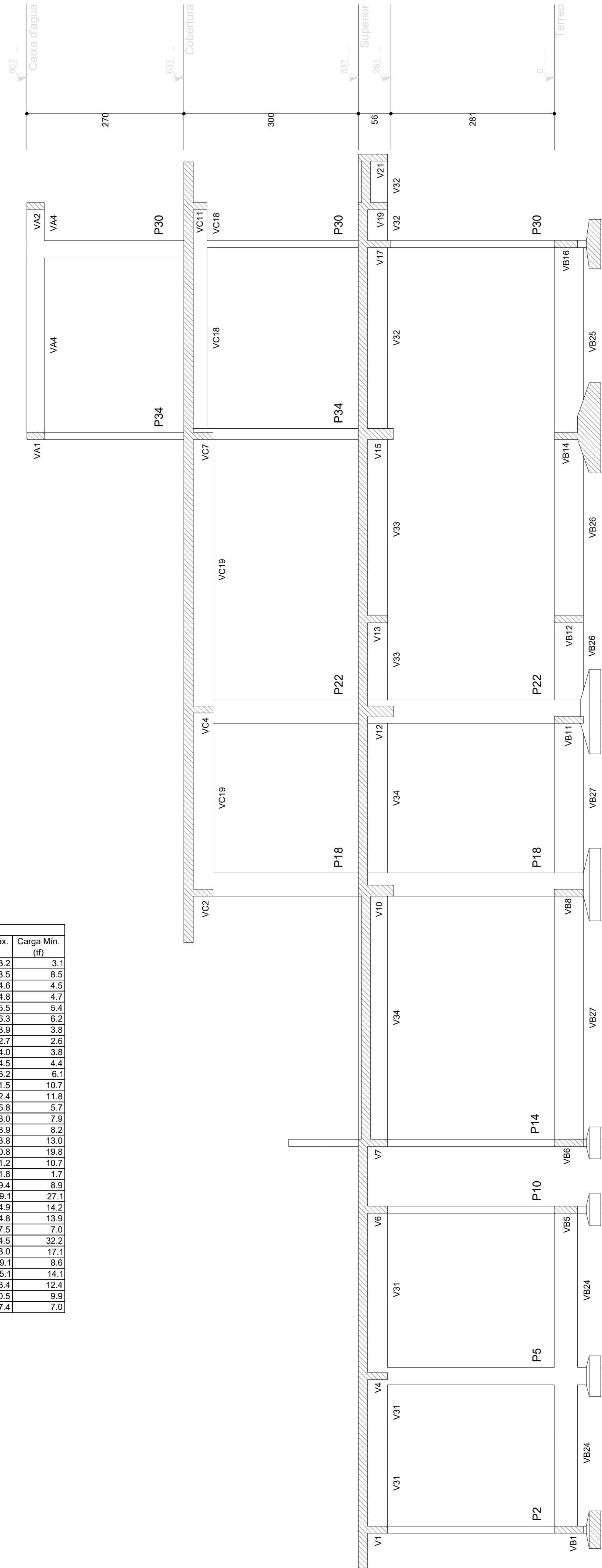
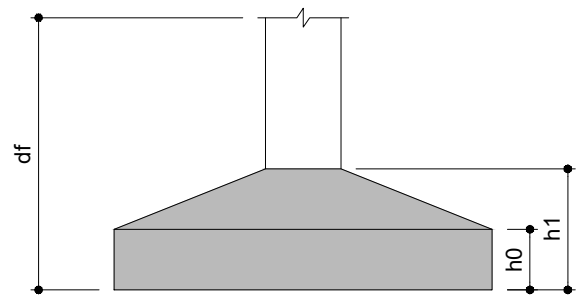
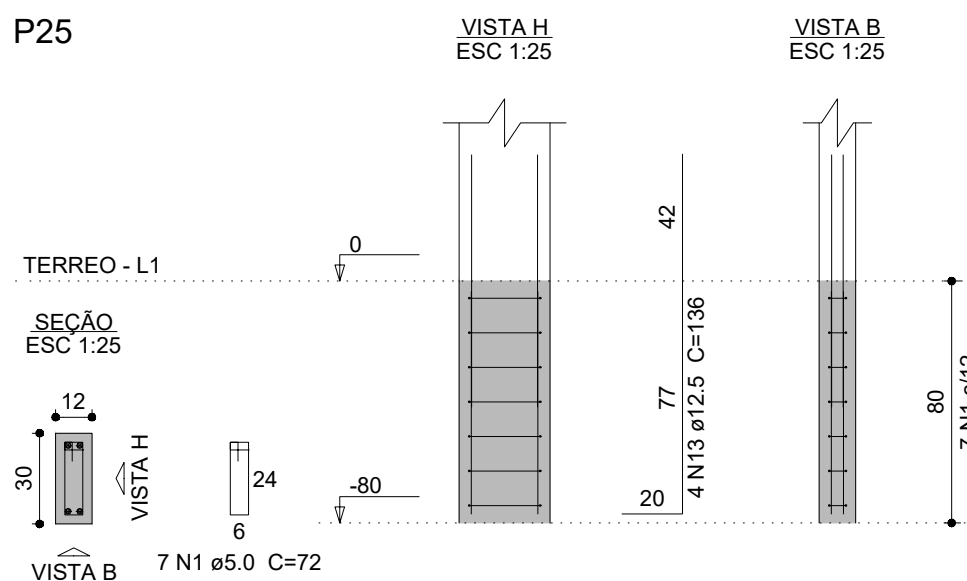
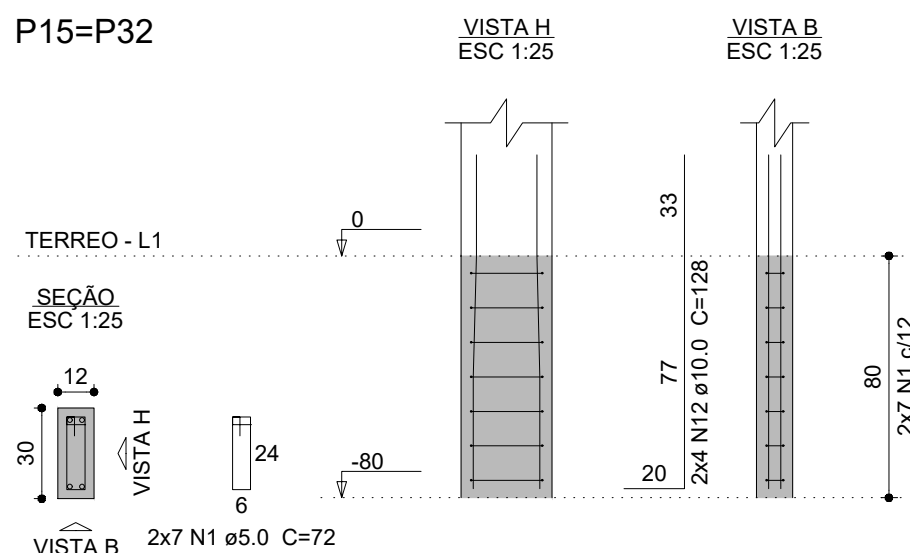
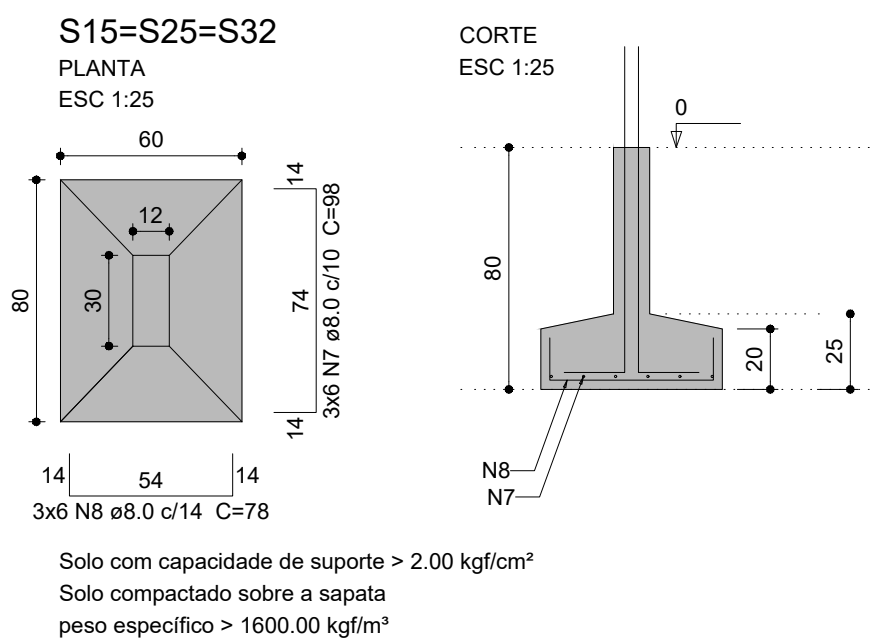
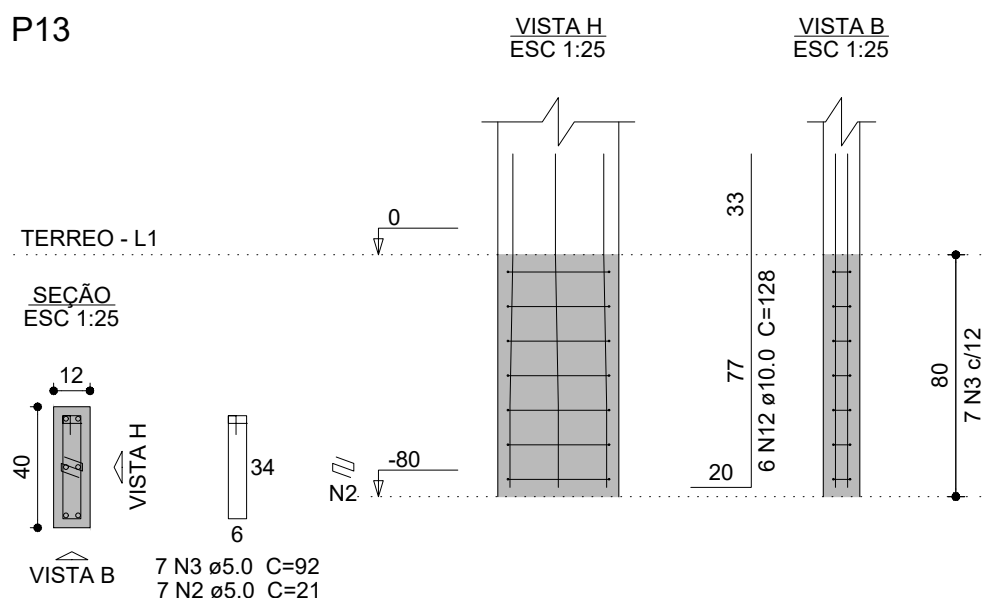
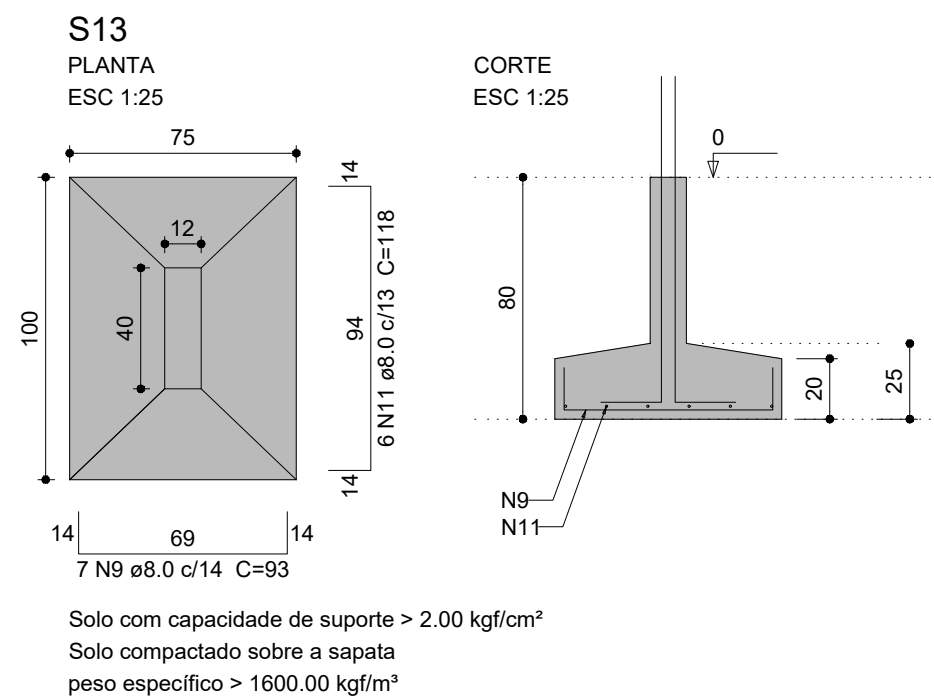
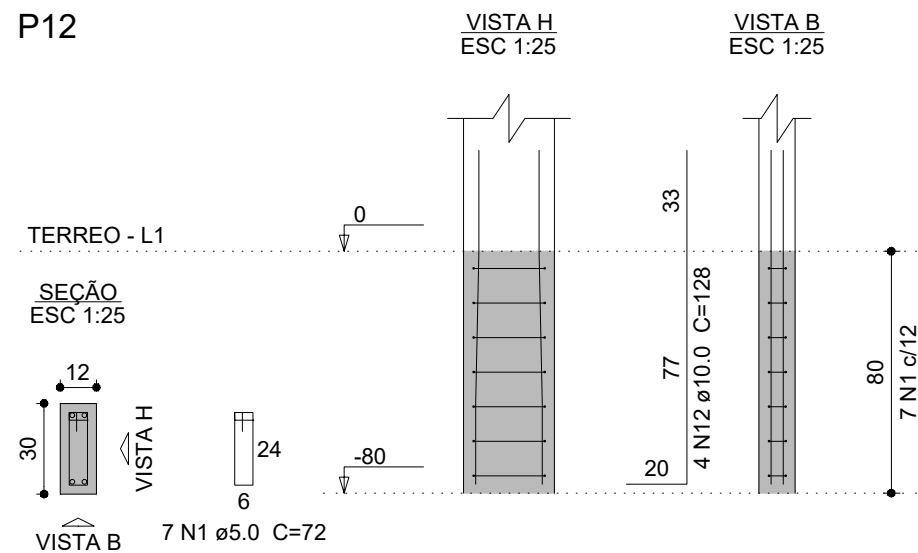
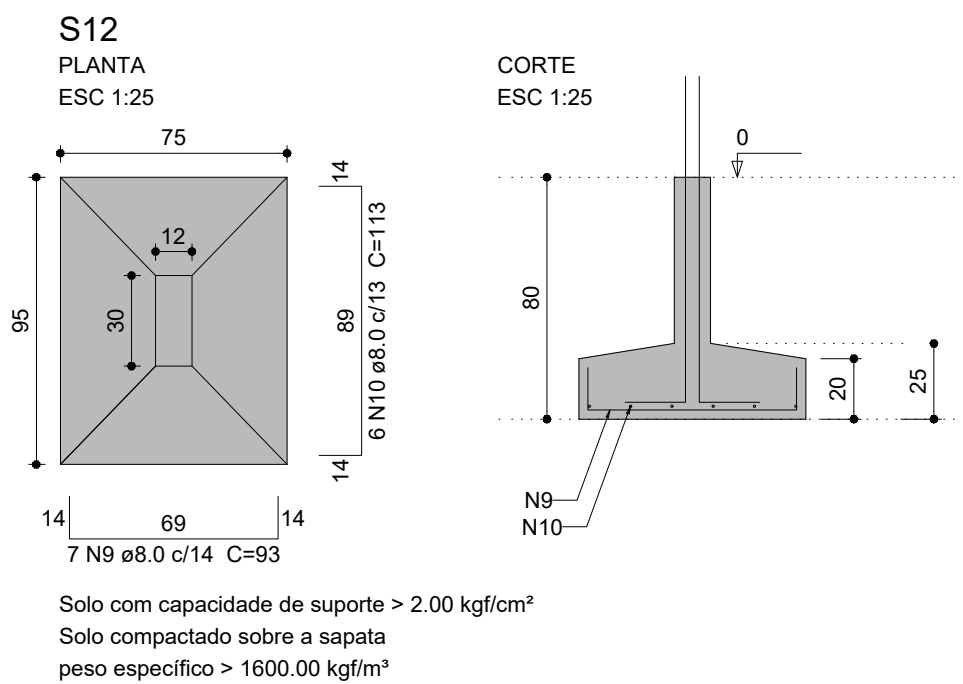
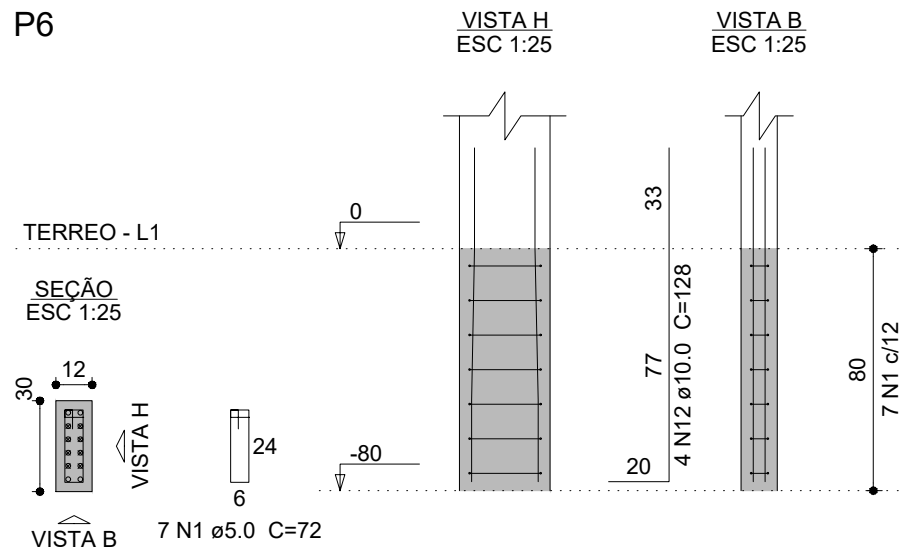
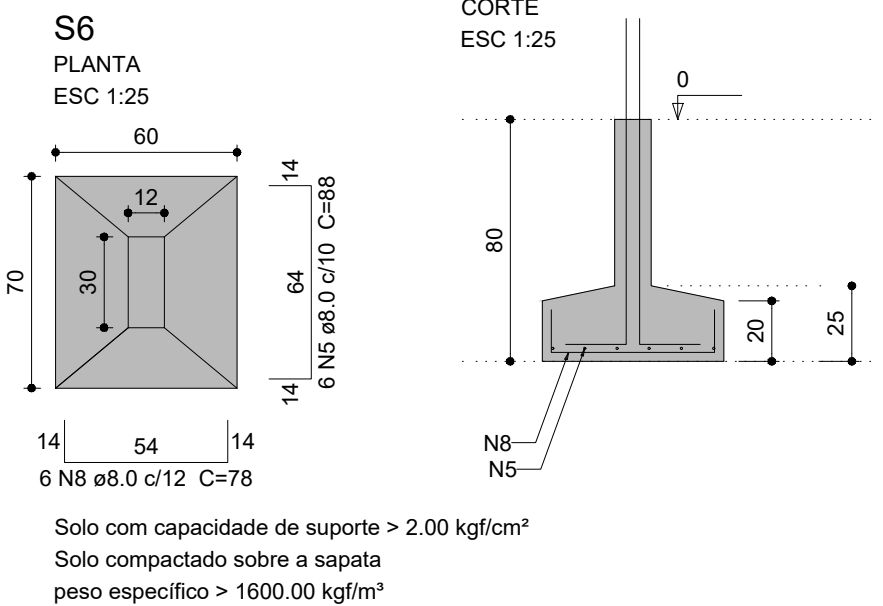
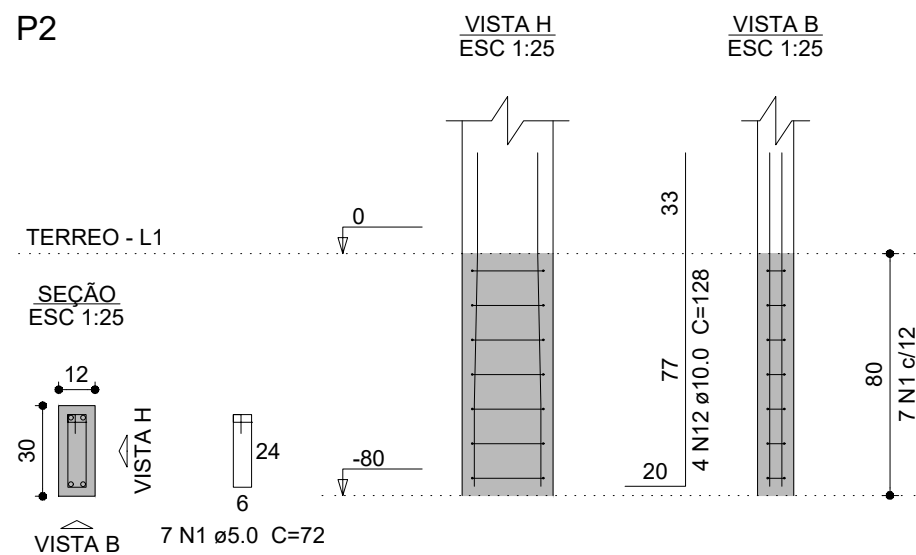
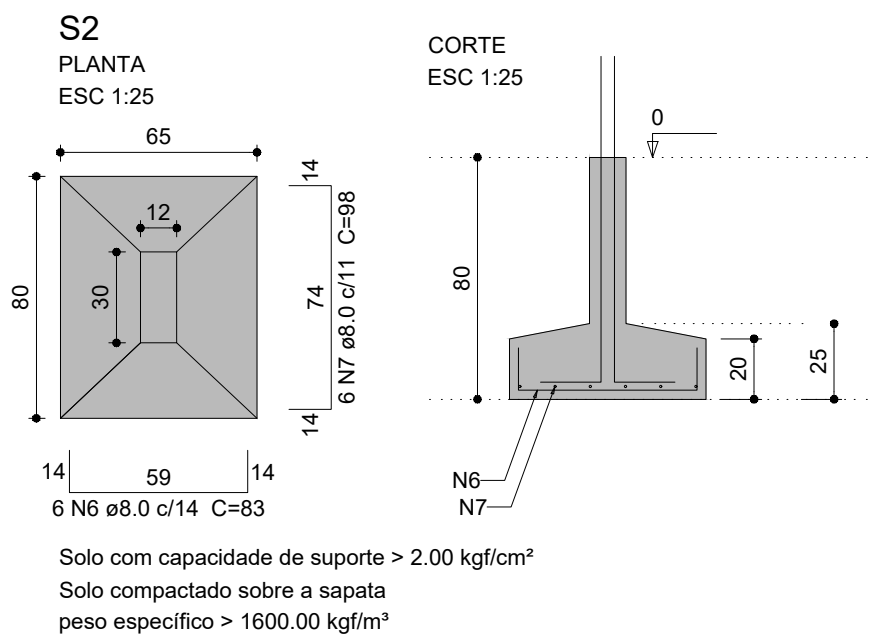
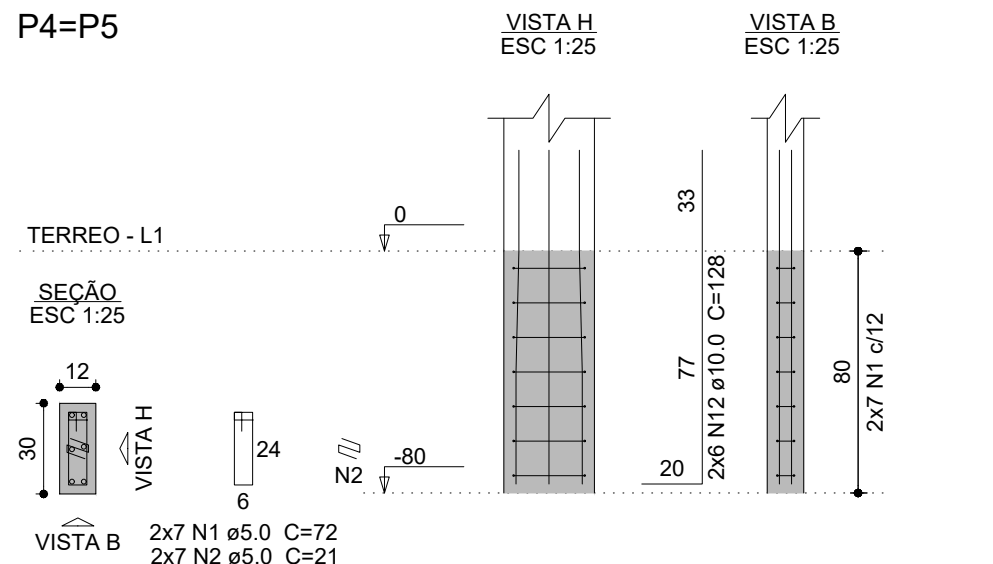
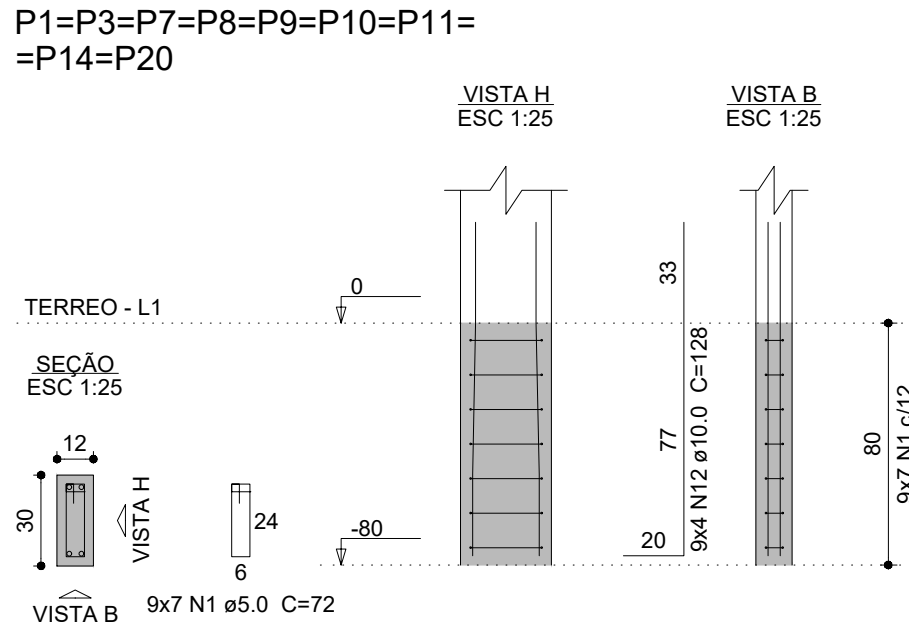
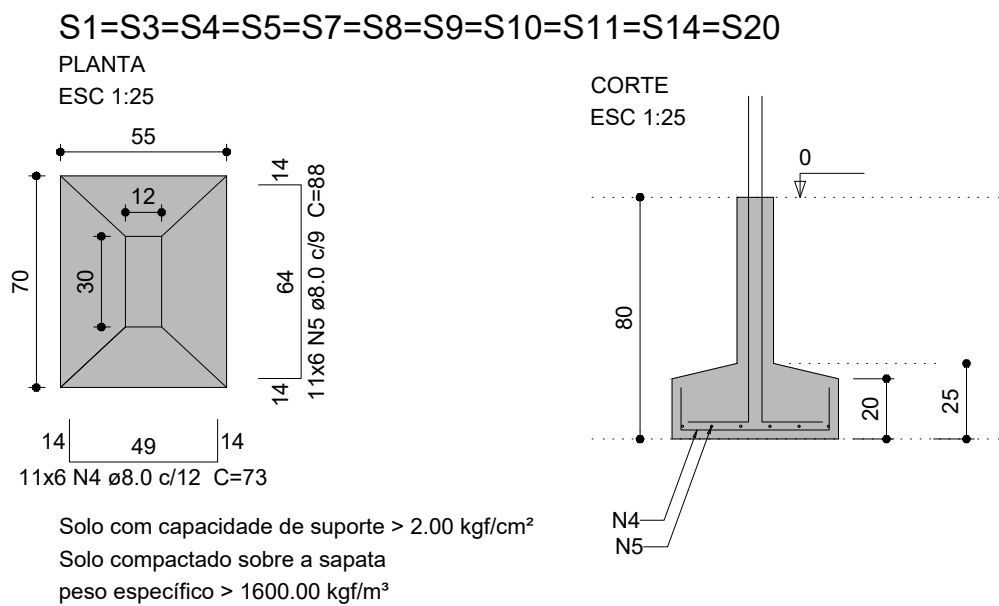


Planta de locação
escala 1:50

Pilar					
Nome	Seção (cm)	X (cm)	Y (cm)	Carga Máx. (tf)	Carga Min. (tf)
P1	12x30	-1252.50	2208.50	3.2	3.1
P2	12x30	-628.50	2217.50	8.5	8.5
P3	12x30	-7.50	2208.50	4.6	4.5
P4	12x30	-1252.50	1953.50	4.8	4.7
P5	12x30	-637.50	1953.50	5.5	5.4
P6	12x30	-322.50	1953.50	6.3	6.2
P7	12x30	-7.50	1966.50	3.9	3.8
P8	12x30	-1243.50	1667.50	2.7	2.6
P9	12x30	-1013.50	1667.50	4.0	3.8
P10	12x30	-628.50	1667.50	4.5	4.4
P11	12x30	-322.50	1676.50	6.2	6.1
P12	12x30	-1137.50	1543.50	11.5	10.7
P13	12x40	-821.50	1552.50	12.4	11.8
P14	12x30	-531.50	1552.50	5.8	5.7
P15	12x30	-7.50	1560.00	8.0	7.9
P16	12x30	-1137.50	1122.50	8.9	8.2
P17	12x30	-1022.50	1122.50	13.8	13.0
P18	19x40	-522.50	1108.50	20.8	19.8
P19	12x30	-7.50	1113.50	11.2	10.7
P20	12x30	-1137.50	957.50	1.8	1.7
P21	12x30	-1031.50	948.50	9.4	8.9
P22	19x40	-522.50	811.50	29.1	27.1
P23	12x40	-7.50	811.50	14.9	14.2
P24	12x40	-1022.50	652.50	14.8	13.9
P25	12x30	-1022.50	328.50	7.5	7.0
P26	19x40	-686.00	323.50	34.5	32.2
P27	12x40	-7.50	351.50	18.0	17.1
P28	12x30	-1022.50	16.50	9.1	8.6
P29	12x40	-696.50	7.50	15.1	14.1
P30	12x40	-493.50	7.50	13.4	12.4
P31	12x30	-238.50	7.50	10.5	9.9
P32	12x30	-7.50	16.50	7.4	7.0



