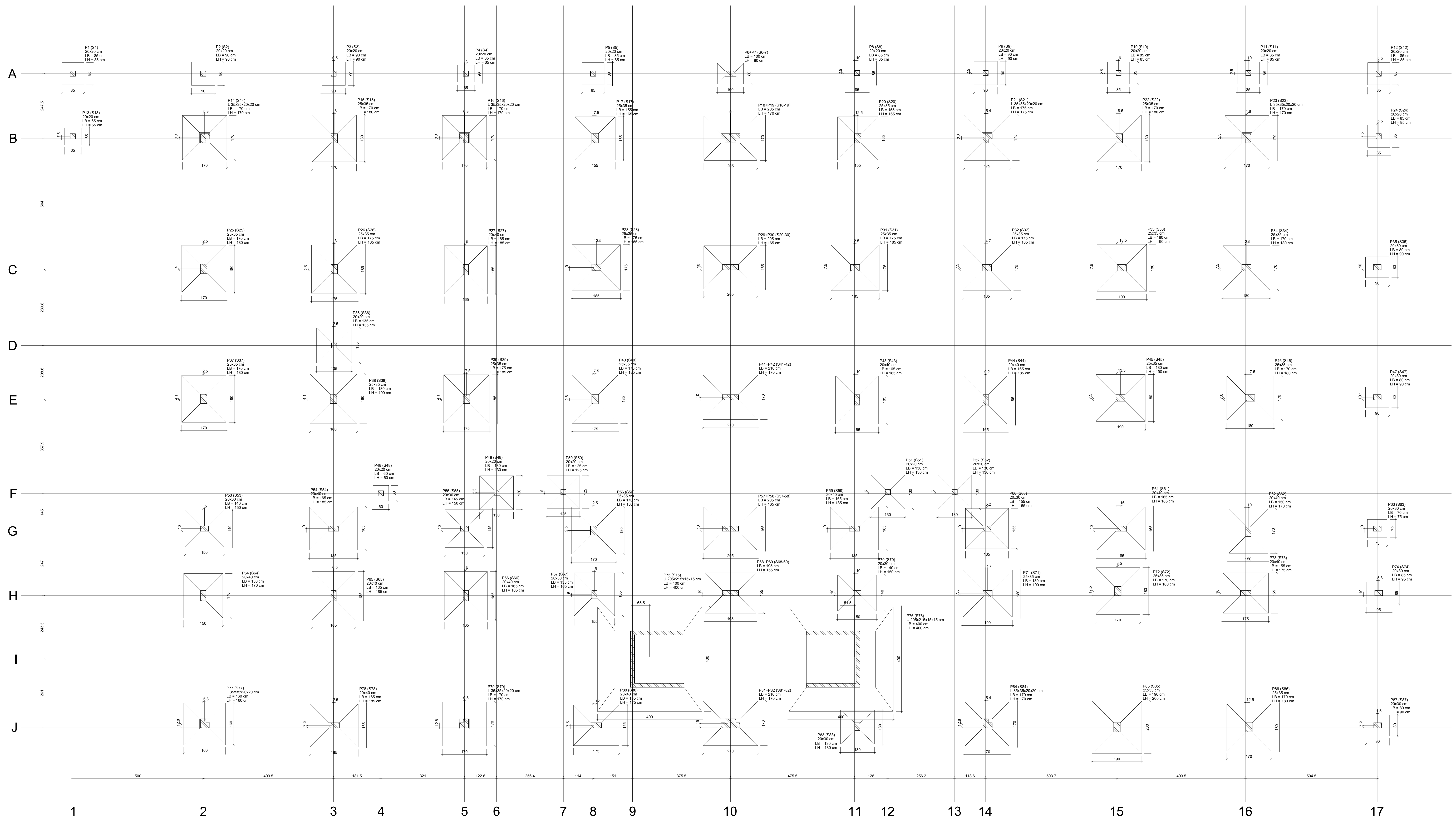


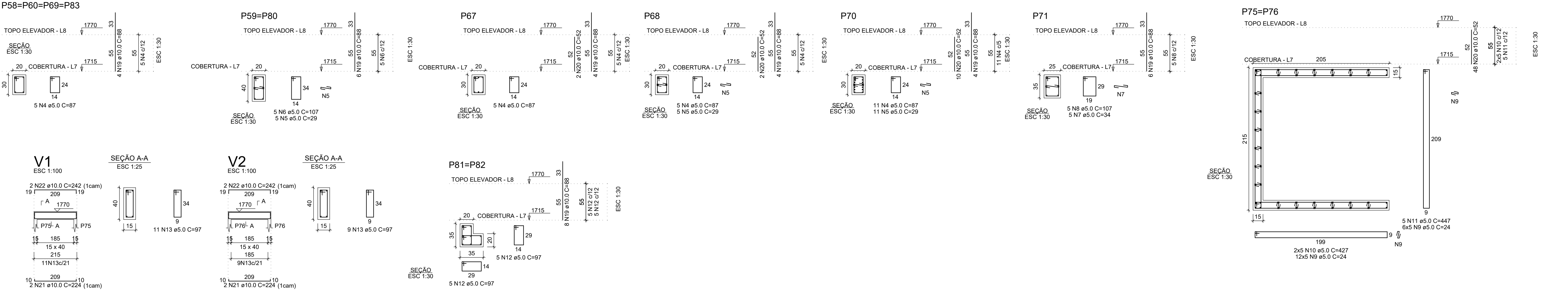


Planta de locação

Plata		Fundação						
Nome	Seção	Norma	Lado	Lb	H0	H1	H2	df
P1	20x20	S1	90	90	25	25	25	16
P2	20x20	S2	90	90	25	25	25	16
P3	20x20	S3	90	90	25	25	25	16
P4	20x20	S4	85	85	25	25	25	16
P5	20x20	S5	85	85	25	25	25	16
P6	20x20	S6	85	85	25	25	25	16
P7	20x20	S7	90	90	25	25	25	16
P10	20x20	S10	85	85	25	25	25	16
P11	20x20	S11	85	85	25	25	25	16
P12	20x20	S12	85	85	25	25	25	16
P13	20x20	S13	65	65	25	25	25	16
L1 L36x36x20x20		S14	170	170	20	45	16	16
P15		S15	170	170	20	45	16	16
P16		S16	170	170	20	45	16	16
P17		S17	155	155	20	45	16	16
P20		S20	175	175	20	45	16	16
L21 L36x36x20x20		S21	175	175	20	45	16	16
P22		S22	175	175	20	45	16	16
L23 L36x36x20x20		S23	170	170	20	45	16	16
P24		S24	85	85	25	25	25	16
P25		S25	175	175	20	45	16	16
P26		S26	175	185	20	50	16	16
P27		S27	175	185	20	50	16	16
P28		S28	175	185	20	50	16	16
P31		S31	175	185	20	50	16	16
P32		S32	175	185	20	50	16	16
P33		S33	180	190	20	55	16	16
P34		S34	180	190	20	55	16	16
P35		S35	80	80	25	25	25	16
P36		S36	170	180	20	50	16	16
P37		S37	170	180	20	50	16	16
P38		S38	180	190	20	55	16	16
P39		S39	180	190	20	55	16	16
P40		S40	175	185	20	50	16	16
P41		S41	175	185	20	50	16	16

P44	25x30	344	165	185	20	50	15
P45	25x30	345	180	190	20	50	15
P46	25x30	346	170	180	20	50	15
P47	25x30	347	80	90	20	25	15
P48	26x20	348	60	60	25	25	15
P49	26x20	349	130	130	20	40	15
P50	26x20	350	125	125	20	35	15
P51	26x20	351	130	130	20	40	15
P52	26x20	352	130	130	20	40	15
P53	26x20	353	140	150	20	40	15
P54	26x20	354	140	150	20	40	15
P55	26x20	355	145	150	20	45	15
P56	26x20	356	150	160	20	50	15
P57	26x20	357	150	160	20	50	15
P58	26x20	358	165	185	20	60	15
P59	26x20	359	160	155	165	40	15
P60	26x20	360	160	155	165	40	15
P61	26x20	361	165	170	20	50	15
P62	26x20	362	150	170	20	45	15
P63	26x20	363	70	70	25	25	15
P64	26x20	364	150	170	20	45	15
P65	26x20	365	150	170	20	45	15
P66	26x20	366	165	185	20	50	15
P67	26x20	367	155	165	20	45	15
P68-P77	26x20	368-376	80	80	20	25	15
P78	26x30	377	140	150	20	40	15
P79	26x30	378	140	150	20	40	15
P79	26x30	379	140	150	20	40	15
P79	26x30	380	140	150	20	40	15
P79	26x30	381	140	150	20	40	15
P79	26x30	382	140	150	20	40	15
P79	26x30	383	140	150	20	40	15
P79	26x30	384	140	150	20	40	15
P79	26x30	385	140	150	20	40	15
P79	26x30	386	140	150	20	40	15
P79	26x30	387	140	150	20	40	15
P79	26x30	388	140	150	20	40	15
P79	26x30	389	140	150	20	40	15
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P79	26x30	391	140	150	20	40	15
P79	26x30	392	140	150	20	40	15
P79	26x30	393	140	150	20	40	15
P79	26x30	394	140	150	20	40	15
P79	26x30	395	140	150	20	40	15
P79	26x30	396	140	150	20	40	15
P79	26x30	397	140	150	20	40	15
P79	26x30	398	140	150	20	40	15
P79	26x30	399	140	150	20	40	15
P79	26x30	400	140	150	20	40	15
P79	26x30	401	140	150	20	40	15
P79	26x30	402	140	150	20	40	15
P79	26x30	403	140	150	20	40	15
P79	26x30	404	140	150	20	40	15
P79	26x30	405	140	150	20	40	15
P79	26x30	406	140	150	20	40	15
P79	26x30	407	140	150	20	40	15
P79	26x30	408	140	150	20	40	15
P79	26x30	409	140	150	20	40	15
P79	26x30	410	140	150	20	40	15
P79	26x30	411	140	150	20	40	15
P79	26x30	412	140	150	20	40	15

P86	25x35	S86	170	180	20	50	150
P87	20x30	S87	80	90	25	25	150
P18+P19		S18-19	205	170	30	65	150
P29+P30		S29-30	205	165	20	55	150
P41+P42		S41-42	210	170	20	55	150
P57+P58		S57-58	205	165	20	55	150
P68+P69		S68-69	195	155	20	55	150
P81+P82		S81-82	210	170	30	65	150



Armação negativa das lajes do pavimento TOPO ELEVADOR (Eixo X)

escala 1:75



Armaduras de distribuição	
Armadura	Armadura de distribuição
N14	3 N1 ø5.0 c/20 C=98
N14	3 N2 ø5.0 c/20 C=103
N14	3 N3 ø5.0 c/20 C=100
N14	3 N3 ø5.0 c/20 C=100



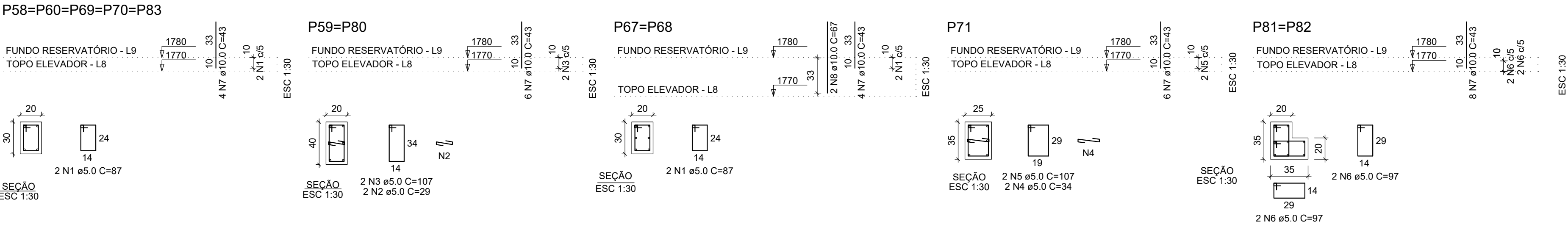
Armação positiva das lajes do pavimento TOPO ELEVADOR (Eixo Y)

escala 1:75



Armação positiva das lajes do pavimento TOPO ELEVADOR (Eixo X)

escala 1:75



RELAÇÃO DO AÇO

Negativos X		Positivos X		Positivos Y	
4xP58	2xP59	P67		P71	
2xP75	2xP81	V1			
V2					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	3	98	294
	2	5.0	3	103	309
	3	5.0	6	100	600
	4	5.0	41	87	3567
	5	5.0	26	29	754
	6	5.0	10	107	1070
	7	5.0	5	34	170
	8	5.0	5	107	535
	9	5.0	180	24	4320
	10	5.0	20	427	8540
	11	5.0	10	447	4470
	12	5.0	20	97	1940
CA50	13	5.0	20	97	1940
	14	6.3	20	58	1160
	15	6.3	10	202	2020
	16	6.3	10	200	2000
	17	6.3	10	202	2020
	18	6.3	10	202	2020
	19	10.0	62	88	5456
	20	10.0	110	52	5720
	21	10.0	4	224	896
	22	10.0	4	242	968

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	92.2	8	12 m	22.6
CA60	5.0	285.1	11	12 m	30.4
PESO TOTAL (kg)				rolo (170 kg)	43.9
CA50		103			
CA60		43.9			

Volume de concreto (C-30) = 2.60 m³
Área de forma = 33.59 m²

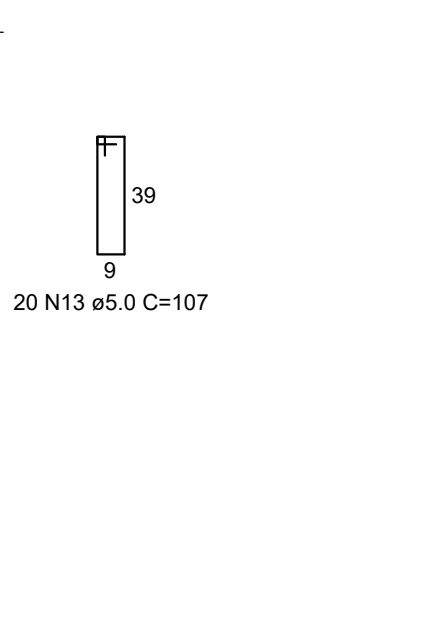
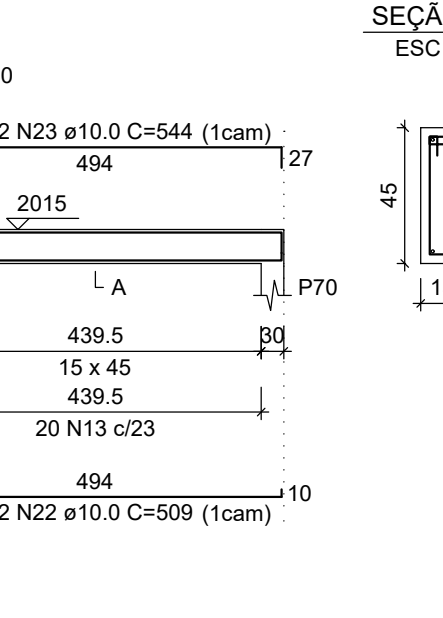
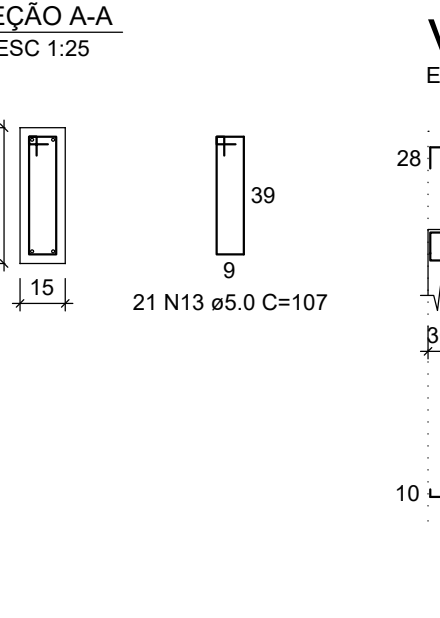
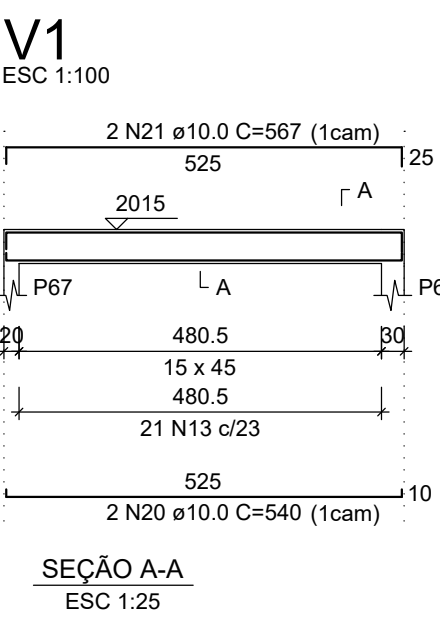
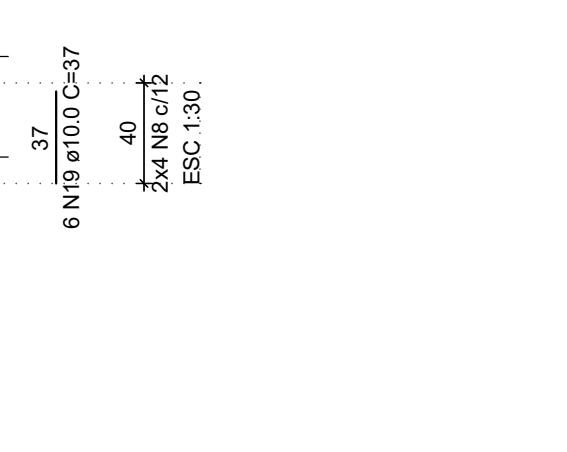
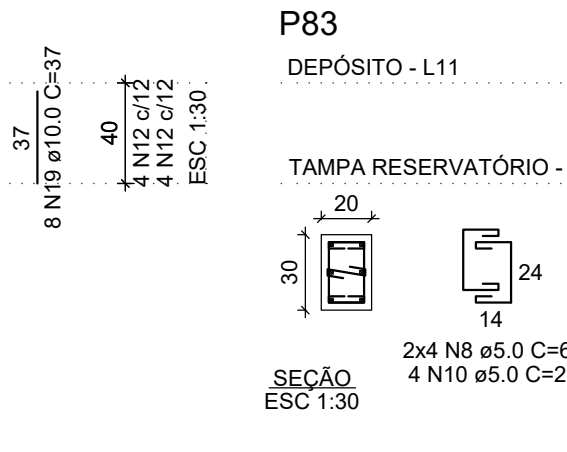
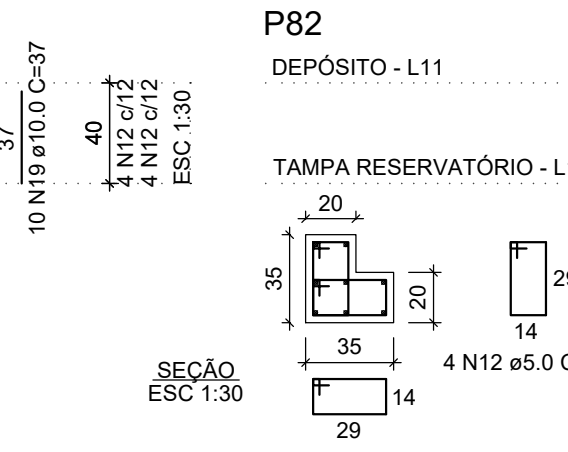
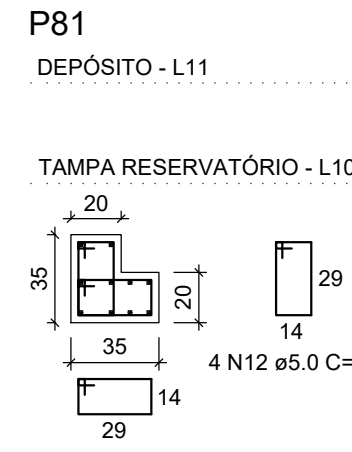
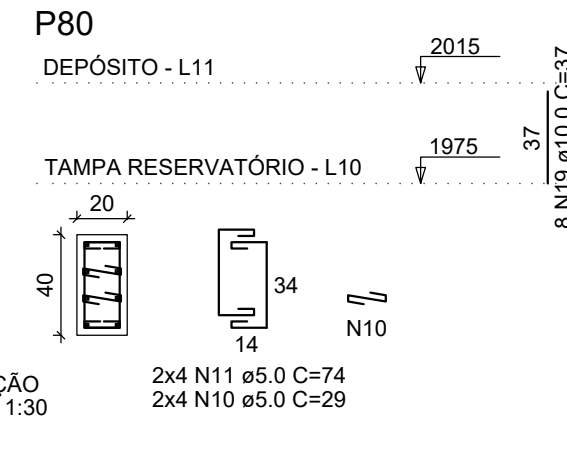
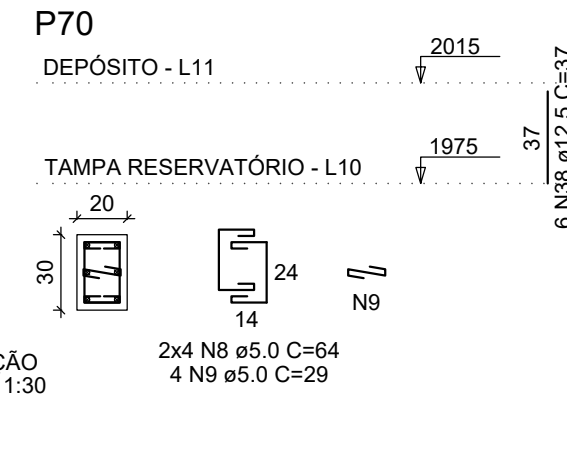
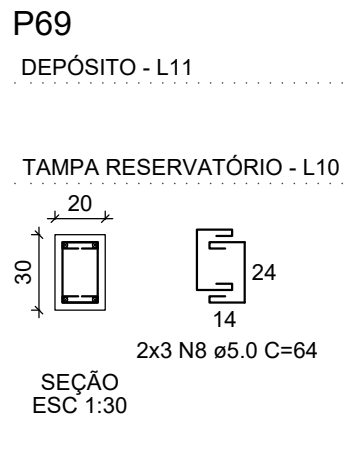
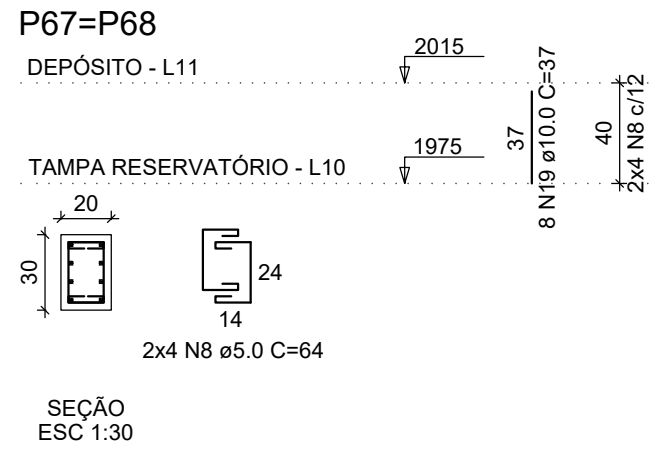
RELAÇÃO DO AÇO

5xP58		2xP59		2xP67	
P71		2xP81			
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	14	87	1218
	2	5.0	4	28	116
	3	5.0	4	107	428
	4	5.0	2	34	68
	5	5.0	2	107	214
CA50	6	5.0	6	97	776
	7	10.0	62	43	2666
	8	10.0	4	67	268

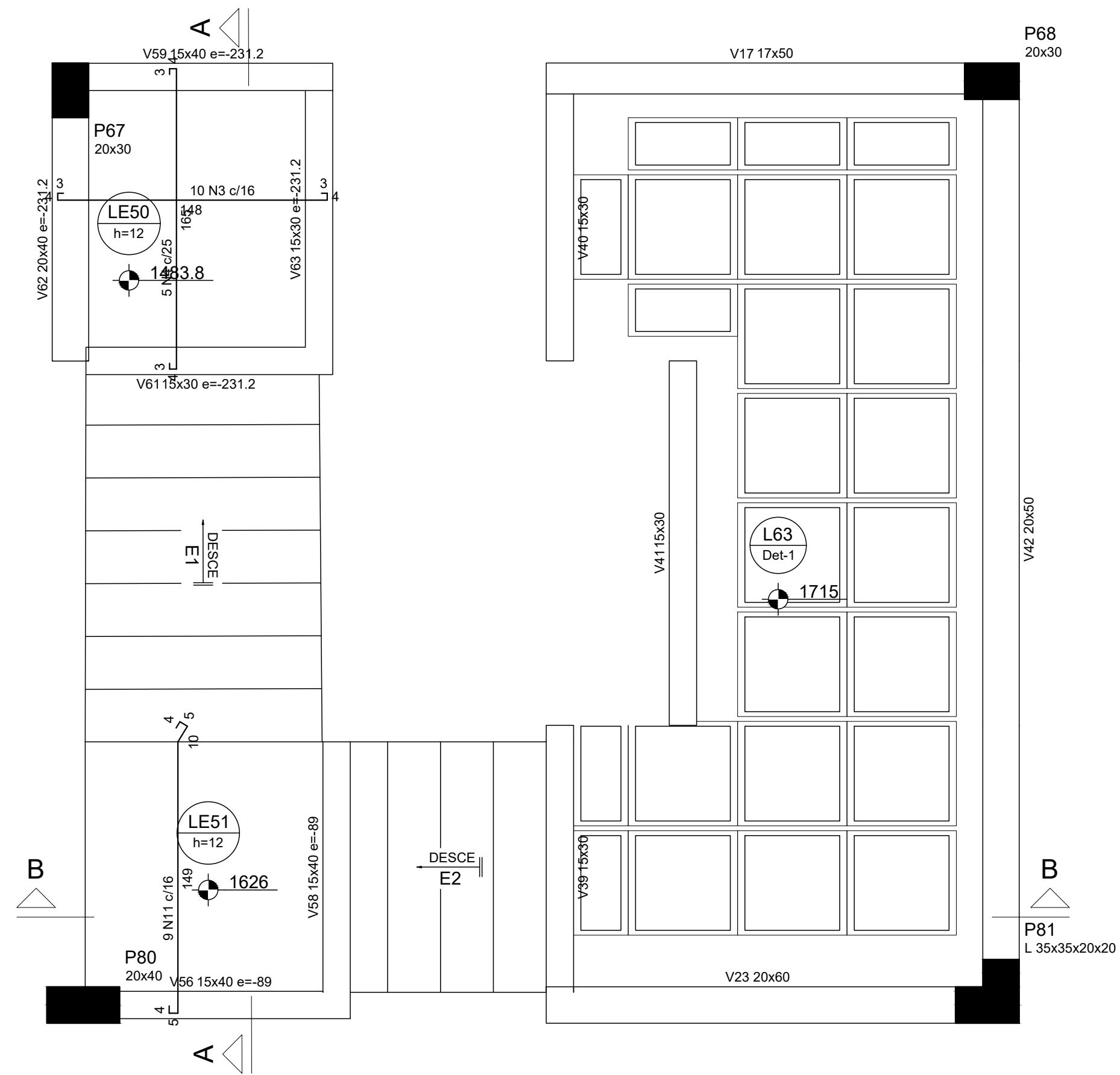
RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	10.0	29.3	3	12 m	18.1
CA60	5.0	28.2	-	rolo (170 kg)	4.3
PESO TOTAL (kg)					
CA50		18.1			
CA60		4.3			

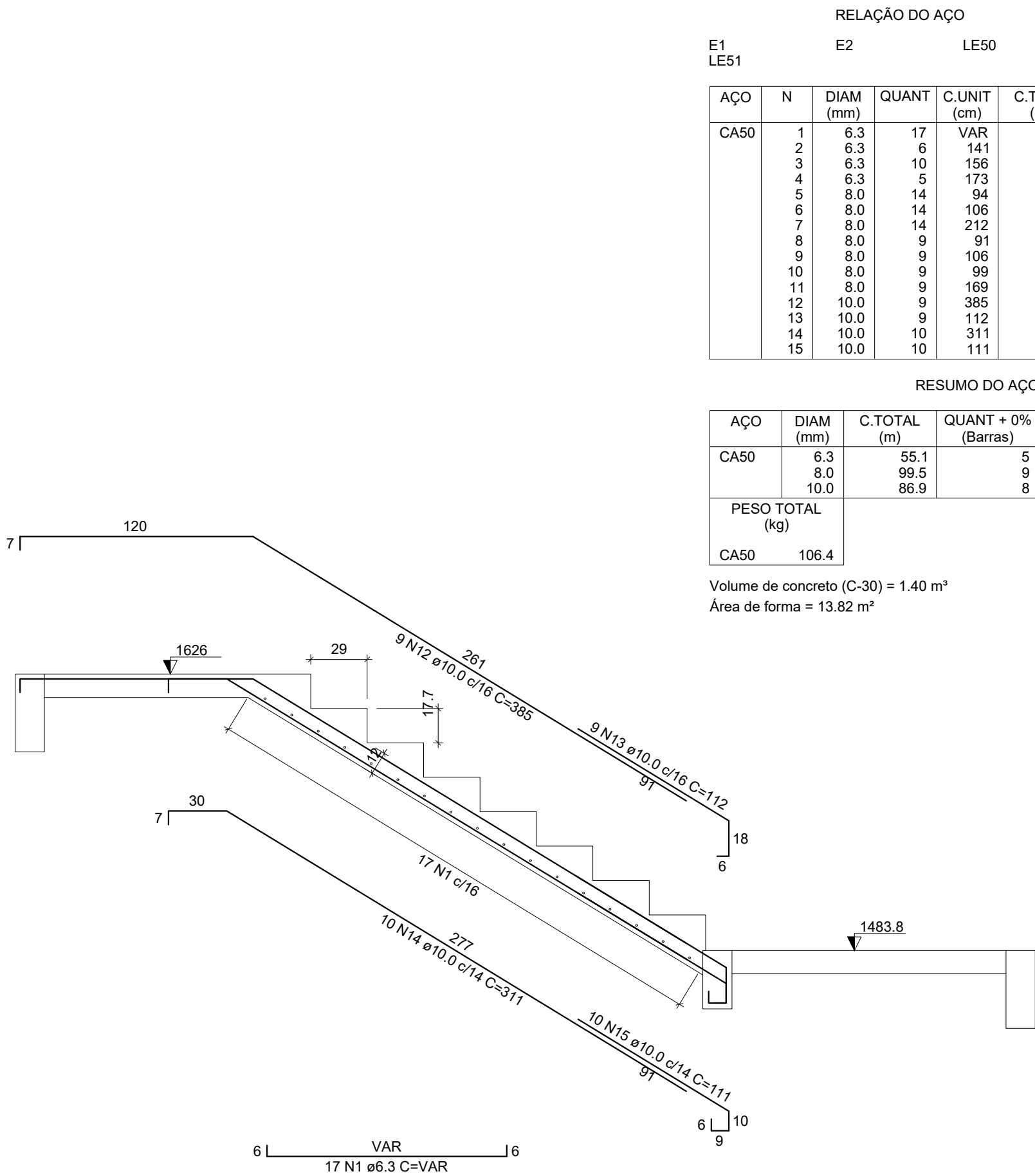
Volume de concreto (C-30) = 0.09 m³
Área de forma = 1.34 m²



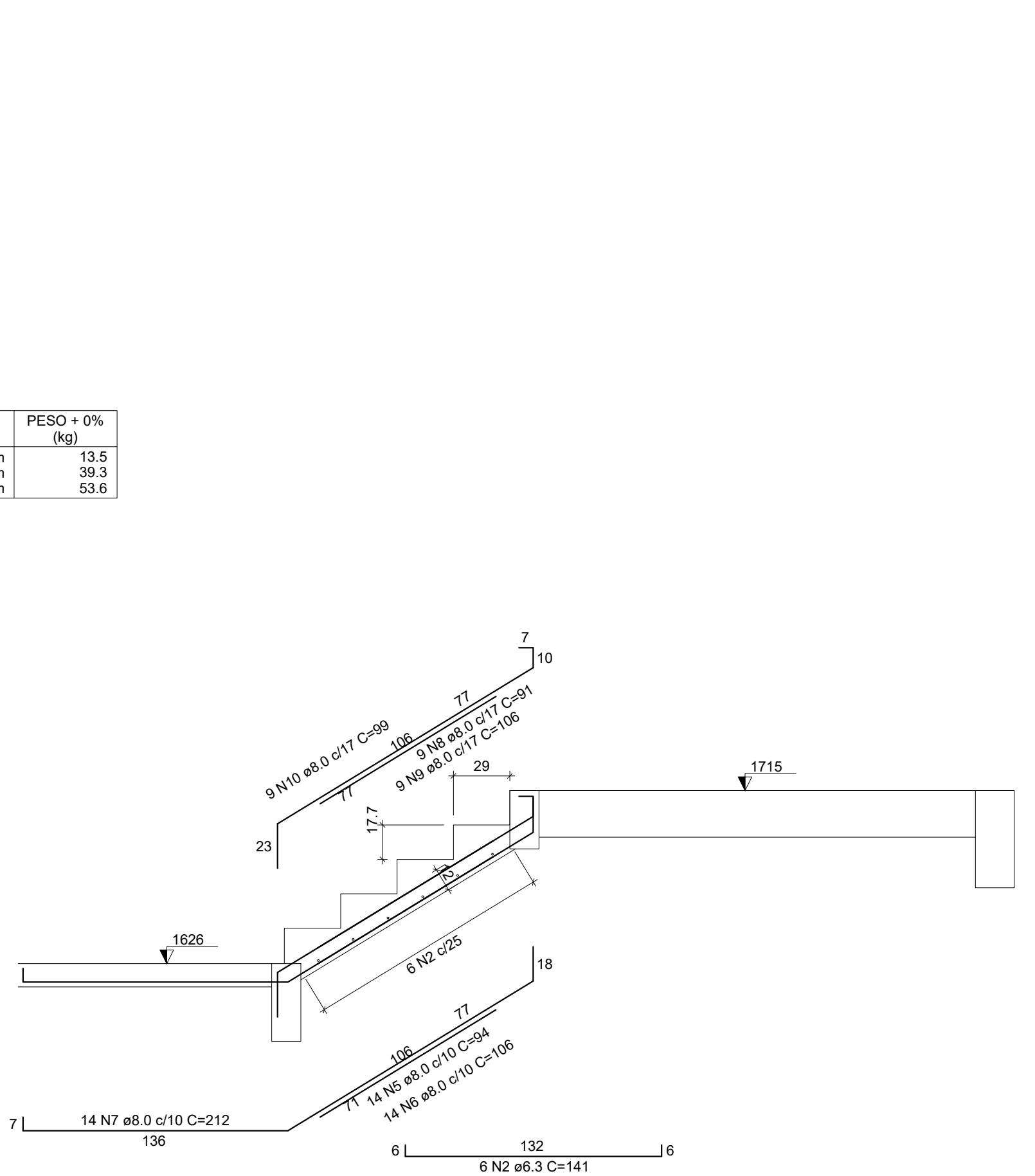
RELAÇÃO DO AÇO					
Negativos X	Negativos Y	Positivos X			
P67	P68	P69			
P70	P71	P72			
P73	P74	P75			
P76	P77	P78			
P79	P80	P81			
P82	P83	P84			
P85	P86	P87			
P88	P89	P90			
P91	P92	P93			
P94	P95	P96			
P97	P98	P99			
P100	P101	P102			
P103	P104	P105			
P106	P107	P108			
P109	P110	P111			
P112	P113	P114			
P115	P116	P117			
P118	P119	P120			
P121	P122	P123			
P124	P125	P126			
P127	P128	P129			
P130	P131	P132			
P133	P134	P135			
P136	P137	P138			
P139	P140	P141			
P142	P143	P144			
P145	P146	P147			
P148	P149	P150			
P151	P152	P153			
P154	P155	P156			
P157	P158	P159			
P160	P161	P162			
P163	P164	P165			
P166	P167	P168			
P169	P170	P171			
P172	P173	P174			
P175	P176	P177			
P178	P179	P180			
P181	P182	P183			
P184	P185	P186			
P187	P188	P189			
P190	P191	P192			
P193	P194	P195			
P196	P197	P198			
P199	P200	P201			
P202	P203	P204			
P205	P206	P207			
P208	P209	P210			
P211	P212	P213			
P214	P215	P216			
P217	P218	P219			
P220	P221	P222			
P223	P224	P225			
P226	P227	P228			
P229	P230	P231			
P232	P233	P234			
P235	P236	P237			
P238	P239	P240			
P241	P242	P243			
P244	P245	P246			
P247	P248	P249			
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P280	P281	P282			
P283	P284	P285			
P286	P287	P288			
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P298	P299	P300			
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P499	P499	P499			



Armação positiva da escada EC
ESC 1:25

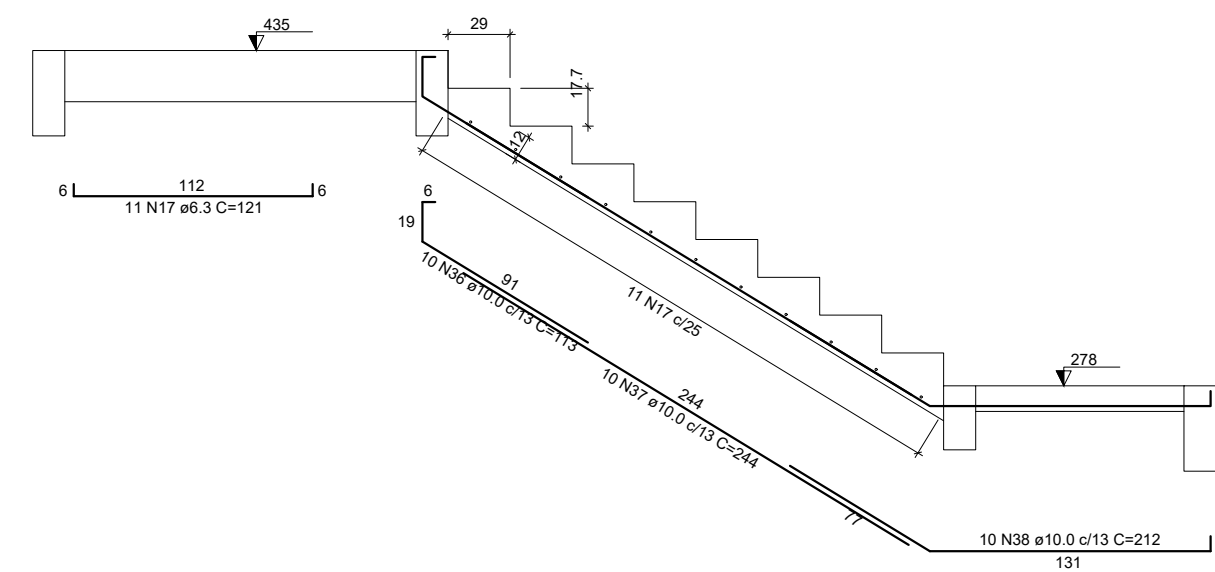
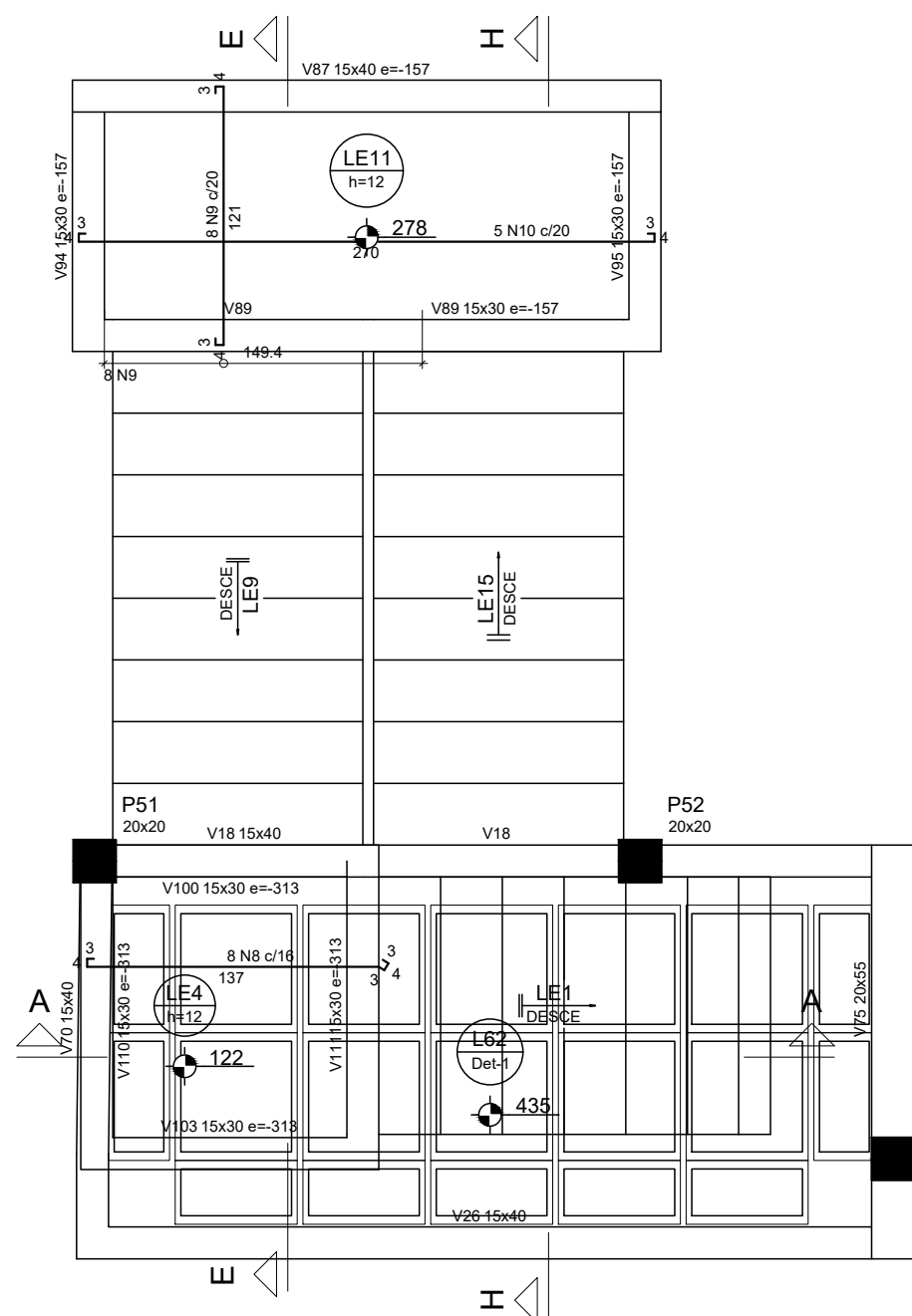


Corte A-A (E1)
ESC 1:25



Corte B-B (E2)
ESC 1:25

ESCADA DA COBERTURA



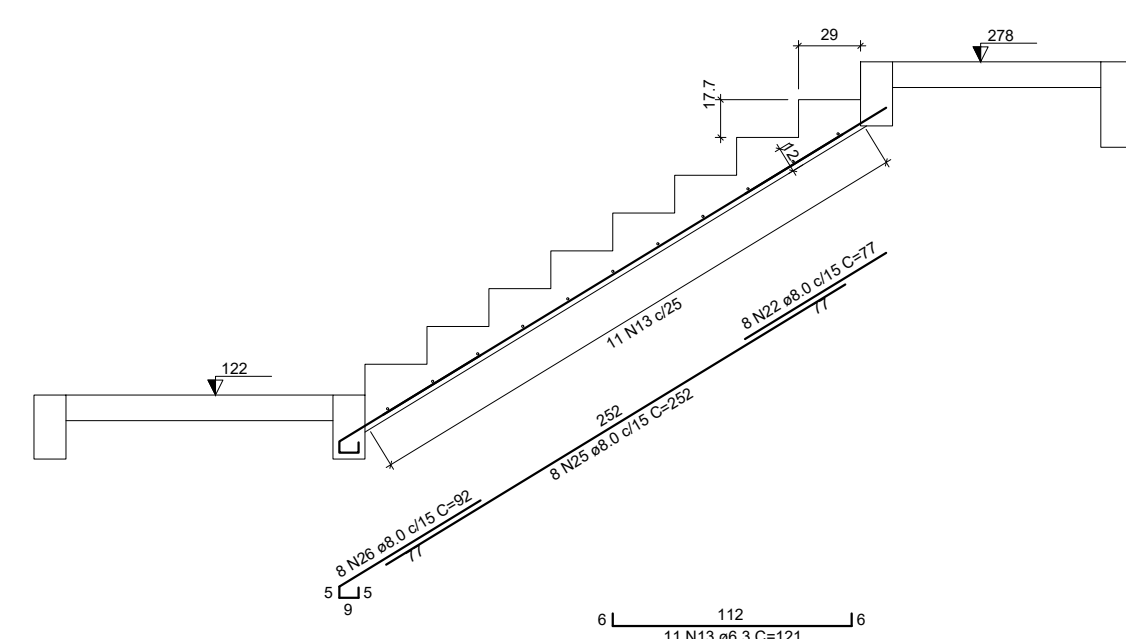
Corte H-H (LE15)

RELAÇÃO DO AÇO						
LE1	LE2	LE3				
LE7	LE8	LE9				
LE10	LE11	LE12				
LE13	LE14	LE15				
LE16						
AÇO	N	DIAM	QUANT	C UNIT	C TOTAL	
CASO 1	1	3	8	124	992	
	2	3	8	68	544	
	3	3	8	68	544	
	4	3	8	76	608	
	5	3	8	84	672	
	6	3	8	92	736	1194
	7	3	8	100	800	
	8	3	8	108	864	
	9	3	8	116	928	
	10	3	15	276	4140	
	11	3	15	284	4260	
	12	6	8	170	1360	
	13	6	8	122	976	
	14	6	8	9	72	
	15	6	8	101	808	
	16	6	8	111	888	
	17	6	8	121	968	
	18	6	8	131	1048	
	19	6	8	141	1128	
	20	6	8	151	1208	
	21	6	8	161	1288	
	22	8	8	78	624	
	23	8	8	86	688	
	24	8	8	94	752	
	25	8	8	102	816	
	26	8	8	110	880	
	27	8	8	118	944	
	28	8	8	126	1008	
	29	8	8	134	1072	
	30	8	8	142	1136	
	31	8	8	150	1200	
	32	8	8	158	1264	
	33	10	0	242	2778	
	34	10	0	250	2900	
	35	10	0	258	3022	
	36	10	0	266	3144	
	37	10	0	274	3266	
	38	10	0	282	3388	
	39	10	0	290	3510	
	40	10	0	298	3632	
	41	10	0	306	3754	
	42	10	0	314	3876	
	43	10	0	322	3998	
	44	10	0	330	4120	
	45	10	0	338	4242	
	46	10	0	346	4364	
	47	10	0	354	4486	
	48	10	0	362	4608	
	49	10	0	370	4730	
	50	10	0	378	4852	
	51	10	0	386	4974	
	52	10	0	394	5096	
	53	10	0	402	5218	
	54	10	0	410	5340	
	55	10	0	418	5462	
	56	10	0	426	5584	
	57	10	0	434	5706	
	58	10	0	442	5828	
	59	10	0	450	5950	
	60	10	0	458	6072	

RESUMO DO AÇO

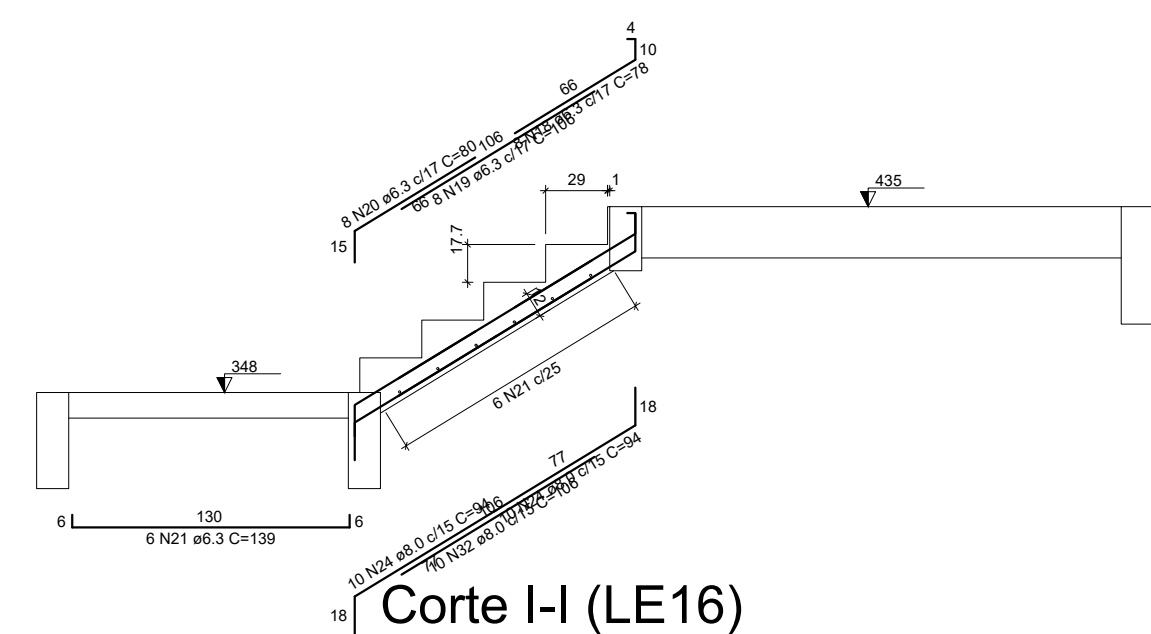
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	310.6	26	12 m	76
	8.0	173.7	15	12 m	68.6
	10.0	158.6	14	12 m	97.8
PESO TOTAL (kg)					
CA50	242.3				

Volume de concreto (C-30) = 7.22 m³
 Área de forma = 69.98 m²



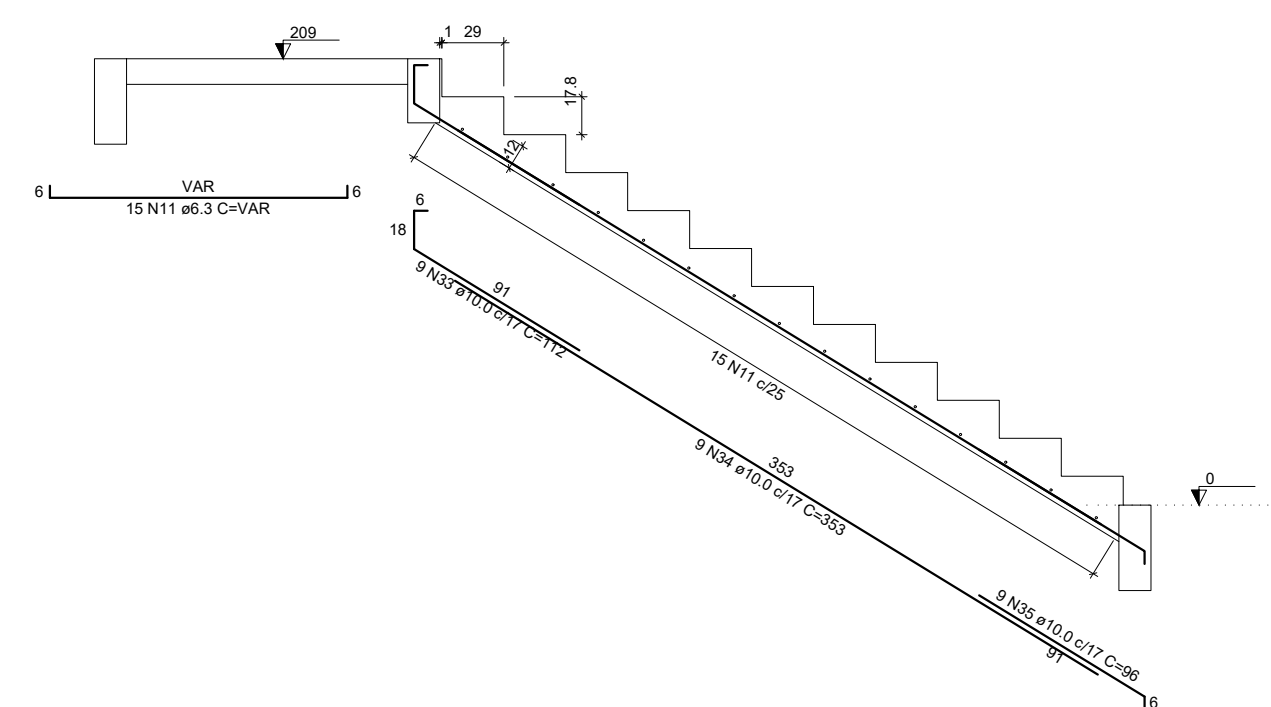
Corte B-B (LE2)

Corte D-D (LE8)



Corte F-F (LE12)

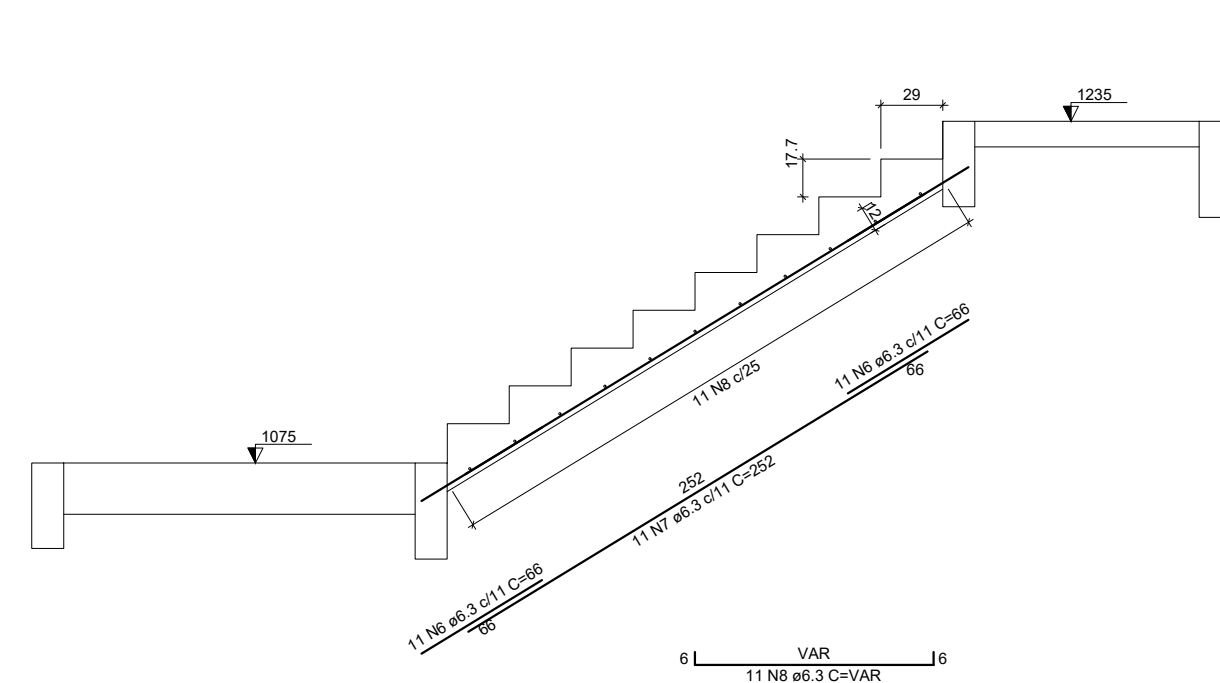
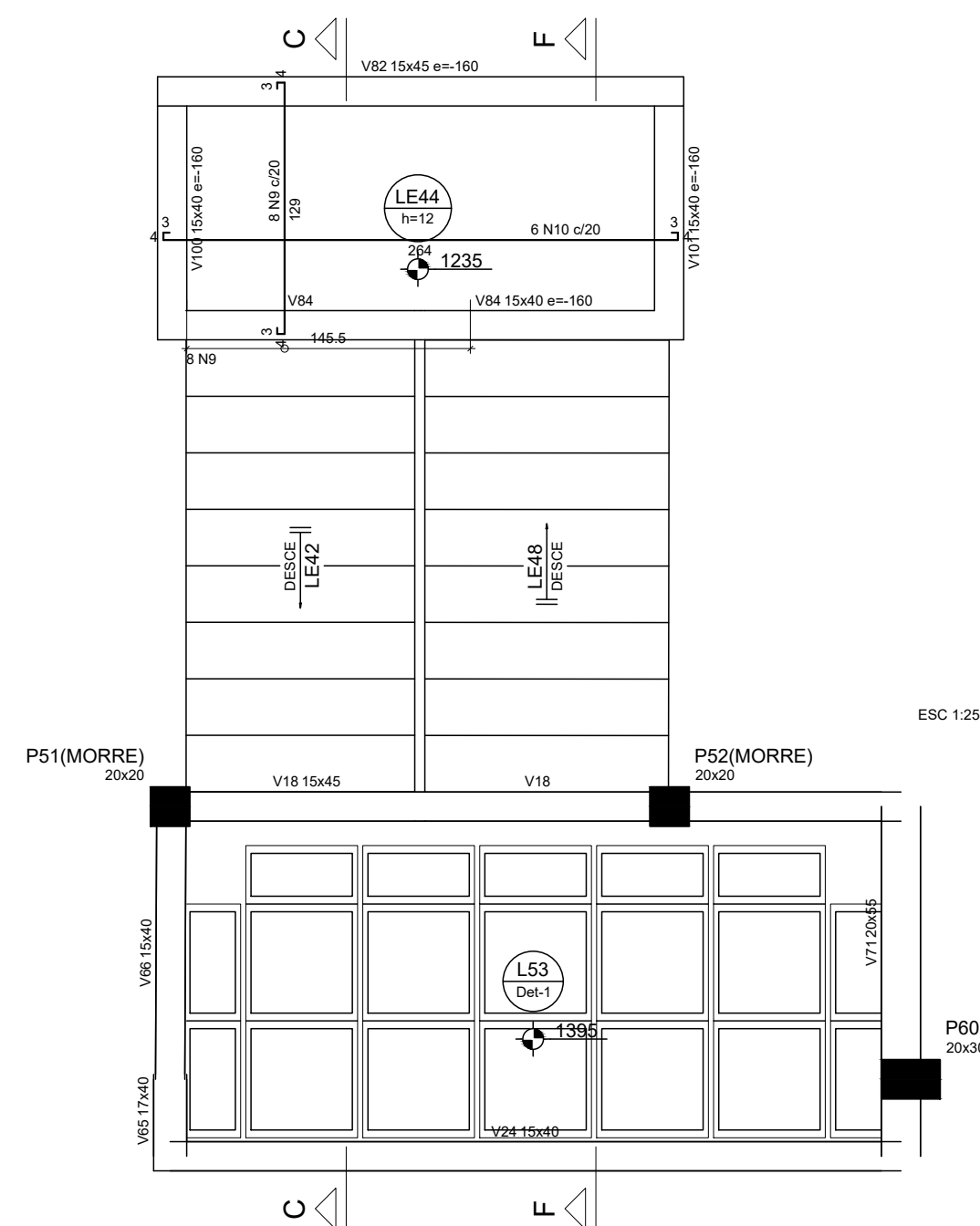
18 Corte I-I (LE16)



Corte E-E (LE9)

Corte F-F (LE12)

18 Corte I-I (LE16)



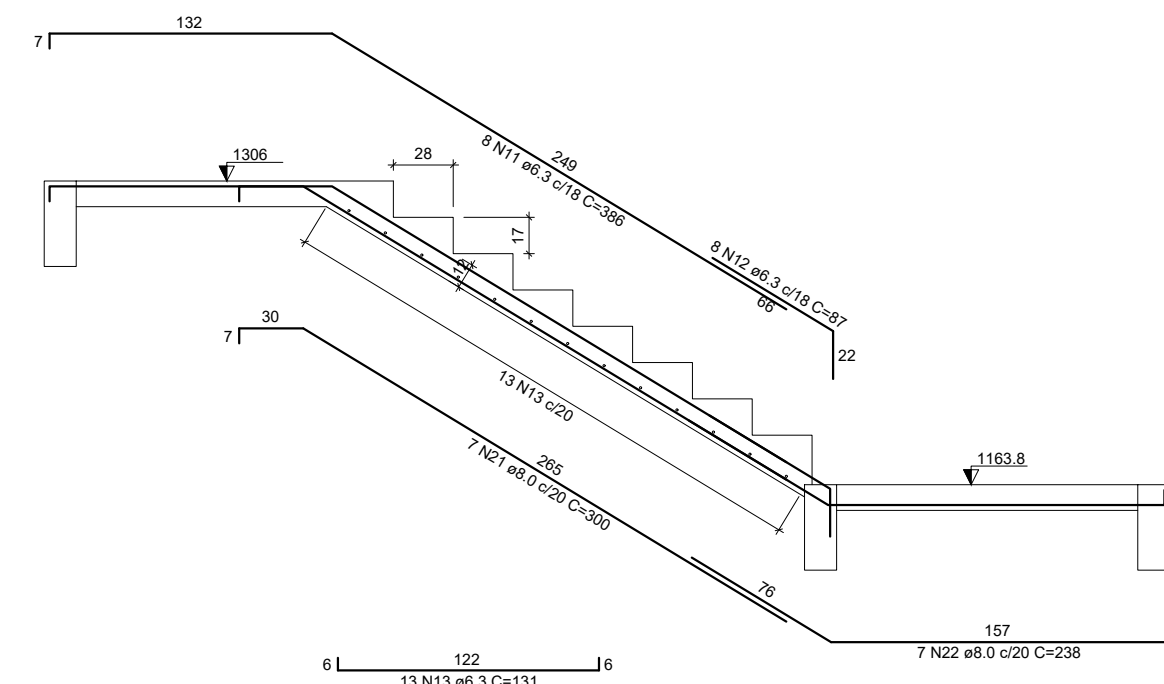
Corte B-B (LE41)

RELACÃO DO AÇO					
LE39	LE40	LE41			
LE42	LE43	LE44			
LE45	LE46	LE47			
LE48	LE49	Negativos			
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	8	3	10	60
	2	8	3	10	1050
	3	8	3	85	1850
	4	8	3	142	1040
	5	8	3	179	2040
	6	8	3	44	2904
	7	8	3	22	5544
	8	8	3	22	VAR
	9	8	3	16	2182
	10	8	3	12	2064
	11	8	3	8	3868
	12	8	3	8	88
	13	8	3	13	1703
	14	8	3	17	1432
	15	8	3	11	1211
	16	8	3	11	VAR
CA50	17	8	3	9	77
	18	8	3	104	538
	19	8	3	9	213
	20	8	3	9	1917
	21	8	3	9	1668
	22	8	3	9	1100
	23	8	3	30	2160
	24	10	10	18	213
	25	10	10	18	2050
	26	10	10	18	215
CA50	27	10	10	7	183
	28	10	10	7	2304
CA50	29	10	10	20	2050
	30	10	10	21	304

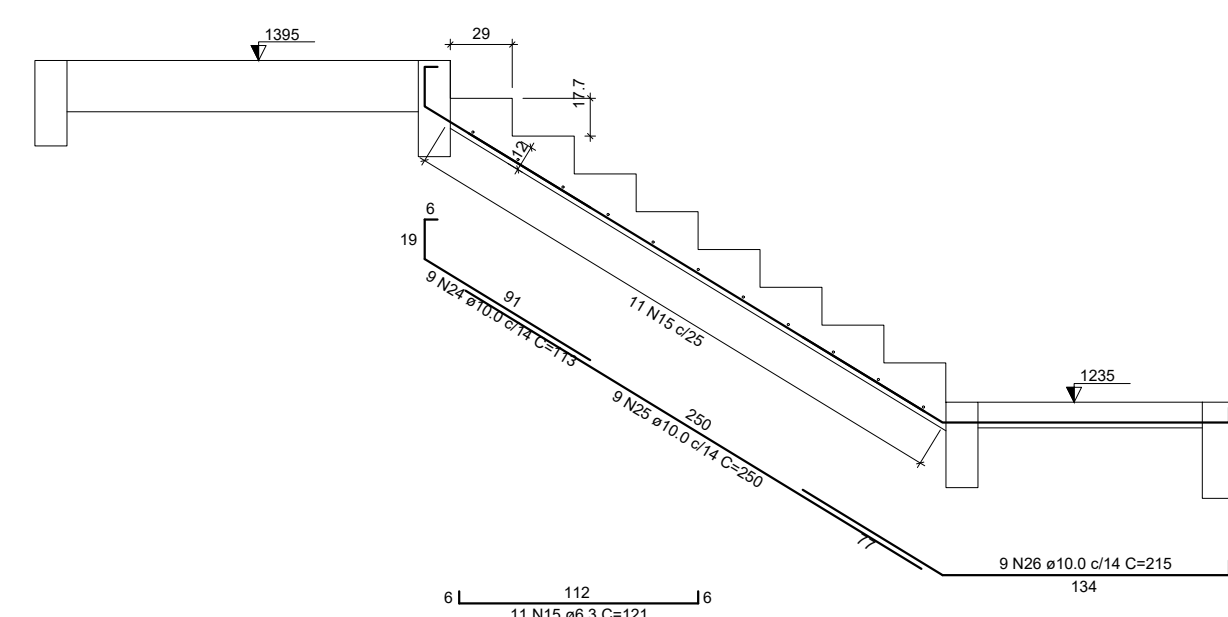
RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	353.1	30	12 m	86.4
	8.0	55.3	5	12 m	21.8
	10.0	116.9	10	12 m	72

Volume de concreto (C-30) = 5.03 m³
Área de forma = 49.62 m²

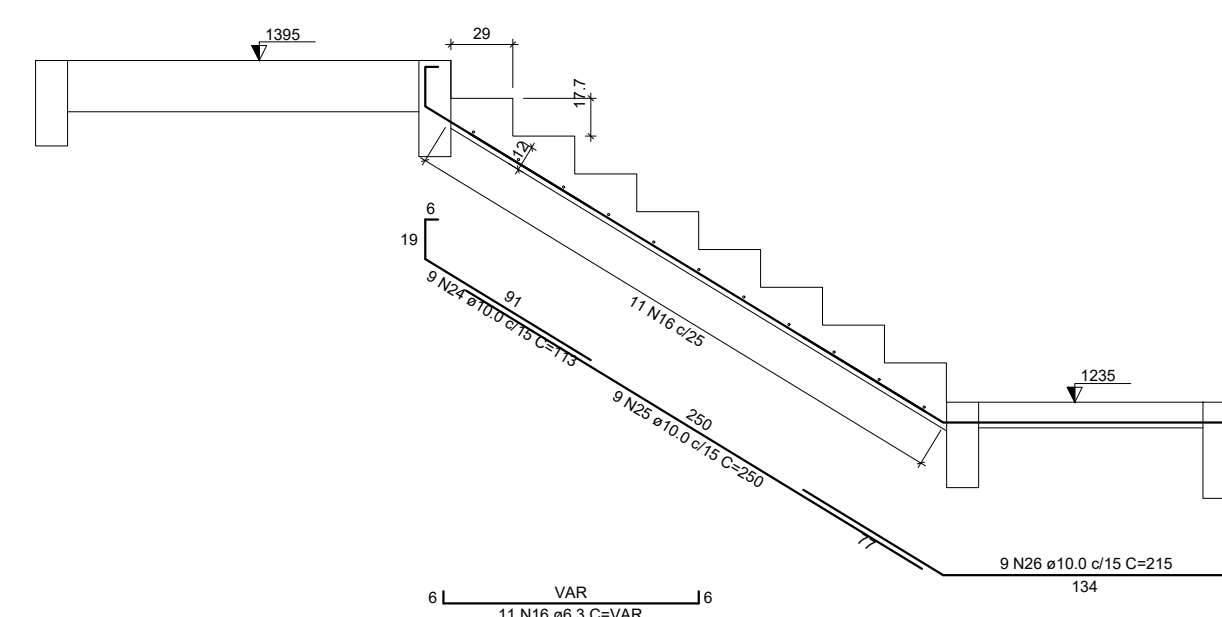
Corte C-C (LE42)



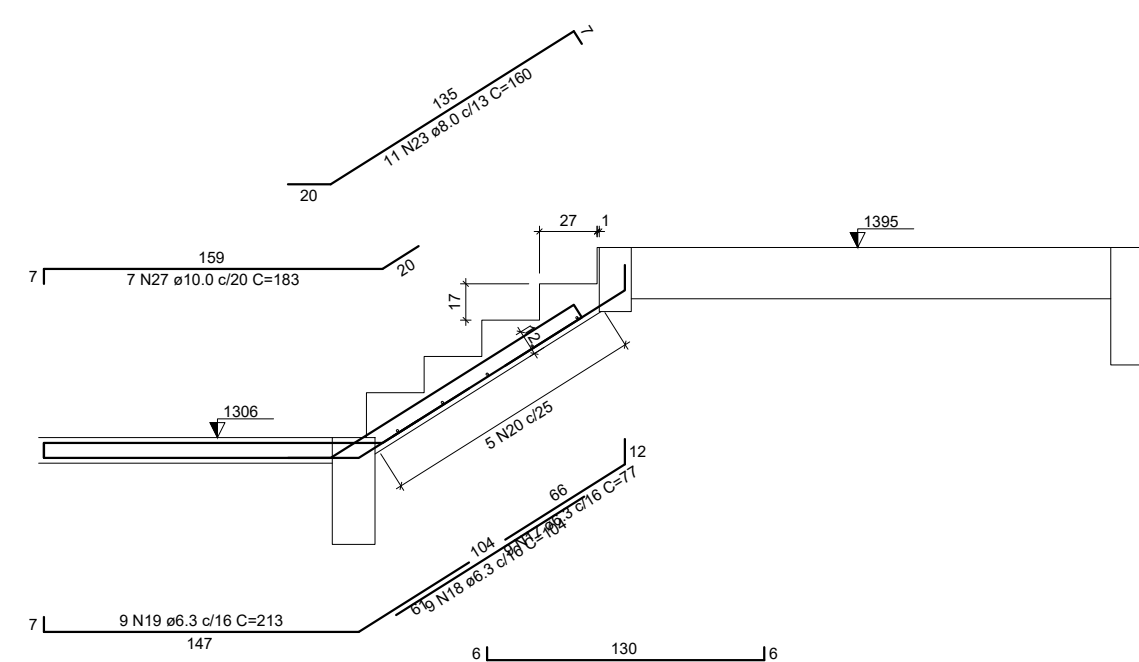
Corte D-D (LE45)



Corte E-E (LE47)

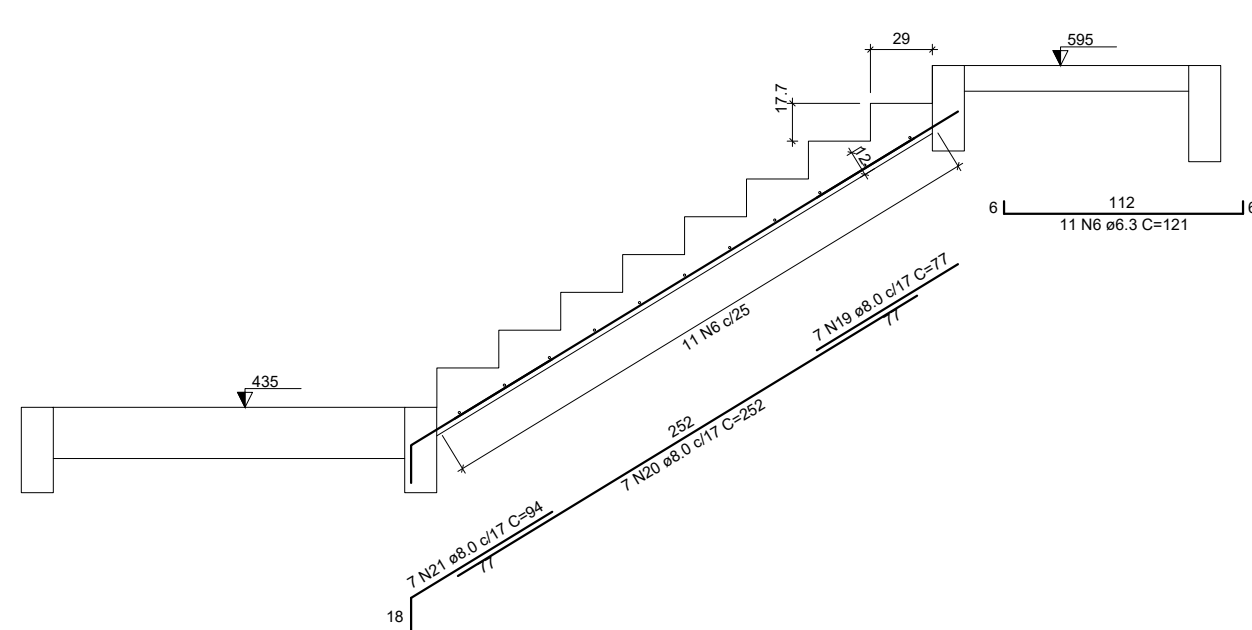
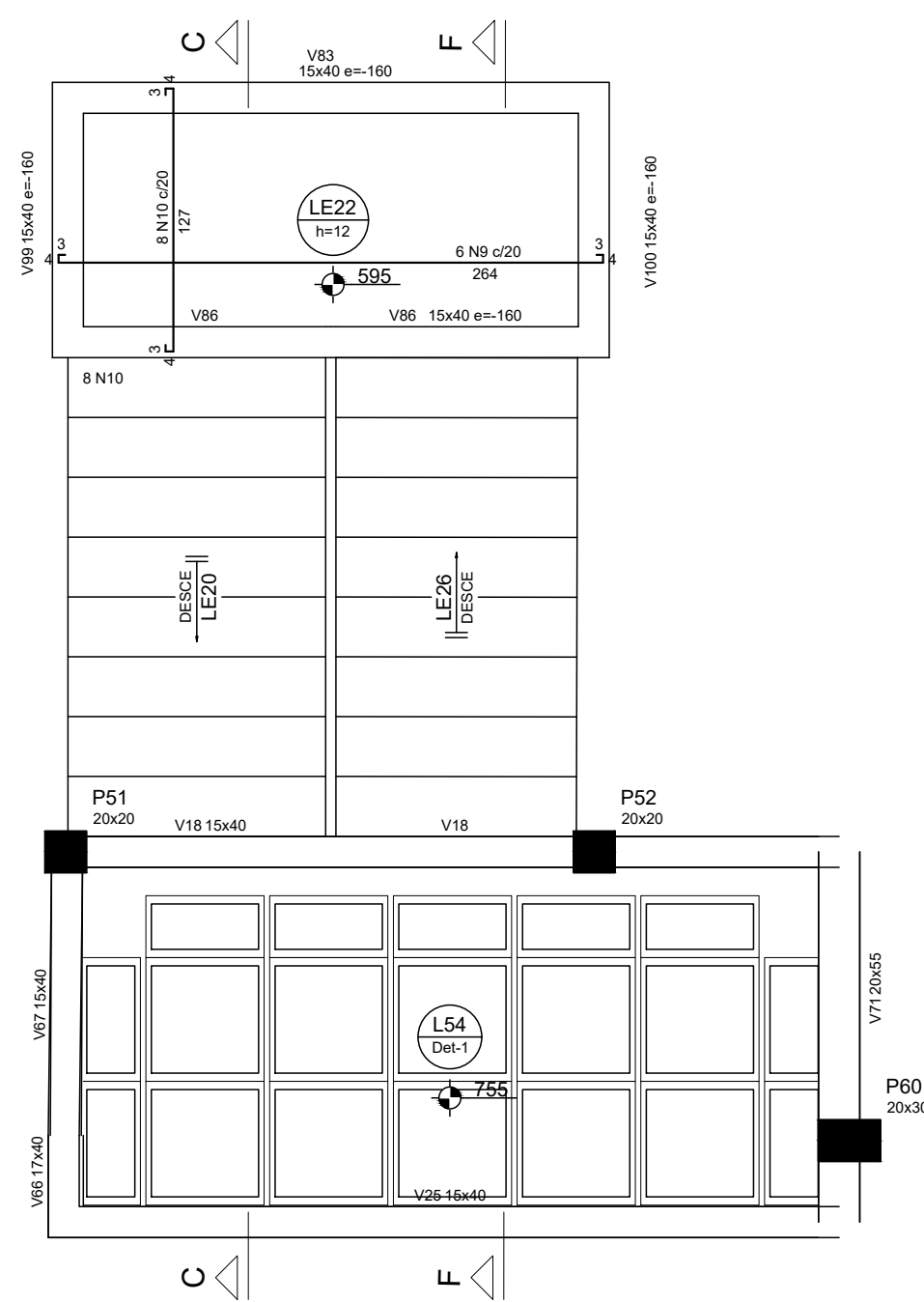
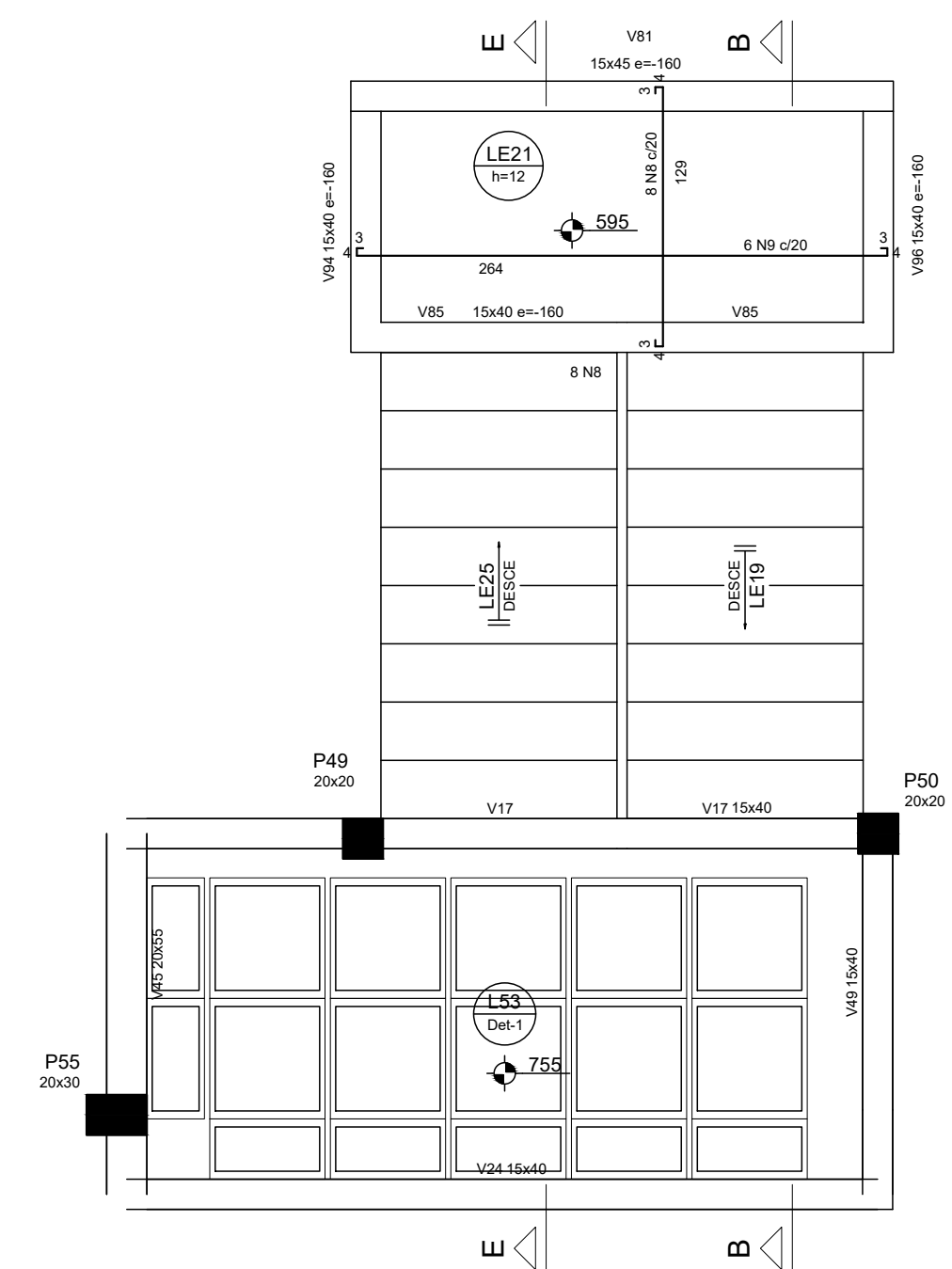


Corte F-F (LE48)

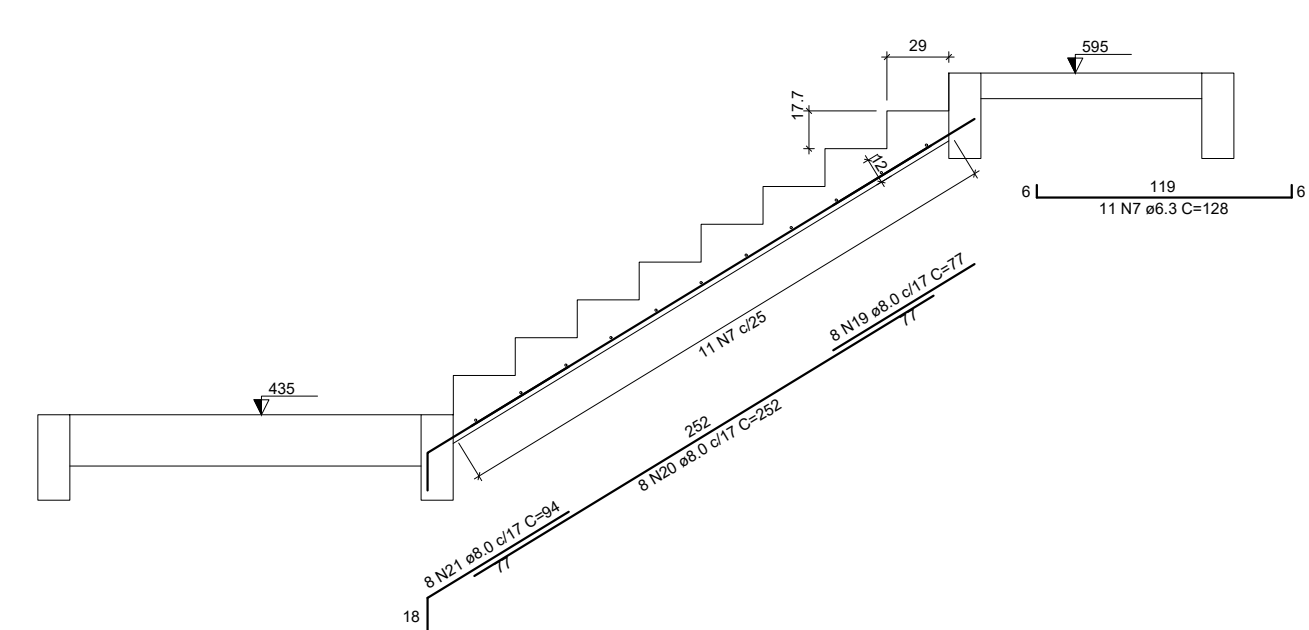


Corte G-G (LE49)

Armação positiva da escada E3



Corte B-B (LE19)



Corte C-C (LE20)

RELAÇÃO DO AÇO

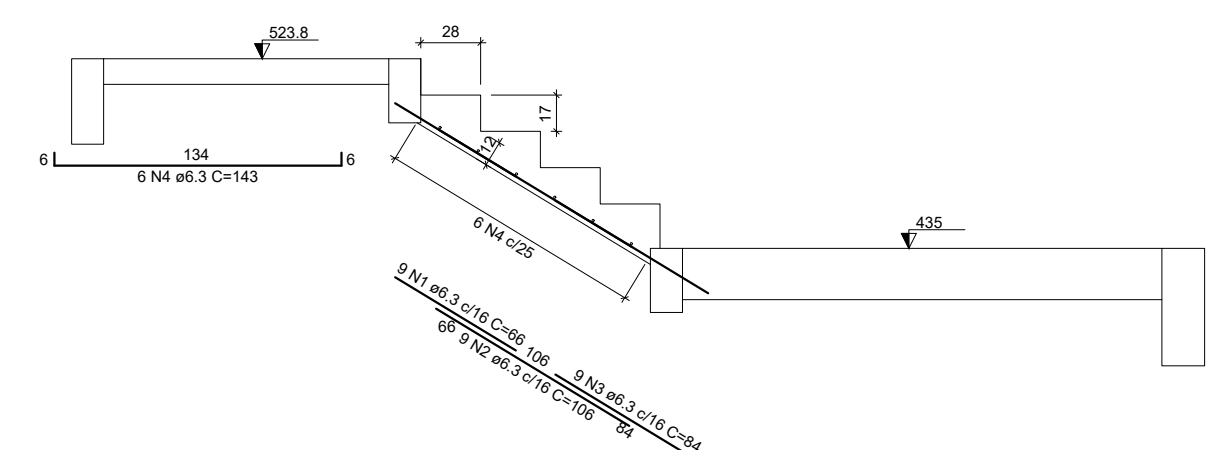
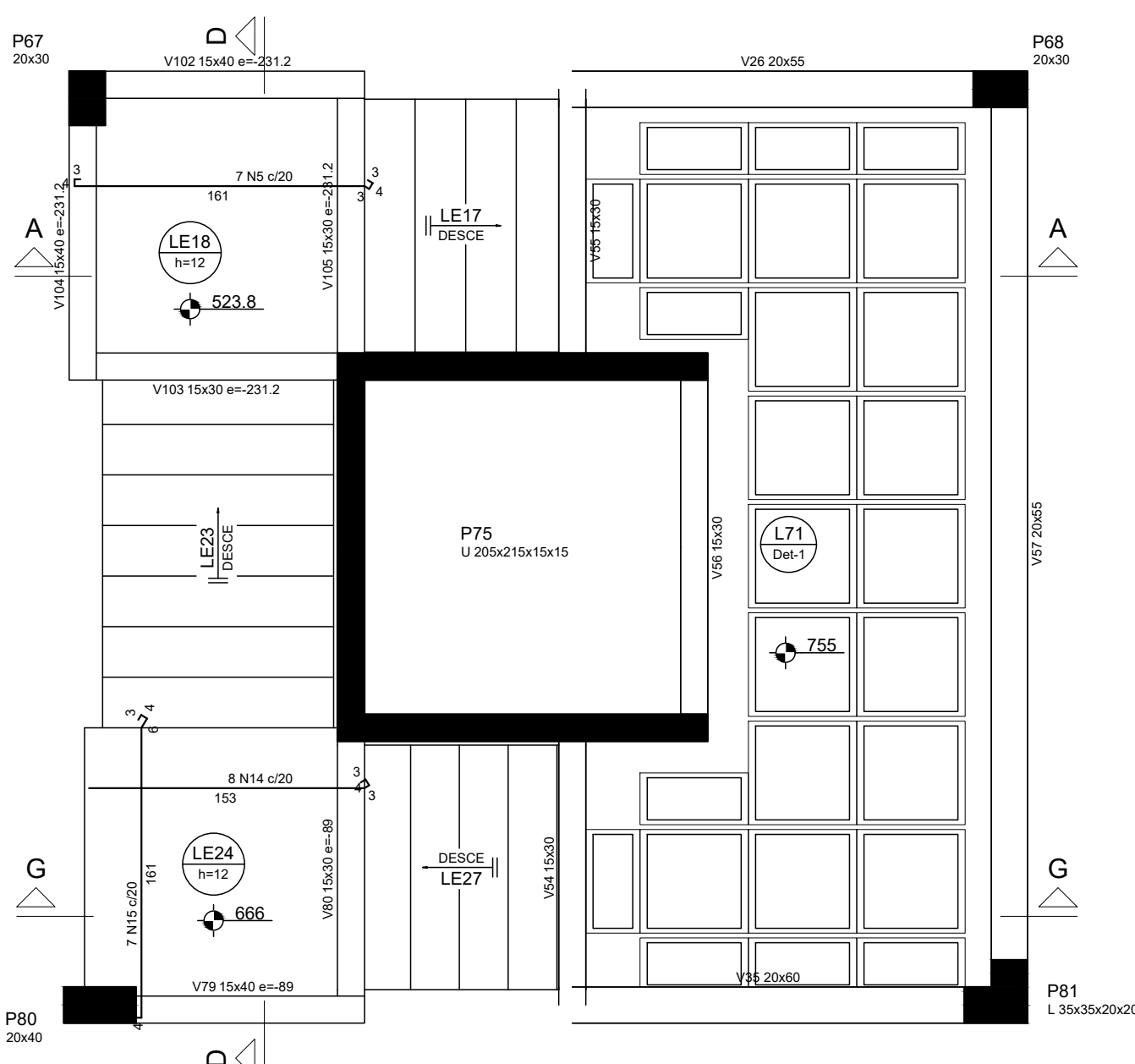
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	9	66	594
	2	6.3	9	108	654
	3	6.3	9	84	756
	4	6.3	9	143	854
	5	6.3	11	172	1204
	6	6.3	11	121	1331
	7	6.3	11	128	1408
	8	6.3	8	137	1096
	9	6.3	12	272	3264
	10	6.3	9	138	1242
	11	6.3	7	282	1974
	12	6.3	9	138	1242
	13	6.3	13	131	1703
	14	6.3	9	189	1701
	15	6.3	9	121	1225
	16	6.3	11	175	1925
	17	6.3	11	VAR	VAR
	18	8.0	15	77	1155
	19	8.0	15	252	3780
	20	8.0	15	94	2338
	21	8.0	27	300	8100
	22	8.0	7	238	1666
	23	8.0	12	201	2412
	24	8.0	7	250	1750
	25	8.0	12	201	2412
	26	8.0	8	88	704
	27	8.0	8	105	840
	28	8.0	8	105	840
	29	8.0	8	184	1472
	30	8.0	10	84	840
	31	8.0	10	107	1070
	32	8.0	10	83	830
	33	10.0	9	113	1017
	34	10.0	9	280	2520
	35	10.0	9	215	1935

RESUMO DO AÇO

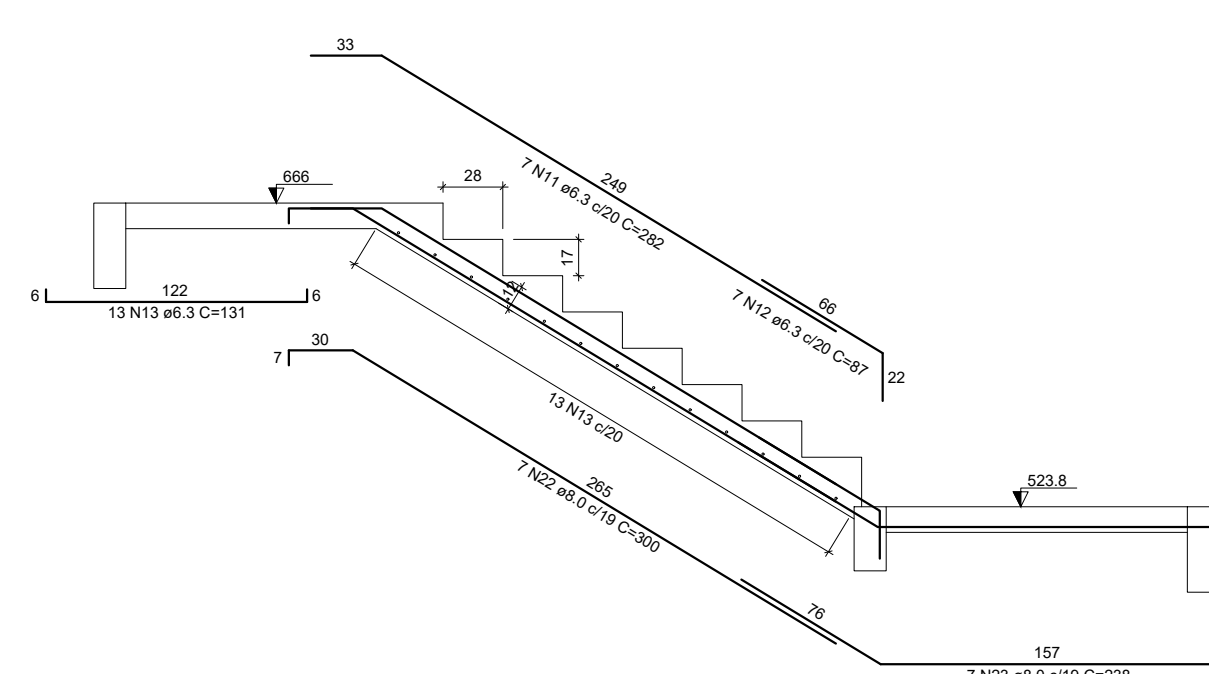
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barbas)	UNIT	PESO + 0% (kg)
CA50	6.3	228.2	20	12 m	55.8
	8.0	234.6	20	12 m	92.6
	10.0	52	5	12 m	32.1

PESO TOTAL (kg)
CA50 180.5

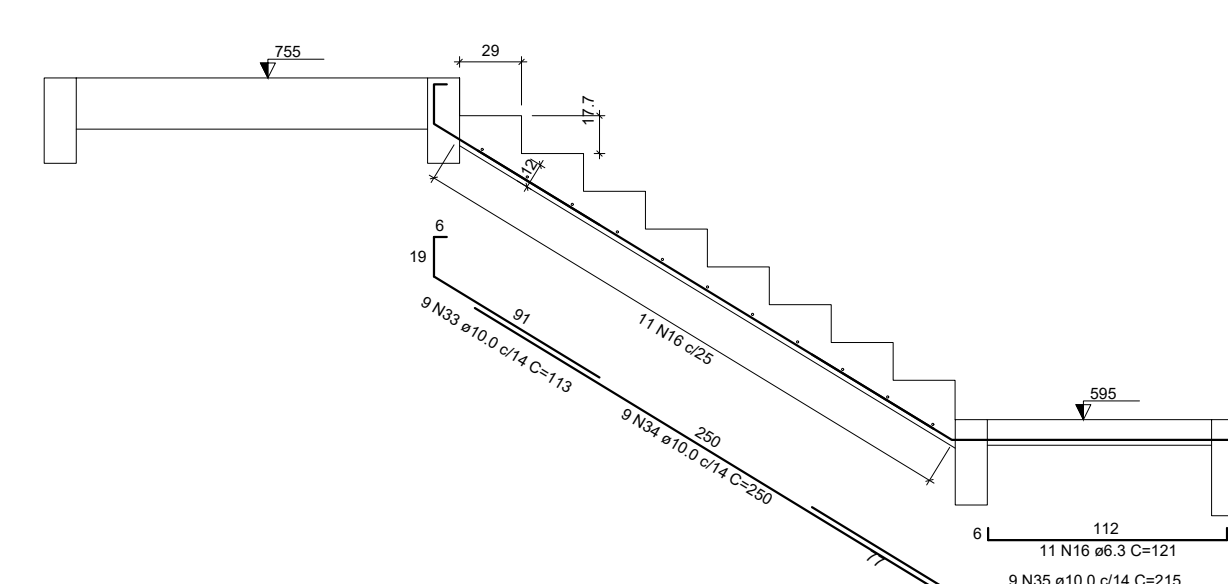
Volume de concreto (C-30) = 5.02 m³
Área de forma = 49.54 m²



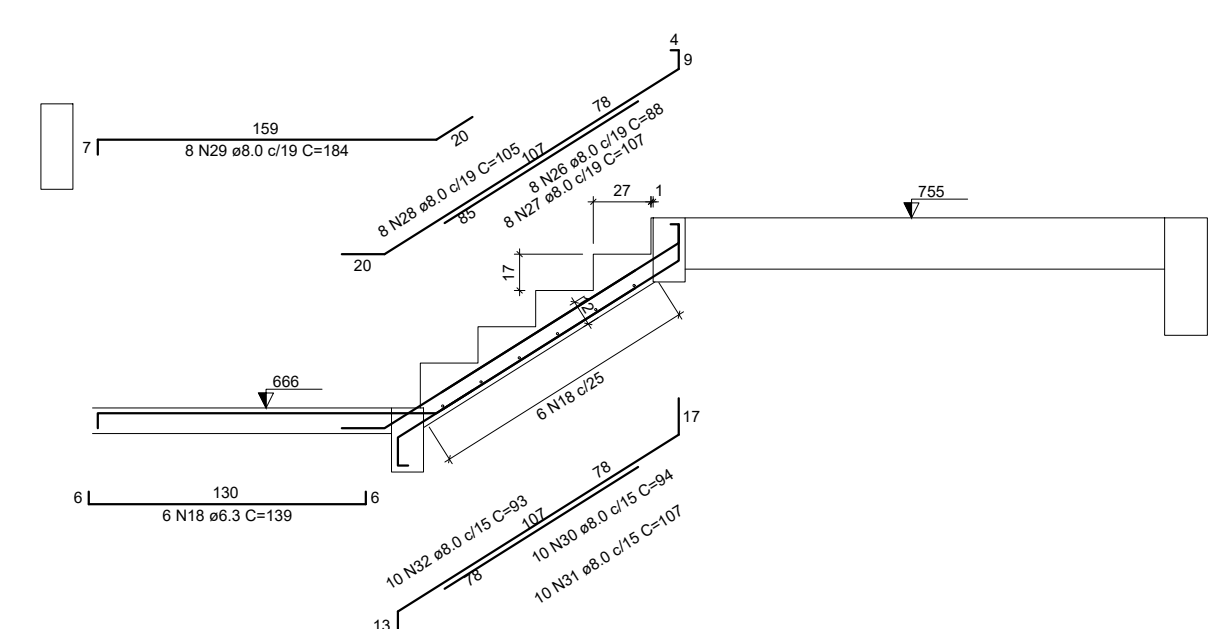
Corte A-A (LE17)



Corte D-D (LE23)

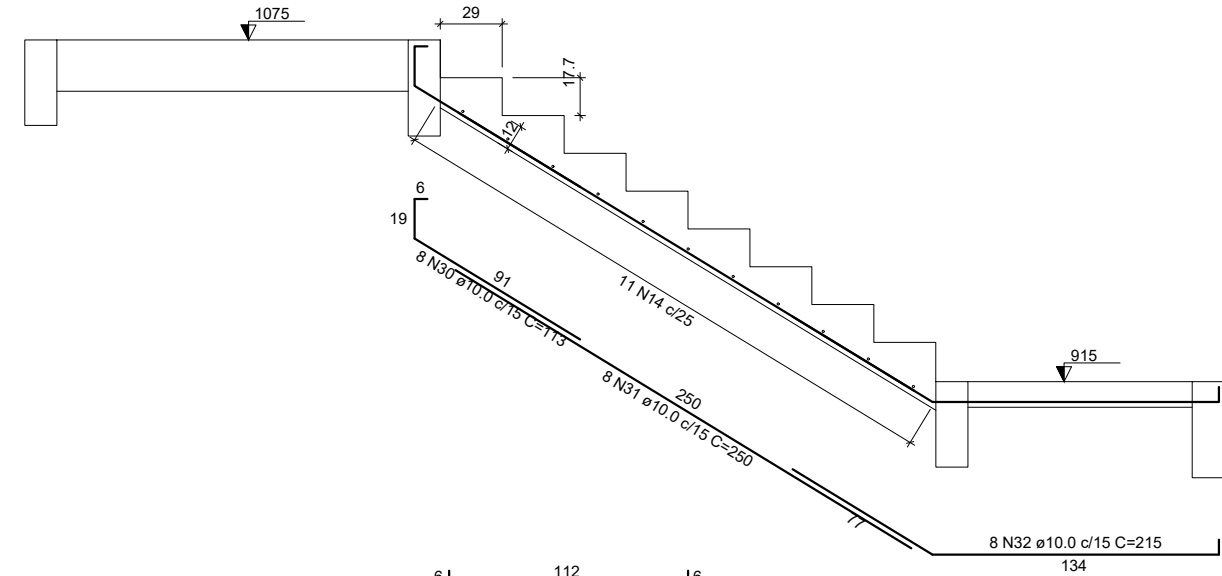
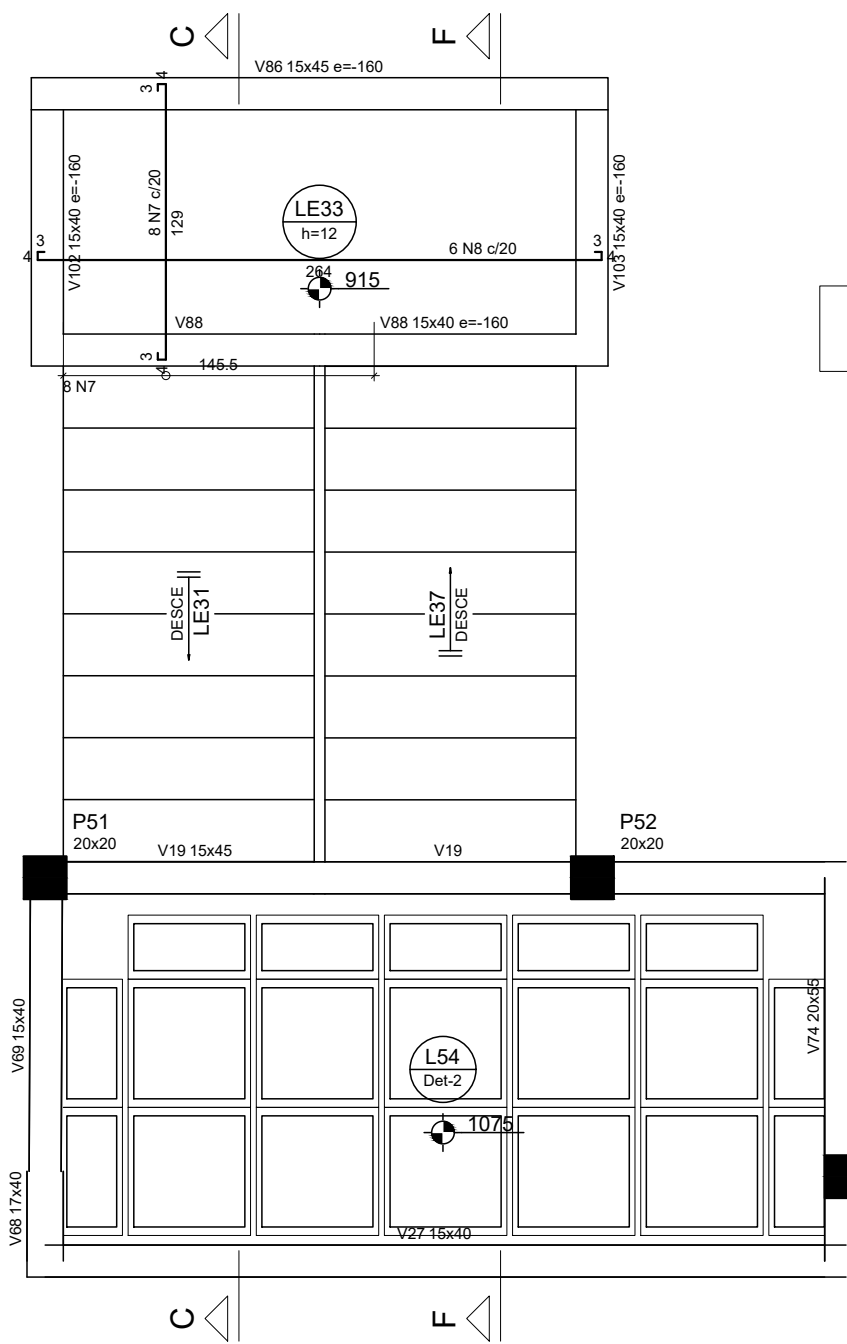
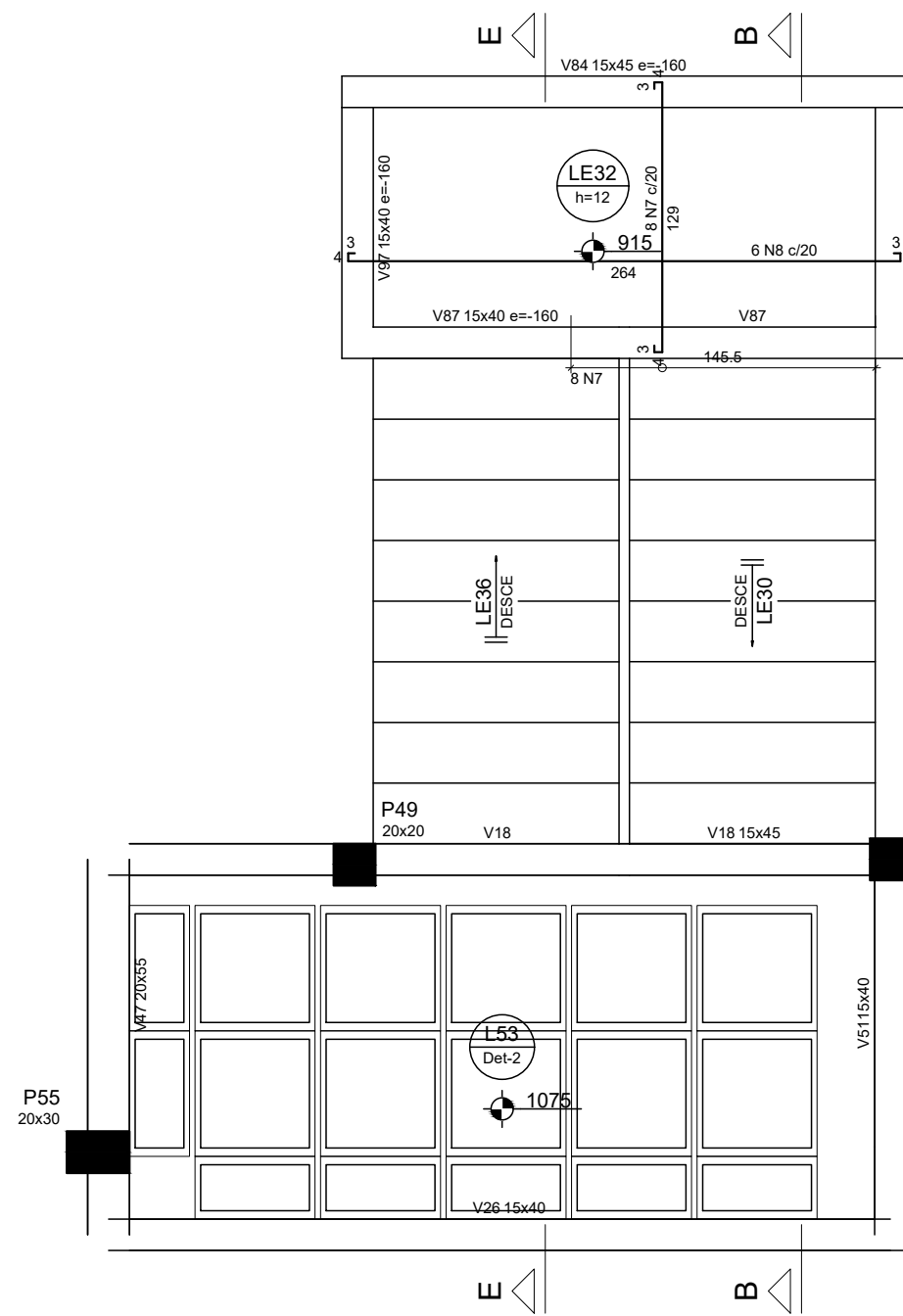


Corte E-E (LE25)

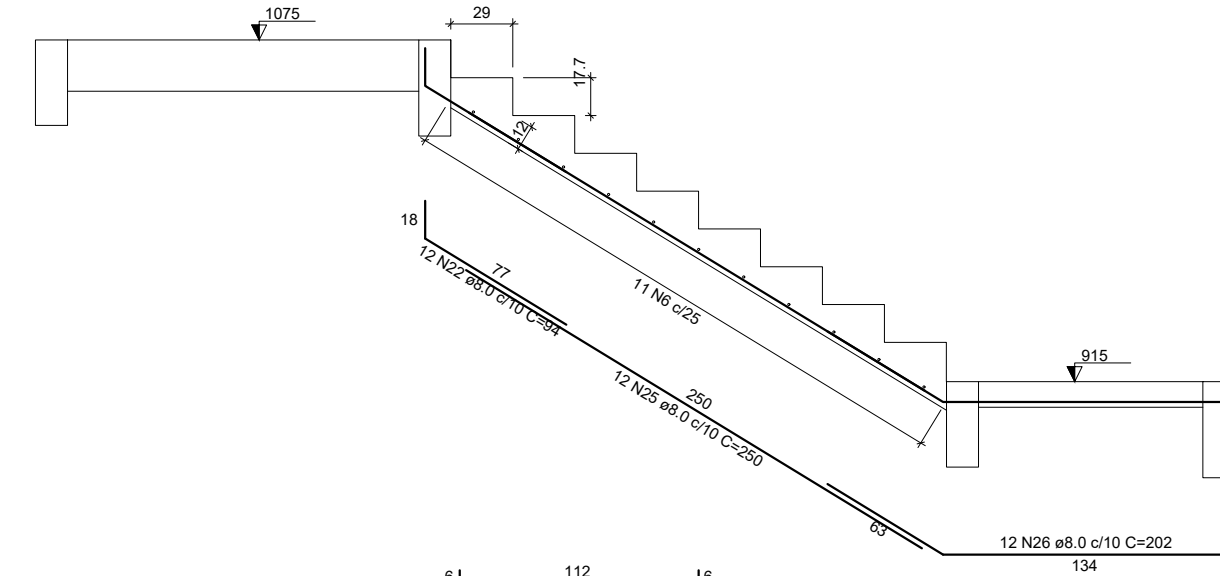


Corte G-G (LE27)

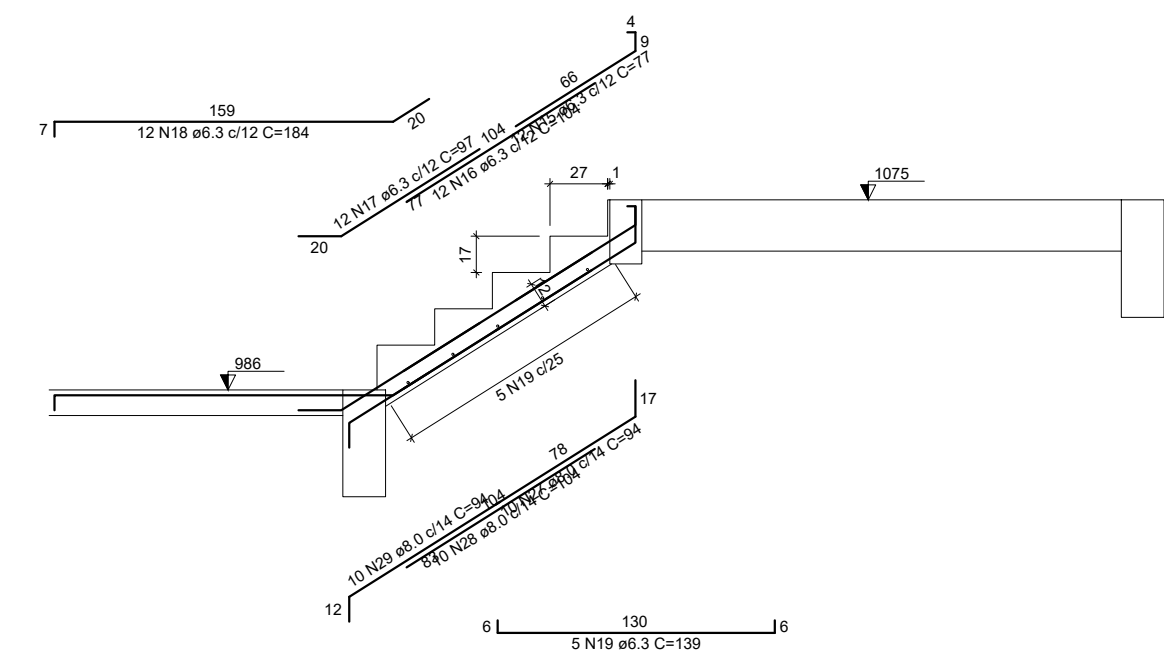
Armação positiva da escada E3



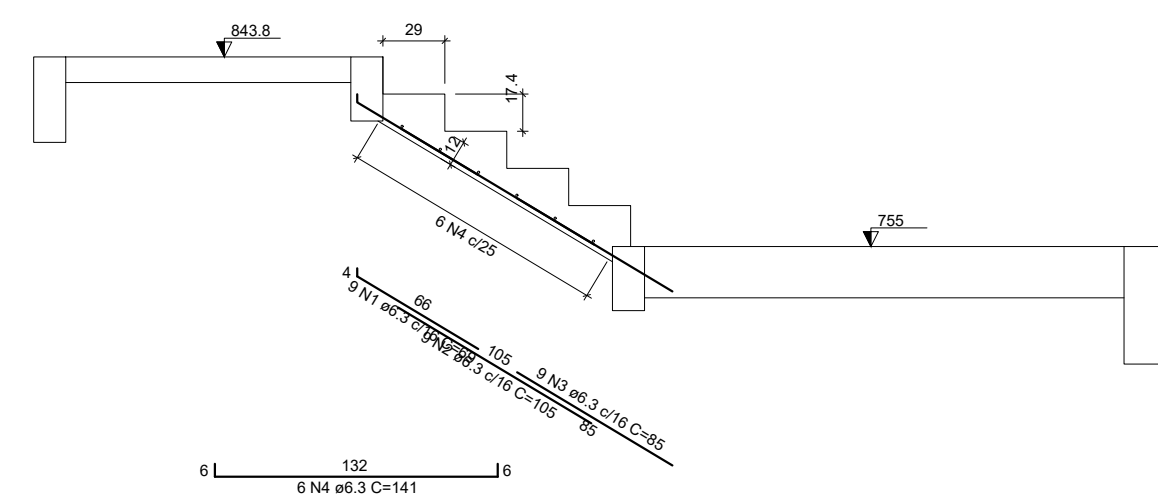
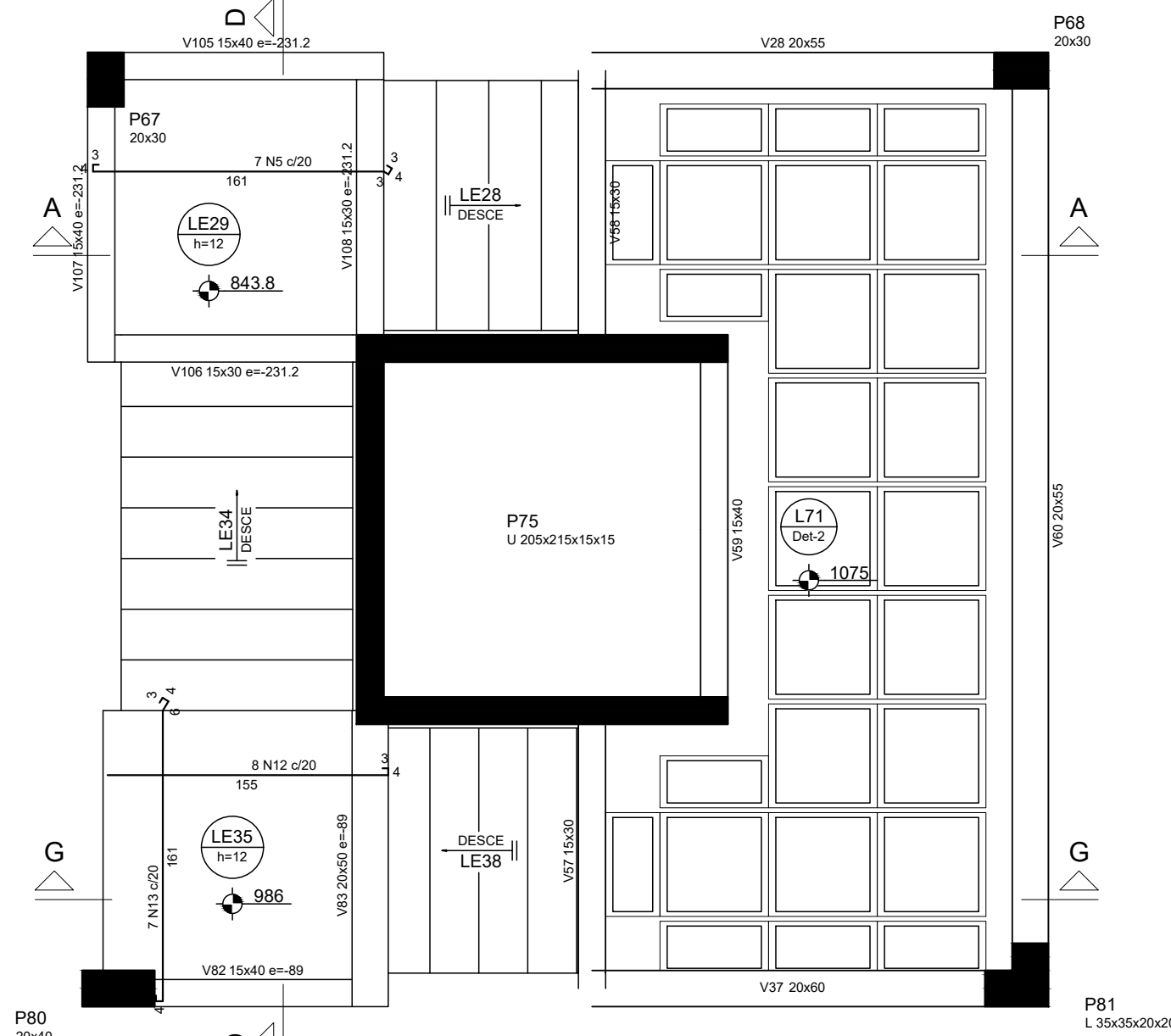
Corte E-E (LE36)
ESC 1:25



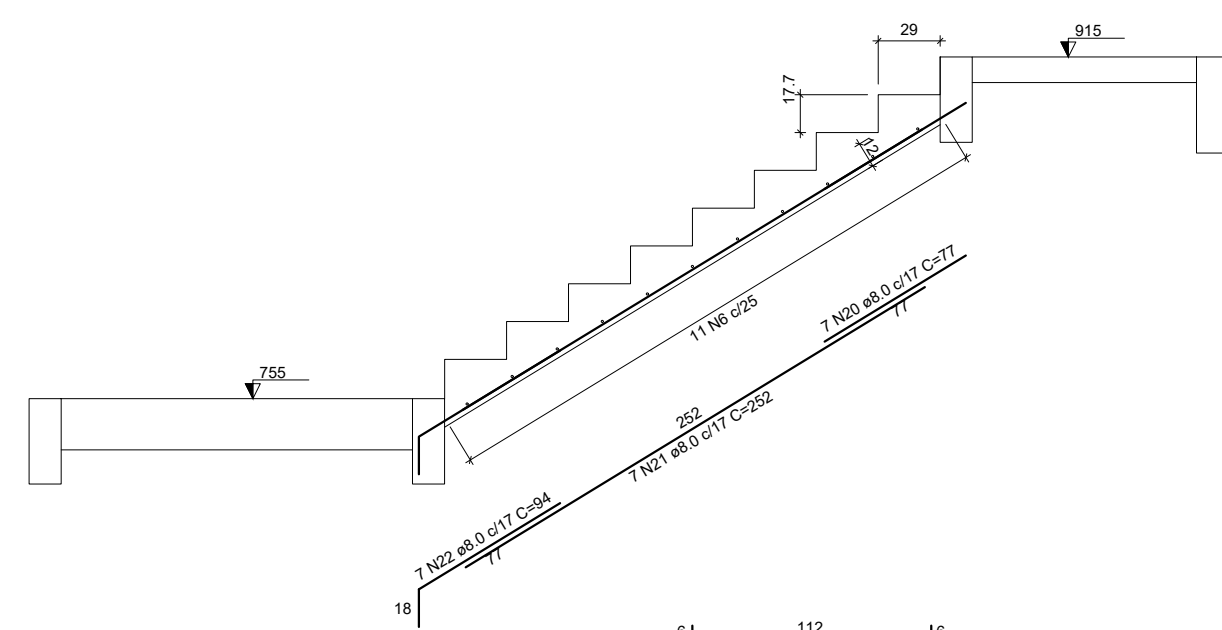
Corte F-F (LE37)
ESC 1:25



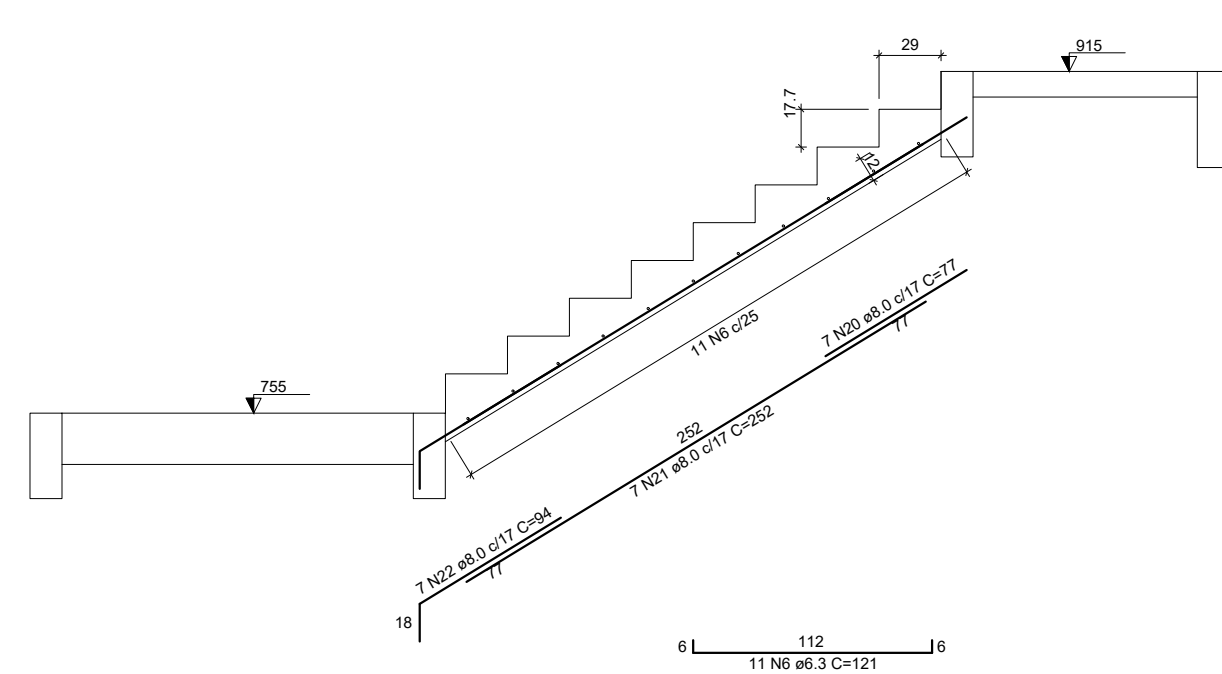
Corte G-G (LE38)
ESC 1:25



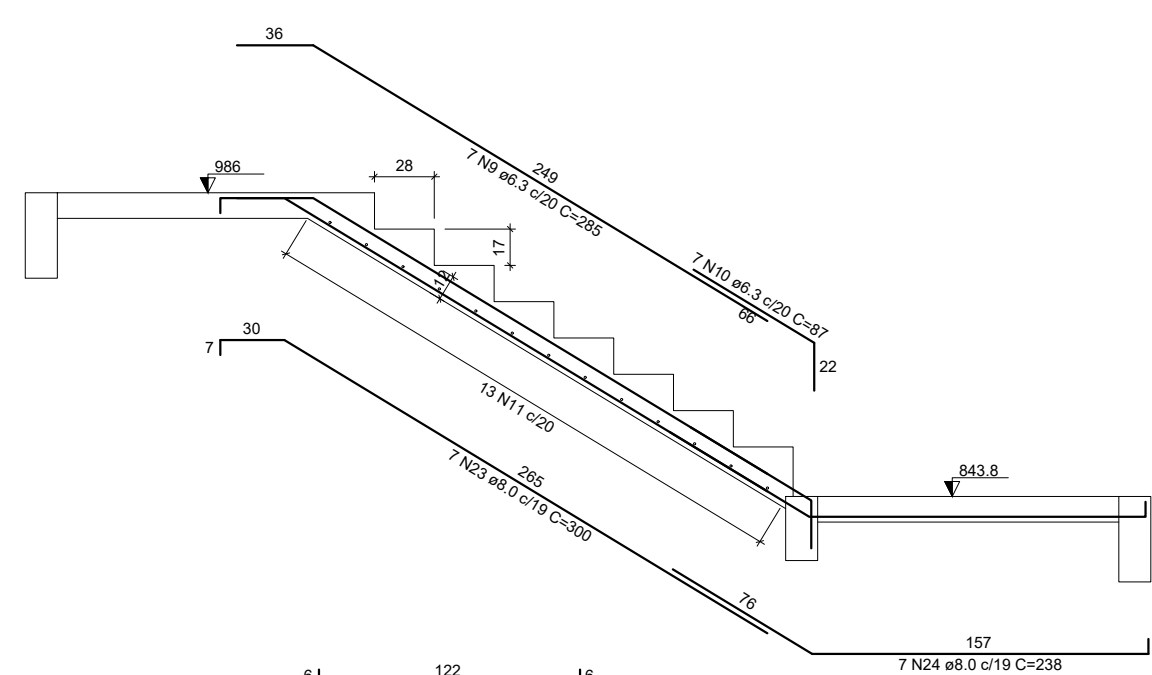
Corte A-A (LE28)
ESC 1:25



Corte B-B (LE30)
ESC 1:25



Corte C-C (LE31)
ESC 1:25



Corte D-D (LE34)
ESC 1:25

Armação positiva da escada E3

RELAÇÃO DO AÇO

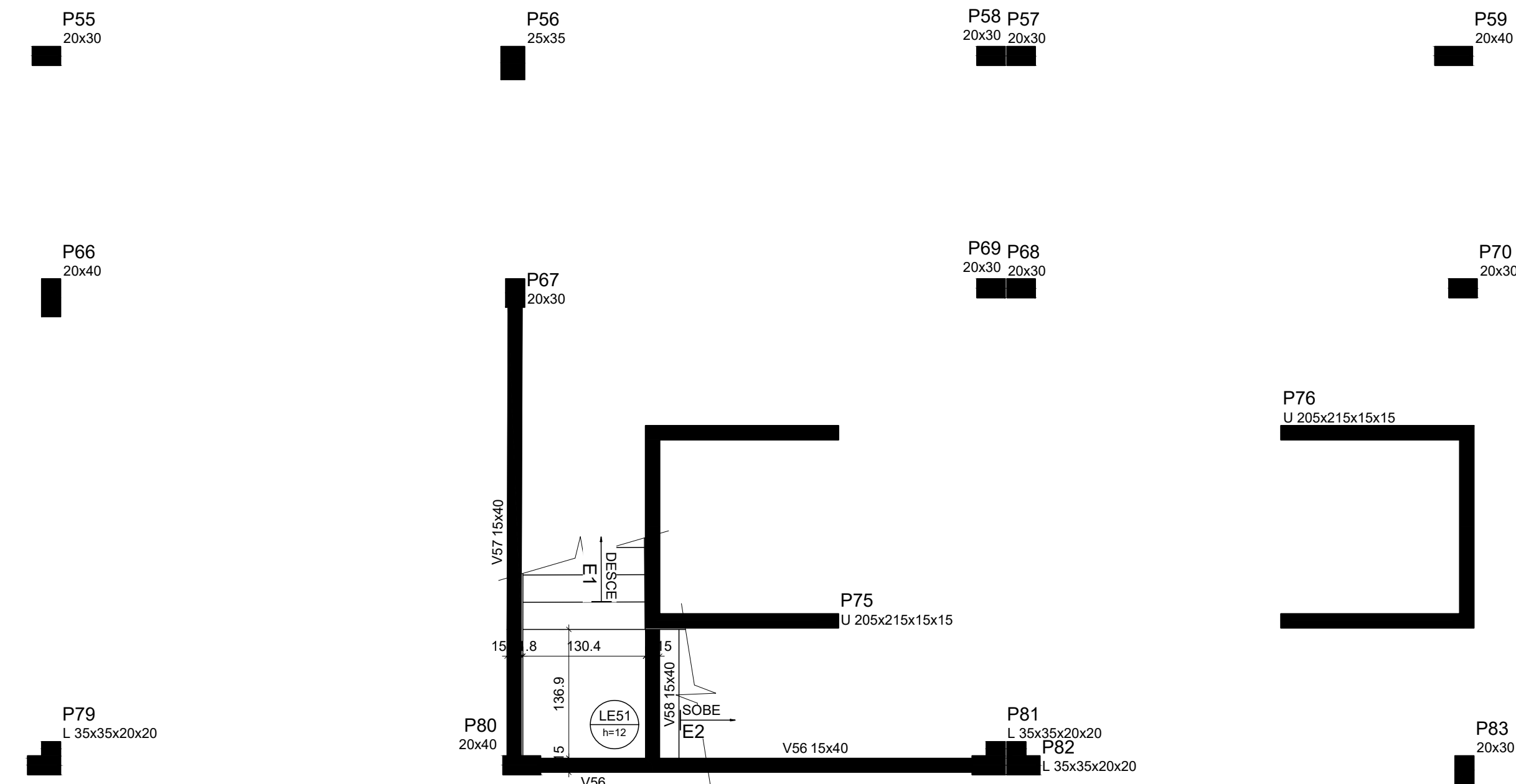
LE28	LE29	LE30
LE31	LE32	LE33
LE34	LE35	LE36
LE37	LE38	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CASO	1	6.3	9	69	621
	2	6.3	9	105	845
	3	6.3	9	85	765
	4	6.3	6	141	846
	5	6.3	7	172	1204
	6	6.3	33	121	3993
	7	6.3	16	137	2182
	8	6.3	12	272	3264
	9	6.3	7	285	1995
	10	6.3	7	87	609
	11	6.3	13	131	1703
	12	6.3	8	169	1332
	13	6.3	7	175	1225
	14	6.3	11	121	1331
	15	6.3	12	77	924
	16	6.3	12	104	1248
	17	6.3	12	97	1164
	18	6.3	12	184	2208
	19	6.3	5	139	695
	20	8.0	14	77	1078
	21	8.0	14	252	3528
	22	8.0	29	94	2744
	23	8.0	7	300	2100
	24	8.0	7	238	1666
	25	8.0	12	250	3000
	26	8.0	12	202	2424
	27	8.0	10	94	940
	28	8.0	10	104	1040
	29	8.0	10	94	940
	30	10.0	8	113	904
	31	10.0	8	250	2000
	32	10.0	8	215	1720

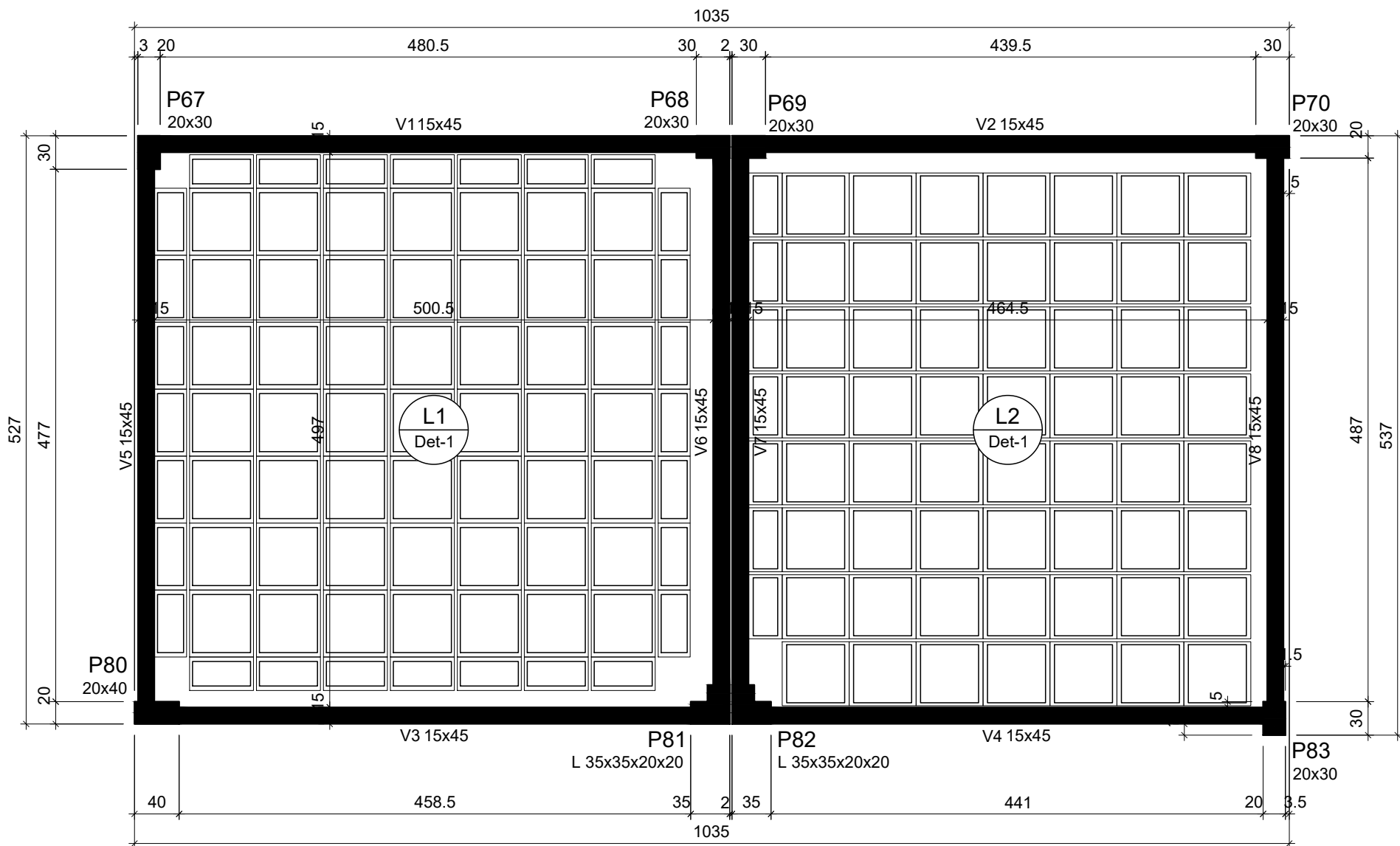
RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0%	UNIT	PESO + 0%
CASO	6.3	282	24	12 m	69
	8.0	191.6	16	12 m	75.6
	10.0	46.2	4	12 m	28.5
PESO TOTAL (kg)					
CASO	173.1				

Volume de concreto (C-30) = 4.97 m³
Área de forma = 49.16 m²



Forma intermediária do pavimento COBERTURA (Nível 1626)



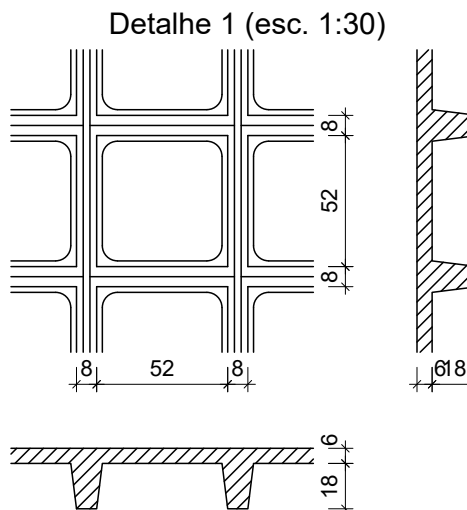
Forma do pavimento DEPÓSITO

Lajes				
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)
L1	Nervurada	24	0	2015
L2	Nervurada	24	0	2015

Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm³)	Abatimento (cm)
300	268384	5.00

Dimensão máxima do agregado = 19 mm

Blocos de enchimento				
Detalhe	Tipo	Nome	Dimensões (cm)	Quantidade
1	Cubetas	B18/60/90	18 60 60	105
		B18/30/90	18 30 60	21
		B18/60/30	18 60 30	14



Lajes				
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)
E1	Maciça	12	0	1626
LE51	Maciça	12	0	1626

Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm³)	Abatimento (cm)
300	268384	5.00

Dimensão máxima do agregado = 19 mm

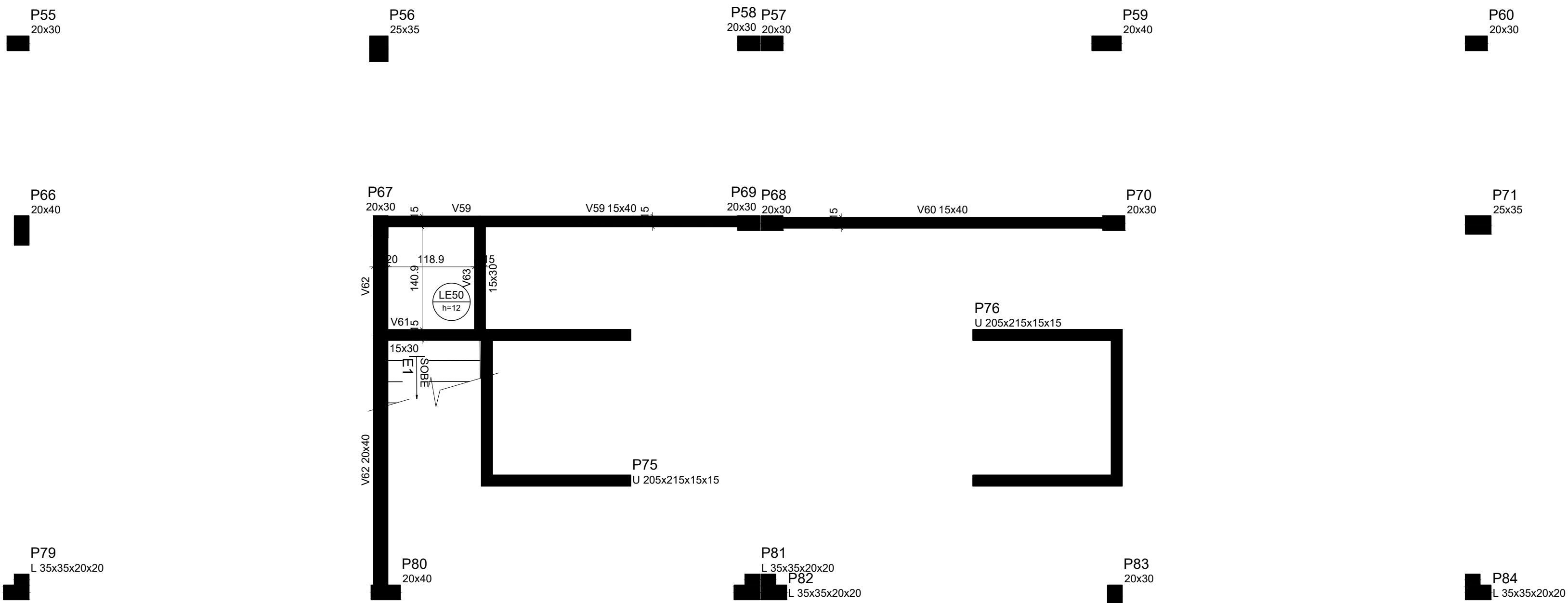
Legenda dos pilares	
■	Pilar que passa

Legenda das vigas e paredes	
■	Viga

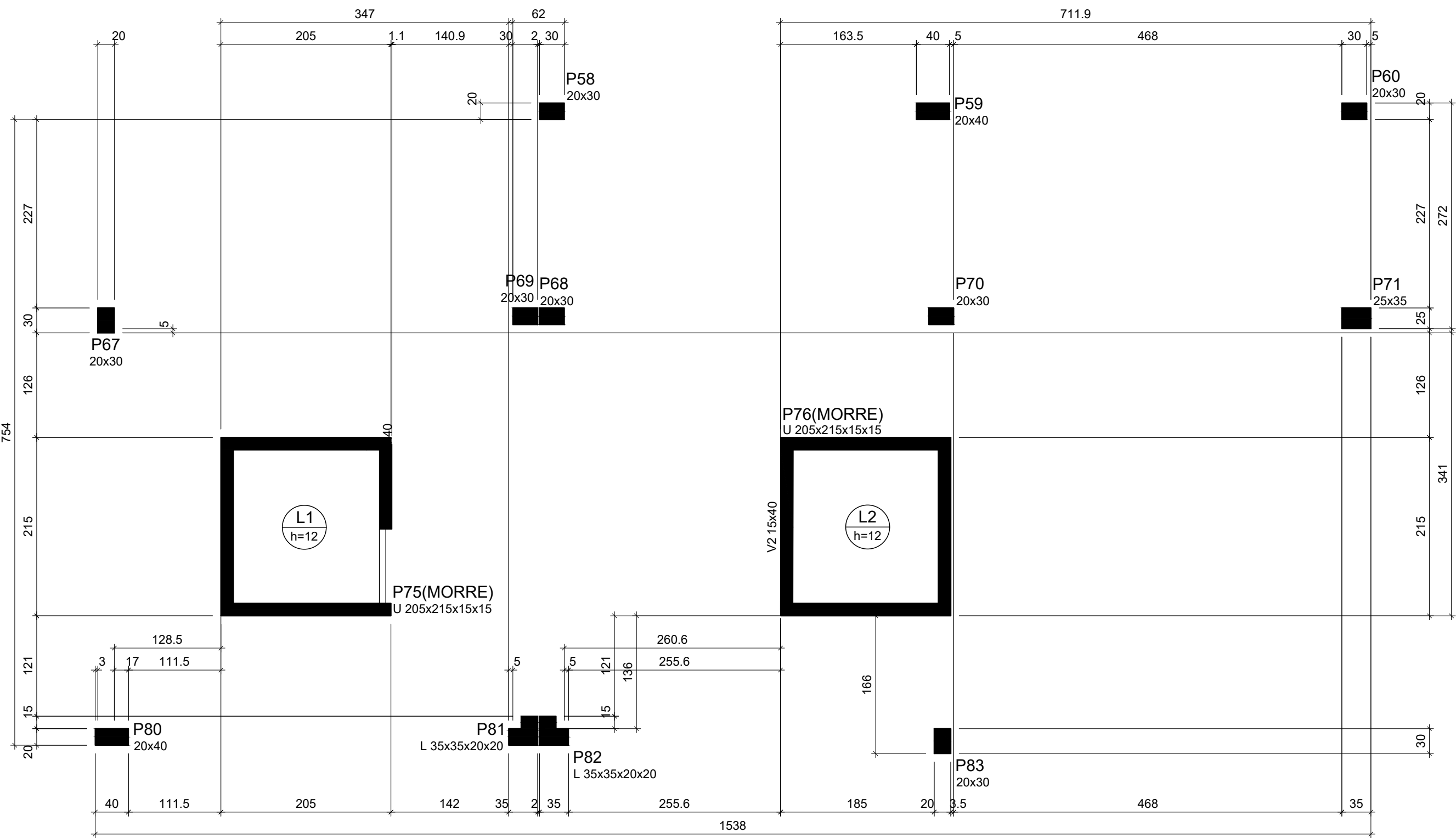
Lajes				
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)
L1	Maciça	12	0	1770
L2	Maciça	12	0	1770

Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm³)	Abatimento (cm)
300	268384	5.00

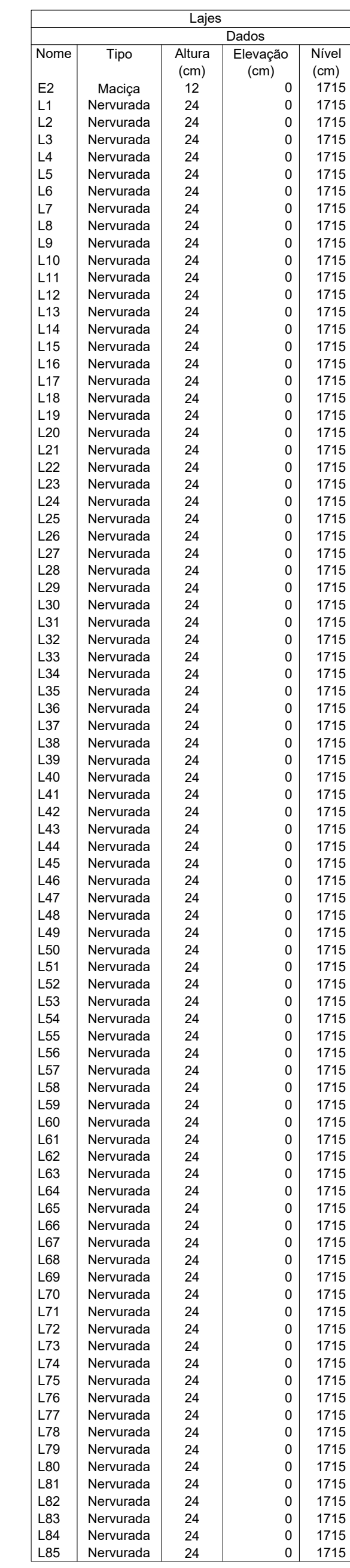
Dimensão máxima do agregado = 19 mm



Forma intermediária do pavimento COBERTURA (Nível 1483.80)



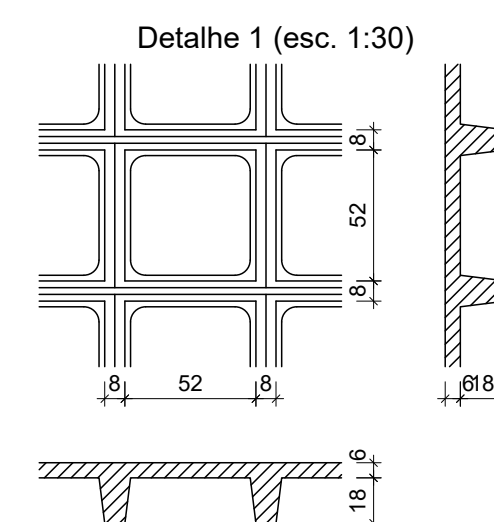
Forma do pavimento TOPO ELEVADOR



Características dos materiais		
fck (kgf/cm ²)	Ecs (kgf/cm ²)	Abatimento (cm)
300	269384	5,00

Dimensão máxima do agregado = 19 mm

Legenda dos pilares	
	Pilar que morre
	Pilar que passa



escala 1:50

Características dos materiais		
fck (kgf/cm²)	Ecs (kgf/cm²)	Abatimento (cm)
300	268384	5.00

Dimensão máxima do agregado = 19 mm

	Pilar que passa
---	-----------------

	Viga
---	------



escala 1:50

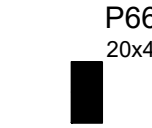


escala 1:50

Lajes				
Dados				
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)
LE8	Maciça	12	0	278
LE9	Maciça	12	0	278
LE10	Maciça	12	0	278
LE11	Maciça	12	0	278



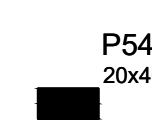
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)
LE6	Maciça	12	0	209
LE7	Maciça	12	0	209

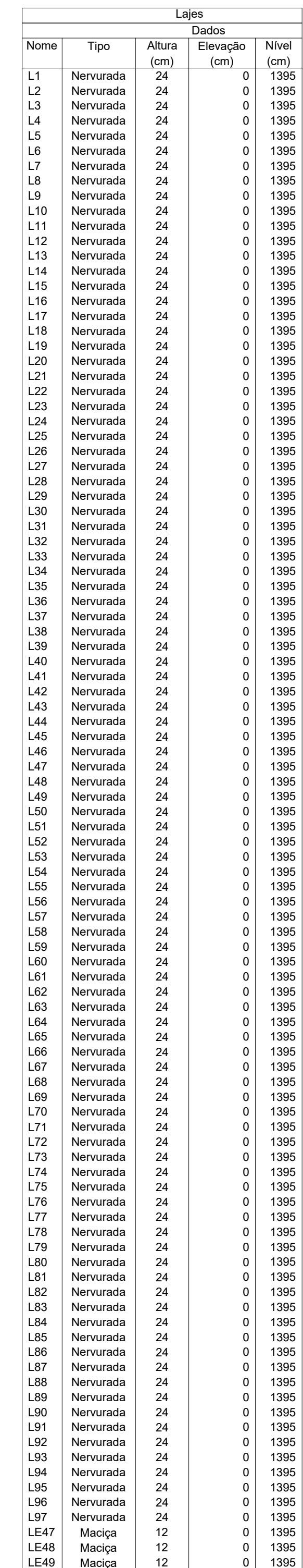


escala 1:50

escala 1:60

Nome	Tipo	Dados		
		Altura (cm)	Elevação (cm)	Nível (cm)
LE12	Maciça	12	0	348
LE13	Maciça	12	0	348





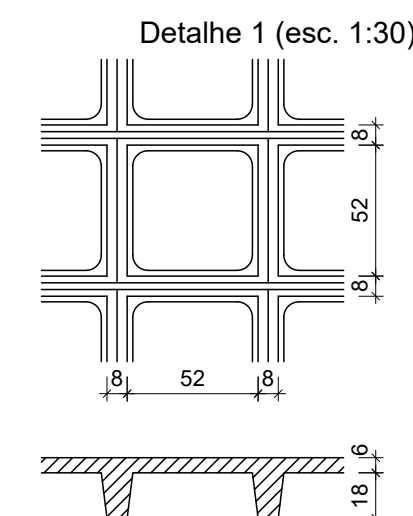
Características dos materiais		
fck (kgf/cm ²)	Ecs (kgf/cm ²)	Abatimento (cm)
300	268384	5.00

Dimensão máxima do agregado = 19 mm

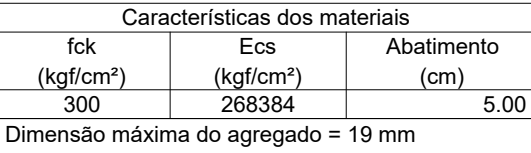
Legenda dos pilares	
	Pilar que morre
	Pilar que passa

Legenda das vigas e paredes	
	Viga

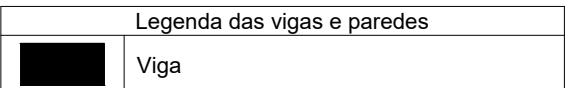
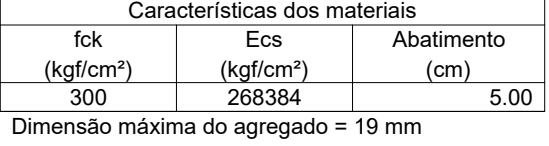
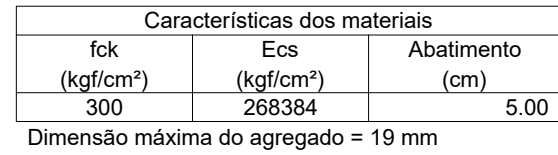
Blocos de enchimento						
Detalhe	Tipo	Nome	Dimensões(cm)			Quantidade
			hb	bx	by	
1	Cubetas	B18/60/60	18	60	60	
		B18/30/60	18	30	60	
		B18/60/30	18	60	30	

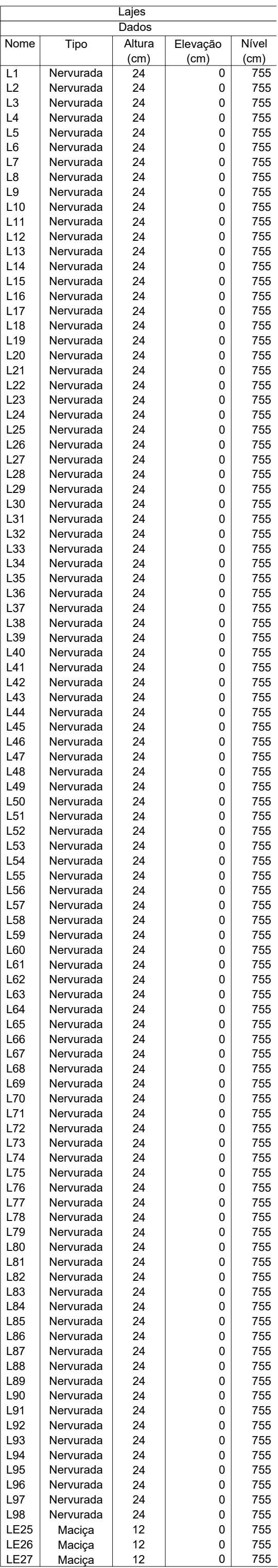


Forma do pavimento QUARTO (Nível 1395)



escala 1:50





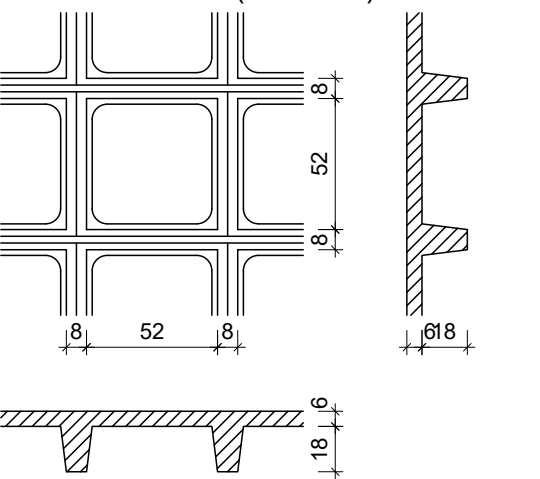
Características dos materiais		
fck (kgf/cm ²)	Ecs (kgf/cm ²)	Abatimento (cm)
300	269384	5.00

Dimensão máxima do agregado = 19 mm

Legenda dos pilares	
	Pilar que nasce

Legenda das vigas e paredes	
	Viga

Detalhe 1 (esc. 1:30)

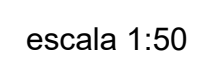


Forma do pavimento SEGUNDO (Nível 755)

escala 1:5



escala 1:50



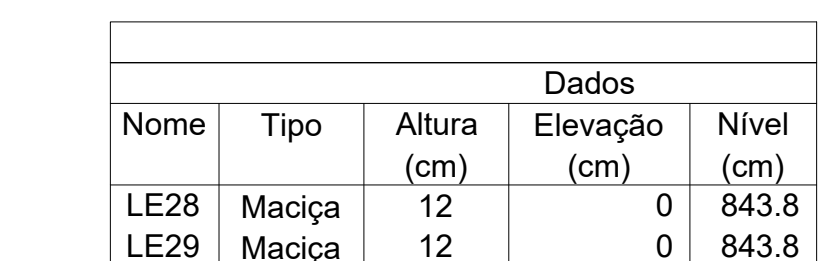
escala 1:50



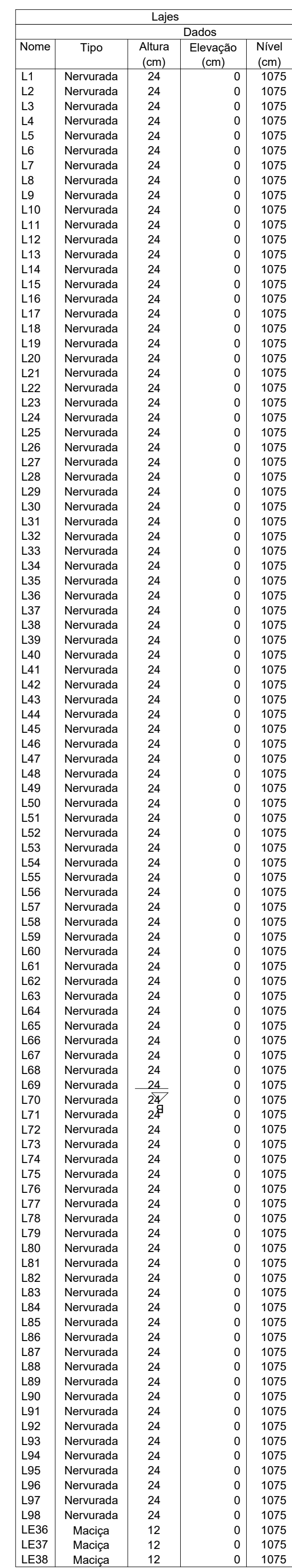
escala 1:50

Características dos materiais		
f _{ck} (kgf/cm ²)	E _{cs} (kgf/cm ²)	Abatimento (cm)
300	268384	5.00

Dimensão máxima do agregado = 19 mm



Legenda das vigas e paredes	
	Viga

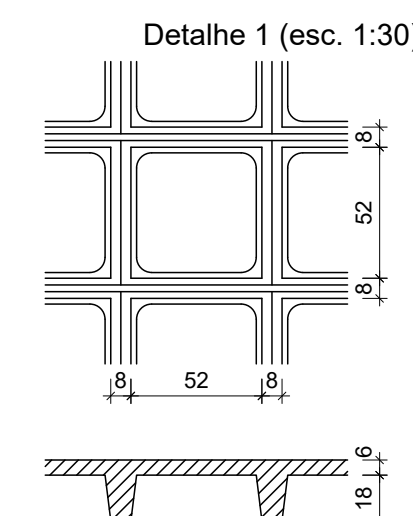


Características dos materiais		
fck (kgf/cm ²)	Ecs (kgf/cm ²)	Abatimento (cm)
300	268384	5.00

Legenda dos pilares



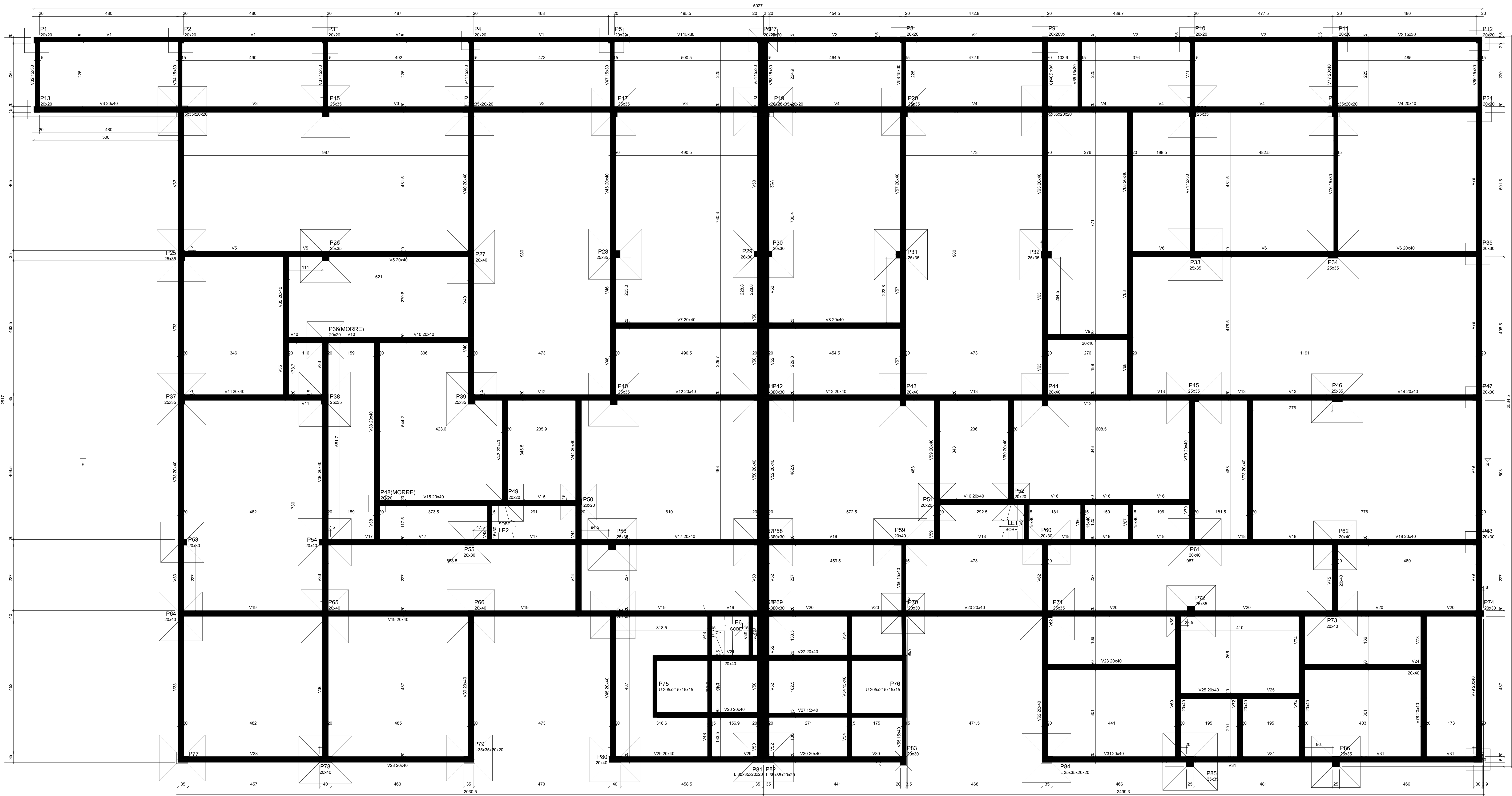
Legenda das vigas e paredes:



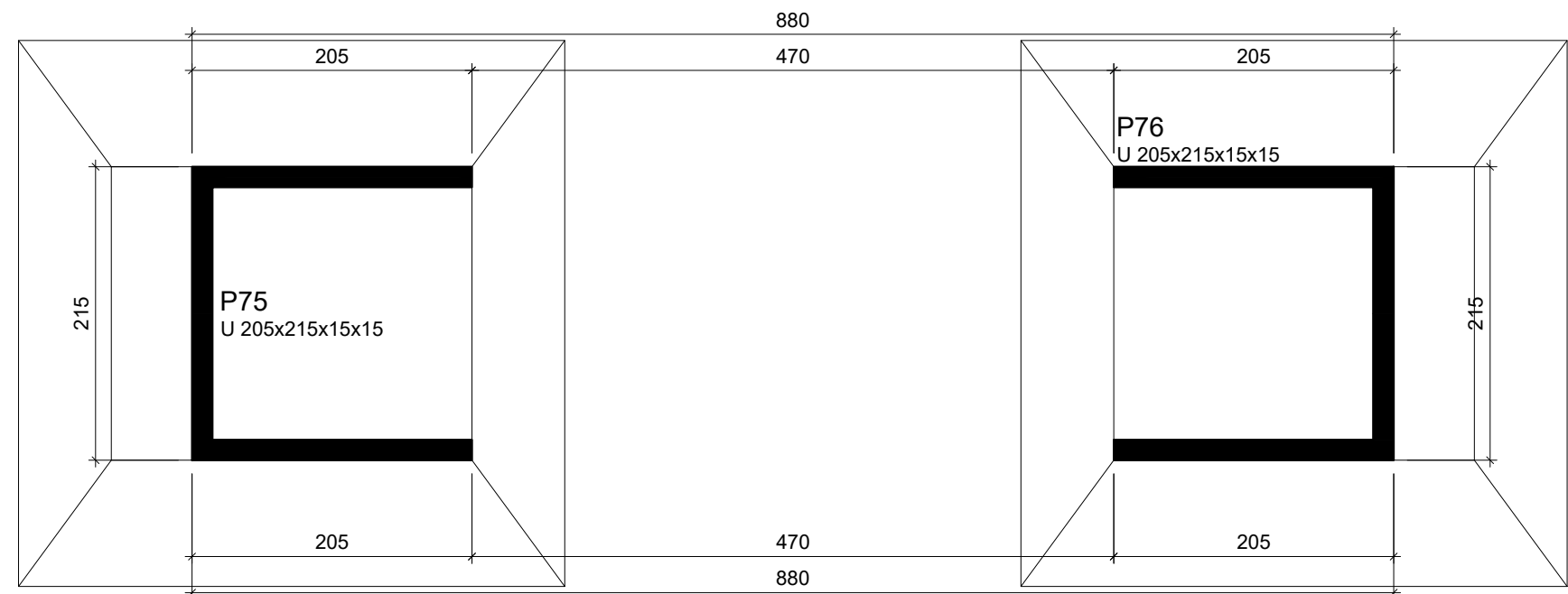
Detalhe 1 (esc. 1:30)

escala 1:50

Blocos de enchimento						
Detalhe	Tipo	Nome	Dimensões(cm)			Quantidade
			hb	bx	by	
1	Cubetas	B18/60/60	18	60	60	1303
		B18/30/60	18	30	60	872
		B18/60/30	18	60	30	332



Forma do pavimento TERREO
escala 1:50



Forma do pavimento POÇO DO ELEVADOR
escala 1:50

Características dos materiais		
Rq (kg/cm²)	Eco (kg/cm²)	Abatimento (cm)
300	268384	5.00
Dimensão máxima do agregado = 19 mm		

Legenda das vigas e paredes	
	Viga

Legenda dos pilares	
	Pilar que morre
	Pilar que passa
	Pilar com mudança de seção

ACO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	14	102	1428
	2	5.0	24	94	2256
	3	5.0	36	99	3561
	4	5.0	6	96	576
	5	5.0	28	100	2800
	6	5.0	31	500	15500
	7	5.0	22	487	10734
	8	5.0	7	493	3451
	9	5.0	12	502	6024
	10	5.0	9	492	4428
	11	5.0	7	491	3437
	12	5.0	15	494	7410
	13	5.0	43	489	21457
	14	5.0	22	487	10732
	15	5.0	7	487	3409
	16	5.0	7	503	3521
	17	5.0	11	497	5467
	18	5.0	7	498	3486
	19	5.0	7	501	3507
	20	5.0	13	503	6539
	21	5.0	23	508	11385
	22	5.0	4	485	3984
	23	5.0	5	485	2440
	24	5.0	8	500	4000
	25	5.0	4	488	1940
	26	5.0	15	508	7620
	27	5.0	29	247	7163
	28	5.0	13	255	1785
	29	5.0	14	252	3528
	30	5.0	7	242	1694
	31	5.0	7	250	1750
	32	5.0	7	237	1659
	33	5.0	7	235	1645
	34	5.0	7	488	3416
	35	5.0	7	482	3374
	36	5.0	16	406	6496
	37	5.0	24	103	2472
	38	5.0	7	502	3508
	39	5.0	8	144	1152
	40	5.0	4	200	800
	41	5.0	14	154	2156
	42	5.0	4	155	620
	43	5.0	4	137	548
	44	5.0	6	158	948
	45	5.0	6	159	954
	46	5.0	8	517	4136
	47	5.0	7	515	3605
	48	5.0	7	100	700
49	5.0	32	63	2978	
50	5.0	11	98	1088	
51	5.0	6	85	510	
52	5.0	5	80	380	
53	5.0	4	90	360	
54	5.0	4	93	372	
55	5.0	4	98	686	
56	5.0	7	93	651	
57	5.0	7	95	595	
58	5.0	4	92	368	
CA50	59	6.3	11	126	1386
	60	6.3	60	65	39065
	61	6.3	56	123	6888
	62	6.3	119	70	8330
	63	6.3	63	80	8470
	64	6.3	123	138	16974
	65	6.3	25	150	3750
	66	6.3	63	138	10350
	67	6.3	25	138	3450
	68	6.3	49	83	4067
	69	6.3	75	79	5925
	70	6.3	70	80	5600
	71	6.3	100	149	14900
	72	6.3	101	137	13837
	73	6.3	73	150	7500
	74	6.3	25	137	3425
	75	6.3	25	132	3020
	76	6.3	25	150	3750
	77	6.3	77	83	2075
78	6.3	24	77	1848	
79	6.3	25	151	3775	
80	6.3	25	138	3450	
81	6.3	26	151	3926	

RESUMO DO AÇO

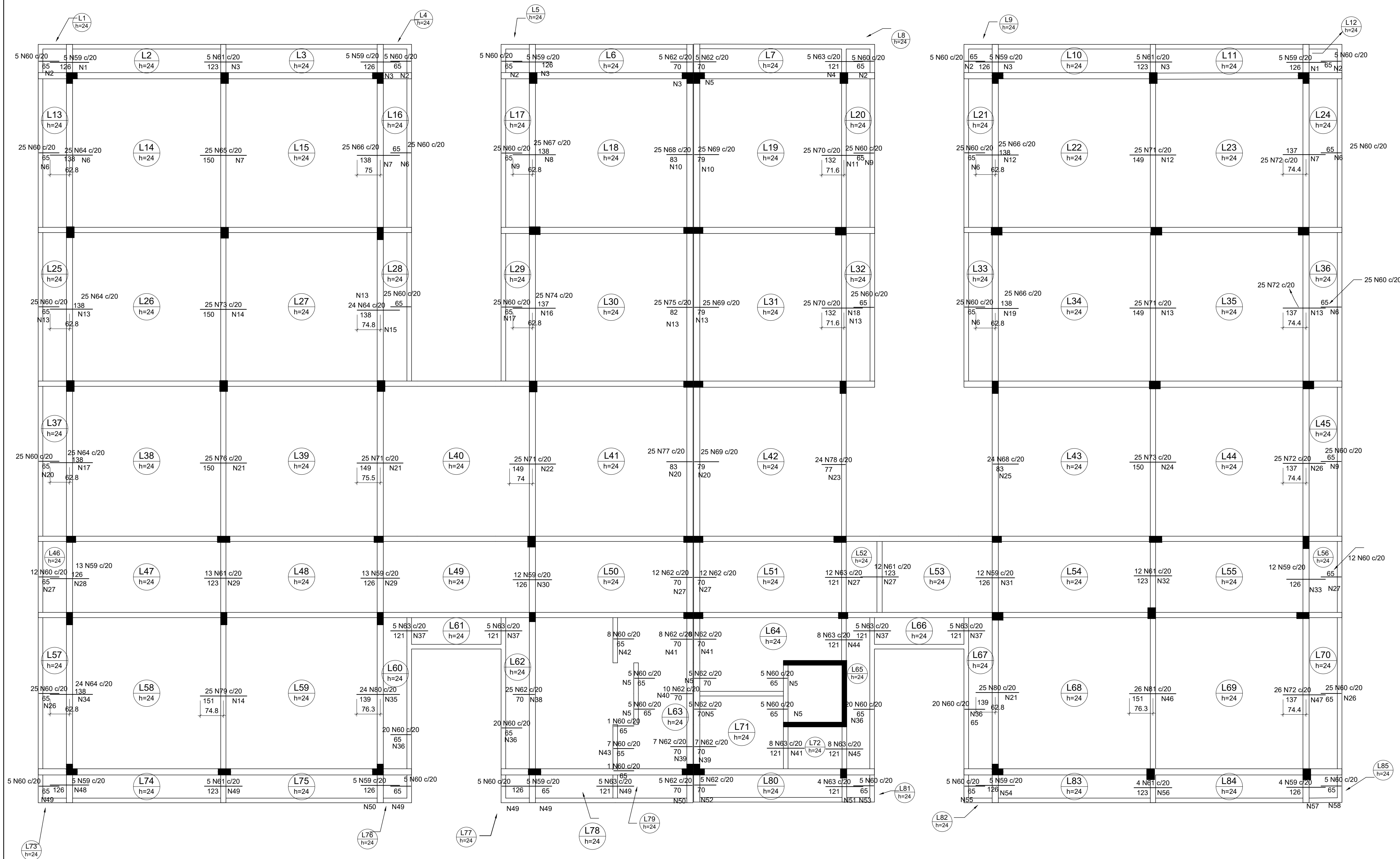
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	1917.5	160	12 m	469.2
CA60	5.0	2092.6	-	rolo (170 kg)	322.5

PESO TOT,
(kg)

CA50	4
------	---

Volume de concreto (C-30) = 0.00 m³

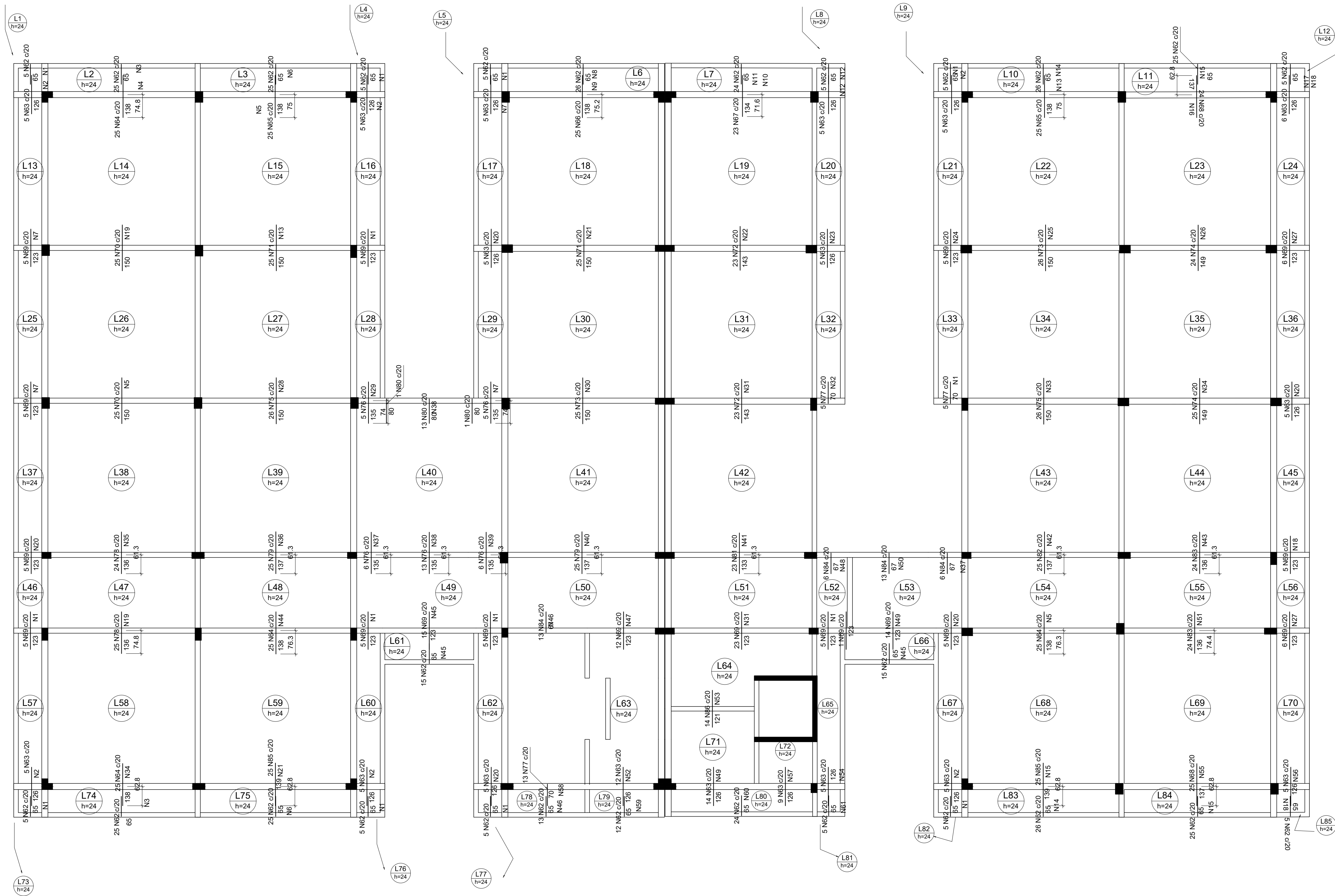
Área de forma = 0.00 m²



Armação negativa das lajes do pavimento COBERTURA (Eixo X)

escala 1:75

Armaduras de distribuição	
Armadura	Armadura de distribuição
N59	7 N1 a5.0 c20 E-102
N60	4 N2 a5.0 c20 E-94
N61	7 N3 a5.0 c20 E-99
N59	7 N3 a5.0 c20 E-99
N60	4 N2 a5.0 c20 E-94
N59	7 N3 a5.0 c20 E-99
N60	4 N2 a5.0 c20 E-94
N61	4 N3 a5.0 c20 E-99
N62	6 N4 a5.0 c20 E-96
N62	4 N5 a5.0 c20 E-100
N60	4 N2 a5.0 c20 E-94
N59	7 N3 a5.0 c20 E-99
N61	7 N3 a5.0 c20 E-99
N60	4 N2 a5.0 c20 E-94
N64	7 N6 a5.0 c20 E-500
N65	8 N7 a5.0 c20 E-497
N67	7 N7 a5.0 c20 E-497
N66	4 N8 a5.0 c20 E-500
N67	7 N8 a5.0 c20 E-493
N60	4 N9 a5.0 c20 E-502
N68	5 N10 a5.0 c20 E-498
N70	4 N10 a5.0 c20 E-491
N70	7 N11 a5.0 c20 E-492
N66	4 N11 a5.0 c20 E-502
N66	7 N12 a5.0 c20 E-494
N60	4 N6 a5.0 c20 E-500
N71	8 N12 a5.0 c20 E-494
N72	7 N7 a5.0 c20 E-497
N60	4 N8 a5.0 c20 E-500
N64	4 N13 a5.0 c20 E-499
N64	7 N13 a5.0 c20 E-499
N73	8 N14 a5.0 c20 E-492
N64	7 N15 a5.0 c20 E-487
N60	4 N13 a5.0 c20 E-499
N74	7 N16 a5.0 c20 E-503
N67	4 N17 a5.0 c20 E-497
N75	5 N13 a5.0 c20 E-499
N69	4 N13 a5.0 c20 E-499
N70	7 N18 a5.0 c20 E-498
N60	4 N13 a5.0 c20 E-499
N72	7 N19 a5.0 c20 E-501
N63	4 N6 a5.0 c20 E-500
N71	8 N13 a5.0 c20 E-499
N73	7 N13 a5.0 c20 E-499
N60	4 N6 a5.0 c20 E-500
N64	7 N17 a5.0 c20 E-497
N67	N20 a5.0 c20 E-503
N62	N21 a5.0 c20 E-495
N71	N21 a5.0 c20 E-495
N77	N22 a5.0 c20 E-498
N69	N20 a5.0 c20 E-503
N72	N23 a5.0 c20 E-485
N68	N24 a5.0 c20 E-500
N68	N25 a5.0 c20 E-488
N72	N26 a5.0 c20 E-508
N60	N49 a5.0 c20 E-502
N60	N27 a5.0 c20 E-247
N59	N28 a5.0 c20 E-255
N62	N27 a5.0 c20 E-247
N59	N29 a5.0 c20 E-252
N59	N30 a5.0 c20 E-242
N62	N27 a5.0 c20 E-247
N62	N27 a5.0 c20 E-247
N61	N27 a5.0 c20 E-247
N59	N31 a5.0 c20 E-250
N61	N32 a5.0 c20 E-237
N60	N33 a5.0 c20 E-235
N60	N27 a5.0 c20 E-247
N62	N34 a5.0 c20 E-208
N59	N26 a5.0 c20 E-509
N79	N8 N14 a5.0 c20 E-492
N80	7 N35 a5.0 c20 E-482
N60	4 N36 a5.0 c20 E-103
N63	6 N37 a5.0 c20 E-106
N62	6 N37 a5.0 c20 E-103
N62	4 N38 a5.0 c20 E-502
N60	4 N36 a5.0 c20 E-106
N62	4 N39 a5.0 c20 E-144
N62	4 N40 a5.0 c20 E-200
N62	4 N41 a5.0 c20 E-154
N62	4 N42 a5.0 c20 E-155
N60	4 N5 a5.0 c20 E-100
N60	4 N43 a5.0 c20 E-137
N62	4 N44 a5.0 c20 E-158
N62	4 N41 a5.0 c20 E-154
N60	4 N5 a5.0 c20 E-100
N60	4 N5 a5.0 c20 E-100
N63	6 N45 a5.0 c20 E-159
N63	4 N36 a5.0 c20 E-106
N63	6 N37 a5.0 c20 E-103
N63	6 N37 a5.0 c20 E-103
N60	4 N37 a5.0 c20 E-106
N80	7 N21 a5.0 c20 E-495
N81	8 N46 a5.0 c20 E-517
N72	7 N47 a5.0 c20 E-515
N60	4 N26 a5.0 c20 E-509
N63	6 N41 a5.0 c20 E-154
N62	4 N5 a5.0 c20 E-100
N62	4 N5 a5.0 c20 E-100
N59	4 N39 a5.0 c20 E-144
N60	7 N48 a5.0 c20 E-100
N61	7 N49 a5.0 c20 E-93
N60	4 N49 a5.0 c20 E-93
N60	4 N49 a5.0 c20 E-93
N59	7 N49 a5.0 c20 E-93
N63	6 N49 a5.0 c20 E-93
N62	4 N50 a5.0 c20 E-98
N62	4 N51 a5.0 c20 E-95
N62	4 N52 a5.0 c20 E-95
N60	4 N53 a5.0 c20 E-90
N60	7 N54 a5.0 c20 E-98
N60	4 N55 a5.0 c20 E-93
N61	7 N56 a5.0 c20 E-83
N61	7 N57 a5.0 c20 E-83
N60	4 N58 a5.0 c20 E-92



Armação negativa das lajes do pavimento COBERTURA (Eixo Y)

escala 1:75

RELAÇÃO DO AÇO

Negativos Y

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	71	94	6674
	2	5.0	42	102	4284
	3	5.0	8	499	3992
	4	5.0	7	495	3465
	5	5.0	22	497	10934
	6	5.0	8	509	4072
	7	5.0	28	97	2716
	8	5.0	4	511	2044
	9	5.0	7	501	3507
	10	5.0	4	477	1908
	11	5.0	7	469	3283
	12	5.0	11	92	1012
	13	5.0	15	505	7575
	14	5.0	8	511	4088
	15	5.0	4	496	7440
	16	5.0	7	488	3416
	17	5.0	7	117	819
	18	5.0	15	109	1635
	19	5.0	15	500	7500
	20	5.0	35	99	3465
	21	5.0	15	496	7440
	22	5.0	8	460	3680
	23	5.0	7	100	700
	24	5.0	7	96	672
	25	5.0	8	513	4104
	26	5.0	8	473	3784
	27	5.0	14	114	1596
	28	5.0	8	510	4080
	29	5.0	7	92	544
	30	5.0	8	503	4024
	31	5.0	15	470	7050
	32	5.0	4	95	380
	33	5.0	8	515	4120
	34	5.0	15	493	7395
	35	5.0	7	490	3430
	36	5.0	7	498	3486
	37	5.0	11	125	1375
	38	5.0	11	254	2794
	39	5.0	7	117	819
	40	5.0	7	508	3556
	41	5.0	7	455	3185
	42	5.0	7	510	3570
	43	5.0	7	483	3381
	44	5.0	7	507	3549
	45	5.0	15	305	4575
	46	5.0	8	368	2944
	47	5.0	7	237	1659
	48	5.0	4	123	492
	49	5.0	4	381	384
	50	5.0	4	255	1020
	51	5.0	7	485	3395
	52	5.0	7	235	1645
	53	5.0	6	289	1734
	54	5.0	7	93	651
	55	5.0	7	506	3542
	56	5.0	7	107	749
	57	5.0	7	188	1316
	58	5.0	4	260	1040
	59	5.0	4	242	968
	60	5.0	4	473	1816
	61	5.0	4	90	360
	62	6.3	391	65	25415
CA50	63	6.3	111	126	13986
	64	6.3	100	138	13800
	65	6.3	50	138	6900
	66	6.3	25	138	3450
	67	6.3	23	134	3082
	68	6.3	49	137	6713
	69	6.3	132	123	16236
	70	6.3	50	150	7500
	71	6.3	50	150	7500
	72	6.3	46	143	6578
	73	6.3	51	150	7650
	74	6.3	49	149	7301
	75	6.3	52	150	7800
	76	6.3	35	135	4725
	77	6.3	23	70	1610
	78	6.3	49	136	6664
	79	6.3	50	137	6850
	80	6.3	15	80	1200
	81	6.3	23	133	3059
	82	6.3	25	137	3425
	83	6.3	48	136	6528
	84	6.3	38	67	2546
	85	6.3	50	139	6950
	86	6.3	14	121	1694

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	1791.6	150	12 m	438.4
CA60	5.0	1937.7	-	rolo (170 kg)	298.7

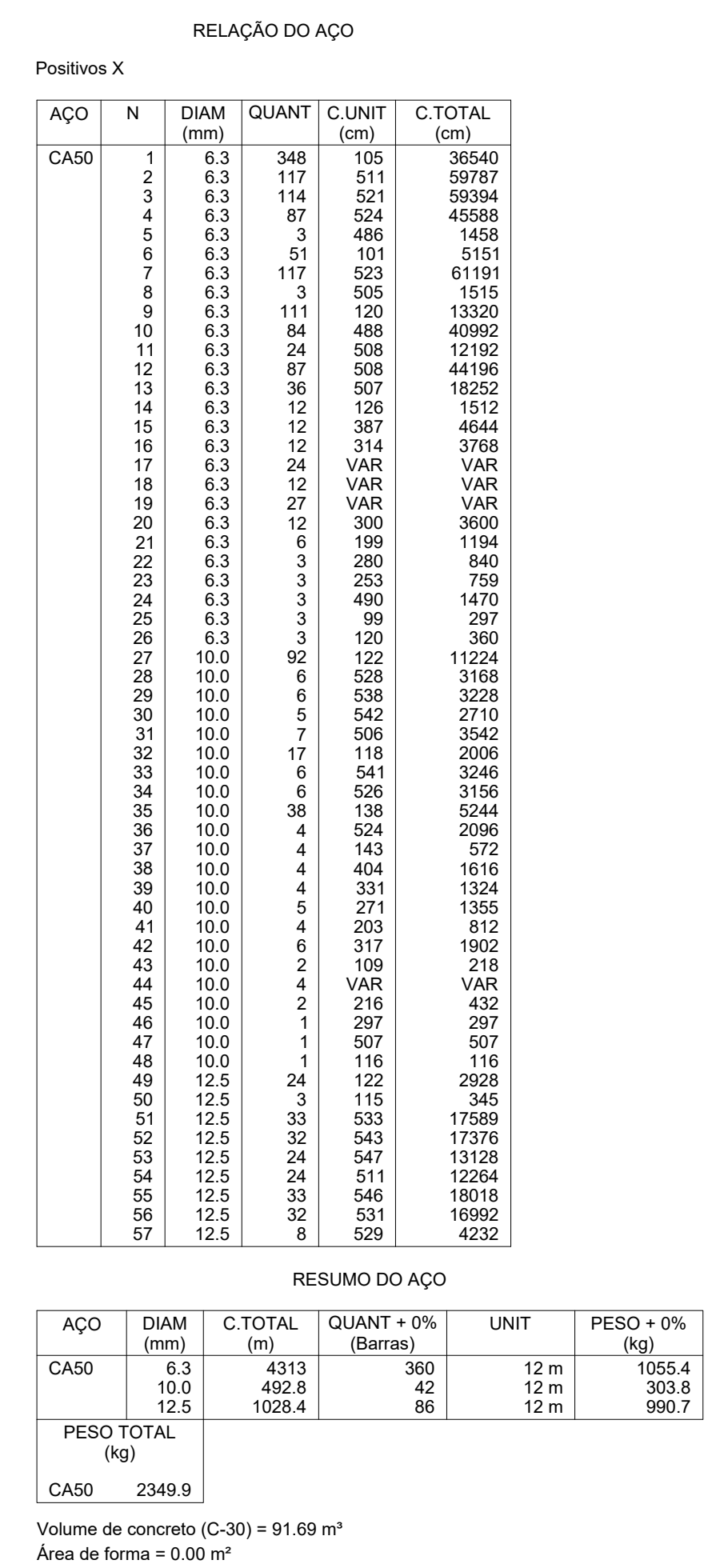
PESO TOTAL (kg)

CA50 438.4

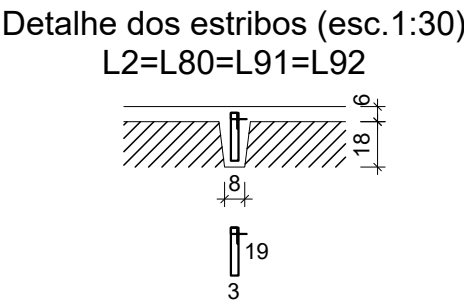
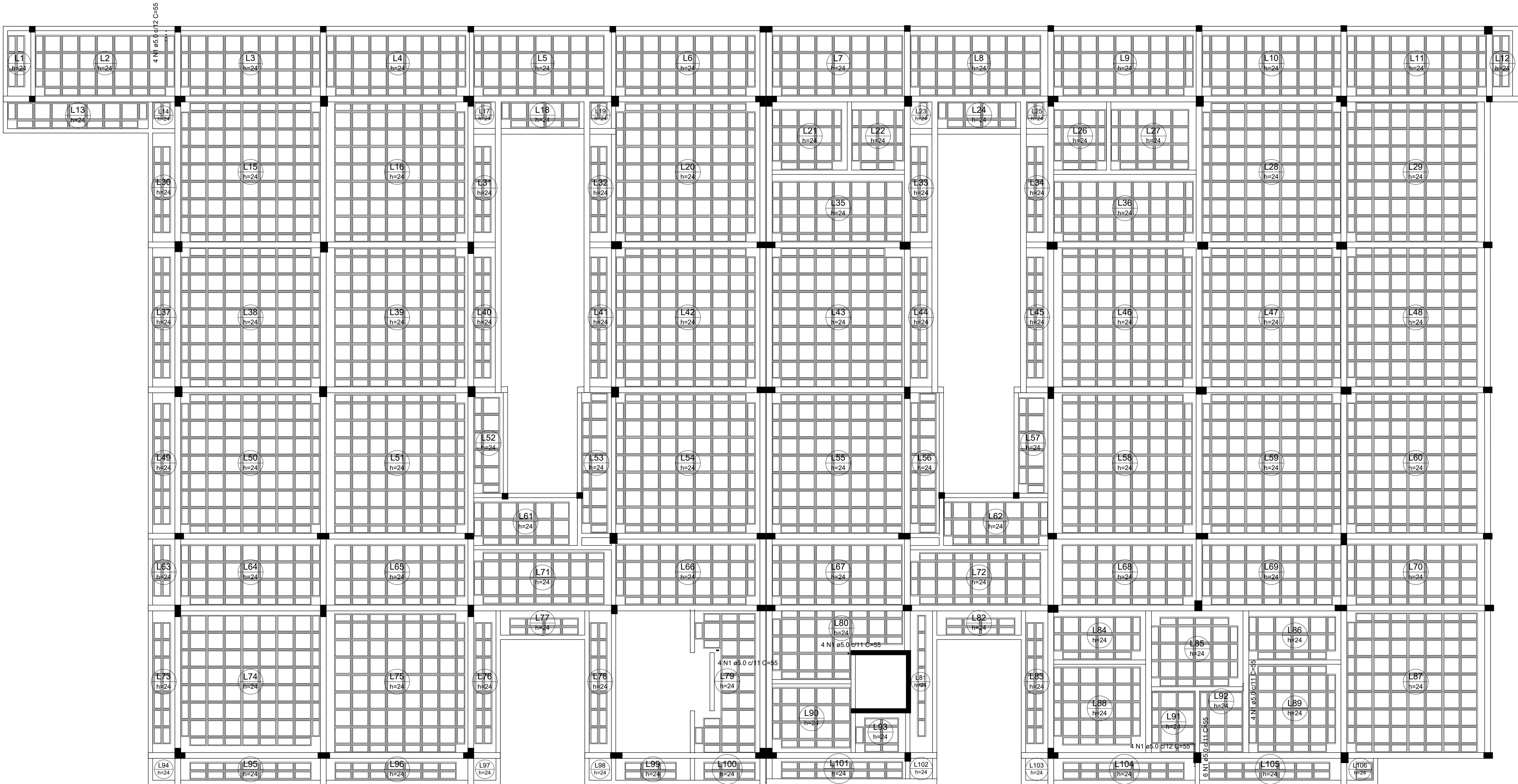
CA60 298.7

Volume de concreto (C-30) = 0.00 m³

Área de forma = 0.00 m²



escala 1:75



Detalhamento de punção e cisalhamento das lajes do pavimento PRIMEIRO (Nível 435)

escala 1:75

Punção

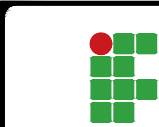
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	25	55	1375

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA60	5.0	13.75	-	rolo (170 kg)	4.3
PESO TOTAL (kg)					
CA60	4.3				

Volume de concreto (C-30) = 0.00 m³

Área de forma = 0.00 m²



INSTITUTO FEDERAL DE
EDUCAÇÃO, CIÊNCIA E TECNOLOGIA
SERTÃO PERNAMBUCANO
DIRETORIA DE ENGENHARIA
E INFRAESTRUTURA
Rua Aristarco Lopes, 240, Centro
Petrolina/PE | CEP: 56.302-100

AVISO DA OBRA

ESTRUTURAL REITORIA

ENDEREÇO DA OBRA:
AVENIDA CENTENÁRIO - CENTRO
PETROLINA-PE (ATRAS DA BIBLIOTECA MUNICIPAL)

PROJETO DE PAVIMENTO

ESCALA: 1/75

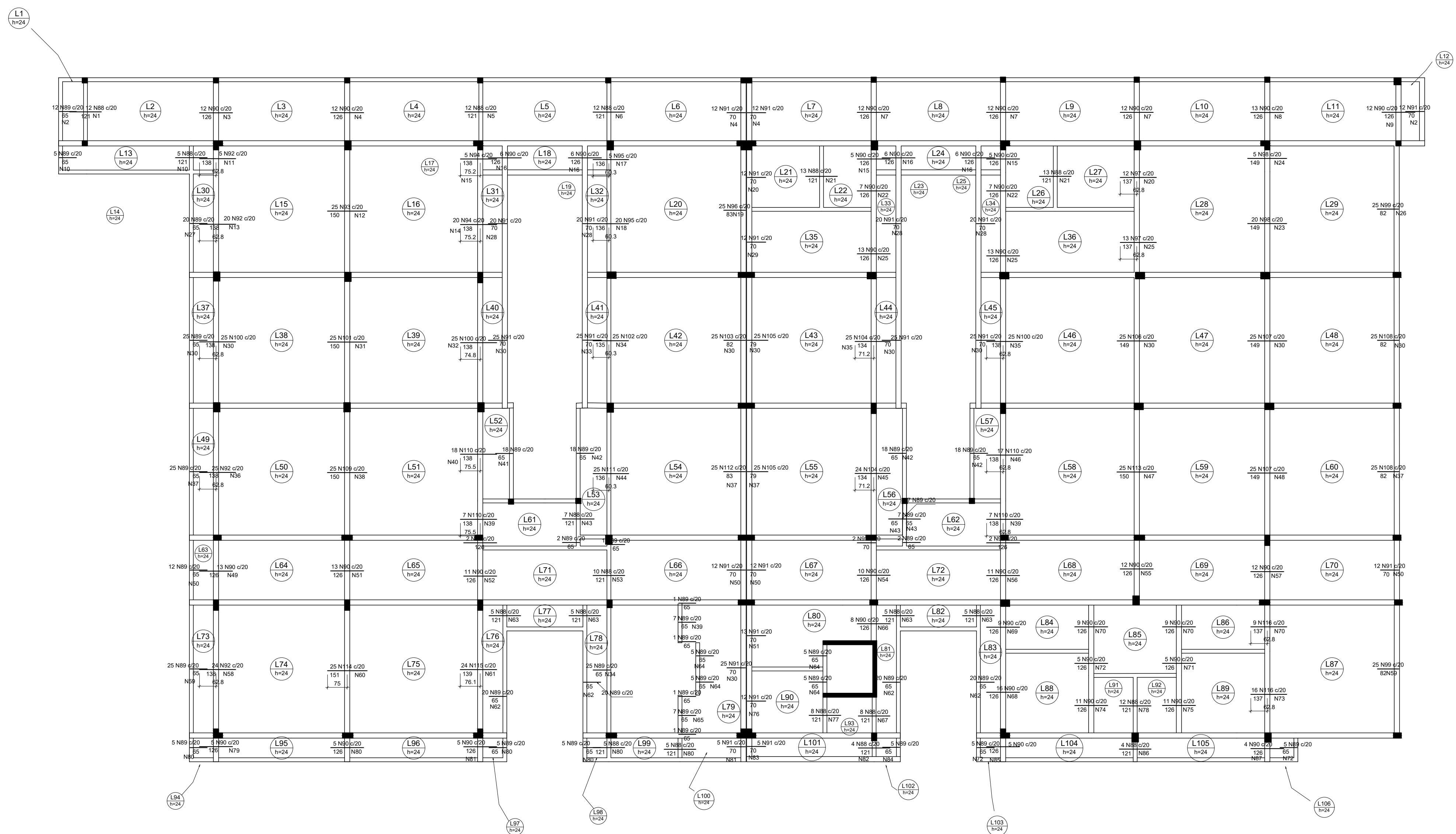
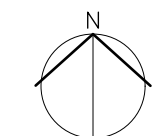
DATA: 26/07/2024

ASSINATURA CARIMBO - RESPONSÁVEL TÉCNICO

ASSINATURA CARIMBO - RESPONSÁVEL TÉCNICO

WILSON NERY DA CUNHA
CREA/PA 746-BA

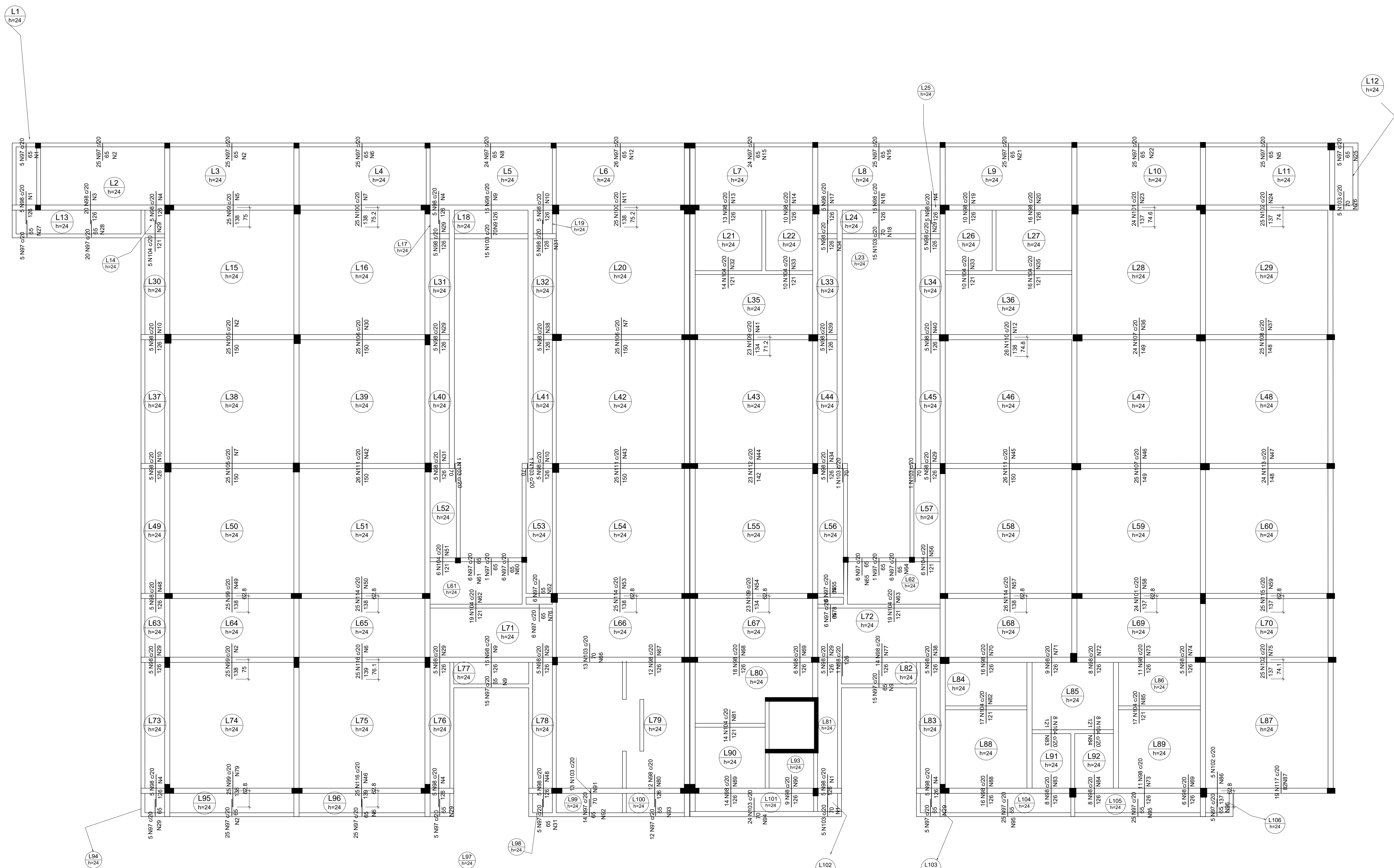
01/04



Armação negativa das lajes do pavimento PRIMEIRO (Eixo X)

escala 1:75

Armaduras de distribuição	
Armadura	Armadura de distribuição
N88	6 N1 a5.0 c20 C=340
N89	4 N2 a5.0 c20 C=343
N90	7 N3 a5.0 c20 C=348
N91	7 N4 a5.0 c20 C=347
N92	6 N5 a5.0 c20 C=338
N93	6 N6 a5.0 c20 C=342
N94	4 N4 a5.0 c20 C=247
N95	4 N4 a5.0 c20 C=247
N96	7 N7 a5.0 c20 C=249
N97	7 N7 a5.0 c20 C=249
N98	7 N7 a5.0 c20 C=249
N99	7 N8 a5.0 c20 C=250
N100	7 N8 a5.0 c20 C=237
N101	4 N2 a5.0 c20 C=243
N102	6 N10 a5.0 c20 C=109
N103	4 N10 a5.0 c20 C=109
N104	7 N11 a5.0 c20 C=102
N105	6 N12 a5.0 c20 C=500
N106	7 N13 a5.0 c20 C=388
N107	7 N14 a5.0 c20 C=397
N108	7 N15 a5.0 c20 C=103
N109	7 N16 a5.0 c20 C=111
N110	7 N16 a5.0 c20 C=111
N111	7 N17 a5.0 c20 C=88
N112	7 N18 a5.0 c20 C=391
N113	6 N19 a5.0 c20 C=483
N114	4 N20 a5.0 c20 C=243
N115	4 N21 a5.0 c20 C=252
N116	7 N22 a5.0 c20 C=141
N117	7 N23 a5.0 c20 C=103
N118	7 N24 a5.0 c20 C=111
N119	7 N25 a5.0 c20 C=103
N120	7 N26 a5.0 c20 C=141
N121	6 N27 a5.0 c20 C=252
N122	7 N28 a5.0 c20 C=243
N123	8 N29 a5.0 c20 C=396
N124	6 N30 a5.0 c20 C=101
N125	7 N25 a5.0 c20 C=252
N126	4 N26 a5.0 c20 C=502
N127	4 N27 a5.0 c20 C=382
N128	4 N28 a5.0 c20 C=381
N129	4 N29 a5.0 c20 C=381
N130	7 N25 a5.0 c20 C=252
N131	4 N28 a5.0 c20 C=381
N132	4 N29 a5.0 c20 C=381
N133	7 N30 a5.0 c20 C=499
N134	4 N30 a5.0 c20 C=499
N135	6 N31 a5.0 c20 C=495
N136	7 N32 a5.0 c20 C=490
N137	7 N33 a5.0 c20 C=499
N138	4 N33 a5.0 c20 C=498
N139	7 N34 a5.0 c20 C=499
N140	5 N35 a5.0 c20 C=499
N141	7 N35 a5.0 c20 C=503
N142	7 N35 a5.0 c20 C=499
N143	4 N30 a5.0 c20 C=499
N144	4 N30 a5.0 c20 C=499
N145	7 N35 a5.0 c20 C=503
N146	8 N36 a5.0 c20 C=499
N147	8 N36 a5.0 c20 C=499
N148	4 N37 a5.0 c20 C=503
N149	8 N38 a5.0 c20 C=498
N150	7 N39 a5.0 c20 C=140
N151	7 N40 a5.0 c20 C=356
N152	7 N41 a5.0 c20 C=386
N153	4 N42 a5.0 c20 C=383
N154	6 N43 a5.0 c20 C=138
N155	7 N44 a5.0 c20 C=492
N156	5 N37 a5.0 c20 C=503
N157	7 N45 a5.0 c20 C=350
N158	4 N46 a5.0 c20 C=383
N159	7 N46 a5.0 c20 C=350
N160	4 N47 a5.0 c20 C=383
N161	8 N47 a5.0 c20 C=500
N162	8 N48 a5.0 c20 C=508
N163	4 N37 a5.0 c20 C=503
N164	4 N47 a5.0 c20 C=383
N165	7 N49 a5.0 c20 C=225
N166	7 N50 a5.0 c20 C=247
N167	7 N51 a5.0 c20 C=254
N168	7 N52 a5.0 c20 C=214
N169	4 N53 a5.0 c20 C=247
N170	4 N54 a5.0 c20 C=208
N171	4 N55 a5.0 c20 C=239
N172	7 N56 a5.0 c20 C=210
N173	7 N57 a5.0 c20 C=235
N174	4 N58 a5.0 c20 C=247
N175	7 N58 a5.0 c20 C=488
N176	4 N59 a5.0 c20 C=507
N177	6 N60 a5.0 c20 C=494
N178	7 N61 a5.0 c20 C=485
N179	4 N62 a5.0 c20 C=406
N180	6 N63 a5.0 c20 C=101
N181	6 N64 a5.0 c20 C=101
N182	4 N65 a5.0 c20 C=499
N183	4 N66 a5.0 c20 C=406
N184	4 N67 a5.0 c20 C=140
N185	4 N68 a5.0 c20 C=138
N186	4 N69 a5.0 c20 C=138
N187	4 N70 a5.0 c20 C=138
N188	4 N71 a5.0 c20 C=138
N189	4 N72 a5.0 c20 C=138
N190	4 N73 a5.0 c20 C=138
N191	4 N74 a5.0 c20 C=138
N192	4 N75 a5.0 c20 C=138
N193	4 N76 a5.0 c20 C=138
N194	4 N77 a5.0 c20 C=138
N195	4 N78 a5.0 c20 C=138
N196	4 N79 a5.0 c20 C=138
N197	4 N80 a5.0 c20 C=138
N198	4 N81 a5.0 c20 C=138
N199	4 N82 a5.0 c20 C=138
N200	4 N83 a5.0 c20 C=138
N201	4 N84 a5.0 c20 C=138
N202	4 N85 a5.0 c20 C=138
N203	4 N86 a5.0 c20 C=138
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N397	4 N280 a5.0 c20 C=138
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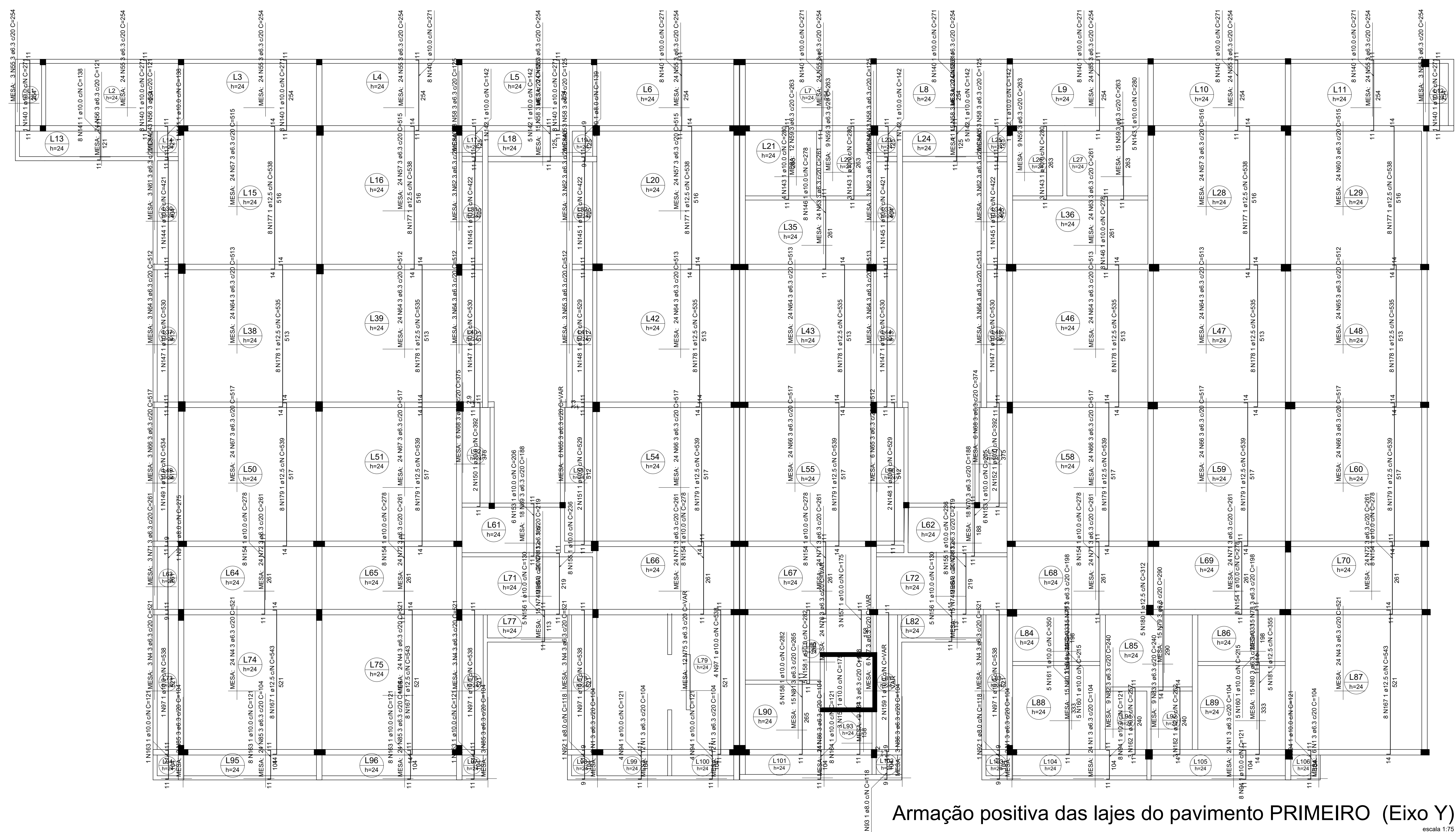
Armação negativa das lajes do pavimento PRIMEIRO (Eixo Y)

escala 1:75

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N89	7 N5 e5.0 c20 C=485	
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N87	4 N6 e5.0 c20 C=507	
N100	7 N7 e5.0 c20 C=487	
N87	4 N8 e5.0 c20 C=488	
N88	7 N4 e5.0 c20 C=102	
N88	7 N9 e5.0 c20 C=305	
N88	7 N10 e5.0 c20 C=497	
N100	7 N11 e5.0 c20 C=491	
N87	4 N12 e5.0 c20 C=516	
N88	7 N13 e5.0 c20 C=286	
N88	7 N14 e5.0 c20 C=202	
N87	4 N15 e5.0 c20 C=475	
N88	7 N16 e5.0 c20 C=493	
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N88	7 N19 e5.0 c20 C=192	
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N87	4 N22 e5.0 c20 C=486	
N101	7 N23 e5.0 c20 C=488	
N102	7 N24 e5.0 c20 C=508	
N87	4 N25 e5.0 c20 C=492	
N103	4 N26 e5.0 c20 C=390	
N87	4 N27 e5.0 c20 C=100	
N87	4 N28 e5.0 c20 C=495	
N104	6 N29 e5.0 c20 C=94	
N105	8 N30 e5.0 c20 C=500	
N106	8 N31 e5.0 c20 C=505	
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N103	4 N32 e5.0 c20 C=305	
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N109	7 N41 e5.0 c20 C=461	
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N88	7 N10 e5.0 c20 C=96	
N105	8 N37 e5.0 c20 C=497	
N111	8 N42 e5.0 c20 C=510	
N88	7 N31 e5.0 c20 C=492	
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N104	6 N51 e5.0 c20 C=118	
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N104	6 N62 e5.0 c20 C=374	
N104	6 N63 e5.0 c20 C=376	
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N88	7 N73 e5.0 c20 C=221	
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N102	7 N86 e5.0 c20 C=107	
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RELAÇÃO DO AÇO

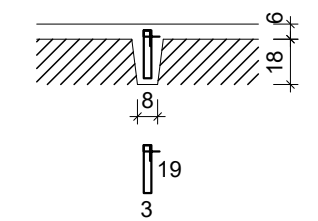
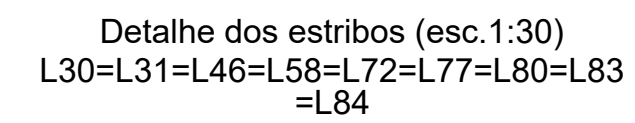
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	4	5.0	42	102	2842	
	5	5.0	11	495	2842	
	6	5.0	15	567	7005	
	7	5.0	23	497	2842	
	8	5.0	4	488	1562	
	9	5.0	26	305	2842	
	10	5.0	28	97	2716	
	11	5.0	11	516	3354	
	12	5.0	7	501	3804	
	13	5.0	7	288	4254	
	14	5.0	7	288	4704	
	15	5.0	4	475	5154	
	16	5.0	4	475	5604	
	17	5.0	7	92	6054	
	18	5.0	7	182	6504	
	19	5.0	7	313	6954	
	20	5.0	4	510	7404	
	21	5.0	4	510	7854	
	22	5.0	4	488	8304	
	23	5.0	7	488	8754	
	24	5.0	7	508	9204	
	25	5.0	4	92	9654	
	26	5.0	4	100	1010	
	27	5.0	4	399	1055	
	28	5.0	74	94	1100	
	29	5.0	8	505	1145	
	30	5.0	18	92	1190	
	31	5.0	12	199	1235	
	32	5.0	12	199	1280	
	33	5.0	8	311	1325	
	34	5.0	8	311	1370	
	35	5.0	6	276	1415	
CASO	36	5.0	8	501	1460	
	37	5.0	8	501	1505	
	38	5.0	7	101	1550	
	39	5.0	7	101	1595	
	40	5.0	7	461	1640	
	41	5.0	8	510	1685	
	42	5.0	8	510	1730	
	43	5.0	8	503	1775	
	44	5.0	15	496	1820	
	45	5.0	8	486	1865	
	46	5.0	14	49	1910	
	47	5.0	8	486	1955	
	48	5.0	7	491	2000	
	49	5.0	7	357	2045	
	50	5.0	7	357	2090	
	51	5.0	6	118	2135	
	52	5.0	7	461	2180	
	53	5.0	7	508	2225	
	54	5.0	7	455	2270	
	55	5.0	4	119	2315	
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	57	5.0	7	511	2405	
	58	5.0	6	126	2450	
	59	5.0	7	495	2495	
	60	5.0	4	125	2540	
	61	5.0	4	126	2585	
	62	5.0	6	276	2630	
	63	5.0	6	276	2675	
	64	5.0	4	126	2720	
	65	5.0	4	126	2765	
	66	5.0	4	126	2810	
	67	5.0	7	237	2855	
	68	5.0	7	237	2900	
	69	5.0	14	119	2945	
	70	5.0	14	119	3000	
71	5.0	7	121	3045		
72	5.0	7	121	3090		
73	5.0	14	211	3135		
74	5.0	14	211	3180		
75	5.0	7	506	3225		
76	5.0	7	506	3270		
77	5.0	7	282	3315		
78	5.0	7	282	3360		
79	5.0	7	493	3405		
80	5.0	7	493	3450		
81	5.0	6	289	3495		
82	5.0	6	289	3540		
83	5.0	13	168	3585		
84	5.0	13	168	3630		
85	5.0	6	337	3675		
86	5.0	6	337	3720		
87	5.0	4	387	3765		
88	5.0	4	387	3810		
89	5.0	7	281	3855		
90	5.0	7	281	3900		
91	5.0	4	242	3945		
92	5.0	4	242	3990		
93	5.0	4	260	4035		
94	5.0	4	260	4080		
95	5.0	8	504	4125		
96	5.0	8	504	4170		
97	5.0	6	516	4215		
98	5.0	6	516	4260		
99	5.0	10	138	4305		
100	5.0	10	138	4350		
101	5.0	6	48	4395		
102	5.0	6	137	4440		
103	5.0	6	137	4485		
104	5.0	10	138	4530		
105	5.0	6	169	4575		
106	5.0	6	169	4620		
107	5.0	25	145	4665		
108	5.0	25	145	4710		
109	5.0	13	334	4755		
110	5.0	13	334	4800		
111	5.0	23	142	4845		
112	5.0	23	142	4890		
113	5.0	46	146	4935		
114	5.0	76	138	4980		
115	5.0	76	138	5025		
116	5.0	50	139	5070		
117	5.0	11	139	5115		



escala 1:75

escala 1:75

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	8.3	10628.4	886	12 m	2600.3
	8.0	25.9	3	12 m	10.2
	10.0	1751.4	146	12 m	1079.8
	12.5	1925.7	161	12 m	1655.1
	16.0	44	4	12 m	89.4



RELAÇÃO DO AÇO

Punção

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	146	55	8030
	2	6.0	12	56	672

RESUMO DO AÇO

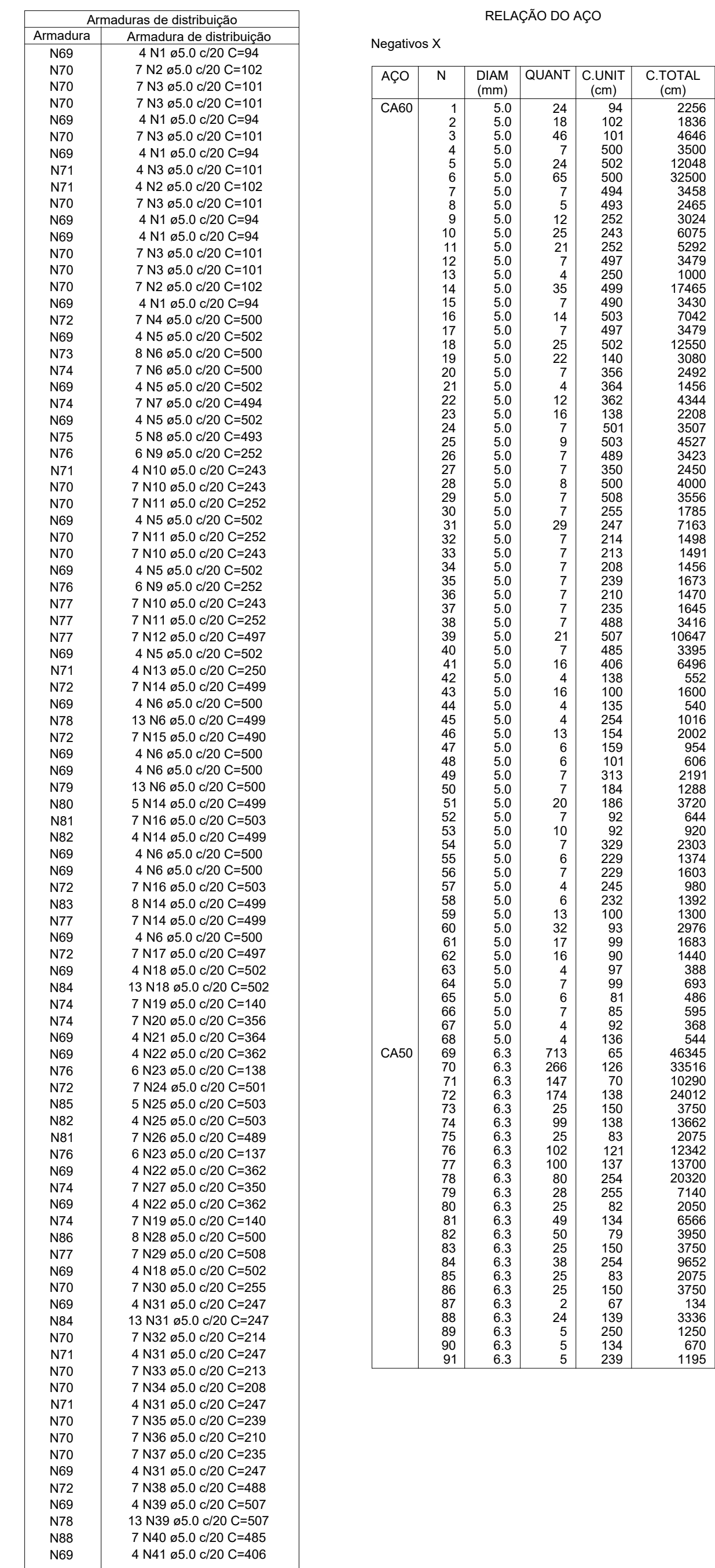
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA60	5.0 6.3	80.2 6.8	- -	rolo (170 kg) rolo (170 kg)	12.4 1.4
PESO TOTAL (kg)					
CA60	13.80				

Volume de concreto (C-30) = 0.00 m³

Área de forma = 0.00 m²

Detalhamento de punção e cisalhamento das lajes do pavimento SEGUNDO (Nível 755)

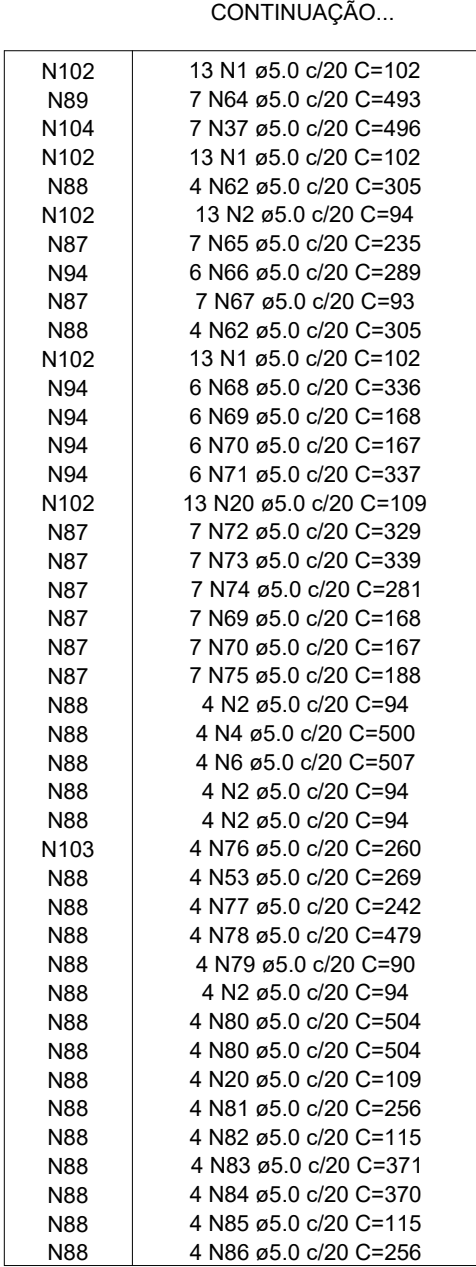
escala 1:75



Volume de concreto (C-30) = 0.00 m³
Área de forma = 0.00 m²

escala 1:75

 INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA SERVIÇO PERNAMBUCANO DIRETORIA DE ENGENHARIA E INFRAESTRUTURA Rua Antenor Lopes, 240, Centro Petrolina/PE CEP: 56.302-100	ASSINATURA DO(A) ESTRUTURA REITORIA
	ASSINATURA DO(A) AVENIDA CENTENÁRIA - CENTRO PETROLINA-PE (ATRAS DA BIBLIOTECA MUNICIPAL)
COORDENADOR DEPARTAMENTO DE ARQUITETURA	ESCALA 1/75
ASSINATURA CARIMBO - DIRETOR GERAL	ASSINATURA CARIMBO - RESPONSÁVEL TÉCNICO WILSON NERY DA CUNHA CREA/14748-B-A
	DATA 26/07/2024 TRABALHO 02/05



Armaduras de distribuição	
Armadura	Armadura de distribuição
N87	7 N1 a5.0 c20 C=102
N88	4 N2 a5.0 c20 C=94
N89	7 N3 a5.0 c20 C=95
N90	4 N4 a5.0 c20 C=500
N90	7 N5 a5.0 c20 C=497
N88	4 N6 a5.0 c20 C=507
N88	4 N2 a5.0 c20 C=94
N87	7 N1 a5.0 c20 C=102
N88	4 N2 a5.0 c20 C=94
N87	7 N1 a5.0 c20 C=97
N50	7 N8 a5.0 c20 C=501
N87	4 N9 a5.0 c20 C=511
N87	7 N10 a5.0 c20 C=268
N87	7 N11 a5.0 c20 C=202
N87	4 N12 a5.0 c20 C=475
N88	4 N13 a5.0 c20 C=95
N87	7 N14 a5.0 c20 C=92
N87	7 N15 a5.0 c20 C=101
N88	4 N2 a5.0 c20 C=94
N87	7 N15 a5.0 c20 C=132
N87	7 N16 a5.0 c20 C=99
N88	4 N17 a5.0 c20 C=510
N88	4 N18 a5.0 c20 C=508
N88	4 N19 a5.0 c20 C=498
N87	4 N20 a5.0 c20 C=109
N87	7 N21 a5.0 c20 C=117
N87	7 N17 a5.0 c20 C=96
N92	8 N4 a5.0 c20 C=500
N87	8 N2 a5.0 c20 C=505
N87	7 N2 a5.0 c20 C=94
N87	7 N23 a5.0 c20 C=101
N93	8 N5 a5.0 c20 C=497
N94	6 N24 a5.0 c20 C=276
N94	6 N25 a5.0 c20 C=199
N87	7 N25 a5.0 c20 C=97
N87	7 N27 a5.0 c20 C=97
N94	6 N25 a5.0 c20 C=199
N94	6 N28 a5.0 c20 C=311
N95	8 N29 a5.0 c20 C=476
N87	7 N30 a5.0 c20 C=116
N87	7 N31 a5.0 c20 C=92
N87	7 N32 a5.0 c20 C=516
N97	13 N2 a5.0 c20 C=94
N97	13 N4 a5.0 c20 C=500
N97	13 N6 a5.0 c20 C=507
N98	7 N33 a5.0 c20 C=92
N97	7 N7 a5.0 c20 C=97
N98	8 N34 a5.0 c20 C=503
N98	8 N35 a5.0 c20 C=470
N97	7 N13 a5.0 c20 C=95
N98	7 N2 a5.0 c20 C=94
N93	8 N38 a5.0 c20 C=516
N95	8 N37 a5.0 c20 C=496
N97	13 N20 a5.0 c20 C=109
N97	13 N2 a5.0 c20 C=94
N97	13 N38 a5.0 c20 C=500
N97	13 N39 a5.0 c20 C=508
N98	6 N40 a5.0 c20 C=118
N84	4 N41 a5.0 c20 C=116
N10	4 N42 a5.0 c20 C=511
N97	6 N43 a5.0 c20 C=456
N88	4 N43 a5.0 c20 C=120
N90	6 N44 a5.0 c20 C=115
N97	7 N45 a5.0 c20 C=511
N97	7 N46 a5.0 c20 C=484
N102	13 N20 a5.0 c20 C=109
N88	4 N47 a5.0 c20 C=511
N88	4 N48 a5.0 c20 C=125
N88	4 N48 a5.0 c20 C=126
N94	6 N49 a5.0 c20 C=374
N94	6 N50 a5.0 c20 C=375
N88	4 N51 a5.0 c20 C=125
N88	4 N52 a5.0 c20 C=125
N102	13 N2 a5.0 c20 C=94
N102	13 N4 a5.0 c20 C=500
N102	13 N6 a5.0 c20 C=507
N103	4 N53 a5.0 c20 C=269
N87	7 N54 a5.0 c20 C=237
N87	7 N55 a5.0 c20 C=357
N87	7 N56 a5.0 c20 C=113
N87	7 N57 a5.0 c20 C=328
N87	7 N58 a5.0 c20 C=171
N87	7 N59 a5.0 c20 C=163
N87	7 N60 a5.0 c20 C=323
N102	13 N20 a5.0 c20 C=109
N87	7 N61 a5.0 c20 C=109
N87	7 N2 a5.0 c20 C=94
N87	7 N62 a5.0 c20 C=305
N87	7 N2 a5.0 c20 C=94
N87	7 N2 a5.0 c20 C=94
N87	7 N62 a5.0 c20 C=305
N87	7 N63 a5.0 c20 C=101
N68	4 N63 a5.0 c20 C=118

RELACÃO DO AÇO					
Negativos Y					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA80	1	5.0	60	102	6120
	2	5.0	119	94	11186
	3	5.0	7	495	3465
	4	5.0	42	500	21000
	5	5.0	15	497	7455
	6	5.0	14	507	7098
	7	5.0	21	97	2037
	8	5.0	7	501	3507
	9	5.0	15	511	8687
	10	5.0	7	268	1878
	11	5.0	7	202	1414
	12	5.0	7	475	1900
	13	5.0	11	55	1045
	14	5.0	7	192	1344
	15	5.0	7	192	1344
	16	5.0	7	313	2193
	17	5.0	4	500	2040
	18	5.0	7	488	3416
	19	5.0	8	498	1952
	20	5.0	60	109	6540
	21	5.0	7	117	817
	22	5.0	8	505	4040
	23	5.0	14	101	1414
	24	5.0	6	276	1656
	25	5.0	12	199	2388
	26	5.0	7	107	1071
	27	5.0	7	97	679
	28	5.0	6	116	1866
	29	5.0	4	476	3808
	30	5.0	7	311	8112
	31	5.0	7	461	3227
	32	5.0	7	516	3672
	33	5.0	6	92	644
	34	5.0	8	503	4020
	35	5.0	8	470	3760
	36	5.0	8	516	4128
	37	5.0	15	496	7440
	38	5.0	13	500	6500
	39	5.0	15	508	6624
	40	5.0	6	118	708
	41	5.0	4	116	464
	42	5.0	7	456	3192
	43	5.0	7	480	3360
	44	5.0	6	119	714
	45	5.0	7	511	3577
	46	5.0	7	120	3388
	47	5.0	4	125	500
48	5.0	4	126	504	
49	5.0	7	374	2244	
50	5.0	6	375	2250	
51	5.0	4	126	504	
52	5.0	4	126	504	
53	5.0	7	269	2152	
54	5.0	7	237	1659	
55	5.0	7	351	2457	
56	5.0	8	319	2552	
57	5.0	7	328	2296	
58	5.0	7	171	1171	
59	5.0	7	163	1119	
60	5.0	7	323	2261	
61	5.0	4	119	670	
62	5.0	22	305	6710	
63	5.0	7	472	3472	
64	5.0	7	493	3451	
65	5.0	7	235	1651	
66	5.0	6	289	1734	
67	5.0	7	93	651	
68	5.0	6	336	2016	
69	5.0	7	188	1284	
70	5.0	13	217	1717	
71	5.0	6	337	2022	
72	5.0	6	329	2033	
73	5.0	7	339	2373	
74	5.0	7	281	1967	
75	5.0	7	188	1316	
76	5.0	7	260	1820	
77	5.0	4	242	968	
78	5.0	4	279	1916	
79	5.0	4	90	360	
80	5.0	8	504	4032	
81	5.0	4	256	1024	
82	5.0	4	115	460	
83	5.0	4	119	476	
84	5.0	4	115	460	
85	5.0	4	115	460	
CA50	87	6.3	335	126	42210
	88	6.3	515	65	33475
	89	6.3	76	138	10488
	90	6.3	9	139	10488
	91	6.3	48	137	6576
	92	6.3	50	150	7500
	93	6.3	3	139	4140
	94	6.3	164	121	19844
	95	6.3	49	149	7301
	96	6.3	93	164	15164
	97	6.3	129	251	32379
	98	6.3	20	128	2560
	99	6.3	23	142	3266
	100	6.3	28	127	3588
101	6.3	51	250	12750	
102	6.3	87	254	22098	
103	6.3	4	70	2800	
104	6.3	25	339	3475	

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	2340.6	196	12 m	572.7
CA60	5.0	2419.7	-	rolo (170 kg)	373
PESO TOTAL (kg)					
CA50	572.7				
CA60	373				

Armação negativa das lajes do pavimento SEGUNDO (Eixo Y)

escala 1:75

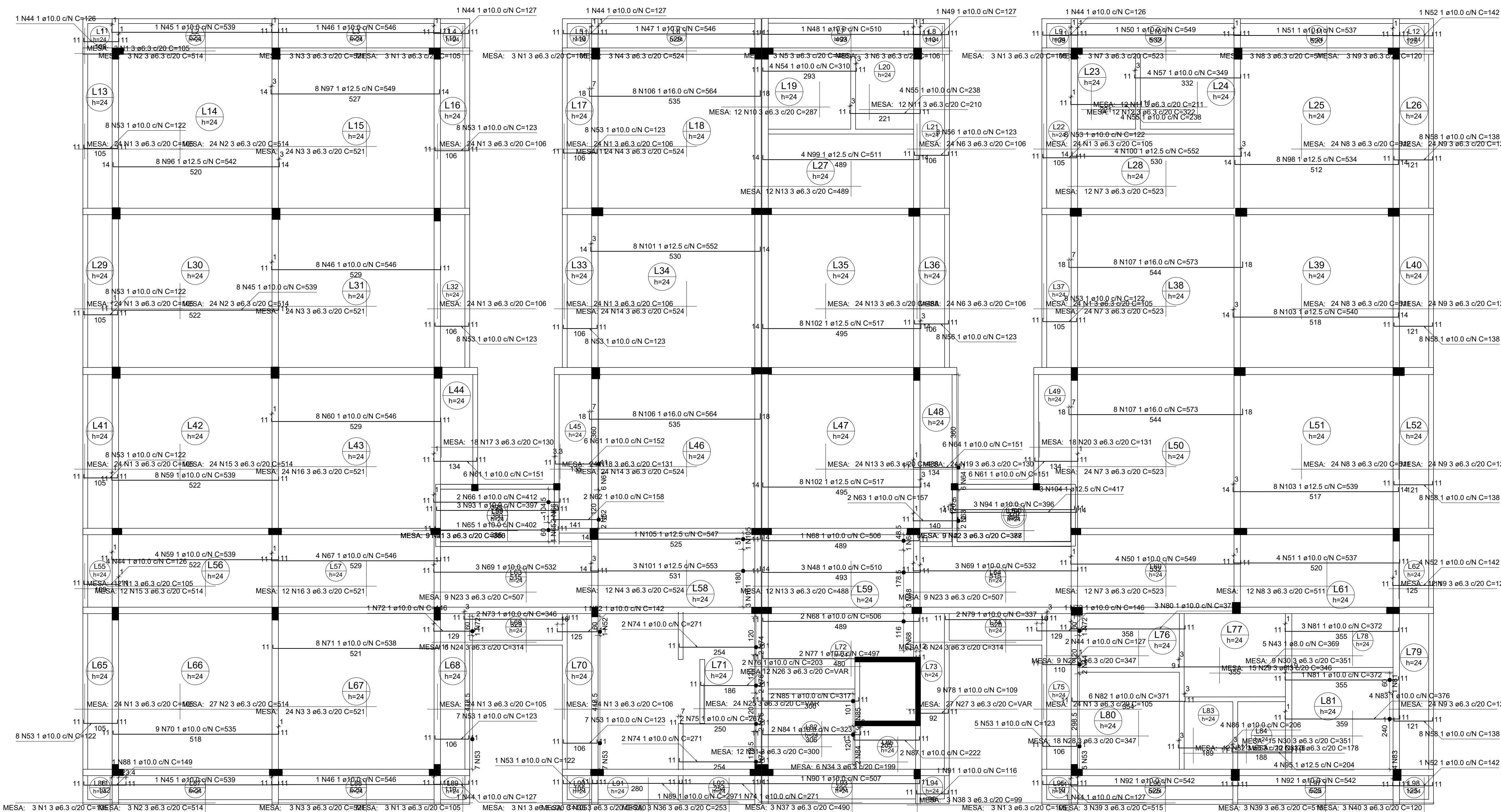
Positivos X

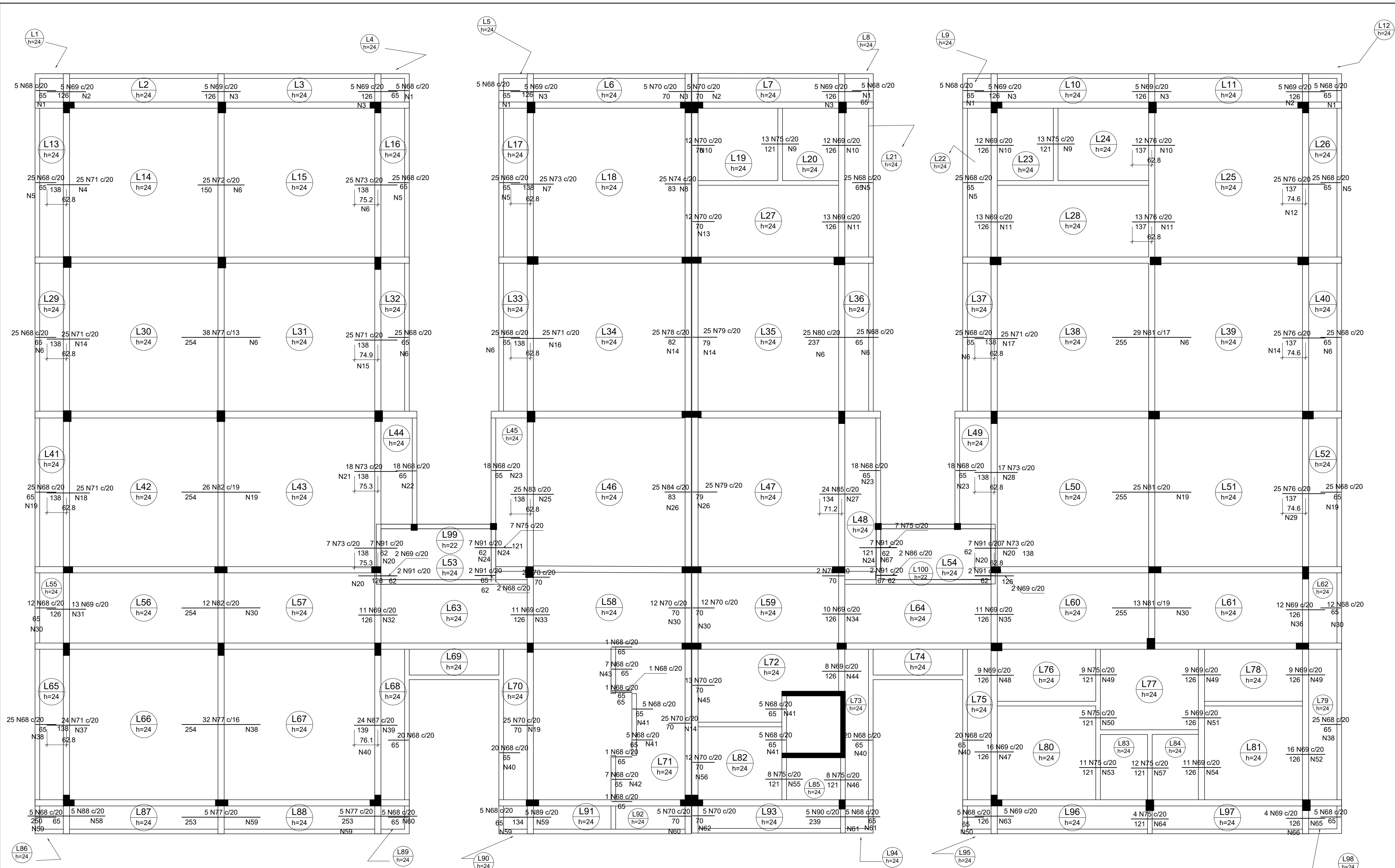
ACO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	348	105	36540
	2	6.3	81	514	41634
	3	6.3	78	52	40638
	4	6.3	39	524	20436
	5	6.3	3	486	1458
	6	6.3	51	106	5406
	7	6.3	75	523	39225
	8	6.3	87	511	44457
	9	6.3	11	120	1020
	10	6.3	12	287	3444
	11	6.3	24	210	5040
	12	6.3	12	342	3864
	13	6.3	72	469	35058
	14	6.3	48	524	25152
	15	6.3	36	514	18504
	16	6.3	16	130	18766
	17	6.3	18	130	2340
	18	6.3	24	131	3144
	19	6.3	22	130	3120
	20	6.3	18	131	2358
	21	6.3	9	385	3465
	22	6.3	9	387	3476
	23	6.3	18	507	9126
	24	6.3	12	314	3768
	25	6.3	24	VAR	VAR
	26	6.3	12	VAR	VAR
	27	6.3	27	VAR	VAR
	28	6.3	27	347	9369
	29	6.3	3	510	5100
	30	6.3	24	351	8424
	31	6.3	12	300	3600
	32	6.3	12	176	2112
	33	6.3	12	178	2136
	34	6.3	6	199	1194
	35	6.3	3	280	840
	36	6.3	3	493	759
	37	6.3	3	480	1470
	38	6.3	3	99	297
	39	6.3	6	366	3090
	40	6.3	3	120	360
	41	6.3	9	389	3420
	42	6.3	4	378	3402
	43	8.0	5	360	1800
	44	8.0	12	126	1512
	45	10.0	10	539	5390
	46	10.0	10	536	5460
	47	10.0	1	546	546
	48	10.0	1	510	2040
	49	10.0	7	177	1239
	50	10.0	5	549	2745
	51	10.0	5	537	2685
	52	10.0	7	142	994
	53	10.0	100	122	12200
	54	10.0	4	310	1240
	55	10.0	12	539	1904
	56	10.0	16	123	1968
	57	10.0	4	349	1396
	58	10.0	32	138	4416
	59	10.0	8	548	6468
	60	10.0	8	546	4368
	61	10.0	12	151	1812
	62	10.0	2	158	316
	63	10.0	6	152	912
	64	10.0	2	157	314
	65	10.0	6	151	906
	66	10.0	1	402	402
	67	10.0	2	412	824
	68	10.0	4	546	2184
	69	10.0	3	506	1518
	70	10.0	6	532	3182
	71	10.0	6	535	4195
	72	10.0	7	538	4304
	73	10.0	2	146	292
	74	10.0	2	146	292
	75	10.0	4	203	812
	76	10.0	4	203	812
	77	10.0	4	217	1268
	78	10.0	9	112	1008
	79	10.0	2	337	674
	80	10.0	3	375	1125
	81	10.0	4	372	1488
	82	10.0	6	371	2226
	83	10.0	4	376	1504
	84	10.0	2	323	646
	85	10.0	2	206	824
	86	10.0	4	559	820
	87	10.0	2	292	444
	88	10.0	2	149	149
	89	10.0	1	227	227
	90	10.0	1	507	507
	91	10.0	1	116	116
	92	10.0	1	1084	1084
	93	10.0	3	397	1191
	94	10.0	3	396	1191
	95	12.5	8	542	4336
	96	12.5	8	549	4392
	97	12.5	8	534	4272
	98	12.5	8	511	4044
	99	12.5	4	552	2208
	100	12.5	11	552	6072
101	12.5	16	517	8272	
102	12.5	16	504	8064	
103	12.5	3	417	1251	
104	12.5	1	547	547	
105	16.0	1	564	9074	
106	16.0	16	573	9168	

AÇO	DIAM (mm)	C.TOTAL (m2)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	4428.3	370	12 m	1083.6
	8.0	18.4	2	12 m	7.3
	10.0	967.3	81	12 m	596.4
	12.5	420.3	36	12 m	404.9
	16.0	181.9	16	12 m	287.1

Volume de concreto (C-30) = 92.10 m³
Área de forma = 0.00 m²

escala 1:75





Armaduras de distribuição	
Armadura	Armadura de distribuição
N68	4 N1 ø5.0 c/20 C=94
N69	7 N2 ø5.0 c/20 C=102
N69	7 N3 ø5.0 c/20 C=101
N68	4 N1 ø5.0 c/20 C=94
N69	7 N3 ø5.0 c/20 C=101
N68	4 N1 ø5.0 c/20 C=94
N70	4 N3 ø5.0 c/20 C=101
N70	4 N2 ø5.0 c/20 C=102
N69	7 N3 ø5.0 c/20 C=101
N68	4 N1 ø5.0 c/20 C=94
N68	4 N1 ø5.0 c/20 C=94
N69	7 N3 ø5.0 c/20 C=101
N69	7 N3 ø5.0 c/20 C=101
N69	7 N2 ø5.0 c/20 C=102
N68	4 N1 ø5.0 c/20 C=94
N71	7 N4 ø5.0 c/20 C=500
N68	4 N5 ø5.0 c/20 C=502
N72	8 N6 ø5.0 c/20 C=500
N73	7 N6 ø5.0 c/20 C=500
N68	4 N5 ø5.0 c/20 C=502
N73	7 N7 ø5.0 c/20 C=494
N68	4 N5 ø5.0 c/20 C=502
N74	5 N8 ø5.0 c/20 C=493
N75	6 N9 ø5.0 c/20 C=252
N70	4 N10 ø5.0 c/20 C=243
N69	7 N10 ø5.0 c/20 C=243
N68	4 N5 ø5.0 c/20 C=502
N69	7 N11 ø5.0 c/20 C=252
N68	4 N5 ø5.0 c/20 C=502
N69	7 N10 ø5.0 c/20 C=243
N75	6 N9 ø5.0 c/20 C=252
N76	7 N10 ø5.0 c/20 C=243
N76	7 N12 ø5.0 c/20 C=497
N76	7 N11 ø5.0 c/20 C=252
N68	4 N5 ø5.0 c/20 C=502
N70	4 N13 ø5.0 c/20 C=250
N71	7 N14 ø5.0 c/20 C=499
N68	4 N6 ø5.0 c/20 C=500
N77	13 N8 ø5.0 c/20 C=499
N71	7 N15 ø5.0 c/20 C=490
N68	4 N6 ø5.0 c/20 C=500
N68	4 N6 ø5.0 c/20 C=500
N71	7 N16 ø5.0 c/20 C=504
N78	5 N14 ø5.0 c/20 C=499
N79	4 N14 ø5.0 c/20 C=499
N68	12 N8 ø5.0 c/20 C=500
N68	4 N6 ø5.0 c/20 C=500
N68	4 N6 ø5.0 c/20 C=500
N71	7 N17 ø5.0 c/20 C=503
N81	13 N6 ø5.0 c/20 C=500
N76	7 N14 ø5.0 c/20 C=499
N68	4 N6 ø5.0 c/20 C=500
N71	7 N18 ø5.0 c/20 C=497
N68	4 N19 ø5.0 c/20 C=502
N82	13 N19 ø5.0 c/20 C=502
N73	7 N20 ø5.0 c/20 C=140
N73	7 N21 ø5.0 c/20 C=356
N68	4 N22 ø5.0 c/20 C=364
N69	4 N23 ø5.0 c/20 C=362
N75	6 N24 ø5.0 c/20 C=138
N83	7 N25 ø5.0 c/20 C=501
N84	5 N26 ø5.0 c/20 C=503
N79	4 N26 ø5.0 c/20 C=503
N85	7 N27 ø5.0 c/20 C=489
N75	6 N24 ø5.0 c/20 C=137
N68	4 N23 ø5.0 c/20 C=362
N73	7 N28 ø5.0 c/20 C=350
N68	4 N23 ø5.0 c/20 C=362
N81	13 N19 ø5.0 c/20 C=502
N73	7 N20 ø5.0 c/20 C=140
N76	7 N29 ø5.0 c/20 C=508
N68	4 N19 ø5.0 c/20 C=502
N68	4 N30 ø5.0 c/20 C=247
N69	7 N31 ø5.0 c/20 C=255
N82	13 N30 ø5.0 c/20 C=247
N69	7 N32 ø5.0 c/20 C=214
N70	4 N30 ø5.0 c/20 C=247
N69	7 N33 ø5.0 c/20 C=213
N69	7 N34 ø5.0 c/20 C=208
N70	4 N30 ø5.0 c/20 C=247
N81	13 N35 ø5.0 c/20 C=247
N69	7 N35 ø5.0 c/20 C=210
N69	7 N36 ø5.0 c/20 C=235
N68	4 N30 ø5.0 c/20 C=247
N71	7 N37 ø5.0 c/20 C=488
N68	4 N38 ø5.0 c/20 C=507
N77	13 N38 ø5.0 c/20 C=507
N87	7 N39 ø5.0 c/20 C=485
N68	4 N40 ø5.0 c/20 C=406
N70	4 N19 ø5.0 c/20 C=502
N68	4 N40 ø5.0 c/20 C=406
N68	4 N41 ø5.0 c/20 C=100

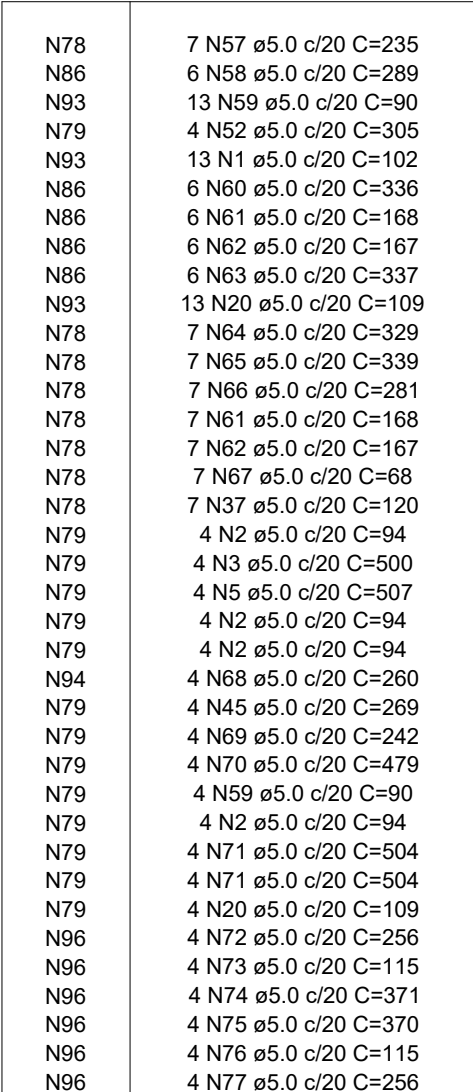
RELAÇÃO DO AÇO					
Negativos X					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	24	94	2256
	2	5.0	18	102	1836
	3	5.0	46	101	4646
	4	5.0	500	5	3500
	5	5.0	24	502	12048
	6	5.0	77	500	38500
	7	5.0	5	494	3458
	8	5.0	7	493	2465
	9	5.0	12	252	3024
	10	5.0	25	243	6075
	11	5.0	21	252	5292
	12	5.0	7	497	3479
	13	5.0	4	250	1000
	14	5.0	27	499	13473
	15	5.0	7	490	3450
	16	5.0	7	504	3528
	17	5.0	7	503	3521
	18	5.0	7	497	3479
	19	5.0	38	502	19076
	20	5.0	22	140	3080
	21	5.0	7	356	2492
	22	5.0	4	364	1456
	23	5.0	12	362	4344
	24	5.0	16	138	2208
	25	5.0	7	501	3507
	26	5.0	9	503	4527
	27	5.0	7	489	3423
	28	5.0	7	2450	17150
	29	5.0	7	508	3556
	30	5.0	42	247	10374
	31	5.0	255	1785	45225
	32	5.0	7	214	1498
	33	5.0	7	213	1491
	34	5.0	7	208	1456
	35	5.0	7	210	1470
	36	5.0	7	235	1645
	37	5.0	7	488	3416
	38	5.0	21	507	10647
	39	5.0	7	485	3395
	40	5.0	16	406	6496
	41	5.0	16	100	1600
	42	5.0	4	135	540
	43	5.0	4	138	552
	44	5.0	7	163	1141
	45	5.0	4	254	1016
	46	5.0	6	159	954
	47	5.0	7	313	2191
	48	5.0	7	184	1288
	49	5.0	20	186	3720
	50	5.0	10	92	920
	51	5.0	7	92	644
	52	5.0	7	329	2303
	53	5.0	6	229	1374
	54	5.0	7	229	1603
	55	5.0	6	154	924
	56	5.0	4	245	980
	57	5.0	6	232	1392
	58	5.0	13	100	1300
	59	5.0	32	93	2976
	60	5.0	17	99	1683
	61	5.0	16	90	1440
	62	5.0	4	97	388
	63	5.0	7	99	693
	64	5.0	6	81	486
	65	5.0	7	85	595
	66	5.0	4	92	368
	67	5.0	4	136	544
	68	6.3	677	65	44005
	69	6.3	254	126	32004
	70	6.3	147	70	10290
	71	6.3	174	138	24012
	72	6.3	25	150	3750
	73	6.3	99	138	13662
	74	6.3	25	83	2075
	75	6.3	97	121	11737
	76	6.3	100	137	13700
	77	6.3	80	254	20320
	78	6.3	25	82	2050
	79	6.3	38	254	9652
	80	6.3	25	138	3450
	81	6.3	67	255	17085
	82	6.3	38	254	9652
	83	6.3	25	134	3325
	84	6.3	24	139	3336
	85	6.3	5	250	1250
	86	6.3	5	134	670
	87	6.3	5	239	1195
	88	6.3	36	62	2232

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	5.0	2317.7	194	12 m	567.1
CA60	6.3	2424	-	rolo (170 kg)	373.6
PESO TOTAL (kg)					
CA50		567.1			
CA60		373.6			
Volume de concreto (C-30) = 0.00 m³					
Área de forma = 0.00 m²					

Armação negativa das lajes do pavimento TERCEIRO (Eixo X)

escala 1:75

N68	4 N41 ø5.0 c/20 C=100
N68	4 N42 ø5.0 c/20 C=135
N70	4 N14 ø5.0 c/20 C=499
N68	4 N43 ø5.0 c/20 C=138
N69	7 N44 ø5.0 c/20 C=163
N70	4 N45 ø5.0 c/20 C=254
N68	4 N41 ø5.0 c/20 C=100
N75	6 N46 ø5.0 c/20 C=159
N68	4 N40 ø5.0 c/20 C=406
N69	7 N47 ø5.0 c/20 C=313
N69	7 N48 ø5.0 c/20 C=184
N68	4 N40 ø5.0 c/20 C=406
N75	6 N49 ø5.0 c/20 C=186
N75	6 N50 ø5.0 c/20 C=92
N69	7 N51 ø5.0 c/20 C=92
N69	7 N49 ø5.0 c/20 C=186
N69	7 N49 ø5.0 c/20 C=186
N69	7 N52 ø5.0 c/20 C=329
N68	4 N38 ø5.0 c/20 C=507
N75	6 N53 ø5.0 c/20 C=229
N69	7 N54 ø5.0 c/20 C=229
N75	6 N55 ø5.0 c/20 C=154
N68	4 N41 ø5.0 c/20 C=100
N70	4 N56 ø5.0 c/20 C=245
N75	6 N57 ø5.0 c/20 C=232
N88	13 N58 ø5.0 c/20 C=100
N68	4 N59 ø5.0 c/20 C=93
N77	13 N59 ø5.0 c/20 C=93
N77	13 N60 ø5.0 c/20 C=99
N68	4 N59 ø5.0 c/20 C=93
N69	7 N59 ø5.0 c/20 C=93
N68	4 N59 ø5.0 c/20 C=93
N70	4 N60 ø5.0 c/20 C=99
N90	12 N61 ø5.0 c/20 C=90
N70	4 N62 ø5.0 c/20 C=97
N68	4 N61 ø5.0 c/20 C=90
N69	7 N63 ø5.0 c/20 C=99
N68	4 N60 ø5.0 c/20 C=93
N75	6 N64 ø5.0 c/20 C=81
N69	7 N65 ø5.0 c/20 C=85
N68	4 N66 ø5.0 c/20 C=92
N91	4 N24 ø5.0 c/20 C=138
N91	4 N20 ø5.0 c/20 C=140
N91	4 N67 ø5.0 c/20 C=136
N91	4 N20 ø5.0 c/20 C=140

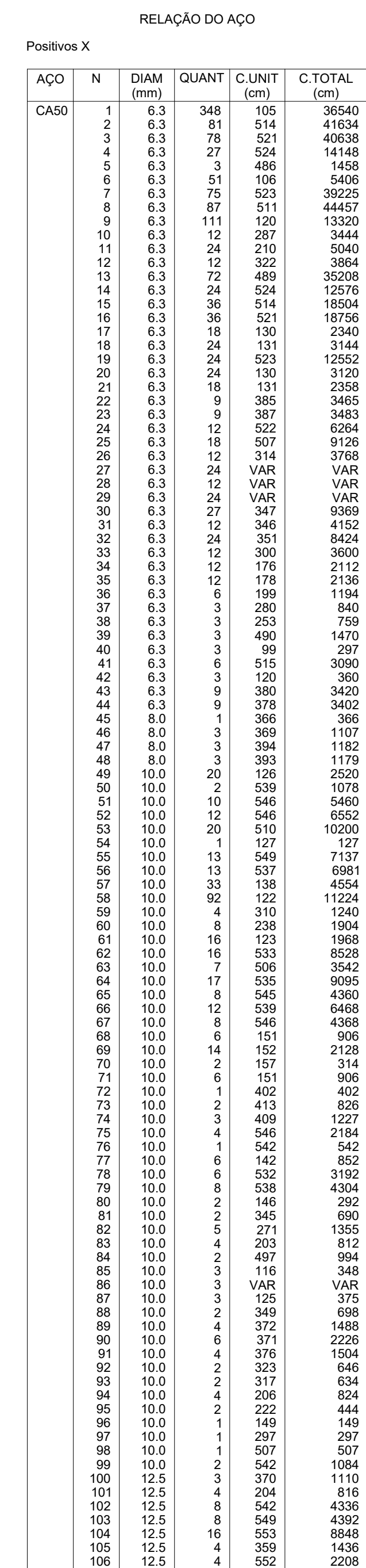


escala 1:75

RELAÇÃO DO AÇO					
Negativos Y					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	60	102	6120
	2	5.0	119	94	11186
	3	5.0	42	500	21000
	4	5.0	7	495	3465
	5	5.0	33	507	17238
	6	5.0	7	497	3479
	7	5.0	21	497	2037
	8	5.0	7	501	3507
	9	5.0	30	471	15330
	10	5.0	7	268	1878
	11	5.0	7	202	1414
	12	5.0	43	475	20425
	13	5.0	11	95	1045
	14	5.0	7	92	644
	15	5.0	7	192	1344
	16	5.0	7	313	2191
	17	5.0	30	510	15300
	18	5.0	7	488	3416
	19	5.0	43	488	21414
	20	5.0	60	109	6540
	21	5.0	7	117	819
	22	5.0	8	505	4040
	23	5.0	14	101	1414
	24	5.0	6	276	1656
	25	5.0	12	199	2388
	26	5.0	7	101	707
	27	5.0	7	97	679
	28	5.0	6	311	1866
	29	5.0	7	812	5684
	30	5.0	7	516	3612
	31	5.0	7	92	644
	32	5.0	7	500	6500
	33	5.0	13	508	6604
	34	5.0	6	118	708
	35	5.0	6	116	664
	36	5.0	7	508	3556
	37	5.0	11	120	1320
	38	5.0	6	119	714
	39	5.0	6	374	2616
	40	5.0	4	126	504
	41	5.0	4	125	500
	42	5.0	4	125	500
	43	5.0	4	126	504
	44	5.0	6	375	2250
	45	5.0	6	252	1512
	46	5.0	7	237	1659
47	5.0	7	240	1680	
48	5.0	7	328	2296	
49	5.0	7	171	1197	
50	5.0	7	163	1141	
51	5.0	7	323	2261	
52	5.0	22	319	6710	
53	5.0	4	118	472	
54	5.0	7	305	2135	
55	5.0	7	496	3472	
56	5.0	7	235	1645	
57	5.0	7	289	1734	
58	5.0	17	90	1530	
59	5.0	6	336	2016	
60	5.0	13	168	2184	
61	5.0	13	167	2171	
62	5.0	6	337	2022	
63	5.0	7	329	2303	
64	5.0	7	339	2373	
65	5.0	7	281	1967	
66	5.0	7	68	476	
67	5.0	7	104	728	
68	5.0	4	242	968	
69	5.0	4	479	1916	
70	5.0	4	504	4032	
71	5.0	4	504	4032	
72	5.0	4	115	460	
73	5.0	4	371	1484	
74	5.0	4	140	560	
75	5.0	4	115	460	
76	5.0	4	256	1024	
77	5.0	32	256	8192	
78	5.0	32	256	8192	
79	6.3	439	65	28535	
80	6.3	76	138	10488	
81	6.3	50	138	6900	
82	6.3	24	347	8328	
83	6.3	25	150	3750	
84	6.3	25	150	3750	
85	6.3	25	151	3775	
86	6.3	164	121	19844	
87	6.3	32	250	8000	
88	6.3	28	251	72280	
89	6.3	20	128	2560	
90	6.3	36	251	9036	
91	6.3	32	252	8064	
92	6.3	25	138	3450	
93	6.3	90	254	22860	
94	6.3	26	70	1820	
95	6.3	26	70	1820	
96	6.3	76	62	4712	

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	2658	222	12 m	650.4
CA60	5.0	2668.3	-	rolo (170 kg)	411.3

Volume de concreto (C-30) = 0.00 m³
Área de forma = 0.00 m²



RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	4414.7	368	12 m	1080.3
	8.0	38.3	4	12 m	15.1
	10.0	1308.2	110	12 m	806.6
	12.5	231.5	20	12 m	223

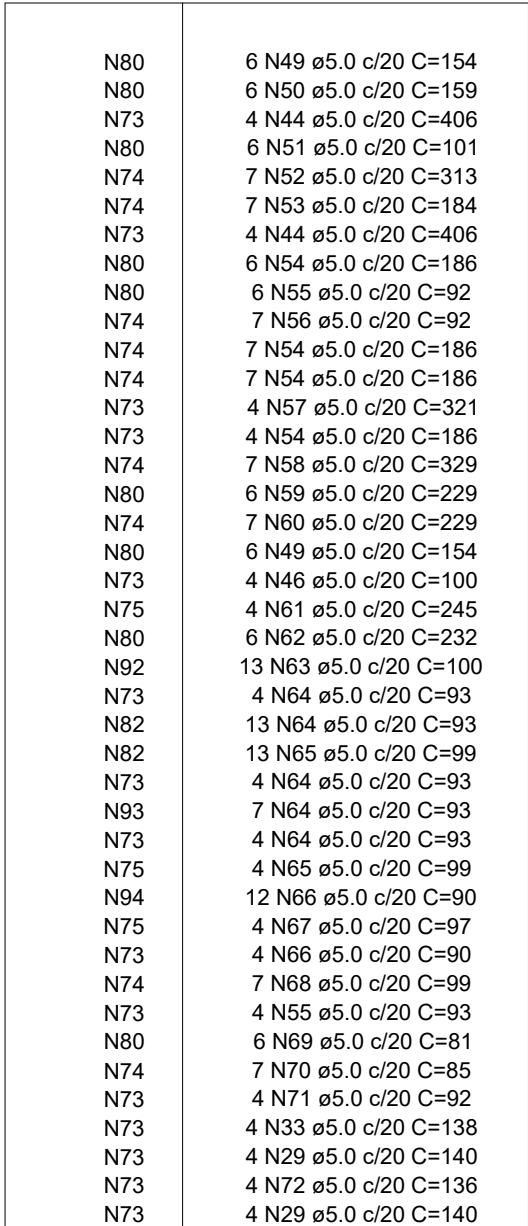
Volume de concreto (C-30) = 91.94 m³
Área de forma = 11.71 m²

Armação positiva das lajes do pavimento TERCEIRO (Eixo X)

escala 1:75



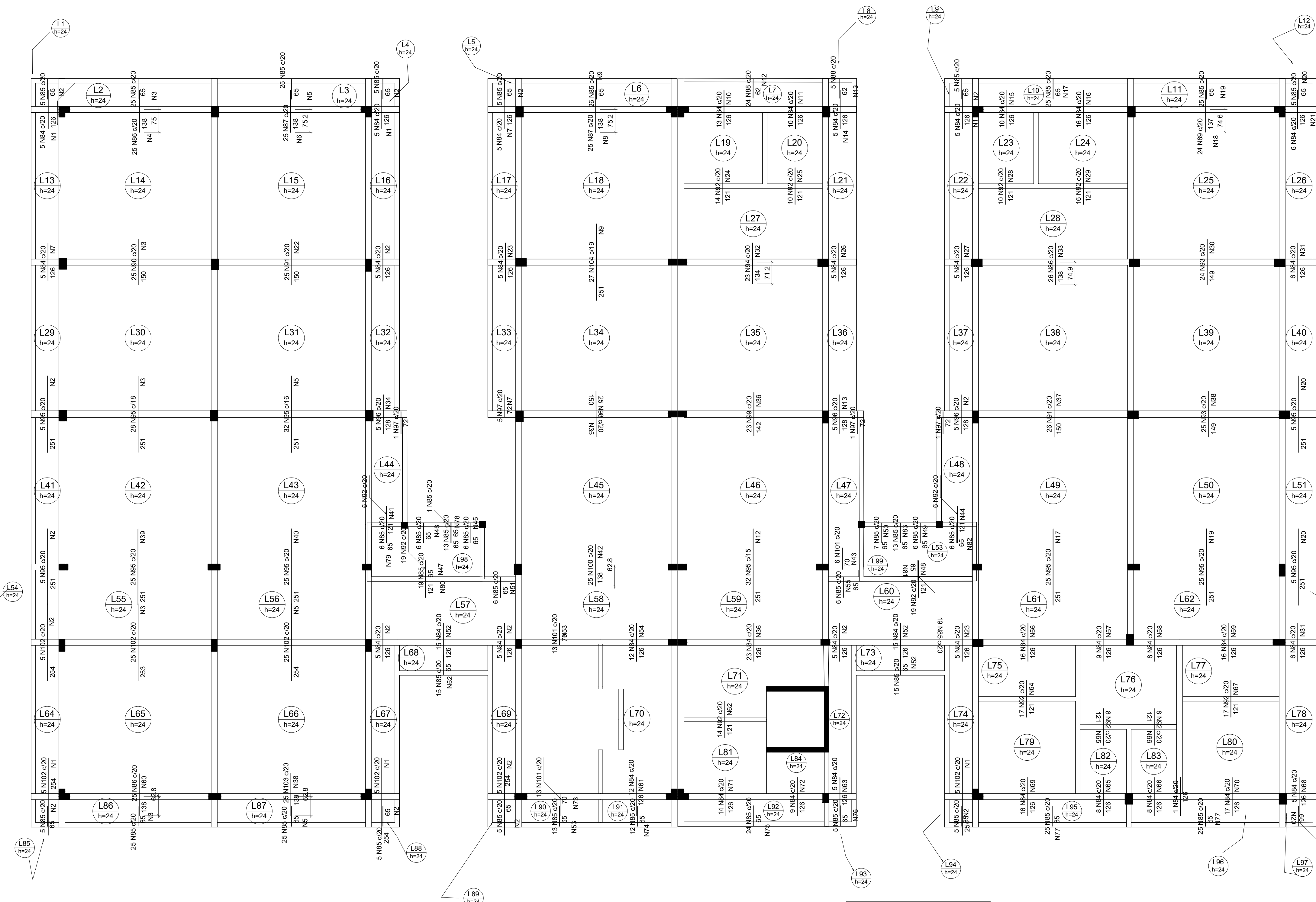
 INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA SERTÃO PERNAMBUCANO DIRETORIA DE ENGENHARIA E INFRAESTRUTURA Rua Aristóteles Lopes 240, Centro Petrolina/PE CEP. 56.302-100 INSTITUTO FEDERAL Sertão Pernambucano	NOME DA EMPRESA ESTRUTURAL REITORIA ENDEREÇO COMPLETO AV. CARLOS DE ALMEIDA, 100 - CENTRO DE PETROLINA-PE (PRÓXIMO DA BIBLIOTECA MUNICIPAL)
DESCRIÇÃO PROPOSTA DE CONTRATO PARA INSTALAÇÃO DE POSICIONAMENTO	ESCALA 1/75 DATA 26/07/2024
ASSINATURA/CARIMBO - DIRETOR GERAL	ASSINATURA/CARIMBO - RESPONSÁVEL TÉCNICO WILSON NERY DA CUNHA CREA/14748-B-A 05/05



escala 1:75

RELAÇÃO DO AÇO					
Negativos X					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	20	84	1890
	2	5.0	14	102	1428
	3	5.0	39	101	3939
	4	5.0	4	103	412
	5	5.0	5	102	714
	6	5.0	4	96	384
	7	5.0	7	500	3500
	8	5.0	24	502	12048
	9	5.0	52	500	26000
	10	5.0	7	494	3458
	11	5.0	7	494	3458
	12	5.0	12	252	3024
	13	5.0	25	243	6075
	14	5.0	21	497	5253
	15	5.0	7	497	3479
	16	5.0	4	250	1000
	17	5.0	35	499	17465
	18	5.0	7	500	3500
	19	5.0	7	504	3528
	20	5.0	14	503	7042
	21	5.0	7	497	3479
	22	5.0	38	502	19076
	23	5.0	7	126	882
	24	5.0	7	356	2492
	25	5.0	4	384	1456
	26	5.0	5	501	2505
	27	5.0	5	457	2285
	28	5.0	7	489	3423
	29	5.0	21	140	2940
	30	5.0	8	362	2896
	31	5.0	7	500	3500
	32	5.0	8	138	1156
	33	5.0	42	107	10374
	35	5.0	7	255	1785
	36	5.0	7	214	1498
	37	5.0	7	141	1047
	38	5.0	7	208	1456
	39	5.0	7	210	1470
	40	5.0	25	235	5875
	41	5.0	7	488	3416
	42	5.0	17	507	8619
	43	5.0	7	488	3385
	44	5.0	16	406	6496
	45	5.0	4	135	540
	46	5.0	16	100	1600
	47	5.0	13	135	1755
	48	5.0	4	254	1016
	49	5.0	12	154	1848
50	5.0	12	154	1848	
51	5.0	6	101	606	
52	5.0	7	313	2191	
53	5.0	7	138	1288	
54	5.0	24	103	4664	
55	5.0	10	92	920	
56	5.0	7	92	644	
57	5.0	7	124	868	
58	5.0	7	329	2303	
59	5.0	6	229	1374	
60	5.0	9	1603	14427	
61	5.0	4	245	980	
62	5.0	6	232	1392	
63	5.0	16	90	1440	
64	5.0	32	93	2976	
65	5.0	17	99	1683	
66	5.0	16	90	1440	
67	5.0	7	398	2786	
68	5.0	7	99	693	
69	5.0	6	81	486	
70	5.0	5	595	595	
71	5.0	4	92	368	
72	5.0	4	136	544	
73	6.3	207	46	8958	
74	6.3	246	126	30996	
75	6.3	147	70	10290	
76	6.3	174	128	21216	
77	6.3	25	150	3750	
78	6.3	99	38	13682	
79	6.3	25	83	2075	
80	6.3	103	11	1063	
81	6.3	100	137	13700	
82	6.3	80	254	20320	
83	6.3	29	82	2050	
84	6.3	50	134	6556	
85	6.3	50	79	3590	
86	6.3	25	150	3750	
87	6.3	30	84	9652	
88	6.3	50	83	4150	
89	6.3	52	150	13260	
90	6.3	2	67	134	
91	6.3	24	139	3336	
92	6.3	5	250	1250	
93	6.3	3	124	670	
94	6.3	5	239	1195	
CA50					

