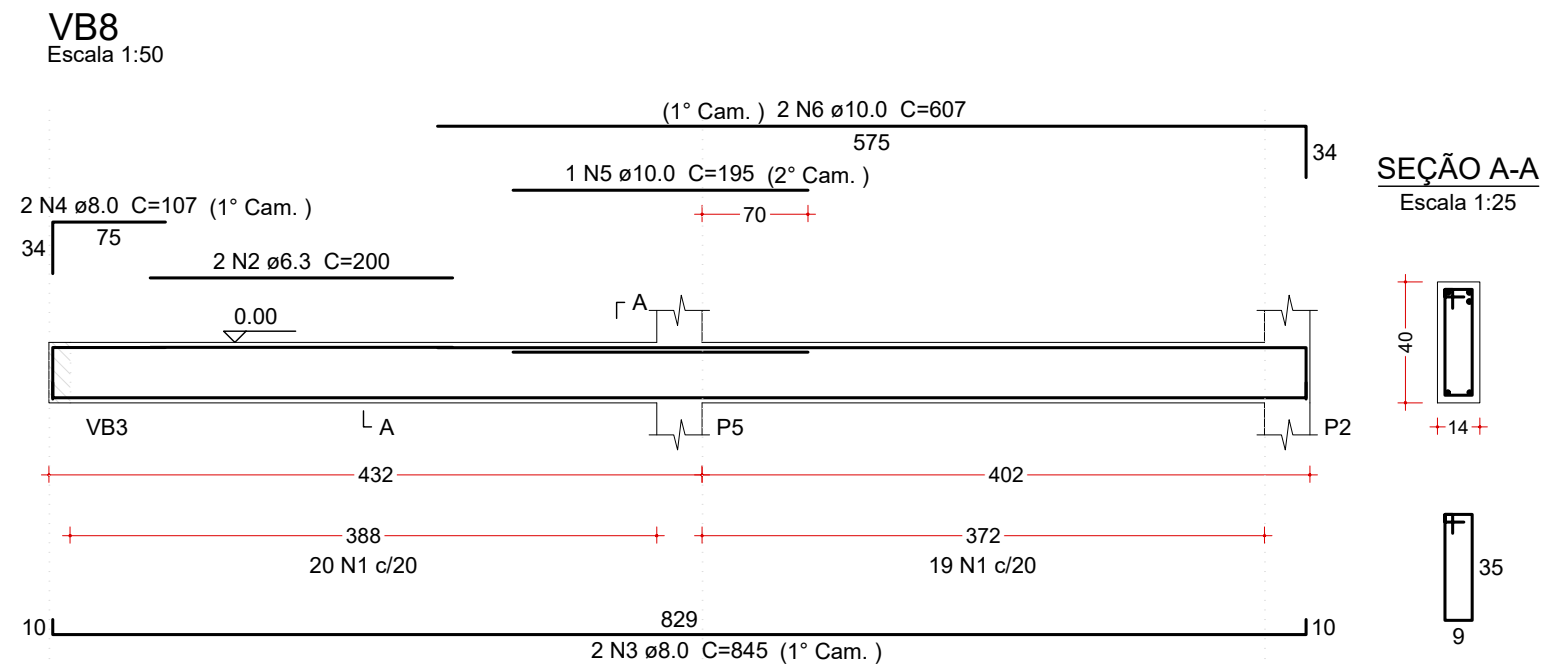
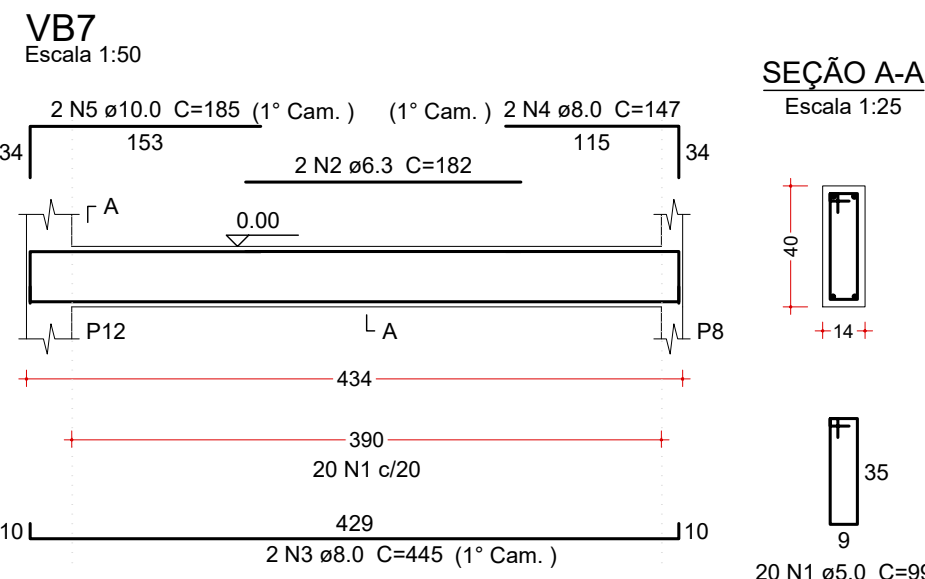
