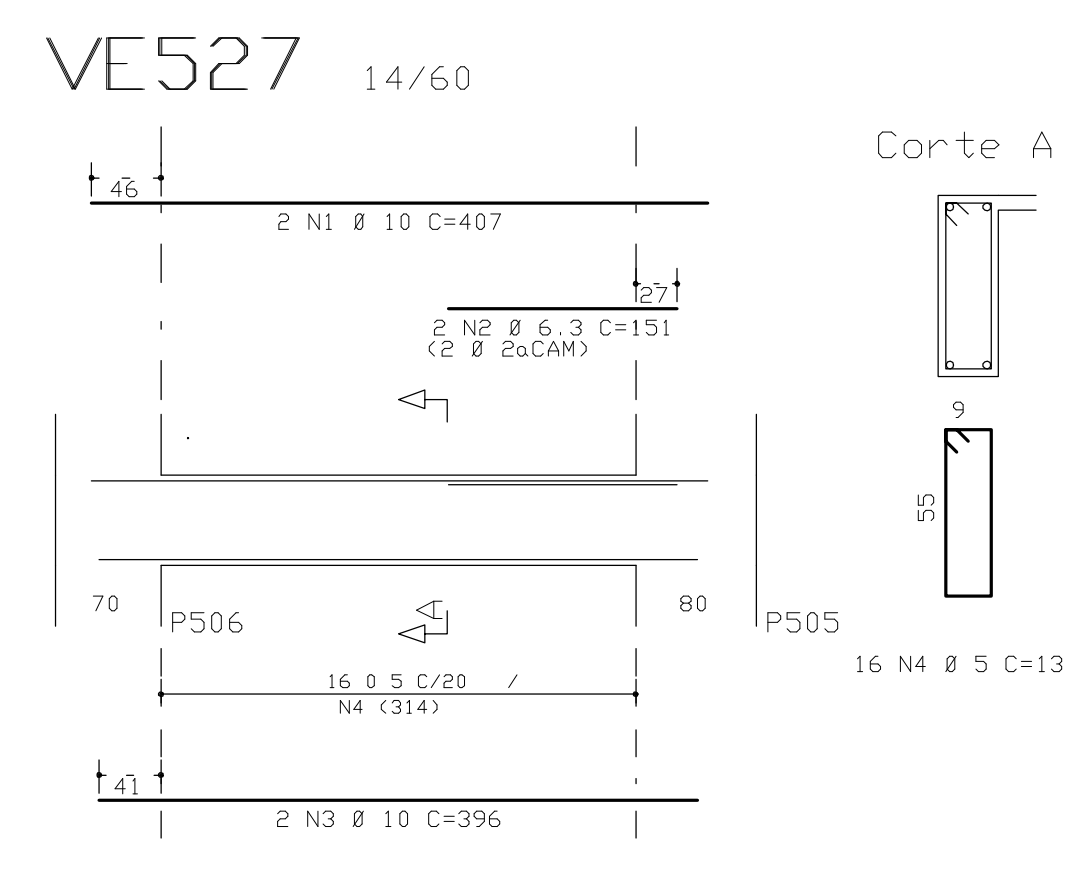
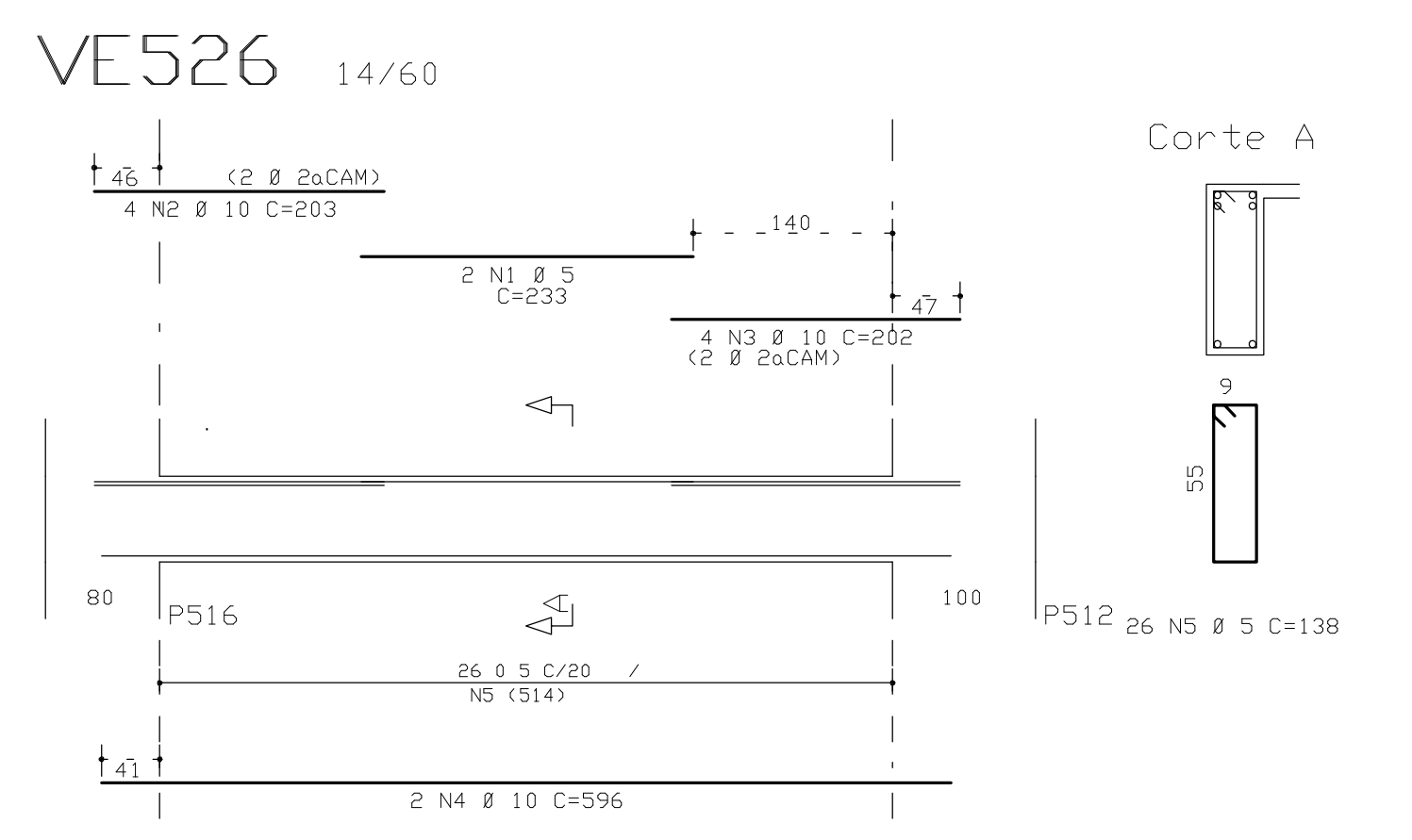
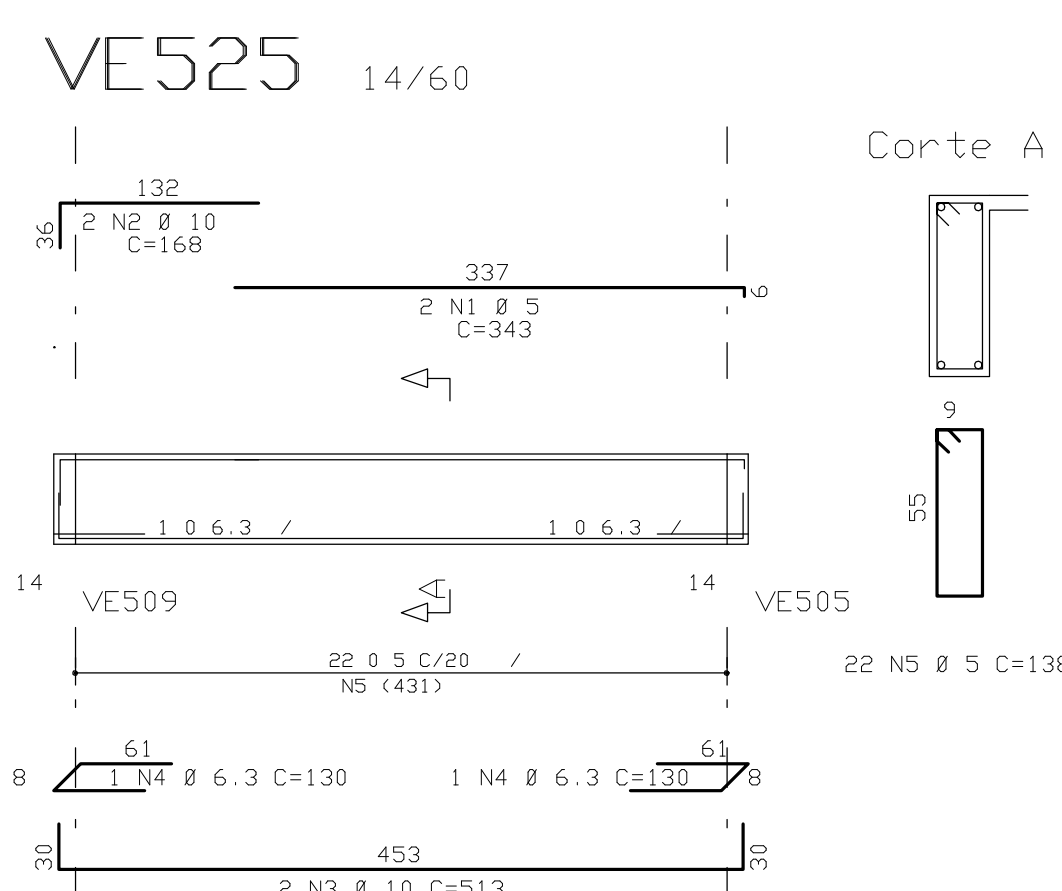
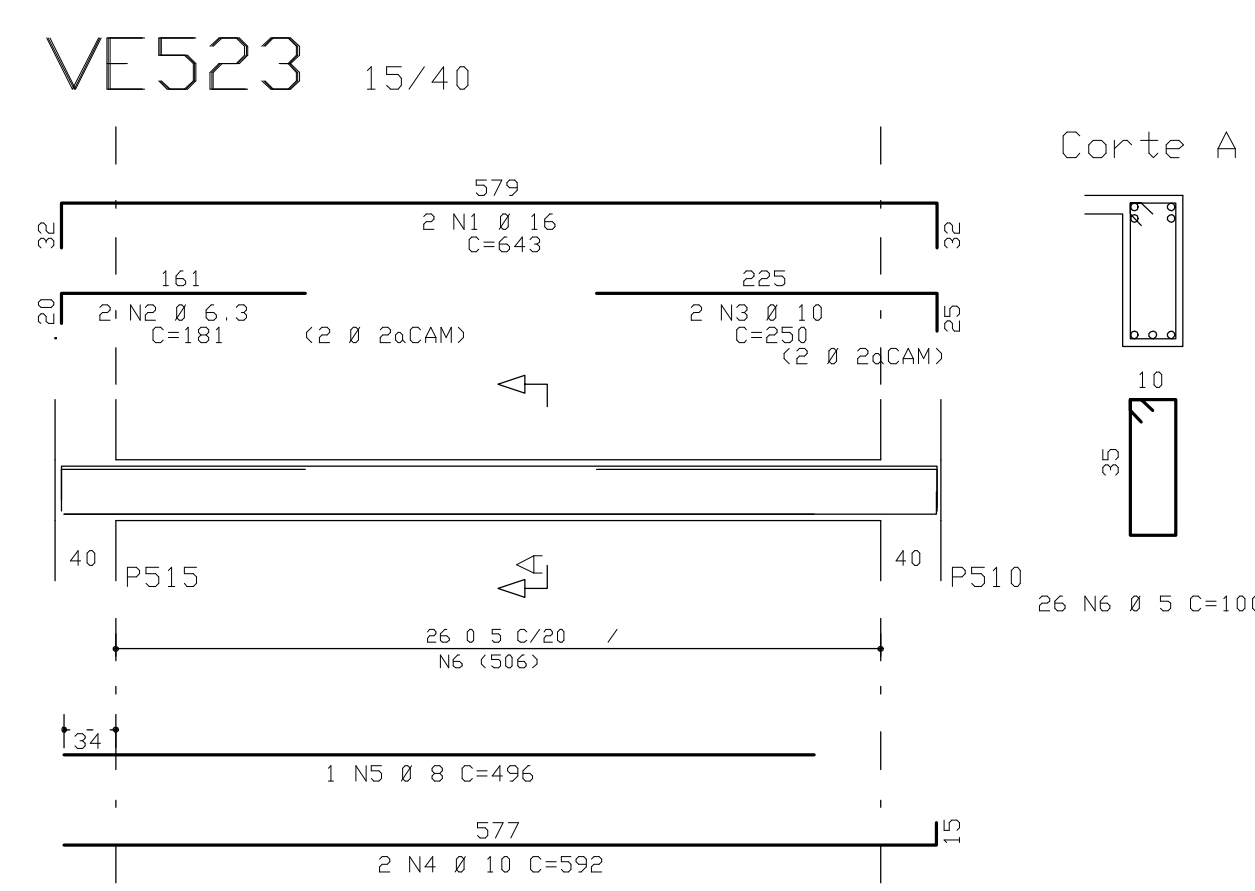
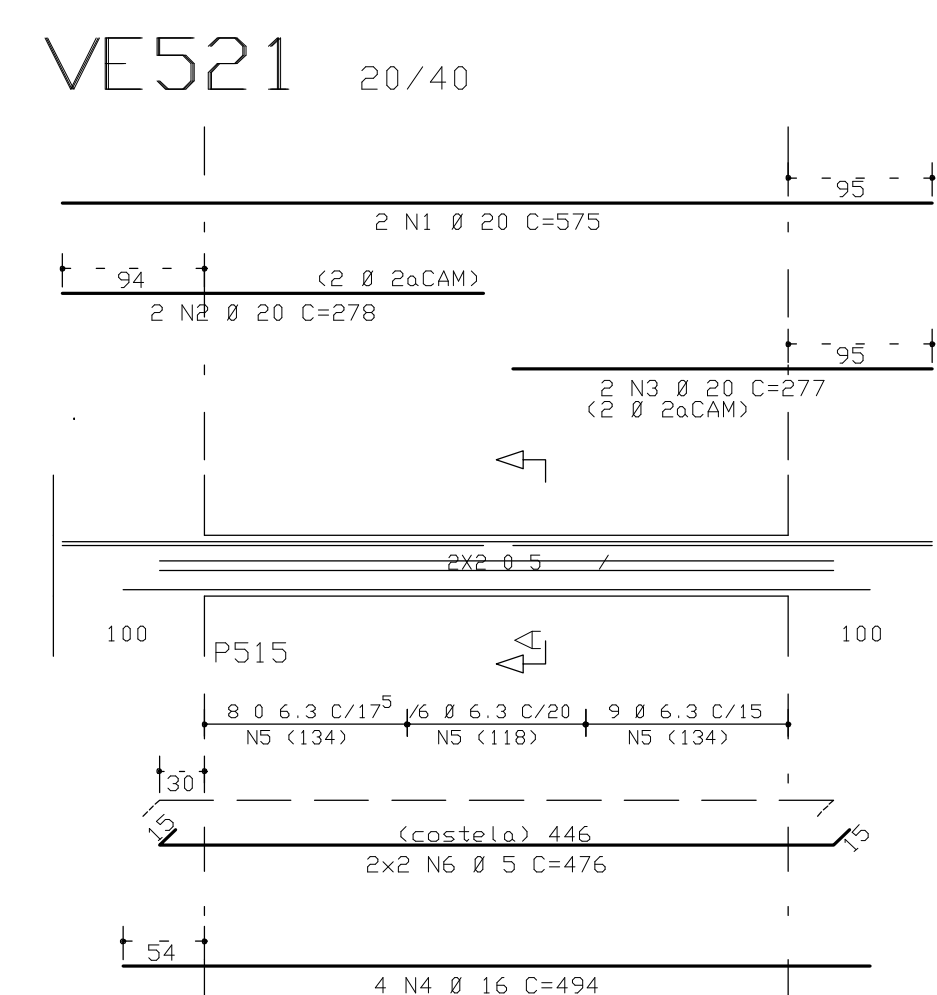
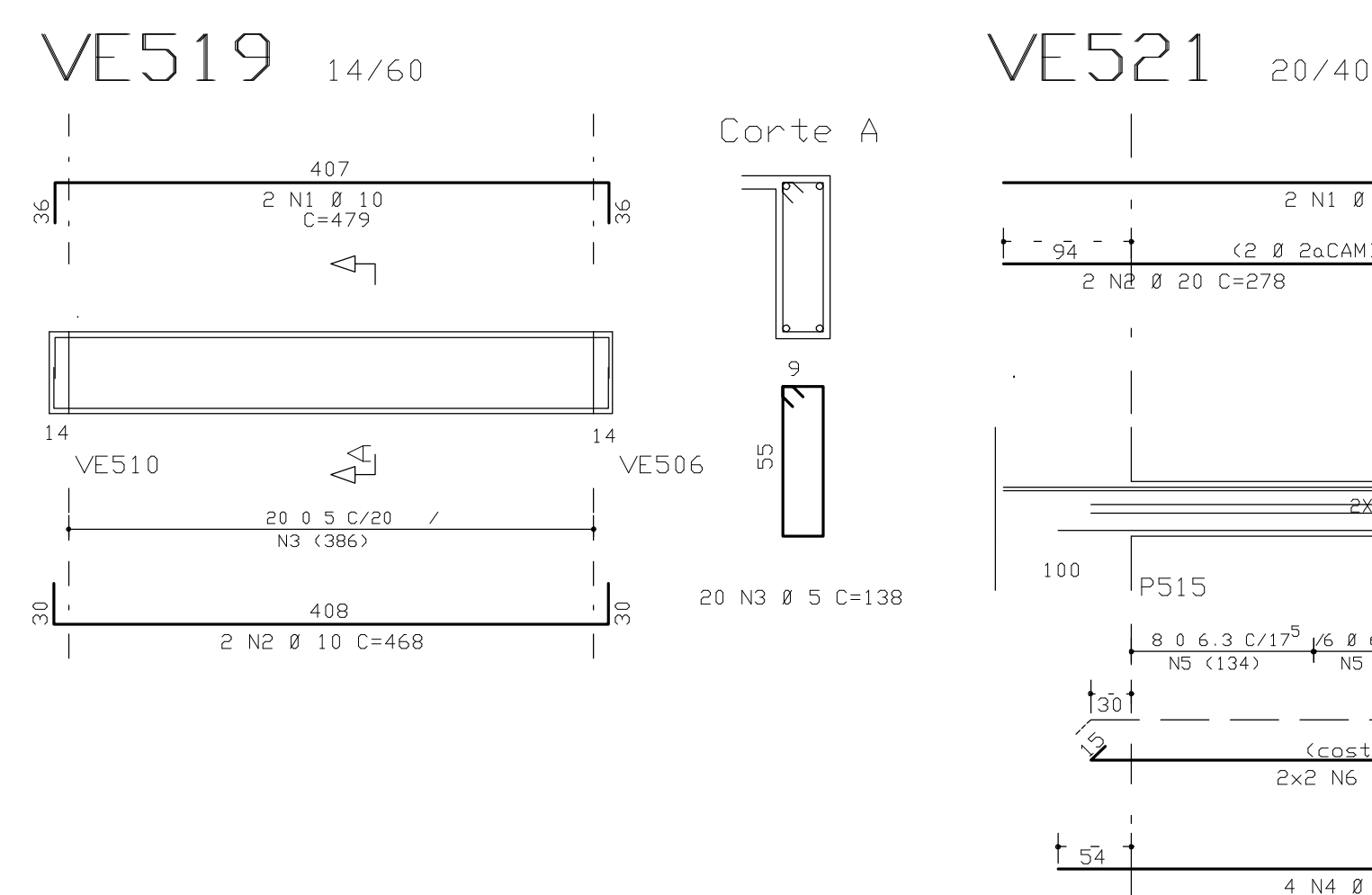
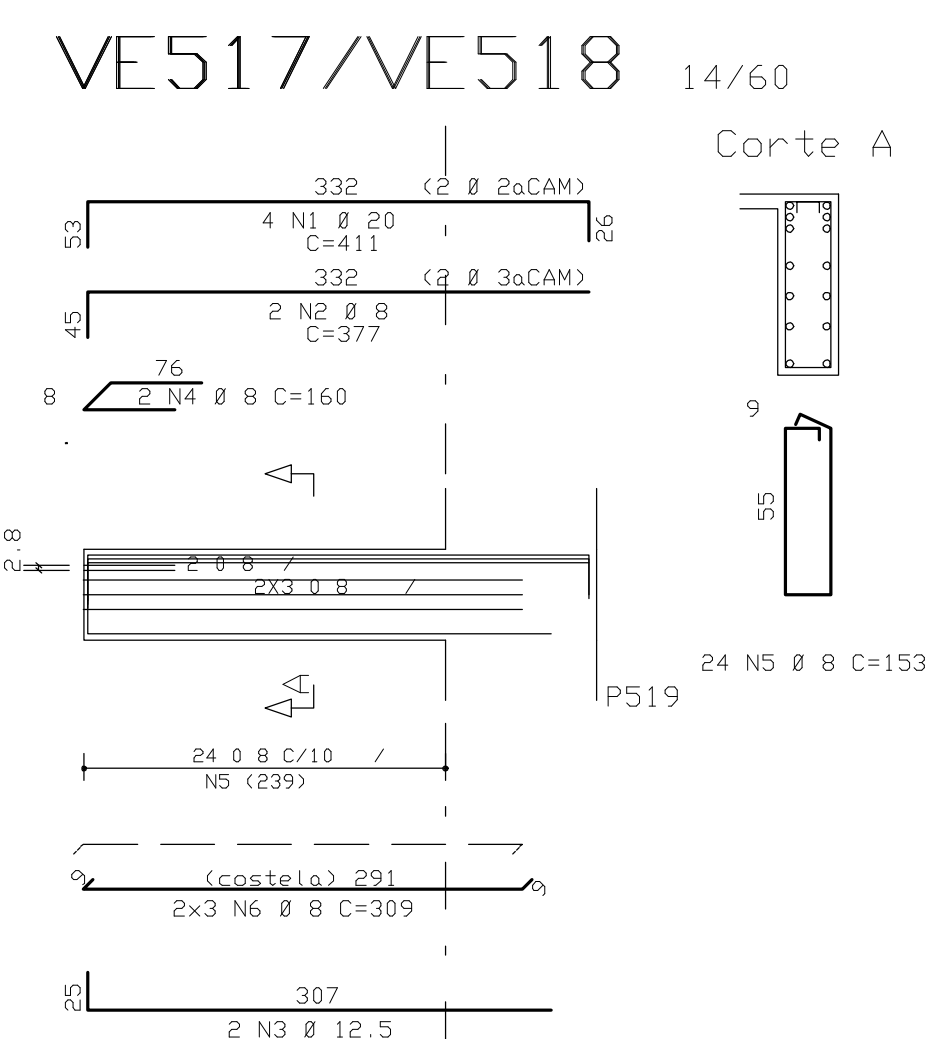
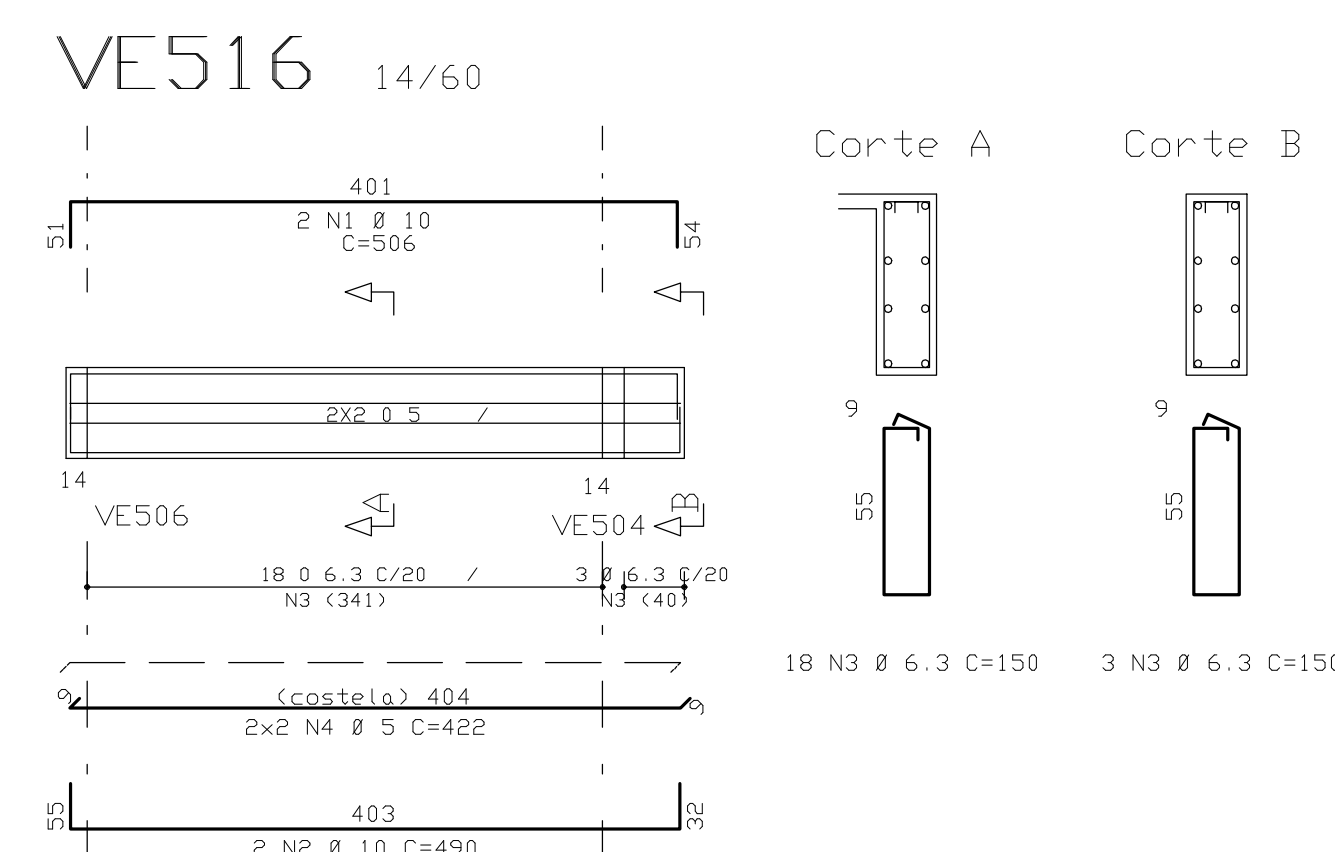
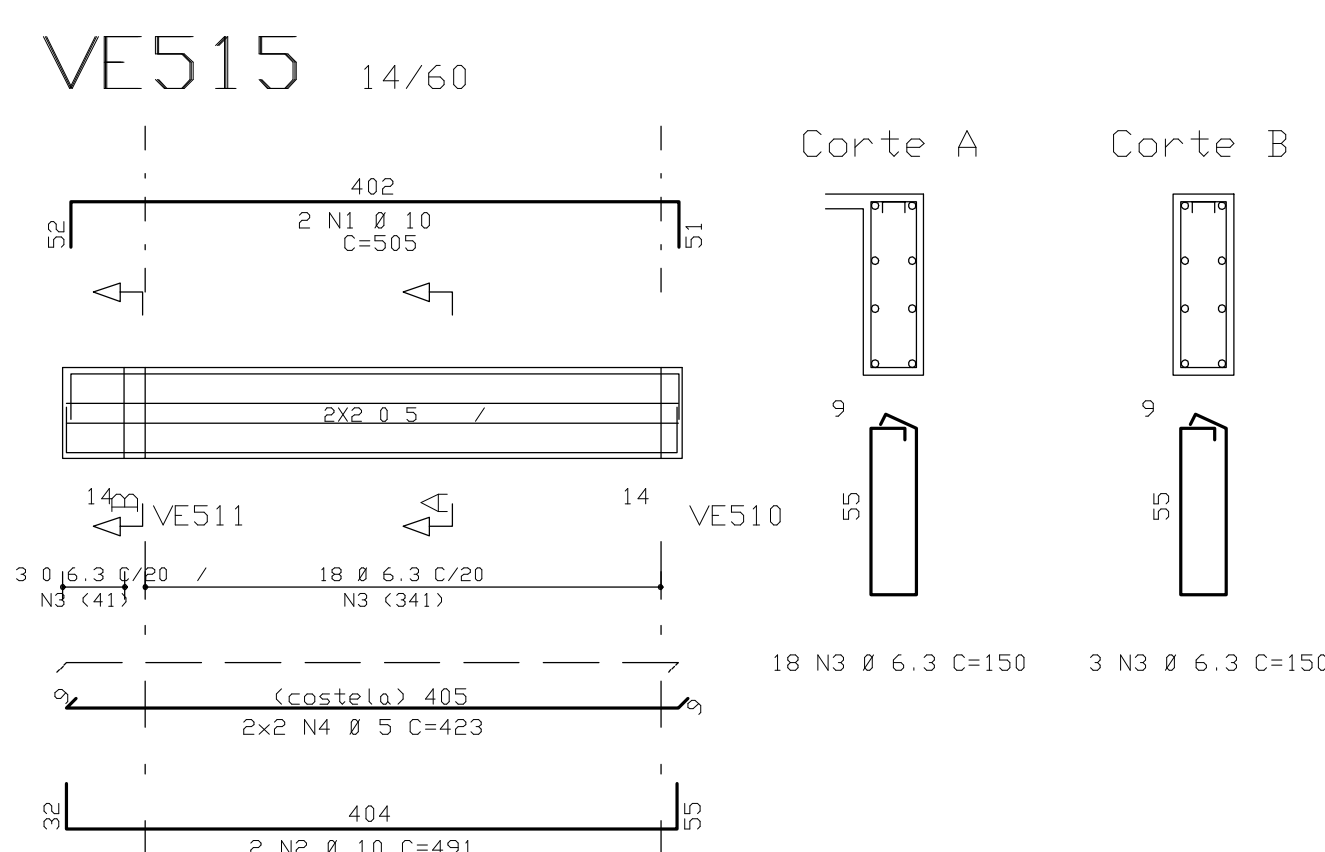
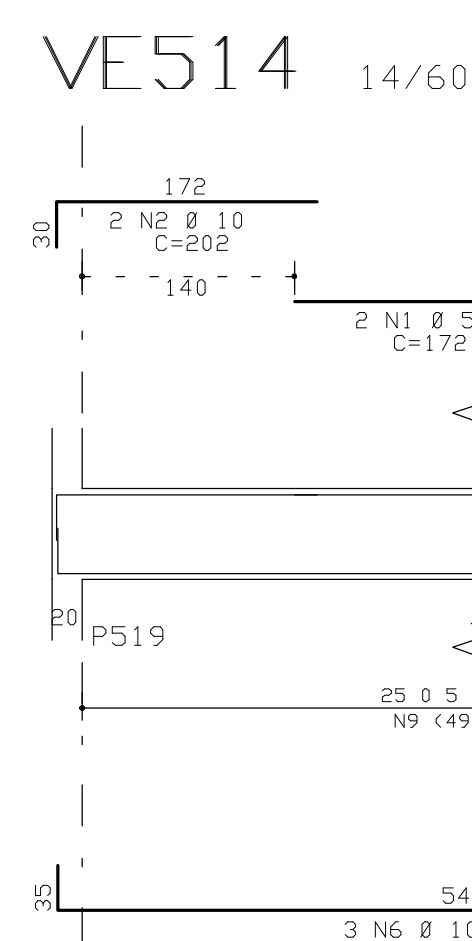
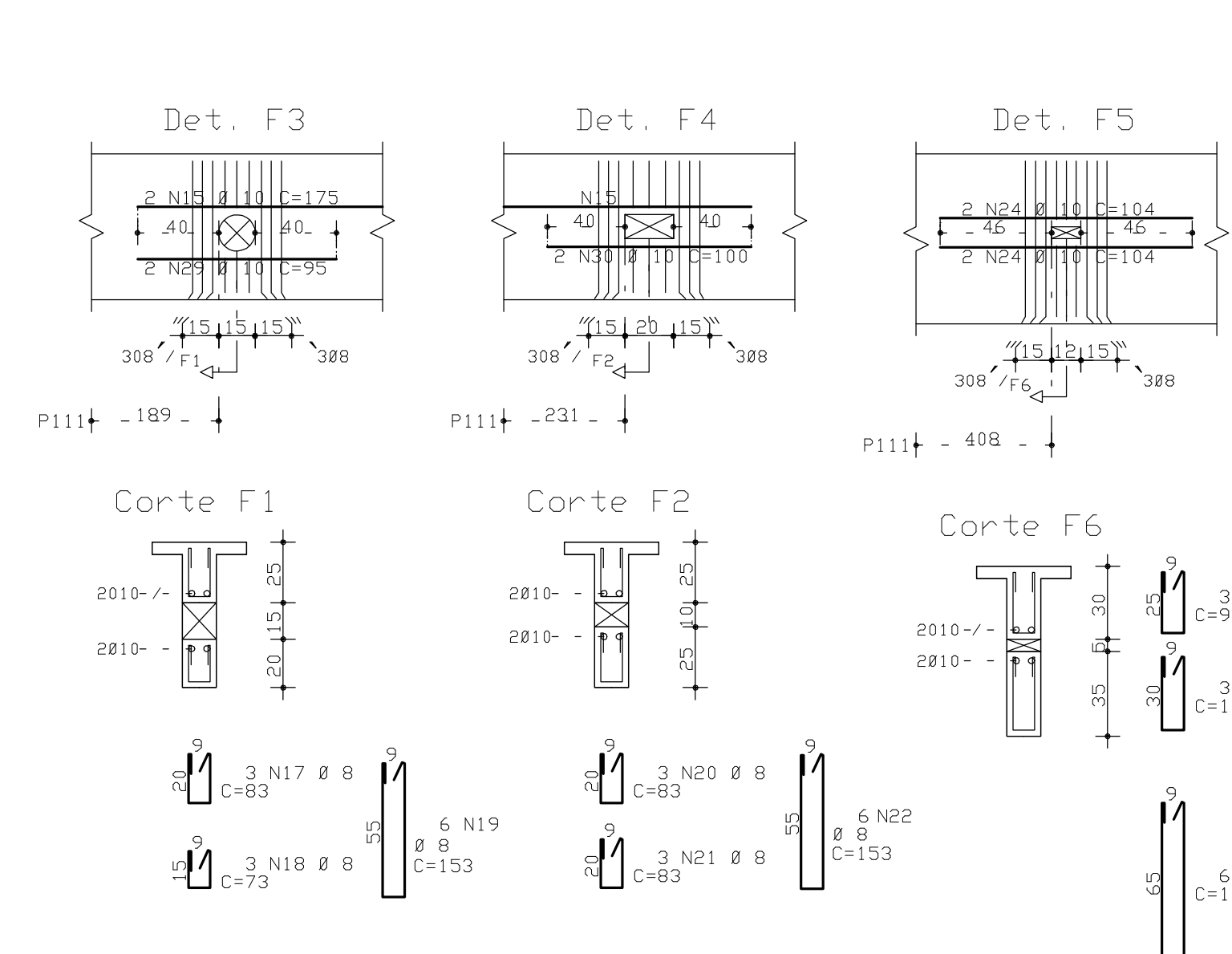
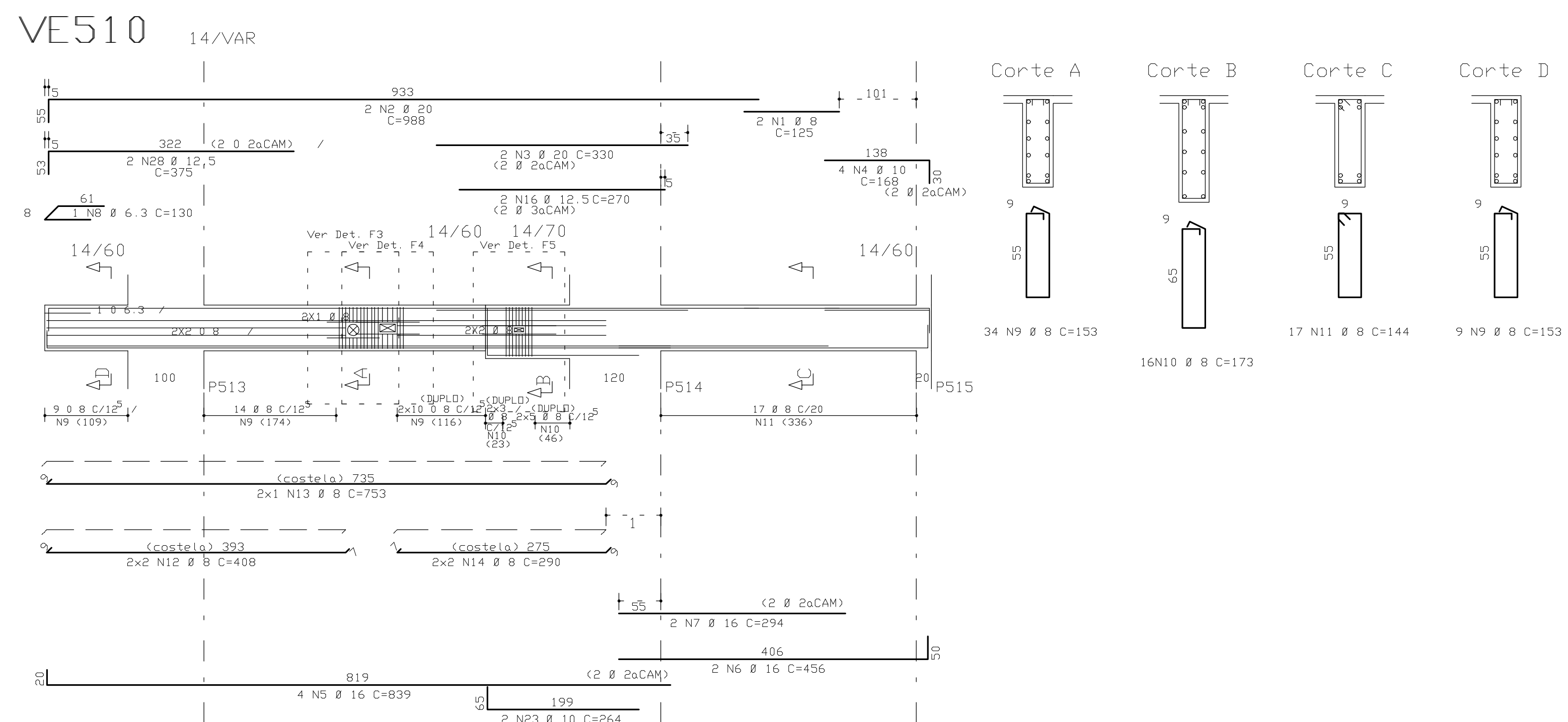
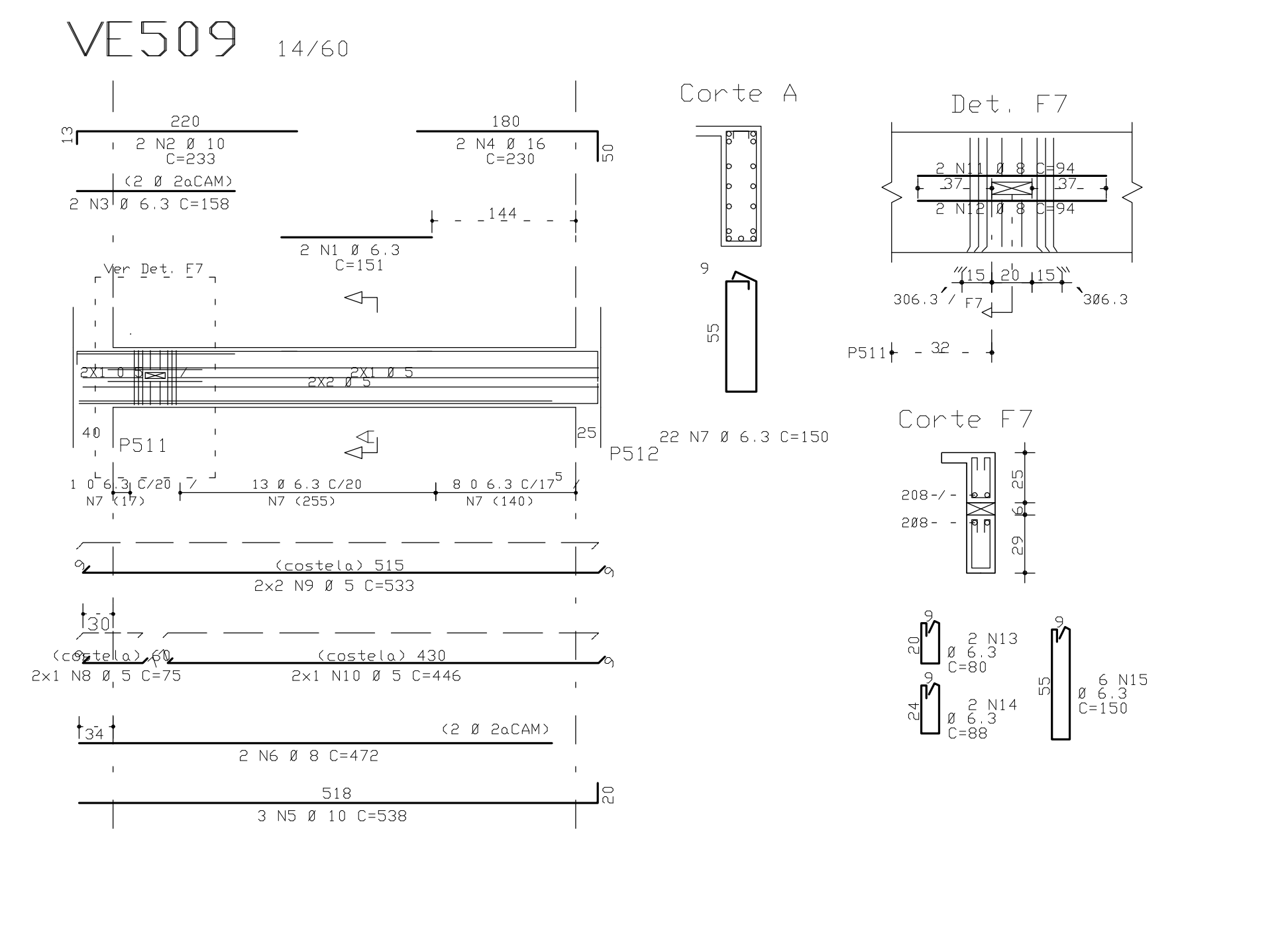
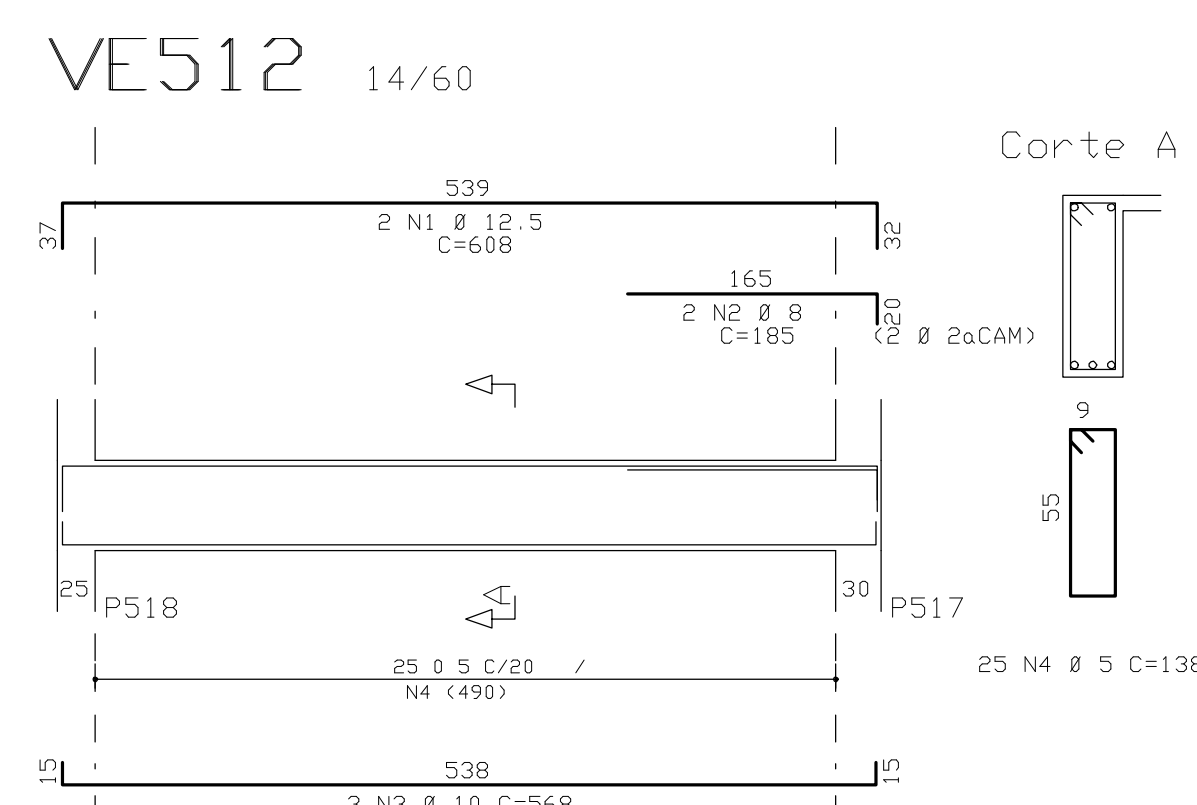
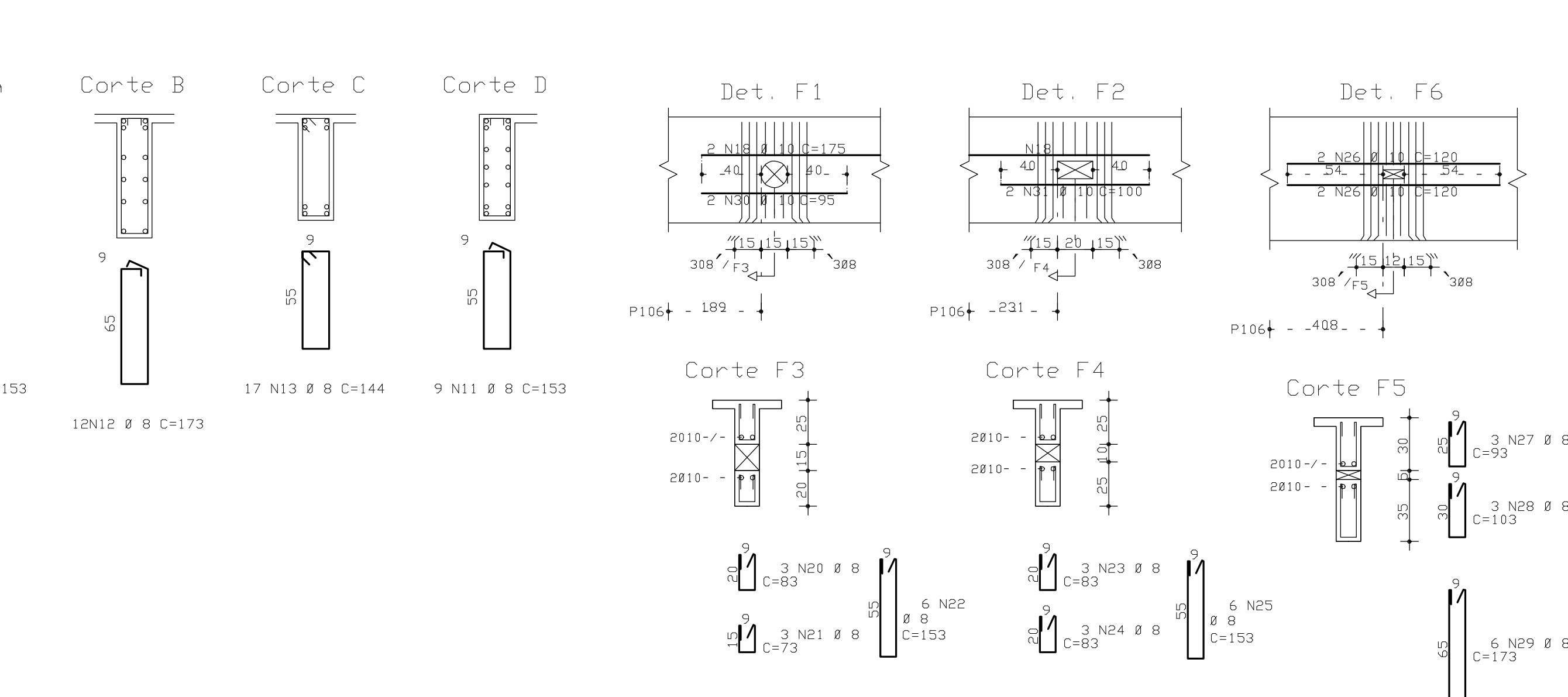
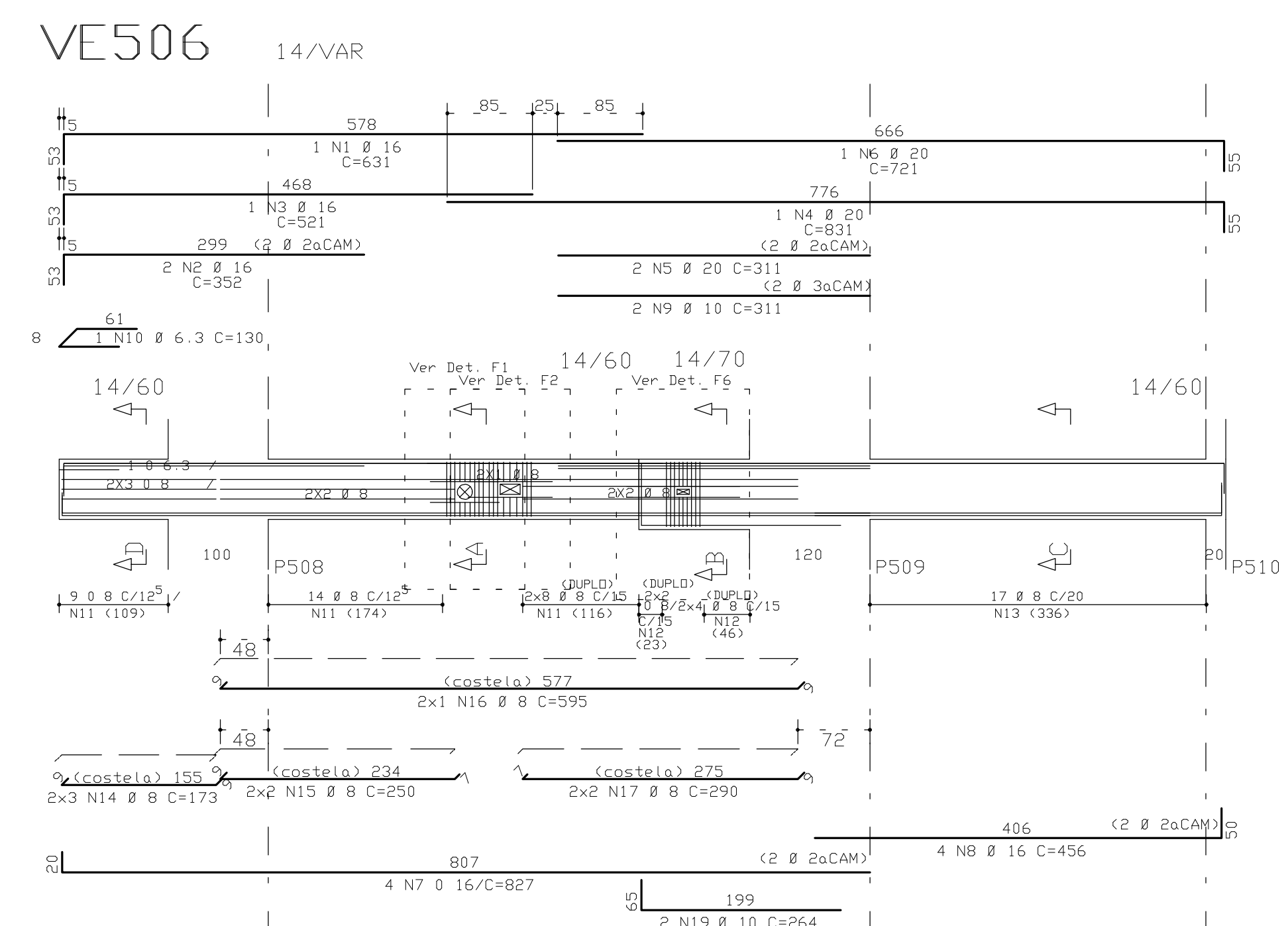
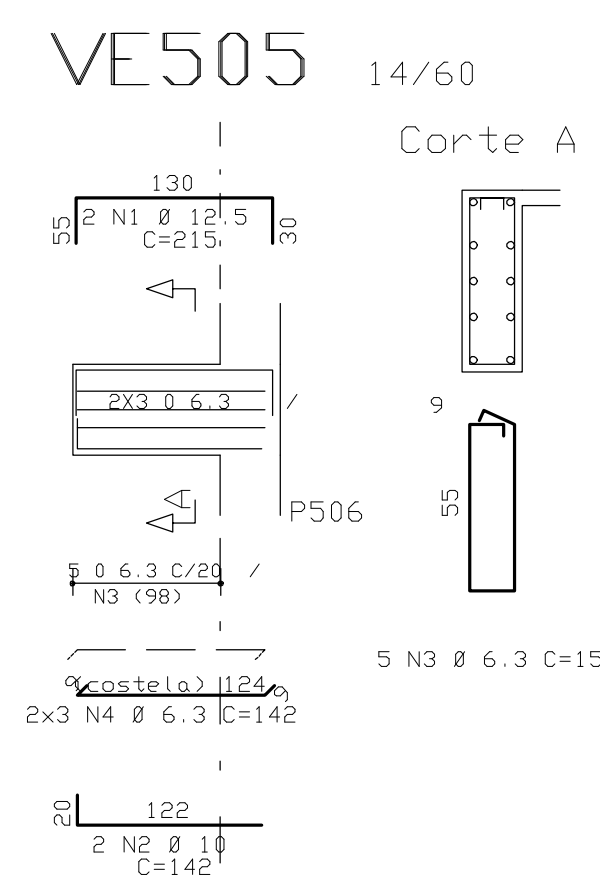
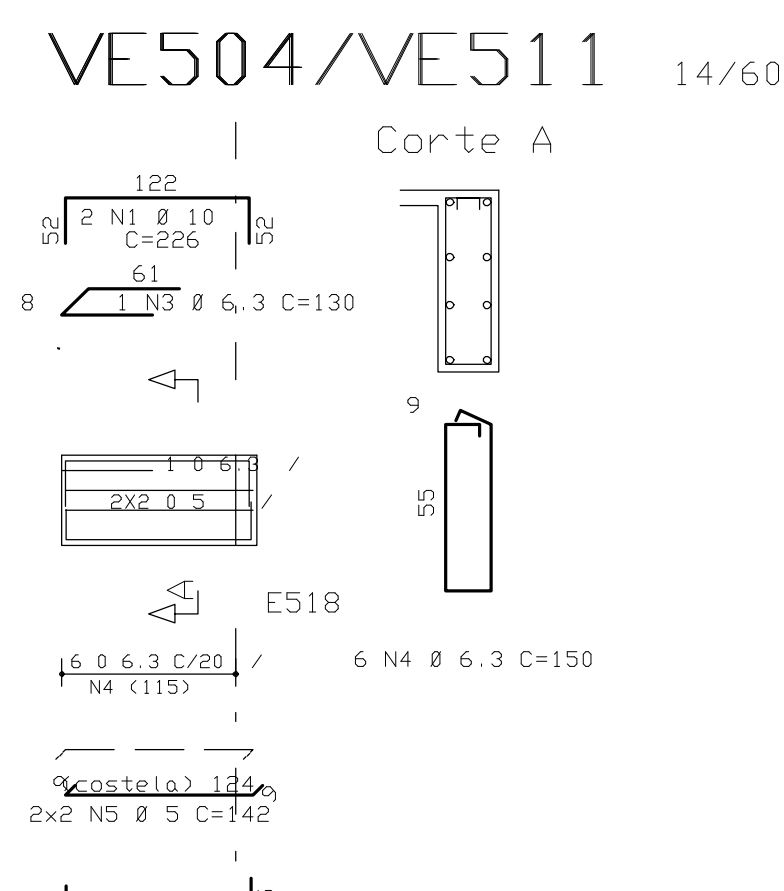
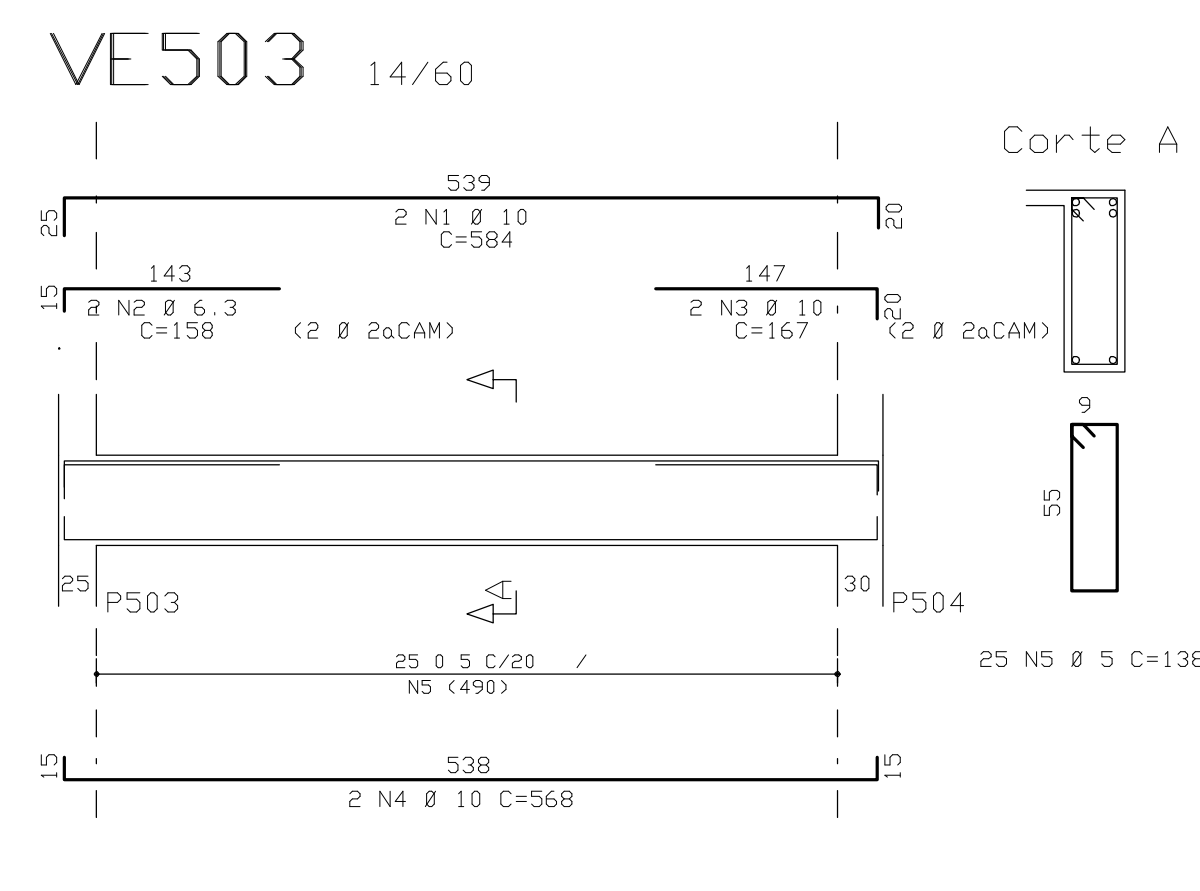
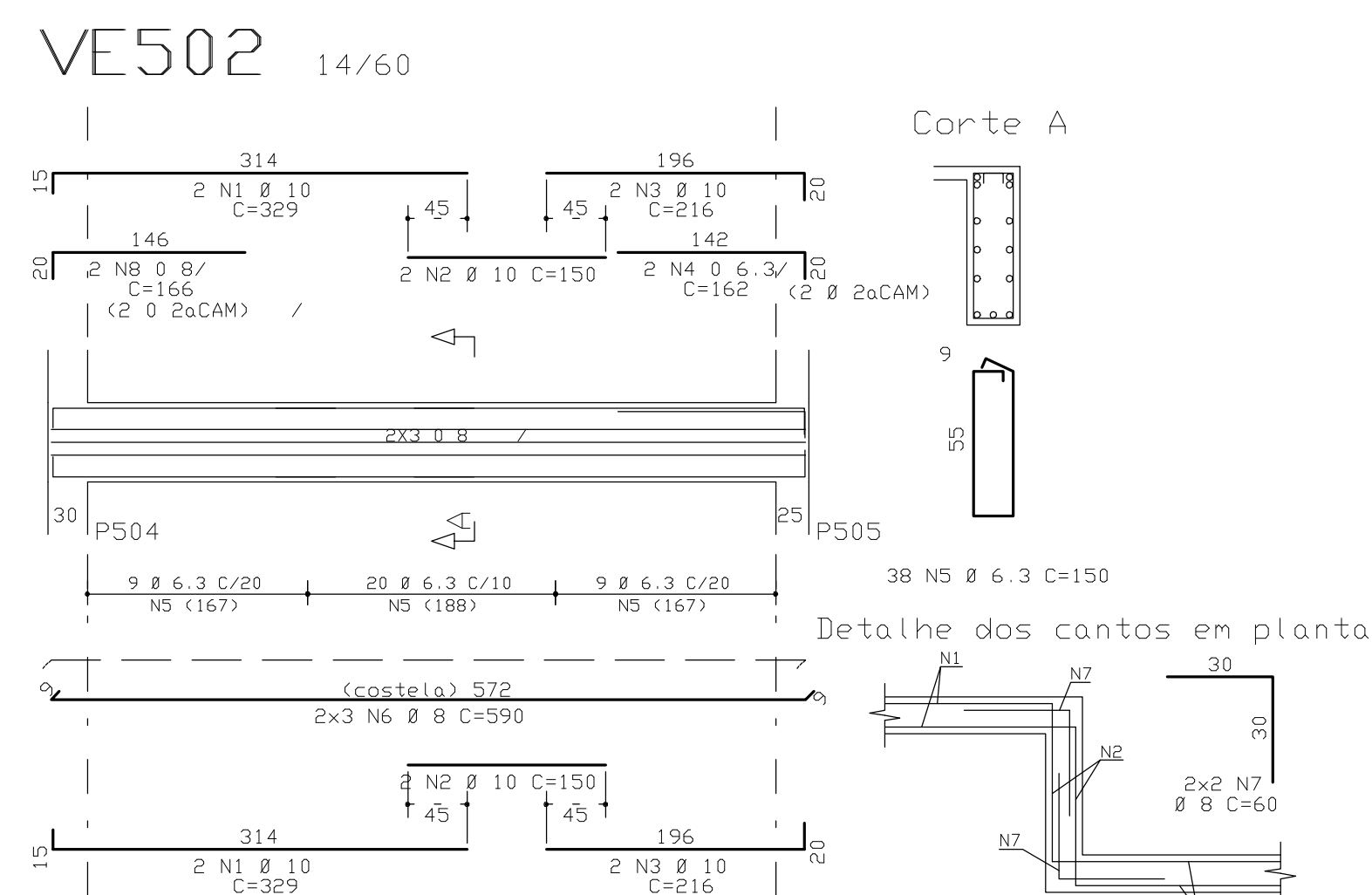
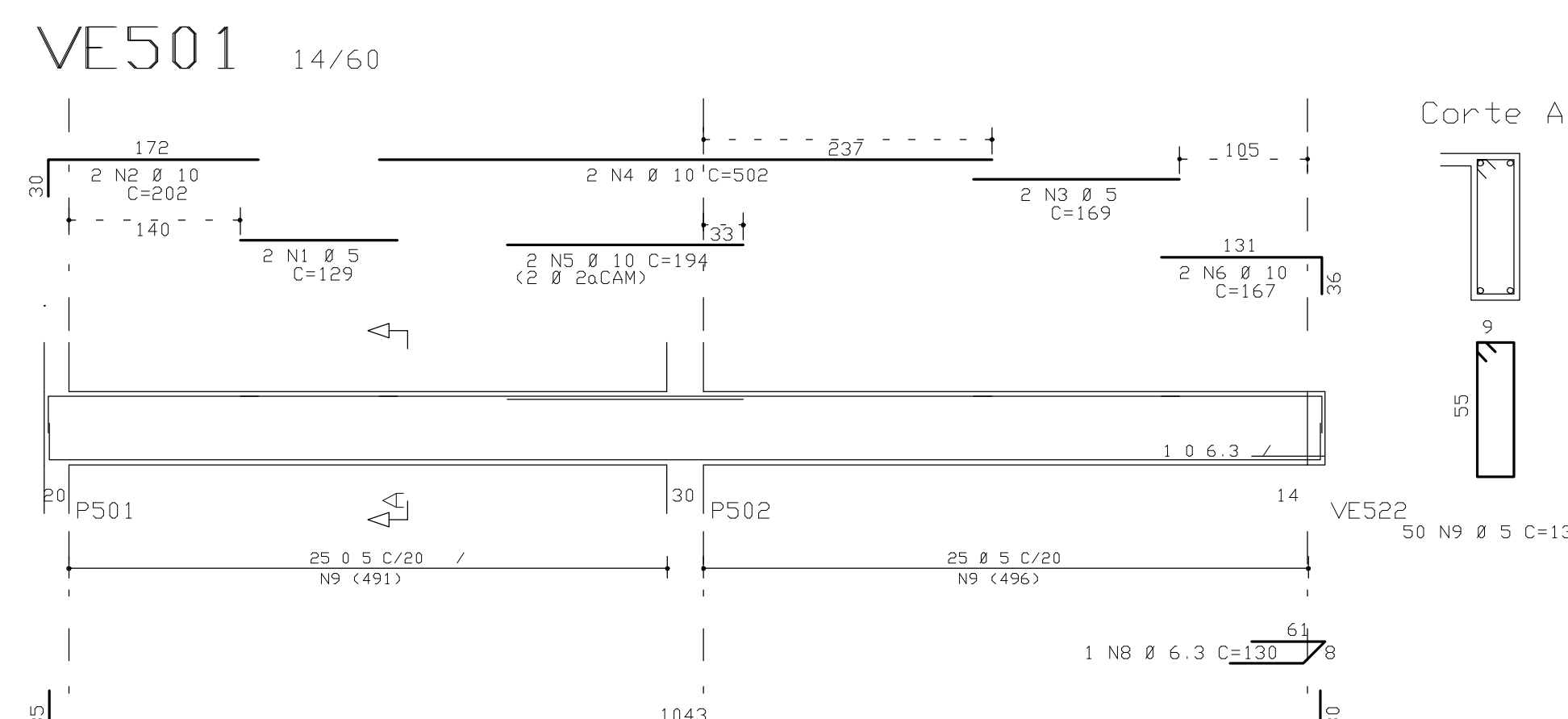




	ACD	PDS	BIT (cm)	QUANT	COMPLEMENT UNIT	TOTAL TOTAL (cm)		ACD	PDS	BIT (cm)	QUANT	COMPLEMENT UNIT	TOTAL TOTAL (cm)	