Volume de concreto (C-30) = 0.00 m³
Área de forma = 0.00 m²



Armação negativa das lajes do pavimento QUARTO (Eixo Y)

escala 1:75

N84	7 N61 ø5.0 c/20 C=235
N92	6 N62 ø5.0 c/20 C=289
N84	7 N63 ø5.0 c/20 C=93
N85	4 N52 ø5.0 c/20 C=305
N102	13 N1 ø5.0 c/20 C=102
N82	5 N64 ø5.0 c/20 C=336
N92	6 N65 ø5.0 c/20 C=168
N92	6 N66 ø5.0 c/20 C=167
N92	6 N67 ø5.0 c/20 C=337
N84	7 N68 ø5.0 c/20 C=107
N84	7 N69 ø5.0 c/20 C=329
N84	7 N70 ø5.0 c/20 C=334
N84	7 N71 ø5.0 c/20 C=281
N84	7 N65 ø5.0 c/20 C=168
N84	7 N66 ø5.0 c/20 C=167
N84	7 N72 ø5.0 c/20 C=188
N85	4 N2 ø5.0 c/20 C=94
N85	4 N3 ø5.0 c/20 C=94
N85	4 N5 ø5.0 c/20 C=507
N85	4 N2 ø5.0 c/20 C=94
N101	4 N73 ø5.0 c/20 C=260
N85	4 N53 ø5.0 c/20 C=269
N85	4 N74 ø5.0 c/20 C=242
N85	4 N75 ø5.0 c/20 C=247
N85	4 N76 ø5.0 c/20 C=90
N85	4 N2 ø5.0 c/20 C=94
N85	4 N77 ø5.0 c/20 C=504
N85	4 N77 ø5.0 c/20 C=504
N85	4 N20 ø5.0 c/20 C=109
N85	4 N78 ø5.0 c/20 C=256
N85	4 N79 ø5.0 c/20 C=115
N85	4 N80 ø5.0 c/20 C=371
N85	4 N81 ø5.0 c/20 C=370
N85	4 N82 ø5.0 c/20 C=115
N85	4 N83 ø5.0 c/20 C=256

Armaduras de distribuição	
Armadura	Armadura de distribuição
N84	7 N1 ø5.0 c/20 C=102
N85	4 N2 ø5.0 c/20 C=94
N85	4 N3 ø5.0 c/20 C=500
N85	7 N4 ø5.0 c/20 C=495
N85	4 N5 ø5.0 c/20 C=507
N87	7 N6 ø5.0 c/20 C=497
N85	4 N2 ø5.0 c/20 C=94
N84	7 N1 ø5.0 c/20 C=102
N85	4 N2 ø5.0 c/20 C=94
N84	7 N7 ø5.0 c/20 C=97
N87	7 N8 ø5.0 c/20 C=501
N85	4 N9 ø5.0 c/20 C=511
N84	7 N10 ø5.0 c/20 C=268
N87	7 N11 ø5.0 c/20 C=202
N88	4 N12 ø5.0 c/20 C=475
N88	4 N13 ø5.0 c/20 C=95
N84	7 N14 ø5.0 c/20 C=92
N84	7 N1 ø5.0 c/20 C=101
N85	4 N2 ø5.0 c/20 C=94
N84	7 N15 ø5.0 c/20 C=191
N84	7 N16 ø5.0 c/20 C=313
N85	4 N17 ø5.0 c/20 C=510
N89	7 N18 ø5.0 c/20 C=488
N85	4 N19 ø5.0 c/20 C=498
N85	4 N20 ø5.0 c/20 C=109
N84	7 N21 ø5.0 c/20 C=117
N84	7 N7 ø5.0 c/20 C=96
N90	8 N3 ø5.0 c/20 C=500
N91	8 N22 ø5.0 c/20 C=505
N84	7 N2 ø5.0 c/20 C=94
N84	7 N23 ø5.0 c/20 C=101
N104	13 N9 ø5.0 c/20 C=510
N92	6 N24 ø5.0 c/20 C=275
N92	6 N25 ø5.0 c/20 C=199
N84	7 N26 ø5.0 c/20 C=101
N84	7 N27 ø5.0 c/20 C=97
N92	6 N28 ø5.0 c/20 C=199
N92	6 N29 ø5.0 c/20 C=311
N93	8 N30 ø5.0 c/20 C=476
N84	7 N31 ø5.0 c/20 C=116
N94	7 N32 ø5.0 c/20 C=461
N86	7 N33 ø5.0 c/20 C=516
N95	13 N2 ø5.0 c/20 C=94
N95	13 N3 ø5.0 c/20 C=500
N95	13 N5 ø5.0 c/20 C=507
N96	7 N34 ø5.0 c/20 C=92
N97	4 N7 ø5.0 c/20 C=97
N98	8 N35 ø5.0 c/20 C=503
N99	8 N36 ø5.0 c/20 C=470
N96	7 N13 ø5.0 c/20 C=95
N96	7 N2 ø5.0 c/20 C=94
N91	8 N37 ø5.0 c/20 C=516
N93	8 N38 ø5.0 c/20 C=496
N95	13 N20 ø5.0 c/20 C=109
N95	13 N2 ø5.0 c/20 C=94
N95	13 N3 ø5.0 c/20 C=500
N95	13 N40 ø5.0 c/20 C=508
N92	6 N41 ø5.0 c/20 C=118
N100	7 N42 ø5.0 c/20 C=508
N95	13 N12 ø5.0 c/20 C=475
N101	4 N43 ø5.0 c/20 C=125
N92	6 N44 ø5.0 c/20 C=119
N95	13 N17 ø5.0 c/20 C=510
N95	13 N19 ø5.0 c/20 C=498
N95	13 N20 ø5.0 c/20 C=109
N85	4 N45 ø5.0 c/20 C=125
N85	4 N46 ø5.0 c/20 C=126
N92	6 N47 ø5.0 c/20 C=374
N92	6 N48 ø5.0 c/20 C=375
N85	4 N49 ø5.0 c/20 C=126
N85	4 N50 ø5.0 c/20 C=131
N102	13 N2 ø5.0 c/20 C=94
N102	13 N3 ø5.0 c/20 C=500
N102	13 N5 ø5.0 c/20 C=507
N85	4 N51 ø5.0 c/20 C=119
N84	7 N2 ø5.0 c/20 C=94
N84	7 N52 ø5.0 c/20 C=305
N84	7 N2 ø5.0 c/20 C=94
N101	4 N53 ø5.0 c/20 C=269
N84	7 N54 ø5.0 c/20 C=237
N85	4 N55 ø5.0 c/20 C=118
N84	7 N2 ø5.0 c/20 C=94
N84	7 N52 ø5.0 c/20 C=305
N84	7 N23 ø5.0 c/20 C=101
N84	7 N56 ø5.0 c/20 C=328
N84	7 N57 ø5.0 c/20 C=171
N84	7 N58 ø5.0 c/20 C=163
N84	7 N59 ø5.0 c/20 C=323
N84	7 N31 ø5.0 c/20 C=116
N102	13 N1 ø5.0 c/20 C=102
N86	7 N60 ø5.0 c/20 C=493
N103	7 N38 ø5.0 c/20 C=496
N102	13 N1 ø5.0 c/20 C=102
N85	4 N52 ø5.0 c/20 C=305
N102	13 N2 ø5.0 c/20 C=94

RELAÇÃO DO AÇO

Negativos Y					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	60	102	6120
	2	5.0	119	94	11186
	3	5.0	42	500	21000
	4	5.0	7	495	3465
	5	5.0	34	507	17238
	6	5.0	7	497	3479
	7	5.0	18	97	1746
	8	5.0	7	501	3507
	9	5.0	17	511	8687
	10	5.0	7	268	1876
	11	5.0	7	202	1414
	12	5.0	17	475	8075
	13	5.0	11	95	1045
	14	5.0	7	92	644
	15	5.0	7	191	1337
	16	5.0	7	313	2191
	17	5.0	17	510	8670
	18	5.0	7	488	3416
	19	5.0	17	498	8466
	20	5.0	34	109	3706
	21	5.0	7	117	819
	22	5.0	8	505	4040
	23	5.0	14	101	1414
	24	5.0	6	275	1650
	25	5.0	6	199	1194
	26	5.0	7	101	707
	27	5.0	7	97	679
	28	5.0	6	199	1194
	29	5.0	6	311	1866
	30	5.0	8	476	3808
	31	5.0	14	116	1624
	32	5.0	7	461	3227
	33	5.0	7	516	3612
	34	5.0	7	92	644
	35	5.0	8	503	4024
	36	5.0	15	470	7050
	37	5.0	8	516	4128
	38	5.0	15	496	7440
	39	5.0	13	500	6500
	40	5.0	13	508	6604
	41	5.0	6	118	708
	42	5.0	7	508	3556
	43	5.0	4	125	500
	44	5.0	6	119	714
45	5.0	4	125	500	
46	5.0	4	126	504	
47	5.0	6	374	2244	
48	5.0	6	375	2250	
49	5.0	4	126	504	
50	5.0	4	131	524	
51	5.0	4	119	476	
52	5.0	22	305	6710	
53	5.0	8	269	2152	
54	5.0	7	237	1659	
55	5.0	4	118	472	
56	5.0	7	328	2296	
57	5.0	7	171	1197	
58	5.0	7	163	1141	
59	5.0	7	323	2261	
60	5.0	7	493	3451	
61	5.0	7	235	1645	
62	5.0	6	289	1734	
63	5.0	7	93	651	
64	5.0	6	336	2016	
65	5.0	13	168	2184	
66	5.0	13	167	2171	
67	5.0	6	337	2022	
68	5.0	7	107	749	
69	5.0	7	329	2303	
70	5.0	7	334	2338	
71	5.0	7	281	1967	
72	5.0	7	188	1316	
73	5.0	4	260	1040	
74	5.0	4	242	968	
75	5.0	4	479	1916	
76	5.0	4	90	360	
77	5.0	8	504	4032	
78	5.0	4	256	1024	
79	5.0	4	115	460	
80	5.0	4	371	1484	
81	5.0	4	370	1480	
82	5.0	4	115	460	
83	5.0	4	256	1024	
84	6.3	346	45	15558	
85	6.3	474	65	30810	
86	6.3	76	138	10488	
87	6.3	29	62	1798	
88	6.3	29	62	1798	
89	6.3	24	137	3288	
90	6.3	25	150	3750	
91	6.3	51	150	7650	
92	6.3	164	121	19844	
93	6.3	49	149	7301	
94	6.3	23	134	3082	
95	6.3	212	251	53212	
96	6.3	15	128	1920	
97	6.3	8	72	576	
98	6.3	25	150	3750	
99	6.3	23	142	3266	
100	6.3	25	138	3450	
101	6.3	32	70	2240	
102	6.3	75	254	19050	
103	6.3	25	139	3475	
104	8.0	27	251	6777	

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	2294.2	192	12 m	561.4
CA80	8.0	67.8	6	12 m	26.7
PESO TOTAL (kg)		2486.3	-	rolo (170 kg)	383.2
CA50		588.1			
CA80		383.2			

Volume de concreto (C-30) = 0.00 m³
Área de forma = 0.00 m²

INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA
SERTÃO PERNAMBUCANO
DIRETORIA DE ENGENHARIA E INFRAESTRUTURA
Rua Américo Lopes, 240, Centro
Petrópolis/PE - CEP: 56.302-100

ESTRUTURAL REITORIA

INSTITUTO FEDERAL Petrópolis/PE

AVENIDA CENTENÁRIO - CENTRO
PETRÓPOLIS-PE (ATRAS DA BIBLIOTECA MUNICIPAL)

DESCRIÇÃO
LAJES DO QUARTO PAVIMENTO NEGATIVA Y

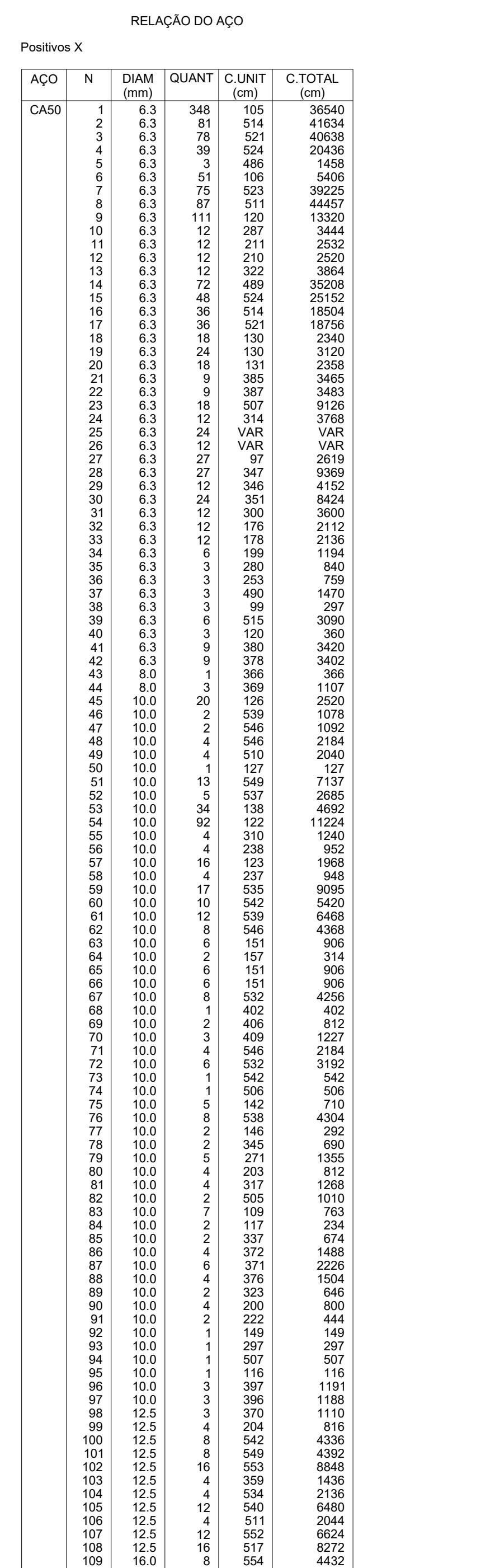
ESCALA
1/75

DATA
26/07/2024

ASSINATURA CARIMBO - DIRETORIA DE ENGENHARIA E INFRAESTRUTURA

ASSINATURA CARIMBO - RESPONSÁVEL TÉCNICO

WILSON NERY DA CUNHA
CREA/44749-BA



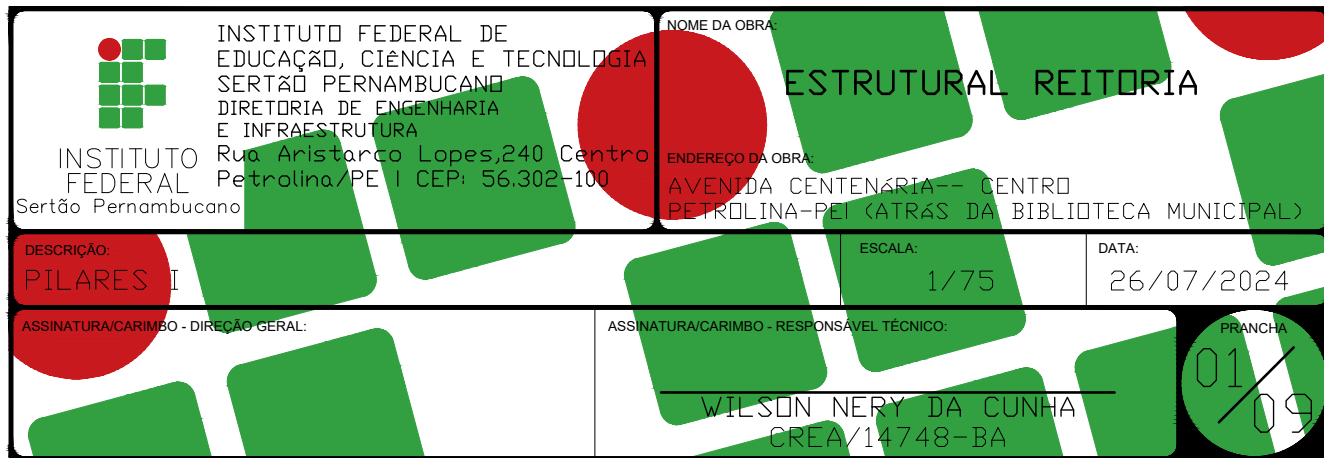
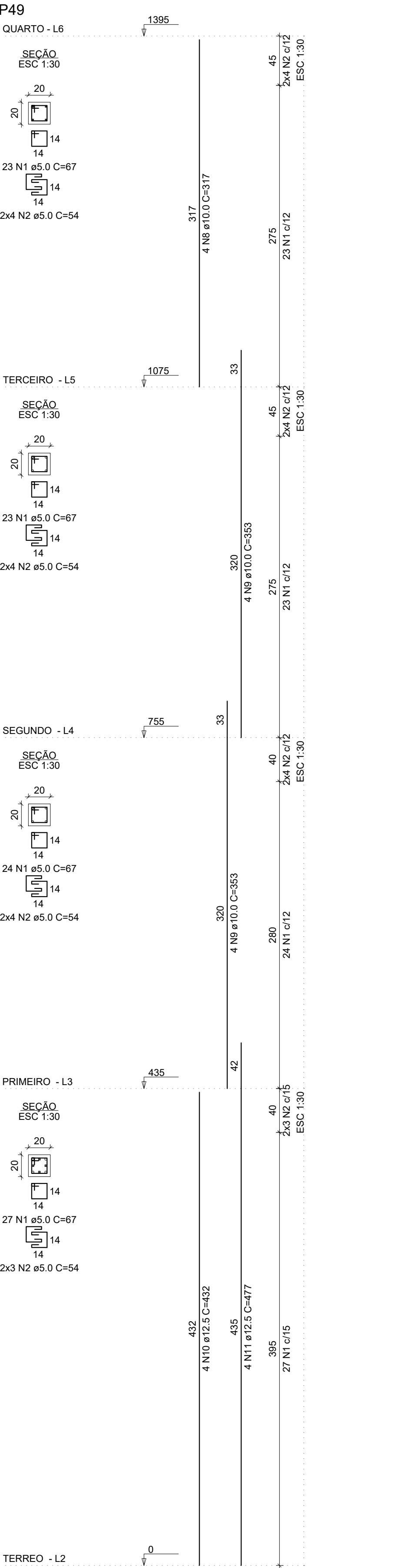
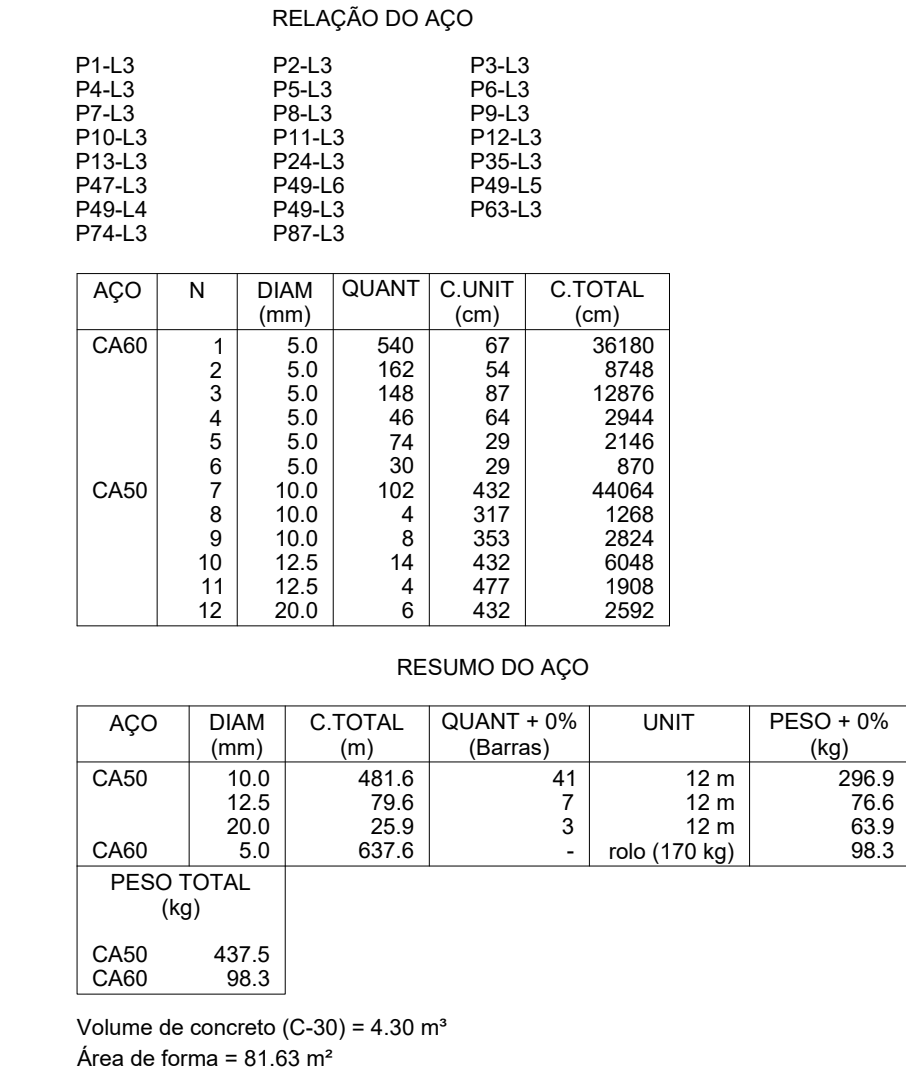
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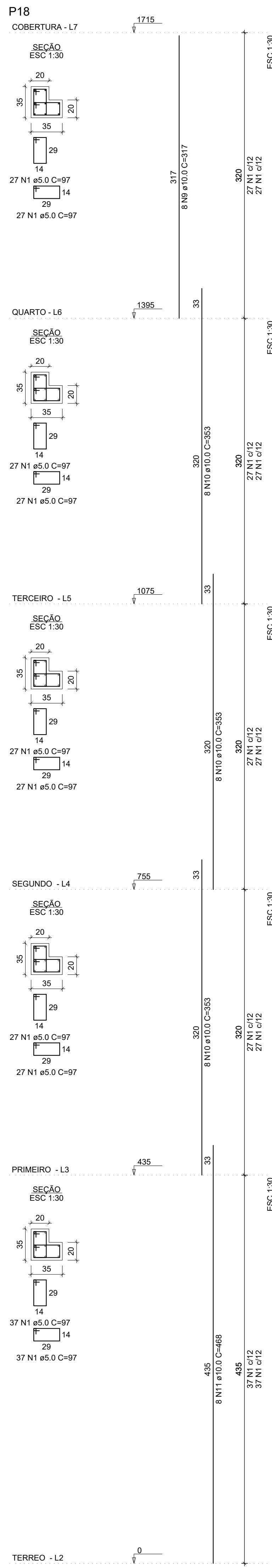
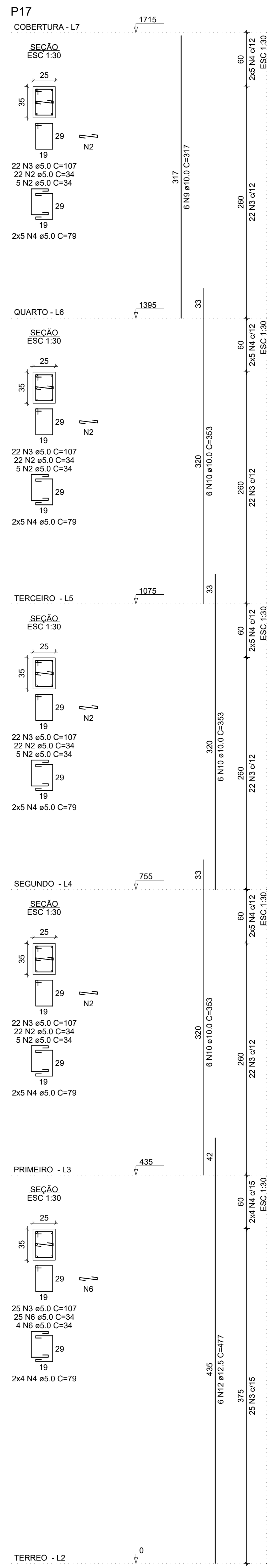
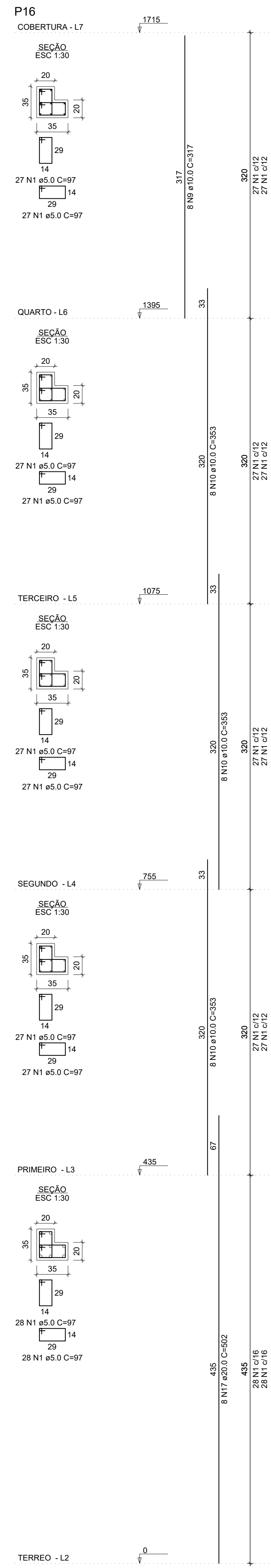
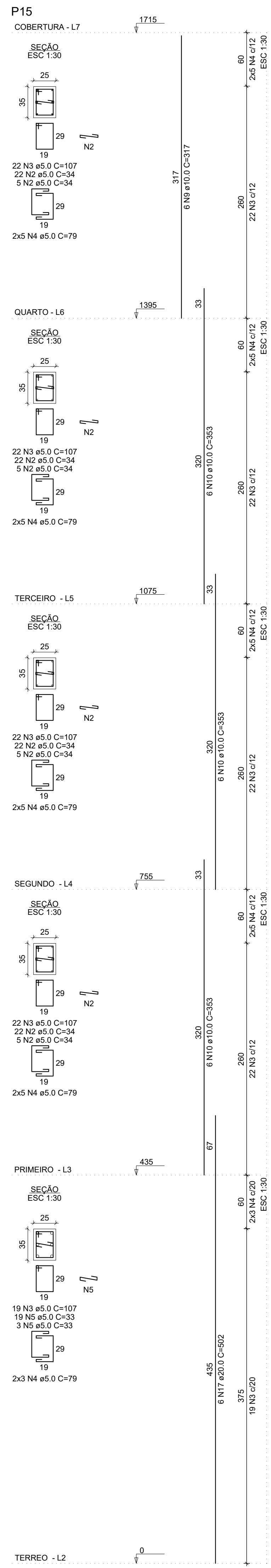
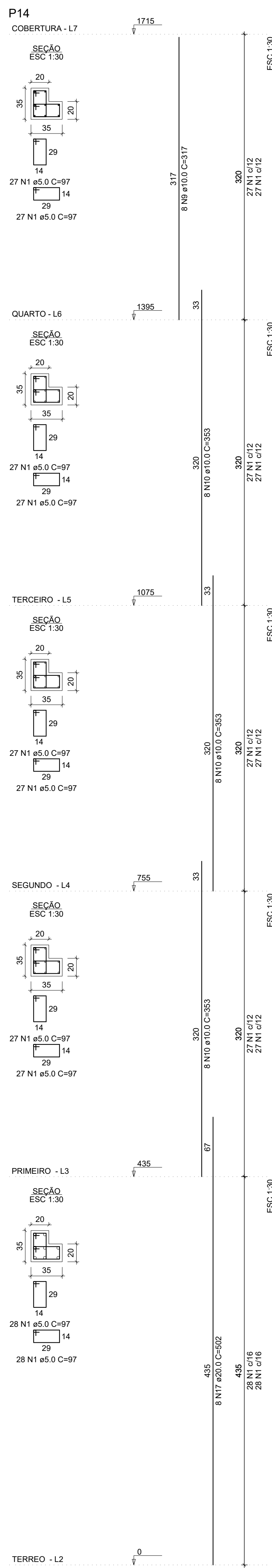
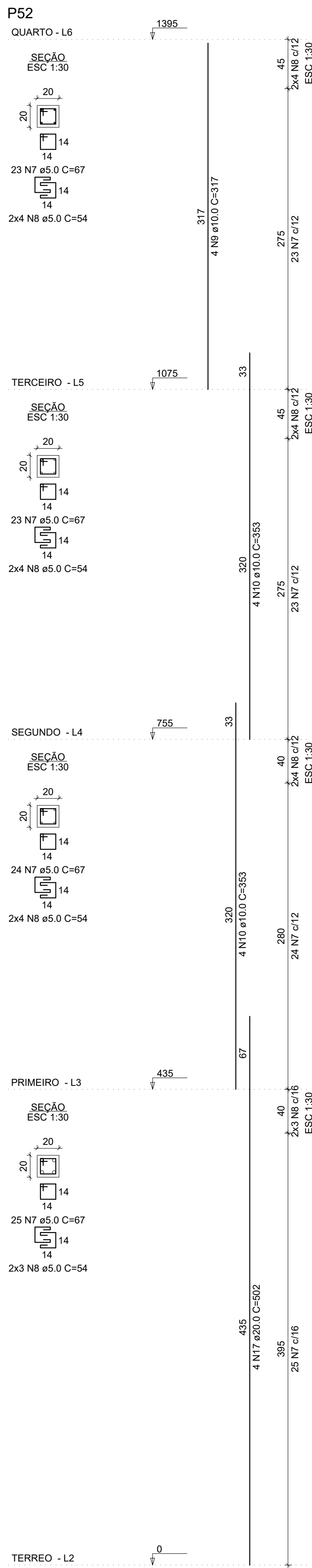
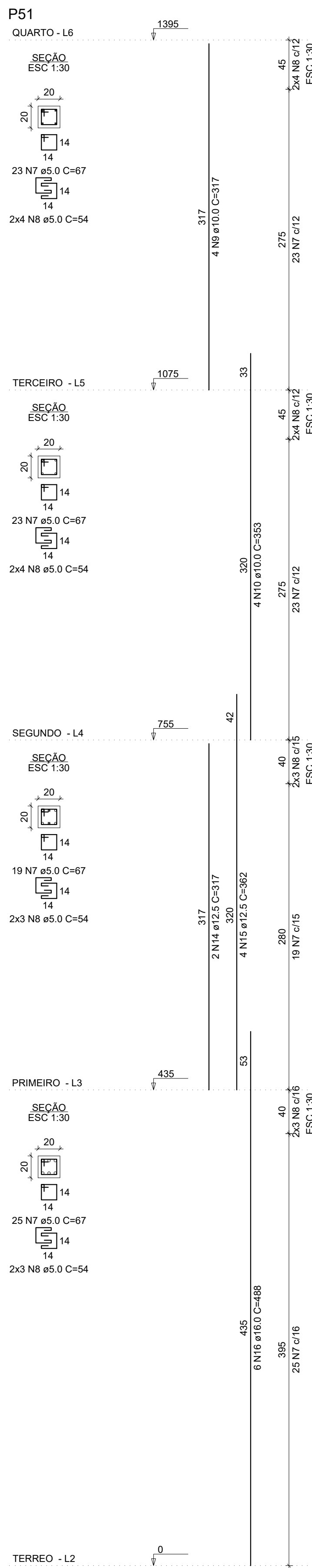
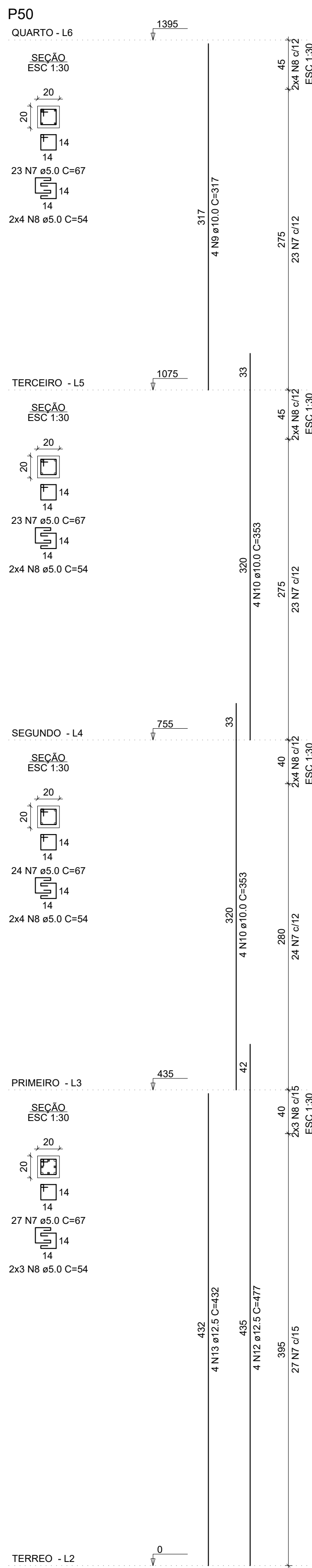
RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	4386.2	366	12 m	1073.3
	8.0	14.7	2	12 m	5.8
	10.0	1041.2	87	12 m	641.9
	12.5	464.9	39	12 m	447.8
	16.0	44.3	4	12 m	70
PESO TOTAL (kg)					
CA50	2238.8				

Volume de concreto (C-30) = 91.53 m³
Área de forma = 0.00 m²



Volume de concreto (C-30) = 0.00 m³
Área de forma = 0.00 m²





RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT (mm)	C.UNIT (mm)	C.TOTAL (mm)
CA60	1	5.0	834	97	80896
	2	5.0	216	34	7344
	3	5.0	220	107	23540
	4	5.0	90	78	7020
	5	5.0	22	33	726
	6	5.0	185	54	990
	7	5.0	282	67	18894
	8	5.0	185	54	10008
	9	10.0	48	317	15216
	10	10.0	128	353	45184
CA50	11	10.0	8	468	3744
	12	12.5	10	477	4770
	13	12.5	4	432	1728
	14	12.5	4	317	1268
	15	12.5	4	362	1448
	16	18.0	6	488	2928
	17	20.0	26	502	13052

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0%	UNIT	PESO + 0% (kg)
CA50	10.0	844.4	34	12 m	385.5
	12.5	85.6	8	12 m	82.7
	18.0	29.3	3	12 m	48.2
CA60	20.0	130.5	11	12 m	321.9
	5.0	1445.7	-	rolo (170 kg)	222.8

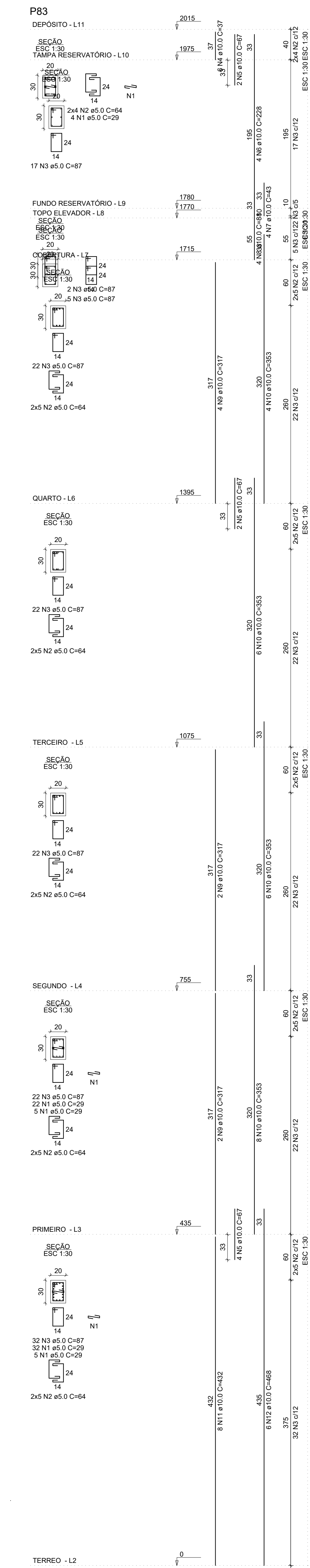
PESO TOTAL (kg)

CA50 846.2

CA60 222.8

Volume de concreto (C-30) = 9.82 m³

Área de forma = 148.67 m²

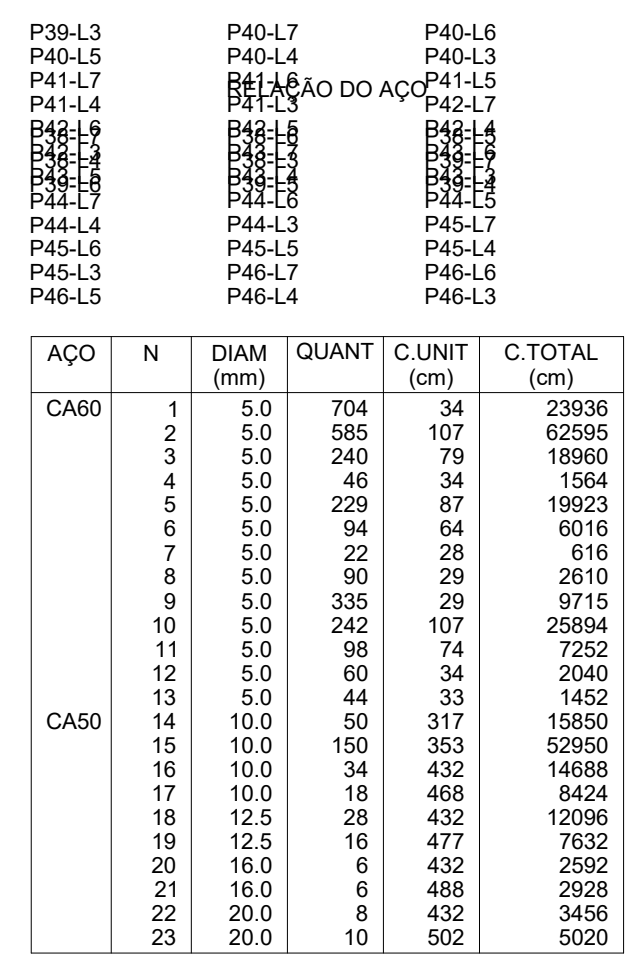


AÇO	DIAM. (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	10.0	780.6	66	12 m	481.3
	12.5	242.3	21	12 m	233.4
	16.0	55.2	5	12 m	87.1
CA60	20.0	30.1	3	12 m	74.3
	5.0	1553.2	-	rolo (170 kg)	244
PESO TOTAL (kg) CA50 876.1 CA60 244					

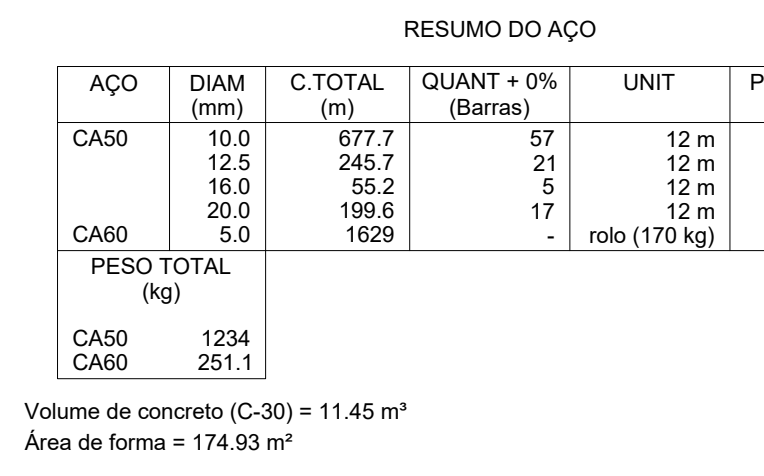
Volume de concreto (C-30) = 11.06 m³
 Área de forma = 157.78 m²

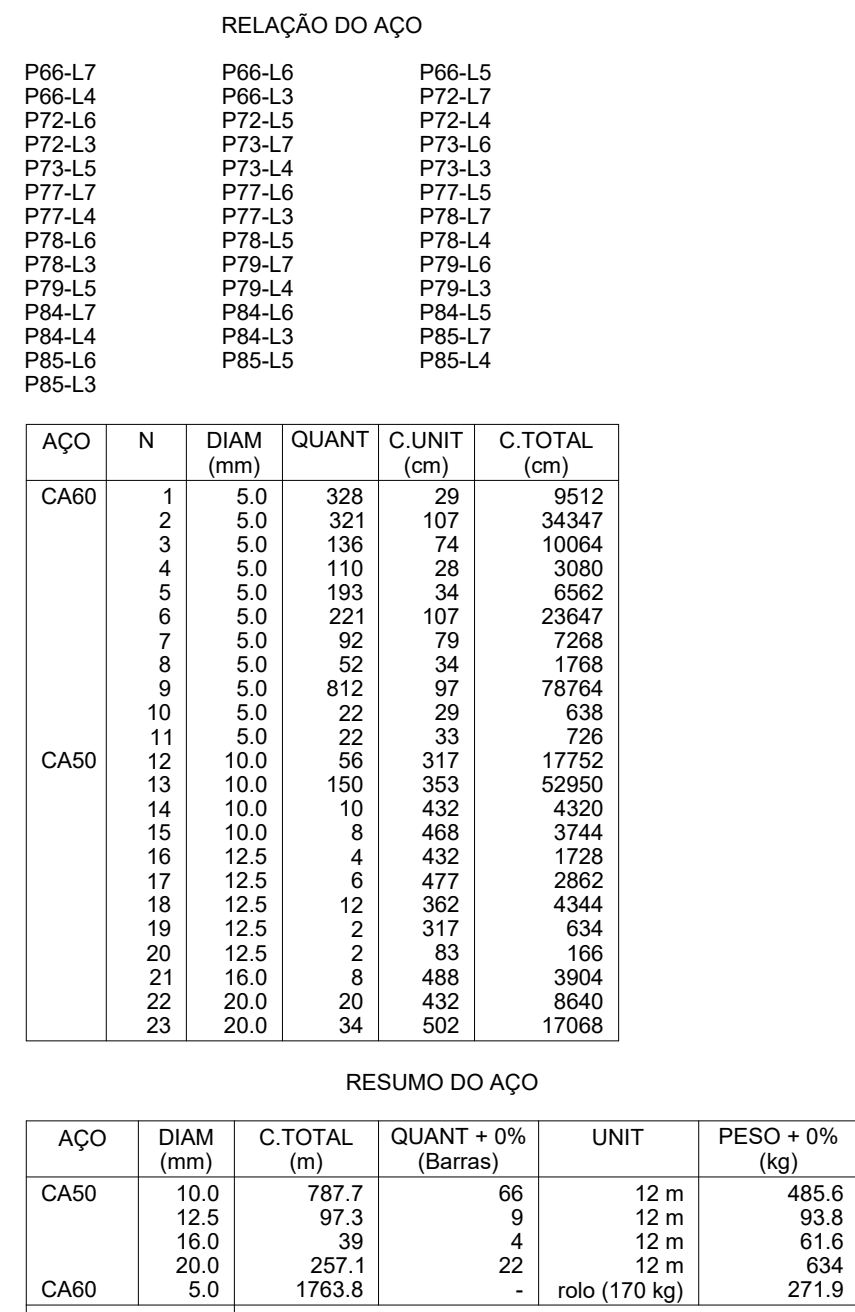
RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	10,0	194,7	17	12 m	120
CA60	5,0	182,1	-	rolo (176 kg)	28,1
PESO TOTAL (kg)					
CA50	120				
CA60	28,1				

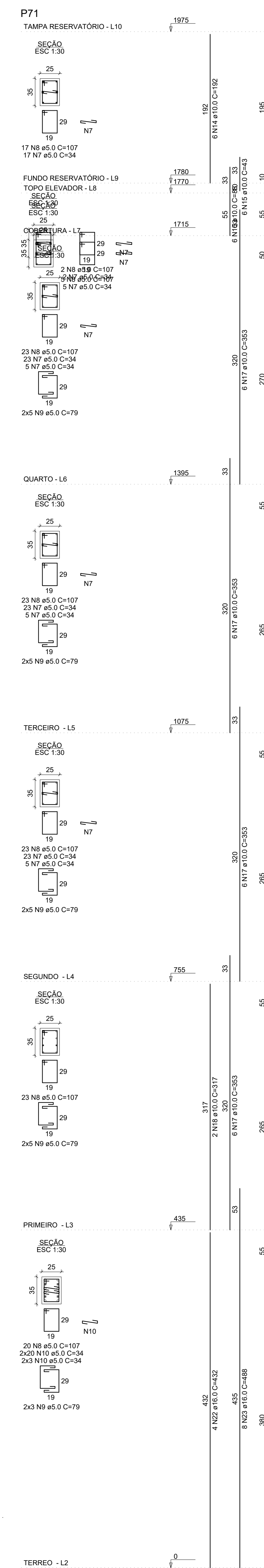
Volume de concreto (C-30) = 1,21 m³
 Área de forma = 20,15 m²



	INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DO RIO GRANDE DO SUL SERVIÇO DE REGISTRO DIRETORIA DE EDUCAÇÃO E INFRAESTRUTURA Rua João Manoel, Luperz 244, Centro Instituto Federal do Rio Grande do Sul Petrópolis - RS CEP: 95.265-900	DATA DA EMISSÃO: 26/07/2024 ESTRUTURAL REITORIA	Nº DE IDENTIFICAÇÃO: 00000000000000000000
INSTITUTO FEDERAL DO RIO GRANDE DO SUL Serviço de Registro	Avenida Centenário do Rio Grande, 1500 - Fátima - Rio Grande - RS CEP: 96.201-900	Nº DE IDENTIFICAÇÃO: 00000000000000000000 AVENIDA CENTENÁRIO DO RIO GRANDE, 1500 - FÁTIMA - RIO GRANDE - RS CEP: 96.201-900	Nº DE IDENTIFICAÇÃO: 00000000000000000000
INSTITUTO FEDERAL DO RIO GRANDE DO SUL	ESCOLA	DATA	ESCOLA
INSTITUTO FEDERAL DO RIO GRANDE DO SUL	1775	26/07/2024	1775
INSTITUTO FEDERAL DO RIO GRANDE DO SUL	ASSISTENTE ADMINISTRATIVO - REGISTRO DE TÍTULOS	ASSISTENTE ADMINISTRATIVO - REGISTRO DE TÍTULOS	ASSISTENTE ADMINISTRATIVO - REGISTRO DE TÍTULOS
INSTITUTO FEDERAL DO RIO GRANDE DO SUL	WILSON NESS DA CUNHA	WILSON NESS DA CUNHA	WILSON NESS DA CUNHA

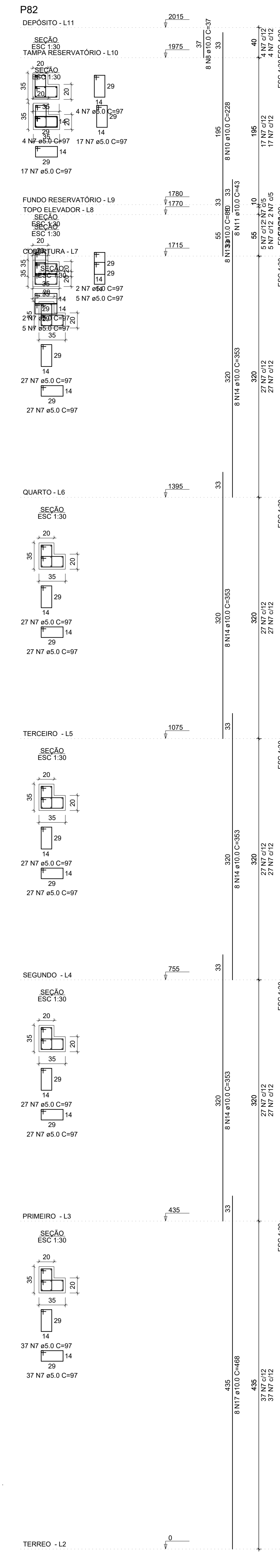
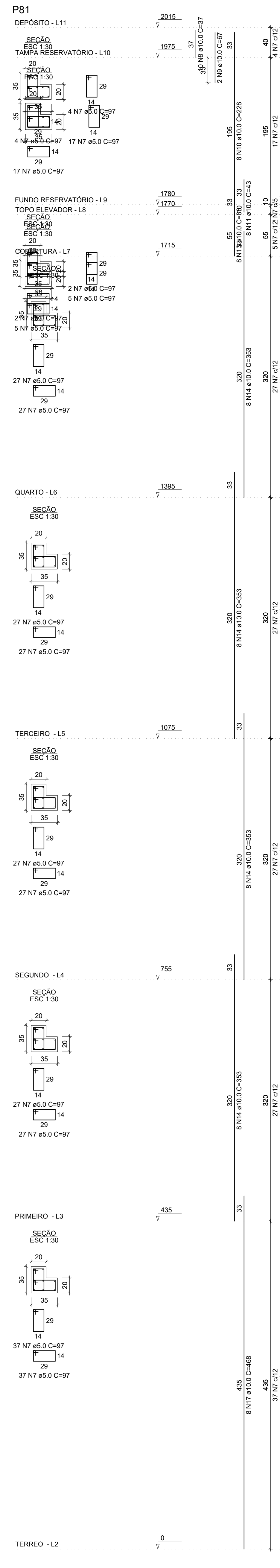
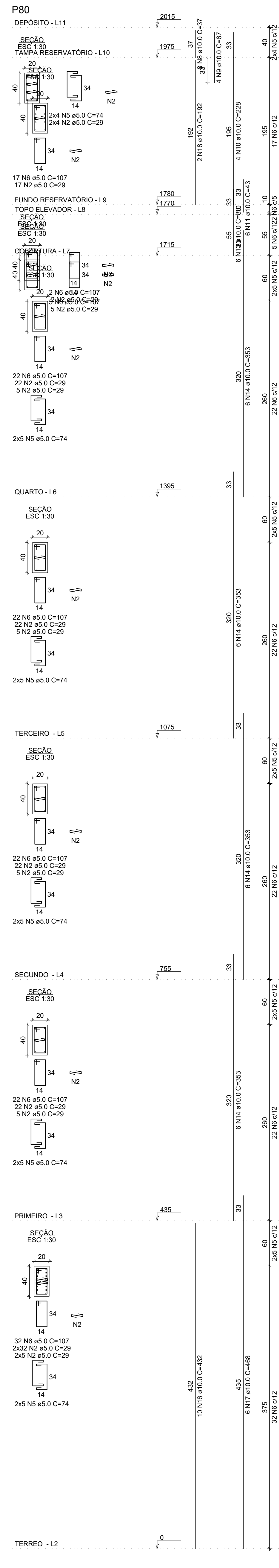
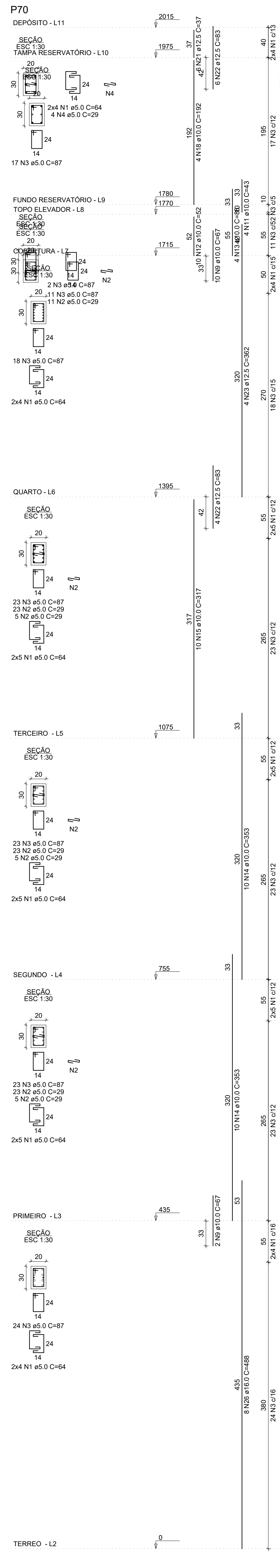
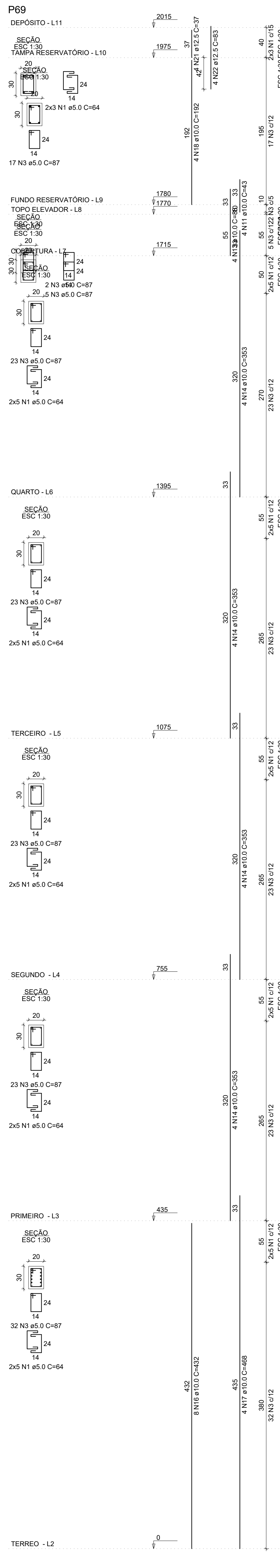
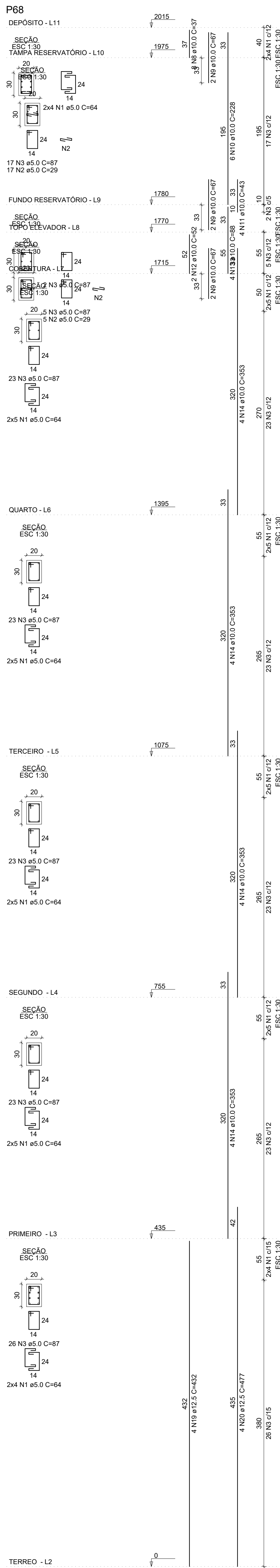
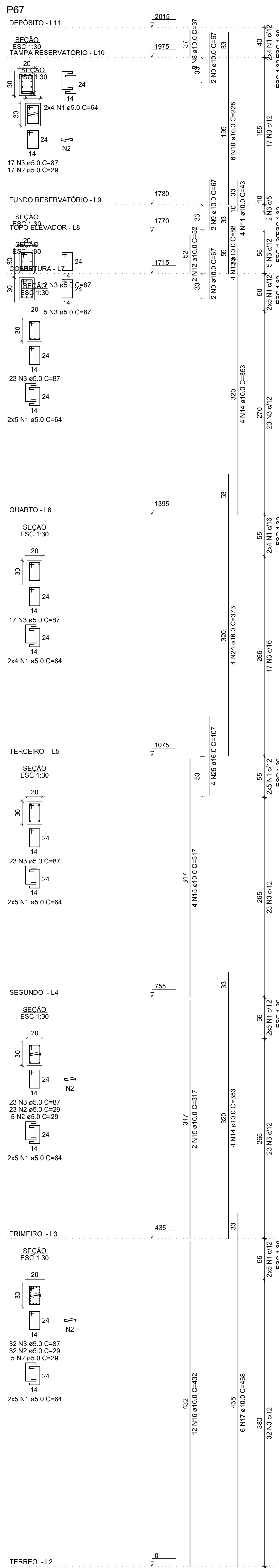






RESUMO DO AÇO				
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UN
CA50	10.0	2318.7	194	
	18.0	85.6	8	
	20.0	124.9	11	
CA60	5.0	6172	-	rolô (m)
PESO TOTAL (kg)				
CA50	1872.7			
CA60	951.3			

Volume de concreto (C-30) = 38,77 m³
 Área de forma = 539,36 m²



RELAÇÃO DO AÇO

ACO	N	DIA (mm)	QUANT	CUNIT	C.TOTAL (cm)
CA80	1	5.0	222	64	14208
	2	5.0	413	29	11977
	3	5.0	573	87	49951
	4	5.0	4	29	116
	5	5.0	68	74	4292
	6	5.0	144	107	15459
	7	5.0	692	97	67124
CA20	8	10.0	42	37	1554
	9	10.0	30	67	2010
	10	10.0	32	228	7296
	11	10.0	38	43	1634
	12	10.0	14	52	729
	13	10.0	38	88	3344
	14	10.0	148	353	52244
	15	10.0	16	317	5072
	16	10.0	30	432	12960
	17	10.0	32	468	14076
	18	10.0	10	192	1920
	19	12.5	4	432	1728
	20	12.5	4	477	1908
	21	12.5	14	83	1162
	22	12.5	14	362	5448
	24	16.0	4	373	1492
	25	16.0	4	107	428
	26	16.0	8	488	3904

RESUMO DO AÇO

ACO	DIA (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	10.0	1637.4	87	12 m	638.6
	12.5	66.2	6	12 m	63.7
CA80	5.0	1629.8	-	rolo (170 kg)	251.2

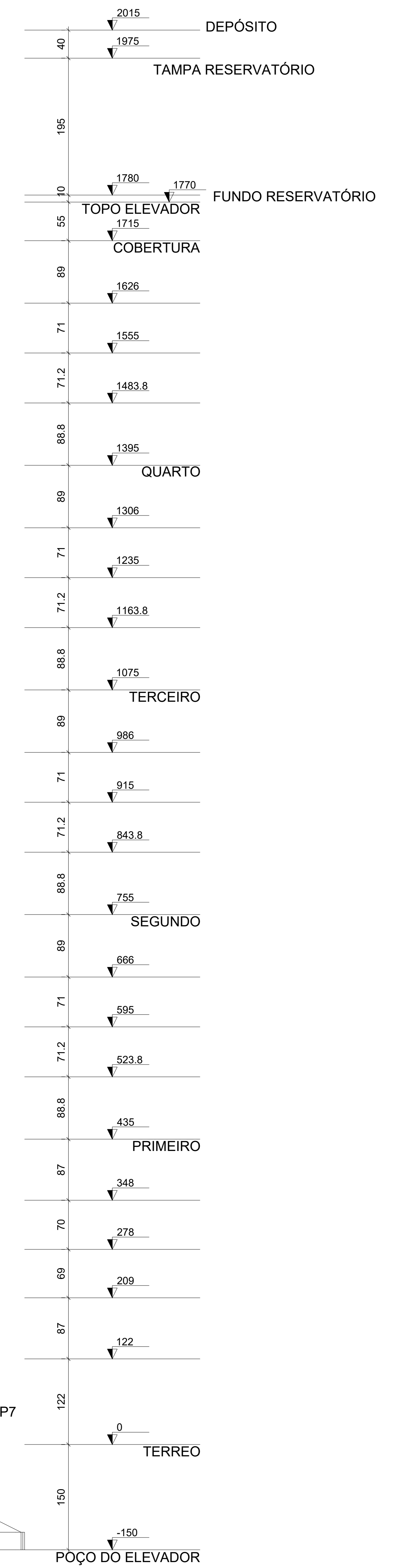
PESO TOTAL (kg)

CA50 785.2

CA80 251.2

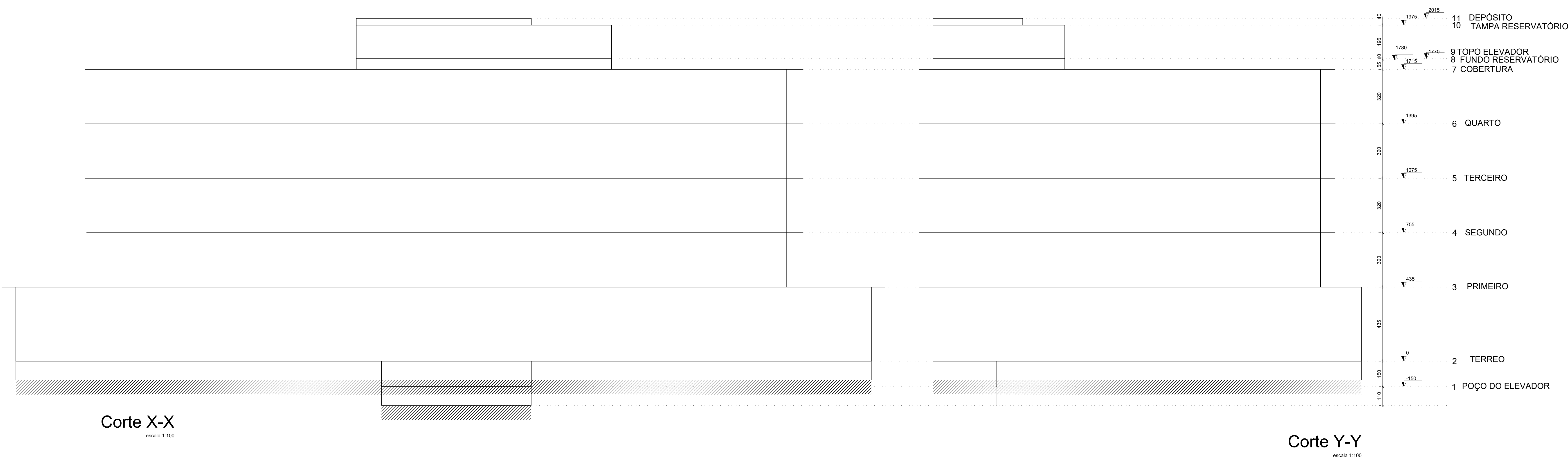
Volume de concreto (C-30) = 10.48 m³

Área de forma = 161.20 m²



 INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA SERTÃO PERNAMBUCANO DIRETORIA DE ENGENHARIA E INFRAESTRUTURA Rua Manoel de Aguiar, 240 - Centro Petrópolis-PE CEP: 56.308-100 INSTITUTO FEDERAL Sertão Pernambucano	NOME DO OBRA ESTRUTURAL REITORIA ENDEREÇO DO OBRA AVENIDA CENENÁRIA - CENTRO PETROLINA-PE (ATRAS DA BIBLIOTECA MUNICIPAL)
Disciplina CORTE A-A ASSINATURACARIMBO - DIRETORIA GERAL	ESCALA 1/75 DATA 26/07/2024 ASSINATURACARIMBO - RESPONSÁVEL TÉCNICO: WILSON NEVES DA CUNHA CREA/14748-B



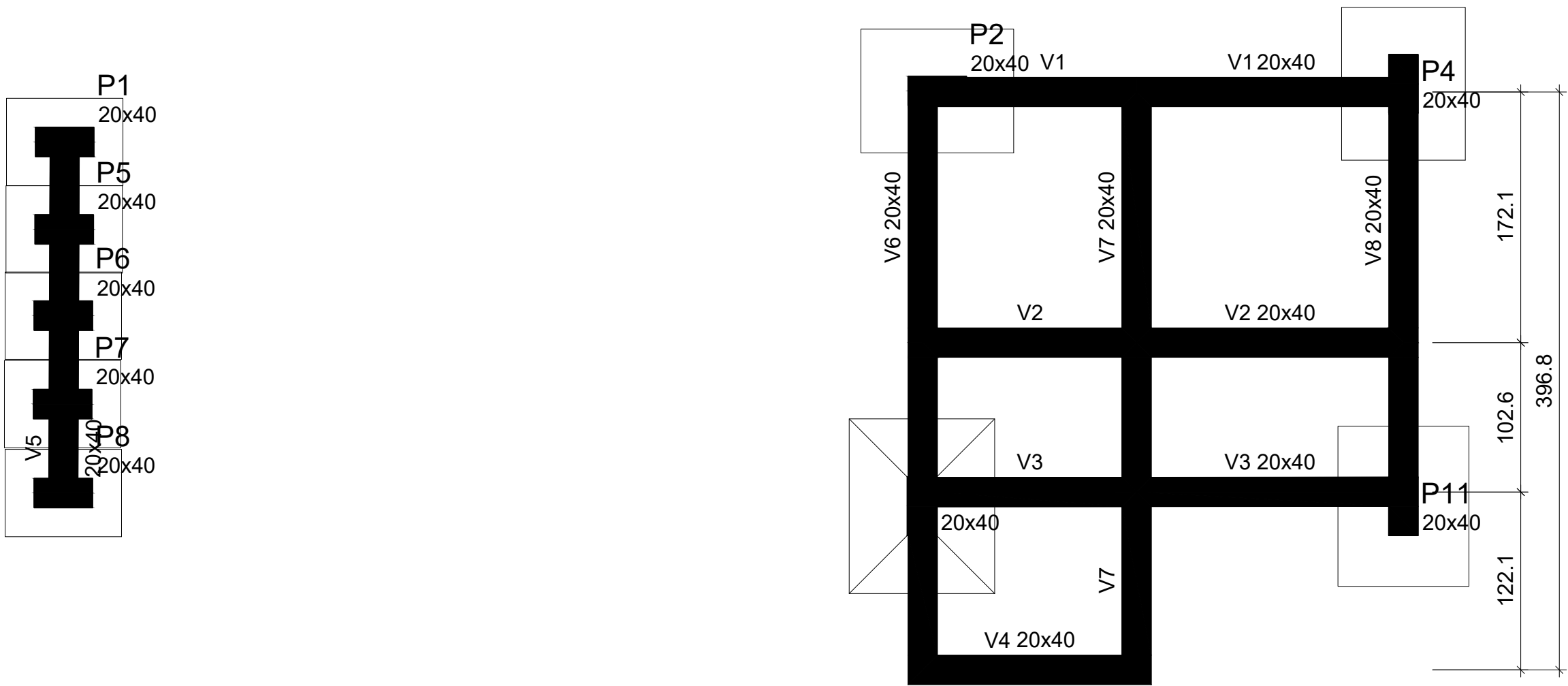


Corte X-X

escala 1:100

Corte Y-Y

escala 1:100



Forma do pavimento TERREO

escala 1:50

Vigas			
Nome	Seção (cm)	Elevação (m)	Nível (m)
V1	20x40	0.00	0.00
V2	20x40	0.00	0.00
V3	20x40	0.00	0.00
V4	20x40	0.00	0.00
V5	20x40	0.00	0.00
V6	20x40	0.00	0.00
V7	20x40	0.00	0.00
V8	20x40	0.00	0.00

Características dos materiais	
fck	Ecs
(kgf/cm²)	(kgf/cm²)
250	241500

Dimensão máxima do agregado = 19 mm

Pilares			
Nome	Seção (cm)	Elevação (m)	Nível (m)
P1	20x40	0.00	0.00
P2	20x40	0.00	0.00
P4	20x40	0.00	0.00
P5	20x40	0.00	0.00
P6	20x40	0.00	0.00
P7	20x40	0.00	0.00
P8	20x40	0.00	0.00
P9	20x40	0.00	0.00
P11	20x40	0.00	0.00



Forma do pavimento SUPERIOR

escala 1:50

Vigas			
Nome	Seção (cm)	Elevação (m)	Nível (m)
V1	20x40	0.00	3.40

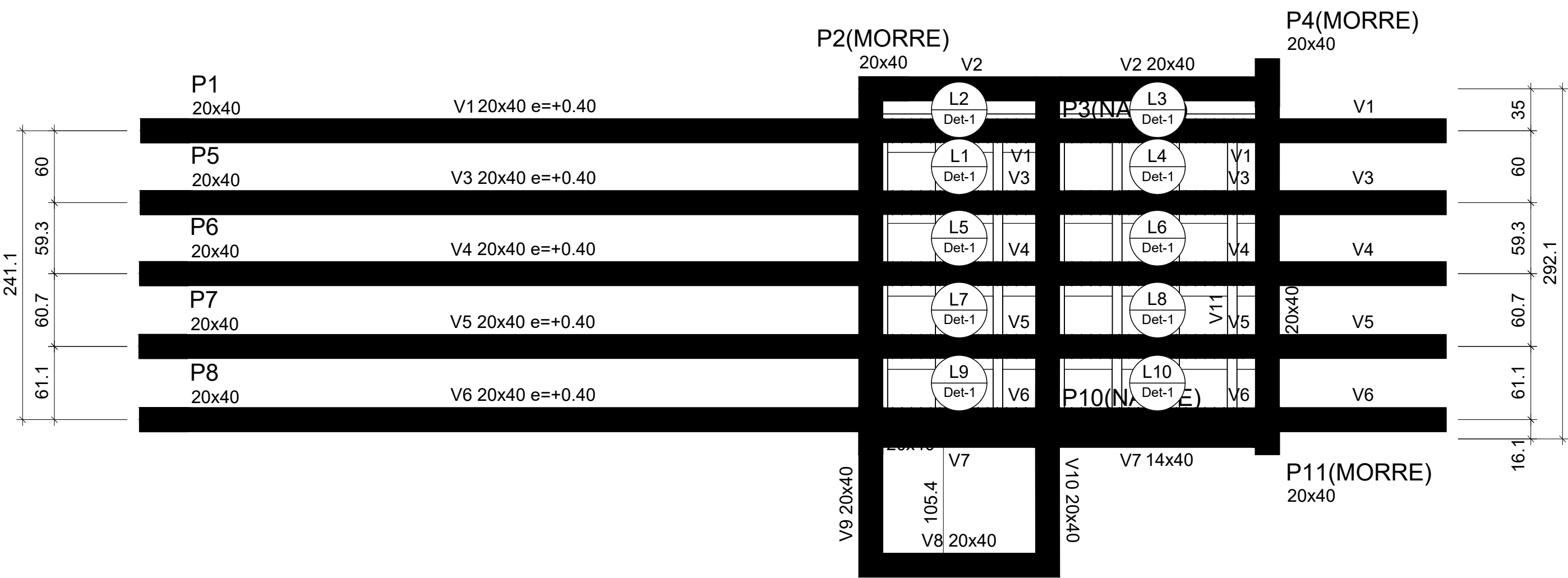
Pilares			
Nome	Seção (cm)	Elevação (m)	Nível (m)
P1	20x40	0.00	3.40
P3	20x20	0.00	3.40
P5	20x40	0.00	3.40
P6	20x40	0.00	3.40
P7	20x40	0.00	3.40
P8	20x40	0.00	3.40
P10	20x20	0.00	3.40

Características dos materiais	
fck	Ecs
(kgf/cm²)	(kgf/cm²)
250	241500

Dimensão máxima do agregado = 19 mm

Legenda das vigas e paredes	
	Viga

Legenda dos pilares	
	Pilar que morre
	Pilar que passa
	Pilar que nasce



Forma do pavimento PRIMEIRA LAJE

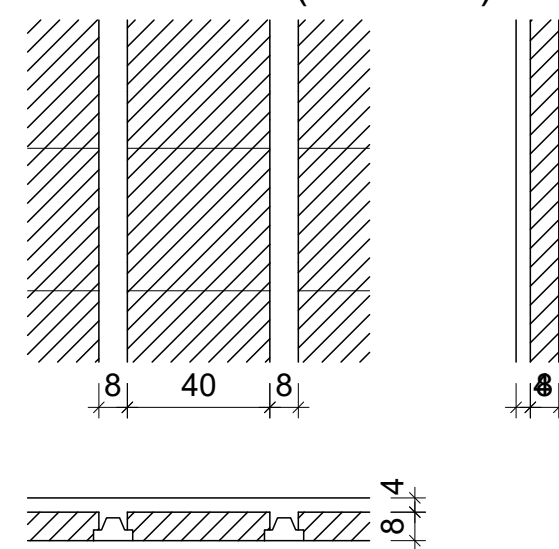
escala 1:50

Vigas			
Nome	Seção (cm)	Elevação (m)	Nível (m)
V1	20x40	0.40	3.40
V2	20x40	0.00	3.00
V3	20x40	0.40	3.40
V4	20x40	0.40	3.40
V5	20x40	0.40	3.40
V6	20x40	0.40	3.40
V7	14x40	0.00	3.00
V8	20x40	0.00	3.00
V9	20x40	0.00	3.00
V10	20x40	0.00	3.00
V11	20x40	0.00	3.00

Pilares			
Nome	Seção (cm)	Elevação (m)	Nível (m)
P1	20x40	0.00	3.00
P2	20x40	0.00	3.00
P3	20x20	0.00	3.00
P4	20x40	0.00	3.00
P5	20x40	0.00	3.00
P6	20x40	0.00	3.00
P7	20x40	0.00	3.00
P8	20x40	0.00	3.00
P9	20x40	0.00	3.00
P10	20x20	0.00	3.00
P11	20x40	0.00	3.00

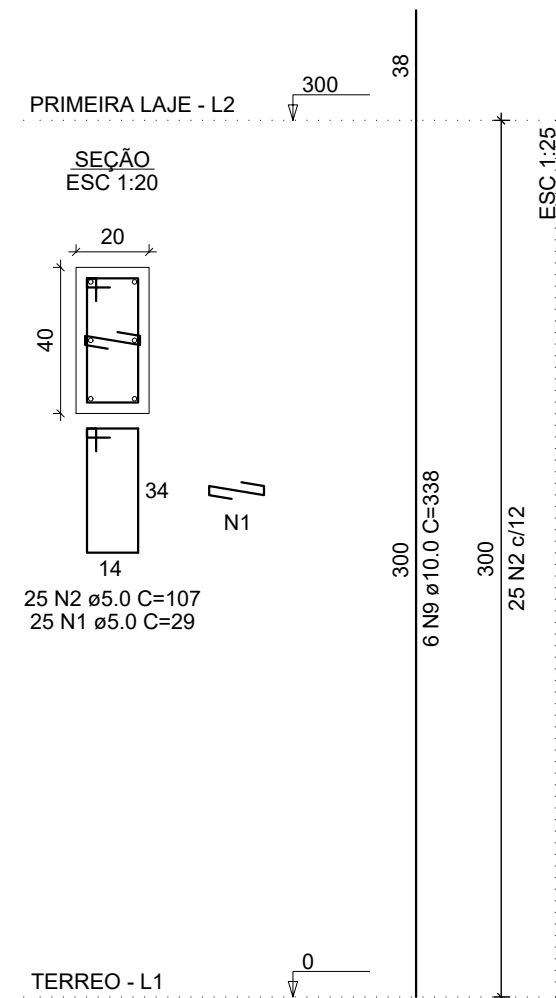
Blocos de enchimento						
Detalhe	Tipo	Nome	Dimensões(cm)			Quantidade
			hb	bx	by	
1	EPS Unidirecional	B8/40/40	8	40	40	28

Detalhe 1 (esc. 1:30)

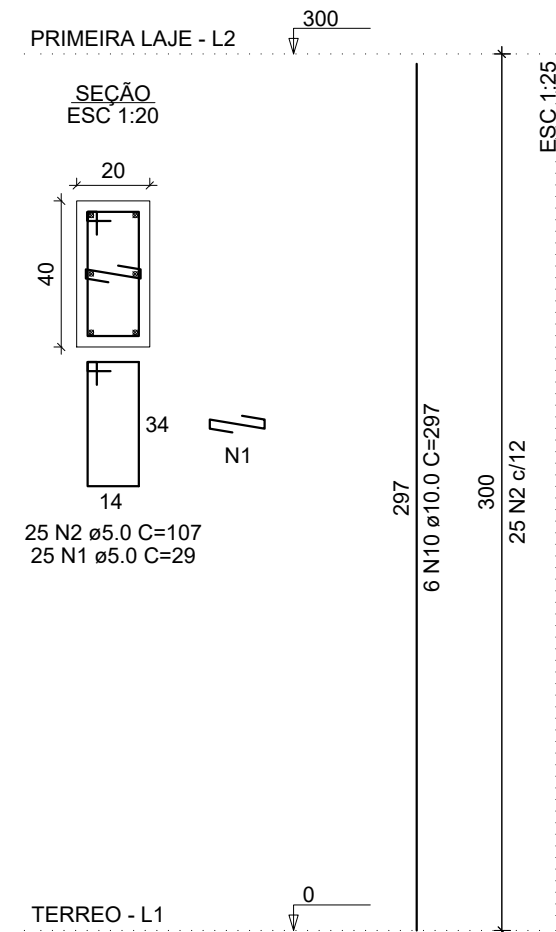


Lajes								
Dados					Sobrecarga (kgf/m²)			
Nome	Tipo	Altura (m)	Elevação (m)	Nível (m)	Peso próprio (kgf/m²)	Adicional	Acidental	Localizada
L1	Pré-moldada	0.12	0.00	3	135	155	100	-
L2	Pré-moldada	0.12	0.00	3	135	155	150	-
L3	Pré-moldada	0.12	0.00	3	135	155	150	-
L4	Pré-moldada	0.12	0.00	3	135	155	100	-
L5	Pré-moldada	0.12	0.00	3	135	155	100	-
L6	Pré-moldada	0.12	0.00	3	135	155	100	-
L7	Pré-moldada	0.12	0.00	3	135	155	100	-
L8	Pré-moldada	0.12	0.00	3	135	155	100	-
L9	Pré-moldada	0.12	0.00	3	135	155	100	-
L10	Pré-moldada	0.12	0.00	3	135	155	100	-

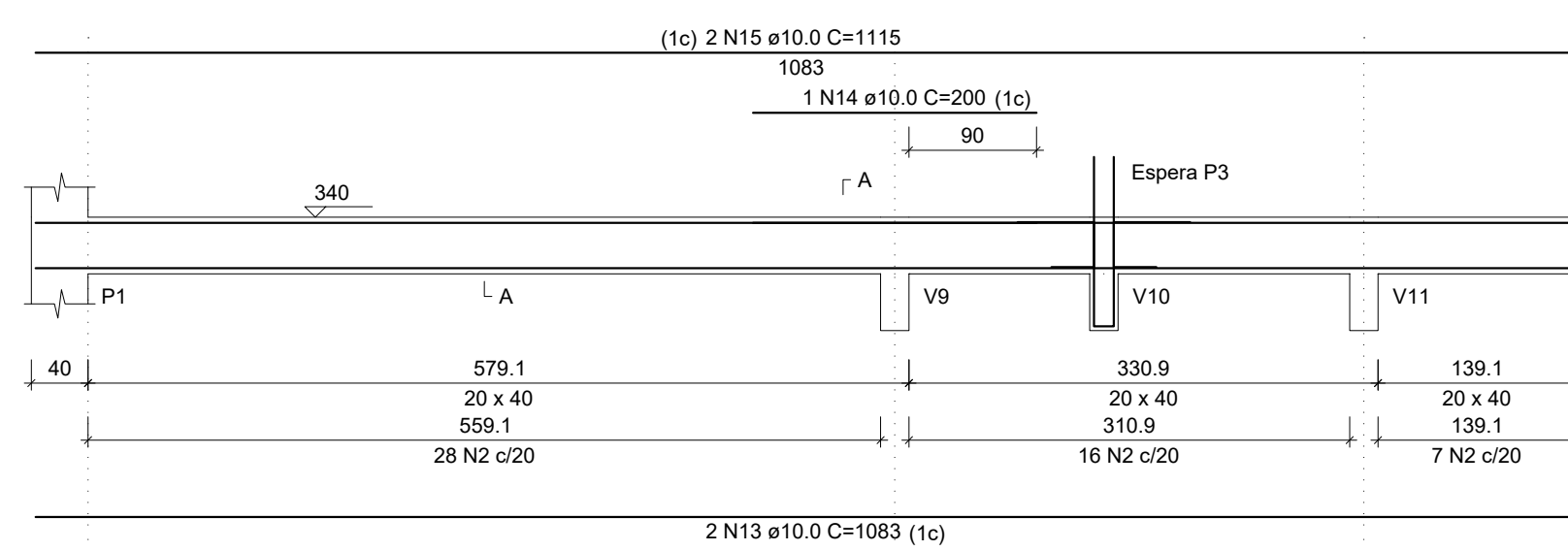
P1=P5=P6=P7=P8



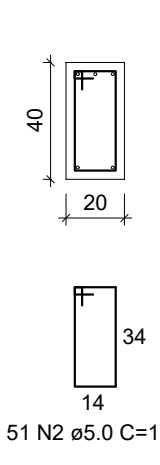
P2=P4=P9=P11



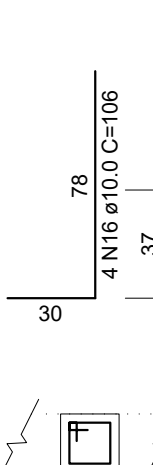
V1
ESC 1:50



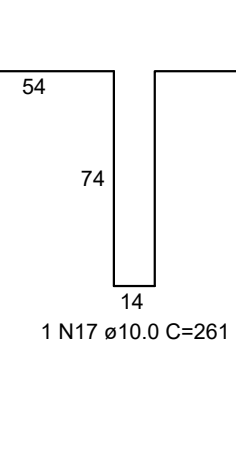
SEÇÃO A-A
ESC 1:25



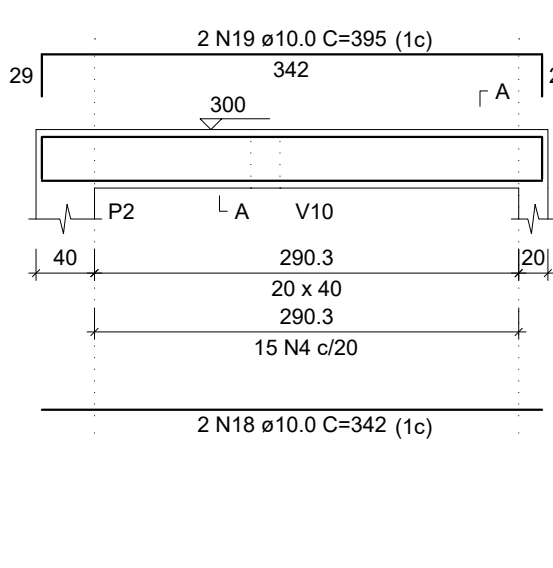
ESPERA P3
ESC 1:25



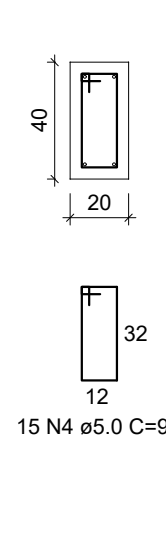
SUSPENSÃO V10
ESC 1:25



V2
ESC 1:50



SEÇÃO A-A
ESC 1:25



RELAÇÃO DO AÇO

5xP1-L3	5xP1-L2	4xP2-L2
2xP3-L3	V1-L3	V1-L2
V2-L2	V3-L2	V4-L2
V5-L2	V6-L2	V7-L2
V8-L2	V9-L2	V10-L2
V11-L2		

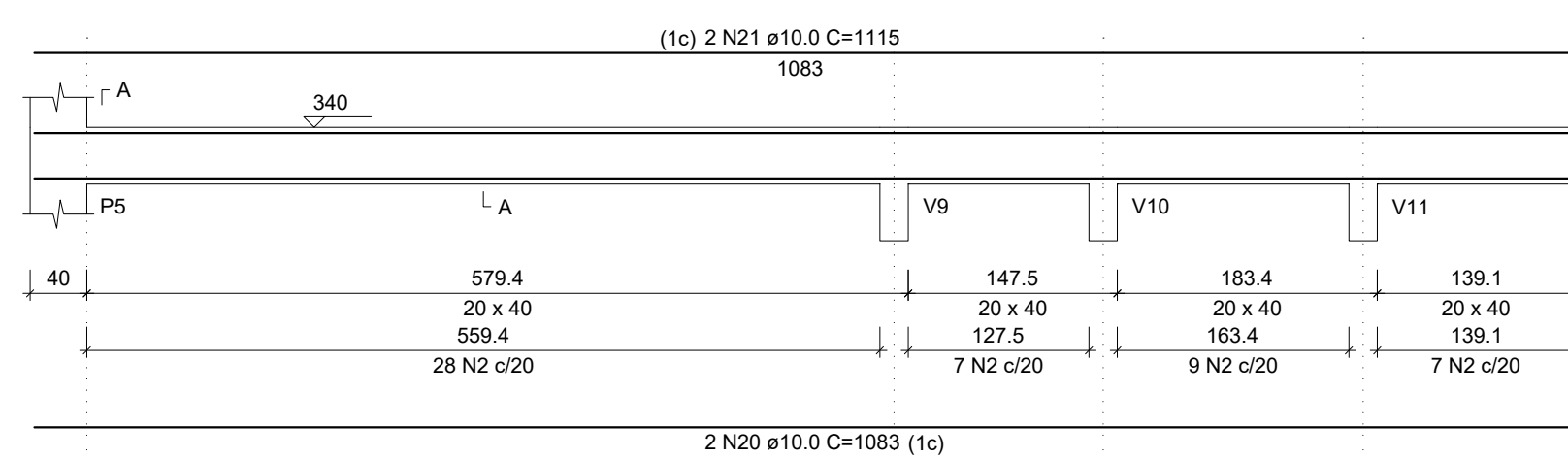
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	245	29	7105
	2	5.0	501	107	53607
	3	5.0	16	67	1072
	4	5.0	86	99	8514
	5	5.0	15	95	1425
CA50	6	5.0	2	160	320
	7	8.0	3	98	294
	8	10.0	38	37	1406
	9	10.0	30	338	10140
	10	10.0	24	237	7128
	11	10.0	2	253	506
	12	10.0	2	306	612
	13	10.0	2	1083	2166
	14	10.0	1	200	200
	15	10.0	2	1115	2230
	16	10.0	8	106	848
	17	10.0	2	261	522
	18	10.0	2	342	684
	19	10.0	2	395	790
	20	10.0	2	1083	2166
	21	10.0	2	1115	2230
	22	10.0	4	1084	4336
	23	10.0	4	1116	4464
	24	10.0	2	1084	2168
	25	10.0	2	1116	2232
	26	10.0	1	180	180
	27	10.0	2	345	690
	28	10.0	2	382	764
	29	10.0	2	160	320
	30	10.0	2	427	854
	31	10.0	2	466	932
	32	10.0	2	418	836
	33	10.0	2	469	938
	34	10.0	2	322	644
	35	10.0	2	375	750

RESUMO DO AÇO

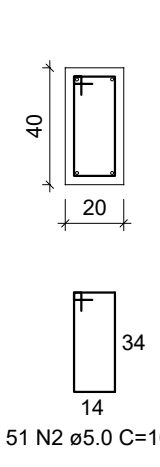
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	PESO + 10% (kg)
CA50	8.0	2.9	1	1.3
CA60	10.0	517.4	48	350.9
	5.0	720.3	-	122.1
PESO TOTAL (kg)				
CA50		352.1		
CA60		122.1		

Volume de concreto (C-25) = 8.46 m³
Área de forma = 112.68 m²

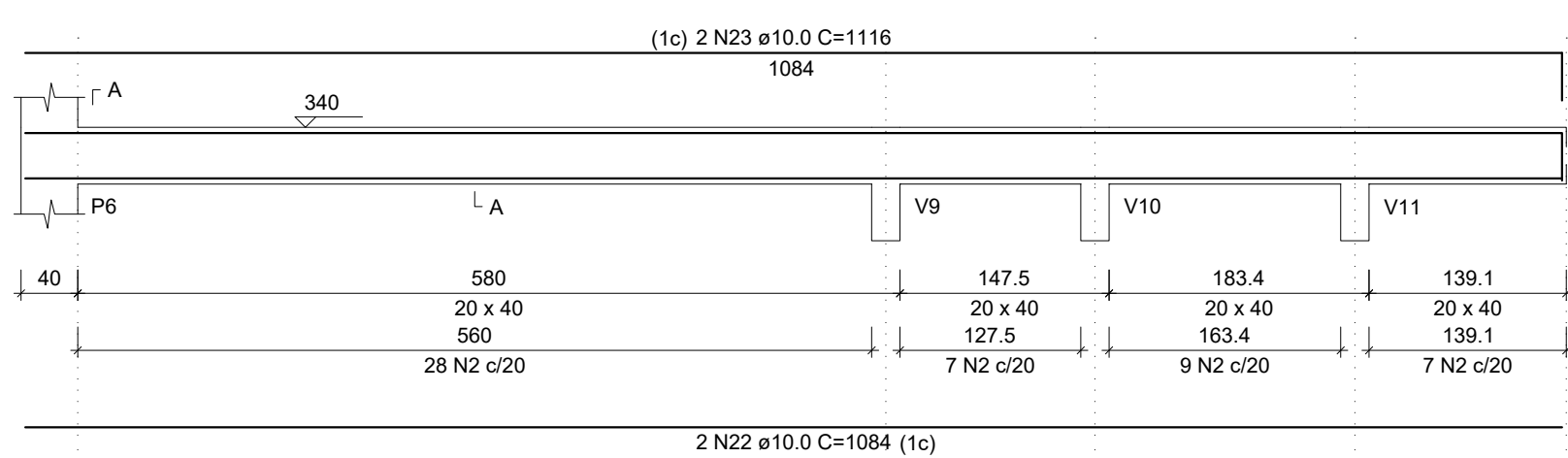
V3
ESC 1:50



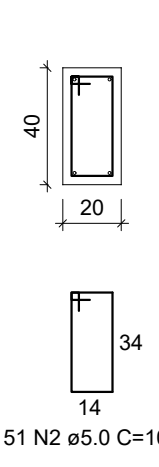
SEÇÃO A-A
ESC 1:25



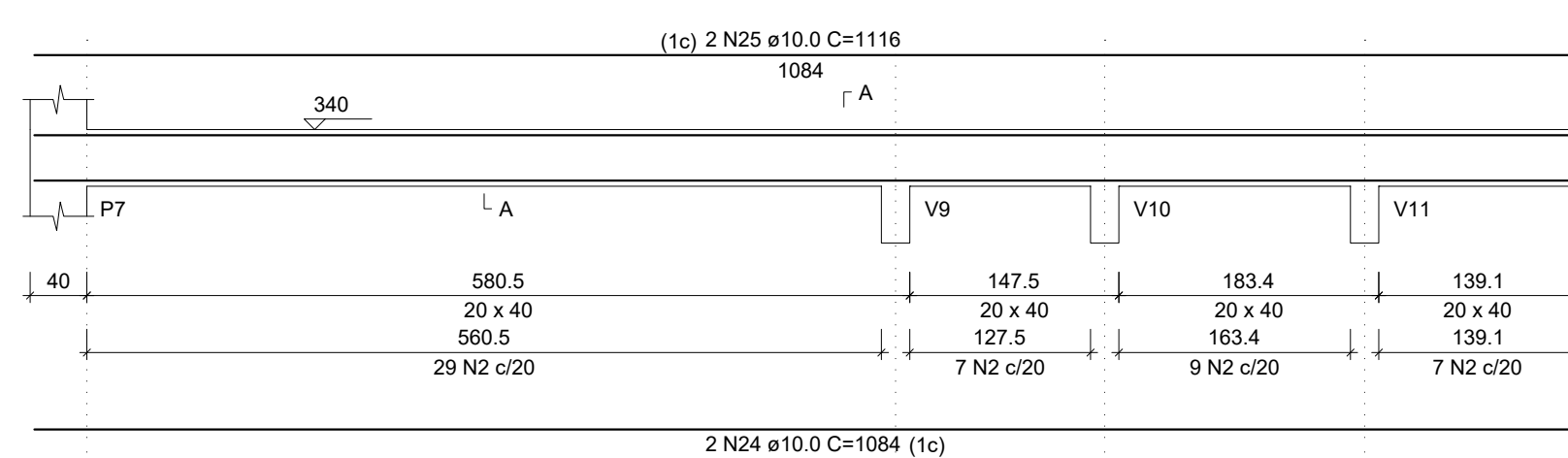
V4
ESC 1:50



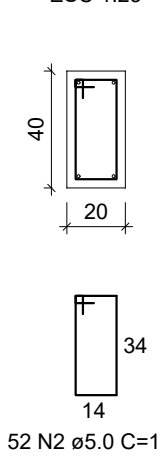
SEÇÃO A-A
ESC 1:25



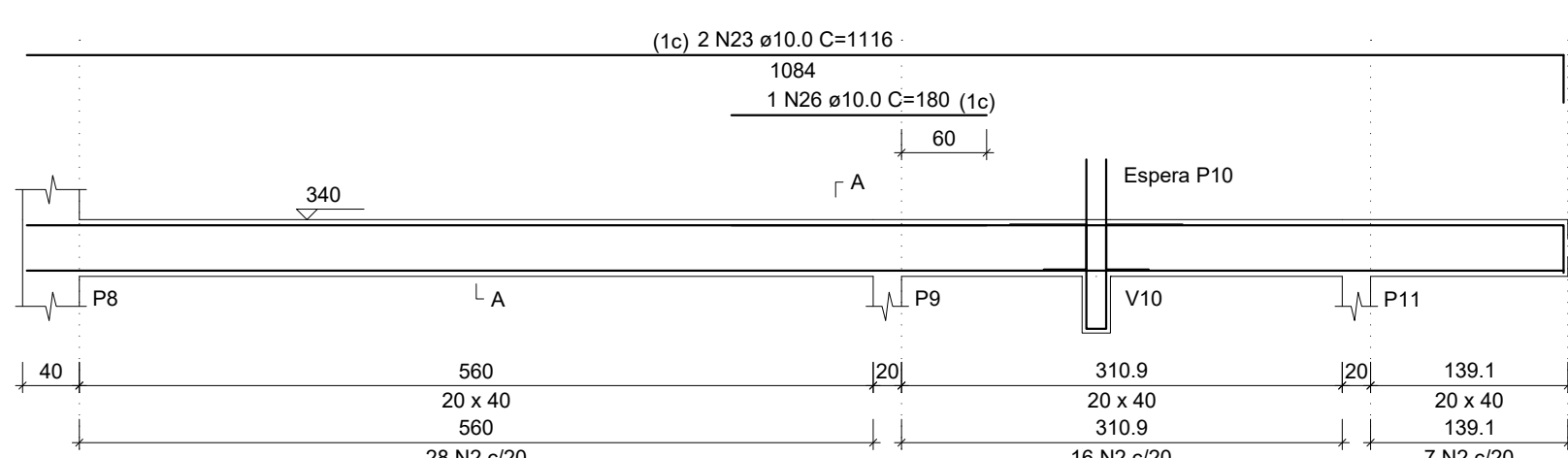
V5
ESC 1:50



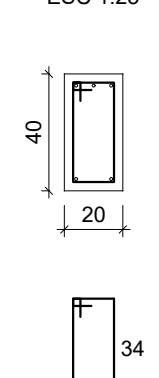
SEÇÃO A-A
ESC 1:25



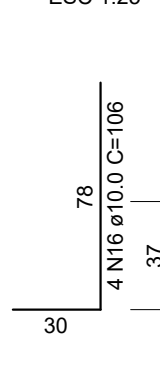
V6
ESC 1:50



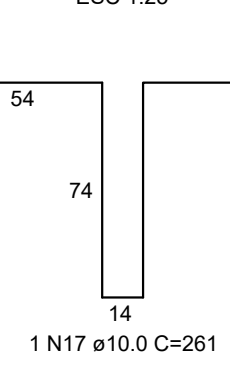
SEÇÃO A-A
ESC 1:25



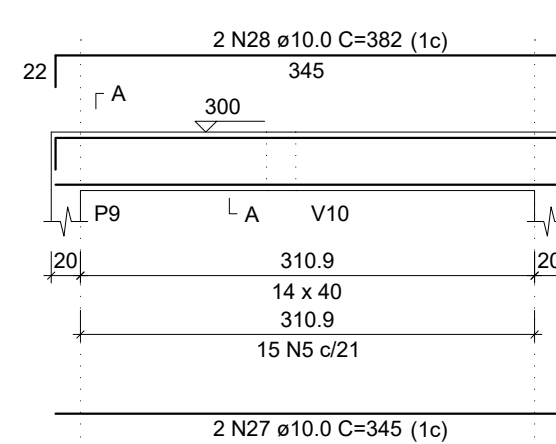
ESPERA P10
ESC 1:25



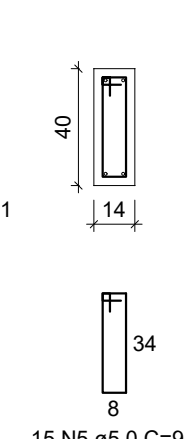
SUSPENSÃO V10
ESC 1:25



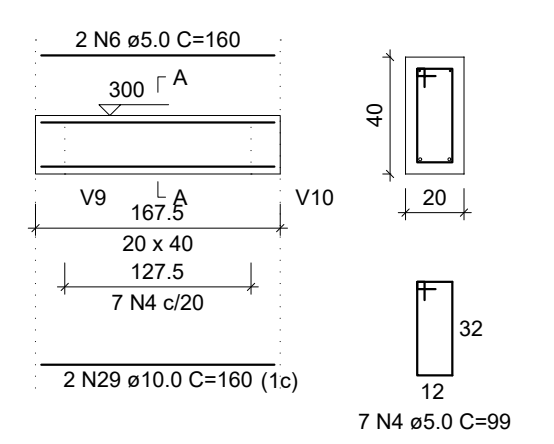
V7
ESC 1:50



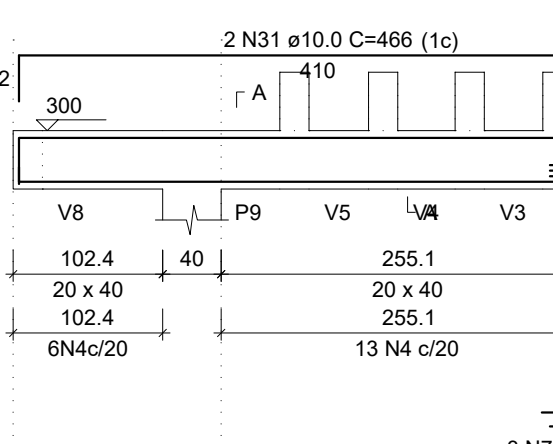
SEÇÃO A-A
ESC 1:25



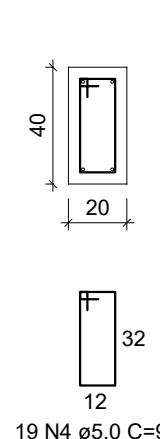
V8
ESC 1:50



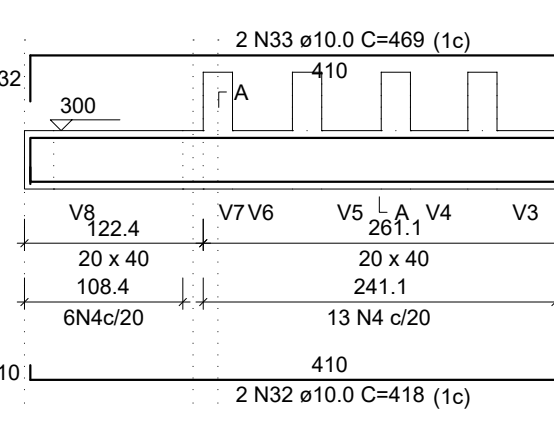
V9
ESC 1:50



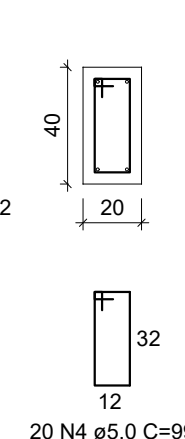
SEÇÃO A-A
ESC 1:25



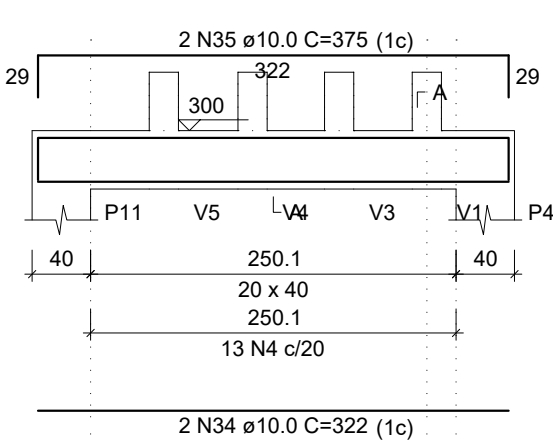
V10
ESC 1:50



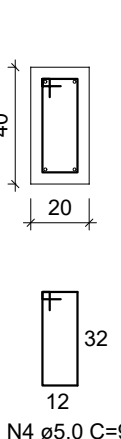
SEÇÃO A-A
ESC 1:25



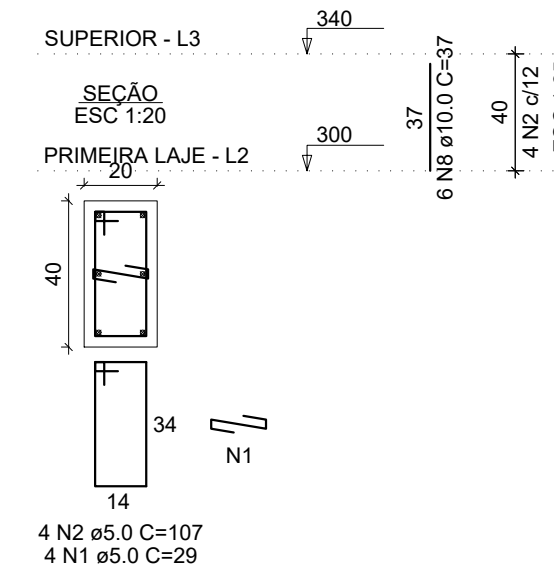
V11
ESC 1:50



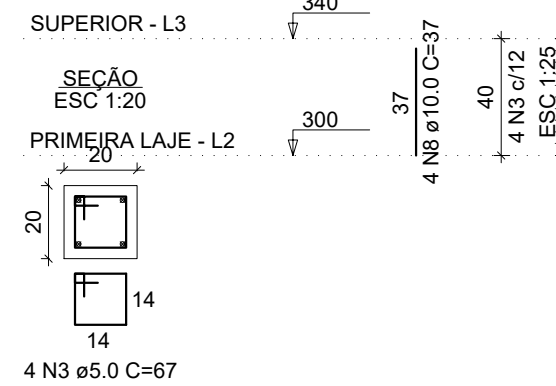
SEÇÃO A-A
ESC 1:25



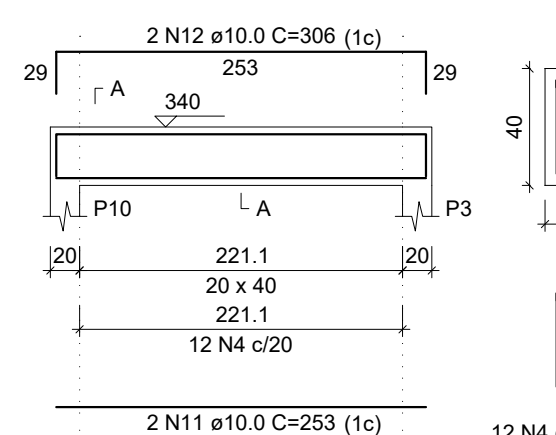
P1=P5=P6=P7=P8



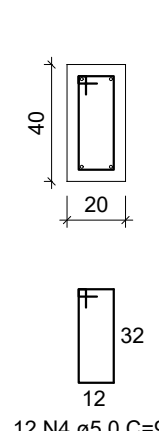
P3=P10



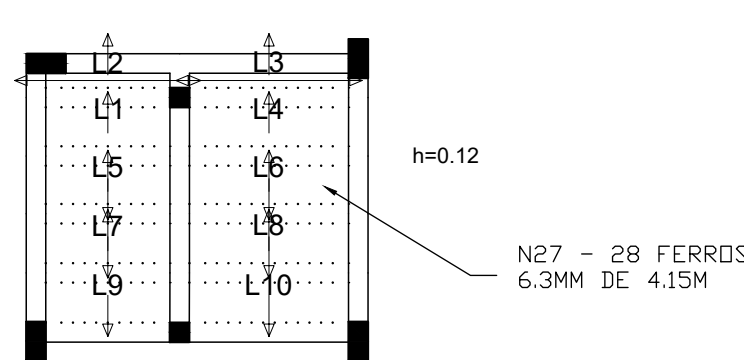
V1
ESC 1:50



SEÇÃO A-A
ESC 1:25

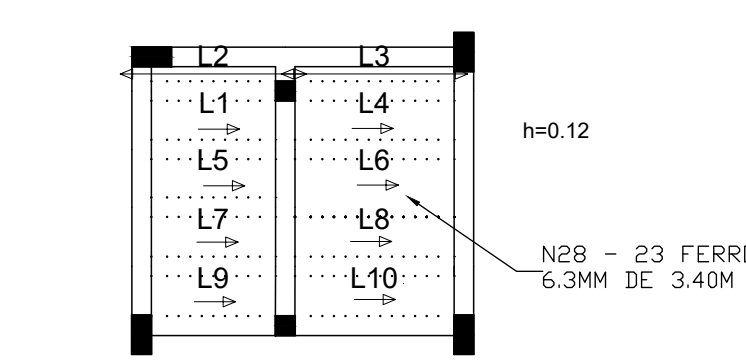


LAJE



Armação positiva (Eixo Y)

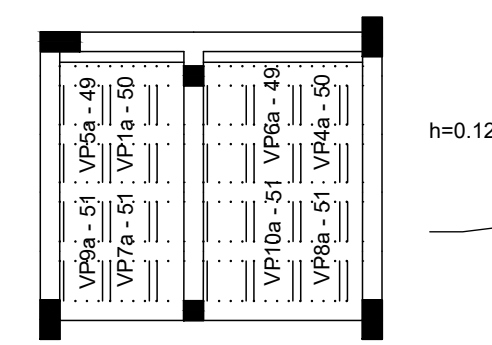
(ARMADURA POSITIVA Y= AÇO DIÂMETRO 6.3 COMP 3.55 M -- 28 FERROS DE 3.55M)



Armação positiva (Eixo X)

(ARMADURA POSITIVA X= AÇO DIÂMETRO 6.3 COMP 4.30M -- 23 FERROS DE 4.30M)

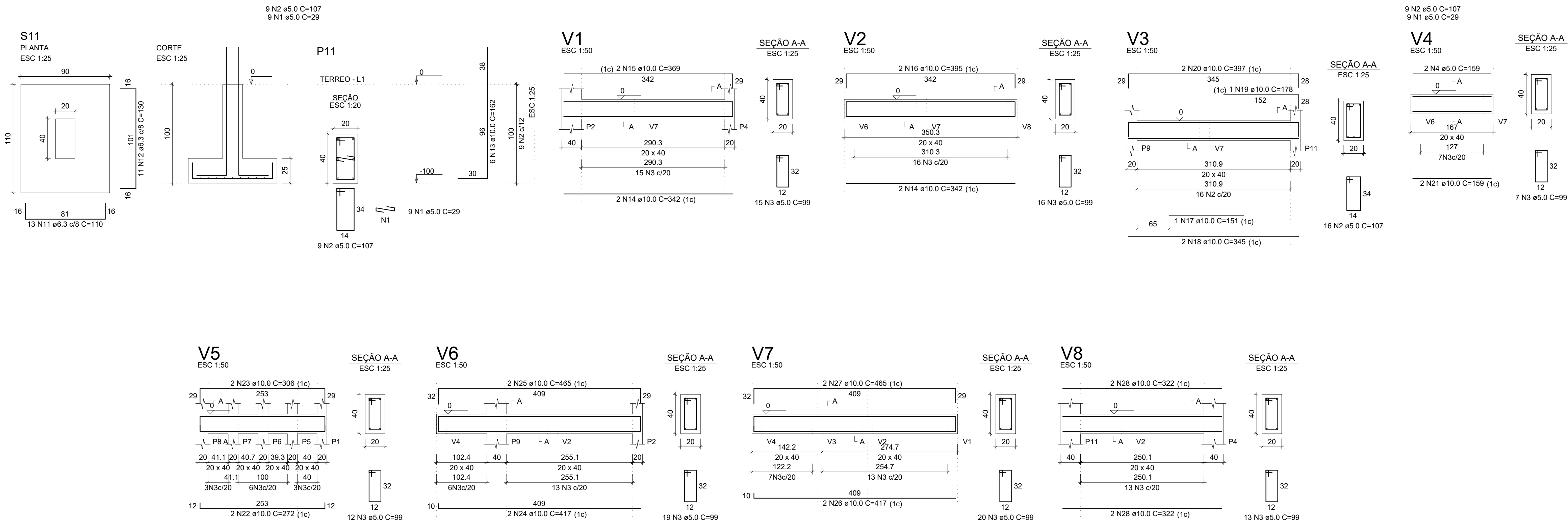
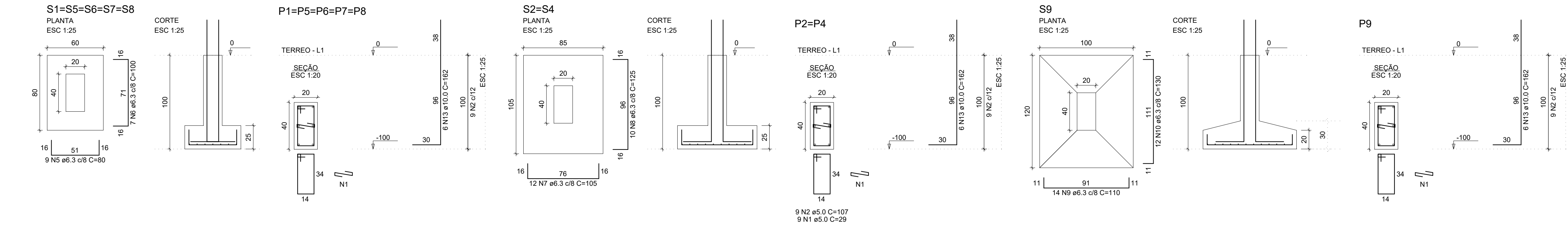
Planta de vigotas pré-moldadas



RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	PESO + 10% (kg)
CA60	6.3	194.40	17	63
PESO TOTAL (kg)				
CA60		63		

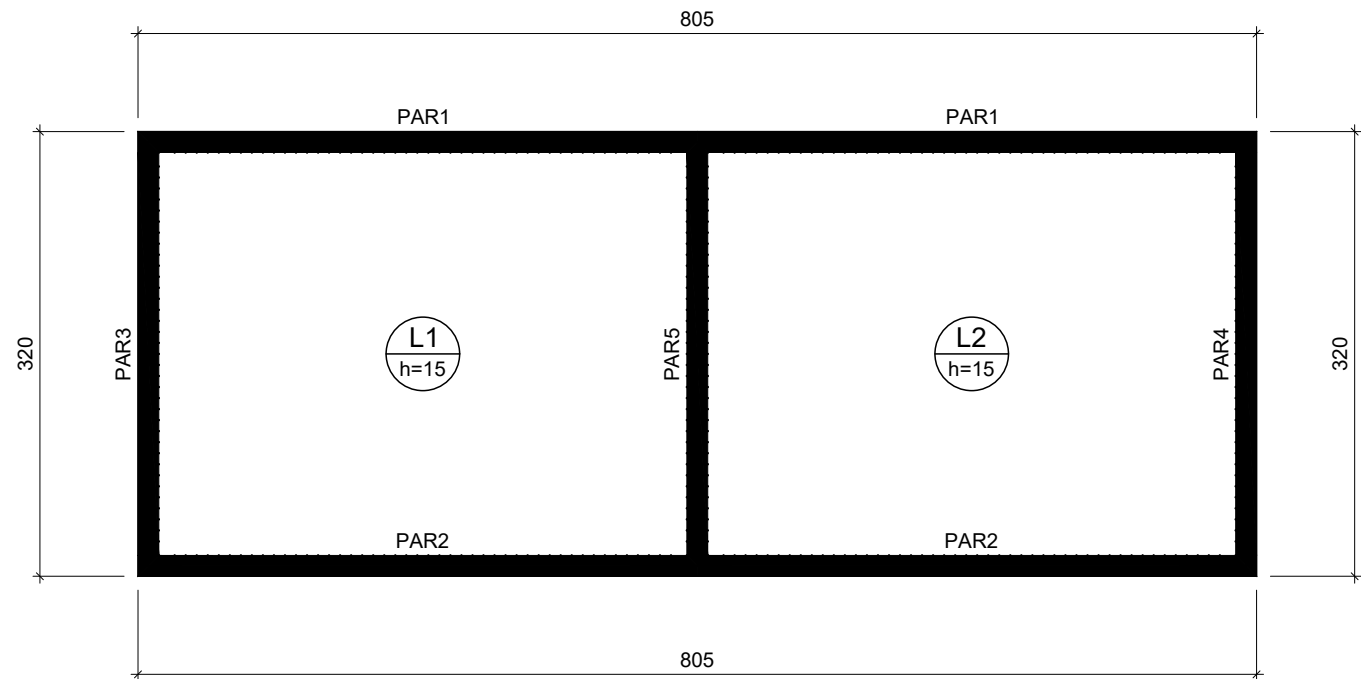
Volume de concreto (C-25) = 0.48m³
Área de forma =



RELAÇÃO DO AÇO					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	81	29	2349
	2	5.0	97	107	10379
	3	5.0	102	99	10098
CA50	4	5.0	2	159	318
	5	6.3	46	80	3600
	6	6.3	35	100	3500
	7	6.3	24	105	2520
	8	6.3	20	125	2500
	9	6.3	14	110	1540
	10	6.3	12	130	1560
	11	6.3	13	110	1430
	12	6.3	11	130	1430
	13	10.0	54	162	8748
	14	10.0	4	342	1368
	15	10.0	2	389	738
	16	10.0	2	395	790
	17	10.0	1	151	151
	18	10.0	2	345	690
	19	10.0	1	178	178
	20	10.0	2	397	794
	21	10.0	2	159	318
	22	10.0	2	272	544
	23	10.0	2	306	612
	24	10.0	2	417	834
	25	10.0	2	465	930
	26	10.0	2	417	834
	27	10.0	2	465	930
	28	10.0	4	322	1288

RESUMO DO AÇO				
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 10% (Barras)	PESO + 10% (kg)
CA50	6.3	180.8	17	48.7
CA60	10.0	197.5	19	133.9
	5.0	231.4	-	39.2
PESO TOTAL (kg)				
CA50	182.6			
CA60	39.2			

Volume de concreto (C-25) = 4.42 m³
Área de forma = 26.52 m²



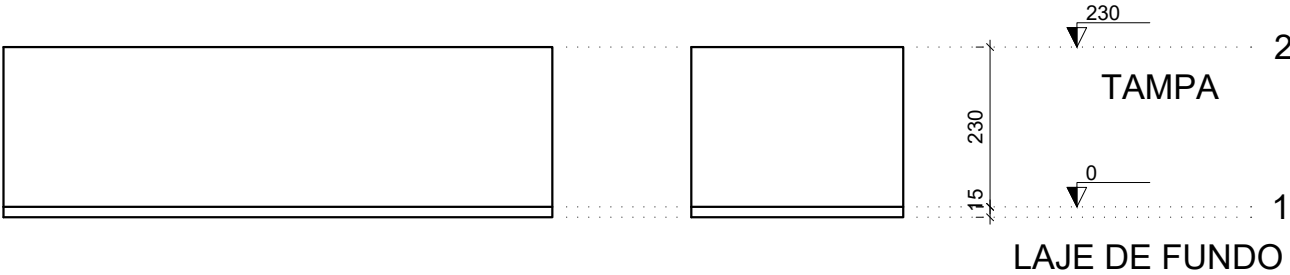
Forma do pavimento LAJE DE FUNDO
escala 1:50

Lajes								
Dados					Sobrecarga (kgf/m²)			
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Peso próprio (kgf/m²)	Adicional	Acidental	Localizada
L1	Maciça	15	0	0	375	150	0	-
L2	Maciça	15	0	0	375	150	0	-

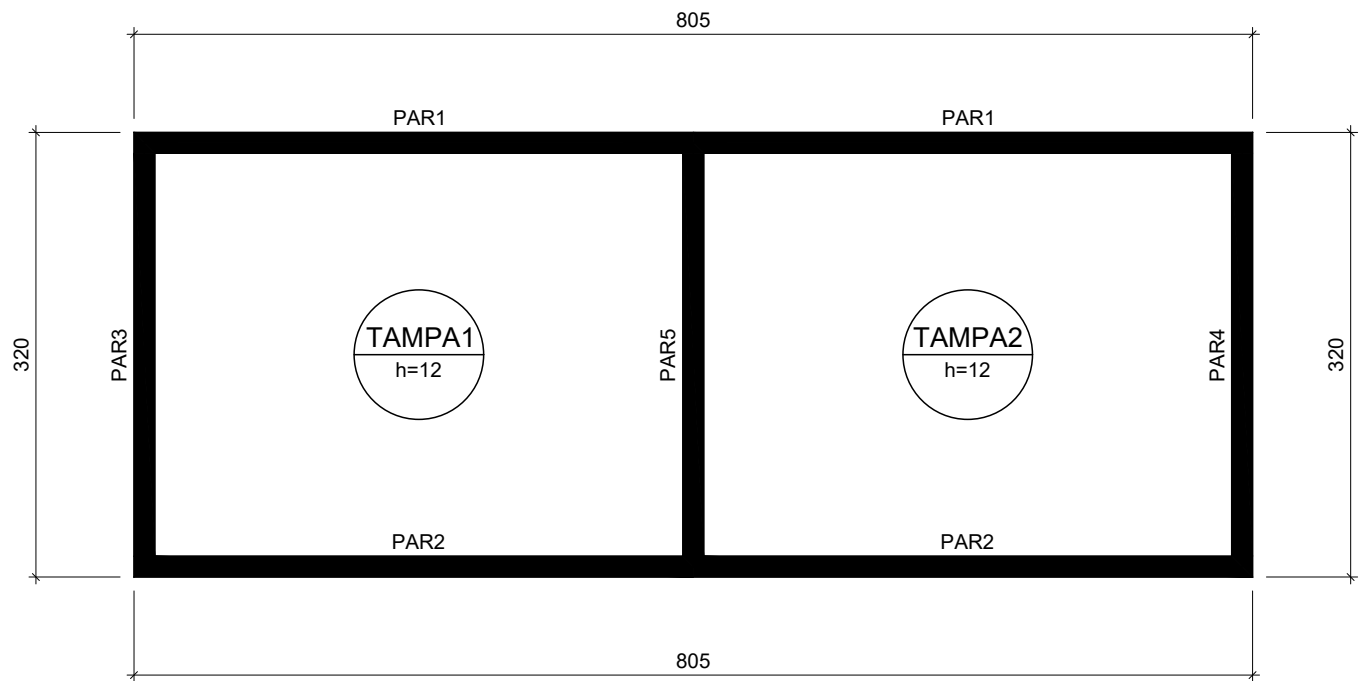
Características dos materiais	
fck (kgf/cm²)	Ecs (kgf/cm²)
250	241500

Dimensão máxima do agregado = 19 mm

Legenda das vigas e paredes	
	Parede de concreto



Corte X-X Corte Y-Y
escala 1:100 escala 1:100



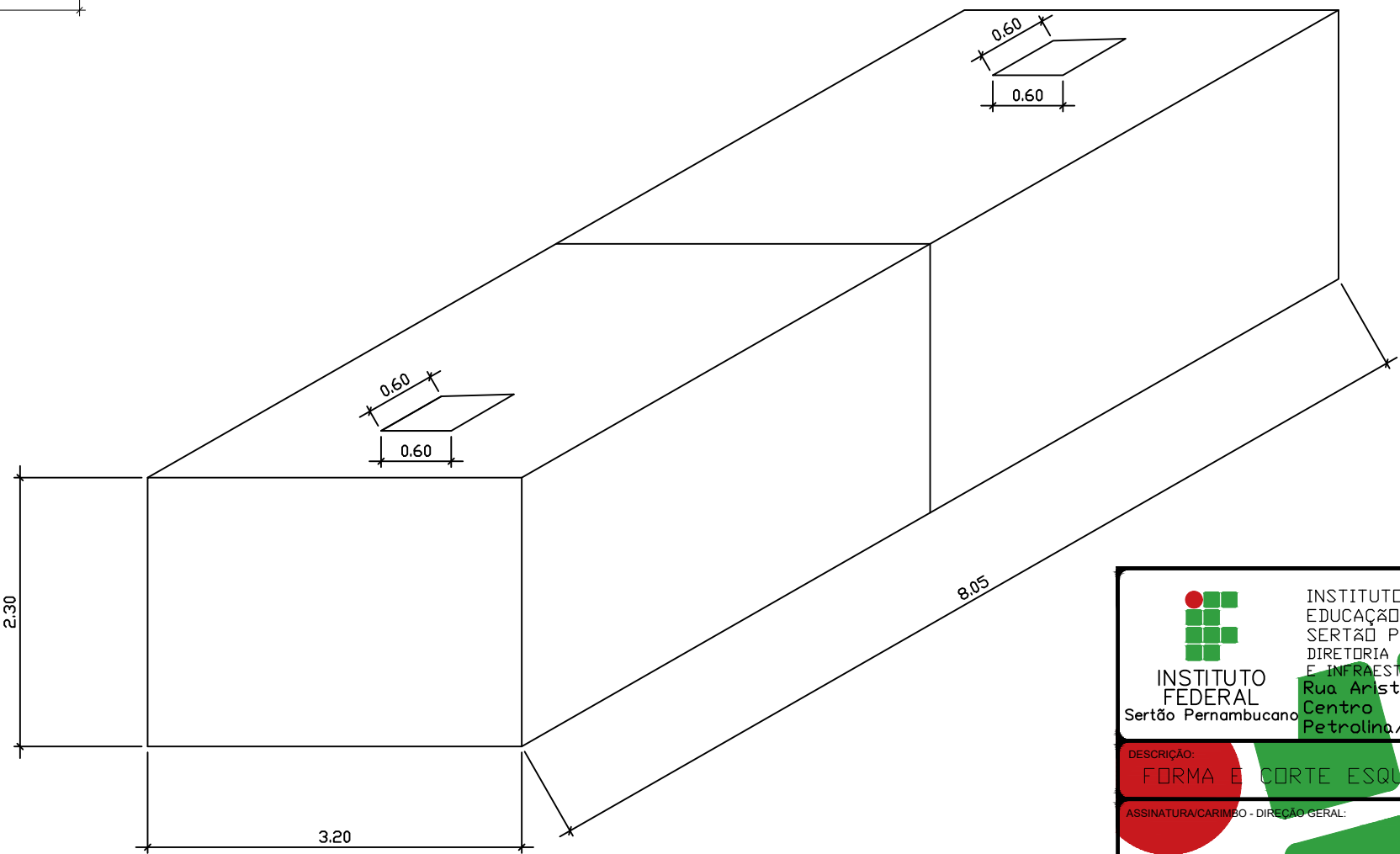
Forma do pavimento TAMPA
escala 1:50

Lajes								
Dados					Sobrecarga (kgf/m²)			
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Peso próprio (kgf/m²)	Adicional	Acidental	Localizada
TAMPA1	Maciça	12	0	230	300	150	150	-
TAMPA2	Maciça	12	0	230	300	150	150	-

Características dos materiais	
fck (kgf/cm²)	Ecs (kgf/cm²)
250	241500

Dimensão máxima do agregado = 19 mm

Legenda das vigas e paredes	
	Parede de concreto



INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA SERTÃO PERNAMBUCANO
DIRETORIA DE ENGENHARIA E INFRAESTRUTURA
Rua Aristarco Lopes 240
Centro
Petrolina/PE | CEP: 56.302-100

NOME DA OBRA: **RESERVATÓRIO INFERIOR REITORIA**

ENDEREÇO DA OBRA: AVENIDA CENTENÁRIA | CENTRO PETROLINA-PE (ATRÁS DA BIBLIOTECA MUNICIPAL)

DESCRIÇÃO: **FORMA E CORTE ESQUEMÁTICO DO RESERVATÓRIO**

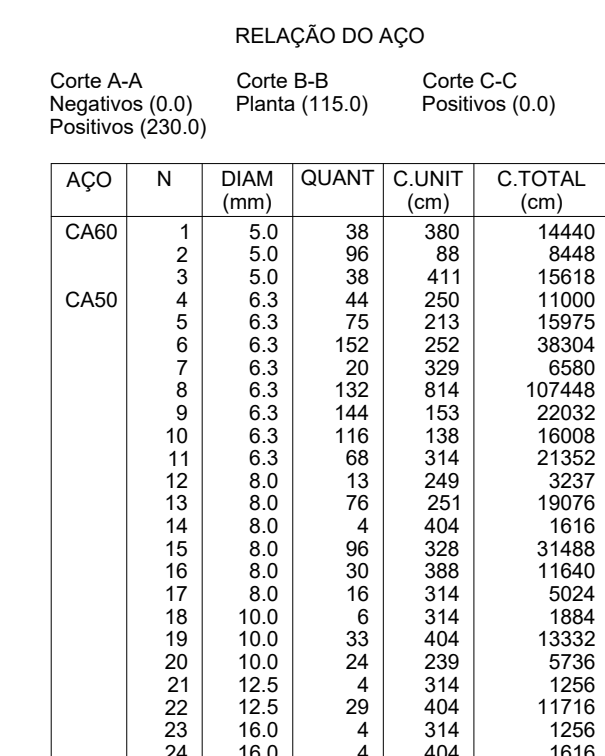
ASSINATURA/CARIMBO - DIREÇÃO GERAL:

ESCALA: **VARIÁVEL**

DATA: **09/04/2024**

ASSINATURA/CARIMBO - RESPONSÁVEL TÉCNICO:

PRONCH: **02/02**



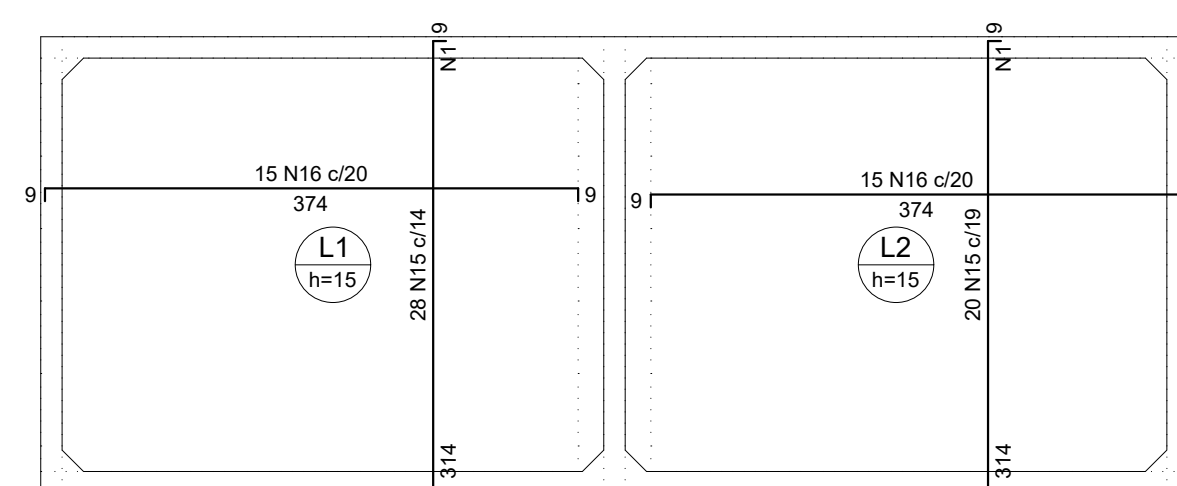
Corte B-B

escala 1:25

escala 1:25

RESUMO DO AÇO			
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	2387	642.5
	8.0	720.8	312.9
	10.0	209.5	142.1
	12.5	129.7	137.5
	16.0	28.7	49.9
CA60	5.0	385.1	65.3
PESO TOTAL (kg)			
CA50	1284.8		
CA60	65.3		

Volume de concreto (C-25) = 14.56 m³
Área de forma = 140.55 m²

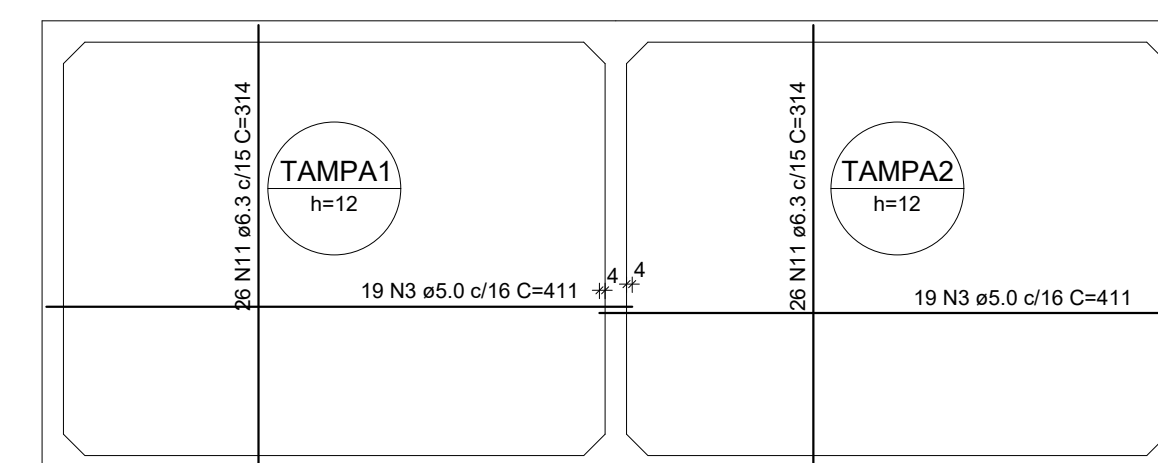


Armação negativa das lajes (0.0)

escala 1:25

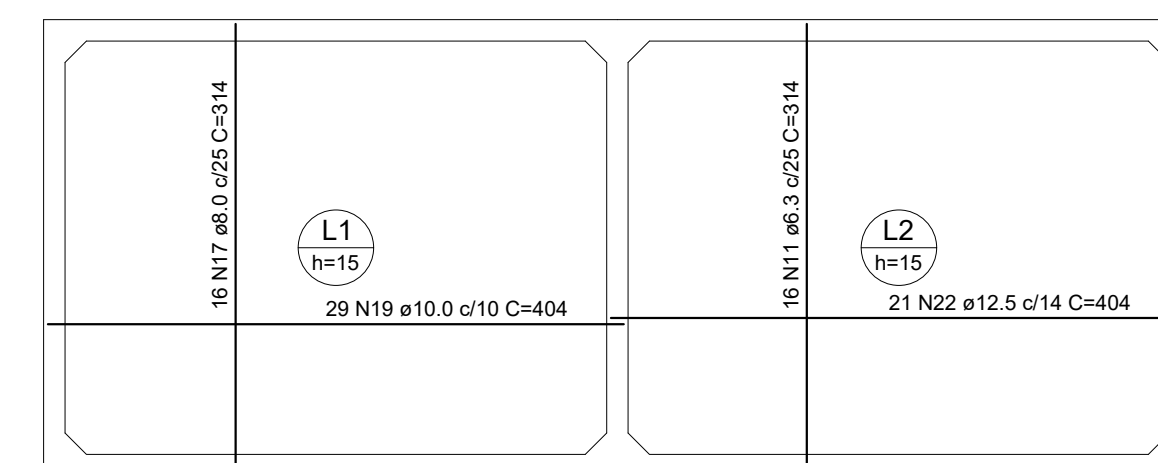
escala 1:50

Armaduras de distribuição	
Armadura	Armadura de distribuição
N15	19 N1 ø5.0 c/17 C=380
N15	19 N1 ø5.0 c/17 C=380



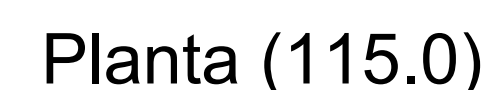
Armação positiva das lajes (230.0)

escala 1:50



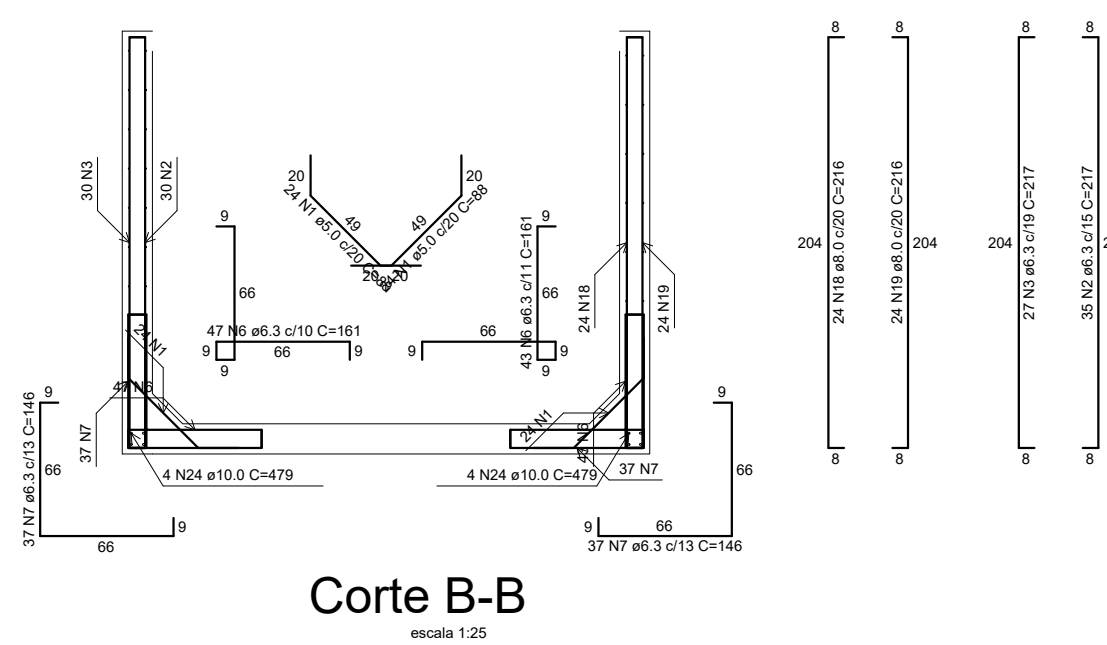
Armação positiva das lajes (0.0)

escala 1:50



escala 1:25

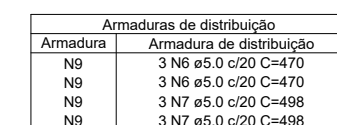
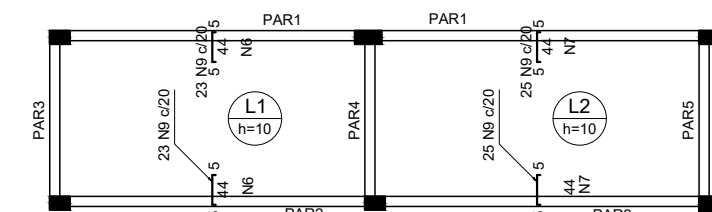
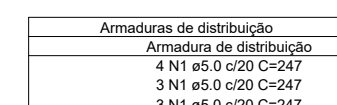




