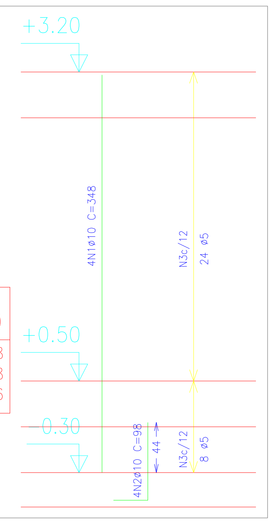
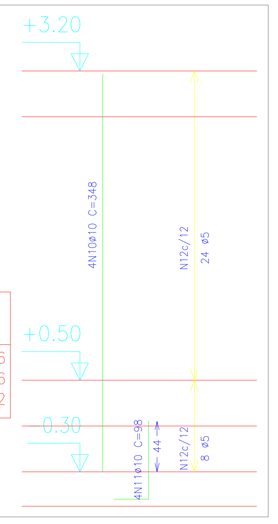
P1=P14=P39=P52



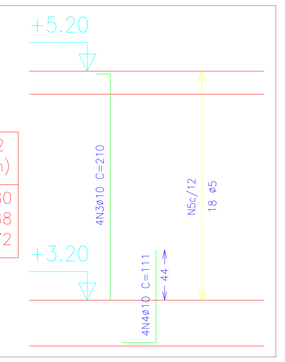
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 4 (cm)
CA-50-A	1	ø10	4	348	1392	5568
"	2	ø10	4	98	392	1568
CA-60-B	3	ø5	32	72	2304	9216

P17=P18=P27=P28=P41 P51=P66=P67



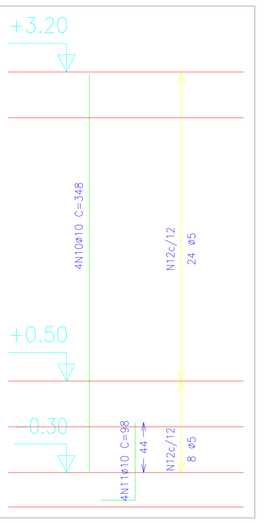
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 8 (cm)
CA-50-A	10	ø10	4	348	1392	11136
"	11	ø10	4	98	392	3136
CA-60-B	12	ø5	32	52	1664	13312

P68=P69



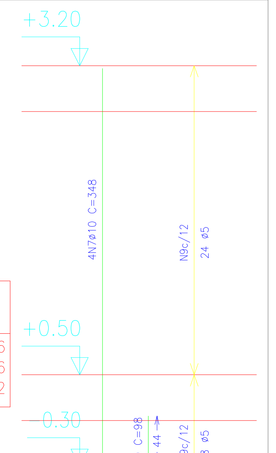
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 2 (cm)
CA-50-A	3	ø10	4	210	840	1680
"	4	ø10	4	111	444	888
CA-60-B	5	ø5	18	52	936	1872

P26=P38=P50



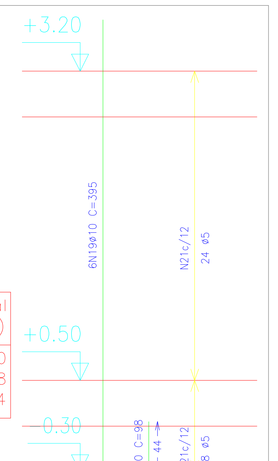
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 3 (cm)
CA-50-A	10	ø10	4	348	1392	4176
"	11	ø10	4	98	392	1176
CA-60-B	12	ø5	32	62	1984	5952

P2=P3=P4=P5=P53=P54 P55=P56



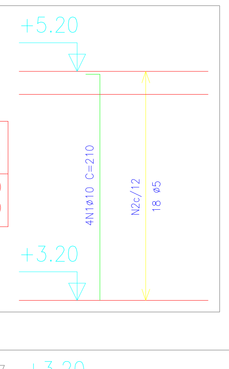
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 8 (cm)
CA-50-A	7	ø10	4	348	1392	11136
"	8	ø10	4	98	392	3136
CA-60-B	9	ø5	32	62	1984	15872

