	5.43	173.97	Verifica!					
141	150	RARA-1	206.21	1403.55	-101.90	-88.18	-230.28						-265.94	-0.31	-0.14	-0.44	3.53	5.13	119.04	Verifica!					
141	150	RARA-2	993.30	2097.13	141.75	172.17	301.20						287.53	0.20	0.11	0.36	3.57	5.27	193.42	Verifica!					
141	150	RARA-2	75.06	1283.46	-136.82	-126.35	-308.64						-348.54	-0.50	-0.19	-0.63	3.48	4.74	115.68	Verifica!					
165	168	RARA-1	1198.82	1479.74	135.45	141.09	286.86						274.24	0.16	0.14	0.38	3.58	5.23	171.93	Verifica!					
165	168	RARA-1	351.39	927.88	-135.82	-126.18	-285.08						-292.50	-0.32	-0.20	-0.62	3.51	4.76	109.55	Verifica!					
165	168	RARA-2	1348.29	1592.98	183.21	185.94	388.21						371.93	0.20	0.17	0.48	3.57	5.04	194.24	Verifica!					
165	168	RARA-2	201.92	814.64	-183.58	-171.03	-386.43						-390.19	-0.52	-0.29	-0.94	3.43	4.12	110.63	Verifica!					
177	180	RARA-1	963.85	757.98	142.95	140.79	318.07						305.29	0.21	0.23	0.57	3.56	4.87	130.97	Verifica!					
177	180	RARA-1	0.13	269.14	-148.75	-139.01	-307.69						-304.82	-0.56	-0.37	-1.23	3.33	3.55	69.03	Verifica!					
177	180	RARA-2	1147.88	852.25	194.37	185.83	428.82						408.00	0.25	0.29	0.69	3.54	4.62	155.67	Verifica!					
177	180	RARA-2	-183.91	174.86	-200.18	-184.06	-418.43						-407.52	-1.15	-0.56	-2.04	3.03	1.92	92.34	Verifica!					
119	122	RARA-1	1230.07	1218.15	77.45	92.49	158.95						171.11	0.09	0.10	0.24	3.57	5.51	152.13	Verifica!					
119	122	RARA-1	114.28	67.54	-73.80	-82.99	-173.39						-193.20	-0.26	-0.31	-0.79	3.29	4.42	50.16	Verifica!					
119	122	RARA-2	1461.85	1456.69	101.88	122.29	214.52						233.68	0.11	0.12	0.29	3.56	5.42	179.65	Verifica!					
119	122	RARA-2	-117.50	-171.01	-98.24	-112.79	-228.97						-255.77	-0.53	-0.68	-2.00	2.29	2.01	56.32	Verifica!					

Quadro A. 30 - Armadura necessária segundo a direcção “x” e “y”

JOINT		COMB	SAPATA	ARMADURA (X)							ARMADURA (Y)											
				e_x/a_0	k_x	$a'/4$	$tg\alpha_x$	$R1_x$	F_{tsdx}	A_{s_x} [cm ² /m]	$A_{s_x,max}$ [cm ² /m]	e_y/b_0	k_y	$b'/4$	$tg\alpha_y$	$R1_y$	F_{tsdy}	A_{s_y} [cm ² /m]	$A_{s_y,max}$ [cm ² /m]			
7	156	RARA-1	S2	0.11	0.22	0.81	1.21	1583.35	1303.68	6.44	10.58	0.32	0.19	1.16	0.85	1700.47	2002.96	14.24	18.15			
7	156	RARA-1		0.15	0.21	0.80	1.22	967.63	794.90	7.74		1.96	-0.02	0.59	0.99	2031.11	2102.53	15.07				
7	156	RARA-2		0.09	0.22	0.81	1.21	1706.86	1406.54	6.61		0.15	0.22	1.22	0.84	1748.80	2089.90	14.81				
7	156	RARA-2		0.24	0.20	0.79	1.22	853.00	697.29	10.58		2.56	-0.10	0.38	1.05	2740.80	2488.26	18.15				
69	114	RARA-1		0.08	0.22	0.81	1.21	1111.85	916.90	4.43		0.25	0.20	1.19	0.84	1175.25	1392.84	9.85				
69	114	RARA-1		0.18	0.21	0.80	1.22	662.97	543.69	3.96		1.39	0.05	0.79	0.93	1036.07	941.10	6.79				
69	114	RARA-2		0.10	0.22	0.81	1.21	1190.39	980.55	4.96		0.40	0.18	1.14	0.85	1311.95	1534.78	10.89				
69	114	RARA-2		0.30	0.20	0.78	1.23	600.35	489.45	4.65		1.91	-0.01	0.61	0.98	1195.66	1236.15	9.10				
141	150	RARA-1		0.09	0.22	0.81	1.21	939.21	773.97	3.84		0.34	0.19	1.16	0.85	1017.33	1196.42	8.48				
141	150	RARA-1		0.29	0.20	0.78	1.23	504.85	411.62	2.72		1.16	0.08	0.87	0.91	701.08	766.38	5.64				
141	150	RARA-2		0.12	0.22	0.81	1.22	1012.77	833.50	4.31		0.46	0.17	1.11	0.86	1136.05	1321.38	9.41				
141	150	RARA-2		0.52	0.17	0.75	1.24	453.08	364.95	3.11		1.72	0.01	0.67	0.96	775.77	784.14	6.04				
7	156	RARA-1		S7	0.11	0.22	0.90	1.09	1639.90	1509.50		6.31	7.50	0.35	0.19	1.38	0.70	1754.62		2499.15	16.04	18.78
7	156	RARA-1			0.18	0.21	0.89	1.09	1233.26	1131.57		4.81		0.42	0.18	1.35	0.71	1328.41		1882.62	12.22	
7	156	RARA-2	0.14		0.22	0.89	1.09	1733.48	1593.13	6.72	0.39	0.18		1.36	0.70	1862.52	2645.64	17.08				
7	156	RARA-2	0.25		0.20	0.87	1.09	1162.71	1063.21	4.73	0.59	0.16		1.29	0.71	1293.02	1810.73	11.90				
69	114	RARA-1	0.12		0.22	0.90	1.09	1625.03	1495.48	6.24	0.35	0.19		1.38	0.70	1734.90	2472.02	15.88				
69	114	RARA-1	0.19		0.21	0.88	1.09	1123.37	1030.13	4.48	0.51	0.17		1.32	0.71	1235.67	1740.23	11.32				
69	114	RARA-2	0.15		0.22	0.89	1.09	1741.43	1600.22	6.86	0.45	0.18		1.34	0.71	1899.87	2687.06	17.35				
69	114	RARA-2	0.28		0.20	0.87	1.10	1030.13	940.74	4.33	0.72	0.14		1.25	0.72	1180.43	1638.08	10.82				
141	150	RARA-1	0.11		0.22	0.90	1.09	1723.98	1587.06	6.72	0.41	0.18		1.36	0.70	1871.13	2654.87	17.03				
141	150	RARA-1	0.19		0.21	0.88	1.09	1114.05	1021.48	4.58	0.62	0.15		1.28	0.72	1262.06	1763.31	11.48				
141	150	RARA-2	0.14		0.22	0.89	1.09	1860.85	1710.75	7.46	0.52	0.17		1.32	0.71	2070.27	2913.90	18.78				
141	150	RARA-2	0.29		0.20	0.87	1.10	1000.41	913.19	4.43	0.90	0.12		1.18	0.73	1206.63	1652.14	10.93				
165	168	RARA-1	0.11		0.22	0.90	1.09	1642.42	1511.93	6.64	0.55	0.16		1.31	0.71	1848.91	2597.41	16.67				
165	168	RARA-1	0.24		0.20	0.88	1.09	951.10	870.11	4.21	0.89	0.12		1.19	0.73	1151.96	1578.81	10.36				
165	168	RARA-2	0.14		0.22	0.89	1.09	1785.10	1640.97	7.50	0.69	0.14		1.26	0.72	2078.44	2890.16	18.64				
165	168	RARA-2	0.37		0.19	0.86	1.10	832.19	756.83	4.22	1.34	0.06		1.03	0.75	1138.34	1508.19	10.11				
177	180	RARA-1	0.15		0.21	0.89	1.09	1163.01	1068.63	5.05	0.81	0.13		1.22	0.73	1399.22	1928.57	12.46				
177	180	RARA-1	0.53		0.17	0.83	1.11	447.13	403.54	2.61	1.75	0.01		0.89	0.78	690.35	799.26	5.51				
177	180	RARA-2	0.18		0.21	0.89	1.09	1313.02	1204.58	5.99	0.98	0.11		1.16	0.73	1653.72	2250.38	14.62				
177	180	RARA-2	1.03		0.10	0.76	1.14	324.35	285.65	3.41	2.91	-0.14		0.48	0.86	839.30	950.08	7.21				
119	122	RARA-1	0.13		0.22	0.89	1.09	1530.88	1407.77	5.87	0.35	0.19		1.38	0.70	1629.89	2322.44	14.96				
119	122	RARA-1	0.61		0.16	0.82	1.11	405.05	364.17	1.89	1.13	0.09		1.11	0.74	494.51	665.93	4.66				
119	122	RARA-2	0.16		0.21	0.89	1.09	1778.34	1633.51	6.93	0.41	0.18		1.36	0.71	1917.07	2719.24	17.58				
119	122	RARA-2	2.27		0.05	0.57	1.16	206.33	156.71	1.80	2.85	-0.13		0.50	0.85	387.06	446.62	4.48				

Nota:

As sapatas S2 e S7 seguem o mesmo modelo de cálculo (sapatas agrupadas com 2 pilares no mesmo alinhamento) e como tal, os quadros de dimensionamento das mesmas são apresentados conjuntamente.

➤ **Estudo da sapata S3**

Quadro A. 31 - Estudo da tensão do solo segundo a direcção “x”

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N ₁ (KN)	N ₂ (KN)	V(y) ₁ (KN)	V(y) ₂ (KN)	M2(y) ₁ (KN.m)	M2(y) ₂ (KN.m)	N	M	e _r	a'	b'	σ _{solo}	VERIFICAÇÃO
8831	5167	RARA-1	S3	3.10	3.20	0.70	173.60	606.74	386.57	11.67	12.60	23.74	25.32	1166.91	-330.26	-0.28	2.53	3.00	153.68	Verifica!
8831	5167	RARA-1						442.01	193.14	-11.68	-12.53	-23.66	-25.31	808.75	-513.88	-0.64	1.83	3.01	146.78	Verifica!
8831	5167	RARA-2						639.08	426.52	15.82	17.10	32.20	34.38	1239.19	-292.99	-0.24	2.63	2.99	157.56	Verifica!
8831	5167	RARA-2						409.67	153.19	-15.83	-17.03	-32.12	-34.37	736.46	-551.15	-0.75	1.60	3.02	152.25	Verifica!
8842	6437	RARA-1						517.38	425.40	9.94	11.50	26.07	26.80	1116.37	-97.69	-0.09	2.92	2.97	128.71	Verifica!
8842	6437	RARA-1						416.44	372.88	-13.44	-13.65	-21.35	-23.83	962.92	-142.53	-0.15	2.80	2.41	142.78	Verifica!
8842	6437	RARA-2						537.86	435.89	14.14	16.02	34.58	35.91	1147.35	-91.94	-0.08	2.94	3.05	127.78	Verifica!
8842	6437	RARA-2						395.96	362.39	-17.63	-18.18	-29.86	-32.93	931.94	-148.28	-0.16	2.78	2.23	150.19	Verifica!

Quadro A. 32 - Estudo da tensão do solo segundo a direcção “y”

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N ₁ (KN)	N ₂ (KN)	V(y) ₁ (KN)	V(y) ₂ (KN)	M1(y) ₁ (KN.m)	M1(y) ₂ (KN.m)	N	M	e _r	a'	b'	σ _{solo}	VERIFICAÇÃO
8831	8842	RARA-1	S3	3.10	3.20	0.70	173.60	606.74	517.38	11.67	9.94	10.38	12.31	1297.71	-131.96	-0.10	2.53	3.00	170.90	Verifica!
8831	8842	RARA-1						442.01	416.44	-11.68	-13.44	-16.15	-14.57	1032.04	-96.89	-0.09	1.83	3.01	187.31	Verifica!
8831	8842	RARA-2						639.08	537.86	15.82	14.14	15.06	16.97	1350.53	-139.32	-0.10	2.63	2.99	171.72	Verifica!
8831	8842	RARA-2						409.67	395.96	-15.83	-17.63	-20.83	-19.22	979.23	-89.53	-0.09	1.60	3.02	202.44	Verifica!
5167	6437	RARA-1						386.57	425.40	12.60	11.50	12.36	12.60	985.57	115.60	0.12	2.92	2.97	113.63	Verifica!
5167	6437	RARA-1						193.14	372.88	-12.53	-13.65	-14.50	-14.75	739.62	293.94	0.40	2.80	2.41	109.67	Verifica!
5167	6437	RARA-2						426.52	435.89	17.10	16.02	17.10	17.38	1036.01	75.48	0.07	2.94	3.05	115.38	Verifica!
5167	6437	RARA-2						153.19	362.39	-17.03	-18.18	-19.25	-19.52	689.18	334.06	0.48	2.78	2.23	111.07	Verifica!

Quadro A. 33 - Armadura necessária segundo a direcção “x” e “y”

JOINT		COMB	SAPATA	ARMADURA (X)						ARMADURA (Y)									
				e_x/a_0	k_x	$a'/4$	$tg\alpha_x$	$R1_x$	F_{tsdx}	A_{s_x} [cm ² /m]	$A_{s_{x,max}}$ [cm ² /m]	e_y/b_0	k_y	$b'/4$	$tg\alpha_y$	$R1_y$	F_{tsdy}	A_{s_y} [cm ² /m]	$A_{s_{y,max}}$ [cm ² /m]
8831	5167	RARA-1	S3	0.94	0.11	0.63	0.96	713.79	746.21	5.73	5.93	0.34	0.19	0.75	0.89	692.89	777.65	7.06	8.38
8831	5167	RARA-1		2.12	0.05	0.46	0.98	685.31	642.38	4.90		0.31	0.19	0.75	0.89	548.19	616.12	7.75	
8831	5167	RARA-2		0.79	0.13	0.66	0.95	731.12	771.32	5.93		0.34	0.19	0.75	0.89	721.81	809.88	7.09	
8831	5167	RARA-2		2.49	0.05	0.40	0.98	712.01	717.03	5.47		0.30	0.19	0.75	0.89	519.29	583.90	8.38	
8842	6437	RARA-1		0.29	0.20	0.73	0.92	591.58	642.20	4.98		0.39	0.18	0.74	0.89	531.76	595.11	4.68	
8842	6437	RARA-1		0.49	0.17	0.70	0.93	532.29	571.22	5.46		1.32	0.06	0.60	0.94	492.02	522.35	4.28	
8842	6437	RARA-2		0.27	0.20	0.73	0.92	604.95	657.62	4.95		0.24	0.20	0.76	0.89	542.72	612.32	4.79	
8842	6437	RARA-2		0.53	0.17	0.70	0.93	519.28	556.07	5.73		1.62	0.03	0.56	0.96	494.35	515.96	4.27	

➤ Estudo da sapata S4

Quadro A. 34 - Estudo da tensão do solo segundo a direcção “x”

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N_1 (KN)	N_2 (KN)	$V(y)_1$ (KN)	$V(y)_2$ (KN)	$M2(y)_1$ (KN.m)	$M2(y)_2$ (KN.m)	N	M	e_r	a'	b'	σ_{solo}	VERIFICAÇÃO
1960	5275	RARA-1	S4	2.80	1.50	0.70	73.50	212.21	233.35	1.77	1.74	3.66	3.63	519.05	26.45	0.05	2.70	1.30	147.68	Verifica!
1960	5275	RARA-1						71.01	37.64	-2.28	-2.15	-4.52	-4.34	182.15	-38.32	-0.21	2.38	0.94	81.07	Verifica!
1960	5275	RARA-2						241.18	273.10	2.49	2.42	5.10	5.02	587.78	38.77	0.07	2.67	1.26	174.35	Verifica!
1960	5275	RARA-2						42.03	-2.11	-3.00	-2.82	-5.96	-5.73	113.42	-50.65	-0.45	1.91	0.29	208.32	Verifica!
2353	5279	RARA-1						317.52	225.89	1.69	1.85	3.64	3.84	616.92	-62.42	-0.10	2.60	1.33	178.08	Verifica!
2353	5279	RARA-1						185.92	92.76	-2.60	-2.43	-5.05	-4.84	352.18	-87.00	-0.25	2.31	1.21	125.86	Verifica!
2353	5279	RARA-2						344.48	253.19	2.43	2.58	5.14	5.34	671.17	-58.14	-0.09	2.63	1.29	197.67	Verifica!
2353	5279	RARA-2						158.96	65.47	-3.33	-3.17	-6.55	-6.33	297.93	-91.28	-0.31	2.19	1.04	131.14	Verifica!