Corte Longitudinal
escala 1:50



Relação do aço

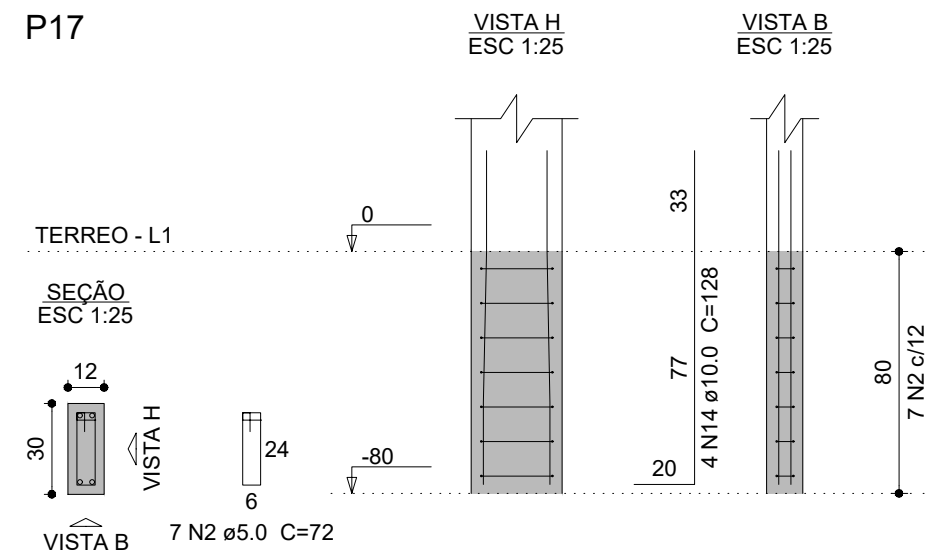
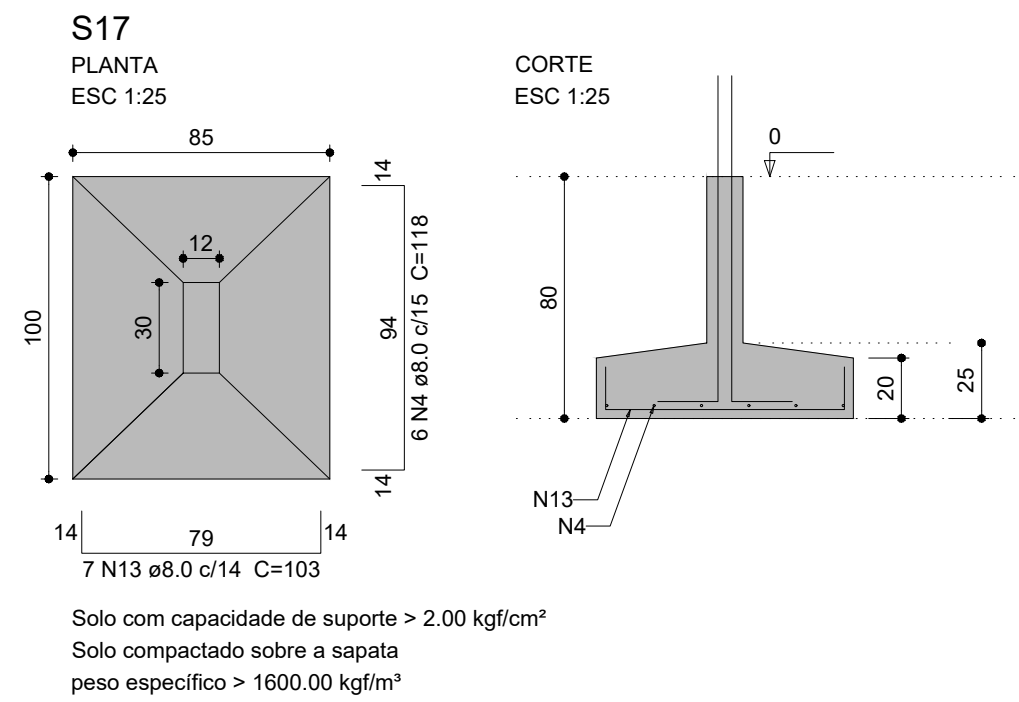
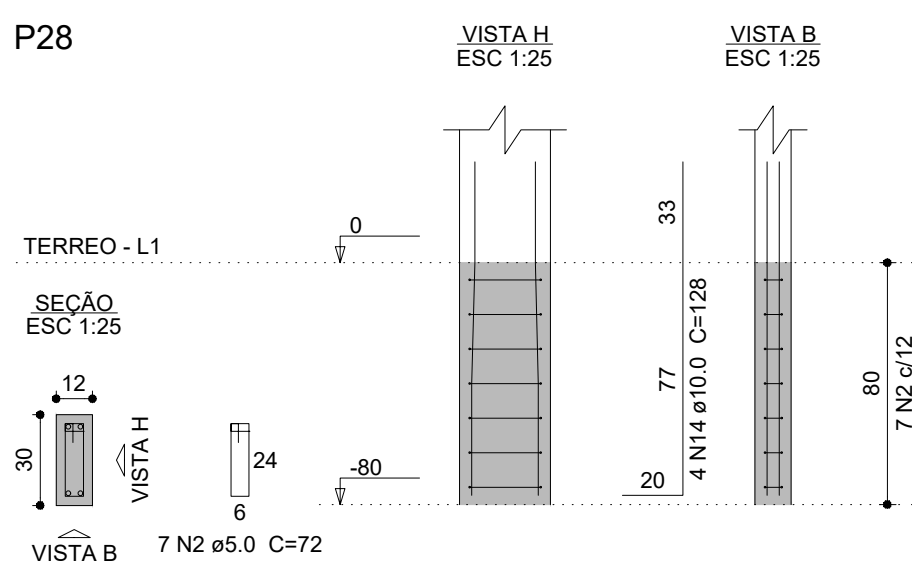
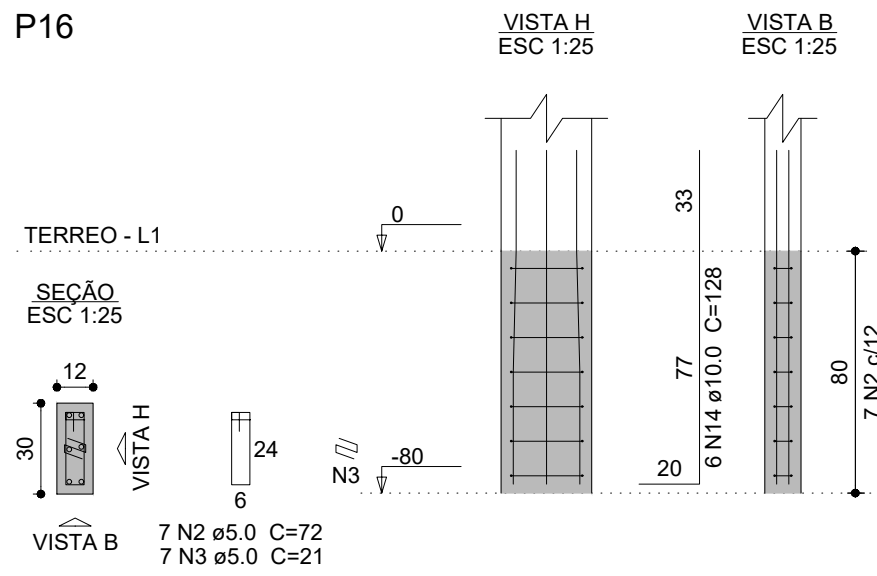
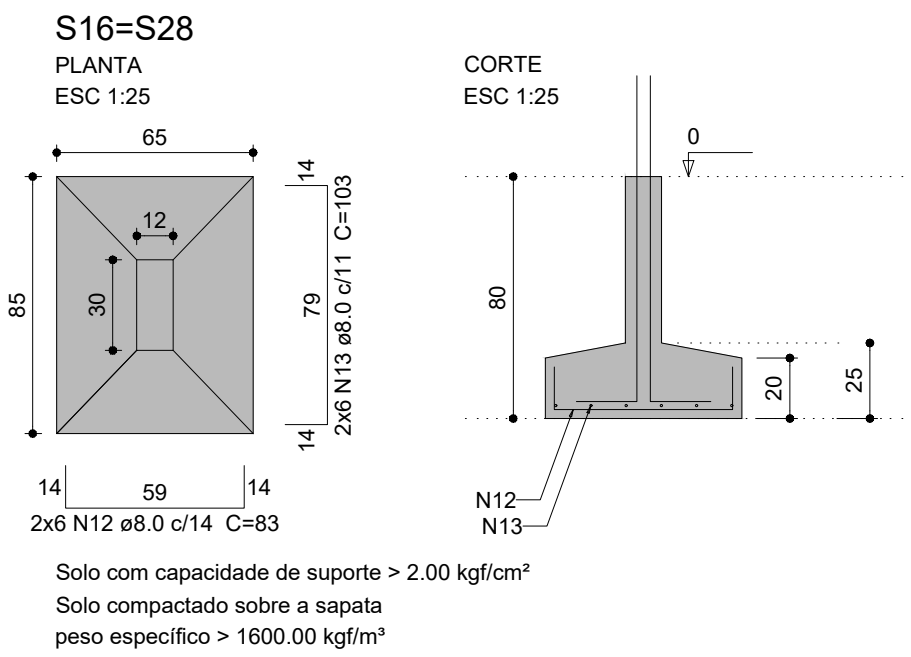
ACO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	119	72	8568
	2	5.0	21	21	441
	3	5.0	7	92	644
CA50	4	8.0	66	73	4818
	5	8.0	72	88	6336
	6	8.0	6	83	498
	7	8.0	24	98	2352
	8	8.0	24	78	1872
	9	8.0	14	93	1302
	10	8.0	6	113	678
	11	8.0	6	118	708
	12	10.0	74	128	9472
	13	12.5	4	136	544

Resumo do aço

ACO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	185.7	80.6
	10.0	94.8	64.2
	12.5	5.5	5.8
CA60	5.0	96.6	16.4
PESO TOTAL (kg)			
CA50	150.6		
CA60	16.4		

Volume de concreto (C-30) = 2.33 m³

Área de forma = 21.92 m²



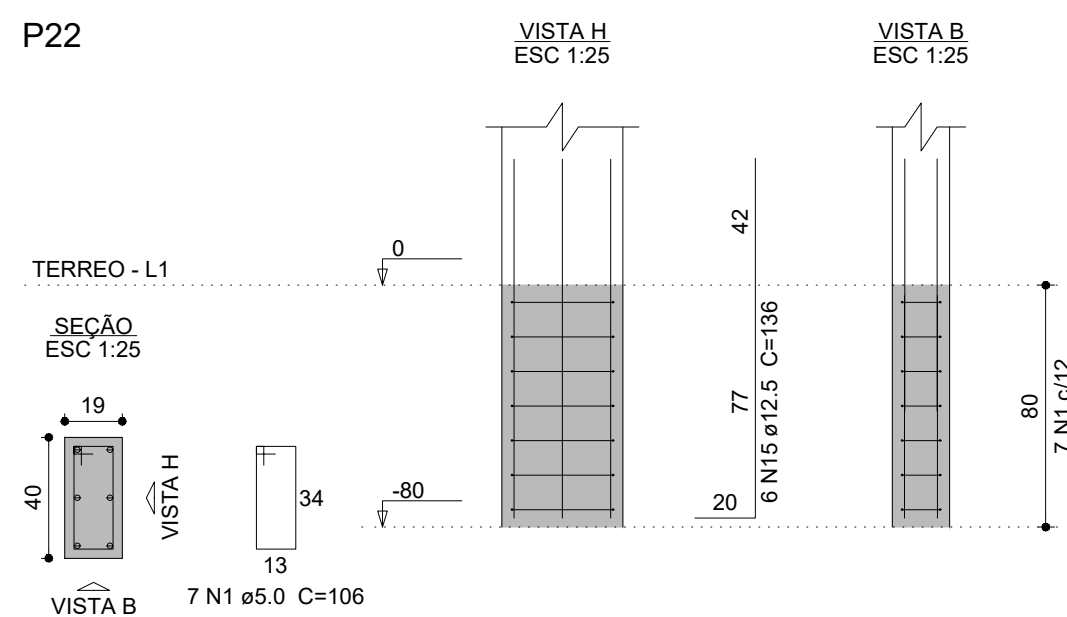
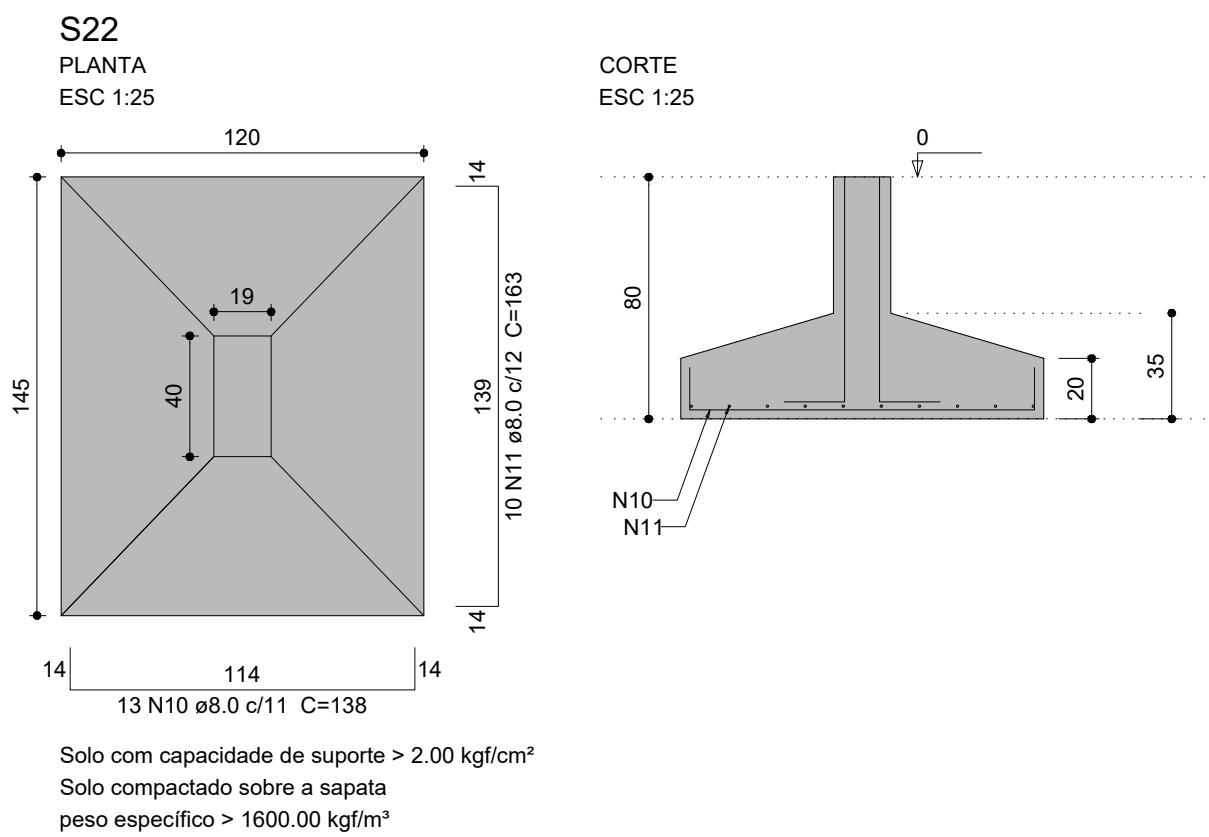
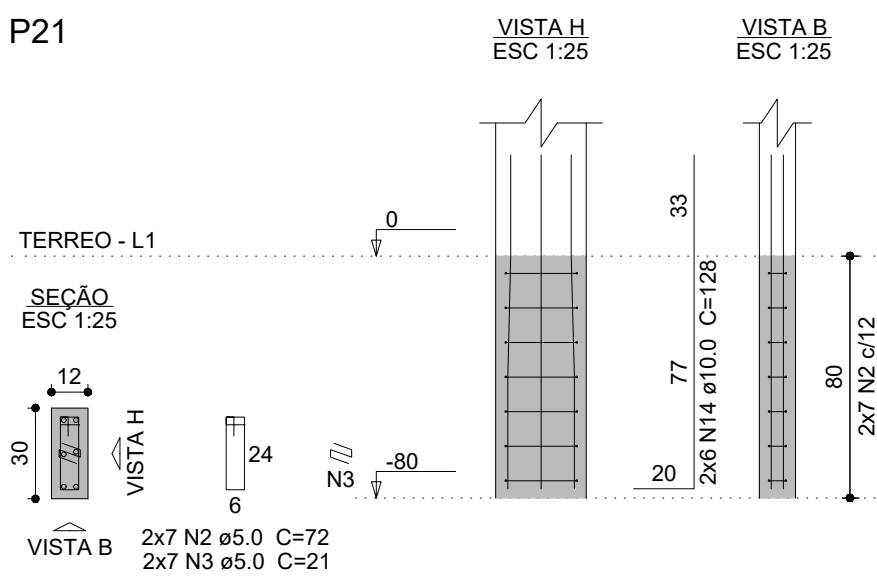
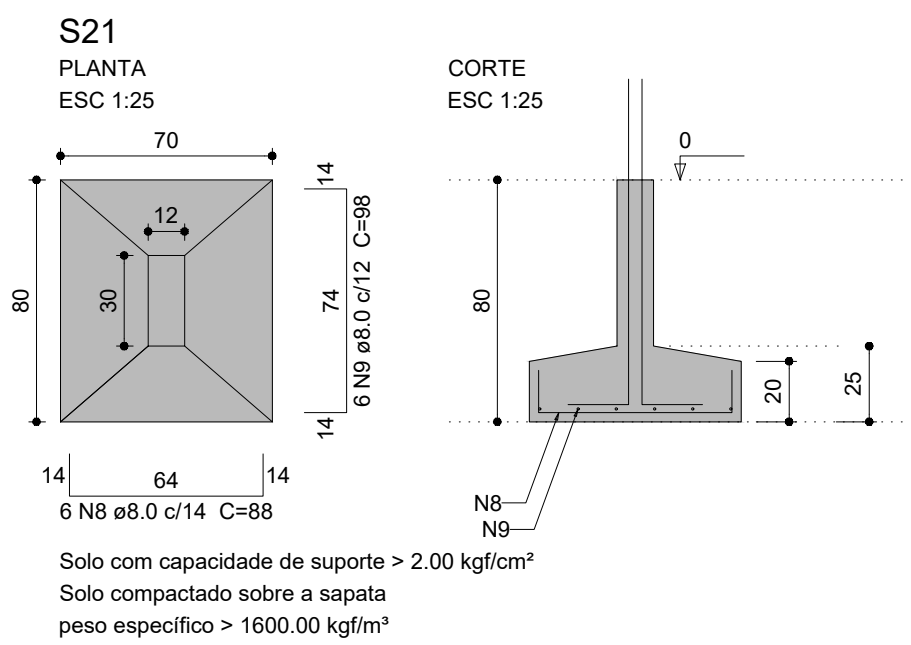
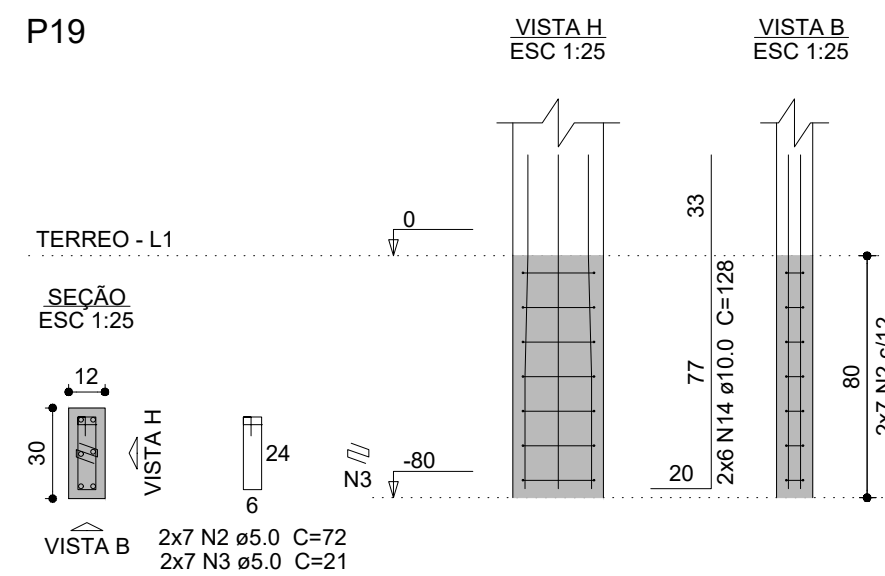
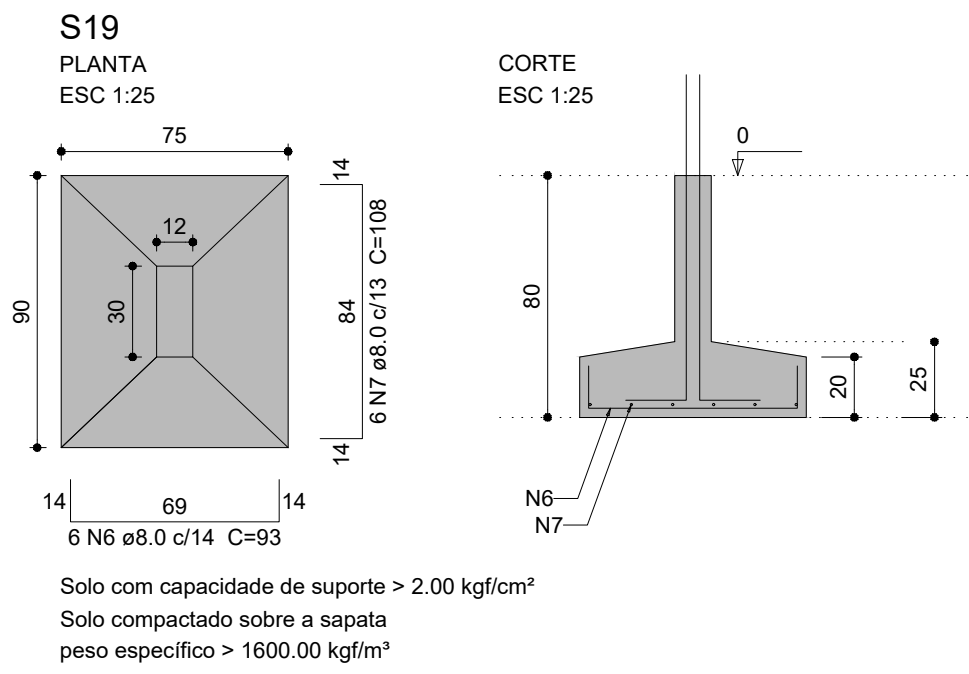
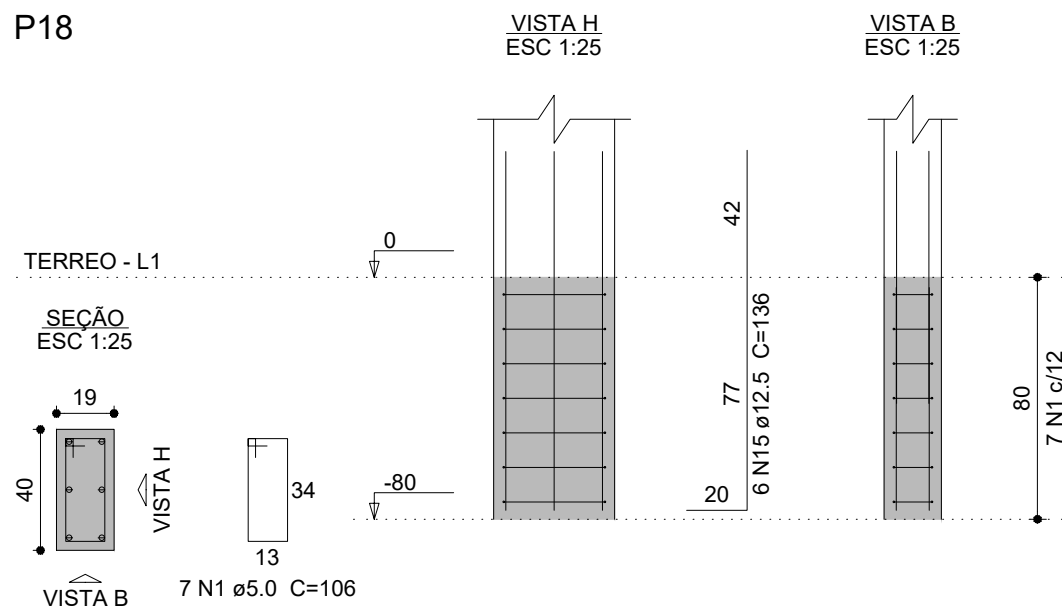
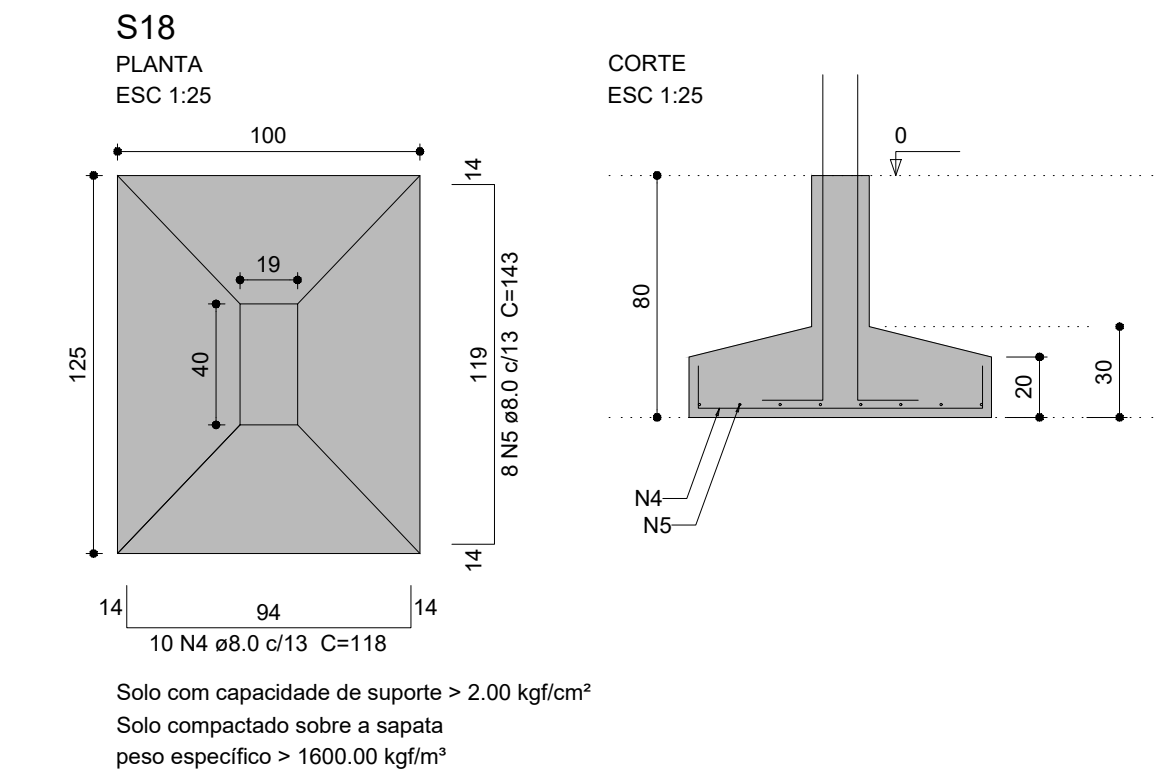
Relação do aço