P40



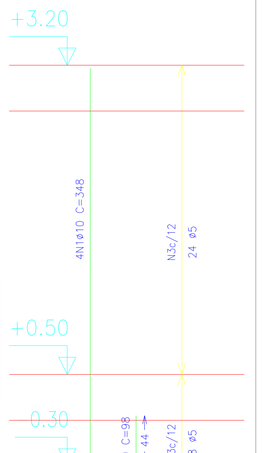
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
CA-50-A	19	ø10	6	395	2370
"	20	ø10	6	98	588
CA-60-B	21	ø5	32	52	1664

P15=P16=P40=P44=P45



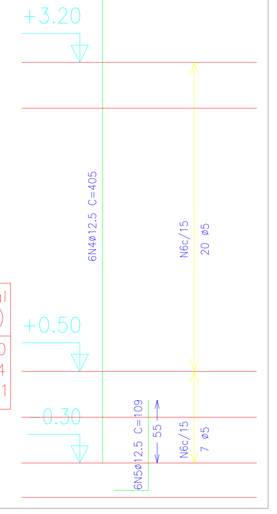
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 5 (cm)
CA-50-A	1	ø10	4	210	840	4200
CA-60-B	2	ø5	18	52	936	4680

P9=P10=P11=P12=P61=P62 P63=P64



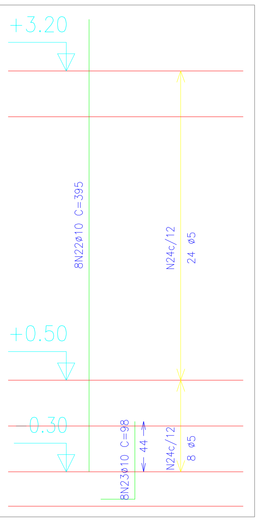
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 8 (cm)
CA-50-A	1	ø10	4	348	1392	11136
"	2	ø10	4	98	392	3136
CA-60-B	3	ø5	32	62	1984	15872

P15



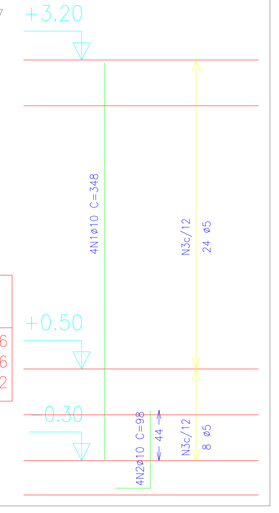
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
CA-50-A	4	ø12.5	6	405	2430
"	5	ø12.5	6	109	654
CA-60-B	6	ø5	27	53	1431

P44



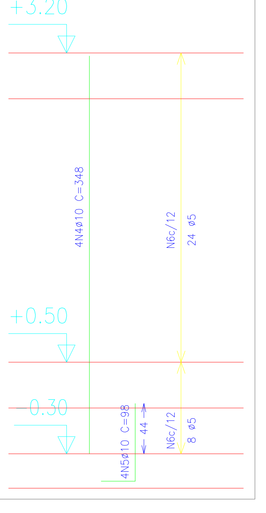
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
CA-50-A	22	ø10	8	395	3160
"	23	ø10	8	98	784
CA-60-B	24	ø5	32	52	1664

P5=P6=P7=P8=P9=P46=P47 P56=P57=P58=P59=P60 P61



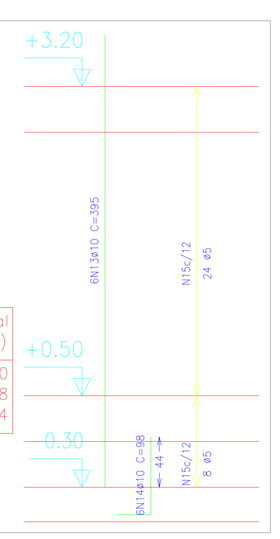
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 13 (cm)
CA-50-A	1	ø10	4	348	1392	18096
"	2	ø10	4	98	392	5096
CA-60-B	3	ø5	32	62	1984	25792