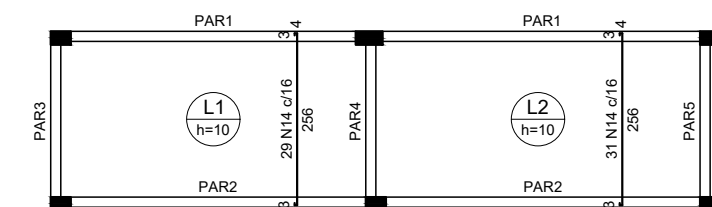
RELAÇÃO DO AÇO					
Negativos X-L10		Negativos Y-L10		Negativos Y-L10	
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5,0	10	247	2470
	2	5,0	4	504	2016
	3	5,0	4	486	1944
	4	5,0	4	465	1860
	5	5,0	4	467	1868
CA50	6	5,0	10	2820	2820
	7	5,0	6	498	2988
	8	6,3	12	866	1032
	9	6,3	120	51	6120
	10	6,3	49	82	4018
	11	6,3	46	77	3542
	12	6,3	12	487	5844
	13	6,3	12	515	6180
	14	6,3	60	264	15840

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	425.8	36	12 m	104.2
CA60	5.0	159.7	-	rolo (170 kg)	24.6

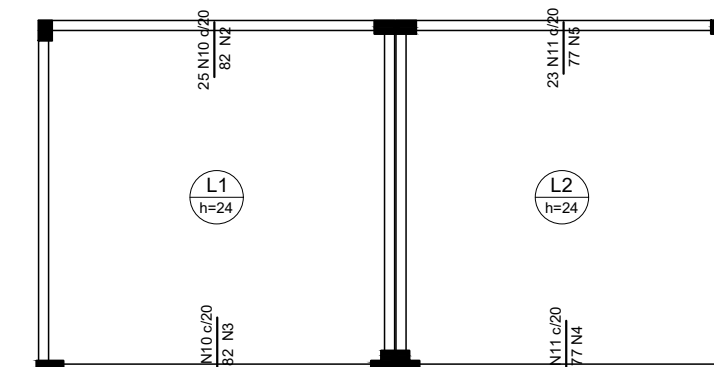
Volume de concreto (C-30) = 2.17 m³
Área de forma = 21.75 m²



escala 1:75

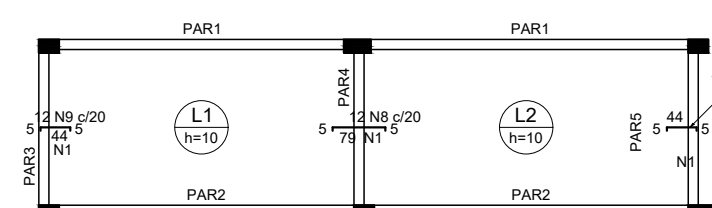


escala 1:73



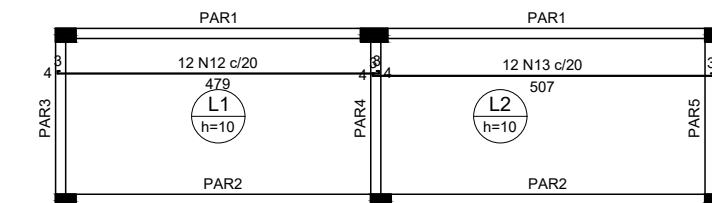
Armaduras de distribuição	
Armadura	Armadura de distribuição
N10	4 N2 ø5,0 c/20 C=504
N10	4 N3 ø5,0 c/20 C=486
N11	4 N4 ø5,0 c/20 C=465
N11	4 N5 ø5,0 c/20 C=467

escala 1:75

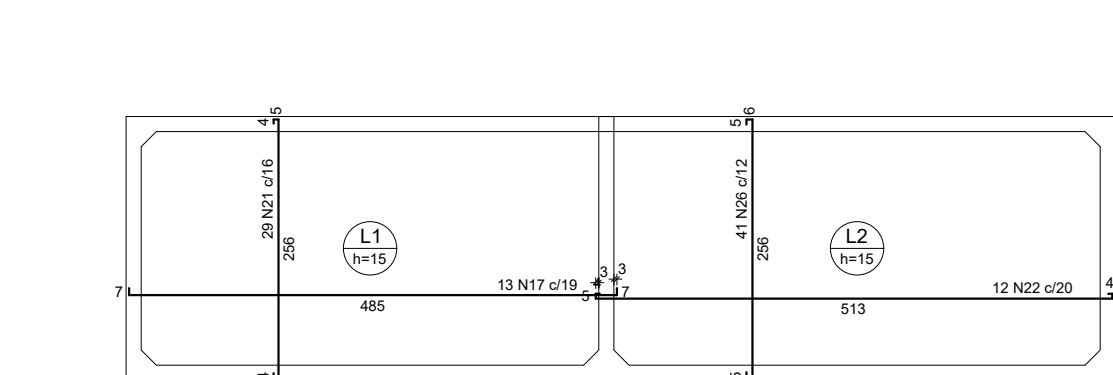


Armadura	N8
	N9
	N9

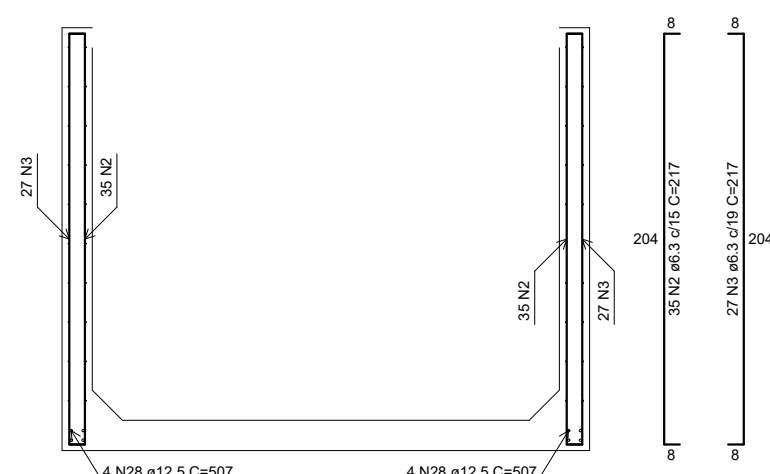
scale 1:7



escala 1:75



escala 1:50



escala 1:2

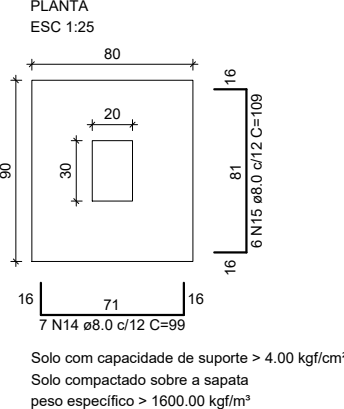
scale 1:25

[illegible]

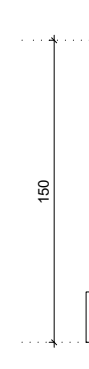
RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	1922.7	161	12 m	470.5
	8.0	324.6	28	12 m	128.1
	10.0	183.3	16	12 m	113
	12.5	61	6	12 m	58.8
CA60	5.0	124.1	1	rola (170 km)	19.1

Volume de concreto (C-30) = 11,09 m³
Área de forma = 120,12 m²

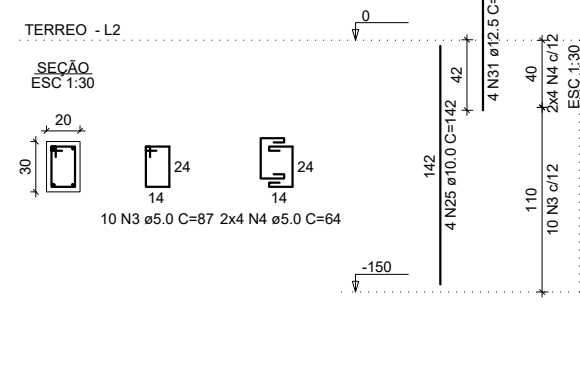
S35=S47=S87



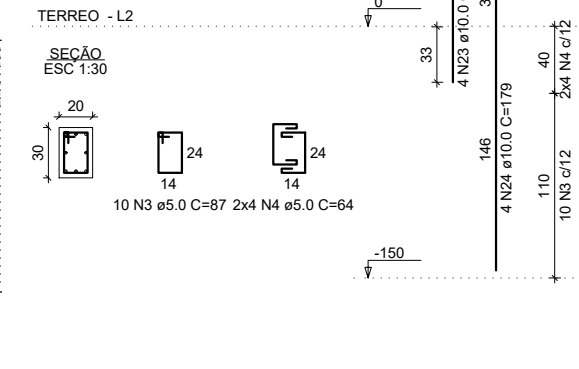
CORTE
ESC 1:25



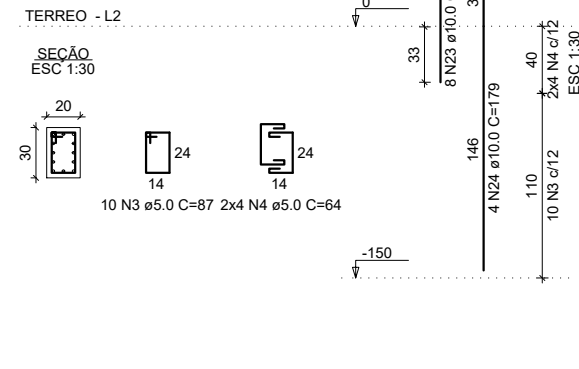
P35



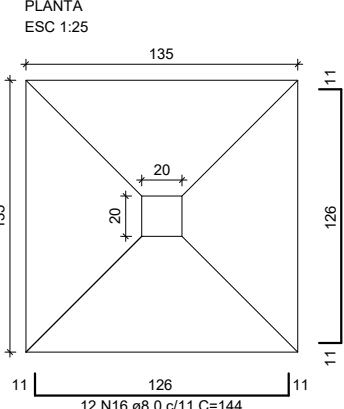
P47



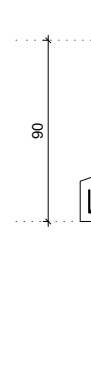
P87



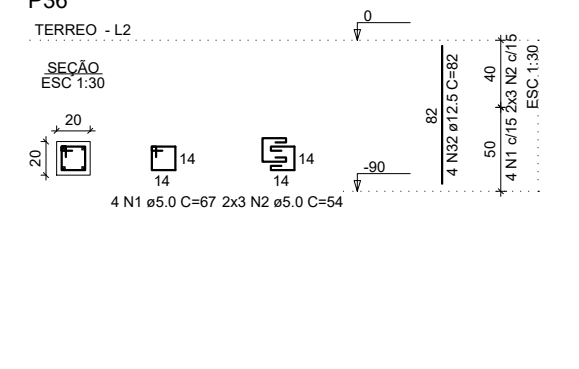
S36



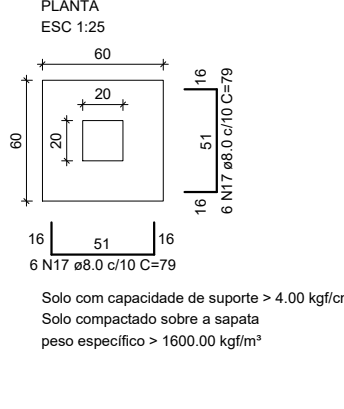
CORTE
ESC 1:25



P36



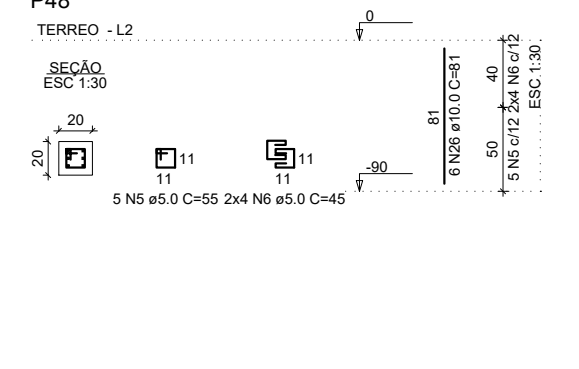
S48



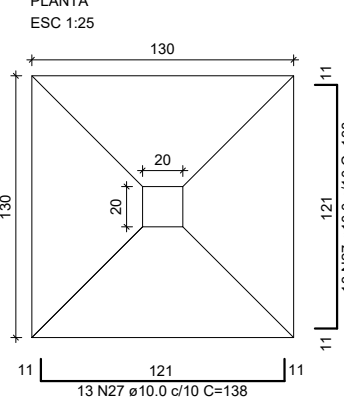
CORTE
ESC 1:25



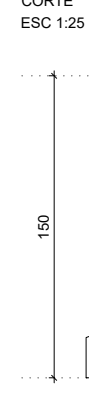
P48



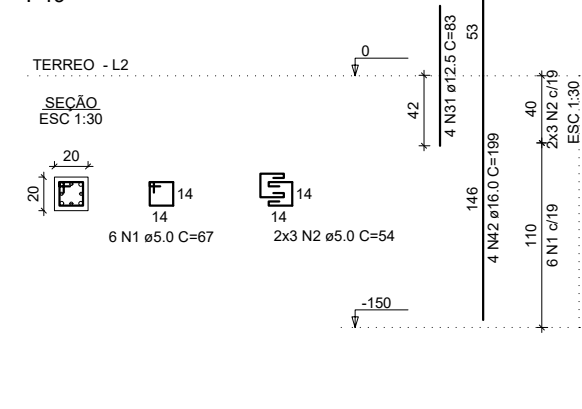
S49=S51=S52=S83



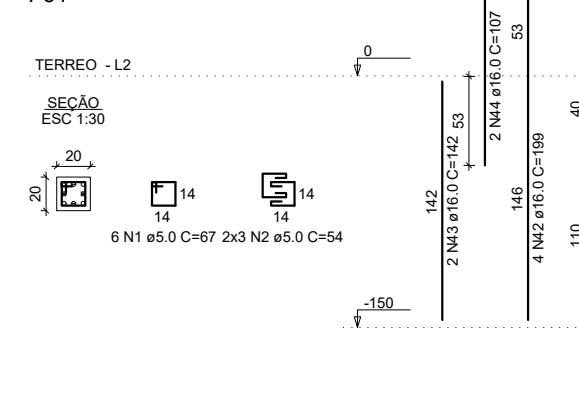
CORTE
ESC 1:25



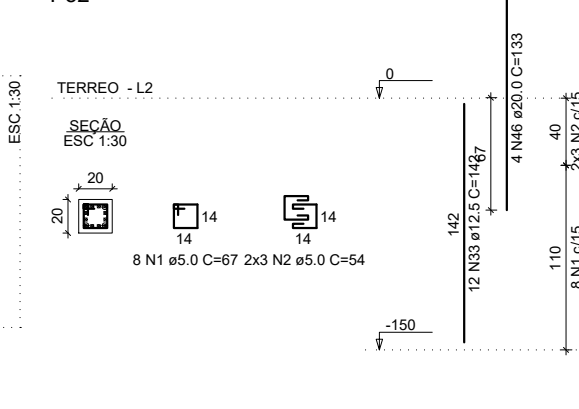
P49



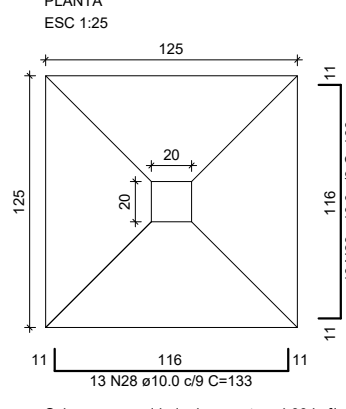
P51



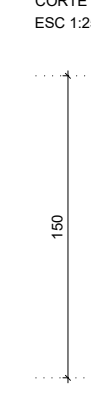
P52



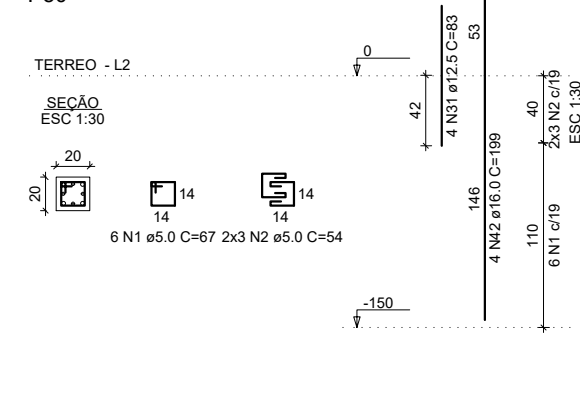
S50



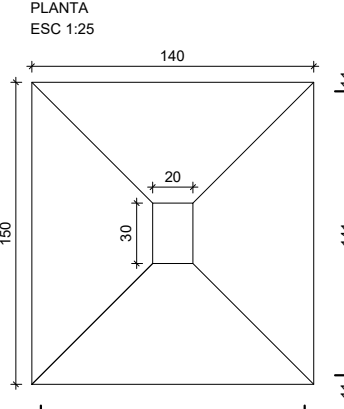
CORTE
ESC 1:25



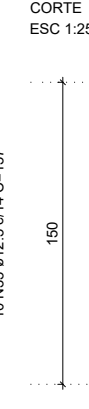
P50



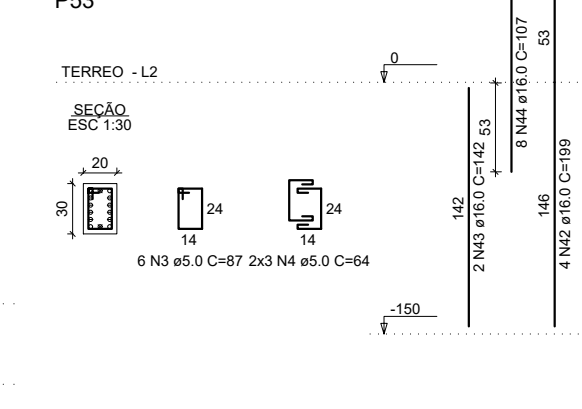
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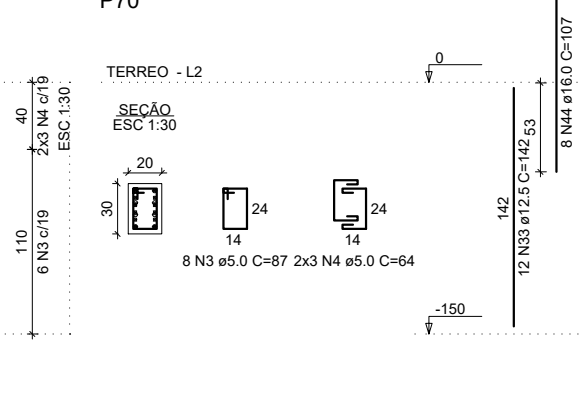
CORTE
ESC 1:25



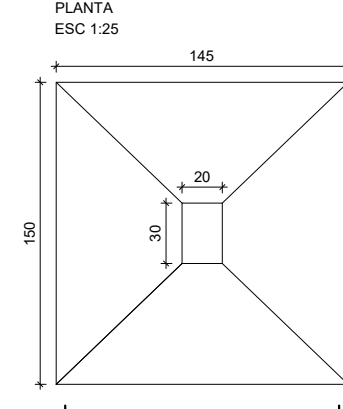
P53



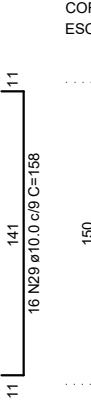
P70



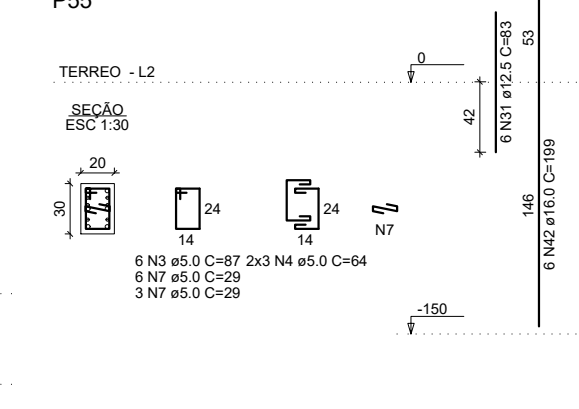
S55



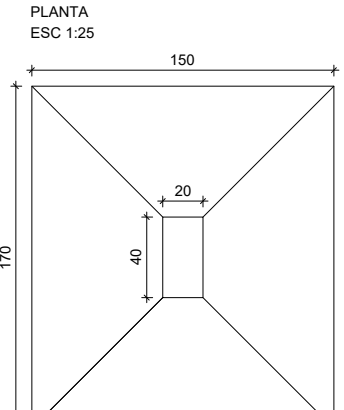
CORTE
ESC 1:25



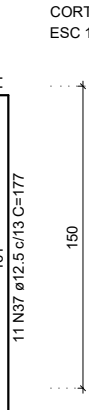
P55



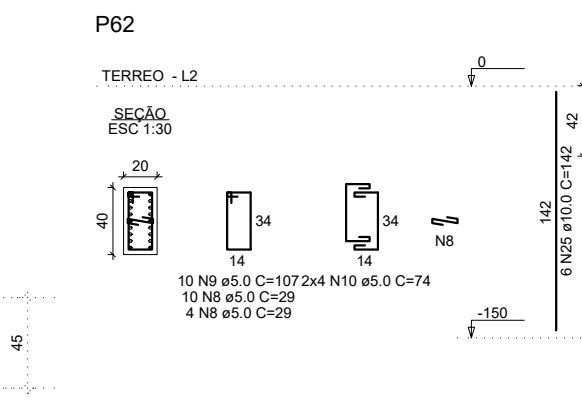
S62=S64



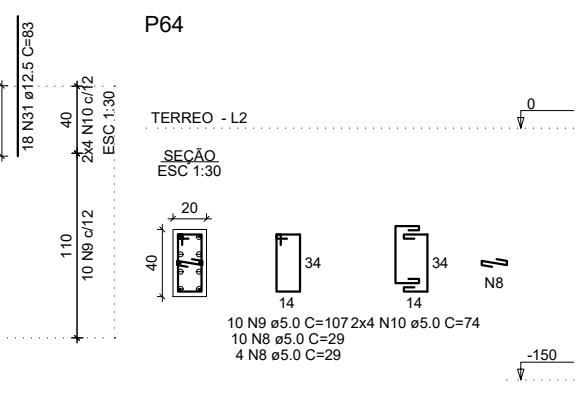
CORTE
ESC 1:25



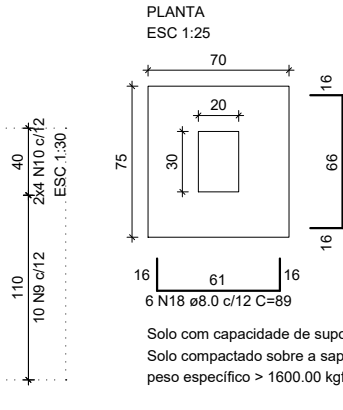
P62



P64



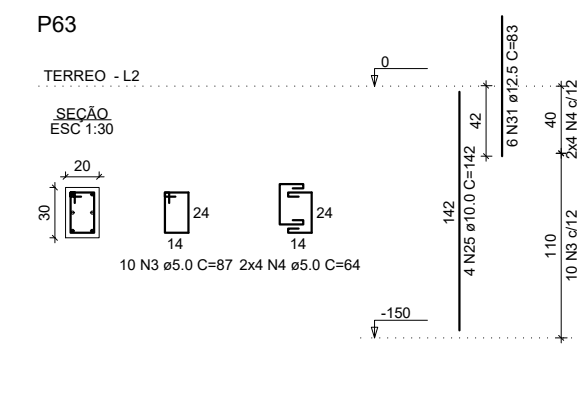
S63



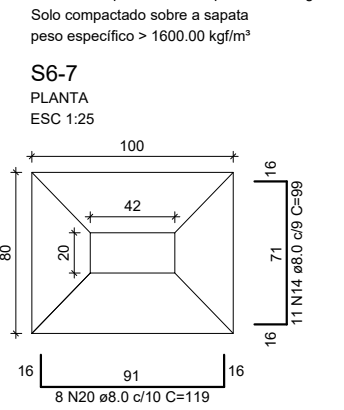
CORTE
ESC 1:25



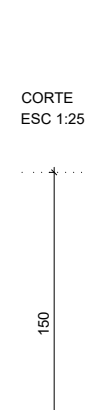
P63



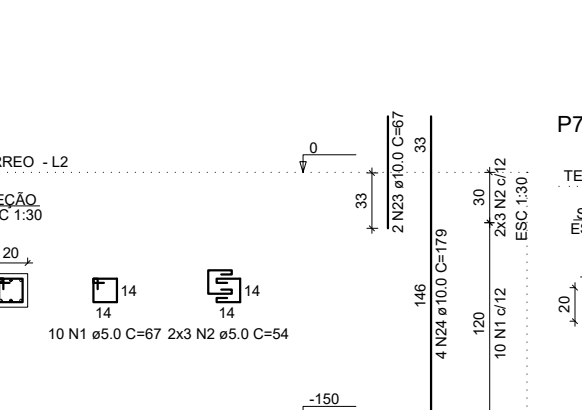
S67



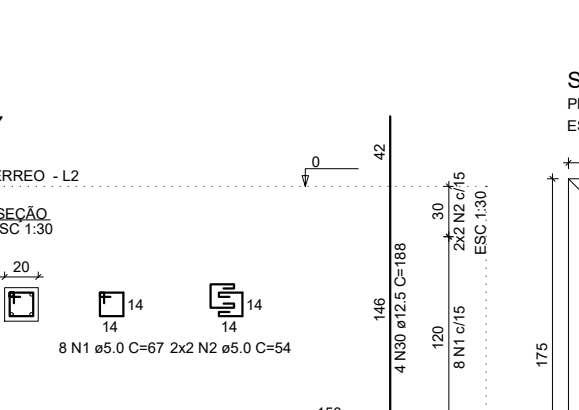
CORTE
ESC 1:25



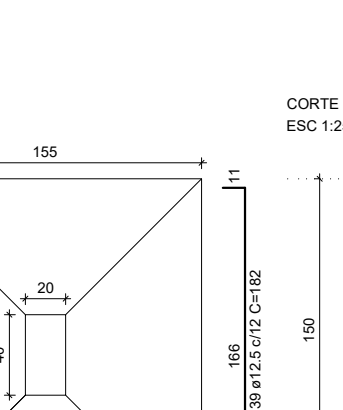
P6



P7



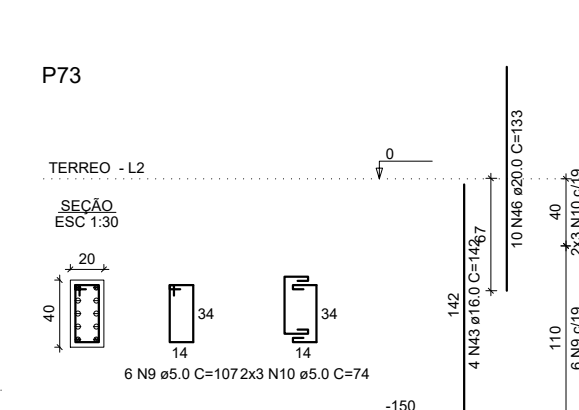
S73=S80



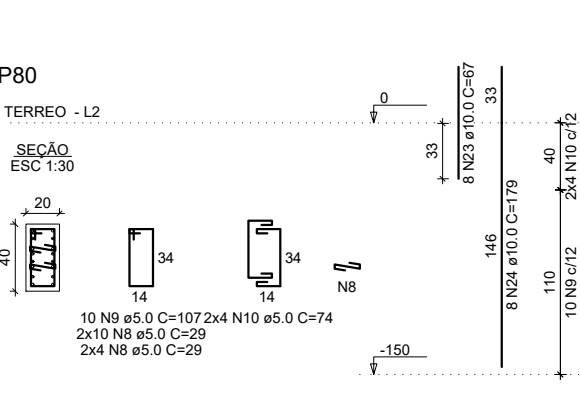
CORTE
ESC 1:25



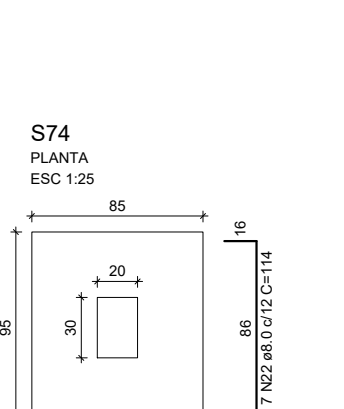
P73



P80



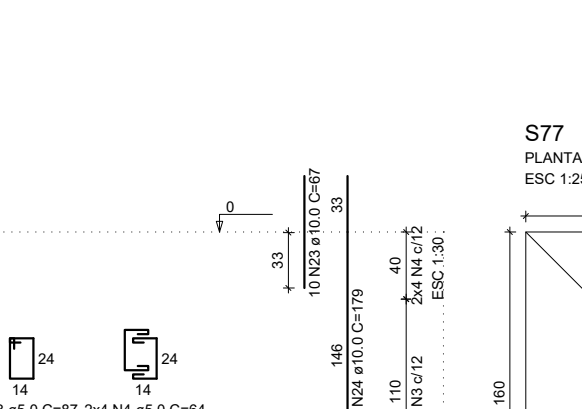
S74



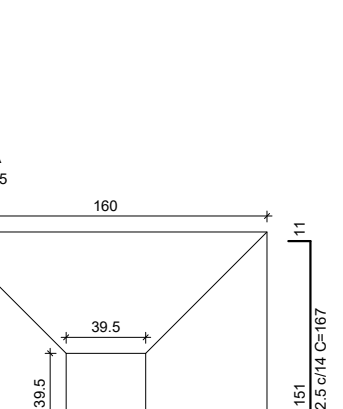
CORTE
ESC 1:25



P74



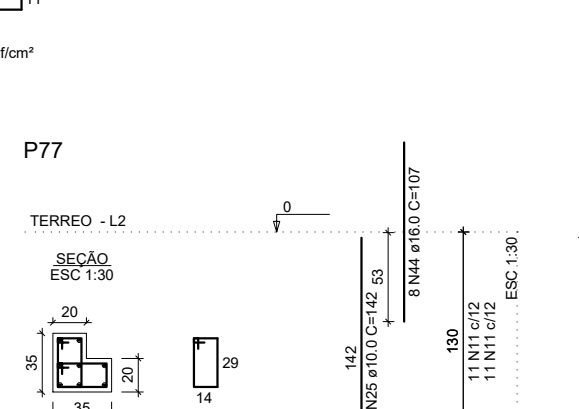
S77



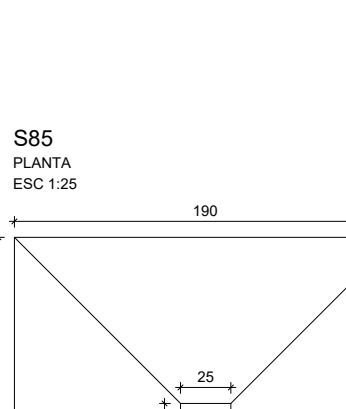
CORTE
ESC 1:25



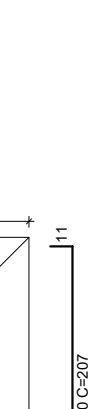
P77



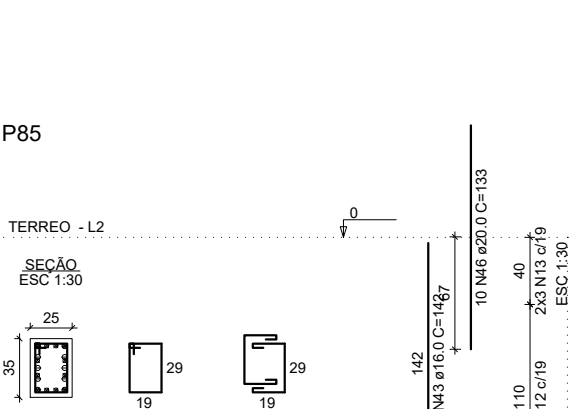
S85



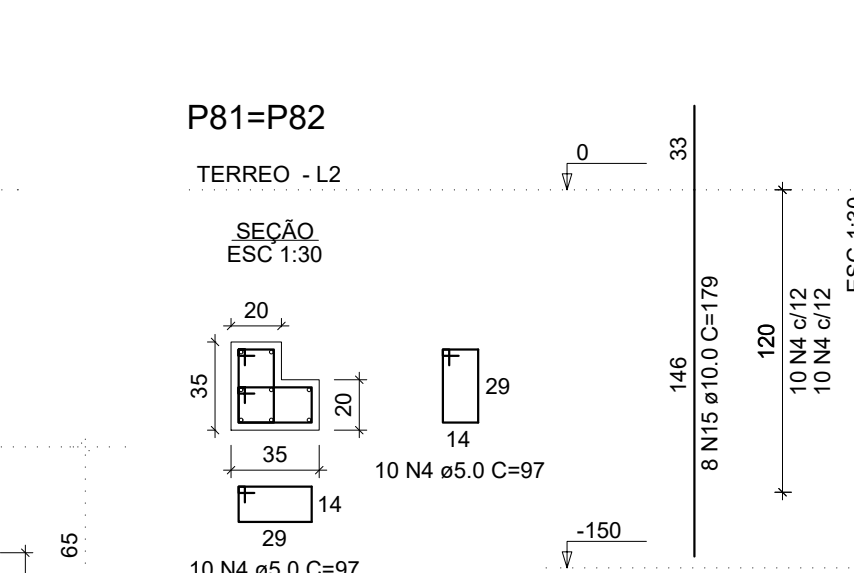
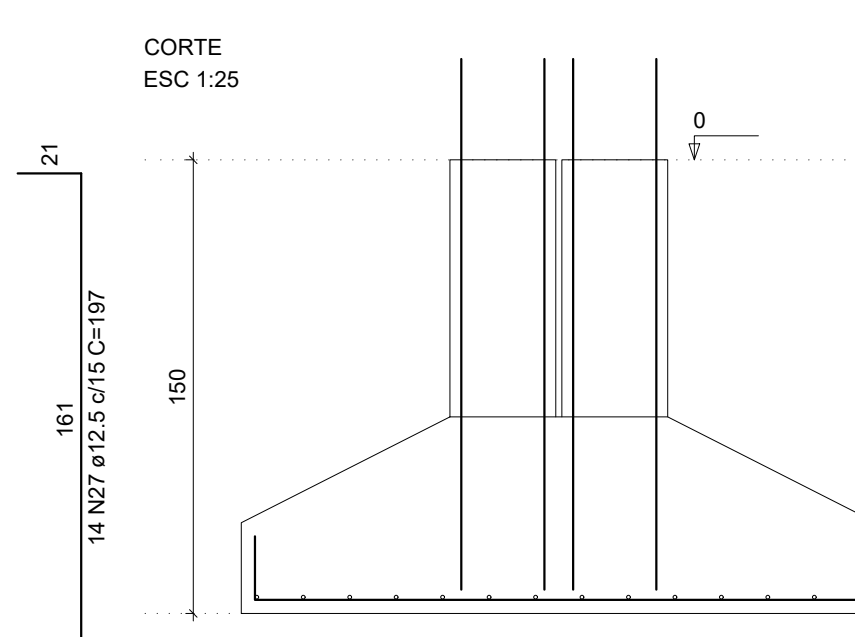
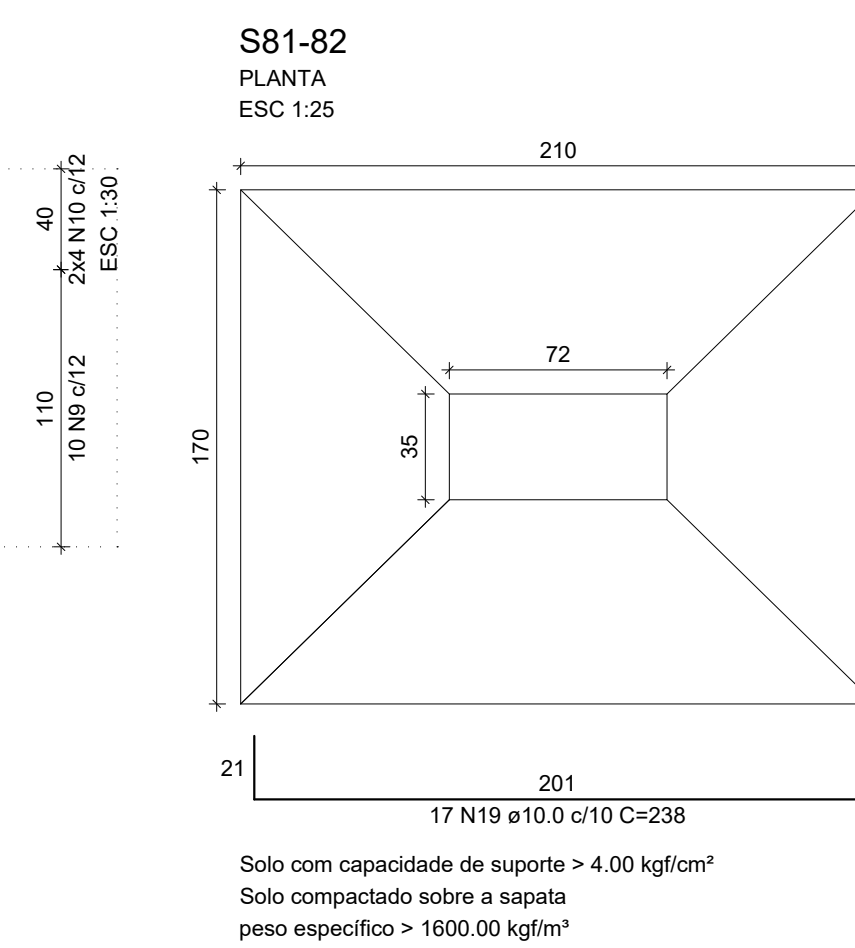
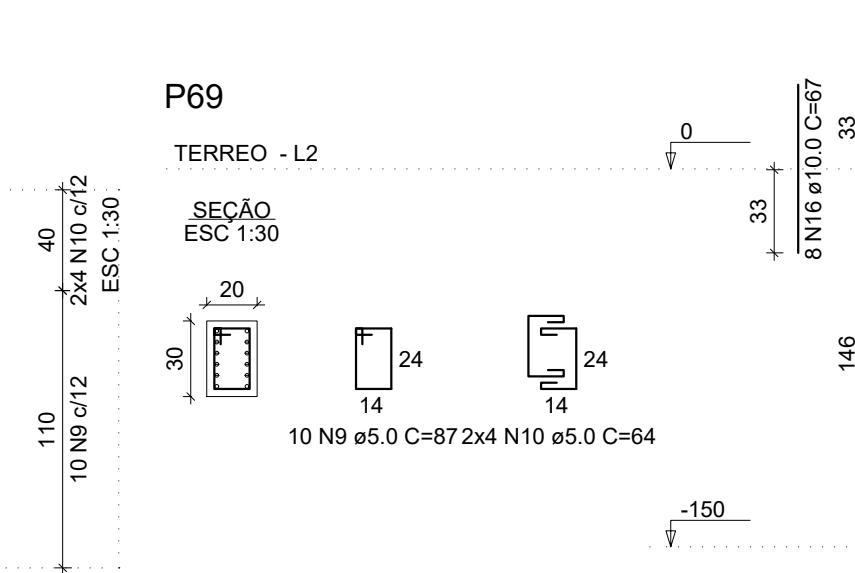
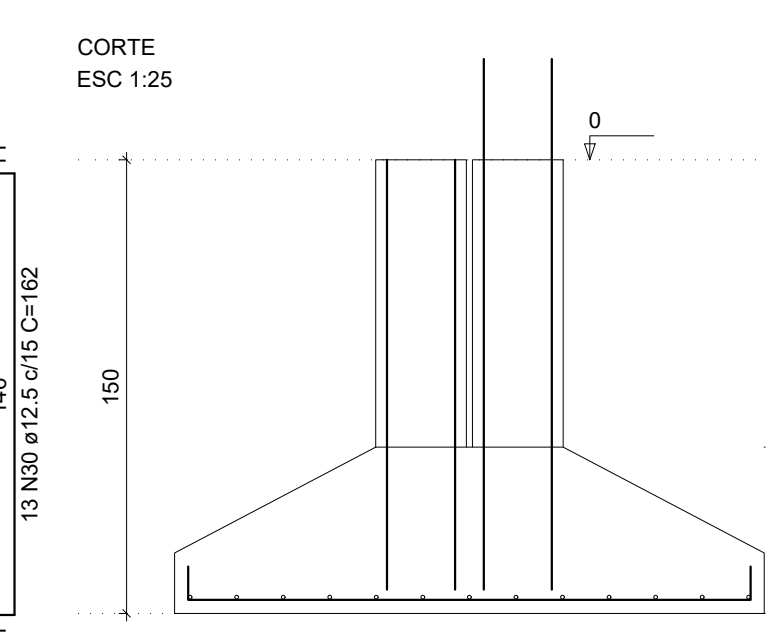
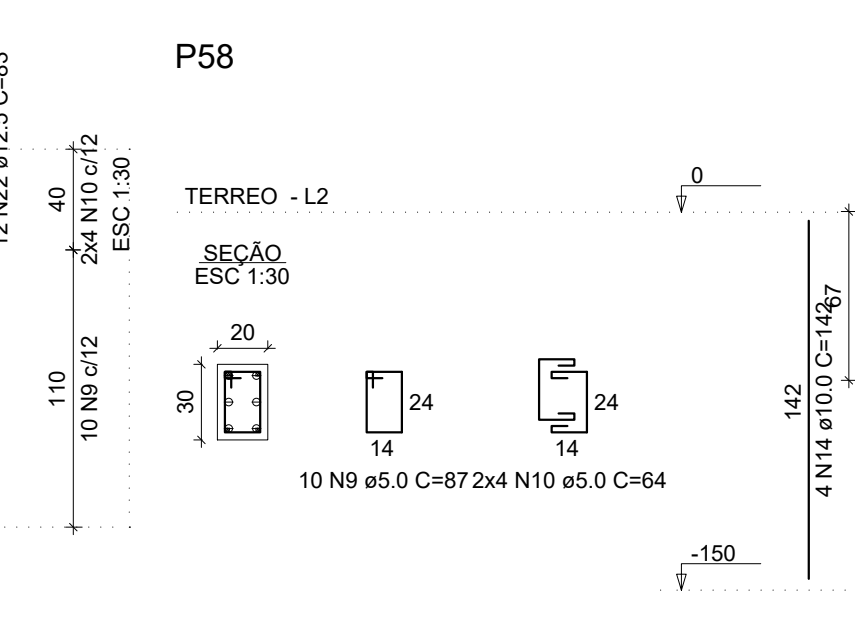
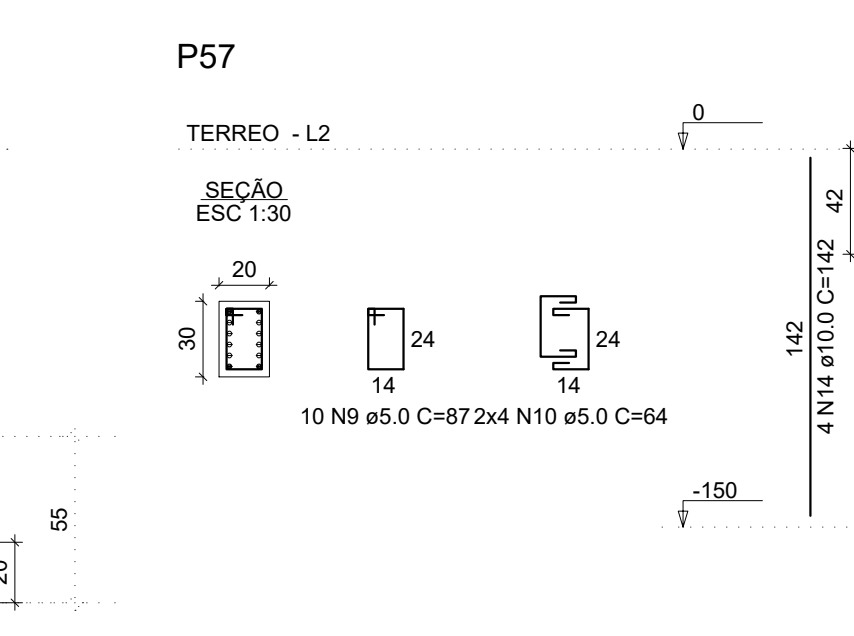
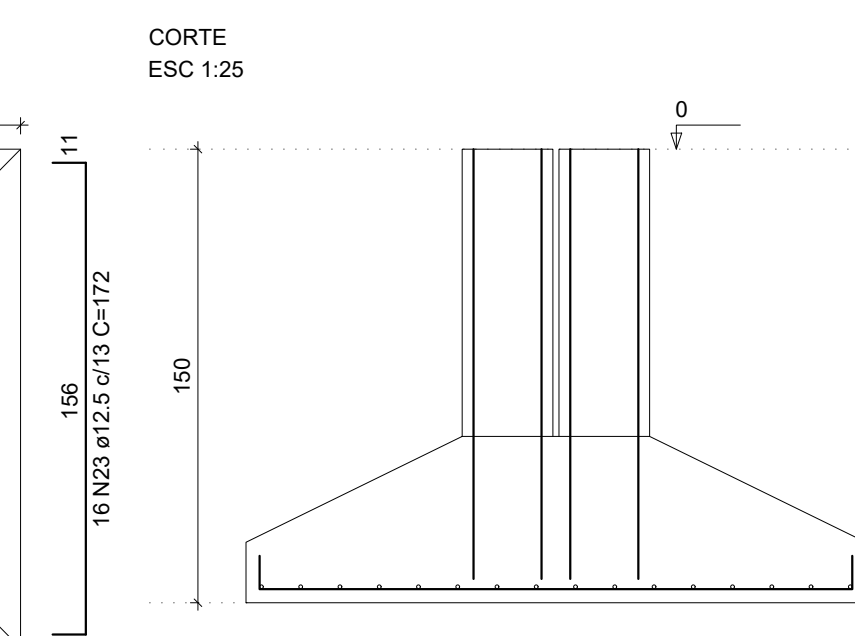
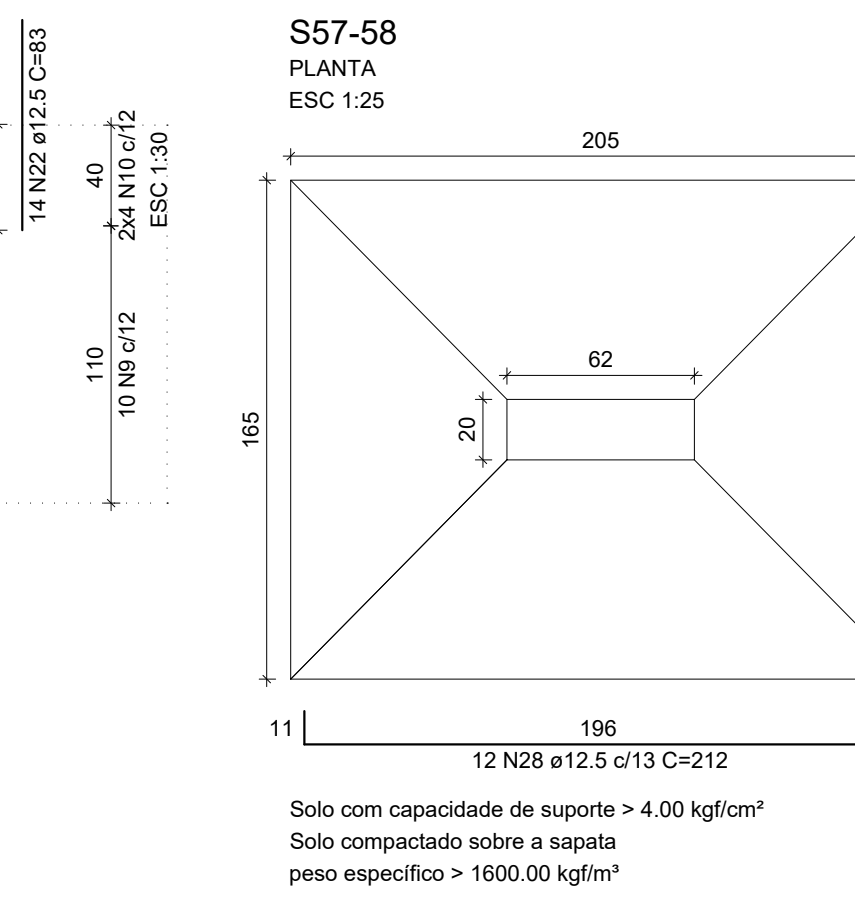
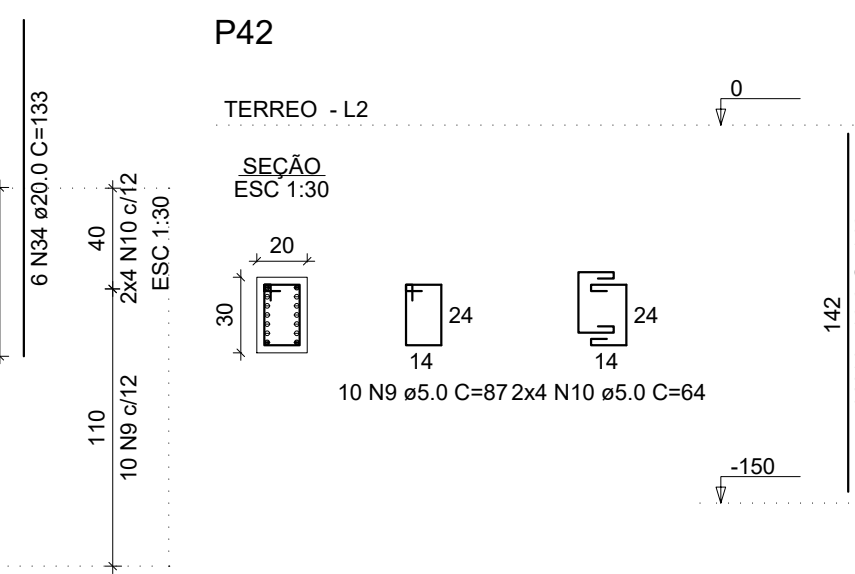
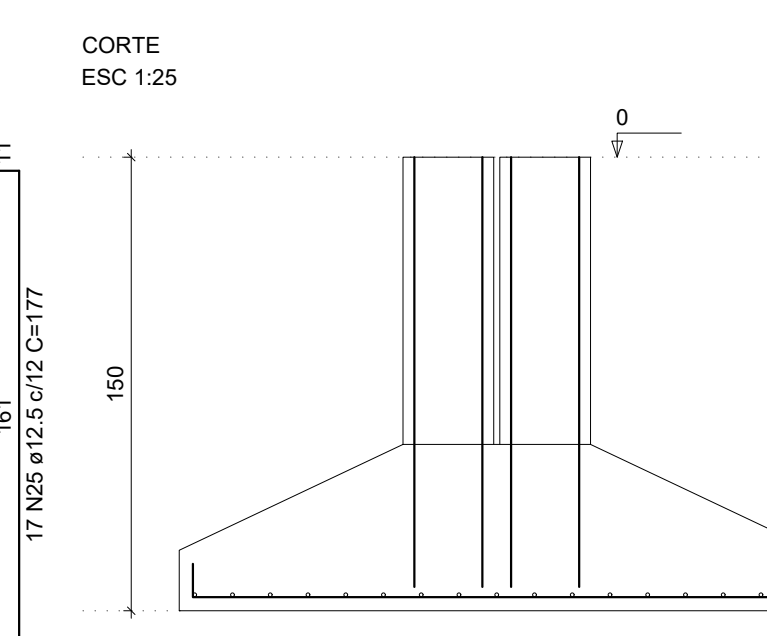
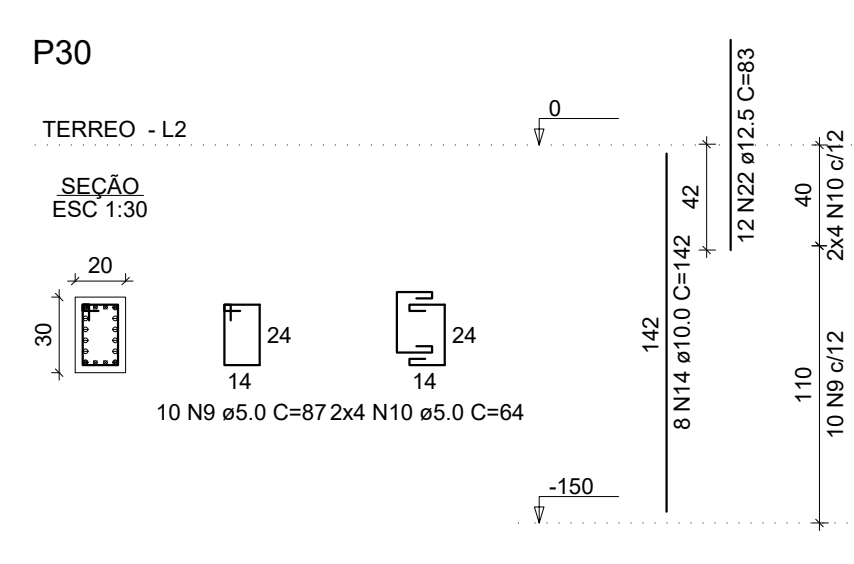
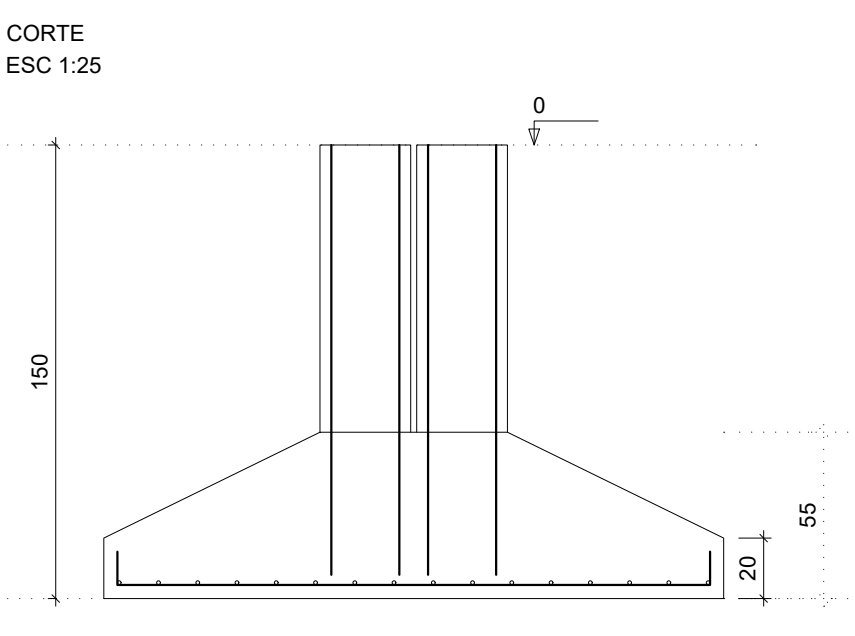
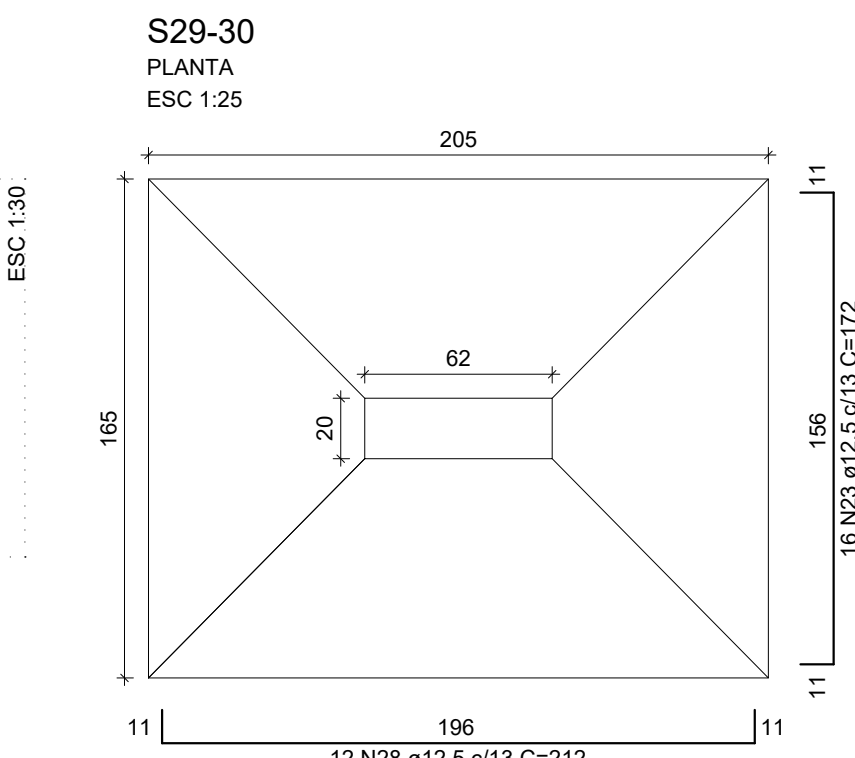
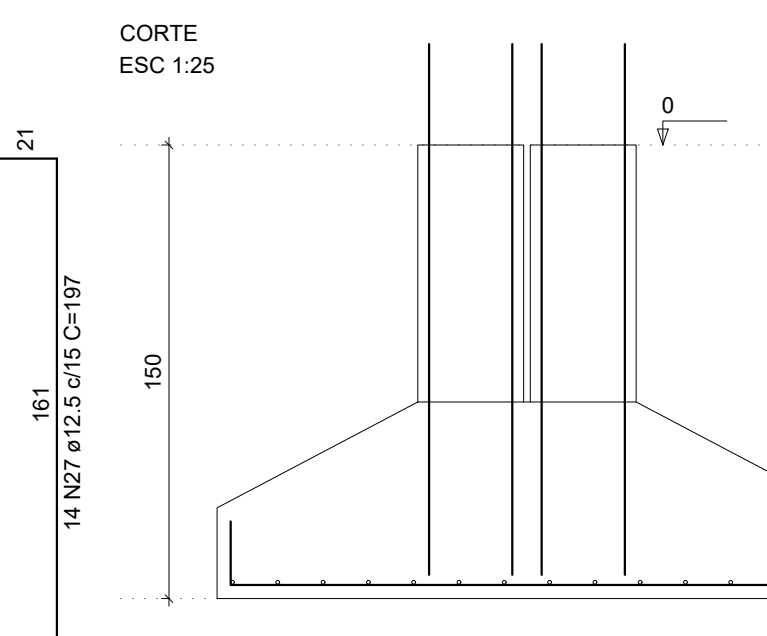
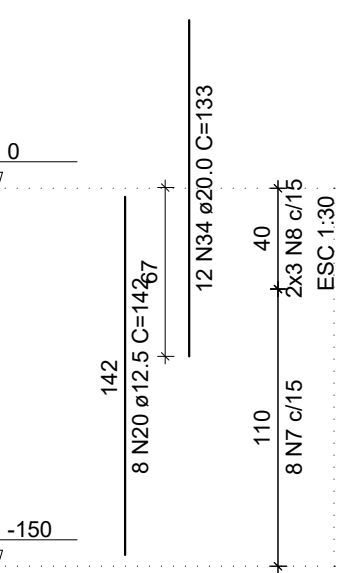
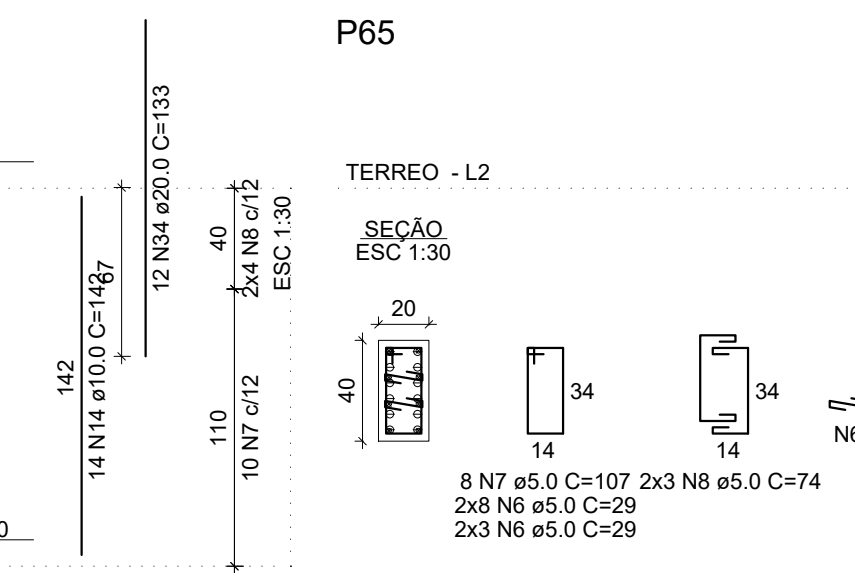
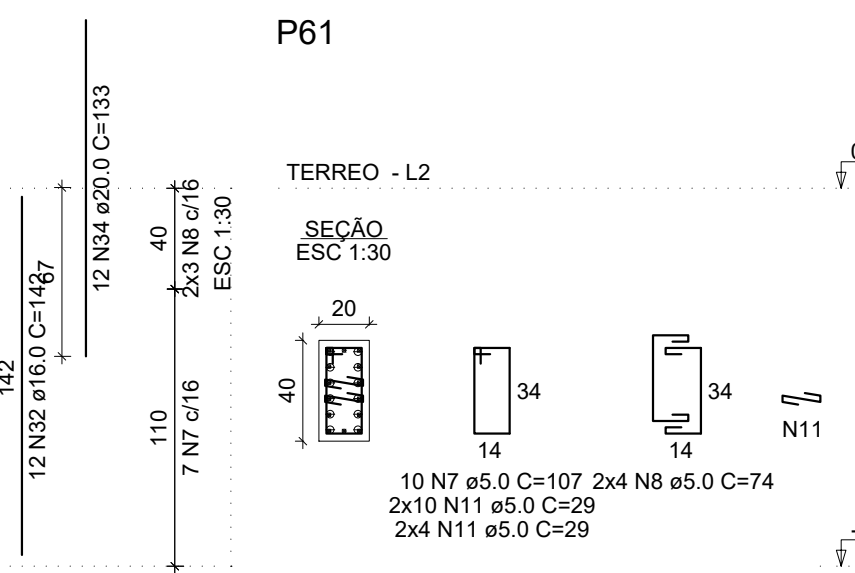
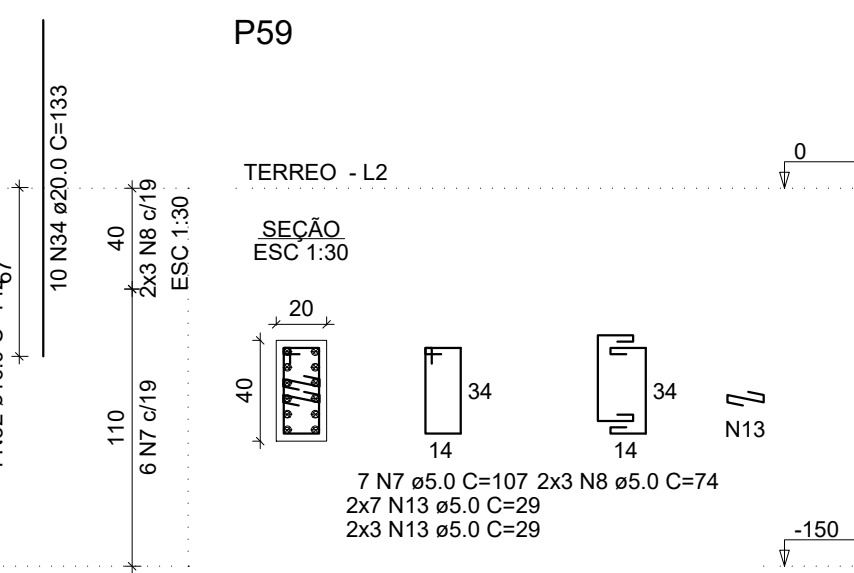
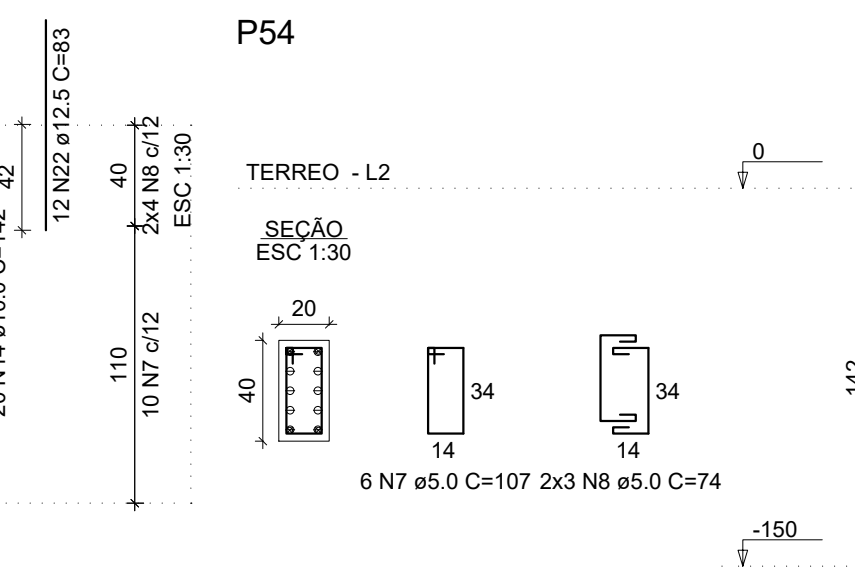
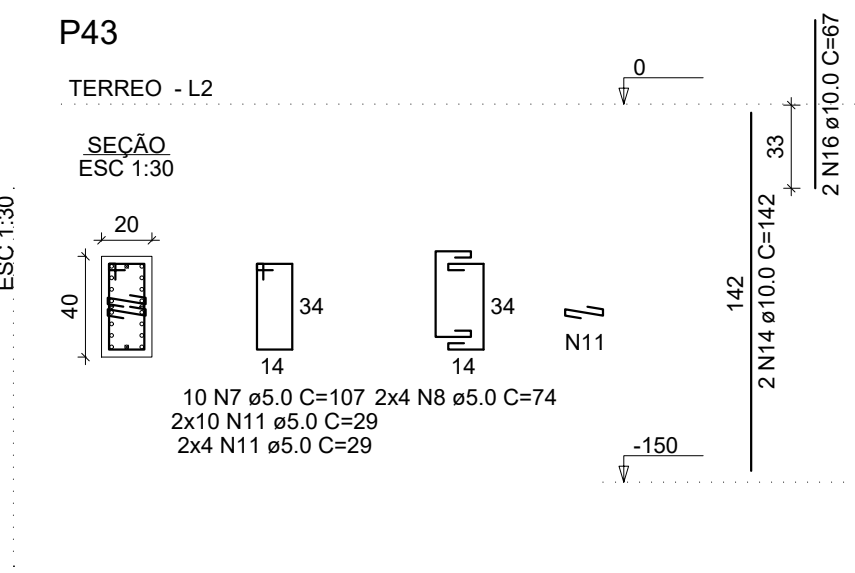
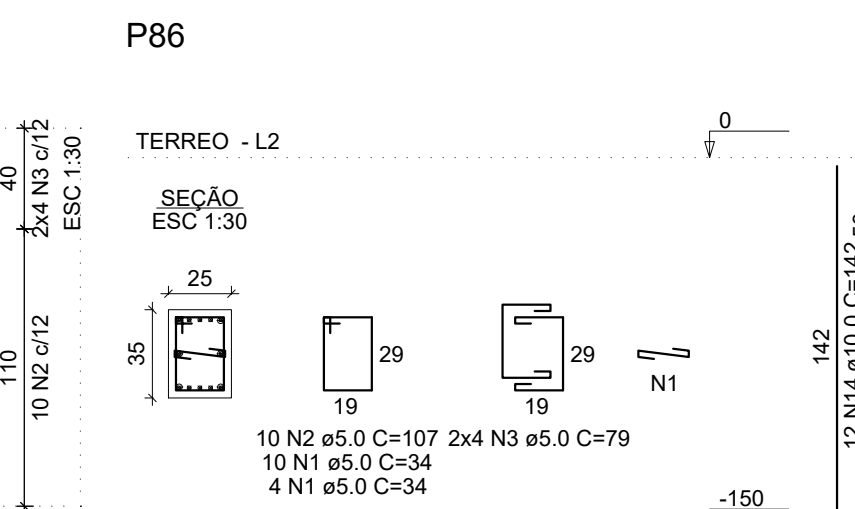
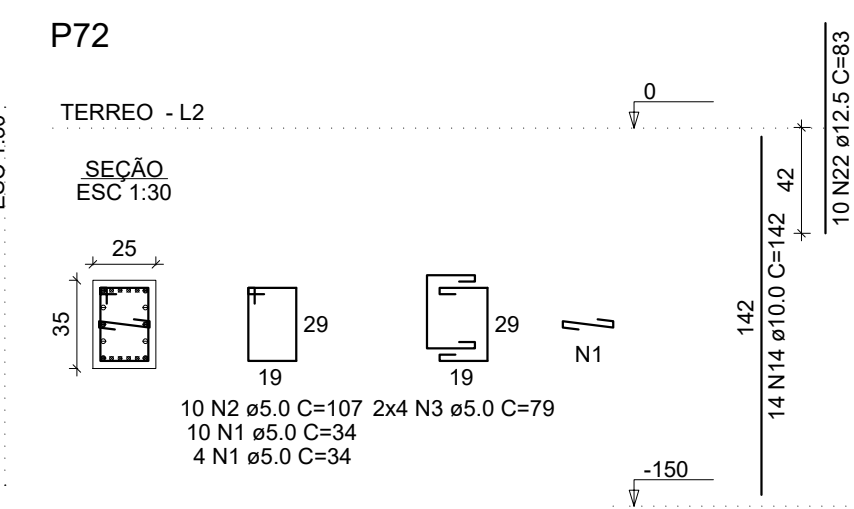
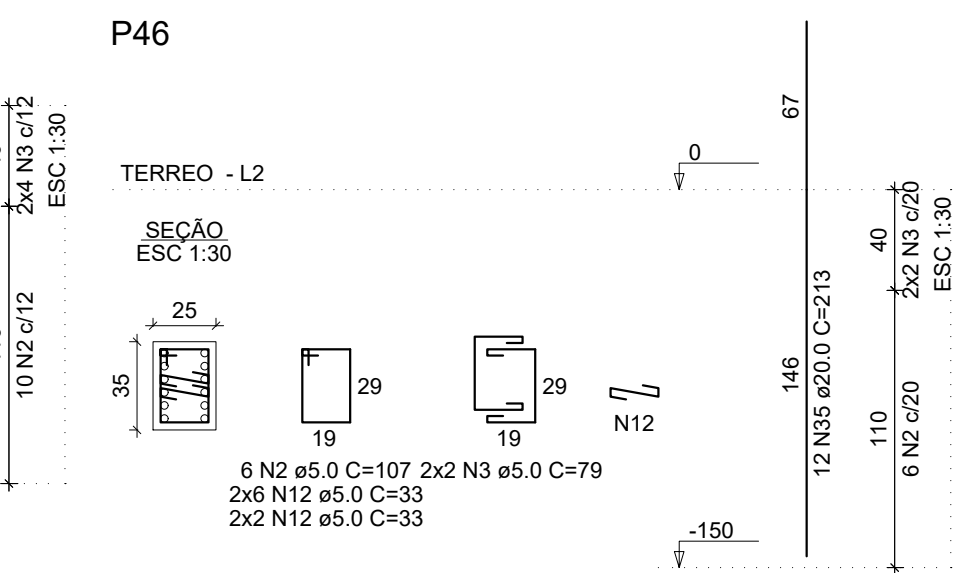
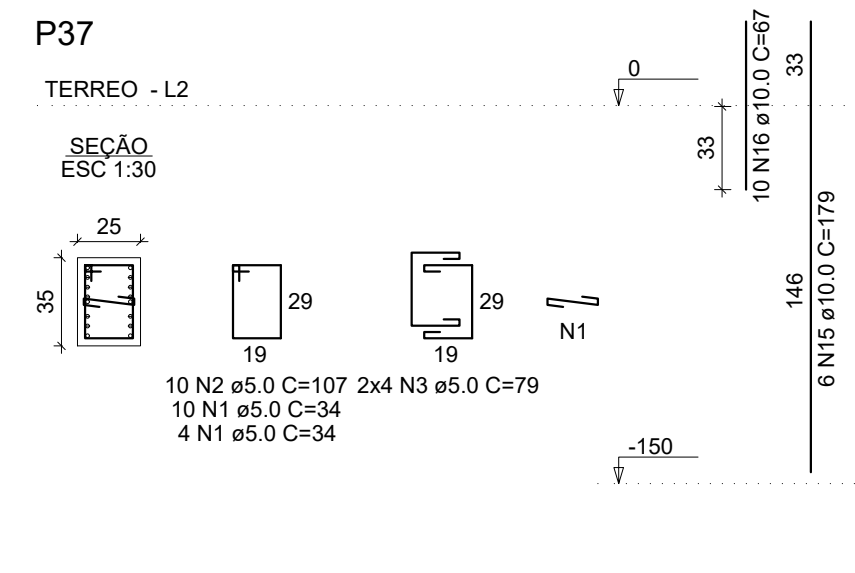
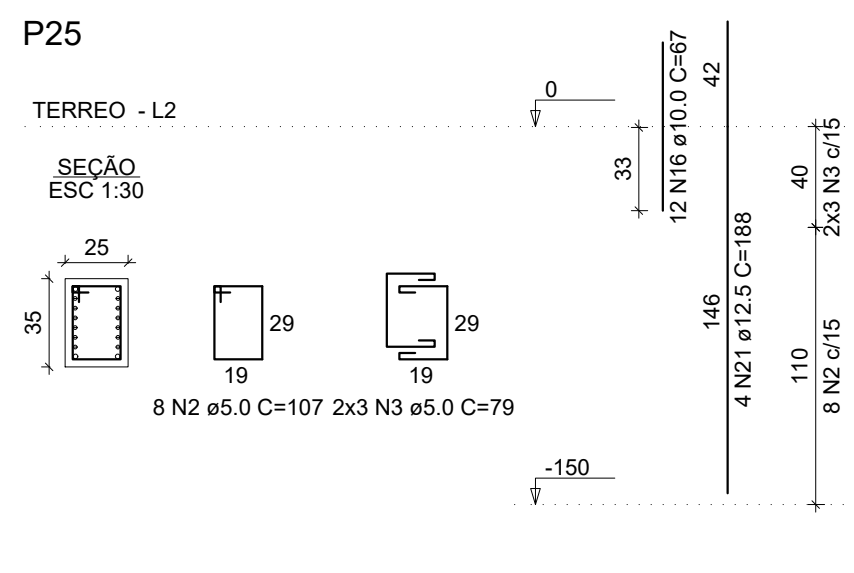
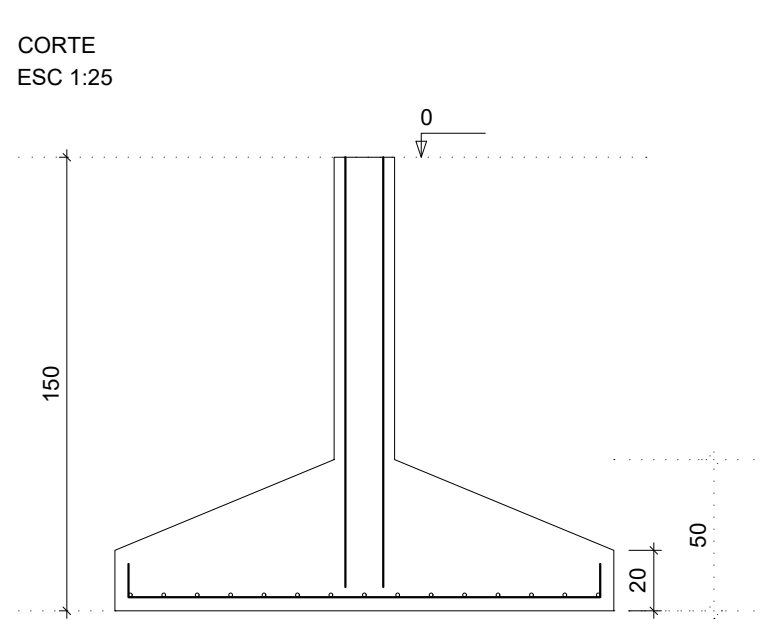
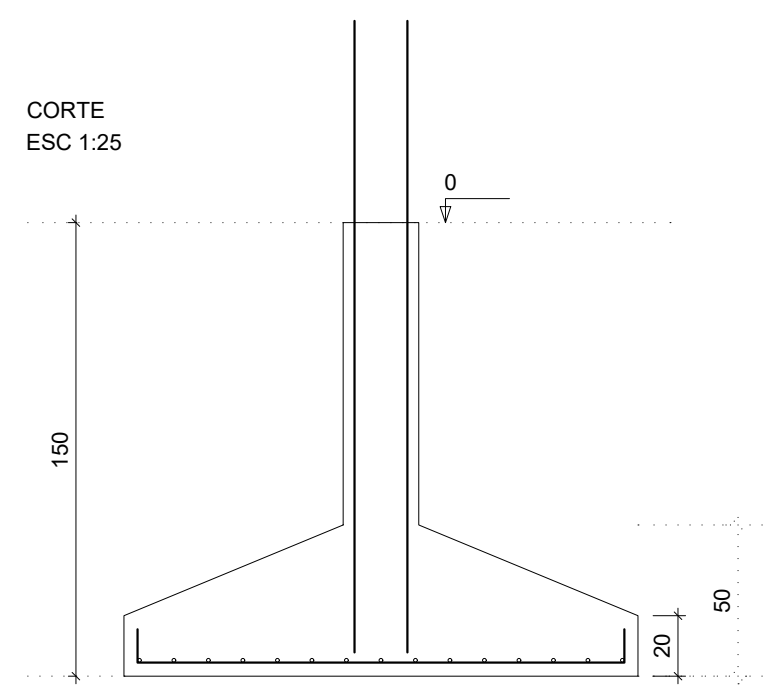
CORTE
ESC 1:25



P85



RELAÇÃO DO AÇO		
P6	P7	P35
P36	P47	P48
P49	P50	P51
P52	P53	P65
P62	P63	P64
P70	P73	P74
P77	P80	P85
P87	3x335	S36
S48	3x549	S50
2xS53	S55	2xS62
S63	S6-7	2xS73
S74	S77	S85

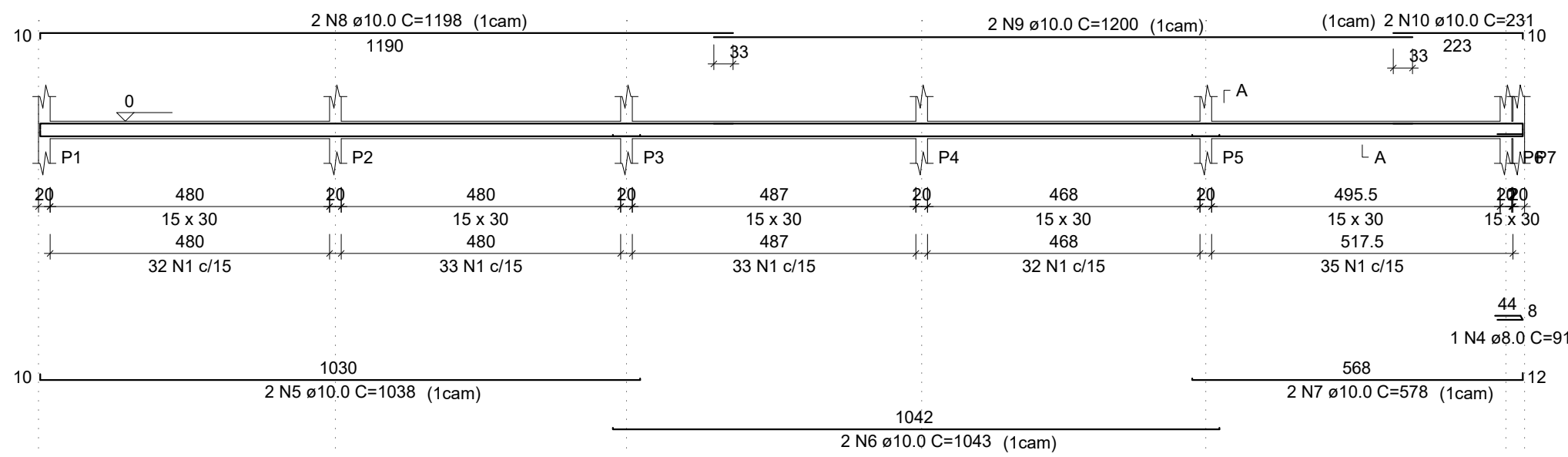


AÇO	DIAM. (mm)	C.TOTAL (mm)	QUANT + 0% (Barra)	UNIT	PESO + 0% (kg)
CA50	10	456,6	39	12 m	231,5
	12,5	1533,8	113	12 m	1304,2
	16	371	12	12 m	58,6
	20	169,2	15	12 m	417,3
CA60	5,0	545,3	-	rolo (170 kg)	84,1
PESO TOTAL (kg)					
CA50	2061,6				
CA60	84,1				

Volume de concreto (C-30) = 28,95 m³
 Área de forma = 88,41 m²

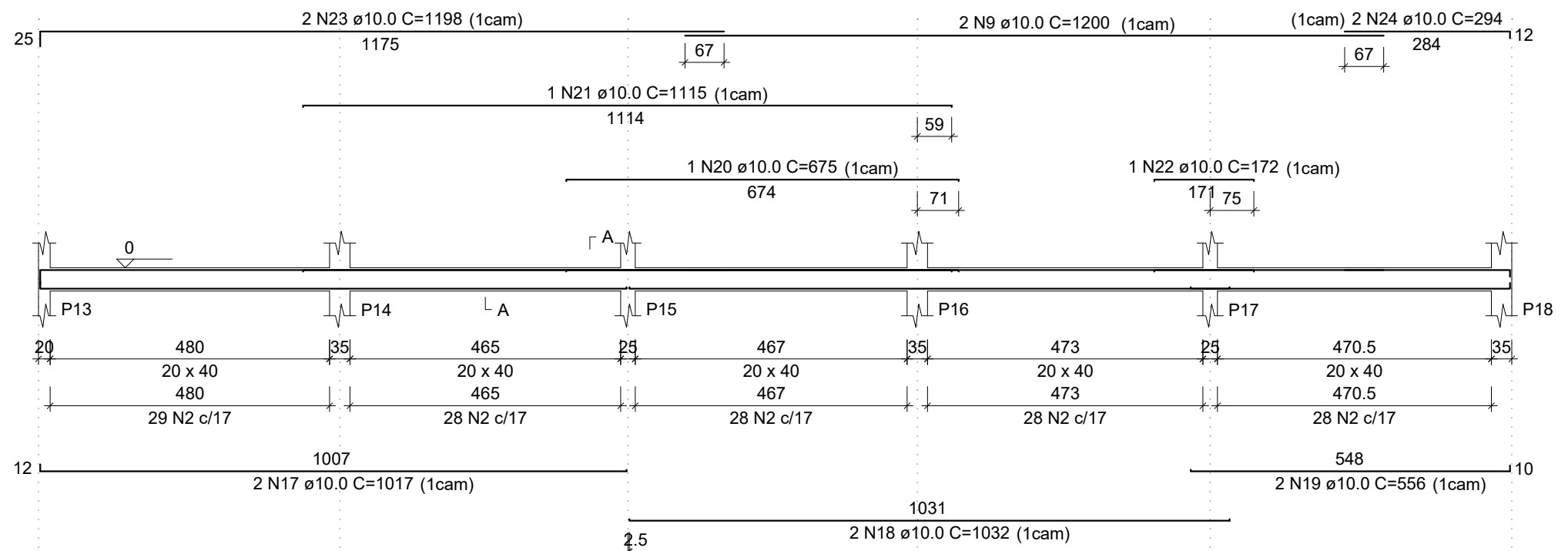
V1

ESC 1:100



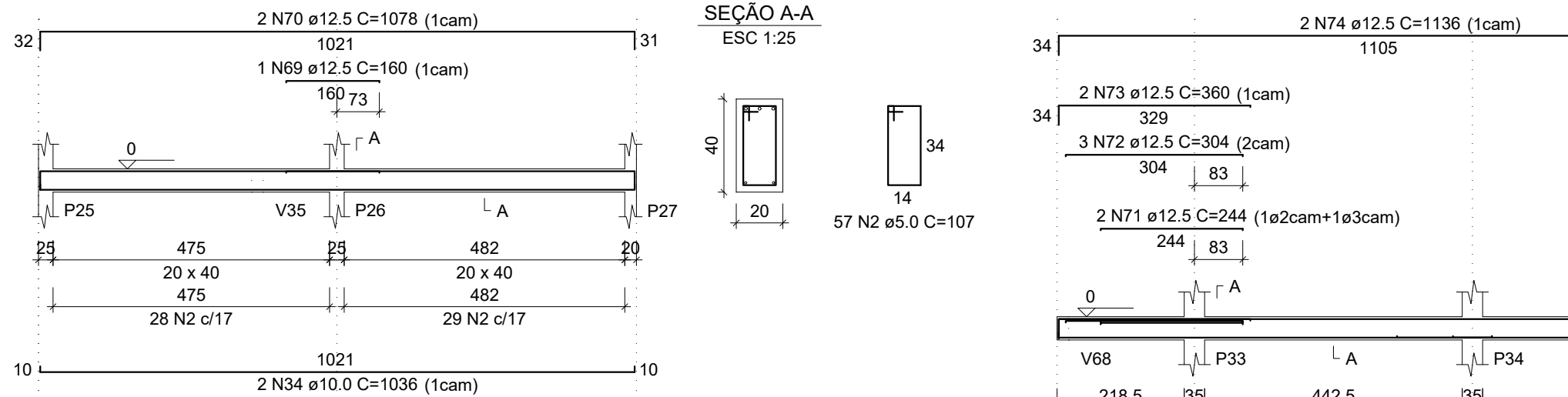
V3

ESC 1:100



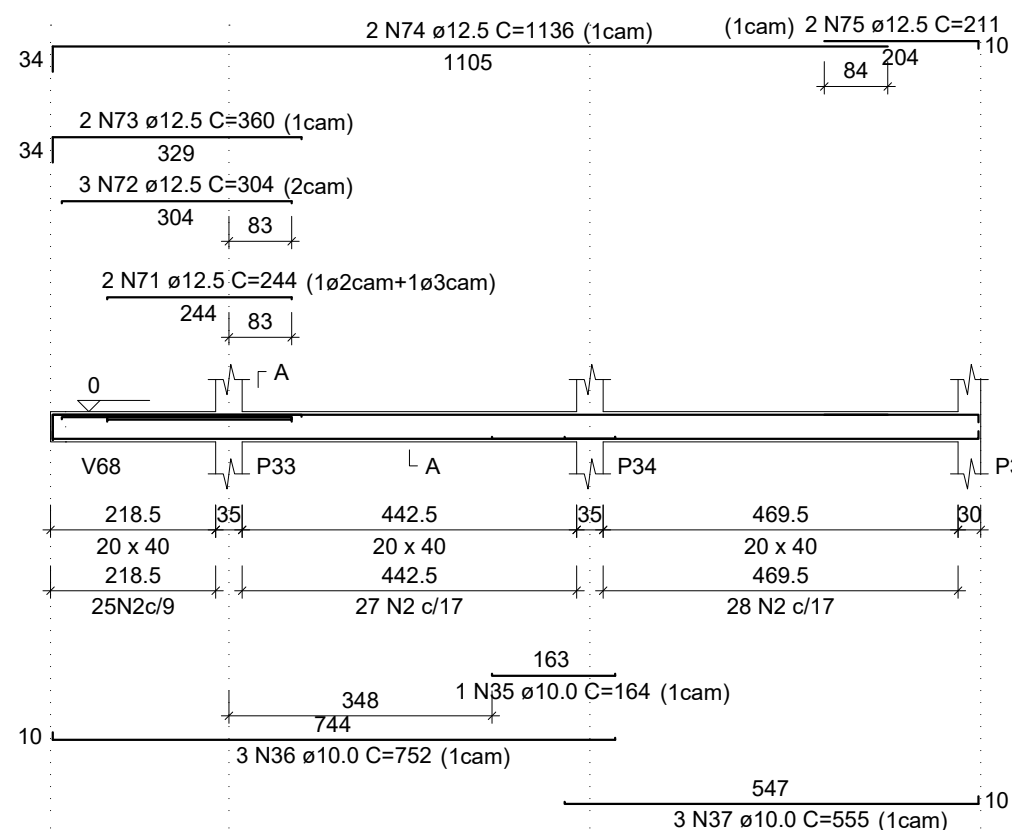
V5

ESC 1:100



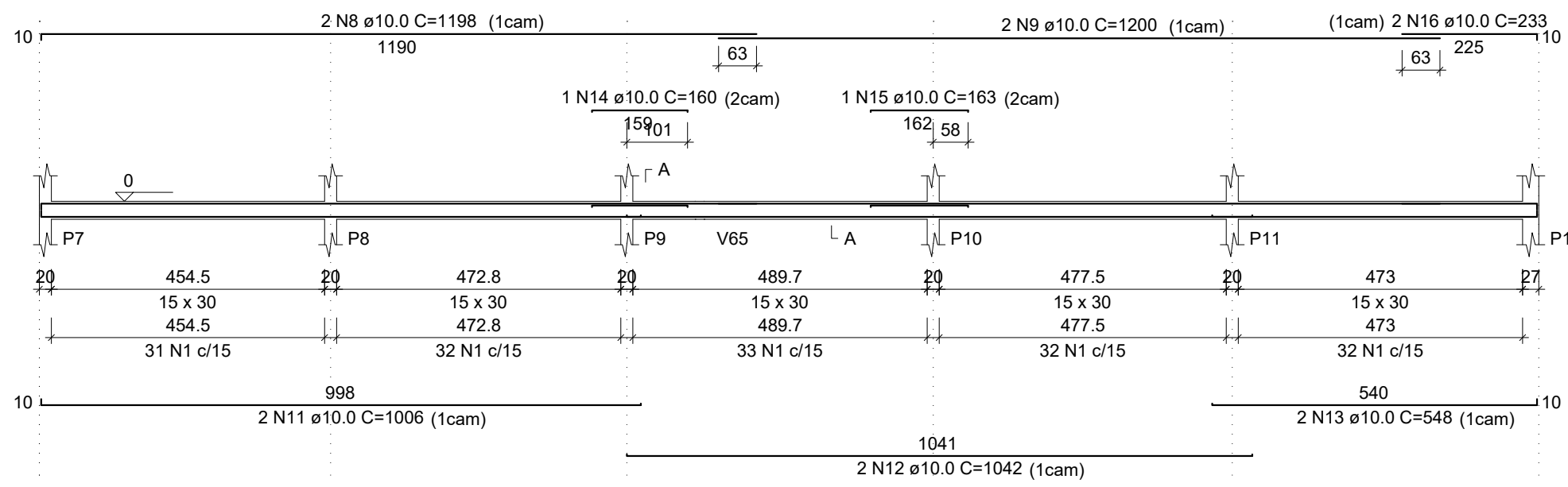
V6

ESC 1:100



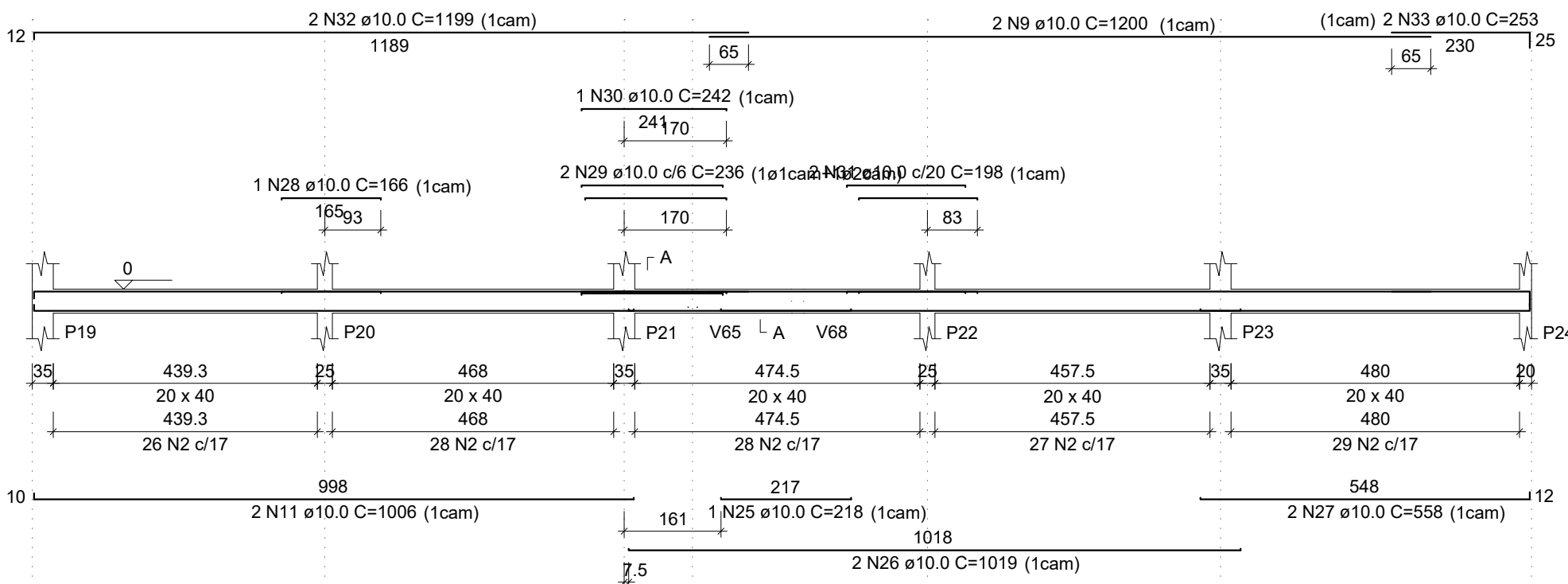
V2

ESC 1:100



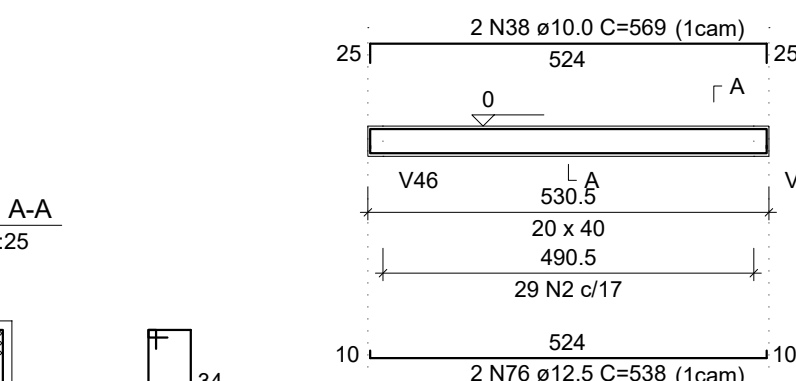
V4

ESC 1:100



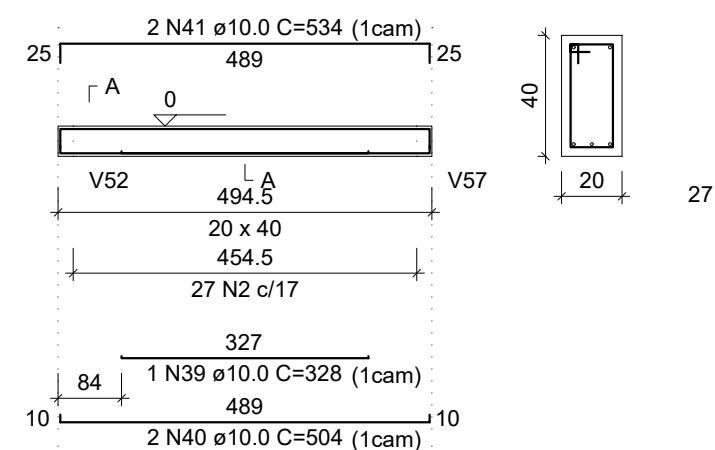
V7

ESC 1:100



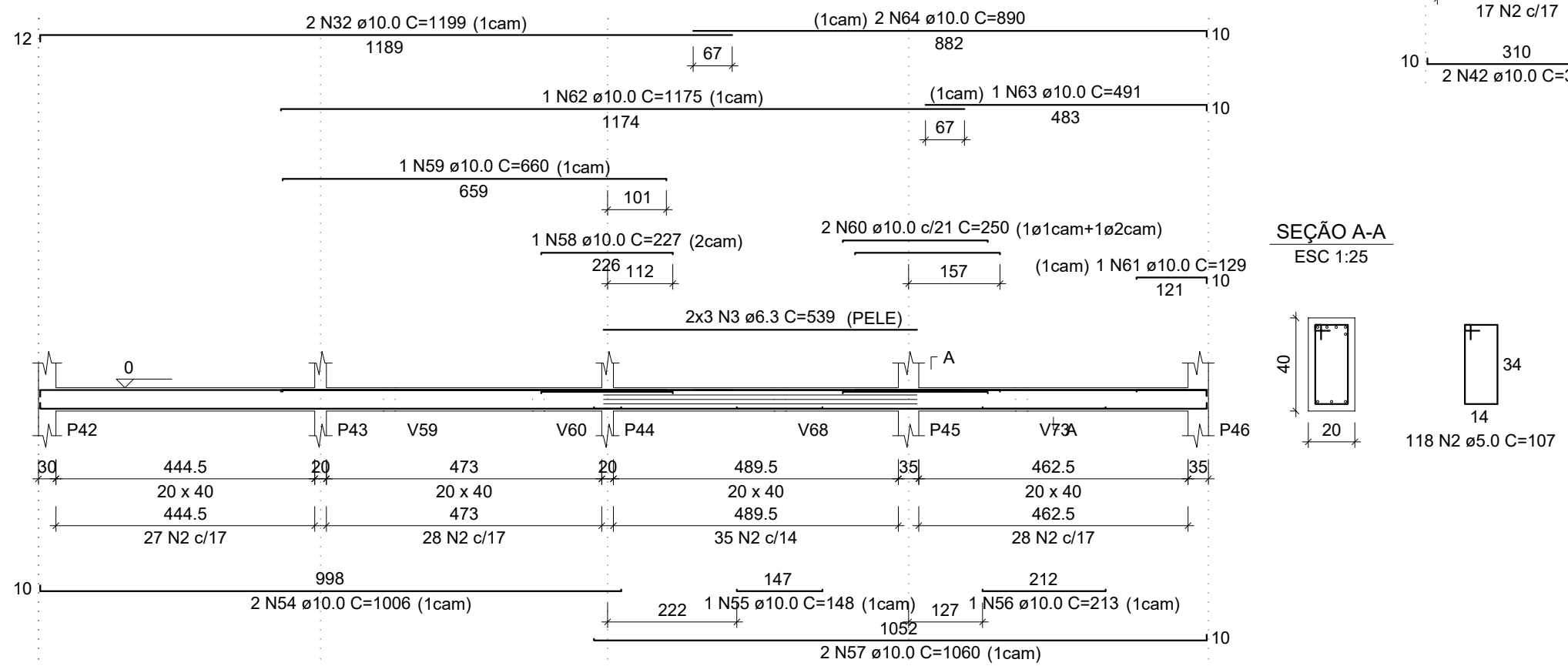
V8

ESC 1:100



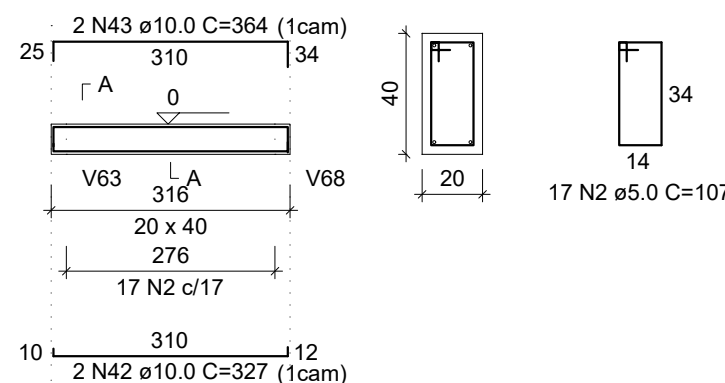
V13

ESC 1:100



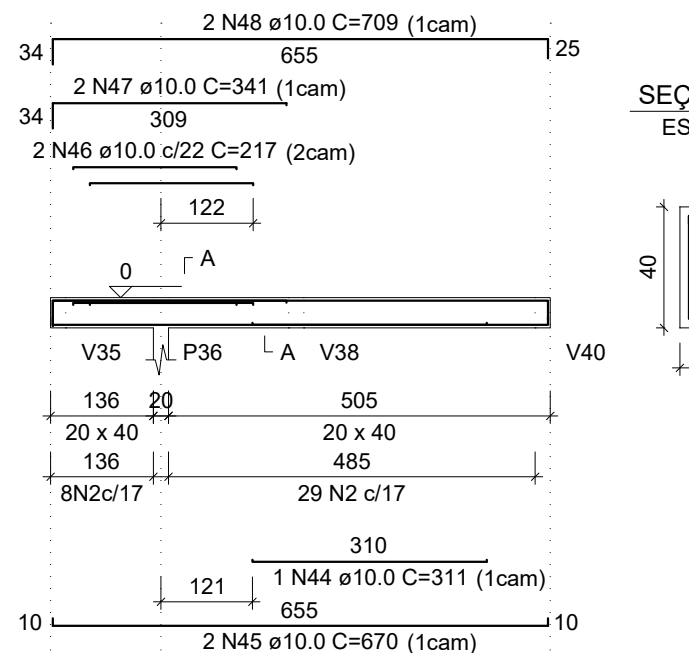
V9

ESC 1:100



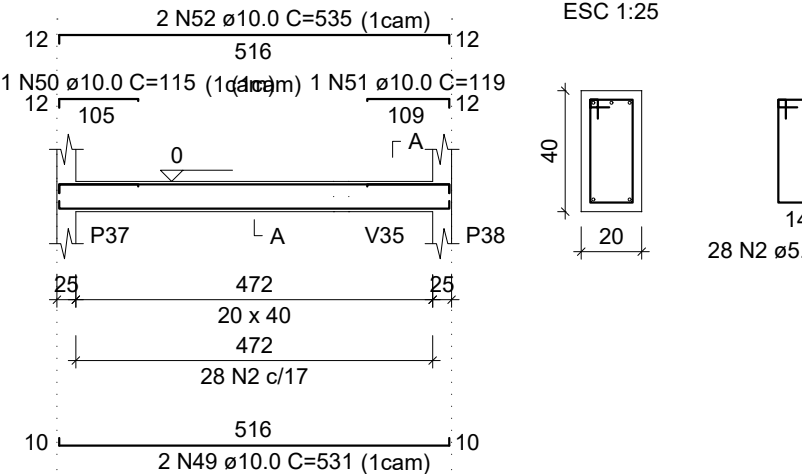
V10

ESC 1:100



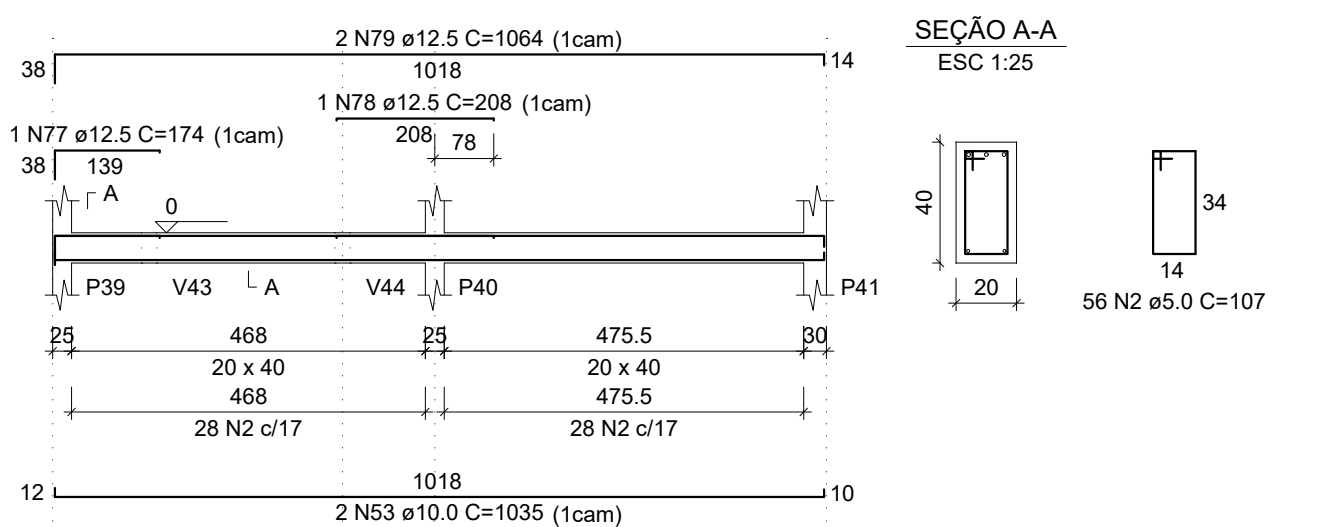
V11

ESC 1:100



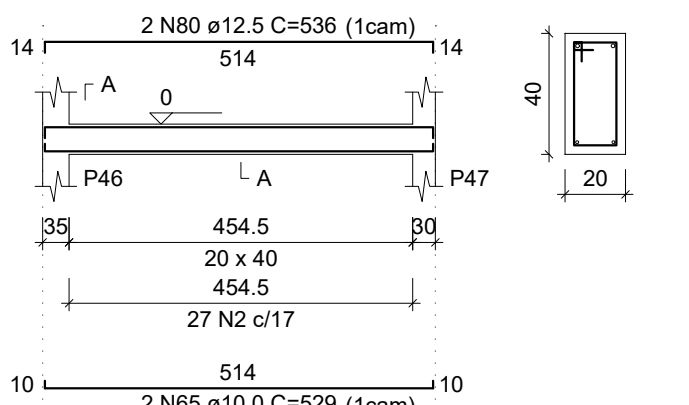
V12

ESC 1:100



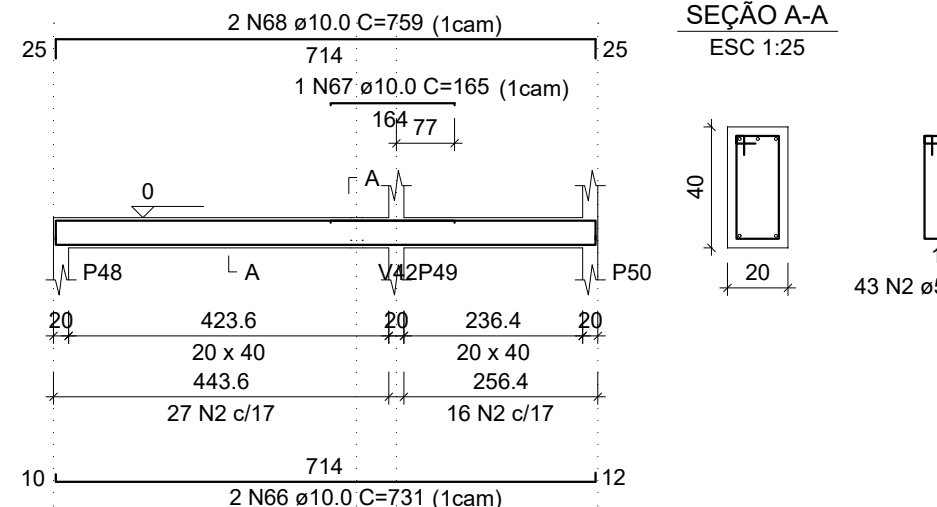
V14

ESC 1:100



V15

ESC 1:100



RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	325	77	25025
CA50	2	5.0	798	107	85386
	3	6.3	6	539	3234
	4	8.0	1	91	91
	5	10.0	2	1038	2076
	6	10.0	2	1043	2086
	7	10.0	2	578	1156
	8	10.0	4	1198	4792
	9	10.0	8	1200	9600
	10	10.0	2	231	462
	11	10.0	2	1006	2012
	12	10.0	2	1042	2084
	13	10.0	2	548	1096
	14	10.0	1	160	160
	15	10.0	1	163	163
	16	10.0	2	233	466
	17	10.0	2	1017	2034
	18	10.0	2	1032	2064
	19	10.0	2	556	1112
	20	10.0	1	675	675
	21	10.0	1	1115	1115
	22	10.0	1	172	172
	23	10.0	2	1198	2396
	24	10.0	2	294	588
	25	10.0	1	218	218
	26	10.0	2	1019	2038
	27	10.0	2	558	1116
	28	10.0	1	166	166
	29	10.0	2	236	472
	30	10.0	1	242	242
	31	10.0	2	198	396
	32	10.0	4	1199	4796
	33	10.0	2	253	506
	34	10.0	2	1036	2072
	35	10.0	1	164	164
	36	10.0	3	752	2256
	37	10.0	3	555	1665
	38	10.0	2	569	1138
	39	10.0	1	328	328
	40	10.0	2	504	1008
	41	10.0	2	534	1068
	42	10.0	2	327	654
	43	10.0	2	364	728
	44	10.0	1	311	311
	45	10.0	1	670	670
	46	10.0	2	217	434
	47	10.0	2	341	682
	48	10.0	2	709	1418
	49	10.0	2	531	1062
	50	10.0	1	115	115
	51	10.0	1	119	119
	52	10.0	1	535	1070
	53	10.0	2	1035	2070
	54	10.0	2	1006	2012
	55	10.0	1	148	148
	56	10.0	1	213	213
	57	10.0	2	1060	2120
	58	10.0	1	227	227
	59	10.0	1	660	660
	60	10.0	2	250	500
	61	10.0	1	129	129
	62	10.0	1	1175	1175
	63	10.0	1	491	491
	64	10.0	2	890	1780
	65	10.0	2	529	1058
	66	10.0	2	731	1462
	67	10.0	1	165	165
	68	10.0	2	759	1518
	69	12.5	1	160	160
	70	12.5	2	1078	2156
	71	12.5	2	244	488
	72	12.5	3	304	912
	73	12.5	2	380	760
	74	12.5	2	1136	2272
	75	12.5	2	211	422
	76	12.5	2	538	1076
	77	12.5	1	174	174
	78	12.5	1	208	208
	79	12.5	2	1064	2128
	80	12.5	2	536	1072

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	32.3	3	12 m	7.9
	8.0	0.9	1	12 m	0.4
	10.0	816.3	69	12 m	503.3
	12.5	117.9	10	12 m	113.6
CA60	5.0	1104.1	-	rolo (170 kg)	170.2

PESO TOTAL (kg)

CA50 625.1

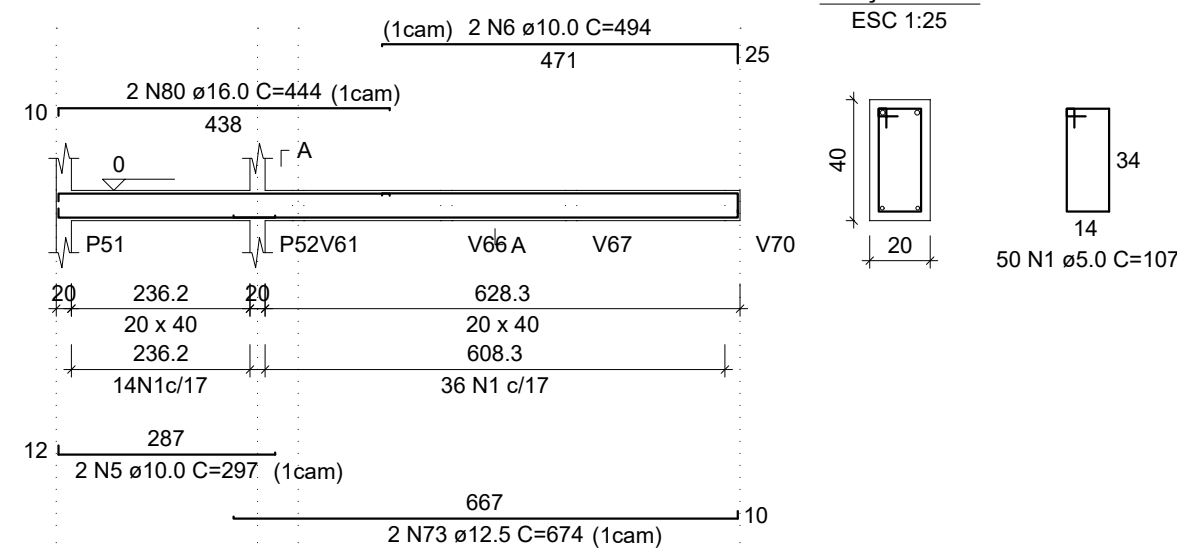
CA60 170.2

Volume de concreto (C-30) = 13.53 m³

Área de forma = 178.64 m²

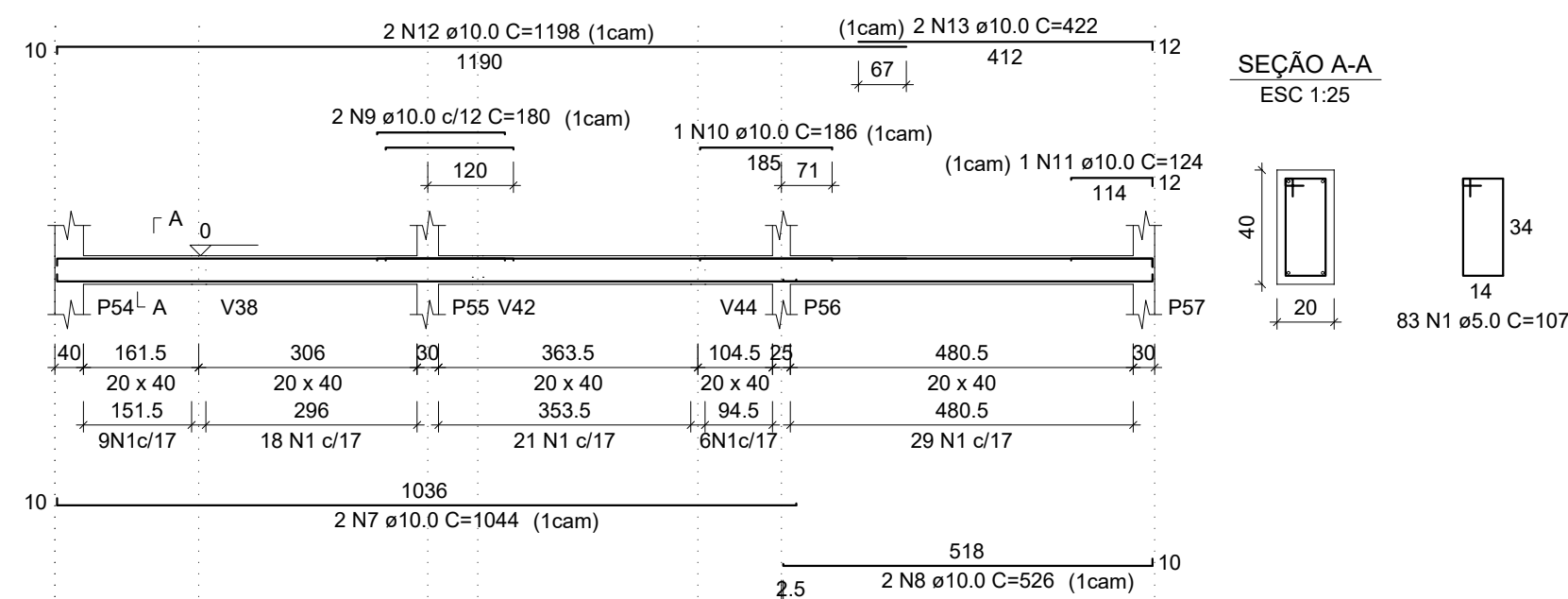
V16

ESC 1:100



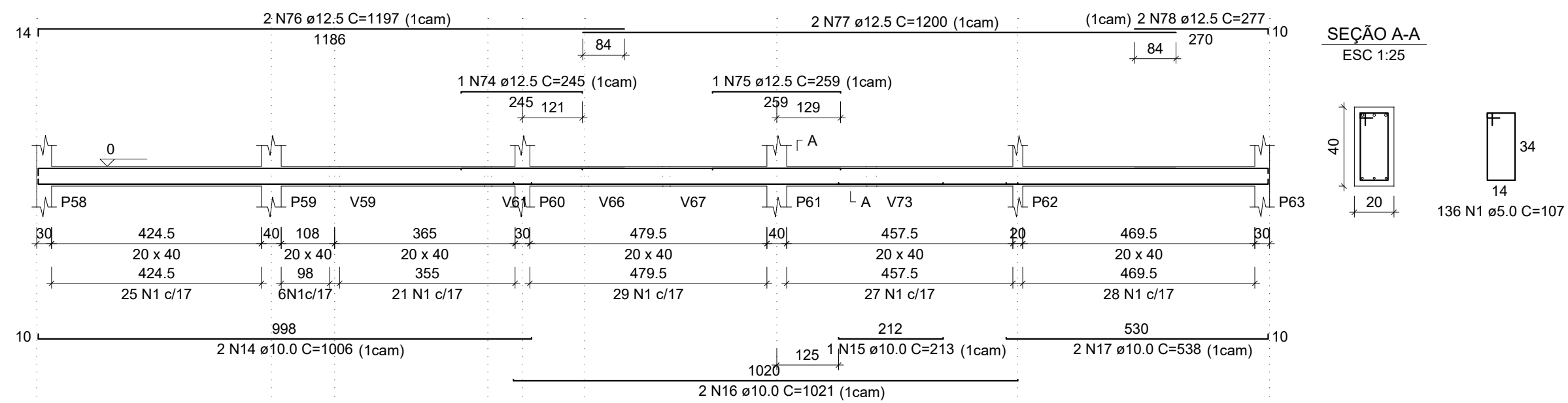
V17

ESC 1:100



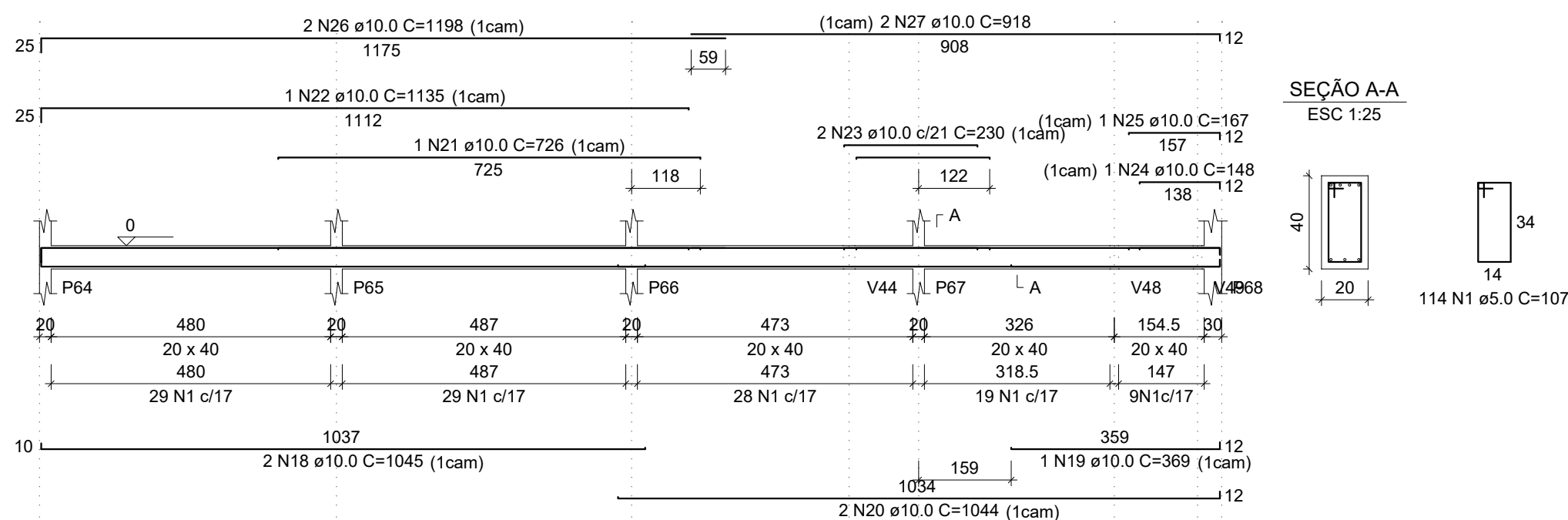
V18

ESC 1:100



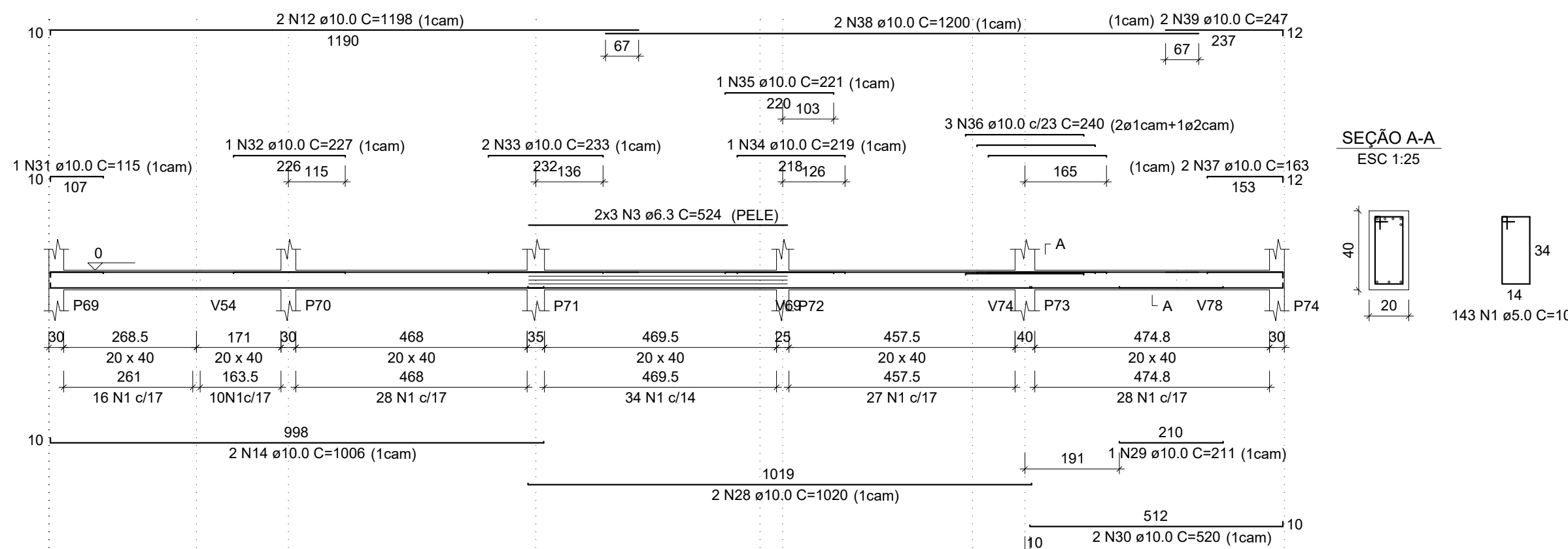
V19

ESC 1:100



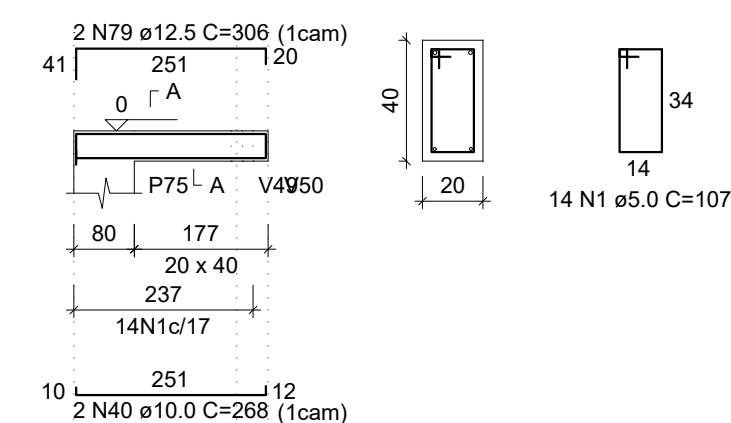
V20

ESC 1:100



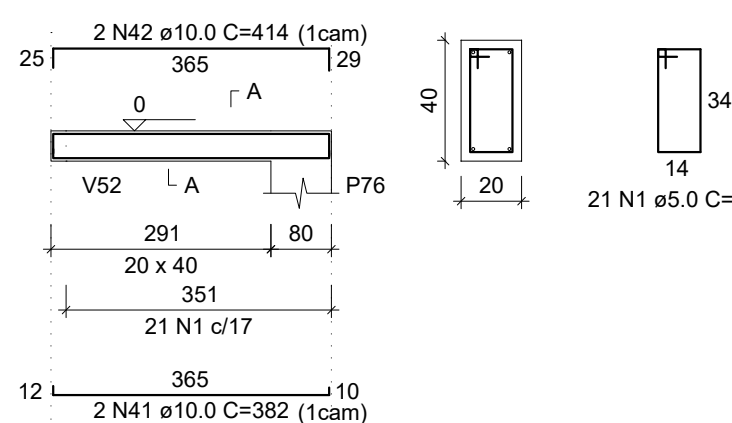
V21

ESC 1:100



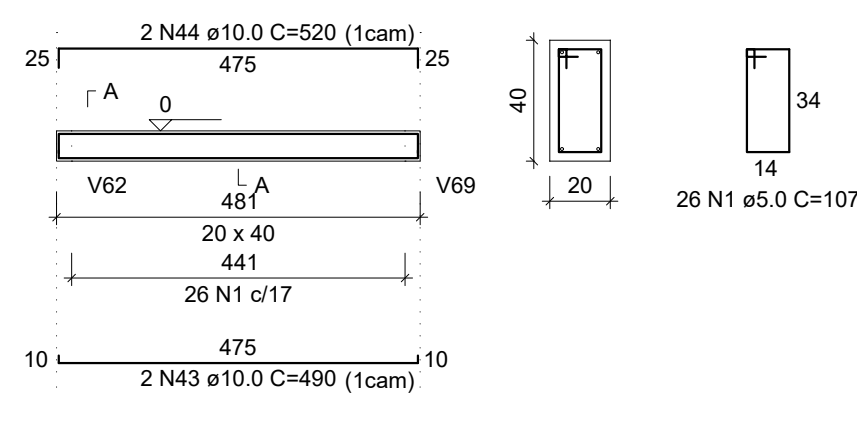
V22

ESC 1:100



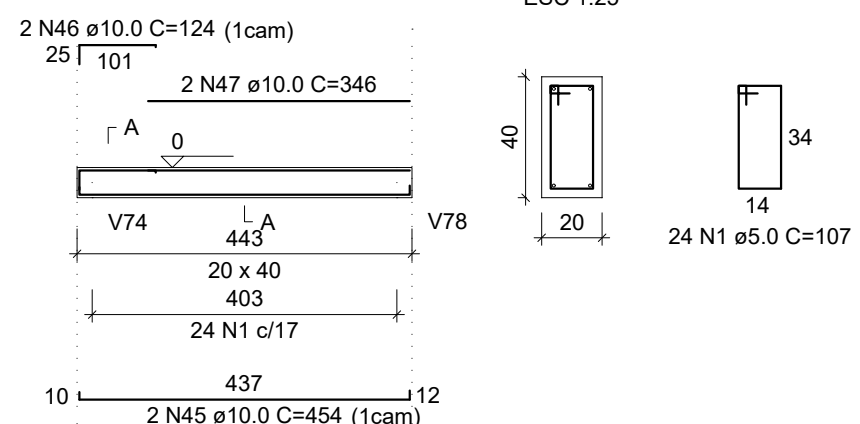
V23

ESC 1:100



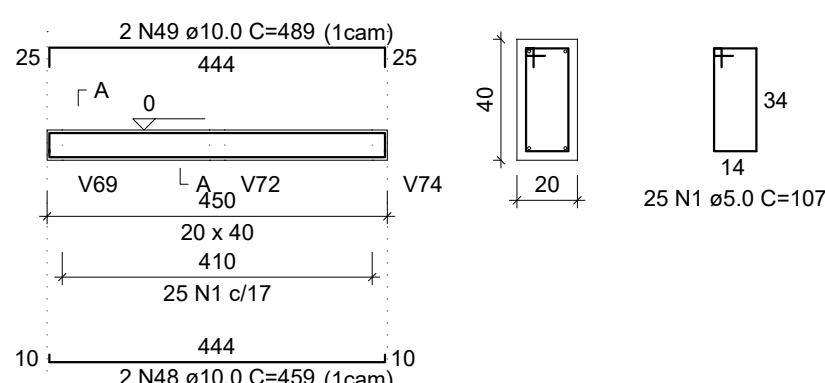
V24

ESC 1:100



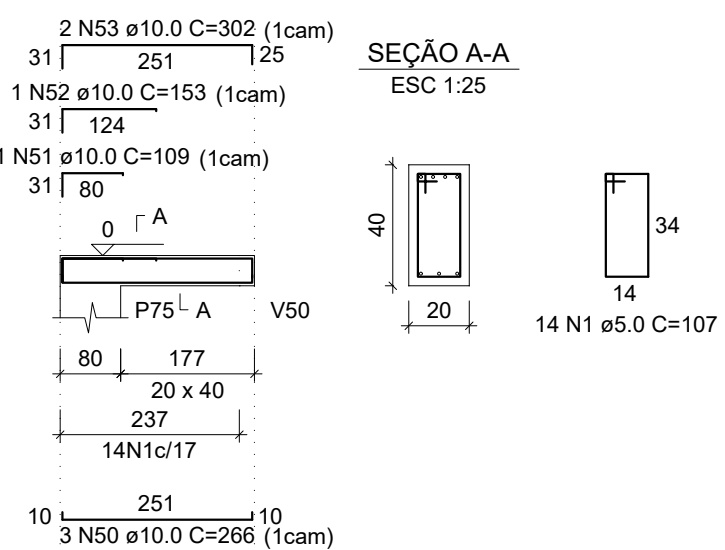
V25

ESC 1:100



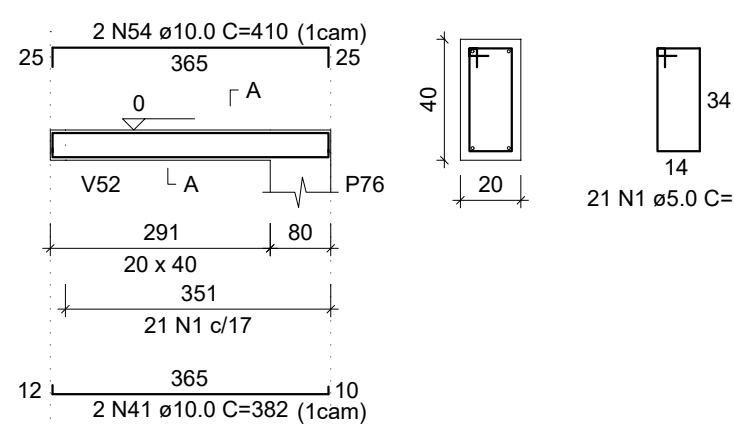
V26

ESC 1:100



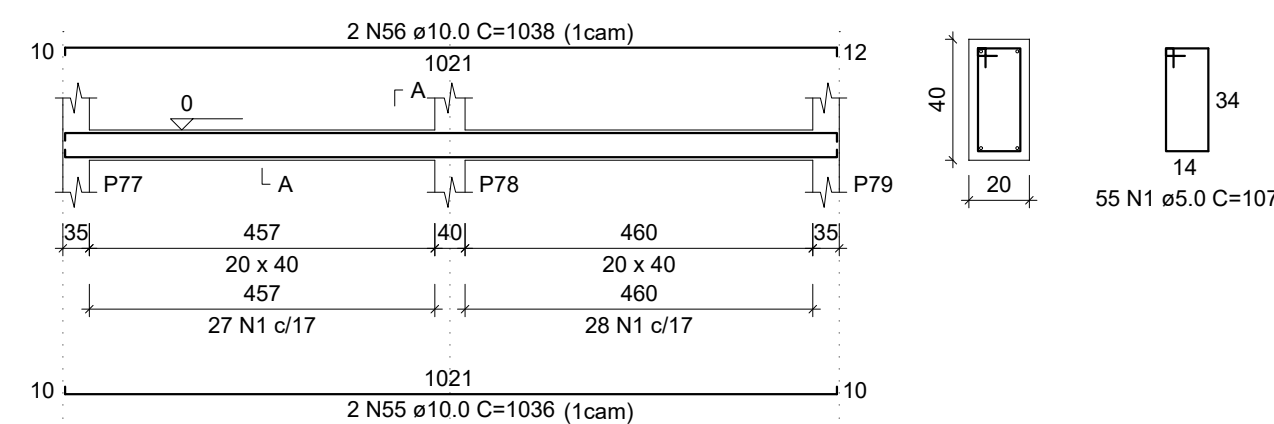
V27

ESC 1:100



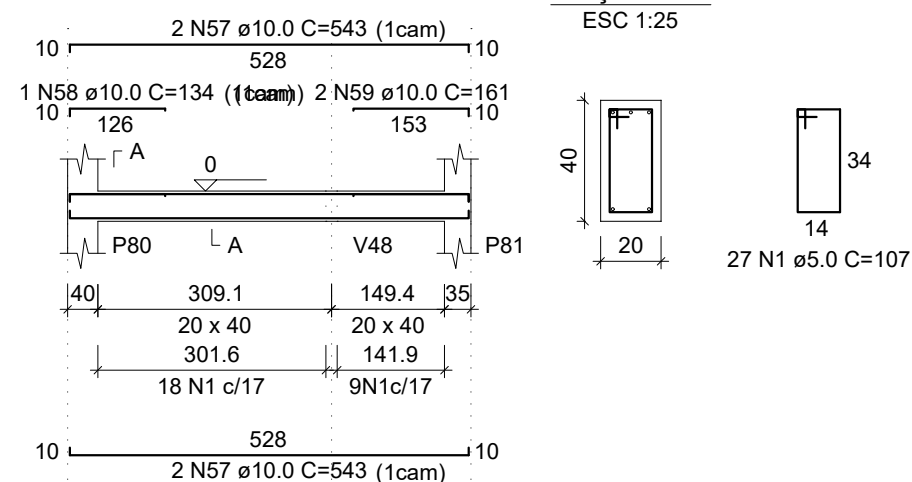
V28

ESC 1:100



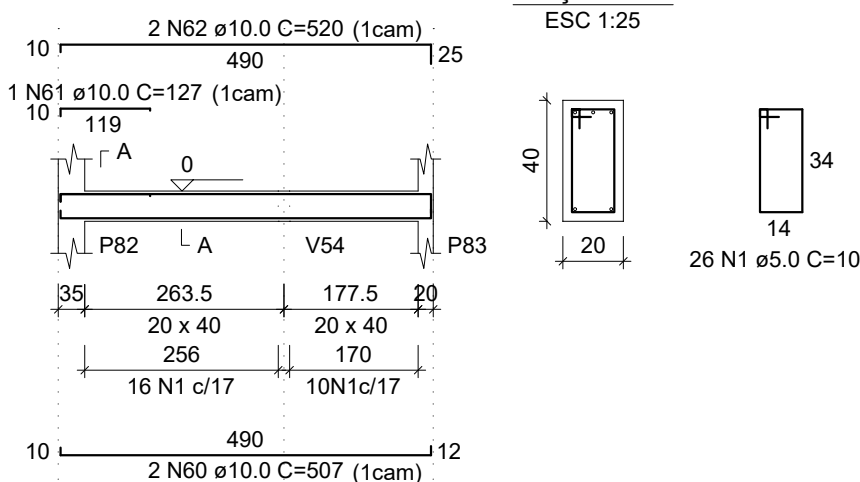
V29

ESC 1:100



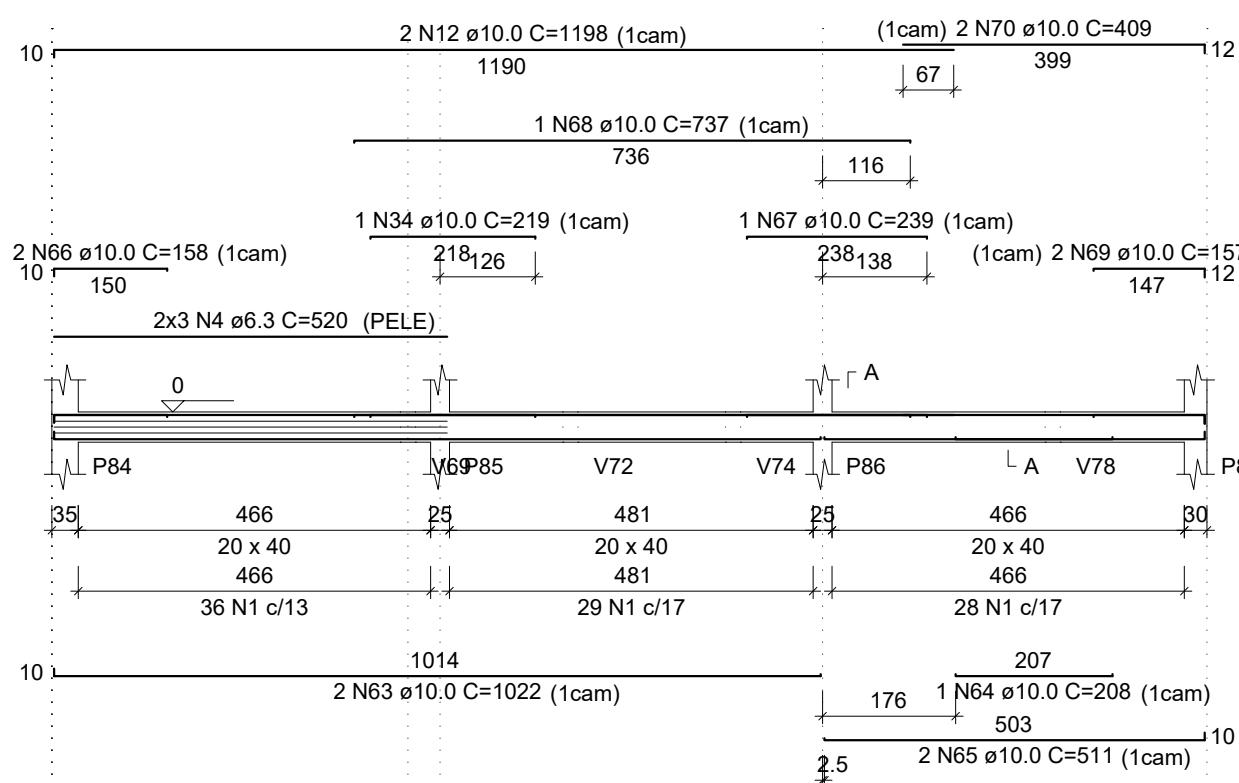
V30

ESC 1:100



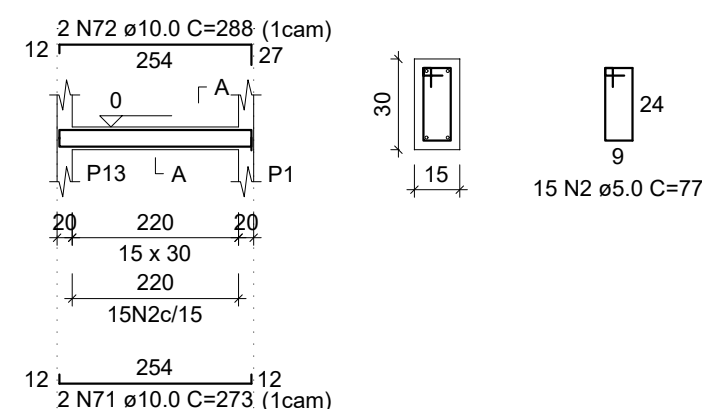
V31

ESC 1:100



V32

ESC 1:100



RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	872	107	93304
CA50	2	5.0	15	77	1155
	3	6.3	6	524	3144
	4	6.3	6	520	3120
	5	10.0	2	297	594
	6	10.0	2	494	988
	7	10.0	2	1044	2088
	8	10.0	2	526	1052
	9	10.0	2	180	360
	10	10.0	1	186	186
	11	10.0	1	124	124
	12	10.0	6	1198	7188
	13	10.0	2	422	844
	14	10.0	4	1006	4024
	15	10.0	1	213	213
	16	10.0	2	1021	2042
	17	10.0	2	538	1076
	18	10.0	2	1045	2090
	19	10.0	1	369	369
	20	10.0	2	1044	2088
	21	10.0	1	726	726
	22	10.0	1	1135	1135
	23	10.0	2	230	460
	24	10.0	1	148	148
	25	10.0	1	167	167
	26	10.0	2	1198	2396
	27	10.0	2	918	1836
	28	10.0	2	1020	2040
	29	10.0	1	211	211
	30	10.0	2	520	1040
	31	10.0	1	115	115
	32	10.0	1	227	227
	33	10.0	2	233	466
	34	10.0	2	219	438
	35	10.0	1	221	221
	36	10.0	3	240	720
	37	10.0	2	163	326
	38	10.0	2	1200	2400
	39	10.0	2	247	494
	40	10.0	2	268	536
	41	10.0	4	382	1528
	42	10.0	2	414	828
	43	10.0	2	480	960
	44	10.0	2	520	1040
	45	10.0	2	454	908
	46	10.0	2	124	248
	47	10.0	2	346	692
	48	10.0	2	459	918
	49	10.0	2	489	978
	50	10.0	3	266	798
	51	10.0	1	109	109
	52	10.0	1	153	153
	53	10.0	2	302	604
	54	10.0	2	410	820
	55	10.0	2	1036	2072
	56	10.0	2	1038	2076
	57	10.0	4	543	2172
	58	10.0	1	134	134
	59	10.0	2	161	322
	60	10.0	2	507	1014
	61	10.0	1	127	127
	62	10.0	2	520	1040
	63	10.0	2	1022	2044
	64	10.0	1	208	208
	65	10.0	2	511	1022
	66	10.0	2	158	316
	67	10.0	1	239	239
	68	10.0	1	737	737
	69	10.0	2	157	314
	70	10.0	2	409	818
	71	10.0	2	273	546
	72	10.0	2	288	576
	73	12.5	2	674	1348
	74	12.5	1	245	245
	75	12.5	1	259	259
	76	12.5	2	1197	2394
	77	12.5	2	1200	2400
	78	12.5	2	277	554
	79	12.5	2	306	612
	80	16.0	2	444	888