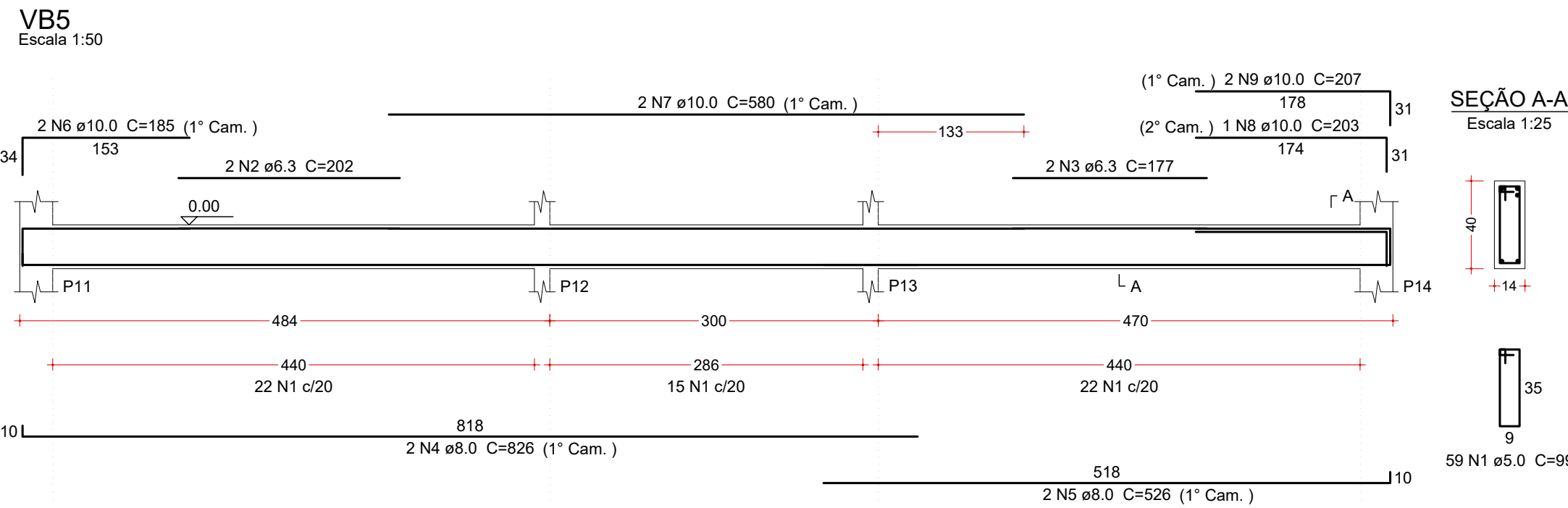
