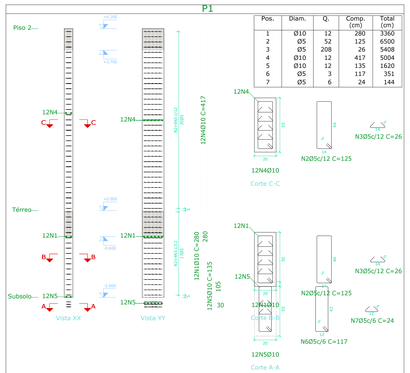
PILARES

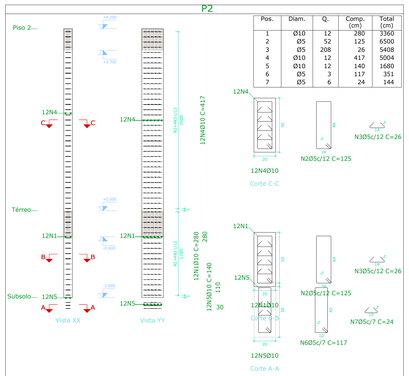
P1



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	12	280	3360
2	Ø5	52	125	6500
3	Ø5	208	26	5408
4	Ø10	12	417	5004
5	Ø10	12	135	1620
6	Ø5	3	117	351
7	Ø5	6	24	144

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 1	20x50	0.42	5.88	30.8	12.6	47.7	103.33
Térreo		0.20	2.80	20.7	6.1	29.5	134.00
Total		0.62	8.68	51.5	18.7	77.2	113.23

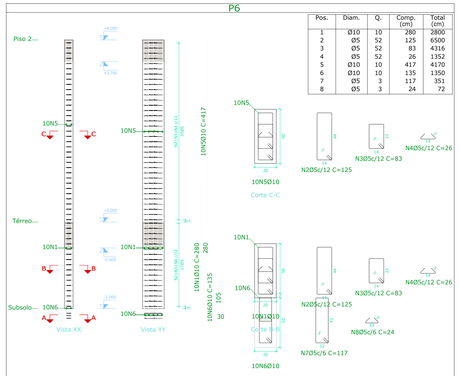
P2



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	12	280	3360
2	Ø5	52	125	6500
3	Ø5	208	26	5408
4	Ø10	12	417	5004
5	Ø10	12	140	1680
6	Ø5	3	117	351
7	Ø5	6	24	144

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 1	20x50	0.42	5.88	30.8	12.6	47.7	103.33
Térreo		0.20	2.80	20.7	6.1	29.5	134.00
Total		0.62	8.68	51.5	18.7	77.2	113.23

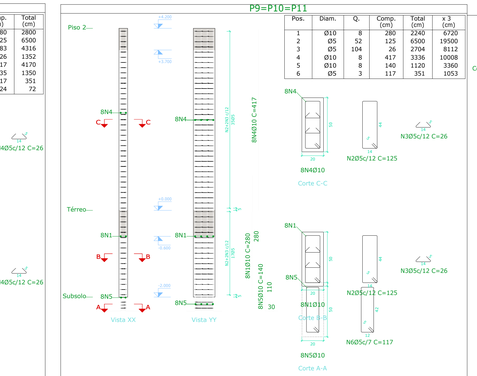
P6



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	10	280	2800
2	Ø5	52	125	6500
3	Ø5	52	83	4316
4	Ø5	52	26	1352
5	Ø10	10	417	4170
6	Ø10	10	135	1350
7	Ø5	3	117	351
8	Ø5	3	24	72

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 1	20x50	0.42	5.88	25.7	12.9	42.5	91.90
Térreo		0.20	2.80	17.3	6.2	25.9	117.50
Total		0.62	8.68	43.0	19.1	68.4	100.16

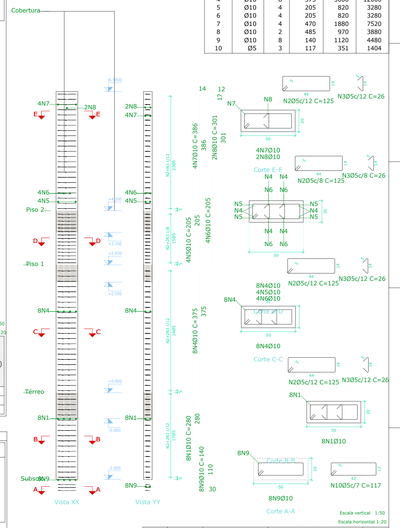
P9=P10=P11



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 3 (cm)
1	Ø10	8	280	2240	6720
2	Ø5	52	125	6500	19500
3	Ø5	104	26	2704	8112
4	Ø10	8	417	3336	10008
5	Ø10	8	140	1120	3360
6	Ø5	3	117	351	1053