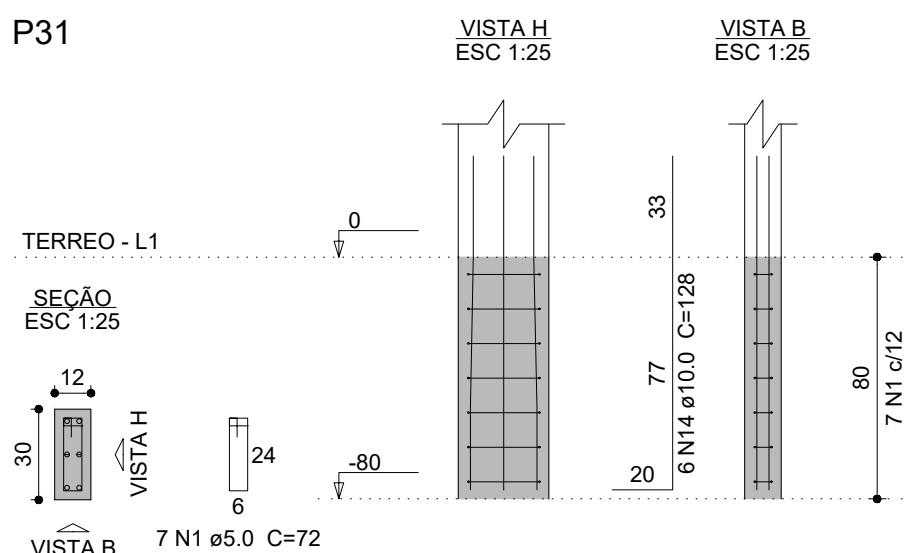
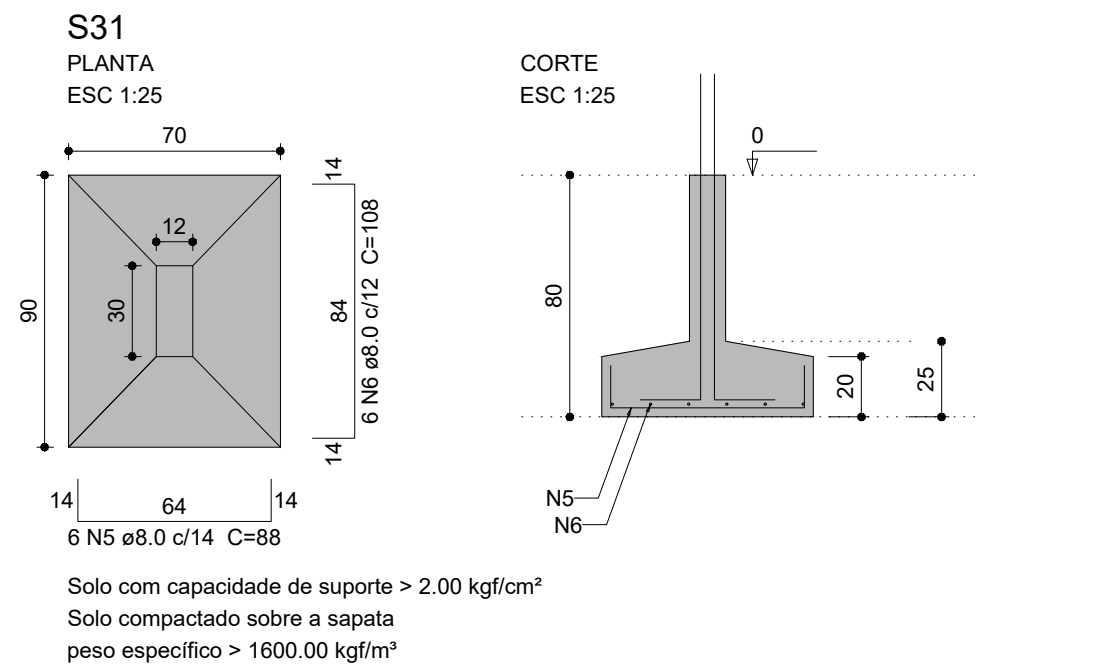
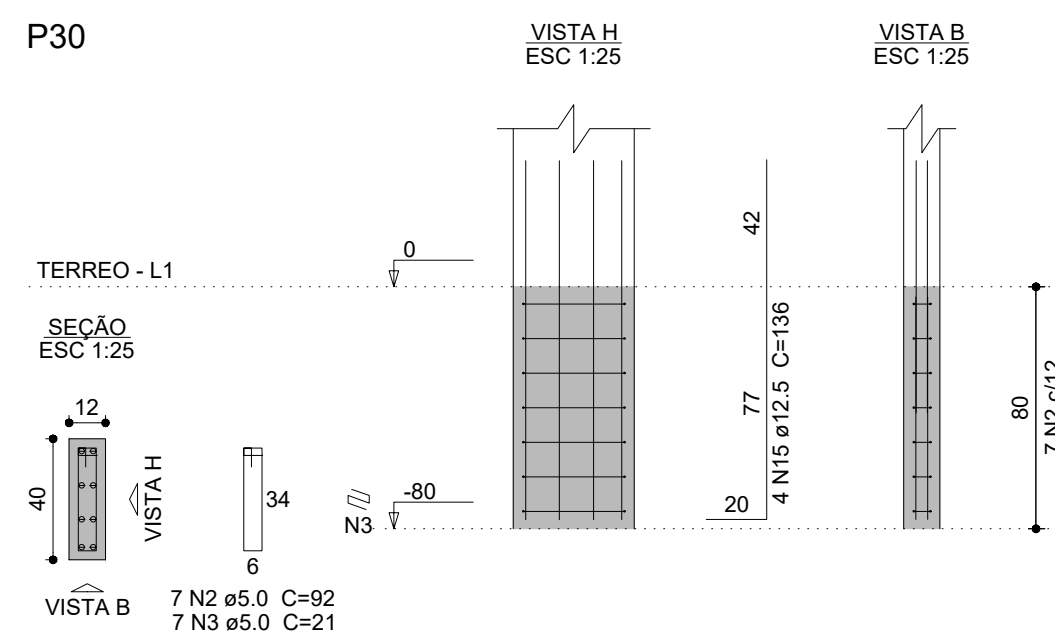
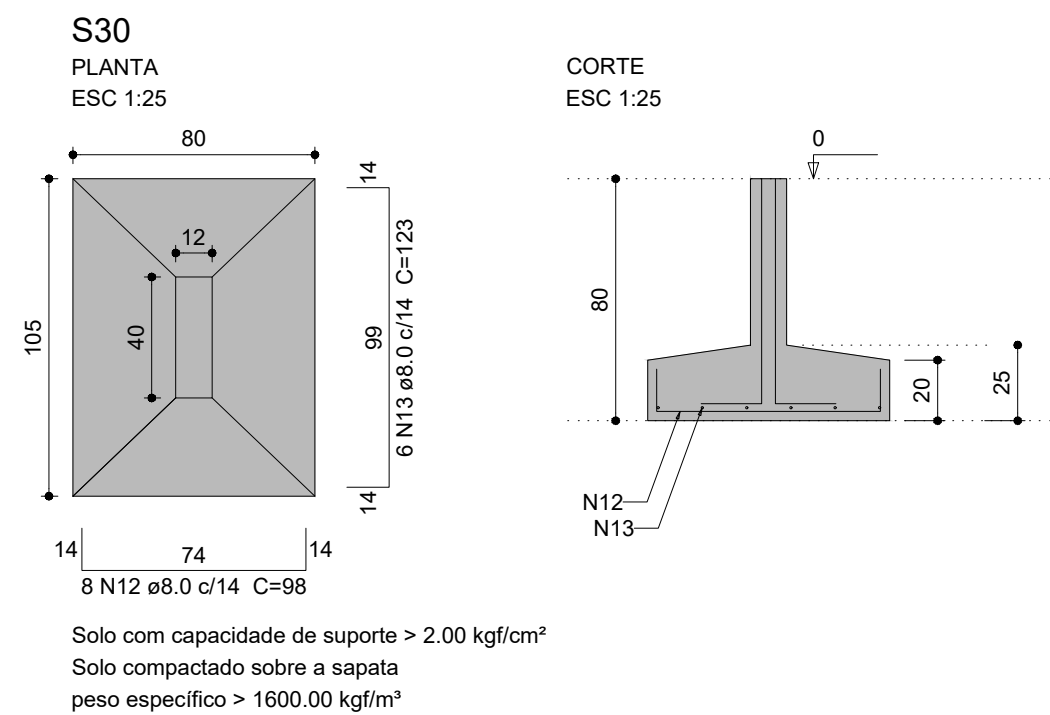
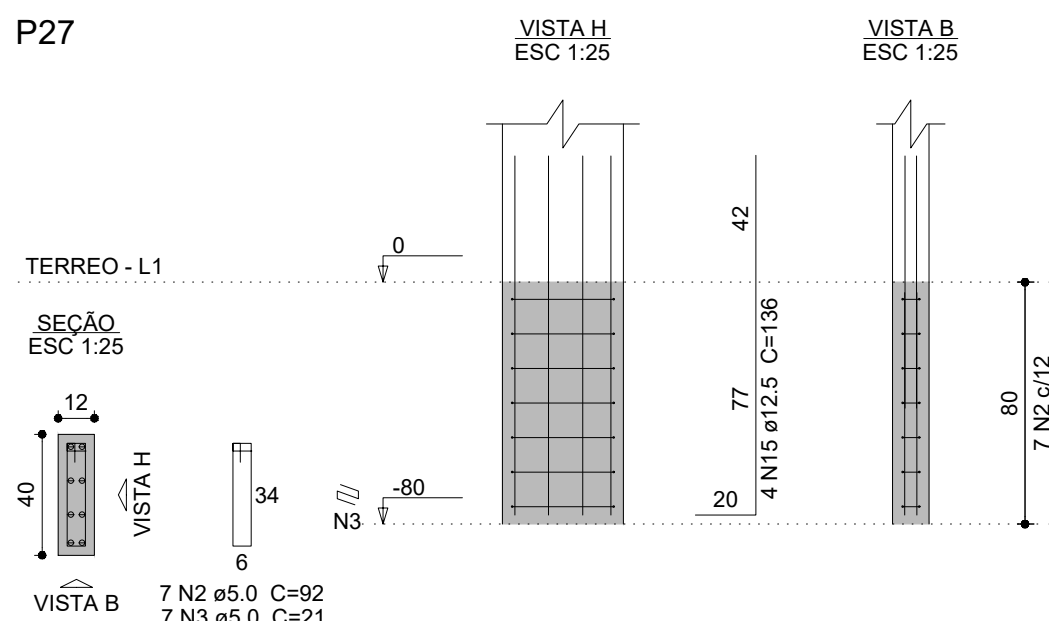
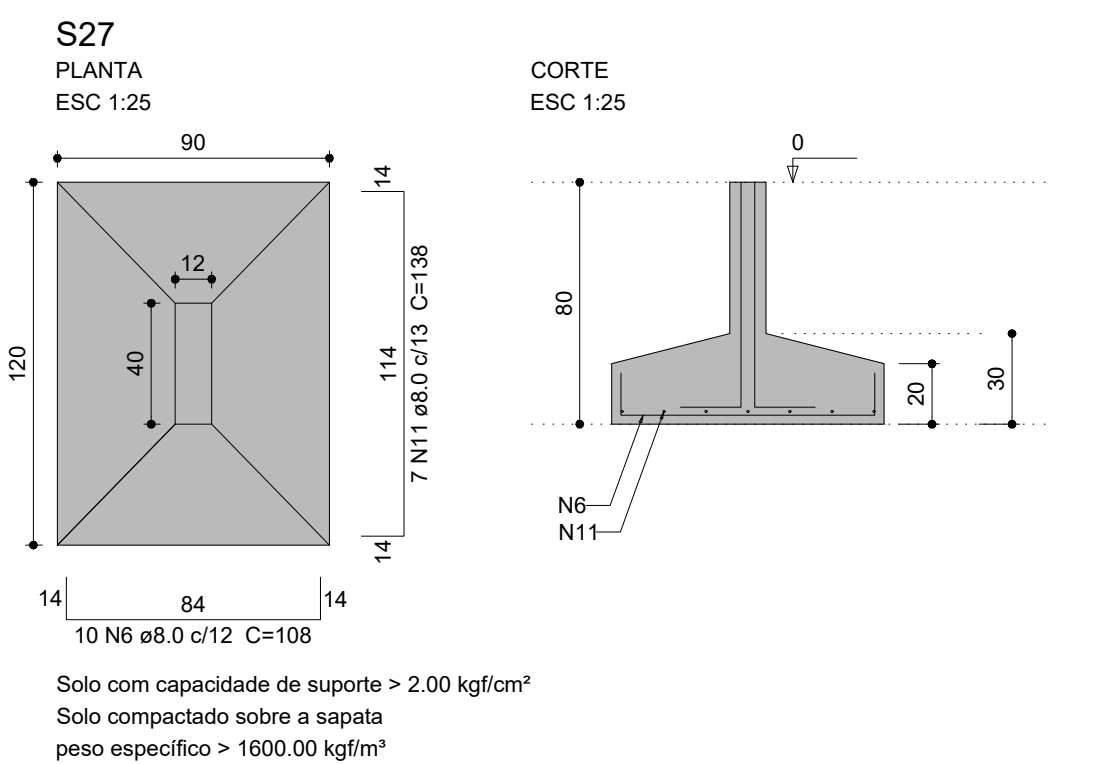
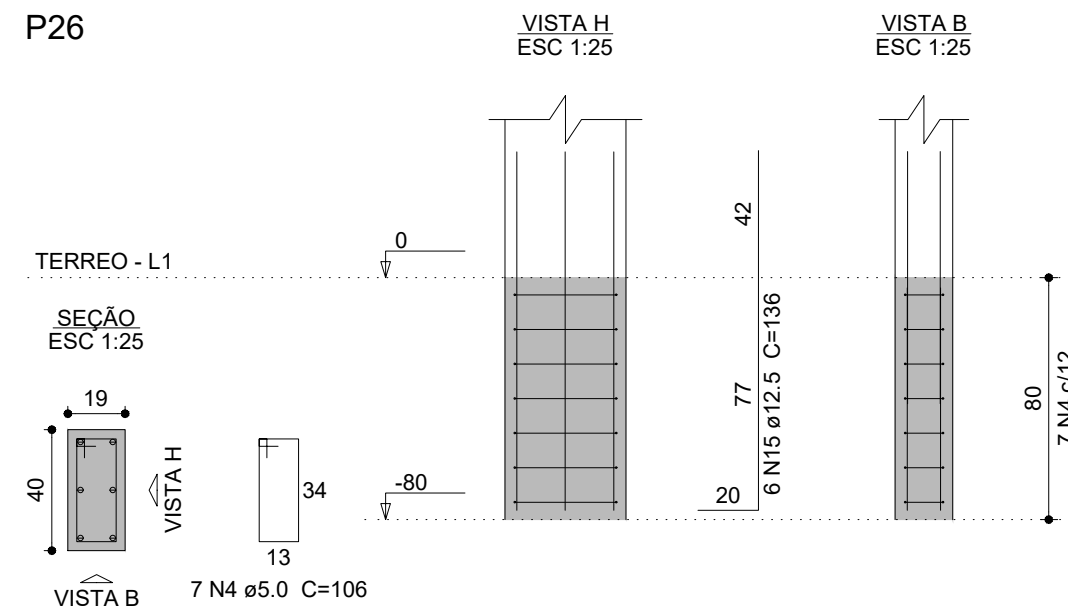
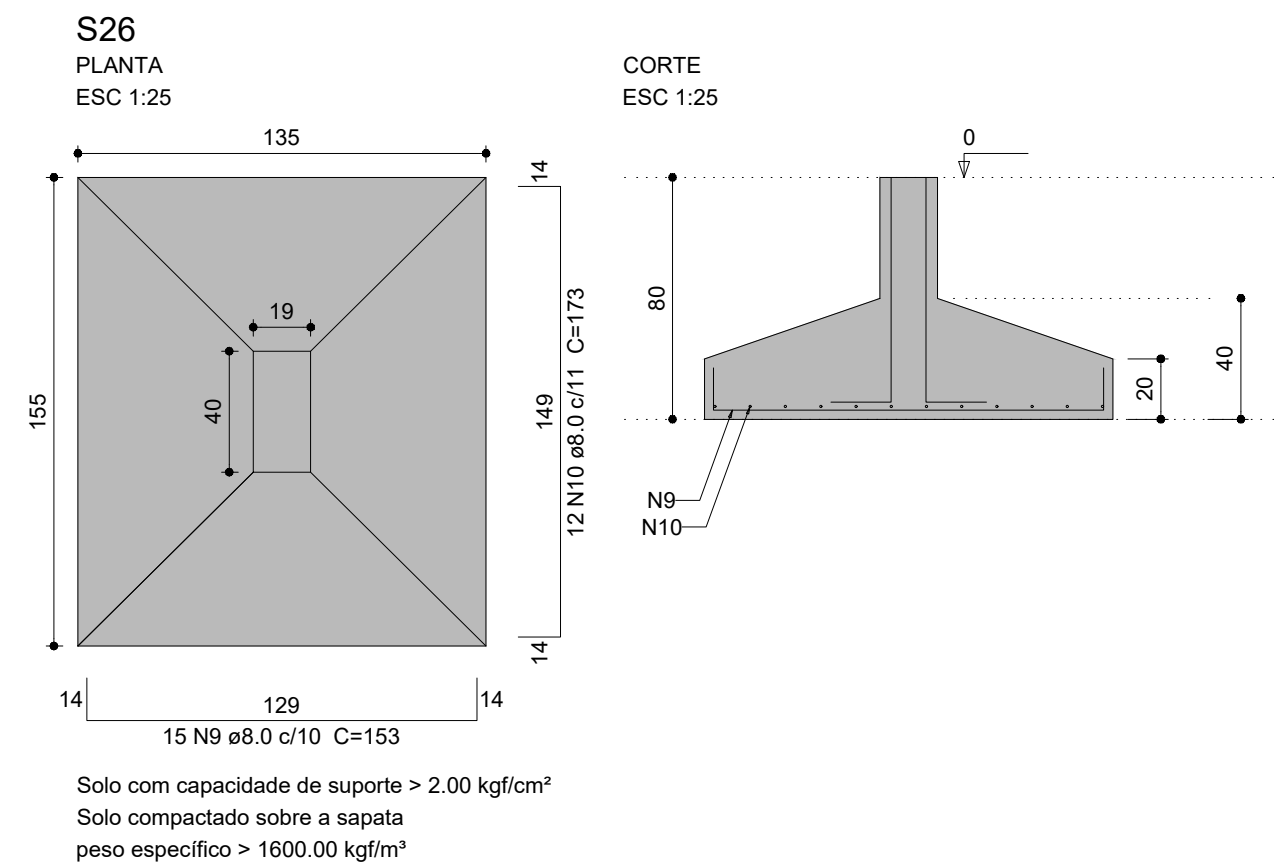
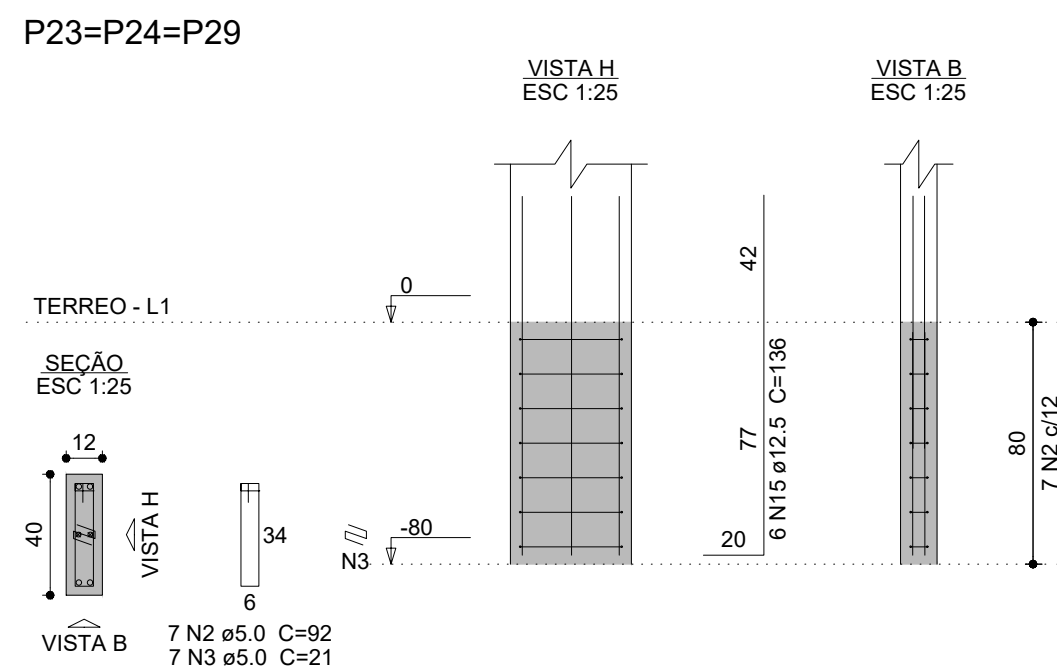
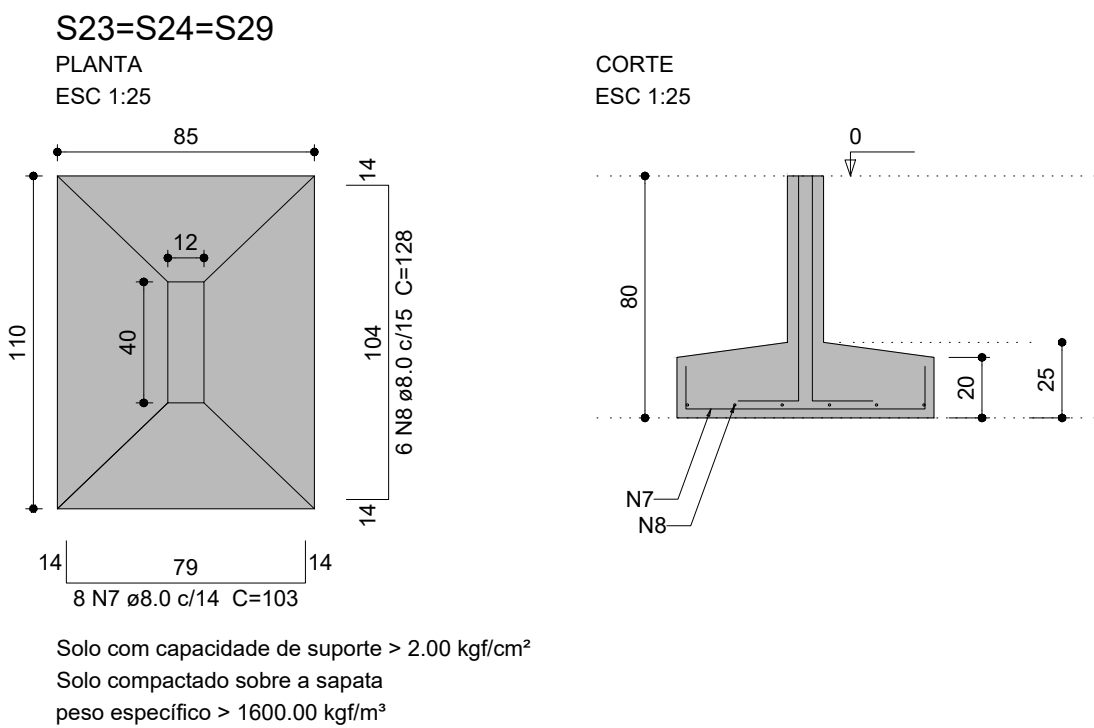
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
S16					
S19					
S17					
S21					
S18					
S22					

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	117.4	50.9
CA50	10.0	48.7	33
CA50	12.5	16.4	17.3
CA60	5.0	57.5	9.7
PESO TOTAL (kg)			
CA50		101.2	
CA60		9.7	

Volume de concreto (C-30) = 1.73 m³
Área de forma = 10.41 m²



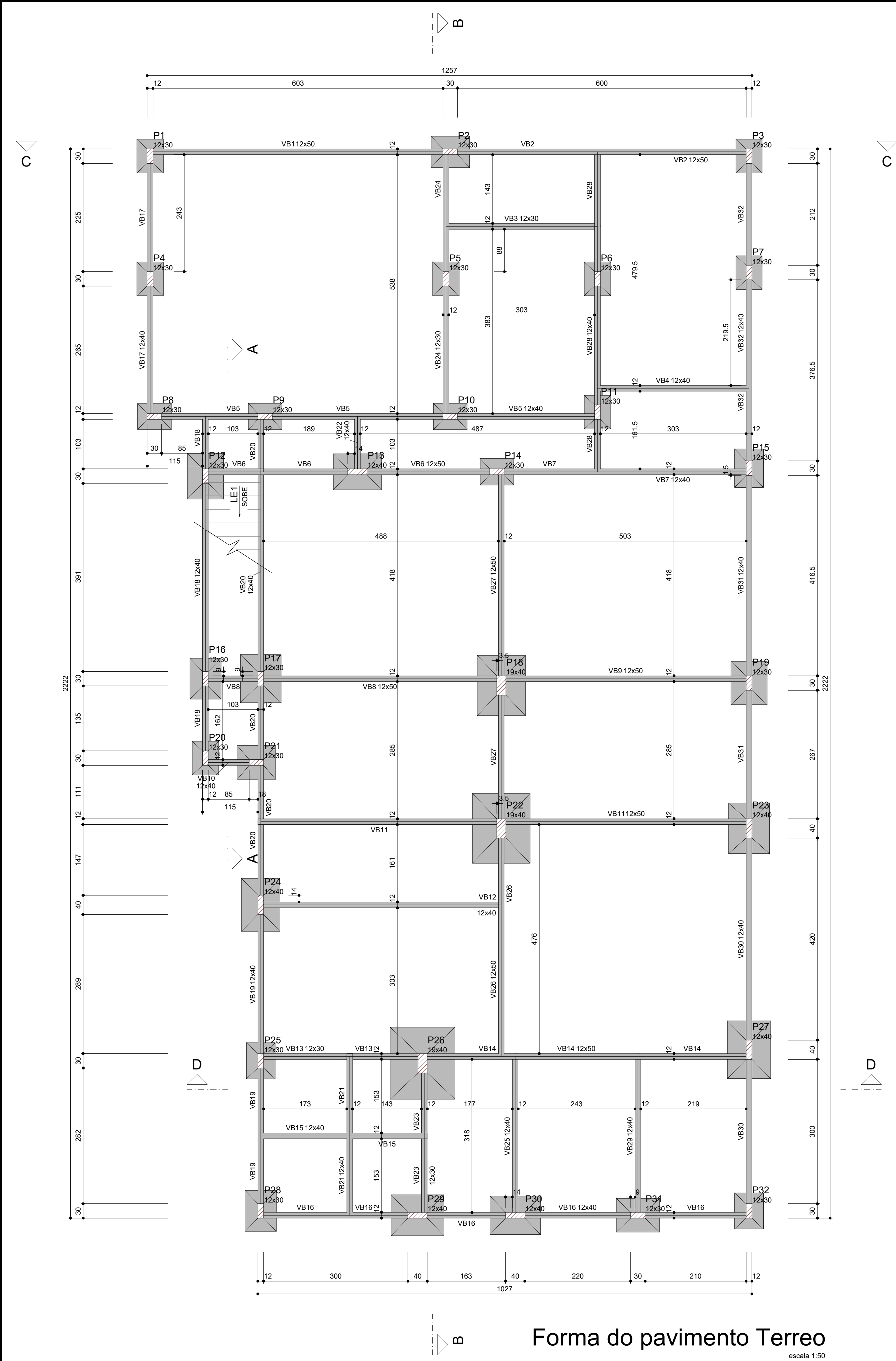


Relação do aço				
AÇO	N	DIAM (mm)	QUANT	C.TOTAL (cm)
CA60	1	5.0	7	72
	2	5.0	35	92
	3	5.0	35	21
	4	5.0	7	106
CA50	5	8.0	6	88
	6	8.0	16	108
	7	8.0	24	103
	8	8.0	18	128
	9	8.0	15	153
	10	8.0	12	173
	11	8.0	7	138
	12	8.0	8	98
	13	8.0	6	123
	14	10.0	6	128
	15	12.5	32	136

Resumo do aço			
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	139	60.3
	10.0	7.7	5.2
	12.5	43.6	46.1
CA60	5.0	52.1	8.8
PESO TOTAL (kg)			
CA50	111.6		
CA60	8.8		

Volume de concreto (C-30) = 2.08 m³
Área de forma = 11.5 m²

RESP. PROJETO:			
DESENHO:			
ESPECIALIDADE: ESTRUTURA DE CONCRETO ARMADO			
PROJETO EXECUTIVO			
SAPATAS / ARRANQUES 3			
REFERÊNCIA:			
OBSERVAÇÕES			
CONTRATANTE:			
OBRA:			
EDIFICAÇÃO COMERCIAL E RESIDENCIAL			
PROPRIETÁRIO:			
RESP. EXECUÇÃO:			
RESP. PROJETO:			
Nº OS: OS 050-19			
DATA: 07/11/2019			
ESCALA: INDICADAS			
FOLHA: CA-04			



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
VB1	12x50	0	0
VB2	12x50	0	0
VB3	12x30	0	0
VB4	12x40	0	0
VB5	12x40	0	0
VB6	12x50	0	0
VB7	12x40	0	0
VB8	12x50	0	0
VB9	12x50	0	0
VB10	12x40	0	0
VB11	12x50	0	0
VB12	12x40	0	0
VB13	12x30	0	0
VB14	12x50	0	0
VB15	12x40	0	0
VB16	12x40	0	0
VB17	12x40	0	0
VB18	12x40	0	0
VB19	12x40	0	0
VB20	12x40	0	0
VB21	12x40	0	0
VB22	12x40	0	0
VB23	12x30	0	0
VB24	12x30	0	0
VB25	12x40	0	0
VB26	12x50	0	0
VB27	12x50	0	0
VB28	12x40	0	0
VB29	12x40	0	0
VB30	12x40	0	0
VB31	12x40	0	0
VB32	12x40	0	0

Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm²)	Abatimento (cm)
300	268384	10.00

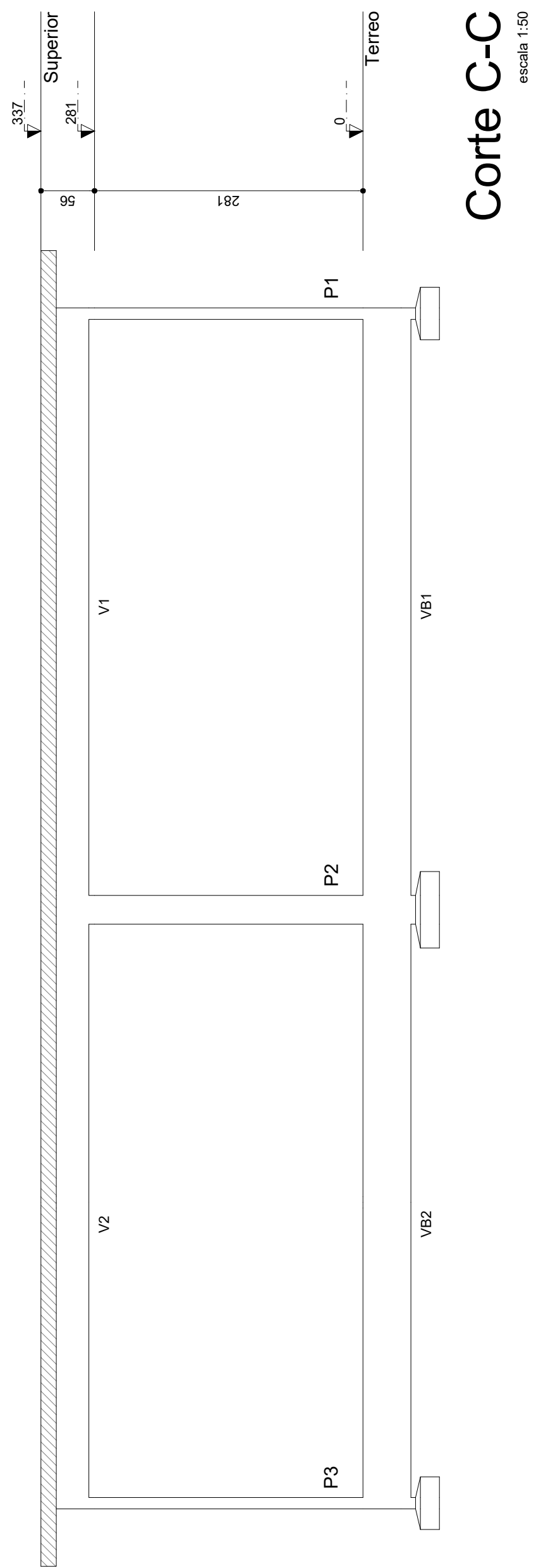
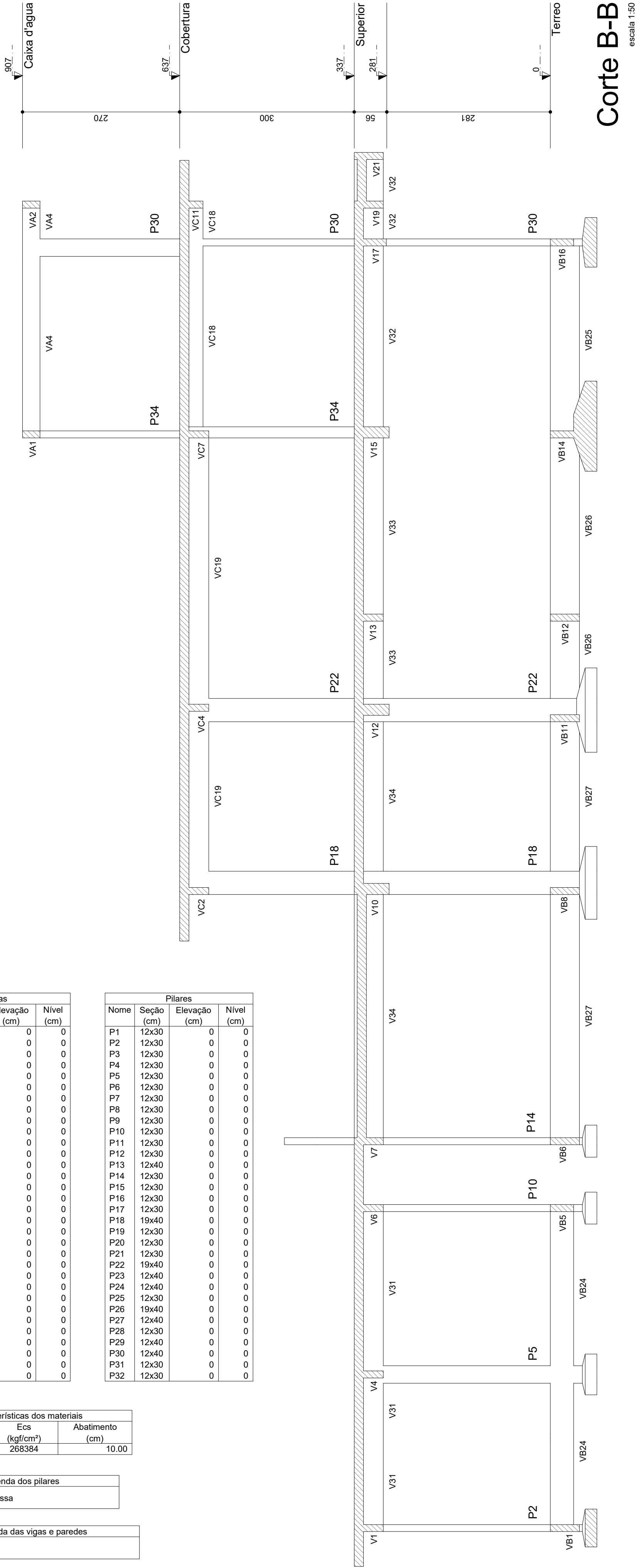
Legenda dos pilares

