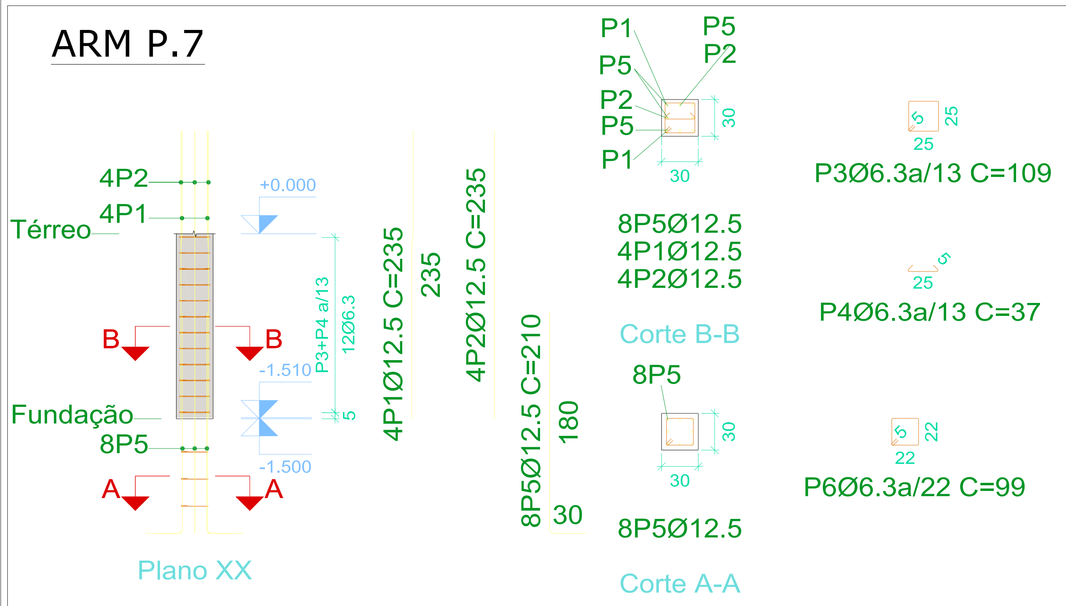
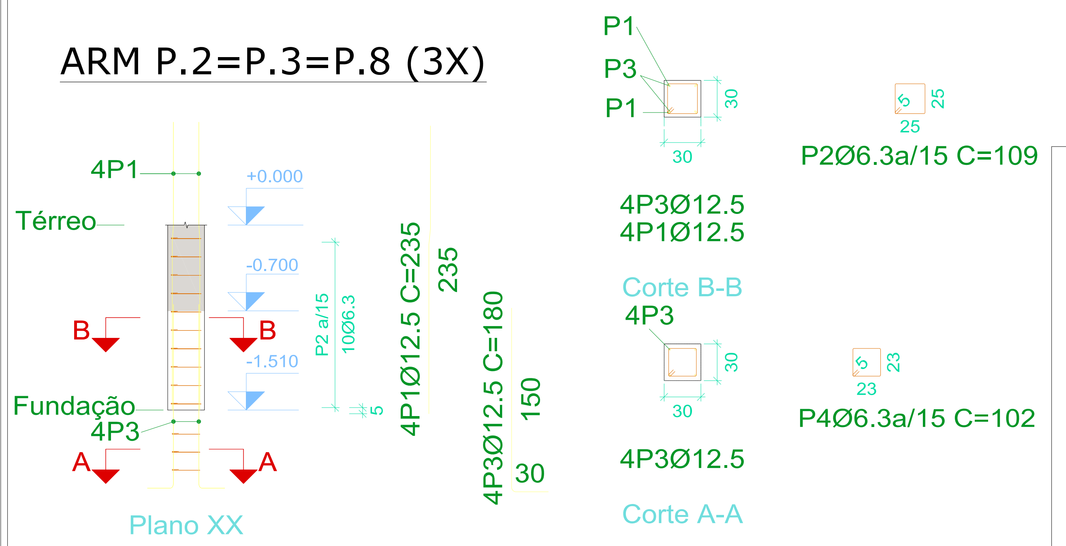
ARM P.7



