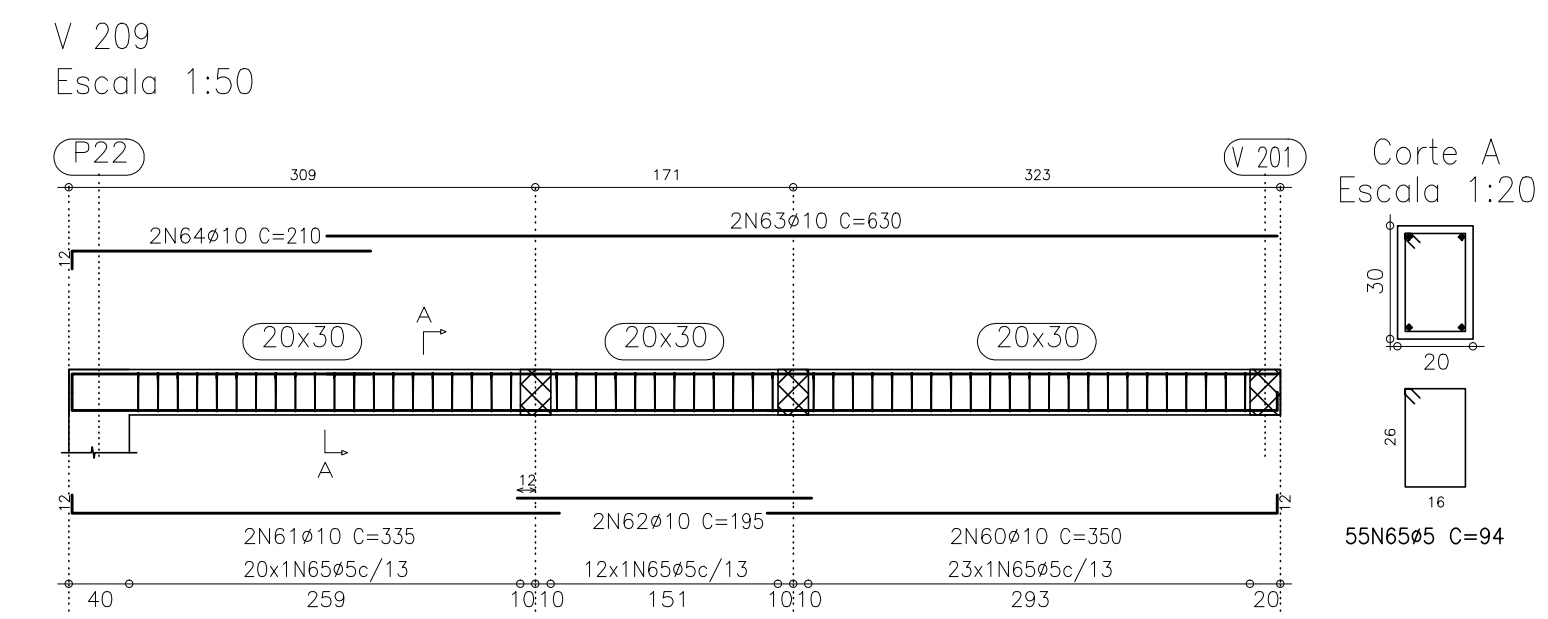
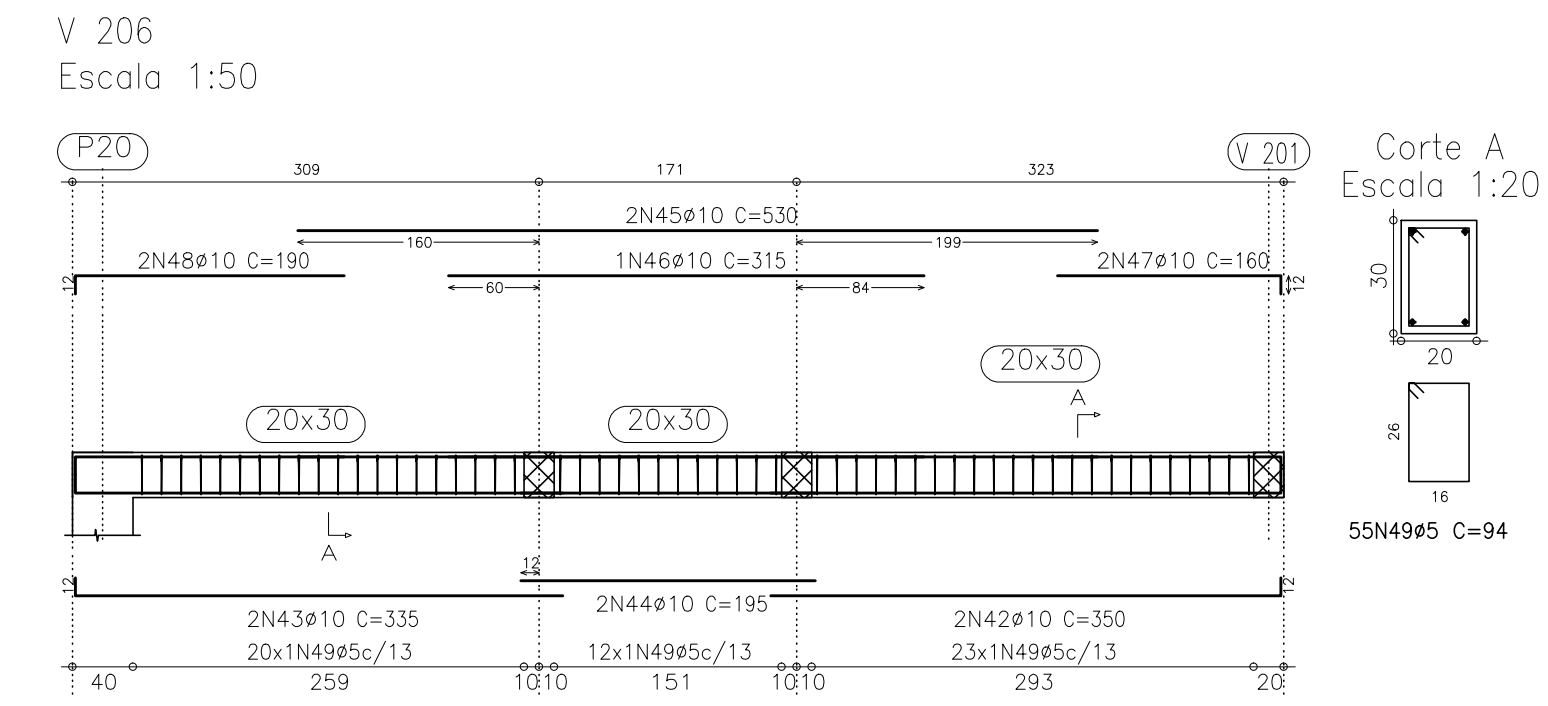