Quadro A. 35 - Estudo da tensão do solo segundo a direcção “y”

JOINT		COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N ₁₊₂ (KN)	VY ₁₊₂ (KN)	M2(x) ₁₊₂ (KN.m)	e _y	a'	b'	σ _{solo}	VERIFICAÇÃO
1960	5275	RARA-1	S4	2.80	1.50	0.70	73.50	445.55	18.57	38.21	0.10	2.60	1.30	153.09	Verifica!
1960	5275	RARA-1						108.65	-19.10	-37.23	-0.28	2.24	0.94	85.94	Verifica!
1960	5275	RARA-2						514.28	25.34	51.74	0.12	2.56	1.26	181.45	Verifica!
1960	5275	RARA-2						39.92	-25.87	-50.77	-0.61	1.59	0.29	250.55	Verifica!
2353	5279	RARA-1						543.42	18.36	38.47	0.08	2.63	1.33	175.65	Verifica!
2353	5279	RARA-1						278.68	-19.31	-36.94	-0.14	2.51	1.21	115.47	Verifica!
2353	5279	RARA-2						597.67	25.13	52.00	0.10	2.59	1.29	200.27	Verifica!
2353	5279	RARA-2						224.43	-26.08	-50.47	-0.23	2.34	1.04	122.65	Verifica!

Quadro A. 36 - Armadura necessária segundo a direcção “x” e “y”

JOINT	COMB	SAPATA	ARMADURA (X)								ARMADURA (Y)								
			e _x /a ₀	k _x	a'/4	tgα _x	R _{1x}	F _{tsdx}	As _x [cm ² /m]	As _{x,max} [cm ² /m]	e _y /b ₀	k _y	b'/4	tgα _y	R _{1y}	F _{tsdy}	As _y [cm ² /m]	As _{y,max} [cm ² /m]	
1960	5275	RARA-1	S4	0.49	0.17	0.67	0.99	269.33	271.06	4.79	6.40	0.33	0.19	0.33	2.23	298.84	133.98	1.18	1.55
1960	5275	RARA-1		1.39	0.05	0.59	1.03	107.18	103.93	2.53		0.93	0.11	0.24	2.43	144.66	46.87	0.48	
1960	5275	RARA-2		0.59	0.16	0.67	1.00	308.42	309.17	5.63		0.39	0.18	0.32	2.25	348.88	155.02	1.39	
1960	5275	RARA-2		3.04	-0.16	0.48	1.11	83.27	75.11	6.05		2.02	-0.03	0.07	2.91	297.94	80.82	1.17	
2353	5279	RARA-1		0.42	0.18	0.65	0.99	332.49	335.68	5.79		0.28	0.20	0.33	2.21	346.94	156.65	1.37	
2353	5279	RARA-1		0.72	0.14	0.58	1.00	213.82	213.24	4.04		0.48	0.17	0.30	2.28	217.67	95.60	0.87	
2353	5279	RARA-2		0.52	0.17	0.66	0.99	357.72	359.65	6.40		0.35	0.19	0.32	2.24	389.42	174.19	1.55	
2353	5279	RARA-2		1.15	0.08	0.55	1.02	190.70	186.76	4.14		0.77	0.13	0.26	2.37	215.13	90.62	0.89	

➤ Estudo da sapata S5, S6 e S8

Quadro A. 37 - Estudo da tensão do solo

JOINT	COMB	SAPATA	A (m)	B (m)	H (m)	PP (m)	N (KN)	Vx (KN)	Vy (KN)	M2(x) (KN.m)	M1(y) (KN.m)	e _x	e _y	a'	b'	σ _{solo}	VERIFICAÇÃO
132	RARA-1	S5	2.20	2.60	0.50	71.50	868.90	19.13	75.72	38.76	145.27	0.05	0.19	2.10	2.21	202.85	Verifica!
132	RARA-1						473.11	-20.64	-66.70	-42.81	-165.26	-0.09	-0.36	2.02	1.87	144.20	Verifica!
132	RARA-2						945.70	25.81	99.68	52.53	198.83	0.06	0.24	2.09	2.11	230.67	Verifica!
132	RARA-2						396.31	-27.32	-90.66	-56.59	-218.81	-0.14	-0.56	1.91	1.47	166.15	Verifica!
143	RARA-1	S6	3.10	3.60	0.70	195.30	1707.58	19.10	92.98	37.57	143.34	0.03	0.11	3.05	3.38	184.75	Verifica!
143	RARA-1						1443.28	-18.73	-65.69	-38.92	-186.22	-0.03	-0.14	3.05	3.32	162.20	Verifica!
143	RARA-2						1759.09	25.59	121.02	50.69	202.07	0.03	0.15	3.04	3.31	194.28	Verifica!
143	RARA-2						1391.77	-25.21	-93.74	-52.05	-244.95	-0.04	-0.20	3.03	3.21	163.50	Verifica!
1	RARA-1	S8	1.90	1.90	0.50	45.13	103.50	12.01	7.14	23.71	14.38	0.20	0.12	1.50	1.66	59.74	Verifica!
1	RARA-1						11.91	-13.77	-5.46	-27.18	-16.95	-0.48	-0.35	0.95	1.21	49.78	Verifica!
1	RARA-2						114.24	16.36	6.84	32.28	14.65	0.20	0.11	1.49	1.67	63.71	Verifica!
1	RARA-2						1.17	-18.12	-5.16	-35.75	-17.22	-0.77	-0.43	0.36	1.04	124.68	Verifica!
3	RARA-1						125.90	11.45	10.54	23.11	12.16	0.17	0.10	1.56	1.70	64.52	Verifica!
3	RARA-1						103.21	-12.82	-4.88	-26.07	-20.62	-0.22	-0.16	1.46	1.59	63.84	Verifica!
3	RARA-2						129.63	15.50	13.13	31.33	17.69	0.22	0.14	1.45	1.62	74.15	Verifica!
3	RARA-2						99.48	-16.87	-7.46	-34.30	-26.15	-0.30	-0.21	1.31	1.49	74.30	Verifica!
5	RARA-1						399.50	10.87	6.93	21.26	17.40	0.06	0.05	1.78	1.81	138.31	Verifica!
5	RARA-1						360.71	-10.55	-9.33	-21.85	-14.98	-0.07	-0.05	1.77	1.80	127.42	Verifica!
5	RARA-2						407.45	14.49	9.80	28.53	23.09	0.08	0.06	1.74	1.78	146.27	Verifica!
5	RARA-2						352.76	-14.17	-12.19	-29.12	-20.66	-0.09	-0.07	1.72	1.77	131.18	Verifica!
9	RARA-1						240.26	12.00	10.89	23.89	10.66	0.10	0.06	1.69	1.79	94.46	Verifica!
9	RARA-1						230.22	-12.87	-4.28	-26.20	-20.26	-0.12	-0.08	1.66	1.74	95.30	Verifica!
9	RARA-2						241.02	16.17	13.51	32.28	16.03	0.14	0.08	1.62	1.74	101.60	Verifica!
9	RARA-2						229.46	-17.03	-6.90	-34.58	-25.62	-0.16	-0.11	1.59	1.69	102.54	Verifica!
59	RARA-1						482.90	9.97	5.29	20.06	16.91	0.05	0.04	1.81	1.83	160.20	Verifica!
59	RARA-1						472.58	-11.34	-9.25	-22.91	-12.26	-0.06	-0.03	1.79	1.83	157.67	Verifica!
59	RARA-2						484.73	13.55	7.91	27.28	22.15	0.06	0.05	1.77	1.80	166.04	Verifica!
59	RARA-2						470.75	-14.92	-11.87	-30.13	-17.50	-0.07	-0.05	1.75	1.81	162.55	Verifica!
64	RARA-1						285.43	11.59	12.80	23.36	5.38	0.09	0.04	1.72	1.83	104.87	Verifica!
64	RARA-1						280.36	-13.27	-0.61	-26.77	-22.28	-0.10	-0.07	1.69	1.76	109.05	Verifica!
64	RARA-2						285.68	15.74	15.17	31.75	10.29	0.12	0.05	1.66	1.79	111.18	Verifica!
64	RARA-2						280.11	-17.43	-2.99	-35.16	-27.18	-0.13	-0.09	1.63	1.72	115.75	Verifica!
71	RARA-1						281.20	11.60	13.19	23.40	4.61	0.09	0.03	1.72	1.83	103.54	Verifica!
71	RARA-1						274.41	-13.34	-0.03	-26.87	-22.68	-0.10	-0.07	1.69	1.76	107.55	Verifica!
71	RARA-2						281.61	15.77	15.58	31.82	9.55	0.12	0.05	1.66	1.79	109.92	Verifica!
71	RARA-2						274.00	-17.51	-2.42	-35.29	-27.61	-0.14	-0.09	1.62	1.72	114.29	Verifica!
75	RARA-1	495.64	9.90	4.98	19.99	17.02	0.05	0.04	1.81	1.83	163.65	Verifica!					
75	RARA-1	485.39	-11.49	-9.33	-23.13	-11.72	-0.05	-0.03	1.79	1.84	161.13	Verifica!					

75	RARA-2					497.30	13.50	7.60	27.23	22.27	0.06	0.05	1.77	1.80	169.44	Verifica!
75	RARA-2					483.73	-15.09	-11.95	-30.37	-16.97	-0.07	-0.04	1.76	1.81	166.04	Verifica!
77	RARA-1					277.67	11.62	13.72	23.44	5.67	0.09	0.04	1.72	1.82	103.06	Verifica!
77	RARA-1					271.25	-13.35	-0.50	-26.91	-23.69	-0.11	-0.08	1.69	1.75	107.20	Verifica!
77	RARA-2					278.07	15.80	16.31	31.87	11.02	0.12	0.06	1.65	1.78	109.70	Verifica!
77	RARA-2					270.85	-17.53	-3.08	-35.33	-29.04	-0.14	-0.10	1.62	1.71	114.24	Verifica!
79	RARA-1					474.44	9.90	5.10	19.99	18.92	0.05	0.04	1.80	1.82	158.48	Verifica!
79	RARA-1					458.11	-11.49	-10.43	-23.13	-12.18	-0.06	-0.03	1.79	1.83	153.96	Verifica!
79	RARA-2					477.38	13.49	7.97	27.23	24.65	0.07	0.05	1.77	1.79	164.89	Verifica!
79	RARA-2					455.17	-15.08	-13.30	-30.38	-17.91	-0.08	-0.05	1.75	1.80	158.81	Verifica!
81	RARA-1					281.04	11.69	14.66	23.54	7.80	0.09	0.05	1.72	1.81	104.94	Verifica!
81	RARA-1					274.55	-13.31	-1.51	-26.86	-25.59	-0.10	-0.08	1.69	1.74	108.99	Verifica!
81	RARA-2					281.65	15.87	17.59	31.97	13.86	0.12	0.07	1.66	1.76	112.05	Verifica!
81	RARA-2					273.93	-17.49	-4.43	-35.29	-31.65	-0.14	-0.11	1.62	1.69	116.41	Verifica!
146	RARA-1					478.51	10.02	5.99	20.16	21.38	0.05	0.05	1.80	1.81	160.65	Verifica!
146	RARA-1					459.34	-11.41	-11.69	-23.03	-14.01	-0.06	-0.04	1.79	1.82	155.08	Verifica!
146	RARA-2					482.28	13.62	9.25	27.40	27.89	0.06	0.06	1.77	1.78	167.68	Verifica!
146	RARA-2					455.57	-15.00	-14.95	-30.28	-20.52	-0.08	-0.06	1.75	1.79	160.08	Verifica!
148	RARA-1					282.51	11.62	15.89	23.45	10.76	0.09	0.06	1.72	1.79	106.58	Verifica!
148	RARA-1					275.04	-13.38	-2.95	-26.96	-28.14	-0.11	-0.09	1.69	1.72	110.48	Verifica!
148	RARA-2					283.40	15.79	19.28	31.87	17.77	0.12	0.08	1.66	1.73	114.33	Verifica!
148	RARA-2					274.15	-17.56	-6.34	-35.38	-35.14	-0.14	-0.12	1.62	1.66	118.48	Verifica!
179	RARA-1					485.24	9.94	7.37	20.05	24.37	0.05	0.05	1.81	1.79	163.71	Verifica!
179	RARA-1					463.37	-11.49	-13.15	-23.14	-16.76	-0.06	-0.05	1.79	1.81	157.42	Verifica!
179	RARA-2					489.56	13.53	11.13	27.30	31.88	0.06	0.07	1.77	1.76	171.39	Verifica!
179	RARA-2					459.06	-15.08	-16.91	-30.38	-24.27	-0.08	-0.06	1.75	1.77	162.79	Verifica!
201	RARA-1					285.51	11.72	17.28	23.58	14.19	0.09	0.07	1.72	1.76	108.98	Verifica!
201	RARA-1					271.42	-13.38	-4.63	-26.96	-31.03	-0.11	-0.11	1.69	1.69	111.05	Verifica!
201	RARA-2					287.51	15.91	21.19	32.02	22.27	0.12	0.10	1.66	1.70	117.73	Verifica!
201	RARA-2					269.42	-17.57	-8.54	-35.40	-39.11	-0.14	-0.14	1.62	1.62	119.62	Verifica!
203	RARA-1					492.54	10.04	8.99	20.19	27.55	0.05	0.06	1.81	1.78	167.15	Verifica!
203	RARA-1					474.34	-11.46	-14.64	-23.11	-19.96	-0.06	-0.05	1.79	1.79	161.77	Verifica!
203	RARA-2					495.87	13.65	13.28	27.45	36.13	0.06	0.08	1.77	1.74	175.14	Verifica!
203	RARA-2					471.01	-15.07	-18.93	-30.37	-28.55	-0.07	-0.07	1.75	1.75	167.98	Verifica!
205	RARA-1					243.76	11.26	18.72	22.97	17.85	0.10	0.09	1.70	1.71	99.17	Verifica!
205	RARA-1					229.10	-13.39	-6.42	-26.98	-34.09	-0.12	-0.14	1.65	1.63	101.82	Verifica!
205	RARA-2					246.23	15.38	23.18	31.31	27.07	0.13	0.13	1.63	1.63	109.20	Verifica!
205	RARA-2					226.63	-17.51	-10.88	-35.32	-43.30	-0.16	-0.18	1.58	1.54	111.90	Verifica!
207	RARA-1					415.52	9.38	10.69	19.31	31.39	0.05	0.08	1.80	1.74	147.38	Verifica!
207	RARA-1					396.95	-11.79	-16.57	-23.55	-23.37	-0.07	-0.07	1.77	1.76	142.43	Verifica!
207	RARA-2					419.03	12.92	15.59	26.48	41.20	0.07	0.11	1.76	1.69	156.32	Verifica!
207	RARA-2					393.44	-15.33	-21.47	-30.72	-33.18	-0.09	-0.10	1.72	1.70	149.58	Verifica!
5122	RARA-1					226.54	9.77	10.32	19.79	17.96	0.09	0.09	1.72	1.73	91.40	Verifica!
5122	RARA-1					172.51	-9.36	-9.22	-20.26	-20.33	-0.11	-0.11	1.67	1.67	77.96	Verifica!
5122	RARA-2					237.14	12.95	13.77	26.47	24.66	0.12	0.11	1.67	1.68	101.03	Verifica!
5122	RARA-2					161.91	-12.54	-12.68	-26.94	-27.03	-0.16	-0.16	1.58	1.58	83.10	Verifica!