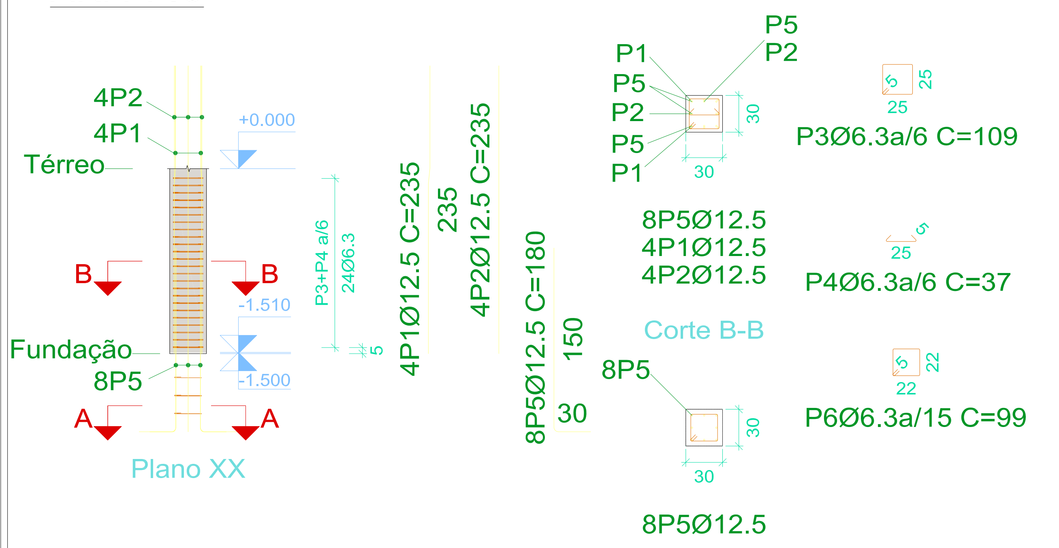
Elemento	Pos.	Diâm.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P7	1	Ø12.5	4	139 13 84	235	940	9.1	
	2	Ø12.5	4	235	235	940	9.1	
	3	Ø6.3	12	25 5 25	109	1308	3.2	
	4	Ø6.3	12	5 25	37	444	1.1	
	5	Ø12.5	8	30 180	210	1680	16.2	
	6	Ø6.3	3	22 5 22	99	297	0.7	
						Total+10%:	43.3	
P8=P2=P3	1	Ø12.5	4	139 13 84	235	940	9.1	
	2	Ø6.3	10	25 5 25	109	1090	2.7	
	3	Ø12.5	4	30 150	180	720	6.9	
	4	Ø6.3	3	23 5 23	102	306	0.7	
						Total+10%:	21.3	
						(x3):	63.9	
Recobrimento: 2.5 cm						Ø6.3:	16.6	0.0
						Ø12.5:	90.6	0.0
						Total:	107.2	0.0

ARM P.2=P.3=P.8 (3X)