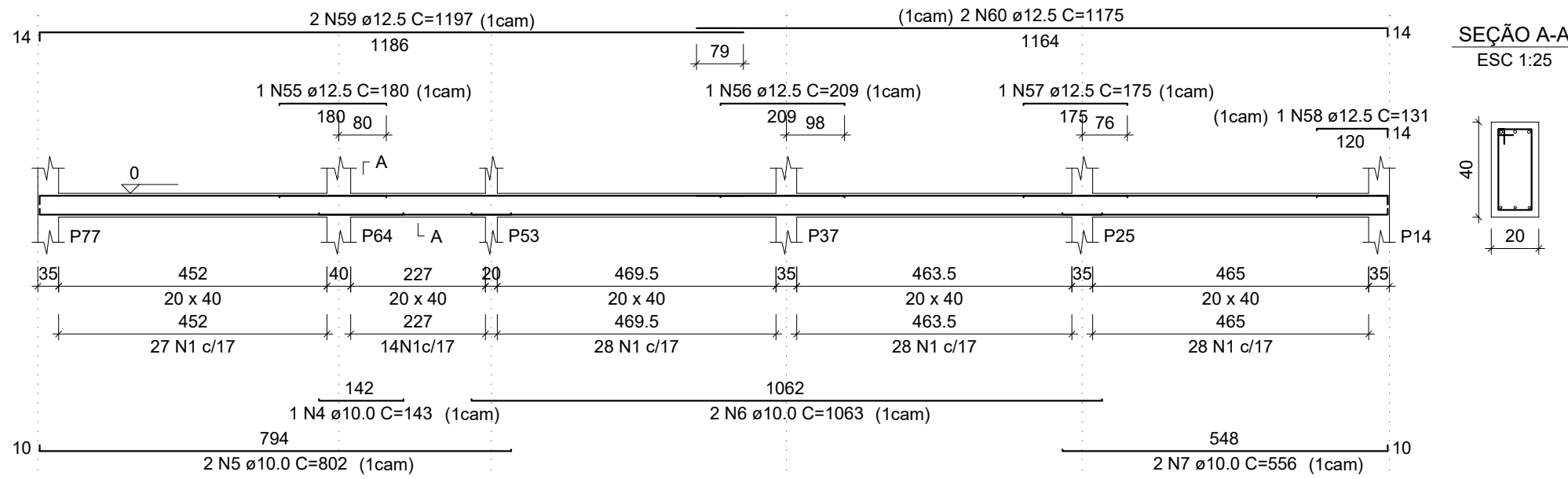
RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	62.6	6	12 m	15.3
	10.0	678.1	57	12 m	418.1
	12.5	78.1	7	12 m	75.3
	16.0	8.9	1	12 m	14.4
CA60	5.0	944.6	-	rolo (170 kg)	145.6
PESO TOTAL (kg)					
CA50		522.7			
CA60		145.6			

Volume de concreto (C-30) = 12.66 m³
Área de forma = 158.79 m²

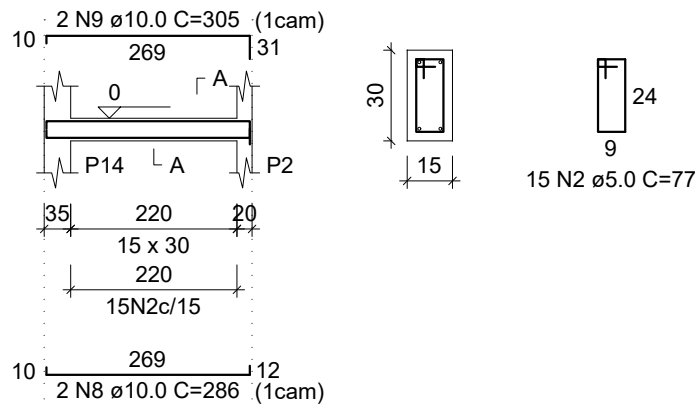
V33

ESC 1:100



V34

ESC 1:100

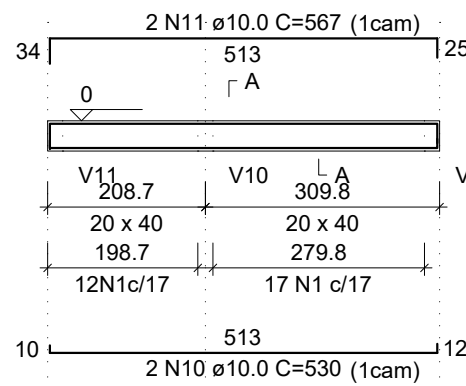


SEÇÃO A-A

ESC 1:25

V35

ESC 1:100

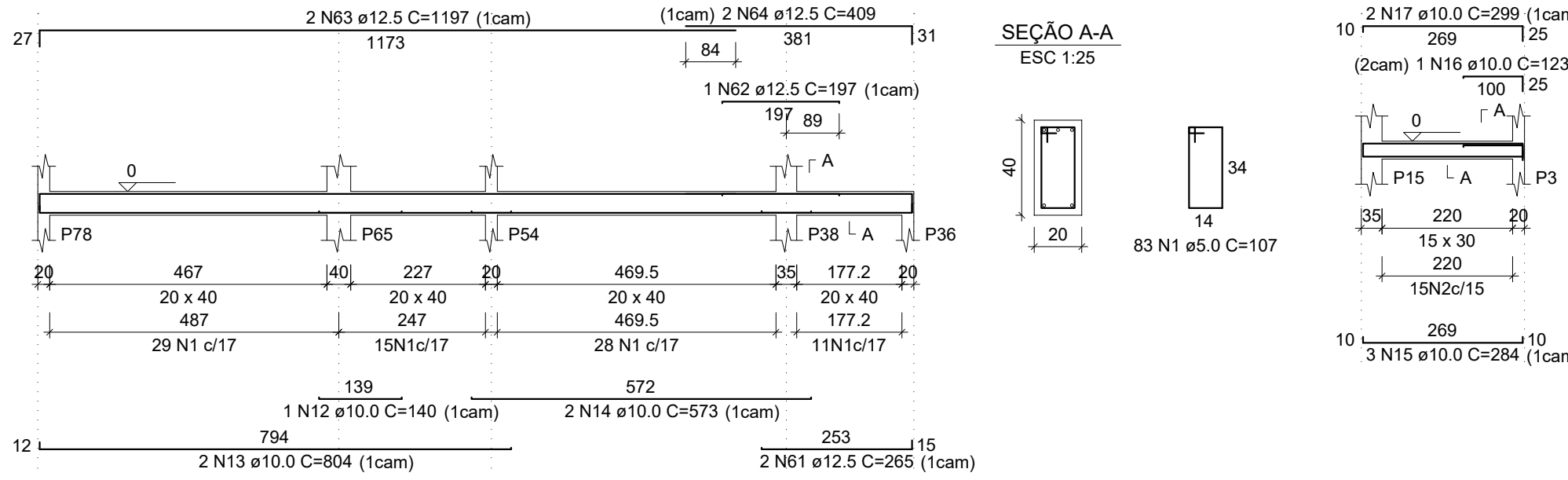


SEÇÃO A-A

ESC 1:25

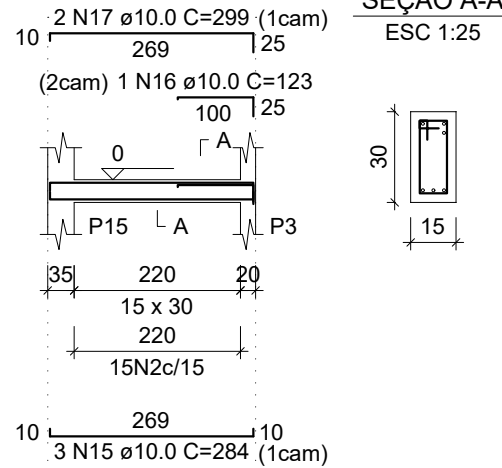
V36

ESC 1:100



V37

ESC 1:100

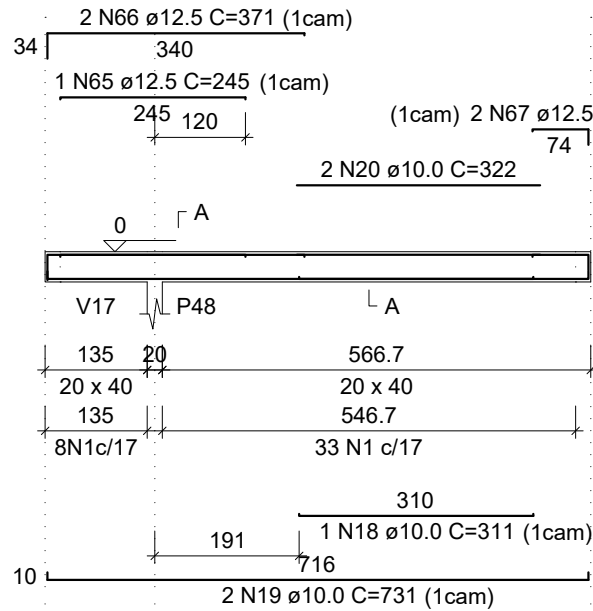


SEÇÃO A-A

ESC 1:25

V38

ESC 1:100

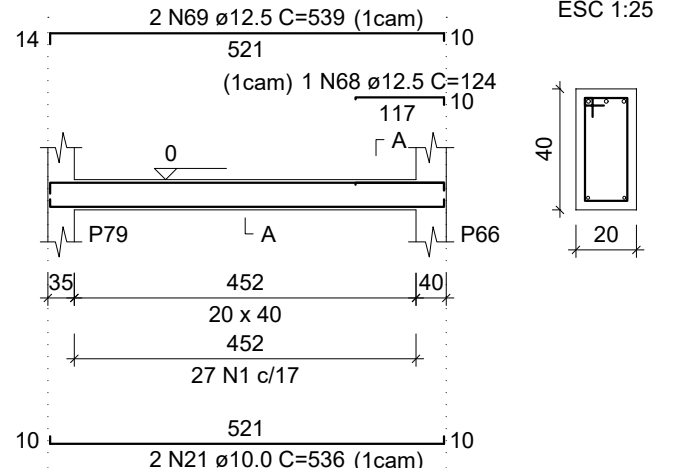


SEÇÃO A-A

ESC 1:25

V39

ESC 1:100

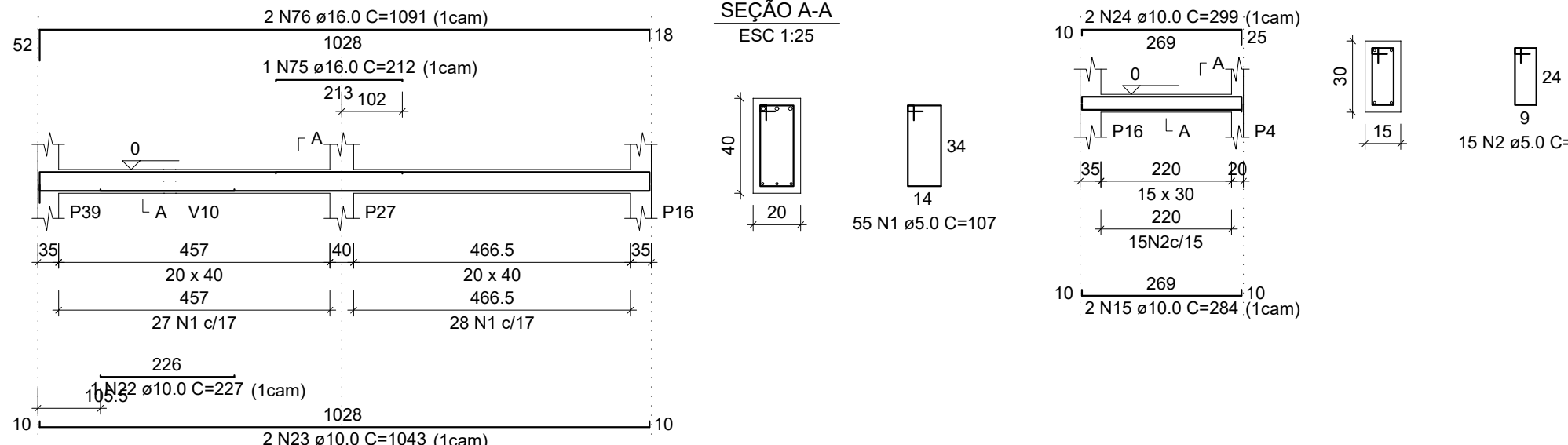


SEÇÃO A-A

ESC 1:25

V40

ESC 1:100

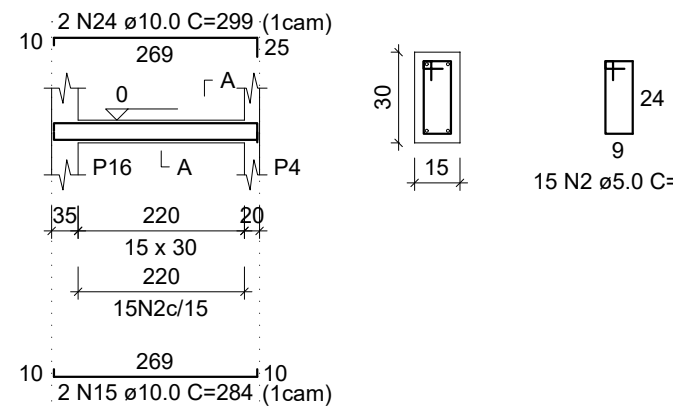


SEÇÃO A-A

ESC 1:25

V41

ESC 1:100

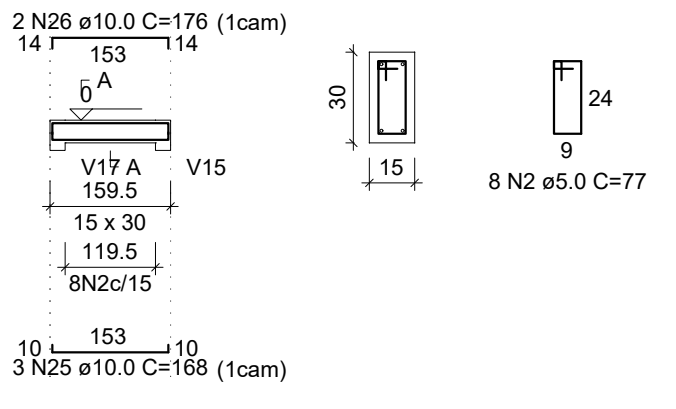


SEÇÃO A-A

ESC 1:25

V42

ESC 1:100

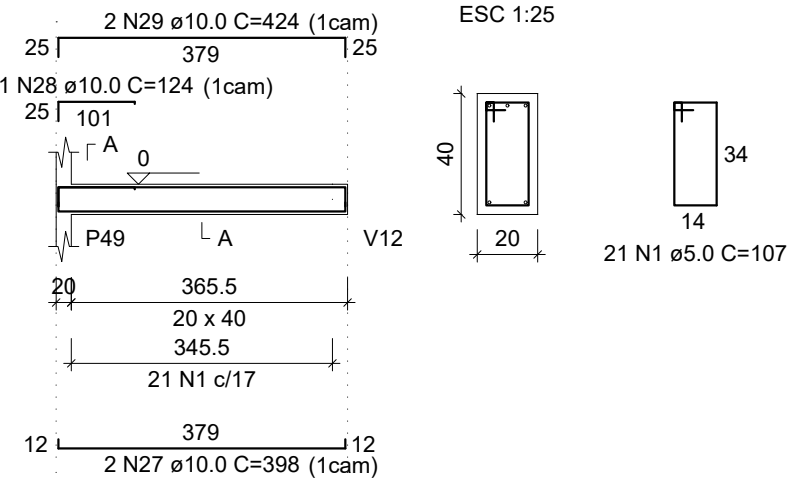


SEÇÃO A-A

ESC 1:25

V43

ESC 1:100

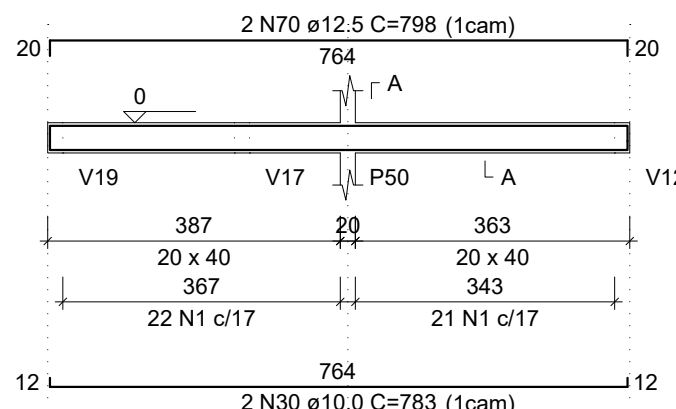


SEÇÃO A-A

ESC 1:25

V44

ESC 1:100

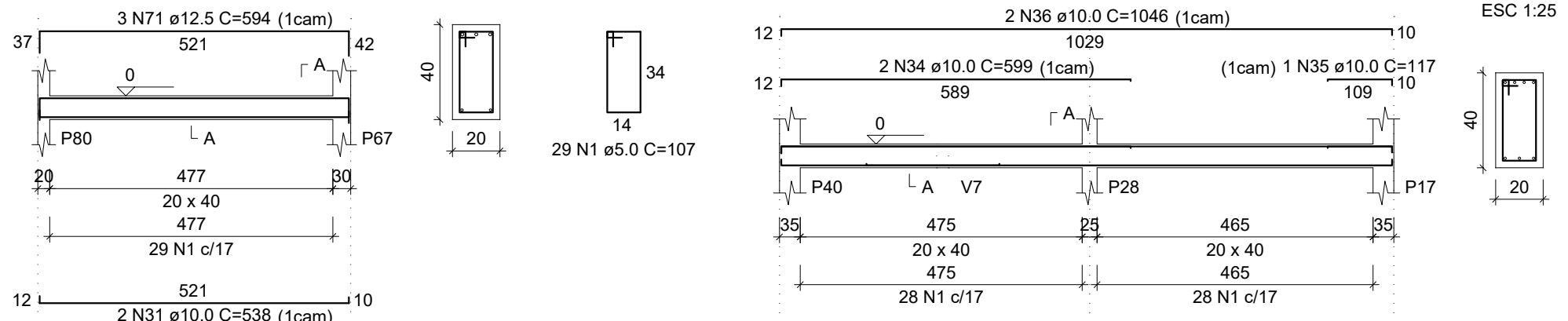


SEÇÃO A-A

ESC 1:25

V45

ESC 1:100

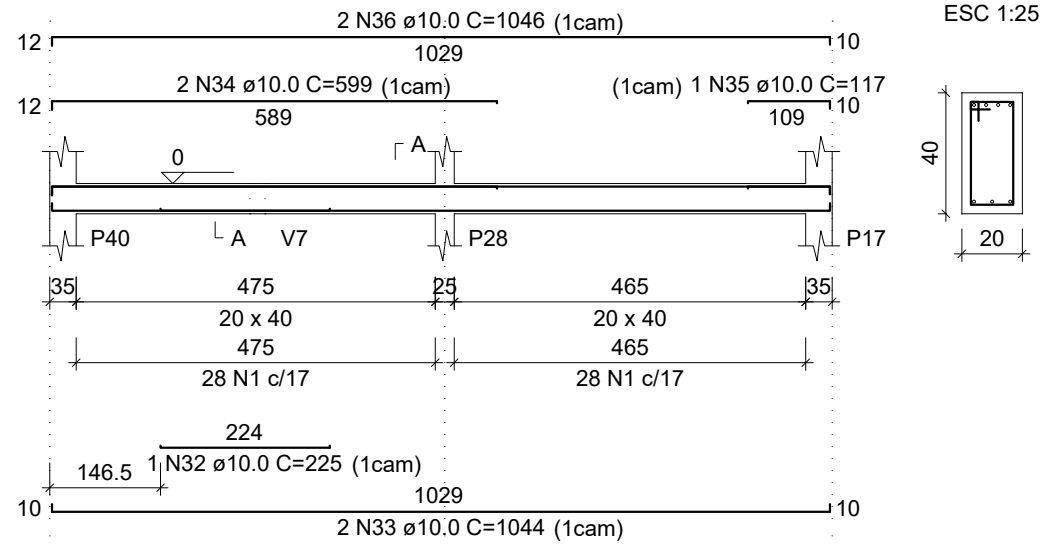


SEÇÃO A-A

ESC 1:25

V46

ESC 1:100

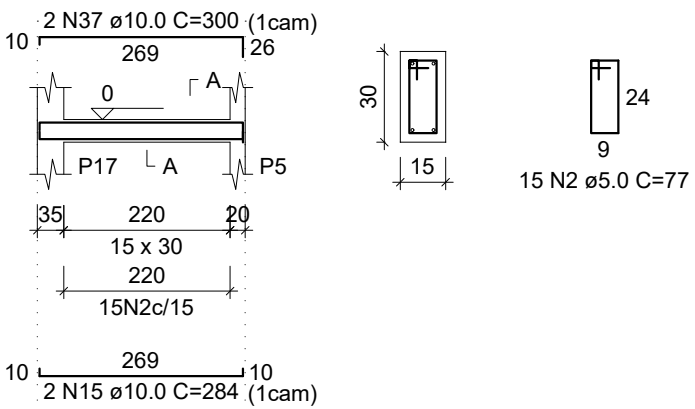


SEÇÃO A-A

ESC 1:25

V47

ESC 1:100

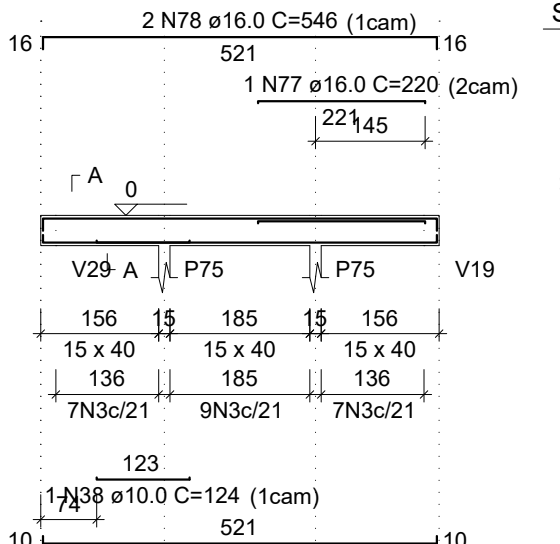


SEÇÃO A-A

ESC 1:25

V48

ESC 1:100

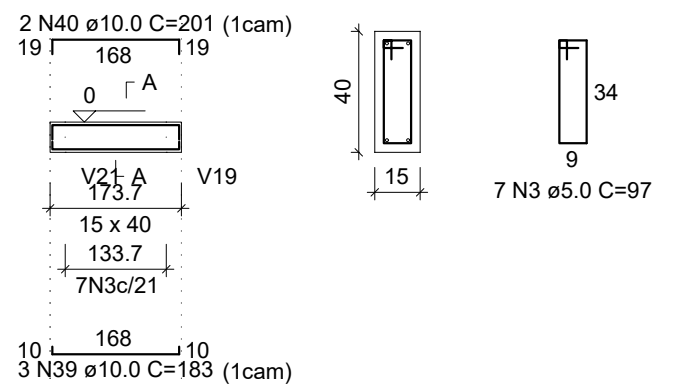


SEÇÃO A-A

ESC 1:25

V49

ESC 1:100

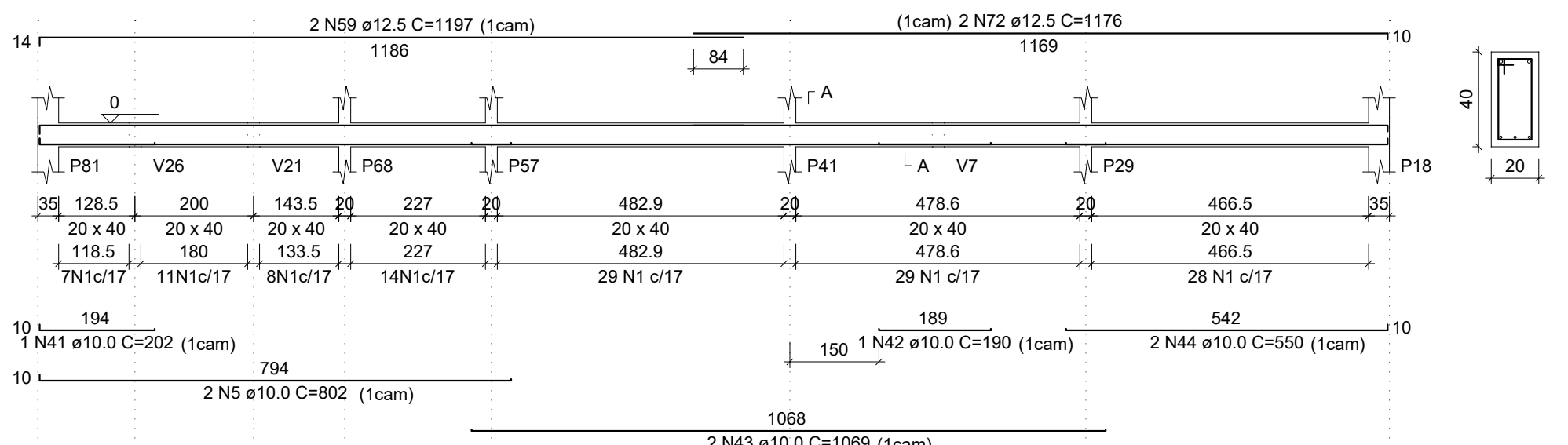


SEÇÃO A-A

ESC 1:25

V50

ESC 1:100

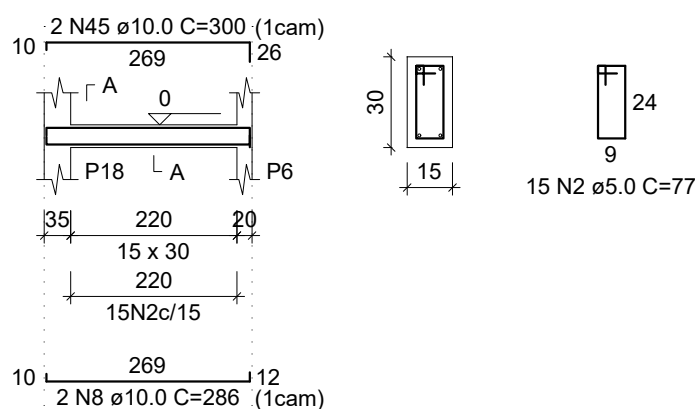


SEÇÃO A-A

ESC 1:25

V51

ESC 1:100



SEÇÃO A-A

ESC 1:25

V52

ESC 1:100

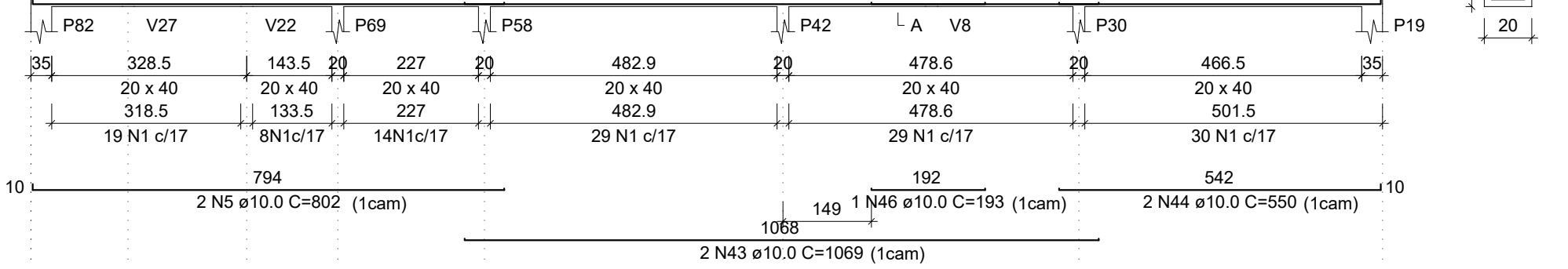


SEÇÃO A-A

ESC 1:25

V52

ESC 1:100

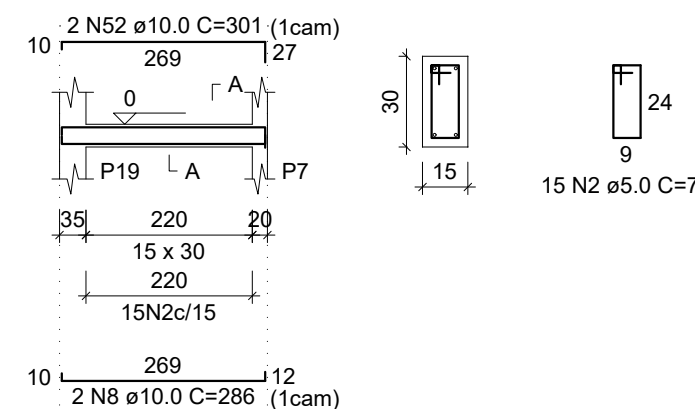


SEÇÃO A-A

ESC 1:25

V53

ESC 1:100

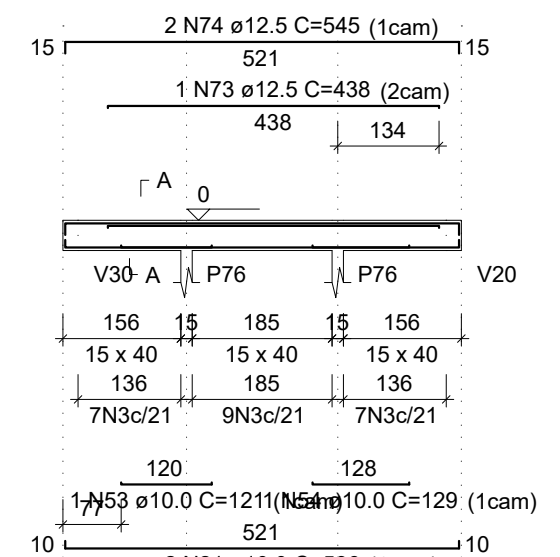


SEÇÃO A-A

ESC 1:25

V54

ESC 1:100

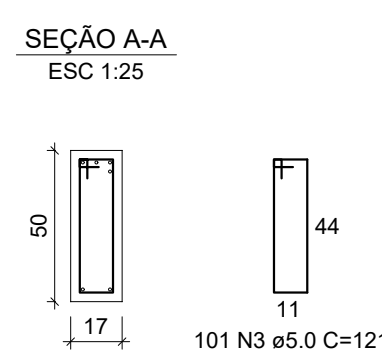
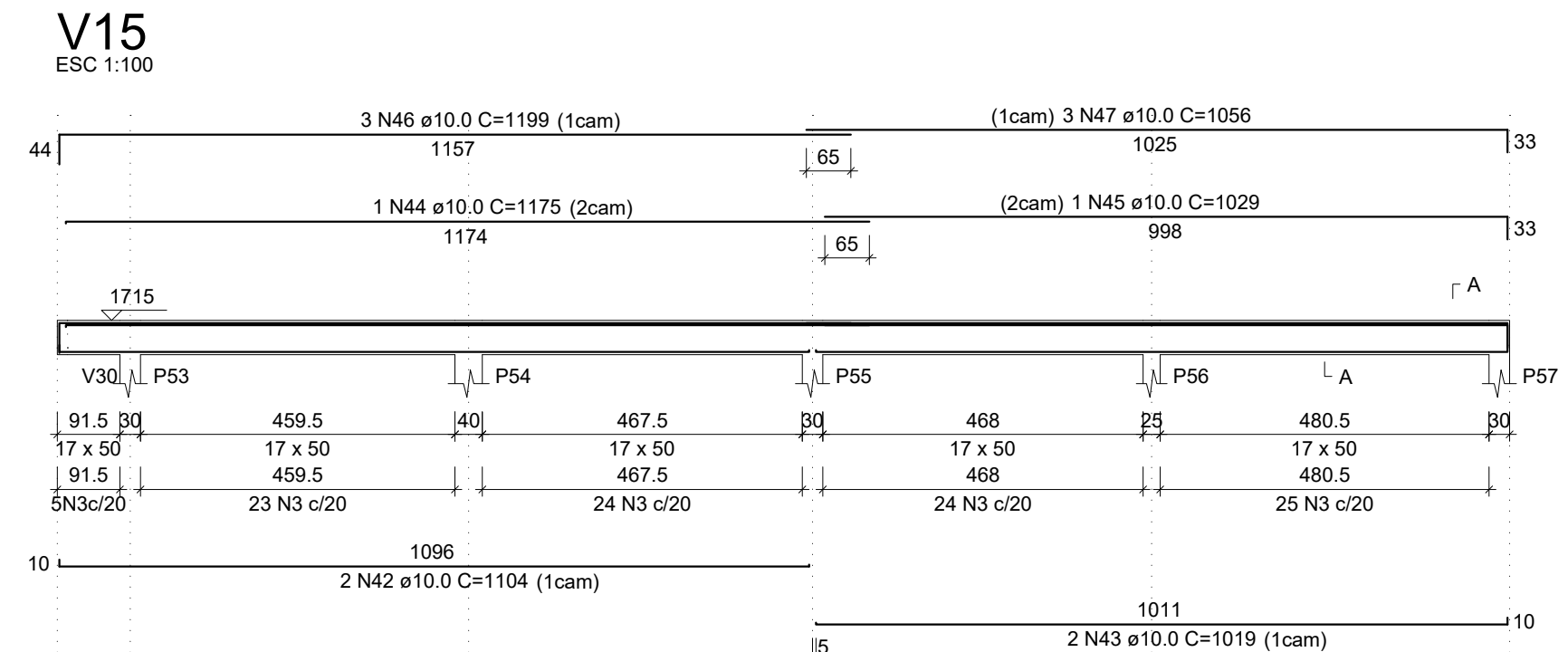
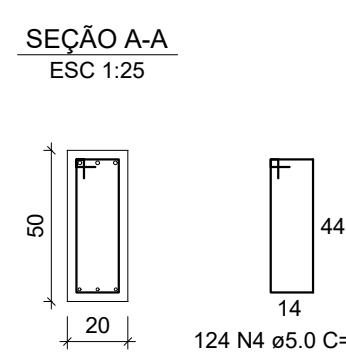
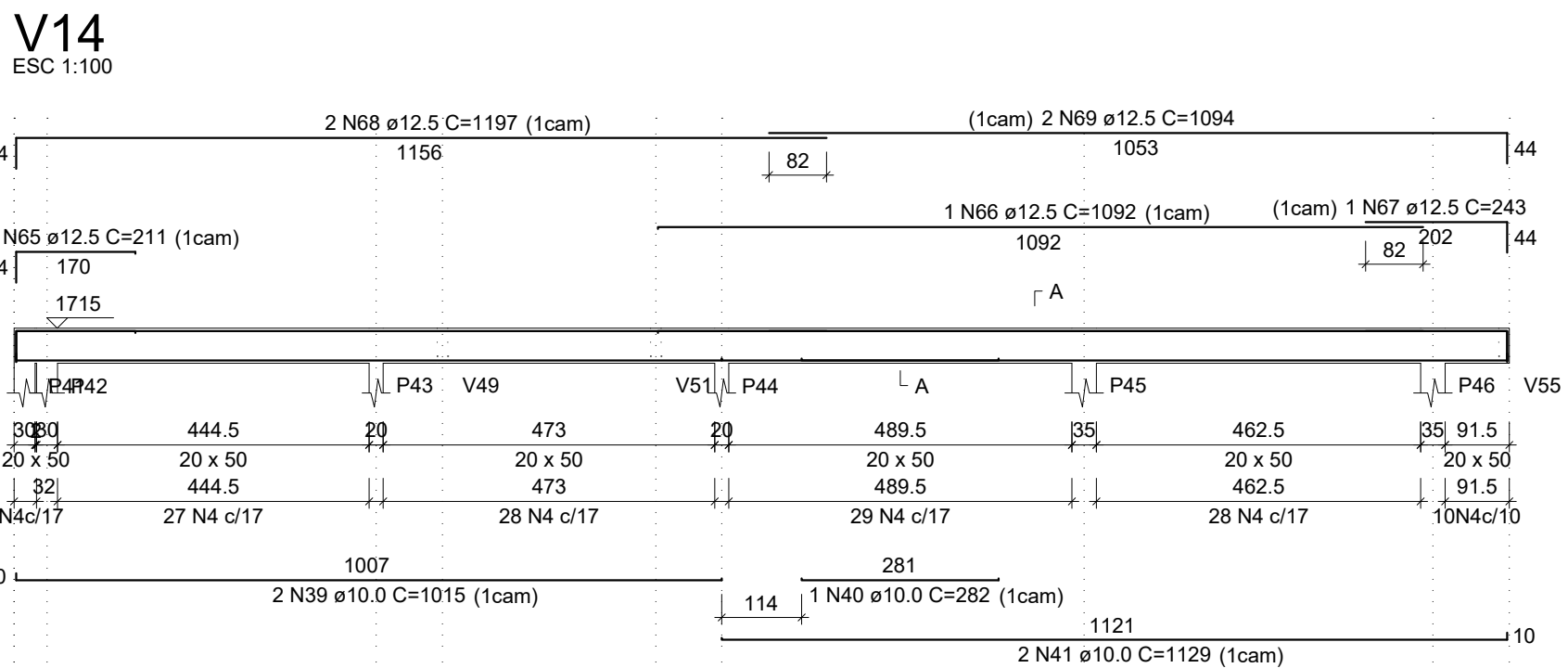
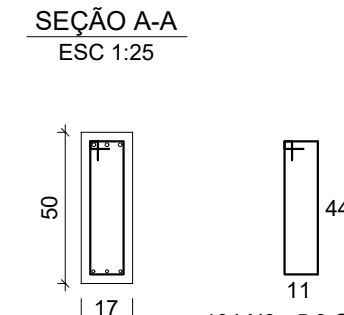
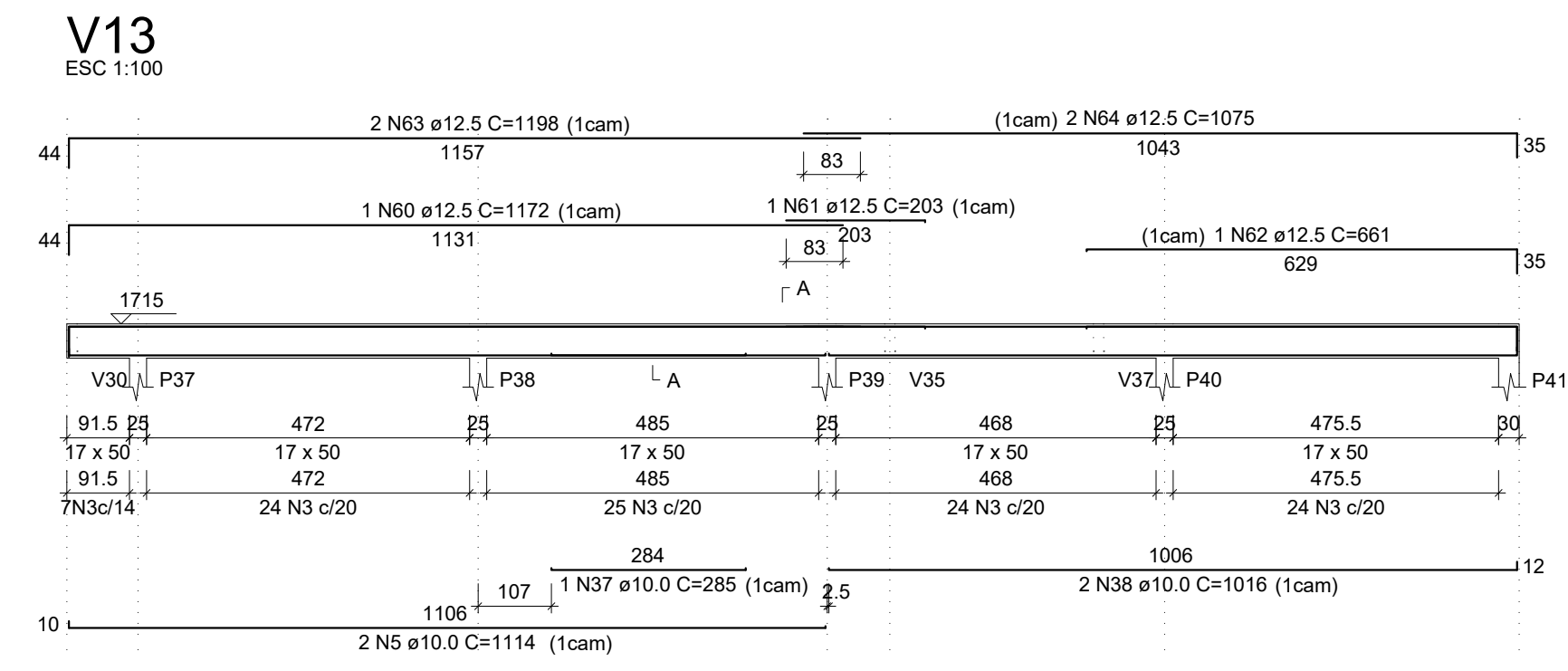
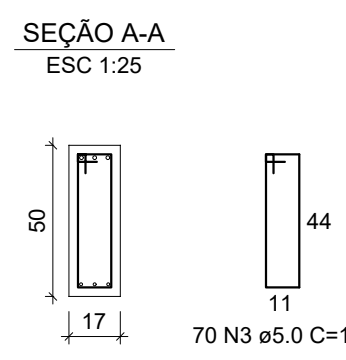
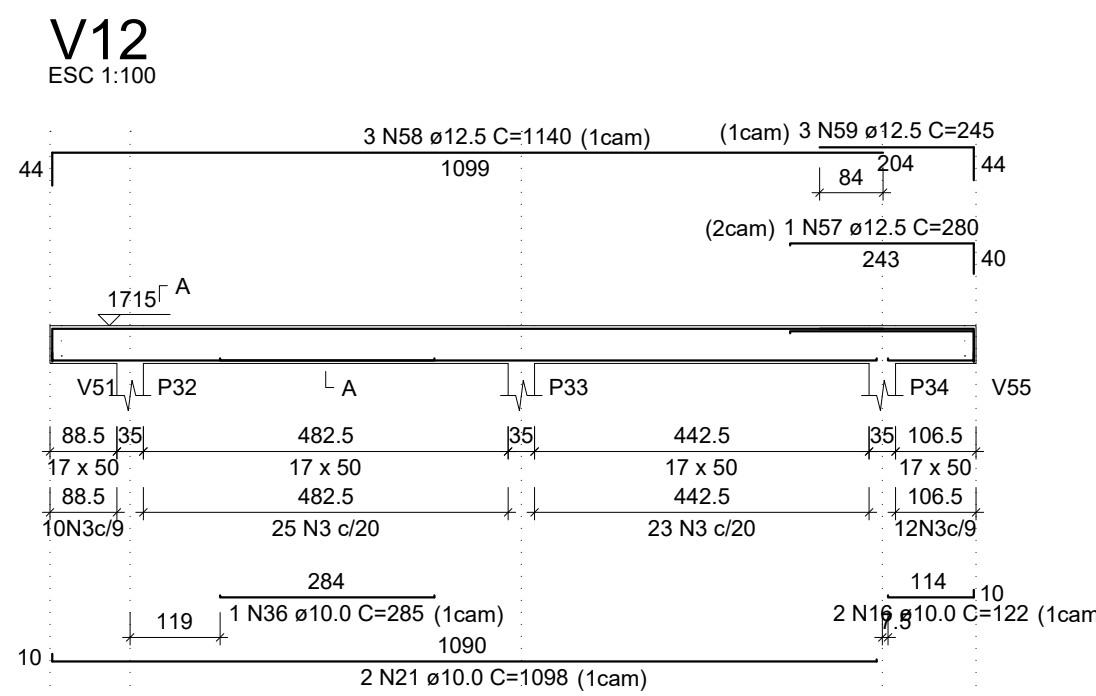
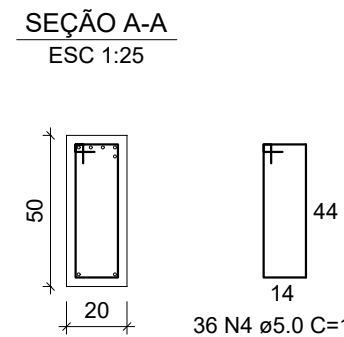
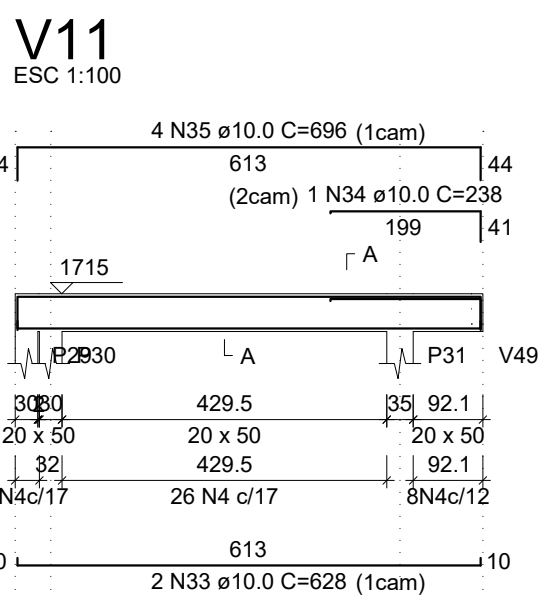
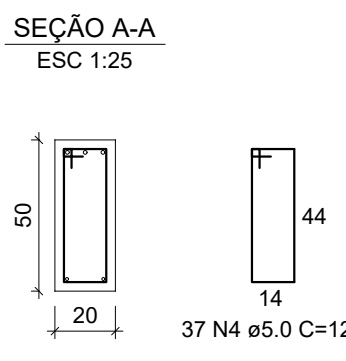
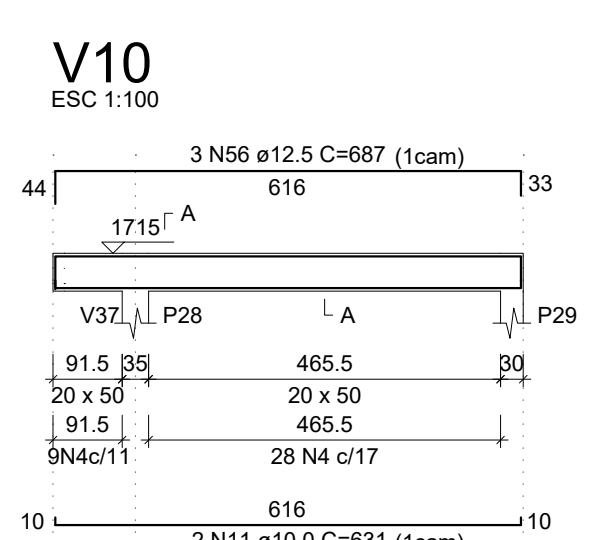
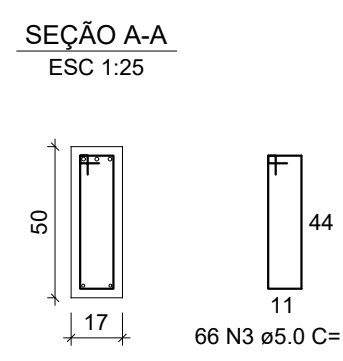
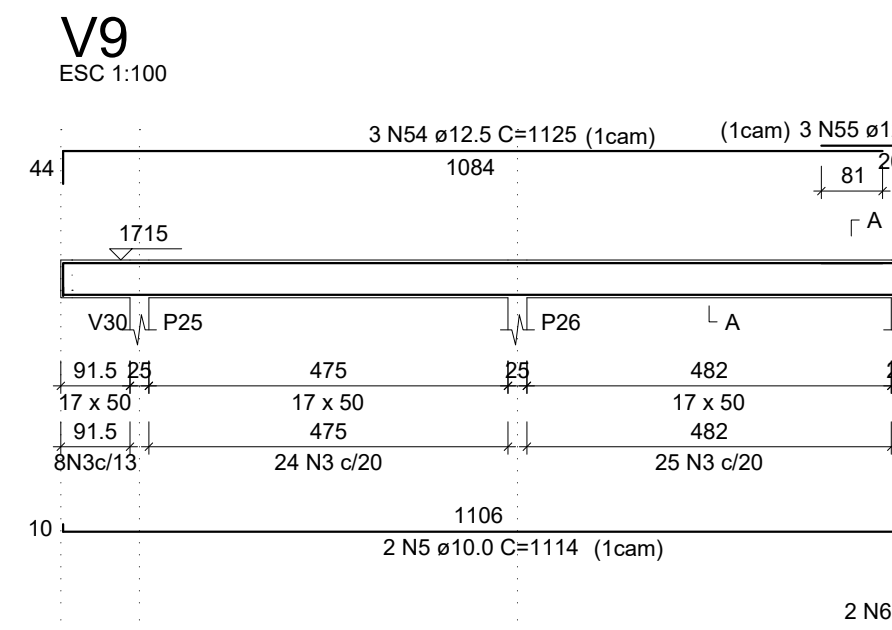
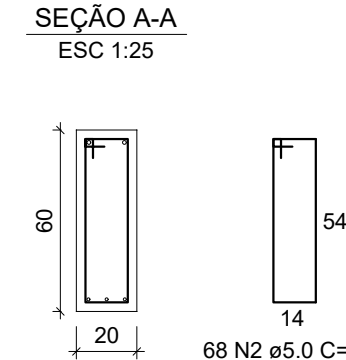
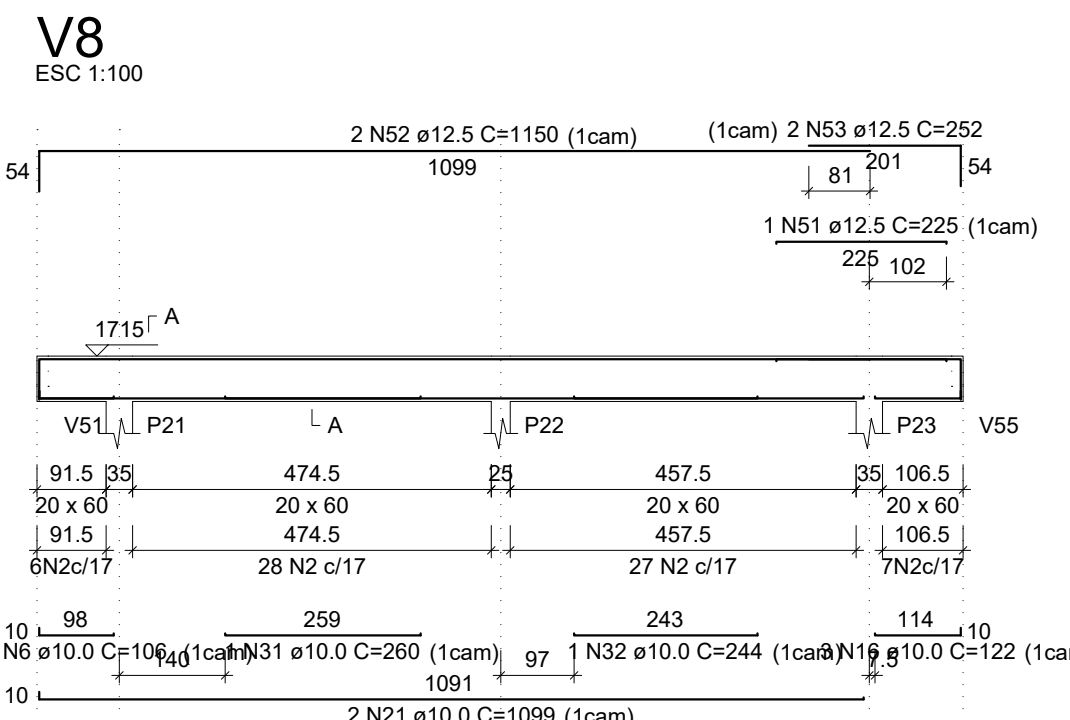
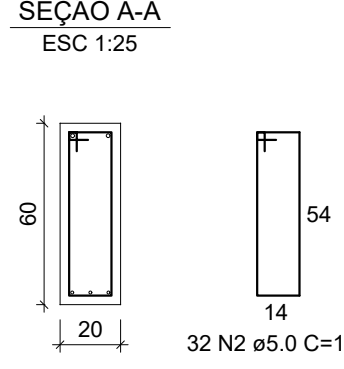
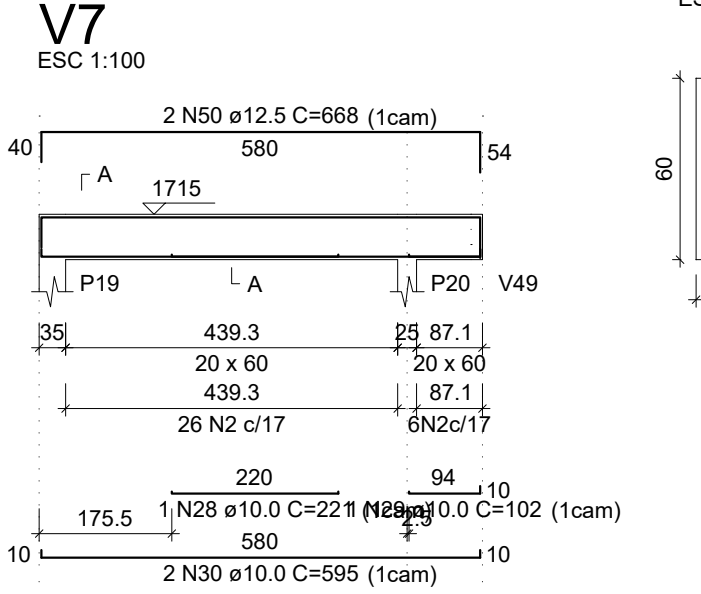
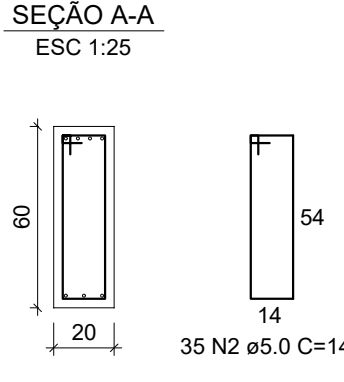
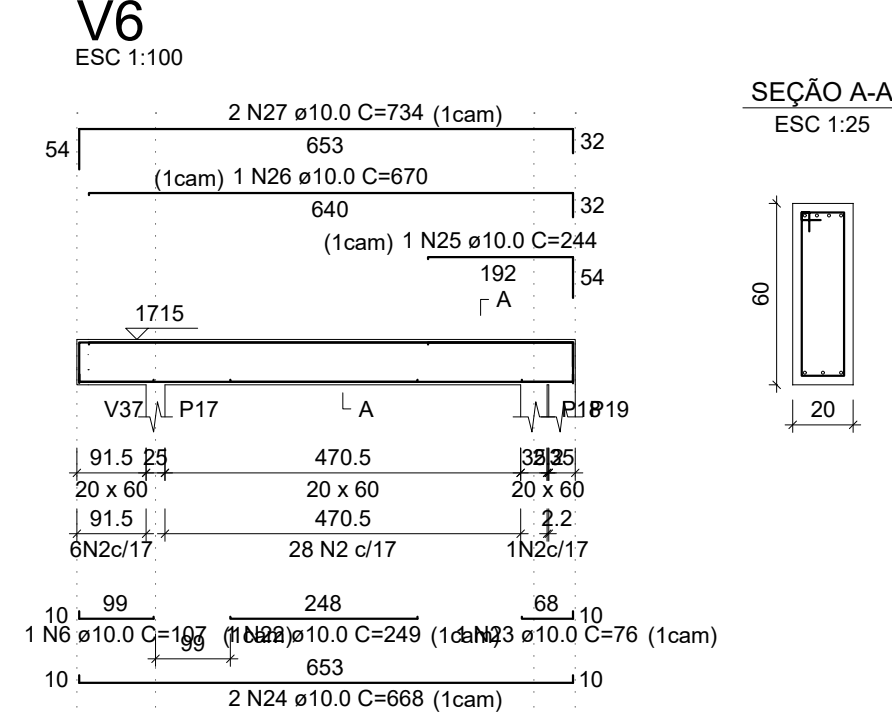
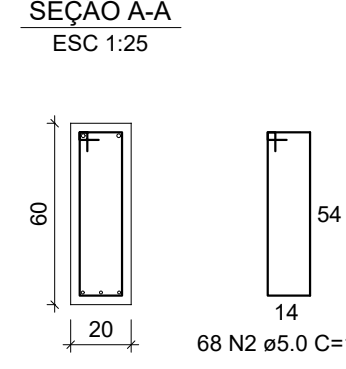
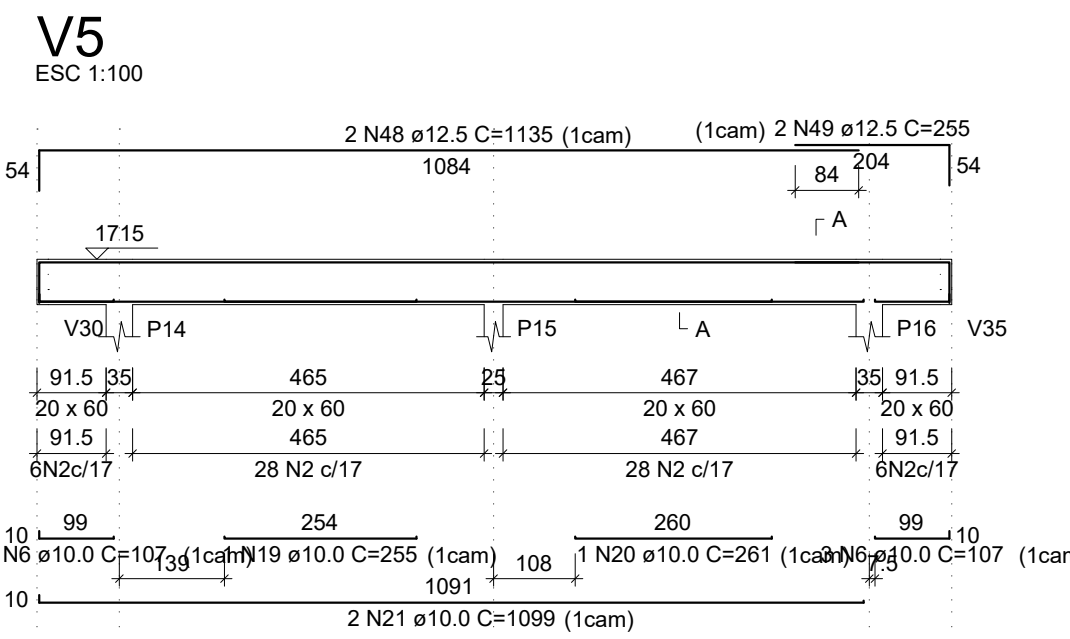
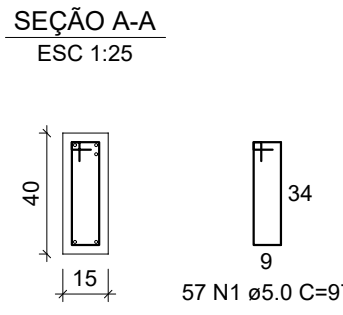
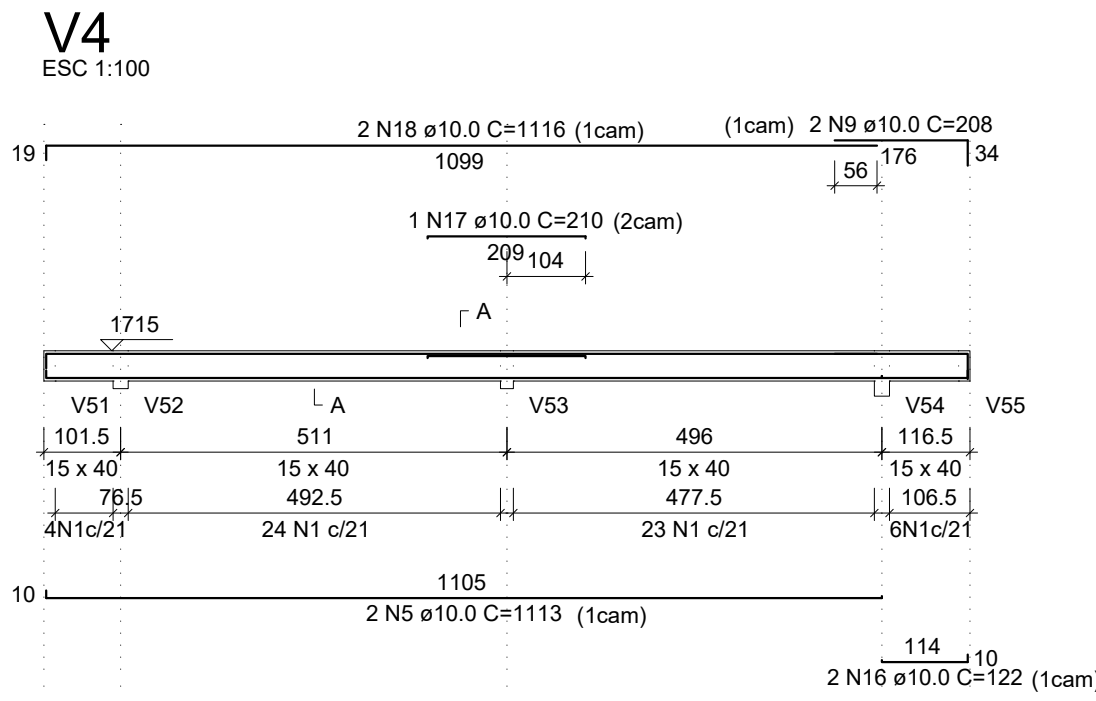
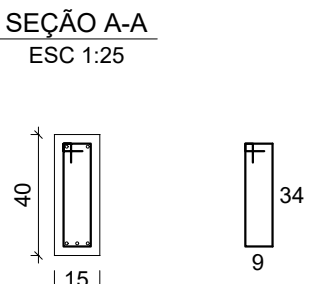
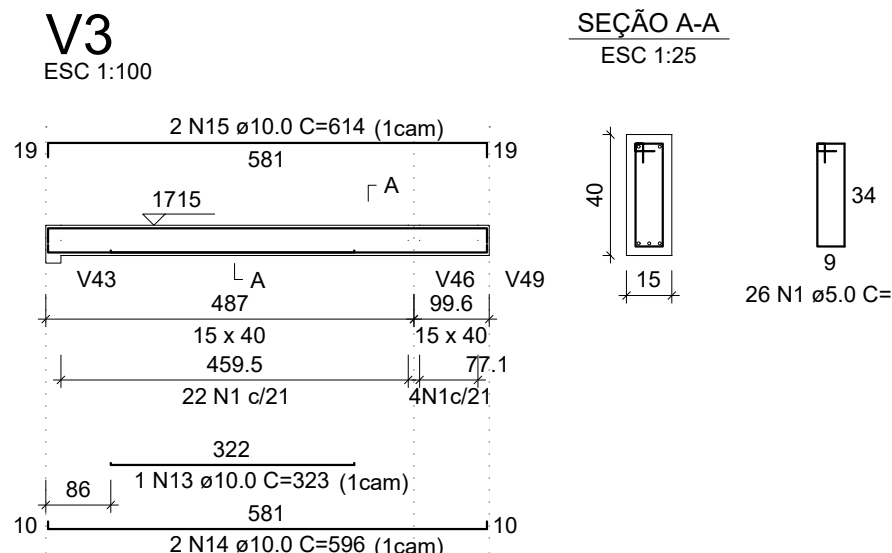
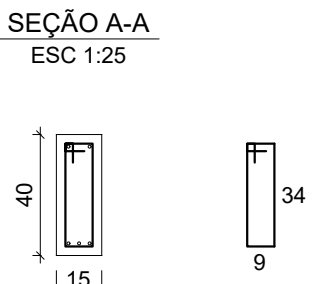
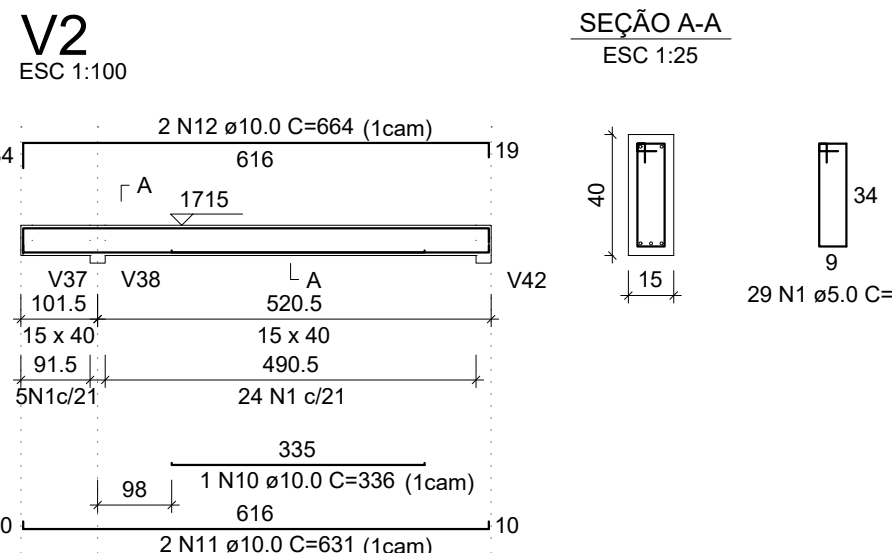
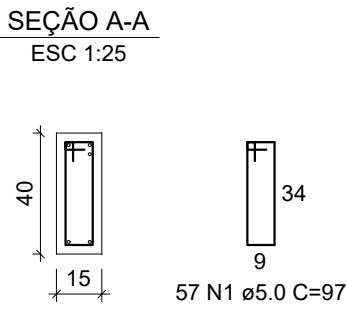
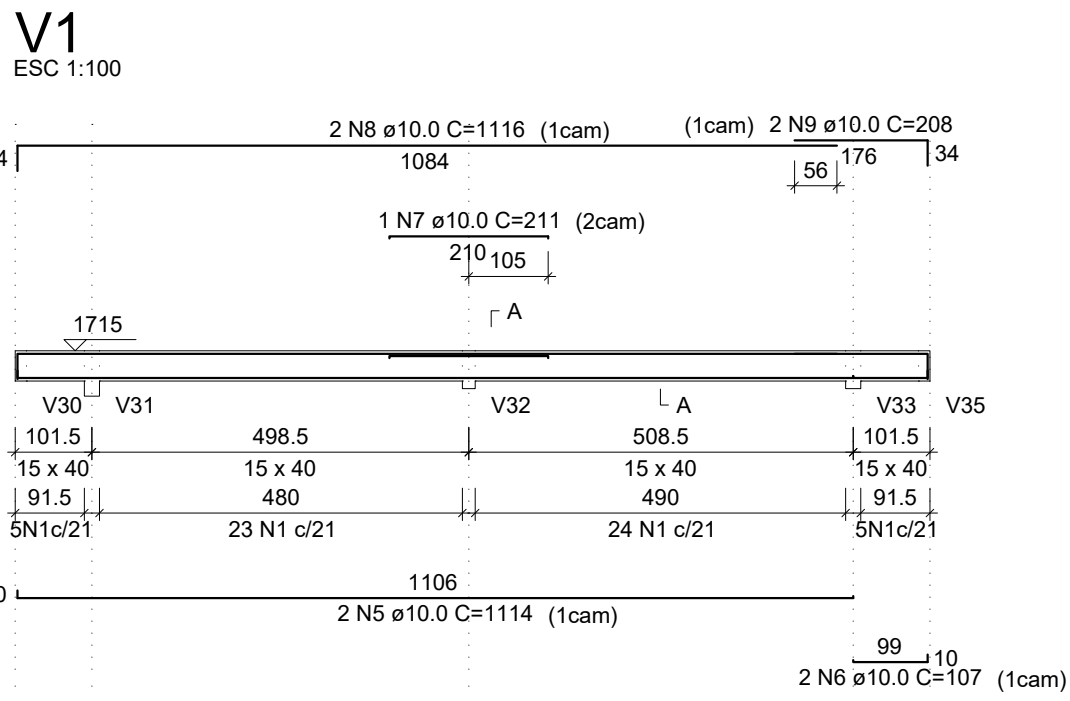


SEÇÃO A-A

ESC 1:25

RELAÇÃO DO AÇO

		V34	V35	V38	
		V37	V40	V43	
		V39	V42	V44	
		V41	V45	V47	
		V43	V46	V48	
		V45	V49	V50	
		V52	V53	V53	
		V54			
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	764	107	81748
	2	5.0	98	77	7546
CA50	3	5.0	53	97	5141
	4	10.0	2	143	143
	5	10.0	6	802	4812
	6	10.0	2	1063	2126
	7	10.0	2	556	1112
	8	10.0	6	286	1716
	9	10.0	2	305	610
	10	10.0	2	530	1060
	11	10.0	2	567	1134
	12	10.0	1	140	140
	13	10.0	2	804	1608
	14	10.0	2	573	1146
	15	10.0	7	284	1988
	16	10.0	2	299	598
	17	10.0	1	311	311
	18	10.0	2	731	1462
	19	10.0	2	322	644
	20	10.0	6	538	3228
	21	10.0	1	227	227
	22	10.0	2	1043	2086
23	10.0	2	299	598	
24	10.0	3	168	504	
25	10.0	2	176	352	
26	10.0	2	398	796	
27	10.0	2	124	124	
28	10.0	2	424	848	
29	10.0	2	783	1566	
30	10.0	2	538	1076	
31	10.0	1	225	225	
32	10.0	2	1044	2088	
33	10.0	2	599	1198	
34	10.0	1	117	117	
35	10.0	2	1046	2092	
36	10.0	2	300	600	
37	10.0	1	124	124	
38	10.0	3	183	549	
39	10.0	2	201	402	
40	10.0	1	202	402	
41	10.0	1	190	190	
42	10.0	4	1069	4276	
43	10.0	4	550	2200	
44	10.0	2	300	600	
45	10.0	1	193	193	
46	10.0	1	124	124	
47	10.0	6	638	3828	
48	10.0	1	145	145	
49	10.0	2	1198	2396	
50	10.0	2	1153	2306	
51	10.0	2	301	602	
52	10.0	1	121	121	
53	10.0	1	129	129	
54	10.0	1	180	180	
55	12.5	1	209	209	
56	12.5	1	175	175	
57	12.5	1	131	131	
58	12.5	1	175	175	
59	12.5	4	1197	4788	
60	12.5	2	1175	2350	
61	12.5	2	265	530	
62	12.5	1	197	197	
63	12.5	2	1197	2394	
64	12.5	2	409	818	
65	12.5	1	245	245	
66	12.5	2	371	742	
67	12.5	2	91	182	
68	12.5	1	124	124	
69	12.5	2	538	1076	
70	12.5	2	798	1596	
71	12.5	3	594	1782	
72	12.5	2	1176	2352	
73	12.5	1	438	438	
74	12.5	2	545	1090	
75	16.0	1	212	212	
76	16.0	2	591	1182	
77	16.0	2	220	440	
78	16.0	2	1046	2092	



RELAÇÃO DO AÇO						
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)	
CA60	1	5.0	169	97	16393	
	2	5.0	203	147	29841	
	3	5.0	341	121	41261	
	4	5.0	197	127	25019	
	5	10.0	8	1114	8912	
	6	10.0	10	107	1070	
	7	10.0	1	211	211	
	8	10.0	2	1116	2232	
	9	10.0	4	208	832	
	10	10.0	2	336	672	
CA50	11	10.0	4	631	2524	
	12	10.0	2	664	1328	
	13	10.0	1	323	323	
	14	10.0	2	596	1192	
	15	10.0	2	614	1228	
	16	10.0	7	122	854	
	17	10.0	1	210	210	
	18	10.0	2	1116	2232	
	19	10.0	1	255	255	
	20	10.0	1	261	261	
CA50	21	10.0	6	1099	6594	
	22	10.0	1	249	249	
	23	10.0	1	76	76	
	24	10.0	2	668	1336	
	25	10.0	1	244	244	
	26	10.0	1	670	670	
	27	10.0	2	734	1468	
	28	10.0	1	221	221	
	29	10.0	1	102	102	
	30	10.0	2	595	1190	
CA50	31	10.0	1	260	260	
	32	10.0	1	244	244	
	33	10.0	2	628	1256	
	34	10.0	1	238	238	
	35	10.0	4	696	2784	
	36	10.0	1	285	285	
	37	10.0	1	285	285	
	38	10.0	2	1016	2032	
	39	10.0	2	1015	2030	
	40	10.0	1	282	282	
CA50	41	10.0	2	1129	2258	
	42	10.0	2	1104	2208	
	43	10.0	2	1019	2038	
	44	10.0	1	1175	1175	
	45	10.0	1	1029	1029	
	46	10.0	3	1199	3597	
	47	10.0	3	1056	3168	
	48	12.5	2	1135	2270	
	49	12.5	2	255	510	
	50	12.5	2	668	1336	
CA50	51	12.5	1	225	225	
	52	12.5	2	1150	2300	
	53	12.5	2	252	504	
	54	12.5	3	1125	3375	
	55	12.5	3	242	726	
	56	12.5	3	687	2061	
	57	12.5	1	280	280	
	58	12.5	3	1140	3420	
	59	12.5	3	245	735	
	60	12.5	1	1172	1172	
CA50	61	12.5	1	203	203	
	62	12.5	1	661	661	
	63	12.5	2	1198	2396	
	64	12.5	2	1075	2150	
	65	12.5	1	211	211	
	66	12.5	1	1092	1092	
	67	12.5	1	243	243	
	68	12.5	2	1197	2394	
	69	12.5	2	1094	2188	
	70	12.5	2	1094	2188	

RESUMO DO AÇO				
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	PESO + 0% (kg)
CA50	10.0	613.1	52	12 m
CA60	5.0	1125.1	26	12 m
PESO TOTAL (kg)				378
CA50	671.4			293.4
CA60	173.4			173.4

Volume de concreto (C-30) = 15.65 m³
Área de forma = 204.77 m²

INSTITUTO FEDERAL DE
EDUCAÇÃO, CIÊNCIA E TECNOLOGIA
SERTÃO PERNAMBUCANO
DIRETORIA DE ENGENHARIA
E INFRAESTRUTURA
Rua Afonso Lopes, 240 - Centro
Sertão Pernambuco
CEP: 56.302-100

ESTRUTURAL REITORIA

ENDERÇO DA OBRA
ESTRUTURA - CENTRO
SERTÃO PERNAMBUCANO

PROJEÇÃO
VIGAS DE COBERTURA V1 A V15

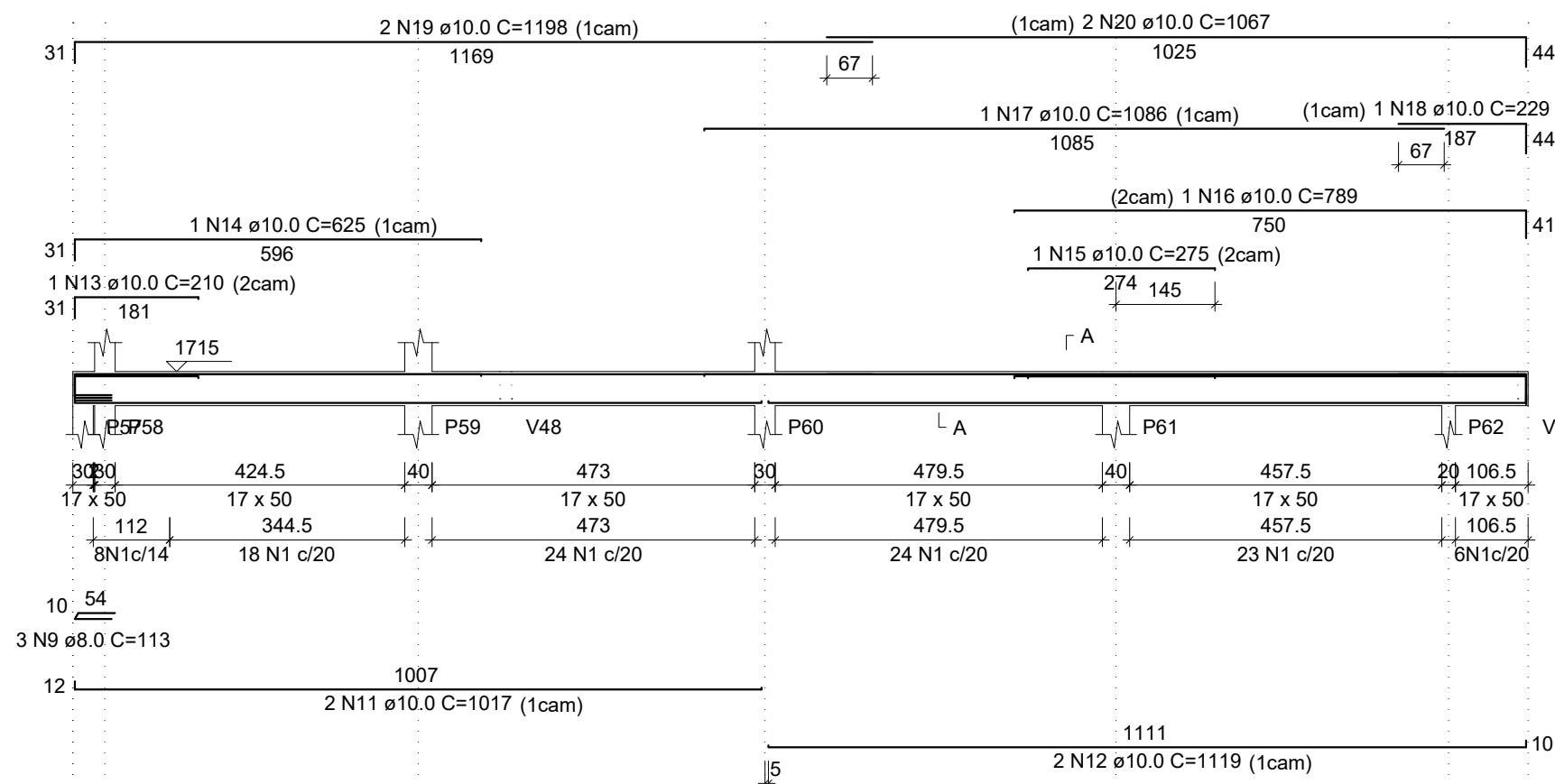
ESCALA
1/75

DATA
26/07/2024

ASSINATURA CARIMBO - RESPONSÁVEL TÉCNICO
WILSON NERY DA CUNHA
CREA 11748-BA

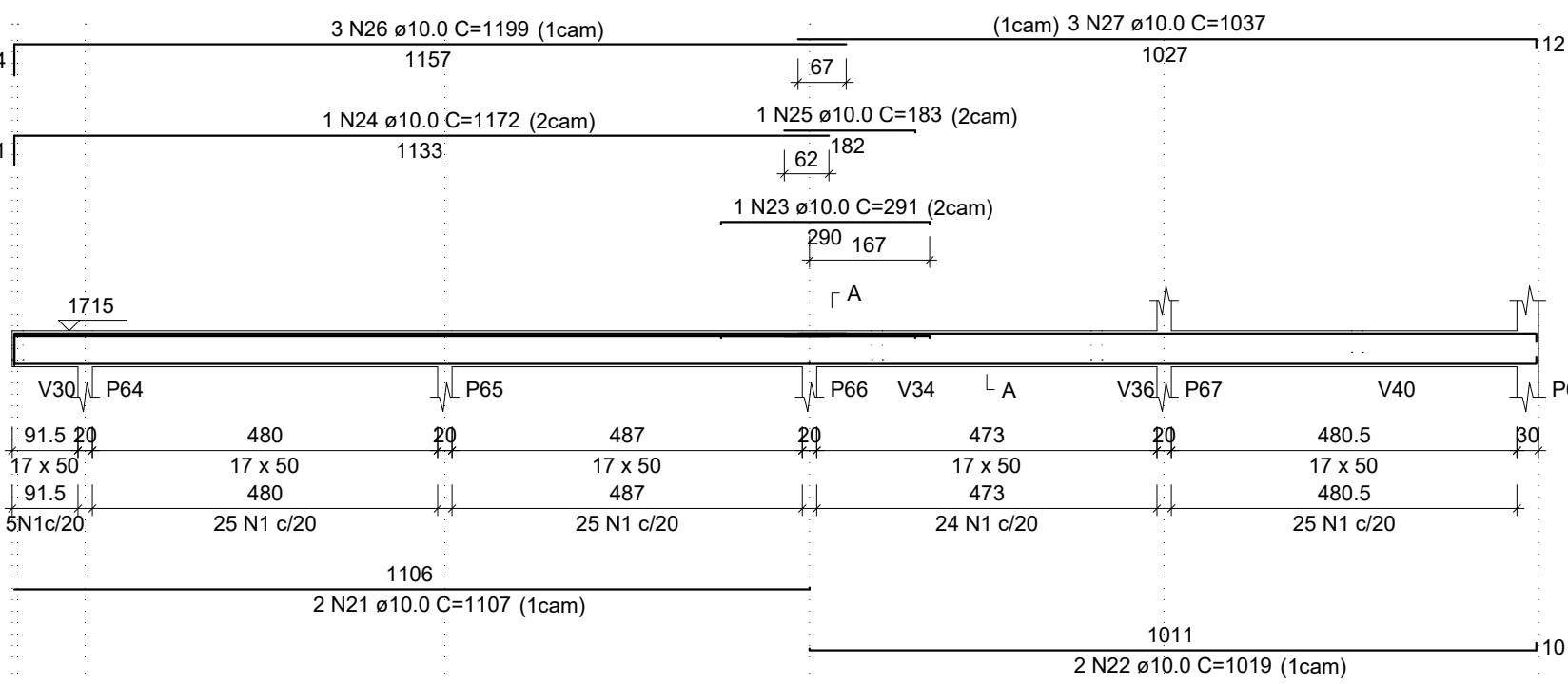
V16

ESC 1:100



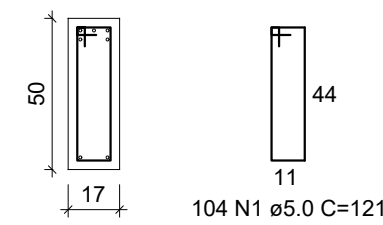
V17

ESC 1:100



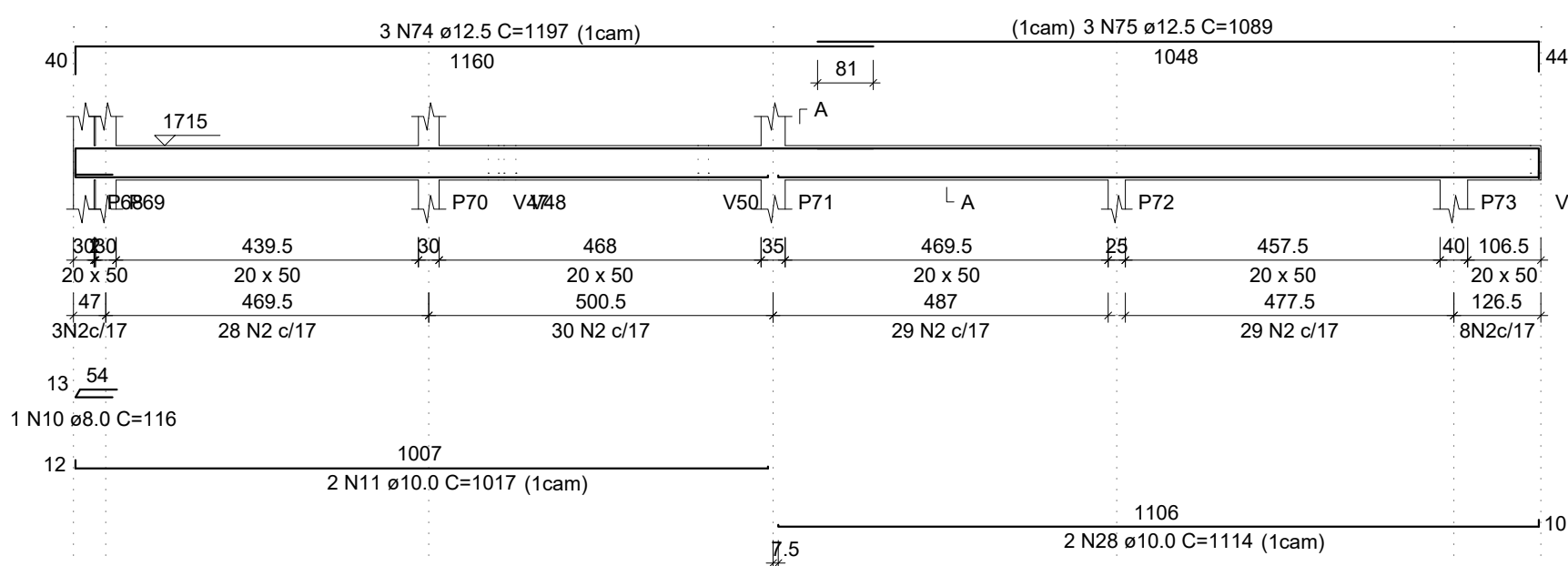
SEÇÃO A-A

ESC 1:25



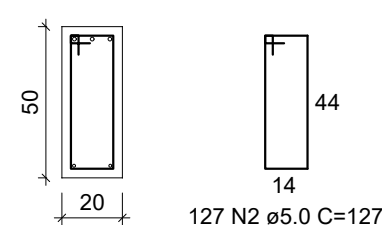
V18

ESC 1:100



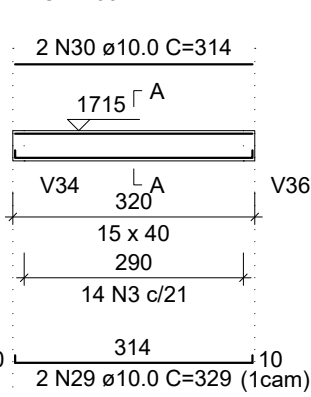
SEÇÃO A-A

ESC 1:25



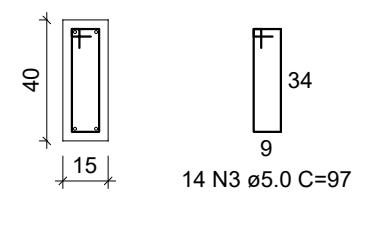
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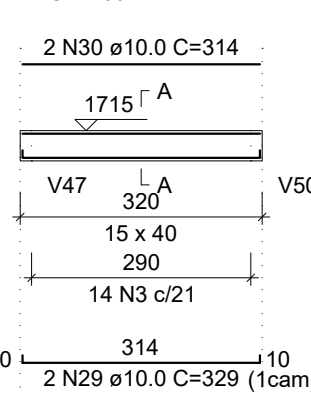
SEÇÃO A-A

ESC 1:25



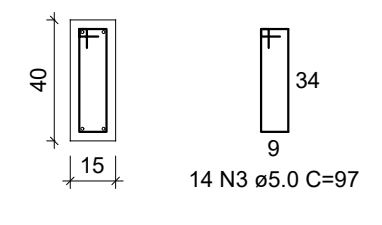
V20

ESC 1:100



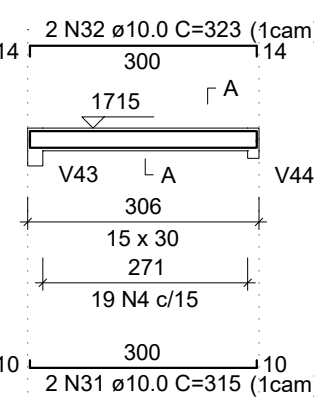
SEÇÃO A-A

ESC 1:25



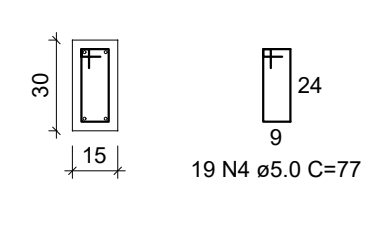
V21

ESC 1:100



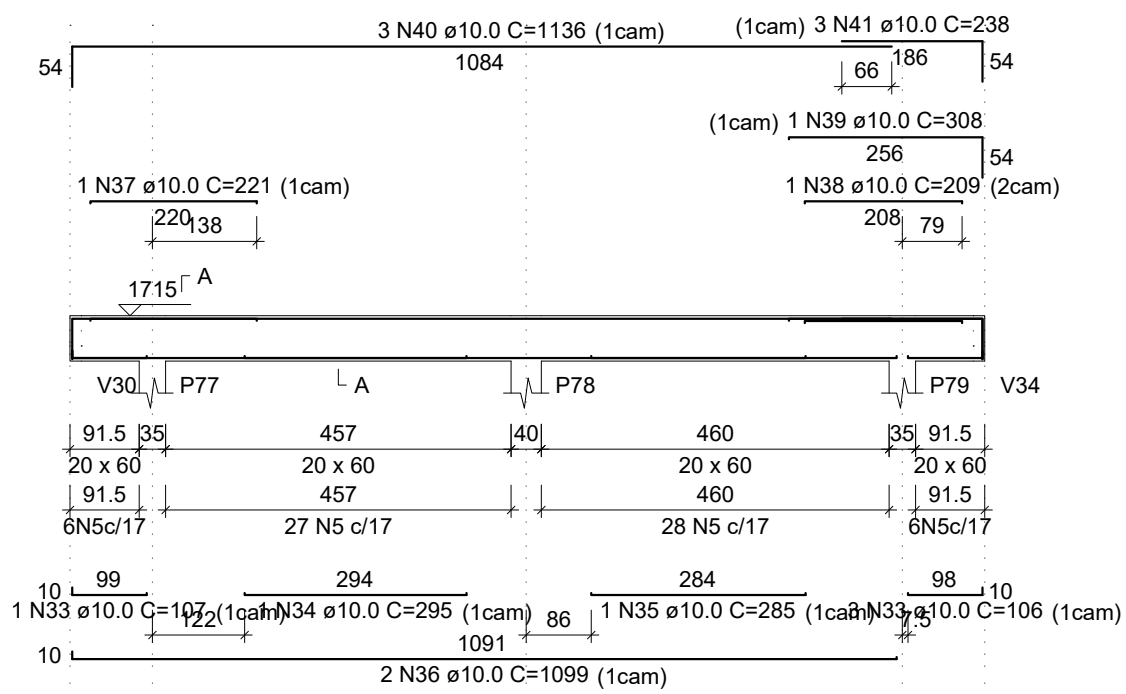
SEÇÃO A-A

ESC 1:25



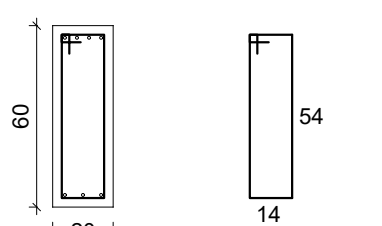
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ESC 1:100



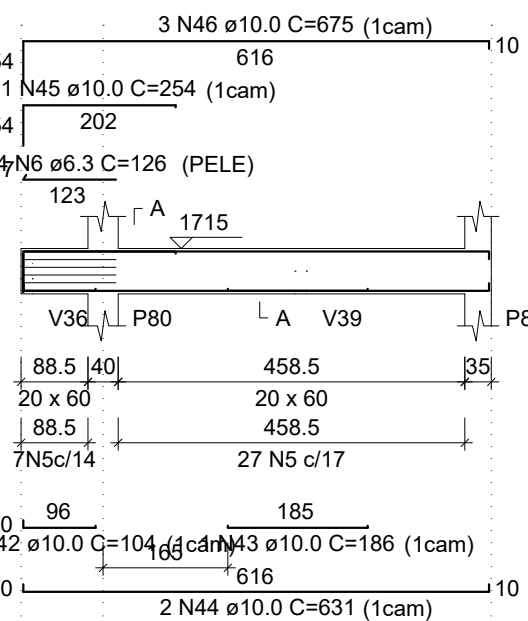
SEÇÃO A-A

ESC 1:25



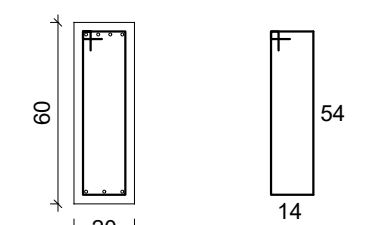
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ESC 1:100



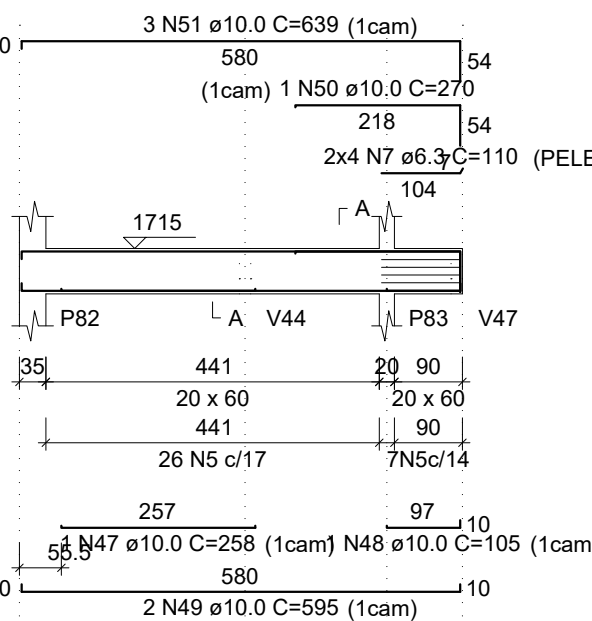
SEÇÃO A-A

ESC 1:25



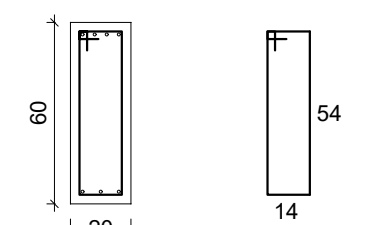
V24

ESC 1:100



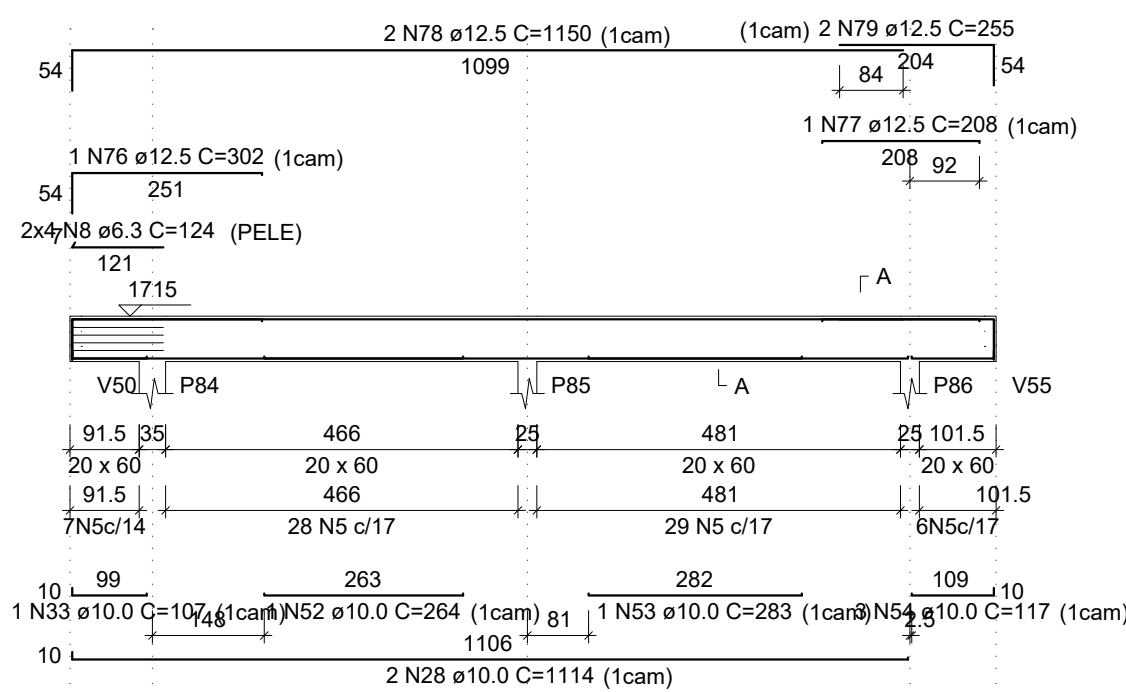
SEÇÃO A-A

ESC 1:25



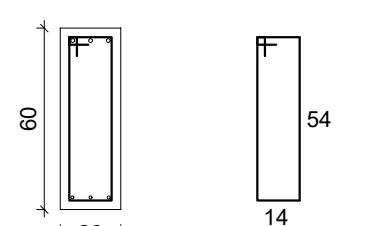
V25

ESC 1:100



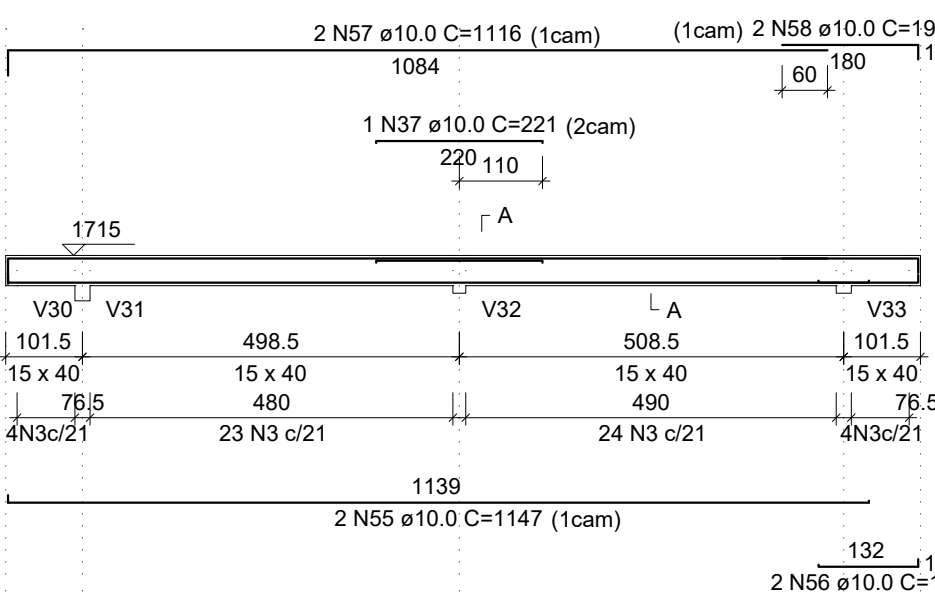
SEÇÃO A-A

ESC 1:25



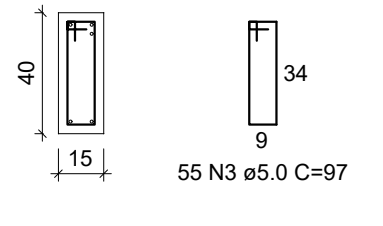
V26

ESC 1:100



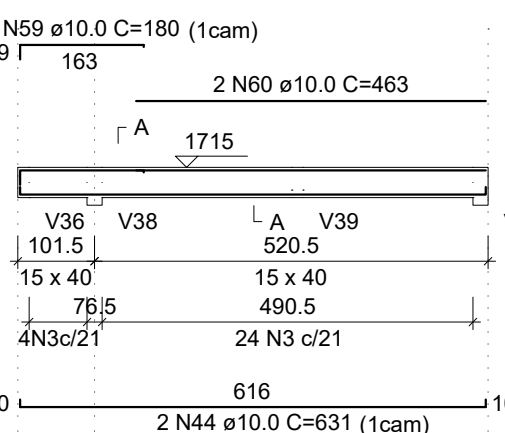
SEÇÃO A-A

ESC 1:25



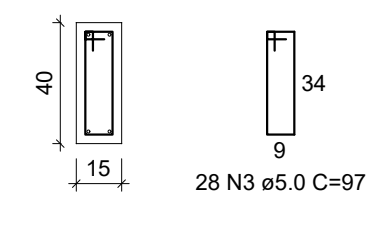
V27

ESC 1:100



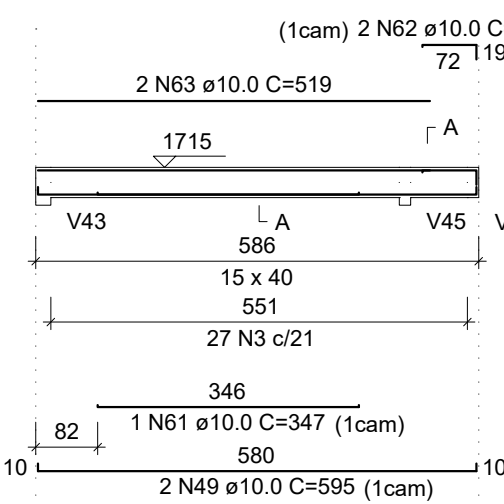
SEÇÃO A-A

ESC 1:25



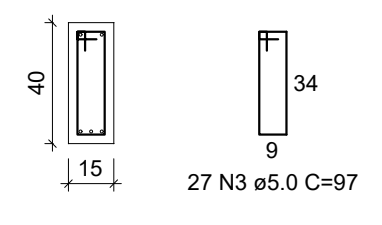
V28

ESC 1:100



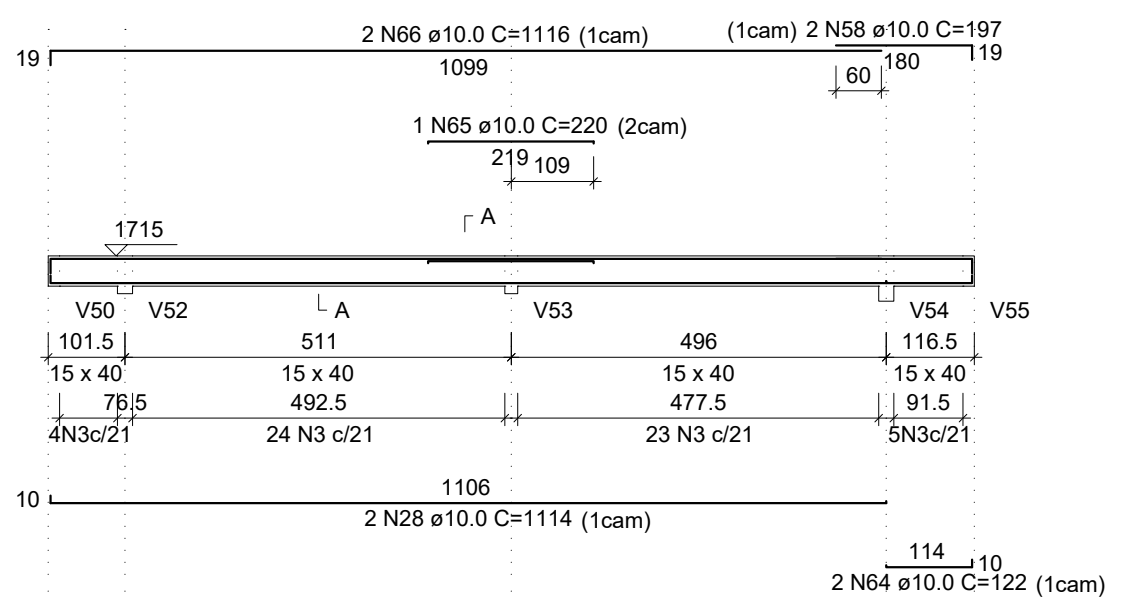
SEÇÃO A-A

ESC 1:25



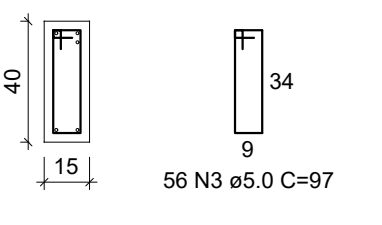
V29

ESC 1:100



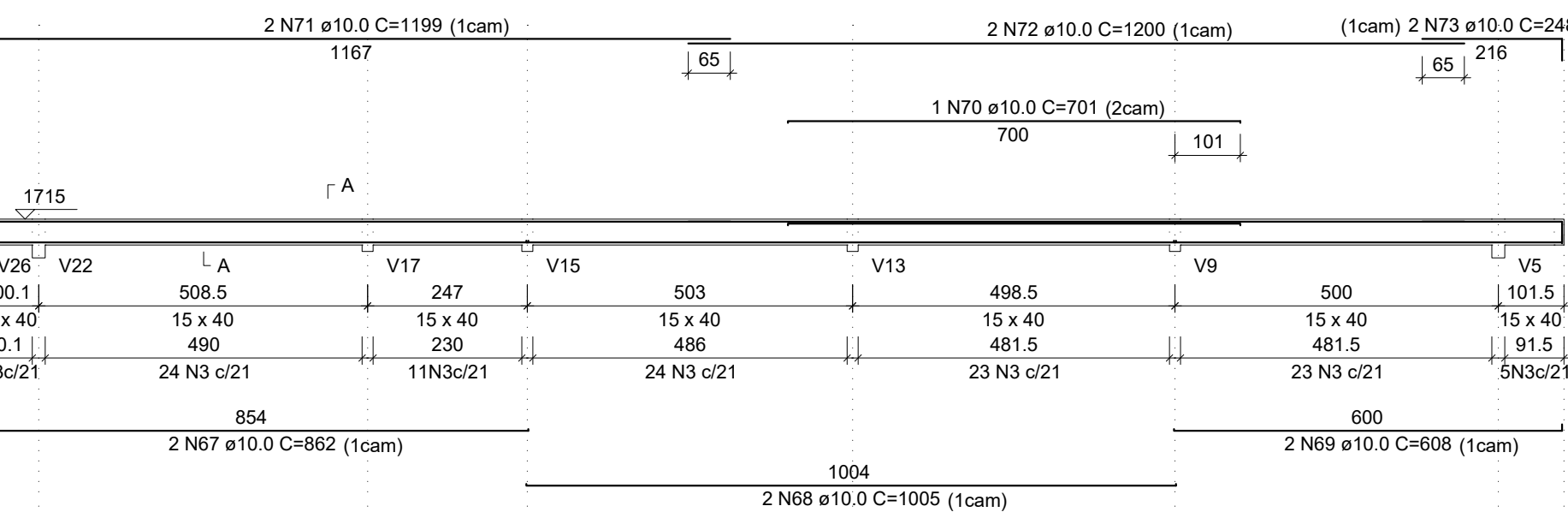
SEÇÃO A-A

ESC 1:25



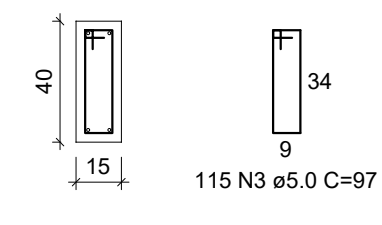
V30

ESC 1:100



SEÇÃO A-A

ESC 1:25



RELAÇÃO DO AÇO

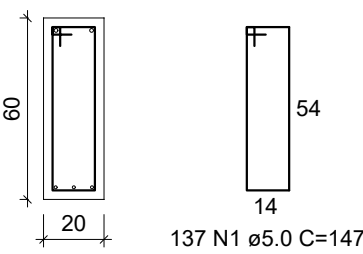
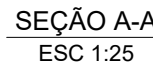
AÇO	N	DIAM (mm)	C.UNIT (cm)	C.TOTAL (cm)
V16	1	5.0	121	25047
V19	2	5.0	127	16129
V22	3	5.0	309	29973
V25	4	5.0	19	1463
V28	5	5.0	204	29688
V17	6	6.3	8	1008
V20	7	6.3	8	110
V23	8	6.3	8	124
V26	9	8.0	3	113
V29	10	8.0	1	116
	11	10.0	4	1017
	12	10.0	2	1119
	13	10.0	1	210
	14	10.0	1	625
	15	10.0	1	275
	16	10.0	1	789
	17	10.0	1	1086
	18	10.0	1	229
	19	10.0	2	1198
	20	10.0	2	1067
	21	10.0	2	1107
	22	10.0	2	1019
	23	10.0	1	291
	24	10.0	1	1172
	25	10.0	1	163
	26	10.0	3	1199
	27	10.0	3	1037
	28	10.0	6	1114
	29	10.0	4	329
	30	10.0	4	314
	31	10.0	2	315
	32	10.0	2	323
	33	10.0	5	107
	34	10.0	1	295
	35	10.0	1	285
	36	10.0	2	1099
	37	10.0	2	221
	38	10.0	1	209
	39	10.0	1	308
	40	10.0	3	1136
	41	10.0	3	238
	42	10.0	1	104
	43	10.0	1	186
	44	10.0	4	631
	45	10.0	1	254
	46	10.0	3	675
	47	10.0	1	258
	48	10.0	1	105
	49	10.0	4	595
	50	10.0	1	270
	51	10.0	3	639
	52	10.0	1	264
	53	10.0	1	283
	54	10.0	3	117
	55	10.0	2	1147
	56	10.0	2	140
	57	10.0	2	1116
	58	10.0	4	197
	59	10.0	2	180
	60	10.0	2	463
	61	10.0	1	347
	62	10.0	2	89
	63	10.0	2	519
	64	10.0	2	122
	65	10.0	1	220
	66	10.0	2	1116
	67	10.0	2	862
	68	10.0	2	1005
	69	10.0	2	608
	70	10.0	1	701
	71	10.0	2	1199
	72	10.0	2	1200
	73	10.0	2	248
	74	12.5	3	1197
	75	12.5	3	1089
	76	12.5	1	302
	77	12.5	1	208
	78	12.5	2	1150
	79	12.5	2	255

RESUMO DO AÇO

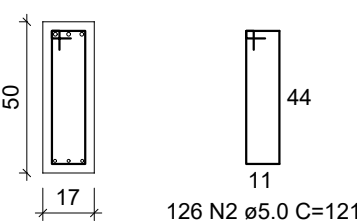
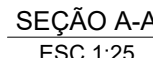
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0%	UNIT	PESO + 0% (kg)
CA50	6.3	28.8	3	12 m	7
	8.0	4.5	1	12 m	1.8
	10.0	785.8	66	12 m	484.5
	12.5	101.8	9	12 m	98
	5.0	1026	-	rolo (170 kg)	158.1
PESO TOTAL (kg)					
CA50		591.4			
CA60		158.1			

Volume de concreto (C-30) = 14.30 m³
Área de forma = 192.72 m²

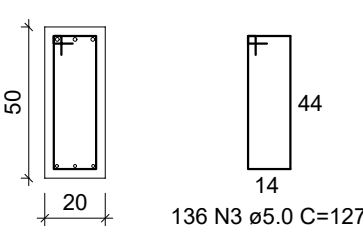
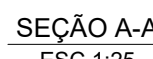
ESC 1:100



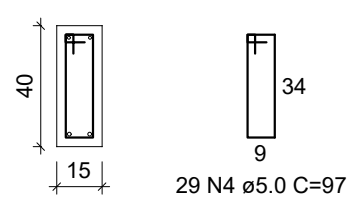
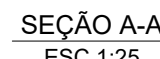
ESC 1:100



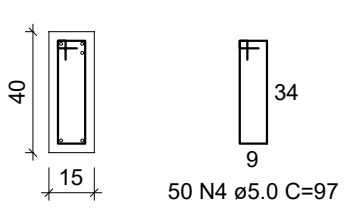
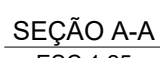
ESC 1:10C



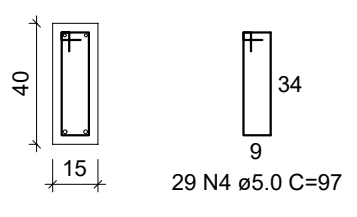
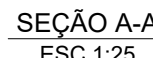
ESC 1:100



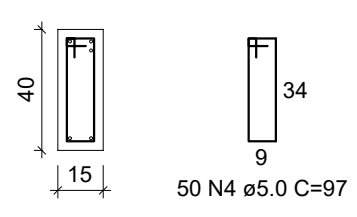
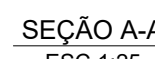
ESC 1:10



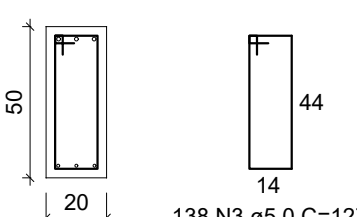
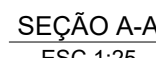
ESC 1:100



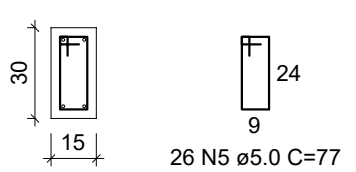
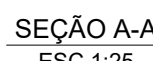
ESC 1:100



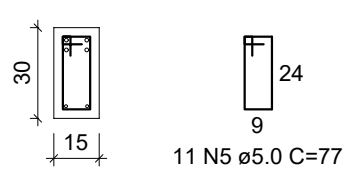
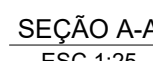
ESC 1:100



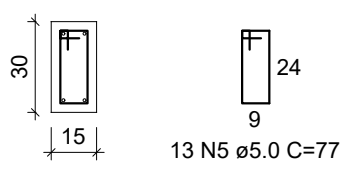
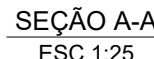
ESC 1:10C



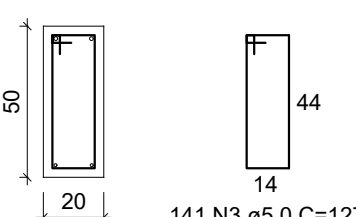
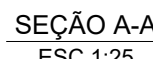
ESC 1:100



ESC 1:100



ESC 1:100



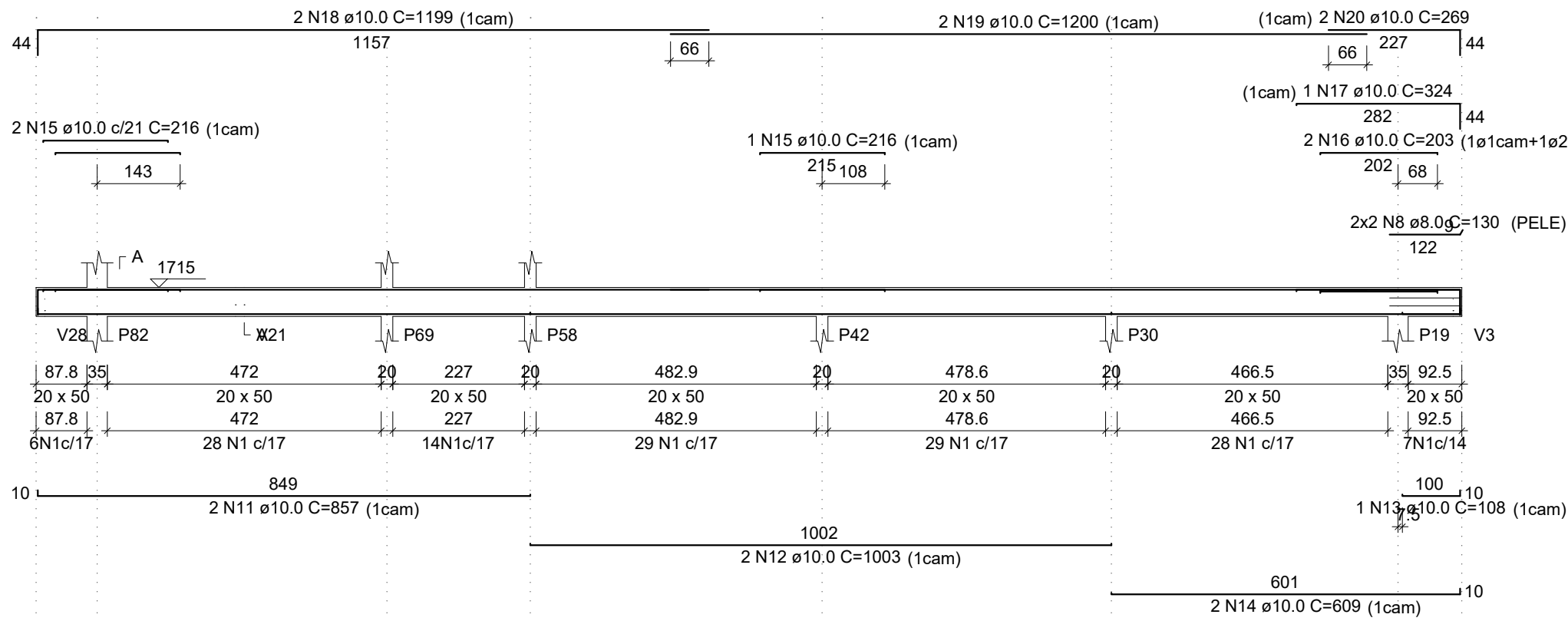
RELAÇÃO DO AÇO					
	V32		V33		
	V35		V36		
	V38		V39		
	V41		V42		
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5,0	137	147	20139
	2	5,0	126	121	15246
	3	5,0	415	127	52705
	4	5,0	158	97	15326
	5	5,0	50	77	3850
CA50	6	8,0	81	81	2443
	7	8,0	4	129	516
	8	10,0	5	105	525
	9	10,0	1	276	276
	10	10,0	1	248	248
	11	10,0	8	859	6882
	12	10,0	1	284	284
	13	10,0	1	267	267
	14	10,0	2	989	1978
	15	10,0	1	273	273
	16	10,0	2	107	214
	17	10,0	4	607	2428
	18	10,0	1	293	293
	19	10,0	2	987	1974
	20	10,0	6	608	3648
	21	10,0	1	299	299
	22	10,0	1	283	283
	23	10,0	2	982	1964
	24	10,0	1	296	296
	25	10,0	2	246	492
	26	10,0	2	407	814
	27	10,0	4	1118	4472
	28	10,0	1	219	219
	29	10,0	7	791	5537
	30	10,0	2	354	708
	31	10,0	2	250	500
	32	10,0	2	403	806
	33	10,0	1	229	229
	34	10,0	2	354	708
	35	10,0	2	761	1522
	36	10,0	1	114	114
	37	10,0	2	844	1688
	38	10,0	1	295	295
	39	10,0	9	999	8991
	40	10,0	2	505	1010
	41	10,0	2	301	602
	42	10,0	2	182	364
	43	10,0	1	123	123
	44	10,0	2	224	448
	45	10,0	2	232	464
	46	10,0	2	1002	2004
	47	12,5	2	1198	2396
	48	12,5	10	1200	12000
	49	12,5	2	325	650
	50	12,5	1	708	708
	51	12,5	1	1130	1130
	52	12,5	1	1130	1130
	53	12,5	5	245	1225
	54	12,5	8	1198	9584
	55	12,5	8	305	2440
	56	12,5	5	642	3210
	57	12,5	1	1106	1106
	58	12,5	1	204	204
	59	12,5	4	524	2096
	60	12,5	1	759	759
	61	12,5	1	284	284
	62	12,5	1	185	185
	63	12,5	1	214	214
	64	12,5	1	185	185
	65	16,0	1	171	171
	66	16,0	2	324	648

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	8.0	7.6	1	12 m	3
	10.0	428.8	36	12 m	264.4
	12.5	355.7	30	12 m	342.7
	16.0	8.2	1	12 m	12.9
CA60	5.0	1072.7	-	rolo (170 kg)	165.3

