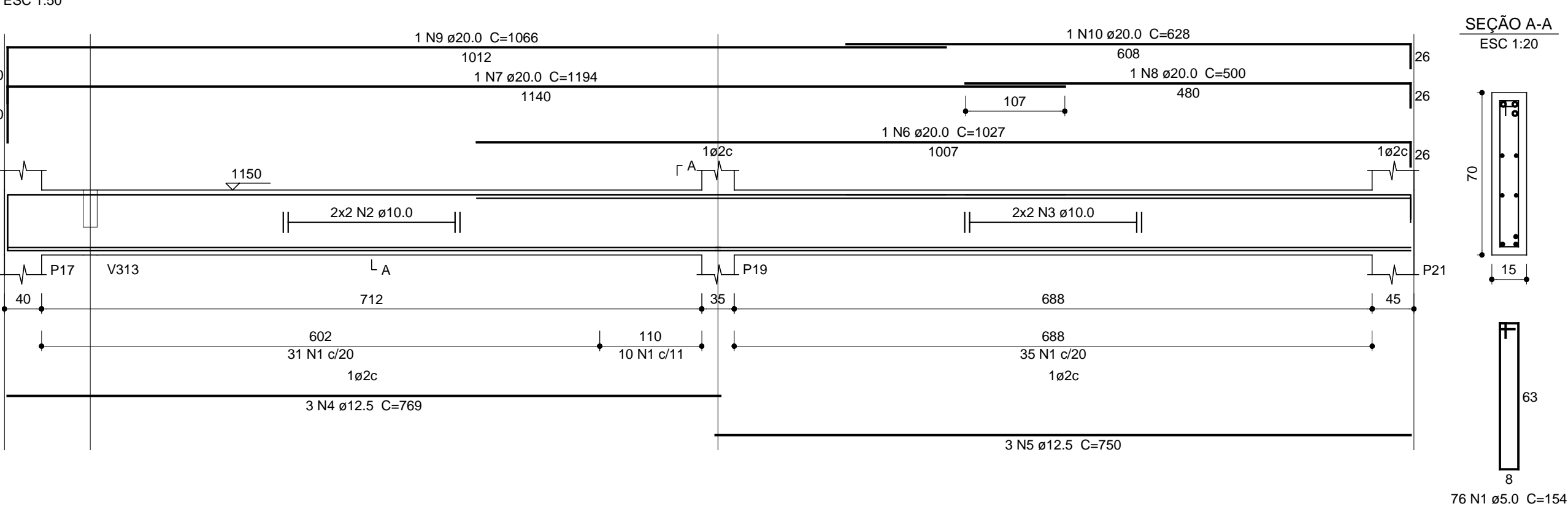
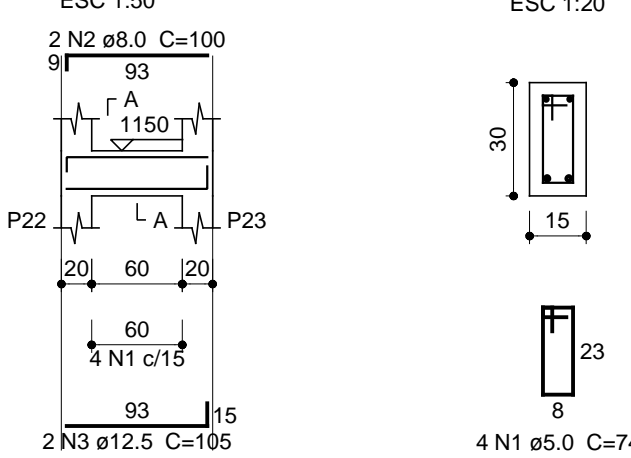


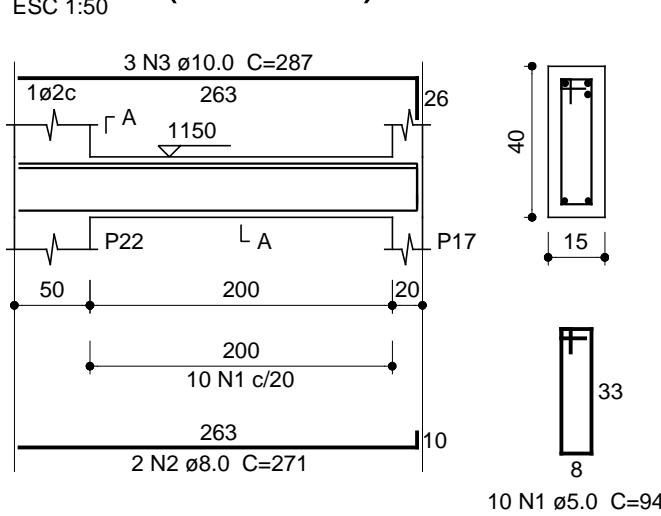
### V309 (15 x 70)