VE501	(X82)						50E	(X82)						
	608	1	5	16	189	9864		50A	1	8	16	125	8500	
	608	2	5	16	189	9864		50A	2	8	16	125	8500	
	608	3	5	16	169	9744		50A	3	10	16	130	8380	
	608	4	5	16	169	9744		50A	4	10	16	130	8380	
	608	5	10	16	194	3164		50A	5	16	32	839	6848	
	608	6	10	16	1872	9848		50A	6	16	32	839	6848	
	608	7	10	16	1108	17728		50A	7	16	16	294	4764	
	608	8	5	3	140	13		50A	8	6	3	244	103	
	608	9	5	3	140	13		50A	9	8	344	103	5836	
	608	10	5	3	140	13		50A	10	8	173	281	1008	
	608	11	5	3	26	1928		50A	11	8	136	144	1934	
	608	12	5	3	26	1928		50A	12	8	136	144	1934	
	608	13	5	3	216	6912		50A	13	8	16	753	1048	
	608	14	5	3	216	6912		50A	14	8	16	753	1048	
	608	15	6	3	30	1504		50A	15	10	16	175	800	
	608	16	6	3	30	1504		50A	16	10	16	175	800	
	608	17	8	32	60	1928		50A	17	8	24	83	1952	
	608	18	8	32	60	1928		50A	18	8	24	83	1952	
	608	19	8	32	60	1928		50A	19	8	24	103	7344	
	608	20	8	32	60	1928		50A	20	8	24	103	7344	
