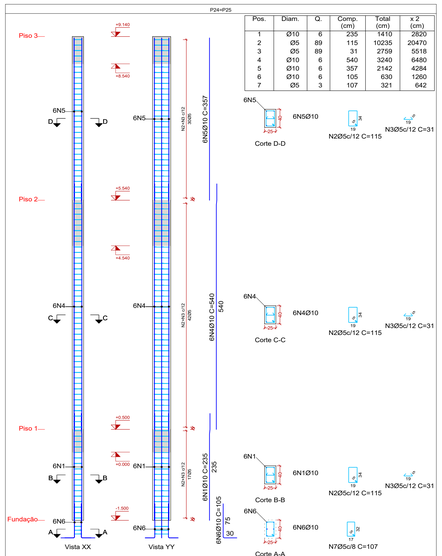
P24=P25

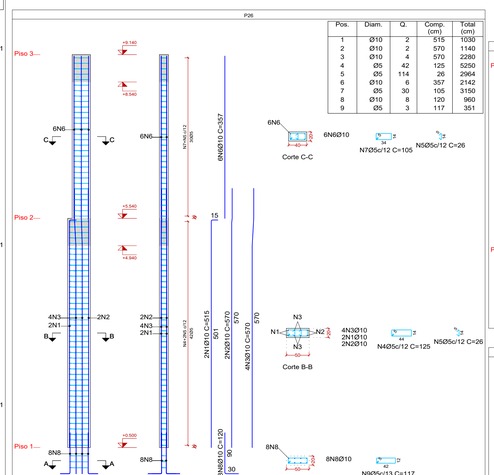


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 2 (cm)
1	Ø10	6	235	1410	2820
2	Ø5	89	115	10235	20470
3	Ø5	89	31	2759	5518
4	Ø10	6	540	3240	6480
5	Ø10	6	357	2142	4284
6	Ø10	6	105	630	1260
7	Ø5	3	107	321	642

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 3	25x40	0.36	4.68	13.2	6.9	22.1	55.83
Piso 2		0.50	6.55	20.0	9.6	32.6	58.73
Piso 1		0.20	2.60	8.7	3.9	13.9	63.00
Total (x2)		2.13	27.66	83.7	40.8	137.2	58.55

P26

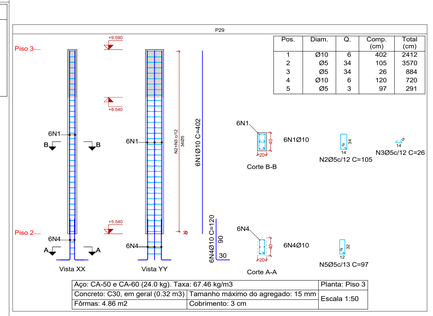


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	2	515	1030
2	Ø10	2	570	1140
3	Ø10	4	570	2280
4	Ø5	42	125	5250
5	Ø5	114	26	2964
6	Ø10	6	357	2142
7	Ø5	30	105	3150
8	Ø10	8	120	960
9	Ø5	3	117	351

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 3	40x20	0.29	4.32	13.2	6.2	21.3	67.36
Piso 2	50x20	0.50	7.06	27.4	11.7	43.1	77.58
Total		0.79	11.38	40.6	17.8	64.3	73.86

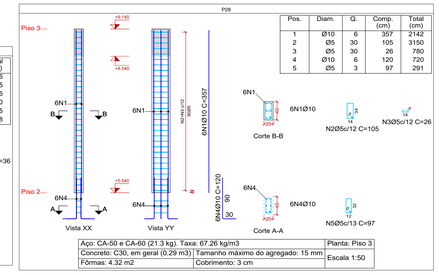
P29



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	6	402	2412
2	Ø5	34	105	3570
3	Ø5	34	26	884
4	Ø10	6	120	720
5	Ø5	3	97	291