P13=P65



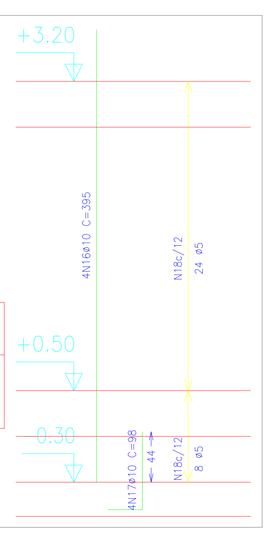
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 2 (cm)
CA-50-A	4	ø10	4	348	1392	2784
"	5	ø10	4	98	392	784
CA-60-B	6	ø5	32	72	2304	4608

P16



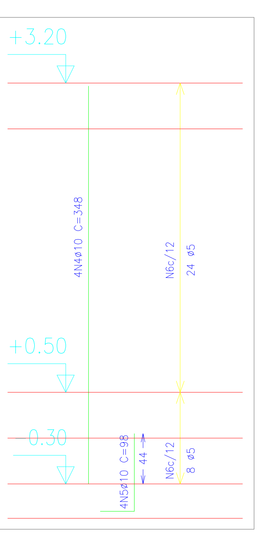
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
CA-50-A	13	ø10	6	395	2370
"	14	ø10	6	98	588
CA-60-B	15	ø5	32	52	1664

P45



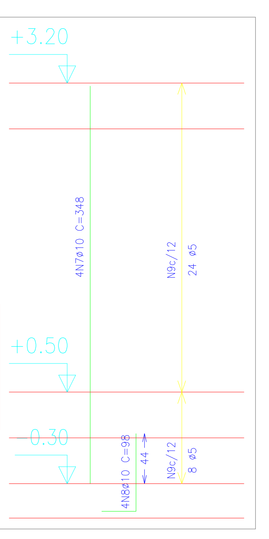
Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)
CA-50-A	16	ø10	4	395	1580
"	17	ø10	4	98	392
CA-60-B	18	ø5	32	52	1664

P18=P19=P20=P21=P22 P28=P29=P30=P31=P32 P33=P34=P41=P42=P43 P48



Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 16 (cm)
CA-50-A	4	ø10	4	348	1392	22272
"	5	ø10	4	98	392	6272
CA-60-B	6	ø5	32	52	1664	26624

P22=P23=P24=P25=P33 P34=P35=P36=P37=P48 P49



Aço	Pos.	Diam.	Q.	Comp. (cm)	Total (cm)	x 11 (cm)
CA-50-A	7	ø10	4	348	1392	15312
"	8	ø10	4	98	392	4312
CA-60-B	9	ø5	32	52	1664	18304

Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50-A (kg)	CA-60-B (kg)
P15=P16=P40=P44 P45	1	ø10	4	13	197		210	840	5.3	
	2	ø5	18		52		52	936		1.5
								Total+10%:	5.8	1.7
								(x5):	29.0	8.5
P68=P69	3	ø10	4	13	197		210	840	5.3	
	4	ø10	4	30	81		111	444	2.8	
	5	ø5	18		52		52	936		1.5
								Total+10%:	8.9	1.7
								(x2):	17.8	3.4

Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50-A (kg)	CA-60-B (kg)
P1=P14=P39=P52	1	ø10	4		348		348	1392	8.7	
	2	ø10	4	30	68		98	392	2.5	
	3	ø5	32		72		72	2304		3.6
								Total+10%:	12.3	4.0
								(x4):	49.2	16.0
P15	4	ø12.5	6		405		405	2430	23.8	
	5	ø12.5	6	30	79		109	654	6.4	
	6	ø5	27		53		53	1431		2.2
								Total+10%:	33.2	2.4
P2=P3=P4=P5=P53 P54=P55=P56	7	ø10	4		348		348	1392	8.7	
	8	ø10	4	30	68		98	392	2.5	
	9	ø5	32		62		62	1984		3.1
								Total+10%:	12.3	3.4
								(x8):	98.4	27.2
P17=P18=P27=P28 P41=P51=P66=P67	10	ø10	4		348		348	1392	8.7	
	11	ø10	4	30	68		98	392	2.5	
	12	ø5	32		52		52	1664		2.6
								Total+10%:	12.3	2.9
								(x8):	98.4	23.2
P16	13	ø10	6		395		395	2370	14.9	
	14	ø10	6	30	68		98	588	3.7	
	15	ø5	32		52		52	1664		2.6
								Total+10%:	20.5	2.9
P45	16	ø10	4		395		395	1580	9.9	
	17	ø10	4	30	68		98	392	2.5	
	18	ø5	32		52		52	1664		2.6
								Total+10%:	13.6	2.9
P40	19	ø10	6		395		395	2370	14.9	
	20	ø10	6	30	68		98	588	3.7	
	21	ø5	32		52		52	1664		2.6
								Total+10%:	20.5	2.9
P44	22	ø10	8		395		395	3160	19.8	
	23	ø10	8	30	68		98	784	4.9	
	24	ø5	32		52		52	1664		2.6
								Total+10%:	27.2	2.9
P5=P6=P7=P8=P9 P46=P47=P56=P57 P58=P59=P60=P61	1	ø10	4		348		348	1392	8.7	
	2	ø10	4	30	68		98	392	2.5	
	3	ø5	32		62		62	1984		3.1
								Total+10%:	12.3	3.4
								(x13):	159.9	44.2
P18=P19=P20=P21 P22=P28=P29=P30 P31=P32=P33=P34 P41=P42=P43=P48	4	ø10	4		348		348	1392	8.7	
	5	ø10	4	30	68		98	392	2.5	
	6	ø5	32		52		52	1664		2.6
								Total+10%:	12.3	2.9
								(x16):	196.8	46.4
P9=P10=P11=P12 P61=P62=P63=P64	1	ø10	4		348		348	1392	8.7	
	2	ø10	4	30	68		98	392	2.5	
	3	ø5	32		62		62	1984		3.1
								Total+10%:	12.3	3.4
								(x8):	98.4	27.2
P13=P65	4	ø10	4		348		348	1392	8.7	
	5	ø10	4	30	68		98	392	2.5	
	6	ø5	32		72		72	2304		3.6
								Total+10%:	12.3	4.0
								(x2):	24.6	8.0
P22=P23=P24=P25 P33=P34=P35=P36 P37=P48=P49	7	ø10	4		348		348	1392	8.7	
	8	ø10	4	30	68		98	392	2.5	
	9	ø5	32		52		52	1664		2.6
								Total+10%:	12.3	2.9
								(x11):	135.3	31.9
P26=P38=P50	10	ø10	4		348		348	1392	8.7	
	11	ø10	4	30	68		98	392	2.5	
	12	ø5	32		62		62	1984		3.1
								Total+10%:	12.3	3.4
								(x3):	36.9	10.2

Resumo Aço Pisos 1 até 3 Pilares	Comp. total (m)	Peso+10% (kg)
CA-50-A	1.519,2	1.061,0
CA-60-B ø5	1.554,2	269,0
Total	3.073,4	

C L P
ENGENHARIA E PROJETOS LTDA

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CNPJ 12.166.504/0001-28
RUA EDMIRTO SANTOS, 70 - CHARQUEADAS - RS
ENG.CIVIL: JOÃO BATISTA COUTO - CREA 42.029 - RS
clpengenharia@gmail.com

UNIDADE BÁSICA DE SAÚDE DA FAMÍLIA

ENDEREÇO: Rua Quintino Bocaiúva nº 375 Vila São Miguel - Rio Grande - RS

PROPRIETÁRIO: PREFEITURA MUNICIPAL DE RIO GRANDE

RESP. TÉCNICOS: ENGº CIVIL JOÃO BATISTA COUTO CREA 42.029

DATA: JUNHO 2012

ESCALA: 1:50

DESENHO: João

PROJETO ESTRUTURAL

PLANTA DE PILARES

PRANCHA: 2/8