Quadro A. 38 - Armadura necessária segundo a direcção “x” e “y”

JOINT	COMB	SAPATA	ARMADURA (X)							ARMADURA (Y)								
			e_x/a_0	k_x	$a'/4$	$tg\alpha_x$	$R1_x$	F_{tsdx}	As_x [cm ² /m]	$As_{x,max}$ [cm ² /m]	e_y/b_0	k_y	$b'/4$	$tg\alpha_y$	$R1_y$	F_{tsdy}	As_y [cm ² /m]	$As_{y,max}$ [cm ² /m]
132	RARA-1	S5	0.17	0.21	0.52	0.97	493.24	508.11	5.29	6.00	0.28	0.20	0.55	1.03	553.04	539.10	5.91	6.62
132	RARA-1		0.30	0.20	0.50	0.98	296.72	302.33	3.72		0.52	0.17	0.47	1.08	378.47	350.45	3.99	
132	RARA-2		0.19	0.21	0.52	0.97	535.65	551.16	6.00		0.35	0.19	0.53	1.04	626.39	601.65	6.62	
132	RARA-2		0.48	0.17	0.48	1.00	268.80	269.84	4.22		0.81	0.13	0.37	1.15	413.50	317.55	3.82	
143	RARA-1	S6	0.09	0.22	0.76	0.91	968.16	1063.06	7.23	7.60	0.16	0.21	0.85	0.90	1013.09	1125.12	8.49	8.87
143	RARA-1		0.09	0.22	0.76	0.91	833.80	915.49	6.35		0.20	0.21	0.83	0.91	889.30	981.78	7.41	
143	RARA-2		0.10	0.22	0.76	0.91	995.71	1092.89	7.60		0.21	0.21	0.83	0.91	1063.93	1173.46	8.87	
143	RARA-2		0.12	0.22	0.76	0.91	813.15	891.09	6.39		0.28	0.20	0.80	0.91	890.32	973.04	7.40	
1	RARA-1	S8	0.67	0.15	0.48	1.22	94.12	77.25	1.07	3.29	0.40	0.18	0.48	1.19	85.14	71.82	1.10	3.27
1	RARA-1		1.59	0.03	0.48	1.35	57.22	42.48	0.81		1.15	0.09	0.48	1.28	44.78	34.89	0.85	
1	RARA-2		0.68	0.15	0.48	1.22	101.28	83.05	1.14		0.38	0.19	0.48	1.18	90.48	76.52	1.18	
1	RARA-2		2.57	-0.10	0.48	1.52	123.73	60.97	1.34		1.43	0.05	0.48	1.32	42.10	31.80	2.06	
3	RARA-1		0.56	0.16	0.48	1.21	103.96	86.27	1.17		0.34	0.19	0.48	1.18	95.79	81.32	1.20	
3	RARA-1		0.73	0.14	0.48	1.23	96.38	78.59	1.14		0.52	0.17	0.48	1.20	88.67	73.92	1.16	
3	RARA-2		0.75	0.14	0.48	1.23	114.28	93.02	1.32		0.46	0.17	0.48	1.19	102.33	85.79	1.36	
3	RARA-2		0.99	0.11	0.48	1.26	104.95	83.26	1.29		0.69	0.14	0.48	1.22	92.40	75.66	1.33	
5	RARA-1		0.20	0.21	0.48	1.16	237.31	204.33	2.60		0.16	0.21	0.48	1.16	233.87	202.24	2.61	
5	RARA-1		0.22	0.21	0.48	1.16	218.27	187.51	2.39		0.16	0.21	0.48	1.16	213.81	184.81	2.41	
5	RARA-2		0.26	0.20	0.48	1.17	246.83	211.17	2.73		0.21	0.21	0.48	1.16	242.04	208.28	2.75	
5	RARA-2		0.30	0.19	0.48	1.17	220.02	187.48	2.44		0.22	0.21	0.48	1.16	214.10	183.89	2.46	
9	RARA-1		0.35	0.19	0.48	1.18	160.38	136.02	1.75		0.19	0.21	0.48	1.16	151.71	130.78	1.78	
9	RARA-1		0.40	0.18	0.48	1.18	157.29	132.79	1.76		0.27	0.20	0.48	1.17	150.56	128.71	1.78	
9	RARA-2		0.47	0.17	0.48	1.19	168.02	140.75	1.86		0.27	0.20	0.48	1.17	156.16	133.57	1.90	
9	RARA-2		0.52	0.17	0.48	1.20	164.46	137.02	1.87		0.35	0.19	0.48	1.18	154.51	131.00	1.90	
59	RARA-1		0.16	0.21	0.48	1.16	277.89	240.27	3.03		0.12	0.22	0.48	1.15	274.72	238.35	3.04	
59	RARA-1		0.18	0.21	0.48	1.16	274.82	237.00	2.97		0.11	0.22	0.48	1.15	268.06	232.91	2.99	
59	RARA-2		0.21	0.21	0.48	1.16	284.16	244.31	3.12		0.16	0.21	0.48	1.16	279.42	241.45	3.13	
59	RARA-2		0.24	0.20	0.48	1.17	279.37	239.51	3.04		0.15	0.21	0.48	1.16	270.89	234.38	3.07	
64	RARA-1		0.29	0.20	0.48	1.17	182.19	155.39	1.95		0.12	0.22	0.48	1.15	171.72	149.05	1.99	
64	RARA-1		0.34	0.19	0.48	1.18	182.46	154.86	2.02		0.23	0.20	0.48	1.17	175.56	150.69	2.05	
64	RARA-2		0.40	0.18	0.48	1.19	189.27	159.71	2.05		0.18	0.21	0.48	1.16	175.38	151.30	2.10	
64	RARA-2		0.45	0.18	0.48	1.19	189.53	159.11	2.12		0.29	0.20	0.48	1.17	179.25	152.89	2.16	
71	RARA-1		0.30	0.20	0.48	1.17	180.13	153.57	1.93		0.11	0.22	0.48	1.15	169.28	147.00	1.96	
71	RARA-1		0.35	0.19	0.48	1.18	179.61	152.33	1.99		0.24	0.20	0.48	1.17	172.67	148.13	2.02	
71	RARA-2		0.41	0.18	0.48	1.19	187.33	157.98	2.03		0.18	0.21	0.48	1.16	173.03	149.33	2.07	
71	RARA-2		0.46	0.17	0.48	1.19	186.68	156.55	2.09		0.30	0.20	0.48	1.17	176.32	150.28	2.13	
75	RARA-1		0.15	0.21	0.48	1.16	284.18	245.81	3.09		0.12	0.22	0.48	1.15	281.06	243.93	3.10	
75	RARA-1		0.18	0.21	0.48	1.16	281.37	242.72	3.04		0.10	0.22	0.48	1.15	274.17	238.36	3.06	
75	RARA-2		0.21	0.21	0.48	1.16	290.36	249.78	3.18		0.16	0.21	0.48	1.16	285.67	246.94	3.20	
75	RARA-2		0.24	0.20	0.48	1.17	286.01	245.30	3.11		0.14	0.22	0.48	1.16	277.08	239.89	3.14	

77	RARA-1	0.30	0.19	0.48	1.17	178.42	152.05	1.92	0.13	0.22	0.48	1.15	168.27	145.91	1.95
77	RARA-1	0.35	0.19	0.48	1.18	178.09	150.97	1.99	0.25	0.20	0.48	1.17	171.87	147.21	2.01
77	RARA-2	0.41	0.18	0.48	1.19	185.64	156.48	2.02	0.20	0.21	0.48	1.16	172.36	148.44	2.06
77	RARA-2	0.47	0.17	0.48	1.19	185.19	155.22	2.09	0.32	0.19	0.48	1.18	175.90	149.60	2.12
79	RARA-1	0.16	0.21	0.48	1.16	273.61	236.52	2.99	0.14	0.22	0.48	1.15	271.60	235.31	3.00
79	RARA-1	0.19	0.21	0.48	1.16	267.79	230.77	2.90	0.12	0.22	0.48	1.15	261.12	226.73	2.92
79	RARA-2	0.22	0.21	0.48	1.16	280.45	241.07	3.10	0.18	0.21	0.48	1.16	277.25	239.13	3.11
79	RARA-2	0.25	0.20	0.48	1.17	271.84	232.82	2.97	0.16	0.21	0.48	1.16	263.78	227.94	3.00
81	RARA-1	0.30	0.20	0.48	1.17	180.17	153.57	1.95	0.15	0.21	0.48	1.16	171.45	148.29	1.98
81	RARA-1	0.35	0.19	0.48	1.18	179.67	152.38	2.02	0.27	0.20	0.48	1.17	175.02	149.57	2.04
81	RARA-2	0.41	0.18	0.48	1.19	187.49	158.08	2.06	0.23	0.20	0.48	1.17	176.25	151.28	2.10
81	RARA-2	0.46	0.17	0.48	1.19	186.65	156.52	2.13	0.35	0.19	0.48	1.18	179.59	152.25	2.16
146	RARA-1	0.16	0.21	0.48	1.16	275.77	238.39	3.03	0.16	0.21	0.48	1.16	275.31	238.11	3.04
146	RARA-1	0.19	0.21	0.48	1.16	268.32	231.26	2.92	0.13	0.22	0.48	1.15	263.14	228.12	2.94
146	RARA-2	0.22	0.21	0.48	1.16	283.03	243.30	3.15	0.21	0.21	0.48	1.16	282.00	242.67	3.15
146	RARA-2	0.25	0.20	0.48	1.17	271.94	232.94	3.00	0.19	0.21	0.48	1.16	266.00	229.34	3.02
148	RARA-1	0.30	0.20	0.48	1.17	180.81	154.16	1.99	0.19	0.21	0.48	1.16	174.29	150.22	2.01
148	RARA-1	0.35	0.19	0.48	1.18	180.00	152.65	2.05	0.31	0.19	0.48	1.17	177.35	151.04	2.06
148	RARA-2	0.40	0.18	0.48	1.19	188.25	158.78	2.11	0.28	0.20	0.48	1.17	180.08	153.84	2.13
148	RARA-2	0.46	0.17	0.48	1.19	186.84	156.67	2.17	0.40	0.18	0.48	1.19	182.71	154.17	2.18
179	RARA-1	0.16	0.21	0.48	1.16	279.04	241.29	3.09	0.18	0.21	0.48	1.16	280.82	242.36	3.09
179	RARA-1	0.19	0.21	0.48	1.16	270.42	233.08	2.96	0.15	0.21	0.48	1.16	267.15	231.11	2.98
179	RARA-2	0.21	0.21	0.48	1.16	286.56	246.42	3.22	0.23	0.20	0.48	1.17	288.62	247.67	3.21
179	RARA-2	0.25	0.20	0.48	1.17	273.77	234.52	3.05	0.22	0.21	0.48	1.16	270.58	232.59	3.06
201	RARA-1	0.30	0.20	0.48	1.17	182.41	155.54	2.03	0.23	0.20	0.48	1.16	178.28	153.04	2.04
201	RARA-1	0.35	0.19	0.48	1.18	178.22	151.08	2.06	0.35	0.19	0.48	1.18	178.01	150.95	2.06
201	RARA-2	0.40	0.18	0.48	1.19	190.40	160.65	2.17	0.33	0.19	0.48	1.18	185.63	157.76	2.19
201	RARA-2	0.47	0.17	0.48	1.19	184.57	154.65	2.19	0.46	0.17	0.48	1.19	183.98	154.29	2.19
203	RARA-1	0.16	0.21	0.48	1.16	282.79	244.55	3.16	0.20	0.21	0.48	1.16	286.82	246.99	3.15
203	RARA-1	0.19	0.21	0.48	1.16	275.86	237.87	3.05	0.18	0.21	0.48	1.16	274.93	237.31	3.05
203	RARA-2	0.21	0.21	0.48	1.16	289.82	249.26	3.29	0.26	0.20	0.48	1.17	295.05	252.43	3.27
203	RARA-2	0.24	0.20	0.48	1.17	279.69	239.74	3.15	0.25	0.20	0.48	1.17	279.76	239.78	3.15
205	RARA-1	0.33	0.19	0.48	1.18	161.25	137.03	1.84	0.31	0.19	0.48	1.17	160.34	136.48	1.84
205	RARA-1	0.41	0.18	0.48	1.19	157.47	132.74	1.88	0.45	0.18	0.48	1.19	160.02	134.29	1.87
205	RARA-2	0.45	0.18	0.48	1.19	169.57	142.40	2.00	0.44	0.18	0.48	1.19	169.33	142.26	2.00
205	RARA-2	0.54	0.16	0.48	1.20	163.85	136.27	2.03	0.60	0.16	0.48	1.21	167.50	138.48	2.02
207	RARA-1	0.17	0.21	0.48	1.16	243.69	210.37	2.78	0.27	0.20	0.48	1.17	251.43	215.06	2.75
207	RARA-1	0.22	0.21	0.48	1.16	237.71	204.22	2.67	0.24	0.20	0.48	1.17	239.06	205.03	2.67
207	RARA-2	0.24	0.20	0.48	1.17	250.81	215.16	2.93	0.35	0.19	0.48	1.18	261.09	221.38	2.90
207	RARA-2	0.29	0.20	0.48	1.17	241.53	206.05	2.79	0.33	0.19	0.48	1.18	245.11	208.22	2.78
5122	RARA-1	0.30	0.19	0.48	1.17	150.19	127.99	1.70	0.28	0.20	0.48	1.17	149.20	127.39	1.71
5122	RARA-1	0.38	0.18	0.48	1.18	123.74	104.60	1.44	0.38	0.18	0.48	1.18	123.74	104.60	1.44
5122	RARA-2	0.39	0.18	0.48	1.18	160.90	135.92	1.86	0.37	0.19	0.48	1.18	159.95	135.34	1.87
5122	RARA-2	0.53	0.16	0.48	1.20	124.55	103.64	1.51	0.54	0.16	0.48	1.20	124.66	103.71	1.51

Nota:

As sapatas S5, S6 e S8 seguem o mesmo modelo de cálculo (sapatas isoladas) e como tal, os quadros de dimensionamento das mesmas são apresentados conjuntamente.