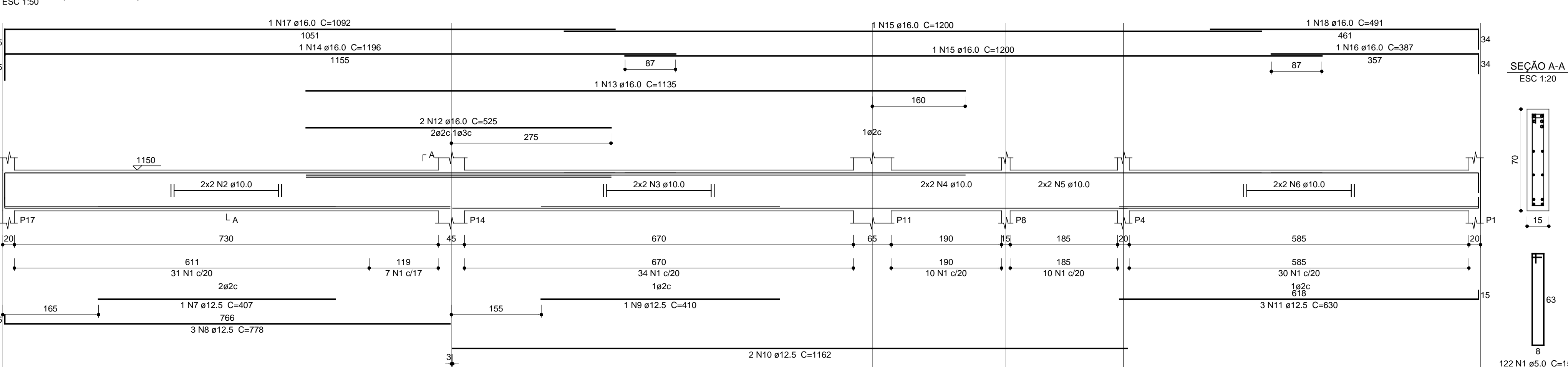
### V310 (15 x 30)



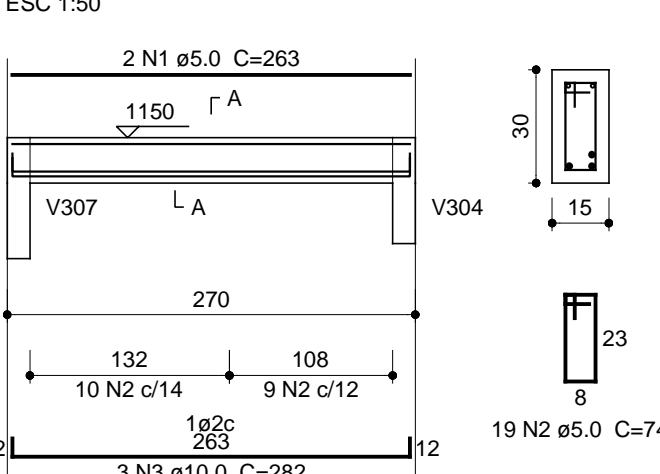
### V311 (15 x 40)



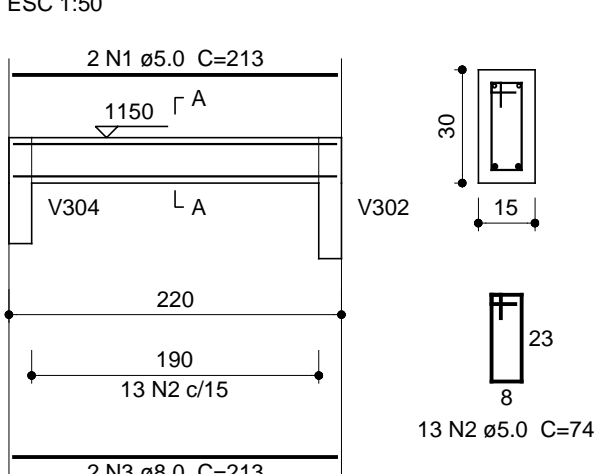
### V312 (15 x 70)