Aço: CA-50 e CA-60 (24.0 kg). Taxa: 67.46 kg/m3		Planta: Piso 3
Concreto: C30, em geral (0.32 m3)	Tamanho máximo do agregado: 15 mm	Escala 1:50
Fôrmas: 4.86 m2	Cobrimento: 3 cm	

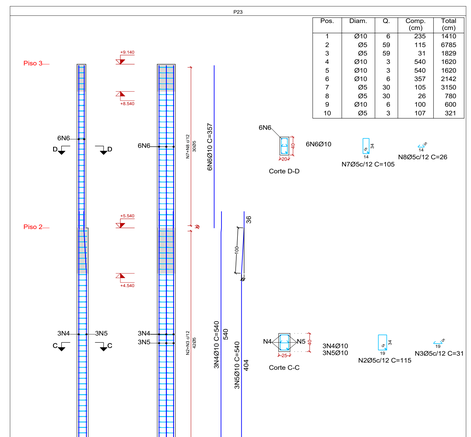
P28



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	6	357	2142
2	Ø5	30	105	3150
3	Ø5	30	26	780
4	Ø10	6	120	720
5	Ø5	3	97	291

Aço: CA-50 e CA-60 (21.3 kg). Taxa: 67.26 kg/m3		Planta: Piso 3
Concreto: C30, em geral (0.29 m3)	Tamanho máximo do agregado: 15 mm	Escala 1:50
Fôrmas: 4.32 m2	Cobrimento: 3 cm	

P23

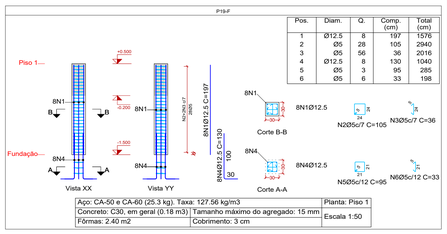


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	6	235	1410
2	Ø5	59	115	6785
3	Ø5	59	31	1829
4	Ø10	3	540	1620
5	Ø10	3	540	1620
6	Ø10	6	357	2142
7	Ø5	30	105	3150
8	Ø5	30	26	780
9	Ø10	6	402	2412
10	Ø5	3	107	321

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 3	20x40	0.29	4.32	13.2	6.2	21.3	67.36
Piso 2	25x40	0.50	6.55	20.0	9.6	32.6	58.73
Piso 1		0.20	2.60	8.7	3.9	13.9	63.00
Total		0.99	13.47	41.9	19.7	67.8	62.10

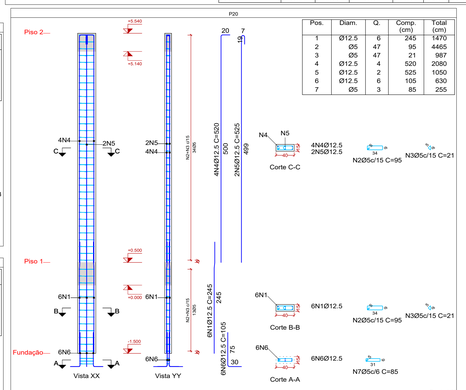
P19-F



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	8	197	1576
2	Ø5	28	105	2940
3	Ø5	56	36	2016
4	Ø12.5	8	130	1040
5	Ø5	3	95	285
6	Ø5	6	33	198

Aço: CA-50 e CA-60 (25.3 kg). Taxa: 127.56 kg/m3		Planta: Piso 1
Concreto: C30, em geral (0.18 m3)	Tamanho máximo do agregado: 15 mm	Escala 1:50
Fôrmas: 2.40 m2	Cobrimento: 3 cm	