Anexo 14– Esforços das Escadas do tipo “E1”

TABLE: Element Forces - Area Shells								
AreaElem	ShellType	Joint	F11 KN/m	F22 KN/m	F12 KN/m	M11 KN.m/m	M22 KN.m/m	M12 KN.m/m
3	Shell-Thin	3	49.59	5.14	2.59	-11.4029	-0.3591	-0.0549
3	Shell-Thin	7	71.21	9.46	-2.83	-11.4809	-2.1095	0.0819
3	Shell-Thin	8	68.97	-1.74	1.8	-3.4152	-0.1228	-0.0361
3	Shell-Thin	9	47.35	-6.07	7.22	-3.6006	0.0822	-0.1729
4	Shell-Thin	7	71.21	9.46	2.83	-11.4809	-2.1095	-0.0819
4	Shell-Thin	4	49.59	5.14	-2.59	-11.4029	-0.3591	0.0549
4	Shell-Thin	10	47.35	-6.07	-7.22	-3.6006	0.0822	0.1729
4	Shell-Thin	8	68.97	-1.74	-1.8	-3.4152	-0.1228	0.0361
5	Shell-Thin	9	59.79	-3.58	1.43	-3.6626	0.0698	-0.3458
5	Shell-Thin	8	57.92	-3.95	1.8	-3.3532	-0.1104	-0.0858
5	Shell-Thin	11	58.77	0.26	-0.58	0.9257	0.362	-0.0946
5	Shell-Thin	12	60.64	0.64	-0.95	1.1618	0.0007952	-0.3546
6	Shell-Thin	8	57.92	-3.95	-1.8	-3.3532	-0.1104	0.0858
6	Shell-Thin	10	59.79	-3.58	-1.43	-3.6626	0.0698	0.3458
6	Shell-Thin	13	60.64	0.64	0.95	1.1618	0.0007952	0.3546
6	Shell-Thin	11	58.77	0.26	0.58	0.9257	0.362	0.0946
7	Shell-Thin	12	57.9	0.09061	-1.8	1.1054	-0.0105	-0.1717
7	Shell-Thin	11	60.99	0.71	-0.58	0.9821	0.3733	-0.0898
7	Shell-Thin	14	60.66	-0.9	0.04507	2.1545	0.3557	0.0007917
7	Shell-Thin	15	57.57	-1.52	-1.18	2.2716	0.0279	-0.0812
8	Shell-Thin	11	60.99	0.71	0.58	0.9821	0.3733	0.0898
8	Shell-Thin	13	57.9	0.09061	1.8	1.1054	-0.0105	0.1717
8	Shell-Thin	16	57.57	-1.52	1.18	2.2716	0.0279	0.0812
8	Shell-Thin	14	60.66	-0.9	-0.04507	2.1545	0.3557	-0.0007917
9	Shell-Thin	15	59.35	-1.17	2.08	2.2973	0.0331	0.0924
9	Shell-Thin	14	56.5	-1.74	0.04507	2.1289	0.3506	0.0033
9	Shell-Thin	17	59.21	11.84	1.4	0.0258	0.0207	0.0486
9	Shell-Thin	1	62.06	12.41	3.44	-0.0258	-0.0362	0.1378
10	Shell-Thin	14	56.5	-1.74	-0.04507	2.1289	0.3506	-0.0033
10	Shell-Thin	16	59.35	-1.17	-2.08	2.2973	0.0331	-0.0924
10	Shell-Thin	2	62.06	12.41	-3.44	-0.0258	-0.0362	-0.1378
10	Shell-Thin	17	59.21	11.84	-1.4	0.0258	0.0207	-0.0486
11	Shell-Thin	5	92.53	18.51	-6.06	-0.016	-0.1444	-0.6466
11	Shell-Thin	18	86.88	17.38	-2.9	0.016	0.0738	-0.2244
11	Shell-Thin	19	83.21	-0.99	-0.24	5.4609	0.2952	-0.1884
11	Shell-Thin	20	88.86	0.14	-3.39	5.5955	0.0505	-0.6106
12	Shell-Thin	18	86.88	17.38	2.9	0.016	0.0738	0.2244
12	Shell-Thin	6	92.53	18.51	6.06	-0.016	-0.1444	0.6466
12	Shell-Thin	21	88.86	0.14	3.39	5.5955	0.0505	0.6106
12	Shell-Thin	19	83.21	-0.99	0.24	5.4609	0.2952	0.1884
13	Shell-Thin	20	80.53	-1.52	1.34	5.5792	0.0472	-0.4982
13	Shell-Thin	19	87.06	-0.22	-0.24	5.4771	0.2985	-0.1819
13	Shell-Thin	22	87.15	0.21	0.54	8.9874	0.4082	-0.1093
13	Shell-Thin	23	80.62	-1.09	2.12	9.1491	0.0089	-0.4256
14	Shell-Thin	19	87.06	-0.22	0.24	5.4771	0.2985	0.1819
14	Shell-Thin	21	80.53	-1.52	-1.34	5.5792	0.0472	0.4982
14	Shell-Thin	24	80.62	-1.09	-2.12	9.1491	0.0089	0.4256
14	Shell-Thin	22	87.15	0.21	-0.54	8.9874	0.4082	0.1093
15	Shell-Thin	23	79.68	-1.28	0.38	9.1425	0.0076	-0.2526
15	Shell-Thin	22	79.56	-1.3	0.54	8.9941	0.4095	-0.1131
15	Shell-Thin	25	79.93	0.53	-0.13	10.5377	0.4248	-0.0255
15	Shell-Thin	26	80.05	0.56	-0.29	10.7027	0.0197	-0.165

16	Shell-Thin	22	79.56	-1.3	-0.54	8.9941	0.4095	0.1131
16	Shell-Thin	24	79.68	-1.28	-0.38	9.1425	0.0076	0.2526
16	Shell-Thin	27	80.05	0.56	0.29	10.7027	0.0197	0.165
16	Shell-Thin	25	79.93	0.53	0.13	10.5377	0.4248	0.0255
17	Shell-Thin	26	75.81	-0.29	-0.12	10.7019	0.0195	0.0142
17	Shell-Thin	25	75.59	-0.34	-0.13	10.5385	0.425	-0.025
17	Shell-Thin	28	75.74	0.41	-0.007239	10.1045	0.4221	0.0644
17	Shell-Thin	29	75.96	0.45	0.002182	10.2635	0.015	0.1037
18	Shell-Thin	25	75.59	-0.34	0.13	10.5385	0.425	0.025
18	Shell-Thin	27	75.81	-0.29	0.12	10.7019	0.0195	-0.0142
18	Shell-Thin	30	75.96	0.45	-0.002182	10.2635	0.015	-0.1037
18	Shell-Thin	28	75.74	0.41	0.007239	10.1045	0.4221	-0.0644
19	Shell-Thin	29	71.63	-0.42	0.03164	10.2661	0.0155	0.2821
19	Shell-Thin	28	71.66	-0.41	-0.007239	10.1019	0.4215	0.0633
19	Shell-Thin	31	71.85	0.55	0.007632	7.6917	0.3767	0.1468
19	Shell-Thin	32	71.82	0.54	0.04651	7.8278	0.0209	0.3656
20	Shell-Thin	28	71.66	-0.41	0.007239	10.1019	0.4215	-0.0633
20	Shell-Thin	30	71.63	-0.42	-0.03164	10.2661	0.0155	-0.2821
20	Shell-Thin	33	71.82	0.54	-0.04651	7.8278	0.0209	-0.3656
20	Shell-Thin	31	71.85	0.55	-0.007632	7.6917	0.3767	-0.1468
21	Shell-Thin	32	68.26	-0.17	0.09783	7.8383	0.023	0.5201
21	Shell-Thin	31	66.98	-0.43	0.007632	7.6811	0.3746	0.147
21	Shell-Thin	34	67.15	0.45	0.35	3.3243	0.235	0.2068
21	Shell-Thin	35	68.43	0.71	0.44	3.3703	-0.0163	0.5799
22	Shell-Thin	31	66.98	-0.43	-0.007632	7.6811	0.3746	-0.147
22	Shell-Thin	33	68.26	-0.17	-0.09783	7.8383	0.023	-0.5201
22	Shell-Thin	36	68.43	0.71	-0.44	3.3703	-0.0163	-0.5799
22	Shell-Thin	34	67.15	0.45	-0.35	3.3243	0.235	-0.2068
23	Shell-Thin	35	62.81	-0.42	0.76	3.4179	-0.0068	0.6659
23	Shell-Thin	34	65.28	0.07635	0.35	3.2767	0.2255	0.1947
23	Shell-Thin	37	64.53	-3.65	-2.81	-2.8802	-0.4168	0.1472
23	Shell-Thin	38	62.06	-4.15	-2.41	-3.2263	0.0785	0.6184
24	Shell-Thin	34	65.28	0.07635	-0.35	3.2767	0.2255	-0.1947
24	Shell-Thin	36	62.81	-0.42	-0.76	3.4179	-0.0068	-0.6659
24	Shell-Thin	39	62.06	-4.15	2.41	-3.2263	0.0785	-0.6184
24	Shell-Thin	37	64.53	-3.65	2.81	-2.8802	-0.4168	-0.1472
25	Shell-Thin	38	45.1	-7.54	-9.41	-3.1933	0.0851	0.3911
25	Shell-Thin	37	71.72	-2.22	-2.81	-2.9131	-0.4234	0.1144
25	Shell-Thin	7	74.17	10.05	4.27	-11.468	-2.0875	-0.0076
25	Shell-Thin	3	47.55	4.73	-2.33	-11.4158	-0.4302	0.269
26	Shell-Thin	37	71.72	-2.22	2.81	-2.9131	-0.4234	-0.1144
26	Shell-Thin	39	45.1	-7.54	9.41	-3.1933	0.0851	-0.3911
26	Shell-Thin	4	47.55	4.73	2.33	-11.4158	-0.4302	-0.269
26	Shell-Thin	7	74.17	10.05	-4.27	-11.468	-2.0875	0.0076

Anexo 15– Esforços das Escadas do tipo “E2”

TABLE: Element Forces - Area Shells								
AreaElem	ShellType	Joint	F11	F22	F12	M11	M22	M12
			KN/m	KN/m	KN/m	KN.m/m	KN.m/m	KN.m/m
7	Shell-Thick	5	-40.56	-37.86	-23.81	118.969	2.9219	-1.2514
7	Shell-Thick	15	-280.78	-85.9	-5	119.494	8.984	-1.3205
7	Shell-Thick	16	-264.13	-2.64	-28.8	106.1468	6.4069	-0.6936
7	Shell-Thick	17	-23.91	45.4	-47.62	105.6769	0.3573	-0.6245
8	Shell-Thick	15	-286.46	-114.3	-7.07	123.0513	11.5256	-0.9379
8	Shell-Thick	18	-306.39	-118.29	4.67	123.8677	14.6938	0.0808
8	Shell-Thick	19	-279.38	16.76	-8.29	103.8588	9.4071	-0.0718
8	Shell-Thick	16	-259.45	20.74	-20.02	103.0649	6.2427	-1.0904
9	Shell-Thick	18	-306.39	-118.29	-4.67	123.8677	14.6938	-0.0808
9	Shell-Thick	20	-286.46	-114.3	7.07	123.0513	11.5256	0.9379
9	Shell-Thick	21	-259.45	20.74	20.02	103.0649	6.2427	1.0904
9	Shell-Thick	19	-279.38	16.76	8.29	103.8588	9.4071	0.0718
10	Shell-Thick	20	-280.78	-85.9	5	119.494	8.984	1.3205
10	Shell-Thick	11	-40.56	-37.86	23.81	118.969	2.9219	1.2514
10	Shell-Thick	22	-23.91	45.4	47.62	105.6769	0.3573	0.6244
10	Shell-Thick	21	-264.13	-2.64	28.8	106.1468	6.4069	0.6936
11	Shell-Thick	17	-137.27	22.73	-27.19	106.5808	2.93	0.1731
11	Shell-Thick	16	-225.04	5.17	-33.93	103.6667	3.519	-1.4803
11	Shell-Thick	23	-226.09	-0.05302	-23.05	86.1169	2.0926	1.1761
11	Shell-Thick	24	-138.32	17.5	-16.31	89.0034	1.5433	2.8295
12	Shell-Thick	16	-220.36	28.56	-25.15	104.7813	7.6548	-0.6578
12	Shell-Thick	19	-271.71	18.29	-8.29	103.7702	8.3206	-0.4998
12	Shell-Thick	25	-271.93	17.2	-11.52	85.1565	4.3958	0.5038
12	Shell-Thick	23	-220.58	27.47	-28.39	86.1603	3.7465	0.3459
13	Shell-Thick	19	-271.71	18.29	8.29	103.7702	8.3206	0.4998
13	Shell-Thick	21	-220.36	28.56	25.15	104.7813	7.6548	0.6577
13	Shell-Thick	26	-220.58	27.47	28.39	86.1603	3.7464	-0.3459
13	Shell-Thick	25	-271.93	17.2	11.52	85.1565	4.3958	-0.5038
14	Shell-Thick	21	-225.04	5.17	33.93	103.6667	3.519	1.4803
14	Shell-Thick	22	-137.27	22.73	27.19	106.5808	2.93	-0.1731
14	Shell-Thick	27	-138.32	17.5	16.31	89.0034	1.5433	-2.8295
14	Shell-Thick	26	-226.09	-0.05301	23.05	86.1169	2.0926	-1.1761
15	Shell-Thick	24	-191.56	6.85	-11.29	87.6868	1.6107	3.2357
15	Shell-Thick	23	-213.01	2.56	-9.35	86.1726	1.773	0.7756
15	Shell-Thick	28	-212.91	3.07	-5.14	66.7875	0.988	2.1083
15	Shell-Thick	29	-191.46	7.36	-7.08	68.246	0.8929	4.5684
16	Shell-Thick	23	-207.5	30.08	-14.68	86.6442	4.1405	1.1447
16	Shell-Thick	25	-224.72	26.64	-11.52	85.9894	4.2651	-0.2932
16	Shell-Thick	30	-228.79	6.28	-0.26	66.3666	2.161	0.296
16	Shell-Thick	28	-211.58	9.73	-3.42	67.0035	2.0586	1.7338
17	Shell-Thick	25	-224.72	26.64	11.52	85.9894	4.2651	0.2932
17	Shell-Thick	26	-207.5	30.08	14.68	86.6442	4.1405	-1.1447
17	Shell-Thick	31	-211.58	9.73	3.42	67.0035	2.0586	-1.7339
17	Shell-Thick	30	-228.79	6.28	0.26	66.3666	2.161	-0.296
18	Shell-Thick	26	-213.01	2.56	9.35	86.1726	1.773	-0.7756
18	Shell-Thick	27	-191.56	6.85	11.29	87.6868	1.6107	-3.2357
18	Shell-Thick	32	-191.46	7.36	7.08	68.246	0.8929	-4.5684
18	Shell-Thick	31	-212.91	3.07	5.14	66.7875	0.988	-2.1083
19	Shell-Thick	29	-202.36	5.18	-1.72	67.676	0.8195	4.7964
19	Shell-Thick	28	-205.35	4.58	-1.55	66.9015	0.9702	1.8835
19	Shell-Thick	33	-206.49	-1.15	1.59	45.9578	0.4393	2.5541
19	Shell-Thick	34	-203.51	-0.56	1.41	46.6613	0.3718	5.4669