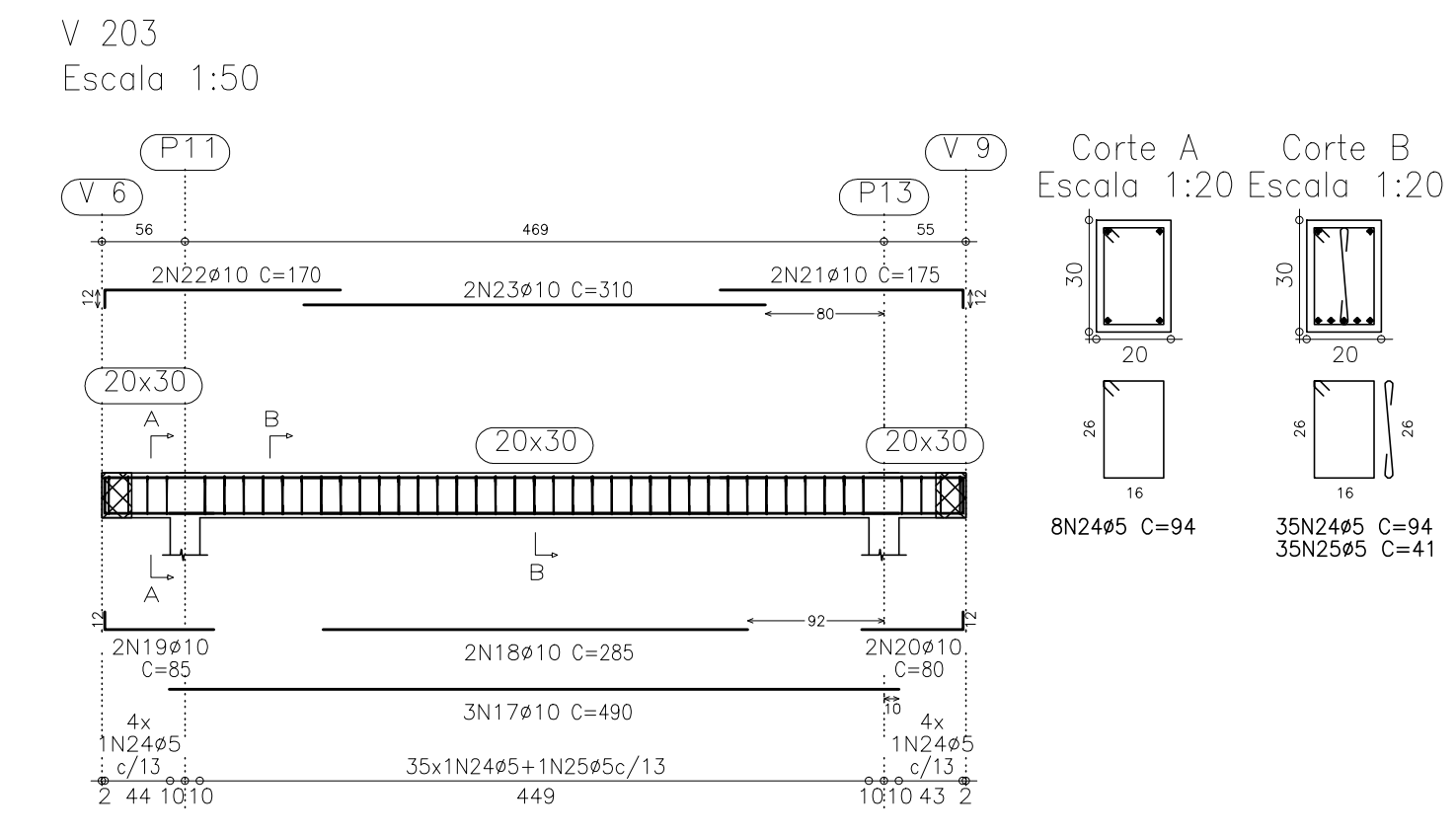
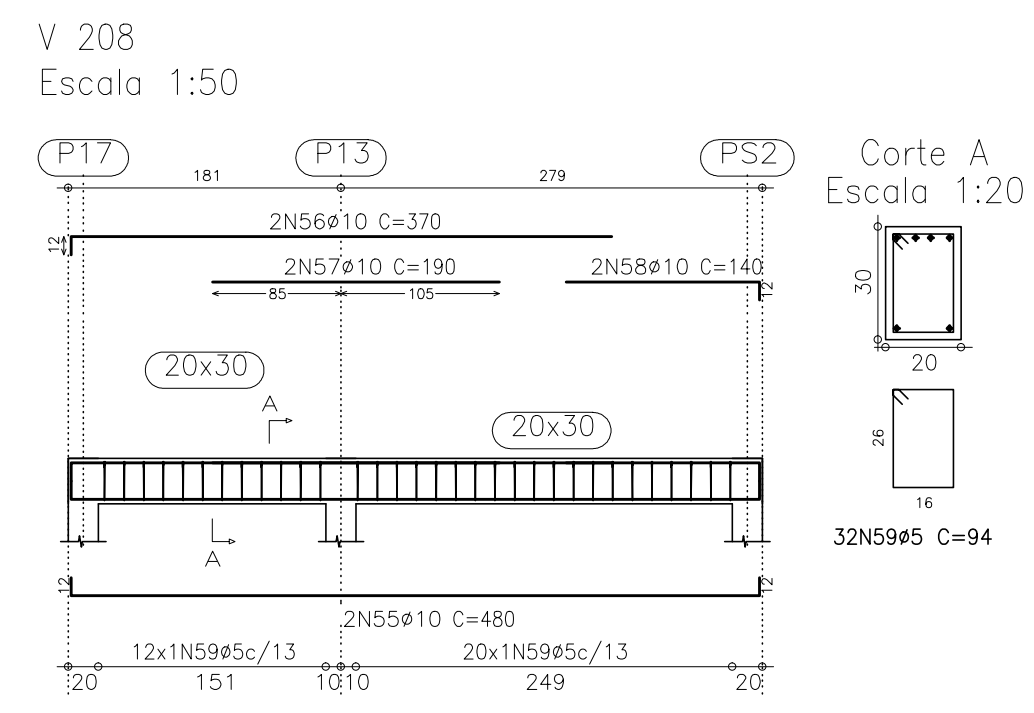
