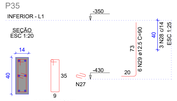
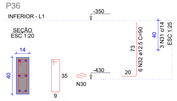
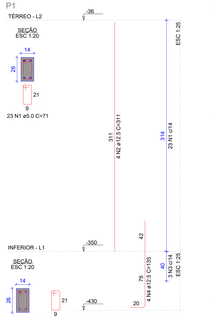
P35



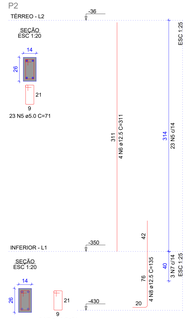
P36



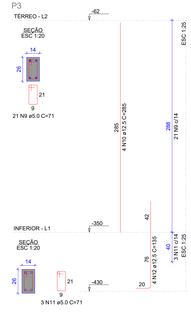
P1



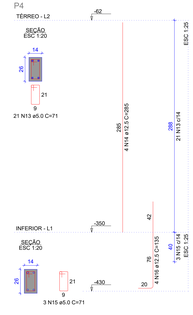
P2



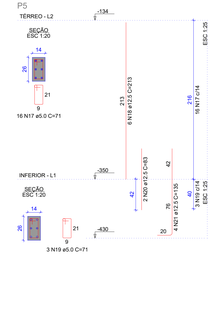
P3



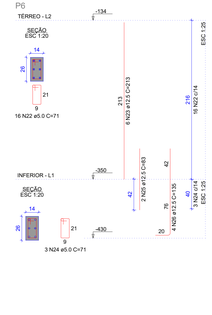
P4



P5



P6



RELAÇÃO DO AÇO

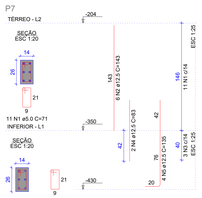
ELEMENTO	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
P1-L2	CA60	1	5.0	23	71	1633
	CA50	2	12.5	4	311	1244
P1-L1	CA60	3	5.0	3	71	213
	CA50	4	12.5	4	311	1244
P2-L2	CA50	5	12.5	4	135	540
	CA60	6	5.0	23	71	1633
P2-L1	CA50	7	12.5	4	311	1244
	CA60	7	5.0	3	71	213
P3-L2	CA50	8	12.5	4	135	540
	CA60	9	5.0	21	71	1491
P3-L1	CA50	10	12.5	4	285	1140
	CA60	11	5.0	3	71	213
P4-L2	CA50	12	12.5	4	135	540
	CA60	13	5.0	21	71	1491
P4-L1	CA50	14	12.5	4	285	1140
	CA60	15	5.0	3	71	213
P5-L2	CA50	16	12.5	4	135	540
	CA60	17	5.0	16	71	1136
P5-L1	CA50	18	12.5	6	213	1278
	CA60	19	5.0	3	71	213
P6-L2	CA50	20	12.5	2	83	166
	CA50	21	12.5	4	135	540
P6-L1	CA60	22	5.0	16	71	1136
	CA50	23	12.5	6	213	1278
P35-L1	CA50	24	12.5	2	83	166
	CA50	25	12.5	2	83	166
P36-L1	CA50	26	12.5	4	135	540
	CA60	27	5.0	3	24	72
	CA60	28	5.0	3	99	297
	CA60	29	5.0	3	99	297
P56-L1	CA60	30	5.0	3	99	297
	CA60	31	5.0	3	99	297
	CA50	32	12.5	6	90	540

RESUMO DO AÇO

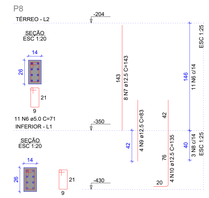
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	PESO + 10% (kg)
CA50	12.5	119.8	11	126.9
CA60	5.0	105.4	-	17.9
PESO TOTAL (kg)				
CA50	126.9			
CA60	17.9			

