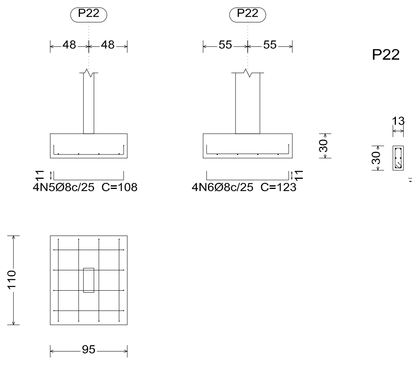
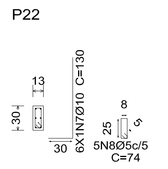
P22





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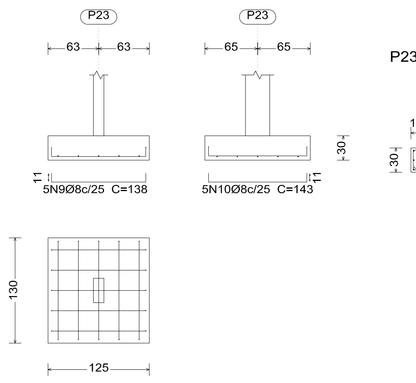

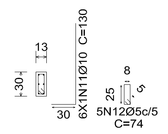

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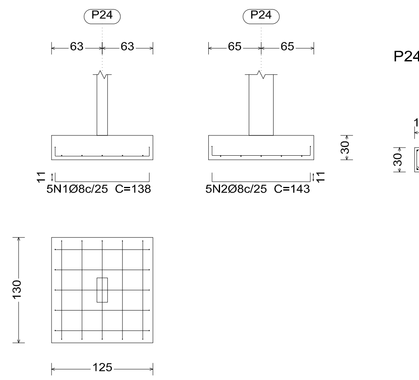

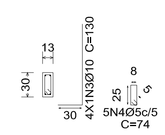

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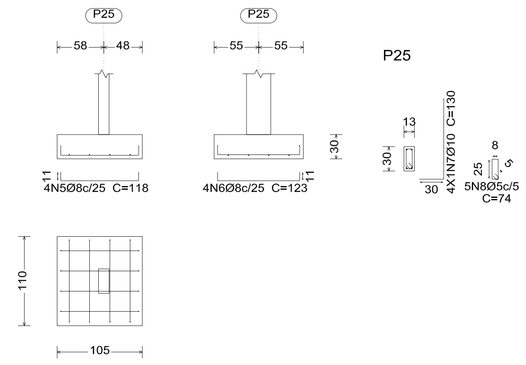

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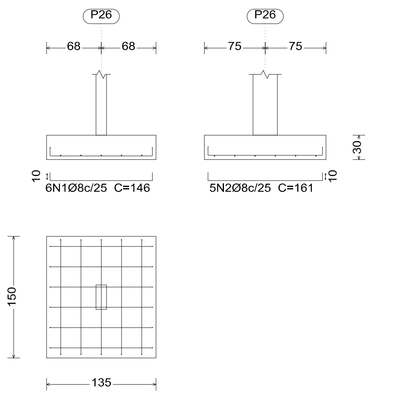

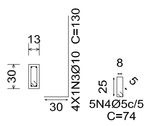

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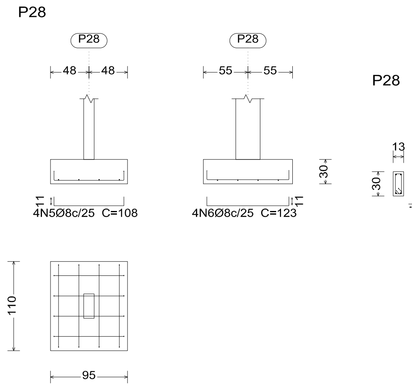
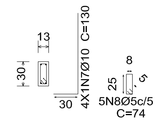
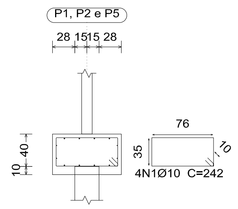
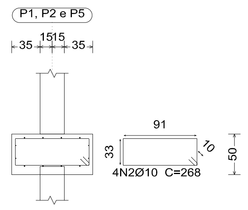


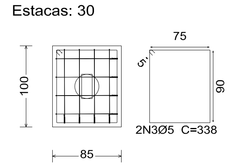


P1, P2 e P5





Estacas: 30



Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P22	5	Ø8	4	11	86	11	108	432	1.7	
	6	Ø8	4	11	101	11	123	492	1.9	
	7	Ø10	6	30	100		130	780	4.8	
	8	Ø5	5		74		74	370		0.6
								Total+10%:	9.2	0.7
P23	9	Ø8	5	11	116	11	138	690	2.7	
	10	Ø8	5	11	121	11	143	715	2.8	
	11	Ø10	6	30	100		130	780	4.8	
	12	Ø5	5		74		74	370		0.6
								Total+10%:	11.3	0.7
								Ø5:	0.0	1.4
								Ø8:	10.0	0.0
								Ø10:	10.6	0.0
								Total:	20.6	1.4