P20

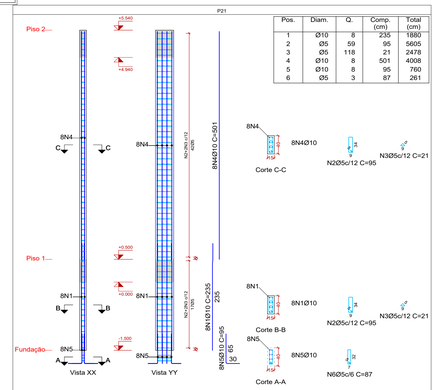


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	6	245	1470
2	Ø5	47	95	4465
3	Ø5	47	21	987
4	Ø12.5	4	520	2080
5	Ø12.5	2	525	1050
6	Ø12.5	6	105	630
7	Ø5	3	85	255

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 2	40x15	0.30	5.54	30.1	6.2	39.9	120.04
Piso 1		0.12	2.20	14.2	2.4	18.3	138.33
Total		0.42	7.74	44.3	8.6	58.2	125.24

P21

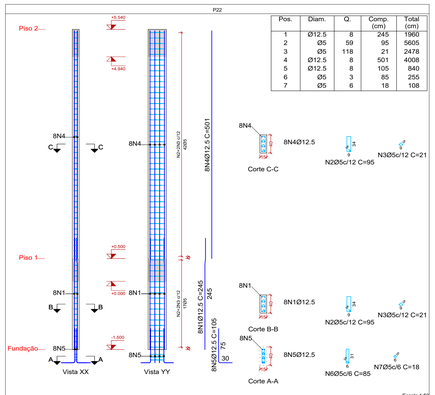


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	8	235	1880
2	Ø5	59	95	5605
3	Ø5	118	21	2478
4	Ø10	8	501	4008
5	Ø10	8	105	840
6	Ø5	3	87	261

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 2	15x40	0.30	5.54	24.7	9.0	37.1	111.44
Piso 1		0.12	2.20	11.6	3.7	16.8	127.50
Total		0.42	7.74	36.3	12.7	53.9	116.00

P22

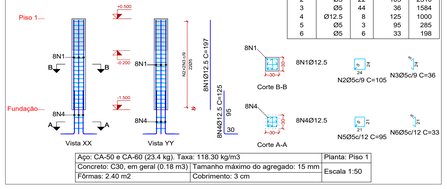


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	8	245	1960
2	Ø5	59	95	5605
3	Ø5	118	21	2478
4	Ø12.5	8	501	4008
5	Ø12.5	8	105	840
6	Ø5	3	85	255
7	Ø5	6	18	108

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 2	15x40	0.30	5.54	38.6	9.0	52.4	157.41
Piso 1		0.12	2.20	18.9	3.7	24.9	188.33
Total		0.42	7.74	57.5	12.7	77.3	166.19

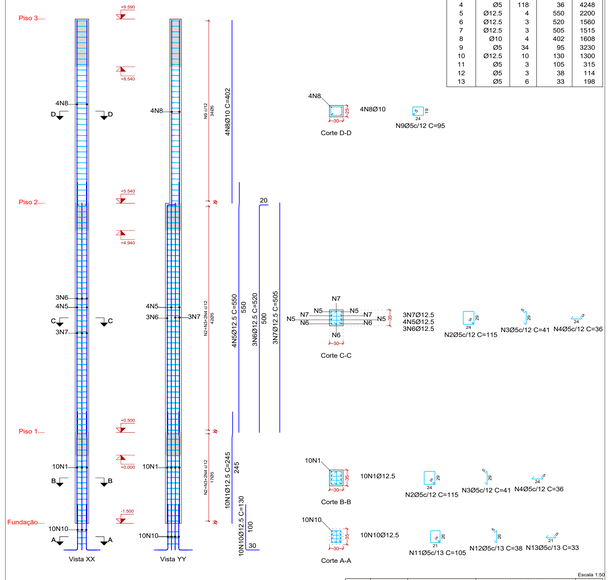
P15-F



Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	8	197	1576
2	Ø5	22	105	2310
3	Ø5	44	36	1584
4	Ø12.5	8	125	1000
5	Ø5	3	95	285
6	Ø5	6	33	198