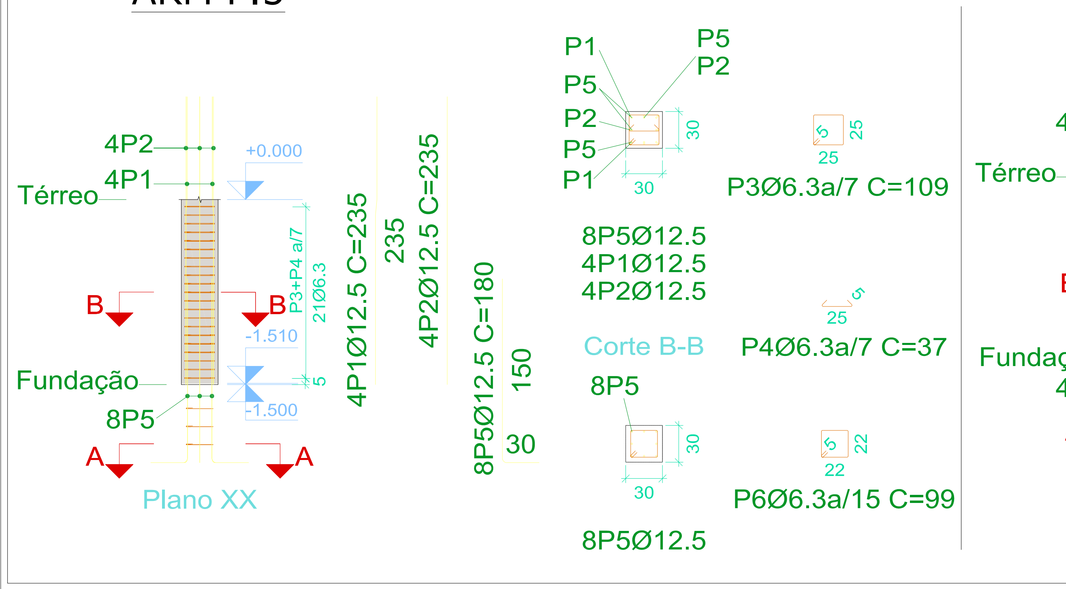


Elemento	Pos.	Diâm.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P6	1	Ø12.5	4	139 13 84	235	940	9.1	
	2	Ø12.5	4	235	235	940	9.1	
	3	Ø6.3	24	25 5 25	109	2616	6.4	
	4	Ø6.3	24	5 25	37	888	2.2	
	5	Ø12.5	8	30 150	180	1440	13.9	
	6	Ø6.3	3	22 5 22	99	297	0.7	
						Total+10%:	45.5	
P5	1	Ø12.5	4	139 13 84	235	940	9.1	
	2	Ø12.5	4	235	235	940	9.1	
	3	Ø6.3	21	25 5 25	109	2289	5.6	
	4	Ø6.3	21	5 25	37	777	1.9	
	5	Ø12.5	8	30 150	180	1440	13.9	
	6	Ø6.3	3	22 5 22	99	297	0.7	
						Total+10%:	44.3	
P4=P1	1	Ø12.5	4	139 13 84	235	940	9.1	
	2	Ø6.3	10	25 5 25	109	1090	2.7	
	3	Ø12.5	4	30 150	180	720	6.9	
	4	Ø6.3	3	23 5 23	102	306	0.7	
						Total+10%:	21.3	
						(x2):	42.6	
Recobrimento: 2.5 cm						Ø6.3:	26.6	0.0
						Ø12.5:	105.8	0.0
						Total:	132.4	0.0