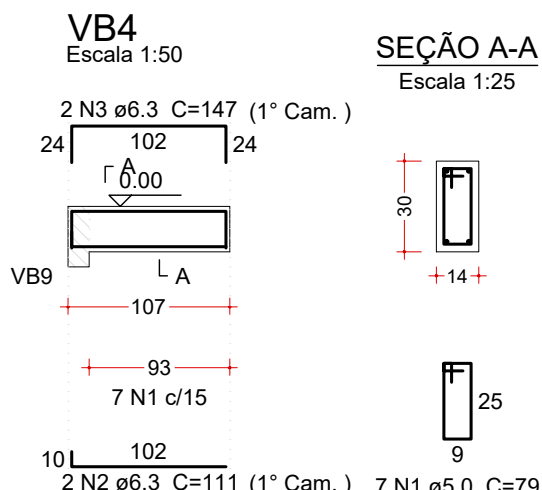
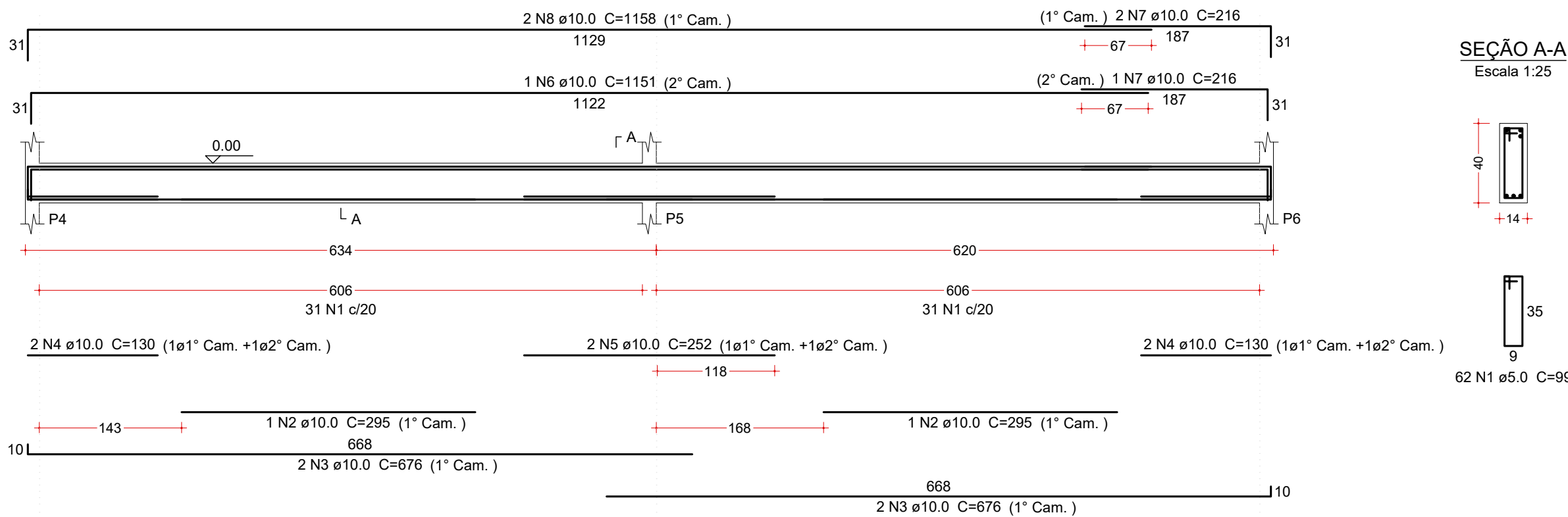