Aço: CA-50 e CA-60 (23.4 kg). Taxa: 118.30 kg/m3		Planta: Piso 1
Concreto: C30, em geral (0.18 m3)	Tamanho máximo do agregado: 15 mm	Escala 1:50
Fôrmas: 2.40 m2	Cobrimento: 3 cm	

P14

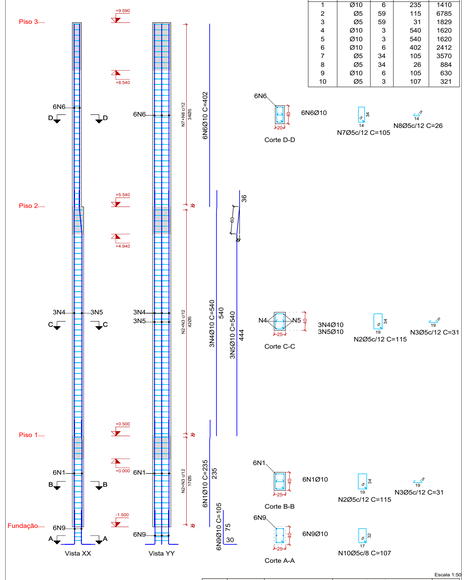


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	10	245	2450
2	Ø5	59	115	6785
3	Ø5	59	41	2419
4	Ø5	118	36	4248
5	Ø12.5	4	550	2200
6	Ø12.5	3	520	1560
7	Ø12.5	3	505	1515
8	Ø10	4	402	1608
9	Ø5	34	95	3230
10	Ø12.5	10	130	1300
11	Ø5	3	105	315
12	Ø5	3	38	114
13	Ø5	6	33	198

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 3	30x25	0.30	4.46	9.9	5.1	16.5	49.38
Piso 2	30x35	0.53	6.55	50.8	15.0	72.4	124.34
Piso 1		0.21	2.60	23.6	6.1	32.7	141.43
Total		1.04	13.61	84.3	26.2	121.6	105.95

P16

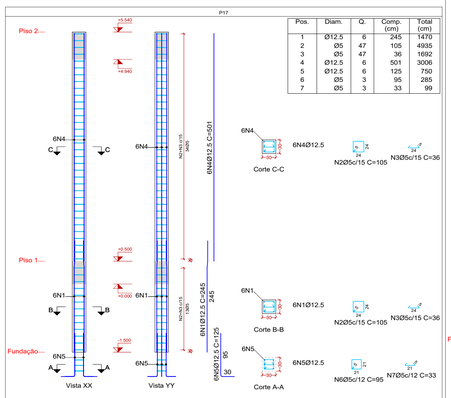


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø10	6	235	1410
2	Ø5	59	115	6785
3	Ø5	59	31	1829
4	Ø10	3	540	1620
5	Ø10	3	540	1620
6	Ø10	6	402	2412
7	Ø5	34	105	3570
8	Ø5	34	26	884
9	Ø10	6	105	630
10	Ø5	3	107	321

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 3	20x40	0.32	4.86	14.9	7.0	24.1	67.59
Piso 2	25x40	0.50	6.55	20.0	9.6	32.6	58.73
Piso 1		0.20	2.60	8.7	3.9	13.9	63.00
Total		1.03	14.01	43.5	20.5	70.6	62.35