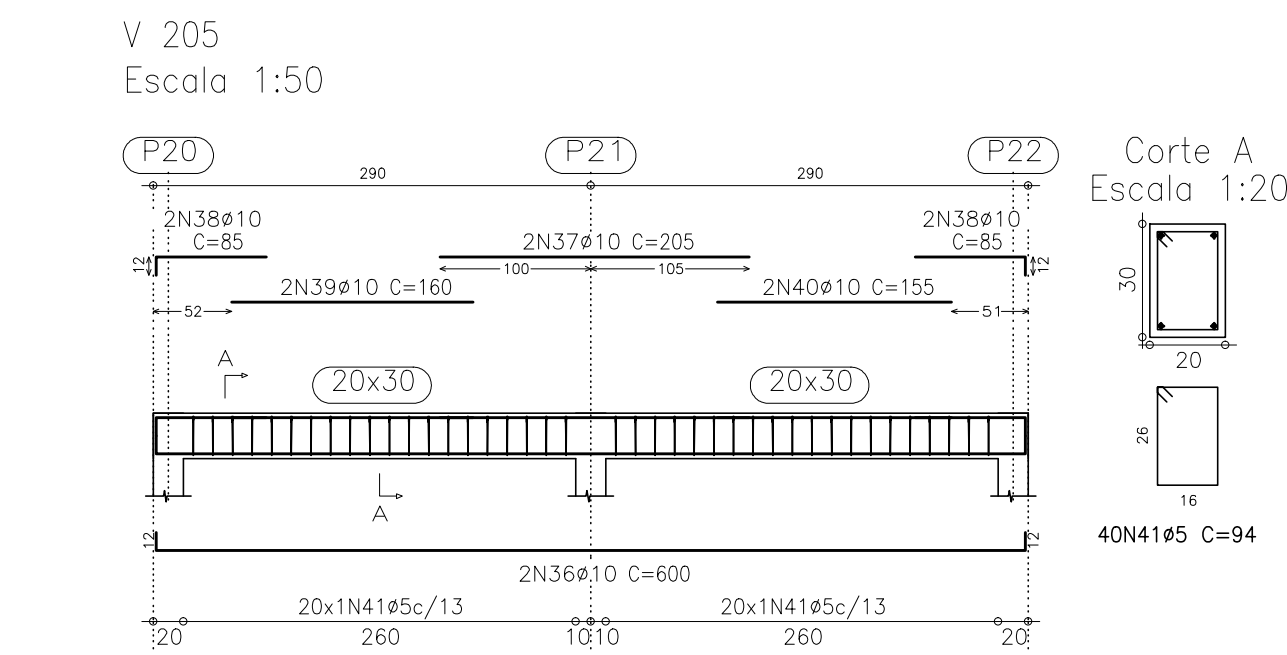
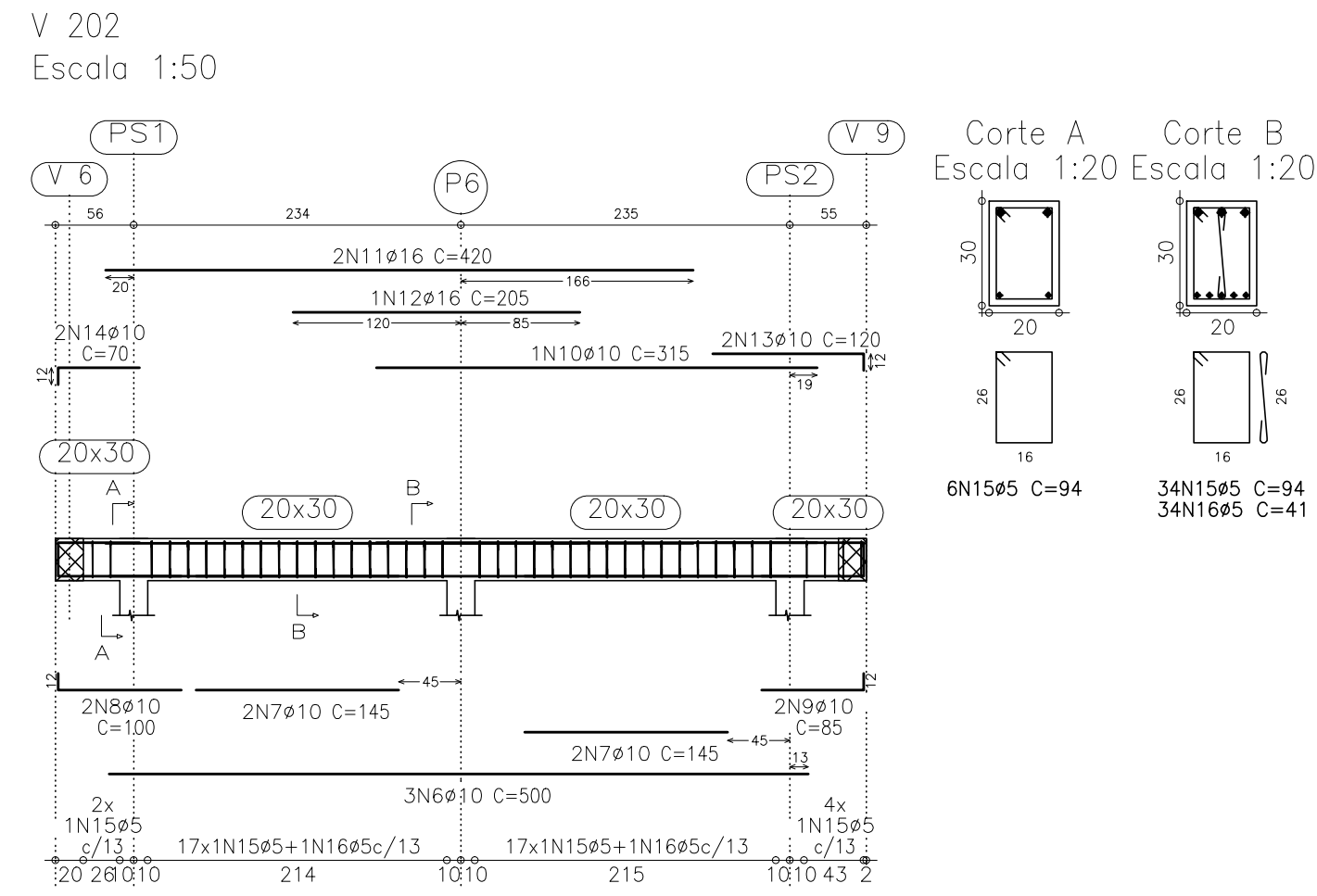