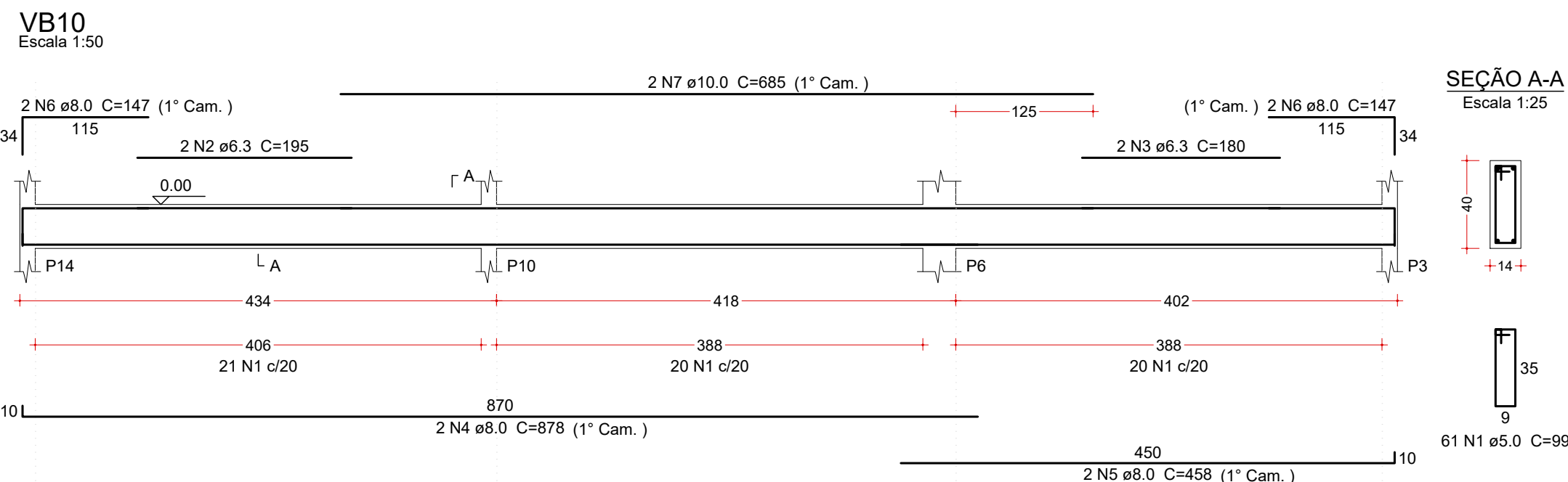
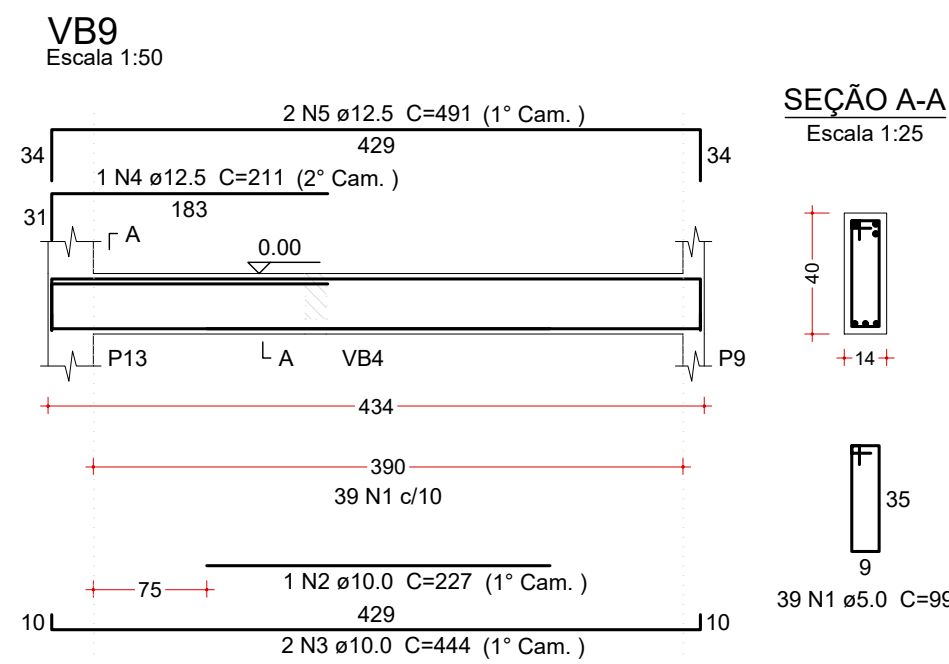