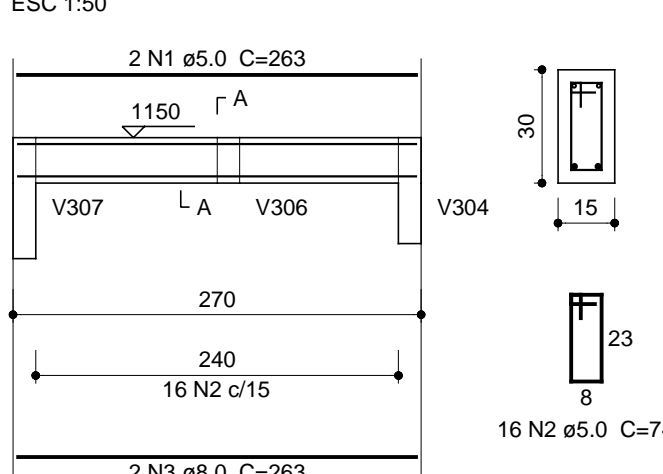
### V314 (15 x 30)



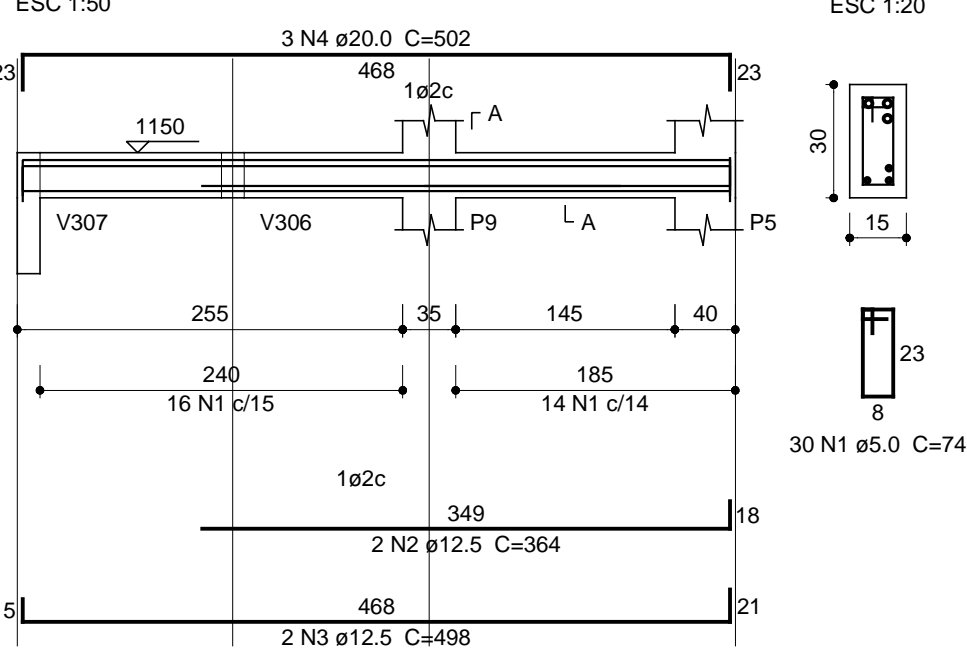
### V315 (15 x 30)



