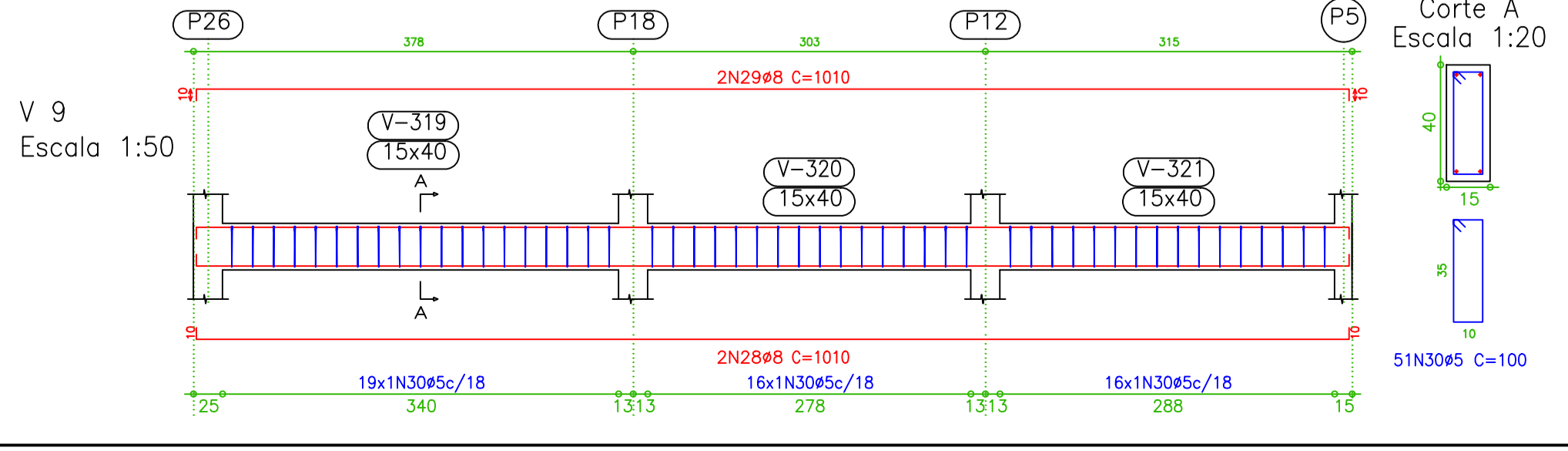
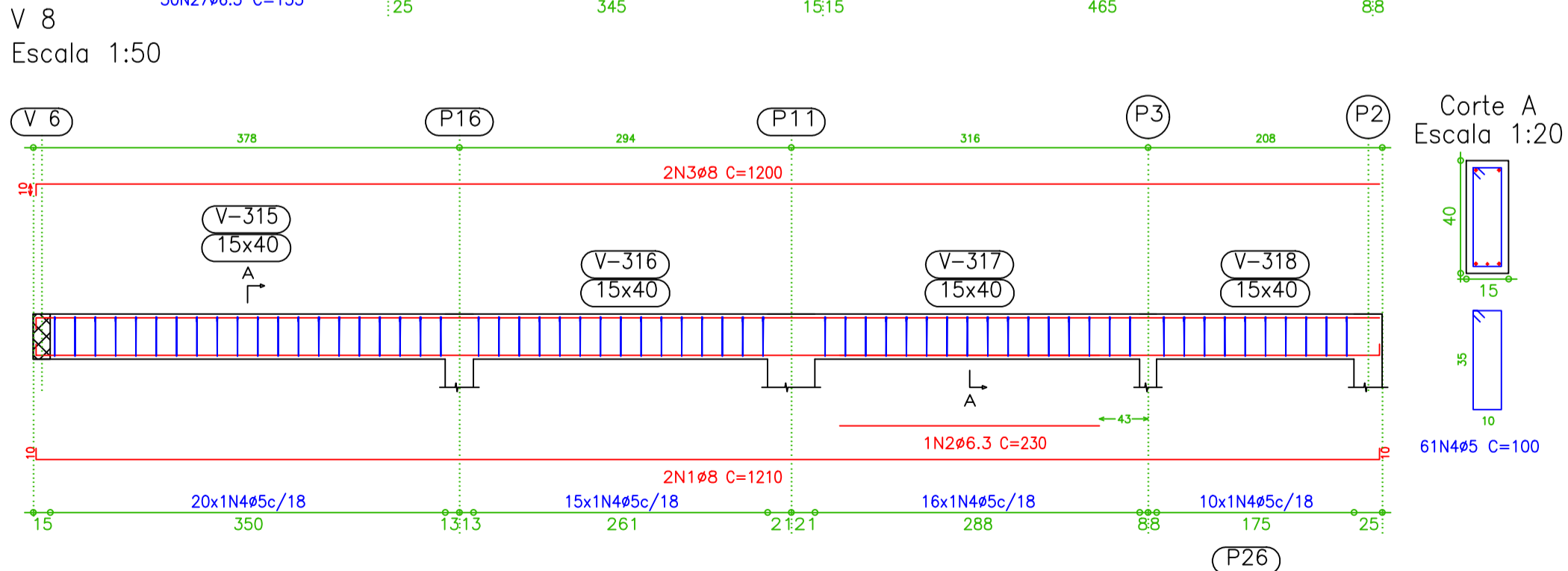
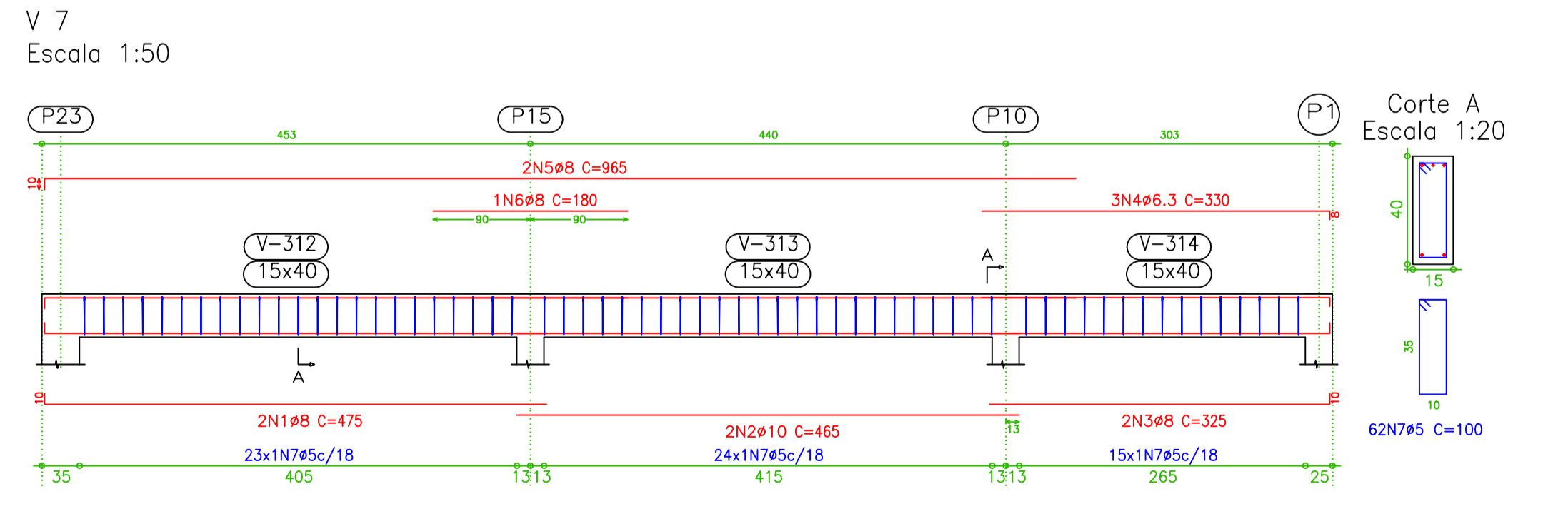
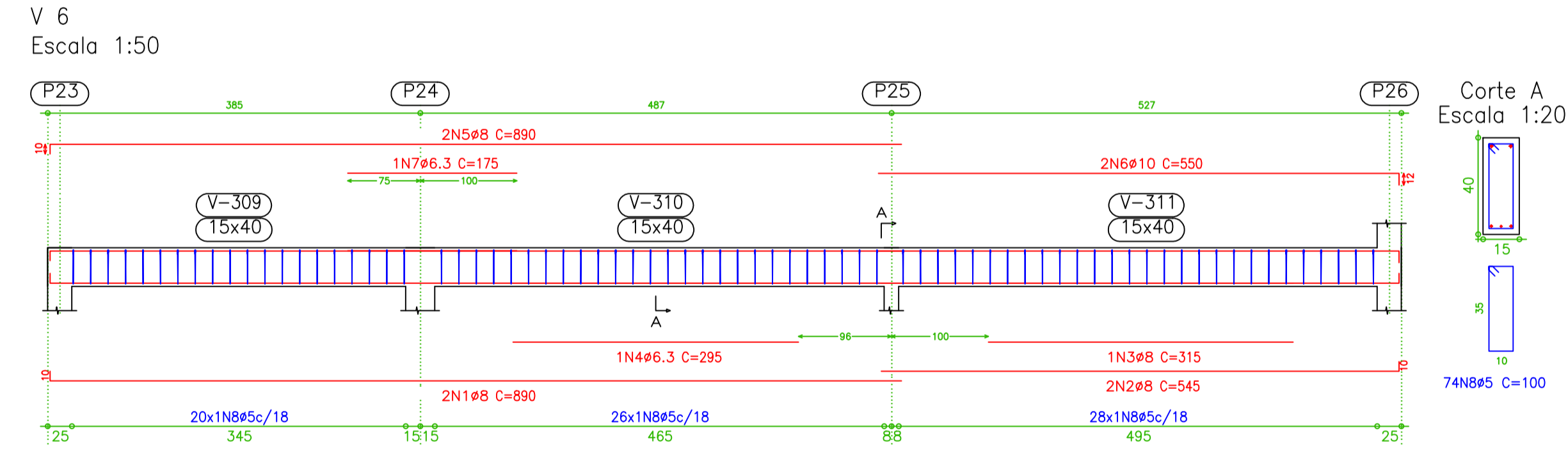
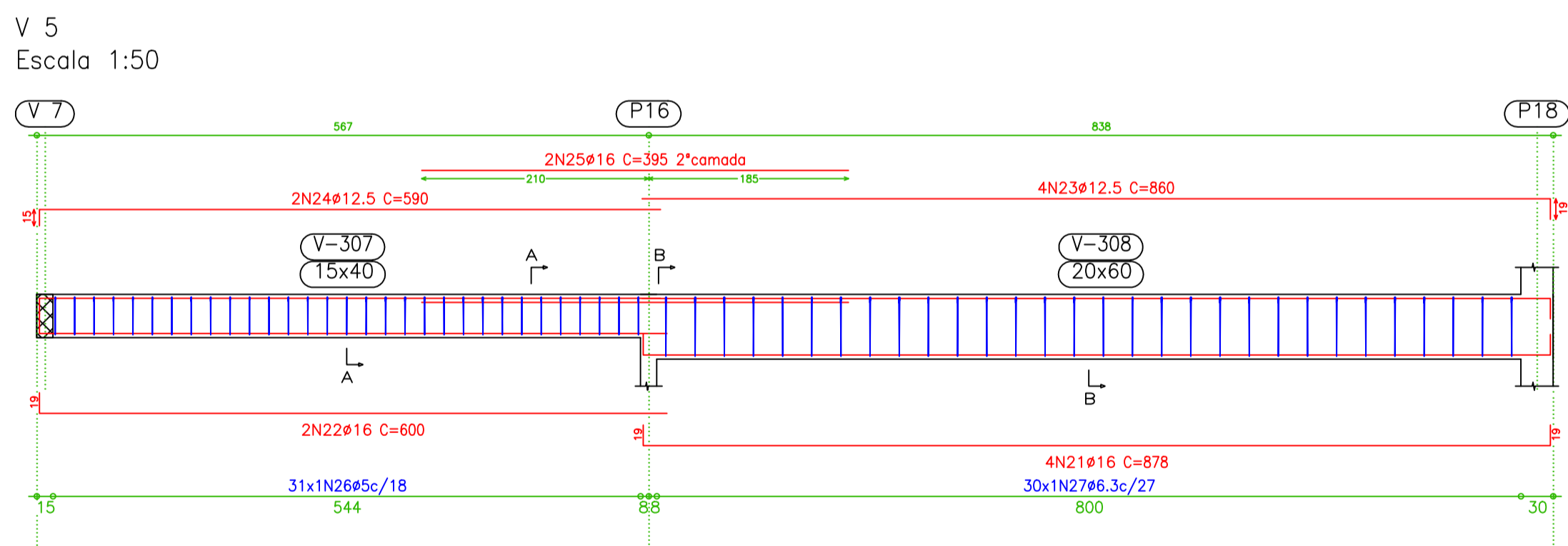
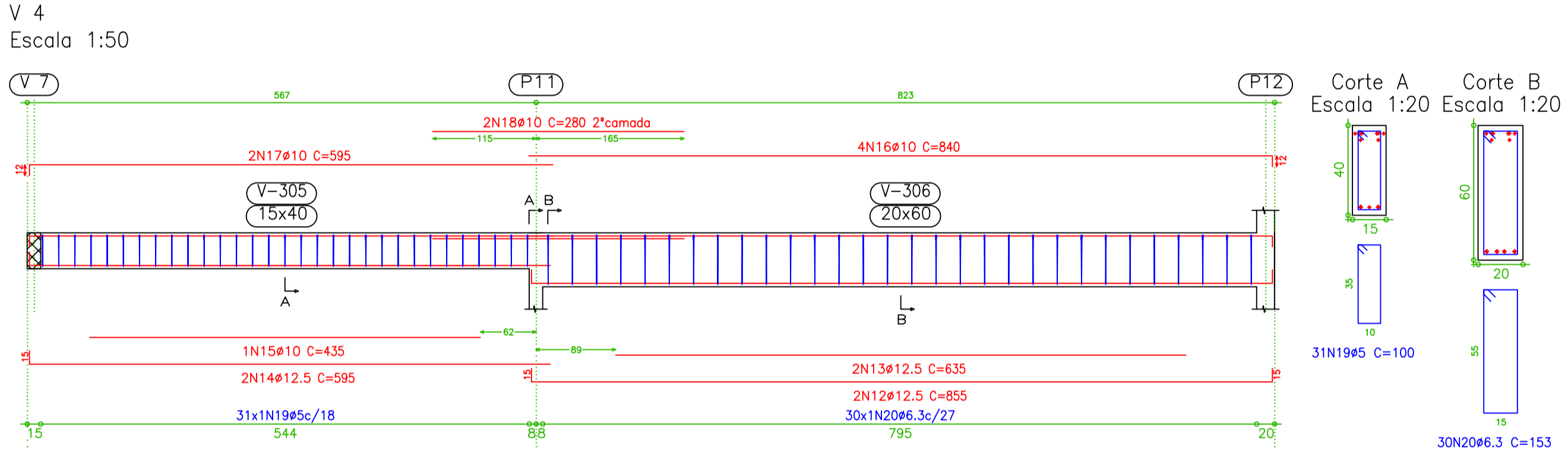
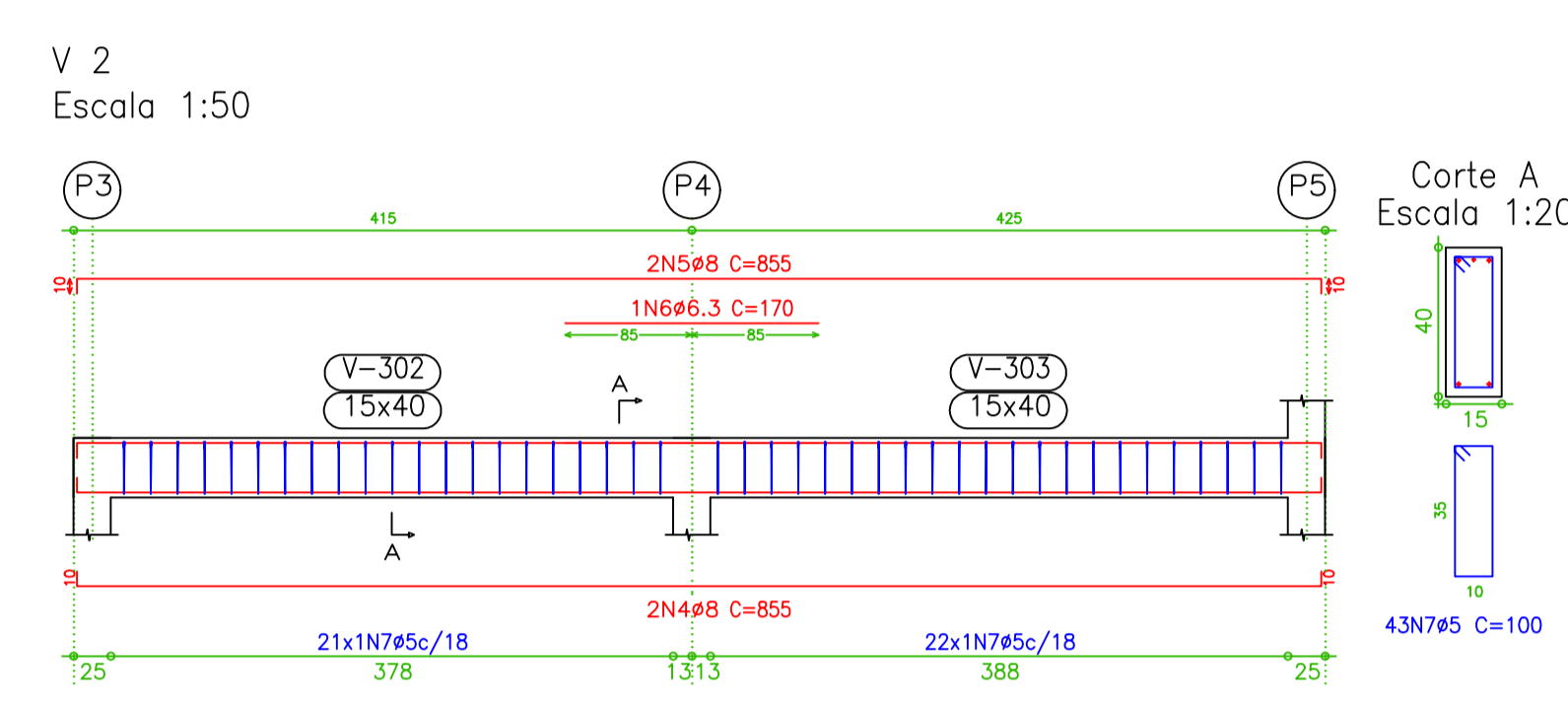
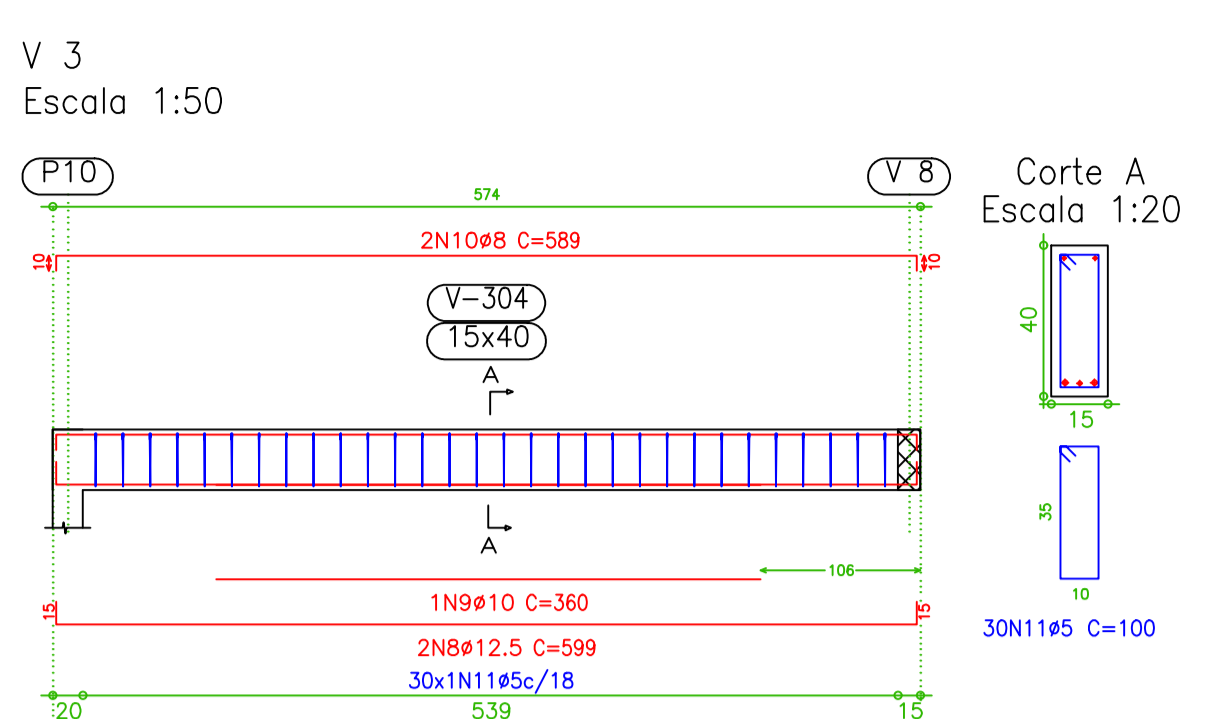
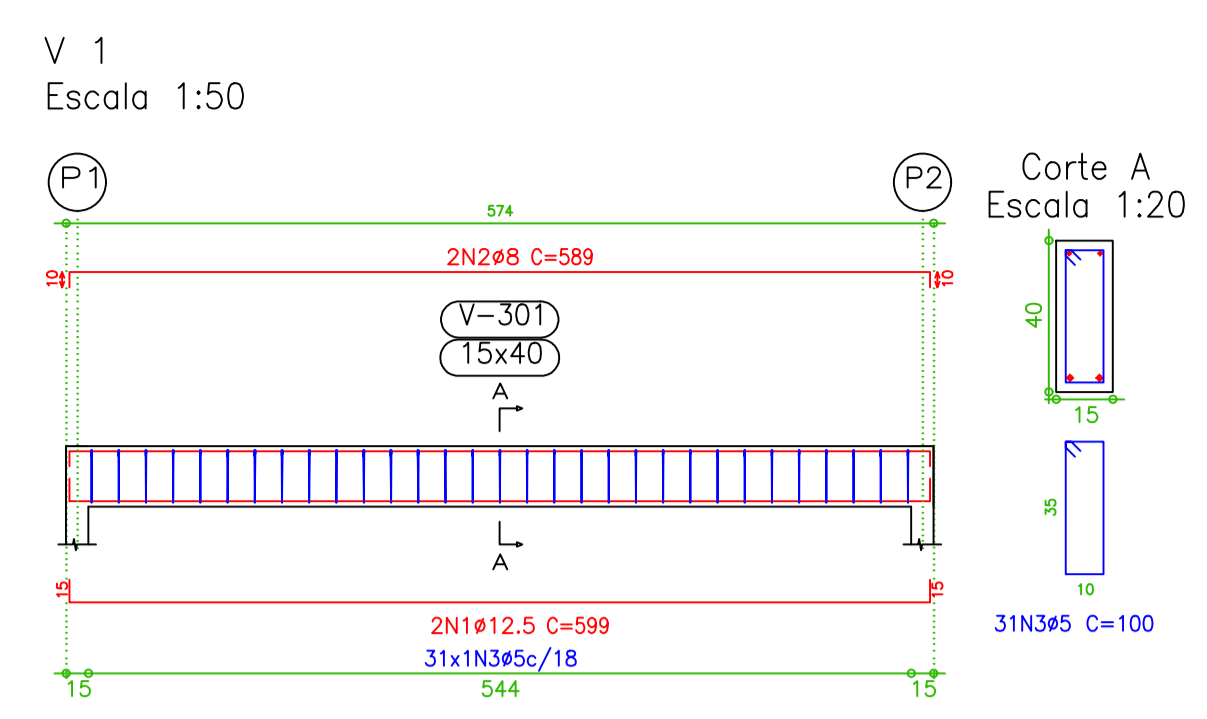


Cobertura 1
Formas
Concreto: C30, em geral
CA-50-A e CA-60-B
Mf: Momento fletor de cálculo por metro de largura (kN x m/m)