Volume de concreto (C-30) = 0.73 m³
Área de forma = 15.87 m²

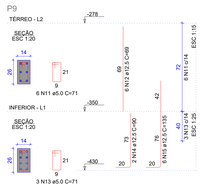
P7



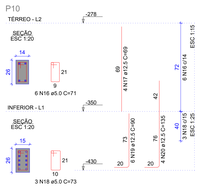
P8



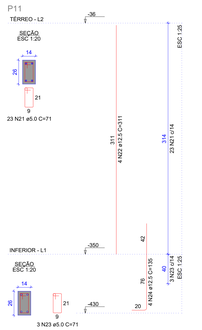
P9



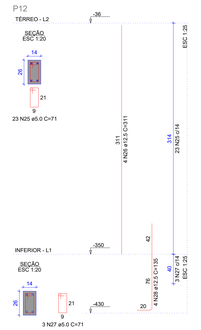
P10



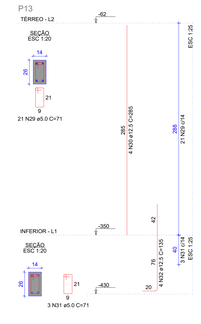
P11



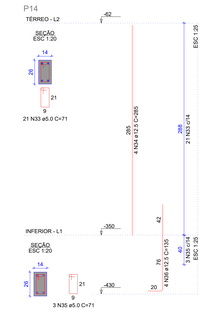
P12



P13



P14



RELAÇÃO DO AÇO

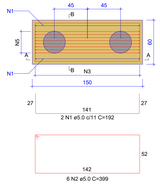
ELEMENTO	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
P7-L2	CA60	1	5.0	11	71	781
	CA50	2	12.5	6	143	858
P7-L1	CA60	3	5.0	3	71	213
	CA50	4	12.5	4	83	166
P8-L2	CA50	5	12.5	4	135	540
	CA60	6	5.0	11	71	781
P8-L1	CA50	7	12.5	8	143	1144
	CA60	8	5.0	3	71	213
P9-L2	CA60	9	12.5	4	83	332
	CA50	10	12.5	4	135	540
P9-L1	CA50	11	12.5	4	69	276
	CA50	12	12.5	6	69	414
	CA60	13	5.0	3	71	213
	CA60	14	12.5	2	90	180
P10-L2	CA50	15	12.5	6	135	810
	CA60	16	5.0	6	71	426
P10-L1	CA50	17	12.5	4	69	276
	CA50	18	12.5	6	69	414
	CA60	19	12.5	6	90	540
P11-L2	CA50	20	12.5	4	135	540
	CA60	21	5.0	23	71	1633
P11-L1	CA50	22	12.5	4	311	1244
	CA60	23	5.0	3	71	213
P12-L2	CA60	24	12.5	4	135	540
	CA60	25	5.0	23	71	1633
P12-L1	CA60	26	12.5	4	311	1244
	CA60	27	5.0	3	71	213
P13-L2	CA50	28	12.5	4	135	540
	CA60	29	5.0	21	71	1491
P13-L1	CA50	30	12.5	4	264	1056
	CA60	31	5.0	3	71	213
P14-L2	CA50	32	12.5	4	135	540
	CA60	33	5.0	21	71	1491
P14-L1	CA50	34	12.5	4	265	1140
	CA60	35	5.0	3	71	213
	CA50	36	12.5	4	135	540

RESUMO DO AÇO

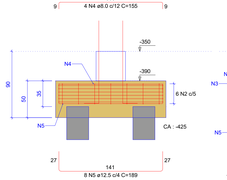
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	PESO + 10% (kg)
CA50	12.5	132.7	13	140.6
CA60	5.0	103.7	-	17.6
PESO TOTAL (kg)				
CA50	140.6			
CA60	17.6			