20	Shell-Thick	28	-204.01	11.24	0.17	67.0436	2.0979	2.1232
20	Shell-Thick	30	-211.13	9.81	-0.26	66.8427	2.225	-0.0922
20	Shell-Thick	35	-213	0.46	-0.67	45.9253	0.8466	0.0945
20	Shell-Thick	33	-205.89	1.88	-0.23	46.1027	0.7466	2.3099
21	Shell-Thick	30	-211.13	9.81	0.26	66.8427	2.225	0.0922
21	Shell-Thick	31	-204.01	11.24	-0.17	67.0436	2.0979	-2.1232
21	Shell-Thick	36	-205.89	1.88	0.23	46.1027	0.7466	-2.3099
21	Shell-Thick	35	-213	0.46	0.67	45.9253	0.8466	-0.0945
22	Shell-Thick	31	-205.35	4.58	1.55	66.9015	0.9702	-1.8836
22	Shell-Thick	32	-202.36	5.18	1.72	67.676	0.8195	-4.7964
22	Shell-Thick	37	-203.51	-0.56	-1.41	46.6613	0.3718	-5.4669
22	Shell-Thick	36	-206.49	-1.15	-1.59	45.9578	0.4393	-2.5541
23	Shell-Thick	34	-195.22	1.1	3.88	46.3144	0.1066	5.5085
23	Shell-Thick	33	-206.3	-1.12	1.08	46.4553	0.7347	2.5132
23	Shell-Thick	38	-206.28	-0.98	-2.29	23.6843	-0.0573	2.4585
23	Shell-Thick	39	-195.19	1.23	0.52	23.4669	-0.6013	5.4537
24	Shell-Thick	33	-205.7	1.92	-0.74	45.9582	0.4592	2.4427
24	Shell-Thick	35	-200.22	3.01	-0.67	45.9837	1.1169	-0.0394
24	Shell-Thick	40	-203.79	-14.86	-2.28	24.0314	-0.1242	0.043
24	Shell-Thick	38	-209.27	-15.95	-2.36	23.9848	-0.7646	2.5251
25	Shell-Thick	35	-200.22	3.01	0.67	45.9837	1.1169	0.0394
25	Shell-Thick	36	-205.7	1.92	0.74	45.9582	0.4592	-2.4427
25	Shell-Thick	41	-209.27	-15.95	2.36	23.9848	-0.7646	-2.5251
25	Shell-Thick	40	-203.79	-14.86	2.28	24.0314	-0.1242	-0.043
26	Shell-Thick	36	-206.3	-1.12	-1.08	46.4553	0.7347	-2.5132
26	Shell-Thick	37	-195.22	1.1	-3.88	46.3144	0.1066	-5.5085
26	Shell-Thick	42	-195.19	1.23	-0.52	23.4669	-0.6013	-5.4537
26	Shell-Thick	41	-206.28	-0.98	2.29	23.6843	-0.0573	-2.4585
27	Shell-Thick	39	-212.01	-2.13	-12.46	24.7351	-2.9623	5.2261
27	Shell-Thick	38	-188.66	2.54	-7.22	25.9685	3.0142	2.6751
27	Shell-Thick	43	-197.05	-39.41	-13.93	-0.8612	0.8997	2.6165
27	Shell-Thick	1	-220.4	-44.08	-19.17	-2.1494	-5.0915	5.1676
28	Shell-Thick	38	-191.66	-12.43	-7.29	22.0709	-2.0006	2.6007
28	Shell-Thick	40	-189.98	-12.1	-2.28	22.4615	0.4151	-0.037
28	Shell-Thick	44	-195.38	-39.08	-2.2	1.6834	-0.3739	0.0449
28	Shell-Thick	43	-197.05	-39.41	-7.21	1.2917	-2.8089	2.6826
29	Shell-Thick	40	-189.98	-12.1	2.28	22.4615	0.4151	0.037
29	Shell-Thick	41	-191.66	-12.43	7.29	22.0709	-2.0006	-2.6007
29	Shell-Thick	45	-197.05	-39.41	7.21	1.2917	-2.8089	-2.6826
29	Shell-Thick	44	-195.38	-39.08	2.2	1.6834	-0.3739	-0.0449
30	Shell-Thick	41	-188.66	2.54	7.22	25.9685	3.0142	-2.6751
30	Shell-Thick	42	-212.01	-2.13	12.46	24.7351	-2.9624	-5.2261
30	Shell-Thick	7	-220.4	-44.08	19.17	-2.1494	-5.0915	-5.1676
30	Shell-Thick	45	-197.05	-39.41	13.93	-0.8612	0.8997	-2.6165
31	Shell-Thick	6	-240.95	12.84	11.6	-8.7466	-5.0332	-3.5821
31	Shell-Thick	46	-193.21	22.39	19.78	-5.7282	-2.6099	-0.7006
31	Shell-Thick	47	-196.19	7.49	1.85	29.1415	0.8561	-2.8176
31	Shell-Thick	48	-243.93	-2.06	-6.33	26.2049	-1.6267	-5.6991
32	Shell-Thick	46	-190.79	34.48	5.74	-5.0947	-6.0932	-1.5223
32	Shell-Thick	49	-178.38	36.97	6.48	-4.2606	-4.6846	0.2271
32	Shell-Thick	50	-183.8	9.86	4.25	28.0993	-0.3642	-0.2348
32	Shell-Thick	47	-196.22	7.37	3.5	27.284	-1.7805	-1.9842
33	Shell-Thick	49	-178.38	36.94	-6.47	-4.261	-4.686	-0.2271
33	Shell-Thick	51	-190.79	34.46	-5.74	-5.0958	-6.0944	1.5222
33	Shell-Thick	52	-196.2	7.38	-3.51	27.2833	-1.7816	1.9846
33	Shell-Thick	50	-183.8	9.86	-4.24	28.0992	-0.3653	0.2353
34	Shell-Thick	51	-193.19	22.44	-19.75	-5.729	-2.6128	0.7014
34	Shell-Thick	12	-240.96	12.88	-11.58	-8.7456	-5.0346	3.5818

34	Shell-Thick	53	-243.95	-2.08	6.3	26.2052	-1.627	5.6976
34	Shell-Thick	52	-196.18	7.47	-1.87	29.1401	0.8543	2.8171
35	Shell-Thick	48	-205.12	5.7	15.5	27.8379	-0.5442	-6.3027
35	Shell-Thick	47	-200.47	6.63	9.69	27.5996	-0.2081	-2.2184
35	Shell-Thick	54	-201.58	1.08	15.99	60.0426	1.3186	-1.9115
35	Shell-Thick	55	-206.23	0.15	21.8	60.3726	0.8862	-5.9957
36	Shell-Thick	47	-200.49	6.52	11.34	27.6386	-1.2881	-2.1394
36	Shell-Thick	50	-208.26	4.96	4.25	27.5469	-0.8961	-0.0821
36	Shell-Thick	56	-204.54	23.54	14.63	59.9321	3.0632	0.0771
36	Shell-Thick	54	-196.78	25.09	21.73	60.0525	2.6429	-1.9802
37	Shell-Thick	50	-208.26	4.97	-4.25	27.5468	-0.8972	0.083
37	Shell-Thick	52	-200.49	6.52	-11.34	27.6391	-1.2889	2.1396
37	Shell-Thick	57	-196.77	25.09	-21.72	60.053	2.643	1.9799
37	Shell-Thick	56	-204.54	23.53	-14.64	59.932	3.0631	-0.0768
38	Shell-Thick	52	-200.47	6.62	-9.69	27.6002	-0.2091	2.2178
38	Shell-Thick	53	-205.13	5.68	-15.5	27.8373	-0.5451	6.3014
38	Shell-Thick	58	-206.23	0.15	-21.8	60.3718	0.8862	5.9953
38	Shell-Thick	57	-201.57	1.08	-15.99	60.043	1.3184	1.9118
39	Shell-Thick	55	-128.8	15.64	17.66	62.0979	0.9689	-5.6856
39	Shell-Thick	54	-215.31	-1.67	28.05	59.6809	1.5086	-2.2185
39	Shell-Thick	59	-213.86	5.57	42.75	90.4049	3.4416	-0.0312
39	Shell-Thick	60	-127.35	22.88	32.37	92.8966	2.8165	-3.4982
40	Shell-Thick	54	-210.51	22.34	33.78	59.6483	2.3913	-1.5092
40	Shell-Thick	56	-259.84	12.48	14.63	58.8711	3.0218	-0.393
40	Shell-Thick	61	-258.55	18.89	10.75	90.5962	8.0023	0.3868
40	Shell-Thick	59	-209.23	28.75	29.9	91.3943	7.3432	-0.7295
41	Shell-Thick	56	-259.84	12.47	-14.63	58.8711	3.0217	0.393
41	Shell-Thick	57	-210.51	22.34	-33.78	59.6483	2.3913	1.5092
41	Shell-Thick	62	-209.23	28.75	-29.9	91.3943	7.3432	0.7295
41	Shell-Thick	61	-258.55	18.89	-10.75	90.5962	8.0022	-0.3867
42	Shell-Thick	57	-215.31	-1.66	-28.05	59.6809	1.5086	2.2185
42	Shell-Thick	58	-128.8	15.64	-17.66	62.0979	0.9688	5.6855
42	Shell-Thick	63	-127.35	22.88	-32.37	92.8965	2.8164	3.4981
42	Shell-Thick	62	-213.86	5.57	-42.75	90.4048	3.4416	0.0311
43	Shell-Thick	60	4.25	49.2	72.96	91.9878	0.6692	-2.6814
43	Shell-Thick	59	-255.63	-2.78	44.69	92.4649	5.8192	-0.8365
43	Shell-Thick	15	-271.9	-84.12	-14.89	119.6617	9.0104	-0.3677
43	Shell-Thick	5	-12.02	-32.15	13.38	119.1747	3.8102	-2.2126
44	Shell-Thick	59	-250.99	20.4	31.84	89.94	6.1488	-0.4627
44	Shell-Thick	61	-266.5	17.3	10.75	90.8014	8.9469	0.1247
44	Shell-Thick	18	-293.09	-115.62	-15.39	123.7201	14.8036	-0.1361
44	Shell-Thick	15	-277.58	-112.52	5.69	122.8487	11.9913	-0.7235
45	Shell-Thick	61	-266.5	17.3	-10.75	90.8014	8.9469	-0.1247
45	Shell-Thick	62	-250.99	20.4	-31.84	89.94	6.1488	0.4627
45	Shell-Thick	20	-277.58	-112.52	-5.69	122.8487	11.9913	0.7235
45	Shell-Thick	18	-293.09	-115.63	15.39	123.7201	14.8036	0.1361
46	Shell-Thick	62	-255.63	-2.78	-44.69	92.4649	5.8191	0.8365
46	Shell-Thick	63	4.25	49.2	-72.96	91.9878	0.6691	2.6813
46	Shell-Thick	11	-12.02	-32.15	-13.38	119.1747	3.8102	2.2125
46	Shell-Thick	20	-271.9	-84.12	14.89	119.6617	9.0104	0.3677
47	Shell-Thick	2	-317.75	-63.5	33.07	-0.8387	-2.3141	-1.9912
47	Shell-Thick	64	-278.94	-55.85	24.87	-0.2886	0.4144	-1.0349
47	Shell-Thick	65	-268.09	-1.58	13.01	8.5157	1.328	-1.1203
47	Shell-Thick	66	-306.75	-8.5	20.66	7.595	-1.4245	-1.9014
48	Shell-Thick	64	-279.26	-55.87	10.88	0.5394	-1.1679	-1.0775
48	Shell-Thick	67	-279.27	-55.86	2.74	0.7001	-0.0723	-0.0198
48	Shell-Thick	68	-273.08	-24.91	4.39	7.1554	0.1896	0.0046
48	Shell-Thick	65	-273.02	-24.69	12.53	6.8963	-0.9024	-1.029

49	Shell-Thick	67	-279.27	-55.86	-2.79	0.6995	-0.0777	0.0236
49	Shell-Thick	69	-279.32	-55.88	-10.9	0.5434	-1.1683	1.0733
49	Shell-Thick	70	-273.07	-24.62	-12.49	6.927	-0.8978	1.0259
49	Shell-Thick	68	-273.05	-24.77	-4.38	7.1533	0.188	-0.007
50	Shell-Thick	69	-278.98	-55.85	-24.82	-0.2832	0.4109	1.0322
50	Shell-Thick	8	-317.75	-63.51	-33.06	-0.8328	-2.3173	1.9937
50	Shell-Thick	71	-306.72	-8.37	-20.62	7.5902	-1.4258	1.8949
50	Shell-Thick	70	-268.11	-1.51	-12.99	8.5484	1.3289	1.126
51	Shell-Thick	66	-270.92	-2.74	3.31	7.011	-0.4869	-2.0768
51	Shell-Thick	65	-286.49	-5.61	7.48	7.5469	0.0794	-0.9569
51	Shell-Thick	72	-286.06	-3.48	1.48	14.9141	0.4332	-1.0269
51	Shell-Thick	73	-270.53	-0.8	-2.58	14.2696	-0.1571	-2.1343
52	Shell-Thick	65	-291.04	-28.42	6.97	7.7631	-0.4201	-0.994
52	Shell-Thick	68	-282.81	-26.85	4.4	7.9261	0.0351	-0.0121
52	Shell-Thick	74	-278.13	-3.46	1.15	14.7075	0.3926	0.0015
52	Shell-Thick	72	-286.35	-4.99	3.7	14.4944	-0.0671	-0.9743
53	Shell-Thick	68	-282.79	-26.71	-4.34	7.9254	0.0351	0.0128
53	Shell-Thick	70	-291.02	-28.31	-6.97	7.794	-0.4169	0.9937
53	Shell-Thick	75	-286.36	-5.02	-3.71	14.5459	-0.0629	0.9728
53	Shell-Thick	74	-278.13	-3.45	-1.1	14.7078	0.3928	-0.0041
54	Shell-Thick	70	-286.48	-5.6	-7.48	7.5841	0.0788	0.9583
54	Shell-Thick	71	-270.91	-2.74	-3.26	7.0171	-0.4839	2.0758
54	Shell-Thick	76	-270.52	-0.77	2.64	14.2621	-0.1542	2.1341
54	Shell-Thick	75	-286.04	-3.41	-1.46	14.959	0.4333	1.0303
55	Shell-Thick	73	-268.64	-0.4	-1.07	14.3384	0.0564	-2.1484
55	Shell-Thick	72	-280.64	-2.93	-2.54	14.6197	0.1733	-1.0111
55	Shell-Thick	77	-280.27	-1.12	-2.25	21.2029	0.2879	-0.9033
55	Shell-Thick	78	-268.27	1.43	-0.74	20.8883	0.1459	-2.0369
56	Shell-Thick	72	-280.84	-4.06	-0.38	14.6956	0.138	-0.9576
56	Shell-Thick	74	-284.84	-4.8	1.11	14.849	0.2561	-0.0069
56	Shell-Thick	79	-283.79	0.41	-1.49	21.3139	0.5233	0.0008077
56	Shell-Thick	77	-279.8	1.14	-2.97	21.1406	0.3965	-0.949
57	Shell-Thick	74	-284.83	-4.79	-1.09	14.8493	0.2567	0.0065
57	Shell-Thick	75	-280.8	-4.02	0.4	14.7401	0.1404	0.9568
57	Shell-Thick	80	-279.76	1.18	2.97	21.1965	0.3996	0.9475
57	Shell-Thick	79	-283.79	0.42	1.49	21.3137	0.5241	-0.0022
58	Shell-Thick	75	-280.61	-2.91	2.56	14.6696	0.1759	1.0118
58	Shell-Thick	76	-268.65	-0.38	1.07	14.345	0.0602	2.1496
58	Shell-Thick	81	-268.28	1.45	0.72	20.8834	0.1478	2.0382
58	Shell-Thick	80	-280.25	-1.11	2.26	21.2535	0.2888	0.9043
59	Shell-Thick	78	-270.16	0.91	-1.86	21.0018	0.2166	-1.9541
59	Shell-Thick	77	-276.3	-0.2	-1.12	21.1531	0.23	-0.9782
59	Shell-Thick	82	-276.27	-0.06872	-1.21	26.9958	0.3029	-0.7839
59	Shell-Thick	83	-270.13	1.03	-1.92	26.8333	0.2637	-1.7566
60	Shell-Thick	77	-275.86	1.96	-1.91	21.2148	0.4535	-0.911
60	Shell-Thick	79	-278.15	1.53	-1.43	21.2837	0.4751	-0.0342
60	Shell-Thick	84	-278.34	0.62	-0.33	27.1155	0.6313	0.0304
60	Shell-Thick	82	-276.05	1.04	-0.81	27.0378	0.6011	-0.8459
61	Shell-Thick	79	-278.15	1.54	1.45	21.2845	0.4759	0.0338
61	Shell-Thick	80	-275.82	1.99	1.9	21.2621	0.4551	0.9096
61	Shell-Thick	85	-276.01	1.04	0.78	27.0909	0.6032	0.8444
61	Shell-Thick	84	-278.34	0.59	0.34	27.115	0.6324	-0.031
62	Shell-Thick	80	-276.26	-0.18	1.1	21.205	0.2324	0.9778
62	Shell-Thick	81	-270.16	0.91	1.85	21.0076	0.2195	1.955
62	Shell-Thick	86	-270.14	1.01	1.93	26.8288	0.2653	1.7576
62	Shell-Thick	85	-276.24	-0.06257	1.2	27.0446	0.3038	0.7838
63	Shell-Thick	83	-270.51	1.13	-0.72	26.9625	0.2995	-1.6662
63	Shell-Thick	82	-271.7	0.85	-1.03	26.9893	0.2923	-0.8643