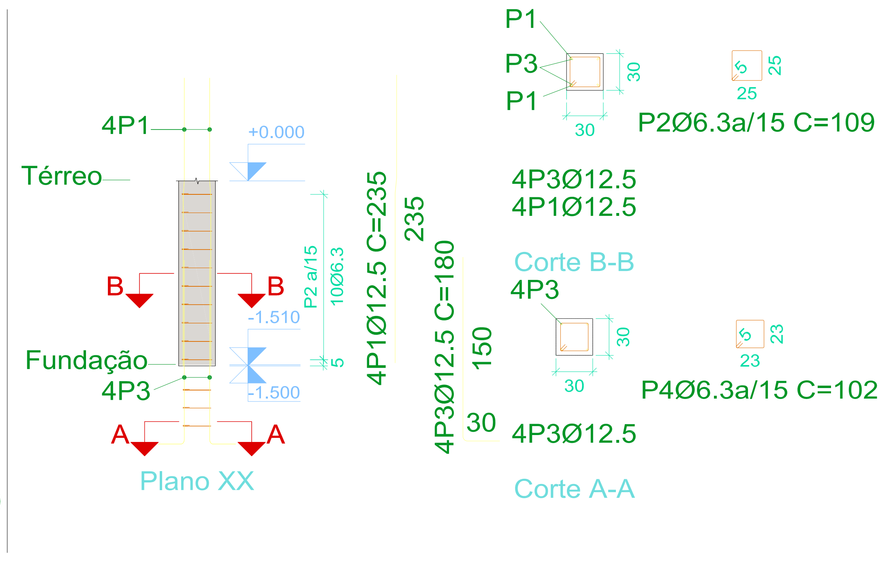
ARM P.6



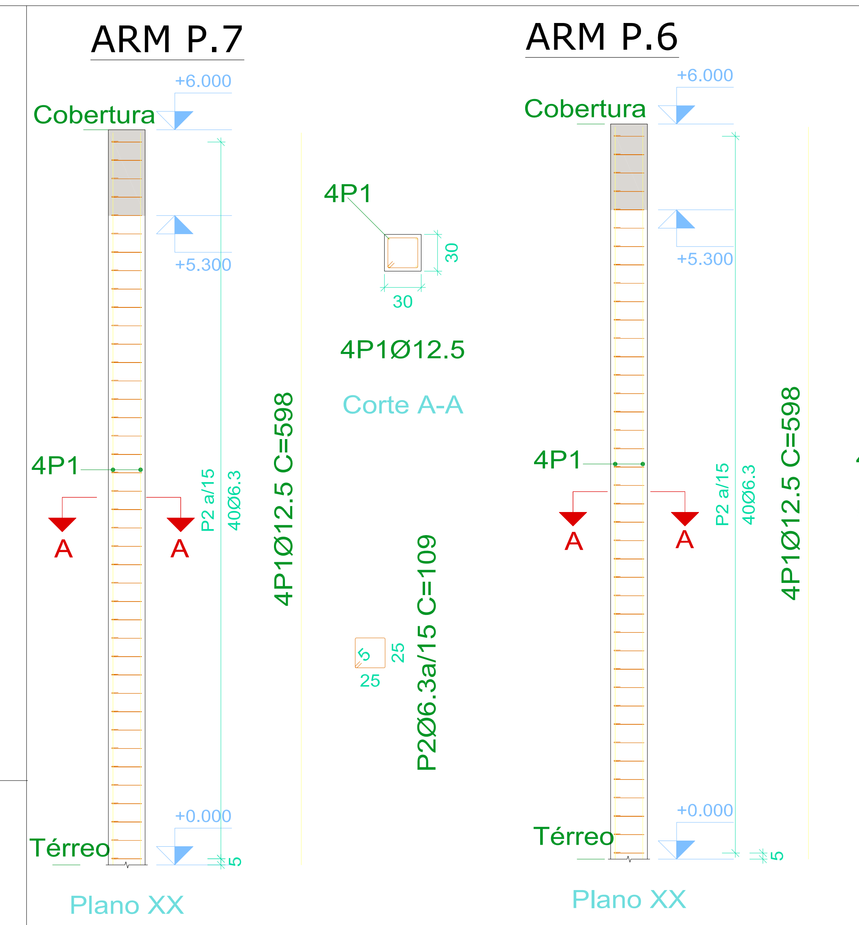
ARM P.5



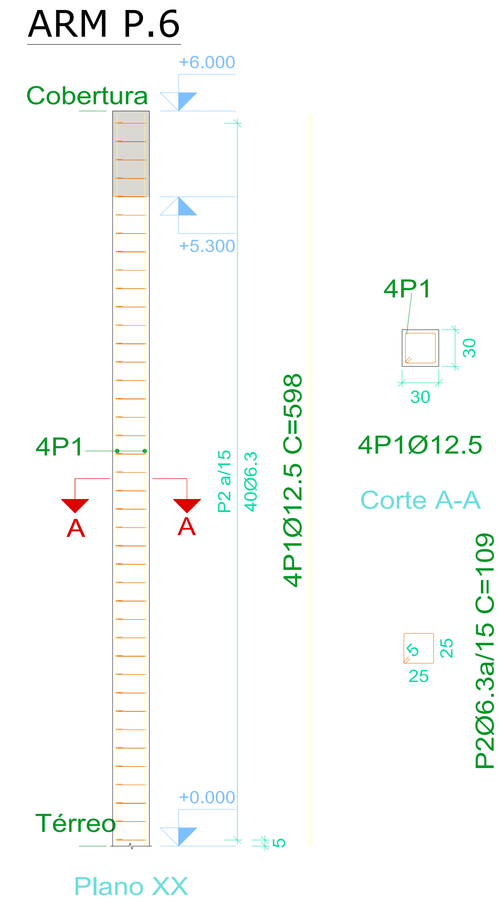
ARM P.1=P.4 (2X)