Volume de concreto (C-30) = 0.71 m³
Área de forma = 15.69 m²

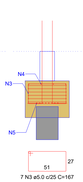
B45
2xC30
PLANTA
ESC 1:25



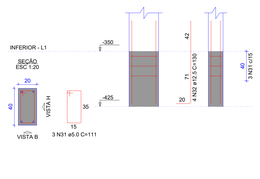
CORTE A-A
ESC 1:25



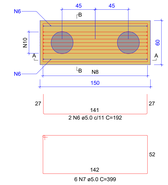
CORTE B-B
ESC 1:25



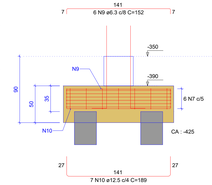
P45



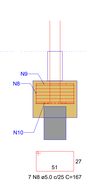
B46
2xC30
PLANTA
ESC 1:25



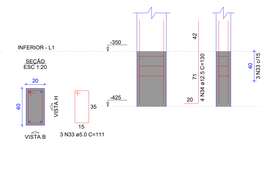
CORTE A-A
ESC 1:25



CORTE B-B
ESC 1:25



P46



RELAÇÃO DO AÇO

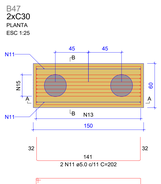
ELEMENTO	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
B45	CA60	1	5.0	2	192	384
	CA50	2	5.0	6	399	2394
	CA60	3	5.0	7	167	1169
	CA50	4	12.5	4	155	620
B46	CA50	5	12.5	8	189	1512
	CA60	6	5.0	2	192	384
	CA50	7	5.0	6	399	2394
	CA60	8	5.0	7	167	1169
B47	CA60	9	6.3	6	152	912
	CA50	10	12.5	7	189	1323
	CA60	11	5.0	2	202	404
	CA60	12	5.0	6	399	2394
	CA60	13	5.0	7	167	1169
	CA60	14	6.3	6	152	912
	CA50	15	12.5	7	199	1393
2xB53	CA60	16	5.0	4	192	768
	CA60	17	5.0	10	399	3990
	CA60	18	5.0	10	167	1670
	CA60	19	6.3	14	152	2128
	CA50	20	12.5	12	189	2268
B54	CA60	21	5.0	2	192	384
	CA60	22	5.0	5	399	1995
	CA60	23	5.0	7	167	1169
	CA60	24	6.3	5	152	760
	CA50	25	12.5	6	189	1134
B55	CA60	26	5.0	2	192	384
	CA60	27	5.0	5	399	1995
	CA60	28	5.0	4	150	600
	CA60	29	5.0	7	167	1169
	CA50	30	12.5	5	199	1741
	CA60	31	5.0	3	111	333
P45	CA50	32	12.5	4	130	520
P46	CA60	33	5.0	3	111	333
	CA50	34	12.5	4	130	520
P47	CA60	35	5.0	3	111	333
	CA50	36	12.5	4	135	540
2xP52	CA60	37	5.0	8	130	1040
	CA50	38	12.5	8	130	1040
P54	CA60	39	5.0	3	111	333
	CA50	40	12.5	4	130	520
P55	CA60	41	5.0	3	111	333
	CA50	42	12.5	4	130	520

RESUMO DO AÇO

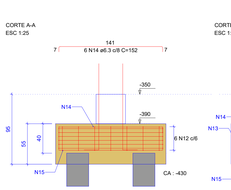
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	PESO + 10% (kg)
CA50	6.3	41	1	11
	8.0	6.2	1	2.7
	10.0	26.6	3	18
	12.5	101.6	10	107.6
CA60	5.0	290.5	-	49.3
PESO TOTAL (kg)				
CA50	139.4			
CA60	49.3			