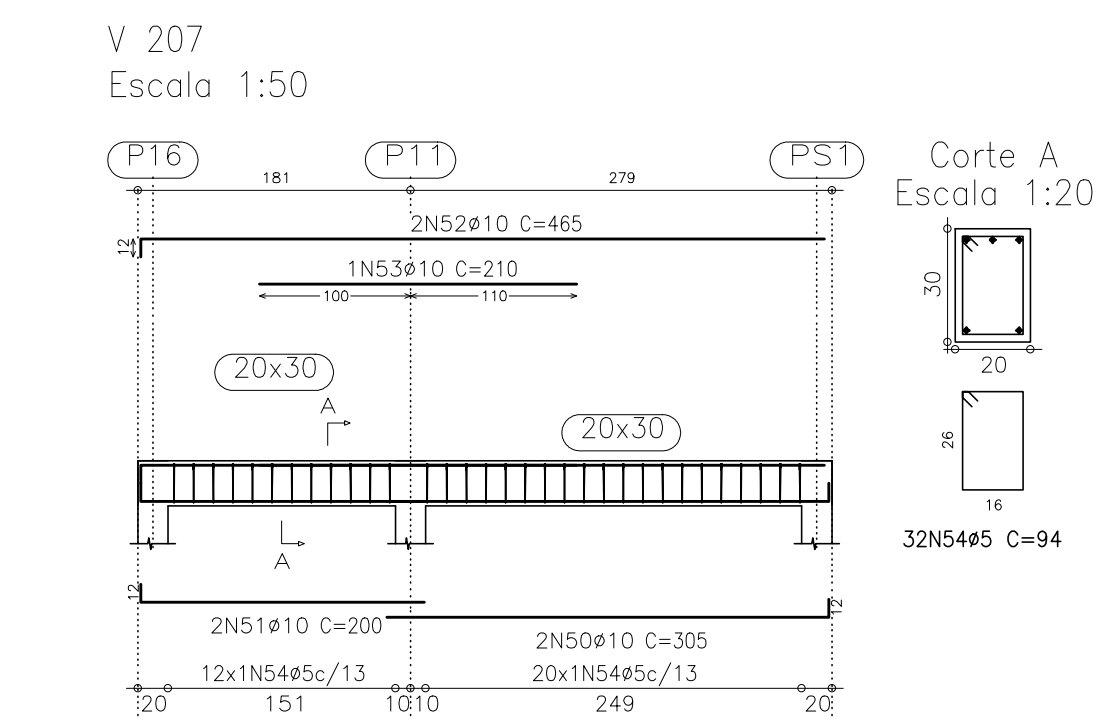
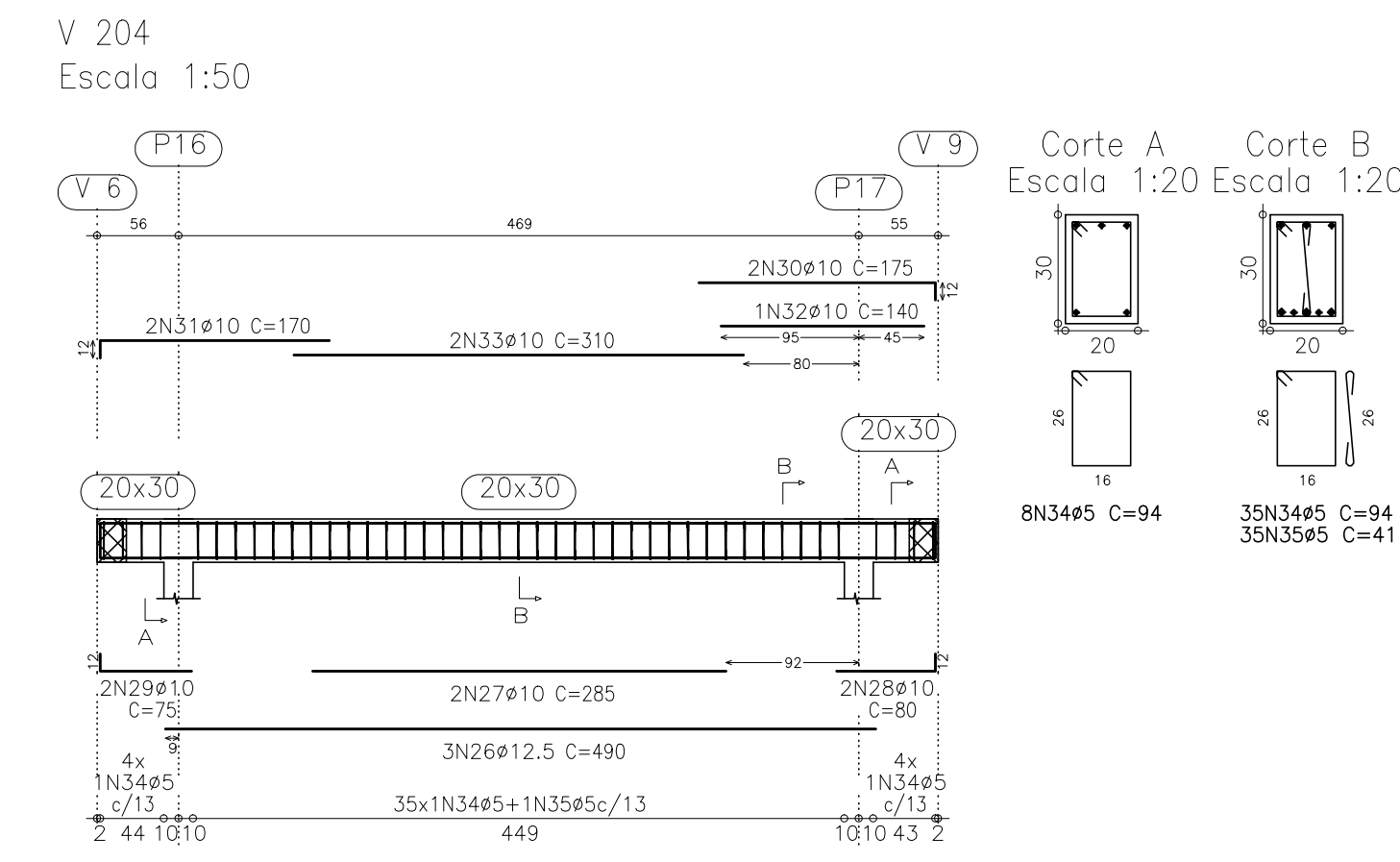