V: Esforço cortante de cálculo por metro de largura (kN/m)
Escala: 1:50



Elemento	Pos.	Diam.	Q.	Dob. (cm)	Ret. (cm)	Dob. (cm)	Comp. (cm)	Tota (cm)	CA-50-A (kg)	CA-60-B (kg)	
V 1	1	Ø12.5	2	15	569	15	599	1198	11.8		
	2	Ø8	2	10	835	10	855	1710	6.7		
	3	Ø5	3	10	170	100	300	1178	4.6	4.9	
Total+10%									18.0	5.4	
V 2	4	Ø8	2	10	835	10	855	1710	6.7		
	5	Ø6.3	1	10	170	100	300	1178	4.6	4.9	
	6	Ø8	2	10	835	10	855	1710	6.7		
	7	Ø5	4	10	170	100	300	1178	4.6	4.9	
Total+10%									15.2	7.5	
V 3	8	Ø12.5	2	15	569	15	599	1198	11.8		
	9	Ø8	2	10	835	10	855	1710	6.7		
	10	Ø8	2	10	835	10	855	1710	6.7		
	11	Ø5	3	10	170	100	300	1178	4.6	4.7	
Total+10%									20.6	5.2	
V 4	12	Ø12.5	2	15	825	15	855	1710	16.8		
	13	Ø12.5	2	15	635	15	635	1270	12.5		
	14	Ø12.5	2	15	580	15	595	1190	11.7		
	15	Ø10	2	10	435	10	435	870	2.7		
	16	Ø10	4	10	828	12	840	3360	21.1		
	17	Ø10	4	12	585	12	595	1190	7.5		