Volume de concreto (C-30) = 3.27 m³
Área de forma = 18.27 m²

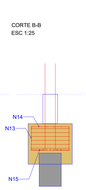
B47
2xC30
PLANTA
ESC 1:25



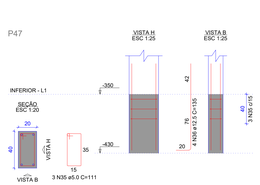
CORTE A-A
ESC 1:25



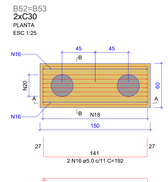
CORTE B-B
ESC 1:25



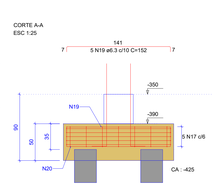
P47



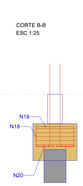
B52=B53
2xC30
PLANTA
ESC 1:25



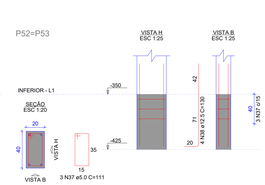
CORTE A-A
ESC 1:25



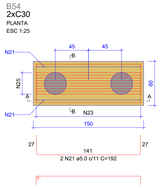
CORTE B-B
ESC 1:25



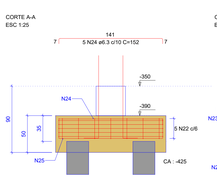
P52=P53



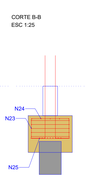
B54
2xC30
PLANTA
ESC 1:25



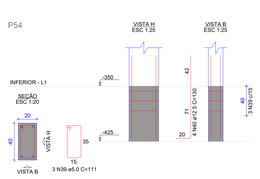
CORTE A-A
ESC 1:25



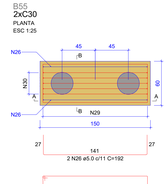
CORTE B-B
ESC 1:25



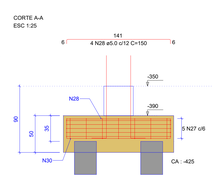
P54



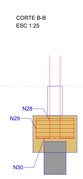
B55
2xC30
PLANTA
ESC 1:25



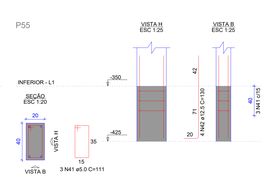
CORTE A-A
ESC 1:25



CORTE B-B
ESC 1:25



P55



RELAÇÃO DO AÇO

ELEMENTO	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
B45	CA60	1	5.0	2	192	384
	CA50	2	5.0	6	399	2394
	CA60	3	5.0	7	167	1169
	CA50	4	12.5	4	155	620
B46	CA50	5	12.5	8	189	1512
	CA60	6	5.0	2	192	384
	CA50	7	5.0	6	399	2394
	CA60	8	5.0	7	167	1169
B47	CA60	9	6.3	6	152	912
	CA50	10	12.5	7	189	1323
	CA60	11	5.0	2	202	404
	CA60	12	5.0	6	399	2394
	CA60	13	5.0	7	167	1169
	CA60	14	6.3	6	152	912
	CA50	15	12.5	7	199	1393
2xB53	CA60	16	5.0	4	192	768
	CA60	17	5.0	10	399	3990
	CA60	18	5.0	10	167	1670
	CA60	19	6.3	14	152	2128
	CA50	20	12.5	12	189	2268
B54	CA60	21	5.0	2	192	384
	CA60	22	5.0	5	399	1995
	CA60	23	5.0	7	167	1169
	CA60	24	6.3	5	152	760
	CA50	25	12.5	6	189	1134
B55	CA60	26	5.0	2	192	384
	CA60	27	5.0	5	399	1995
	CA60	28	5.0	4	150	600
	CA60	29	5.0	7	167	1169
	CA50	30	12.5	5	199	1741
	CA60	31	5.0	3	111	333
P45	CA50	32	12.5	4	130	520
P46	CA60	33	5.0	3	111	333
	CA50	34	12.5	4	130	520
P47	CA60	35	5.0	3	111	333
	CA50	36	12.5	4	135	540
2xP52	CA60	37	5.0	8	130	1040
	CA50	38	12.5	8	130	1040
P54	CA60	39	5.0	3	111	333
	CA50	40	12.5	4	130	520
P55	CA60	41	5.0	3	111	333
	CA50	42	12.5	4	130	520

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	PESO + 10% (kg)
CA50	12.5	132.7	13	140.6
CA60	5.0	103.7	-	17.6
PESO TOTAL (kg)				
CA50	140.6			
CA60	17.6			

NOTAS IMPORTANTES

A) Em caso de dúvidas consultar o calculista.

B) Verificar a limpeza das formas ou partes da estrutura em contato com a concretagem.

C) Dobrar as barras conforme a NBR 6118: 2023.

D) O C.G. dos blocos deve coincidir com o C.G. das estacas e/ou de cargas.

E) Especificações do concreto para sapatas:

fck > = 30 MPa;
Slump 12 + ou – 3 cm;
Cimento a ser empregado: CP II – F – 30.

F) Especificações do concreto para vigas de travamento:

fck > = 30 MPa;
Slump 12 + ou – 3 cm;
Cimento a ser empregado: CP II – F – 32.

G) A Fundação deve ser levantada e informada à PROJEPLUS para a verificação de possíveis alterações de projeto devido a excentricidades de locação das mesmas.

H) As medidas apresentadas no projeto estão em cm, exceto quando especificado.

I) Profundidade das estacas: Conforme projeto de Locação.

J) Espaçamento entre os estribos: Conforme Projeto de Locação

K) Cobrimento da armadura= Conforme Projeto.

L) Na fabricação dos pilares pré moldados, verificar comprimento de embutimento em cólice, e sua devida rugosidade

REVISÕES DE PROJETO

REV.	DATA	ASSUNTO
1	16/12/2025	EMISSÃO DE PROJETO EXECUTIVO

PROJEPLUS
engenharia

PROJETO ESTRUTURAL

OBRA: **CMEI SAPOPEMA**

PROPRIETÁRIO: PREFEITURA MUNICIPAL DE SAPOPEMA

CONTEÚDO:

- **DETALHAMENTO DE FUNDAÇÃO**
- **DETALHAMENTO DE PILARES**

RESPONSÁVEL TÉCNICO: **ANDRÉ DE MOURA RODRIGUES**
CREA-PR: 166714-D

FOLHA NÚMERO: **02**

TOTAL FOLHAS: **11**

PROPRIETÁRIO: **PREFEITURA MUNICIPAL DE SAPOPEMA**

DESENHO: ANDRÉ RODRIGUES

ESCALA: COMO INDICADO