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 1	20x50	1.26	5.88	20.6	9.7	33.3	24.05
Térreo		0.60	2.80	13.8	4.7	20.4	30.83
Total (x3)		5.58	26.04	103.1	43.4	161.1	26.24

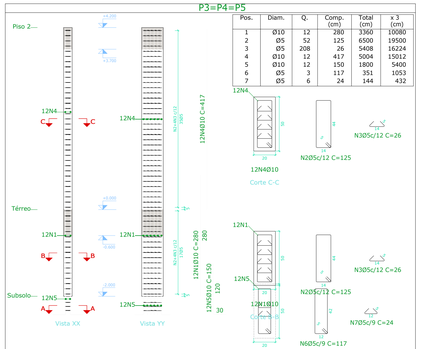
P26



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 4 (cm)
1	Ø10	8	280	2240	8960
2	Ø5	80	125	11750	47000
3	Ø5	135	26	3900	15600
4	Ø10	8	375	3000	12000
5	Ø10	4	205	820	3280
6	Ø10	4	205	820	3280
7	Ø10	4	470	1880	7520
8	Ø10	2	485	970	3880
9	Ø10	8	140	1120	4480
10	Ø5	3	117	351	1404

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 1	20x50	0.42	5.88	30.8	12.6	47.7	103.33
Térreo		0.20	2.80	20.7	6.1	29.5	134.00
Total		0.62	8.68	51.5	18.7	77.2	113.23

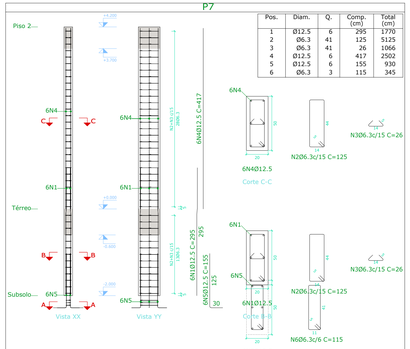
P3=P4=P5



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 3 (cm)
1	Ø10	12	280	3360	10080
2	Ø5	52	125	6500	19500
3	Ø5	208	26	5408	16224
4	Ø10	12	417	5004	15012
5	Ø10	12	150	1800	5400
6	Ø5	3	117	351	1053
7	Ø5	6	24	144	432

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 1	20x50	1.26	5.88	30.8	12.6	47.7	34.44
Térreo		0.60	2.80	20.7	6.1	29.5	44.67
Total (x3)		5.58	26.04	154.6	56.1	231.6	37.74

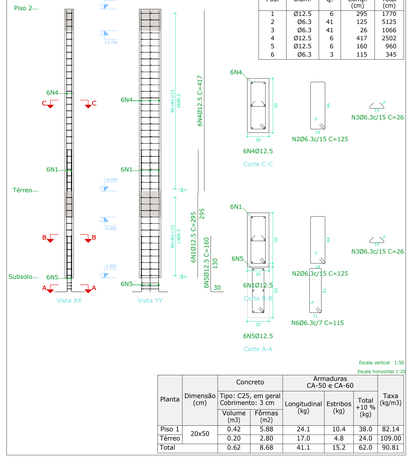
P7



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	6	295	1770
2	Ø6.3	41	125	5125
3	Ø6.3	41	26	1066
4	Ø12.5	6	417	2502
5	Ø12.5	6	155	930
6	Ø6.3	3	115	345

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 1	20x50	0.42	5.88	24.1	10.4	38.0	82.14
Térreo		0.20	2.80	17.0	4.8	24.0	109.00
Total		0.62	8.68	41.1	15.2	62.0	90.81