	608	21	8	32	158	9348		50A	21	8	24	83	1952	
	608	22	8	32	158	9348		50A	22	8	24	103	7344	
	608	23	10	16	568	9888		50A	23	10	16	264	4272	
	608	24	10	16	568	9888		50A	24	10	16	264	4272	
	608	25	10	16	256	1360		50A	25	10	16	104	3376	
	608	26	10	16	256	1360		50A	26	8	24	103	4824	
	608	27	10	16	256	1360		50A	27	8	24	103	4824	
	608	28	10	16	256	1360		50A	28	10	16	375	6800	
	608	29	10	16	256	1360		50A	29	10	16	375	6800	
	608	30	10	16	568	9888		50A	30	10	16	100	1656	
VE500	(X82)						50E	(X82)						
	608	1	15	6	16	215	9440		50A	31	16	3	688	9728
	608	2	10	16	140	8272		50A	32	16	3	688	9728	
	608	3	10	16	140	8272		50A	33	10	16	248	13632	
	608	4	5	3	48	145	6816		50A	34	5	233	128	7536
VE506	(X83)						50E	(X83)						
	50A	1	16	8	631	5928		50A	1	10	32	152	4880	
	50A	2	16	8	631	5928		50A	2	10	32	152	4880	
	50A	3	16	8	321	4168		50A	3	10	32	80	2560	
	50A	4	16	8	831	6448		50A	4	8	32	80	2560	
	50A	5	20	16	311	4976		50A	5	8	48	280	2880	