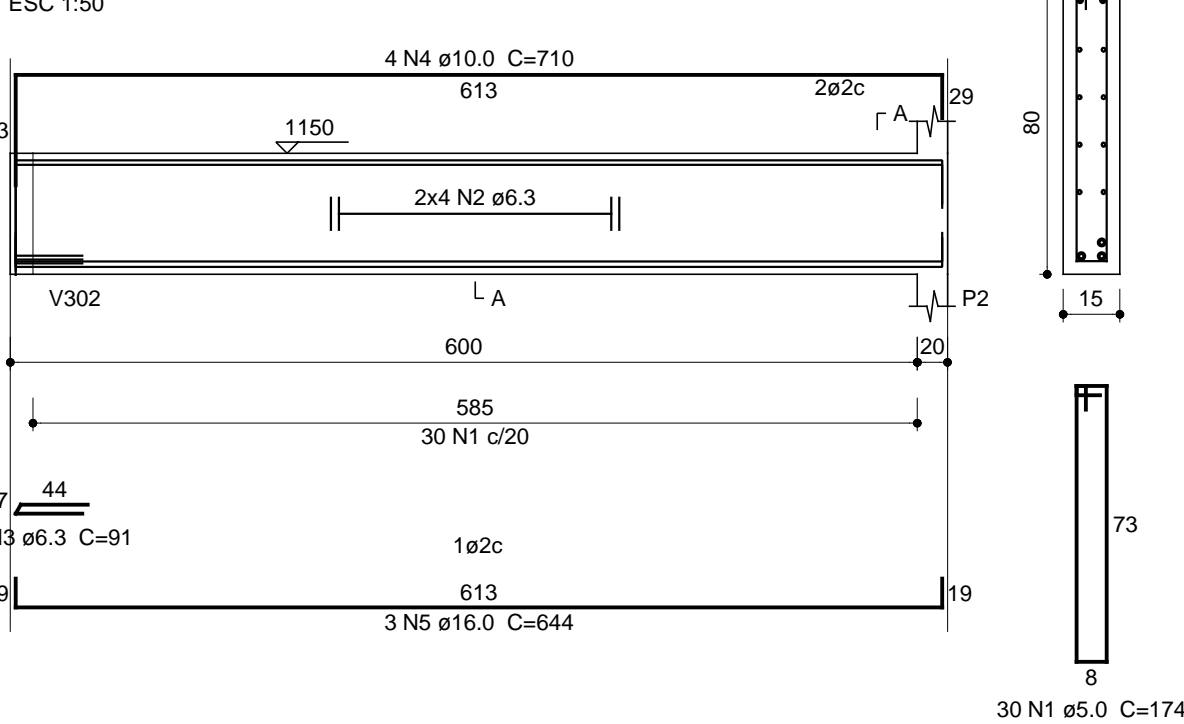
### V316 (15 x 30)



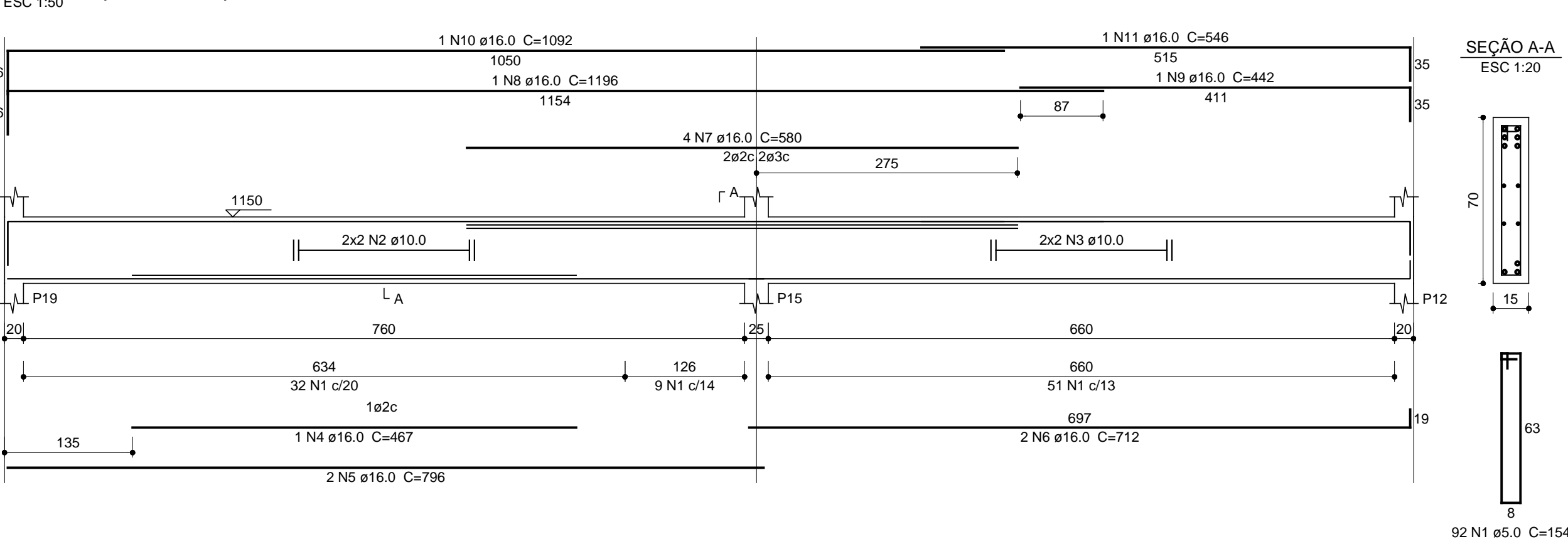
### V317 (15 x 30)