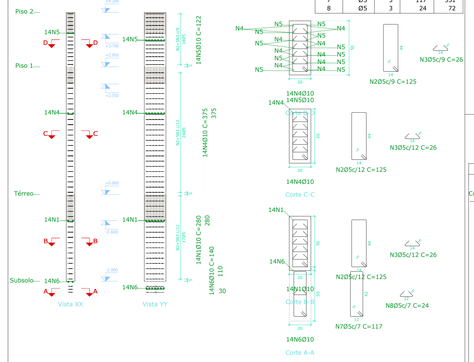
P8



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	6	295	1770
2	Ø6.3	41	125	5125
3	Ø6.3	41	26	1066
4	Ø12.5	6	417	2502
5	Ø12.5	6	160	960
6	Ø6.3	3	115	345

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 1	20x50	0.42	5.88	24.1	10.4	38.0	82.14
Térreo		0.20	2.80	17.0	4.8	24.0	109.00
Total		0.62	8.68	41.1	15.2	62.0	90.81

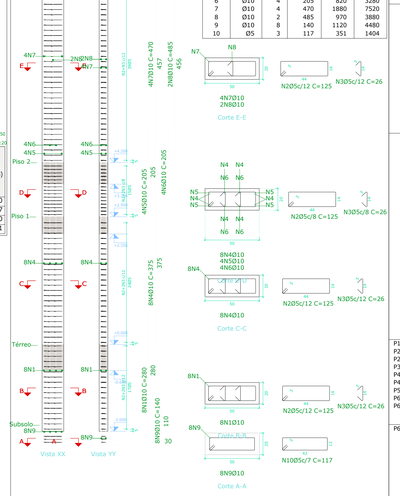
P12



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	14	280	3920
2	Ø5	55	125	6875
3	Ø5	275	26	7150
4	Ø10	14	375	5250
5	Ø10	14	122	1708
6	Ø10	14	140	1960
7	Ø5	3	117	351
8	Ø5	3	24	72

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 2	20x50	0.13	1.75	10.5	5.6	17.7	128.80
Piso 1		0.30	4.13	32.4	9.6	46.2	142.37
Térreo		0.20	2.80	24.2	6.8	34.1	155.00
Total		0.62	8.68	67.0	22.0	98.0	143.71

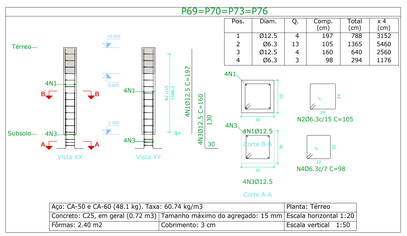
P39



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 4 (cm)
1	Ø10	8	280	2240	8960
2	Ø5	80	125	11750	47000
3	Ø5	150	26	3900	15600
4	Ø10	8	375	3000	12000
5	Ø10	4	205	820	3280
6	Ø10	4	205	820	3280
7	Ø10	4	470	1880	7520
8	Ø10	2	485	970	3880
9	Ø10	8	140	1120	4480
10	Ø5	3	117	351	1404

Planta	Dimensão (cm)	Concreto: Tipo: C25, em geral Cobrimento: 3 cm		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Volume (m3)	Fôrmas (m2)	Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
Piso 3	50x20	1.84	6.44	17.6	9.0	29.3	14.46
Piso 2		0.50	1.75	10.1	4.2	15.7	28.60
Piso 1		1.18	4.13	18.5	6.7	27.7	21.36
Térreo		0.80	2.80	13.8	4.7	20.4	23.13
Total (x4)		17.28	60.48	239.8	98.3	372.4	19.58

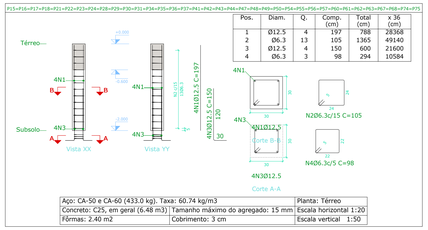
P69=P70=P73=P76



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 4 (cm)
1	Ø12.5	4	197	788	3152
2	Ø6.3	13	105	1365	5460
3	Ø12.5	4	160	640	2560
4	Ø6.3	3	98	294	1176

Aço: CA-50 e CA-60 (48.1 kg). Taxa: 60.74 kg/m3		Planta: Térreo
Concreto: C25, em geral (0.72 m3)	Tamanho máximo do agregado: 15 mm	Escala horizontal 1:20
Fôrmas: 2.40 m2	Cobrimento: 3 cm	Escala vertical 1:50