	50A	6	20	16	311	4976		50A	6	8	48	280	2880	
	50A	7	16	32	857	36464		50E						
	50A	8	16	32	857	36464		50E						
	50A	9	16	32	311	4976		50E						
	50A	10	16	32	138	1484		50E						
	50A	11	8	30	132	1573		50E						
	50A	12	8	30	132	1573		50E						
	50A	13	8	30	144	19584		50E						
	50A	14	8	30	144	19584		50E						
	50A	15	8	30	177	24608		50E						
	50A	16	8	30	177	24608		50E						
	50A	17	8	32	250	8000		50E						
	50A	18	8	32	250	8000		50E						
	50A	19	8	32	290	9680		50E						
	50A	20	8	32	290	9680		50E						
	50A	19	10	16	264	4284		50E						
	50A	20	10	16	264	4284		50E						
	50A	21	8	30	192	2400		50E						
	50A	22	8	30	192	2400		50E						
	50A	23	8	48	123	7344		50E						
	50A	24	8	48	123	7344		50E						
	50A	25	8	24	83	1952		50E						
	50A	26	8	24	83	1952		50E						
	50A	27	8	24	103	7344		50E						
	50A	28	8	24	103	7344		50E						
	50A	29	8	32	120	3840		50E						
	50A	30	8	32	120	3840		50E						