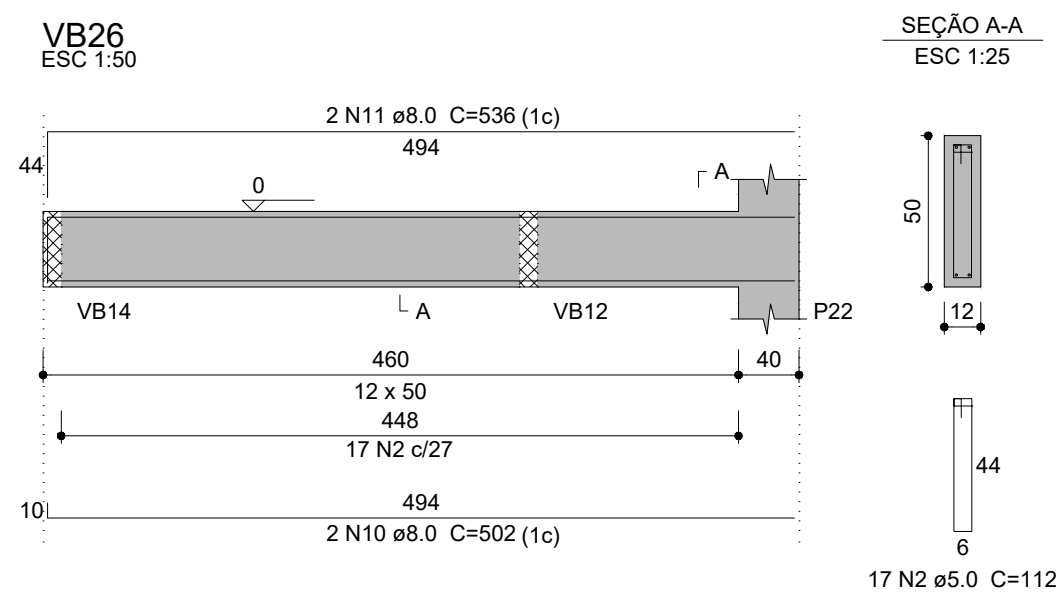
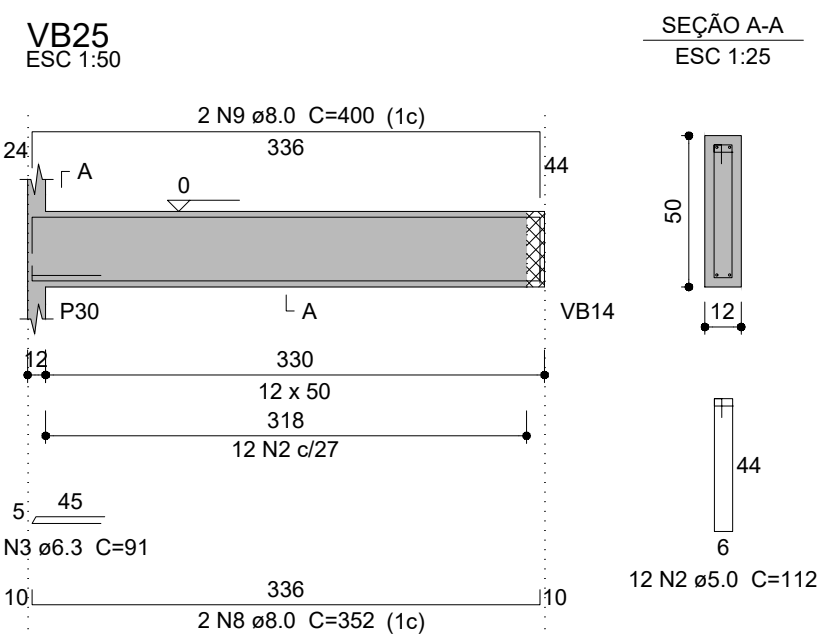
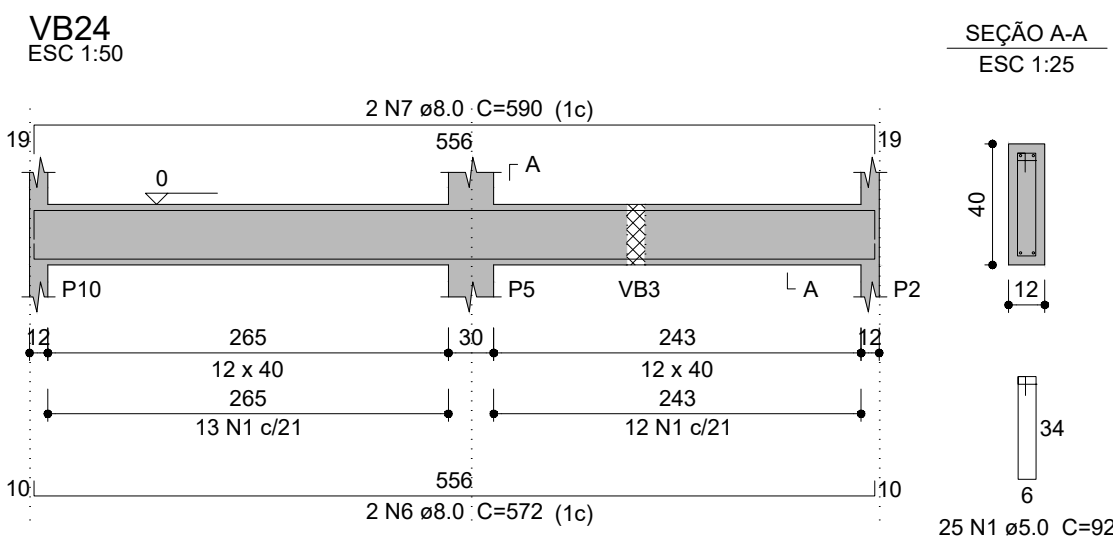
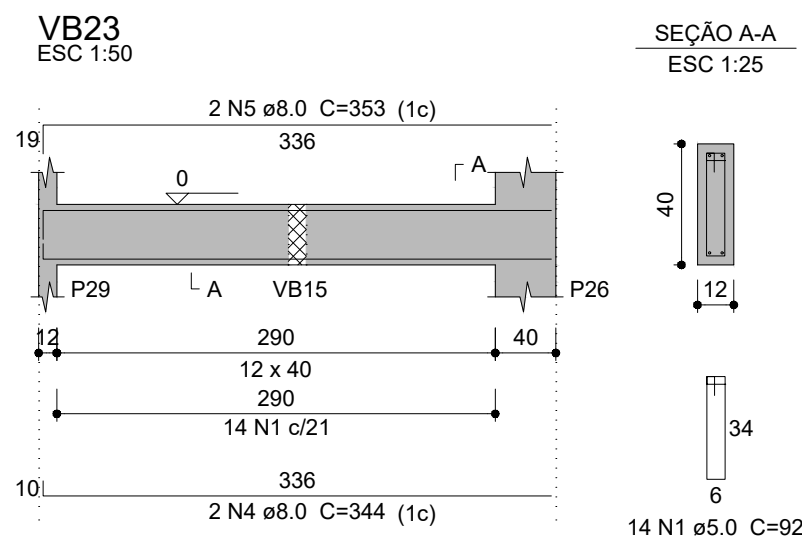
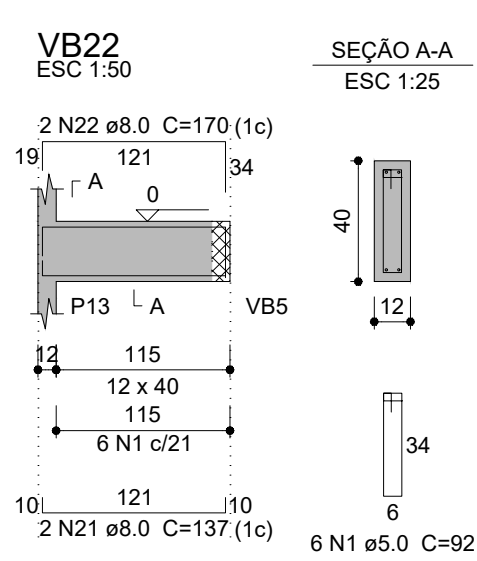
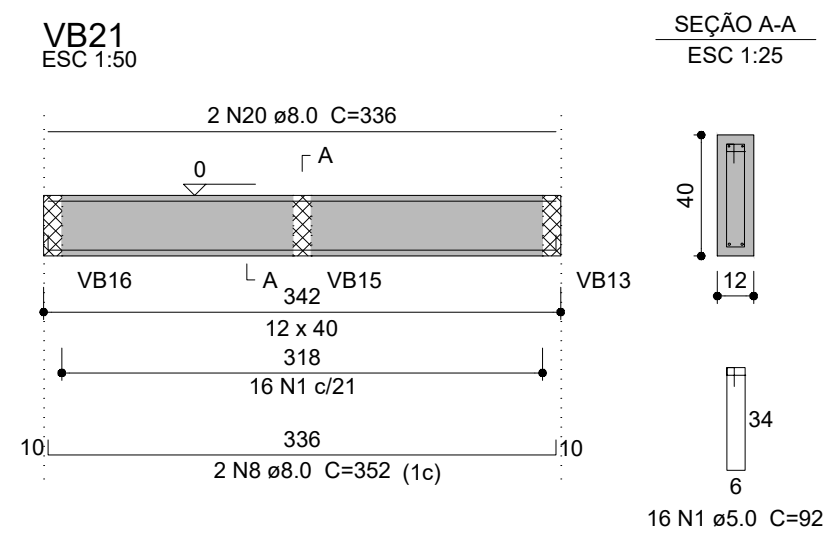
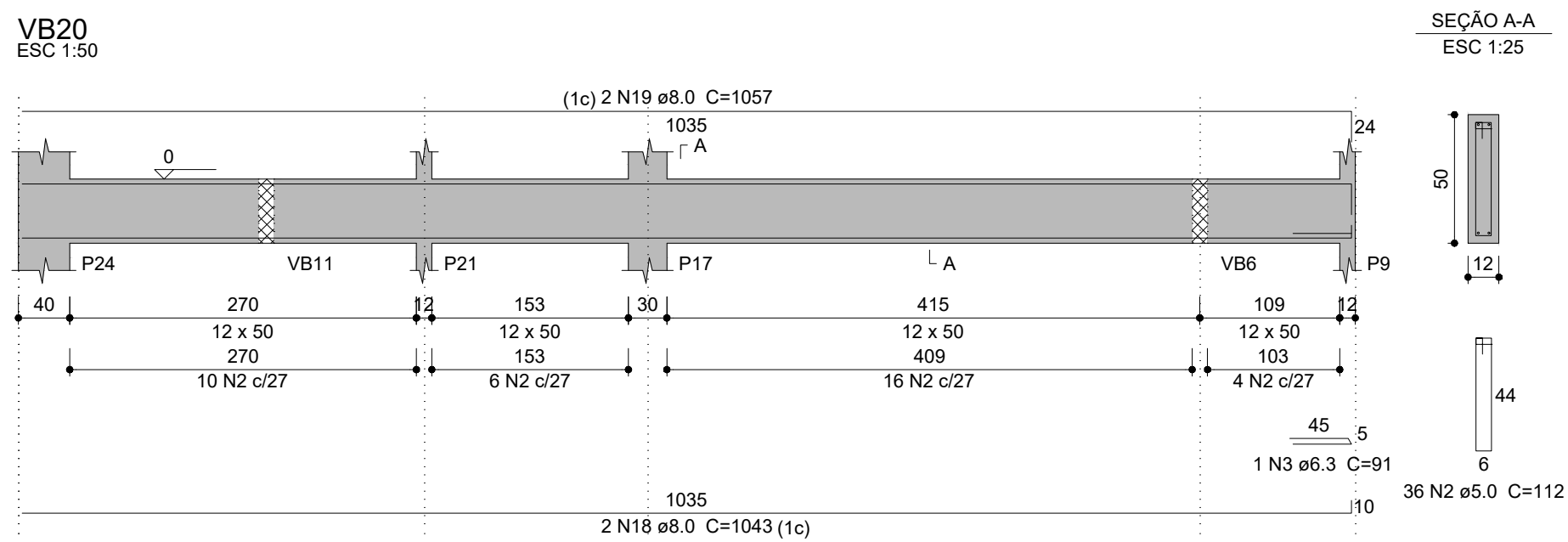
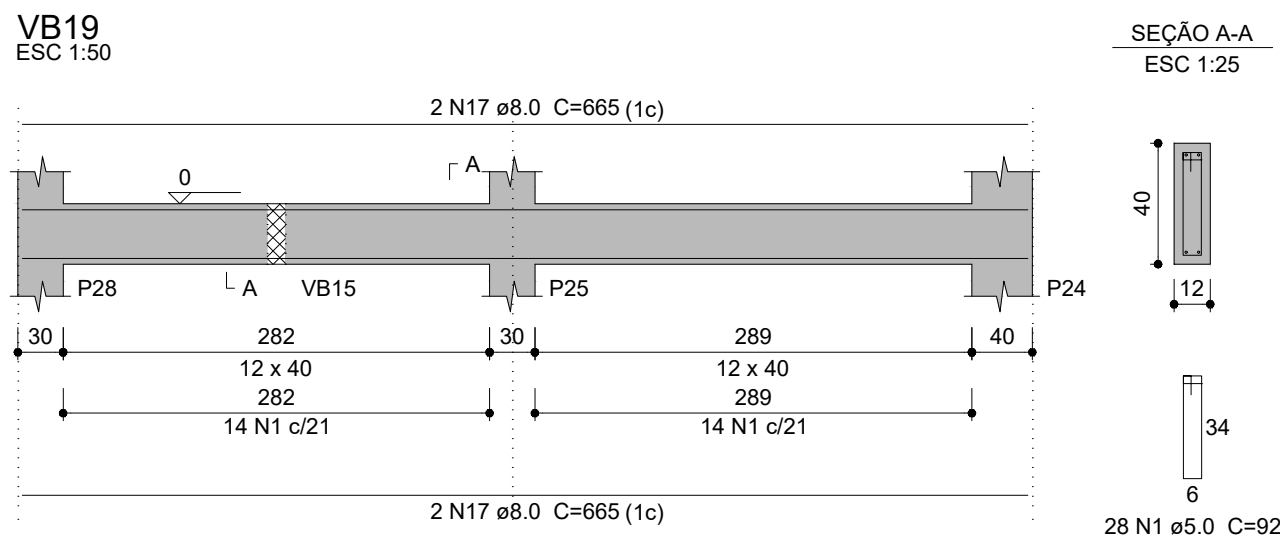
Pilar que passa

Legenda das vigas e paredes

Viga

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	12x30	0	0
P2	12x30	0	0
P3	12x30	0	0
P4	12x30	0	0
P5	12x30	0	0
P6	12x30	0	0
P7	12x30	0	0
P8	12x30	0	0
P9	12x30	0	0
P10	12x30	0	0
P11	12x30	0	0
P12	12x30	0	0
P13	12x40	0	0
P14	12x30	0	0
P15	12x30	0	0
P16	12x30	0	0
P17	12x30	0	0
P18	19x40	0	0
P19	12x30	0	0
P20	12x30	0	0
P21	12x30	0	0
P22	19x40	0	0
P23	12x40	0	0
P24	12x40	0	0
P25	12x30	0	0
P26	19x40	0	0
P27	12x40	0	0
P28	12x30	0	0
P29	12x40	0	0
P30	12x40	0	0
P31	12x30	0	0
P32	12x30	0	0





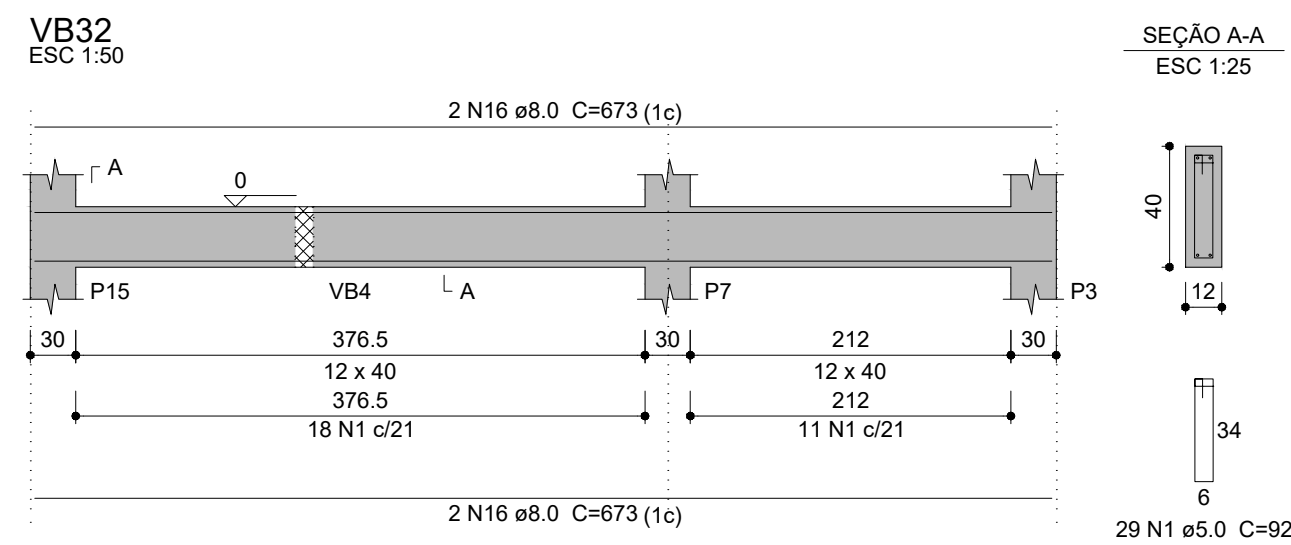
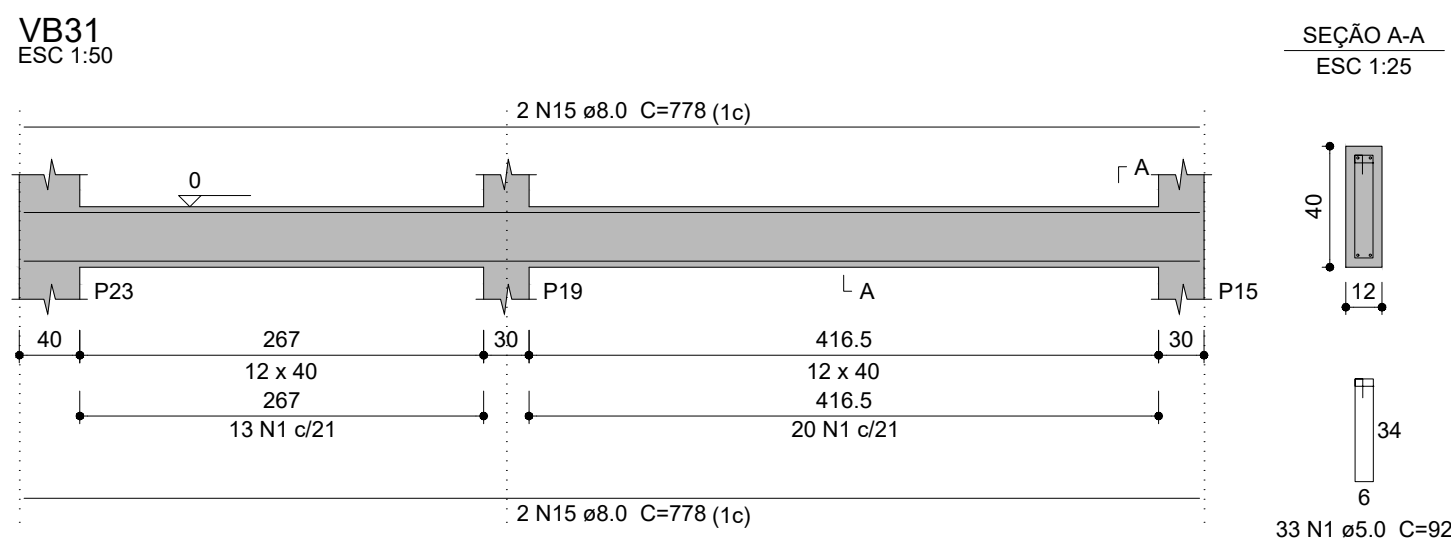
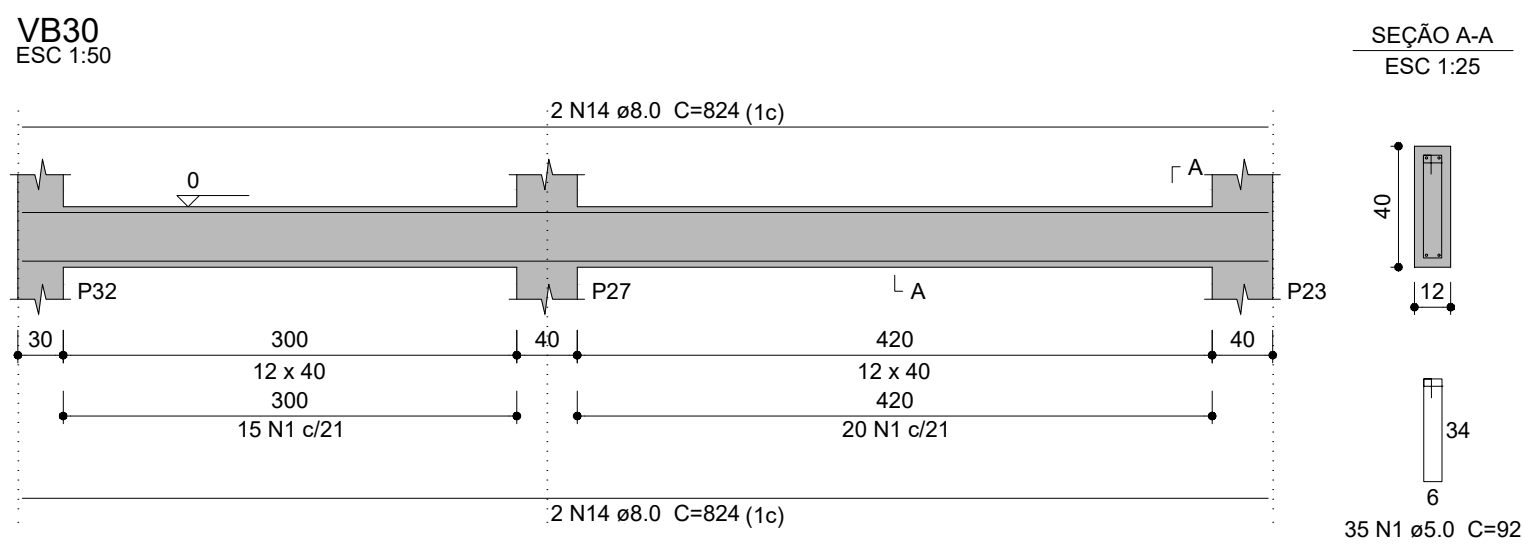
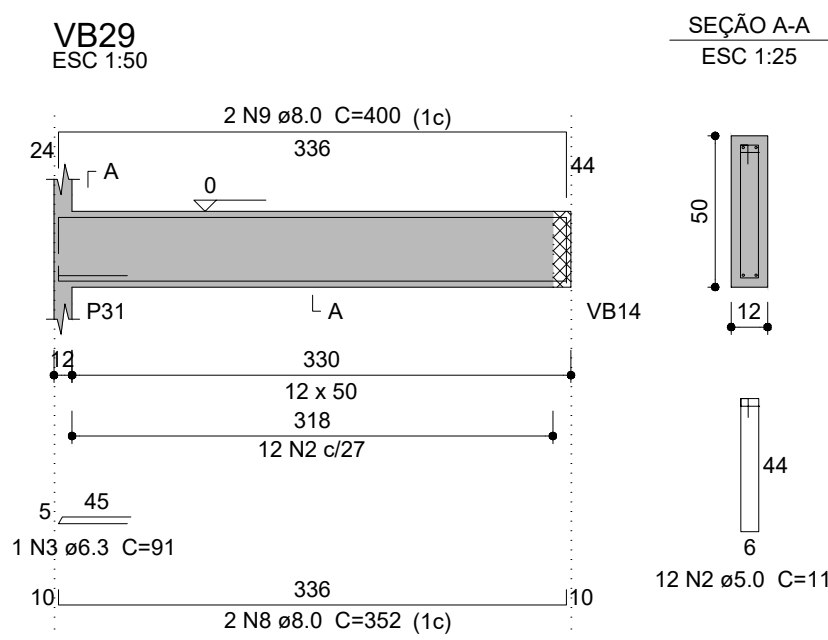
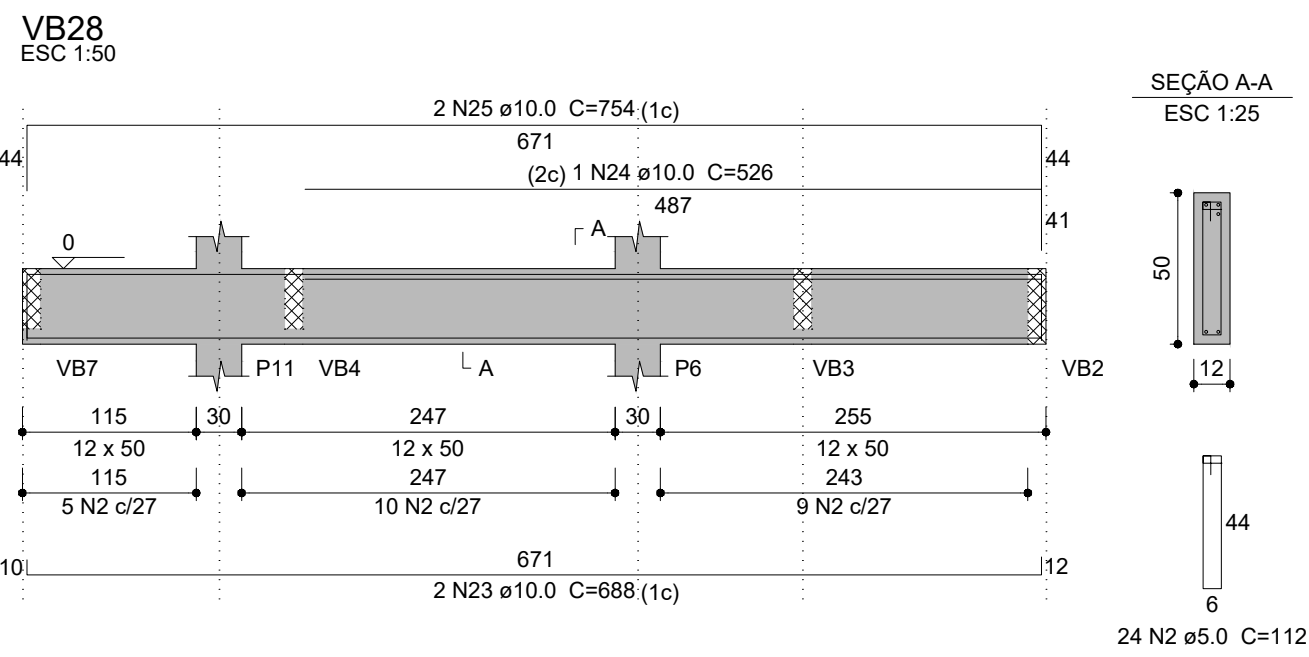
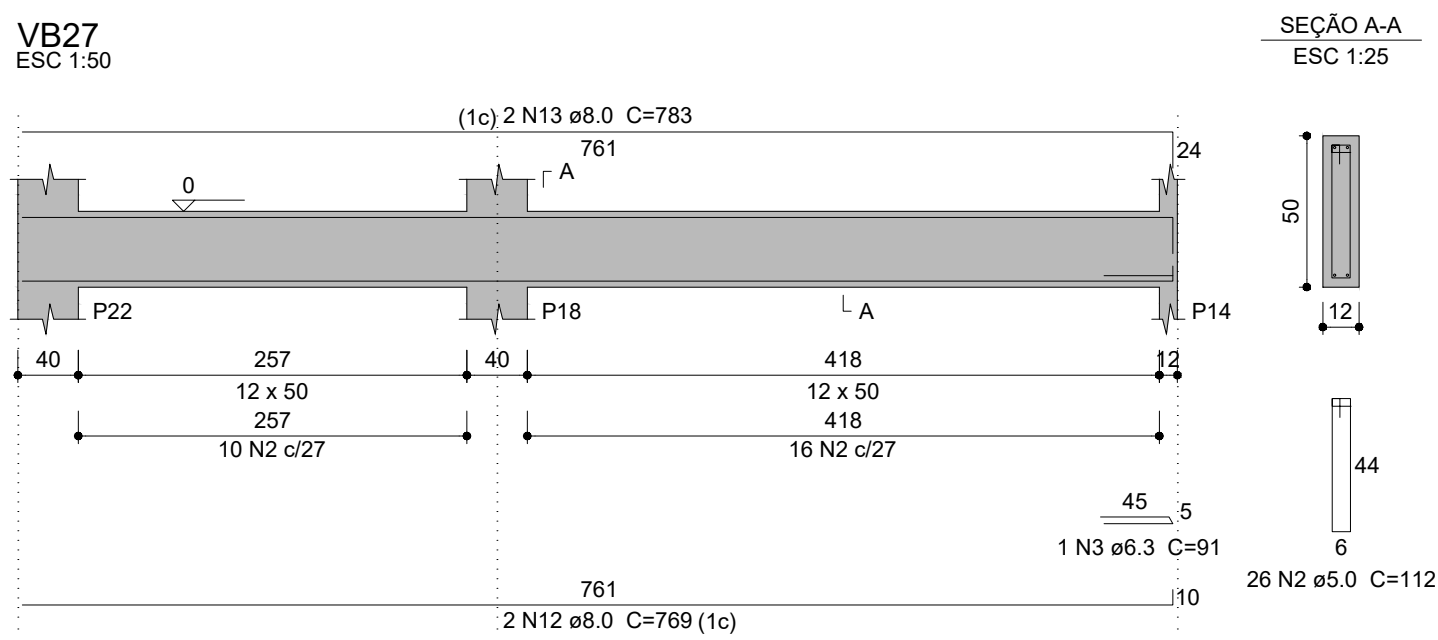
Relação do aço

VB19	VB20	VB21	VB22	VB23	VB24	VB25	VB26	VB27	VB28	VB29	VB30	VB31	VB32				
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	186	92	17112	CA60	2	5.0	127	112	14224	CA60	3	6.3	4	91	364
	4	8.0	2	344	688		4	8.0	2	344	688		5	8.0	2	353	706
	6	8.0	2	572	1144		6	8.0	2	572	1144		7	8.0	2	590	1180
	8	8.0	6	352	2112		8	8.0	6	352	2112		9	8.0	4	400	1600
	10	8.0	2	502	1004		10	8.0	2	502	1004		11	8.0	2	536	1072
	12	8.0	2	769	1538		12	8.0	2	769	1538		13	8.0	2	783	1566
	13	8.0	2	783	1566		14	8.0	4	824	3296		15	8.0	4	778	3112
	14	8.0	4	824	3296		15	8.0	4	778	3112		16	8.0	4	665	2660
	15	8.0	4	778	3112		16	8.0	4	665	2660		17	8.0	4	665	2660
	16	8.0	4	665	2660		17	8.0	4	665	2660		18	8.0	2	1043	2086
	17	8.0	4	665	2660		18	8.0	2	1043	2086		19	8.0	2	1057	2114
	18	8.0	2	1043	2086		19	8.0	2	1057	2114		20	8.0	2	336	672
	19	8.0	2	1057	2114		20	8.0	2	336	672		21	8.0	2	137	274
	20	8.0	2	336	672		21	8.0	2	137	274		22	8.0	2	170	340
	21	8.0	2	137	274		22	8.0	2	170	340		23	10.0	2	688	1376
	22	8.0	2	170	340		23	10.0	2	688	1376		24	10.0	1	526	526
	23	10.0	2	688	1376		24	10.0	1	526	526		25	10.0	2	754	1508
	24	10.0	1	526	526		25	10.0	2	754	1508						

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)	%
CA50	6.3	3.7	129.6	1
	8.0	298.6	129.6	23.1
	10.0	34.1	53.1	53.1
CA60	5.0	313.4	53.1	
PESO TOTAL (kg)				
CA50	153.7			
CA60	53.1			

Volume de concreto (C-30) = 4.28 m³
Área de forma = 80.98 m²



RESP. PROJETO:

DESENHO:

PROJETO EXECUTIVO

VIGAS BALDRAMES 2

REFERÊNCIA:

ESPECIALIDADE:

ESTRUTURA DE CONCRETO ARMADO

PROJETO EXECUTIVO

VIGAS BALDRAMES 2

REFERÊNCIA:

OBSERVAÇÕES

RESP.

VISTO:

RESP.