Volume de concreto (C-30) = 14.78 m³
Área de forma = 189.36 m²

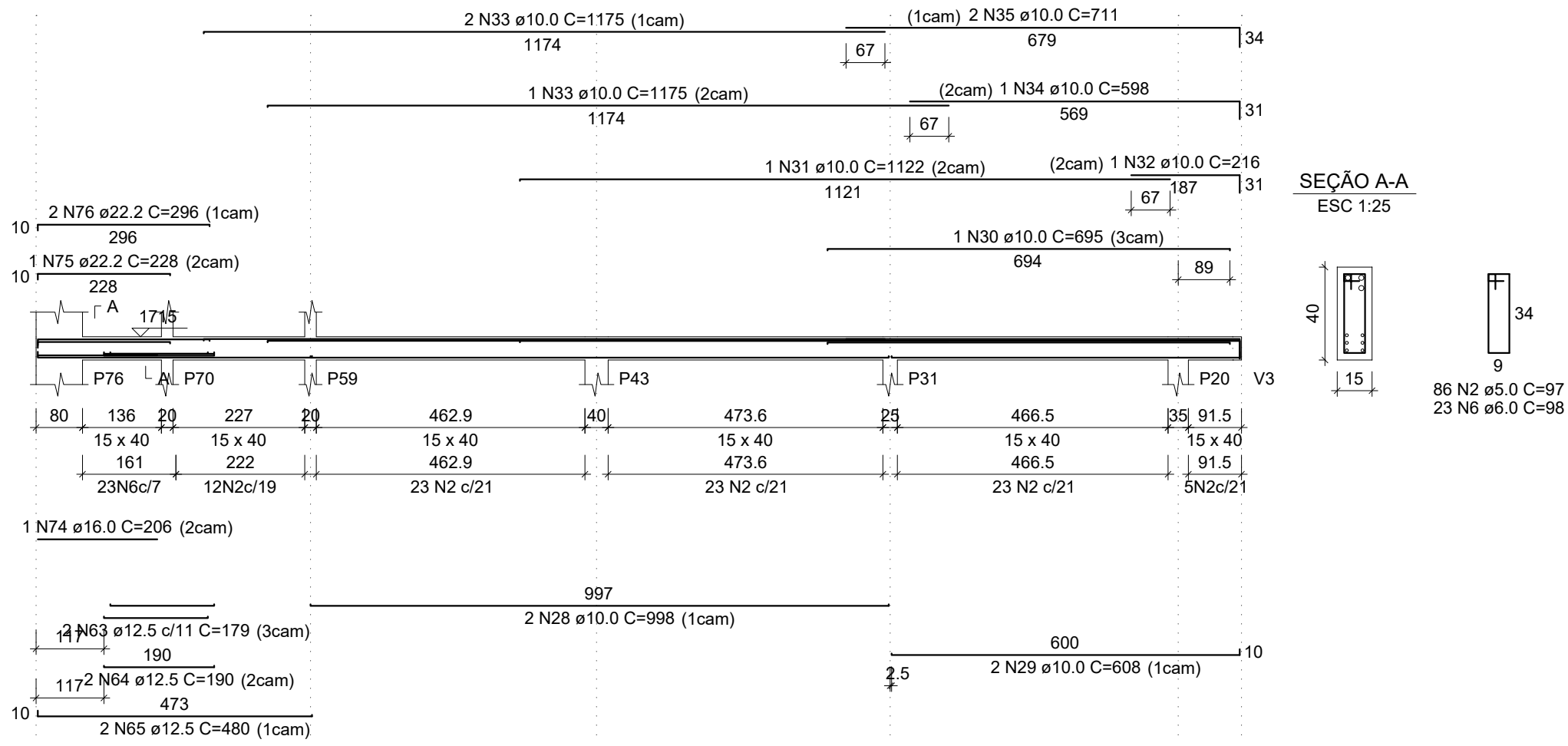
V43

ESC 1:100



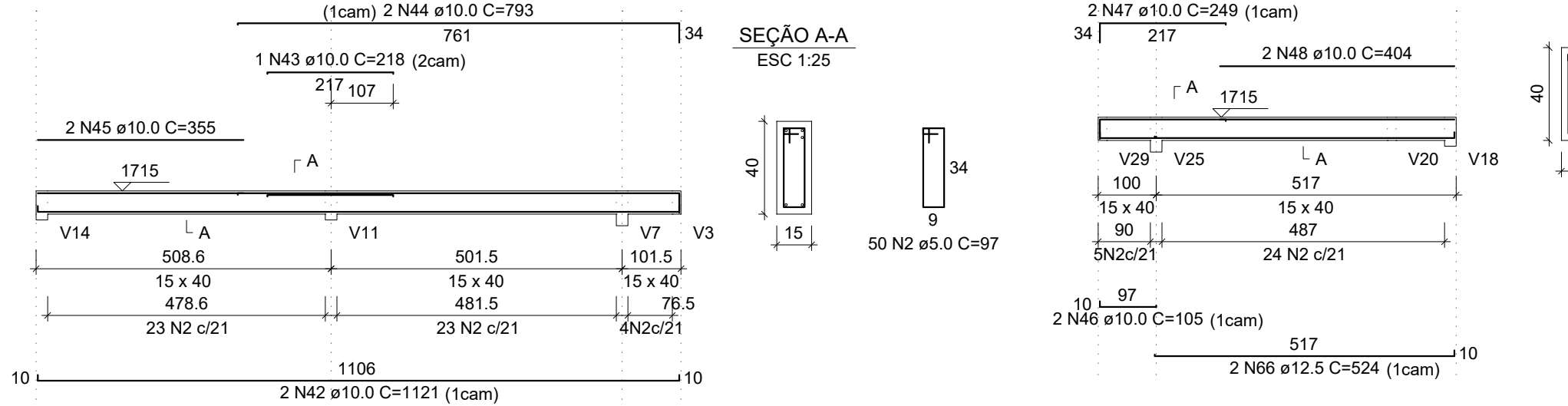
V46

ESC 1:100



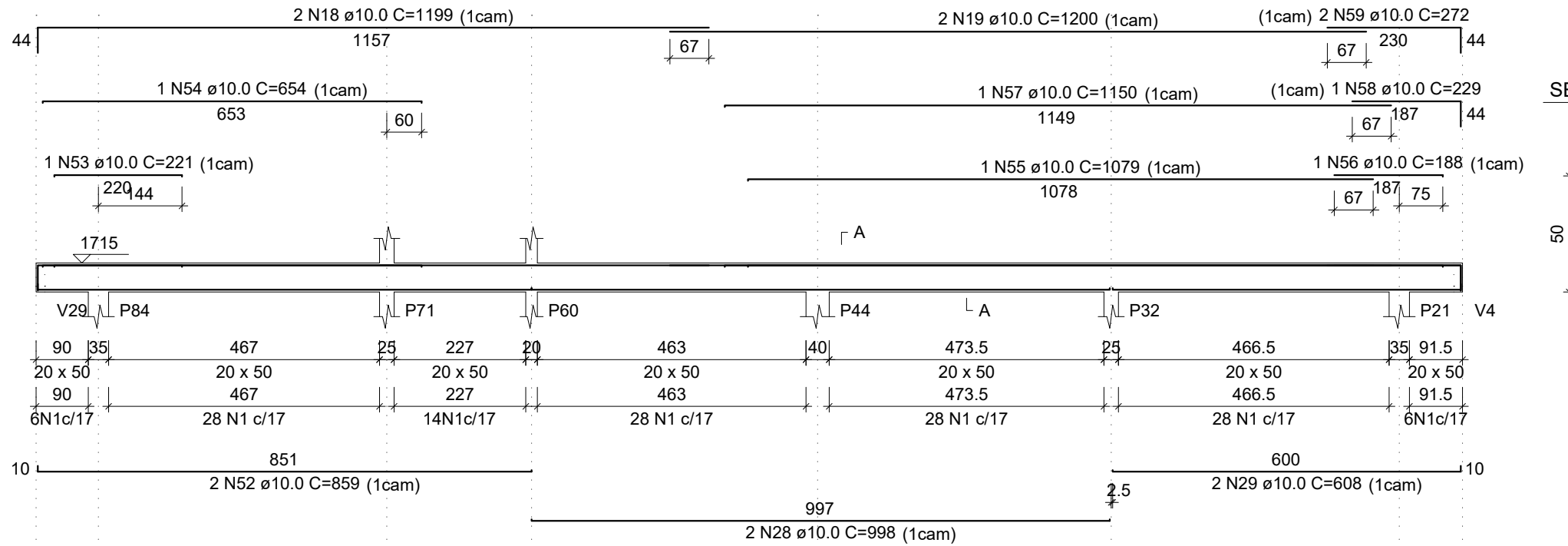
V49

ESC 1:100



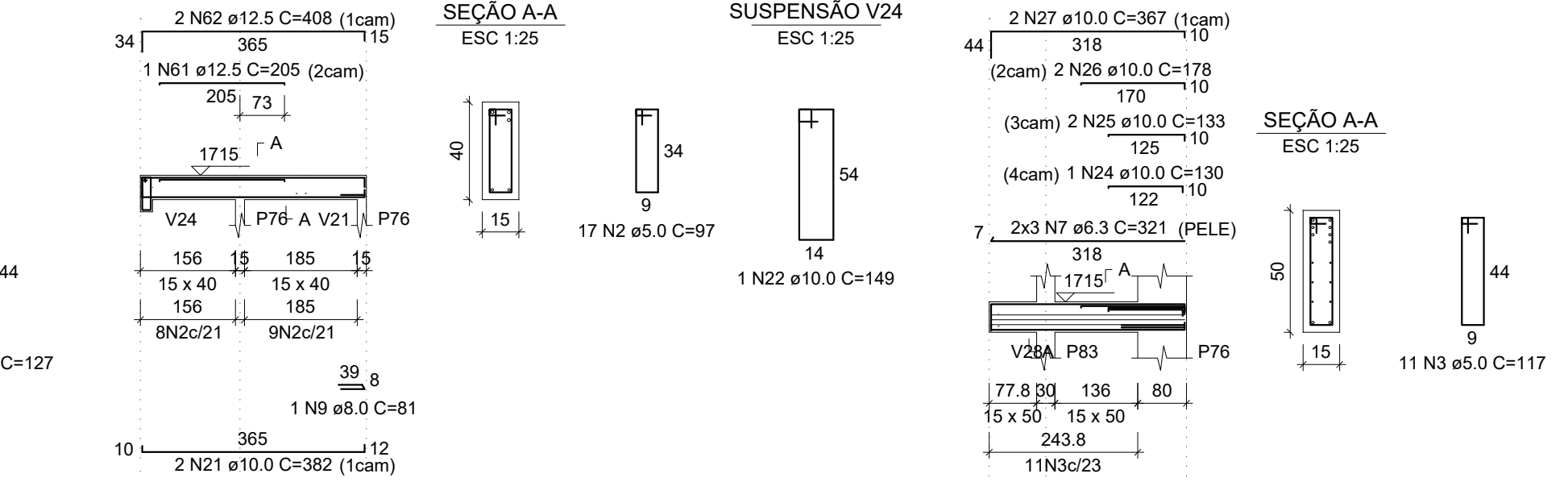
V52

ESC 1:100



V44

ESC 1:100



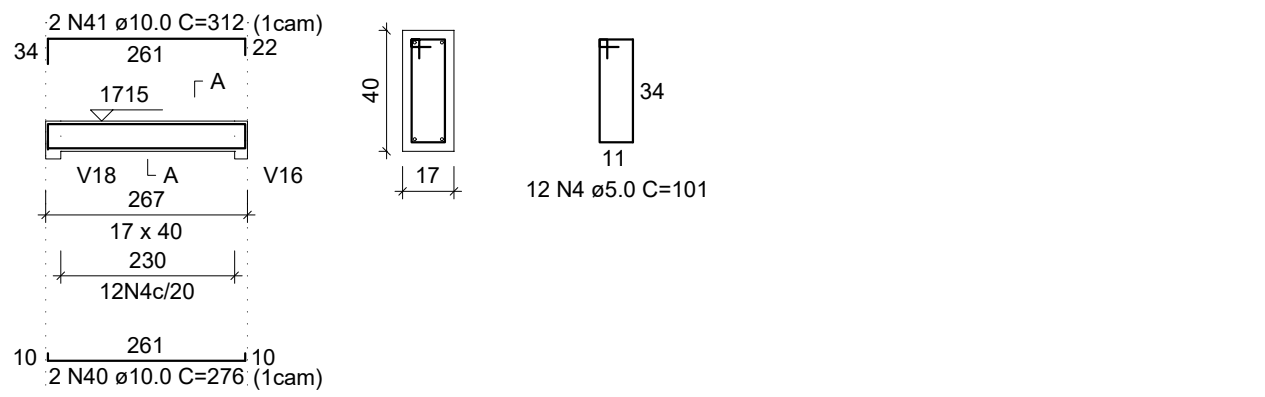
V45

ESC 1:100



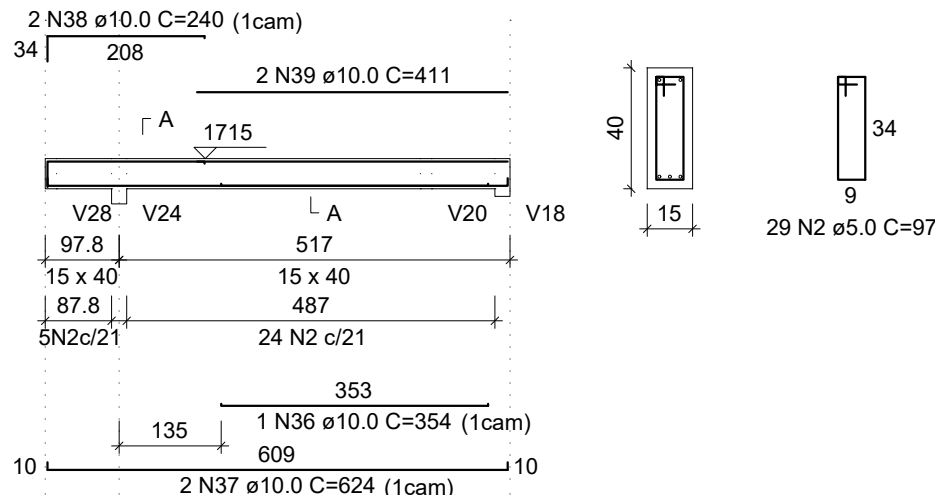
V48

ESC 1:100



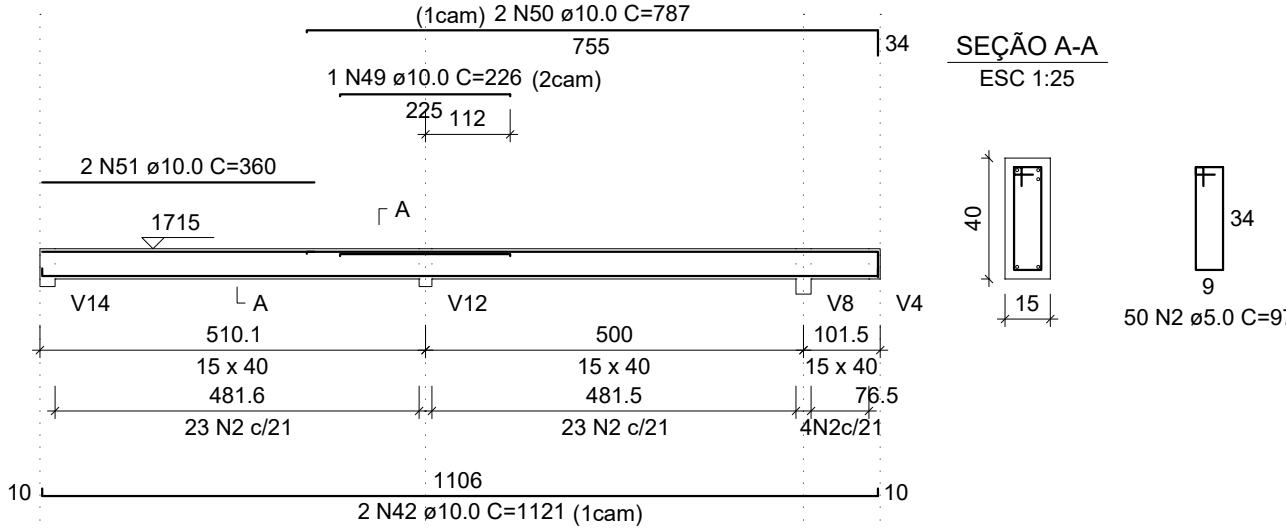
V47

ESC 1:100



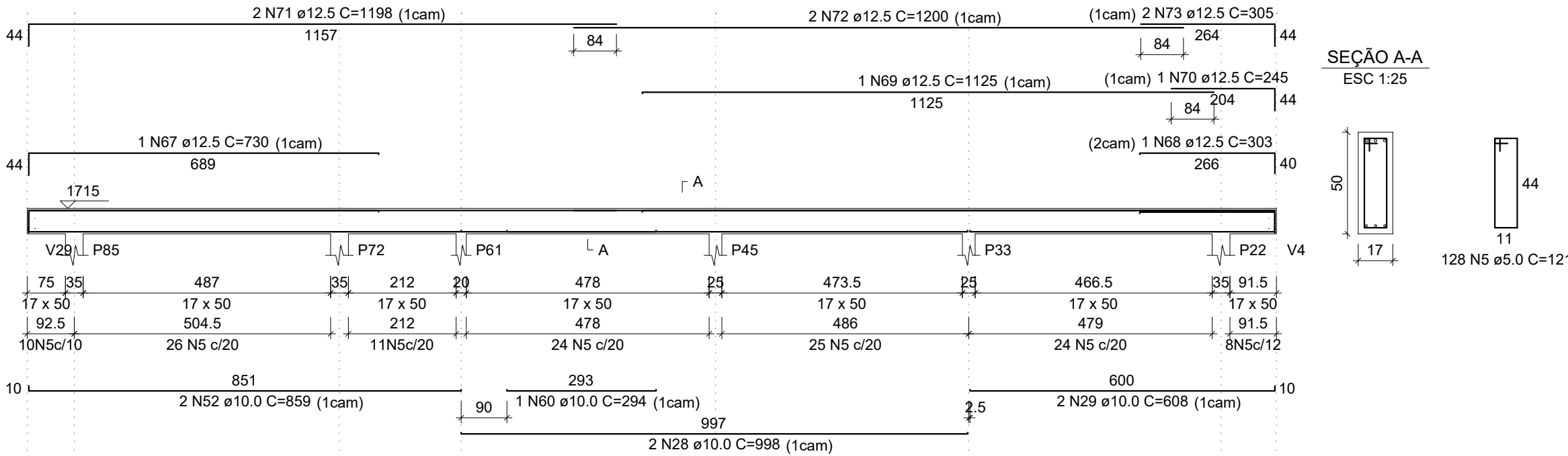
V51

ESC 1:100



V53

ESC 1:100



RELAÇÃO DO AÇO

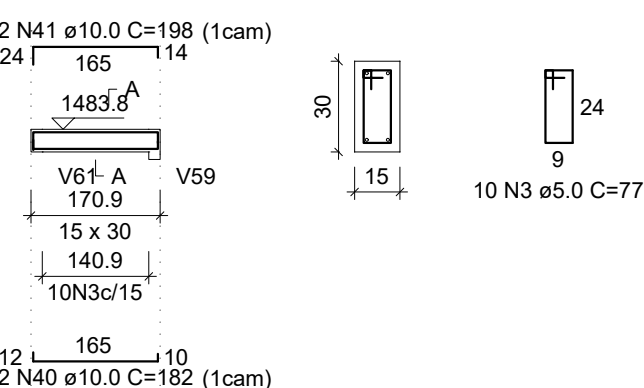
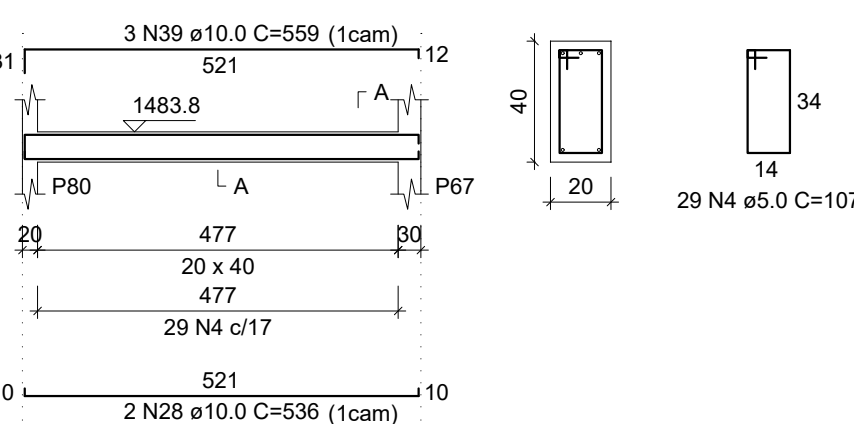
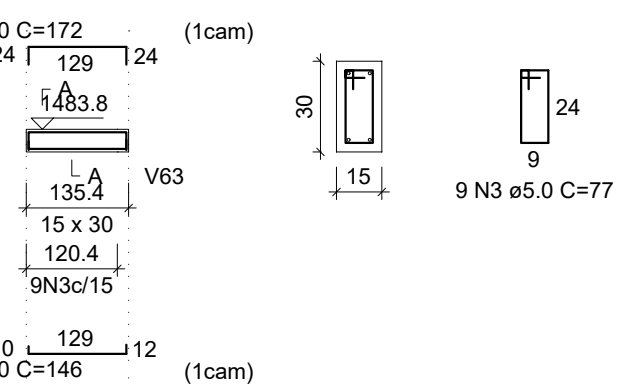
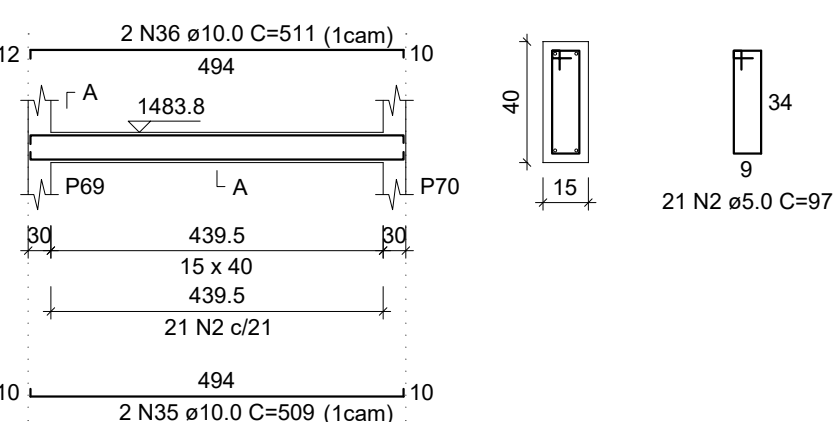
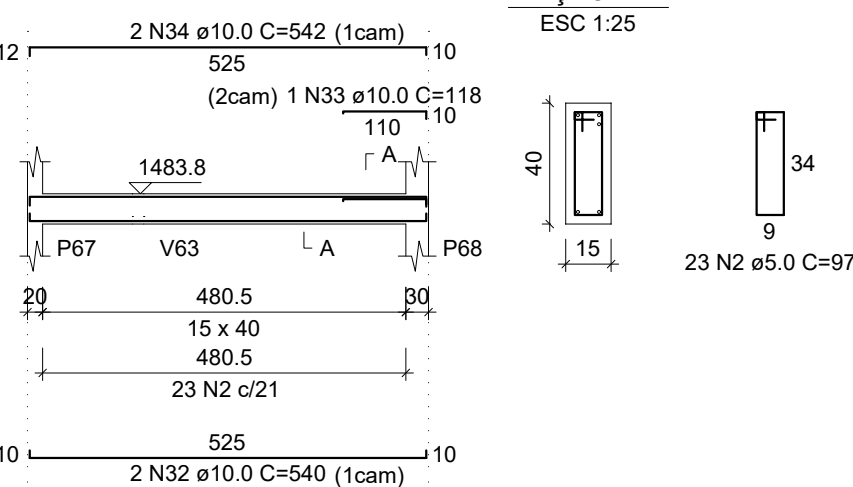
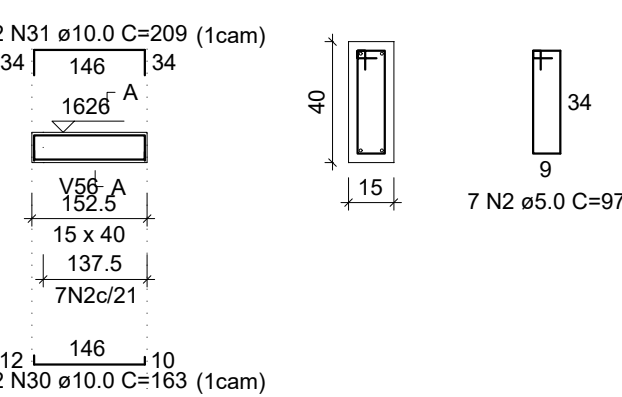
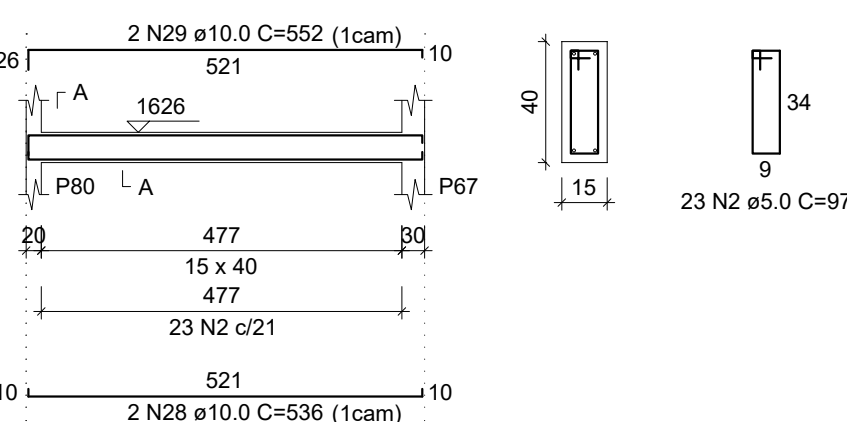
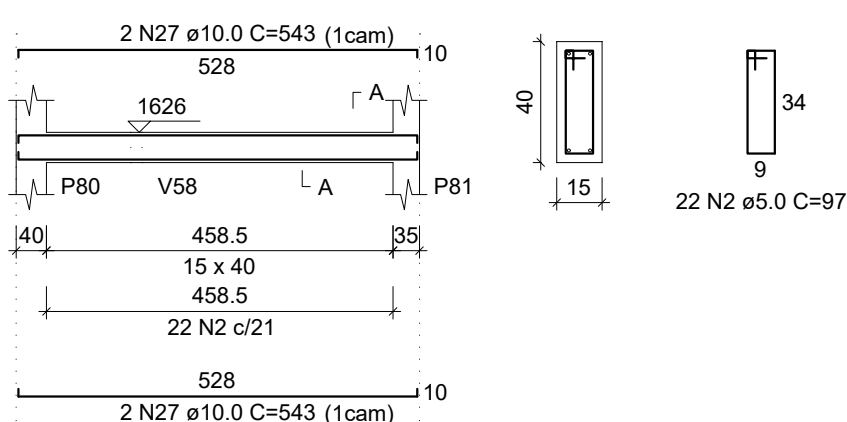
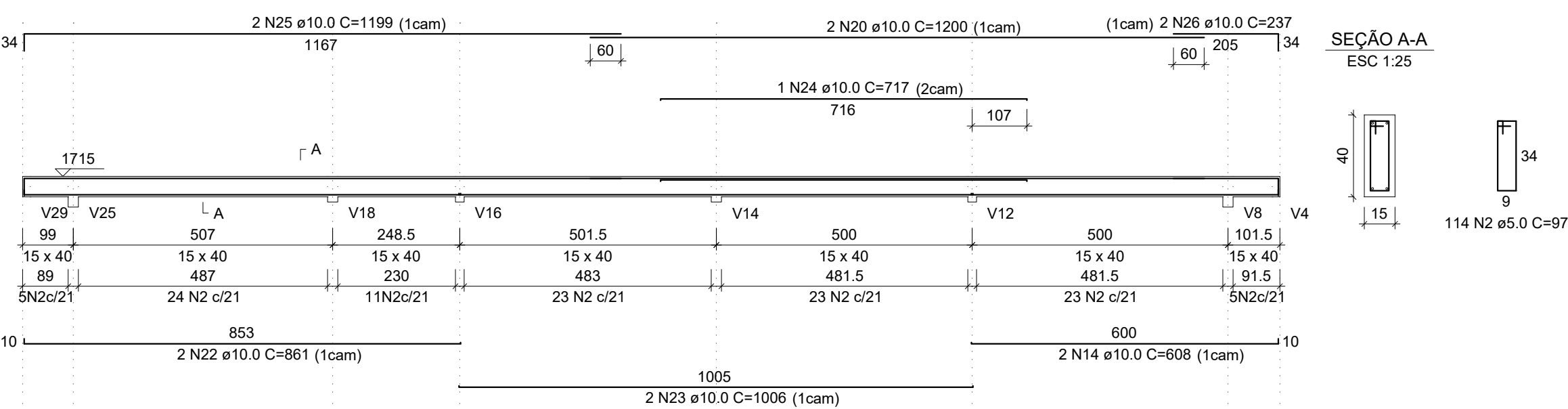
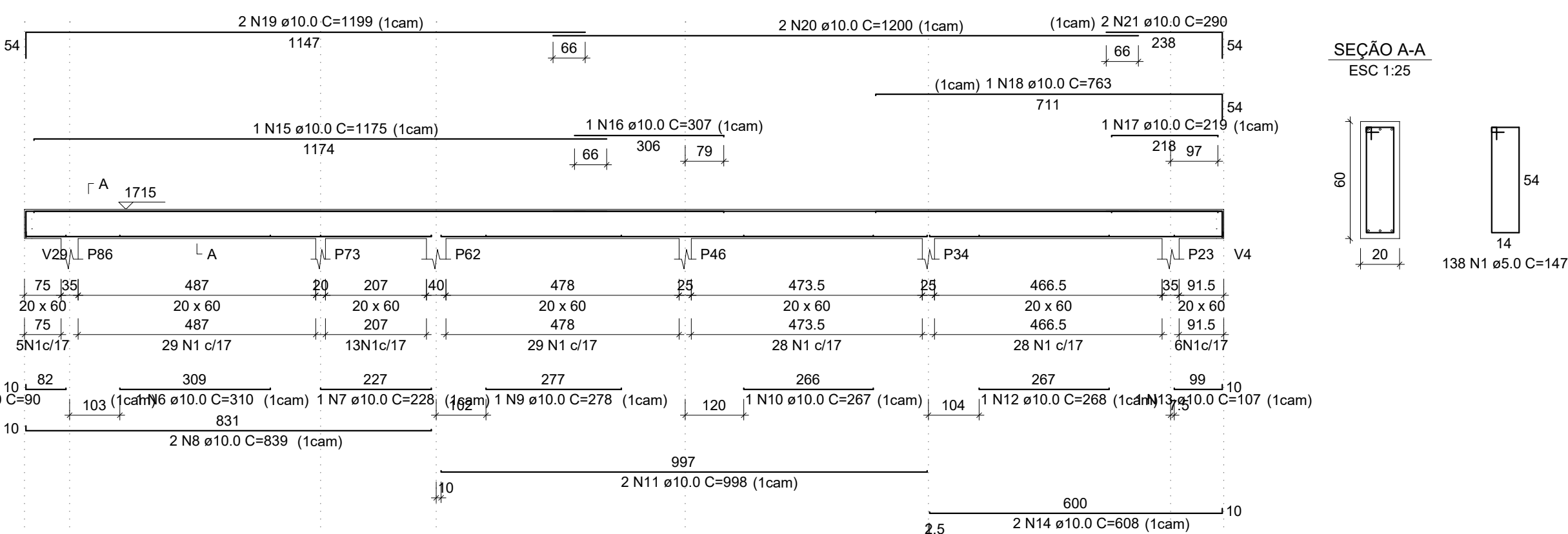
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
V43	1	5.0	279	127	35433
V46	2	5.0	261	97	25317
V49	3	5.0	11	117	1287
V52	4	5.0	12	101	1212
	5	5.0	128	121	15488
	6	6.0	23	98	2254
	7	6.3	6	321	1926
	8	8.0	4	130	520
	9	8.0	1	81	81
	10	8.0	2	211	422
	11	10.0	2	857	1714
	12	10.0	2	1003	2006
	13	10.0	1	108	108
	14	10.0	1	324	324
	15	10.0	3	216	648
	16	10.0	2	203	406
	17	10.0	2	269	538
	18	10.0	4	1199	4796
	19	10.0	4	1200	4800
	20	10.0	2	335	670
	21	10.0	1	130	130
	22	10.0	1	149	149
	23	10.0	2	335	670
	24	10.0	2	367	734
	25	10.0	2	133	266
	26	10.0	2	178	356
	27	10.0	2	367	734
	28	10.0	6	998	5988
	29	10.0	6	608	3648
	30	10.0	1	695	695
	31	10.0	1	1122	1122
	32	10.0	1	216	216
	33	10.0	3	1175	3525
	34	10.0	1	598	598
	35	10.0	2	711	1422
	36	10.0	1	354	354
	37	10.0	2	624	1248
	38	10.0	2	240	480
	39	10.0	2	411	822
	40	10.0	2	276	552
	41	10.0	2	312	624
	42	10.0	4	1121	4484
	43	10.0	1	218	218
	44	10.0	2	793	1586
	45	10.0	2	355	710
	46	10.0	2	105	210
	47	10.0	2	249	498
	48	10.0	2	404	808
	49	10.0	1	226	226
	50	10.0	2	787	1574
	51	10.0	2	360	720
	52	10.0	4	859	3436
	53	10.0	1	221	221
	54	10.0	1	654	654
	55	10.0	1	1079	1079
	56	10.0	1	188	188
	57	10.0	1	1150	1150
	58	10.0	1	229	229
	59	10.0	2	272	544
	60	10.0	1	294	294
	61	12.5	1	205	205
	62	12.5	2	408	816
	63	12.5	2	179	358
	64	12.5	2	190	380
	65	12.5	2	480	960
	66	12.5	2	524	1048
	67	12.5	1	730	730
	68	12.5	1	303	303
	69	12.5	1	1125	1125
	70	12.5	1	245	245
	71	12.5	2	1198	2396
	72	12.5	2	1200	2400
	73	12.5	2	305	610
	74	16.0	1	206	206
	75	22.2	1	228	228
	76	22.2	2	296	592

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0%	UNIT	PESO + 0% (kg)
CA50	6.3	41.80	2	12 m	5.2
	8.0	10.2	1	12 m	4
	10.0	597.5	50	12 m	368.4
	12.5	111.05	10	12 m	111.5
	16.0	2.1	1	12 m	3.3
	20.0	8.2	1	12 m	24.9
	5.0	787.4	-	rolo (170 kg)	121.4

Volume de concreto (C-30) = 10.97 m³

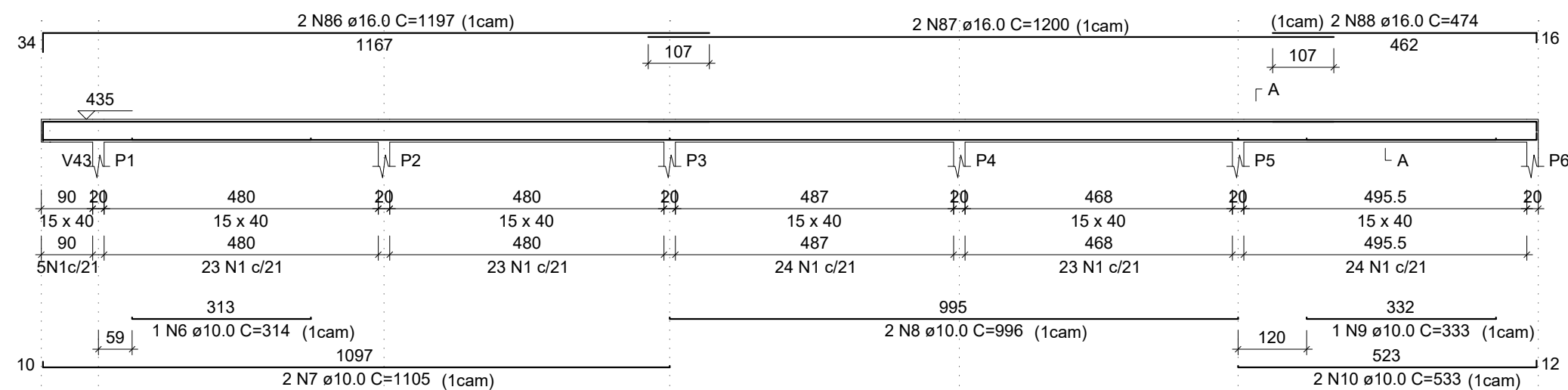
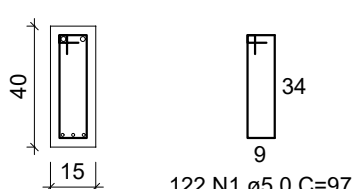
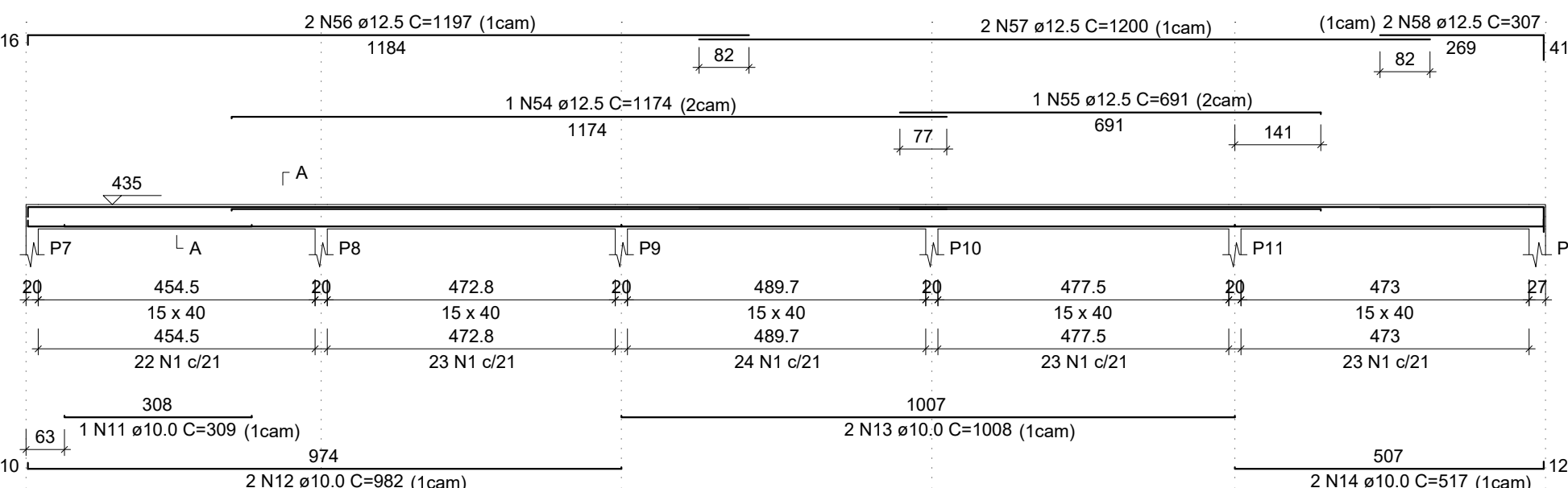
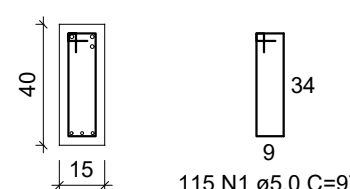
Área de forma = 150.15 m²



V54	V55	V56			
V57	V58	V59			
V60	V61	V62			
V63					

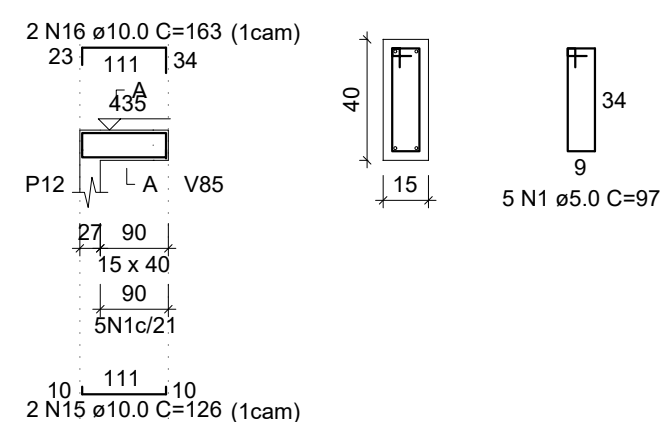
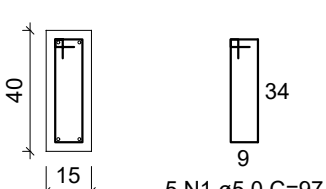
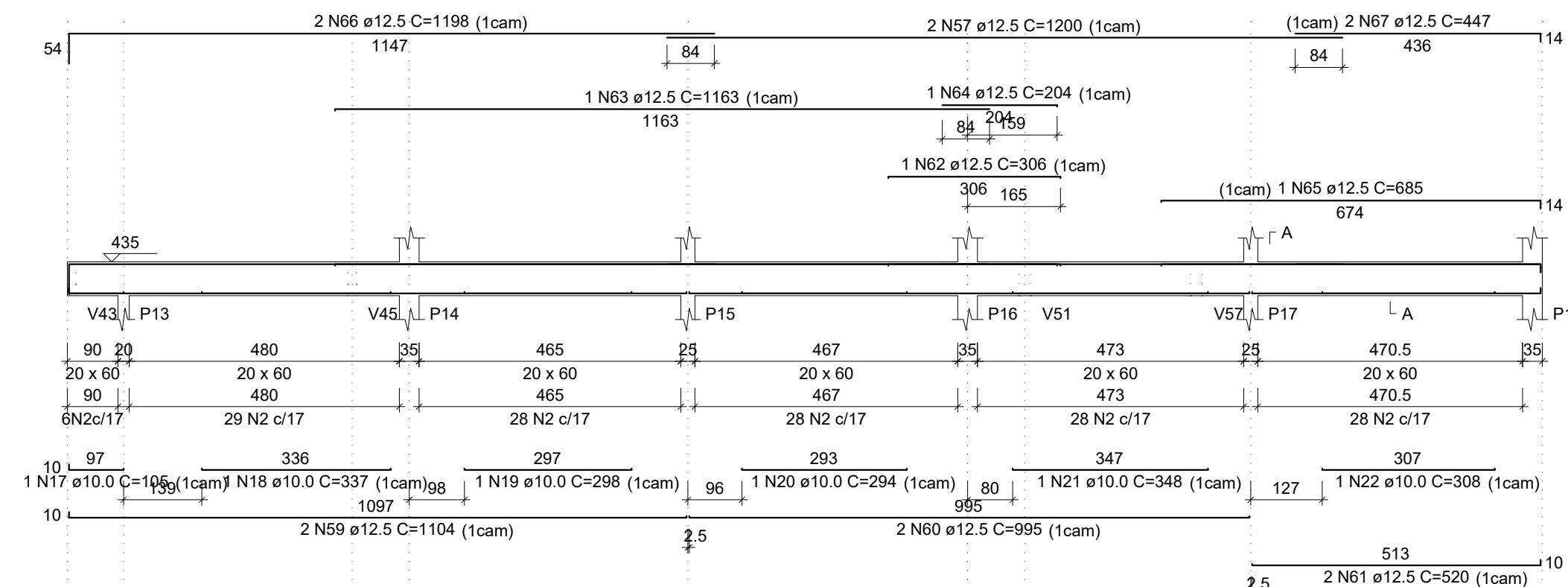
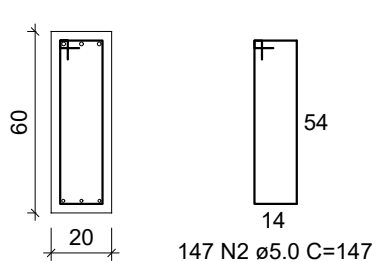
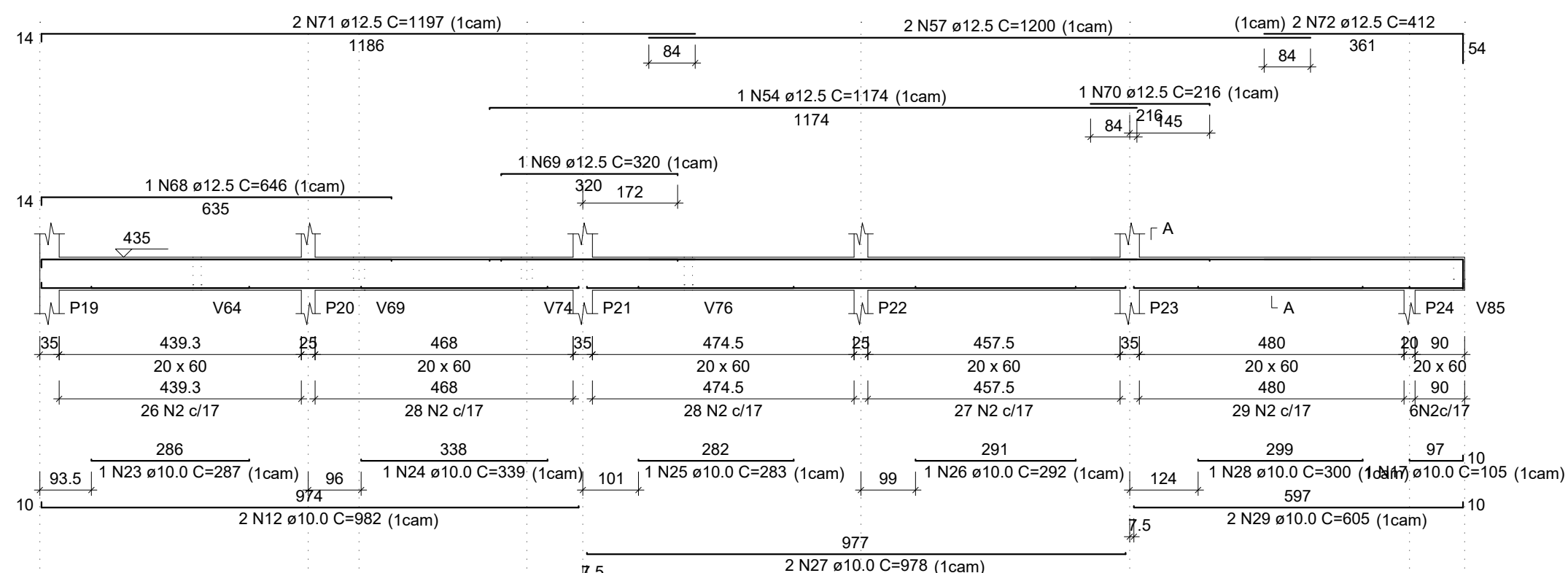
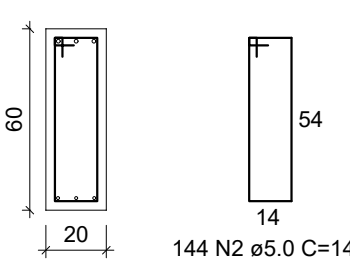
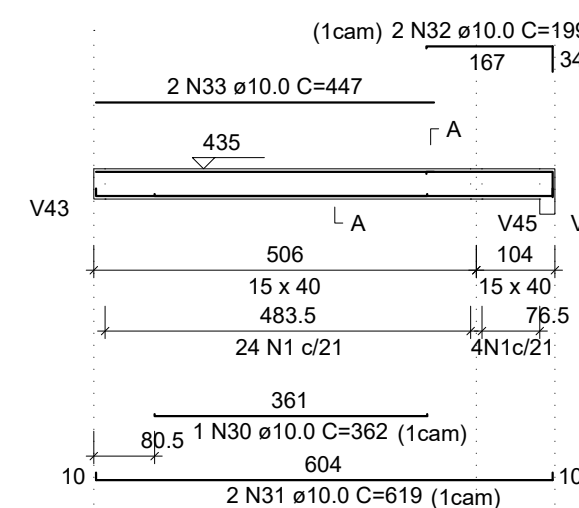
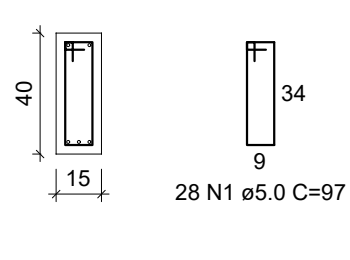
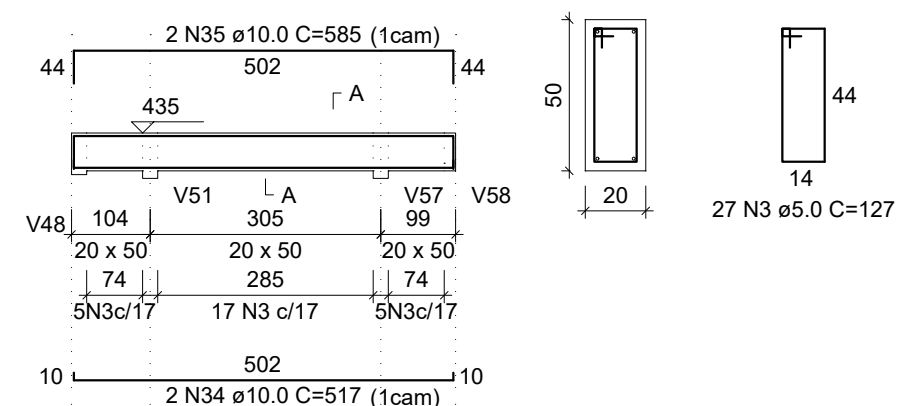
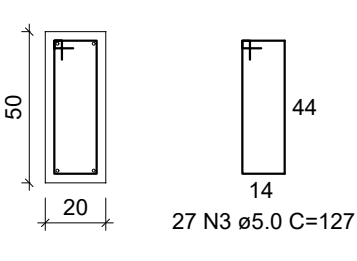
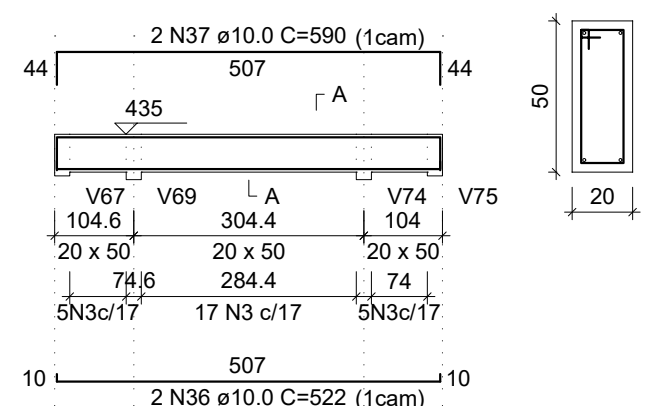
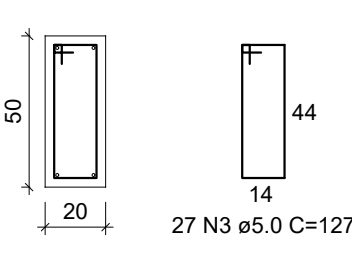
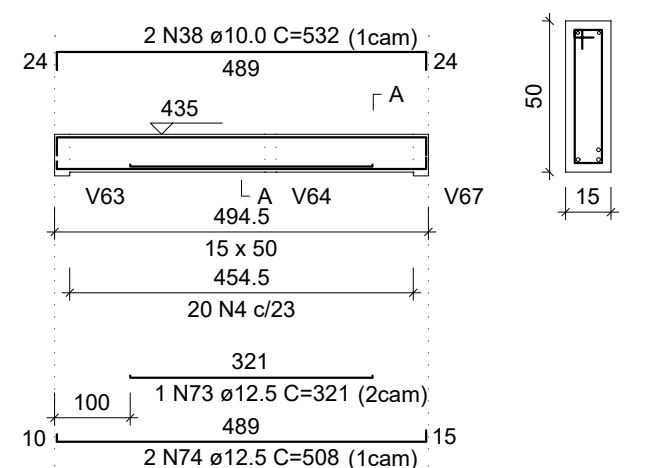
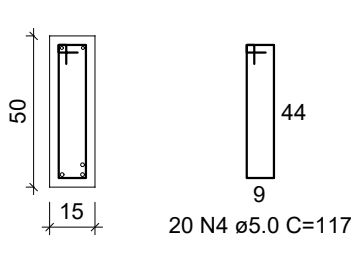
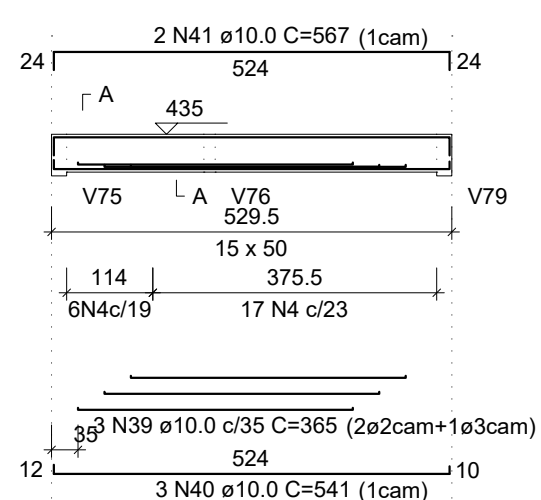
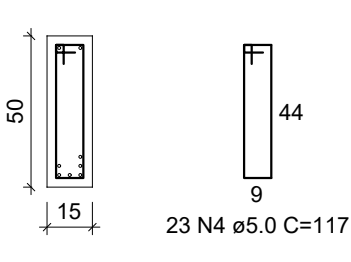
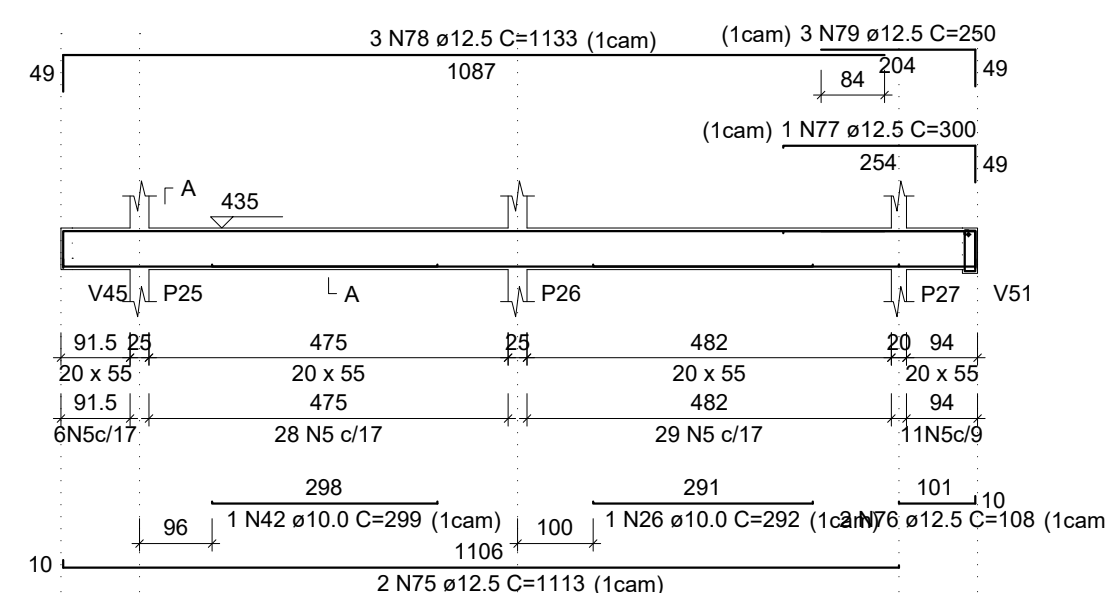
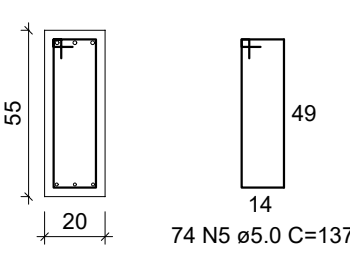
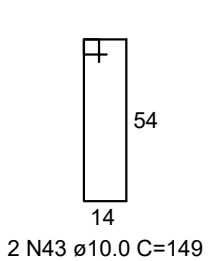
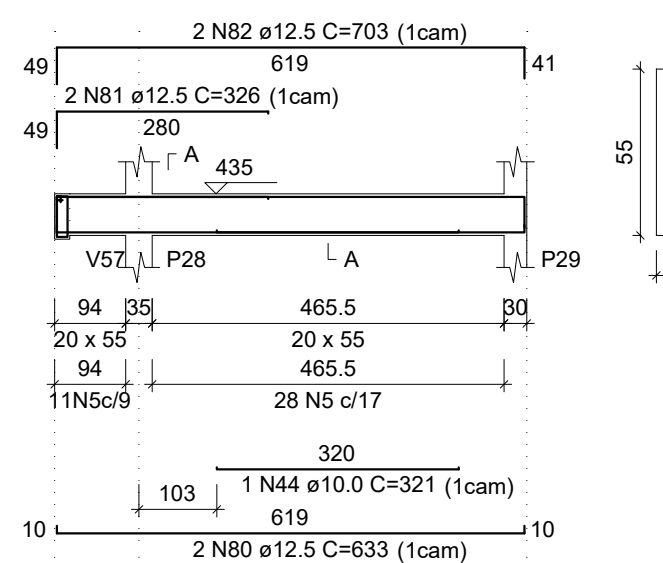
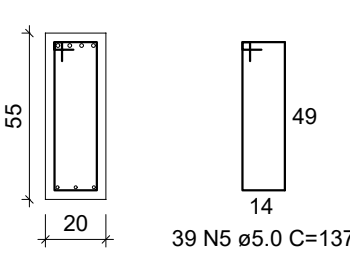
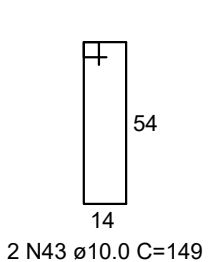
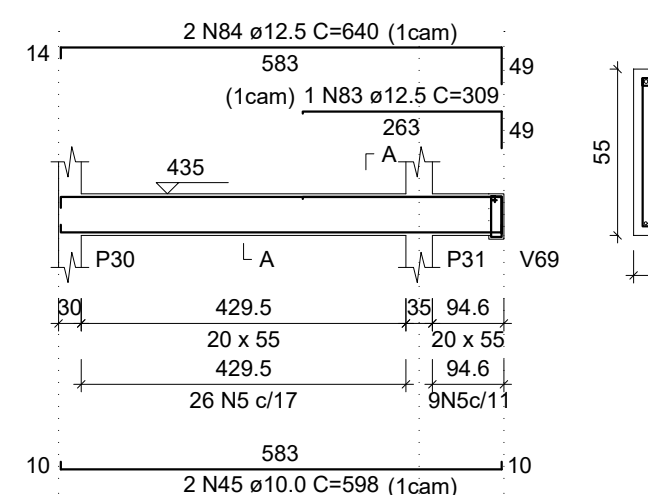
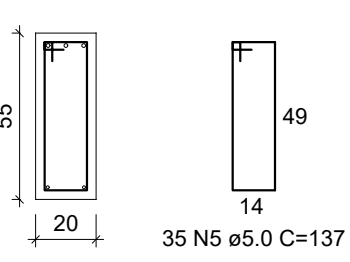
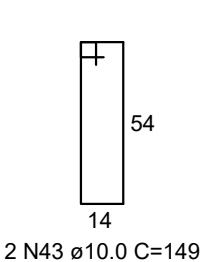
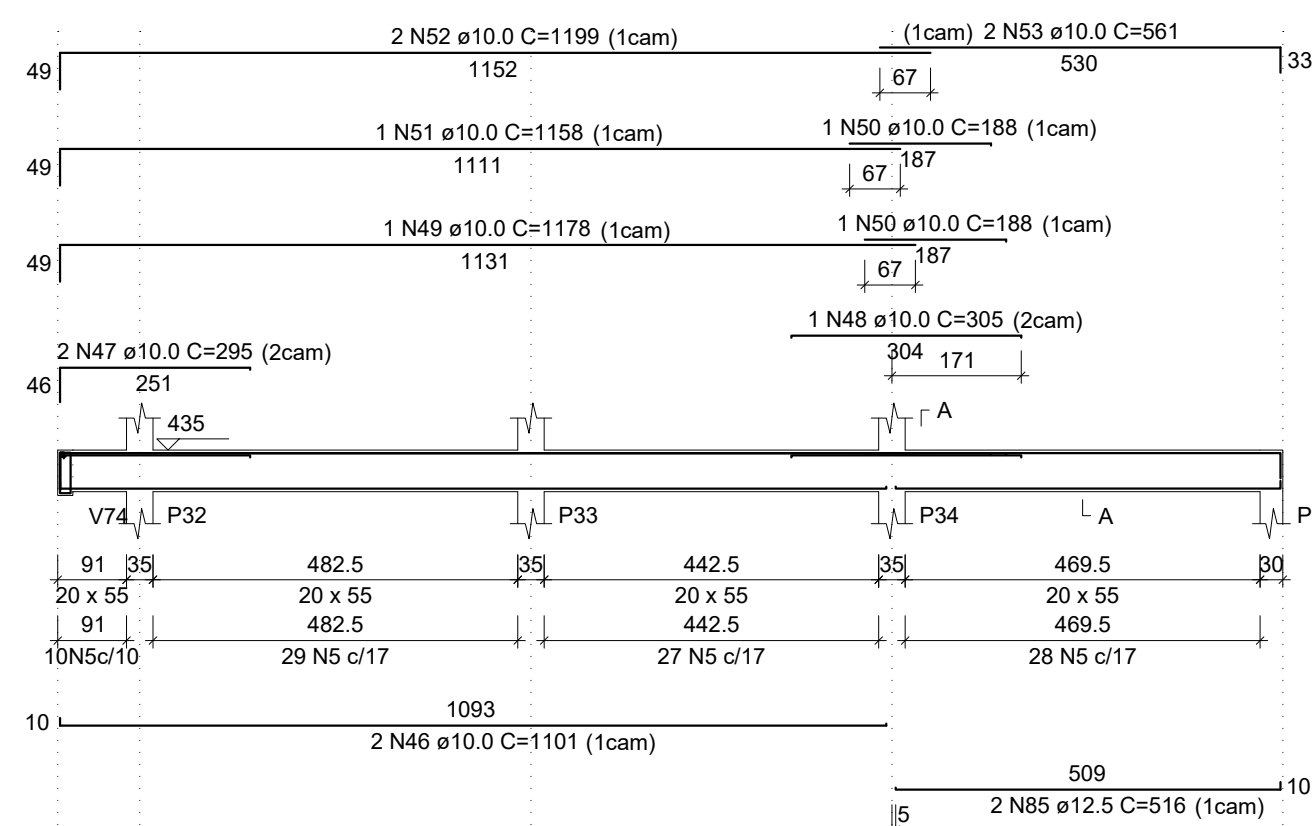
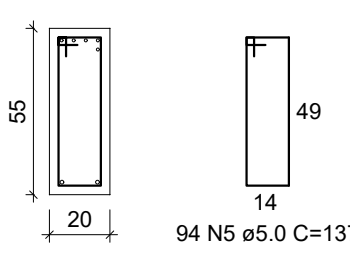
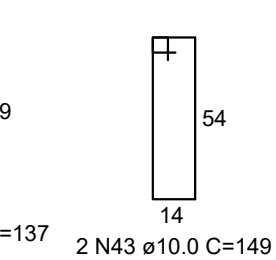
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	10.0	387.8	33	12 m	239.1
CA60	5.0	452.2	-	rolo (170 kg)	69.7
PESO TOTAL (kg)					
CA50	239.1				
CA60	69.7				

Volume de concreto (C-30) = 6.33 m³
Área de forma = 86.64 m²

V1
ESC 1:100SEÇÃO A-A
ESC 1:25V2
ESC 1:100SEÇÃO A-A
ESC 1:25

RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	270	97	26190
	2	5.0	291	147	42777
	3	5.0	54	127	6858
	4	5.0	43	117	5031
	5	5.0	242	137	33154
CA50	6	10.0	1	314	314
	7	10.0	2	1105	2210
	8	10.0	2	996	1992
	9	10.0	1	333	333
	10	10.0	2	533	1066
	11	10.0	1	309	309
	12	10.0	4	962	3828
	13	10.0	2	1008	2016
	14	10.0	2	517	1034
	15	10.0	2	126	252
	16	10.0	2	163	326
	17	10.0	2	105	210
	18	10.0	1	337	337
	19	10.0	1	298	298
	20	10.0	1	294	294
	21	10.0	1	348	348
	22	10.0	1	308	308
	23	10.0	1	287	287
	24	10.0	1	339	339
	25	10.0	1	283	283
	26	10.0	2	292	584
	27	10.0	2	978	1956
	28	10.0	1	300	300
	29	10.0	2	605	1210
	30	10.0	1	362	362
	31	10.0	2	619	1238
	32	10.0	2	199	398
	33	10.0	2	447	894
	34	10.0	2	517	1034
	35	10.0	2	585	1170
	36	10.0	1	522	1044
	37	10.0	2	590	1180
	38	10.0	2	532	1064
	39	10.0	3	365	1095
	40	10.0	3	541	1623
	41	10.0	2	567	1134
	42	10.0	1	299	299
	43	10.0	8	149	1192
	44	10.0	1	321	321
	45	10.0	2	598	1196
	46	10.0	2	1101	2202
	47	10.0	2	295	590
	48	10.0	1	305	305
	49	10.0	1	1178	1178
	50	10.0	2	188	376
	51	10.0	1	1158	1158
	52	10.0	2	1199	2398
	53	10.0	2	361	722
	54	12.5	2	1174	2348
	55	12.5	1	691	691
	56	12.5	2	1197	2394
	57	12.5	6	1200	7200
	58	12.5	2	307	614
	59	12.5	2	1104	2208
	60	12.5	2	995	1990
	61	12.5	2	520	1040
	62	12.5	1	306	306
	63	12.5	1	1163	1163
	64	12.5	1	204	204
	65	12.5	1	685	685
	66	12.5	2	1198	2396
	67	12.5	2	447	894
	68	12.5	1	646	646
	69	12.5	1	320	320
	70	12.5	1	216	216
	71	12.5	2	1197	2394
	72	12.5	2	412	824
	73	12.5	1	321	321
	74	12.5	2	508	1016
	75	12.5	2	1113	2226
	76	12.5	2	108	216
	77	12.5	1	300	300
	78	12.5	3	1133	3399
	79	12.5	3	250	750
	80	12.5	2	633	1266
	81	12.5	2	326	652
	82	12.5	2	703	1406
	83	12.5	1	309	309
	84	12.5	2	640	1280
	85	12.5	2	516	1032
	86	16.0	2	1197	2394
	87	16.0	2	1200	2400
	88	16.0	2	474	948

V3
ESC 1:100SEÇÃO A-A
ESC 1:25V4
ESC 1:100SEÇÃO A-A
ESC 1:25V5
ESC 1:100SEÇÃO A-A
ESC 1:25V6
ESC 1:100SEÇÃO A-A
ESC 1:25V7
ESC 1:100SEÇÃO A-A
ESC 1:25V8
ESC 1:100SEÇÃO A-A
ESC 1:25V9
ESC 1:100SEÇÃO A-A
ESC 1:25V10
ESC 1:100SEÇÃO A-A
ESC 1:25V11
ESC 1:100SEÇÃO A-A
ESC 1:25SUSPENSÃO V51
ESC 1:25V12
ESC 1:100SEÇÃO A-A
ESC 1:25SUSPENSÃO V57
ESC 1:25V13
ESC 1:100SEÇÃO A-A
ESC 1:25SUSPENSÃO V69
ESC 1:25V14
ESC 1:100SEÇÃO A-A
ESC 1:25SUSPENSÃO V74
ESC 1:25

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	10.0	451.1	38	12 m	278.1
	12.5	427.1	36	12 m	411.4
	16.0	57.4	5	12 m	80.6
CA60	5.0	1140.1	-	rolo (170 kg)	175.7

PESO TOTAL (kg)

CA50	780.1
CA60	175.7

Volume de concreto (C-30) = 15.99 m³

Área de forma = 205.00 m²

Structural drawing of a reinforced concrete beam (Fig. 10.10) showing reinforcement details and dimensions. The beam has a total length of 10.0m. Reinforcement includes top bars (N15, N16, N14, N12, N13, N11, N7, N8, N9, N10) and bottom bars (N6, N1). Dimensions are given in meters. The drawing shows the beam profile with reinforcement bars and their spacing.

2 N18 ϕ 10.0 C=314

435 Γ A

V50 320 V56

15 x 40

290

14 N2 ϕ 21

314

10

2 N17 ϕ 10.0 C=329 (1cam)

Technical drawing of a rectangular plate. The drawing shows two views: a front view (left) and a side view (right). The front view has a height of 40 and a width of 15. The side view has a height of 34 and a width of 9. Below the side view, there is a note: 14 N2 ø5.0 C=97.

2 N18 ϕ 10.0 C=314

435 Γ A

V68 320 V73

15 x 40

290

14 N2 c/21

314

10

2 N17 ϕ 10.0 C=329 (1cam)

Technical drawing of a rectangular plate. The drawing shows two views: a front view (left) and a side view (right). The front view has a height of 40 and a width of 15. The side view has a height of 34 and a width of 9. A note below the side view reads: 14 N2 ø5.0 C=97.

22 2 N20 ø10.0 C=389 (1cam)

350

435

V75 L A

356

15 x 45

316

14 N3 c/23

10 2 N19 ø10.0 C=367 (1cam)

Diagram showing two rectangles. The first rectangle has a height of 45 and a width of 15. The second rectangle has a height of 39 and a width of 9.

ACO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	143	137	19591
	2	5.0	187	89	18139
	3	5.0	42	77	4484
CA50	4	5.0	19	77	1463
	5	5.0	256	147	706
	6	6.3	8	517	4138
	7	10.0	2	985	1970
	8	10.0	2	353	706
	9	10.0	2	324	648
	10	10.0	2	973	1946
	11	10.0	1	96	96
	12	10.0	1	279	837
	13	10.0	2	246	492
	14	10.0	2	327	654
	15	10.0	2	1107	2214
	16	10.0	2	188	376
	17	10.0	4	329	1318
	18	10.0	4	314	1256
	19	10.0	2	367	734
	20	10.0	2	365	730
	21	10.0	1	288	288
	22	10.0	2	368	736
	23	10.0	2	360	720
	24	10.0	2	315	630
	25	10.0	2	323	646
	26	10.0	2	363	726
	27	10.0	2	387	774
	28	10.0	1	346	346
	29	10.0	1	331	331
30	10.0	2	1099	2198	
31	10.0	1	104	104	
32	10.0	1	639	1278	
33	10.0	1	191	191	
34	10.0	1	191	191	
35	10.0	1	385	385	
36	10.0	1	107	107	
37	10.0	2	595	1190	
38	10.0	2	579	1158	
39	10.0	2	639	1278	
40	10.0	1	311	311	
41	10.0	1	111	111	
42	10.0	1	1021	1022	
43	10.0	1	762	762	
44	10.0	1	742	742	
45	10.0	1	722	722	
46	10.0	1	542	542	
47	10.0	1	1175	1175	
48	10.0	1	506	506	
49	10.0	2	1139	2278	
50	10.0	2	554	1108	
51	10.0	2	1147	2294	
52	10.0	2	140	280	
53	10.0	2	1116	2232	
54	10.0	2	185	370	
55	10.0	2	649	1298	
56	10.0	1	382	382	
57	10.0	2	595	1190	
58	10.0	1	115	115	
59	10.0	2	625	1250	
60	10.0	2	1114	2228	
61	10.0	2	122	244	
62	10.0	2	1116	2232	
63	10.0	2	214	428	
64	10.0	2	521	1042	
65	10.0	2	376	752	
66	10.0	1	247	247	
67	10.0	2	424	848	
68	12.5	2	521	1042	
69	12.5	2	327	654	
70	12.5	2	788	1576	
71	12.5	1	1056	1056	
72	12.5	1	203	203	
73	12.5	1	135	135	
74	12.5	1	254	254	
75	12.5	1	147	147	
76	12.5	1	678	1356	
77	12.5	1	907	1814	
78	12.5	2	574	1148	

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	41.4	4	12 m	10.1
	10.0	545.8	46	12 m	336.5
	12.5	108	9	12 m	104
	20.0	11.6	1	12 m	28.5
CA60	5.0	813.2	-	rolo (170 kg)	125.3

2 N23 ø10.0 C=390 (1cam)
351
22
435
A
V80
L A
356.6
15 x 45
316.6
14 N3 c/23
287
2 N21 ø10.0 C=288 (1cam)
351
2 N22 ø10.0 C=368 (1cam)
12
10

Diagram showing the dimensions of the rectangular plate. The plate has a height of 45 and a width of 15. A smaller rectangle is inscribed within it, with a height of 39 and a width of 9.

30
15
24
9
19 N4 ø5.0 C=77

2 N27 ϕ 10.0 C=387 (1cam)
22 348 122
435 A
V77 A V78 V8
354.4
15 x 45
314.4
14 N3 c/23
348 12
2 N26 ϕ 10.0 C=365 (1cam)
10

54

435

A

V45 P77

91.5 35 457

20 x 60 20 x 60

91.5 457

6N5c/17 27 N5 c/

60
20
54
14
67 N5 ø5.0 C=14.7

2 N76 ø12.5 C=616
54 616 (1cm)
435
V56 P80 A
88.5 40 458.5
20 x 60 20 x 60
88.5 458.5
6N5c/17 27 N5 c
10 96 198

Technical drawing of a rectangular plate. The left view shows a rectangle with a height of 60 and a width of 20. The right view shows a rectangle with a height of 54 and a width of 14. Below the right view, the text "32 N5 ø5.0 C=147" is present.

Technical drawing of a roof truss (Dachstuhl) showing various structural members and their dimensions. The drawing includes a side elevation and a plan view. Key components include rafters (N48, N46, N44, N43, N42, N45), purlins (V73, V77, V80, V82), and various beams (N49, N47, N40, N77, N41). Dimensions are given in millimeters (mm) and centimeters (cm). The drawing is labeled "Dachstuhl" and "Dachstuhl".

Side Elevation Details:

- Top chord: 2 N48 ø10.0 C=1199 (1cam) with a height of 1147 mm. A horizontal offset of 64 mm is shown.
- Second chord: 1 N46 ø10.0 C=1175 (1cam) with a height of 1174 mm. A horizontal offset of 64 mm is shown.
- Third chord: 1 N44 ø10.0 C=722 (1cam) with a height of 721 mm. A horizontal offset of 146 mm is shown.
- Fourth chord: 1 N43 ø10.0 C=742 (2cam) with a height of 741 mm. A horizontal offset of 166 mm is shown.
- Fifth chord: 1 N42 ø10.0 C=762 (2cam) with a height of 761 mm. A horizontal offset of 186 mm is shown.
- Bottom chord: 2 N45 ø10.0 c/21 C=271 (1ø1cam+1ø2cam) with a height of 150 mm.

Plan View Details:

- Left side: V73, P84, V77, P85, V80-A, P86, V82, P87.
- Dimensions: 91.5, 35, 466, 25, 481, 25, 466, 80, 91.5, 466, 28 N5 c/17, 481, 29 N5 c/17, 466, 28 N5 c/17, 310, 128, 503, 2.5.
- Bottom chord: 3 N28 ø10.0 C=107 (1cam) with a height of 99 mm. A horizontal offset of 5 mm is shown.
- Bottom chord: 2 N77 ø12.5 C=997 (1cam) with a height of 997 mm.
- Bottom chord: 2 N41 ø10.0 C=511 (1cam) with a height of 503 mm.

Technical drawing of a roof plan showing structural layout, dimensions, and material specifications.

Top Section:

- Left end: 34
- Top reinforcement: 2 N53 ø10.0 C=1116 (1cam)
- Right end: (1cam) 2 N54 ø10.0 C=185
- Internal dimensions: 1084, 48, 168, 119
- Internal reinforcement: 1 N52 ø10.0 C=189 (2cam)
- Internal dimensions: 188, 95
- Section line: A-A

Bottom Section:

- Left end: 435
- Reinforcement: 4N2ø21
- Dimensions: 101.5, 15 x 40, 78.5
- Reinforcement: 23 N2 c/21
- Dimensions: 500, 480
- Reinforcement: 24 N2 c/21
- Dimensions: 507, 15 x 40, 487, 78.5
- Reinforcement: 4N2ø21
- Dimensions: 101.5, 15 x 40
- Right end: V50

Bottom Section (Continued):

- Left end: 10
- Top reinforcement: 2 N50 ø10.0 C=1147 (1cam)
- Internal dimensions: 1139
- Right end: 132, 10
- Bottom reinforcement: 2 N51 ø10.0 C=140 (1cam)

55 N2 ø5.0 C=97

40
15
34
9
28 N2 ø5.0 C=97

2 N60 ø10.0 C=625 (1cam)

25 580 25

N58 ø10.0 C=115 (1cam) (1cam) 1 N59 ø10.0 C= 92 125

Γ A

435

V63 L A V66

586

20 x 60

551

33 N5 ø17

86 381

1 N56 ø10.0 C=382 (1cam)

580

2 N57 ø10.0 C=595 (1cam)

10 10

19

2 N63 ø10.0 C=1116 (1cam)

1cam

2 N64 ø10.0 C=214

1099

435

62

182

34

A

V73

V75

A

V78

V81

V82

101.5

503.5

503.5

116.5

15 x 40

15 x 40

15 x 40

15 x 40

76.5

486

486

106.5

4N2c/21

24 N2 c/21

24 N2 c/21

6N2c/21

10

1106

2 N61 ø10.0 C=1114 (1cam)

114

10

2 N62 ø10.0 C=122

[illegible]

40

15

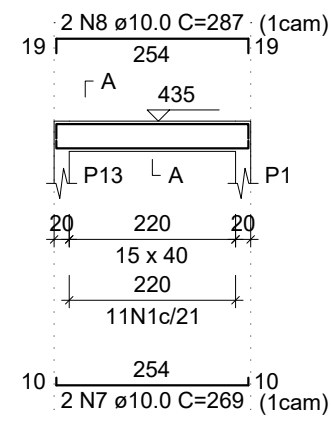
34

9

18 N2 ø5.0 C=97

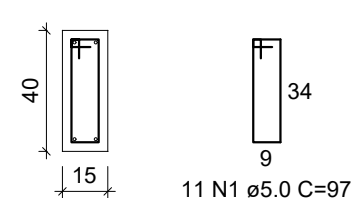
V44

ESC 1:100



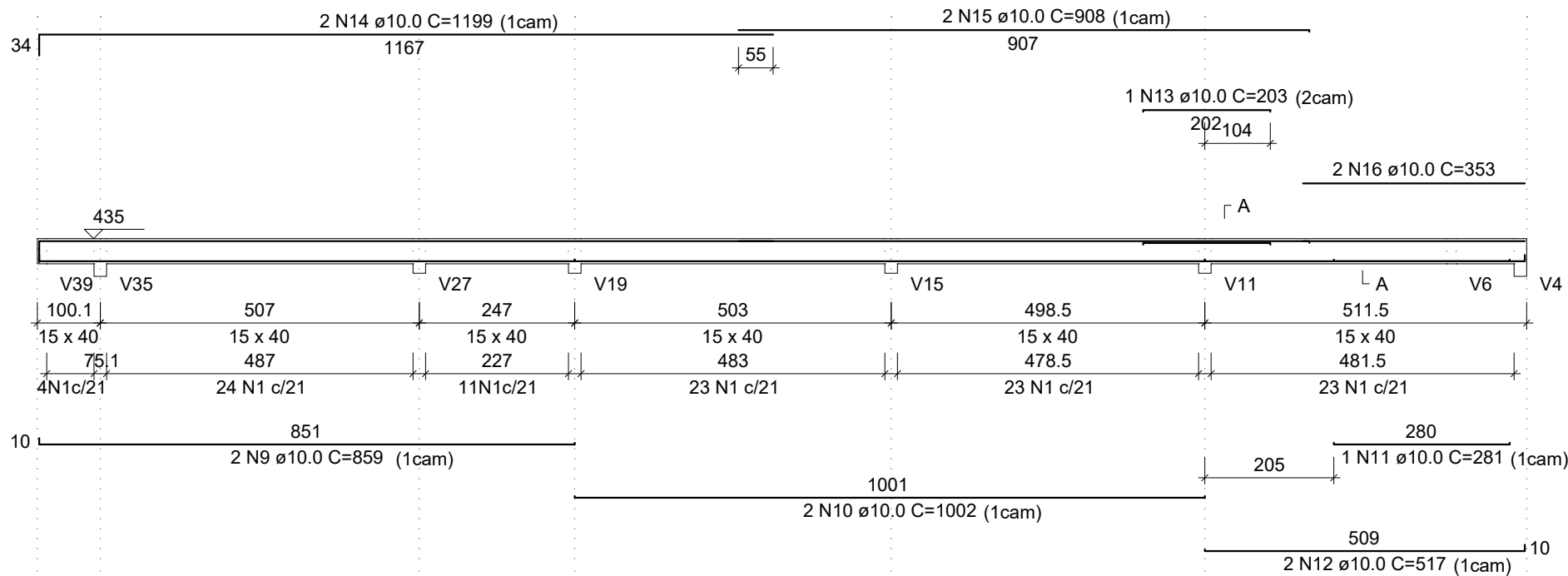
SEÇÃO A-A

ESC 1:25



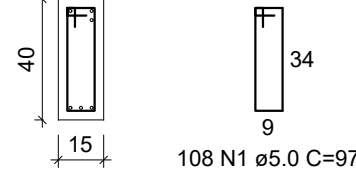
V45

ESC 1:100



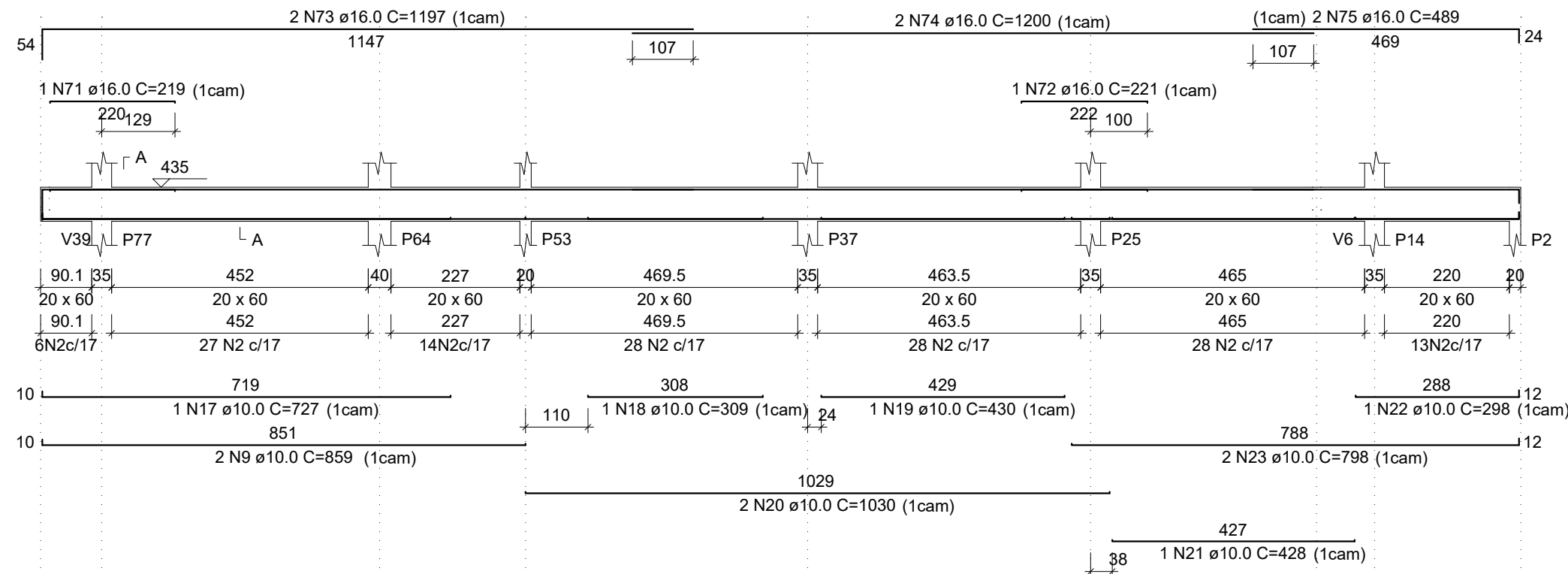
SEÇÃO A-A

ESC 1:25



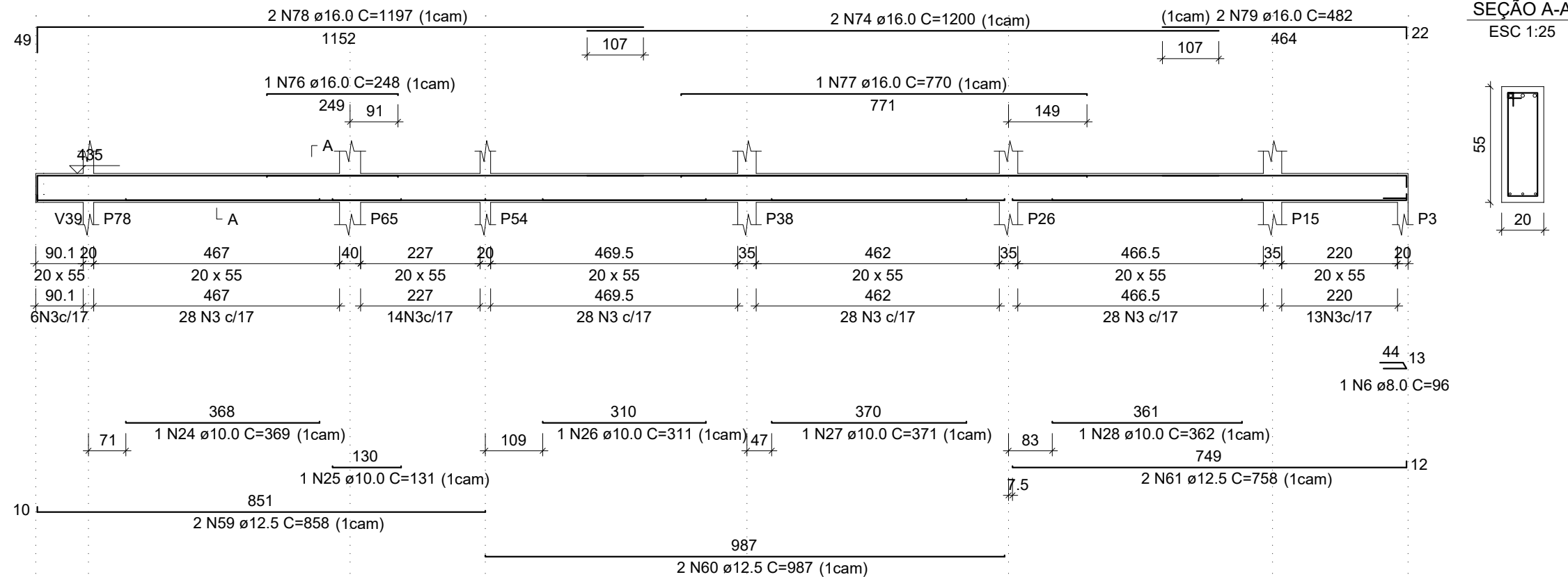
V46

ESC 1:100



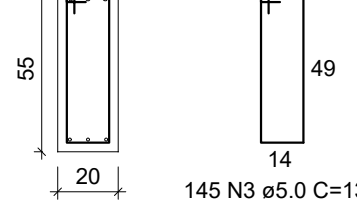
V47

ESC 1:100



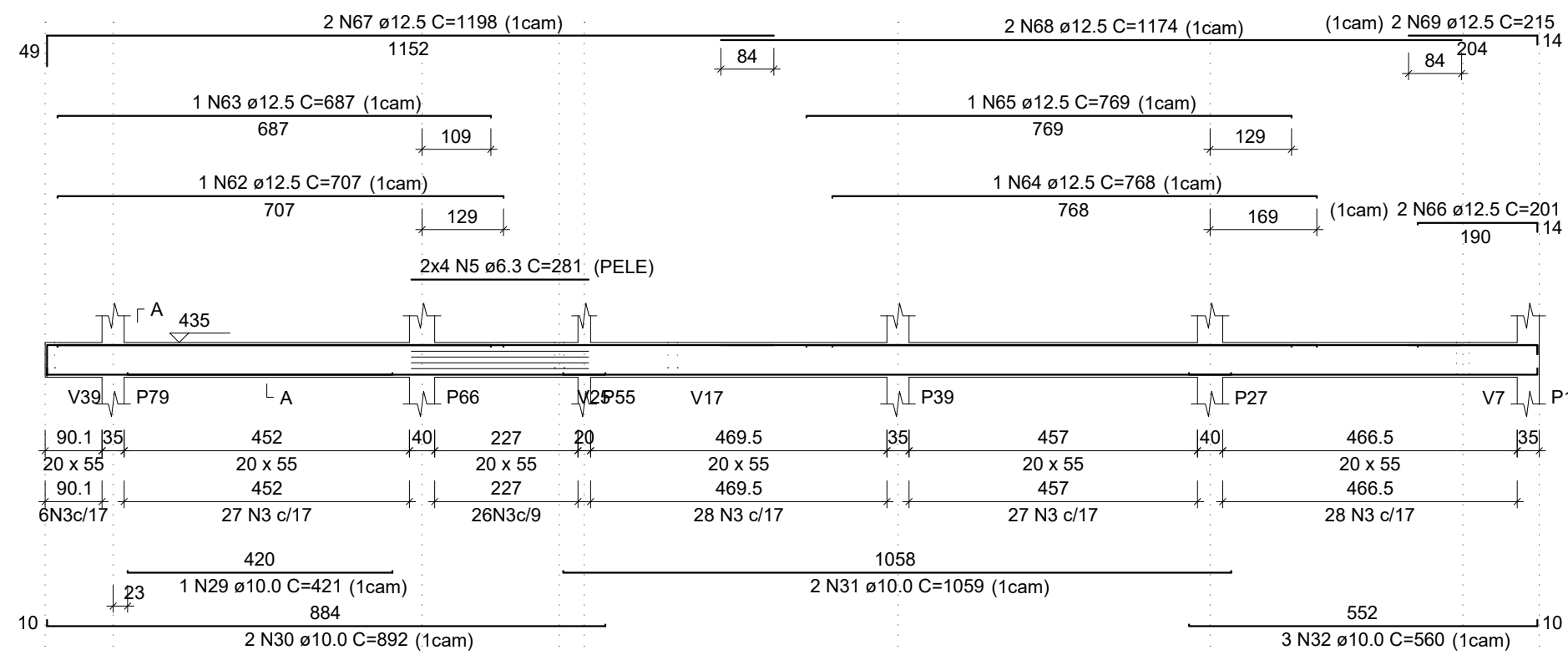
SEÇÃO A-A

ESC 1:25



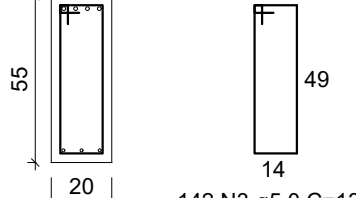
V48

ESC 1:100



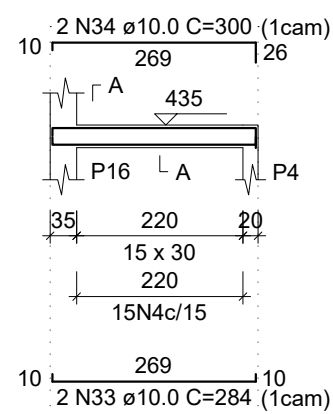
SEÇÃO A-A

ESC 1:25



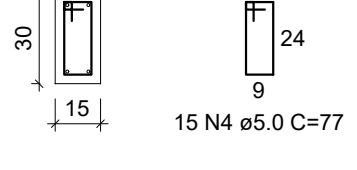
V49

ESC 1:100



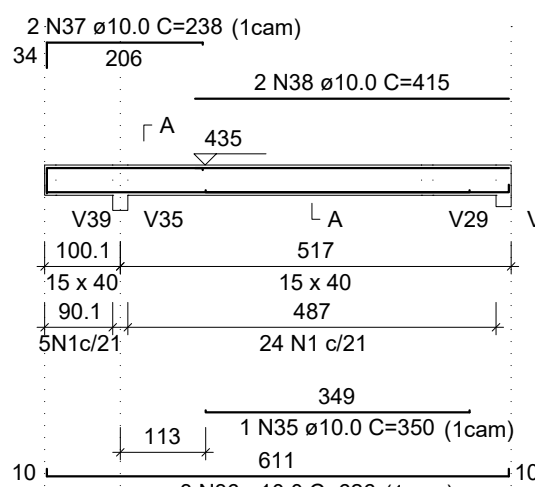
SEÇÃO A-A

ESC 1:25



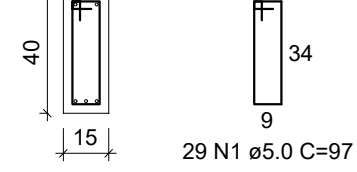
V50

ESC 1:100



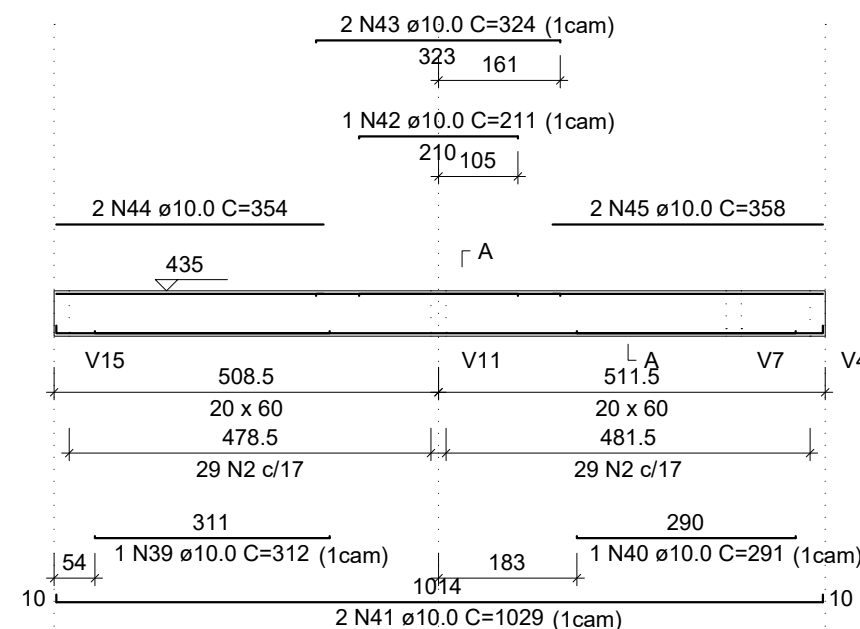
SEÇÃO A-A

ESC 1:25



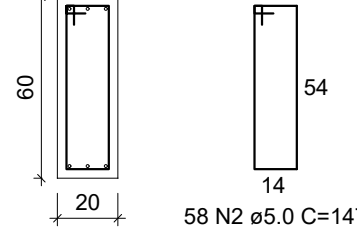
V51

ESC 1:100



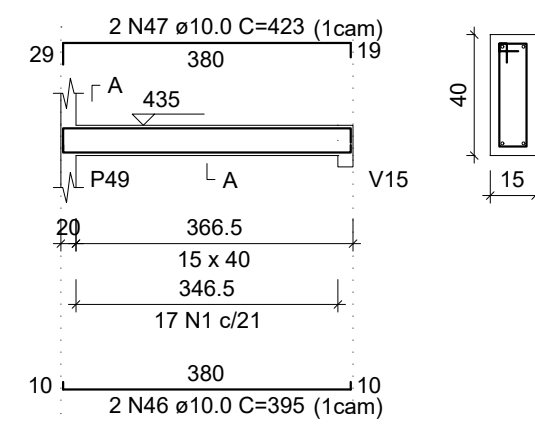
SEÇÃO A-A

ESC 1:25



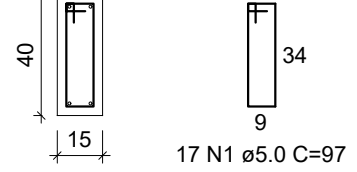
V52

ESC 1:100



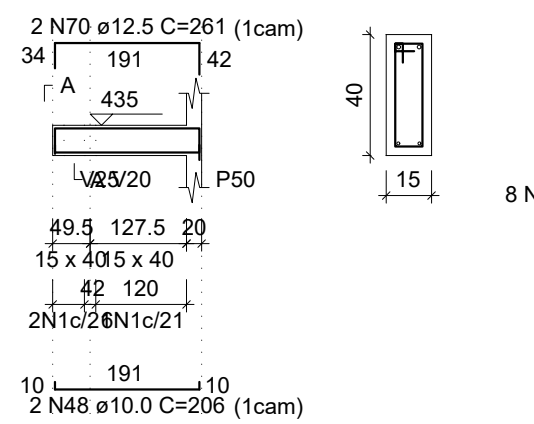
SEÇÃO A-A

ESC 1:25



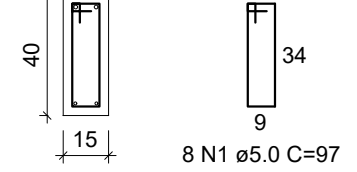
V53

ESC 1:100



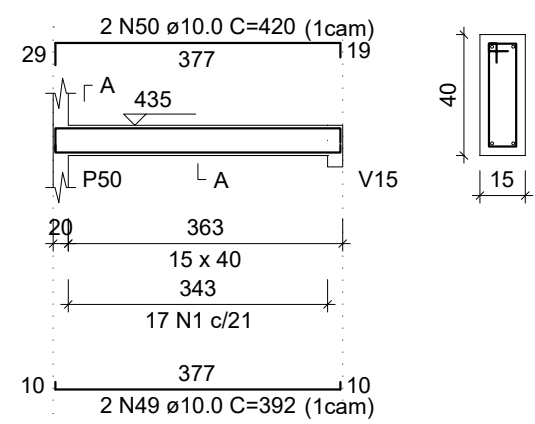
SEÇÃO A-A

ESC 1:25



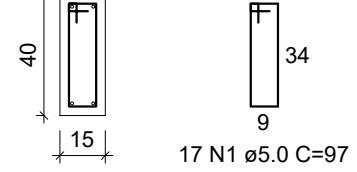
V54

ESC 1:100



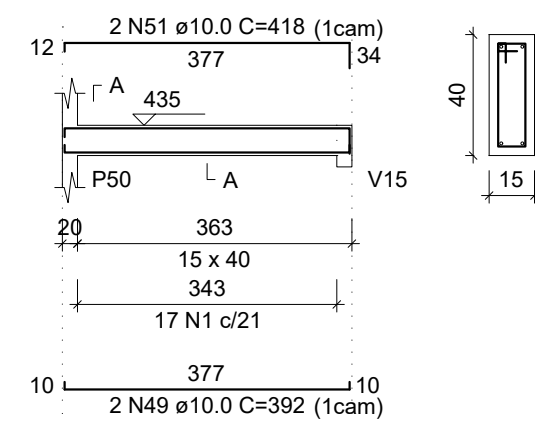
SEÇÃO A-A

ESC 1:25



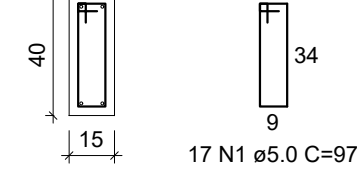
V55

ESC 1:100



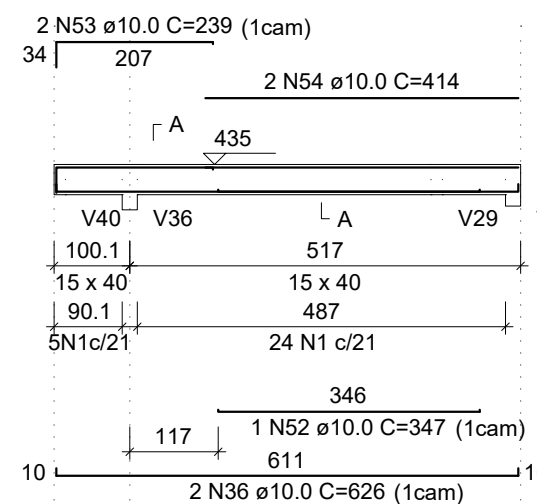
SEÇÃO A-A

ESC 1:25



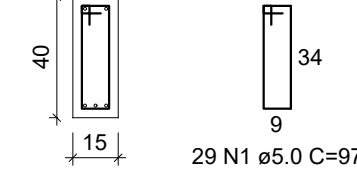
V56

ESC 1:100



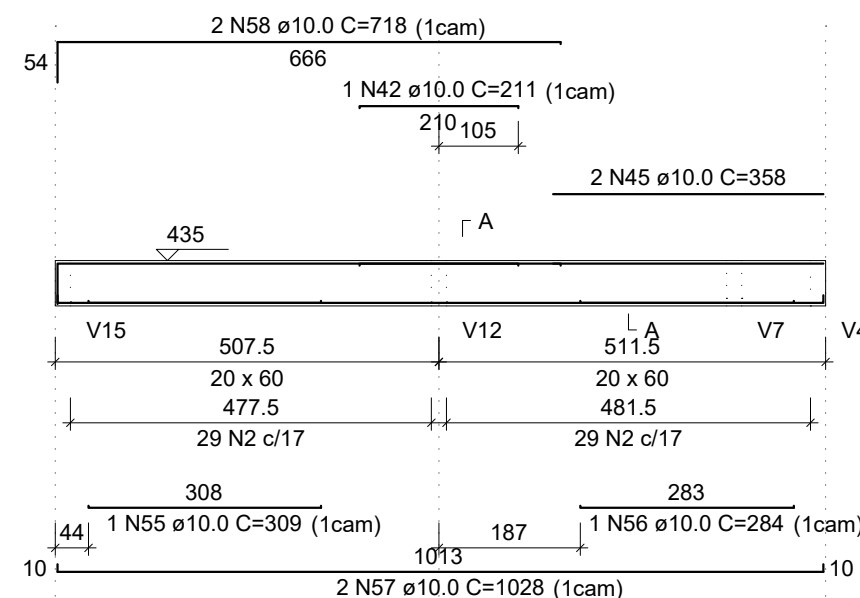
SEÇÃO A-A

ESC 1:25



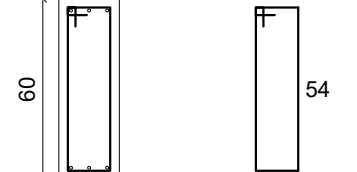
V57

ESC 1:100



SEÇÃO A-A

ESC 1:25



RELAÇÃO DO AÇO

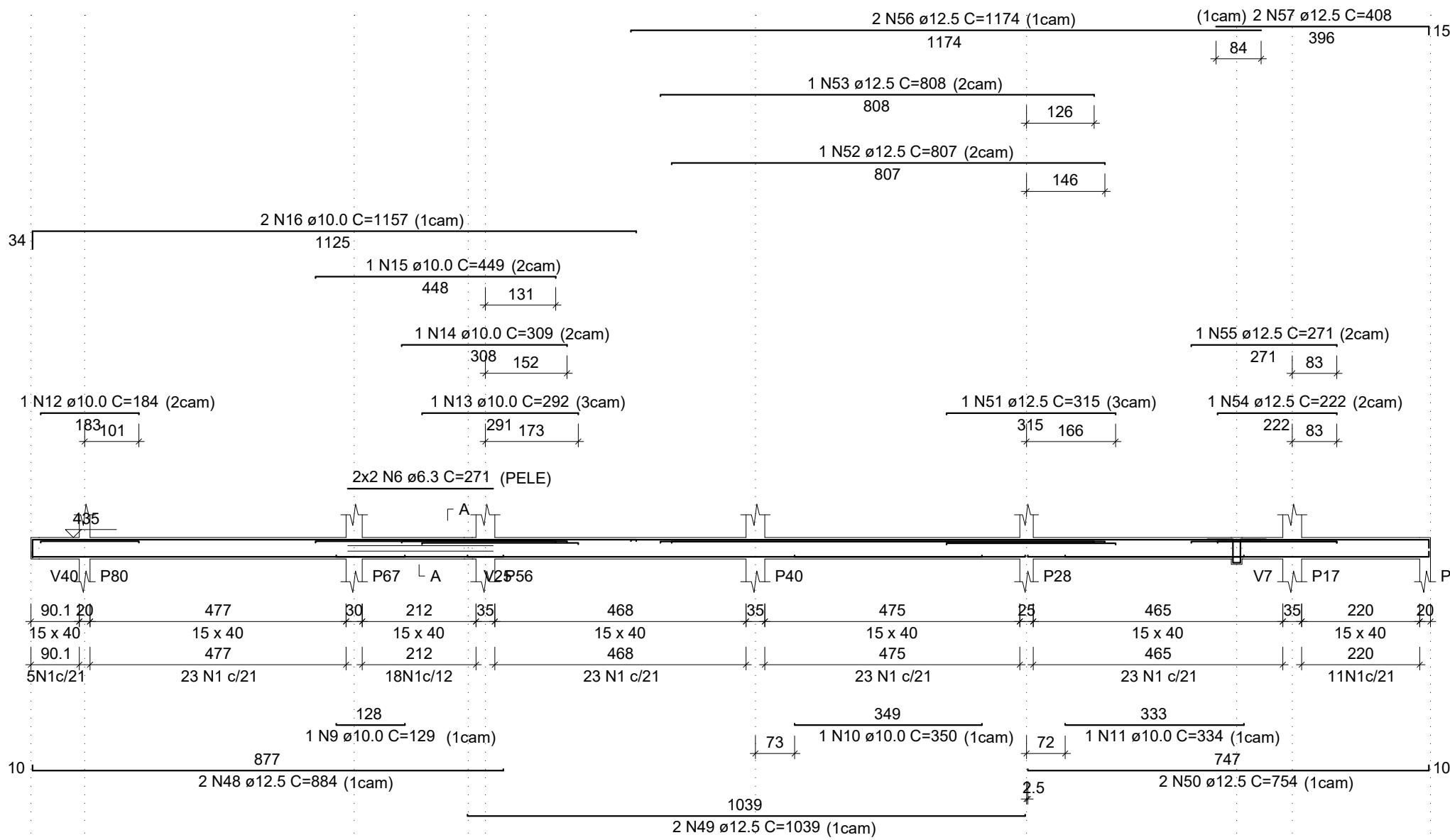
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
V44	1	5.0	236	97	22892
V47	2	5.0	260	147	38220
V50	3	5.0	287	137	39319
V53	4	5.0	15	77	1155
V56	5	6.3	8	281	2248
	6	8.0	1	96	96
	7	10.0	2	269	538
	8	10.0	2	287	574
	9	10.0	4	859	3436
	10	10.0	2	1002	2004
	11	10.0	1	281	281
	12	10.0	2	517	1034
	13	10.0	1	203	203
	14	10.0	2	1199	2398
	15	10.0	2	898	1816
	16	10.0	2	353	706
	17	10.0	1	727	727
	18	10.0	1	309	309
	19	10.0	1	430	430
	20	10.0	2	1030	2060
	21	10.0	1	428	428
	22	10.0	1	298	298
	23	10.0	2	798	1596
	24	10.0	1	369	369
	25	10.0	1	131	131
	26	10.0	1	311	311
	27	10.0	1	371	371
	28	10.0	1	362	362
	29	10.0	1	421	421
	30	10.0	2	892	1784
	31	10.0	2	1059	2118
	32	10.0	3	560	1680
	33	10.0	2	284	568
	34	10.0	2	300	600
	35	10.0	1	350	350
	36	10.0	5	626	3130
	37	10.0	2	238	476
	38	10.0	2	415	830
	39	10.0	1	312	312
	40	10.0	1	291	291
	41	10.0	2	1029	2058
	42	10.0	1	211	211
	43	10.0	2	324	648
	44	10.0	2	354	708
	45	10.0	1	358	358
	46	10.0	2	395	790
	47	10.0	2	423	846
	48	10.0	4	206	824
	49	10.0	4	392	1568
	50	10.0	2	420	840
	51	10.0	2	418	836
	52	10.0	1	347	347
	53	10.0	2	239	478
	54	10.0	2	414	828
	55	10.0	1	309	309
	56	10.0	1	284	284
	57	10.0	2	1028	2056
	58	10.0	2	718	1436
	59	12.5	2	868	1736
	60	12.5	2	987	1974
	61	12.5	2	758	1516
	62	12.5	1	707	707
	63	12.5	1	687	687
	64	12.5	1	768	768
	65	12.5	1	769	769
	66	12.5	2	201	402
	67	12.5	2	1198	2396
	68	12.5	2	1174	2348
	69	12.5	2	215	430
	70	12.5	2	261	522
	71	16.0	1	219	219
	72	16.0	1	221	221
	73	16.0	2	1197	2394
	74	16.0	4	1200	4800
	75	16.0	2	489	978
	76	16.0	1	248	248
	77	16.0	1	770	770
	78	16.0	2	1197	2394
	79	16.0	2	482	964

RESUMO DO AÇO

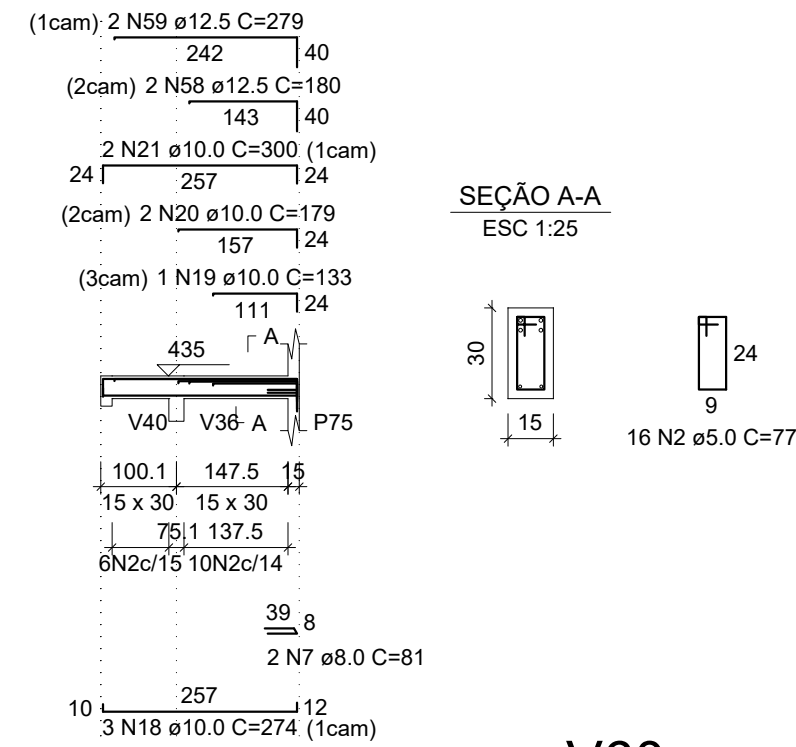
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	22.5	2	12 m	5.5
	8.0	1	1	12 m	0.4
	10.0	492.36	41	12 m	299.7
	12.5	142.3	12	12 m	137.1
	16.0	129.9	11	12 m	205
	5.0	1015.9	-	rolo (170 kg)	156.6
PESO TOTAL (kg)					
CA50		647.7			
CA60		156.6			

Volume de concreto (C-30) = 14.30 m³
Área de forma = 181.28 m²

V58
ESC 1:100

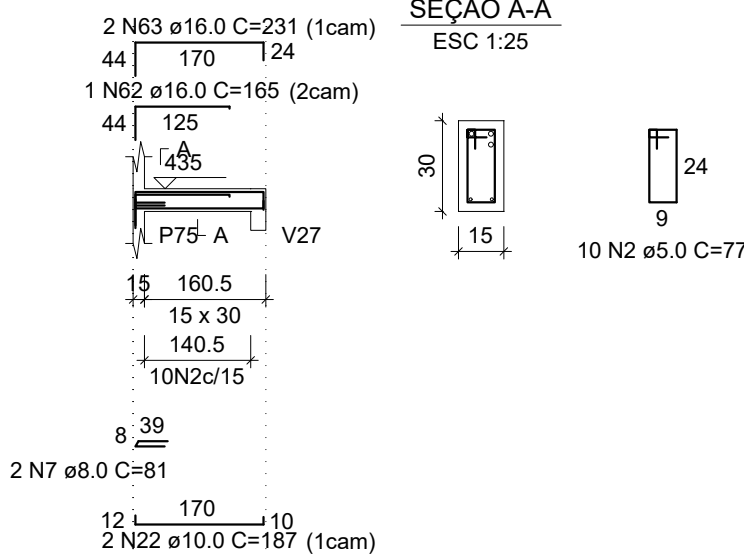


V59
ESC 1:100



SEÇÃO A-A
ESC 1:25

V60
ESC 1:100



RELAÇÃO DO AÇO

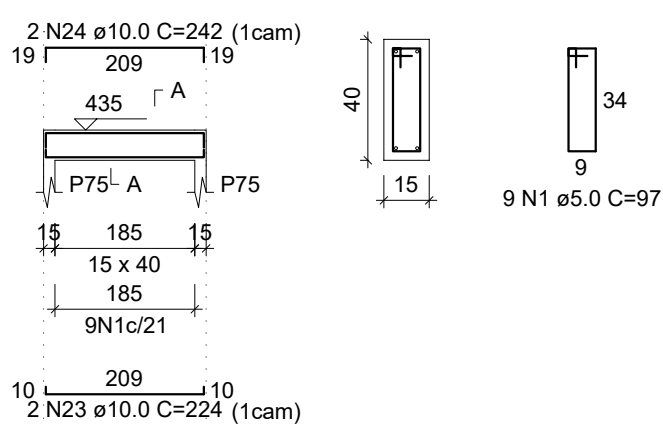
AÇO	N	DIAM (mm)	QUANT	C UNIT (cm)	C TOTAL (cm)
CA60	1	5.0	151	97	14647
	2	5.0	26	77	2002
	3	5.0	294	137	40278
	4	5.0	11	117	1287
	5	5.0	20	127	2540
CA50	6	6.3	4	271	1084
	7	8.0	5	81	405
	8	8.0	2	96	192
	9	10.0	1	129	129
	10	10.0	1	350	350
	11	10.0	1	334	334
	12	10.0	1	184	184
	13	10.0	1	232	232
	14	10.0	1	309	309
	15	10.0	1	449	449
	16	10.0	2	1157	2314
	17	10.0	1	189	189
	18	10.0	3	274	822
	19	10.0	1	133	133
	20	10.0	2	179	358
	21	10.0	2	300	600
	22	10.0	2	187	374
	23	10.0	2	224	448
	24	10.0	2	242	484
	25	10.0	2	859	1718
	26	10.0	4	1002	4008
	27	10.0	4	759	3036
	28	10.0	1	191	191
	29	10.0	1	232	232
	30	10.0	1	217	217
	31	10.0	1	1079	1079
	32	10.0	2	188	376
	33	10.0	4	1159	4796
	34	10.0	4	1200	4800
	35	10.0	2	415	830
	36	10.0	2	859	1718
	37	10.0	1	207	207
	38	10.0	1	204	204
	39	10.0	1	660	660
	40	10.0	1	685	685
	41	10.0	1	1088	1088
	42	10.0	2	415	830
	43	10.0	2	149	298
	44	10.0	2	280	560
	45	10.0	2	326	652
	46	10.0	2	382	764
	47	10.0	2	142	284
	48	12.5	2	884	1768
	49	12.5	2	1039	2078
	50	12.5	2	754	1508
	51	12.5	1	315	315
	52	12.5	1	807	807
	53	12.5	1	808	808
	54	12.5	1	222	222
	55	12.5	1	271	271
	56	12.5	2	1174	2348
	57	12.5	2	408	816
	58	12.5	2	180	360
	59	12.5	2	279	558
	60	12.5	1	273	273
	61	12.5	2	277	554
	62	16.0	1	165	165
	63	16.0	2	231	462
	64	16.0	2	390	780
	65	22.2	2	366	732

RESUMO DO AÇO

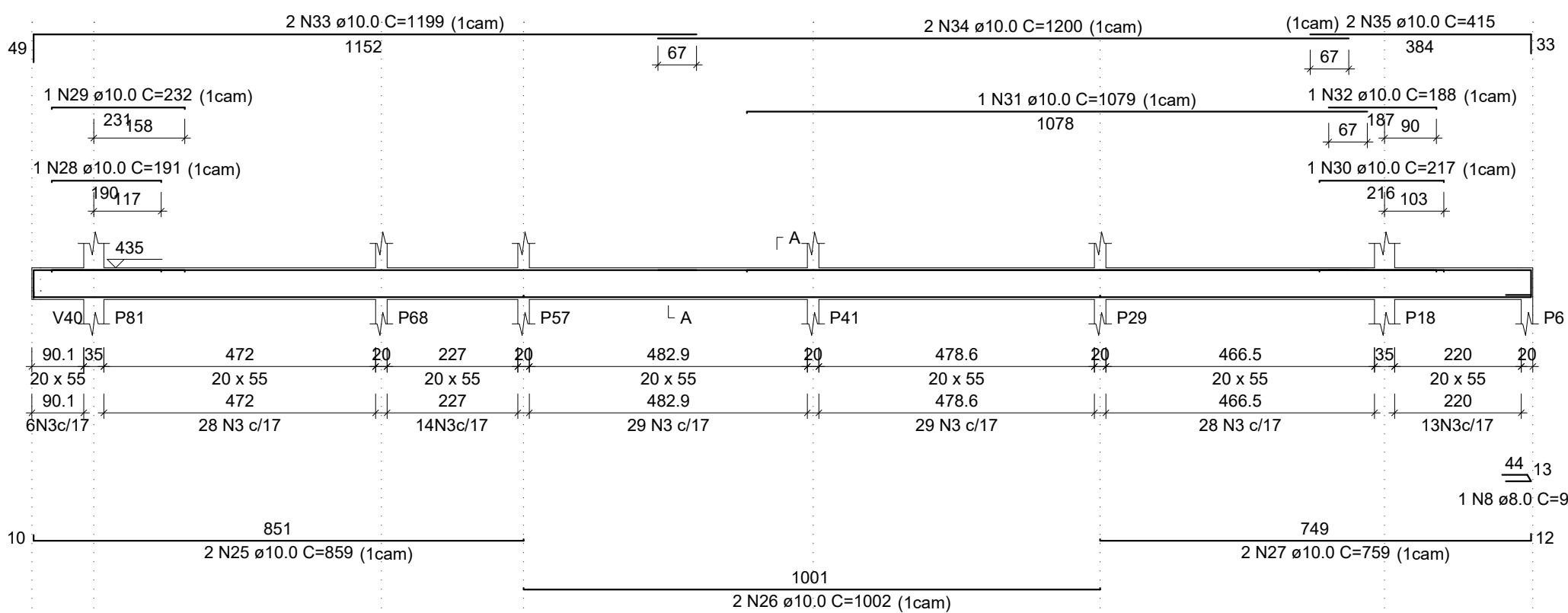
AÇO	DIAM (mm)	C TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	10.8	1	12 m	2.7
	8.0	6	1	12 m	2.4
	10.0	369.8	31	12 m	228
	12.5	128.9	11	12 m	122.2
	16.0	14.1	2	12 m	22.2
	20.0	7.3	1	12 m	22.2
CA60	5.0	607.5	-	rolo (170 kg)	93.6
PESO TOTAL (kg)					
CA50	399.7				
CA60	93.6				

Volume de concreto (C-30) = 8.32 m³
Área de forma = 108.58 m²

V61
ESC 1:100

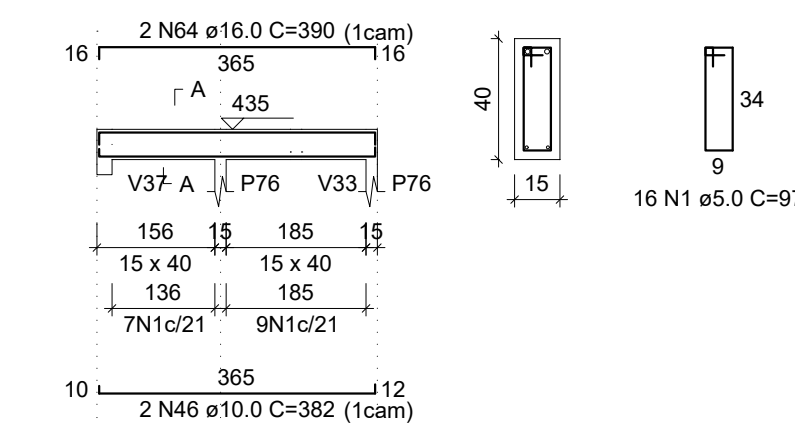


V62
ESC 1:100



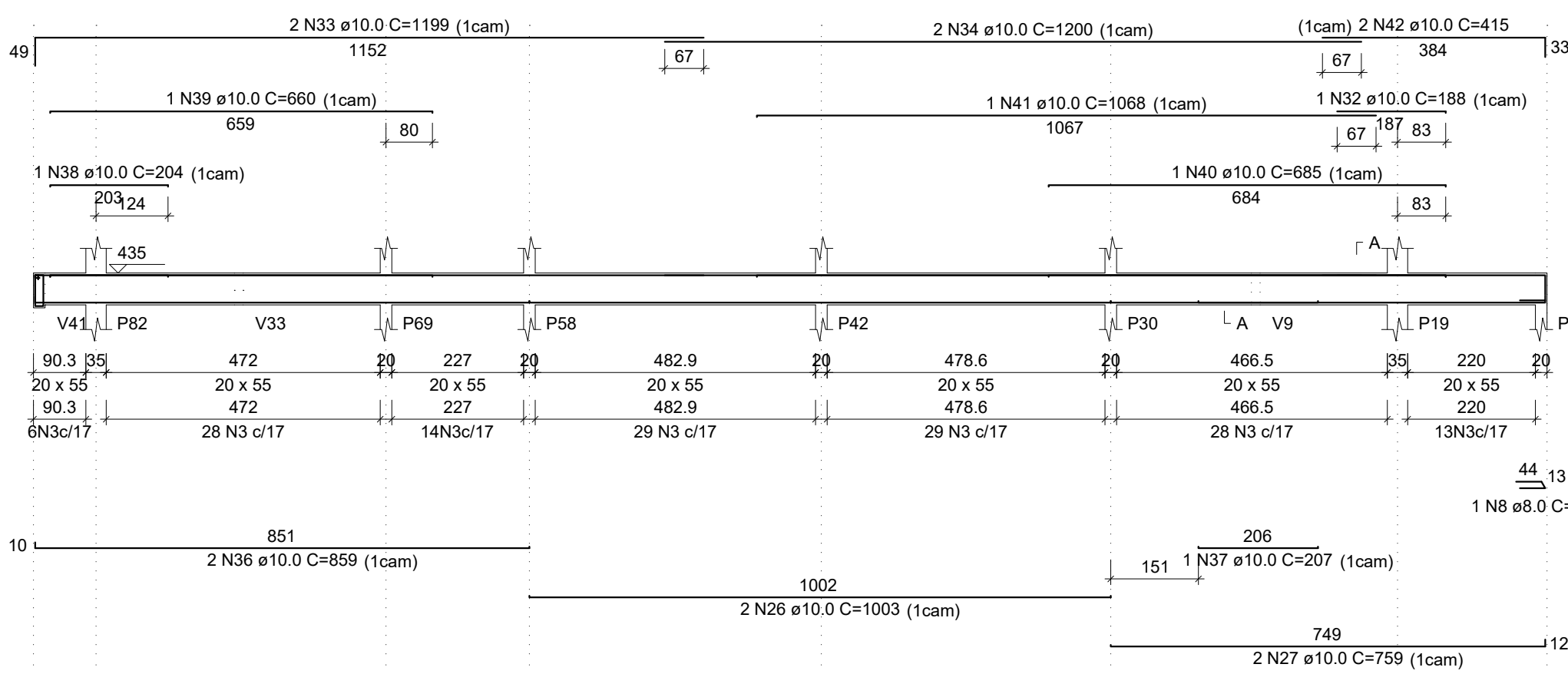
SEÇÃO A-A
ESC 1:25

V65
ESC 1:100



SEÇÃO A-A
ESC 1:25

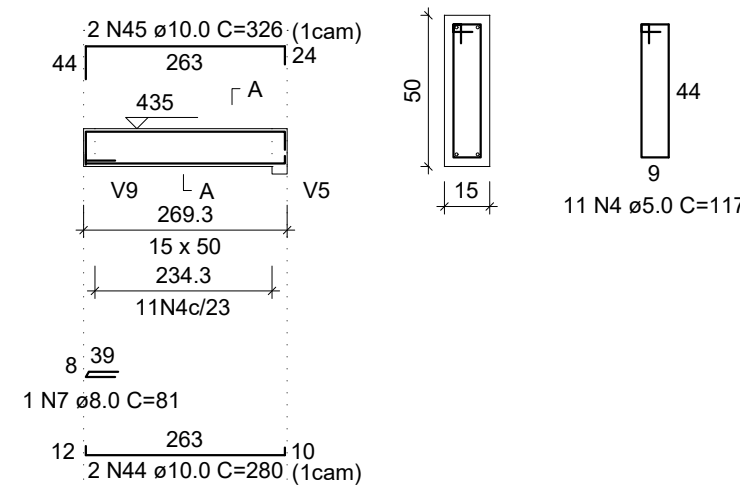
V63
ESC 1:100



SEÇÃO A-A
ESC 1:25

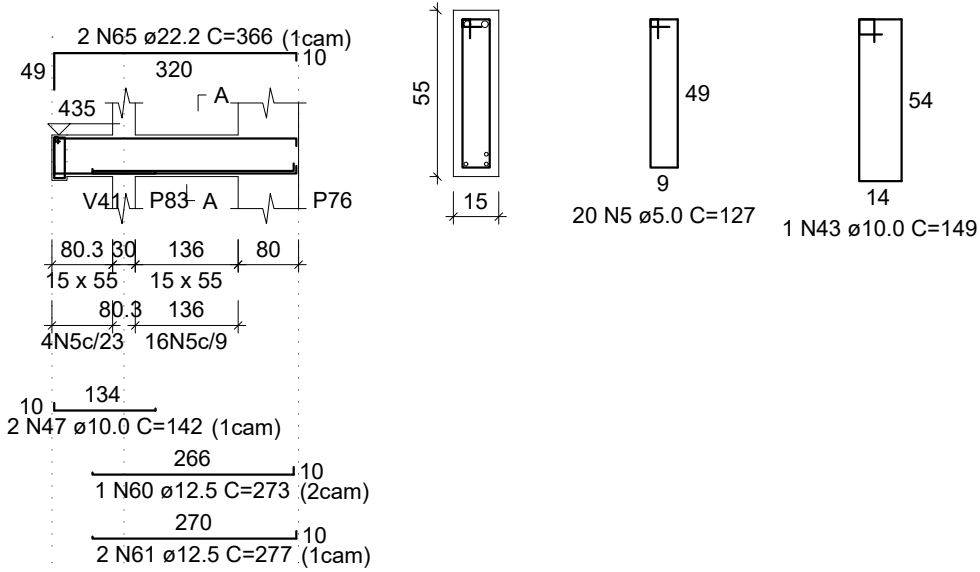
SUSPENSÃO V41
ESC 1:25

V64
ESC 1:100



SEÇÃO A-A
ESC 1:25

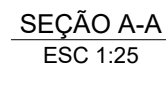
V66
ESC 1:100



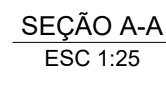
SEÇÃO A-A
ESC 1:25

SUSPENSÃO V41
ESC 1:25

ESC 1:100

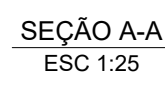


ESC 1:10

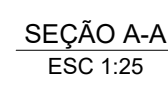


VOC
ESC: 1:100

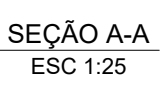
ESC 1:100



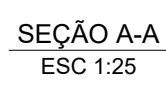
ESC 1:100



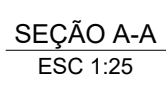
ESC 1:10M



ESC 1:10



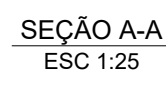
ESC 1:10



ESC 1:10



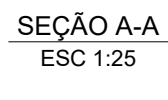
ESC 1:100



ESC 1:100



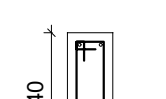
ESC 1:100



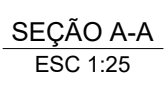
ESC 1:25



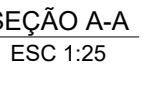
ESC 1:25



V O J
ESC 1:100



ESC: 1:100

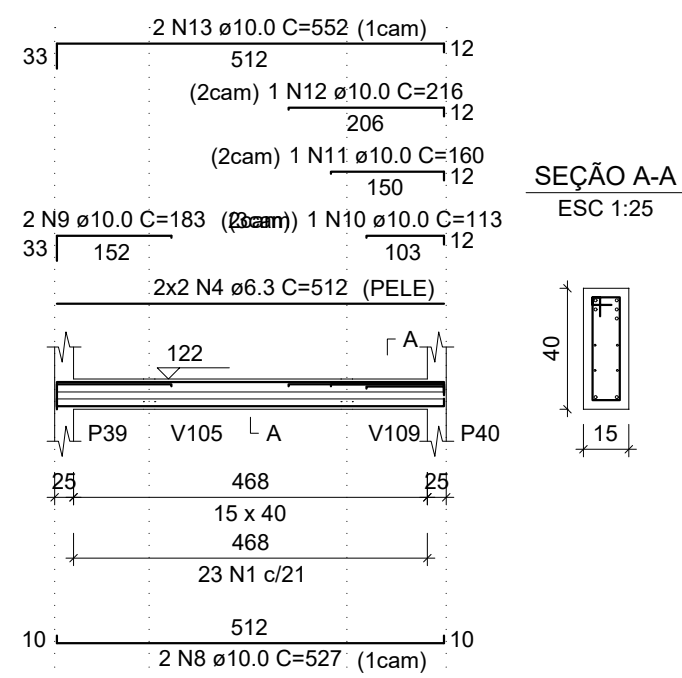


AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	24.3	3	12 m	2.5
	8.0	6.4	1	12 m	6
	10.0	716.4	60	12 m	441.7
	12.5	13.3	2	12 m	12.8
	20.0	11.2	1	12 m	27.7
CA60	5.0	717.7	-	rolo (170 kg)	110.6

Volume de concreto (C-30) = 10.08 m³
Área de forma = 128.49 m²

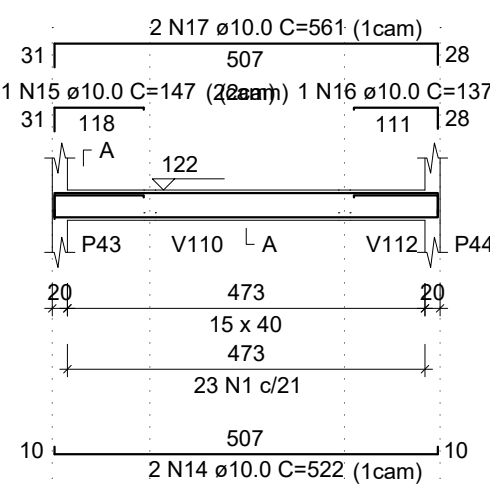
V96

ESC 1:100



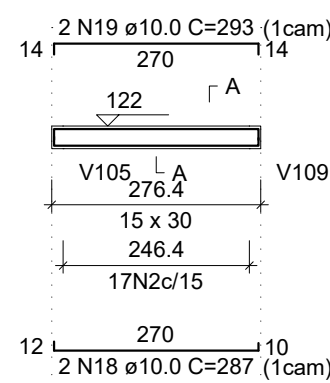
V97

ESC 1:100



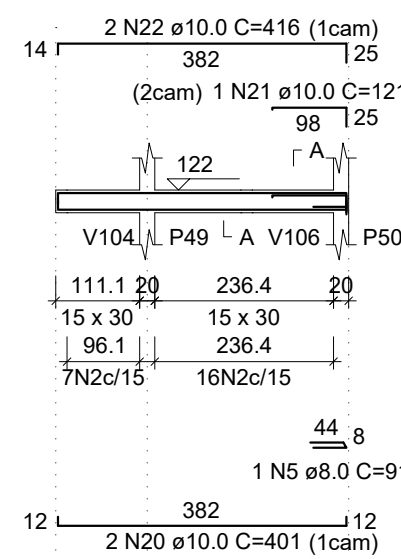
V98

ESC 1:100



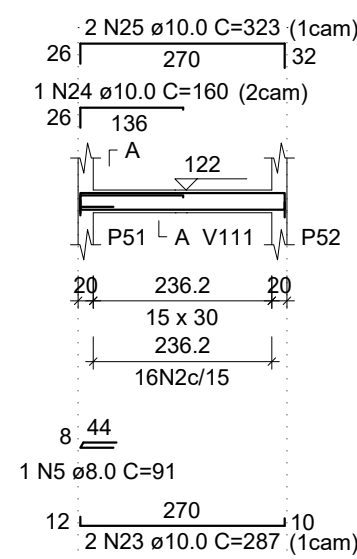
V99

ESC 1:100



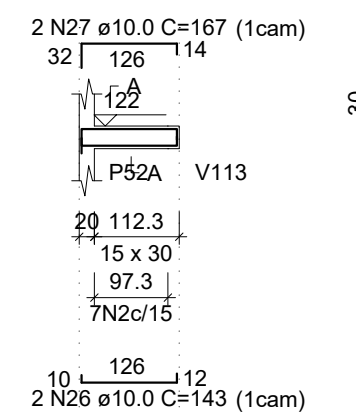
V100

ESC 1:100



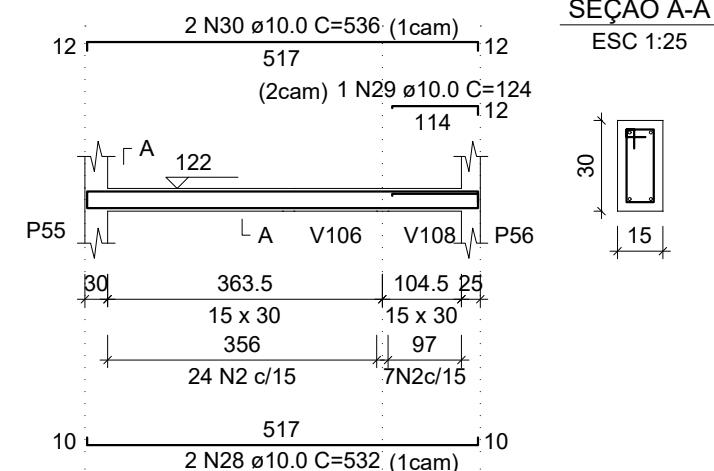
V101

ESC 1:100



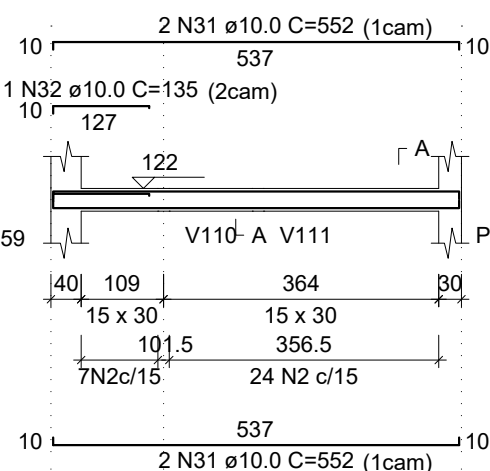
V102

ESC 1:100



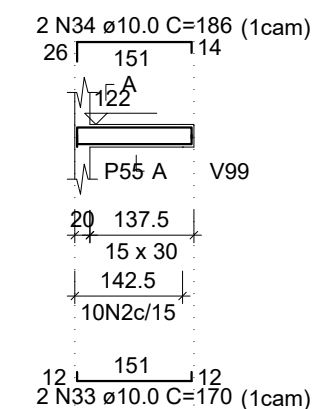
V103

ESC 1:100



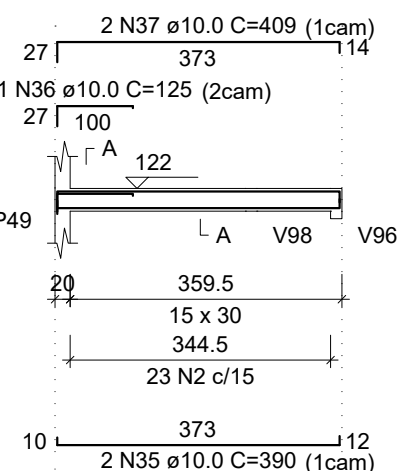
V104

ESC 1:100



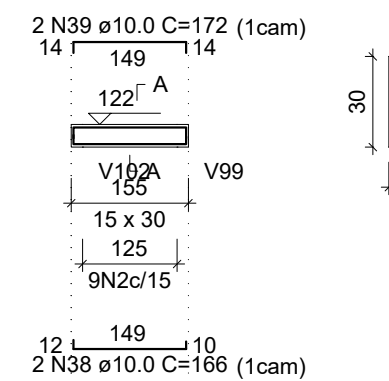
V105

ESC 1:100



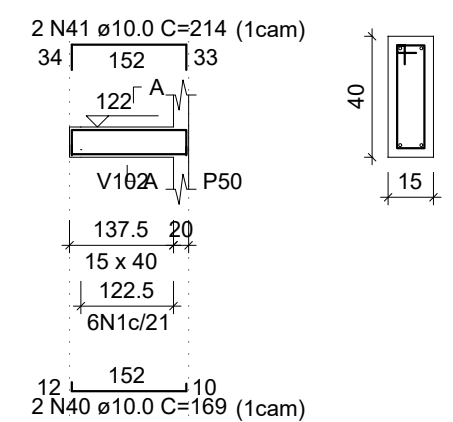
V106

ESC 1:100



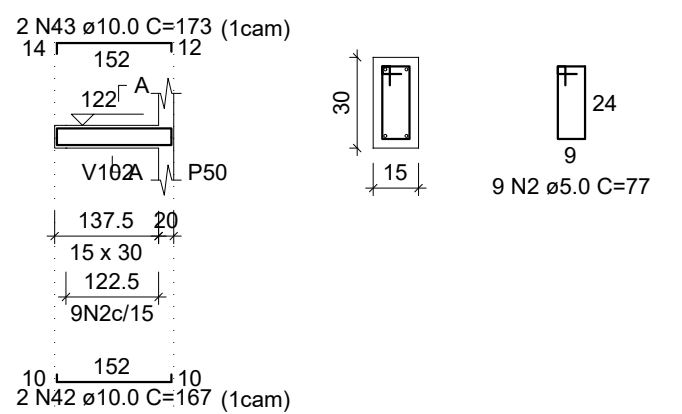
V107

ESC 1:100



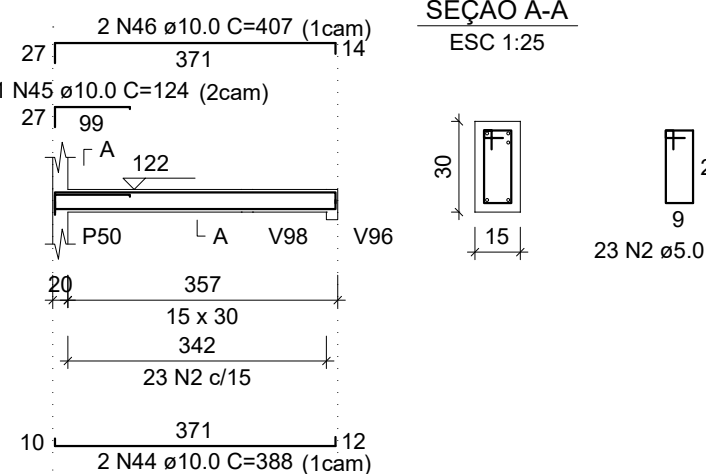
V108

ESC 1:100



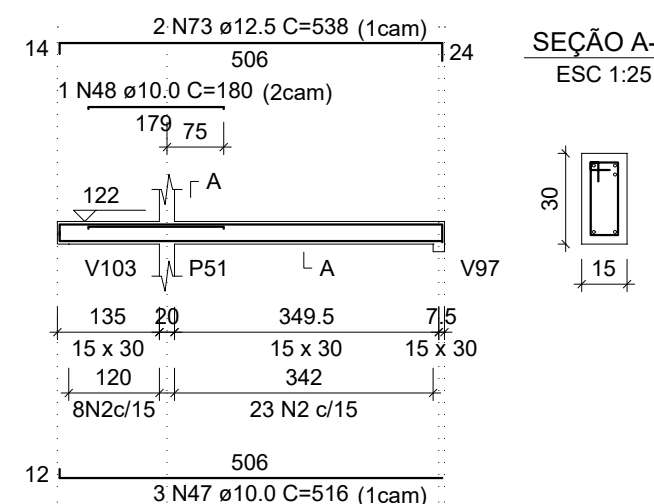
V109

ESC 1:100



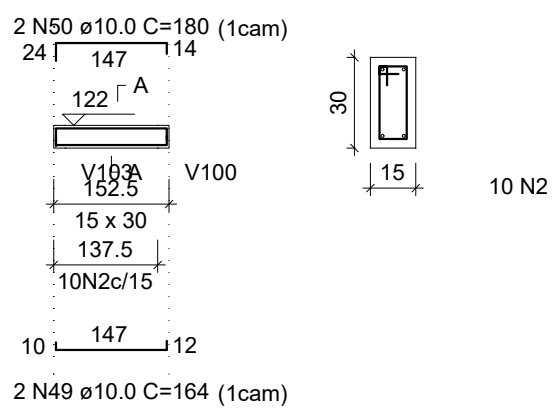
V110

ESC 1:100



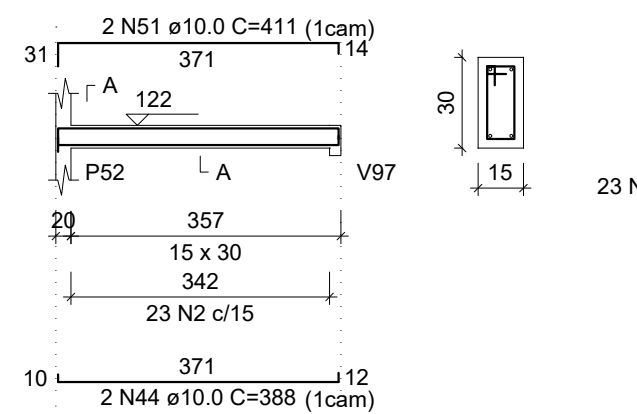
V111

ESC 1:100



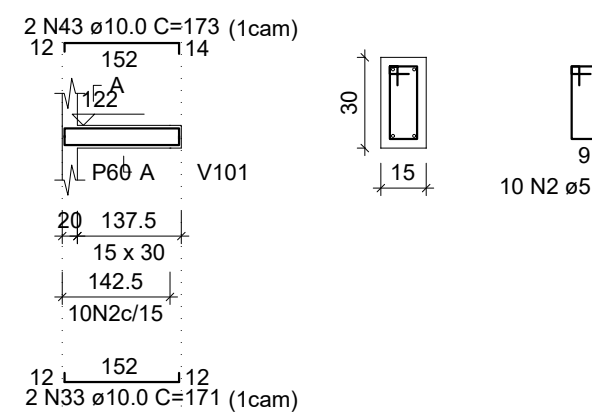
V112

ESC 1:100



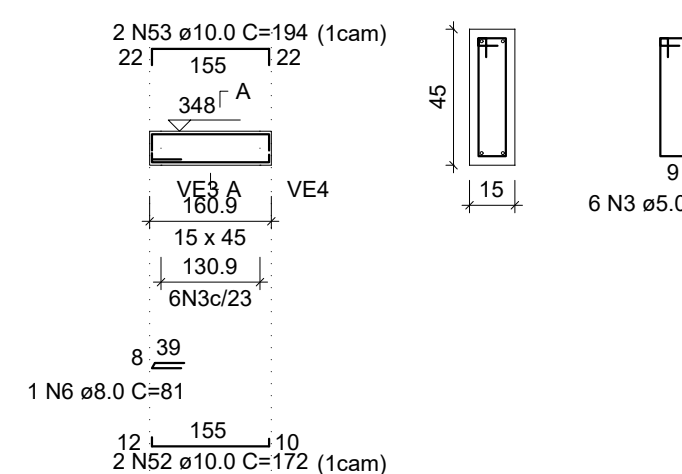
V113

ESC 1:100



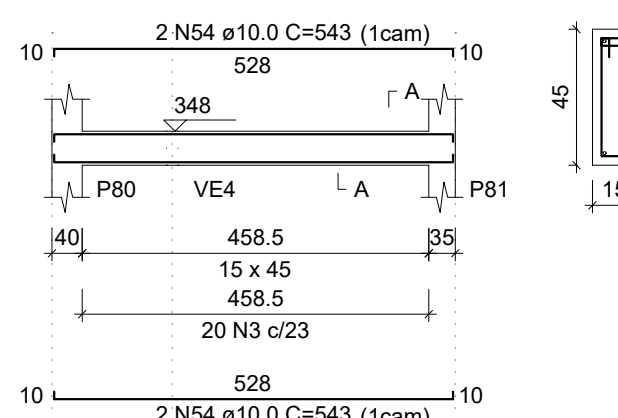
VE1

ESC 1:100



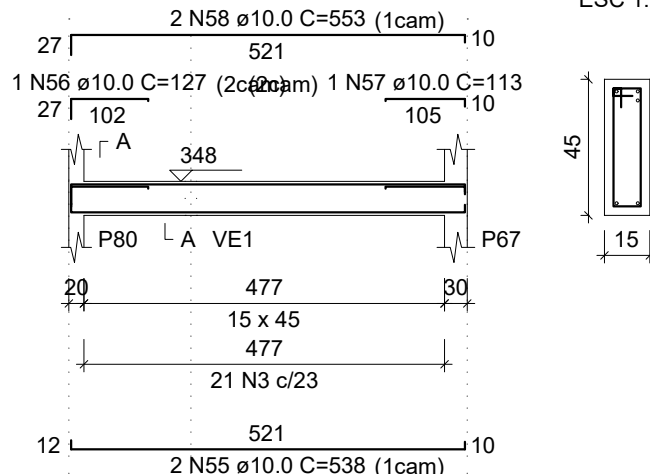
VE2

ESC 1:100



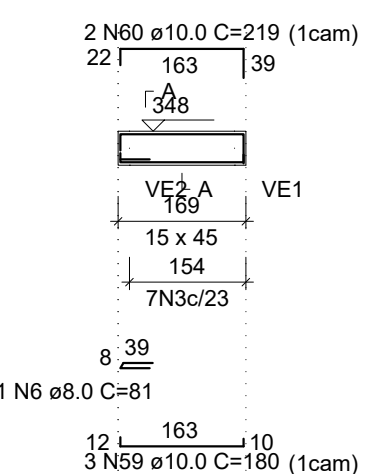
VE3

ESC 1:100



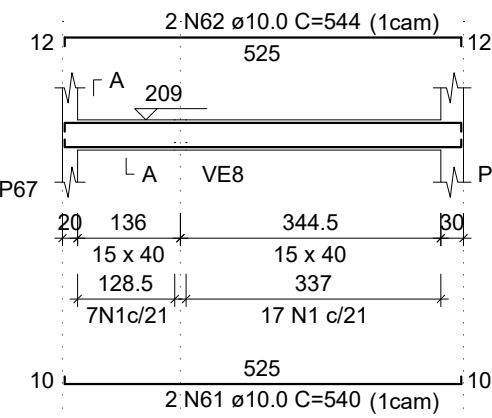
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ESC 1:100