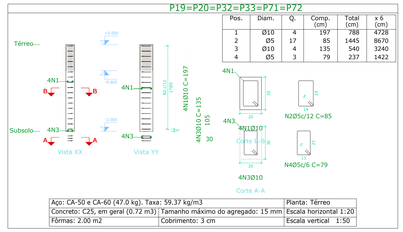
P15=P16=P17=P18=P21=P22=P23=P24=P28=P29=P30=P31=P34=P35=P36=P37=P41=P42=P43=P46=P47=P48=P49=P50=P54=P55=P56=P57=P60=P61=P62=P63=P67=P68=P74=P75



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 36 (cm)
1	Ø12.5	4	197	788	28368
2	Ø6.3	13	105	1365	49140
3	Ø12.5	4	150	600	21600
4	Ø6.3	3	98	294	10584

Aço: CA-50 e CA-60 (433.0 kg). Taxa: 60.74 kg/m3		Planta: Térreo
Concreto: C25, em geral (6.48 m3)	Tamanho máximo do agregado: 15 mm	Escala horizontal 1:20
Fôrmas: 2.40 m2	Cobrimento: 3 cm	Escala vertical 1:50

P19=P20=P32=P33=P71=P72



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 6 (cm)
1	Ø10	4	197	788	4728
2	Ø5	17	85	1445	8670
3	Ø10	4	135	540	3240
4	Ø5	3	79	237	1422

Aço: CA-50 e CA-60 (47.0 kg). Taxa: 59.37 kg/m3		Planta: Térreo
Concreto: C25, em geral (0.72 m3)	Tamanho máximo do agregado: 15 mm	Escala horizontal 1:20
Fôrmas: 2.00 m2	Cobrimento: 3 cm	Escala vertical 1:50