63	Shell-Thick	87	-271.94	-0.34	-0.58	31.9254	0.3231	-0.5965
63	Shell-Thick	88	-270.74	-0.05603	-0.27	31.8942	0.3071	-1.3949
64	Shell-Thick	82	-271.48	1.96	-0.7	27.0574	0.6149	-0.7708
64	Shell-Thick	84	-272.66	1.75	-0.28	27.089	0.6162	-0.0432
64	Shell-Thick	89	-273	0.02589	-0.32	32.0308	0.7068	0.0411
64	Shell-Thick	87	-271.82	0.23	-0.74	31.9963	0.6975	-0.6861
65	Shell-Thick	84	-272.66	1.73	0.28	27.0904	0.6172	0.0434
65	Shell-Thick	85	-271.44	1.95	0.72	27.1013	0.6156	0.7695
65	Shell-Thick	90	-271.78	0.25	0.73	32.0395	0.6988	0.6845
65	Shell-Thick	89	-273	0.02539	0.3	32.0299	0.7083	-0.0412
66	Shell-Thick	85	-271.66	0.86	1.03	27.0364	0.2945	0.8628
66	Shell-Thick	86	-270.51	1.14	0.71	26.9669	0.3014	1.6663
66	Shell-Thick	91	-270.75	-0.06471	0.26	31.8901	0.3082	1.3958
66	Shell-Thick	90	-271.9	-0.35	0.59	31.9657	0.3243	0.5958
67	Shell-Thick	88	-268.12	0.47	-0.17	32.0163	0.3332	-1.283
67	Shell-Thick	87	-267.92	0.54	-0.02303	31.935	0.3244	-0.6955
67	Shell-Thick	92	-268.09	-0.3	-0.08503	35.7091	0.3386	-0.3811
67	Shell-Thick	93	-268.29	-0.37	-0.24	35.7984	0.3284	-0.9664
68	Shell-Thick	87	-267.81	1.06	-0.26	32.0142	0.7018	-0.5899
68	Shell-Thick	89	-267.88	1.05	-0.25	31.999	0.6999	-0.0525
68	Shell-Thick	94	-268.15	-0.34	-0.0009145	35.7637	0.7455	0.0528
68	Shell-Thick	92	-268.09	-0.33	-0.004067	35.7859	0.7411	-0.4845
69	Shell-Thick	89	-267.88	1.05	0.27	32.0007	0.7009	0.0532
69	Shell-Thick	90	-267.78	1.07	0.25	32.0473	0.7019	0.5892
69	Shell-Thick	95	-268.06	-0.33	-0.01166	35.81	0.7415	0.4835
69	Shell-Thick	94	-268.16	-0.35	0.001311	35.7625	0.7468	-0.0522
70	Shell-Thick	90	-267.89	0.54	0.003764	31.9688	0.3259	0.6932
70	Shell-Thick	91	-268.12	0.46	0.17	32.0182	0.3343	1.2829
70	Shell-Thick	96	-268.29	-0.37	0.25	35.7964	0.3284	0.9674
70	Shell-Thick	95	-268.05	-0.29	0.08351	35.7328	0.3391	0.3792
71	Shell-Thick	93	-264.37	0.45	0.04405	35.9143	0.3495	-0.8427
71	Shell-Thick	92	-263.89	0.54	0.03802	35.7059	0.3422	-0.4893
71	Shell-Thick	97	-264.08	-0.41	-0.02952	38.0082	0.3374	-0.1305
71	Shell-Thick	98	-264.56	-0.51	-0.02103	38.2496	0.3305	-0.4889
72	Shell-Thick	92	-263.9	0.51	0.03826	35.7964	0.7422	-0.3705
72	Shell-Thick	94	-263.81	0.53	0.03902	35.7292	0.7398	-0.0584
72	Shell-Thick	99	-264	-0.43	-0.02984	37.9983	0.7605	0.0614
72	Shell-Thick	97	-264.09	-0.45	-0.03034	38.0822	0.7589	-0.2517
73	Shell-Thick	94	-263.81	0.52	-0.04158	35.7306	0.7406	0.0588
73	Shell-Thick	95	-263.88	0.51	-0.02633	35.8118	0.742	0.3703
73	Shell-Thick	100	-264.07	-0.44	0.0333	38.0875	0.7585	0.2516
73	Shell-Thick	99	-264	-0.43	0.01814	37.9972	0.7611	-0.0604
74	Shell-Thick	95	-263.87	0.54	-0.03568	35.7203	0.3421	0.4878
74	Shell-Thick	96	-264.37	0.45	-0.05179	35.9148	0.349	0.8425
74	Shell-Thick	101	-264.56	-0.51	0.01816	38.2495	0.3289	0.4895
74	Shell-Thick	100	-264.06	-0.42	0.03761	38.0143	0.3369	0.128
75	Shell-Thick	98	-260	0.4	0.02035	38.3386	0.345	-0.345
75	Shell-Thick	97	-259.78	0.45	0.09345	37.9902	0.3422	-0.2695
75	Shell-Thick	102	-259.96	-0.43	0.01558	38.5019	0.3336	0.1358
75	Shell-Thick	103	-260.17	-0.47	-0.05289	38.8742	0.3286	0.0326
76	Shell-Thick	97	-259.79	0.41	0.02082	38.0825	0.7586	-0.13
76	Shell-Thick	99	-259.7	0.43	0.01093	37.9681	0.7552	-0.0618
76	Shell-Thick	104	-259.87	-0.43	0.01158	38.4551	0.7539	0.0634
76	Shell-Thick	102	-259.96	-0.45	0.02209	38.577	0.7562	-0.0077
77	Shell-Thick	99	-259.7	0.43	-0.00452	37.9685	0.7555	0.0614
77	Shell-Thick	100	-259.78	0.42	-0.0236	38.0836	0.7579	0.1299
77	Shell-Thick	105	-259.96	-0.45	-0.02801	38.5757	0.7554	0.0078
77	Shell-Thick	104	-259.87	-0.44	-0.008505	38.4549	0.7541	-0.0628

78	Shell-Thick	100	-259.78	0.45	-0.1	37.9909	0.3408	0.2698
78	Shell-Thick	101	-260	0.38	-0.01752	38.3386	0.3433	0.3444
78	Shell-Thick	106	-260.17	-0.47	0.06245	38.8743	0.3268	-0.0321
78	Shell-Thick	105	-259.95	-0.42	-0.01849	38.5009	0.3326	-0.1369
79	Shell-Thick	103	-255.47	0.47	-0.01714	38.8958	0.3318	0.1813
79	Shell-Thick	102	-255.55	0.46	0.01791	38.5157	0.3377	-0.0335
79	Shell-Thick	107	-255.73	-0.44	0.06104	37.0514	0.3253	0.363
79	Shell-Thick	108	-255.64	-0.43	0.0241	37.3592	0.3287	0.5494
80	Shell-Thick	102	-255.56	0.43	0.01407	38.5831	0.7571	0.112
80	Shell-Thick	104	-255.6	0.42	0.01245	38.4604	0.7553	-0.0625
80	Shell-Thick	109	-255.76	-0.38	0.03002	37.0472	0.7209	0.0576
80	Shell-Thick	107	-255.72	-0.37	0.03133	37.1474	0.7245	0.2293
81	Shell-Thick	104	-255.6	0.42	-0.02037	38.4598	0.7556	0.0617
81	Shell-Thick	105	-255.57	0.43	-0.0123	38.5833	0.7564	-0.112
81	Shell-Thick	110	-255.73	-0.37	-0.02314	37.1534	0.724	-0.2292
81	Shell-Thick	109	-255.76	-0.37	-0.03137	37.0479	0.7212	-0.0577
82	Shell-Thick	105	-255.56	0.45	-0.009174	38.5162	0.3367	0.035
82	Shell-Thick	106	-255.46	0.48	0.01809	38.8952	0.33	-0.1819
82	Shell-Thick	111	-255.64	-0.42	-0.03237	37.3594	0.3277	-0.5489
82	Shell-Thick	110	-255.74	-0.45	-0.06213	37.057	0.3246	-0.3623
83	Shell-Thick	108	-251	0.5	-0.03473	37.3014	0.3193	0.6903
83	Shell-Thick	107	-251.45	0.4	0.02823	37.0963	0.3277	0.2286
83	Shell-Thick	112	-251.61	-0.42	0.17	33.9061	0.301	0.5569
83	Shell-Thick	113	-251.16	-0.32	0.1	34.0481	0.3101	1.0114
84	Shell-Thick	107	-251.43	0.49	0.05344	37.1603	0.7271	0.3428
84	Shell-Thick	109	-251.63	0.45	0.01031	37.0876	0.7287	-0.0564
84	Shell-Thick	114	-251.79	-0.31	0.05783	33.9476	0.6512	0.0512
84	Shell-Thick	112	-251.58	-0.27	0.1	33.9931	0.6544	0.4493
85	Shell-Thick	109	-251.63	0.45	-0.01144	37.0865	0.7293	0.0556
85	Shell-Thick	110	-251.45	0.49	-0.06086	37.172	0.7271	-0.3425
85	Shell-Thick	115	-251.6	-0.28	-0.09866	34.0135	0.6544	-0.449
85	Shell-Thick	114	-251.79	-0.31	-0.04971	33.949	0.6518	-0.0517
86	Shell-Thick	110	-251.47	0.4	-0.02792	37.1079	0.3274	-0.2268
86	Shell-Thick	111	-251	0.5	0.04362	37.3001	0.3185	-0.6905
86	Shell-Thick	116	-251.16	-0.32	-0.1	34.0492	0.3101	-1.0111
86	Shell-Thick	115	-251.63	-0.42	-0.18	33.9263	0.3012	-0.5553
87	Shell-Thick	113	-246.62	0.57	0.07692	33.9392	0.292	1.1294
87	Shell-Thick	112	-247.6	0.38	0.07405	33.9364	0.3016	0.4529
87	Shell-Thick	117	-247.79	-0.58	0.15	29.3423	0.244	0.7058
87	Shell-Thick	118	-246.81	-0.39	0.15	29.3103	0.2562	1.3824
88	Shell-Thick	112	-247.57	0.53	0.07494	33.9947	0.6571	0.5417
88	Shell-Thick	114	-247.85	0.48	0.01813	34.0061	0.6603	-0.0392
88	Shell-Thick	119	-248.06	-0.56	0.06677	29.4381	0.5068	0.0368
88	Shell-Thick	117	-247.78	-0.51	0.12	29.4086	0.5103	0.6176
89	Shell-Thick	114	-247.86	0.48	-0.02729	34.0048	0.6612	0.0387
89	Shell-Thick	115	-247.6	0.52	-0.07897	34.0227	0.6579	-0.5412
89	Shell-Thick	120	-247.8	-0.51	-0.11	29.4443	0.5113	-0.6171
89	Shell-Thick	119	-248.06	-0.56	-0.06324	29.4398	0.5077	-0.0372
90	Shell-Thick	115	-247.62	0.38	-0.06665	33.9637	0.302	-0.4514
90	Shell-Thick	116	-246.62	0.57	-0.07122	33.9372	0.2923	-1.1295
90	Shell-Thick	121	-246.81	-0.39	-0.15	29.3126	0.2572	-1.3825
90	Shell-Thick	120	-247.82	-0.58	-0.15	29.3785	0.2451	-0.7043
91	Shell-Thick	118	-242.92	0.42	-0.14	29.155	0.2323	1.4741
91	Shell-Thick	117	-243.96	0.2	-0.04135	29.3758	0.2425	0.6276
91	Shell-Thick	122	-244.19	-0.94	-0.17	23.6768	0.1244	0.7673
91	Shell-Thick	123	-243.15	-0.72	-0.26	23.4415	0.1387	1.6156
92	Shell-Thick	117	-243.95	0.26	0.004979	29.4146	0.5146	0.6756
92	Shell-Thick	119	-243.79	0.29	0.02213	29.5086	0.5178	-0.02