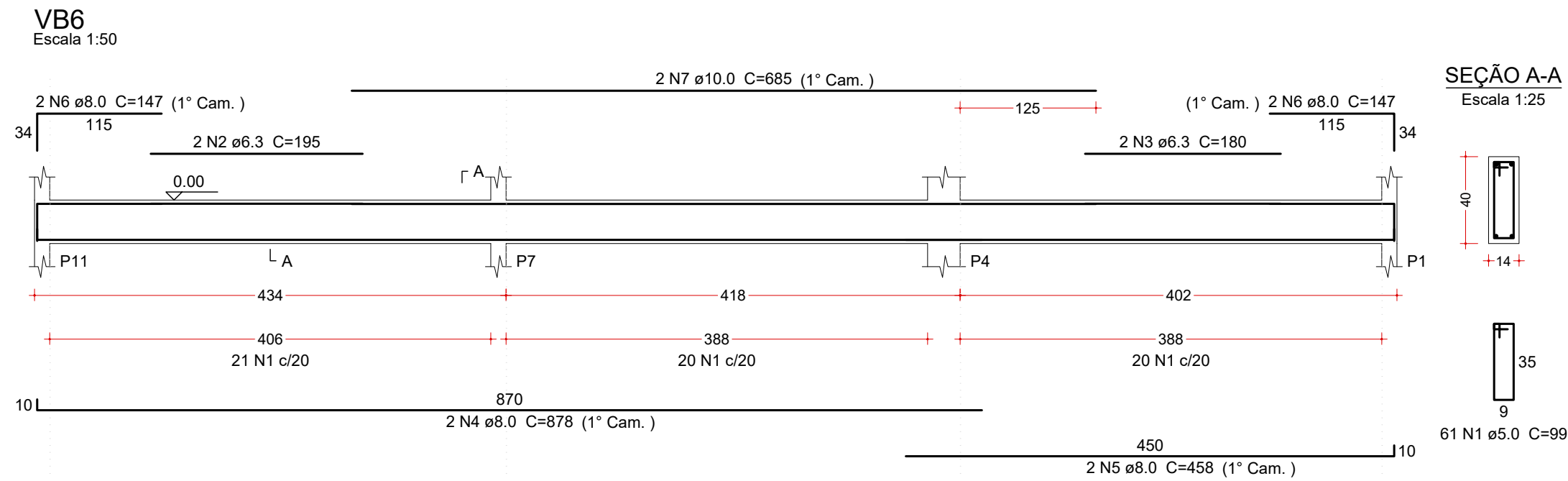