	50A	31	8	32	103	7344		50E						
	50A	32	8	32	103	7344		50E						
	50A	33	10	16	90	2472		50E						
	50A	34	10	16	90	2472		50E						
	50A	35	10	16	143	3672		50E						
VE507	(X16)						50E	(X16)						
	50A	2	8	32	254	8128		50E						
	608	5	5	16	160	15680		50E						
VE509	(X82)						50E	(X82)						
	50A	1	6	3	16	181	2144		50A	2	10	16	468	7488
	50A	2	10	16	833	9718		50A	3	5	160	120	3280	
	50A	3	16	32	230	3680		50A	4	20	16	279	4440	
	50A	4	16	32	230	3680		50A	5	20	16	279	4440	
	50A	5	16	32	1291	5		50A	6	16	32	494	3888	
	50A	6	8	16	472	752		50A	7	16	32	494	3888	
	50A	7	16	32	143	2208		50A	8	6	32	229	3600	
	608	8	5	16	75	105		608	6	5	8	47	624	
	608	9	3	32	1765	3		608	7	5	8	47	624	
	608	10	3	16	446	736		50E						
	50A	11	8	16	94	1504		50E						
	50A	12	8	16	94	1504		50E						
	50A	13	8	16	88	1408		50E						
	50A	14	6	3	88	1408		50E						
	50A	15	6	3	88	1408		50E						
	50A	16	6	3	88	1408		50E						
	50A	17	6	3	88	1408		50E						