Pilares que nascem em Térreo e chegam em Cobertura
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P1	1	Ø10	12	280	280	3360	20.7	
	2	Ø5	52	125	125	6500		10.2
	3	Ø5	208	26	26	5408		8.5
	4	Ø10	12	417	417	5004	30.8	
	5	Ø10	12	135	135	1620	10.0	
	6	Ø5	3	117	117	351		0.6
	7	Ø5	6	24	24	144		0.2
					Total+10%:	67.7		21.5
P2	1	Ø10	12	280	280	3360	20.7	
	2	Ø5	52	125	125	6500		10.2
	3	Ø5	208	26	26	5408		8.5
	4	Ø10	12	417	417	5004	30.8	
	5	Ø10	12	140	140	1680	10.4	
	6	Ø5	3	117	117	351		0.6
	7	Ø5	6	24	24	144		0.2
					Total+10%:	68.1		21.5
P3=P4=P5	1	Ø10	12	280	280	3360	20.7	
	2	Ø5	52	125	125	6500		10.2
	3	Ø5	208	26	26	5408		8.5
	4	Ø10	12	417	417	5004	30.8	
	5	Ø10	12	150	150	1800	11.1	
	6	Ø5	3	117	117	351		0.6
	7	Ø5	6	24	24	144		0.2
					Total+10%: (x3):	68.9 206.7		21.5 64.5
P6	1	Ø10	10	280	280	2800	17.3	
	2	Ø5	52	125	125	6500		10.2
	3	Ø5	52	83	83	4316		6.8
	4	Ø5	52	26	26	1352		2.1
	5	Ø10	10	417	417	4170	25.7	
	6	Ø10	10	135	135	1350	8.3	
	7	Ø5	3	117	117	351		0.6
	8	Ø5	3	24	24	72		0.1
					Total+10%:	56.4		21.8
P7	1	Ø12.5	6	295	295	1770	17.0	
	2	Ø6.3	41	125	125	5125	12.6	
	3	Ø6.3	41	26	26	1066	2.6	
	4	Ø12.5	6	417	417	2502	24.1	
	5	Ø12.5	6	155	155	930	9.0	
	6	Ø6.3	3	115	115	345	0.8	
					Total+10%:	72.7		
P8	1	Ø12.5	6	295	295	1770	17.0	
	2	Ø6.3	41	125	125	5125	12.6	
	3	Ø6.3	41	26	26	1066	2.6	
	4	Ø12.5	6	417	417	2502	24.1	
	5	Ø12.5	6	160	160	960	9.2	
	6	Ø6.3	3	115	115	345	0.8	
					Total+10%:	72.9		
P9=P10=P11	1	Ø10	8	280	280	2240	13.8	
	2	Ø5	52	125	125	6500		10.2
	3	Ø5	104	26	26	2704		4.2
	4	Ø10	8	417	417	3336	20.6	
	5	Ø10	8	140	140	1120	6.9	
	6	Ø5	3	117	117	351		0.6
					Total+10%: (x3):	45.4 136.2		16.5 49.5
P12	1	Ø10	14	280	280	3920	24.2	
	2	Ø5	55	125	125	6875		10.8
	3	Ø5	275	26	26	7150		11.2
	4	Ø10	14	375	375	5250	32.4	
	5	Ø10	14	122	122	1708	10.5	
	6	Ø10	14	140	140	1960	12.1	
	7	Ø5	3	117	117	351		0.6
	8	Ø5	3	24	24	72		0.1
					Total+10%:	87.1		25.0
P14=P66	1	Ø16	12	320	320	3840	60.6	
	2	Ø6.3	39	125	125	4875	11.9	
	3	Ø6.3	156	26	26	4056	9.9	
	4	Ø16	12	540	540	6480	102.3	
	5	Ø16	4	140	140	560	8.8	
	6	Ø16	8	120	120	960	15.2	
	7	Ø10	4	410	410	1640	10.1	
	8	Ø10	10	425	425	4250	26.2	
	9	Ø5	33	125	125	4125		6.5
	10	Ø5	165	26	26	4290		6.7
	11	Ø16	12	180	180	2160	34.1	
	12	Ø6.3	3	112	112	336	0.8	
	13	Ø6.3	6	23	23	138	0.3	
					Total+10%: (x2):	308.2 616.4		14.5 29.0
P15=P16=P17=P18 P21=P22=P23=P24 P28=P29=P30=P31 P34=P35=P36=P37 P41=P42=P43=P44 P47=P48=P49=P50 P54=P55=P56=P57 P60=P61=P62=P63 P67=P68=P74=P75	1	Ø12.5	4	197	197	788	7.6	
	2	Ø6.3	13	105	105	1365	3.3	
	3	Ø12.5	4	150	150	600	5.8	
	4	Ø6.3	3	98	98	294	0.7	
					Total+10%: (x36):	19.1 687.6		
P69=P70=P73=P76	1	Ø12.5	4	197	197	788	7.6	
	2	Ø6.3	13	105	105	1365	3.3	
	3	Ø12.5	4	160	160	640	6.2	
	4	Ø6.3	3	98	98	294	0.7	
					Total+10%: (x4):	19.6 78.4		
P19=P20=P32=P33 P71=P72	1	Ø10	4	197	197	788	4.9	
	2	Ø5	17	85	85	1445		2.3
	3	Ø10	4	135	135	540	3.3	
	4	Ø5	3	79	79	237		0.4
					Total+10%: (x6):	9.0 54.0		3.0 18.0
					Ø5:	0.0		250.8
					Ø6.3:	261.6		0.0
					Ø10:	756.0		0.0
					Ø12.5:	700.4		0.0
					Ø16:	486.2		0.0
					Total:	2204.2		250.8

Nº	DATA	REVISÃO	RESPONSÁVEL

PROJETADO POR:
ROCHA A Casa do Projeto — Projetos e Engenharia
Av. Coleracabana, 435 - ILHA COMPRIDA-SP
Fones: 13-3842 1254 13-99729 9170

DES.: GABRIELA BERBEL		SET./2017
PRO.: JOEL ROCHA FRANÇA		SET./2017
RESP. TECN.: JOEL ROCHA FRANÇA		SET./2017
ASS.:	Creo 6700040942-SP	
RESP. TECN.: CAROLINE VAZ RODRIGUES		
ASS.:	CAU A72611-7	

PREFEITURA MUNICIPAL DE ILHA COMPRIDA
ESTÂNCIA BALNEÁRIA
AVENIDA BEIRA MAR 11000 - CEP 11925-000

OBRA: PROJETO CENTRO CULTURAL, ESPORTIVO E DE LAZER
ENDEREÇO: AVENIDA SÃO PAULO - BALNEÁRIO ADRIANA

ASSUNTO: PILARES

Nº DES.:
FL.: 07/12
REV.: 0
ESCALA: 1/50

A B C D E F