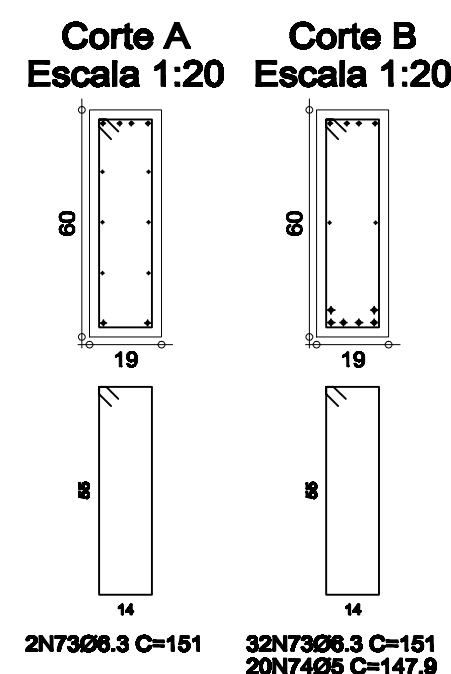
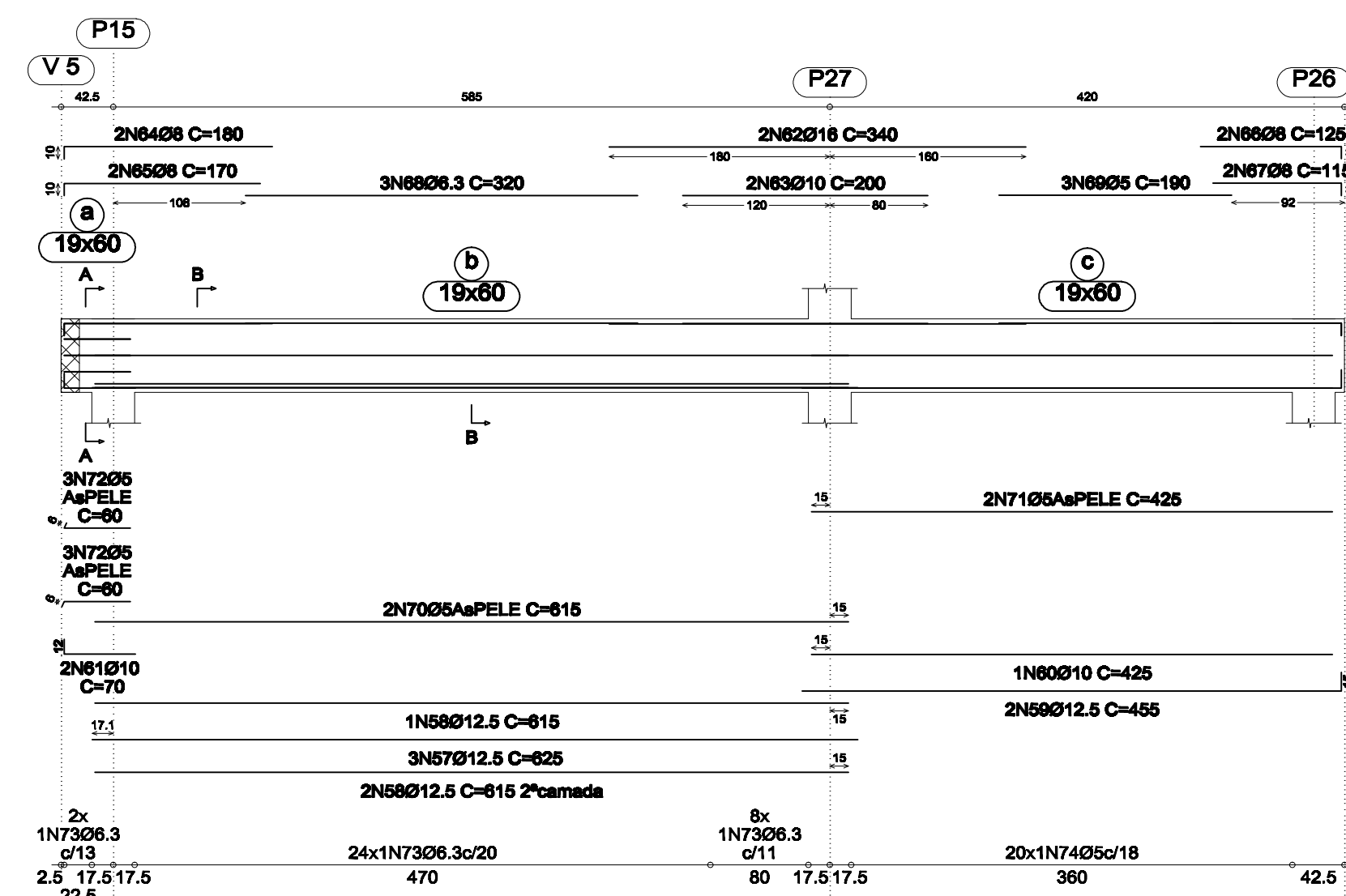
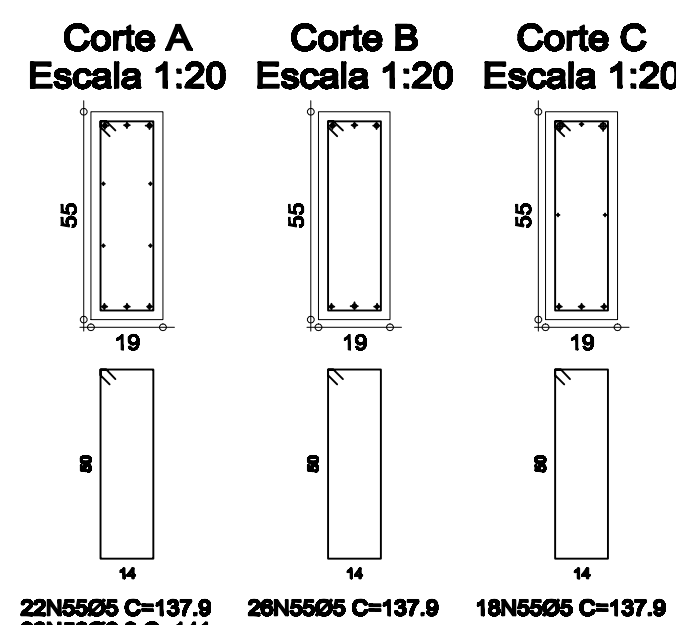
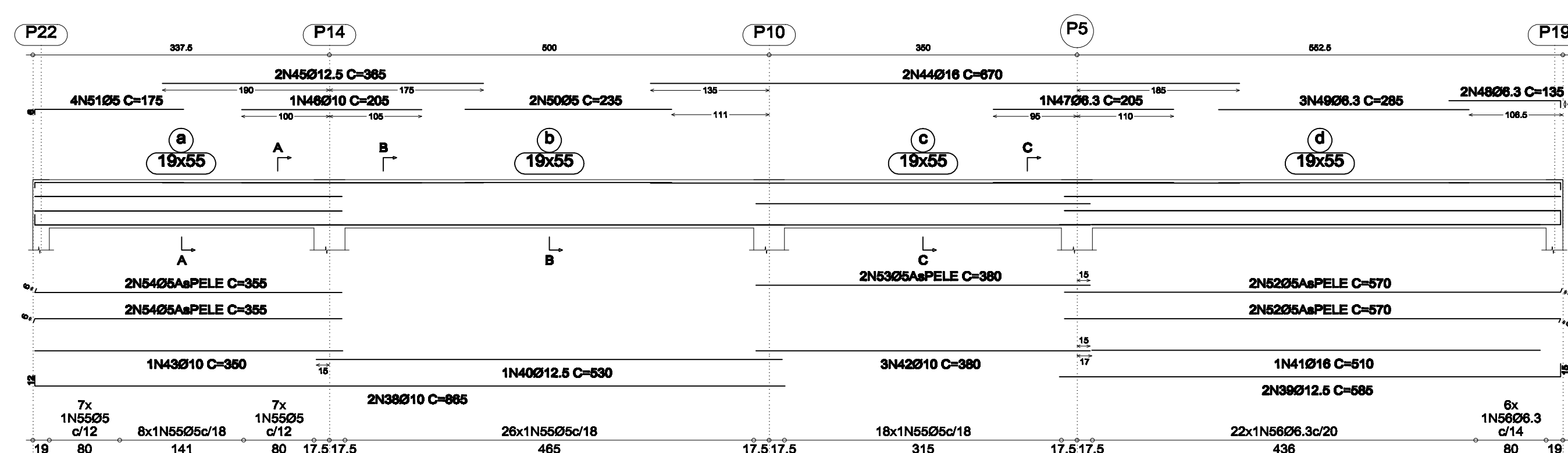
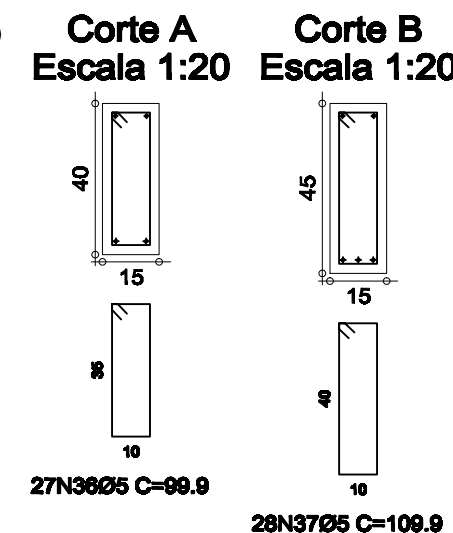
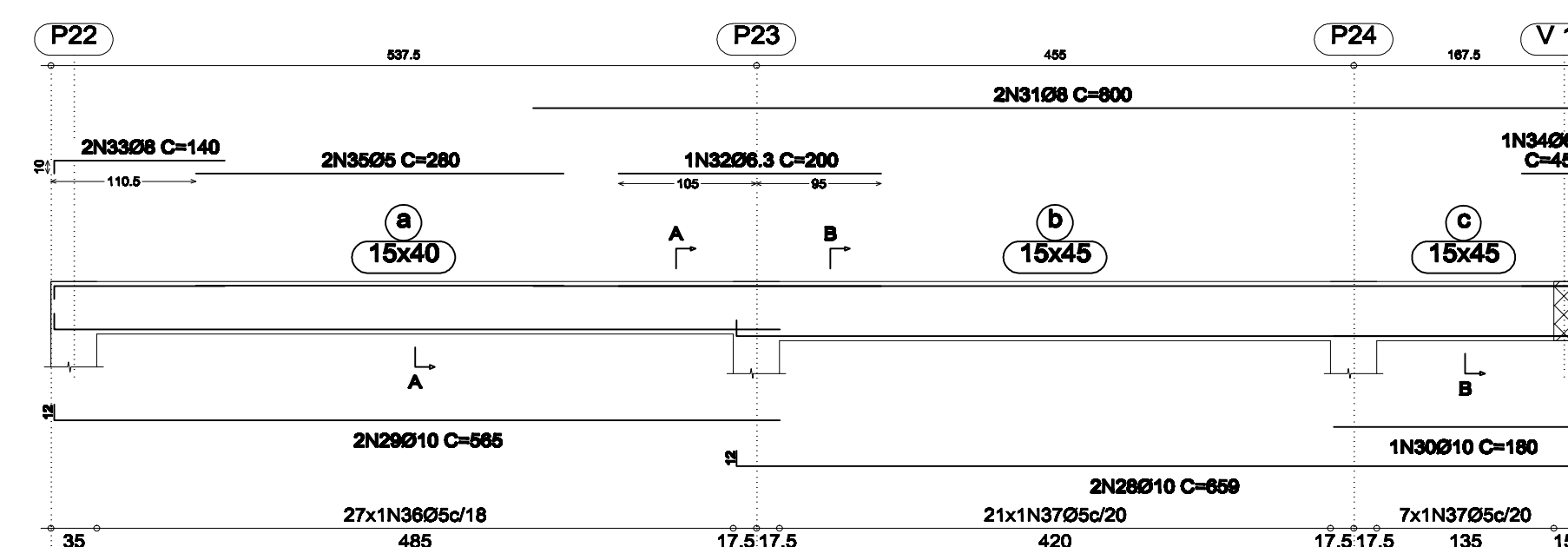
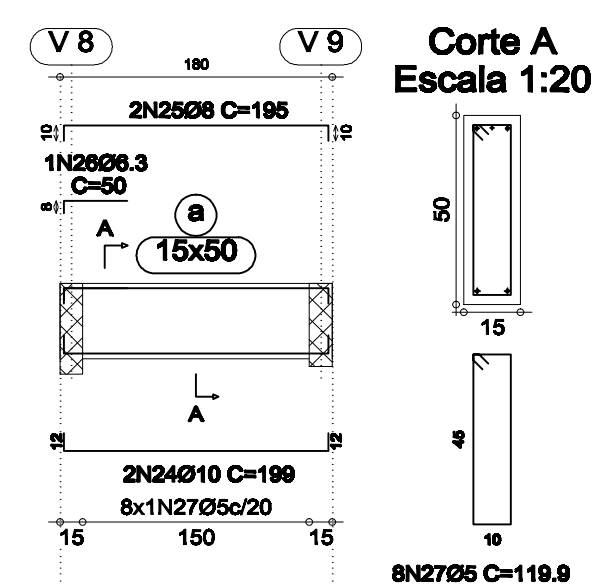
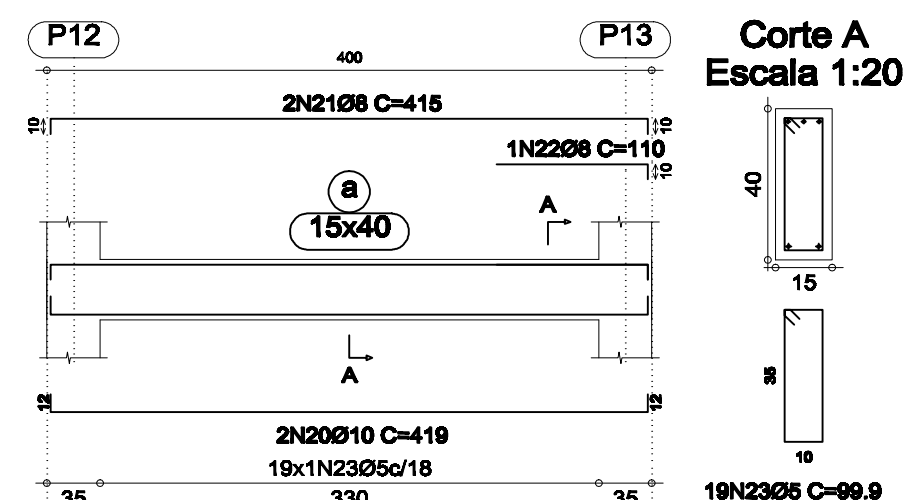
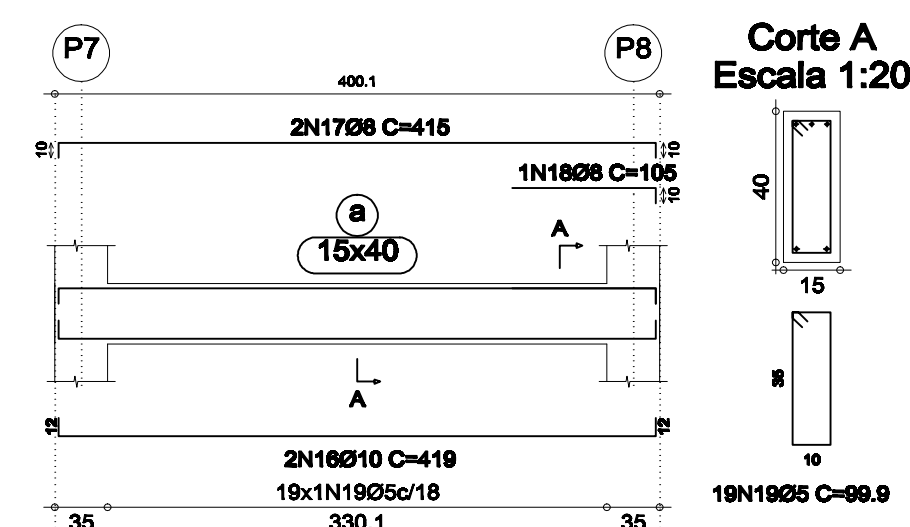
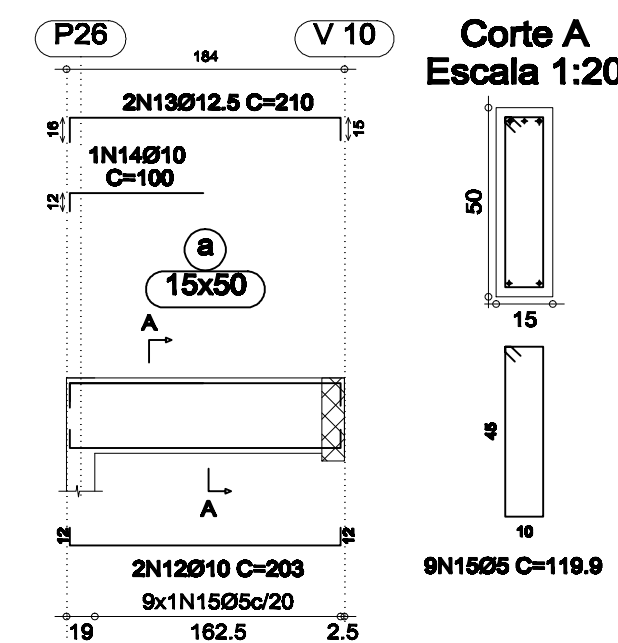
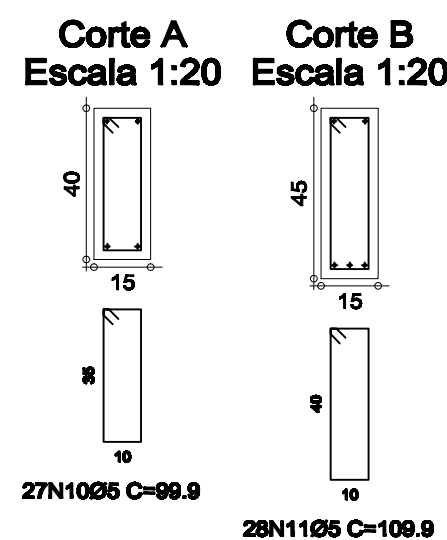


Cobertura
Desenho de vigas
Concreto: C30, usina.rigor
Aço: CA-50-A e CA-60-B
Escala vigas: 1:50
Escala seções: 1:20



Elemento	Pos.	Diam.	Q.	DoB. (cm)	Ret. (cm)	DoB. (cm)	Comp. (cm)	Total (cm)	CA-50-A (kg)	CA-60-B (kg)	