EMISSÃO INICIAL

REVISÃO

DATA

REVISÃO

REVISÃO

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Nº OS: OS 050-19

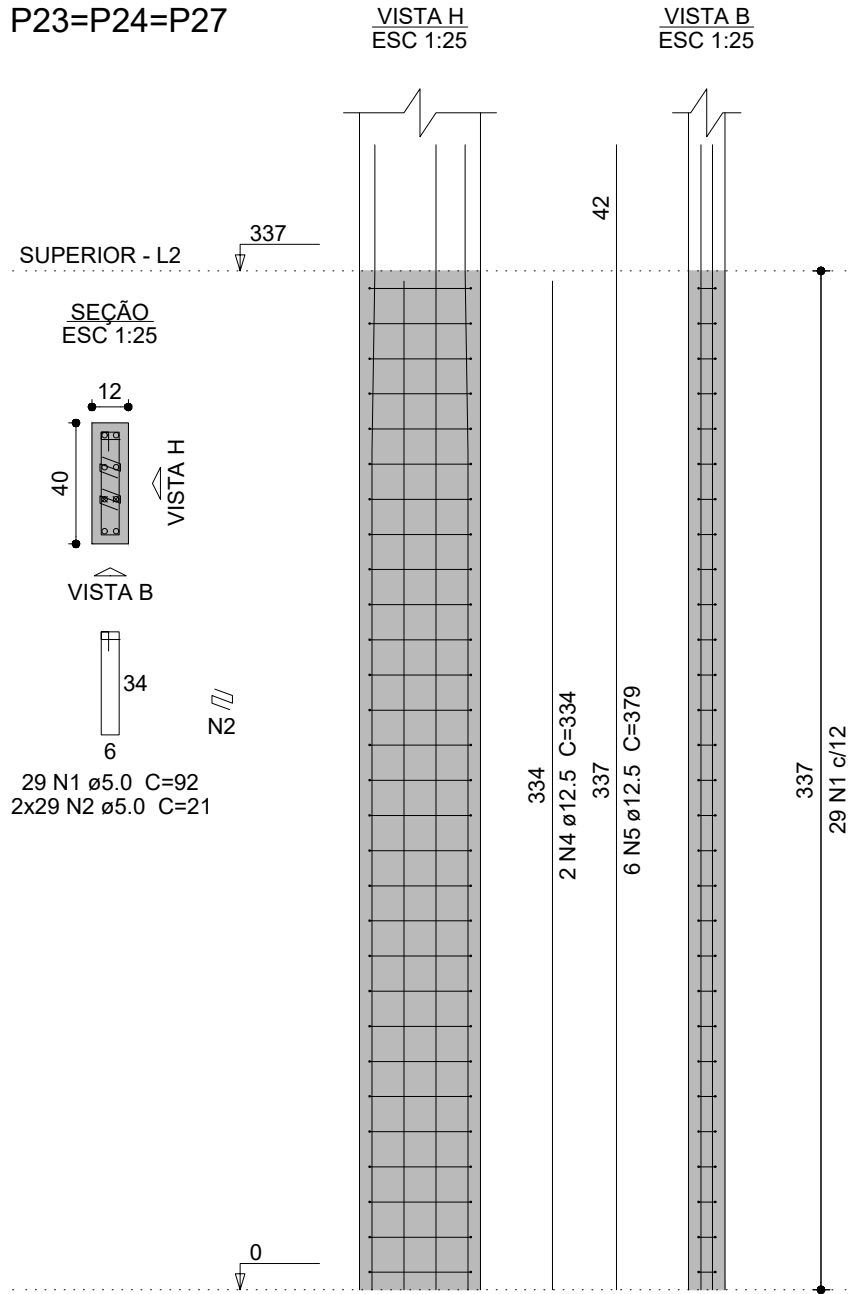
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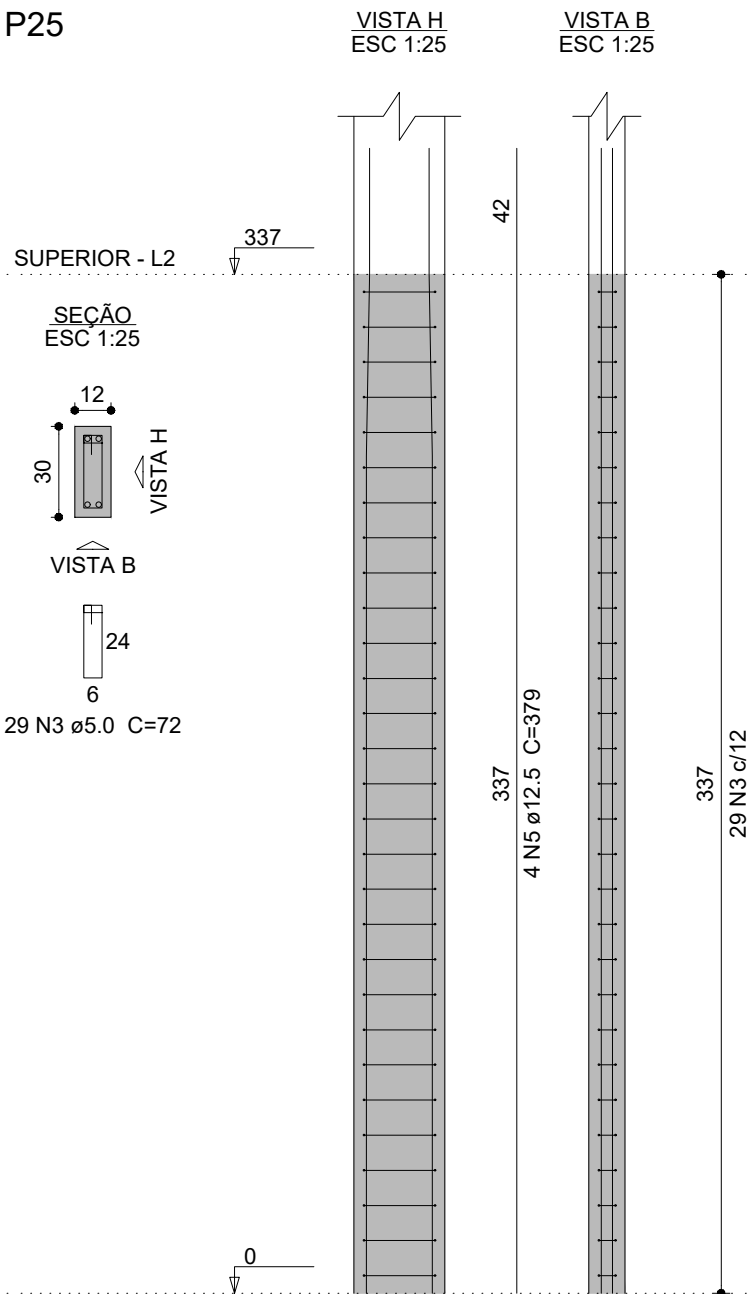
FOLHA:

CA-07

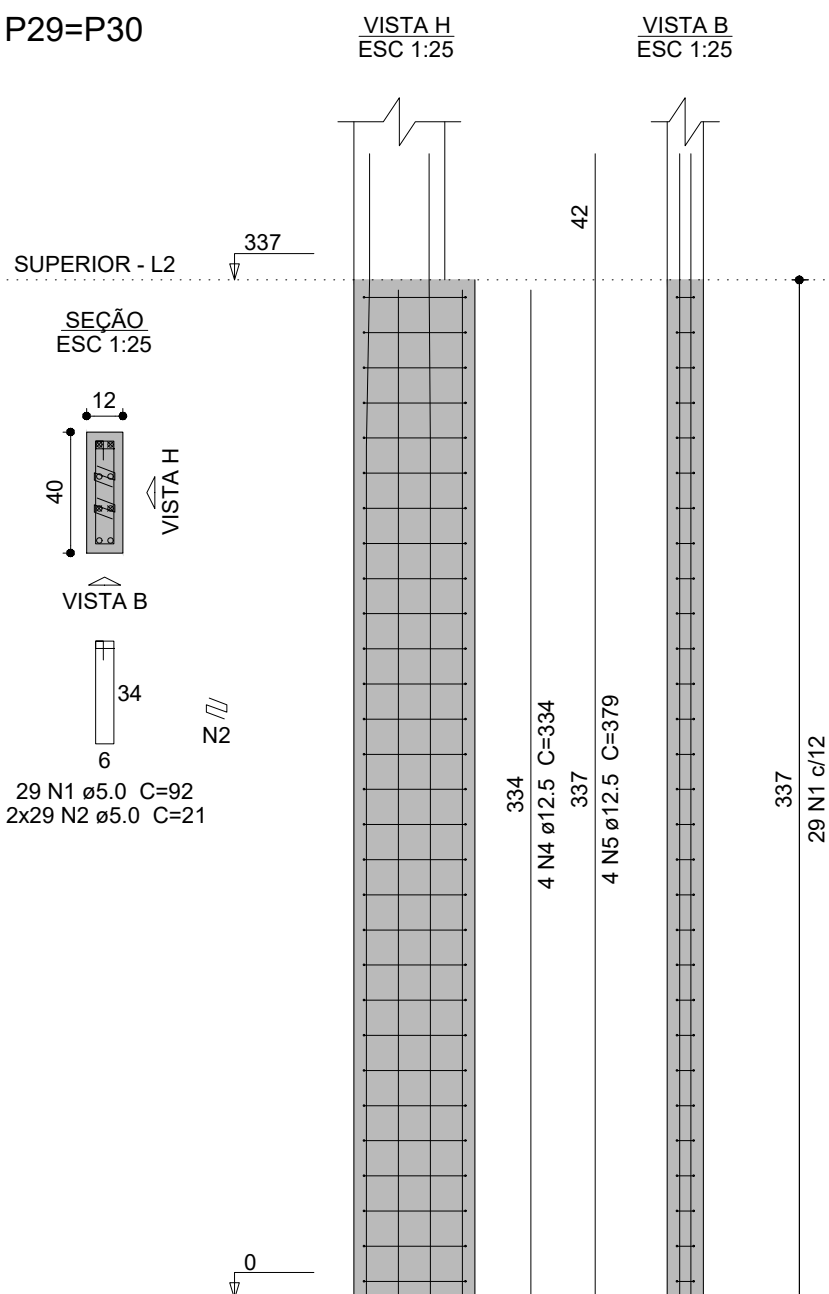
P23=P24=P27



P25



P29=P30



Relação do aço

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	145	92	13340
	2	5.0	290	21	6090
	3	5.0	29	72	2088
CA50	4	12.5	14	334	4676
	5	12.5	30	379	11370

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	12.5	160.5	170
CA60	5.0	215.2	36.5
PESO TOTAL (kg)			
CA50	170		
CA60	36.5		

Volume de concreto (C-30) = 0.93 m³
Área de forma = 20.35 m²

RESP. PROJETO:

DESENHO:

ESPECIALIDADE:

REFERÊNCIA:

PROJETO EXECUTIVO

PILARES SUPERIOR 2

CONTRATANTE:

OBRA:

EDIFICAÇÃO COMERCIAL E RESIDENCIAL

PROPRIETÁRIO

RESP. EXECUÇÃO

RESP. PROJETO

Nº OS:

OS 050-19

DATA:

07/11/2019

ESCALA:

INDICADAS

FOLHA:

CA-09

REV:

R00

DATA:

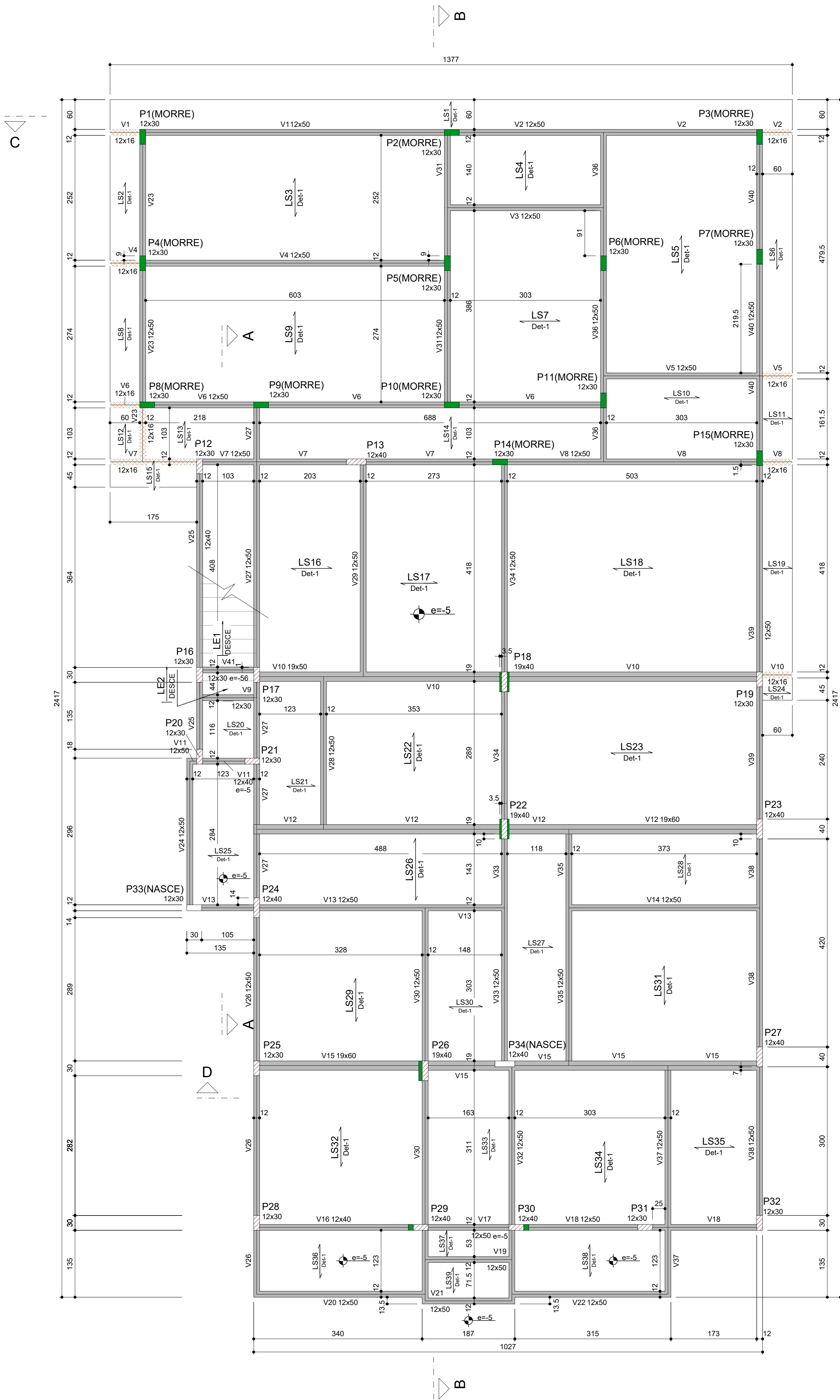
07/11/19

EMISSÃO INICIAL

DESCRIÇÃO:

RESP.

VISTO:



Vigas				
Nome	Seção (cm)	Elevação (cm)	Nível (cm)	
V1	12x16	0	337	
V2	12x50	0	337	
V3	12x50	0	337	
V4	12x16	0	337	
V5	12x50	0	337	
V6	12x16	0	337	
V7	12x50	0	337	
V8	12x50	0	337	
V9	12x16	0	337	
V10	12x30	0	337	
V11	12x50	0	337	
V12	12x40	-5	332	
V13	12x50	0	337	
V14	12x50	0	337	
V15	12x50	0	337	
V16	12x40	0	337	
V17	12x50	-5	332	
V18	12x50	0	337	
V19	12x50	0	337	
V20	12x50	0	337	
V21	12x50	0	337	
V22	12x50	0	337	
V23	12x16	0	337	
V24	12x50	0	337	
V25	12x40	0	337	
V26	12x50	0	337	
V27	12x50	0	337	
V28	12x50	0	337	
V29	12x50	0	337	
V30	12x50	0	337	
V31	12x50	0	337	
V32	12x50	0	337	
V33	12x50	0	337	
V34	12x50	0	337	
V35	12x50	0	337	
V36	12x50	0	337	
V37	12x50	0	337	
V38	12x50	0	337	
V39	12x50	0	337	
V40	12x50	0	337	
V41	12x30	-56	281	

Blocos de enchimento				
Detalhe	Tipo	Nome	Dimensões (cm) hb. bx by	Quantidade
1	EPS Unidirecional	B12/30/125	12 30 125	516

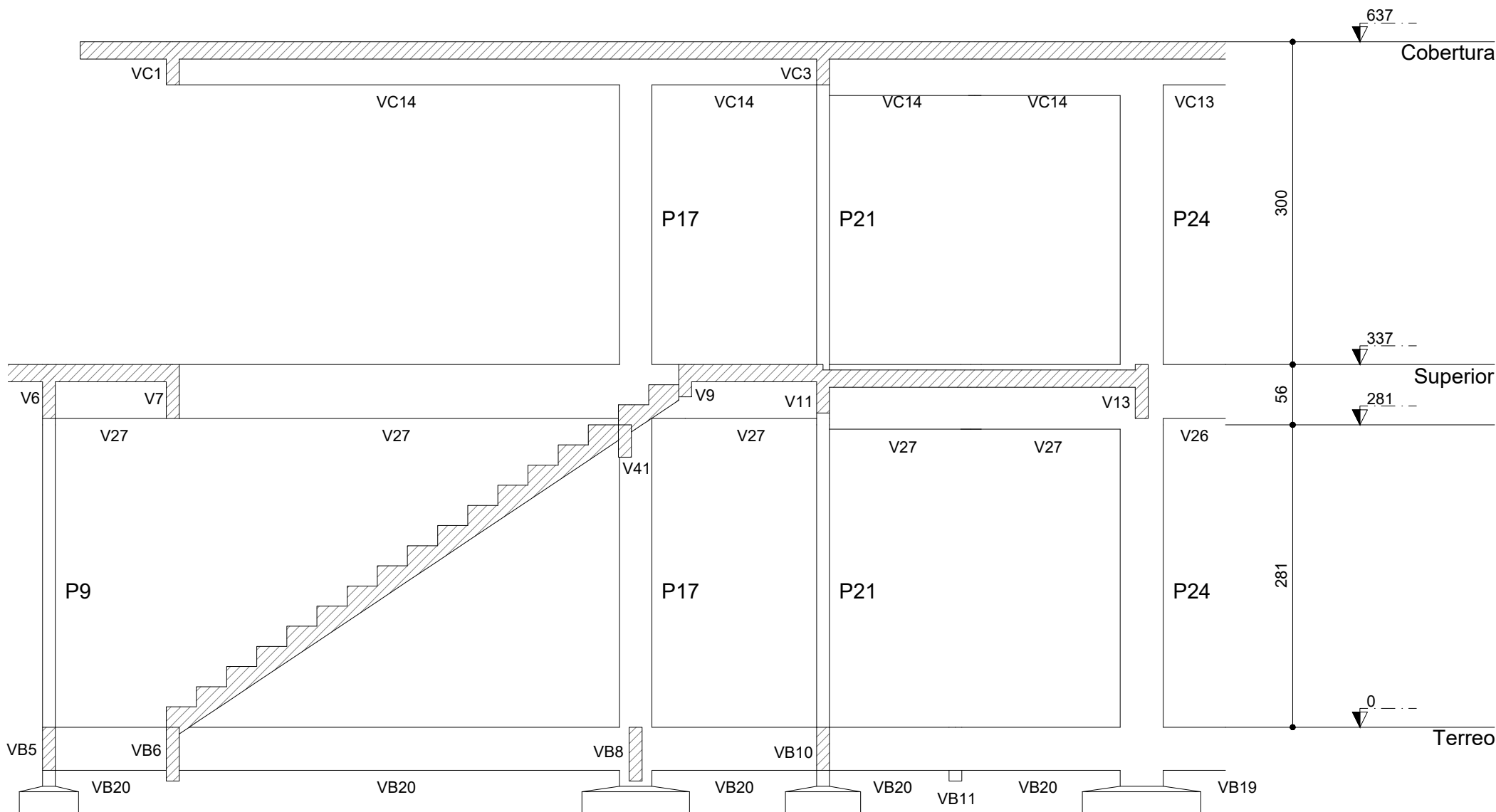
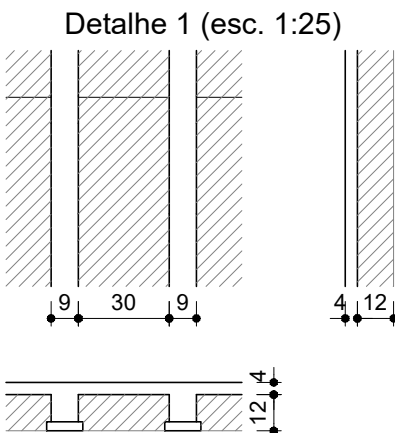
Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm²)	Abatimento (cm)
300	268384	10.00

Lajes						
Nome	Tipo	Dados			Sobrecarga (kgf/m²)	
		Altura (cm)	Elevação (cm)	Nível (cm)	Total	Localizada
LE1	Maciça	12	-56	281	595	424
LE2	Maciça	12	0	337	699	0
LS1	Trelçada 1D	16	0	337	171	0
LS2	Trelçada 1D	16	0	337	171	0
LS3	Trelçada 1D	16	0	337	171	0
LS4	Trelçada 1D	16	0	337	171	0
LS5	Trelçada 1D	16	0	337	176	0
LS6	Trelçada 1D	16	0	337	176	0
LS7	Trelçada 1D	16	0	337	171	0
LS8	Trelçada 1D	16	0	337	171	0
LS9	Trelçada 1D	16	0	337	171	0
LS10	Trelçada 1D	16	0	337	171	0
LS11	Trelçada 1D	16	0	337	171	0
LS12	Trelçada 1D	16	0	337	171	0
LS13	Trelçada 1D	16	0	337	171	0
LS14	Trelçada 1D	16	0	337	171	0
LS15	Trelçada 1D	16	0	337	171	0
LS16	Trelçada 1D	16	0	337	171	0
LS17	Trelçada 1D	16	-5	332	171	0
LS18	Trelçada 1D	16	0	337	176	0
LS19	Trelçada 1D	16	0	337	171	0
LS20	Trelçada 1D	16	0	337	171	0
LS21	Trelçada 1D	16	0	337	171	0
LS22	Trelçada 1D	16	0	337	171	0
LS23	Trelçada 1D	16	0	337	176	0
LS24	Trelçada 1D	16	0	337	171	0
LS25	Trelçada 1D	16	-5	332	171	0
LS26	Trelçada 1D	16	0	337	171	0
LS27	Trelçada 1D	16	0	337	171	0
LS28	Trelçada 1D	16	0	337	171	0
LS29	Trelçada 1D	16	0	337	171	0
LS30	Trelçada 1D	16	0	337	171	0
LS31	Trelçada 1D	16	0	337	171	0
LS32	Trelçada 1D	16	0	337	171	0
LS33	Trelçada 1D	16	0	337	171	0
LS34	Trelçada 1D	16	0	337	171	0
LS35	Trelçada 1D	16	0	337	171	0
LS36	Trelçada 1D	16	-5	332	171	0
LS37	Trelçada 1D	16	0	337	171	332
LS38	Trelçada 1D	16	-5	332	171	0
LS39	Trelçada 1D	16	-5	332	171	0

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	12x30	0	337
P2	12x30	0	337
P3	12x30	0	337
P4	12x30	0	337
P5	12x30	0	337
P6	12x30	0	337
P7	12x30	0	337
P8	12x30	0	337
P9	12x30	0	337
P10	12x30	0	337
P11	12x30	0	337
P12	12x30	0	337
P13	12x40	0	337
P14	12x30	120	457
P15	12x30	0	337
P16	12x30	0	337
P17	12x30	0	337
P18	19x40	0	337
P19	12x30	0	337
P20	12x30	0	337
P21	12x30	0	337
P22	19x40	0	337
P23	12x40	0	337
P24	12x40	0	337
P25	12x30	0	337
P26	19x40	0	337
P27	12x40	0	337
P28	12x30	0	337
P29	12x40	0	337
P30	12x40	0	337
P31	12x30	0	337
P32	12x30	0	337
P33	12x30	0	337
P34	12x40	0	337

Legenda dos pilares	
	Pilar que morre
	Pilar que passa
	Pilar que nasce
	Pilar com mudança de seção

Legenda das vigas e paredes	
	Viga
	Viga chata ou invertida



Corte A-A
escala 1:50

Forma do pavimento Superior
escala 1:50

RESP. PROJETO:

DESENHO:

ESPECIALIDADE: **ESTRUTURA DE CONCRETO ARMADO**

PROJETO EXECUTIVO

FORMAS SUPERIOR

REFERENCIA:

OBSERVAÇÕES:

CONTRATANTE:

OBRA: **EDIFICAÇÃO COMERCIAL E RESIDENCIAL**

PROPRIETÁRIO:

RESP. EXECUÇÃO:

RESP. PROJETO:

Nº OS: **OS 050-19**

DATA: **07/11/2019**

ESCALA: **INDICADAS**

FOLHA: **CA-10**

REV:

DATA:

EMISSÃO INICIAL

DESCRÇÃO:

RESP.

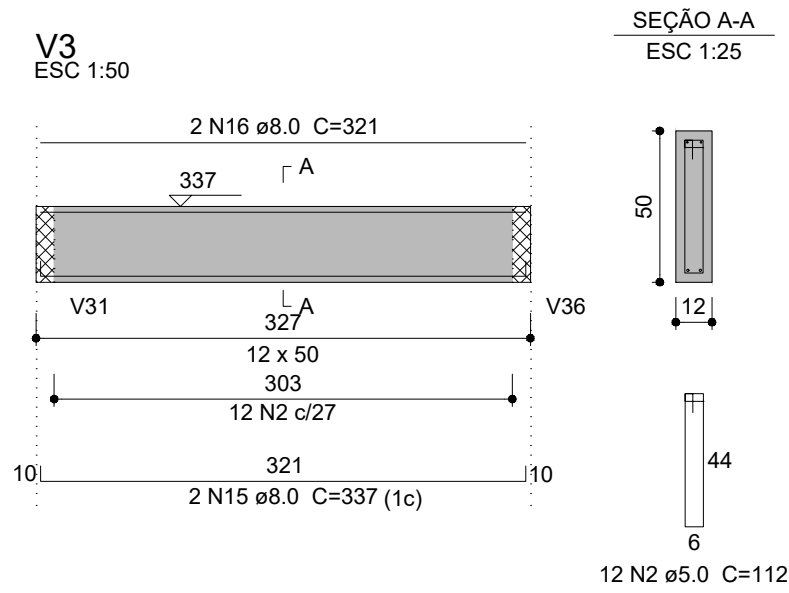
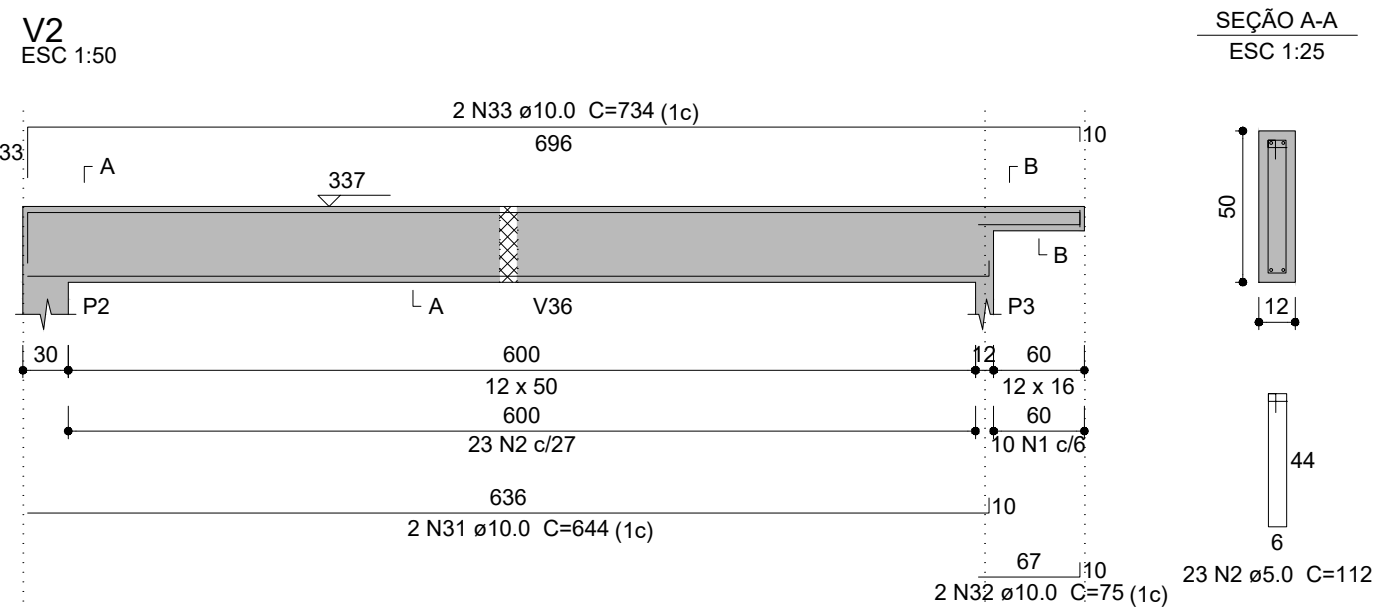
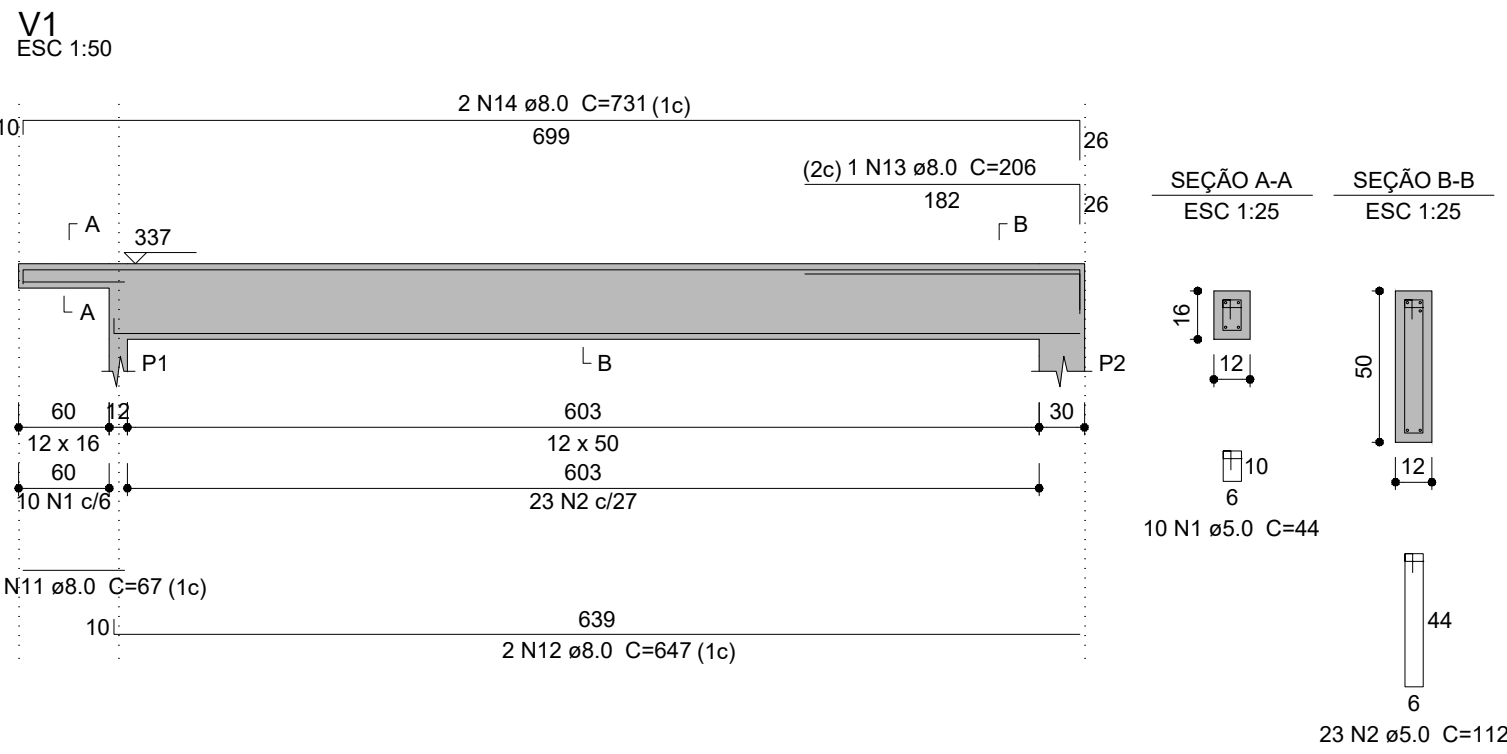
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Corte A-A

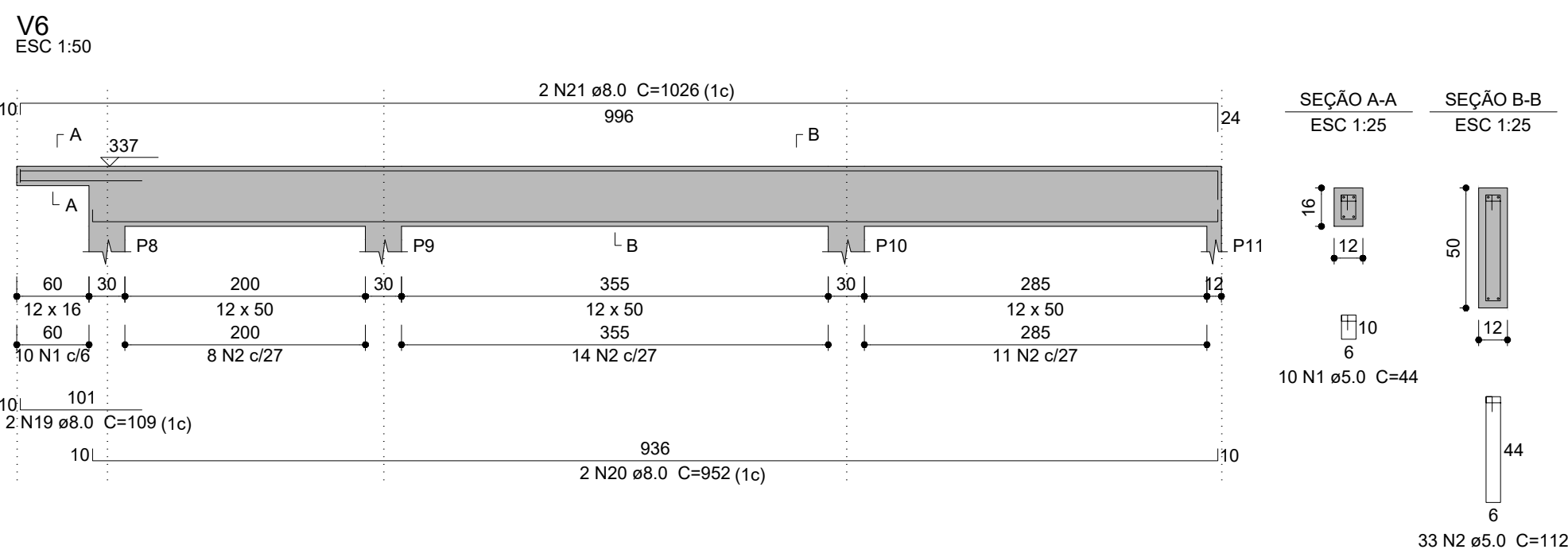
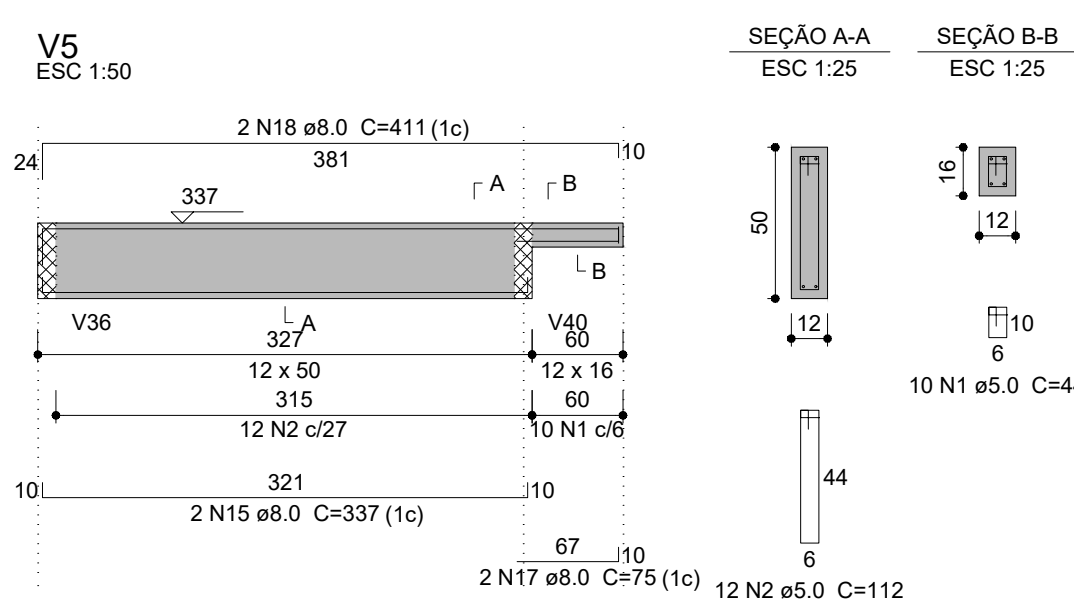
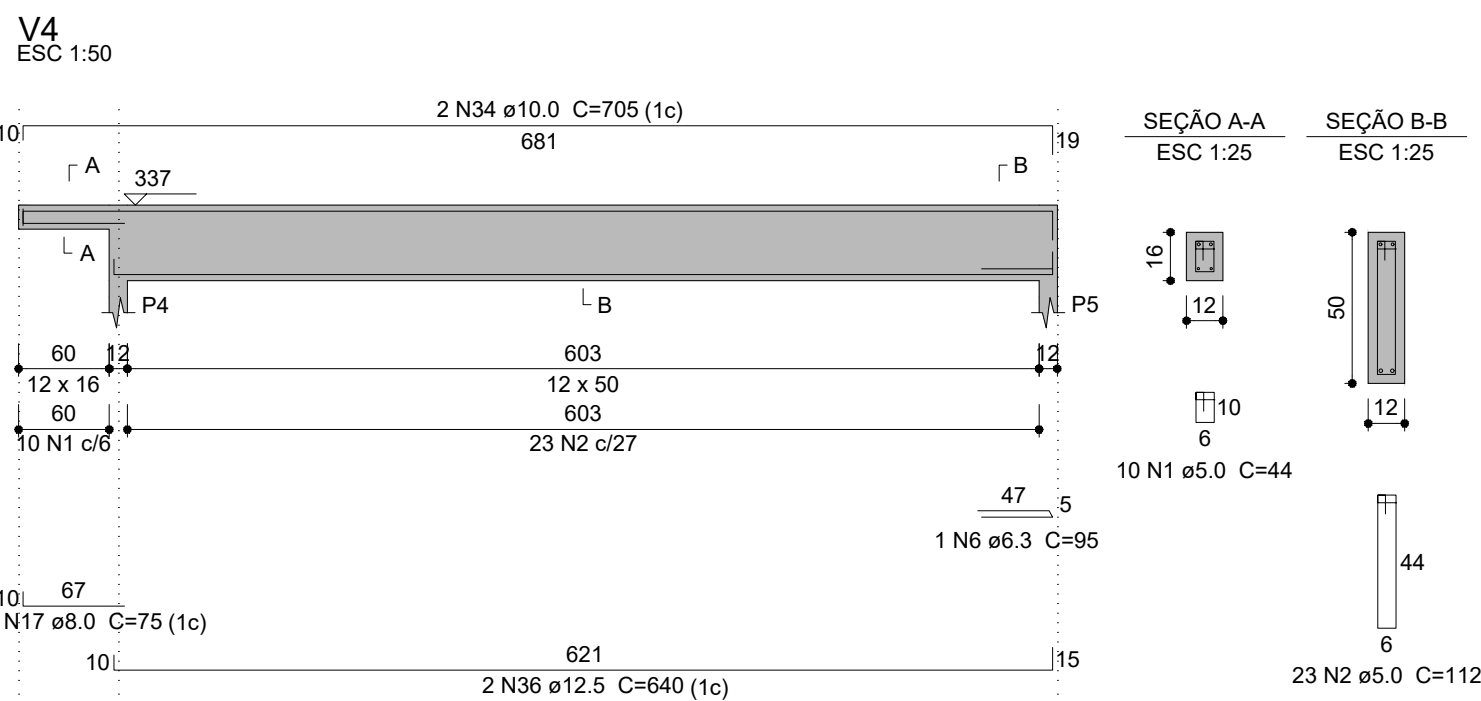
Corte A-A