92	Shell-Thick	124	-244.25	-2.02	-0.42	23.8175	0.2344	0.0206
92	Shell-Thick	122	-244.41	-2.05	-0.44	23.7152	0.2389	0.7164
93	Shell-Thick	119	-243.79	0.3	-0.03172	29.5072	0.5189	0.0201
93	Shell-Thick	120	-243.98	0.26	-0.013	29.4582	0.5164	-0.6753
93	Shell-Thick	125	-244.44	-2.04	0.44	23.7638	0.2415	-0.7161
93	Shell-Thick	124	-244.25	-2.01	0.42	23.8195	0.2362	-0.0206
94	Shell-Thick	120	-243.99	0.2	0.0446	29.4183	0.2434	-0.6269
94	Shell-Thick	121	-242.92	0.43	0.15	29.153	0.2337	-1.4747
94	Shell-Thick	126	-243.14	-0.71	0.25	23.4448	0.1413	-1.6165
94	Shell-Thick	125	-244.22	-0.94	0.16	23.7263	0.1268	-0.7667
95	Shell-Thick	123	-242.04	-0.42	-0.74	23.2409	0.1083	1.6893
95	Shell-Thick	122	-240.22	-0.01104	-1.07	23.7237	0.1234	0.7059
95	Shell-Thick	127	-240.6	-1.94	-2.34	17.1757	-0.0653	0.6916
95	Shell-Thick	128	-242.43	-2.35	-2.02	16.6921	-0.056	1.6756
96	Shell-Thick	122	-240.46	-1.21	-1.26	23.7156	0.2438	0.7157
96	Shell-Thick	124	-237.75	-0.72	-0.49	23.9404	0.2543	0.0208
96	Shell-Thick	129	-238.67	-5.31	-1.37	17.3939	-0.2553	-0.0181
96	Shell-Thick	127	-241.38	-5.8	-2.15	17.1691	-0.2573	0.6769
97	Shell-Thick	124	-237.75	-0.7	0.47	23.939	0.2561	-0.02
97	Shell-Thick	125	-240.5	-1.22	1.25	23.7721	0.2472	-0.7156
97	Shell-Thick	130	-241.41	-5.78	2.15	17.2246	-0.2531	-0.6773
97	Shell-Thick	129	-238.66	-5.27	1.37	17.3962	-0.2524	0.0185
98	Shell-Thick	125	-240.25	0.002206	1.06	23.7786	0.1257	-0.7072
98	Shell-Thick	126	-242.03	-0.4	0.73	23.2381	0.1107	-1.6905
98	Shell-Thick	131	-242.42	-2.34	2	16.696	-0.052	-1.6763
98	Shell-Thick	130	-240.64	-1.94	2.33	17.2326	-0.0617	-0.6923
99	Shell-Thick	128	-249	-3.24	-4.65	16.378	-0.1026	1.6776
99	Shell-Thick	127	-235.28	-0.63	-4.1	17.3143	-0.0538	0.7035
99	Shell-Thick	132	-235.46	-1.52	-4.96	10.0953	-0.4414	0.3999
99	Shell-Thick	133	-249.18	-4.15	-5.55	9.1877	-0.466	1.3694
100	Shell-Thick	127	-236.09	-4.65	-3.82	17.2023	-0.258	0.6017
100	Shell-Thick	129	-227.6	-3.1	-1.47	17.547	-0.217	0.0565
100	Shell-Thick	134	-228.85	-9.33	-3.92	10.3565	-1.065	-0.0497
100	Shell-Thick	132	-237.34	-10.9	-6.29	10.0345	-1.0971	0.4948
101	Shell-Thick	129	-227.6	-3.06	1.45	17.5461	-0.2147	-0.055
101	Shell-Thick	130	-236.14	-4.66	3.8	17.2634	-0.2528	-0.6021
101	Shell-Thick	135	-237.39	-10.91	6.29	10.0806	-1.092	-0.4958
101	Shell-Thick	134	-228.85	-9.29	3.93	10.3586	-1.0607	0.0511
102	Shell-Thick	130	-235.31	-0.6	4.1	17.3728	-0.0506	-0.7074
102	Shell-Thick	131	-248.97	-3.19	4.62	16.3738	-0.0995	-1.6789
102	Shell-Thick	136	-249.17	-4.17	5.53	9.1916	-0.4623	-1.3684
102	Shell-Thick	135	-235.5	-1.56	4.95	10.1438	-0.4393	-0.4036
103	Shell-Thick	133	-268.6	-8.1	-4.58	8.7199	-0.5772	1.3628
103	Shell-Thick	132	-227.74	0.2	-6.84	10.3279	-0.375	0.432
103	Shell-Thick	137	-227.38	2.01	-16.15	2.4766	-0.9805	-0.2728
103	Shell-Thick	138	-268.22	-6.24	-14.17	1.0104	-1.1543	0.6305
104	Shell-Thick	132	-229.77	-9.33	-8.05	9.9692	-1.1522	0.2562
104	Shell-Thick	134	-212.19	-6	-4.07	10.7163	-0.9503	0.1903
104	Shell-Thick	139	-212.17	-5.9	-6.06	3.0376	-2.4128	-0.177
104	Shell-Thick	137	-229.76	-9.31	-10.09	2.354	-2.5972	-0.1154
105	Shell-Thick	134	-212.19	-5.97	4.04	10.7156	-0.9476	-0.1891
105	Shell-Thick	135	-229.83	-9.35	8.03	10.0183	-1.1458	-0.2569
105	Shell-Thick	140	-229.83	-9.36	10.09	2.3785	-2.5946	0.1139
105	Shell-Thick	139	-212.18	-5.92	6.06	3.0393	-2.4086	0.1791
106	Shell-Thick	135	-227.76	0.19	6.86	10.3759	-0.3719	-0.4369
106	Shell-Thick	136	-268.59	-8.12	4.53	8.7172	-0.5755	-1.3635
106	Shell-Thick	141	-268.21	-6.23	14.14	1.0128	-1.1541	-0.6274
106	Shell-Thick	140	-227.4	2.01	16.14	2.5017	-0.9826	0.2666

107	Shell-Thick	138	-296.58	-11.98	-33.61	-0.6275	-1.5758	0.083
107	Shell-Thick	137	-215.54	3.99	-25.4	3.5036	-0.6614	0.3401
107	Shell-Thick	46	-212.92	17.09	17.93	-5.3029	-2.7116	-1.8733
107	Shell-Thick	6	-294.16	0.11	8.33	-8.9811	-3.5035	-2.3235
108	Shell-Thick	137	-217.98	-6.95	-19.2	2.5455	-2.7953	-0.5496
108	Shell-Thick	139	-205.53	-4.63	-6.12	3.537	-2.0754	0.2578
108	Shell-Thick	49	-198	32.98	13.11	-4.4105	-4.4514	-0.2331
108	Shell-Thick	46	-210.55	30.21	-0.03386	-5.2659	-5.138	-1.0396
109	Shell-Thick	139	-205.52	-4.64	6.17	3.5357	-2.0742	-0.2584
109	Shell-Thick	140	-218.02	-7	19.14	2.5654	-2.7913	0.549
109	Shell-Thick	51	-210.58	30.24	-0.02718	-5.2685	-5.1418	1.0417
109	Shell-Thick	49	-198	32.97	-13.06	-4.4094	-4.4504	0.2351
110	Shell-Thick	140	-215.52	3.97	25.37	3.5271	-0.6604	-0.3411
110	Shell-Thick	141	-296.57	-11.97	33.59	-0.6261	-1.5786	-0.0865
110	Shell-Thick	12	-294.17	0.02963	-8.23	-8.9803	-3.5049	2.3257
110	Shell-Thick	51	-212.91	17.06	-17.92	-5.3086	-2.7177	1.867
111	Shell-Thick	9	-34.61	-6.92	-3.21	-1.1265	-2.8877	2.8422
111	Shell-Thick	144	-33.34	-0.61	-1.99	12.5593	-1.6844	2.743
111	Shell-Thick	143	-30.33	-0.09061	-1.17	13.8036	1.7274	1.5667
111	Shell-Thick	142	-31.58	-6.32	-2.35	-0.404	0.4979	1.412
112	Shell-Thick	142	-31.6	-6.32	-1.19	0.7483	-1.549	1.4703
112	Shell-Thick	143	-30.79	-2.3	-1.2	11.6381	-1.1249	1.423
112	Shell-Thick	146	-30.81	-2.33	-0.36	12.0126	0.2364	0.008
112	Shell-Thick	145	-31.61	-6.32	-0.35	0.9842	-0.1813	0.0212
113	Shell-Thick	145	-31.61	-6.32	0.35	0.9827	-0.1893	-0.0246
113	Shell-Thick	146	-30.81	-2.32	0.36	12.0104	0.2338	-0.0022
113	Shell-Thick	148	-30.79	-2.3	1.2	11.6836	-1.1186	-1.418
113	Shell-Thick	147	-31.6	-6.32	1.2	0.7528	-1.5494	-1.4642
114	Shell-Thick	147	-31.58	-6.32	2.35	-0.3938	0.4939	-1.4098
114	Shell-Thick	148	-30.33	-0.08134	1.17	13.8473	1.7292	-1.5768
114	Shell-Thick	149	-33.34	-0.59	1.98	12.5502	-1.685	-2.7354
114	Shell-Thick	3	-34.6	-6.92	3.21	-1.1161	-2.8918	-2.847
115	Shell-Thick	144	-26.54	0.57	0.08991	11.9265	-0.3575	2.9462
115	Shell-Thick	151	-26.7	-0.21	0.68	23.6422	-0.0358	3.0375
115	Shell-Thick	150	-29.01	-0.61	0.15	24.4546	0.3848	1.4616
115	Shell-Thick	143	-28.86	0.14	-0.46	12.576	0.0133	1.3611
116	Shell-Thick	143	-29.29	-2.02	-0.45	12.743	-0.4277	1.397
116	Shell-Thick	150	-28.95	-0.3	-0.03574	24.1321	0.065	1.3994
116	Shell-Thick	152	-28.35	-0.19	0.03742	24.4298	0.4555	0.0133
116	Shell-Thick	146	-28.7	-1.91	-0.38	12.9673	-0.05	0.0054
117	Shell-Thick	146	-28.69	-1.89	0.37	12.9665	-0.0498	-0.0049
117	Shell-Thick	152	-28.35	-0.19	-0.04031	24.4303	0.4559	-0.0094
117	Shell-Thick	153	-28.93	-0.31	0.04331	24.206	0.0702	-1.3964
117	Shell-Thick	148	-29.27	-2.01	0.45	12.787	-0.424	-1.3956
118	Shell-Thick	148	-28.85	0.15	0.46	12.6295	0.0137	-1.3636
118	Shell-Thick	153	-29	-0.61	-0.16	24.5188	0.3851	-1.4668
118	Shell-Thick	154	-26.7	-0.22	-0.69	23.6325	-0.0325	-3.0397
118	Shell-Thick	149	-26.54	0.57	-0.09077	11.9355	-0.353	-2.9463
119	Shell-Thick	151	-23.85	0.39	0.17	23.8543	0.1588	3.0099
119	Shell-Thick	156	-23.97	-0.2	0.14	34.5173	0.2103	2.8265
119	Shell-Thick	155	-24.74	-0.38	0.33	34.9634	0.29	1.2885
119	Shell-Thick	150	-24.62	0.22	0.35	24.2422	0.1882	1.4675
120	Shell-Thick	150	-24.55	0.56	0.23	24.2939	0.2585	1.3844
120	Shell-Thick	155	-24.69	-0.15	0.39	34.9736	0.5356	1.359
120	Shell-Thick	157	-25.26	-0.25	0.18	35.1921	0.5992	-0.0071
120	Shell-Thick	152	-25.12	0.46	0.01177	24.4805	0.3041	0.0176
121	Shell-Thick	152	-25.12	0.45	-0.01887	24.4809	0.3051	-0.0162
121	Shell-Thick	157	-25.26	-0.25	-0.17	35.1919	0.6003	0.0093

121	Shell-Thick	158	-24.66	-0.14	-0.38	35.0533	0.5389	-1.3564
121	Shell-Thick	153	-24.52	0.57	-0.24	24.3575	0.2611	-1.3824
122	Shell-Thick	153	-24.59	0.22	-0.35	24.3129	0.1919	-1.4688
122	Shell-Thick	158	-24.71	-0.38	-0.33	35.0365	0.291	-1.2901
122	Shell-Thick	159	-23.97	-0.2	-0.14	34.5114	0.2121	-2.8291
122	Shell-Thick	154	-23.86	0.39	-0.16	23.8628	0.1634	-3.0124
123	Shell-Thick	156	-20.57	0.47	0.13	34.6951	0.278	2.7065
123	Shell-Thick	161	-20.74	-0.38	0.22	44.2256	0.3019	2.4166
123	Shell-Thick	160	-20.8	-0.37	0.0901	44.5203	0.3314	1.1044
123	Shell-Thick	155	-20.63	0.48	-0.00584	34.9647	0.2589	1.3897
124	Shell-Thick	155	-20.59	0.68	0.13	35.0289	0.5684	1.2939
124	Shell-Thick	160	-20.79	-0.36	0.02933	44.5892	0.6914	1.1922
124	Shell-Thick	162	-20.81	-0.37	0.02656	44.7118	0.7055	-0.0474
124	Shell-Thick	157	-20.6	0.68	0.13	35.1361	0.5662	0.0537
125	Shell-Thick	157	-20.6	0.68	-0.14	35.1369	0.5671	-0.0528
125	Shell-Thick	162	-20.81	-0.37	-0.02053	44.7114	0.7071	0.0484
125	Shell-Thick	163	-20.76	-0.36	-0.01949	44.6653	0.6937	-1.1899
125	Shell-Thick	158	-20.55	0.69	-0.14	35.0965	0.5697	-1.2915
126	Shell-Thick	158	-20.59	0.48	0.01526	35.038	0.2615	-1.3893
126	Shell-Thick	163	-20.76	-0.37	-0.0964	44.5911	0.3324	-1.1046
126	Shell-Thick	164	-20.74	-0.39	-0.23	44.2201	0.3034	-2.418
126	Shell-Thick	159	-20.57	0.46	-0.12	34.702	0.281	-2.7078
127	Shell-Thick	161	-16.69	0.45	-0.02879	44.396	0.3462	2.295
127	Shell-Thick	166	-16.87	-0.49	0.06732	52.4978	0.3264	1.9226
127	Shell-Thick	165	-16.55	-0.43	0.06145	52.6493	0.348	0.8417
127	Shell-Thick	160	-16.37	0.52	-0.03396	44.5345	0.3252	1.2094
128	Shell-Thick	160	-16.36	0.52	-0.01288	44.6102	0.7009	1.0816
128	Shell-Thick	165	-16.56	-0.46	0.05477	52.7302	0.7584	0.9634
128	Shell-Thick	167	-16.51	-0.45	0.04377	52.811	0.7671	-0.0571
128	Shell-Thick	162	-16.31	0.53	-0.02383	44.6849	0.6949	0.0605
129	Shell-Thick	162	-16.31	0.53	0.01456	44.6863	0.6961	-0.0608
129	Shell-Thick	167	-16.51	-0.45	-0.03474	52.8102	0.7694	0.0572
129	Shell-Thick	168	-16.53	-0.46	-0.04478	52.7926	0.76	-0.9614
129	Shell-Thick	163	-16.33	0.53	0.004533	44.673	0.7012	-1.0798
130	Shell-Thick	163	-16.33	0.52	0.04339	44.6013	0.3276	-1.2074
130	Shell-Thick	168	-16.52	-0.43	-0.06907	52.7083	0.3496	-0.8409
130	Shell-Thick	169	-16.88	-0.5	-0.07723	52.4931	0.3279	-1.9236
130	Shell-Thick	164	-16.69	0.45	0.03604	44.4011	0.3481	-2.295
131	Shell-Thick	166	-12.27	0.42	-0.04295	52.6545	0.3642	1.775
131	Shell-Thick	171	-12.46	-0.52	0.12	58.9741	0.3431	1.3608
131	Shell-Thick	170	-12.14	-0.45	0.0446	58.9822	0.3607	0.5582
131	Shell-Thick	165	-11.95	0.5	-0.12	52.6699	0.3473	0.9694
132	Shell-Thick	165	-11.96	0.46	-0.03246	52.7567	0.7646	0.832
132	Shell-Thick	170	-12.15	-0.5	0.00862	59.0634	0.7846	0.6922
132	Shell-Thick	172	-12.02	-0.48	0.02751	59.0758	0.7913	-0.0702
132	Shell-Thick	167	-11.83	0.49	-0.01362	52.7779	0.7598	0.0694
133	Shell-Thick	167	-11.83	0.48	0.003802	52.7799	0.7613	-0.0707
133	Shell-Thick	172	-12.02	-0.48	-0.02028	59.0746	0.7932	0.0691
133	Shell-Thick	173	-12.12	-0.5	0.001222	59.0993	0.7851	-0.6916
133	Shell-Thick	168	-11.93	0.46	0.02535	52.8049	0.7645	-0.8317
134	Shell-Thick	168	-11.92	0.5	0.13	52.7186	0.3492	-0.9662
134	Shell-Thick	173	-12.11	-0.44	-0.05083	59.0179	0.3617	-0.5556
134	Shell-Thick	174	-12.46	-0.52	-0.13	58.9721	0.3432	-1.3613
134	Shell-Thick	169	-12.27	0.42	0.04894	52.6564	0.3652	-1.7744
135	Shell-Thick	171	-7.55	0.46	-0.04189	59.1208	0.3737	1.2022
135	Shell-Thick	176	-7.75	-0.55	0.1	63.2584	0.3413	0.7519
135	Shell-Thick	175	-7.45	-0.48	0.04939	63.0696	0.3549	0.2372
135	Shell-Thick	170	-7.25	0.53	-0.09828	58.9804	0.3622	0.6919