V 1	1	Ø10	2	12	630	12	654	1308	8.2		
	2	Ø10	2	12	583		965	1130	7.1		
	3	Ø10	1		495		495	495	3.1		
	4	Ø12.5	1		175		175	175	1.7		
	5	Ø8	2		620	10	830	1660	6.5		
	6	Ø8	1		200		200	200	0.8		
	7	Ø8	2	10	130		140	280	1.1		
	8	Ø6.3	1		37	8	46	45	0.1		
	9	Ø5	2		245		245	490		0.8	
	10	Ø5	27		100		100	2700		4.2	
	11	Ø5	28		110		110	3080		4.8	
Total+10%:								31.5	10.8		
V 2	12	Ø10	2	12	179	12	203	408	2.5		
	13	Ø12.5	2	16	179	15	210	420	4.1		
	14	Ø10	1	12	88		100	100	0.8		
	15	Ø5	9				120	1080		1.7	
Total+10%:								7.9	1.9		
V 3	16	Ø10	2	12	395	12	419	838	5.3		
	17	Ø8	2	10	395	10	415	830	3.3		
	18	Ø5	1		95	10	105	105	0.4		
Total+10%:								9.9	3.0		
V 4	19	Ø5	19				100	1900		3.3	
	20	Ø10	2	12	395	12	419	838	5.3		
	21	Ø8	2	10	395	10	415	830	3.3		
	22	Ø5	1		100	10	110	110	0.4		
Total+10%:								9.9	3.0		
V 5	23	Ø5	19				100	1900		3.3	
	24	Ø10	2	12	175	12	199	398	2.5		
	25	Ø8	2	10	175	10	195	390	1.5		
	26	Ø6.3	1	8	42		50	50	0.1		
Total+10%:								4.5	1.5		
V 6	27	Ø5	8				120	960		1.7	
	28	Ø10	2	12	635	12	659	1318	8.3		
	29	Ø10	2	12	583		965	1130	7.1		
	30	Ø10	1		180		180	180	1.1		
	31	Ø8	2		790	10	800	1600	6.3		
	32	Ø6.3	1		200		200	200	0.5		
	33	Ø5	2	10	130		140	280	1.1		
	34	Ø6.3	1		37	8	45	45	0.1		
	35	Ø5	2		280		280	560		0.9	
	36	Ø5	27				100	2700		4.2	
	37	Ø5	28				110	3080		4.8	
Total+10%:								27.0	10.9		
V 7	38	Ø10	2	12	853		865	1730	10.9		