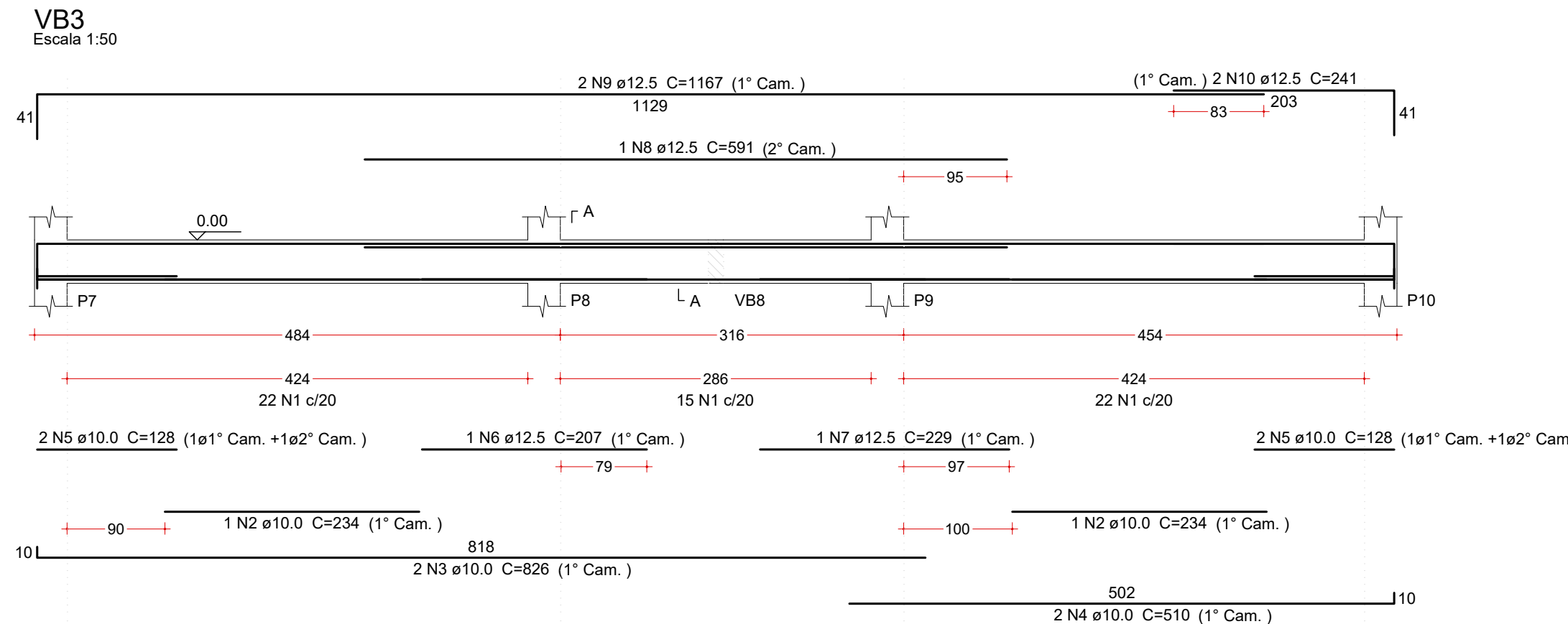
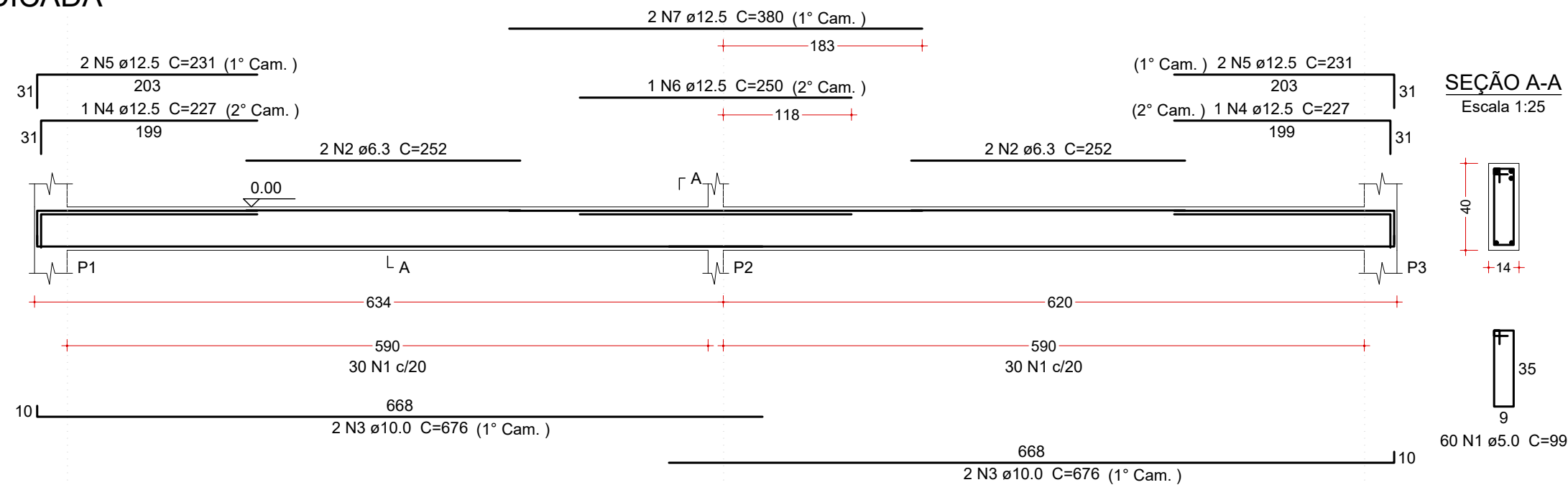