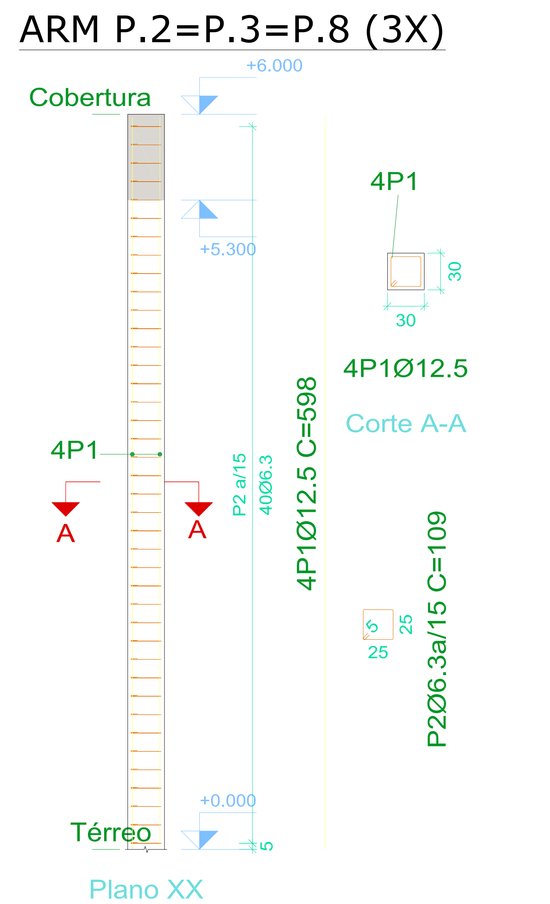
ARM P.7



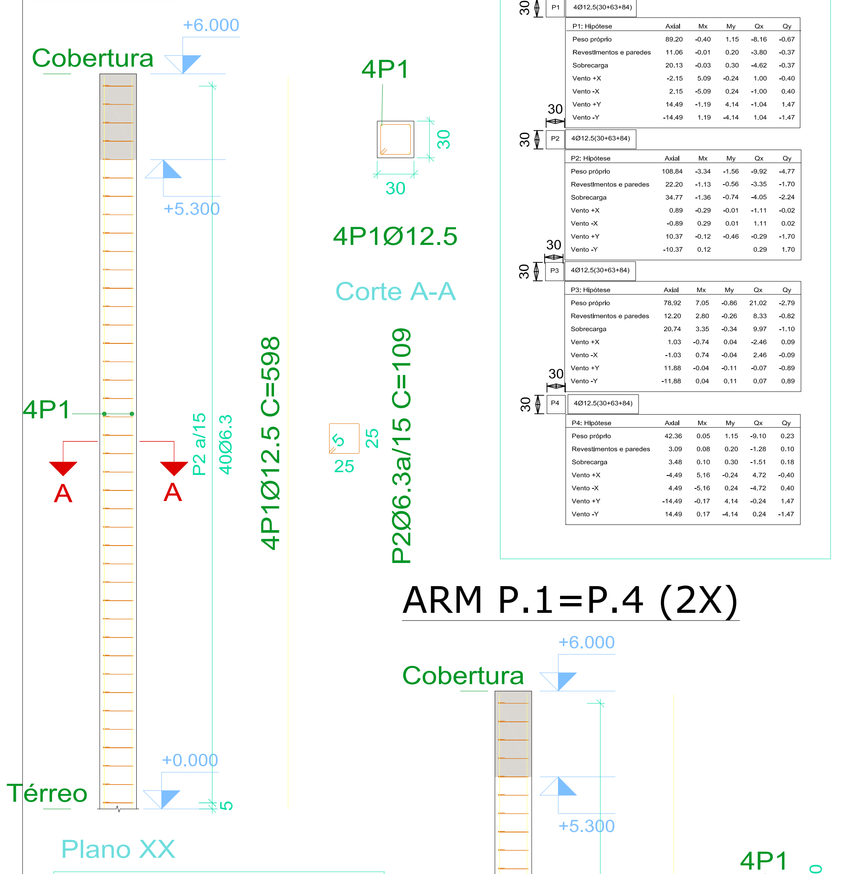
ARM P.6



ARM P.2=P.3=P.8 (3X)



ARM P.5



P1: Hipótese	Axial	Mx	My	Qx	Qy
Peso próprio	89.20	-0.40	1.15	-8.16	-0.67
Revestimentos e paredes	11.06	-0.01	0.20	-3.80	-0.37
Sobrecarga	20.13	-0.03	0.30	-4.62	-0.37
Vento +X	-2.15	5.09	-0.24	1.00	-0.40
Vento -X	2.15	-5.09	0.24	-1.00	0.40
Vento +Y	14.49	-1.19	4.14	-1.04	1.47
Vento -Y	-14.49	1.19	-4.14	1.04	-1.47