	50A	18	6	3	88	1408		50E						
	50A	19	6	3	88	1408		50E						
	50A	20	6	3	88	1408		50E						
	50A	21	6	3	88	1408		50E						
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	50A	24	6	3	88	1408		50E						
	50A	25	6	3	88	1408		50E						
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	50A	27	6	3	88	1408		50E						
	50A	28	6	3	88	1408		50E						
	50A	29	6	3	88	1408		50E						
	50A	30	6	3	88	1408		50E						
	50A	31	6	3	88	1408		50E						
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	50A	33	6	3	88	1408		50E						
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	50A	40	6	3	88	1408		50E						
	50A	41	6	3	88	1408		50E						
	50A	42	6	3	88	1408		50E						
	50A	43	6	3	88	1408		50E						
	50A	44	6	3	88	1408		50E						
	50A	45	6	3	88	1408		50E						
	50A	46	6	3	88	1408		50E						
	50A	47	6	3	88	1408		50E						
	50A	48	6	3	88	1408		50E						
	50A	49	6	3	88	1408		50E						
	50A	50	6	3	88	1408		50E						
	50A	51	6	3	88	1408		50E						
	50A	52	6	3	88	1408		50E						
	50A	53	6	3	88	1408		50E						
	50A	54	6	3	88	1408		50E						
	50A	55	6	3	88	1408		50E						
	50A	56	6	3	88	1408		50E						
	50A	57	6	3	88	1408		50E						
	50A	58	6	3	88	1408		50E						
	50A	59	6											

RESUMO ACO CA 50-60			
ACO	BIT (mm)	CDMPR (%)	PESO (kg)
60B	5	3455	553
50A	6,3	2444	611
50A	8	5239	2095
50A	10	2972	1872
50A	12,5	360	360
50A	16	1245	1992
50A	20	829	2072
Peso Total	60B =		553 kg
Peso Total	50A =		9002 kg

COBRIMENTO DA ARMADURA:

- LAJES = 2,0 cm
- VIGAS E PILARES = 2,5 cm
- BLOCOS, BALDRAMES E CONTENEDORES (FACE EM CONTATO COM A TERRA) = 3,0 cm

ESSES COBRIMENTOS DEVERÃO SER GARANTIDOS COM O USO DE ESPACADORES OU PASTILHAS.

COBRIMENTOS ESPECÍFICOS EM CONTRÁRIO AOS VALORES INDICADOS ACIMA, ESTÃO INDICADOS NOS DESENHOS E FORMAS DOS PAVIMENTOS.

NORMAS UTILIZADAS:
NBR-6118/2003 - PROJETO E EXECUCAO DE OBRAS DE CONCRETO ARMADO