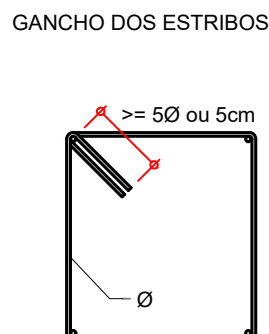
PROJETO ESTRUTURAL - REVITALIZAÇÃO DO PARQUE NATURAL MUNICIPAL DE POUSO ALEGRE  
ESCALA INDICADA



DETALHE DE DOBRAS  
SEM ESCALA

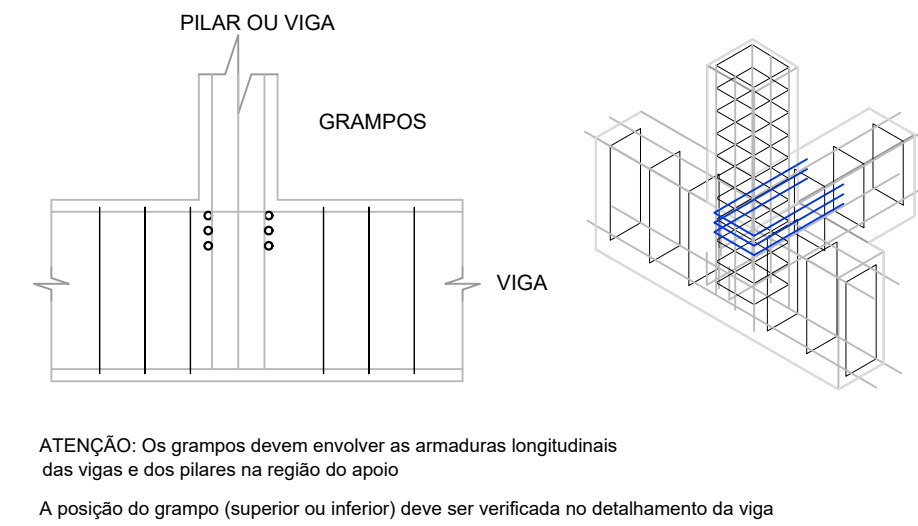
DIÂMETRO MÍNIMO DOS PINOS DE DOBRAMENTO DAS BARRAS:

ESTRIBOS		BARRAS DE TRAÇÃO	
Ø (mm)	D (mm)	Ø (mm)	D (mm)
5,0	15,0	5,0	30,0
6,3	18,9	6,3	31,5
8,0	24,0	8,0	40,0
10,0	30,0	10,0	50,0
12,5	62,5	12,5	62,5
16,0	80,0	16,0	80,0
≥ 20,0		8xe	