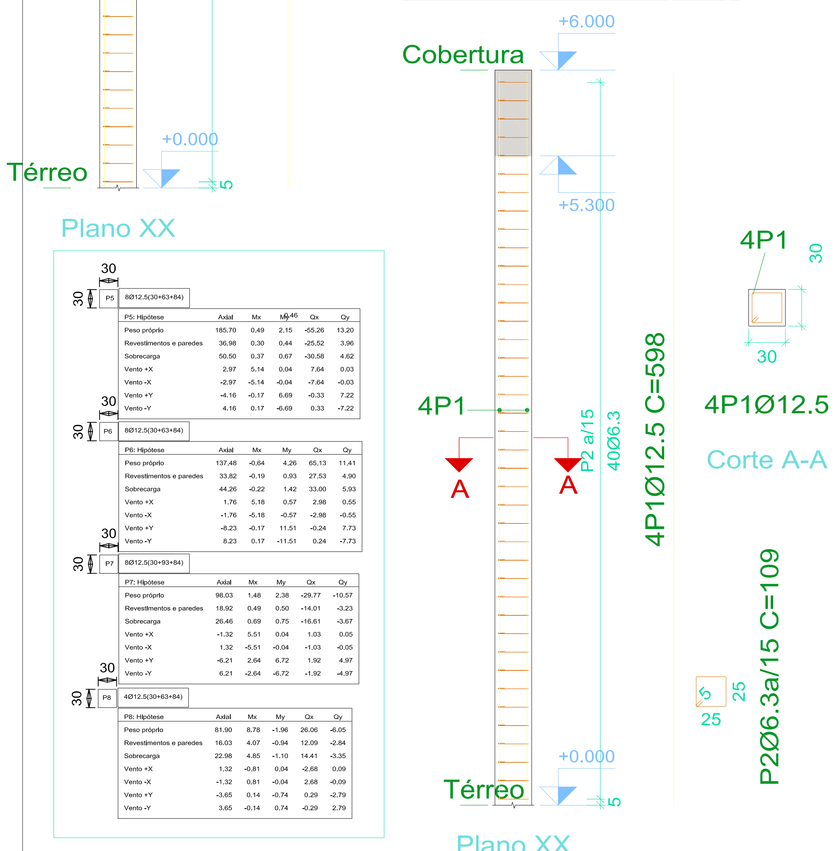
P2: Hipótese	Axial	Mx	My	Qx	Qy
Peso próprio	108.84	-3.34	-1.56	-9.92	-4.77
Revestimentos e paredes	22.20	-1.13	-0.56	-3.35	-1.70
Sobrecarga	34.77	-1.36	-0.74	-4.05	-2.24
Vento +X	0.69	-0.29	-0.01	-1.11	-0.02
Vento -X	-0.69	0.29	0.01	1.11	0.02
Vento +Y	10.37	-0.12	-0.46	-0.29	-1.70
Vento -Y	-10.37	0.12		0.29	1.70

P3: Hipótese	Axial	Mx	My	Qx	Qy
Peso próprio	78.92	7.05	-0.86	21.02	-2.79
Revestimentos e paredes	12.20	2.80	-0.26	8.33	-0.82
Sobrecarga	20.74	3.35	-0.34	9.97	-1.10
Vento +X	1.03	-0.74	0.04	-2.46	0.09
Vento -X	-1.03	0.74	-0.04	2.46	-0.09
Vento +Y	11.88	-0.84	-0.11	-0.07	-0.89
Vento -Y	-11.88	0.84	0.11	0.07	0.89

P4: Hipótese	Axial	Mx	My	Qx	Qy
Peso próprio	42.36	0.05	1.15	-0.10	0.23
Revestimentos e paredes	3.69	0.08	0.20	-1.28	0.10
Sobrecarga	3.48	0.10	0.30	-1.51	0.18
Vento +X	-6.49	5.16	-0.24	4.72	-0.40
Vento -X	6.49	-5.16	0.24	-4.72	0.40
Vento +Y	-14.49	-0.17	4.14	-0.24	1.47
Vento -Y	14.49	0.17	-4.14	0.24	-1.47

Elemento	Pos.	Diâm.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P7	1	Ø12.5	4	598	598	2392	23.0	
	2	Ø6.3	40	25 5 25	109	4360	10.7	
						Total+10%:	37.1	
P8=P2=P3	1	Ø12.5	4	598	598	2392	23.0	
	2	Ø6.3	40	25 5 25	109	4360	10.7	
						Total+10%:	37.1	
						(x3):	111.3	
P6	1	Ø12.5	4	598	598	2392	23.0	
	2	Ø6.3	40	25 5 25	109	4360	10.7	
						Total+10%:	37.1	
Recobrimento: 2.5 cm						Ø6.3:	59.0	0.0
						Ø12.5:	126.5	0.0
						Total:	185.5	0.0