	18	Ø10	2	10	280	10	280	560	3.5		
	19	Ø5	3	10	100	100	300	1178	4.6	4.9	
	20	Ø6.3	3	10	153	100	300	4590	11.3	4.9	
	Total+10%									95.8	5.4
	V 5	21	Ø16	4	19	840	19	878	3512	55.1	
		22	Ø16	2	19	581	19	600	1200	18.8	
23		Ø12.5	4	19	841	19	860	3440	33.8		
24		Ø12.5	2	15	575	15	590	1180	11.6		
25		Ø16	2	10	395	10	395	790	12.4		
26		Ø5	3	10	100	100	300	1178	4.6	4.9	
27		Ø6.3	3	10	153	100	300	4590	11.3	4.9	
Total+10%									157.3	5.4	
V 6	1	Ø8	2	10	880	10	890	1780	7.0		
	2	Ø8	2	10	535	10	545	1090	4.3		
	3	Ø8	2	10	315	10	315	630	2.6		
	4	Ø6.3	1	10	295	10	295	590	0.7		
	5	Ø8	2	10	880	10	890	1780	7.0		
	6	Ø10	2	10	538	12	550	1100	6.9		
	7	Ø6.3	1	10	175	100	300	740	0.4		
	8	Ø5	7	10	100	100	300	7400	11.6	12.8	
Total+10%									30.3	12.8	
V 7	1	Ø8	2	10	465	10	475	950	3.7		
	2	Ø10	2	10	465	10	465	930	5.8		
	3	Ø8	2	10	315	10	325	650	2.6		
	4	Ø6.3	3	10	322	8	330	990	2.4		
	5	Ø6.3	1	10	965	10	965	1930	7.6		
	6	Ø8	2	10	180	10	180	360	0.7		