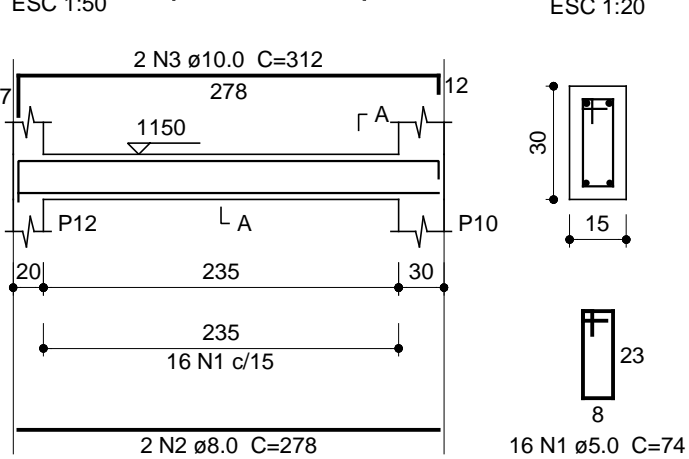
### V318 (15 x 80)



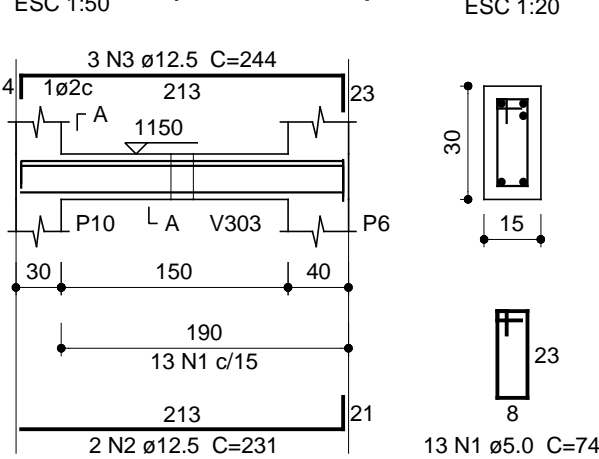
### V319 (15 x 70)



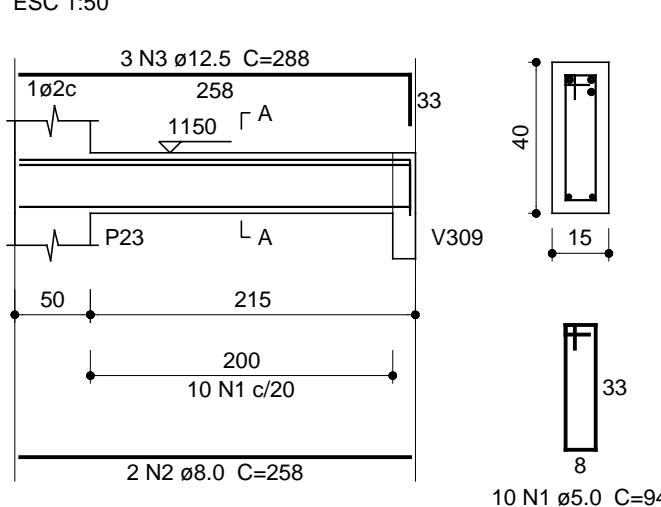
### V320 (15 x 30)