RESP. PROJETO:						
<div>DESENHO:</div>						
Especialidade: Estrutura de Concreto Armado					Projeto Executivo	Escada
REFERENCIA:						
CONTRATANTE:						
OBRA:	Edificação Comercial e Residencial				R00	07/11/19
					MISSÃO INICIAL	
					REVISÃO DATA:	VISTO:
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PROPRIETARIO						
RESP. EXECUCAO						
RESP. PROJETO						
Nº OS:	OS 050-19					
DATA:	07/11/2019					
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FOLHA:	CA-11					



Relação do aço

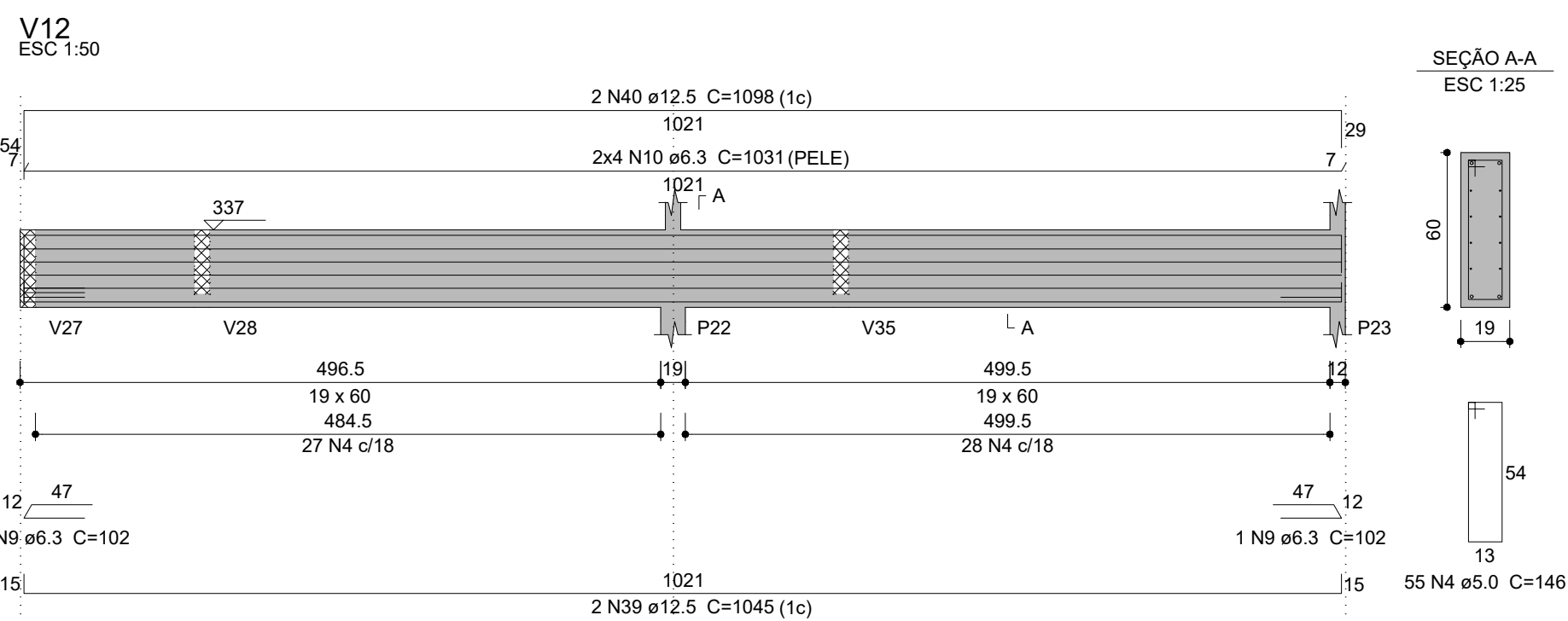
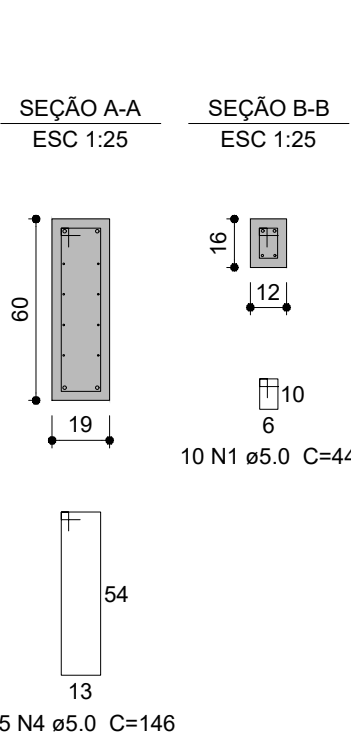
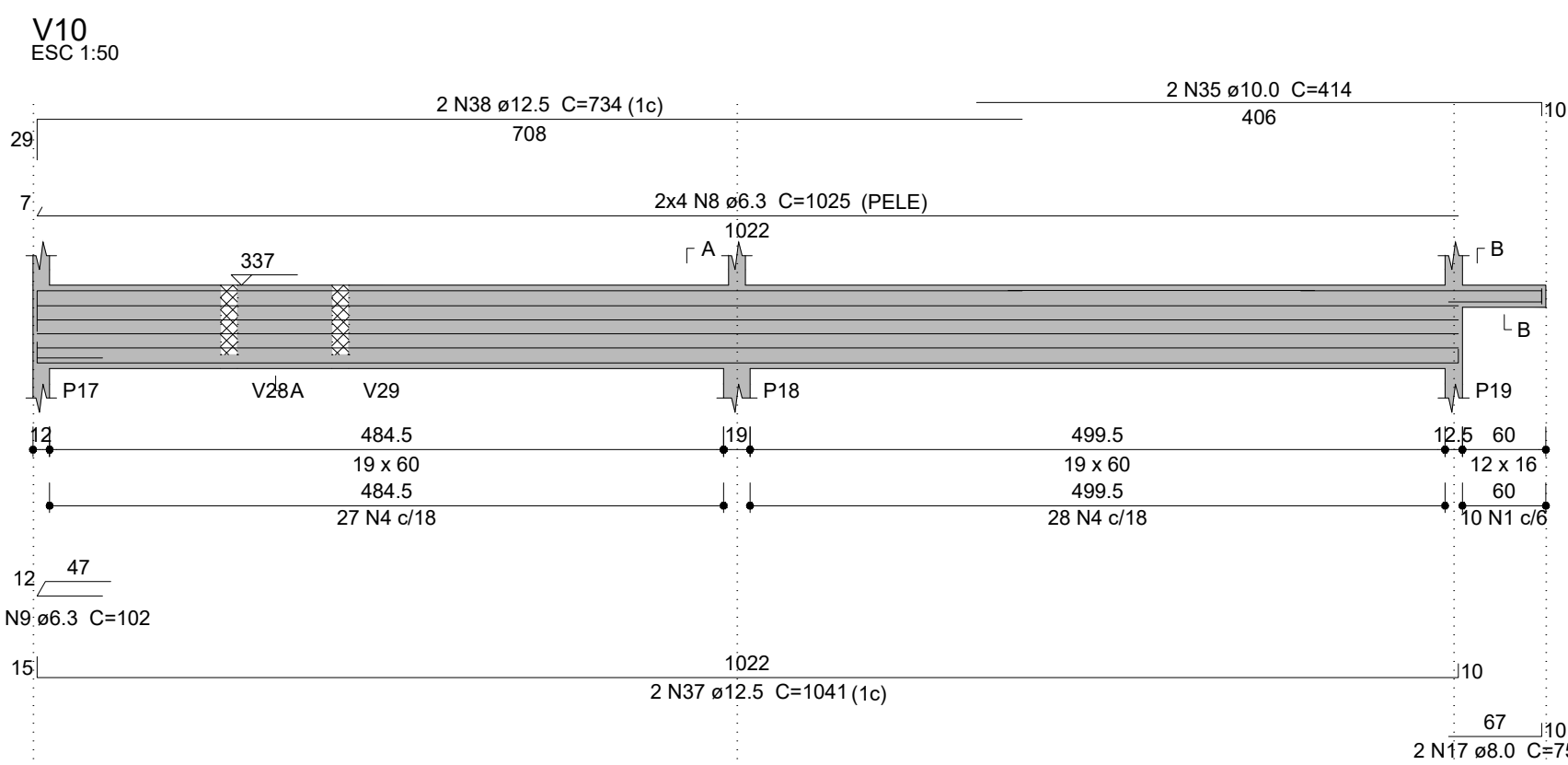
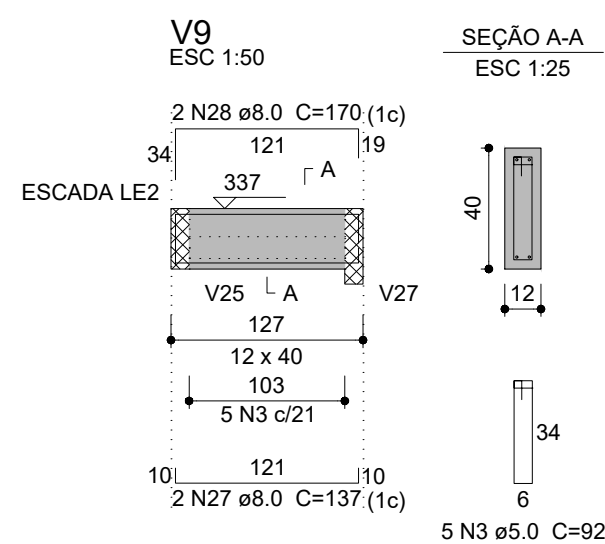
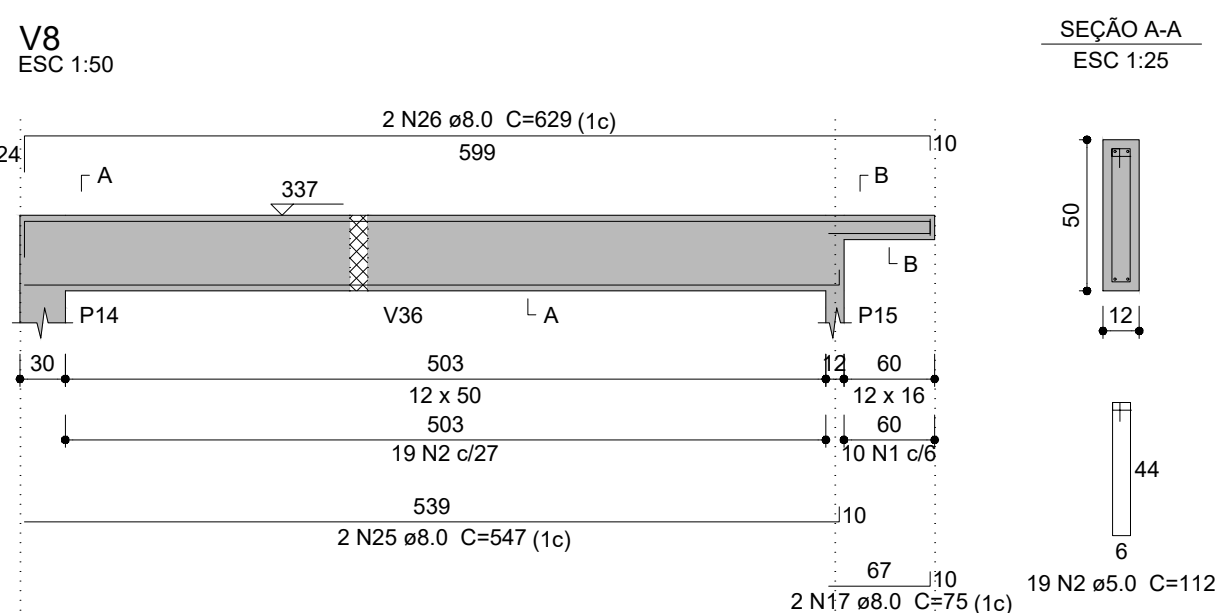
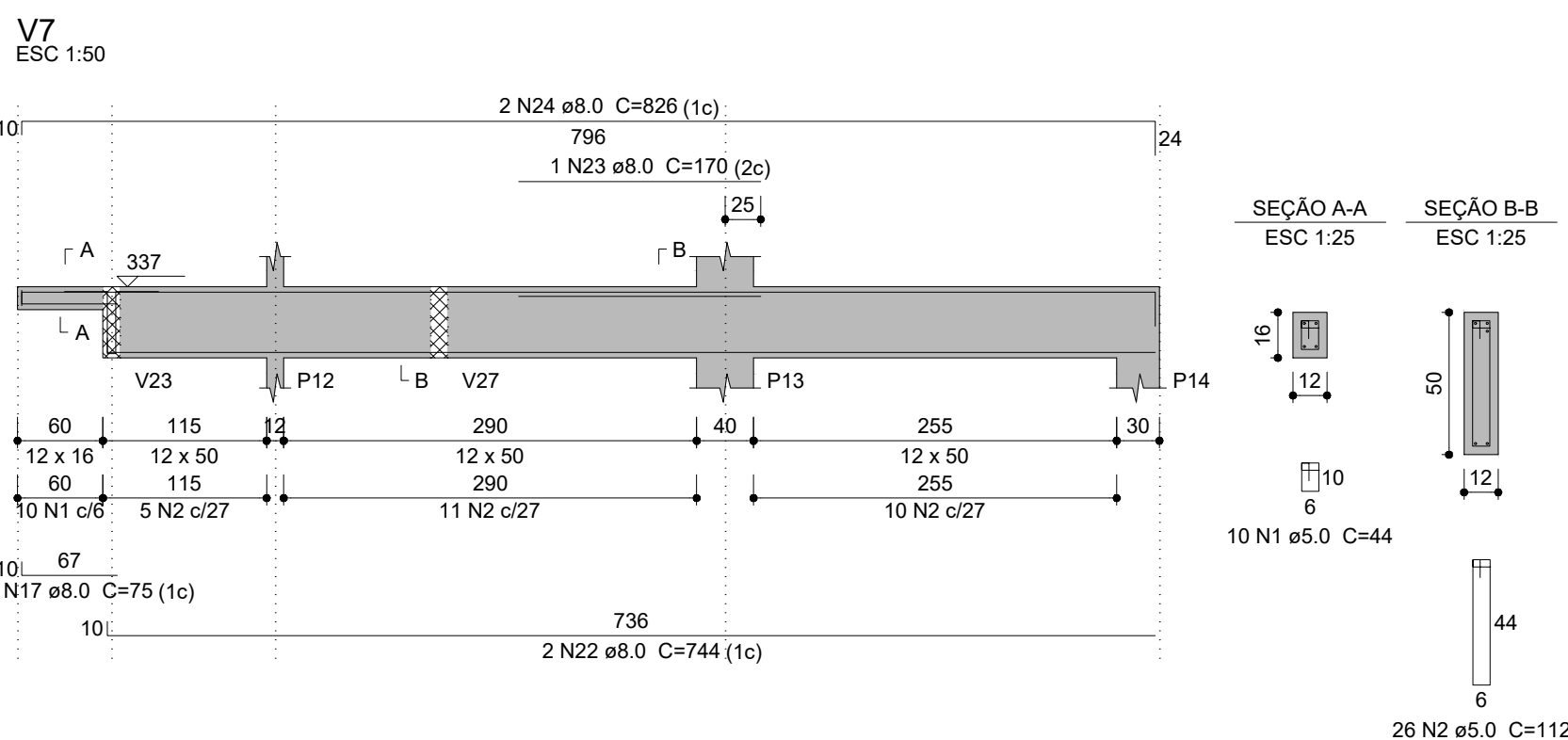
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	80	44	3520
	2	5.0	171	112	19152
	3	5.0	5	92	460
	4	5.0	110	146	16060
	5	5.0	8	72	576
CA50	6	6.3	1	95	95
	7	6.3	1	148	148
	8	6.3	8	1025	8200
	9	6.3	5	102	510
	10	6.3	8	1031	8248
	11	8.0	2	67	134
	12	8.0	2	647	1294
	13	8.0	1	206	206
	14	8.0	2	731	1462
	15	8.0	4	337	1348
	16	8.0	2	321	642
	17	8.0	10	75	750
	18	8.0	2	411	822
	19	8.0	2	109	218
	20	8.0	2	952	1904
	21	8.0	2	1026	2052
	22	8.0	2	744	1488
	23	8.0	1	170	170
	24	8.0	2	826	1652
	25	8.0	2	547	1094
	26	8.0	2	629	1258
	27	8.0	2	137	274
	28	8.0	2	170	340
	29	8.0	2	149	298
	30	8.0	2	163	326
	31	10.0	2	844	1288
	32	10.0	2	75	150
	33	10.0	2	734	1468
	34	10.0	2	705	1410
	35	10.0	2	414	828
	36	12.5	2	640	1280
	37	12.5	2	1041	2082
	38	12.5	2	734	1468
	39	12.5	2	1045	2090
	40	12.5	2	1098	2196

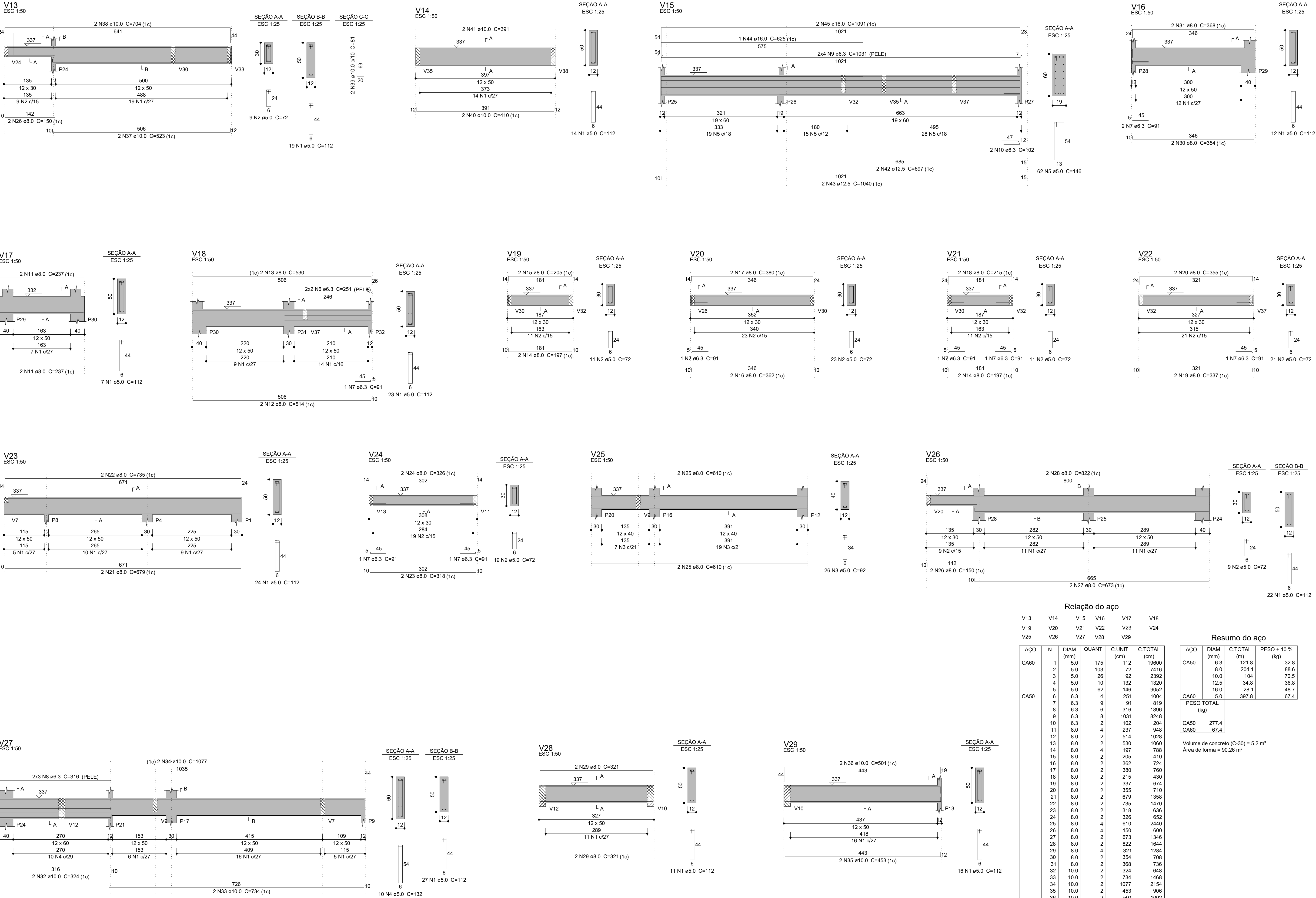


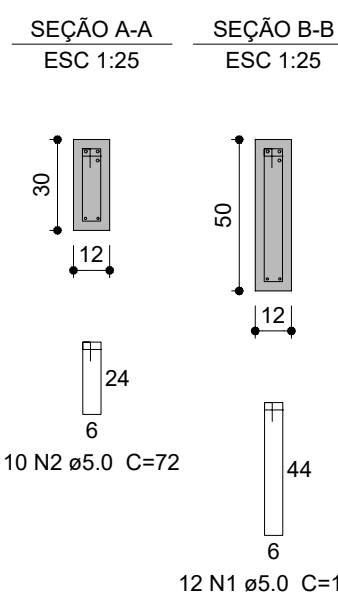
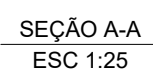
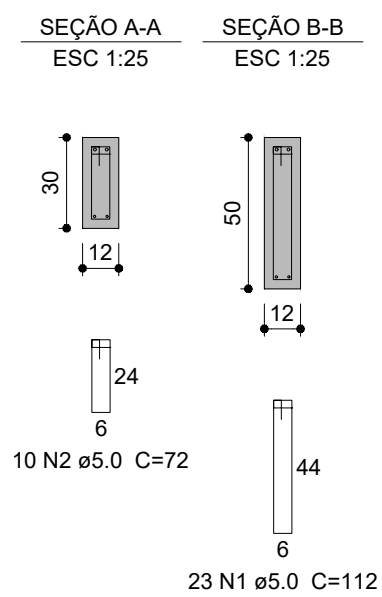
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	172.1	46.3
	8.0	177.4	77
	10.0	51.5	34.9
	12.5	91.2	96.6
CA60	5.0	397.7	67.4

Volume de concreto (C-30) = 5.4 m³
Área de forma = 86.22 m²







Relação do aço

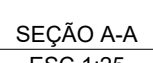
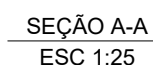
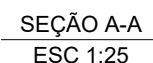
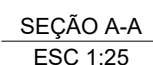
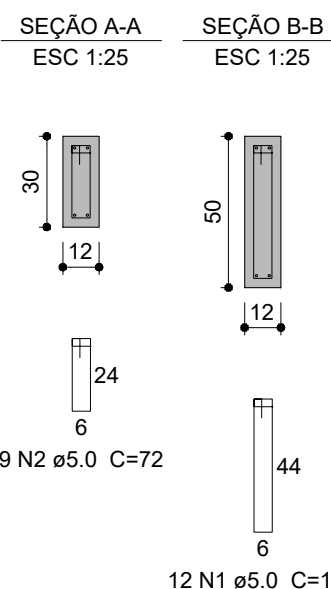
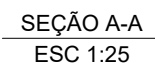
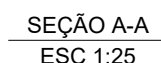
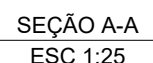
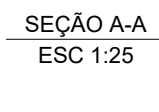
V30	V31	V32
V33	V34	V35
V36	V37	V38
V39	V40	V41

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	227	112	25424
CA50	2	5.0	38	72	2736
	3	6.3	2	91	182
	4	8.0	2	673	1346
	5	8.0	2	717	1434
	6	8.0	2	274	547
	7	8.0	2	145	290
	8	8.0	4	164	656
	9	8.0	2	667	1334
	10	8.0	1	537	537
	11	8.0	2	572	1144
	12	8.0	2	600	1200
	13	8.0	4	344	1376
	14	8.0	2	687	1376
	15	8.0	2	755	1510
	16	8.0	2	150	300
17	8.0	2	535	1070	
18	8.0	2	778	1556	
19	8.0	2	800	1600	
20	10.0	2	863	1726	
21	10.0	1	425	425	
22	10.0	1	535	535	
23	10.0	2	548	1096	
24	10.0	2	501	1002	
25	10.0	2	227	454	
26	10.0	2	518	1036	
27	10.0	2	771	1542	
28	10.0	2	790	1580	
29	10.0	4	824	3296	
30	12.5	4	478	1950	

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	1.9	0.5
	8.0	170.1	73.8
	10.0	126.7	85.9
	12.5	19.6	20.8
CA60	5.0	281.6	47.7
PESO TOTAL (kg)			
CA50	181		
CA60	47.7		