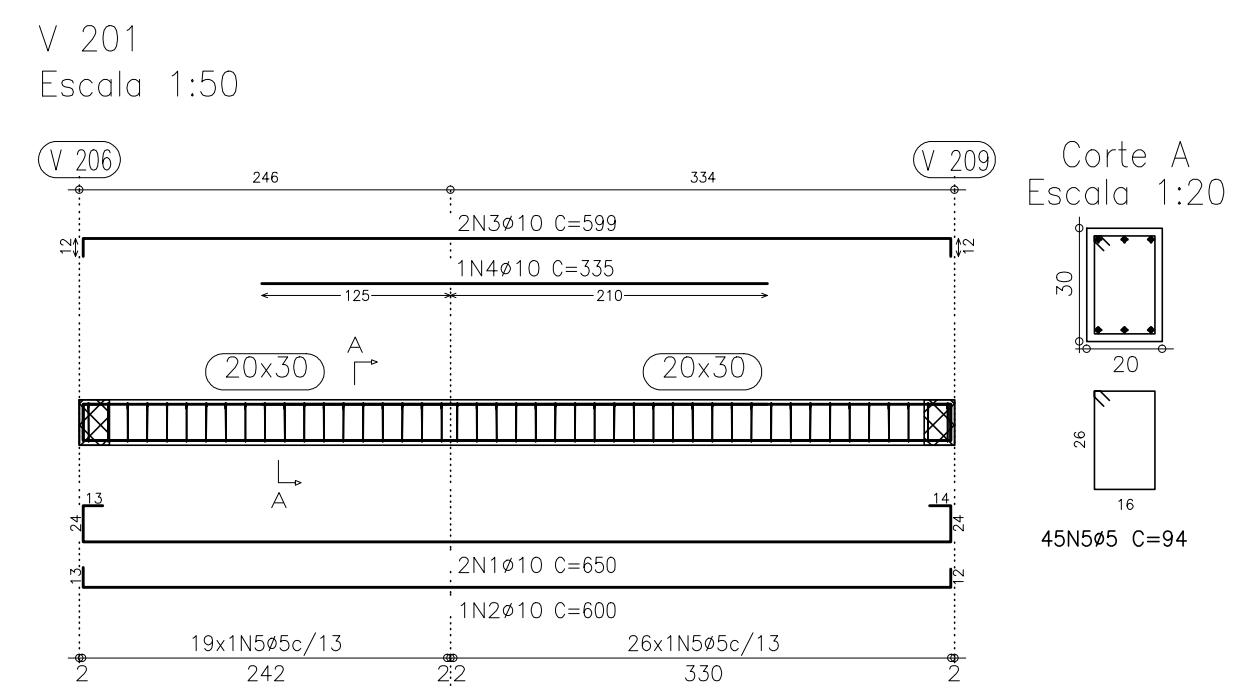
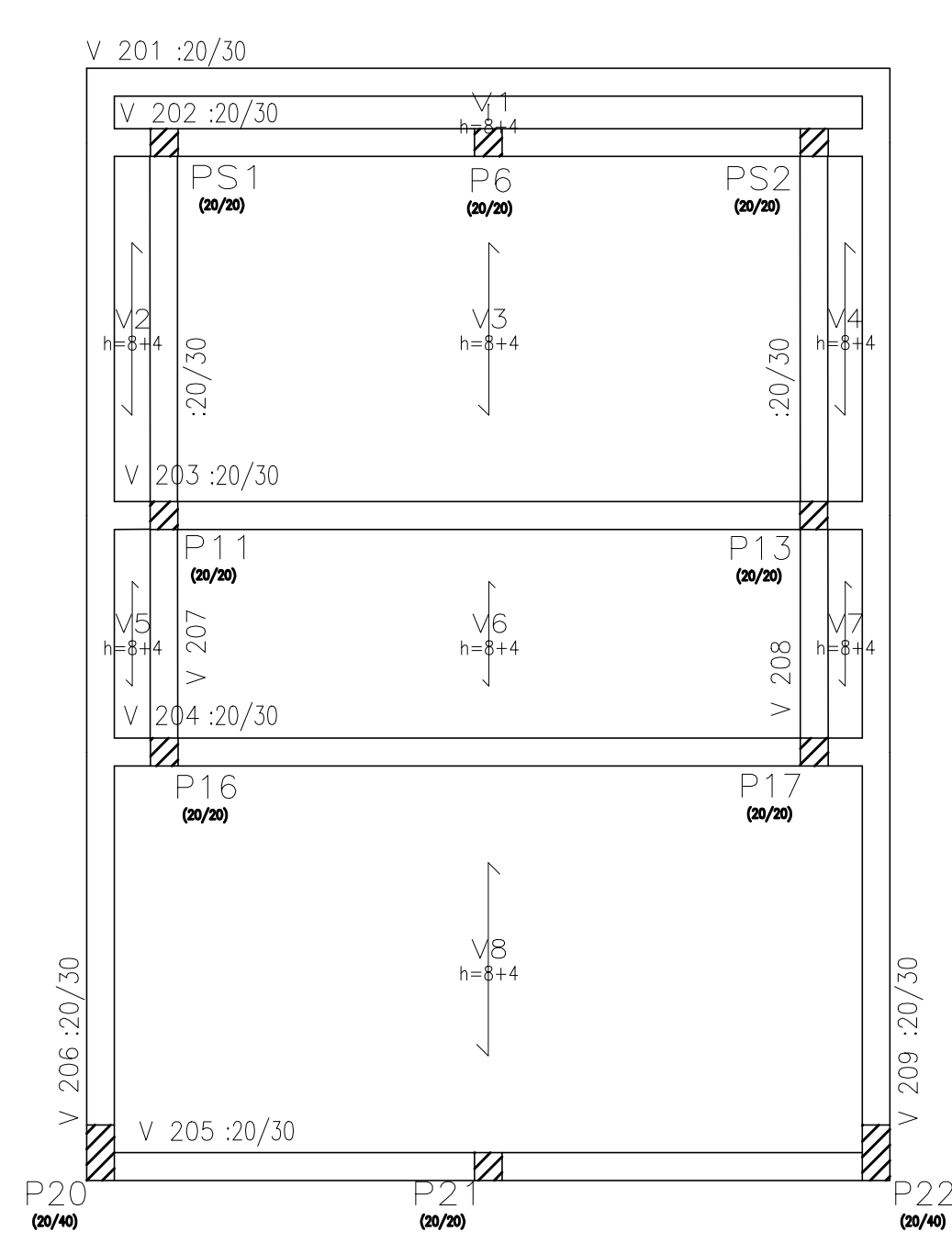