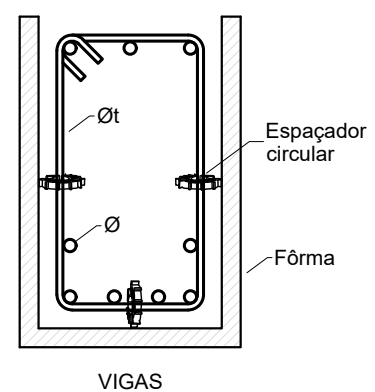


NOTA: gancho em ângulo de 45°

GRAMPOS DE ANCORAGEM  
SEM ESCALA



ESPAÇADORES NAS VIGAS  
SEM ESCALA



Relação do aço

ELEMENTO	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
VB1	CA60	1	5,0	60	99	5940
	CA50	2	6,3	4	252	1008
	CA50	3	10,0	4	676	2704
	CA50	4	12,5	2	227	454
	CA50	5	12,5	4	231	924
	CA50	6	12,5	1	250	250
	CA50	7	12,5	2	380	760
VB2	CA60	1	5,0	62	99	6138
	CA50	2	10,0	2	295	590
	CA50	3	10,0	4	676	2704
	CA50	4	10,0	4	130	520
	CA50	5	10,0	2	252	504
	CA50	6	10,0	1	1151	1151
	CA50	7	10,0	3	216	648
VB3	CA60	1	5,0	59	99	5841
	CA50	2	10,0	2	234	468
	CA50	3	10,0	2	826	1652
	CA50	4	10,0	2	510	1020
	CA50	5	10,0	4	128	512
	CA50	6	12,5	1	207	207
	CA50	7	12,5	1	229	229
VB4	CA60	1	5,0	7	79	553
	CA50	2	6,3	2	111	222
	CA50	3	6,3	2	147	294
VB5	CA60	1	5,0	59	99	5841
	CA50	2	6,3	2	202	404
	CA50	3	6,3	2	177	354
	CA50	4	8,0	2	626	1252
	CA50	5	8,0	2	526	1052
	CA50	6	10,0	2	185	370
	CA50	7	10,0	2	580	1160
VB6	CA60	1	5,0	61	99	6039
	CA50	2	6,3	2	195	390
	CA50	3	6,3	2	180	360
	CA50	4	8,0	2	878	1756
	CA50	5	8,0	2	458	916
	CA50	6	8,0	4	147	588
	CA50	7	10,0	2	605	1210
VB7	CA60	1	5,0	20	99	1980
	CA50	2	6,3	2	182	364
	CA50	3	8,0	2	445	890
	CA50	4	8,0	2	147	294
	CA50	5	10,0	2	185	370
VB8	CA60	1	5,0	39	99	3861
	CA50	2	6,3	2	200	400
	CA50	3	8,0	2	845	1690
	CA50	4	8,0	2	107	214
	CA50	5	10,0	1	195	195
	CA50	6	10,0	2	607	1214
VB9	CA60	1	5,0	39	99	3861
	CA50	2	10,0	1	227	227
	CA50	3	10,0	2	444	888
	CA50	4	12,5	1	211	211
	CA50	5	12,5	2	491	982
VB10	CA60	1	5,0	61	99	6039
	CA50	2	6,3	2	195	390
	CA50	3	6,3	2	180	360
	CA50	4	8,0	2	878	1756
	CA50	5	8,0	2	458	916
	CA50	6	8,0	4	147	588
	CA50	7	10,0	2	685	1370

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT (Barras)	PESO (kg)
CA50	6,3	45,5	4	11,1
CA50	8,0	123,2	11	48,6
CA50	10,0	225,7	19	139,2
CA50	12,5	74,3	7	71,5
CA60	5,0	481	39	71
PESO TOTAL (kg)				270,4
CA50				270,4
CA60				71

Volume de concreto (C-25) = 4,86 m³  
Área de forma = 81,61 m²



Rua Miguel Vianna, nº 81, 2º Andar  
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COORDENAÇÃO

ALOÍSIO CAETANO FERREIRA

RESPONSÁVEL TÉCNICO E AUTOR

ENG. CIVIL FLÁVIA BARBOSA CREA MG-187.842/D

EMPREENHAMENTO

REVITALIZAÇÃO DO PARQUE NATURAL MUNICIPAL DE POUSO ALEGRE

ENDEREÇO:  
AVENIDA WALDEMAR AZEVEDO JUNQUEIRA  
POUSO ALEGRE - MINAS GERAIS

ASSUNTO:  
CENTRO EDUCACIONAL  
PROJETO ESTRUTURAL EM CONCRETO ARMADO  
DETALHAMENTO DAS VIGAS

DISCIPLINA:  
ESTRUTURAL

FASE DO PROJETO:  
EXECUTIVO

FOLHA Nº:  
05/08

DATA INICIAL: 02/06/2023  
ESCALA: INDICADA  
REVISÃO: ROO  
ARQUIVO: DAC-PMPA-PNM-CED-PE-EST-ROO.DWG