Volume de concreto (C-30) = 4.18 m³
Área de forma = 78.34 m²

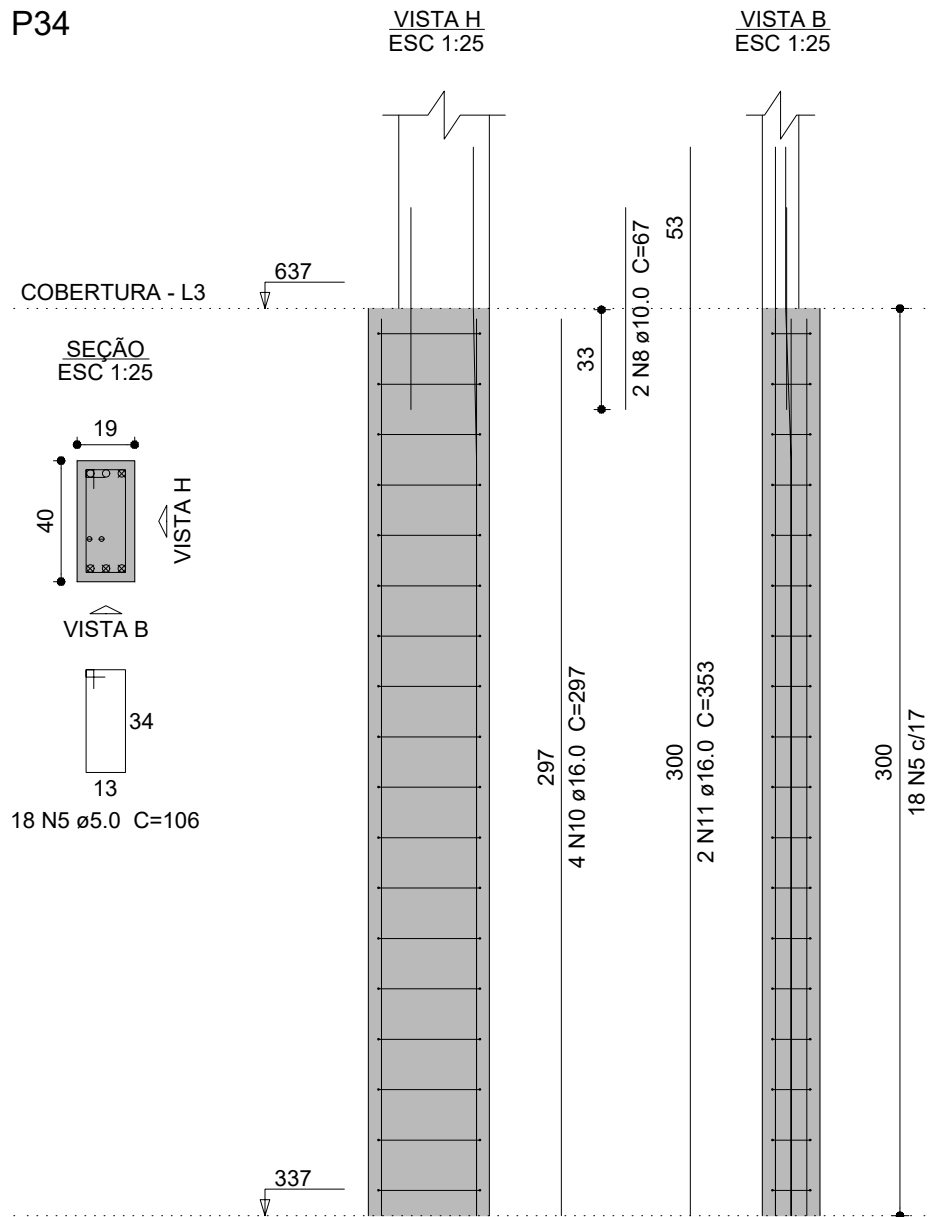
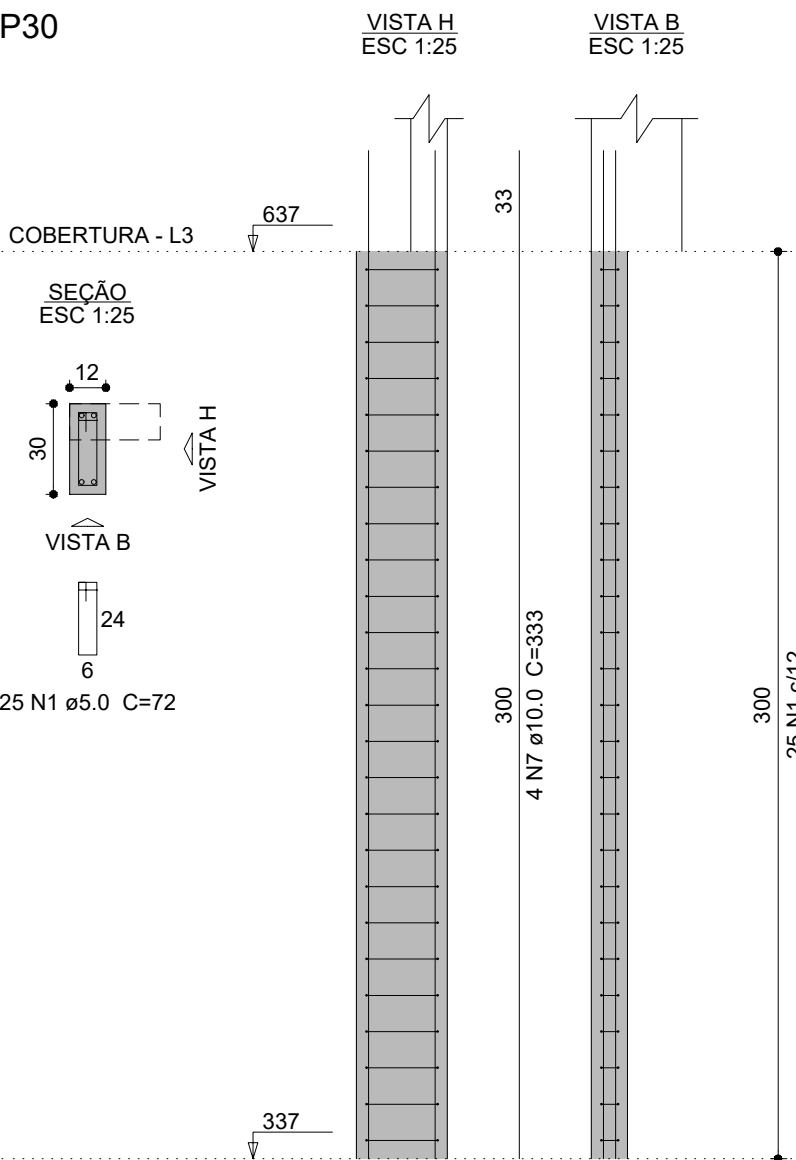
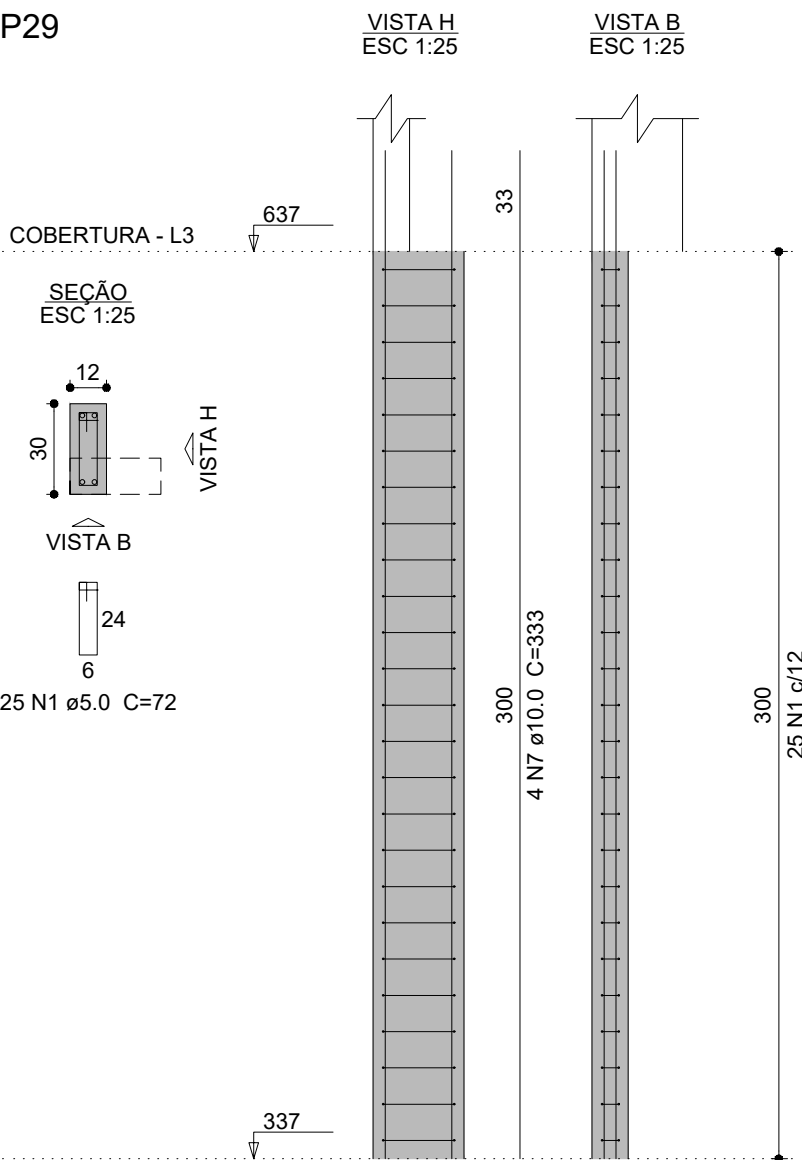
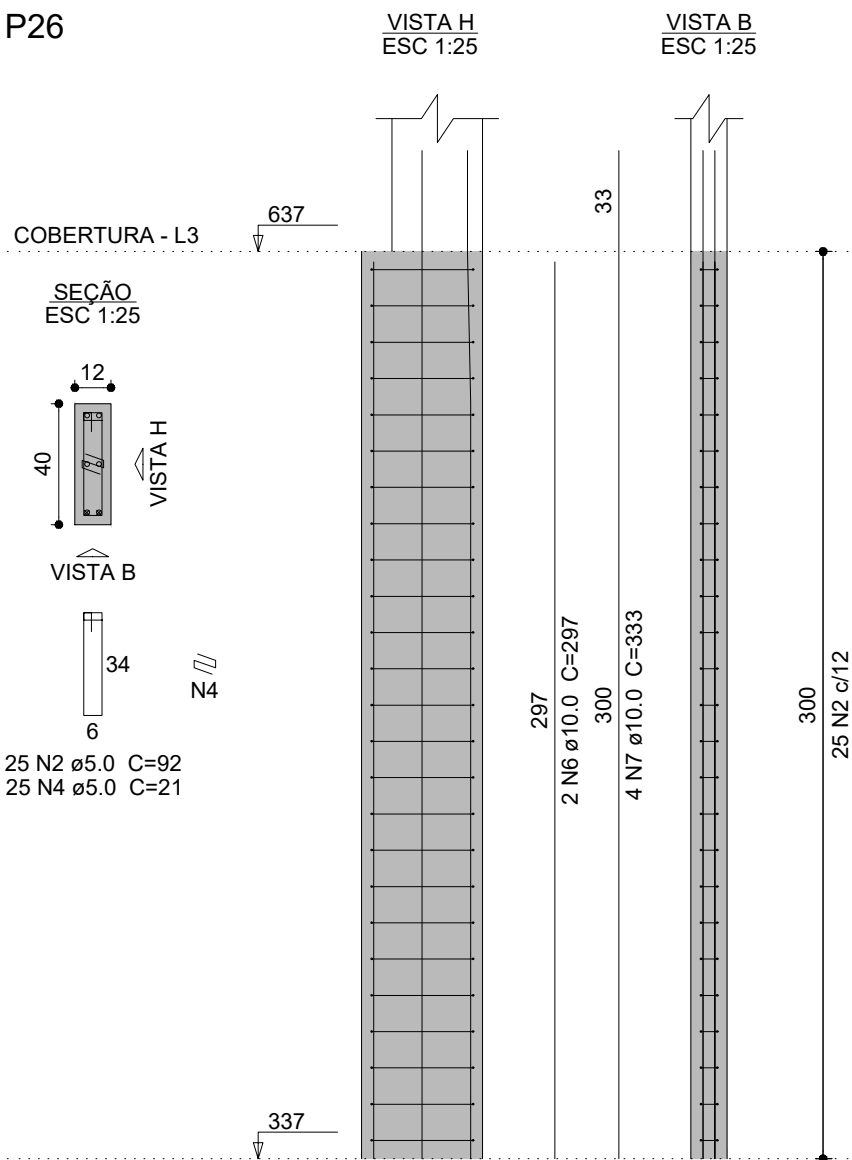
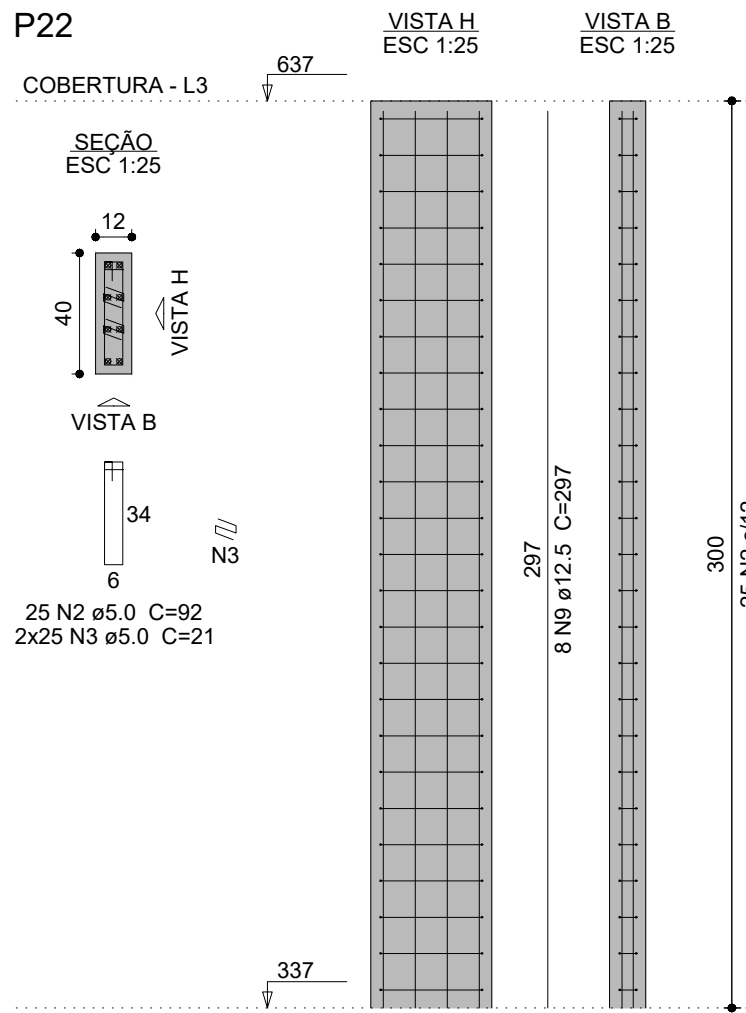
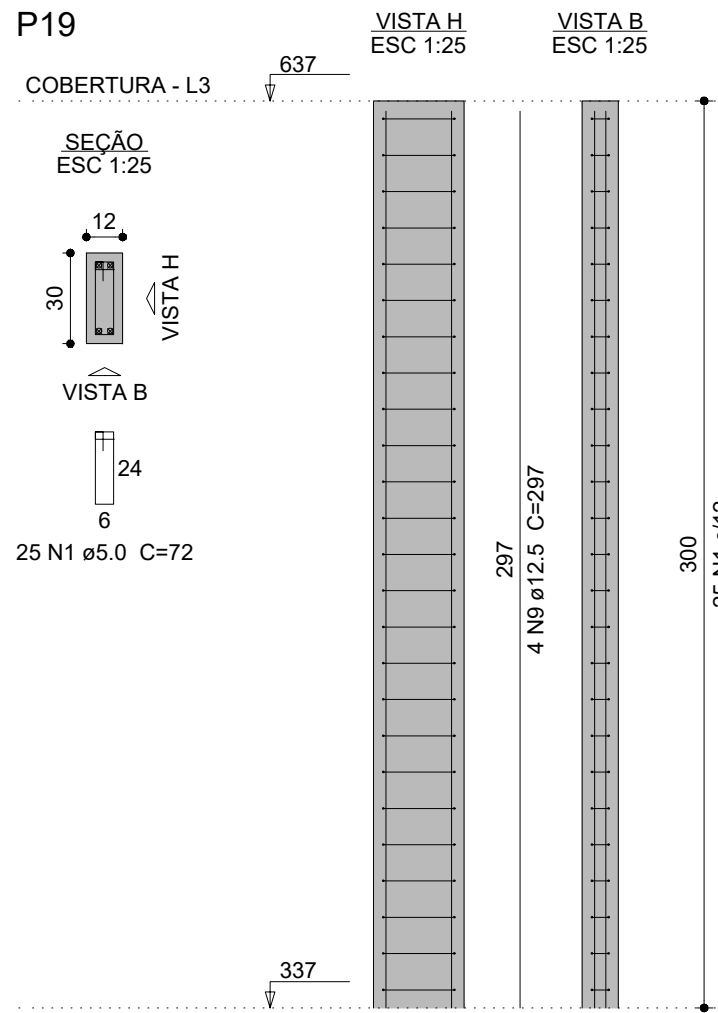
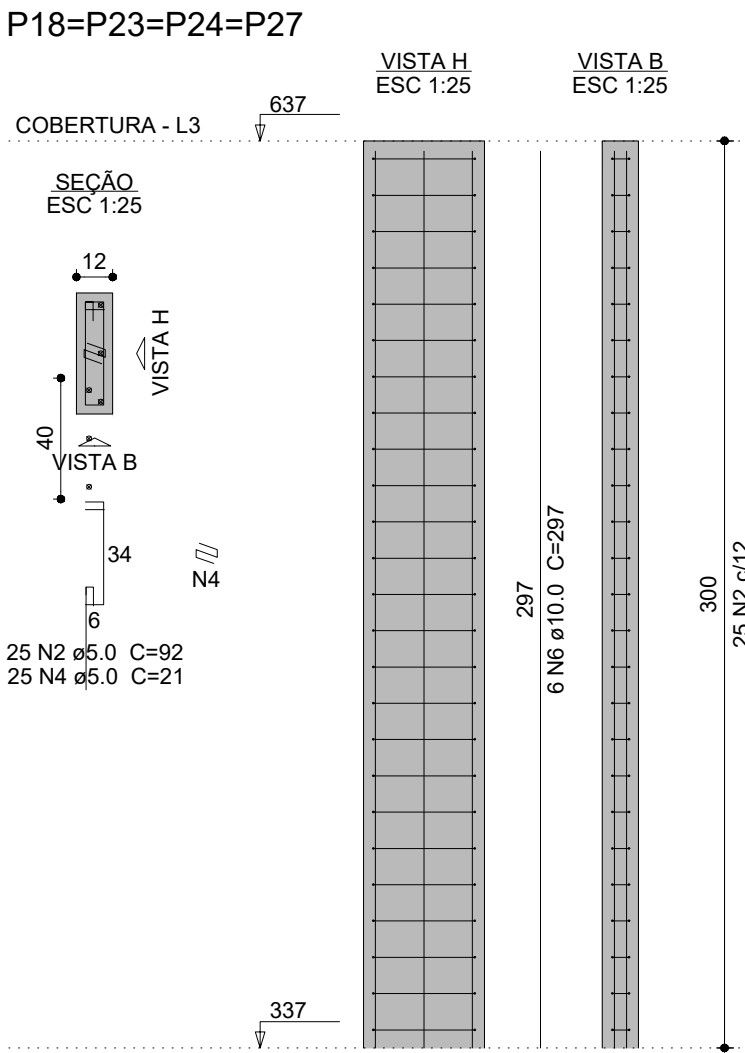
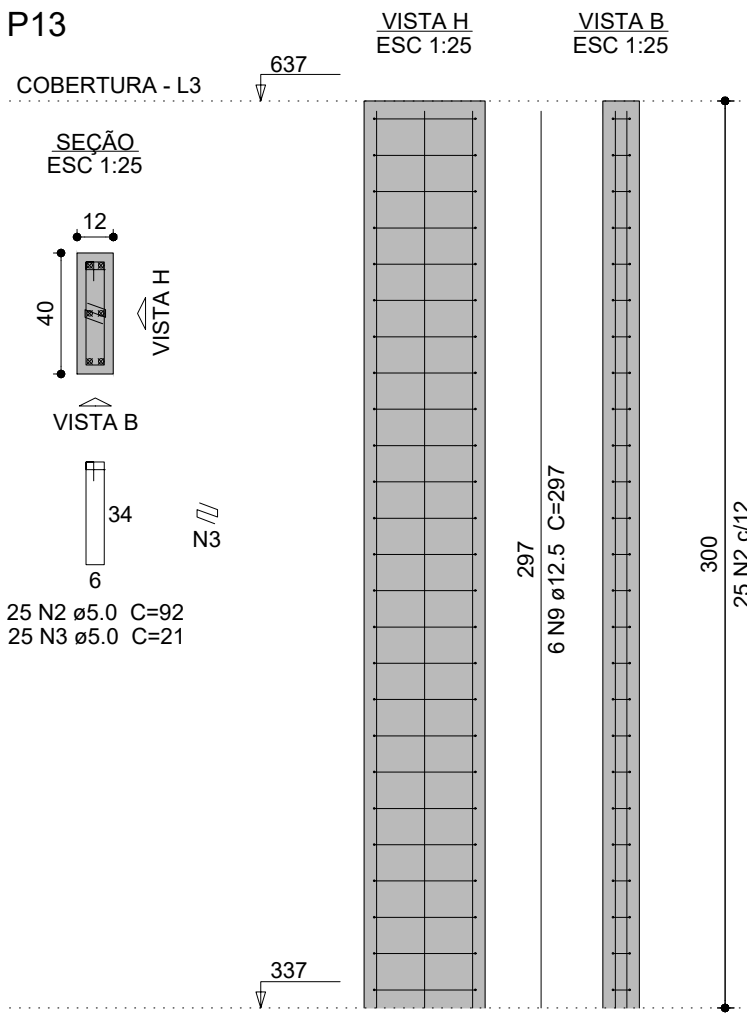
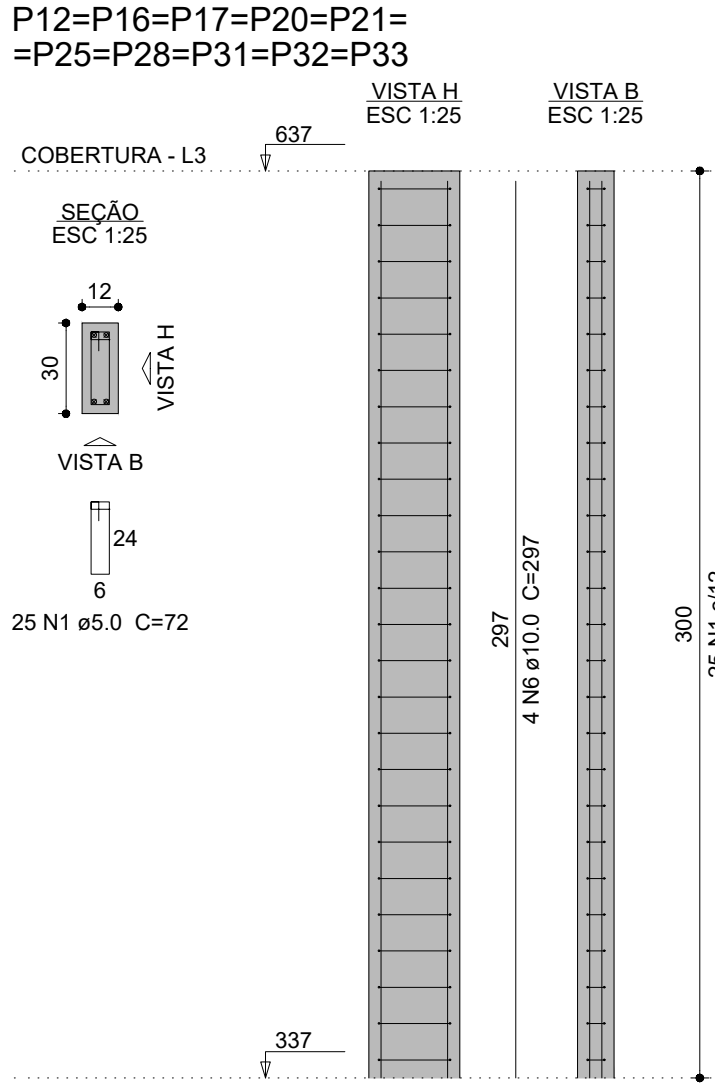




Relação do aço						
Negativos		Positivos				
AÇO	N	DIAM (mm)	QUANT	C.UNIT (VAR	C.TOTAL (cm)	
CA60	1	5.0	75	VAR	VAR	
	2	5.0	8	615	4920	
	3	5.0	16	315	5040	
	4	5.0	28	66	1848	
	5	5.0	8	174	1392	
	6	5.0	6	115	690	
	7	5.0	8	430	3440	
	8	5.0	12	138	1656	
	9	5.0	15	510	5100	
	10	5.0	15	269	4035	
	22	5.0	6	67	402	
	23	5.0	2	1872	2714	
	24	5.0	2	271	542	
	25	5.0	1	108	108	
	26	5.0	2	499	998	
CA50	27	5.0	2	293	586	
	28	5.0	2	181	362	
	29	5.0	2	122	244	
	30	5.0	4	52	208	
	31	5.0	2	182	364	
	32	5.0	2	437	874	
	11	6.3	3	VAR	VAR	
	12	6.3	94	159	14946	
	13	6.3	3	557	1671	
	14	6.3	3	VAR	VAR	
	15	6.3	3	VAR	VAR	
	16	6.3	3	VAR	VAR	
	17	6.3	6	121	726	
	18	6.3	7	316	2312	
	19	6.3	17	361	6137	
20	6.3	13	453	4953		
21	8.0	2	159	318		
33	10.0	2	321	642		
34	10.0	1	443	443		

Volume de concreto (C-30) = 15.5 m³





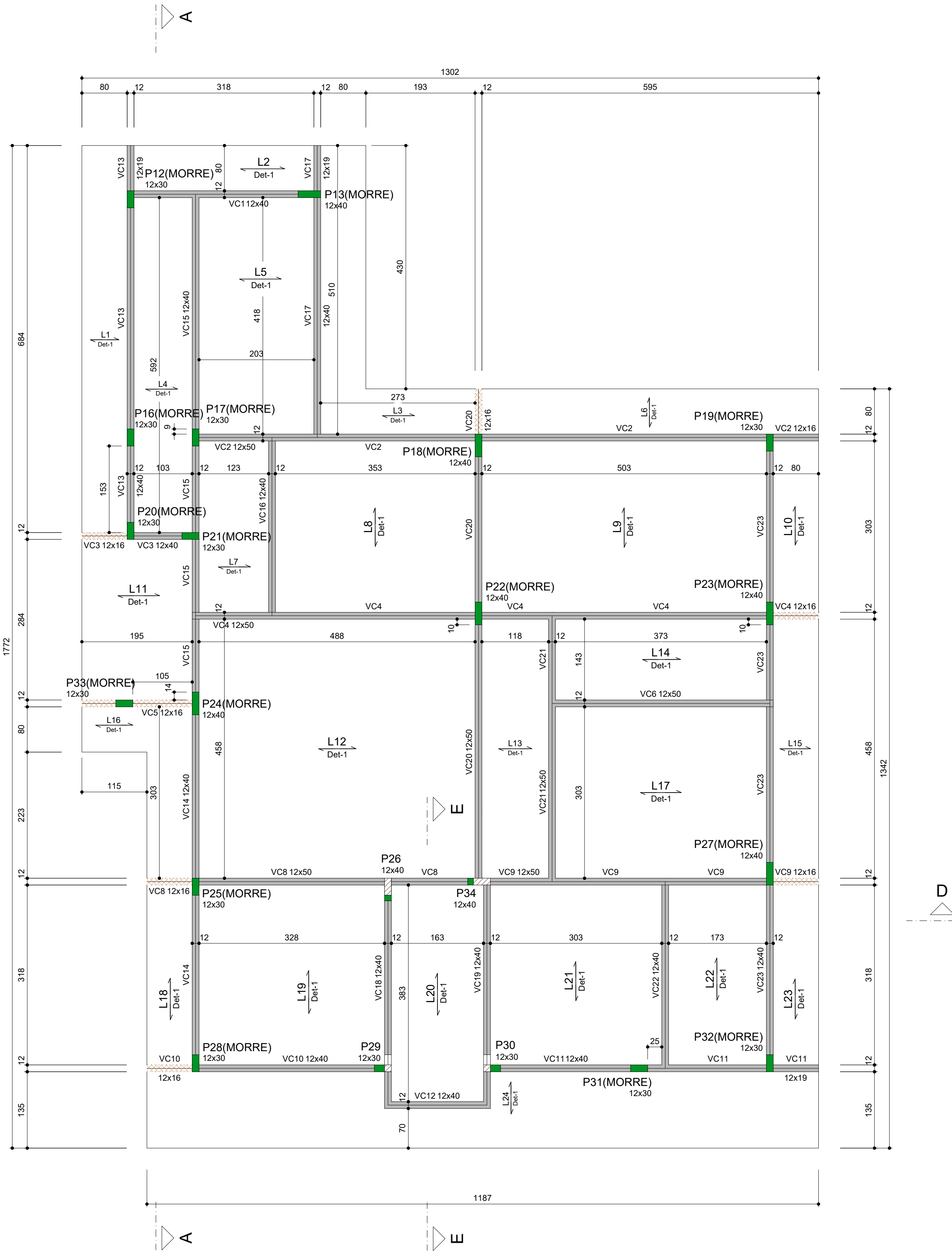
Relação do aço

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	325	72	23400
	2	5.0	175	92	16100
	3	5.0	75	21	1575
	4	5.0	125	21	2625
	5	5.0	18	106	1908
CA50	6	10.0	66	297	19602
	7	10.0	12	333	3996
	8	10.0	2	67	134
	9	12.5	18	297	5346
	10	16.0	4	297	1188
	11	16.0	2	353	706

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	237.4	160.9
	12.5	53.5	56.7
	16.0	19	32.9
CA60	5.0	456.1	77.3
PESO TOTAL (kg)			
CA50	250.5		
CA60	77.3		

Volume de concreto (C-30) = 2.64 m³
Área de forma = 58.14 m²



Forma do pavimento Cobertura

escala 1:50

Vigas				
Nome	Seção (cm)	Elevação (cm)	Nível (cm)	
VC1	12x40	0	637	
VC2	12x50	0	637	
VC3	12x19	0	637	
VC4	12x50	0	637	
VC5	12x16	0	637	
VC6	12x50	0	637	
VC8	12x16	0	637	
VC9	12x50	0	637	
VC10	12x16	0	637	
VC11	12x40	0	637	
VC12	12x19	0	637	
VC13	12x40	0	637	
VC14	12x19	0	637	
VC15	12x40	0	637	
VC16	12x40	0	637	
VC17	12x40	0	637	
VC18	12x40	0	637	
VC19	12x40	0	637	
VC20	12x50	0	637	
VC21	12x16	0	637	
VC22	12x50	0	637	
VC23	12x40	0	637	

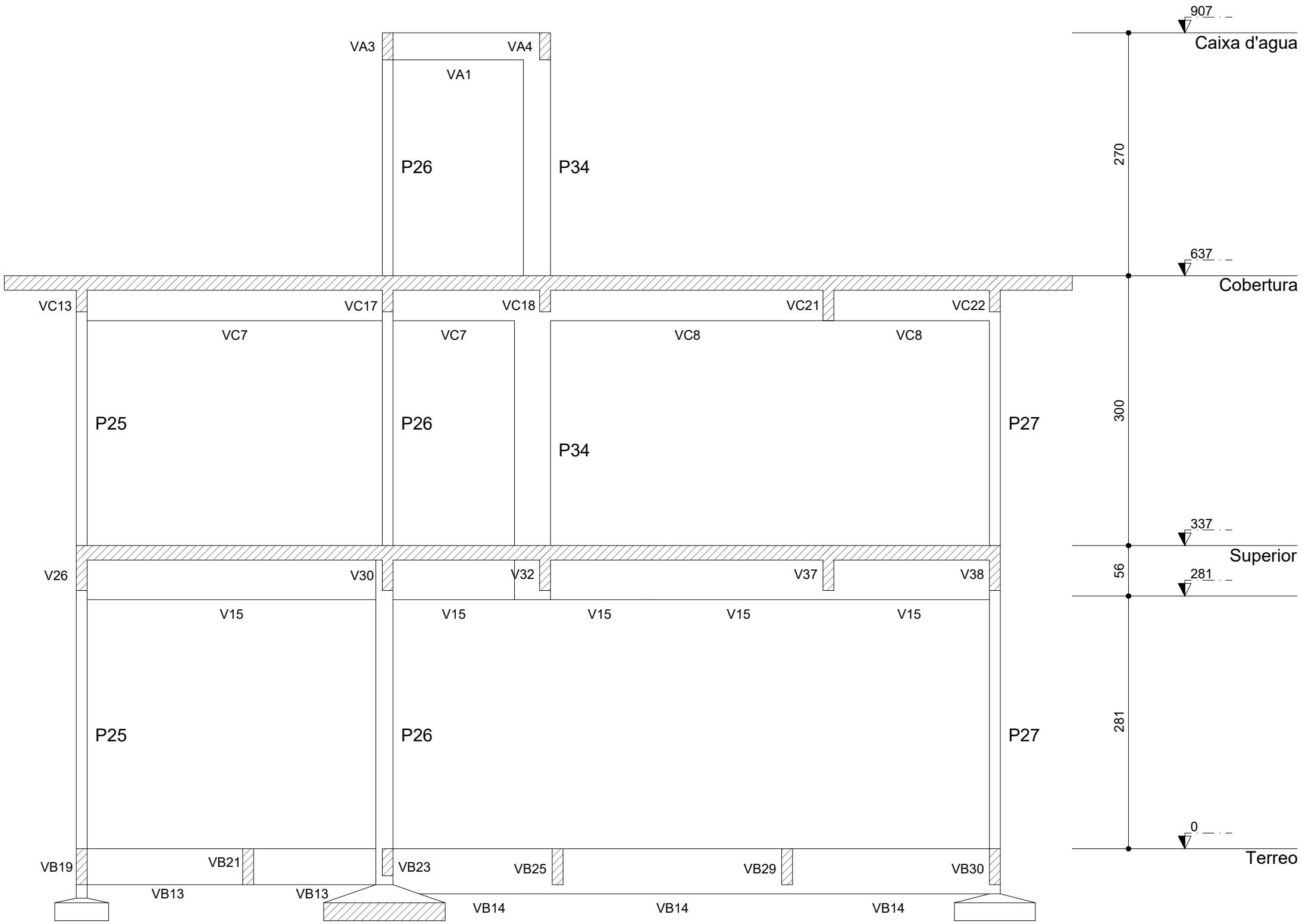
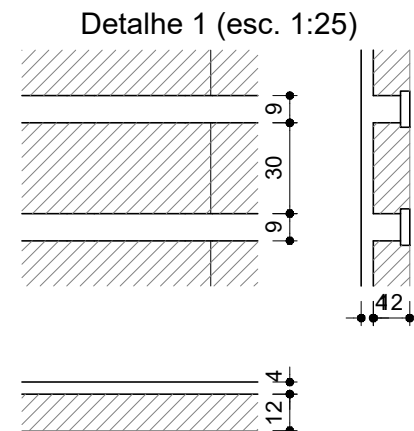
Blocos de enchimento					
Detalhe	Tipo	Nome	Dimensões (cm)		
			hb	bx	by
1	EPS Unidirecional	B12/30/125	12	30	125

Lajes						
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Sobrecarga (kgf/m²)	
					Peso próprio (kgf/m²)	Total Localizada
L1	Treliçada 1D	16	0	637	171	232 -
L2	Treliçada 1D	16	0	637	171	232 -
L3	Treliçada 1D	16	0	637	171	232 -
L4	Treliçada 1D	16	0	637	171	232 -
L5	Treliçada 1D	16	0	637	171	232 -
L6	Treliçada 1D	16	0	637	171	232 -
L7	Treliçada 1D	16	0	637	171	232 -
L8	Treliçada 1D	16	0	637	171	232 -
L9	Treliçada 1D	16	0	637	171	232 -
L10	Treliçada 1D	16	0	637	171	232 -
L11	Treliçada 1D	16	0	637	171	232 -
L12	Treliçada 1D	16	0	637	171	232 -
L13	Treliçada 1D	16	0	637	171	232 -
L14	Treliçada 1D	16	0	637	171	232 -
L15	Treliçada 1D	16	0	637	171	232 -
L16	Treliçada 1D	16	0	637	171	232 -
L17	Treliçada 1D	16	0	637	171	232 -
L18	Treliçada 1D	16	0	637	171	232 -
L19	Treliçada 1D	16	0	637	171	232 -
L20	Treliçada 1D	16	0	637	171	150 -
L21	Treliçada 1D	16	0	637	171	232 -
L22	Treliçada 1D	16	0	637	171	232 -
L23	Treliçada 1D	16	0	637	171	232 -
L24	Treliçada 1D	16	0	637	171	232 -

Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm²)	Abatimento (cm)
300	268384	10.00

Legenda dos pilares	
	Pilar que morre
	Pilar com mudança de seção

Legenda das vigas e paredes	
	Viga
	Viga chata ou invertida



Corte D-D

escala 1:50

RESP. PROJETO:

DESENHO:

ESPECIALIDADE: ESTRUCTURA DE CONCRETO ARMADO

PROJETO EXECUTIVO

REFERENCIA: FORMAS COBERTURA

OBSERVAÇÕES

CONTRATANTE:

PROPRIETÁRIO

RESP. EXECUÇÃO

RESP. PROJETO

REVISÃO

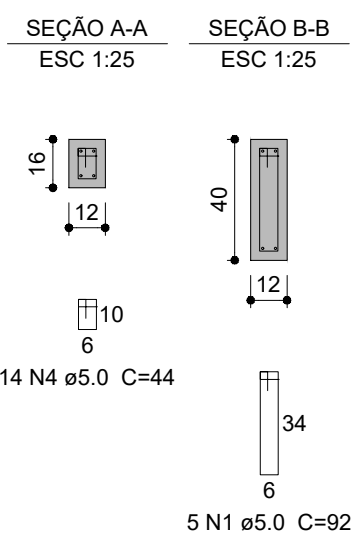
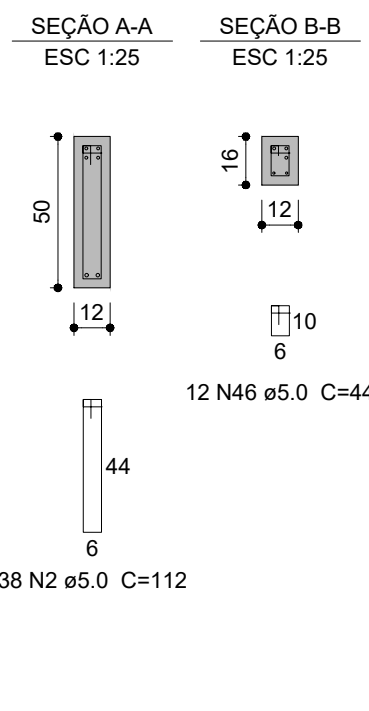
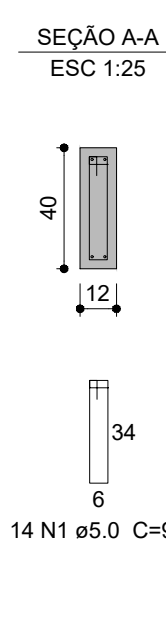
REV.