	7	Ø5	6	10	100	100	300	6200	9.7	10.7	
Total+10%									25.1	10.7	
V 8	1	Ø8	2	10	1190	10	1210	2420	9.5		
	2	Ø6.3	1	10	230	10	230	460	0.6		
	3	Ø8	2	10	1190	10	1200	2400	9.4		
	4	Ø8	2	10	1190	10	1200	2400	9.4	9.6	
Total+10%									21.5	10.6	
V 9	28	Ø8	2	10	990	10	1010	2020	7.9		
	29	Ø8	2	10	990	10	1010	2020	7.9		
	30	Ø5	5	10	100	100	300	5100	8.0	8.0	
Total+10%									17.4	8.8	

Resumo Aço	Comp. total (m)	Peso+10% (kg)	Total
Cobertura 1 Vigas			
CA-50-A Ø6.3	110.4	30	
Ø8	233.1	101	
Ø10	79.4	55	
Ø12.5	111.9	121	
Ø16	55.0	95	402
CA-60-B Ø5	414.0	71	7.1
Total			473

Elemento	Formas (m²)	Superfície total: 150.30 m²	Volume (m³)	Barros (kg)
LAJES	134.88	9.85	144	
Vigas fundo	14.14	6.70	473	
Forma lateral	61.77			
Filares (Sup. Formas)	32.50	1.72	208	
Total	243.30	18.27	825	
Índices (por m²)	1.619	0.122	5.49	

Cobertura 1
Desenho de vigas
Concreto: C30, em geral
Aço: CA-50-A e CA-60-B
Escala vigas: 1:50
Escala seções: 1:20