ARM P.1=P.4 (2X)



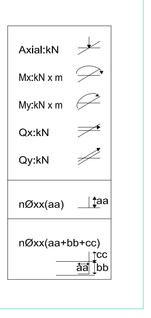
P5: Hipótese	Axial	Mx	My	Qx	Qy
Peso próprio	185.70	0.49	2.15	-55.26	13.20
Revestimentos e paredes	36.98	0.30	0.44	-25.52	3.96
Sobrecarga	50.50	0.37	0.67	-30.58	4.62
Vento +X	2.97	5.14	0.04	7.64	0.03
Vento -X	-2.97	-5.14	-0.04	-7.64	-0.03
Vento +Y	-4.16	-0.17	8.69	-0.33	7.22
Vento -Y	4.16	0.17	-8.69	0.33	-7.22

P6: Hipótese	Axial	Mx	My	Qx	Qy
Peso próprio	137.48	-0.64	4.26	65.13	11.41
Revestimentos e paredes	33.82	-0.10	0.93	27.53	4.90
Sobrecarga	44.26	-0.22	1.42	33.00	5.93
Vento +X	1.76	5.16	0.57	2.98	0.55
Vento -X	-1.76	-5.16	-0.57	-2.98	-0.55
Vento +Y	-8.23	-0.17	11.51	-0.24	7.73
Vento -Y	8.23	0.17	-11.51	0.24	-7.73

P7: Hipótese	Axial	Mx	My	Qx	Qy
Peso próprio	98.03	1.48	2.38	-29.77	-10.57
Revestimentos e paredes	18.92	0.49	0.50	-14.01	-3.23
Sobrecarga	26.46	0.69	0.75	-16.61	-3.67
Vento +X	-1.32	5.51	0.04	1.03	0.05
Vento -X	1.32	-5.51	-0.04	-1.03	-0.05
Vento +Y	-6.21	2.64	6.72	1.92	4.97
Vento -Y	6.21	-2.64	-6.72	-1.92	-4.97

P8: Hipótese	Axial	Mx	My	Qx	Qy
Peso próprio	81.90	8.78	-1.96	26.06	-6.05
Revestimentos e paredes	16.03	4.07	-0.94	12.09	-2.84
Sobrecarga	22.98	4.85	-1.10	14.41	-3.35
Vento +X	1.32	-0.81	0.04	-2.68	0.09
Vento -X	-1.32	0.81	-0.04	2.68	-0.09
Vento +Y	-3.65	0.14	-0.74	0.29	-2.79
Vento -Y	3.65	-0.14	0.74	-0.29	2.79

Elemento	Pos.	Diâm.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P5	1	Ø12.5	4	598	598	2392	23.0	
	2	Ø6.3	40	25 5 25	109	4360	10.7	
						Total+10%:	37.1	
P4=P1	1	Ø12.5	4	598	598	2392	23.0	
	2	Ø6.3	40	25 5 25	109	4360	10.7	
						Total+10%:	37.1	
						(x2):	74.2	
Recobrimento: 2.5 cm						Ø6.3:	35.4	0.0
						Ø12.5:	75.9	0.0
						Total:	111.3	0.0



REVISÕES			
0	EMISSÃO INICIAL	14/01/2019	KBSP
REVISÃO	DESCRIÇÃO	DATA	AUBRIUA

UIE Unidade de Infraestrutura

CPS Centro Paula Souza

GOVERNO DO ESTADO DE SÃO PAULO

OBRA: CAMPUS CEETEPS EM SÃO PAULO
UNIDADE: 254 -Etec Profa Dra Doroti Quiomi Kanashiro Toyohara
LOCAL (MUNICÍPIO): RUA AMBRÓSIA DO MÉXICO, 180 - PIRITUBA
ÁREA TÉCNICA: ESTRUTURA
ESCALA: 1/25
FOLHA Nº: EST-004/011
TÍTULO:
PROJETO BÁSICO
REFEITÓRIO - ESTRUTURA
PLANTA DE ARMAÇÃO DOS PILARES 1 a 8
REFORMA
DESENHO: UIE
PROJETO: UIE
COORDENAÇÃO: UIE
OBSERVAÇÃO: CONFERIR MEDIDAS NO LOCAL
DATA: 01/04/2019
REVISÃO: R0