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EMISSÃO INICIAL

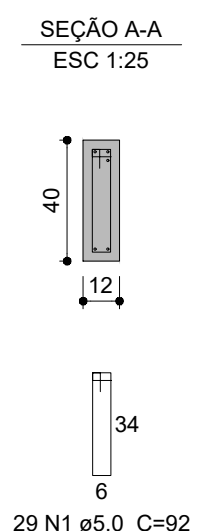
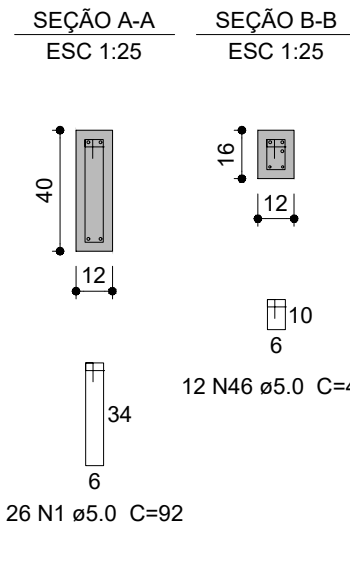
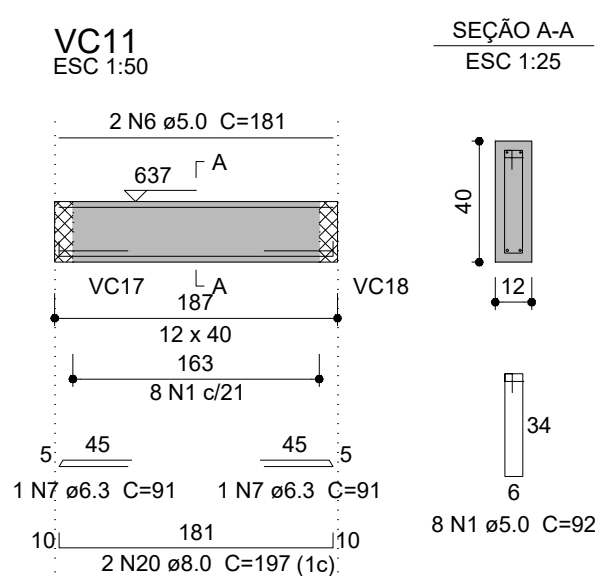
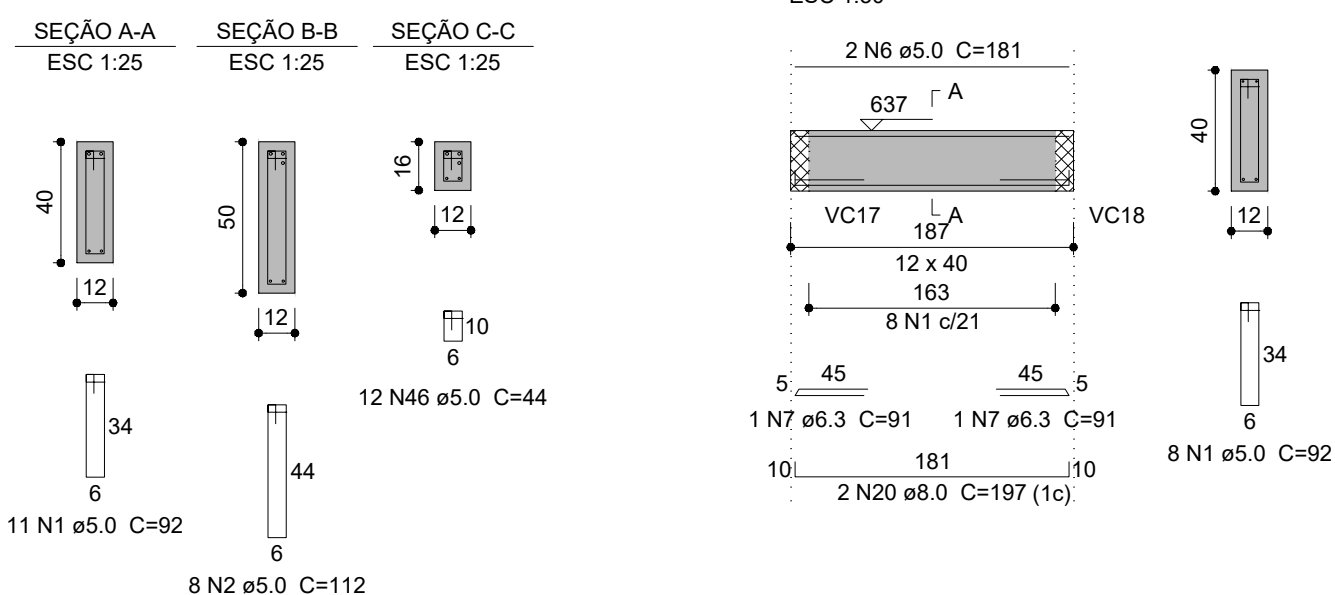
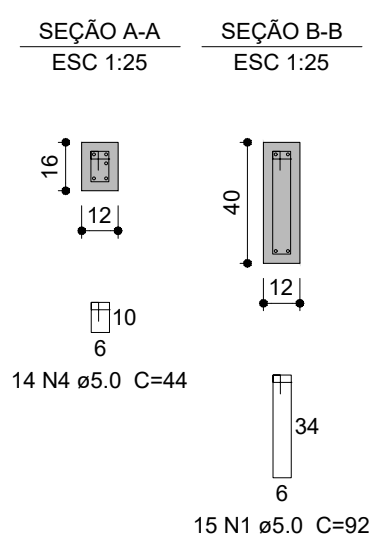
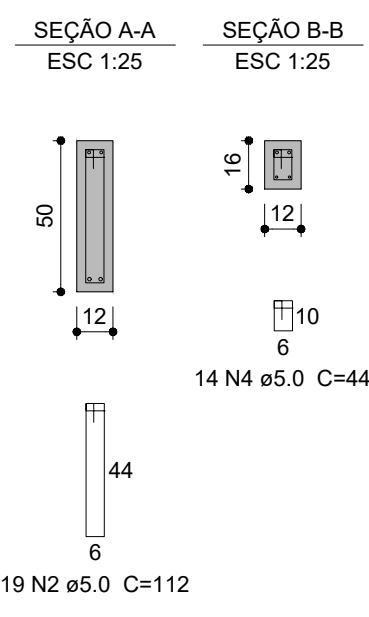
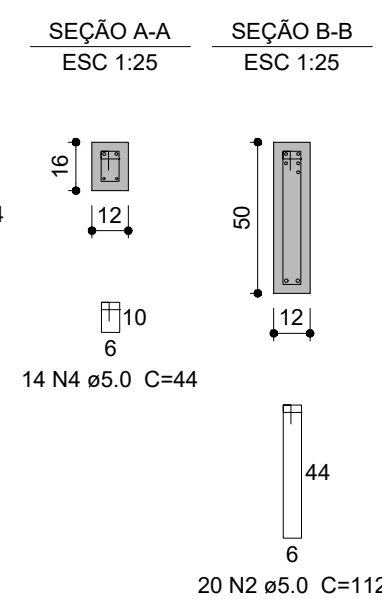
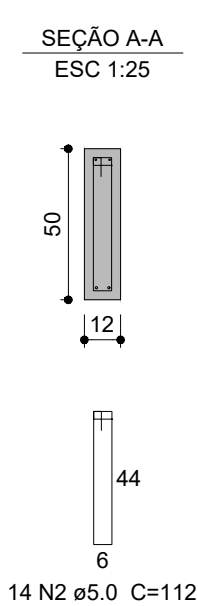
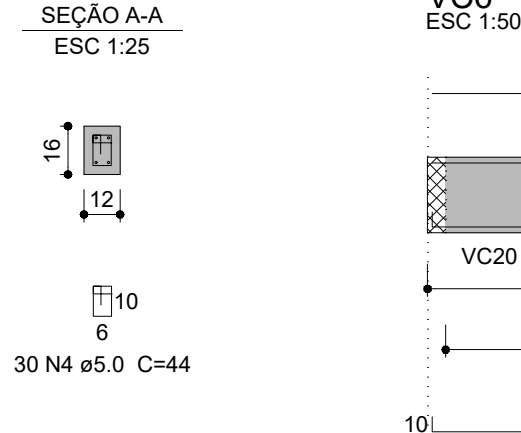
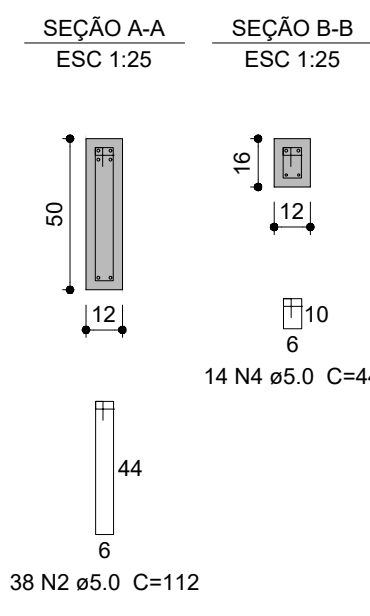
DESCRICAÇÃO

CA-17

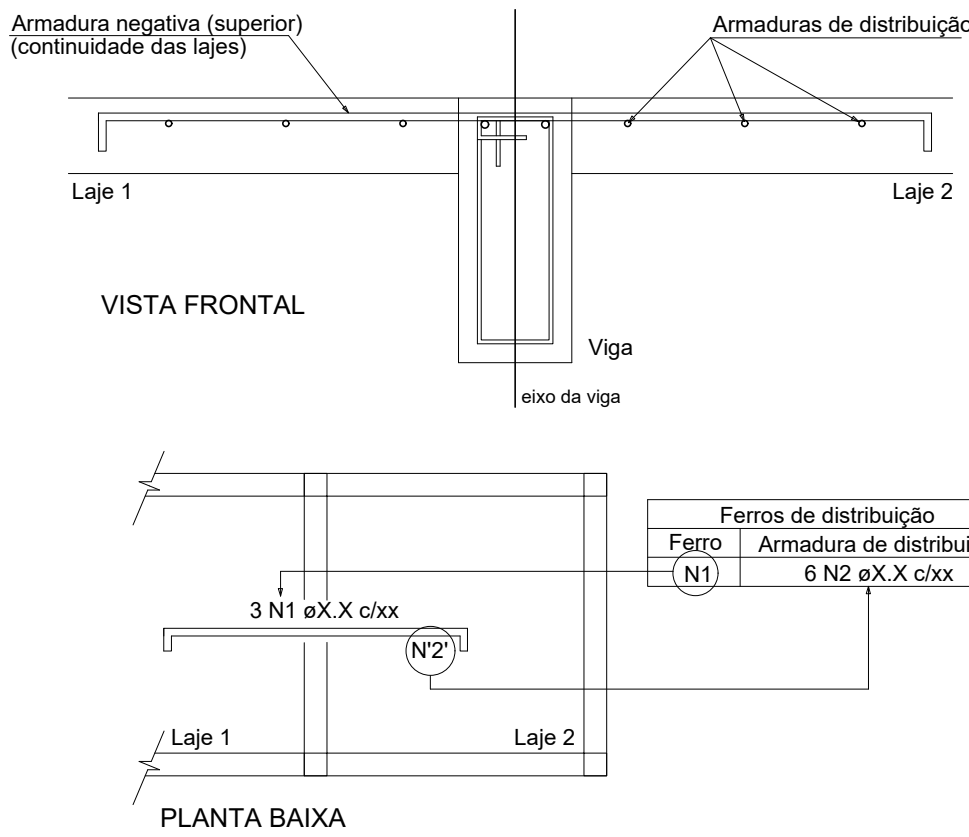


Resumo do aço

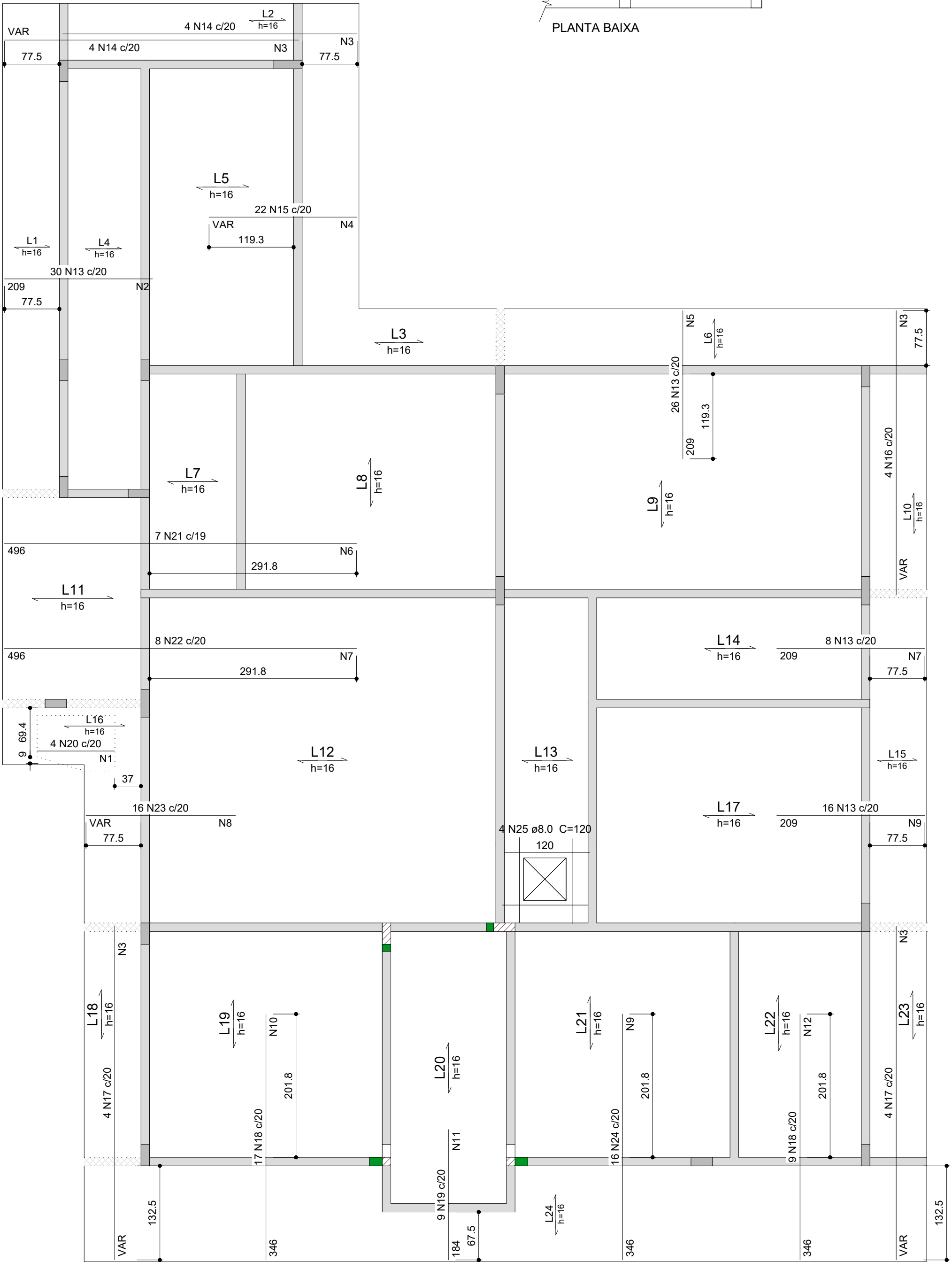
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	4.6	1.2
	8.0	97.1	42.1
	10.0	199.3	135.1
	12.5	42.4	44.8
CA60	5.0	324.1	54.9
PESO TOTAL (kg)			
CA50	223.3		
CA60	54.9		



DETALHE DA ARMADURA DE SUPERIOR DE CONTINUIDADE DA LAJE
E MONTAGEM DA ARMADURA DE DISTRIBUIÇÃO



Armaduras de distribuição	
Armadura	Armadura de distribuição
N20	6 N1 ø5.0 c/20 C=78
N13	11 N2 ø5.0 c/20 C=604
N14	21 N3 ø5.0 c/20 C=VAR
N14	21 N3 ø5.0 c/20 C=VAR
N15	11 N4 ø5.0 c/20 C=VAR
N13	11 N5 ø5.0 c/20 C=515
N16	20 N3 ø5.0 c/20 C=VAR
N21	25 N6 ø5.0 c/20 C=141
N22	25 N7 ø5.0 c/20 C=155
N23	11 N8 ø5.0 c/20 C=VAR
N13	11 N7 ø5.0 c/20 C=155
N13	11 N9 ø5.0 c/20 C=315
N17	24 N3 ø5.0 c/20 C=VAR
N18	18 N10 ø5.0 c/20 C=340
N19	10 N11 ø5.0 c/20 C=175
N24	18 N9 ø5.0 c/20 C=315
N18	18 N12 ø5.0 c/20 C=185
N17	24 N3 ø5.0 c/20 C=VAR



Armação negativa das lajes do pavimento Cobertura
escala 1:50

Relação do aço					
Negativos			Positivos		
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	6	78	468
	2	5.0	11	604	6644
	3	5.0	110	VAR	VAR
	4	5.0	11	VAR	VAR
	5	5.0	11	515	5665
	6	5.0	25	141	3525
	7	5.0	36	155	5580
	8	5.0	11	VAR	VAR
	9	5.0	29	315	9135
	10	5.0	18	340	6120
	11	5.0	10	175	1750
	12	5.0	18	185	3330
	13	5.0	8	87	696
	14	5.0	2	691	1382
	15	5.0	6	337	2022
	16	5.0	2	492	984
	17	5.0	2	267	534
	18	5.0	2	602	1204
	19	5.0	2	322	644
	20	5.0	2	303	606
	21	5.0	2	477	954
	22	5.0	2	177	354
	23	5.0	2	297	594
	24	5.0	4	142	568
	25	5.0	2	1182	2364
	26	6.3	80	209	16720
	27	6.3	8	VAR	VAR
	28	6.3	22	VAR	VAR
	29	6.3	4	VAR	VAR
	30	6.3	8	VAR	VAR
	31	6.3	26	346	8996
	32	6.3	9	184	1656
	33	8.0	4	110	440
	34	8.0	7	496	3472
	35	8.0	3	476	1428
	36	10.0	8	496	3968
	37	10.0	16	VAR	VAR
	38	10.0	16	346	5536

Resumo do aço			
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	406.5	109.4
	8.0	53.4	23.2
	10.0	128.8	87.4
CA60	5.0	727.8	123.4
PESO TOTAL (kg)			
CA50	219.9		
CA60	123.4		

Volume de concreto (C-30) = 10.63 m³



Armação positiva das lajes do pavimento Cobertura
escala 1:50

RESP. PROJETO:

DESENHO:

ESTRUTURA DE CONCRETO ARMADO

PROJETO EXECUTIVO

LAJES COBERTURA

REFERÊNCIA:

ESPECIALIDADE:

OBSERVAÇÕES

CONTRATANTE:

OBRA:

EDIFICAÇÃO COMERCIAL E RESIDENCIAL

PROPRIETÁRIO

RESP. EXECUÇÃO

RESP. PROJETO

Nº OS:

OS 050-19

DATA:

07/11/2019

ESCALA:

INDICADAS

FOLHA:

CA-20

REV:

DATA:

EMISSÃO INICIAL

DESCRICAÇÃO:

RESP:

VISTO:

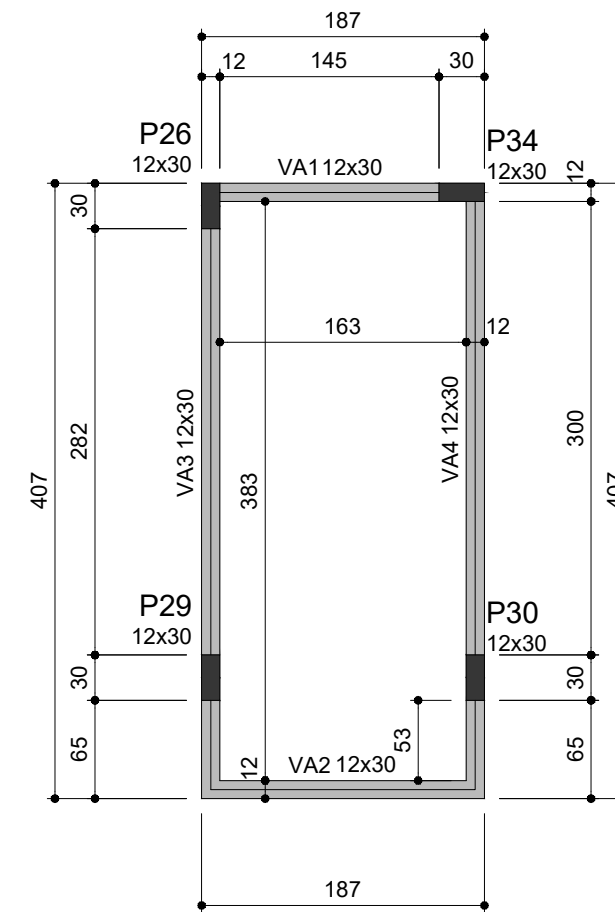
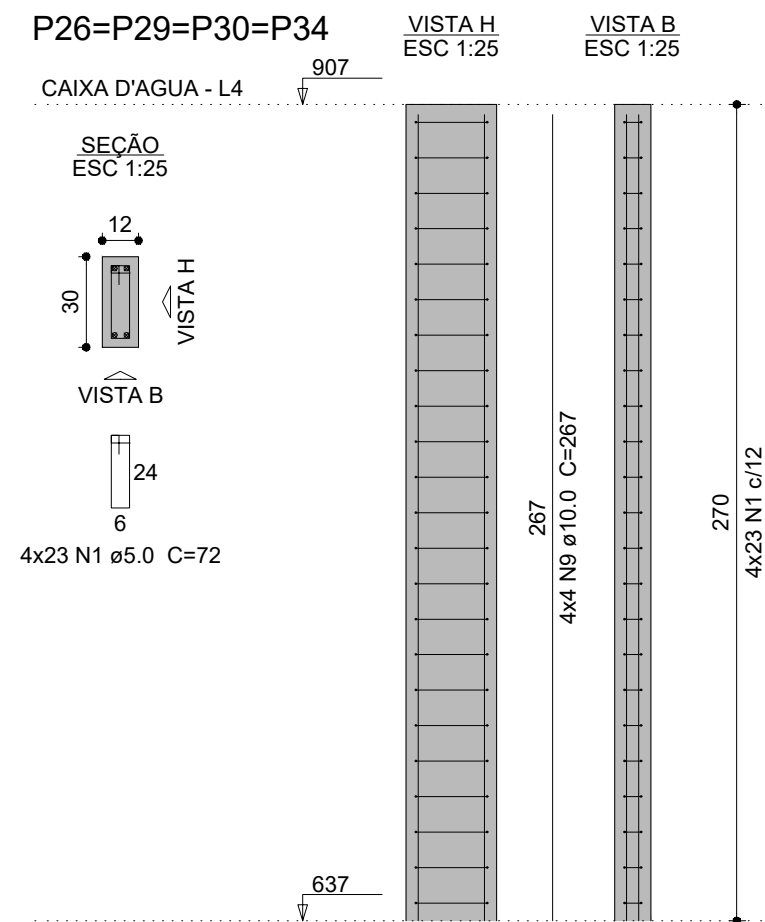
Relação do aço

4xP26 VA3		VA1 VA4		VA2	
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	368	72	26496
CA50	10	5.0	74	72	5328
	11	6.3	2	91	182
	12	8.0	4	197	788
	13	8.0	4	215	860
	14	8.0	2	409	818
	15	8.0	2	435	870
	16	8.0	2	417	834
	17	8.0	2	445	890
	9	10.0	64	267	17088

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	6.3	1.9	0.5
	8.0	50.6	22
	10.0	170.9	115.9
CA60	5.0	318.3	54
PESO TOTAL (kg)			
CA50	138.3		
CA60	54		


Volume de concreto (C-30) = 0.82 m³
Área de forma = 17.63 m²



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
VA1	12x30	0	907
VA2	12x30	0	907
VA3	12x30	0	907
VA4	12x30	0	907

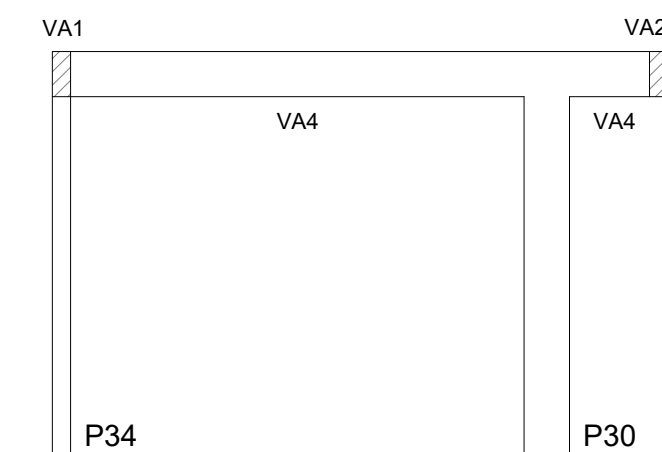
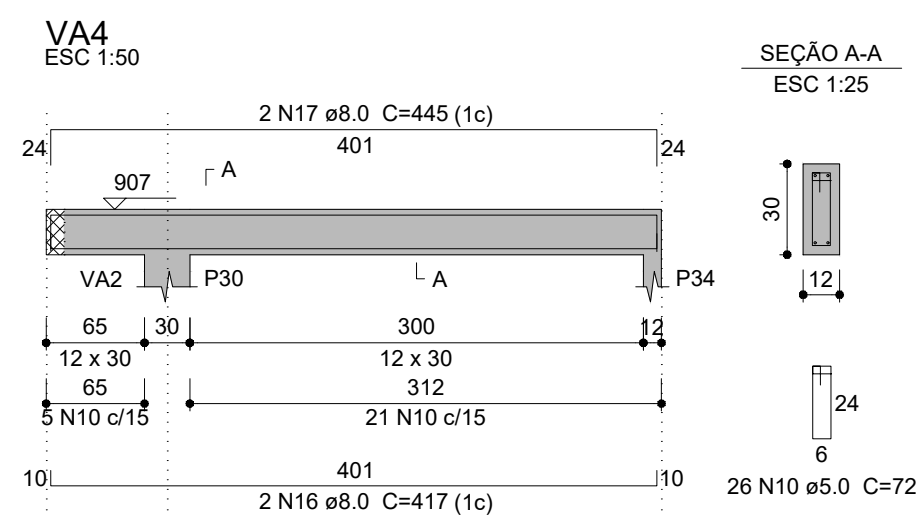
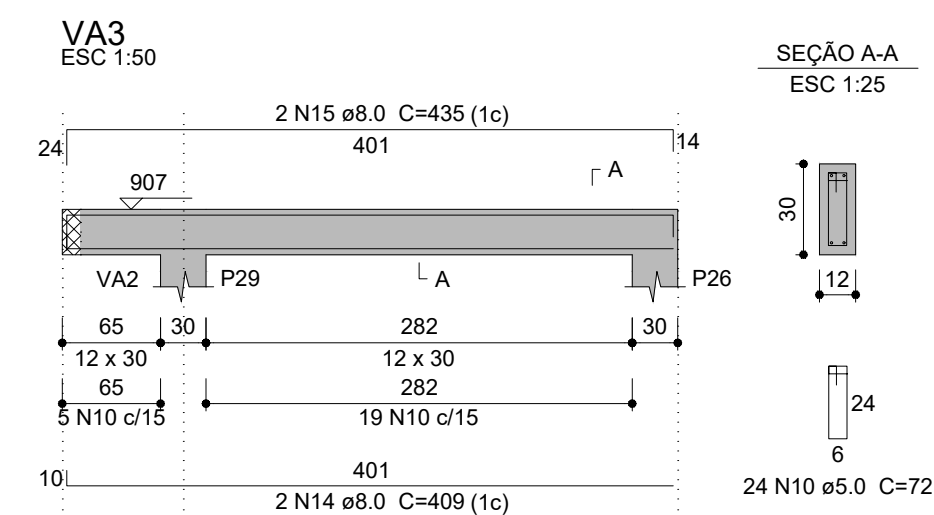
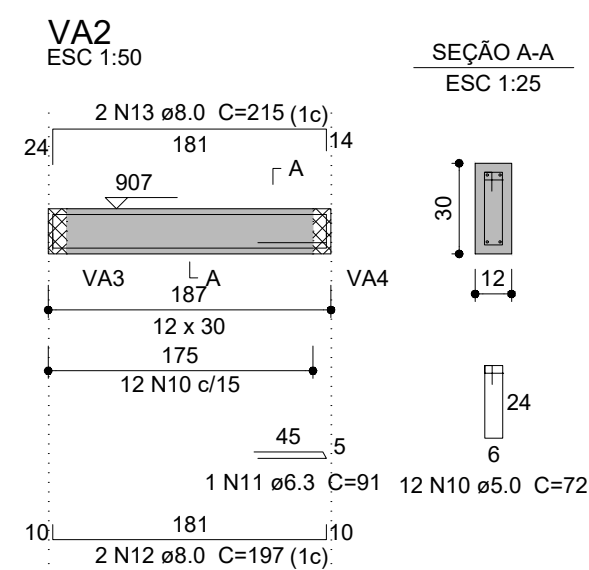
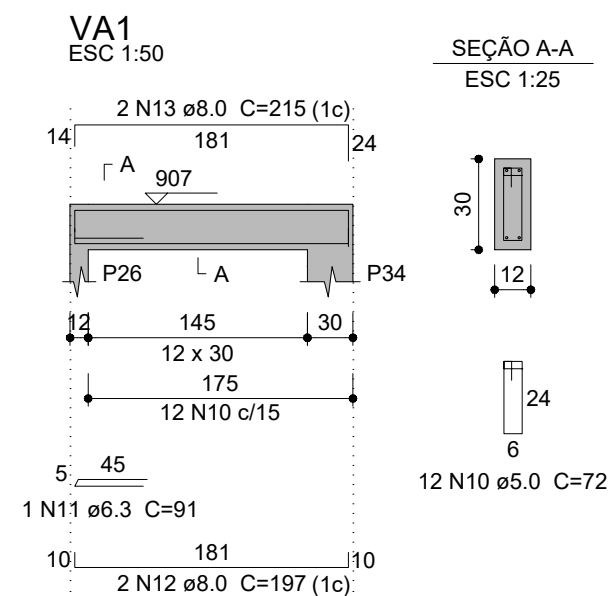
Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm²)	Abatimento (cm)
300	268384	10.00

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P26	12x30	0	907
P29	12x30	0	907
P30	12x30	0	907
P34	12x30	0	907

Legenda dos pilares	
	Pilar que morre

Forma do pavimento Caixa d'agua

escala 1:50



Corte E-E (Caixa d'agua)

escala 1:50