### V321 (15 x 30)



### V313 (15 x 40)



#### Relação do aço

ELEMENTO	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
V309	CA60	1	5.0	76	154	11704
	CA50	2	10.0	4	CORR	3120
	CA50	3	10.0	4	CORR	3044
	CA50	4	12.5	3	769	2307
	CA50	5	12.5	3	750	2250
	CA50	6	20.0	1	1027	1027
	CA50	7	20.0	1	1194	1194
	CA50	8	20.0	1	500	500
	CA50	9	20.0	1	1066	1066
	CA50	10	20.0	1	628	628
V310	CA60	1	5.0	4	74	296
	CA50	2	8.0	2	100	200
	CA50	3	12.5	2	105	210
V311	CA60	1	5.0	10	94	940
	CA50	2	8.0	2	271	542
	CA50	3	10.0	3	287	861
V312	CA50	1	5.0	122	154	18788
	CA50	2	10.0	4	CORR	3152
	CA50	3	10.0	4	CORR	3092
	CA50	4	10.0	4	CORR	1052
	CA50	5	10.0	4	CORR	852
	CA50	6	10.0	4	CORR	2472
	CA50	7	12.5	1	407	407
	CA50	8	12.5	3	778	2334
	CA50	9	12.5	1	410	410
	CA50	10	12.5	2	1162	2324
	CA50	11	12.5	3	630	1890
	CA50	12	16.0	2	525	1050
	CA50	13	16.0	1	1135	1135
	CA50	14	16.0	1	1196	1196
	CA50	15	16.0	2	1200	2400
	CA50	16	16.0	1	387	387
	CA50	17	16.0	1	1092	1092
	CA50	18	16.0	1	491	491
V313	CA60	1	5.0	10	94	940
	CA50	2	8.0	2	258	516
	CA50	3	12.5	3	288	864
V314	CA60	1	5.0	2	263	526
	CA60	2	5.0	19	74	1406
	CA50	3	10.0	3	282	846
V315	CA60	1	5.0	2	213	426
	CA60	2	5.0	13	74	962
	CA50	3	8.0	2	213	426
V316	CA60	1	5.0	2	263	526
	CA60	2	5.0	16	74	1184
	CA50	3	8.0	2	263	526
V317	CA60	1	5.0	30	74	2220
	CA50	2	12.5	2	364	728
	CA50	3	12.5	2	498	996
	CA50	4	20.0	3	502	1506
V318	CA60	1	5.0	30	174	5220
	CA50	2	6.3	8	CORR	4904
	CA50	3	6.3	3	91	273
	CA50	4	10.0	4	710	2840
	CA50	5	16.0	3	644	1932
V319	CA60	1	5.0	92	154	14168
	CA50	2	10.0	4	CORR	3192
	CA50	3	10.0	4	CORR	2792
	CA50	4	16.0	1	467	467
	CA50	5	16.0	2	796	1592
	CA50	6	16.0	2	712	1424
	CA50	7	16.0	4	580	2320
	CA50	8	16.0	1	1196	1196
	CA50	9	16.0	1	442	442
	CA50	10	16.0	1	1092	1092
	CA50	11	16.0	1	546	546
V320	CA60	1	5.0	16	74	1184
	CA50	2	8.0	2	278	556
	CA50	3	10.0	2	312	624
V321	CA60	1	5.0	13	74	962
	CA50	2	12.5	2	231	462
	CA50	3	12.5	3	244	732

#### Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	51.8	12.7
	8.0	27.7	10.9
	10.0	279.4	172.3
	12.5	159.2	153.3
	16.0	187.7	296.1
	20.0	59.3	146
CA60	5.0	614.6	94.7
PESO TOTAL			(kg)
CA50		791.3	
CA60		94.7	

Volume de concreto (C35) = 7.72 m³  
Área de forma = 115.76 m²

V309	V310	V311	V312	V313	V314	V315	V316
V317	V318	V319	V320	V321			

00			EMISSION INICIAL				13/06/2016
Nº			REVISÃO				DATA

<b>ESTEL ENGENHARIA</b> Rua José Quirino, 147 - São João - CEP 86305-060 - Itajaí-SC Tel: (047) 3046-2001 Fax: (047) 3046-2004 estel@estelengenharia.com.br - www.estelengenharia.com.br			PROJETO N°	1280/16
			PROJETO	ESTRUTURAL
<b>MUNICÍPIO DE PARANAGUÁ</b> <b>PREDIO ADM. DA PREFEITURA DE PARANAGUÁ</b> <b>ARMAÇÃO DAS VIGAS DO 2º PAVIMENTO</b>			RESPONSÁVEL TÉCNICO	PROPRIETÁRIO
PRANCHA N° <b>49/75</b>			SÉRGIO LUIZ DO AMARAL LOZOVEY CREA/SC 13708-0	PREFEITURA DE PARANAGUÁ UNIDADE DE GERENCIAMENTO DE PROGRAMAS
AUTOR DO PROJETO SÉRGIO LOZOVEY	CAD ARLINE DEPINE	DATA 03/2016	REVISÃO 00	CONTROLE DE PROJETOS PROJETO DEFINITIVO ( X )
ÁREA 1.850,00 m²	VERIFICAÇÃO RENATO REIS	ESCALA IND.	ARQUIVO 1280-EST-49-R0	PROJETO NÃO DEFINITIVO ( )

PENAS	
RED	0.1mm BLACK
YELLOW	0.2mm BLACK
GREEN	0.3mm BLACK
CYAN	0.4mm BLACK
BLUE	0.5mm BLACK
MAGENTA	0.6mm BLACK
10	0.1mm
40	0.1mm
80	0.1mm
160	0.1mm
320	0.1mm
640	0.1mm
1280	0.1mm
2560	0.1mm