P17

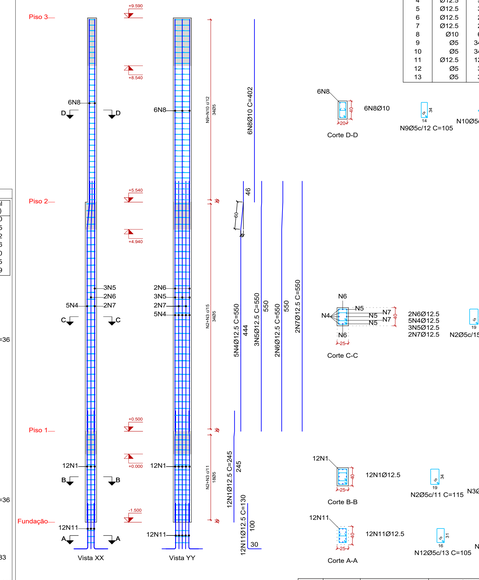


Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	6	245	1470
2	Ø5	47	105	4935
3	Ø5	47	36	1692
4	Ø12.5	6	501	3006
5	Ø12.5	6	125	750
6	Ø5	3	95	285
7	Ø5	3	33	99

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 2	30x30	0.45	6.05	29.0	7.5	40.2	80.47
Piso 1		0.18	2.40	14.2	2.9	18.8	95.00
Total		0.63	8.45	43.1	10.4	59.0	84.60

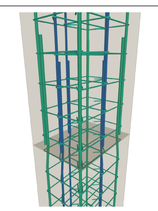
P18



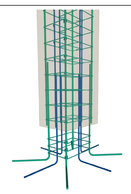
Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
1	Ø12.5	12	245	2940
2	Ø5	52	115	5980
3	Ø5	52	83	4316
4	Ø12.5	5	550	2750
5	Ø12.5	3	550	1650
6	Ø12.5	2	550	1100
7	Ø12.5	2	550	1100
8	Ø10	6	402	2412
9	Ø5	34	105	3570
10	Ø5	34	26	884
11	Ø12.5	12	130	1560
12	Ø5	3	105	315
13	Ø5	3	28	84

Escala 1:50

Planta	Dimensão (cm)	Concreto		Armaduras CA-50 e CA-60			Taxa (kg/m3)
		Tipo: C30, em geral Cobrimento: 3 cm		Longitudinal (kg)	Estribos (kg)	Total +10 % (kg)	
		Volume (m3)	Fôrmas (m2)				
Piso 3	20x40	0.32	4.86	14.9	7.0	24.1	67.59
Piso 2	25x40	0.50	6.55	63.6	10.6	81.6	147.22
Piso 1		0.20	2.60	28.3	5.6	37.3	169.50
Total		1.03	14.01	106.8	23.2	143.0	126.46



PERSPECTIVA 3D - TRANSPASSE ARMADURAS



PERSPECTIVA 3D - ARRANQUE PILARES

Axial:t

nØxx(aa)

aa

nØxx(aa+bb+cc)

cc

aa bb

MUNICÍPIO DE ARARANGUÁ Terra nossa

PREFEITURA MUNICIPAL DE ARARANGUA - SC
SECRETARIA DE OBRAS, VIAÇÃO E SERVIÇOS URBANOS
ADM. CESAR A. CESAR / CRISTIANO S. COSTA

UTILIZE O LEITOR DE QR CODE E ACESSE A MODELAGEM 3D DA ESTRUTURA

Projeto:

ESTRUTURAL - CONCRETO ARMADO

Prancha: 10 / 20

OBRA: Escola de Formação de Professores do Mun. de Araranguá

End.: Rua Giácomo Antônio Mazzuco, Cidade Alta, Araranguá/SC

Assunto:

- Detalhamentos de Pilares, P14 ao P29

Colaboradores:
- Michel Vieira do Canto | Eng. Civil Crea/SC 100827-6
- Isabella Bilésimo Colodel | Eng. Civil (em formação)
- Michelly Gaudino | Eng. Civil (em formação)

Revisão: R00 17/11/2025

Escala: INDICADA

Responsável Técnico:

Luis Fernando Klar Serrano
Eng. Civil Crea/SC 59257-2
KS ENGENHARIA LTDA

Assinado de forma digital por LUIS FERNANDO KLAR SERRANO:05574000900
Dados: 2025.11.20 17:53:22 -03'00'

Proprietário:

Município de Araranguá
CNPJ Nº. 82.911.249/0001-13

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