NBR-6120/1980 - CARGAS PARA O CALCULO DE ESTRUTURAS DE EDIFICACOES

INDICE:
VE501 A VE519 / VE521 / VE523 / VE525 A VE527

FCK = 30 MPa
EC = 26 GPa
A/C = 0,65

(MÓDULO DE ELASTICIDADE SECANTE
AOS 28 DIAS).

(FATOR AGUA CIMENTO)

26/10/2009 EMISSÃO INICIAL			
REV	DATA	DESCRIÇÃO	
		Simetria Engenharia 114 BARRO, 20-31 2041-015 e 333 BRASILIA-DF 71202-045 FONE: (061) 3784-3009 E-MAIL: ciba@simetria-eng.br	
PROJETO ESTRUTURAL			
CLIENTE: DISCID INCORPORADORA E IMOBILIARIA LTDA		Nº OBRAS: 001	
OBRA: EDIFICIO RESIDENCIAL OLYMPIQUE			
ENDEREÇO OBRA: OBRA ESPECIAL 74 LOTES G E H - GUARAPUÁ			
DESCRIÇÃO:		RESENDA Nº	
ARMACADA DAS VIGAS DO 7º AO 14º PAVIMENTOS		189-XXX	
TODRE C - JUNTA E (01:02)			
DESCRIÇÃO	DATA	ESCALA	UNIDADE
189-XXX	26/11/2009	1:50	Nº PROJ: SIMETRIA 461
ARQUIVO: PLT			
189-11ST-189-XXX-008.PLT			
PREPAREADO:		RESPONSÁVEL TÉCNICO:	
_____ RESPONSÁVEL TÉCNICO PELA PROJETO ESTRUTURAL			
SIMETRIA ENGENHARIA E PROJETOS S/C LTDA OBRA: 275/05			