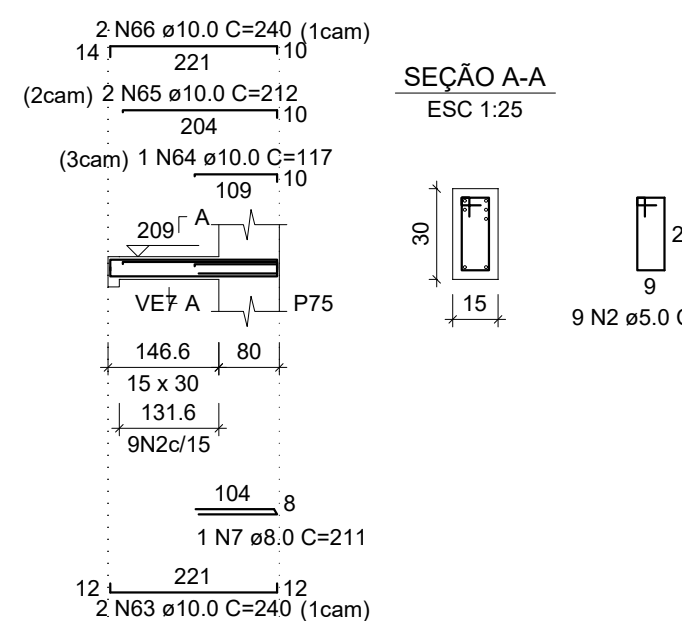
VE5

ESC 1:100



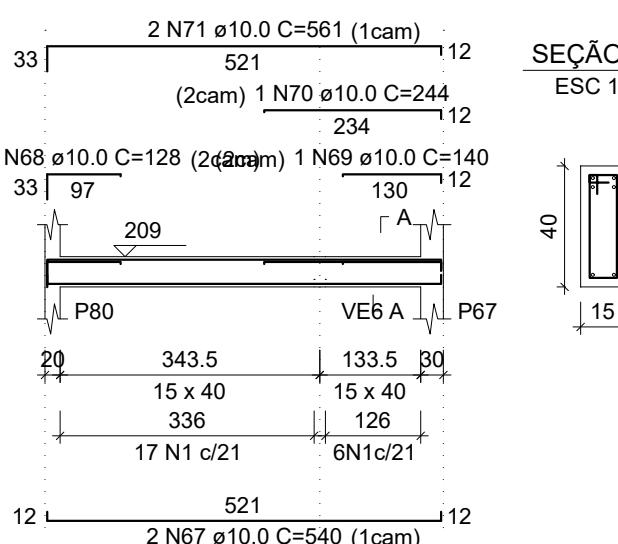
VE6

ESC 1:100



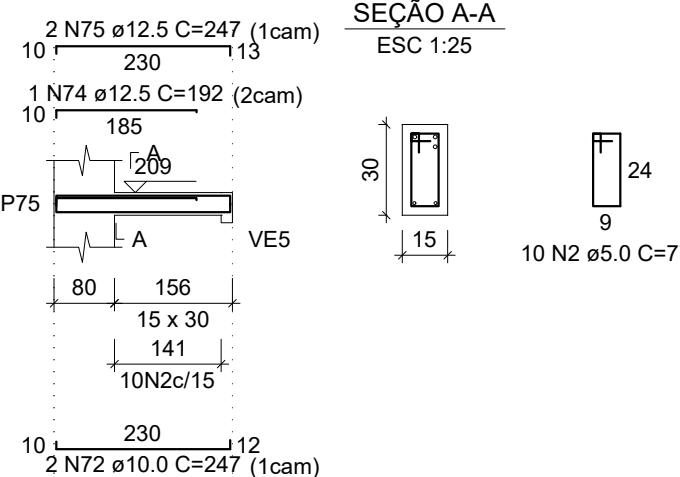
VE7

ESC 1:100



VE8

ESC 1:100



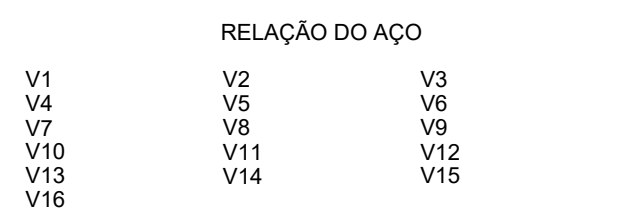
RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
V96	1	5.0	99	97	9603
V99	2	5.0	292	77	22484
V102	3	5.0	54	107	5778
V105	4	6.3	4	512	2048
V108	5	8.0	2	91	182
V111	6	8.0	2	81	162
VE1	7	8.0	1	211	211
VE4	8	10.0	2	527	1054
VE7	9	10.0	2	183	366
	10	10.0	1	113	113
	11	10.0	1	160	160
	12	10.0	1	216	216
	13	10.0	2	552	1104
	14	10.0	2	522	1044
	15	10.0	1	147	147
	16	10.0	1	137	137
	17	10.0	2	561	1122
	18	10.0	2	287	574
	19	10.0	2	233	466
	20	10.0	2	401	802
	21	10.0	1	121	121
	22	10.0	2	416	832
	23	10.0	2	287	574
	24	10.0	1	160	160
	25	10.0	2	323	646
	26	10.0	2	143	286
	27	10.0	2	167	334
	28	10.0	2	532	1064
	29	10.0	1	124	124
	30	10.0	2	536	1072
	31	10.0	4	552	2208
	32	10.0	4	135	540
	33	10.0	4	170	680
	34	10.0	2	196	392
	35	10.0	2	390	780
	36	10.0	1	125	125
	37	10.0	2	409	818
	38	10.0	2	166	332
	39	10.0	2	172	344
	40	10.0	2	169	338
	41	10.0	2	214	428
	42	10.0	2	167	334
	43	10.0	4	173	692
	44	10.0	4	388	1552
	45	10.0	1	124	124
	46	10.0	2	407	814
	47	10.0	3	516	1548
	48	10.0	1	180	180
	49	10.0	2	164	328
	50	10.0	2	180	360
	51	10.0	2	411	822
	52	10.0	2	172	344
	53	10.0	2	194	388
	54	10.0	4	543	2172
	55	10.0	2	538	1076
	56	10.0	1	127	127
	57	10.0	1	113	113
	58	10.0	2	553	1106
	59	10.0	3	180	540
	60	10.0	2	219	438
	61	10.0	2	540	1080
	62	10.0	2	544	1088
	63	10.0	2	240	480
	64	10.0	1	117	117
	65	10.0	2	212	424
	66	10.0	2	240	480
	67	10.0	2	540	1080
	68	10.0	1	128	128
	69	10.0	1	140	140
	70	10.0	1	244	244
	71	10.0	2	561	1122
	72	10.0	2	247	494
	73	12.5	2	538	1076
	74	12.5	1	192	192
	75	12.5	2	247	494

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	20.5	2	12 m	5
	8.0	5.5	1	12 m	2.2
	10.0	391.4	33	12 m	241.3
	12.5	17.6	2	12 m	17
CA60	5.0	378.7	-	rolo (170 kg)	58.4
PESO TOTAL (kg)					
CA50		265.5			
CA60		58.4			

Volume de concreto (C-30) = 4.55 m³
Área de forma = 73.64 m²

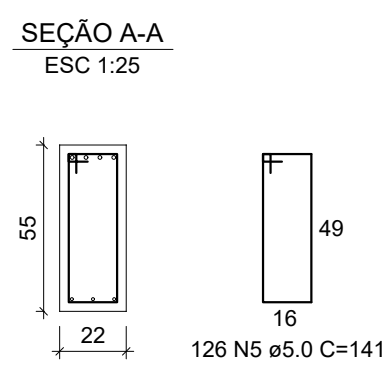
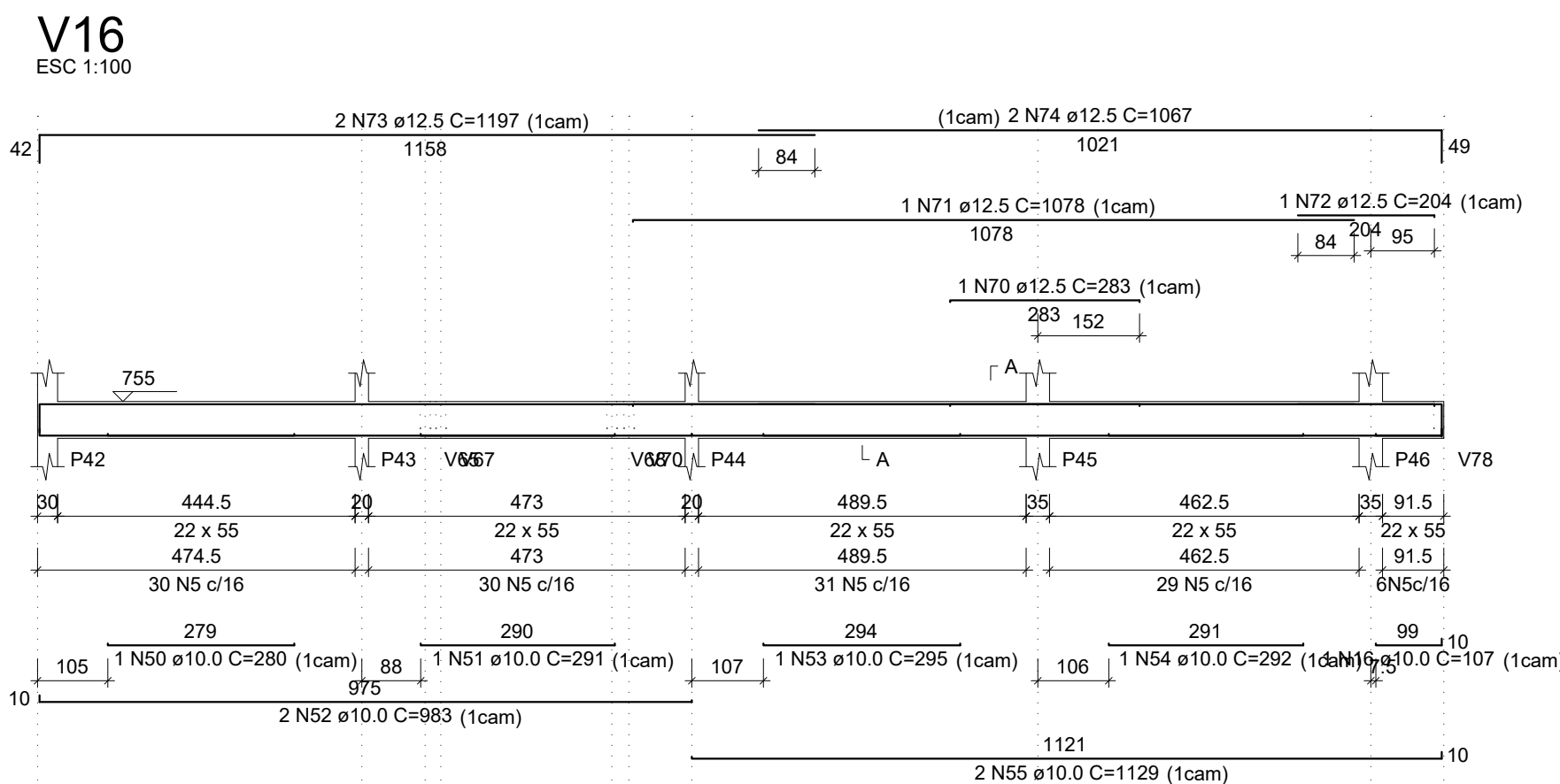
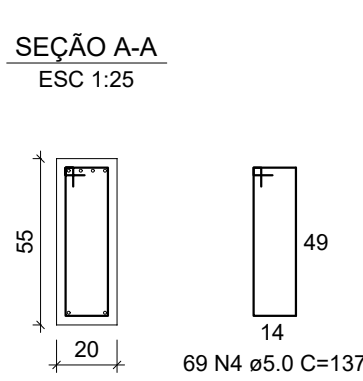


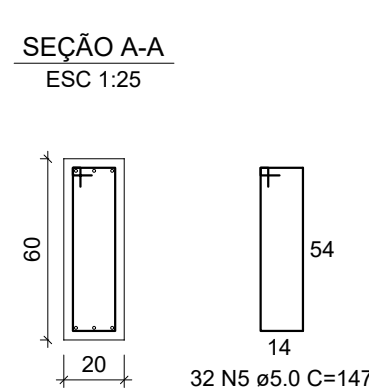
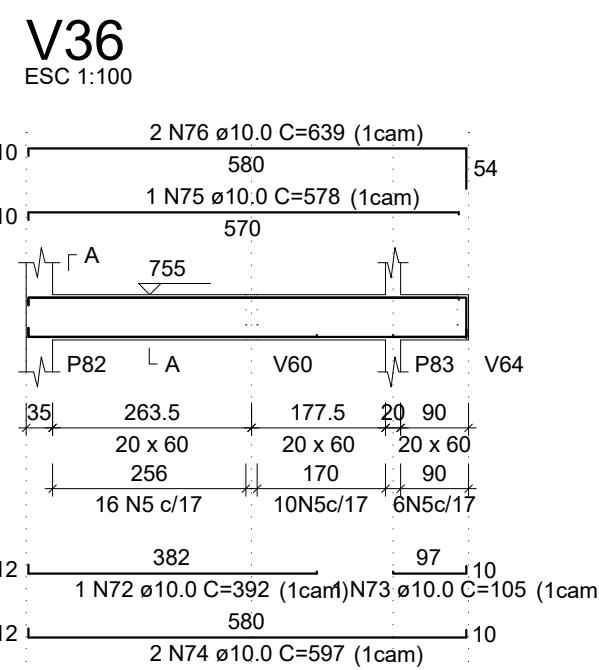
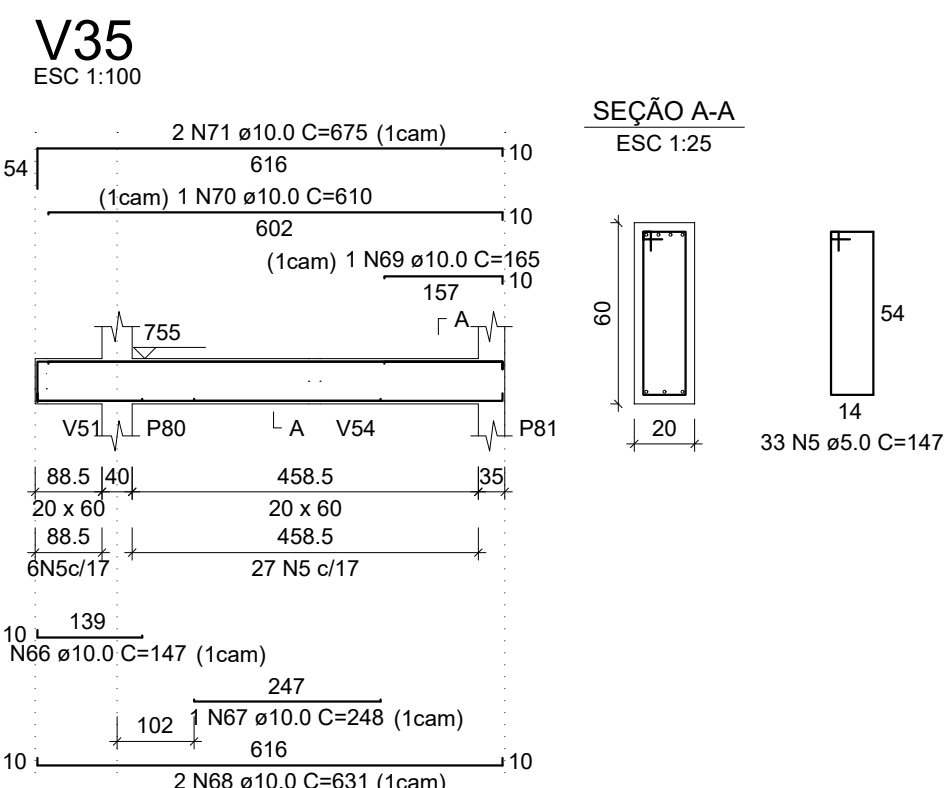
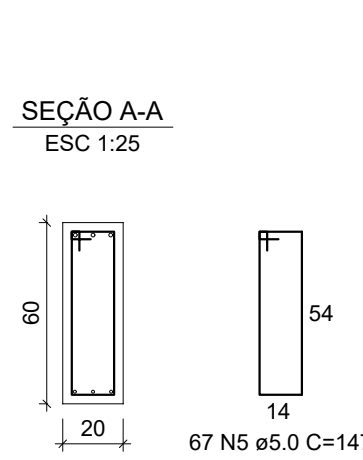
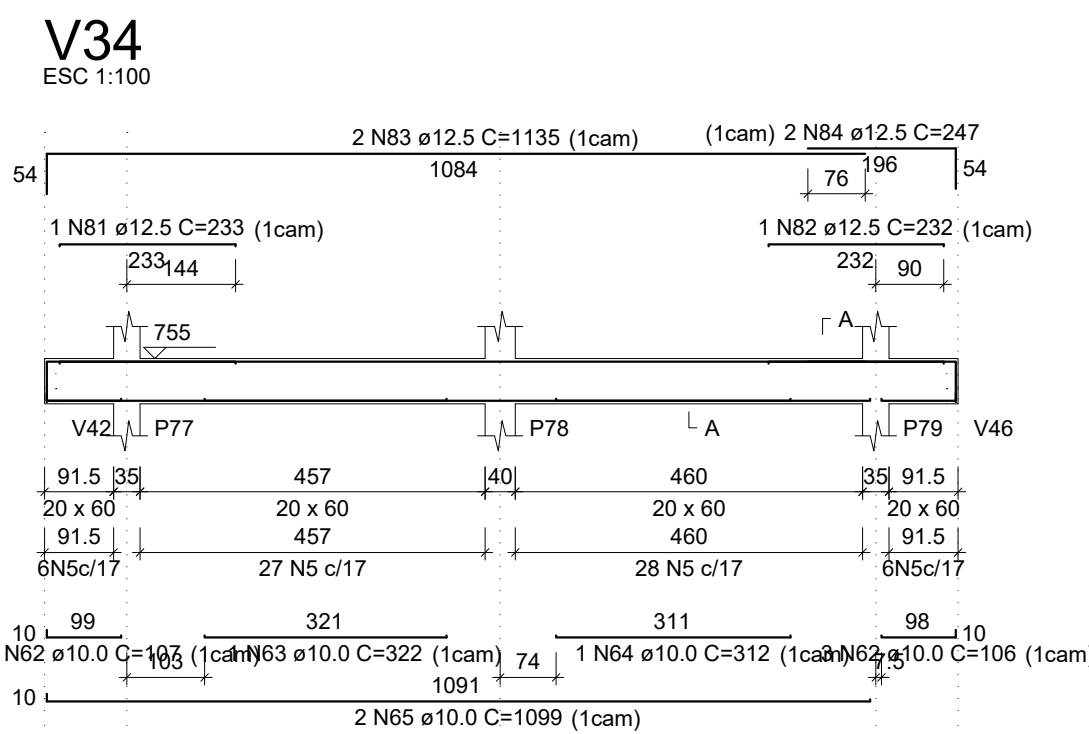
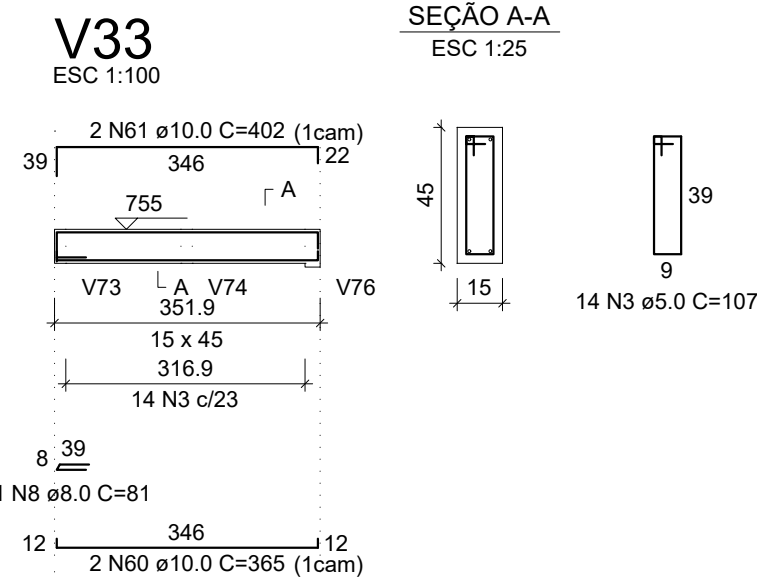
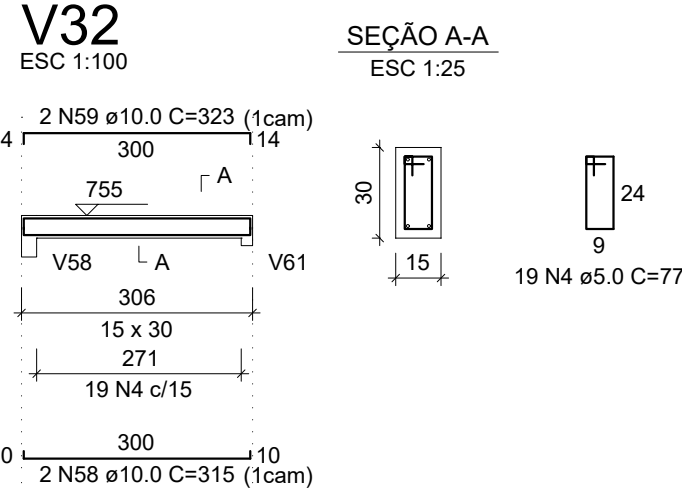
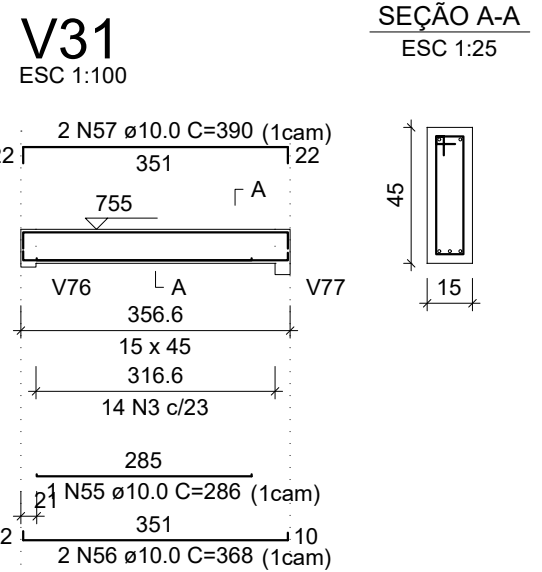
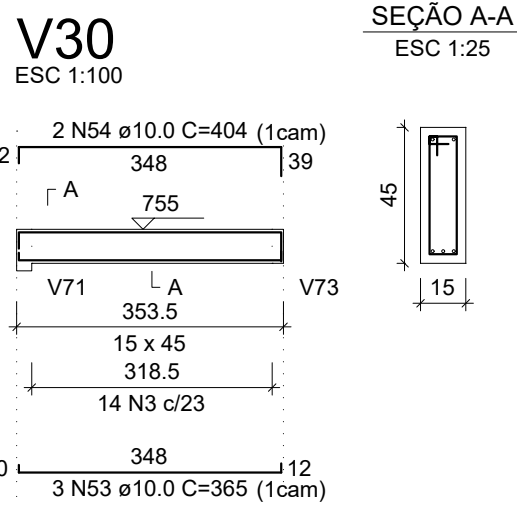
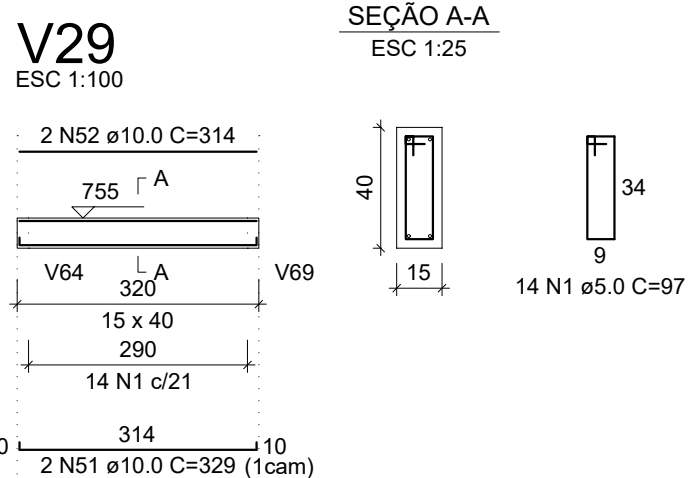
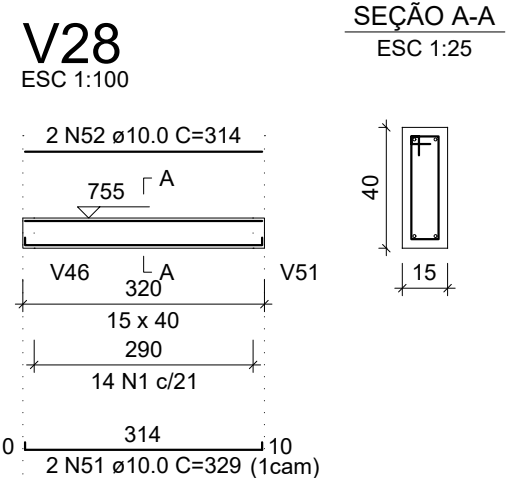
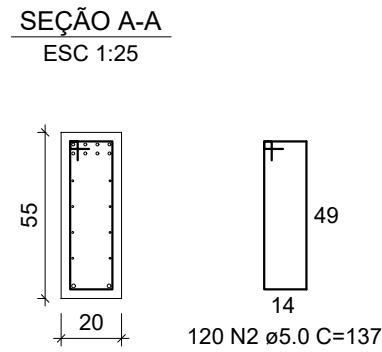
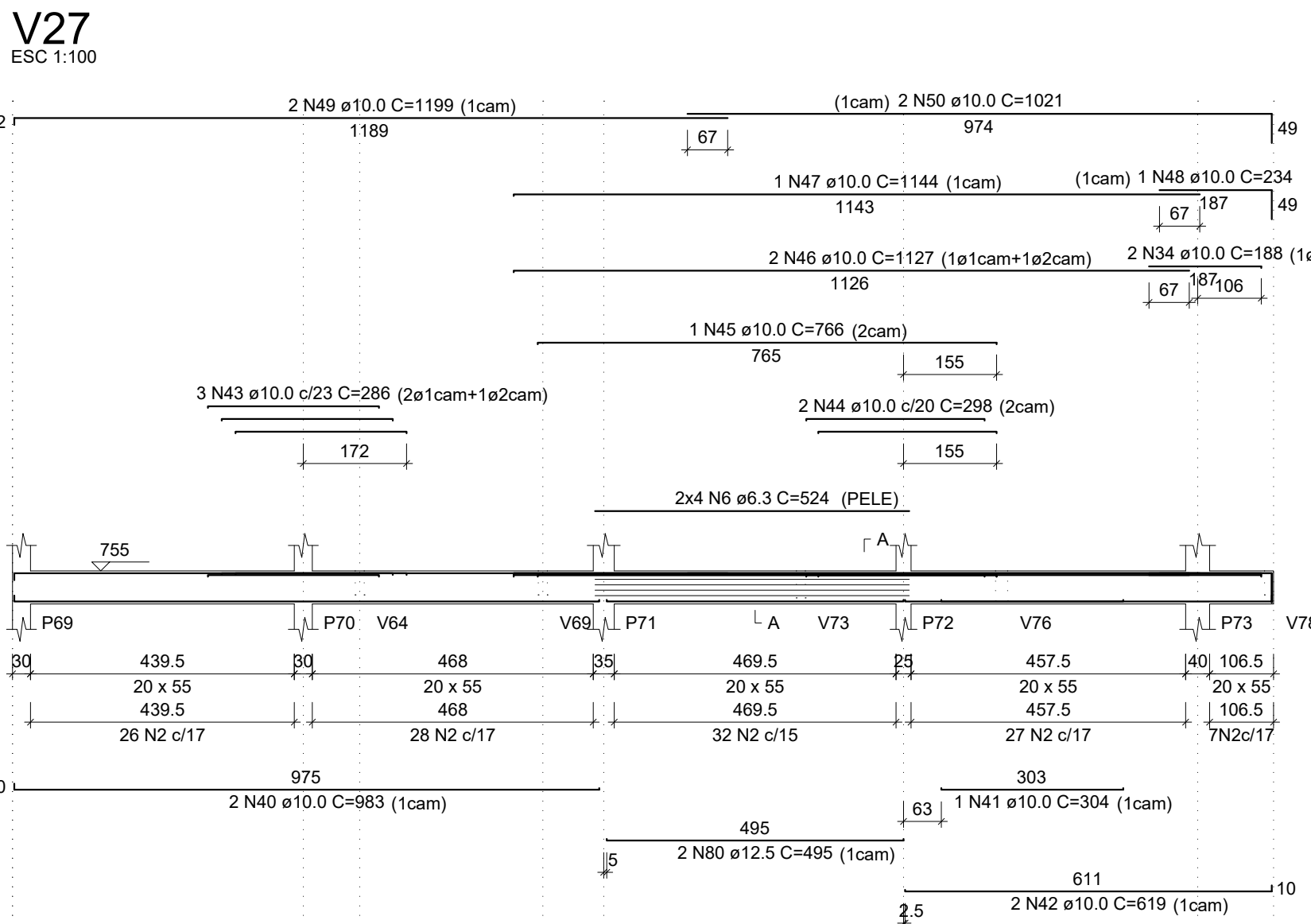
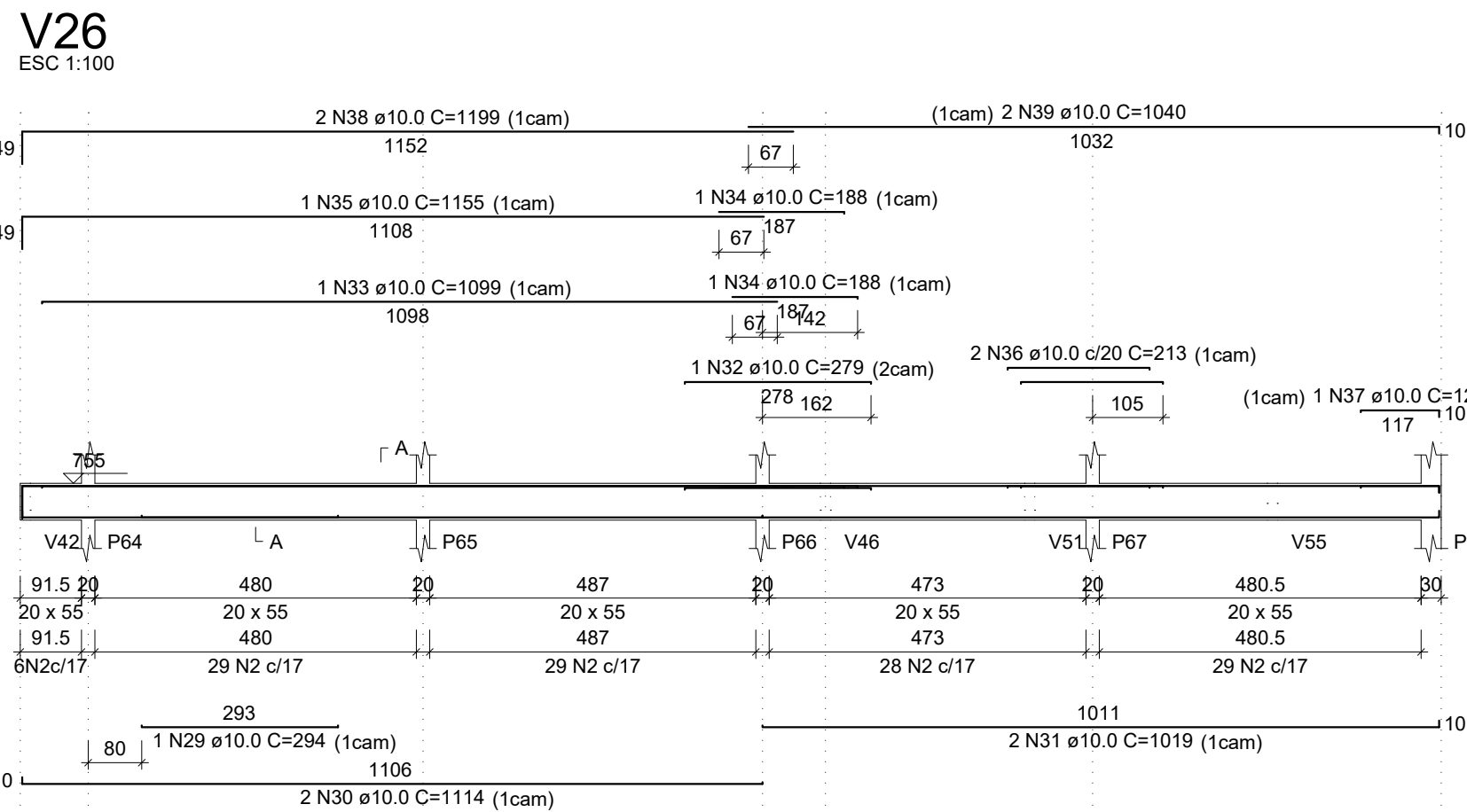
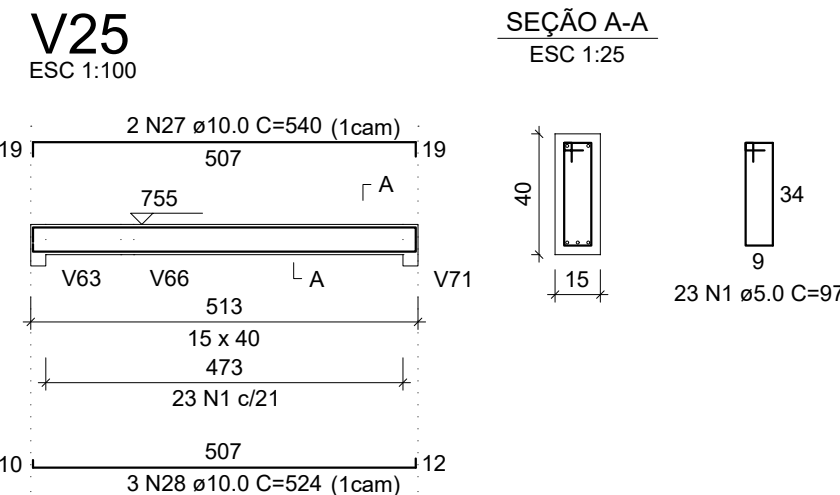
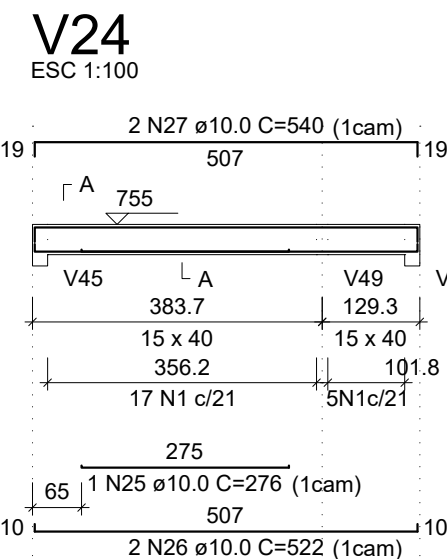
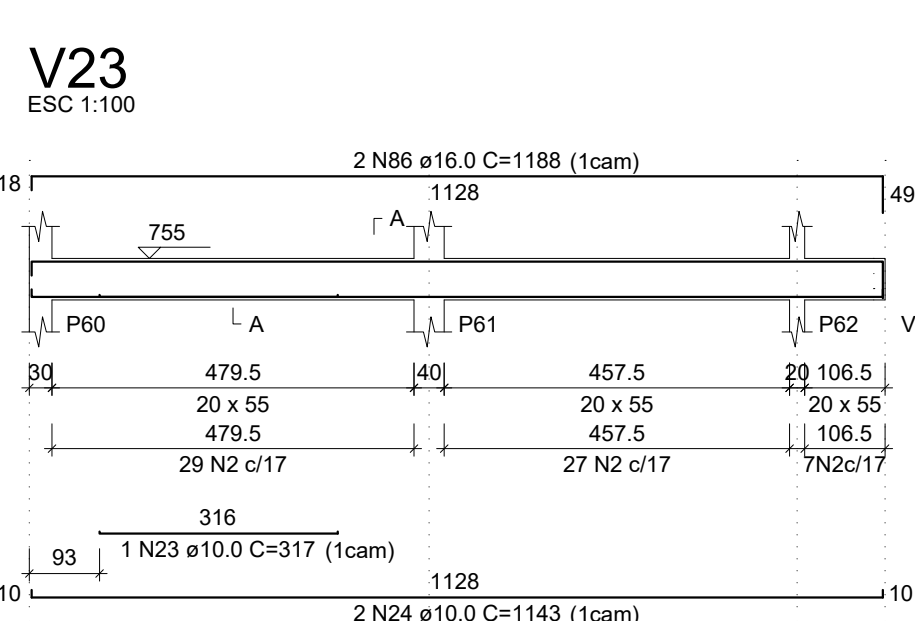
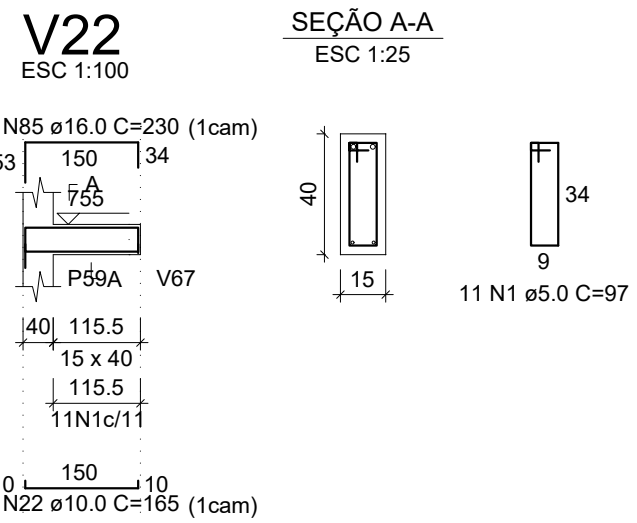
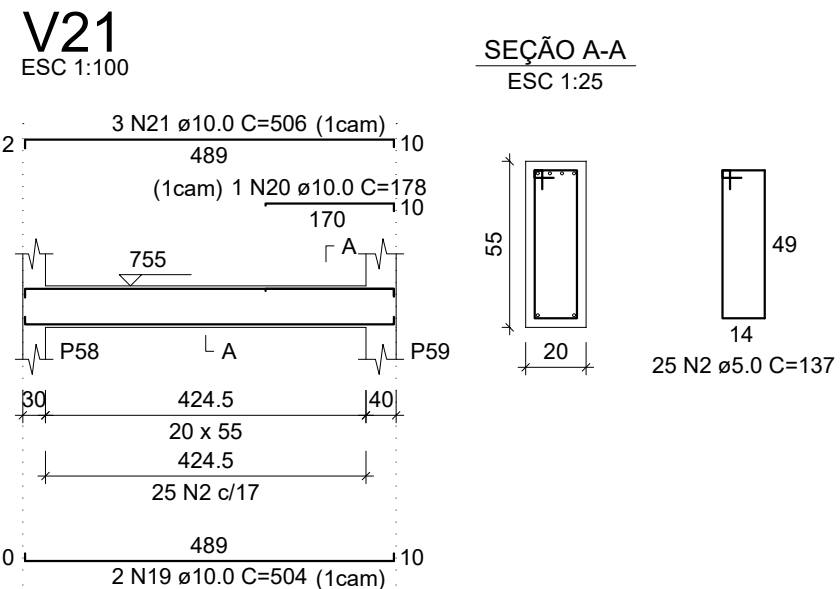
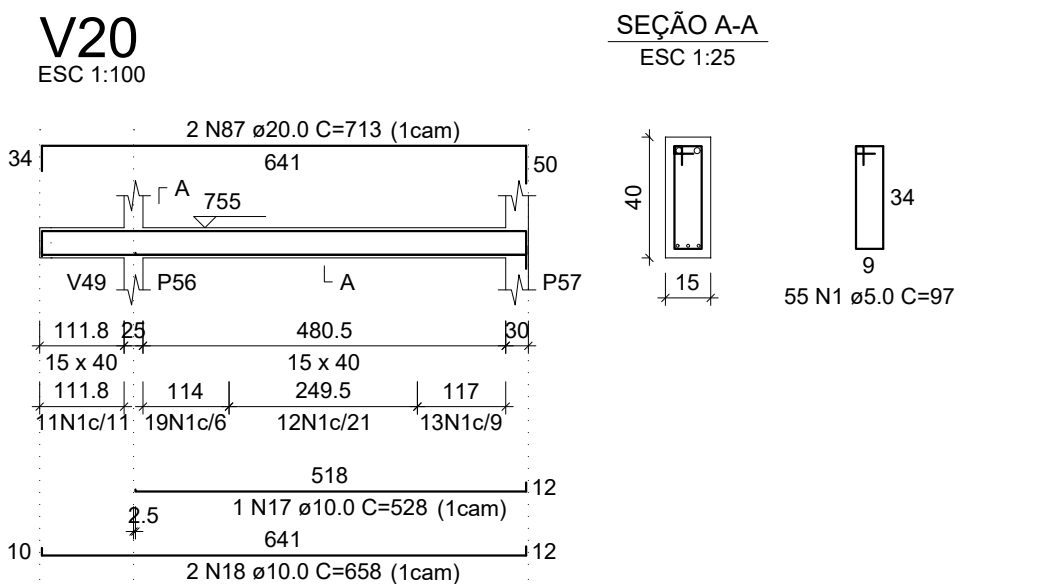
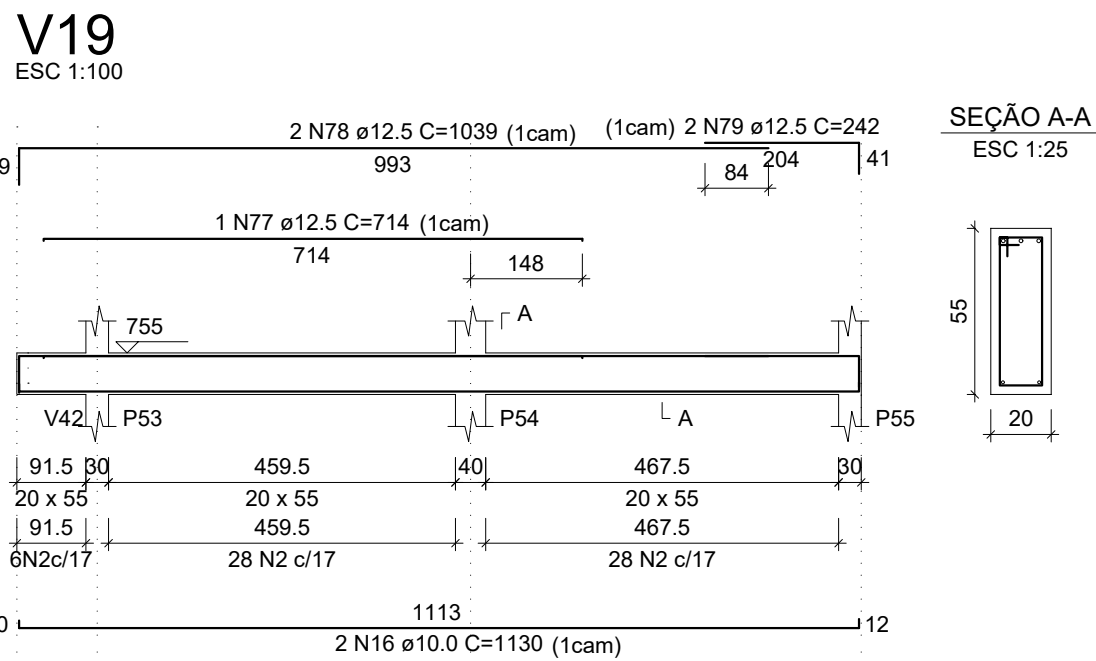
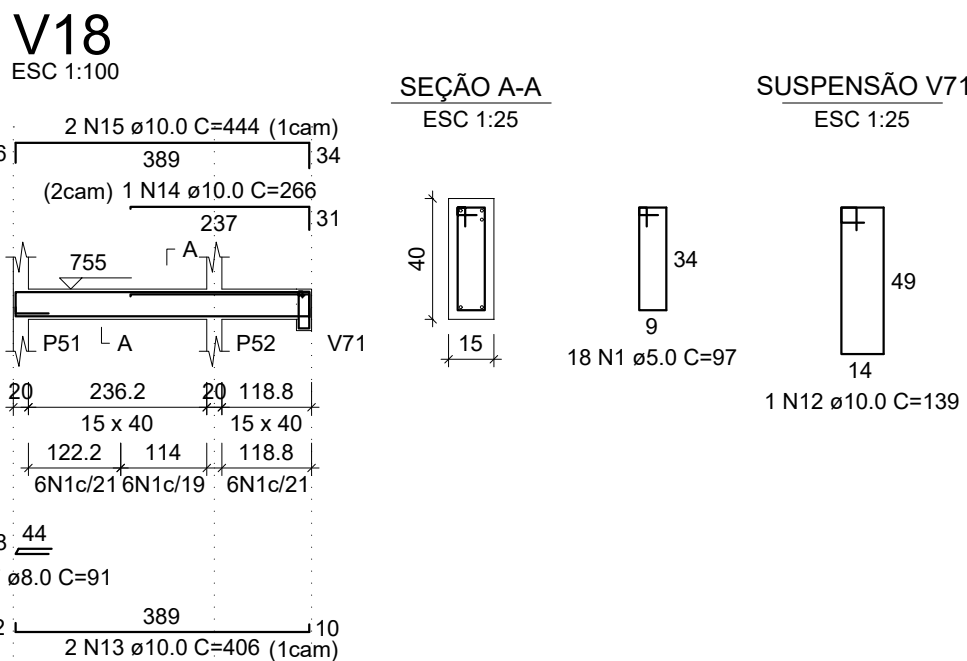
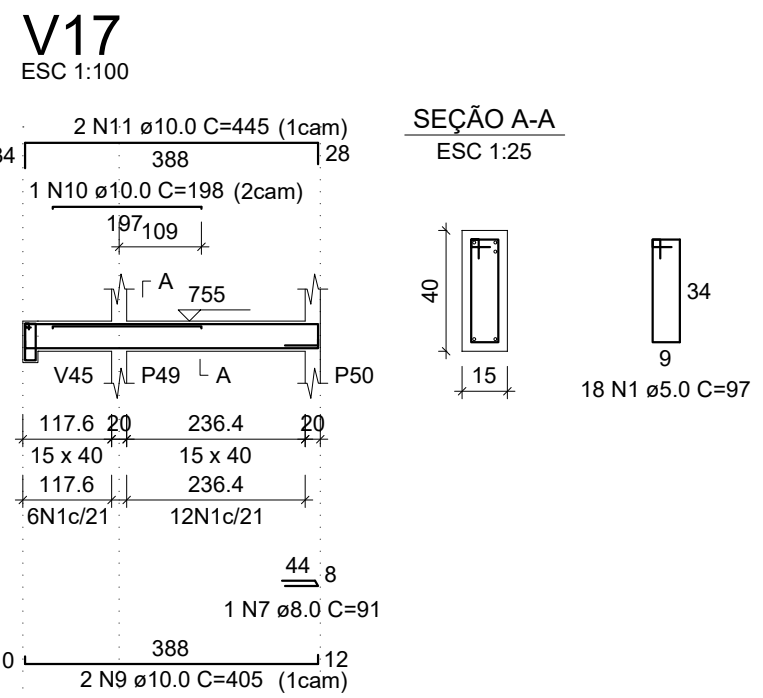
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	165	97	16005
	2	5.0	202	147	29694
CA50	3	5.0	43	117	5031
	4	5.0	204	137	27948
	5	5.0	255	141	35955
	6	10.0	4	1147	4588
	7	10.0	2	140	280
	8	10.0	2	1101	2202
	9	10.0	4	196	784
	10	10.0	4	631	2524
	11	10.0	2	649	1298
	12	10.0	2	596	1118
	13	10.0	2	614	1228
	14	10.0	2	155	310
	15	10.0	2	1116	2232
	16	10.0	10	107	1070
	17	10.0	1	288	288
	18	10.0	1	230	230
	19	10.0	4	1099	4396
	20	10.0	2	1031	2062
	21	10.0	2	374	747
	22	20.0	2	1136	2272
23	20.0	1	328	328	
24	20.0	1	234	474	
25	20.0	1	264	264	
26	20.0	1	102	102	
27	20.0	1	595	1190	
28	20.0	1	180	180	
29	20.0	1	562	562	
30	20.0	1	641	1282	
31	10.0	1	269	269	
32	10.0	1	285	285	
33	10.0	5	122	610	
34	10.0	2	532	1064	
35	10.0	2	1134	1134	
36	10.0	4	1114	4456	
37	10.0	1	1048	1048	
38	10.0	1	188	188	
39	10.0	3	131	3393	
40	10.0	3	234	702	
41	10.0	3	307	921	
42	10.0	1	210	210	
43	10.0	3	637	1911	
44	10.0	1	315	315	
45	10.0	1	298	298	
46	10.0	1	312	312	
47	10.0	1	308	308	
48	10.0	1	284	284	
49	10.0	2	1014	2028	
50	10.0	1	290	290	
51	10.0	1	291	291	
52	10.0	2	983	1966	
53	10.0	1	295	295	
54	10.0	1	292	292	
55	10.0	1	1129	2258	
56	12.5	1	151	151	
57	12.5	1	611	1348	
58	12.5	1	270	270	
59	12.5	1	219	219	
60	12.5	1	2150	2360	
61	12.5	2	252	504	
62	12.5	2	303	1260	
63	12.5	1	602	602	
64	12.5	2	673	1346	
65	12.5	2	595	1190	
66	12.5	2	1097	2194	
67	12.5	1	1085	1085	
68	12.5	3	245	750	
69	12.5	3	1150	2250	
70	12.5	1	263	263	
71	12.5	1	1078	1078	
72	12.5	1	204	204	
73	12.5	2	1197	2394	
74	12.5	2	1087	2174	
75	16.0	2	511	1022	
76	16.0	2	546	1092	
77	16.0	2	1619	2358	
78	16.0	2	1086	2172	

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	10.0	562.8	47	12 m	347
	12.5	215.5	18	12 m	207.6
	16.0	66.8	6	12 m	105.4
CA60	5.0	1146.3	-	rolo (170 kg)	176.7

Volume de concreto (C-30) = 16.44 m³

Área de forma = 200.51 m²





RELAÇÃO DO AÇO

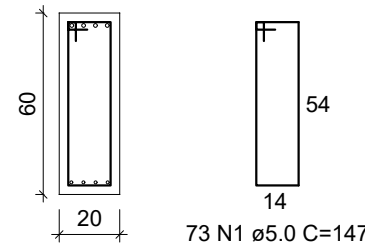
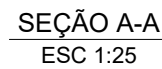
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	175	97	16975
	2	5.0	391	137	53567
	3	5.0	42	107	4494
	4	5.0	19	77	1463
	5	5.0	132	147	19404
CA50	6	6.3	8	524	4192
	7	8.0	2	91	182
	8	8.0	1	81	81
	9	10.0	2	405	810
	10	10.0	1	198	198
	11	10.0	2	445	890
	12	10.0	2	358	716
	13	10.0	2	406	812
	14	10.0	1	266	266
	15	10.0	2	444	888
	16	10.0	2	1130	2260
	17	10.0	1	528	528
	18	10.0	2	658	1316
	19	10.0	2	504	1008
	20	10.0	1	178	178
	21	10.0	3	506	1518
	22	10.0	2	165	330
	23	10.0	1	317	317
	24	10.0	2	1143	2286
	25	10.0	1	276	276
	26	10.0	2	522	1044
	27	10.0	4	540	2160
	28	10.0	3	524	1572
	29	10.0	2	294	588
	30	10.0	2	1114	2228
	31	10.0	2	1019	2038
	32	10.0	1	279	279
	33	10.0	1	1098	1098
	34	10.0	4	188	752
	35	10.0	1	1155	1155
	36	10.0	2	213	426
	37	10.0	1	125	125
	38	10.0	2	1199	2398
	39	10.0	2	1040	2080
	40	10.0	2	983	1966
	41	10.0	1	304	304
	42	10.0	2	619	1238
	43	10.0	3	286	858
	44	10.0	2	298	596
	45	10.0	1	766	766
	46	10.0	2	1127	2254
	47	10.0	1	1144	1144
	48	10.0	1	234	234
	49	10.0	2	1189	2378
	50	10.0	2	1021	2042
	51	10.0	4	329	1316
	52	10.0	4	314	1256
	53	10.0	3	385	1095
	54	10.0	2	404	808
	55	10.0	1	286	286
	56	10.0	2	368	736
	57	10.0	2	390	780
	58	10.0	2	315	630
	59	10.0	2	323	646
	60	10.0	2	365	730
	61	10.0	2	402	804
	62	10.0	4	107	428
	63	10.0	1	322	322
	64	10.0	1	312	312
	65	10.0	2	1099	2198
	66	10.0	1	147	147
	67	10.0	1	248	248
	68	10.0	2	631	1262
	69	10.0	1	165	165
	70	10.0	1	610	610
	71	10.0	2	675	1350
	72	10.0	1	392	392
	73	10.0	1	105	105
	74	10.0	2	597	1194
	75	10.0	1	578	578
	76	10.0	2	639	1278
	77	12.5	1	714	714
	78	12.5	2	1039	2078
	79	12.5	2	242	484
	80	12.5	2	485	970
	81	12.5	1	233	233
	82	12.5	1	232	232
	83	12.5	2	1135	2270
	84	12.5	2	247	494
	85	16.0	2	230	460
	86	16.0	2	1188	2376
	87	20.0	2	713	1426

RESUMO DO AÇO

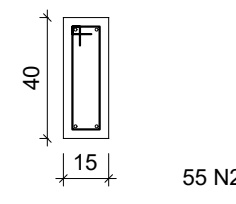
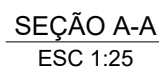
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	41.9	4	12 m	10.3
	8.0	2.6	1	12 m	1
	10.0	652.8	55	12 m	402.5
	12.5	75	7	12 m	72.2
	16.0	28.4	3	12 m	44.8
	20.0	14.3	2	12 m	35.2
CA60	5.0	959	-	rolo (170 kg)	147.8

Volume de concreto (C-30) = 13.38 m³
Área de forma = 168.85 m²

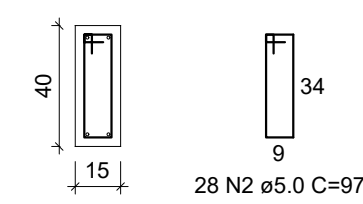
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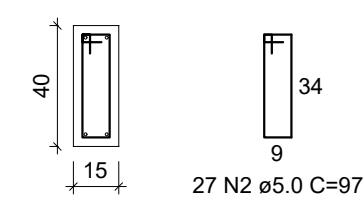
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ESC 1:100



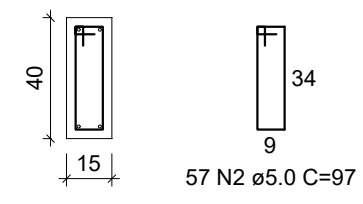
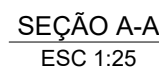
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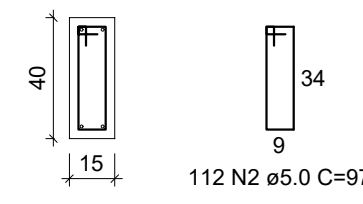
RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	64.1	6	12 m	158.2
	10.0	96.1	49	12 m	357.7
	12.5	171.7	15	12 m	169.0
	16.0	128.7	11	12 m	203.1
CA60	5.0	1130	-	rolo (170 kg)	174.2
PESO TOTAL (kg)					
CA50	742.4				
CA60	174.2				

VOLUME DE CONCRETO (C-30) = 15.70 m³
ÁREA DE FORMA = 208.38 m²

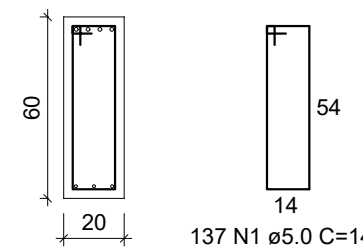
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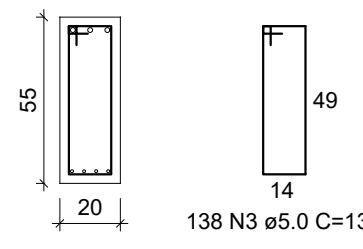
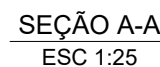
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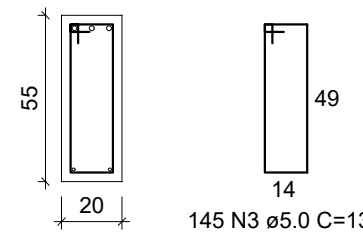
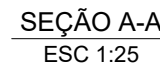
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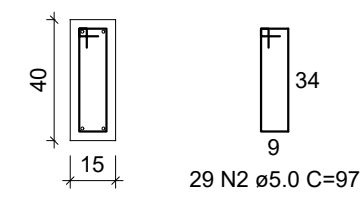
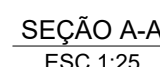
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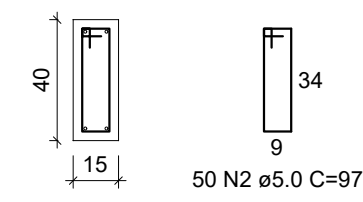
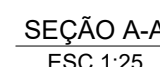
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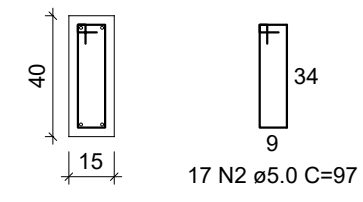
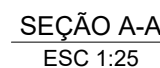
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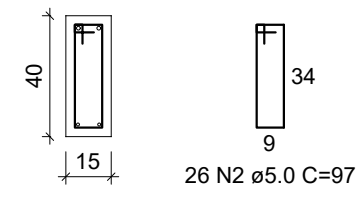
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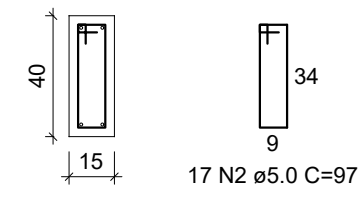
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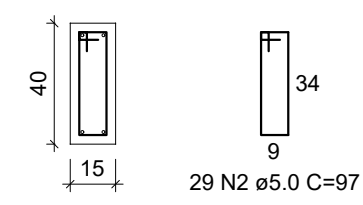
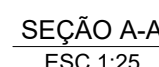
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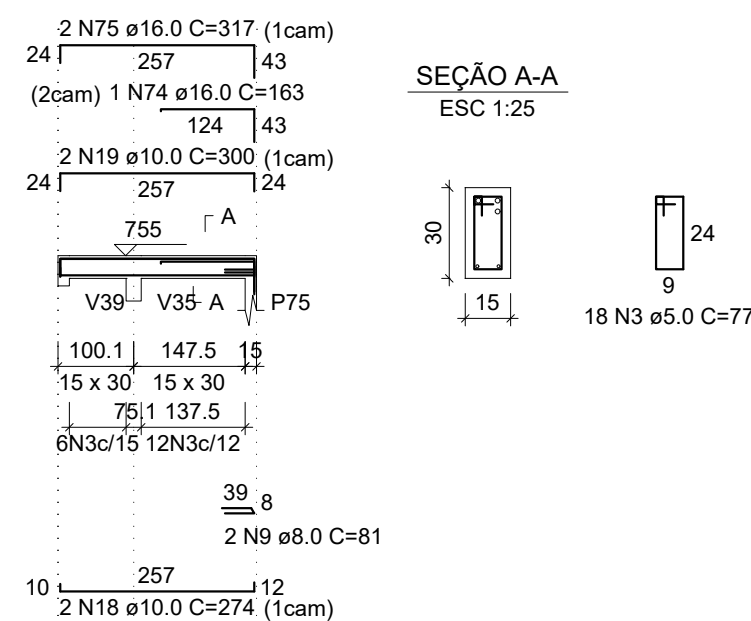
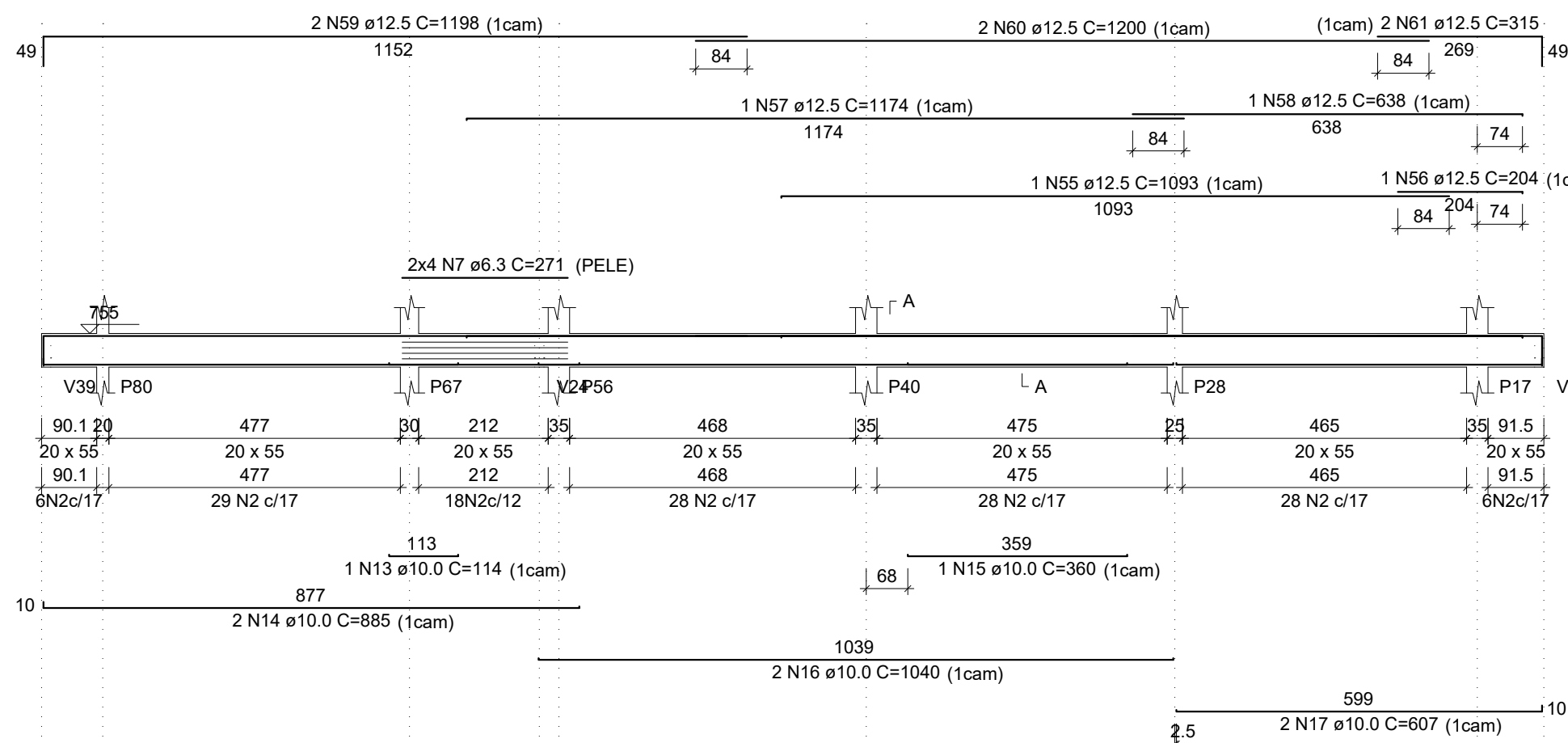
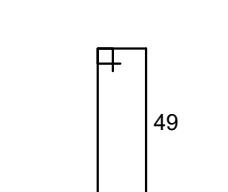
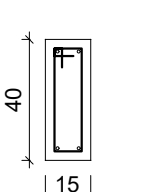
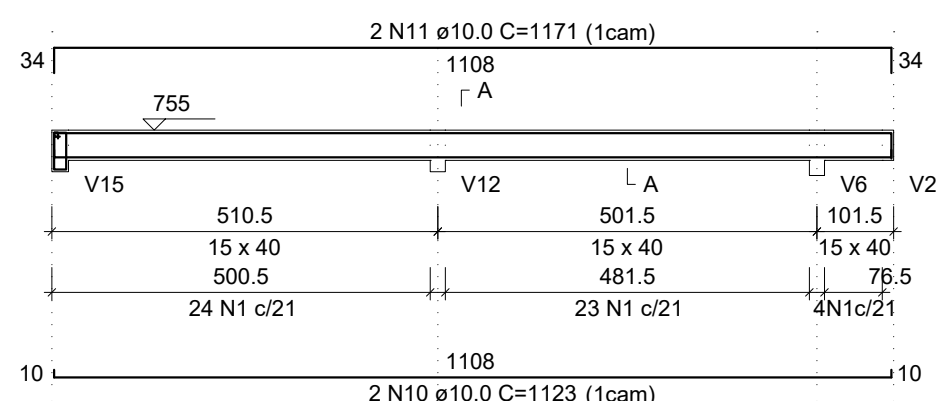


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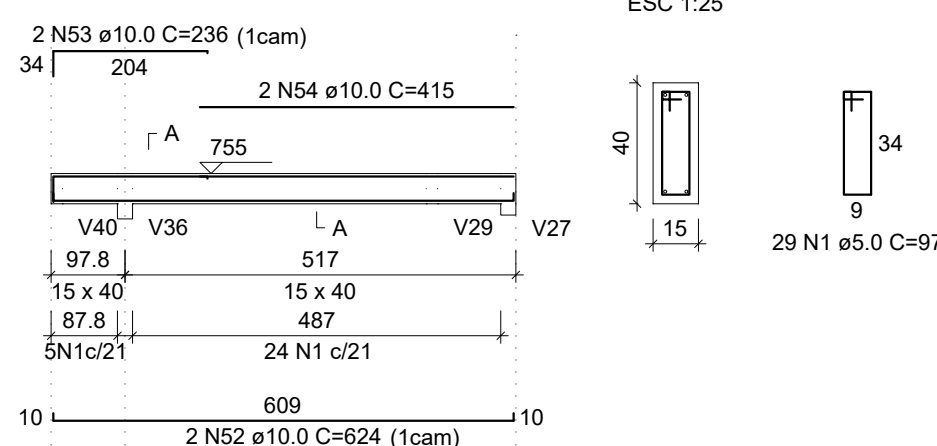
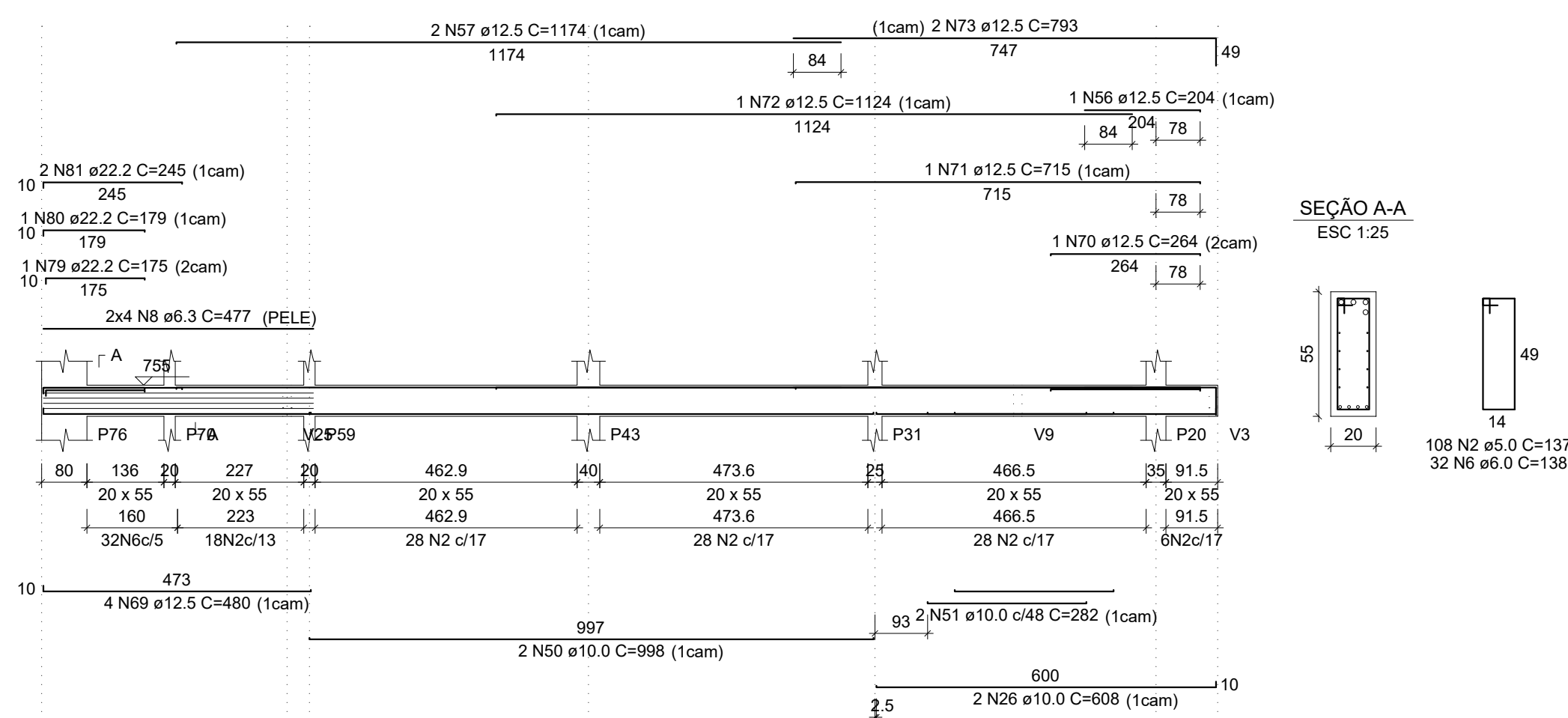
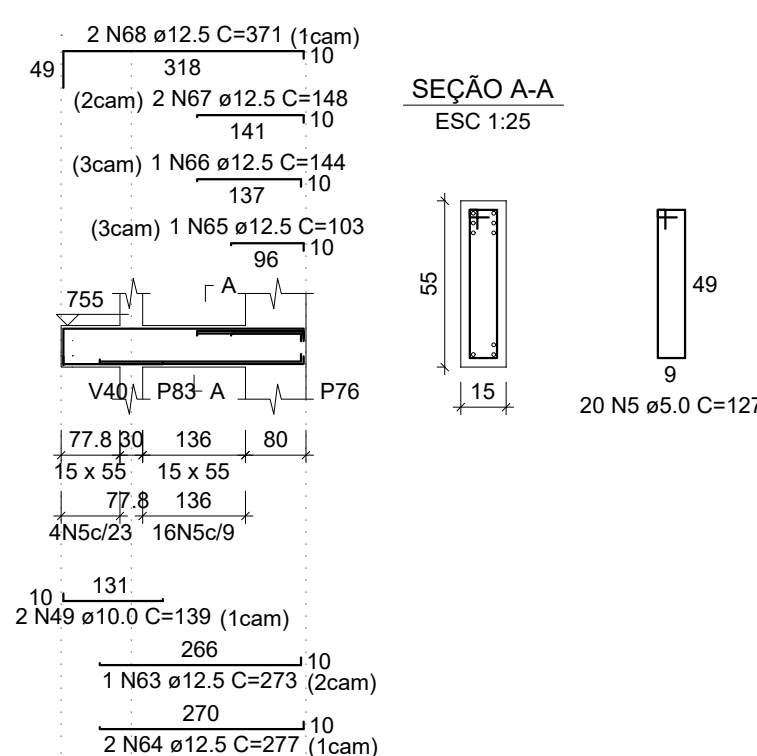
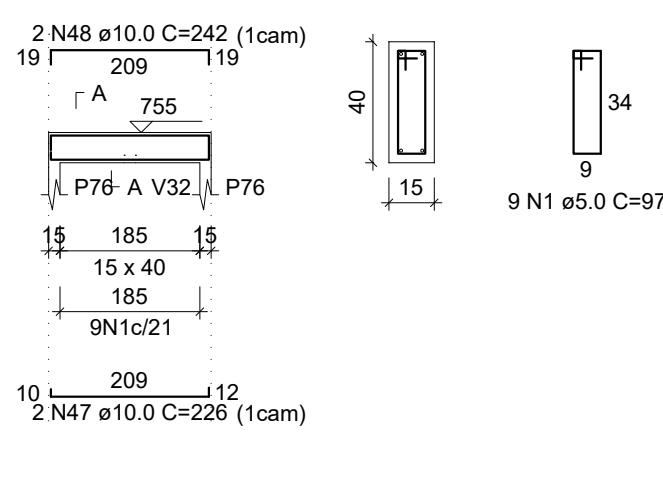
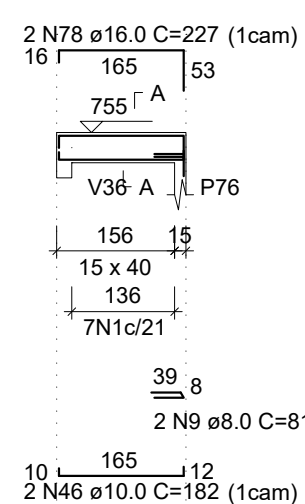
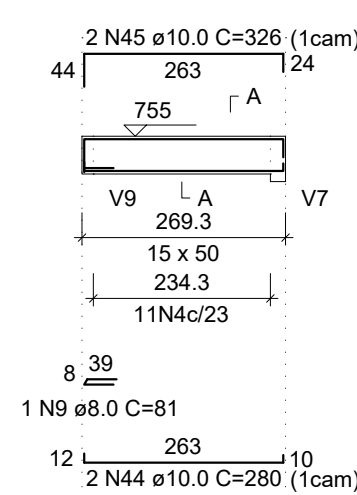
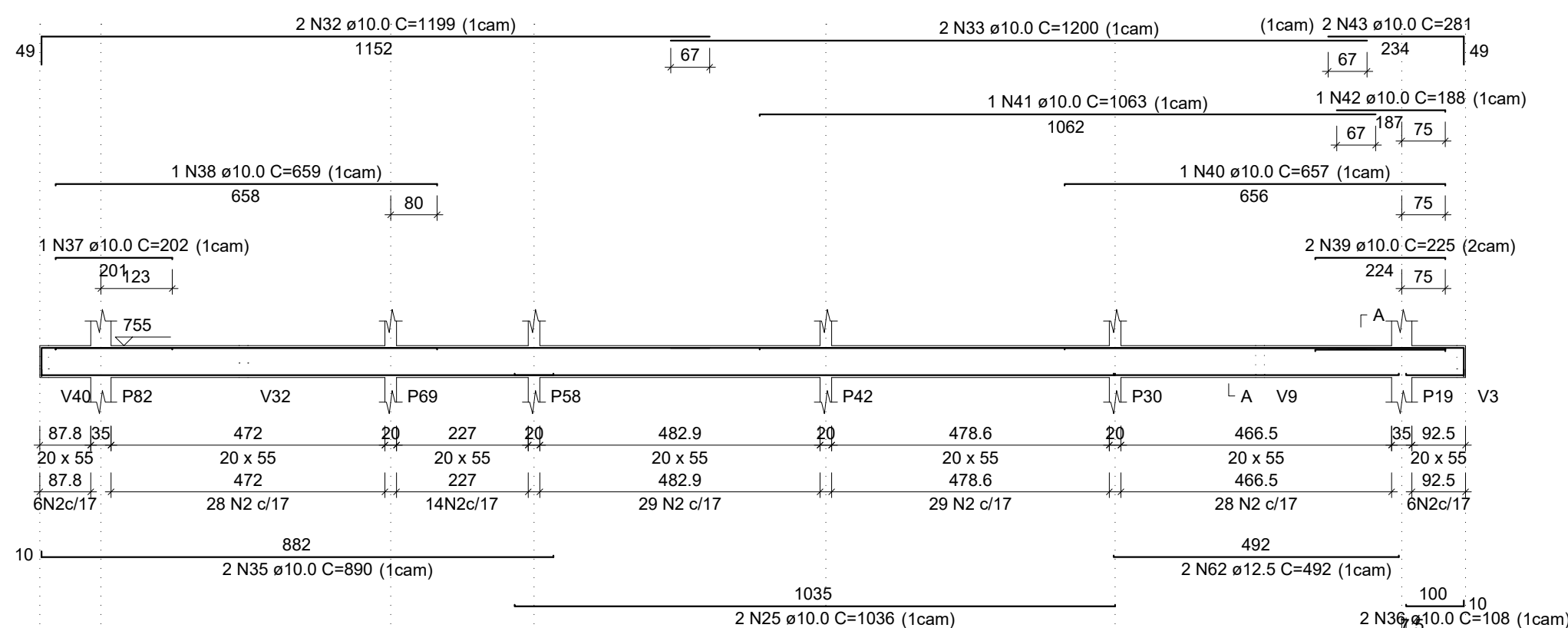
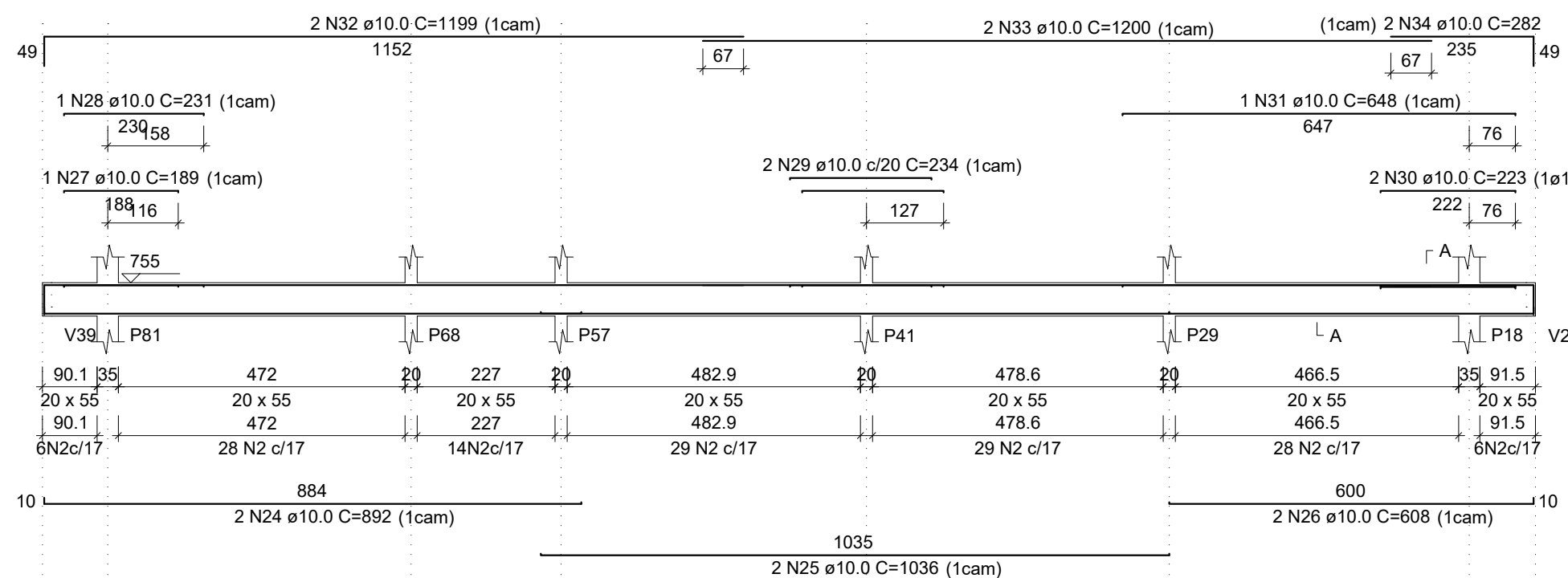
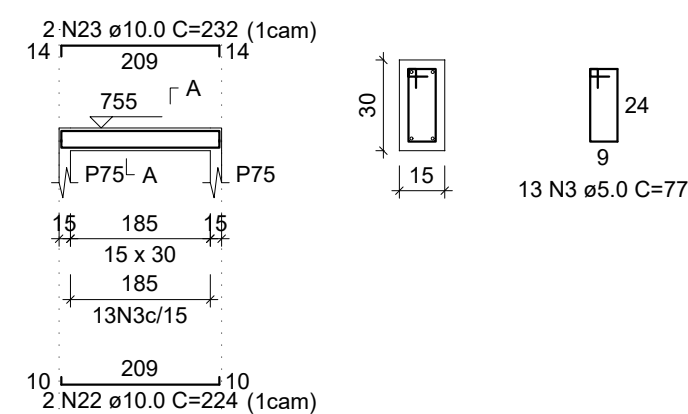
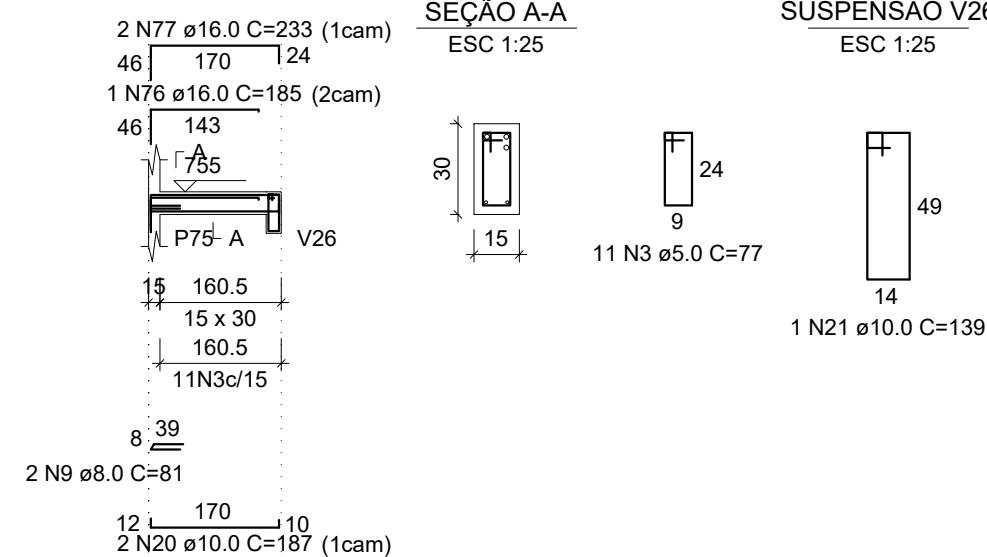
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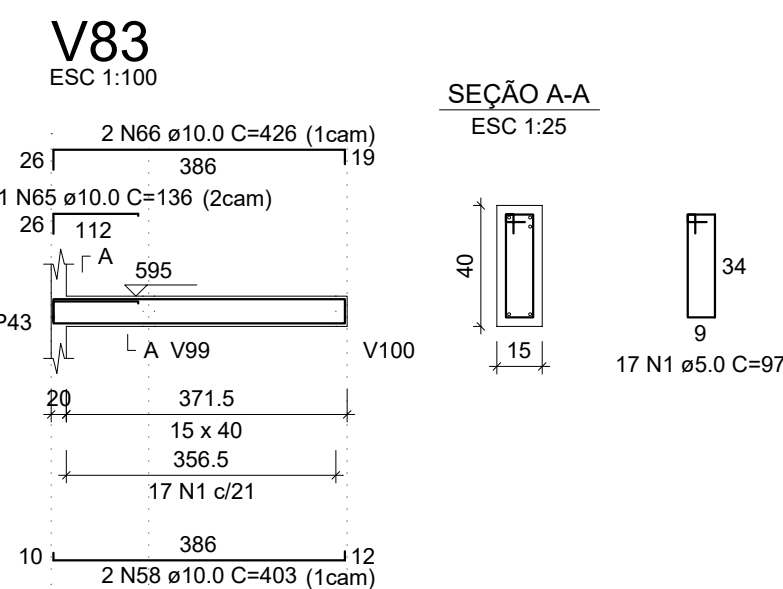
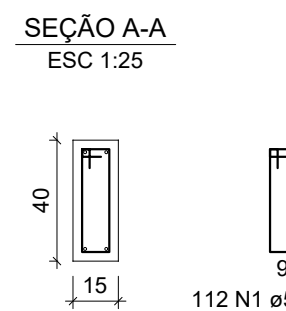
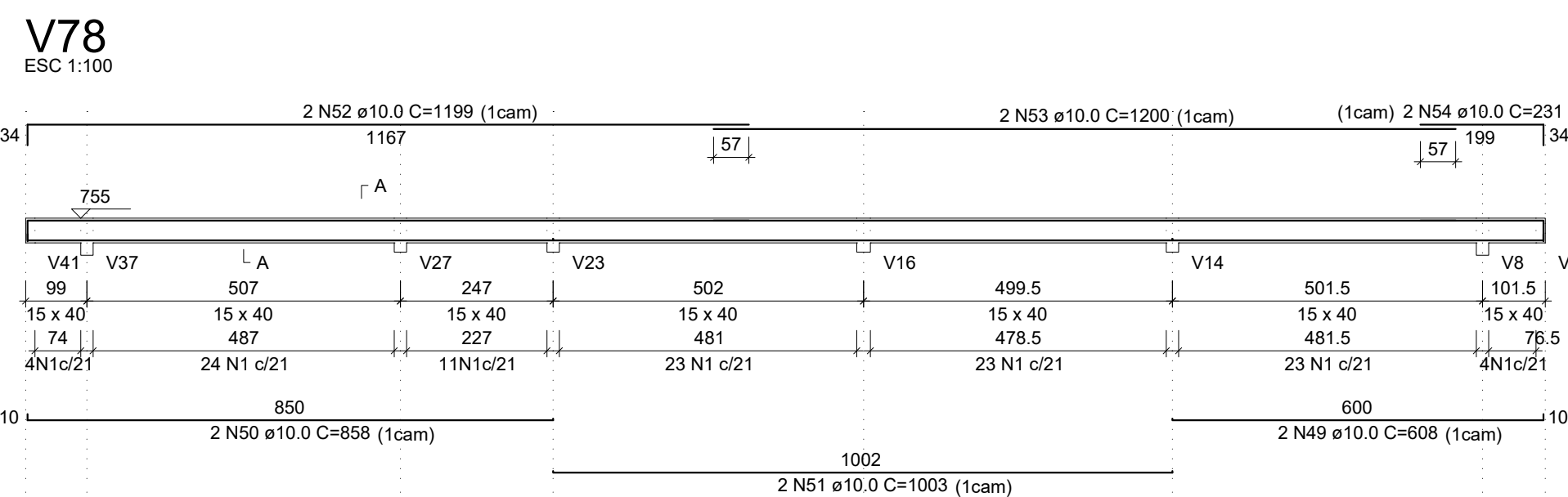
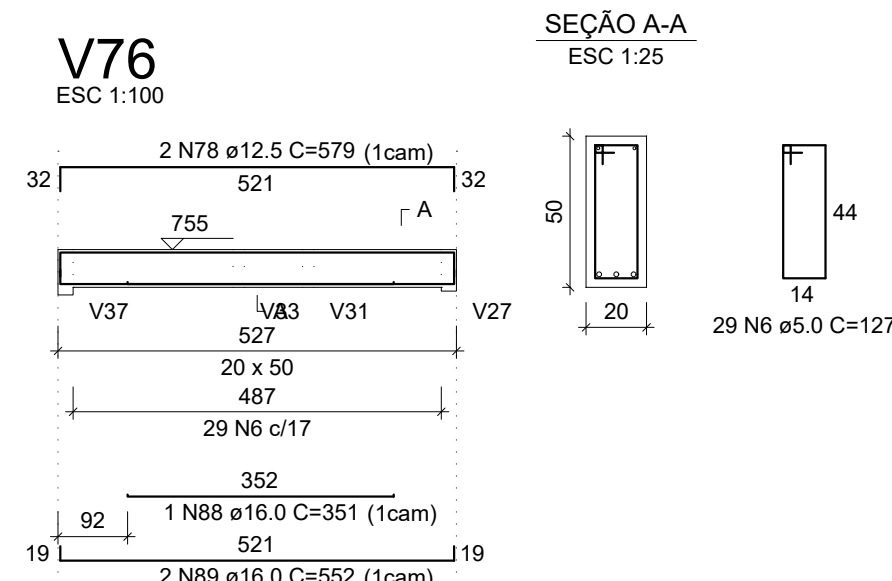
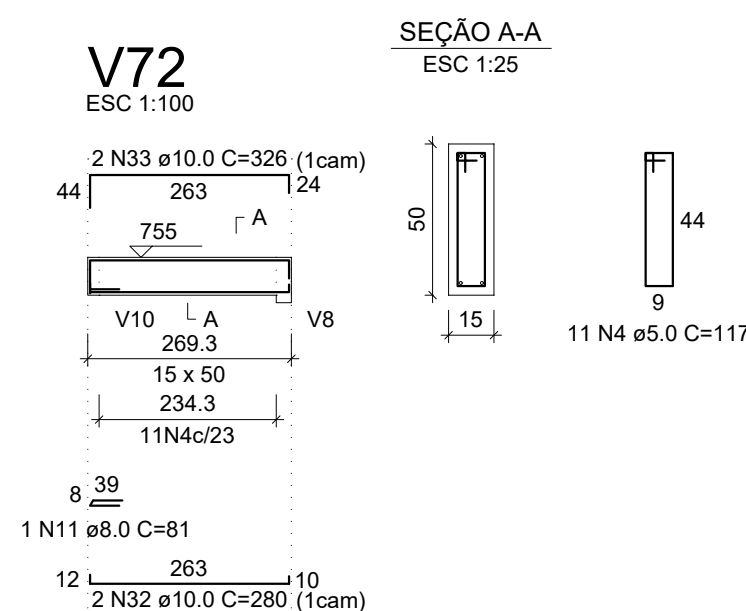
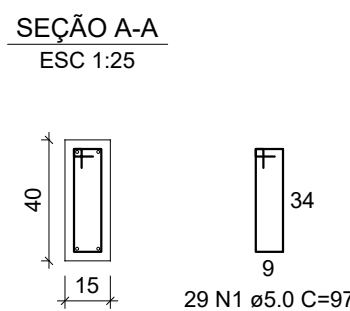




V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62	V63
AÇO	N	DIA (mm)	QUANT	C.UNIT	C.TOTAL	C.UNIT	C.TOTAL	C.UNIT	C.TOTAL	C.UNIT	C.TOTAL
CA60	1	5,0	96	97	9312						
	2	5,0	531	137	72747						
	3	5,0	42	77	3234						
	4	5,0	4	17	1287						
	5	5,0	20	127	2540						
	6	6,3	32	137	4416						
	7	6,3	63	218	11658						
	8	6,3	8	477	3816						
	9	8,0	7	81	5567						
	10	10,0	2	1123	2246						
CA50	11	10,0	2	1171	2342						
	12	10,0	1	143	114						
	13	10,0	1	114	114						
	14	14,0	2	885	1770						
	15	10,0	1	360	360						
	16	10,0	2	1040	2080						
	17	10,0	2	607	1214						
	18	10,0	2	274	548						
	19	10,0	2	300	600						
	20	10,0	2	187	374						
	21	10,0	1	139	139						
	22	10,0	2	224	448						
	23	10,0	2	832	1664						
	24	10,0	2	892	1784						
	25	10,0	4	1036	4144						
	26	10,0	4	808	2432						
	27	10,0	1	189	189						
	28	10,0	1	231	231						
	29	10,0	2	223	448						
	30	10,0	2	234	468						
	31	10,0	1	648	648						
	32	10,0	4	1189	4756						
	33	10,0	4	1200	4800						
	34	10,0	2	282	564						
	35	10,0	2	890	1780						
	36	10,0	2	108	216						
	37	10,0	1	659	659						
	38	10,0	1	202	202						
	39	10,0	2	225	450						
	40	10,0	1	1057	1057						
	41	10,0	1	663	663						
	42	10,0	1	188	188						
	43	10,0	2	281	562						
	44	10,0	2	280	560						
	45	10,0	2	326	652						
	46	10,0	2	364	728						
	47	10,0	2	226	452						
	48	10,0	2	242	484						
	49	10,0	2	239	478						
	50	10,0	2	998	1996						
	51	10,0	2	282	564						
	52	10,0	2	624	1248						
	53	10,0	2	236	472						
	54	10,0	2	415	830						
	55	12,5	1	1093	1093						
	56	12,5	2	2014	4028						
	57	12,5	3	1174	3522						
	58	12,5	1	638	638						
	59	12,5	2	1198	2396						
	60	12,5	2	1200	2400						
	61	12,5	2	315	630						
	62	12,5	2	492	984						
	63	12,5	1	273	273						
	64	12,5	1	277	554						
	65	12,5	1	103	103						
	66	12,5	1	144	144						
	67	12,5	1	148	296						
	68	12,5	2	371	742						
	69	12,5	2	480	960						
	70	12,5	1	264	264						
	71	12,5	1	715	715						
	72	12,5	1	1124	1124						
	73	12,5	1	793	1586						
	74	16,0	1	163	163						
	75	16,0	1	317	634						
	76	16,0	1	185	185						
	77	16,0	1	223	446						
	78	16,0	2	237	474						
	79	22,2	1	175	175						
	80	22,2	1	179	179						
	81	22,2	2	245	490						

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	59.8	5	12 m	14.6
	8.0	5.7	1	12 m	2.2
	10.0	470.2	40	12 m	289.9
	12.5	197.9	17	12 m	190.0
	16.0	9.4	2	12 m	30
CA60	20.0	8.1	1	12 m	25.6
	5.0	891.2	-	rolo (170 kg)	137.4
	6.3	44.2	-	rolo (170 kg)	9.8

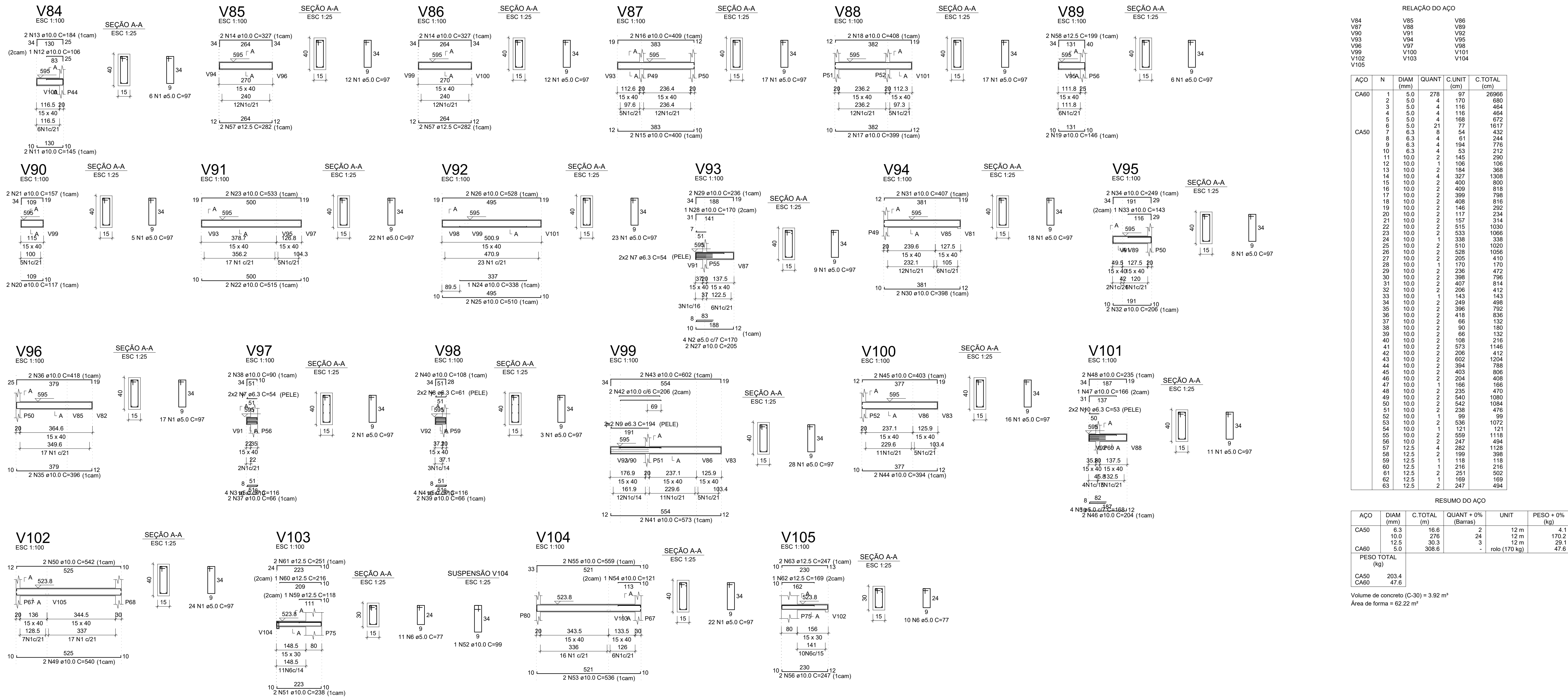




RELACÃO DO AÇO						
V65	V66	V67				
V68	V69	V70				
V71	V72	V73				
V74	V75	V76				
V77	V78	V79				
V80	V81	V82				
V83						
AÇO	N	DIAM (mm)	QUANT	C UNIT	C TOTAL	
CA80	1	5,0	333	97	32301	
	2	5,0	3	101	303	
	3	5,0	259	137	35843	
	4	5,0	4	1287	5174	
	5	5,0	39	107	4173	
	6	5,0	29	127	3683	
	7	5,0	19	147	20286	
	8	5,0	10	77	1054	
	9	6,3	8	266	2120	
	10	6,3	21	108	2268	
CA50	11	8,0	2	81	162	
	12	8,0	6	131	784	
	13	10,0	4	1123	4492	
	14	10,0	2	785	1570	
	15	10,0	2	365	730	
	16	10,0	2	68	136	
	17	10,0	2	102	204	
	18	10,0	2	527	1054	
	19	10,0	2	212	424	
	20	10,0	2	546	1092	
	21	10,0	2	302	604	
	22	10,0	2	416	832	
	23	10,0	2	626	1252	
	24	10,0	2	238	476	
	25	10,0	2	415	830	
	26	10,0	2	787	1574	
	27	10,0	2	363	726	
	28	10,0	2	286	572	
	29	10,0	1	137	274	
	30	10,0	1	311	611	
	31	10,0	2	300	590	
	32	10,0	2	280	560	
	33	10,0	2	326	652	
	34	10,0	2	345	690	
	35	10,0	1	304	608	
	36	10,0	2	760	1520	
	37	10,0	1	301	602	
	38	10,0	2	580	1160	
	39	10,0	1	1107	2214	
	40	10,0	1	90	180	
	41	10,0	1	341	682	
	42	10,0	1	182	364	
	43	10,0	2	124	248	
	44	10,0	1	344	688	
	45	10,0	1	316	632	
	46	10,0	2	1041	2082	
	47	10,0	1	343	686	
	48	10,0	1	107	214	
	49	10,0	4	608	2432	
	50	10,0	2	858	1716	
	51	10,0	2	1003	2006	
	52	10,0	2	1199	2398	
	53	10,0	2	1200	2400	
	54	10,0	2	231	462	
	55	10,0	4	243	972	
	56	10,0	2	175	350	
	57	10,0	2	201	402	
	58	10,0	2	403	806	
	59	10,0	1	127	254	
	60	10,0	2	432	864	
	61	10,0	2	150	300	
	62	10,0	1	116	232	
	63	10,0	2	116	232	
	64	10,0	1	99	198	
	65	10,0	1	106	212	
	66	10,0	2	426	852	
67	12,5	2	891	1782		
68	12,5	2	1060	2120		
69	12,5	2	2007	4014		
70	12,5	2	599	1198		
71	12,5	1	281	562		
72	12,5	1	1092	2184		
73	12,5	1	1102	2204		
74	12,5	1	2074	4148		
75	12,5	1	579	1158		
76	12,5	2	1197	2394		
77	12,5	2	798	1596		
78	12,5	2	1179	2358		
79	12,5	1	230	460		
80	12,5	3	1198	3594		
81	16,0	1	733	1466		
82	16,0	2	1034	2068		
83	12,5	2	325	650		
84	16,0	1	733	1466		
85	16,0	2	1034	2068		
86	16,0	2	1200	2400		
87	16,0	2	360	720		
88	16,0	1	351	702		
89	16,0	2	552	1104		
90	20,0	2	561	1122		
91	20,0	1	297	594		
92	20,0	2	297	594		

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	44	4	12 m	10.8
	8.0	9.5	1	12 m	3.7
	10.0	485.8	41	12 m	299.5
	12.5	229.8	20	12 m	221.4
	16.0	77.7	7	12 m	121.6
CA60	22.0	54.5	2	12 m	54.5
	5.0	982.9		rolo (170 kn)	151.5

Volume de concreto (C-30) = 13.75 m³
Área de forma = 184.01 m²



RELAÇÃO DO AÇO

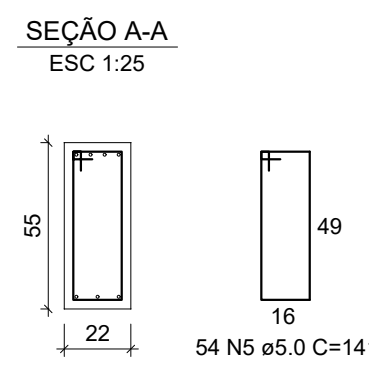
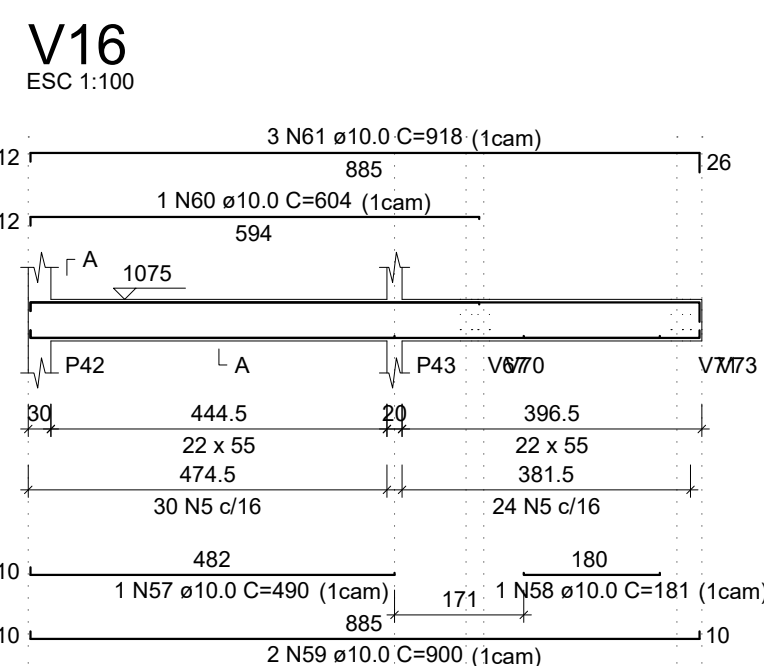
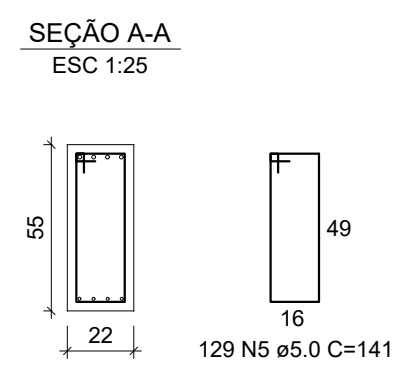
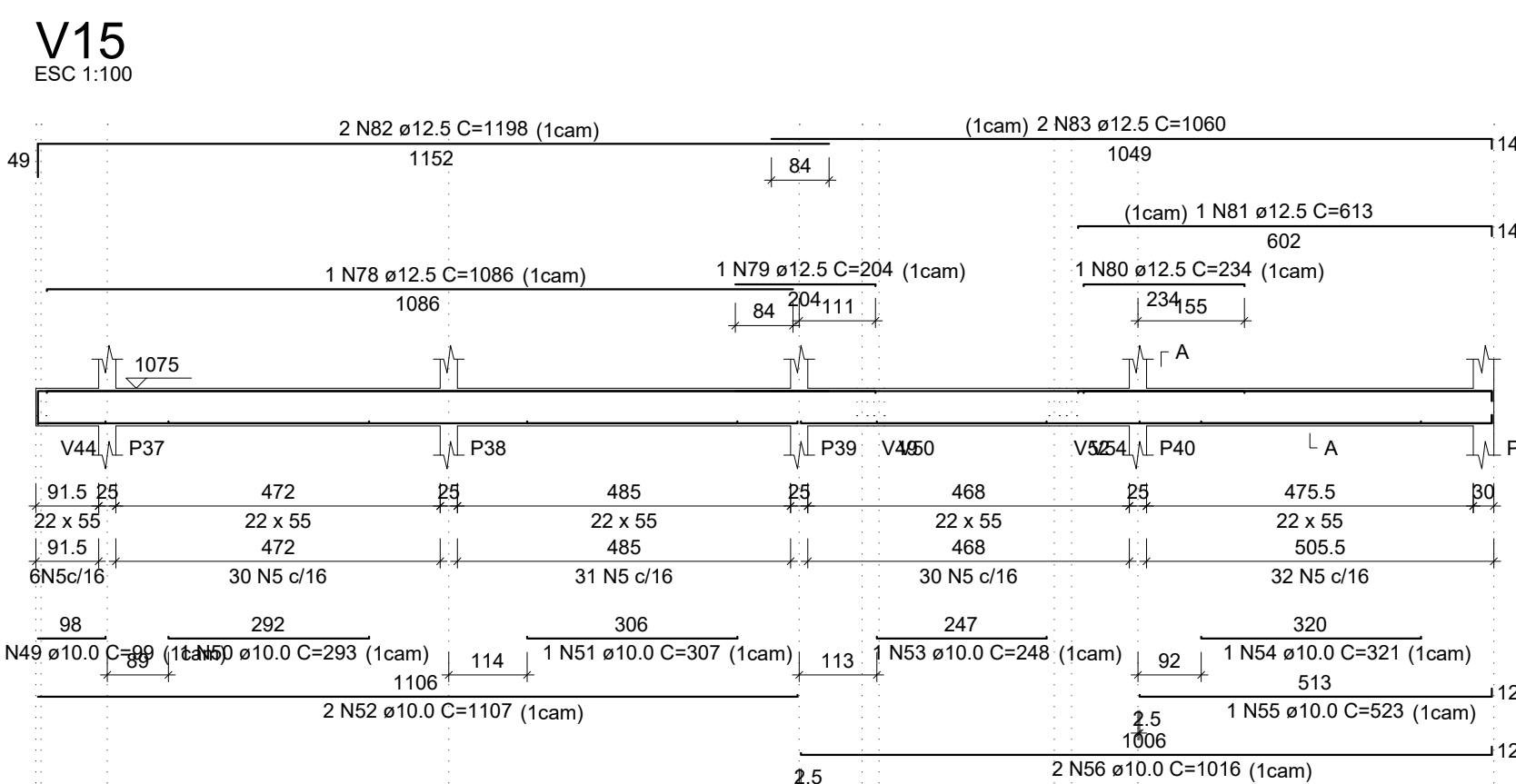
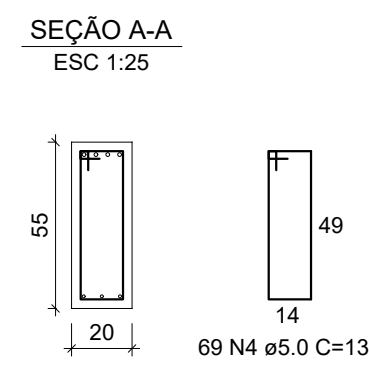
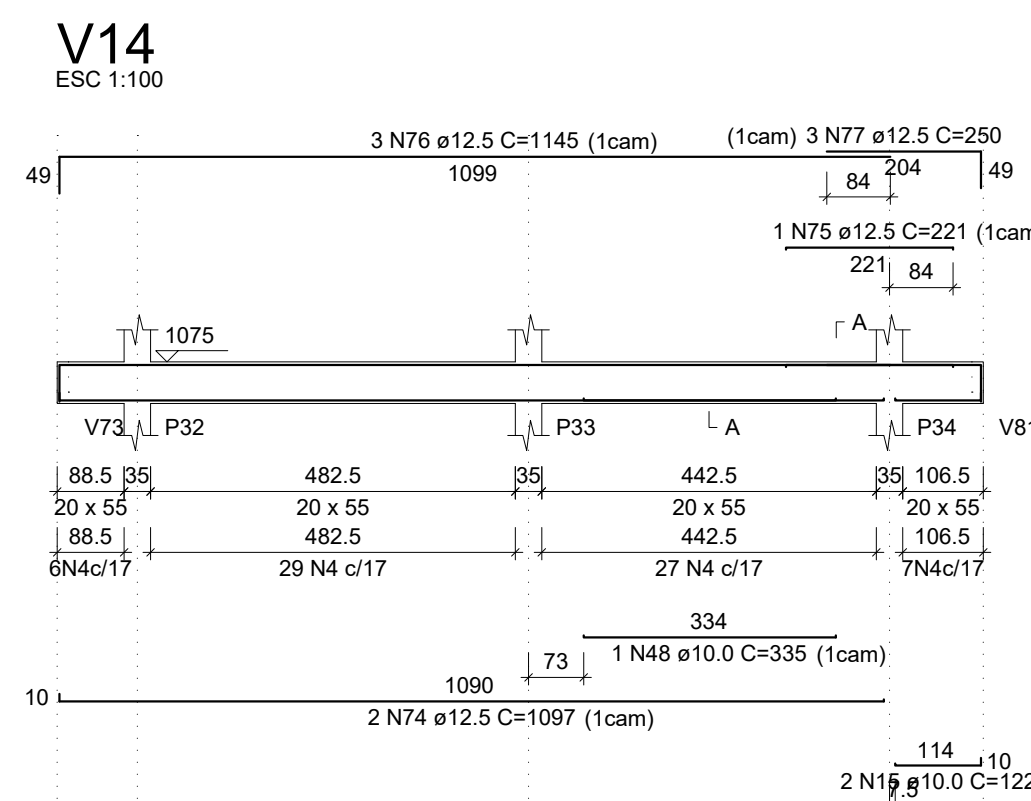
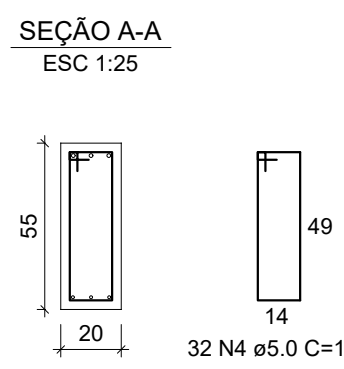
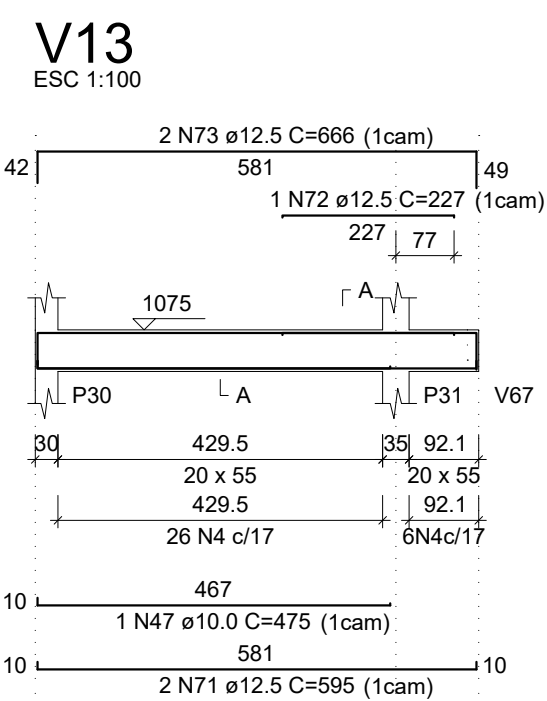
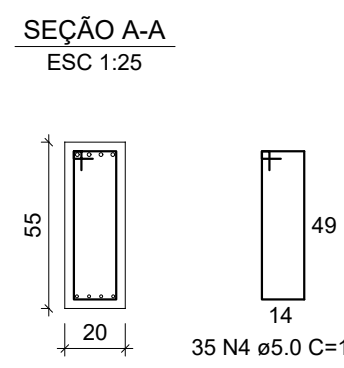
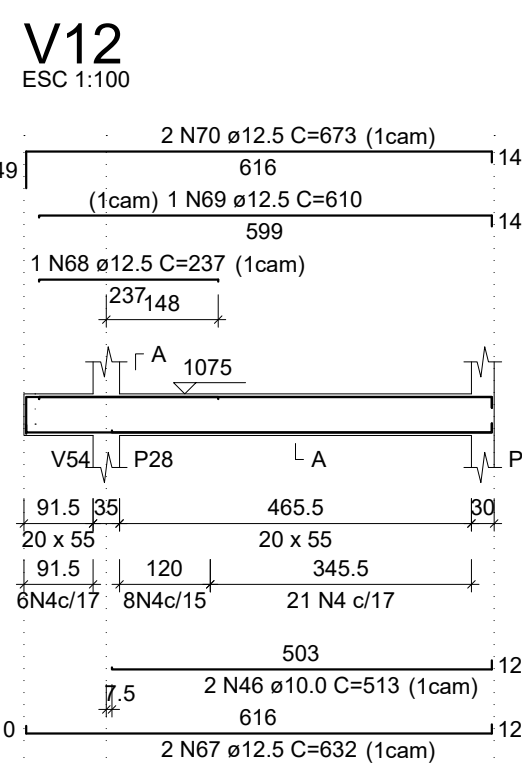
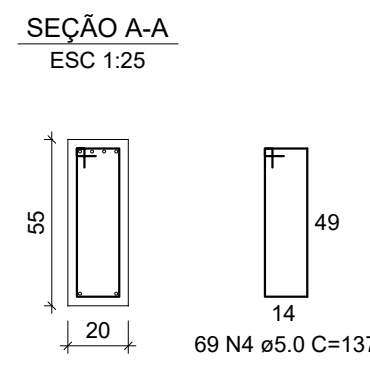
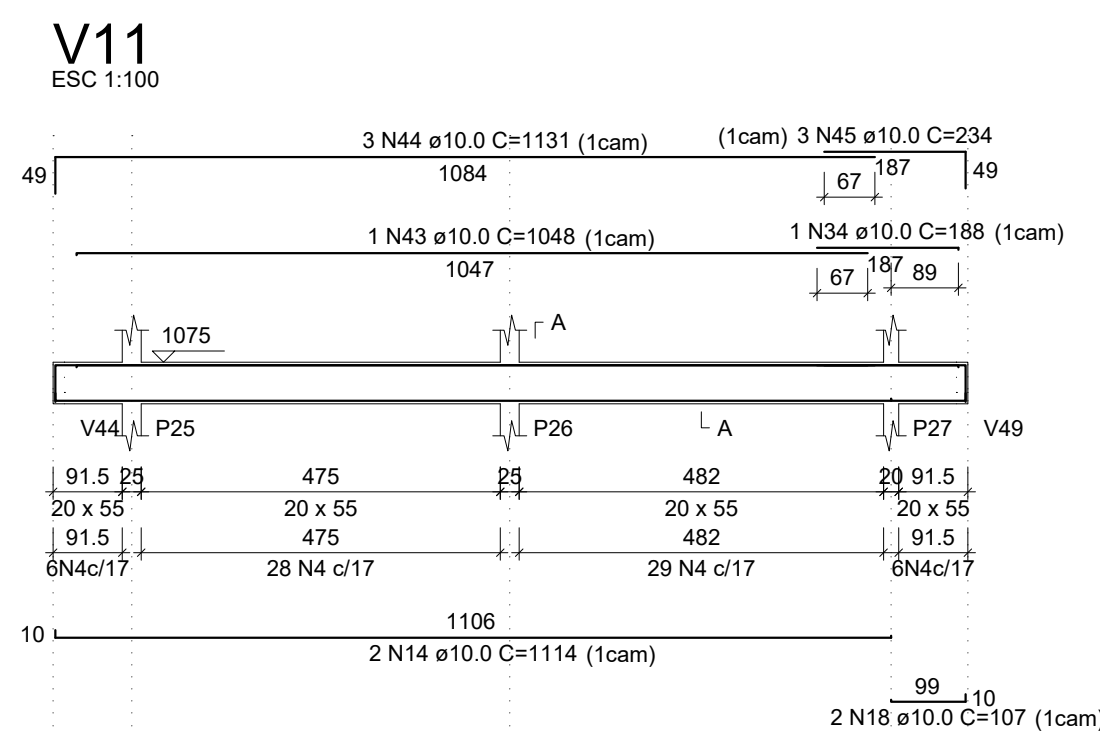
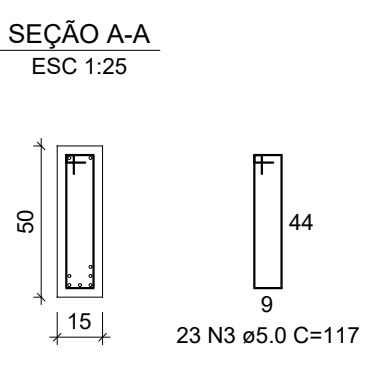
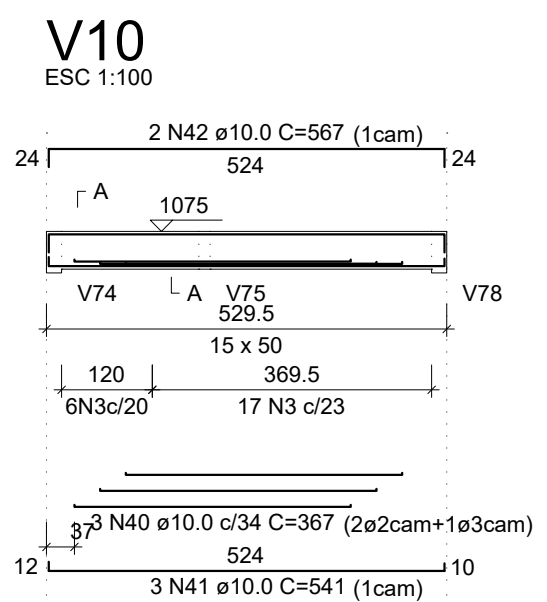
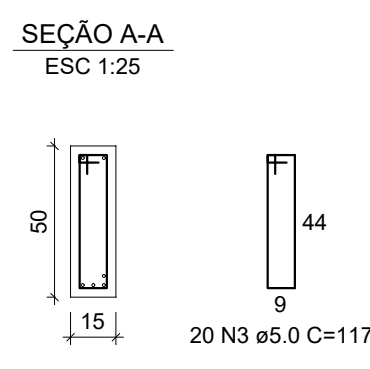
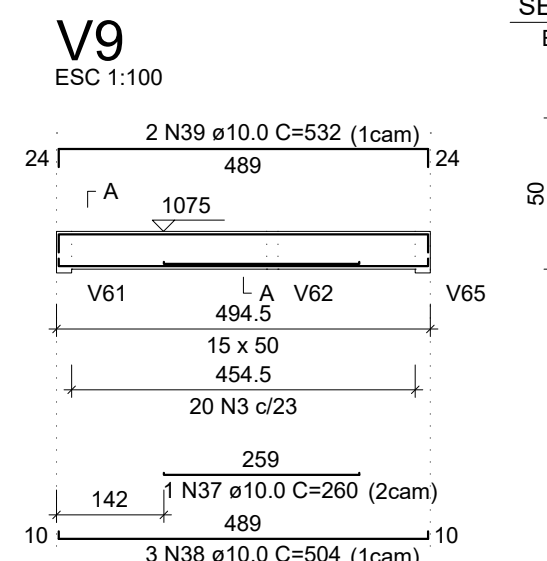
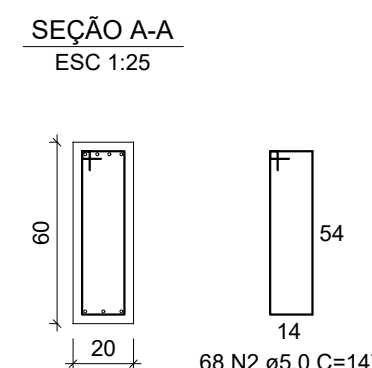
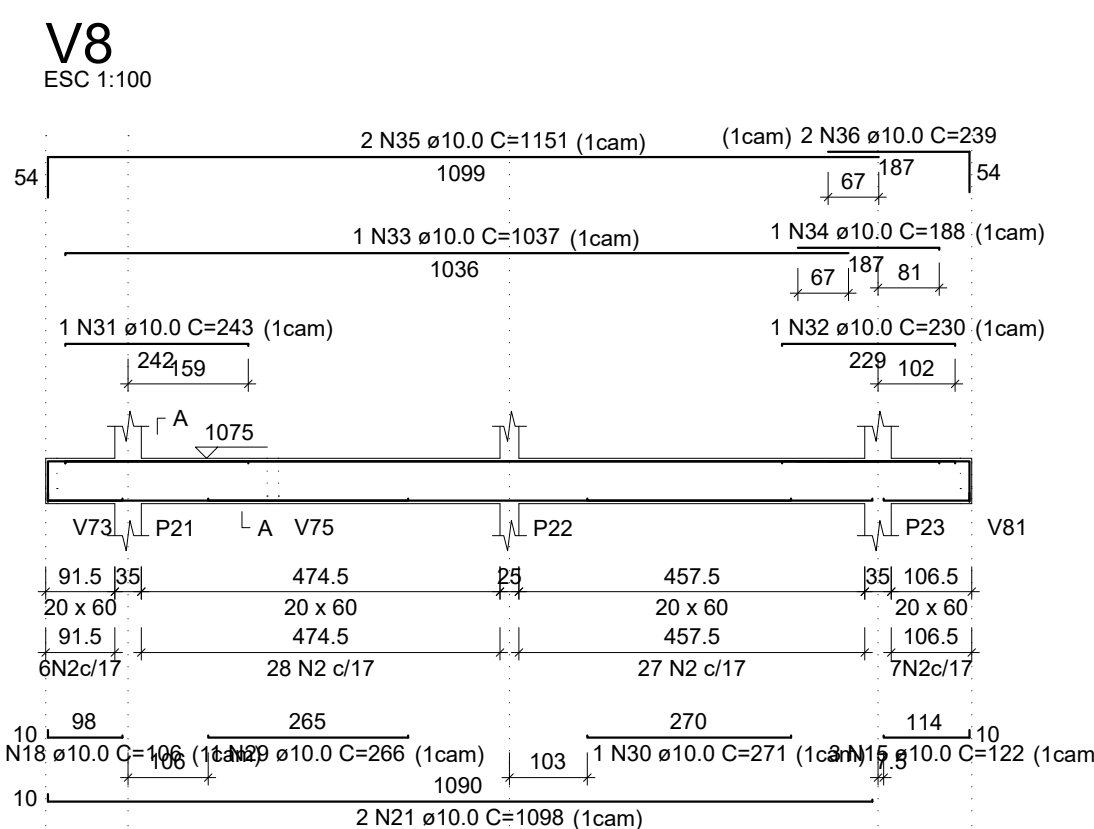
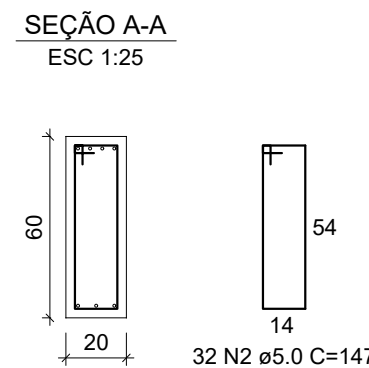
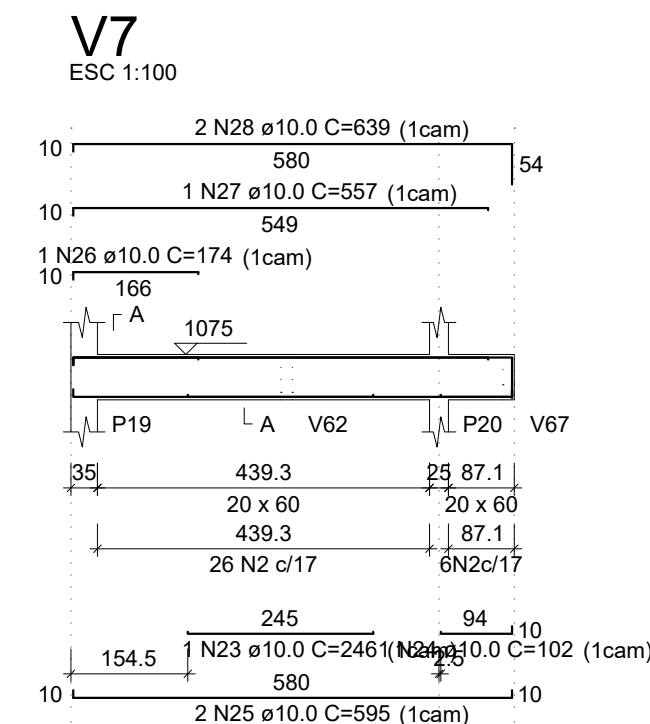
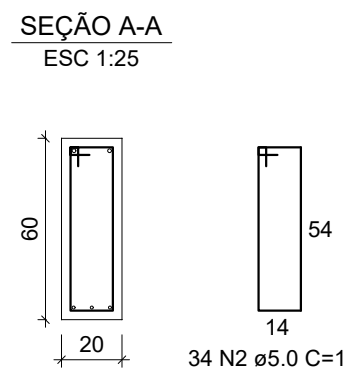
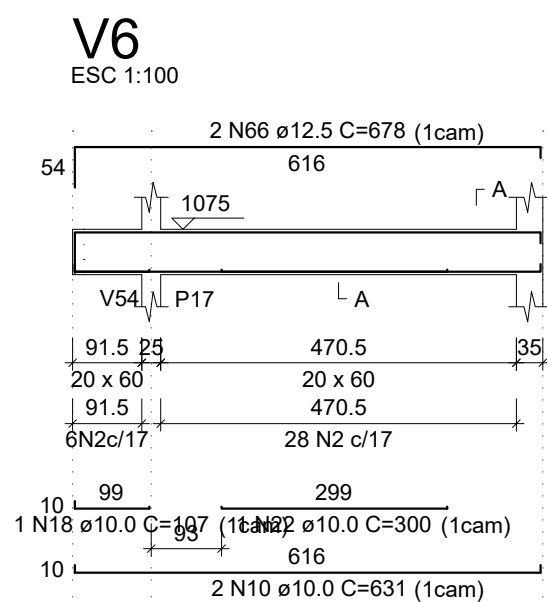
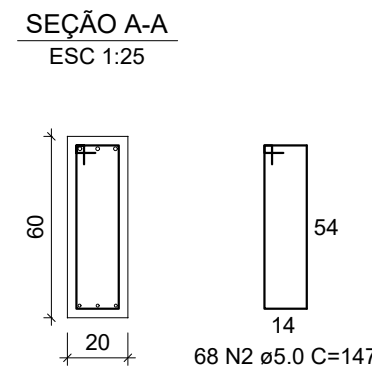
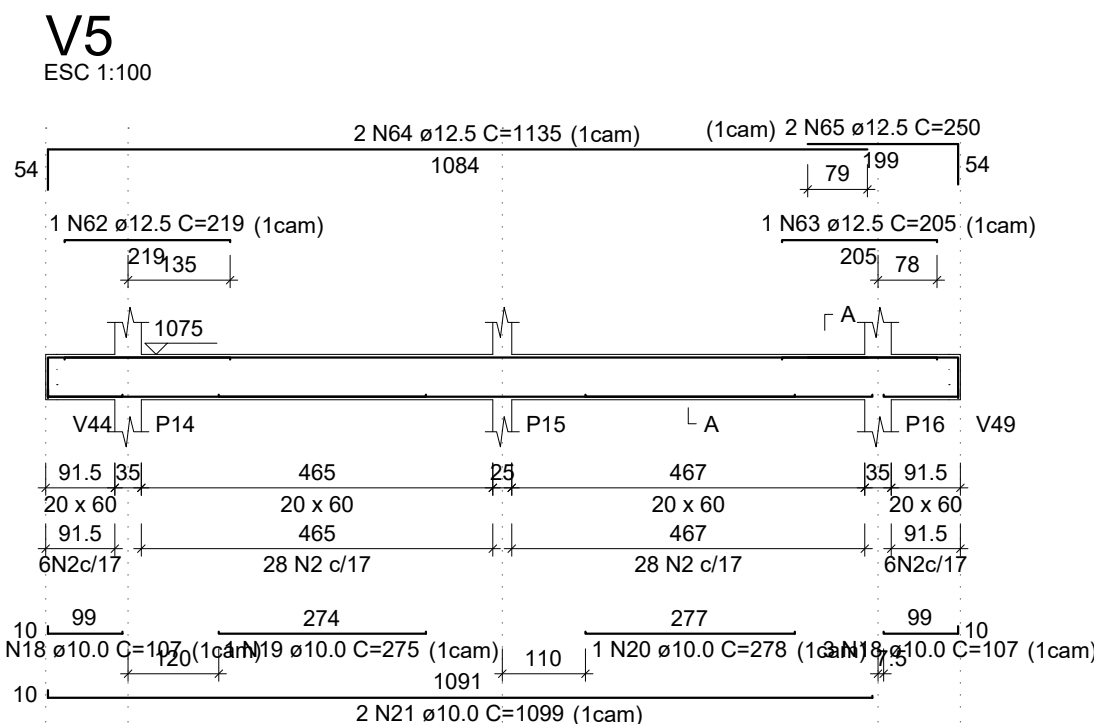
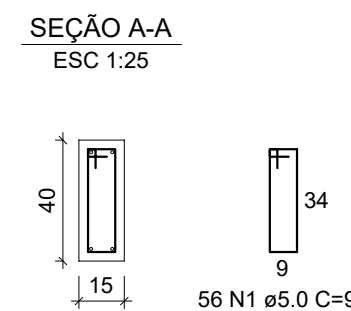
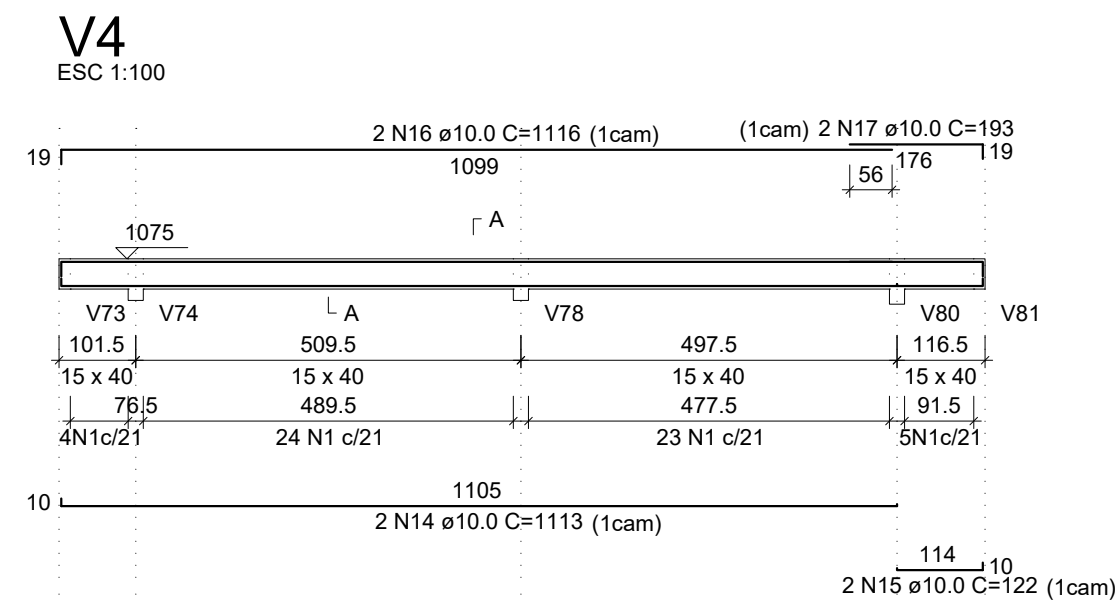
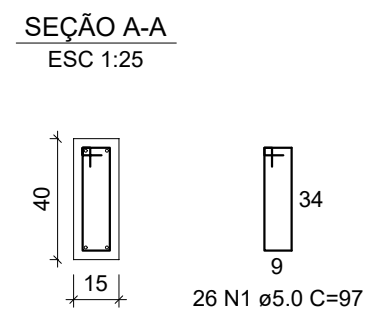
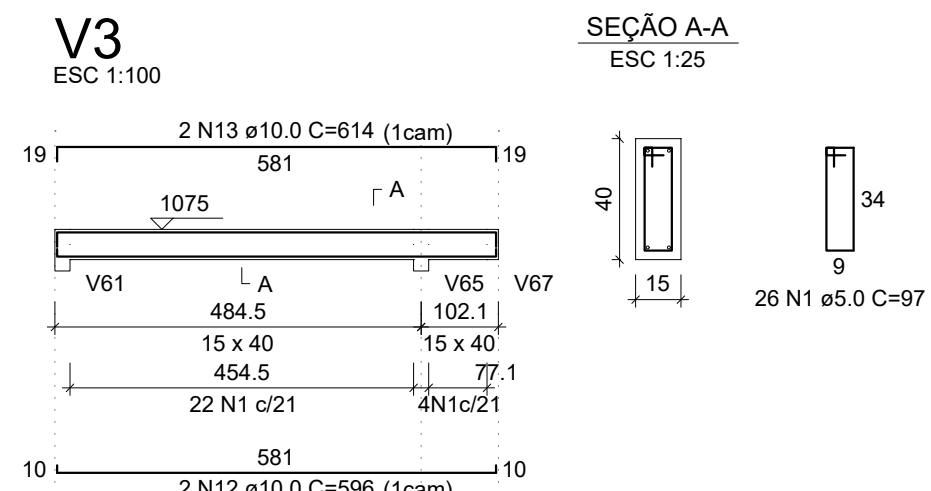
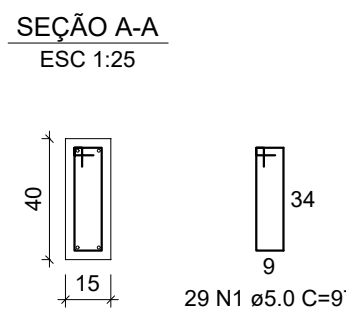
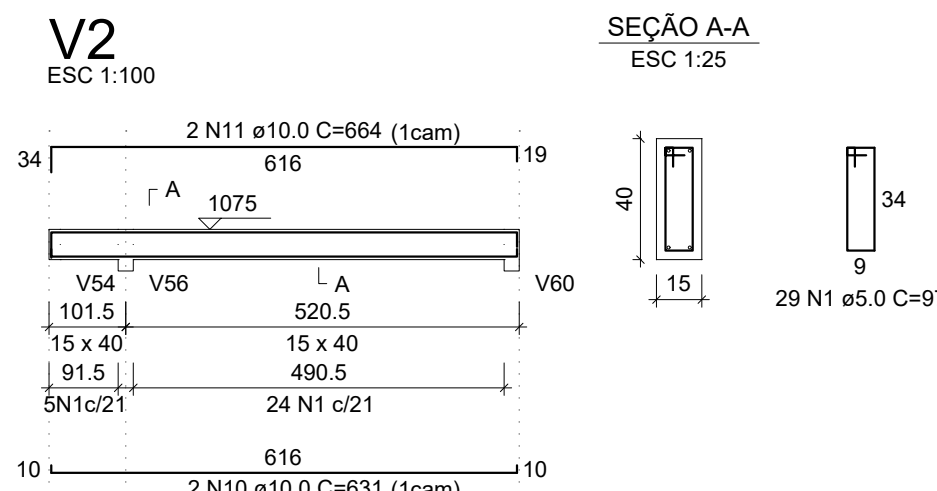
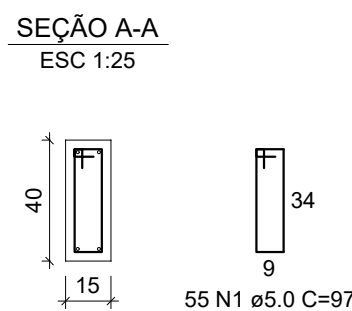
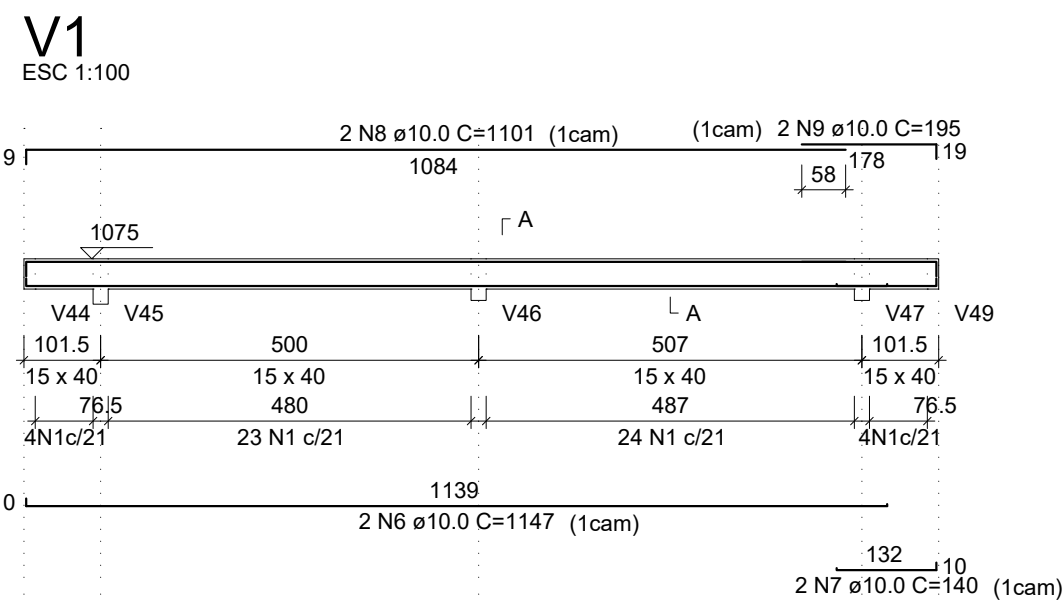
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	278	97	26966
	2	5.0	4	170	680
	3	5.0	4	116	464
	4	5.0	4	116	464
	5	5.0	4	168	672
	6	5.0	21	77	1617
	7	6.3	8	54	432
	8	6.3	4	61	244
	9	6.3	4	194	776
	10	6.3	4	53	212
	11	10.0	2	145	290
	12	10.0	1	106	106
	13	10.0	2	184	368
	14	10.0	2	327	654
	15	10.0	2	400	800
	16	10.0	2	409	818
	17	10.0	2	399	798
	18	10.0	2	408	816
	19	10.0	2	146	292
	20	10.0	2	117	234
	21	10.0	2	338	676
	22	10.0	2	515	1030
	23	10.0	2	533	1066
	24	10.0	2	338	676
	25	10.0	2	510	1020
	26	10.0	2	528	1056
	27	10.0	2	205	410
	28	10.0	2	407	814
	29	10.0	2	236	472
	30	10.0	2	398	796
	31	10.0	2	407	814
	32	10.0	2	206	412
	33	10.0	1	143	143
	34	10.0	2	249	498
	35	10.0	2	386	772
	36	10.0	2	418	836
	37	10.0	2	66	132
	38	10.0	2	90	180
	39	10.0	2	66	132
	40	10.0	2	108	216
	41	10.0	2	573	1146
	42	10.0	2	206	412
	43	10.0	2	602	1204
	44	10.0	2	394	788
	45	10.0	2	403	806
	46	10.0	2	204	408
	47	10.0	1	166	166
	48	10.0	2	235	470
	49	10.0	2	540	1080
	50	10.0	2	542	1084
	51	10.0	2	238	476
	52	10.0	1	99	99
	53	10.0	2	536	1072
	54	10.0	1	121	121
	55	10.0	2	559	1118
	56	10.0	2	247	494
	57	12.5	4	282	1128
	58	12.5	2	199	398
	59	12.5	1	118	118
	60	12.5	1	216	216
	61	12.5	2	251	502
	62	12.5	1	169	169
	63	12.5	2	247	494