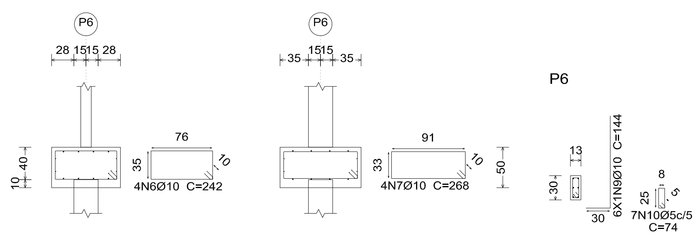
Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P24	1	Ø8	5	11	116	11	138	690	2.7	
	2	Ø8	5	11	121	11	143	715	2.8	
	3	Ø10	4	30	100		130	520	3.2	
	4	Ø5	5		74		74	370		0.6
								Total+10%:	9.6	0.7
P25	5	Ø8	4	11	96	11	118	472	1.9	
	6	Ø8	4	11	101	11	123	492	1.9	
	7	Ø10	4	30	100		130	520	3.2	
	8	Ø5	5		74		74	370		0.6
								Total+10%:	7.7	0.7
								Ø5:	0.0	1.4
								Ø8:	10.3	0.0
								Ø10:	7.0	0.0
								Total:	17.3	1.4

Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P26	1	Ø8	6	10	126	10	146	876	3.5	
	2	Ø8	5	10	141	10	161	805	3.2	
	3	Ø10	4	30	100		130	520	3.2	
	4	Ø5	5		74		74	370		0.6
								Total+10%:	10.9	0.7
P28	5	Ø8	4	11	86	11	108	432	1.7	
	6	Ø8	4	11	101	11	123	492	1.9	
	7	Ø10	4	30	100		130	520	3.2	
	8	Ø5	5		74		74	370		0.6
								Total+10%:	7.5	0.7
								Ø5:	0.0	1.4
								Ø8:	11.4	0.0
								Ø10:	7.0	0.0
								Total:	18.4	1.4

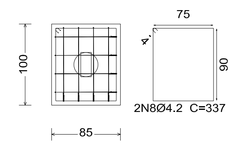
Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P1=P2=P5	1	Ø10	4		242		242	968	6.0	
	2	Ø10	4		268		268	1072	6.6	
	3	Ø5	2		338		338	676	1.1	
	4	Ø10	4	30	114		144	576	3.5	
	5	Ø5	7		74		74	518		0.8
								Total+10%:	18.9	0.9
								(x3):	56.7	2.7
P6	6	Ø10	4		242		242	968	6.0	
	7	Ø10	4		268		268	1072	6.6	
	8	Ø4.2	2		337		337	674	0.7	
	9	Ø10	4	30	114		144	864	5.3	
	10	Ø5	7		74		74	518		0.8
								Total+10%:	20.5	0.9
								Ø4.2:	0.8	0.0
								Ø5:	3.6	3.6
								Ø10:	72.8	0.0
								Total:	77.2	3.6

Elemento	Pos.	Diam.	Q.	Dob. (cm)	Reta (cm)	Dob. (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P7	1	Ø10	4		242		242	968	6.0	
	2	Ø10	4		268		268	1072	6.6	
	3	Ø5	2		338		338	676	1.1	
	4	Ø10	6	30	114		144	864	5.3	
	5	Ø5	7		74		74	518		0.8
								Total+10%:	20.9	0.9
								Ø5:	1.2	0.9
								Ø10:	19.7	0.0
								Total:	20.9	0.9

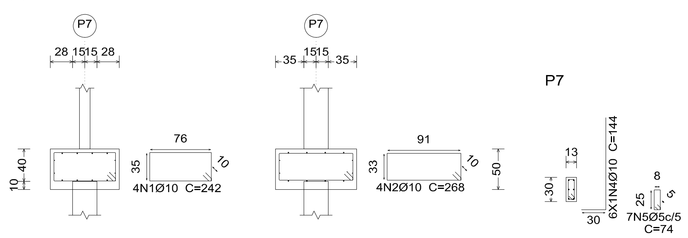
P6



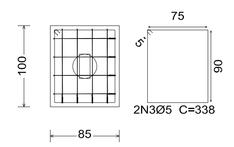
Estacas: 30



P7



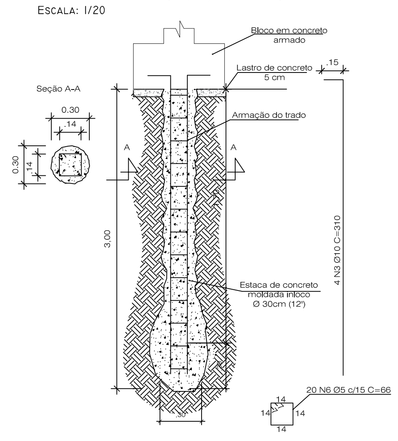
Estacas: 30



Detalhamento das sapatas
CA-50 e CA-60
Concreto: C25
Escala: 1:75

ESTACA A TRADO (TI, 2, 5, 6 E 7)

ESCALA: 1/20



Resumo Aço Fundação Detalhamento fundação		Comp. total (m)	Peso+10% (kg)	Total
CA-50	Ø4.2	6.7	1	
	Ø5	27.0	5	
	Ø8	422.7	184	
	Ø10	293.4	199	389
CA-60	Ø5	114.7	20	20
Total				409

P.M.B.M. | SECRETARIA MUNICIPAL DE PLANEJAMENTO URBANO

PROJETO ESTRUTURAL

FOLHA : 3/19

DESCRIÇÃO : DETALHAMENTO DAS SAPATAS E ESTACA A TRADO

PROPRIETÁRIO : PREFEITURA MUNICIPAL DE BARRA MANSA

LOCAL : VILA URSULINO

QUADRO DE ÁREAS

DATA: 18/11/2022

SELO DE APROVAÇÃO PMBM

SECRETÁRIO	AUTOR DO PROJETO	DESENHO
EROS DOS SANTOS	ENG.º ARLENIO P. DE OLIVEIRA CREA/RJ 2018107043	ENG.º ARLENIO P. DE OLIVEIRA
REVISÃO 1	REVISÃO 2	N º ART/RRT:
REVISÃO 3	REVISÃO 4	N º DO PROJETO:

CARIMBO

APROVAÇÃO SMPU