136	Shell-Thick	170	-7.26	0.47	-0.03305	59.0777	0.7871	0.5431
136	Shell-Thick	175	-7.46	-0.51	0.02408	63.1456	0.7952	0.3911
136	Shell-Thick	177	-7.36	-0.49	0.02879	63.0779	0.7997	-0.0795
136	Shell-Thick	172	-7.17	0.49	-0.02863	59.0352	0.7838	0.0735
137	Shell-Thick	172	-7.17	0.49	0.02311	59.0368	0.7848	-0.0746
137	Shell-Thick	177	-7.36	-0.49	-0.02253	63.0768	0.8004	0.0778
137	Shell-Thick	178	-7.43	-0.51	-0.01915	63.1546	0.7947	-0.3917
137	Shell-Thick	173	-7.24	0.48	0.02639	59.1016	0.7867	-0.5436
138	Shell-Thick	173	-7.23	0.53	0.11	59.0027	0.3622	-0.6895
138	Shell-Thick	178	-7.43	-0.48	-0.05313	63.08	0.3545	-0.2337
138	Shell-Thick	179	-7.75	-0.55	-0.11	63.2587	0.3395	-0.7516
138	Shell-Thick	174	-7.55	0.46	0.04561	59.1208	0.373	-1.2013
139	Shell-Thick	176	-2.5	0.5	-0.006102	63.3689	0.3615	0.5729
139	Shell-Thick	181	-2.71	-0.55	0.07195	64.8689	0.3432	0.0898
139	Shell-Thick	180	-2.56	-0.51	0.004882	64.4826	0.3532	-0.1052
139	Shell-Thick	175	-2.35	0.54	-0.07662	63.0407	0.3581	0.4047
140	Shell-Thick	175	-2.36	0.51	-0.01038	63.1418	0.7945	0.2348
140	Shell-Thick	180	-2.56	-0.52	0.007841	64.5572	0.7977	0.0764
140	Shell-Thick	182	-2.51	-0.51	0.003987	64.429	0.7968	-0.0831
140	Shell-Thick	177	-2.31	0.52	-0.01459	63.0321	0.791	0.0781
141	Shell-Thick	177	-2.31	0.52	0.01413	63.0325	0.7912	-0.0781
141	Shell-Thick	182	-2.51	-0.51	-0.001775	64.4286	0.7967	0.0821
141	Shell-Thick	183	-2.56	-0.52	-0.008058	64.5551	0.7965	-0.077
141	Shell-Thick	178	-2.35	0.51	0.007608	63.1452	0.7937	-0.2351
142	Shell-Thick	178	-2.35	0.54	0.07993	63.0431	0.3565	-0.4044
142	Shell-Thick	183	-2.56	-0.51	-0.004543	64.4814	0.352	0.1069
142	Shell-Thick	184	-2.71	-0.55	-0.07455	64.8693	0.3409	-0.0898
142	Shell-Thick	179	-2.5	0.5	0.006057	63.3683	0.3594	-0.5718
143	Shell-Thick	181	2.71	0.54	0.05196	64.8918	0.3465	-0.0864
143	Shell-Thick	186	2.5	-0.51	0.01123	63.3507	0.3566	-0.5703
143	Shell-Thick	185	2.41	-0.53	-0.05659	63.0058	0.354	-0.4086
143	Shell-Thick	180	2.63	0.52	-0.01387	64.484	0.3552	0.1042
144	Shell-Thick	180	2.62	0.52	0.002255	64.5587	0.7975	-0.0797
144	Shell-Thick	185	2.42	-0.51	-0.003338	63.1068	0.7934	-0.2377
144	Shell-Thick	187	2.39	-0.52	-0.00891	62.9914	0.7896	-0.0778
144	Shell-Thick	182	2.6	0.51	-0.003127	64.4238	0.7963	0.0831
145	Shell-Thick	182	2.6	0.51	0.007353	64.4232	0.7964	-0.0823
145	Shell-Thick	187	2.39	-0.51	0.006517	62.992	0.7897	0.0778
145	Shell-Thick	188	2.41	-0.51	-0.001205	63.112	0.7925	0.2375
145	Shell-Thick	183	2.61	0.52	-0.0002906	64.5588	0.7966	0.0798
146	Shell-Thick	183	2.61	0.52	0.01152	64.4841	0.3539	-0.1057
146	Shell-Thick	188	2.4	-0.53	0.06146	63.0111	0.3531	0.4078
146	Shell-Thick	189	2.5	-0.5	-0.008869	63.3511	0.3552	0.5698
146	Shell-Thick	184	2.71	0.54	-0.05634	64.8908	0.3442	0.087
147	Shell-Thick	186	7.75	0.54	0.08802	63.2822	0.342	-0.7484
147	Shell-Thick	191	7.55	-0.47	-0.03054	59.1057	0.3692	-1.2004
147	Shell-Thick	190	7.29	-0.52	-0.08372	58.9355	0.3576	-0.6945
147	Shell-Thick	185	7.5	0.48	0.03696	63.0432	0.356	-0.2345
148	Shell-Thick	185	7.5	0.5	0.01988	63.1163	0.7941	-0.3935
148	Shell-Thick	190	7.3	-0.47	-0.02585	59.036	0.7857	-0.5451
148	Shell-Thick	192	7.23	-0.49	-0.02471	58.9804	0.7821	-0.0727
148	Shell-Thick	187	7.43	0.49	0.0213	63.0306	0.7982	0.0803
149	Shell-Thick	187	7.43	0.49	-0.01498	63.0295	0.7989	-0.0791
149	Shell-Thick	192	7.23	-0.49	0.0182	58.9817	0.7824	0.0734
149	Shell-Thick	193	7.28	-0.48	0.01951	59.059	0.7851	0.5448
149	Shell-Thick	188	7.48	0.5	-0.01353	63.1297	0.7939	0.3933
150	Shell-Thick	188	7.47	0.48	-0.0418	63.0564	0.3557	0.2322
150	Shell-Thick	193	7.27	-0.53	0.09166	58.9586	0.3575	0.6923

150	Shell-Thick	194	7.55	-0.46	0.03505	59.1068	0.3687	1.1997
150	Shell-Thick	189	7.75	0.54	-0.09582	63.2806	0.3409	0.7484
151	Shell-Thick	191	12.46	0.52	0.11	58.9931	0.3435	-1.3586
151	Shell-Thick	196	12.27	-0.42	-0.03743	52.6419	0.3616	-1.7732
151	Shell-Thick	195	11.98	-0.49	-0.11	52.6428	0.3447	-0.9689
151	Shell-Thick	190	12.16	0.45	0.03884	58.9552	0.3619	-0.5545
152	Shell-Thick	190	12.17	0.5	0.005858	59.0314	0.7841	-0.6929
152	Shell-Thick	195	11.98	-0.46	-0.02799	52.7351	0.764	-0.8323
152	Shell-Thick	197	11.86	-0.48	-0.0112	52.7464	0.7593	-0.0678
152	Shell-Thick	192	12.05	0.48	0.02281	59.022	0.7908	0.0718
153	Shell-Thick	192	12.05	0.48	-0.01601	59.0209	0.792	-0.071
153	Shell-Thick	197	11.86	-0.48	0.002452	52.7479	0.76	0.0685
153	Shell-Thick	198	11.95	-0.46	0.02132	52.7778	0.7638	0.8315
153	Shell-Thick	193	12.15	0.5	0.00294	59.0657	0.7845	0.6921
154	Shell-Thick	193	12.14	0.44	-0.04512	58.9885	0.3623	0.5522
154	Shell-Thick	198	11.95	-0.5	0.12	52.6865	0.3454	0.9665
154	Shell-Thick	199	12.27	-0.42	0.04344	52.6443	0.3619	1.7728
154	Shell-Thick	194	12.46	0.52	-0.12	58.9907	0.3436	1.3585
155	Shell-Thick	196	16.88	0.49	0.06642	52.5089	0.3279	-1.9211
155	Shell-Thick	201	16.69	-0.45	-0.02772	44.3883	0.3447	-2.293
155	Shell-Thick	200	16.37	-0.51	-0.03321	44.5362	0.3238	-1.2079
155	Shell-Thick	195	16.56	0.43	0.0608	52.6418	0.3499	-0.8392
156	Shell-Thick	195	16.56	0.46	0.05417	52.7184	0.7595	-0.9629
156	Shell-Thick	200	16.37	-0.52	-0.01119	44.617	0.7022	-1.0811
156	Shell-Thick	202	16.32	-0.53	-0.02345	44.6937	0.6964	-0.0589
156	Shell-Thick	197	16.51	0.45	0.04192	52.7853	0.7682	0.059
157	Shell-Thick	197	16.51	0.45	-0.03386	52.7843	0.7696	-0.0589
157	Shell-Thick	202	16.32	-0.53	0.0147	44.6952	0.6977	0.059
157	Shell-Thick	203	16.34	-0.52	0.003518	44.6773	0.703	1.0799
157	Shell-Thick	198	16.53	0.45	-0.04504	52.7738	0.7606	0.9617
158	Shell-Thick	198	16.53	0.43	-0.06739	52.6952	0.3508	0.8374
158	Shell-Thick	203	16.34	-0.52	0.04239	44.5986	0.3258	1.206
158	Shell-Thick	204	16.69	-0.45	0.03415	44.3922	0.3465	2.2937
158	Shell-Thick	199	16.88	0.5	-0.07571	52.5063	0.3287	1.9216
159	Shell-Thick	201	20.74	0.38	0.22	44.2331	0.3035	-2.4155
159	Shell-Thick	206	20.57	-0.46	0.12	34.6919	0.2787	-2.707
159	Shell-Thick	205	20.61	-0.48	-0.008908	34.997	0.2595	-1.3889
159	Shell-Thick	200	20.78	0.37	0.09218	44.5376	0.333	-1.1014
160	Shell-Thick	200	20.78	0.36	0.03081	44.6024	0.6944	-1.1918
160	Shell-Thick	205	20.57	-0.68	0.13	35.0666	0.5727	-1.293
160	Shell-Thick	207	20.59	-0.68	0.13	35.1921	0.5706	-0.0518
160	Shell-Thick	202	20.8	0.36	0.02759	44.7281	0.7083	0.0489
161	Shell-Thick	202	20.8	0.37	-0.02138	44.7277	0.7102	-0.0498
161	Shell-Thick	207	20.59	-0.67	-0.13	35.1933	0.5723	0.0514
161	Shell-Thick	208	20.54	-0.68	-0.14	35.1363	0.5745	1.2913
161	Shell-Thick	203	20.75	0.36	-0.02152	44.6758	0.6966	1.1897
162	Shell-Thick	203	20.75	0.36	-0.09844	44.6073	0.3346	1.1013
162	Shell-Thick	208	20.58	-0.48	0.01817	35.0709	0.2635	1.3878
162	Shell-Thick	209	20.57	-0.46	-0.12	34.6973	0.2825	2.7084
162	Shell-Thick	204	20.74	0.39	-0.23	44.2287	0.3052	2.4175
163	Shell-Thick	206	23.98	0.2	0.14	34.5208	0.213	-2.8275
163	Shell-Thick	211	23.86	-0.39	0.17	23.8507	0.1622	-3.0107
163	Shell-Thick	210	24.6	-0.22	0.35	24.3093	0.192	-1.4659
163	Shell-Thick	205	24.72	0.38	0.33	35.0115	0.293	-1.2868
164	Shell-Thick	205	24.67	0.15	0.39	35.0165	0.5414	-1.3593
164	Shell-Thick	210	24.53	-0.56	0.23	24.3681	0.2681	-1.3851
164	Shell-Thick	212	25.08	-0.46	0.01157	24.5817	0.3136	-0.0168
164	Shell-Thick	207	25.23	0.25	0.18	35.2556	0.6047	0.0083
165	Shell-Thick	207	25.23	0.25	-0.17	35.2559	0.6066	-0.0109
165	Shell-Thick	212	25.08	-0.46	-0.01884	24.5818	0.3145	0.0156

165	Shell-Thick	213	24.5	-0.57	-0.23	24.4271	0.2701	1.3828
165	Shell-Thick	208	24.65	0.15	-0.38	35.0986	0.5452	1.3559
166	Shell-Thick	208	24.69	0.38	-0.33	35.0853	0.2951	1.2901
166	Shell-Thick	213	24.57	-0.23	-0.34	24.3773	0.1957	1.4671
166	Shell-Thick	214	23.86	-0.39	-0.16	23.8599	0.1665	3.0118
166	Shell-Thick	209	23.98	0.21	-0.15	34.5124	0.2156	2.8303
167	Shell-Thick	211	26.7	0.22	0.69	23.6291	-0.0316	-3.0409
167	Shell-Thick	216	26.54	-0.56	0.08845	11.9238	-0.3487	-2.9426
167	Shell-Thick	215	28.84	-0.15	-0.46	12.6576	0.0204	-1.3569
167	Shell-Thick	210	28.99	0.6	0.16	24.53	0.3876	-1.464
168	Shell-Thick	210	28.93	0.3	-0.03094	24.2099	0.0779	-1.4004
168	Shell-Thick	215	29.26	1.99	-0.45	12.8251	-0.4146	-1.3949
168	Shell-Thick	217	28.67	1.87	-0.37	13.0757	-0.0412	-0.0044
168	Shell-Thick	212	28.33	0.19	0.04187	24.5413	0.4645	-0.0157
169	Shell-Thick	212	28.33	0.19	-0.04412	24.542	0.4646	0.0119
169	Shell-Thick	217	28.66	1.86	0.36	13.0742	-0.0422	0.003
169	Shell-Thick	218	29.25	1.98	0.45	12.8556	-0.4126	1.392
169	Shell-Thick	213	28.91	0.3	0.0378	24.2773	0.0824	1.3973
170	Shell-Thick	213	28.97	0.6	-0.17	24.5865	0.3872	1.4692
170	Shell-Thick	218	28.82	-0.15	0.46	12.6991	0.0192	1.3605
170	Shell-Thick	219	26.54	-0.56	-0.08939	11.9344	-0.346	2.9429
170	Shell-Thick	214	26.7	0.22	-0.69	23.6187	-0.0291	3.0422
171	Shell-Thick	216	33.34	0.58	-1.98	12.5401	-1.6775	-2.728
171	Shell-Thick	10	34.6	6.92	-3.21	-1.114	-2.8877	-2.8472
171	Shell-Thick	220	31.57	6.32	-2.35	-0.3901	0.4956	-1.4047
171	Shell-Thick	215	30.32	0.07262	-1.17	13.8805	1.736	-1.5831
172	Shell-Thick	215	30.78	2.27	-1.2	11.7193	-1.1128	-1.4208
172	Shell-Thick	220	31.59	6.32	-1.2	0.7531	-1.5472	-1.4676
172	Shell-Thick	221	31.6	6.32	-0.36	0.9926	-0.1825	-0.0212
172	Shell-Thick	217	30.8	2.3	-0.35	12.121	0.2462	-0.0142
173	Shell-Thick	217	30.8	2.29	0.35	12.1191	0.243	0.01
173	Shell-Thick	221	31.6	6.32	0.36	0.9914	-0.1896	0.0231
173	Shell-Thick	222	31.6	6.32	1.2	0.7557	-1.5476	1.4626
173	Shell-Thick	218	30.78	2.26	1.19	11.7513	-1.1084	1.4173
174	Shell-Thick	218	30.32	0.06671	1.16	13.9112	1.7354	1.5896
174	Shell-Thick	222	31.57	6.31	2.35	-0.3836	0.4921	1.4035
174	Shell-Thick	4	34.6	6.92	3.21	-1.106	-2.8914	2.8522
174	Shell-Thick	219	33.33	0.57	1.97	12.5344	-1.6796	2.7227