Laje 2
 Desenho de vigas
 Concreto: C20, em geral
 Aço: CA-50-A e CA-60-B
 Escala vigas: 1:50
 Escala seções: 1:20



Elemento	Pos.	Diam.	Q.	Comp.	Total	Comp.	Total	Comp.	Total	Comp.	Total		
				(cm)	(cm)	(cm)	(cm)	(kg)	(kg)	(kg)	(kg)		
V 201	1	ø10	2	37	575	38	650	1300	8.2				
	2	ø10	1	15	575	12	600	600	3.8				
	3	ø10	2	12	225	12	200	1188	7.5				
	4	ø10	1	335	335	335	335	2.1					
	5	ø5	40				84	4250					
Total+10%											23.8	7.3	
V 202	6	ø10	3	500	500	500	1500	9.4					
	7	ø10	4	145	145	145	435	3.6					
	8	ø10	2	12	86	12	100	200	1.3				
	9	ø10	2	12	86	12	85	170	1.1				
	10	ø10	1	315	315	315	315	2.0					
	11	ø16	3	420	420	420	840	13.2					
	12	ø10	2	225	225	225	225	3.2					
	13	ø10	2	108	108	12	120	240	1.5				
	14	ø10	2	12	96	12	70	140	0.9				
	15	ø5	40				84	3760			5.9		
	16	ø5	34				68	3134			2.2		
	Total+10%											39.8	8.9
	V 203	17	ø10	3	480	480	480	1470	9.2				
		18	ø10	2	285	285	285	570	3.6				
		19	ø10	2	12	73	12	85	170	1.1			
20		ø10	2	12	68	12	80	160	1.0				
21		ø10	2	163	163	12	175	350	2.2				
22		ø10	2	158	158	12	170	340	2.1				
23		ø10	2	310	310	310	620	3.9					
24		ø5	43				84	4042			6.3		
25		ø5	35				70	3134			2.3		
Total+10%											25.4	5.5	
V 204		26	ø12.5	3	480	480	480	1470	14.4				
		27	ø10	2	12	358	12	80	160	1.0			
		28	ø10	2	12	68	12	80	160	1.0			
		29	ø10	2	12	68	12	80	160	1.0			
		30	ø10	2	163	163	12	175	350	2.2			
		31	ø10	2	158	158	12	170	340	2.1			
		32	ø10	2	140	140	12	140	280	1.8			
	33	ø10	2	310	310	310	620	3.9					
	34	ø5	43				84	4042			6.3		
	35	ø5	35				70	3134			2.3		
	Total+10%											31.9	9.5
	V 205	36	ø10	2	12	576	12	600	1200	7.5			
		37	ø10	2	205	205	205	410	2.6				
		38	ø10	2	12	73	12	205	410	2.6			
39		ø10	2	160	160	160	320	2.0					
40		ø10	2	155	155	155	310	1.9					
41		ø5	40				84	3760			5.9		
Total+10%											17.7	6.5	
V 206		42	ø10	2	12	338	12	350	700	4.4			
		43	ø10	2	12	323	12	335	670	4.2			
		44	ø10	2	195	195	195	390	2.4				
		45	ø10	2	530	530	530	1060	6.7				
	46	ø10	1	315	315	315	315	2.0					
	47	ø10	2	148	148	12	160	320	2.0				
	48	ø10	2	178	178	12	190	380	2.4				
	49	ø5	55				94	5170			8.1		
	Total+10%											26.5	8.9
V 207	50	ø10	2	293	293	293	586	3.8					
	51	ø10	2	188	188	200	400	2.5					
	52	ø10	2	12	453	12	465	930	5.8				
	53	ø10	2	210	210	210	420	2.6					
	54	ø5	30				60	3008			4.7		
Total+10%											14.7	5.2	
V 208	55	ø10	2	12	456	12	480	960	6.0				
	56	ø10	2	12	358	12	370	740	4.6				
	57	ø10	2	190	190	190	380	2.4					
	58	ø10	2	128	128	12	140	280	1.8				
	59	ø5	32				64	3008			4.7		
	Total+10%											16.3	5.2
V 209	60	ø10	2	12	338	12	350	700	4.4				
	61	ø10	2	12	323	12	335	670	4.2				
	62	ø10	2	195	195	195	390	2.4					
	63	ø10	2	530	530	530	1060	7.9					
	64	ø10	2	178	178	12	190	380	2.4				
	65	ø5	50				100	5170			8.1		
	Total+10%											23.7	8.9
	ø5: 0.0 69.9												
ø12.5: 15.8 186.0													
ø16: 18.0 200.0													
Total: 219.8 69.9													