	39	Ø12.5	2		570	15	585	1170	11.5		
	40	Ø12.5	1		530		530	530	5.2		
	41	Ø16	1		510		510	510	8.0		
	42	Ø10	3		380		380	1140	7.2		
	43	Ø10	1		350		350	350	2.2		
	44	Ø16	2		670		670	1340	21.0		
	45	Ø12.5	2		365		365	730	7.2		
	46	Ø10	1		205		205	205	1.3		
	47	Ø6.3	1		205		205	205	0.5		
	48	Ø6.3	2		127	8	135	270	0.7		
	49	Ø6.3	3		255		255	255	2.1		
	50	Ø5	2		235		235	470		0.7	
	51	Ø5	4	6	199		175	700		1.1	
	52	Ø5	4		564	6	570	2280		3.6	
	53	Ø5	3		380		380	760		1.2	
	54	Ø5	4	6	349		355	1420		2.2	
	55	Ø5	66				138	9108		14.3	
	56	Ø6.3	28				141	3948	9.8		
Total+10%:								96.4	25.4		
V 8	57	Ø12.5	3		625		625	1875	18.4		
	58	Ø12.5	3		615		615	1845	18.1		
	59	Ø12.5	2		440	15	455	910	8.9		
	60	Ø10	1		425		425	425	2.7		
	61	Ø10	2	12	58		70	140	0.9		
	62	Ø16	2		340		340	680	10.7		
	63	Ø10	2		200		200	400	2.5		
	64	Ø8	2	10	170		180	360	1.4		
	65	Ø8	2	10	160		170	340	1.3		
	66	Ø8	2		115	10	125	250	1.0		
	67	Ø8	2		105	10	115	230	0.9		
	68	Ø6.3	3		320		320	960	2.4		
	69	Ø5	3		190		190	570		0.9	
	70	Ø5	3		615		615	1230		1.9	
	71	Ø5	2		425		425	850		1.3	
72	Ø5	6	6	54		60	360		0.6		
73	Ø6.3	34				151	5134	12.7			
74	Ø5	20				148	2960		4.6		
Total+10%:								90.1	10.2		
Ø5: 0.0									0.0	67.5	
Ø6.3: 31.9									0.0		
Ø8: 32.3									0.0		
Ø10: 86.8									0.0		
Ø12.5: 62.6									0.0		
Ø16: 43.6									0.0		
Total: 277.2									67.5		

<h1>Meta</h1>		<div><div>15</div><div>A N O S</div></div>	
ENGENHARIA E PLANEJAMENTO			
PROJETO ESTRUTURAL			
OBRA 8º BATALHÃO DE BOMBEIROS MILITAR - CONV. PMT AV. PATRÍCIO LIMA, 804 - HUMAITÁ - TUBARÃO - S.C.			
ASSUNTO VIGAS COBERTURA		ÁREA: 610,43 M²	
		PRANCHA	
		C21	
		24	
ESC.: INDICADA			
DATA : MARÇO / 2018			
PROJ.: 18-003			
EQUIPE TÉCNICA		CHARLES MENDES DE SOUZA	
		CREA/SC 41.111-4	
REVISÃO Nº DATA EMISSÃO PARCIAL COLABORADOR			
00	19/02/2018	EMISSÃO PARCIAL	ENG. CHARLES
01	19/03/2018	EMISSÃO FINAL	ENG. CHARLES
CHARLES MENDES DE SOUZA		PROPRIETÁRIO	
R. Cel. José Martins Cabral, 42 - SI 1 - Centro - Tubarão - S.C.			
(48) 3622-2534 - projetos@metaengenharia.eng.br			