Resumo Aço Vigas	Comp. total (m)	Peso+10% (kg)	Total
CA-50-A ø10	269.5	186	
ø12.5	14.7	16	
ø16	10.5	18	220
CA-60-B ø5	404.5	70	70
Total		290	



Laje 2 - Superfície total: 48,8 m²

Elemento	Formas (m ²)	Volume (m ³)
LAMES	96,20	3,69
Vigas: fôrma	9,73	3,08
Fôrma lateral	20,45	1,44
Fôrma: (Dep. Formas)	20,45	1,44
Total	146,83	7,65

Tabela de características de lajes de concreto (Página 9)

LAJE DE VIGAS DE CONCRETO

Módulo de elasticidade: 21000 MPa

Módulo de ruptura: 16 MPa

Espessura mínima de concreto: 4 cm

Distância entre pilares: 2,0 m

Relevo/Módulo: Carbono

Tempo de cura: 10 cm

Volume de concreto: 3,08 m³

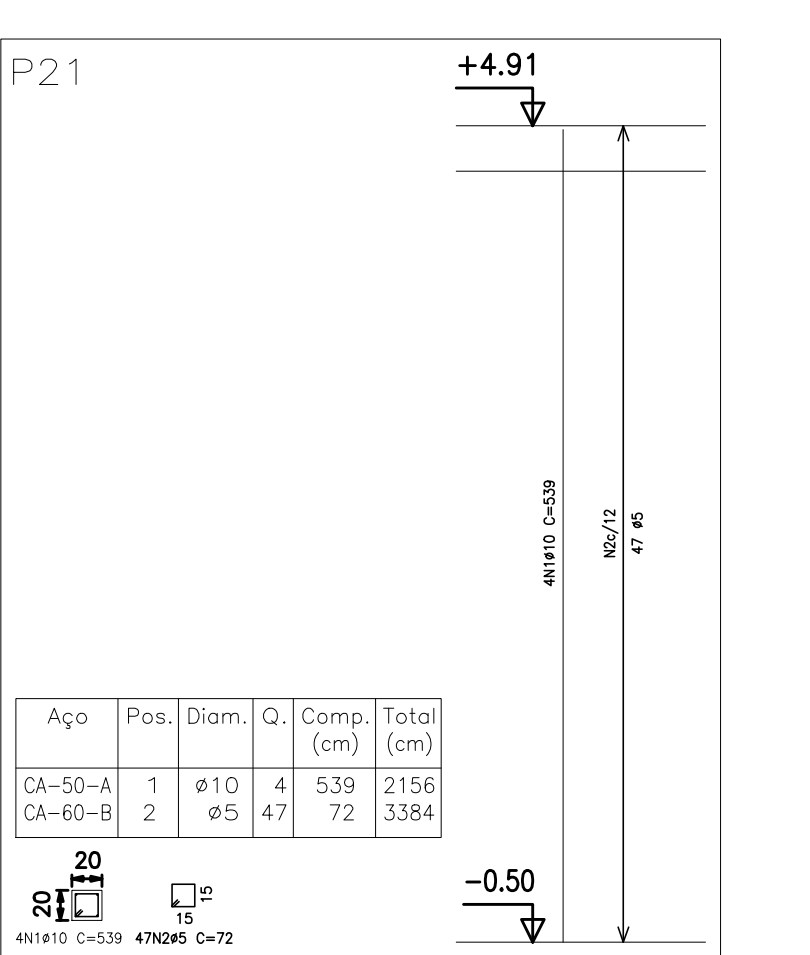
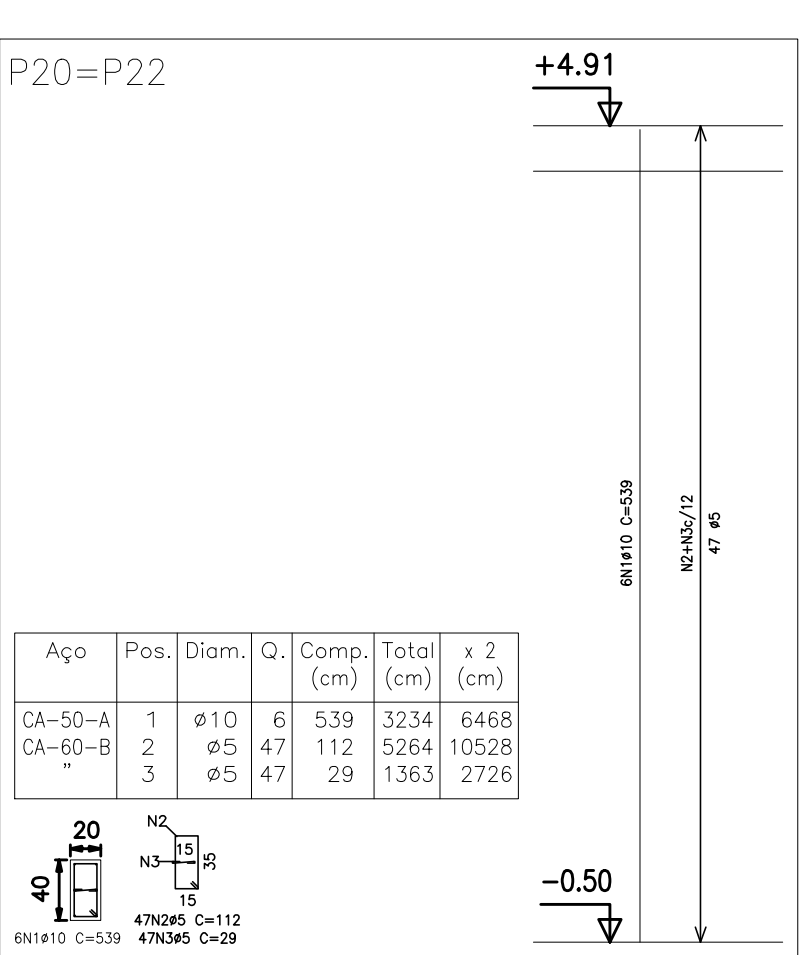
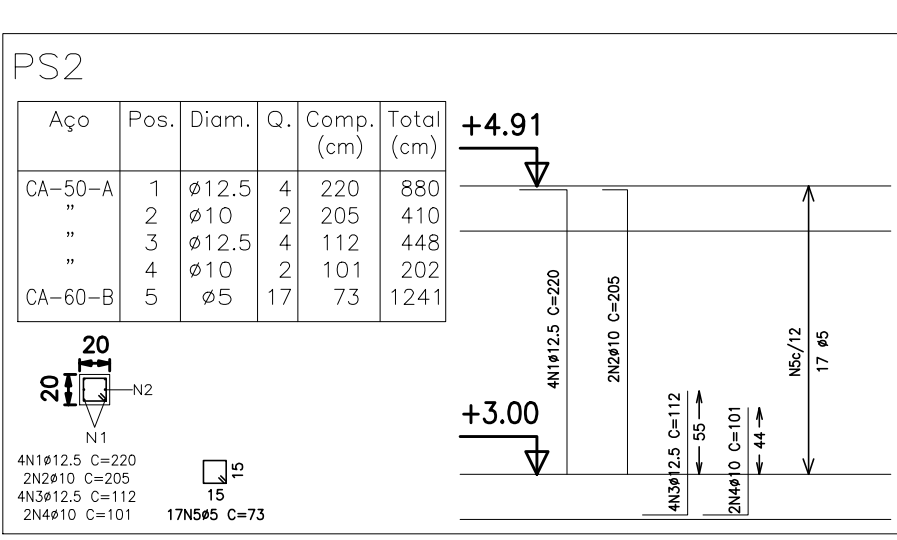
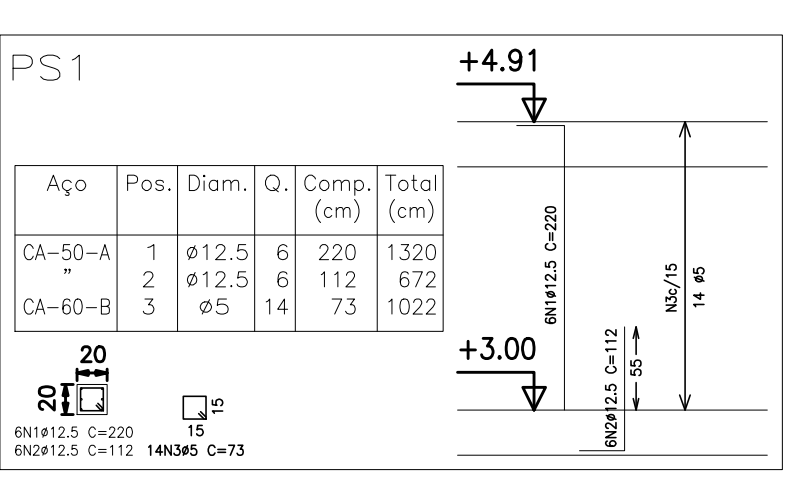
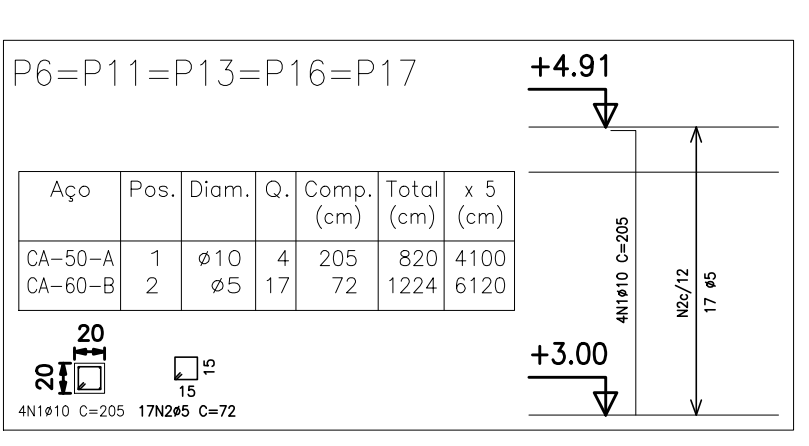
Para pilares: ø16, 12x12

Para lajes: 20x20

Para cunhas: se obtiverem referências a partir das vigas

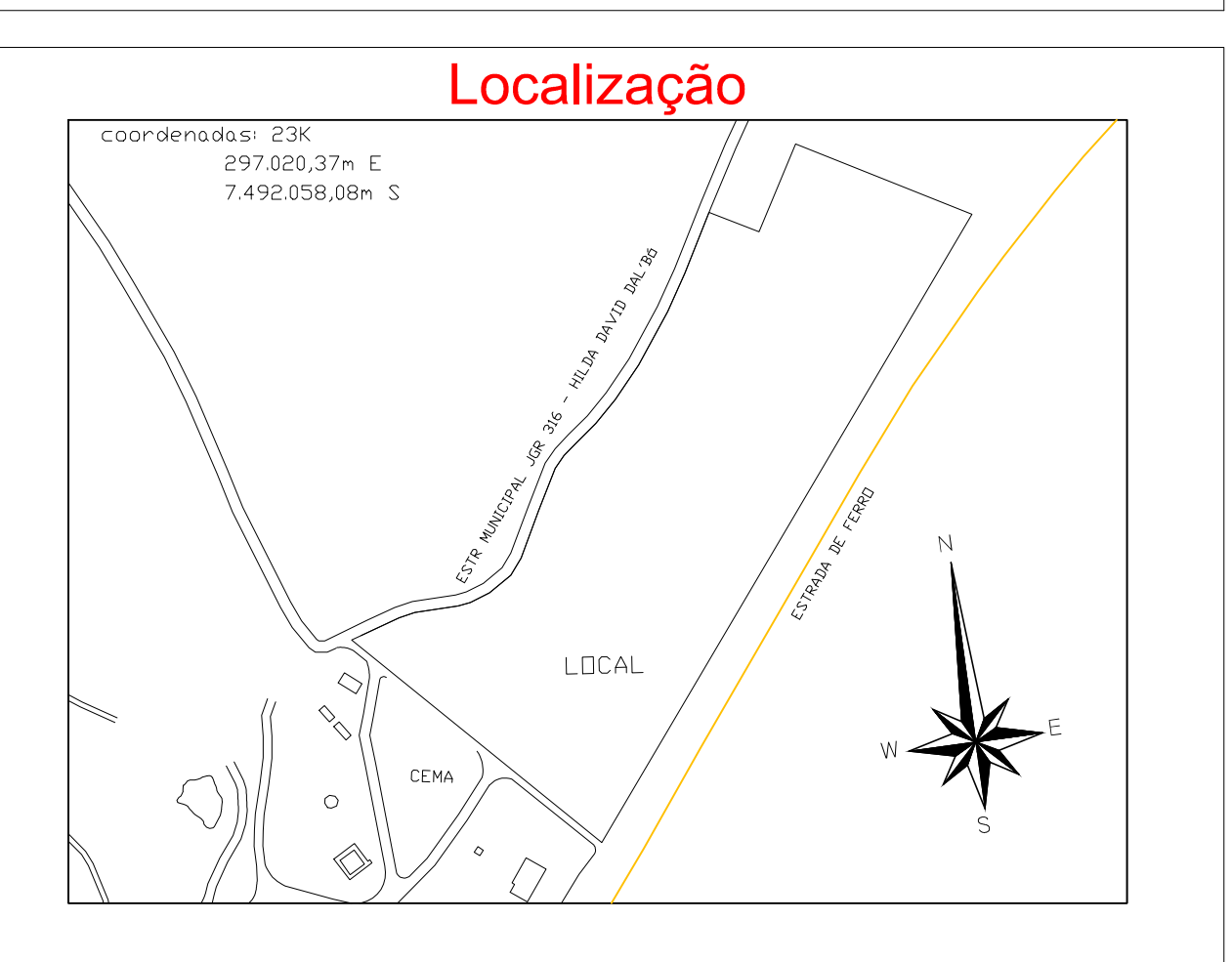
Os pontos de ancoragem e de apoio, deverão ser indicados.

Pilares que terminam em Laje 2
 Concreto: C20, em geral
 Aço: CA-50-A e CA-60-B
 Escala: 1:50



Resumo Aço Laje 1 até Laje 2 Pilares	Comp. total (m)	Peso+10% (kg)	Total
CA-50-A ø10	133,4	92	
ø12.5	33,2	36	128
CA-60-B ø5	250,2	43	43
Total		171	

eng. Adriano Poltzweier
 CREA nº 506095777



FORMA DA LAJE 2
 ESCALA 1:50

Obra: _____

SECRETARIA: **Planejamento** DEPARTAMENTO: **Arquitetura e Urbanismo**

ASSUNTO: **Modernização de Infraestrutura Esportiva Forma da Laje 2**

ESCALA: _____ DATA: _____ VISTO: _____ DATA: **julho/2017** DESENHO: **Adriano** FOLHA/TOTAL: **1 / 1**

ARQUITETO: _____



Prefeitura do Município de Jaguarúna
 Rua Alfredo Basso, 1235 - Centro - Jaguarúna-SP - CEP 13620-000-Fone: (019) 3867-9700-Fax: (019) 3867-2866