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	16.6	2	12 m	4.1
	10.0	276	24	12 m	170.2
	12.5	30.3	3	12 m	29.1
CA60	5.0	308.6	-	rolo (170 kg)	47.6

PESO TOTAL (kg)
CA50 203.4
CA60 47.6

Volume de concreto (C-30) = 3.92 m³
Área de forma = 62.22 m²



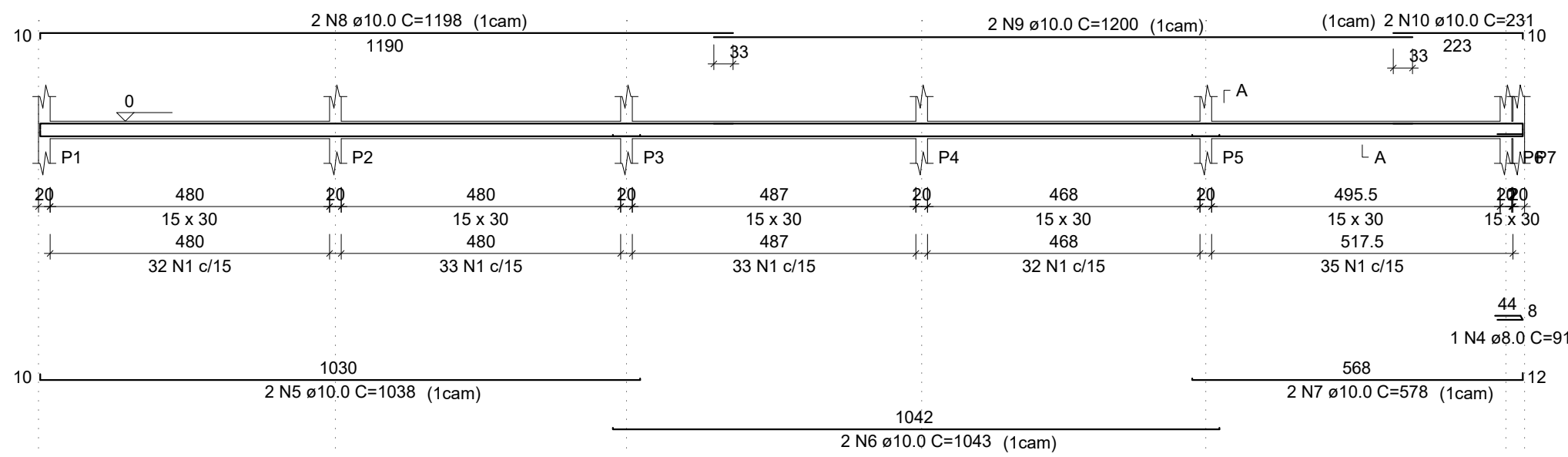
RELAÇÃO DO AÇO					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	186	97	18102
	2	5.0	202	147	29694
	3	5.0	43	117	5031
	4	5.0	205	137	28085
	5	5.0	183	141	25803
	6	10.0	2	1147	2294
	7	10.0	2	140	280
	8	10.0	2	1101	2202
	9	10.0	2	195	390
	10	10.0	4	631	2524
CA50	11	10.0	2	664	1328
	12	10.0	2	596	1192
	13	10.0	2	614	1228
	14	10.0	4	1113	4452
	15	10.0	7	122	854
	16	10.0	2	1116	2232
	17	10.0	2	193	386
	18	10.0	8	107	856
	19	10.0	1	275	300
	20	10.0	1	278	278
	21	10.0	4	1099	4396
	22	10.0	1	275	275
	23	10.0	1	246	246
	24	10.0	1	102	102
	25	10.0	2	595	1190
	26	10.0	1	174	174
	27	10.0	1	557	557
	28	10.0	2	639	1278
	29	10.0	1	266	266
	30	10.0	1	271	271
	31	10.0	1	243	243
	32	10.0	1	230	230
	33	10.0	1	1037	1037
	34	10.0	2	188	376
	35	10.0	2	1151	2302
	36	10.0	1	239	239
	37	10.0	1	260	260
	38	10.0	3	504	1512
	39	10.0	2	532	1064
	40	10.0	3	367	1101
	41	10.0	3	541	1623
	42	10.0	2	567	1134
	43	10.0	1	1048	1048
	44	10.0	3	1131	3393
	45	10.0	3	234	702
	46	10.0	2	513	1026
	47	10.0	1	475	475
	48	10.0	1	335	335
	49	10.0	1	99	99
	50	10.0	1	293	293
	51	10.0	1	307	307
	52	10.0	2	1107	2214
	53	10.0	1	248	248
	54	10.0	1	321	321
	55	10.0	1	523	523
	56	10.0	2	1016	2032
	57	10.0	1	490	490
	58	10.0	1	181	181
	59	10.0	2	600	1200
	60	10.0	1	604	604
	61	10.0	3	918	2754
	62	12.5	1	219	219
	63	12.5	1	205	205
	64	12.5	2	1135	2270
	65	12.5	2	250	500
	66	12.5	2	678	1356
	67	12.5	2	632	1264
	68	12.5	1	237	237
	69	12.5	1	610	610
	70	12.5	2	673	1346
	71	12.5	2	595	1190
	72	12.5	1	227	227
	73	12.5	2	666	1332
	74	12.5	2	1097	2194
	75	12.5	1	221	221
	76	12.5	3	1145	3435
	77	12.5	3	250	750
	78	12.5	1	1086	1086
	79	12.5	1	204	204
	80	12.5	1	234	234
	81	12.5	1	613	613
	82	12.5	2	1198	2396
	83	12.5	2	1060	2120

RESUMO DO AÇO				
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	PESO + 0% (kg)
CA50	10.0	597.6	50	368.4
CA60	5.0	1047.2	21	231.3
PESO TOTAL (kg)				600

Volume de concreto (C-30) = 14.98 m³
Área de forma = 184.54 m²

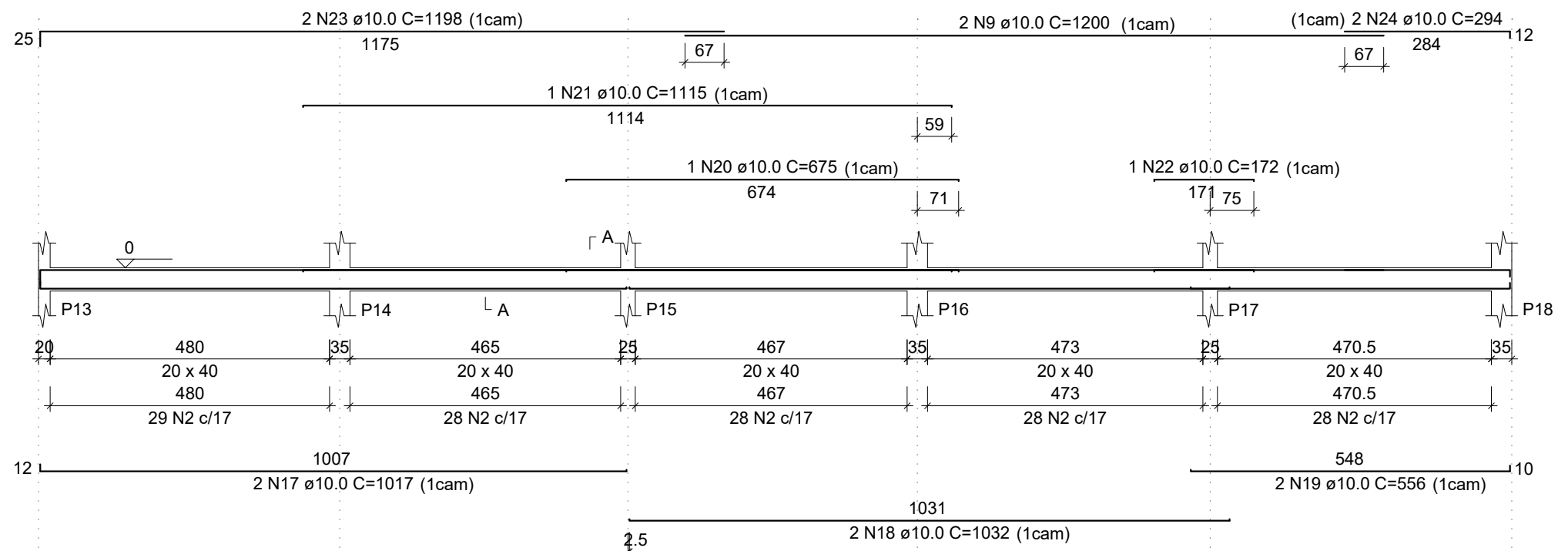
V1

ESC 1:100



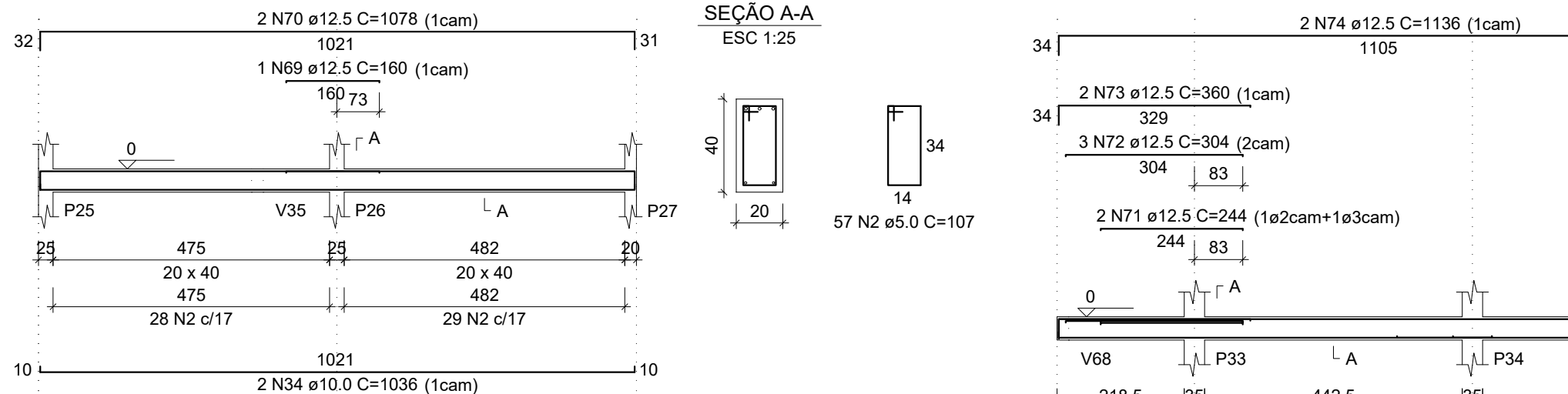
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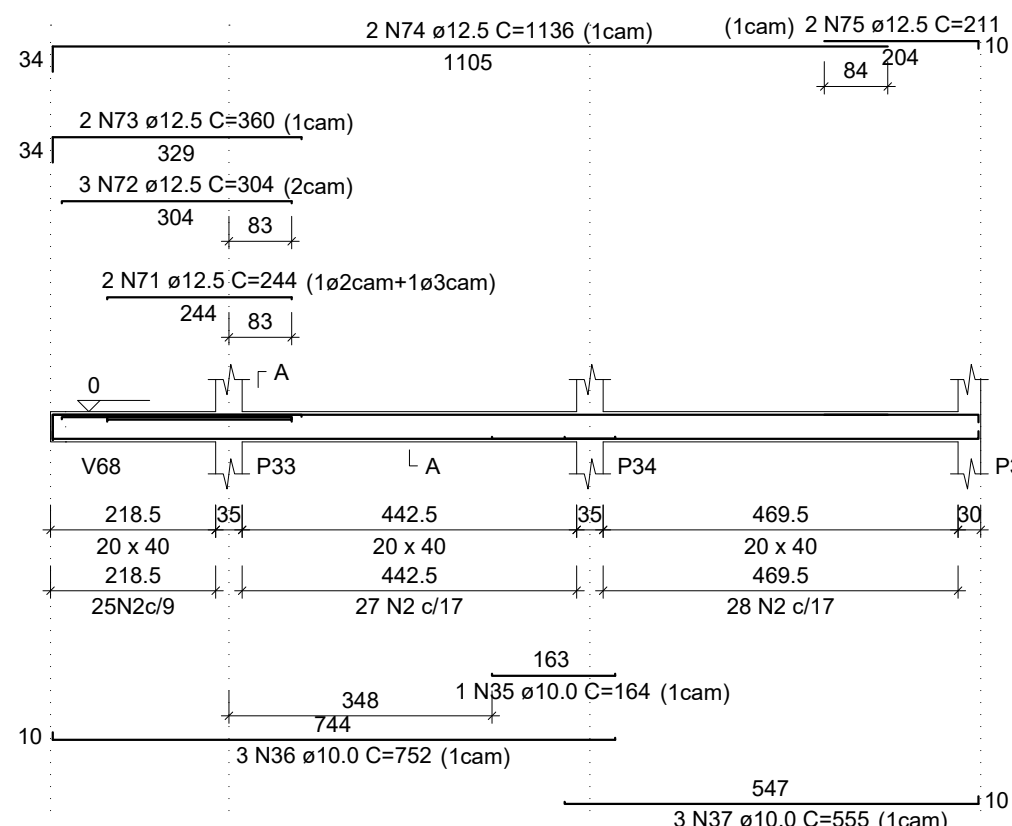
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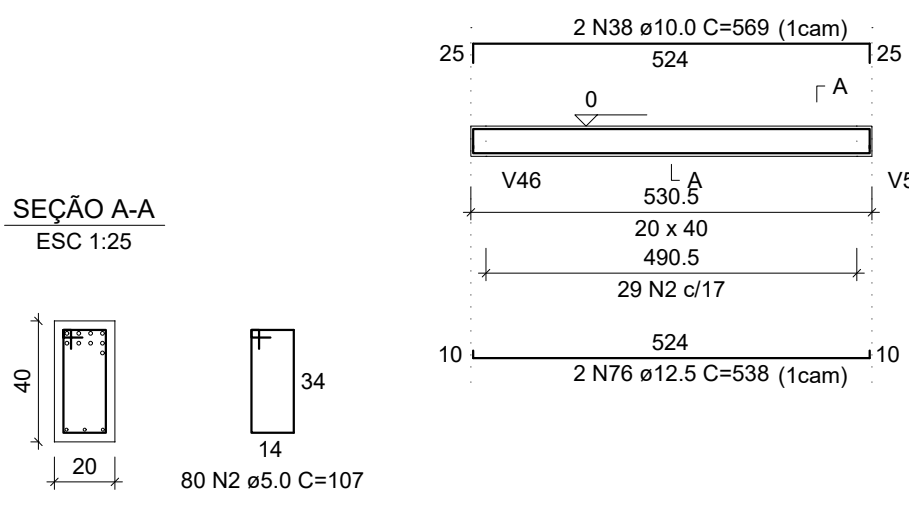
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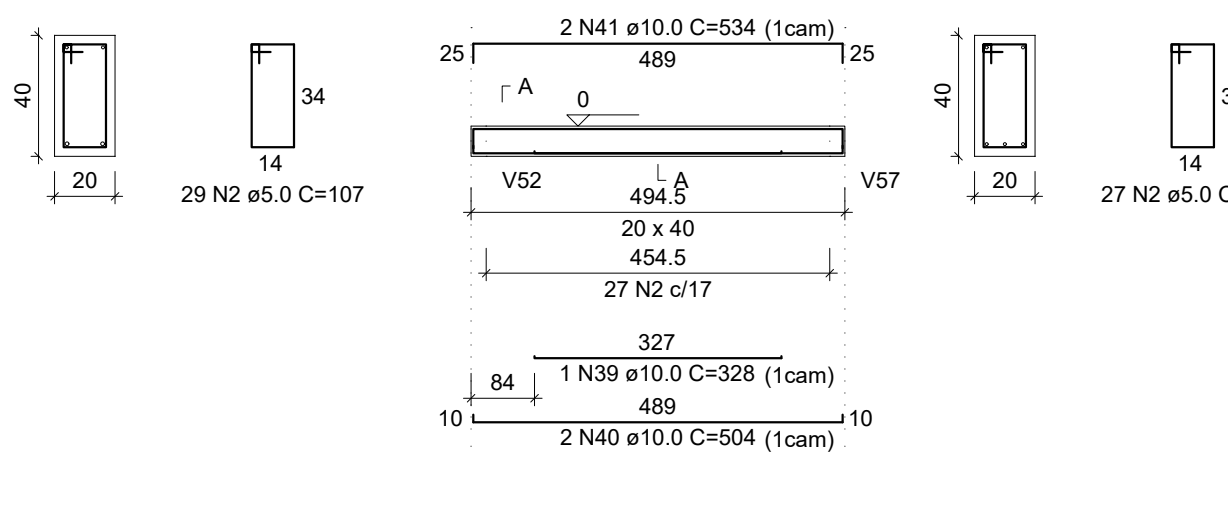
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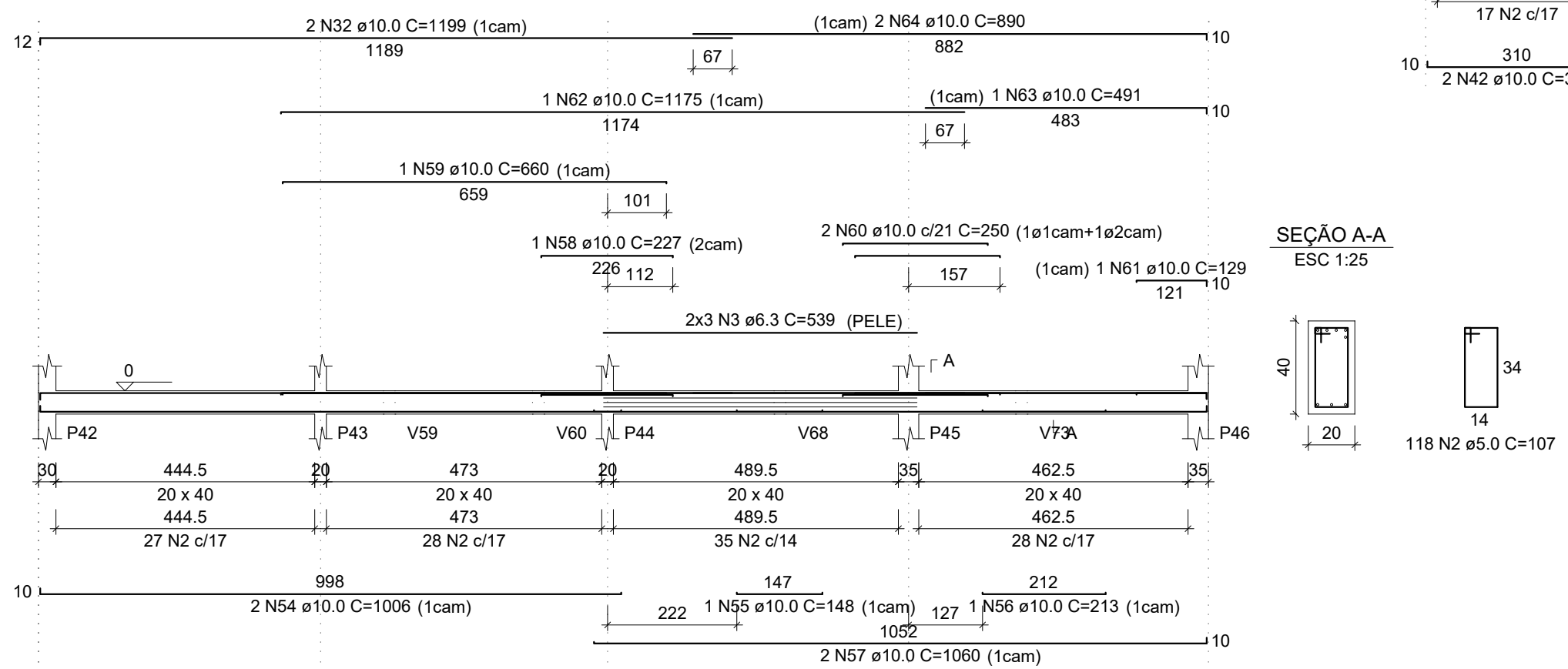
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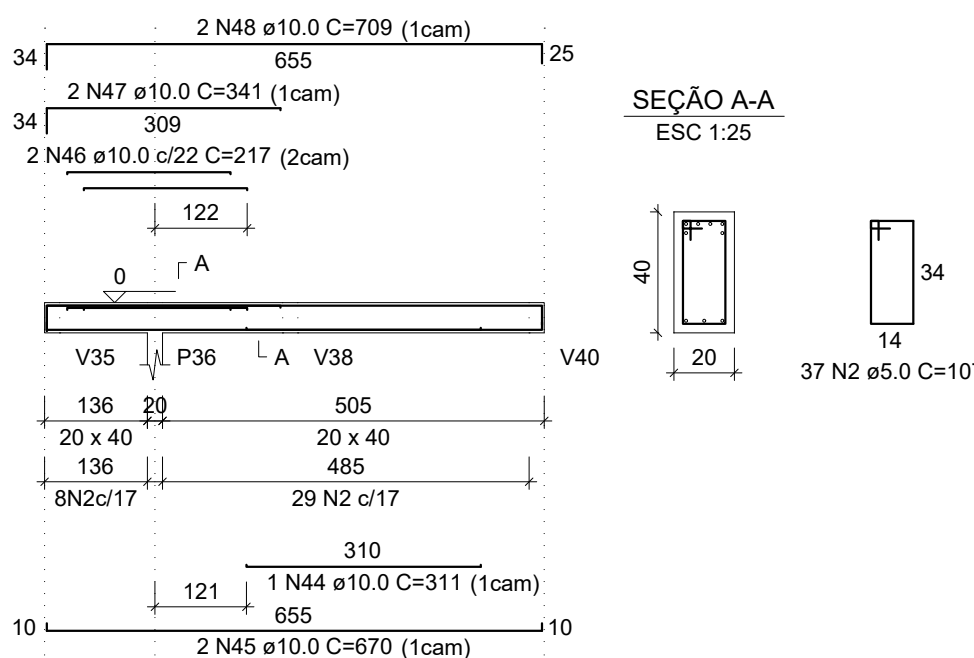
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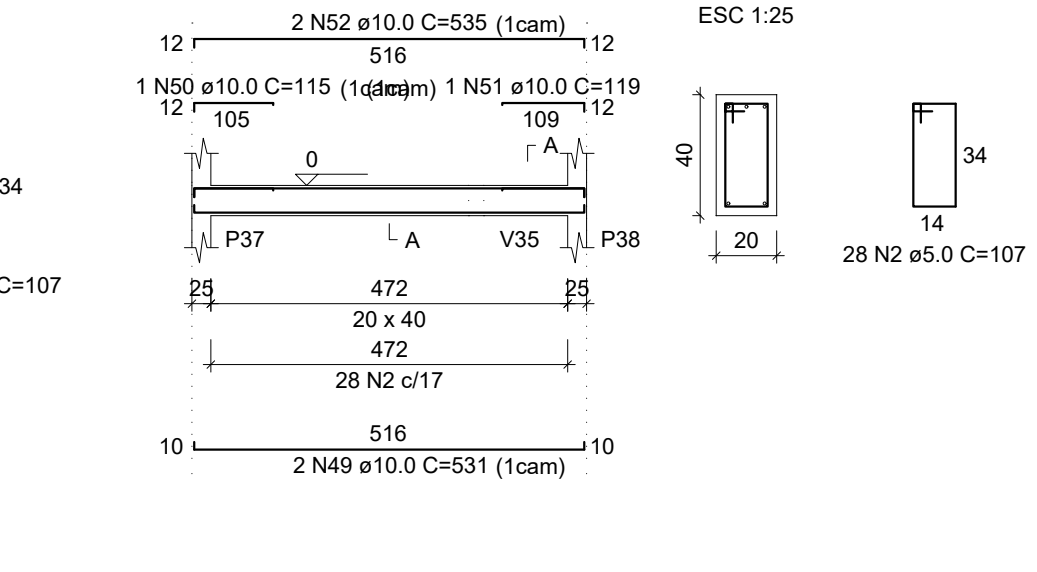
V10

ESC 1:100



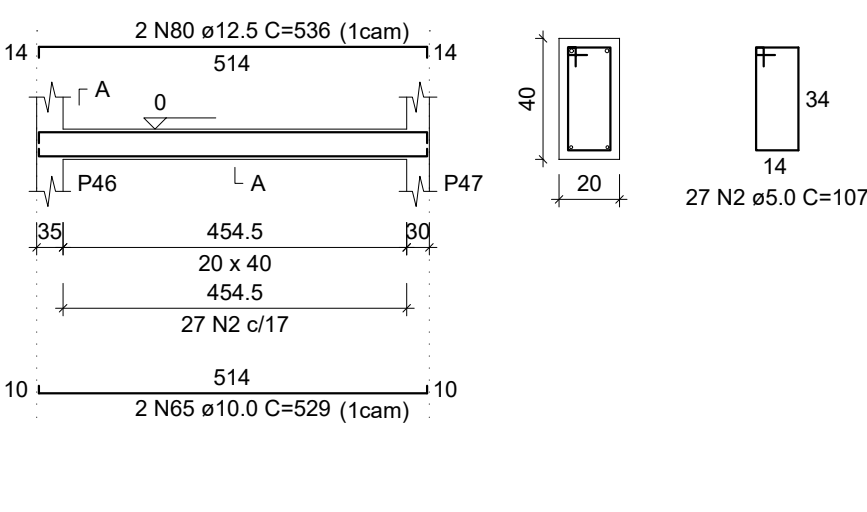
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ESC 1:100



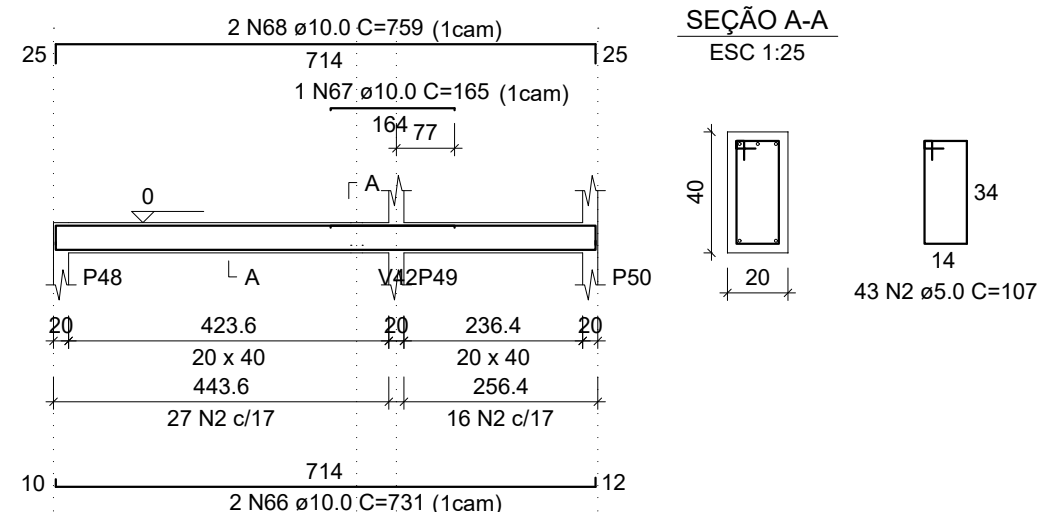
V14

ESC 1:100



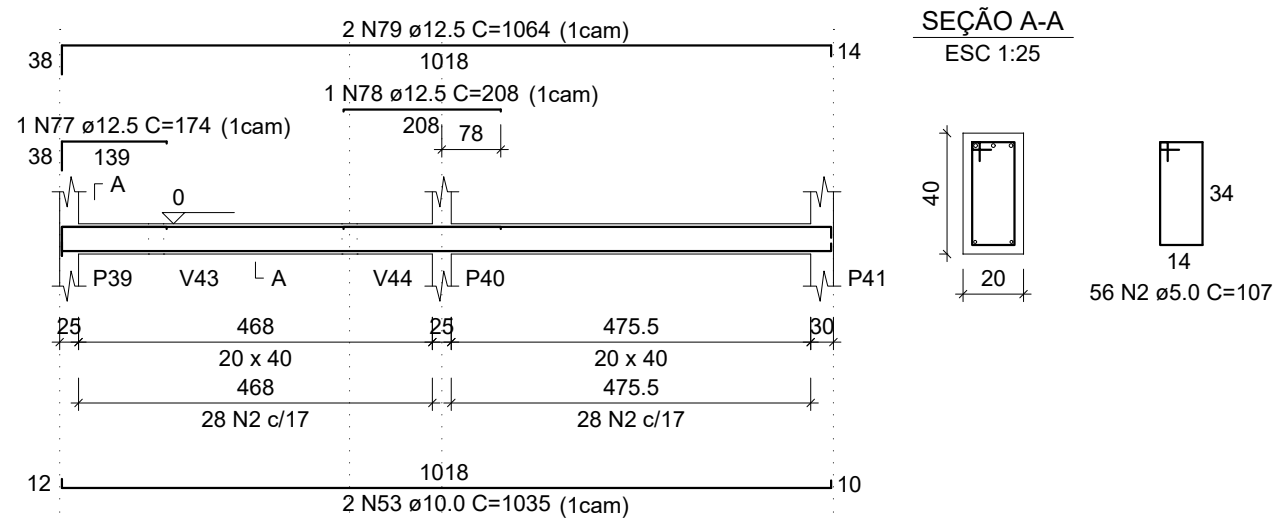
V15

ESC 1:100



V12

ESC 1:100



RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	325	77	25025
CA50	2	5.0	798	107	85386
	3	6.3	6	539	3234
	4	8.0	1	91	91
	5	10.0	2	1038	2076
	6	10.0	2	1043	2086
	7	10.0	2	578	1156
	8	10.0	4	1198	4792
	9	10.0	8	1200	9600
	10	10.0	2	231	462
	11	10.0	2	1006	2012
	12	10.0	2	1042	2084
	13	10.0	2	548	1096
	14	10.0	1	160	160
	15	10.0	1	163	163
	16	10.0	2	233	466
	17	10.0	2	1017	2034
	18	10.0	2	1032	2064
	19	10.0	2	556	1112
	20	10.0	1	675	675
	21	10.0	1	1115	1115
	22	10.0	1	172	172
	23	10.0	2	1198	2396
	24	10.0	2	294	588
	25	10.0	1	218	218
	26	10.0	2	1019	2038
	27	10.0	2	558	1116
	28	10.0	1	166	166
	29	10.0	2	236	472
	30	10.0	1	242	242
	31	10.0	2	198	396
	32	10.0	4	1199	4796
	33	10.0	2	253	506
	34	10.0	2	1036	2072
	35	10.0	1	164	164
	36	10.0	3	752	2256
	37	10.0	3	555	1665
	38	10.0	2	569	1138
	39	10.0	1	328	328
	40	10.0	2	504	1008
	41	10.0	2	534	1068
	42	10.0	2	327	654
	43	10.0	2	364	728
	44	10.0	1	311	311
	45	10.0	1	670	670
	46	10.0	2	217	434
	47	10.0	2	341	682
	48	10.0	2	709	1418
	49	10.0	2	531	1062
	50	10.0	1	115	115
	51	10.0	1	119	119
	52	10.0	1	535	1070
	53	10.0	2	1035	2070
	54	10.0	2	1006	2012
	55	10.0	1	148	148
	56	10.0	1	213	213
	57	10.0	2	1060	2120
	58	10.0	1	227	227
	59	10.0	1	660	660
	60	10.0	2	250	500
	61	10.0	1	129	129
	62	10.0	1	1175	1175
	63	10.0	1	491	491
	64	10.0	2	890	1780
	65	10.0	2	529	1058
	66	10.0	2	731	1462
	67	10.0	1	165	165
	68	10.0	2	759	1518
	69	12.5	1	160	160
	70	12.5	2	1078	2156
	71	12.5	2	244	488
	72	12.5	3	304	912
	73	12.5	2	380	760
	74	12.5	2	1136	2272
	75	12.5	2	211	422
	76	12.5	2	538	1076
	77	12.5	1	174	174
	78	12.5	1	208	208
	79	12.5	2	1064	2128
	80	12.5	2	536	1072

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	32.3	3	12 m	7.9
	8.0	0.9	1	12 m	0.4
	10.0	816.3	69	12 m	503.3
	12.5	117.9	10	12 m	113.6
CA60	5.0	1104.1	-	rolo (170 kg)	170.2

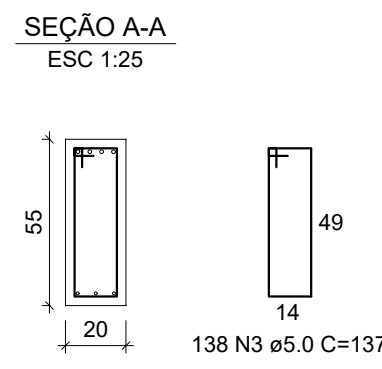
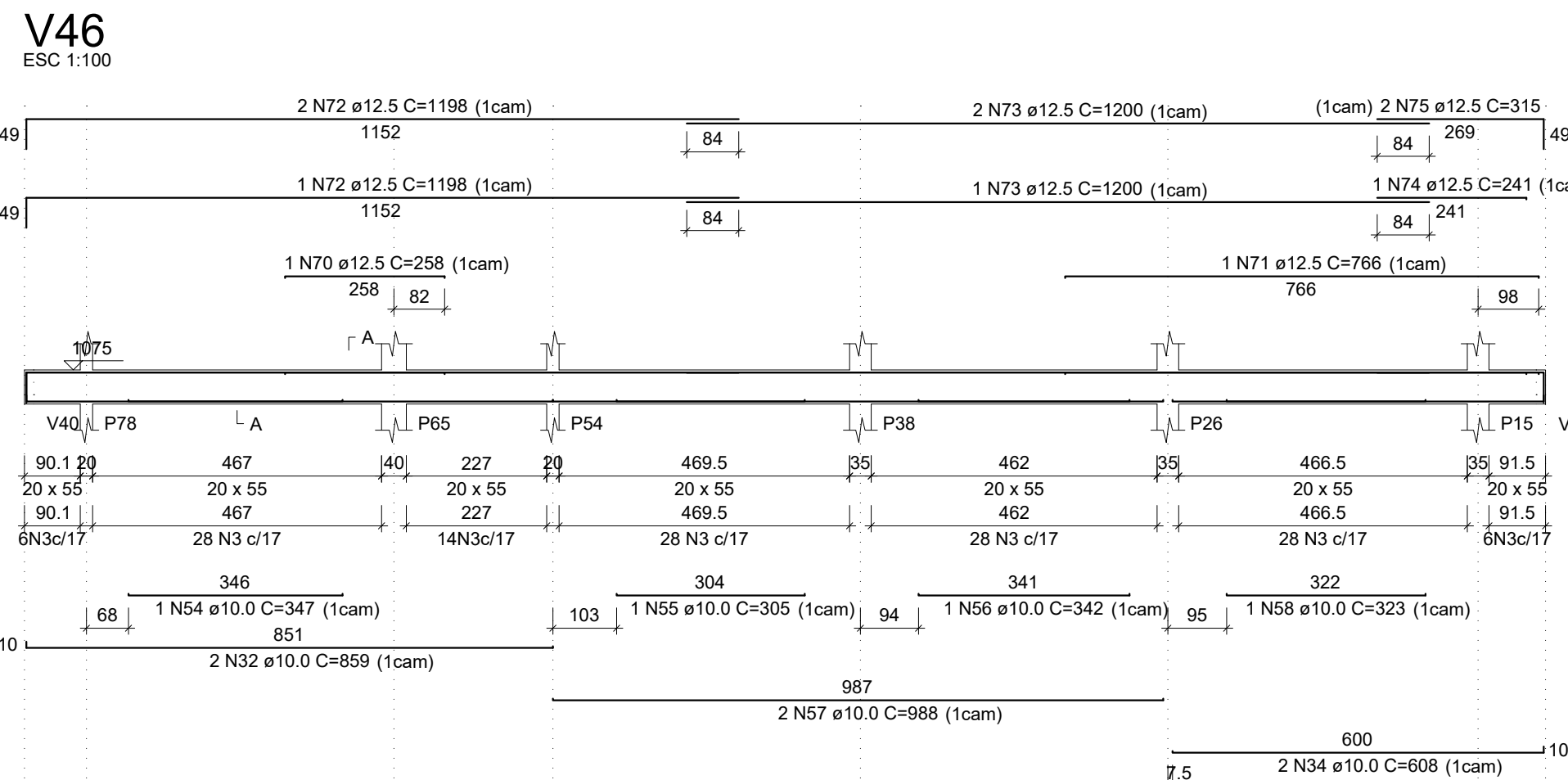
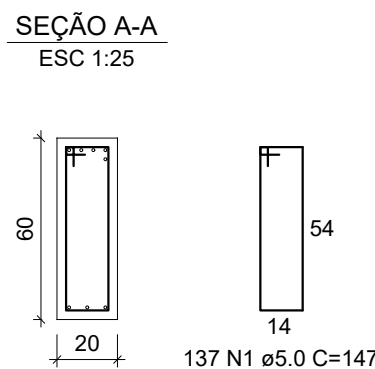
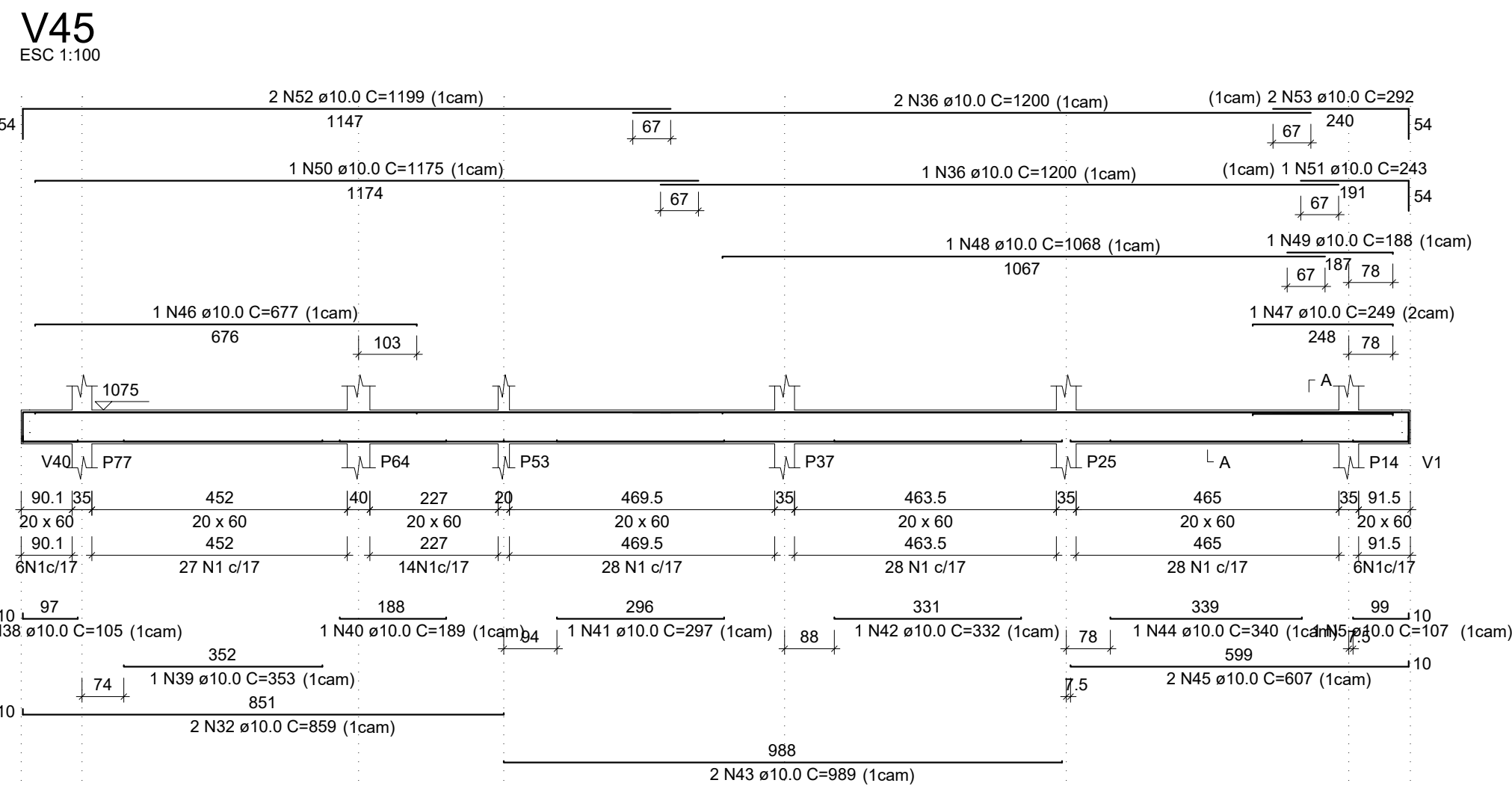
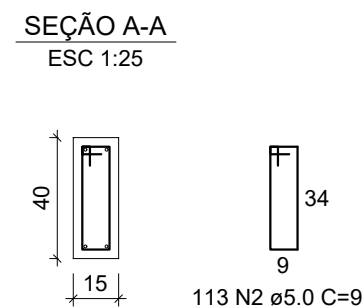
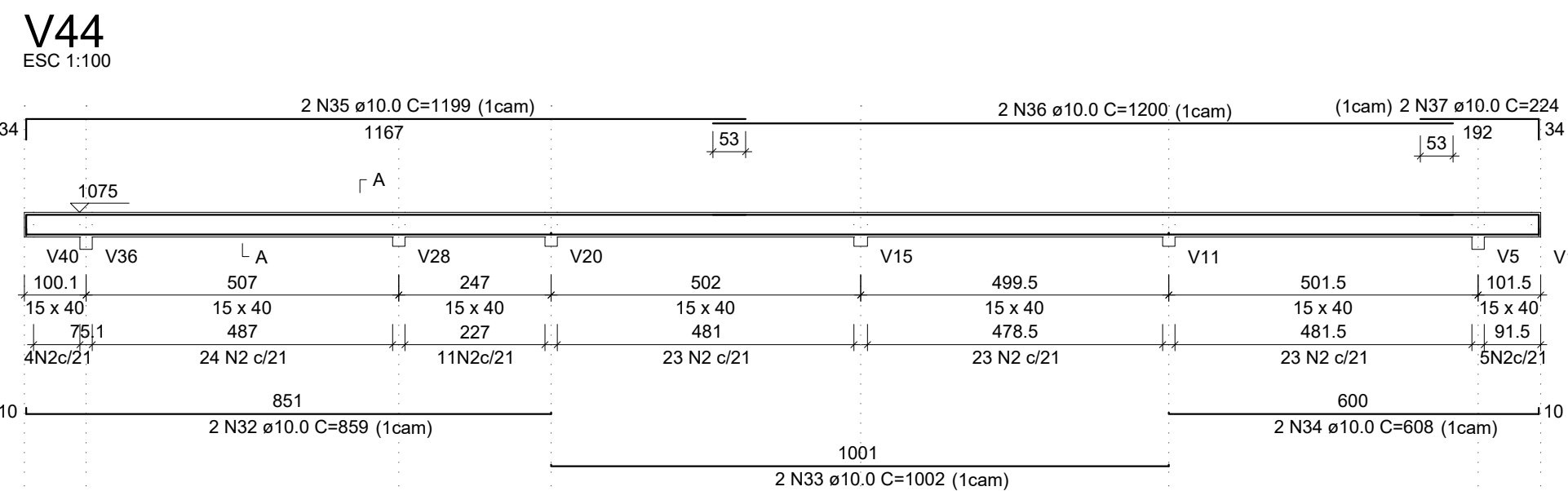
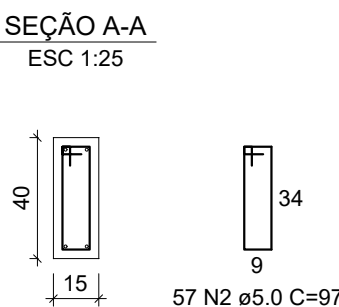
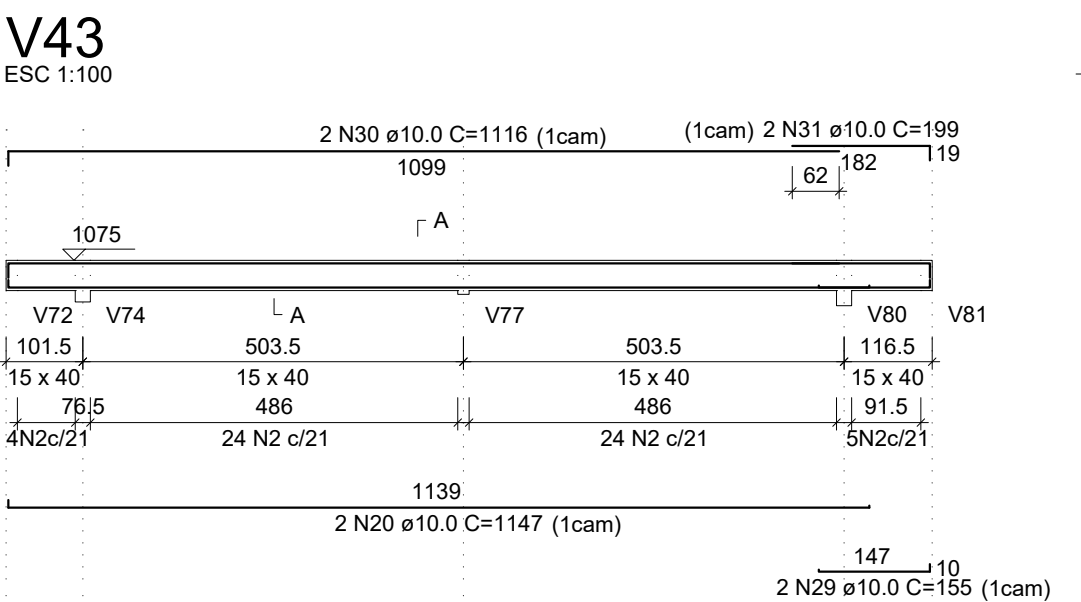
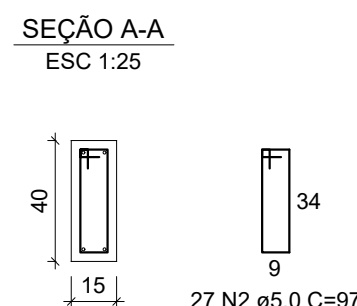
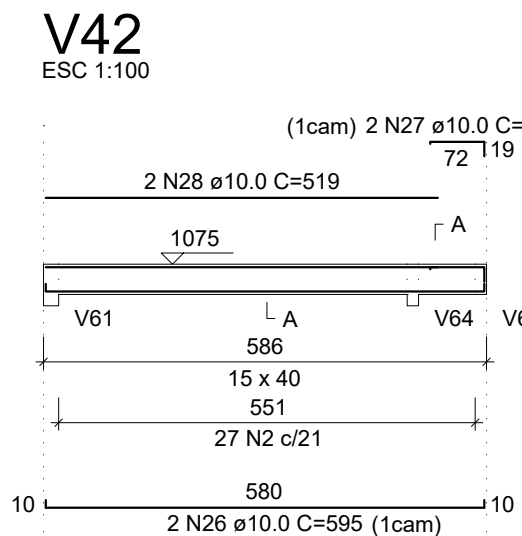
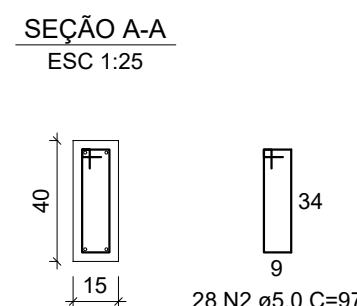
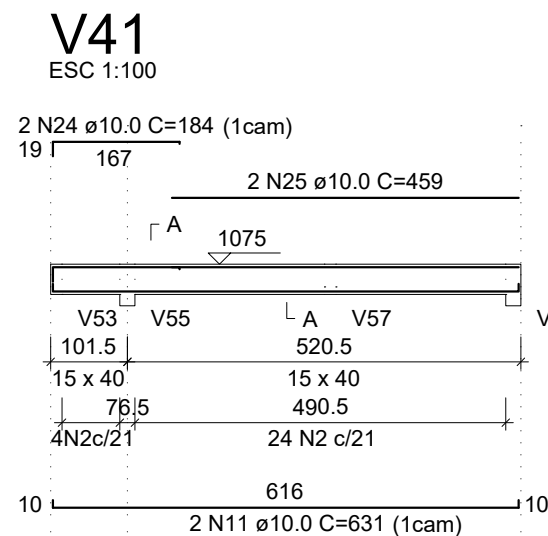
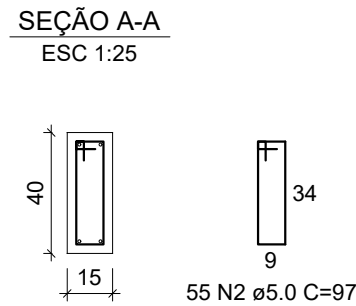
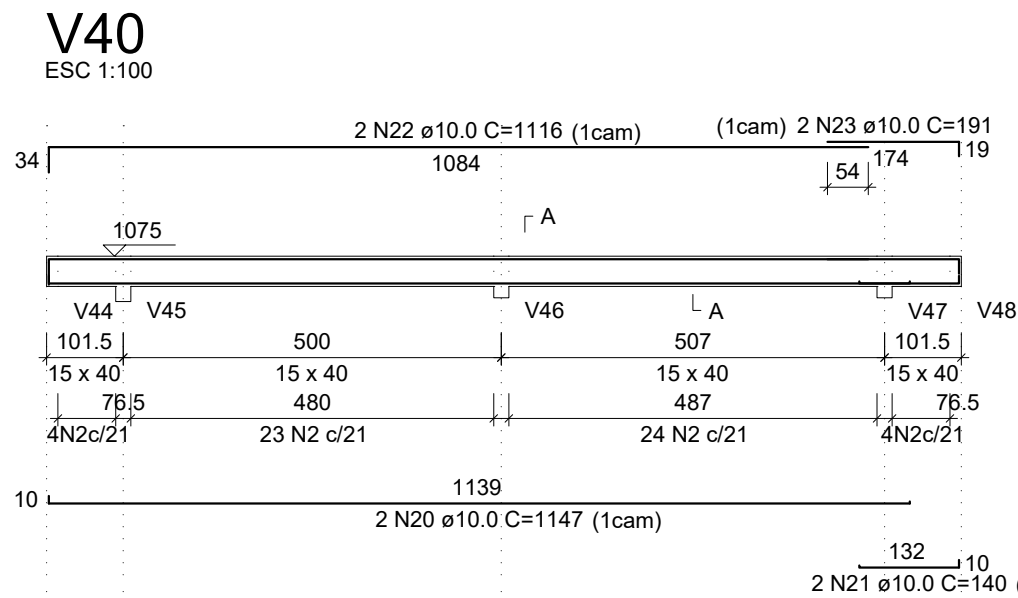
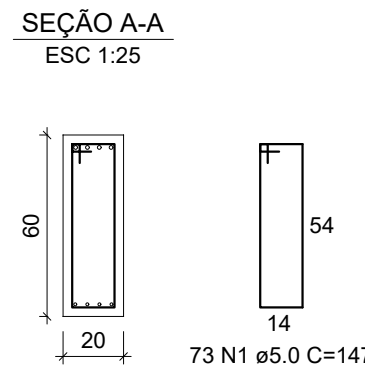
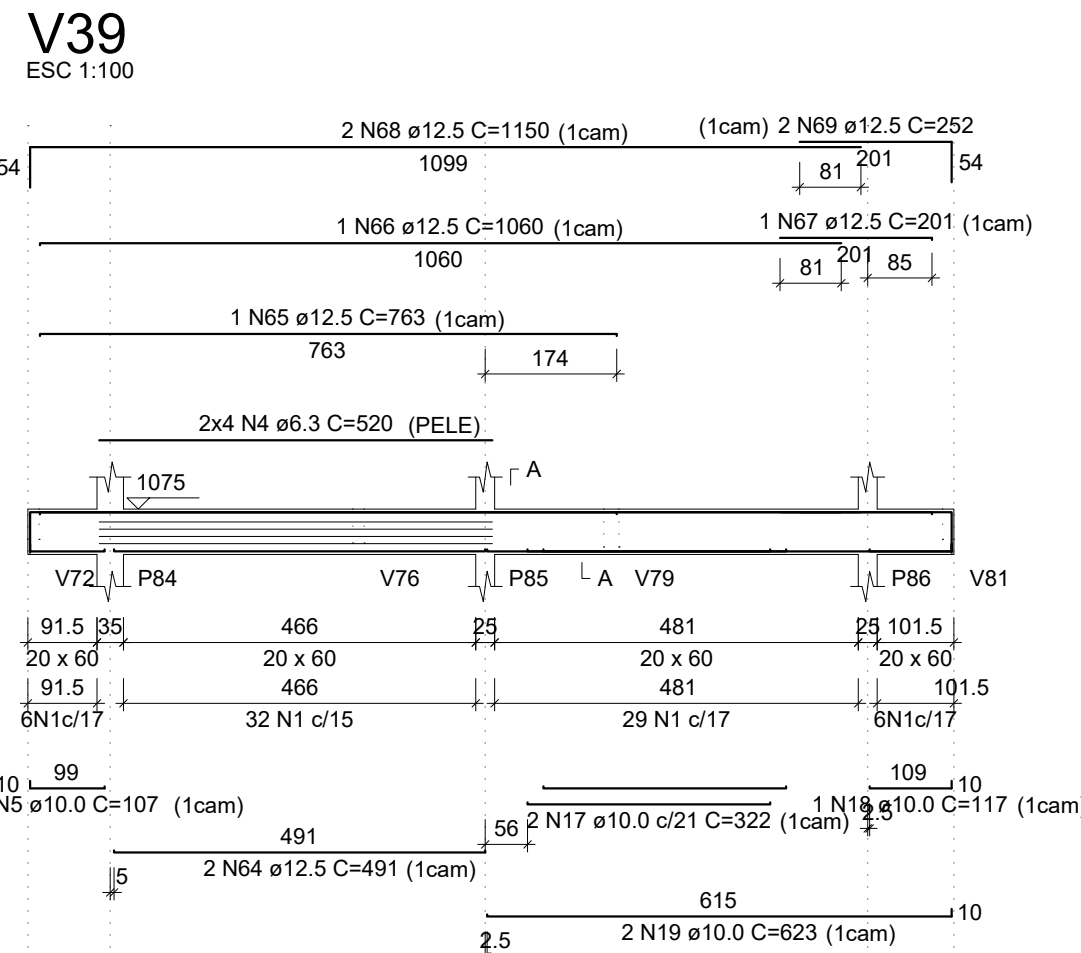
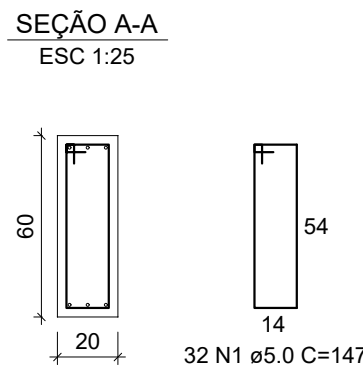
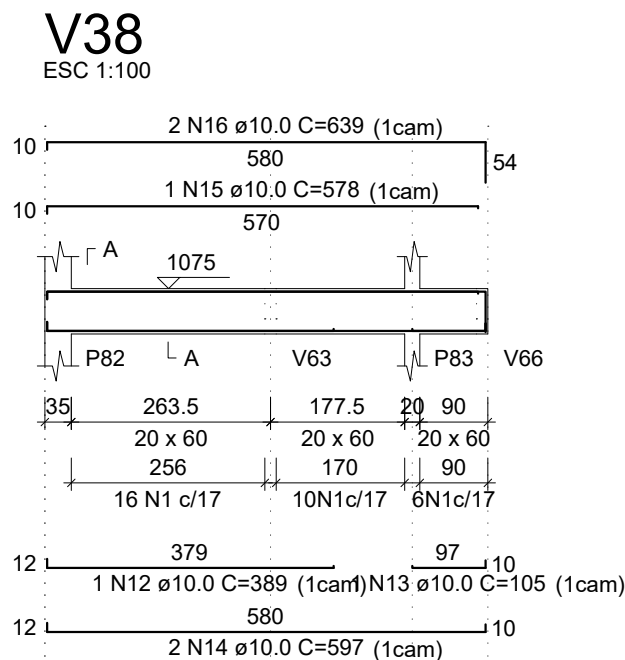
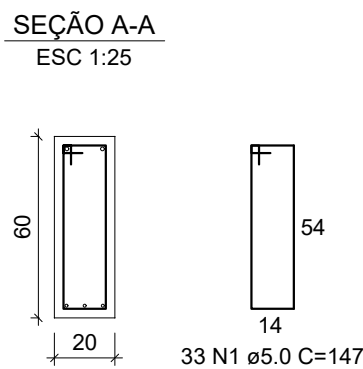
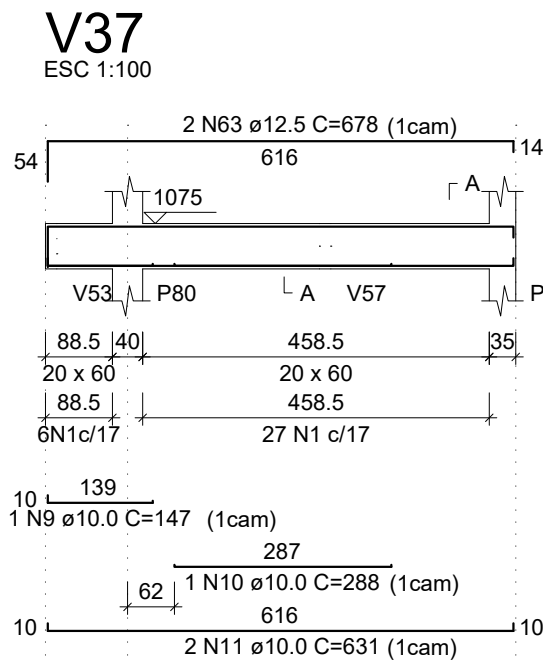
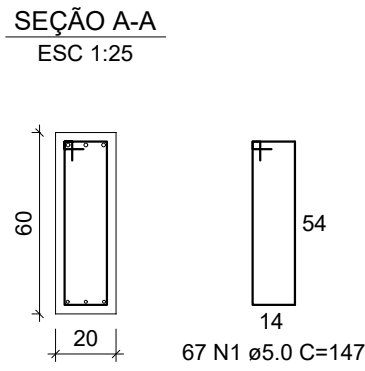
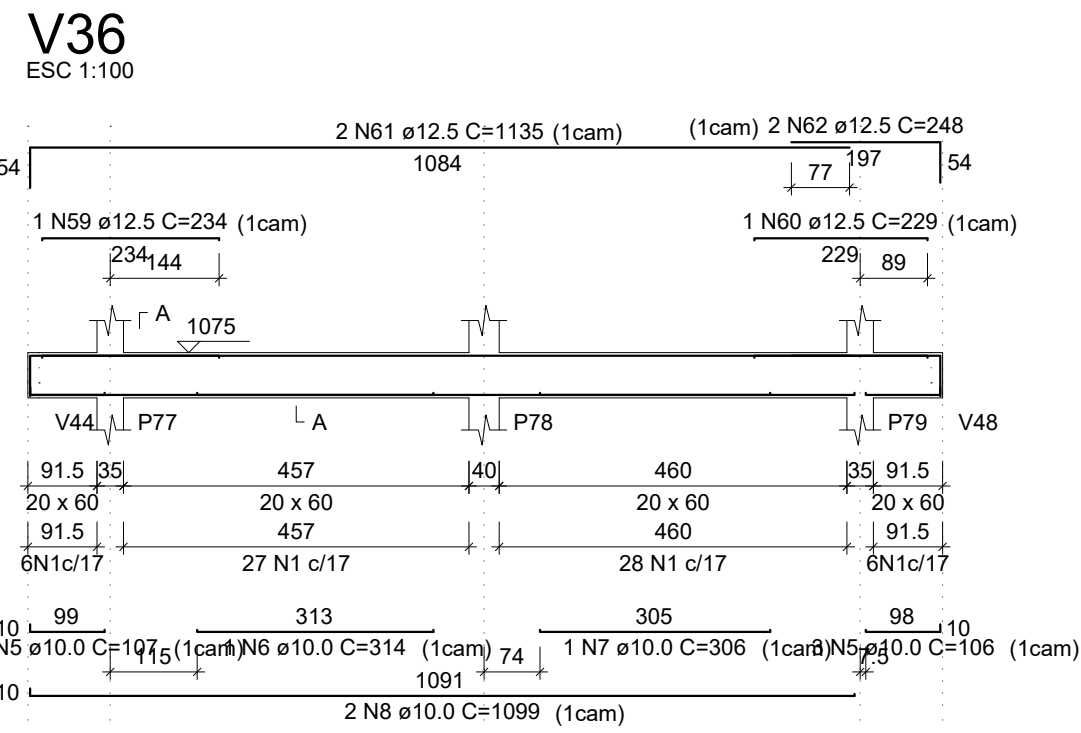
PESO TOTAL (kg)

CA50 625.1

CA60 170.2

Volume de concreto (C-30) = 13.53 m³

Área de forma = 178.64 m²



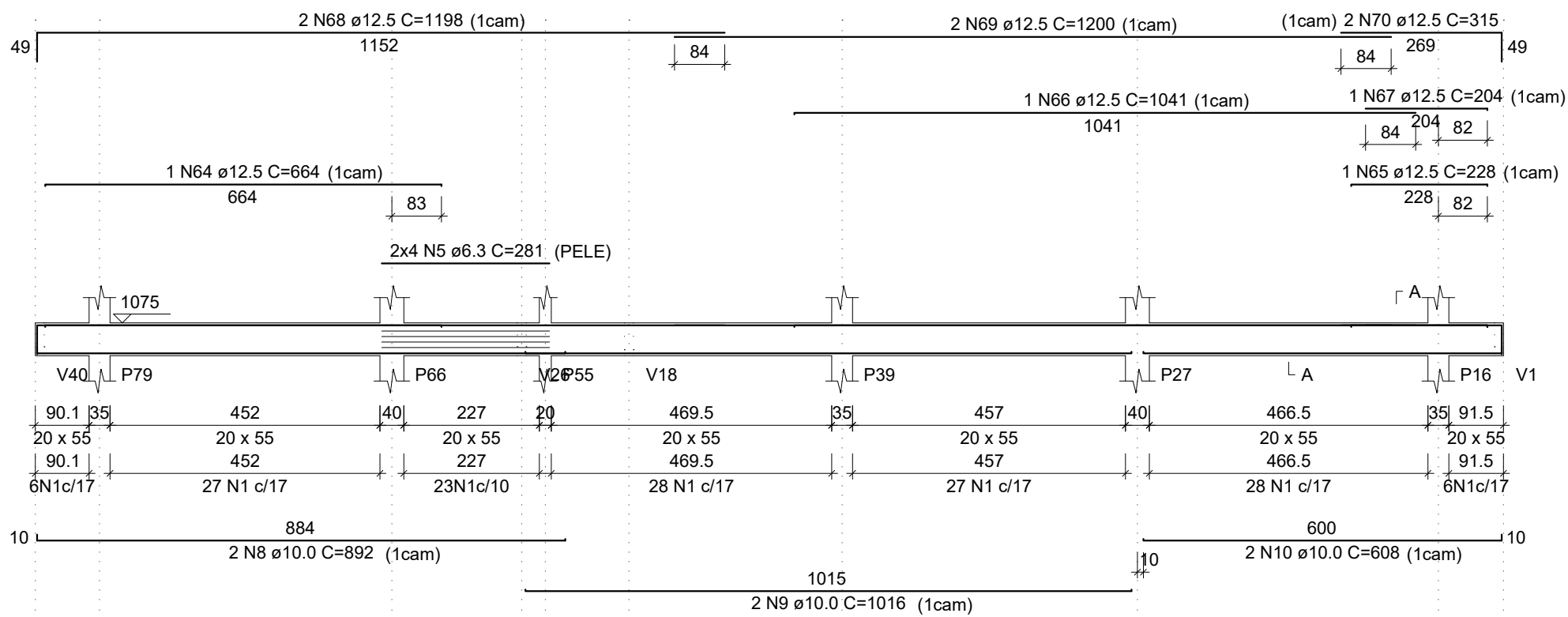
RELAÇÃO DO AÇO					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	342	147	50274
	2	5.0	280	97	27160
	3	5.0	189	137	18906
	4	6.3	8	520	4160
CA50	5	10.0	8	107	856
	6	10.0	1	314	314
	7	10.0	1	306	306
	8	10.0	2	1099	2198
	9	10.0	1	147	147
	10	10.0	1	288	288
	11	10.0	4	631	2524
	12	10.0	1	389	389
	13	10.0	1	105	105
	14	10.0	2	597	1194
	15	10.0	1	578	578
	16	10.0	2	639	1278
	17	10.0	2	322	644
	18	10.0	1	117	117
	19	10.0	2	623	1246
	20	10.0	4	1147	4588
	21	10.0	2	140	280
	22	10.0	2	1116	2232
	23	10.0	2	191	382
	24	10.0	2	184	368
	25	10.0	2	459	918
	26	10.0	2	595	1190
	27	10.0	2	89	178
	28	10.0	2	519	1038
	29	10.0	2	155	310
	30	10.0	2	1116	2232
	31	10.0	2	199	398
	32	10.0	6	859	5154
	33	10.0	1	1002	2004
	34	10.0	4	608	2432
	35	10.0	2	1199	2398
	36	10.0	5	1200	6000
	37	10.0	2	224	448
	38	10.0	1	105	105
	39	10.0	1	353	353
	40	10.0	1	189	189
	41	10.0	1	297	297
	42	10.0	1	332	332
	43	10.0	2	989	1978
	44	10.0	1	340	340
	45	10.0	2	607	1214
	46	10.0	1	677	677
	47	10.0	1	249	249
	48	10.0	1	1068	1068
	49	10.0	1	188	188
	50	10.0	1	1175	1175
	51	10.0	1	243	243
	52	10.0	2	1199	2398
	53	10.0	2	292	584
	54	10.0	1	347	347
	55	10.0	1	305	305
	56	10.0	1	342	342
	57	10.0	2	988	1976
	58	10.0	1	323	323
	59	12.5	1	234	234
	60	12.5	1	229	229
	61	12.5	2	1135	2270
	62	12.5	2	248	496
	63	12.5	2	678	1356
	64	12.5	2	491	982
	65	12.5	1	763	763
	66	12.5	1	1060	1060
	67	12.5	1	201	201
	68	12.5	2	1150	2300
	69	12.5	2	252	504
	70	12.5	1	258	258
	71	12.5	1	766	766
	72	12.5	3	1198	3594
	73	12.5	3	1200	3600
	74	12.5	1	241	241
	75	12.5	2	315	630

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	41.6		12 m	10.2
	10.0	594.1	4	12 m	366.3
	12.5	194.8	17	12 m	187.7
CA60	5.0	963.4	-	rolo (170 kg)	148.5
PESO TOTAL (kg)					
CA50	564.2				
CA60	148.5				

Volume de concreto (C-30) = 13.69 m³
Área de forma = 175.35 m²

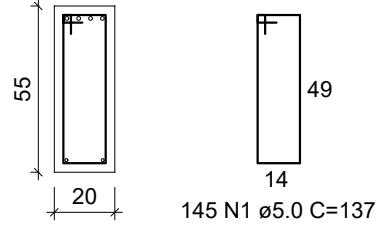
V47

ESC 1:100



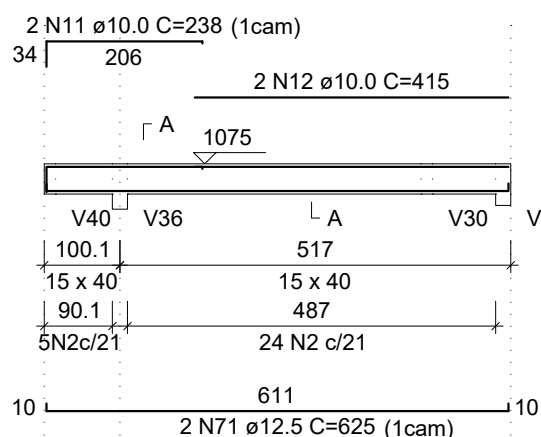
SEÇÃO A-A

ESC 1:25



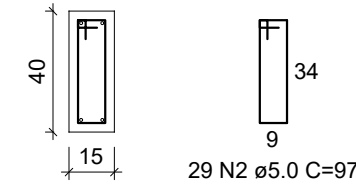
V48

ESC 1:100



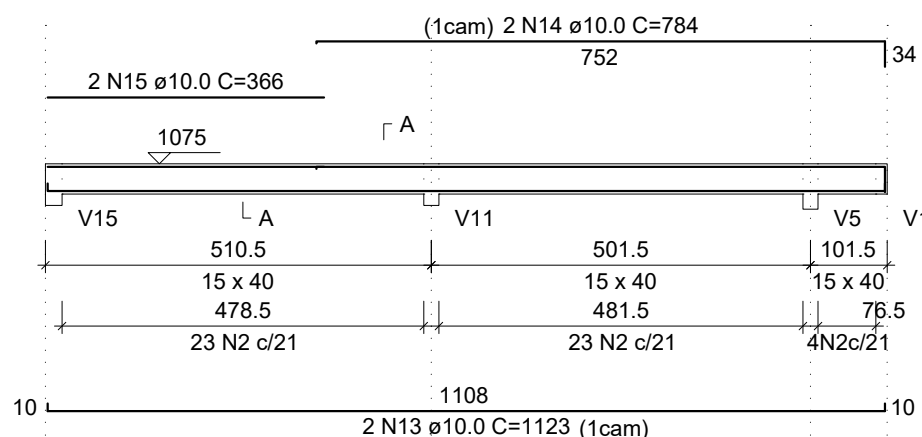
SEÇÃO A-A

ESC 1:25



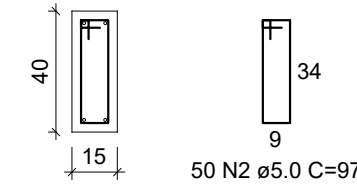
V49

ESC 1:100



SEÇÃO A-A

ESC 1:25



RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	567	137	77679
	2	5.0	225	97	21825
	3	5.0	31	77	2387
	4	5.0	11	117	1287
CA50	5	6.3	8	281	2248
	6	6.3	8	271	2168
	7	8.0	5	405	2025
	8	10.0	4	892	3568
	9	10.0	2	1016	2032
	10	10.0	2	608	1216
	11	10.0	2	238	476
	12	10.0	2	415	830
	13	10.0	4	1123	4492
	14	10.0	2	784	1568
	15	10.0	2	366	732
	16	10.0	2	394	788
	17	10.0	2	405	810
	18	10.0	3	206	618
	19	10.0	2	392	784
	20	10.0	2	424	848
	21	10.0	2	235	470
	22	10.0	2	418	836
	23	10.0	2	786	1572
	24	10.0	2	364	728
	25	10.0	2	626	1252
	26	10.0	1	184	184
	27	10.0	2	667	1334
	28	10.0	1	298	298
	29	10.0	2	760	1520
	30	10.0	2	1107	2214
	31	10.0	1	236	236
	32	10.0	1	203	203
	33	10.0	1	1175	1175
	34	10.0	1	650	650
	35	10.0	3	1199	3597
	36	10.0	1	713	713
	37	10.0	2	791	1582
	38	10.0	2	274	548
	39	10.0	2	300	600
	40	10.0	2	187	374
	41	10.0	1	139	139
	42	10.0	2	224	448
	43	10.0	2	242	484
	44	10.0	2	1069	2138
	45	10.0	2	641	1282
	46	10.0	2	890	1780
	47	10.0	2	1036	2072
	48	10.0	1	208	208
	49	10.0	2	609	1218
	50	10.0	2	240	480
	51	10.0	1	177	177
	52	10.0	1	209	209
	53	10.0	1	270	270
	54	10.0	1	651	651
	55	10.0	2	1199	2398
	56	10.0	2	1200	2400
	57	10.0	2	281	562
	58	10.0	2	280	560
	59	10.0	2	326	652
	60	10.0	2	382	764
	61	10.0	2	196	392
	62	10.0	1	278	278
	63	10.0	2	413	826
	64	12.5	1	664	664
	65	12.5	1	228	228
	66	12.5	1	1041	1041
	67	12.5	1	204	204
	68	12.5	4	1198	4792
	69	12.5	4	1200	4800
	70	12.5	4	315	1260
	71	12.5	4	625	2500
	72	12.5	2	259	518
	73	12.5	1	188	188
	74	16.0	1	165	165
	75	16.0	2	318	636
	76	16.0	1	205	205
	77	16.0	2	237	474

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0%	UNIT	PESO + 0% (kg)
CA50	6.3	44.2	4	12 m	10.8
	8.0	4	1	12 m	1.6
	10.0	590.3	50	12 m	363.9
	12.5	162	14	12 m	156
	16.0	14.8	2	12 m	23.4
CA60	5.0	1031.8	-	rolo (170 kg)	159

PESO TOTAL (kg)

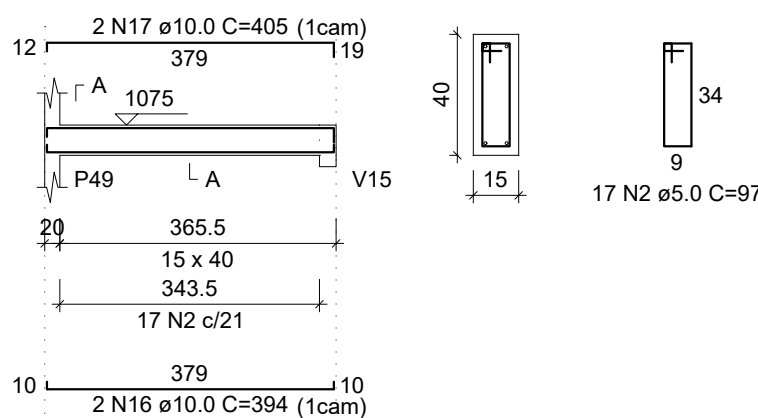
CA50	555.7
CA60	159

Volume de concreto (C=30) = 14.26 m³

Área de forma = 182.22 m²

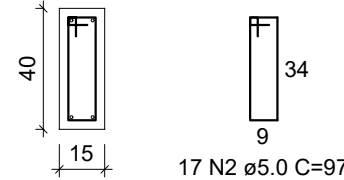
V50

ESC 1:100



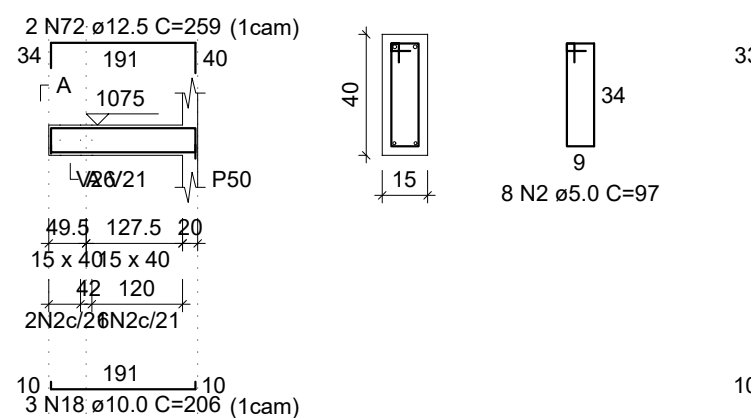
SEÇÃO A-A

ESC 1:25



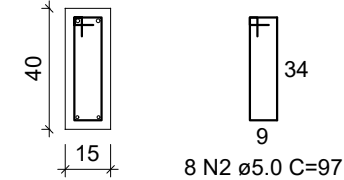
V51

ESC 1:100



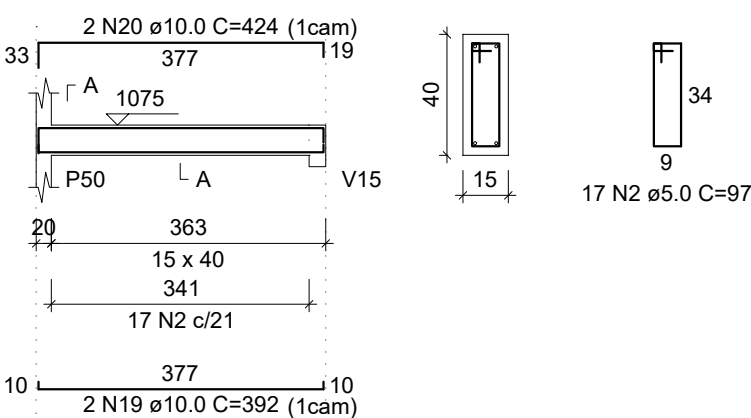
SEÇÃO A-A

ESC 1:25



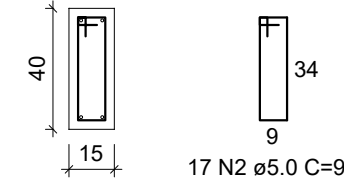
V52

ESC 1:100



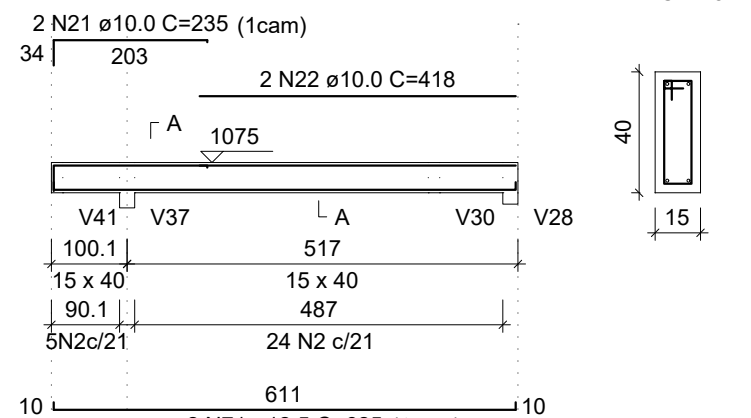
SEÇÃO A-A

ESC 1:25



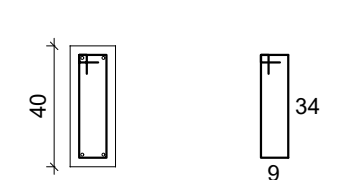
V53

ESC 1:100



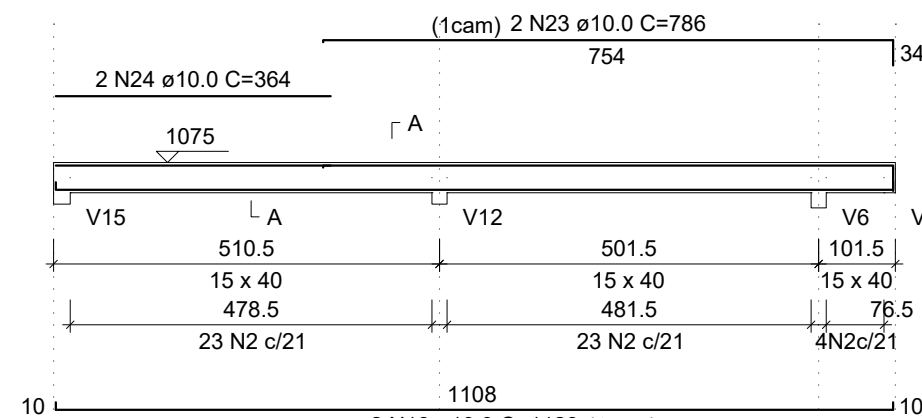
SEÇÃO A-A

ESC 1:25



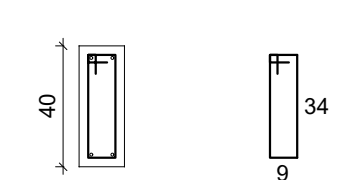
V54

ESC 1:100



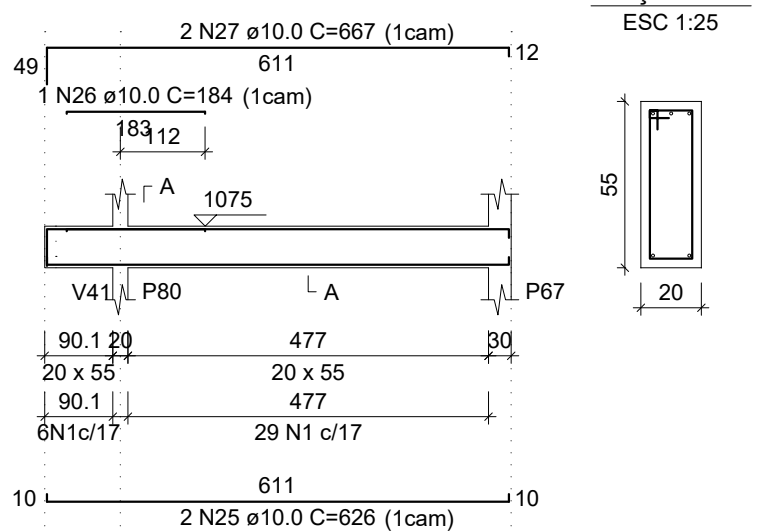
SEÇÃO A-A

ESC 1:25



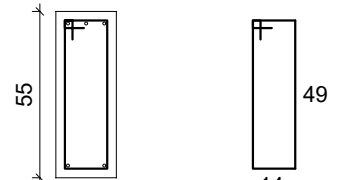
V55

ESC 1:100



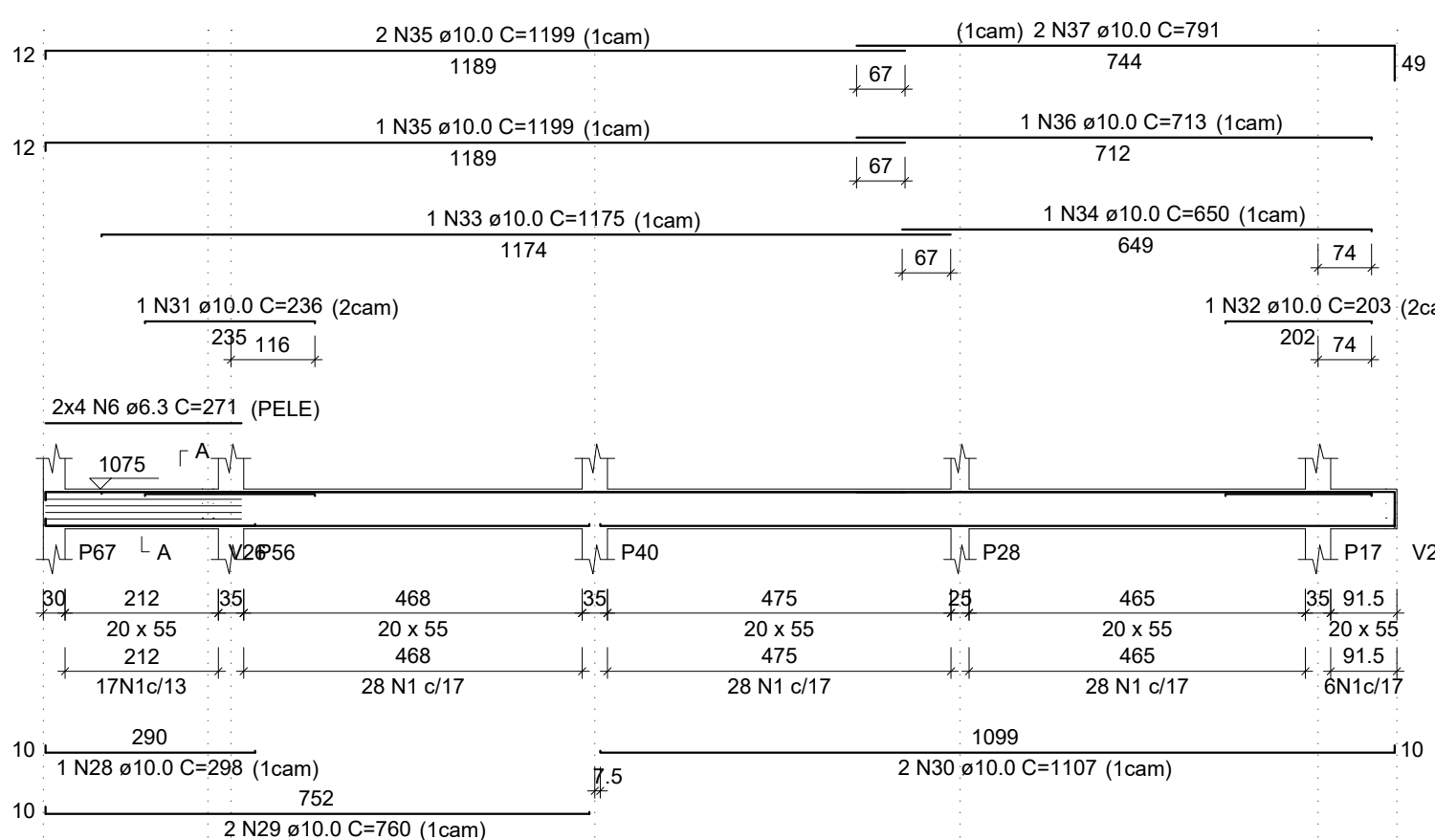
SEÇÃO A-A

ESC 1:25

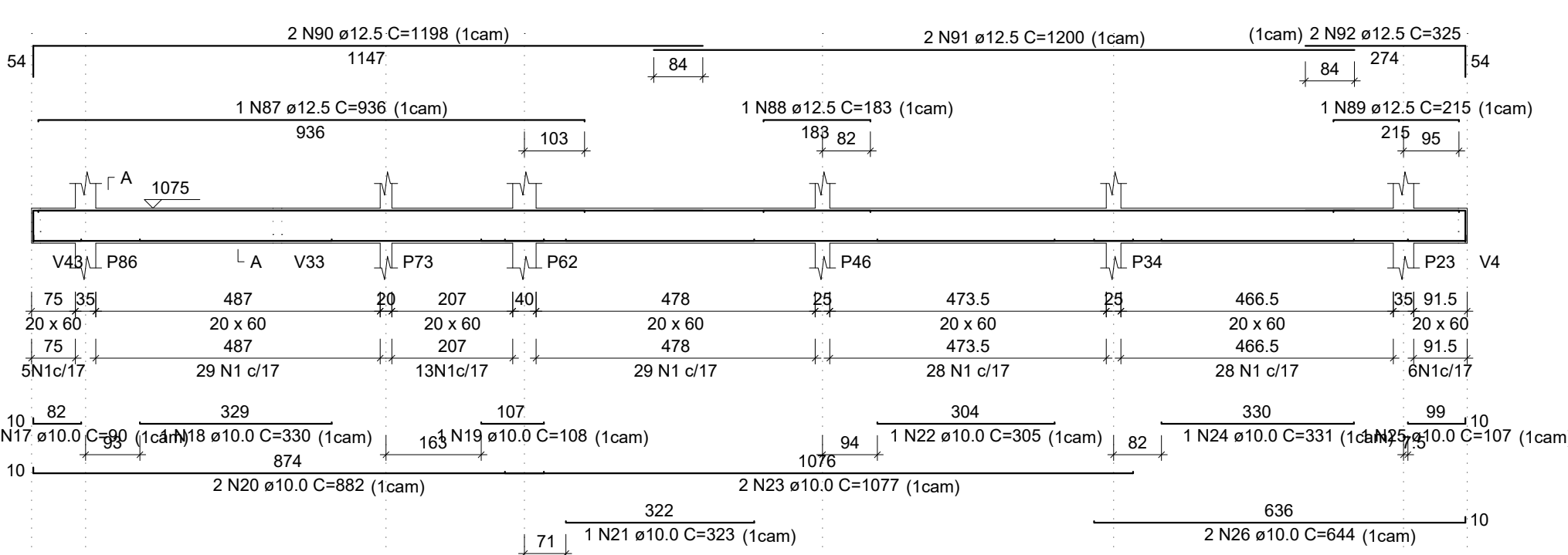


V56

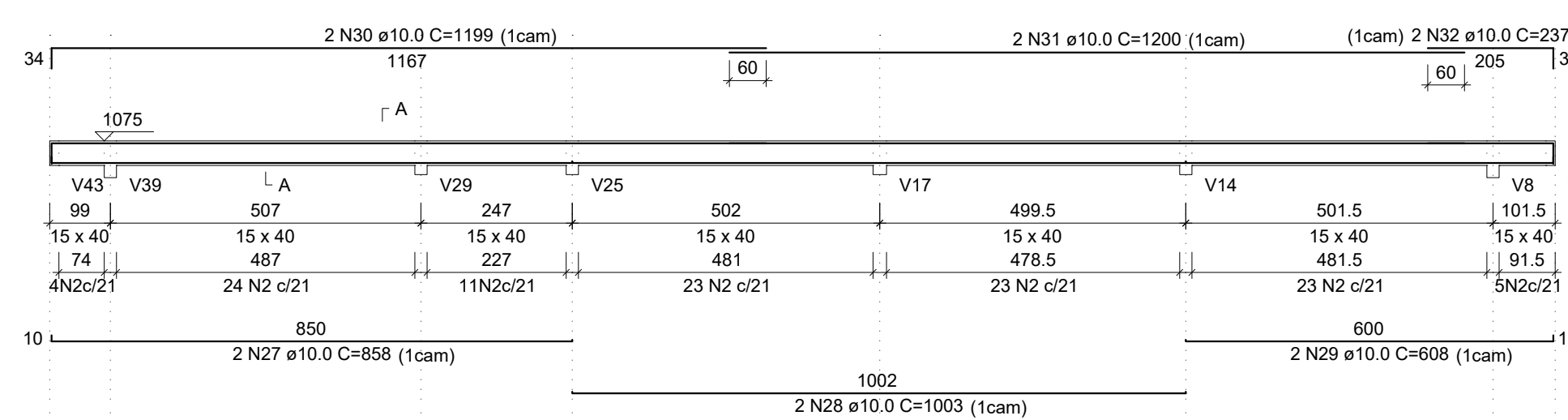
ESC 1:100



V80

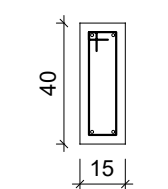


V81

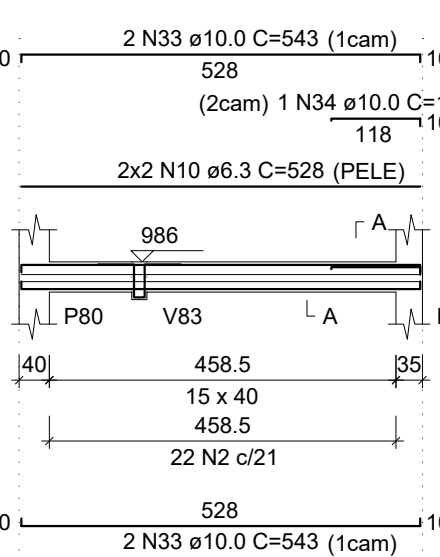


SEÇÃO A-A

ESC 1:25

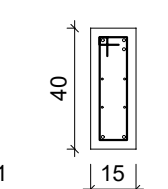


V82



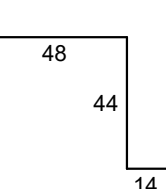
SEÇÃO A-A

ESC 1:25

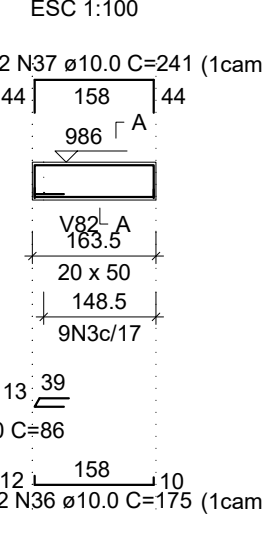


SUSPENSÃO V83

ESC 1:25

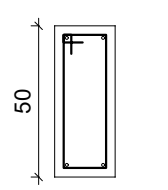


V83

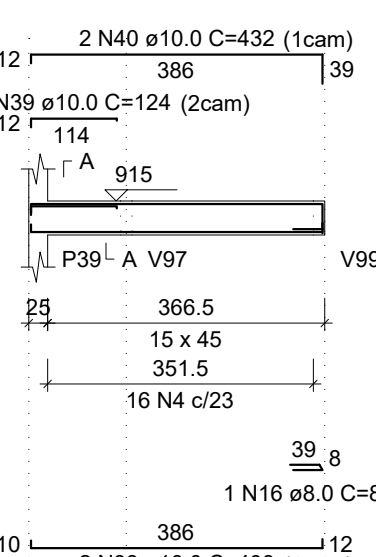


SEÇÃO A-A

ESC 1:25

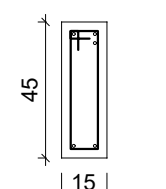


V84

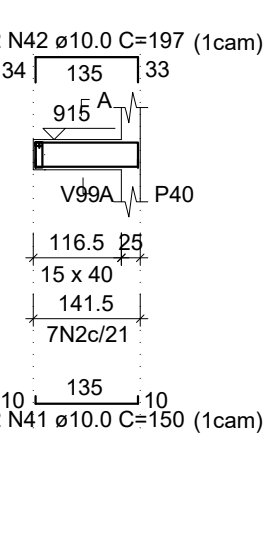


SEÇÃO A-A

ESC 1:25

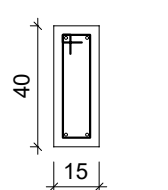


V85



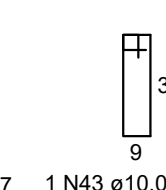
SEÇÃO A-A

ESC 1:25

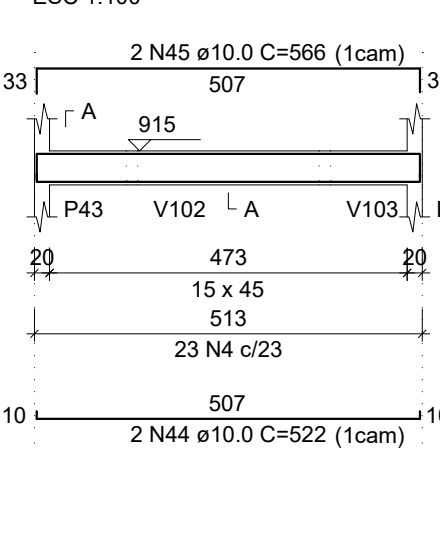


SUSPENSÃO V99

ESC 1:25

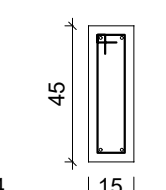


V86

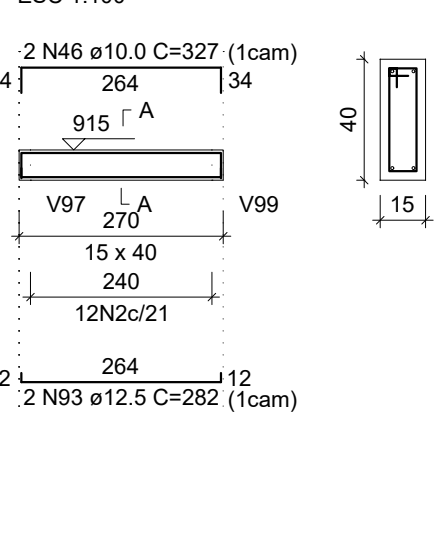


SEÇÃO A-A

ESC 1:25

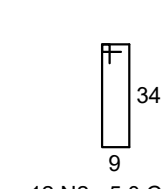


V87

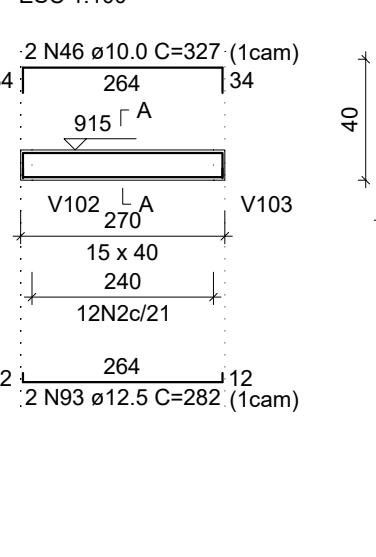


SEÇÃO A-A

ESC 1:25

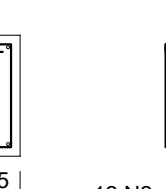


V88

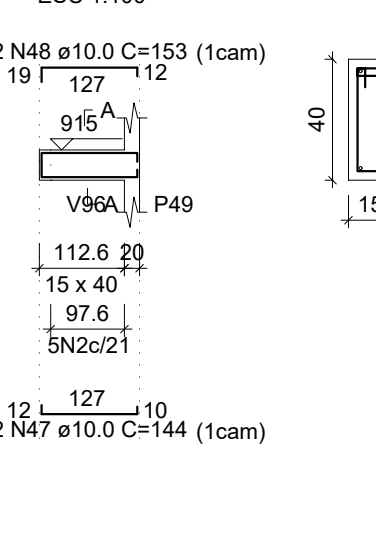


SEÇÃO A-A

ESC 1:25

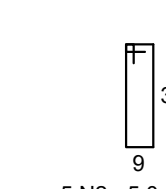


V89

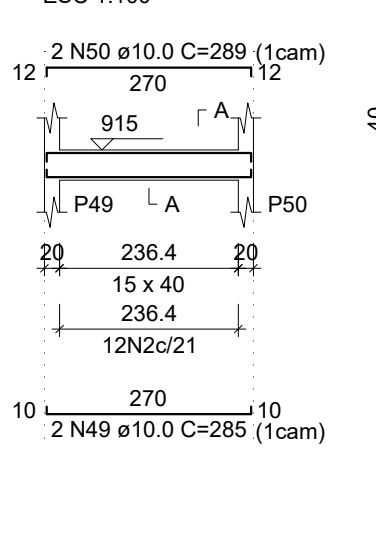


SEÇÃO A-A

ESC 1:25

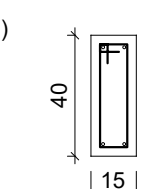


V90

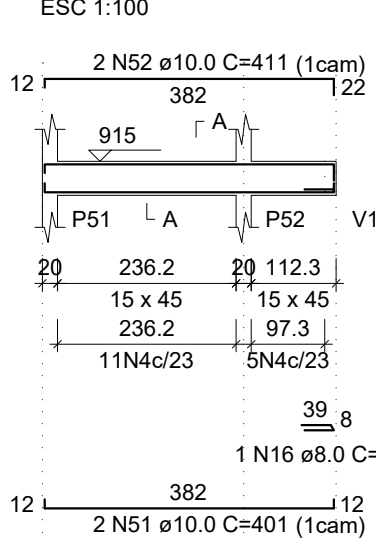


SEÇÃO A-A

ESC 1:25

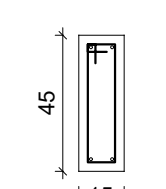


V91

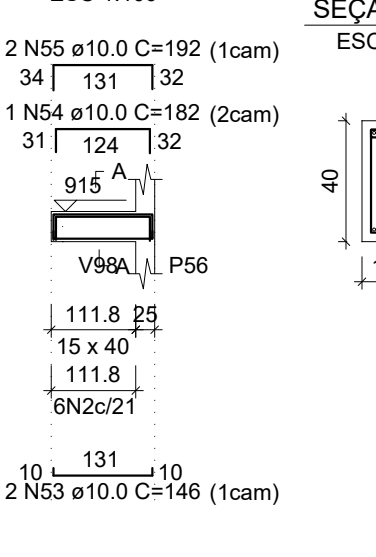


SEÇÃO A-A

ESC 1:25

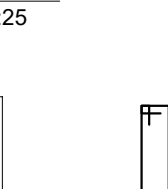


V92

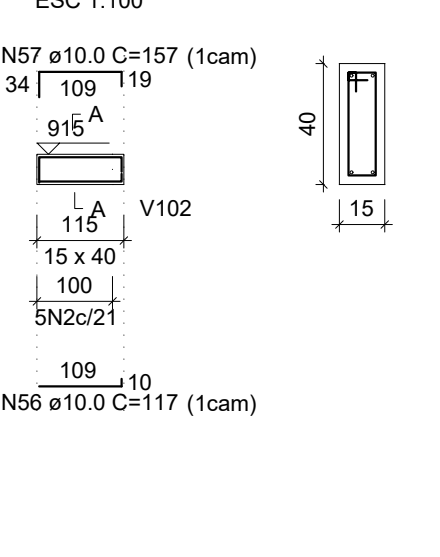


SEÇÃO A-A

ESC 1:25

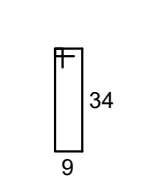


V93

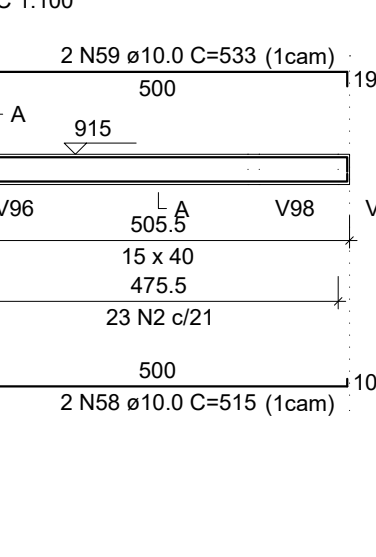


SEÇÃO A-A

ESC 1:25

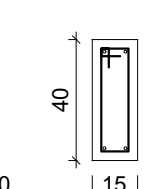


V94

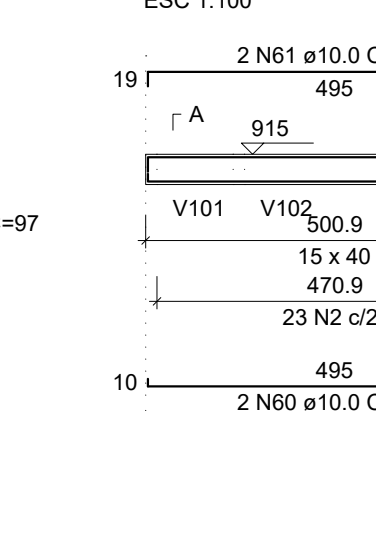


SEÇÃO A-A

ESC 1:25

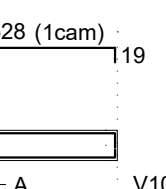


V95

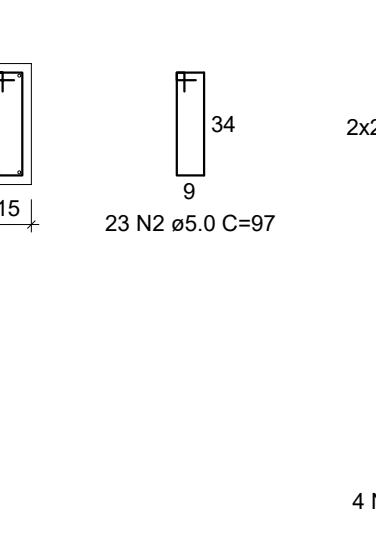


SEÇÃO A-A

ESC 1:25

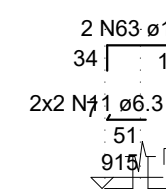


V96

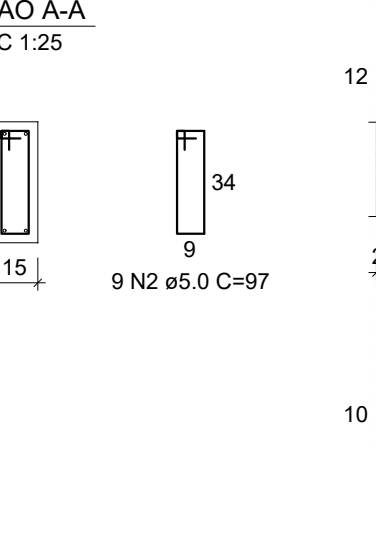


SEÇÃO A-A

ESC 1:25

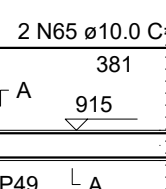


V97

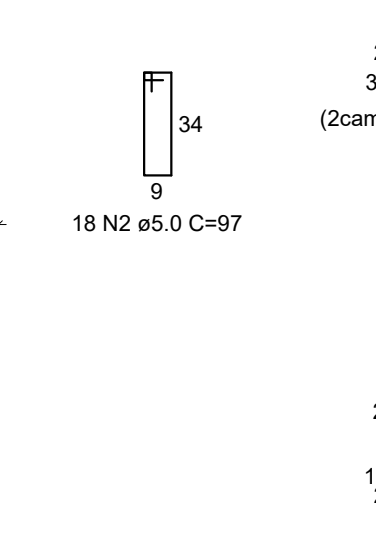


SEÇÃO A-A

ESC 1:25

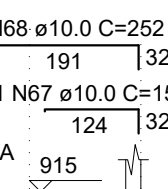


V98

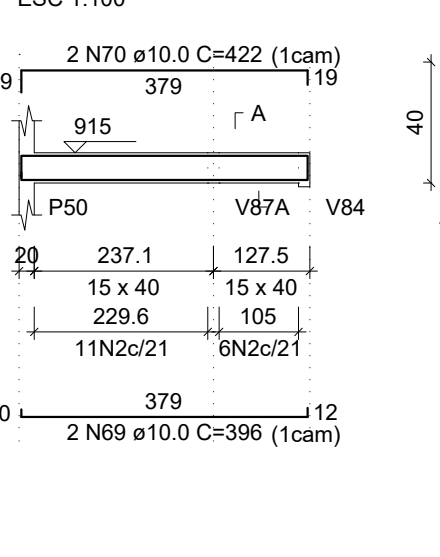


SEÇÃO A-A

ESC 1:25

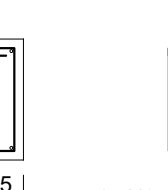


V99

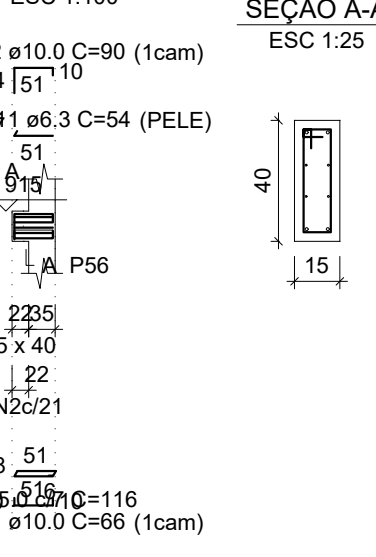


SEÇÃO A-A

ESC 1:25

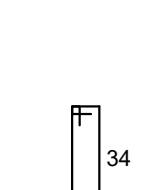


V100

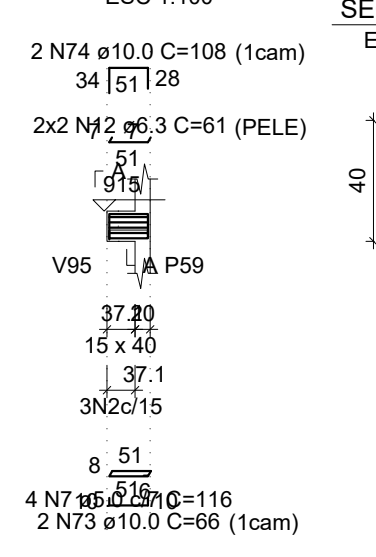


SEÇÃO A-A

ESC 1:25

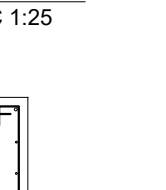


V101

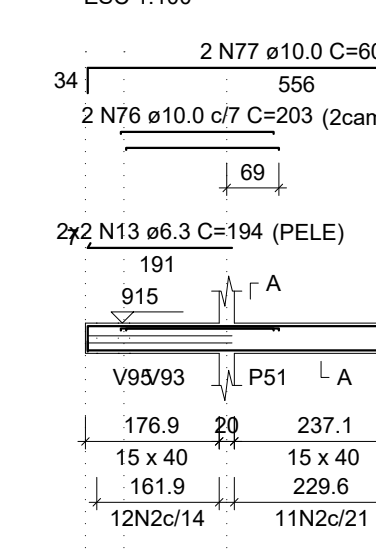


SEÇÃO A-A

ESC 1:25

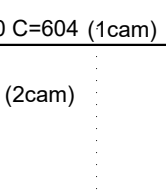


V102

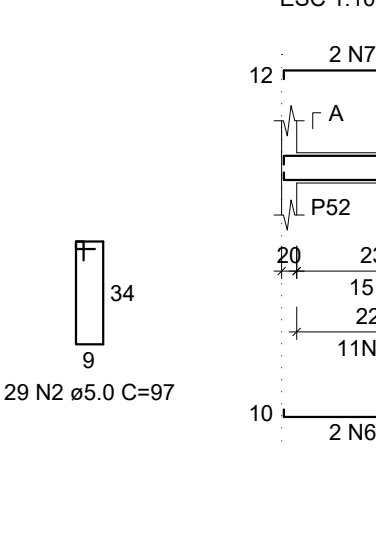


SEÇÃO A-A

ESC 1:25

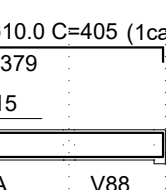


V103

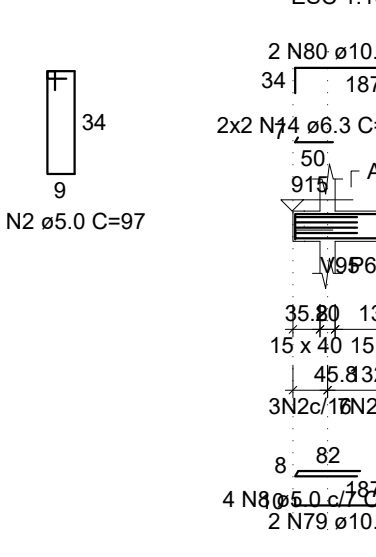


SEÇÃO A-A

ESC 1:25

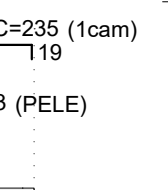


V104

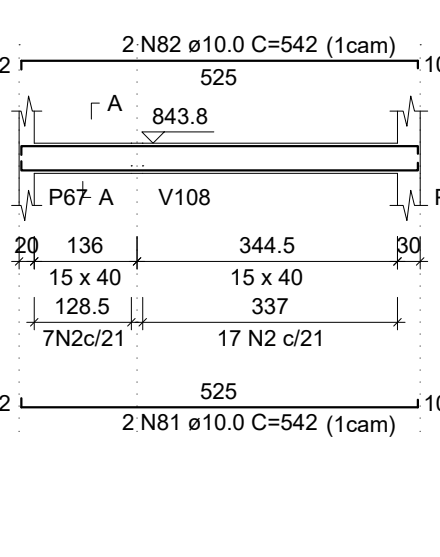


SEÇÃO A-A

ESC 1:25

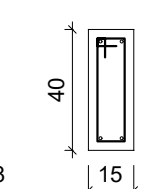


V105

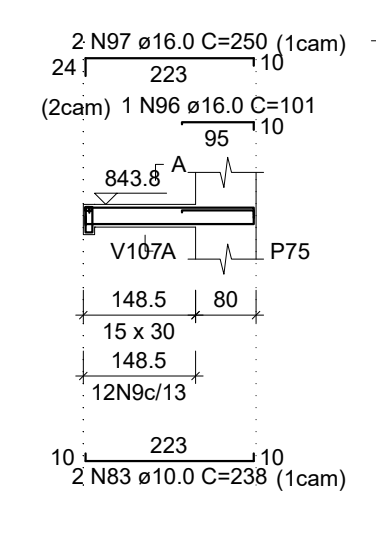


SEÇÃO A-A

ESC 1:25

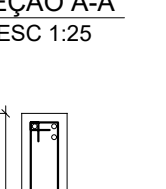


V106

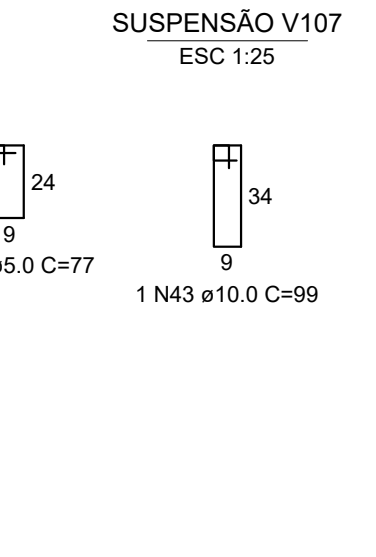


SEÇÃO A-A

ESC 1:25

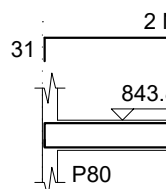


V107

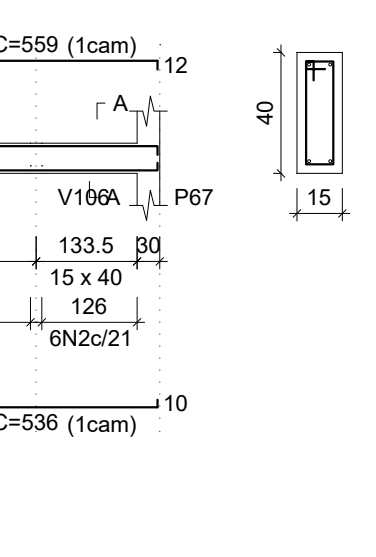


SEÇÃO A-A

ESC 1:25

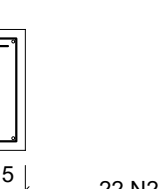


V108



SEÇÃO A-A

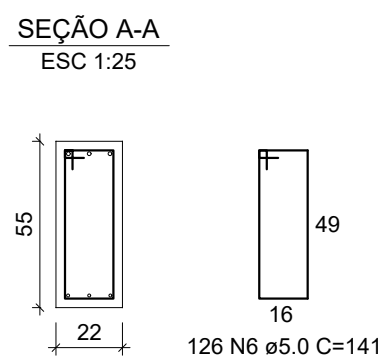
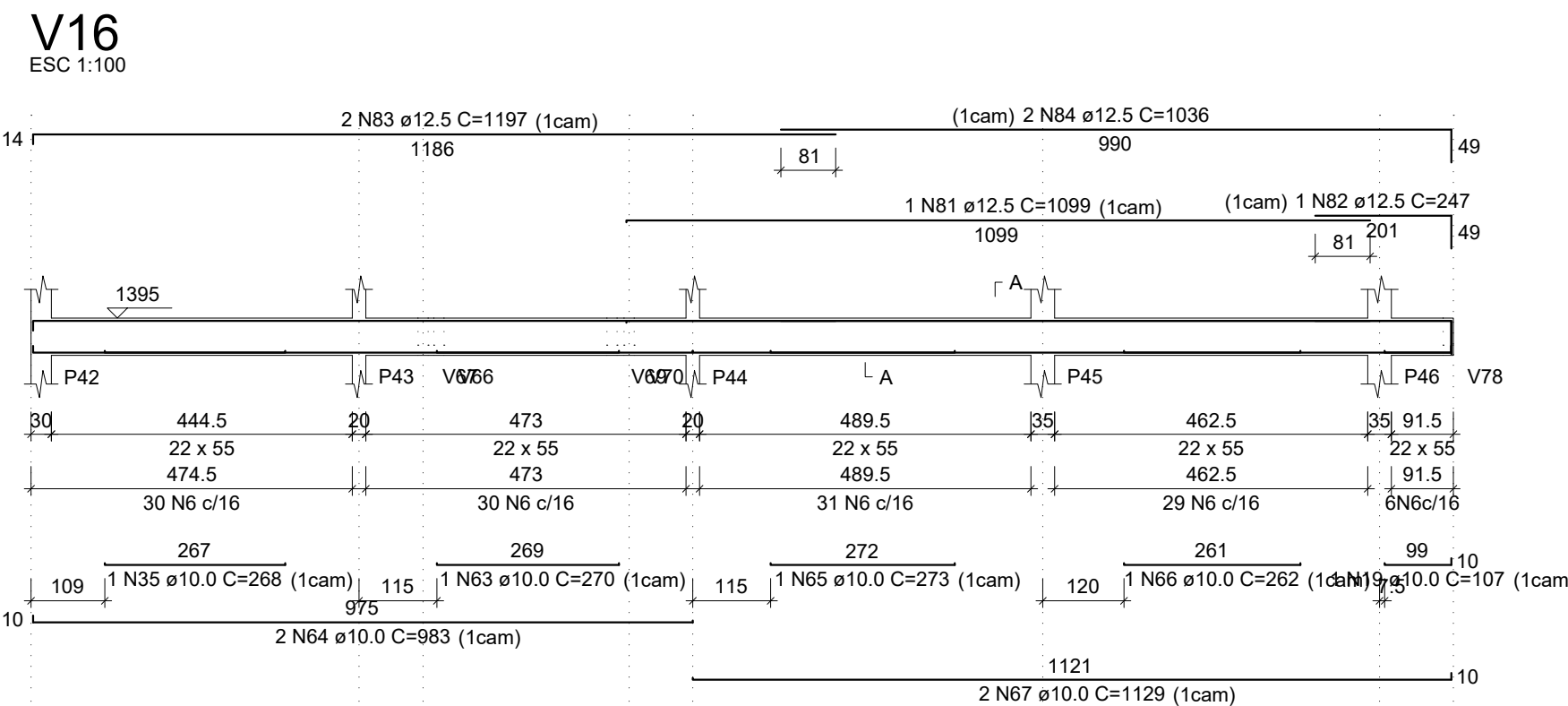
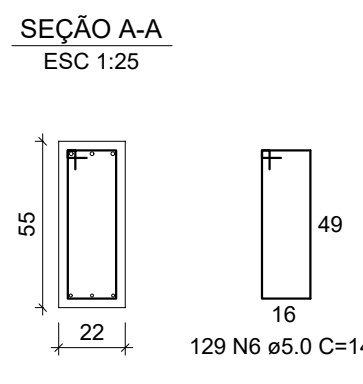
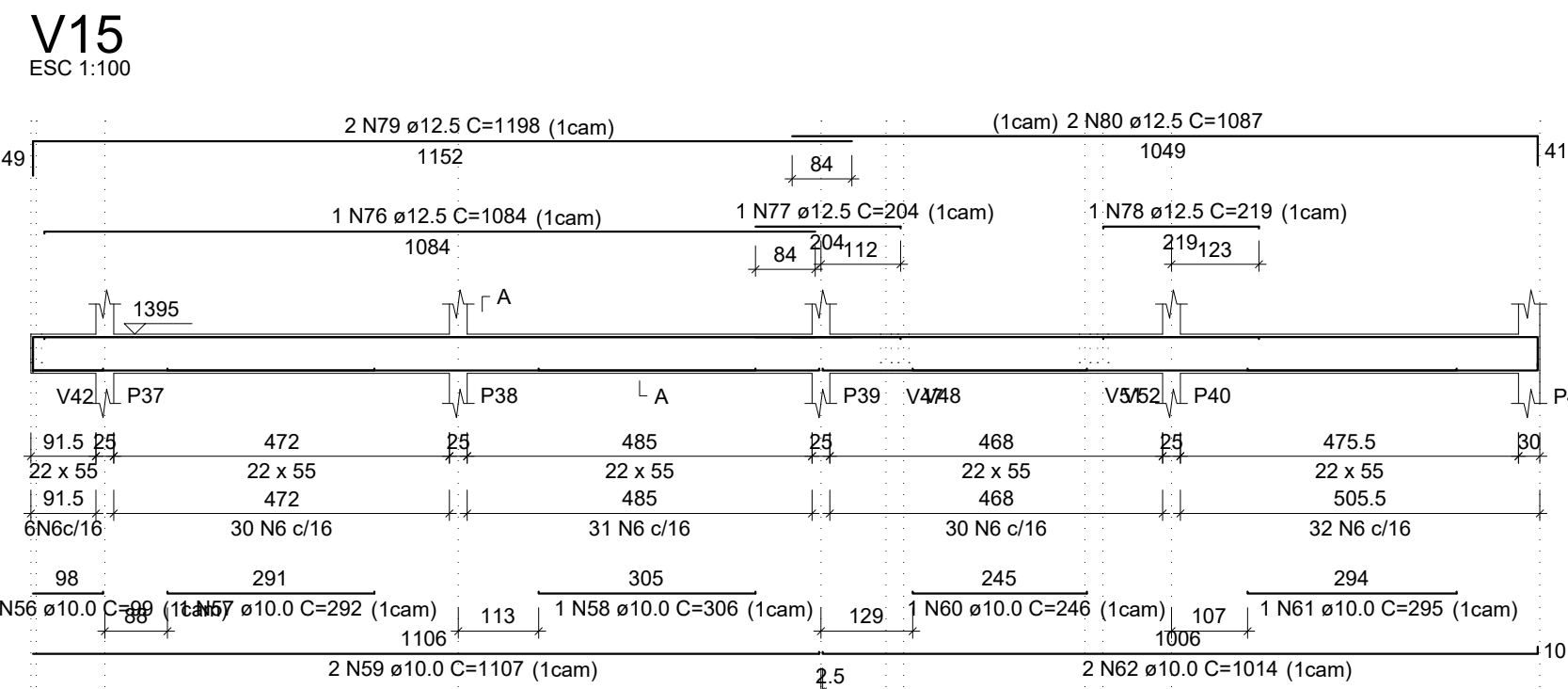
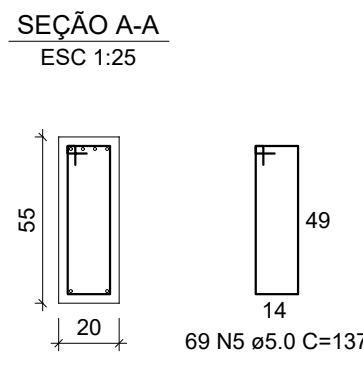
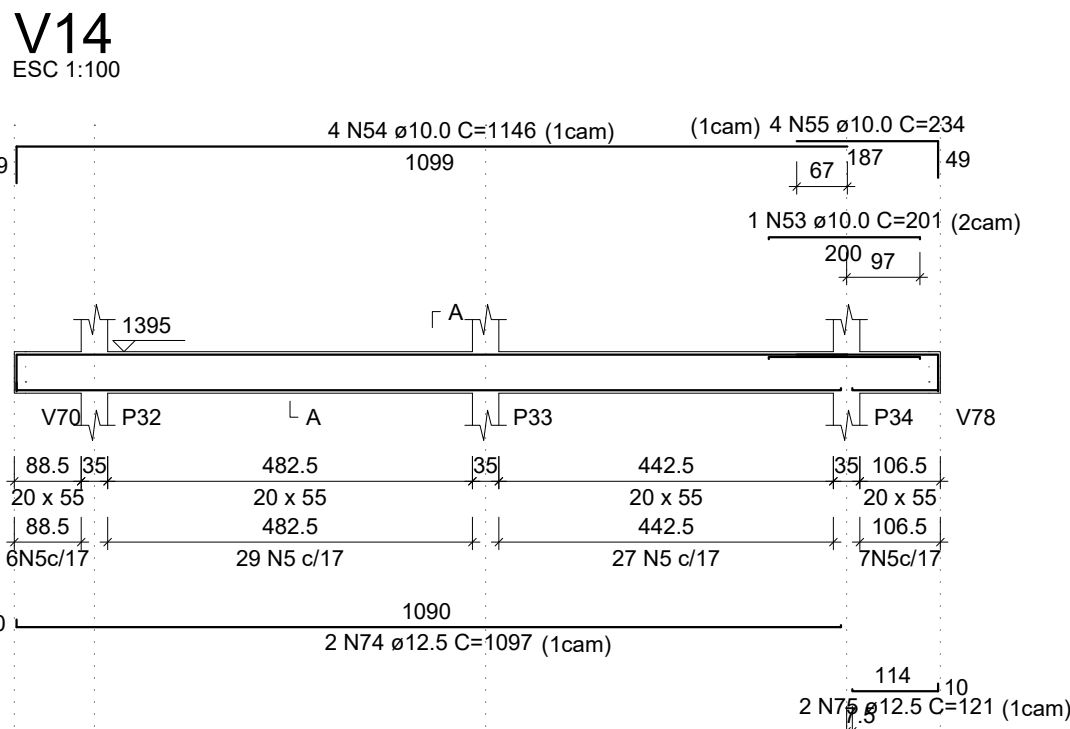
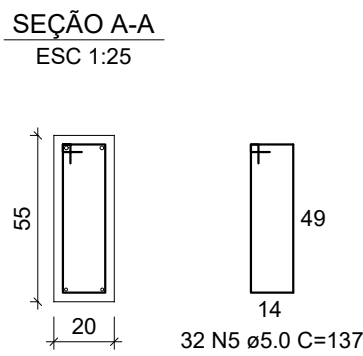
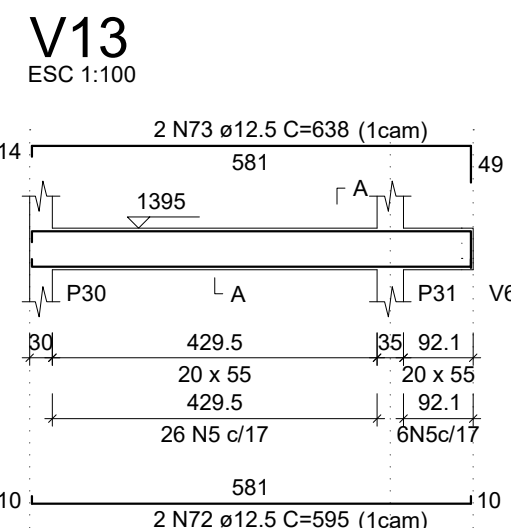
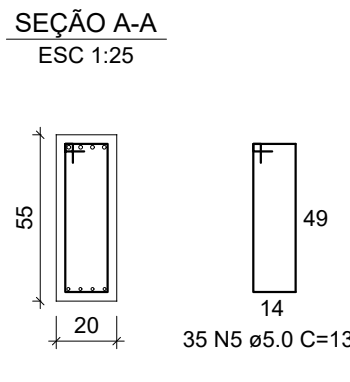
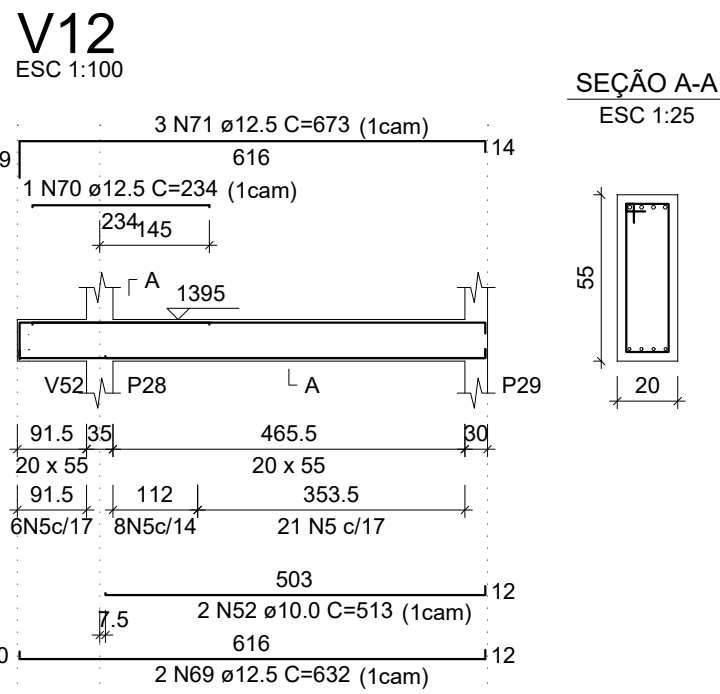
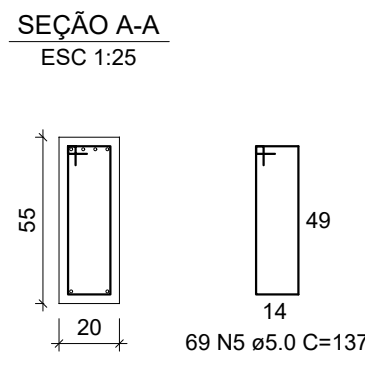
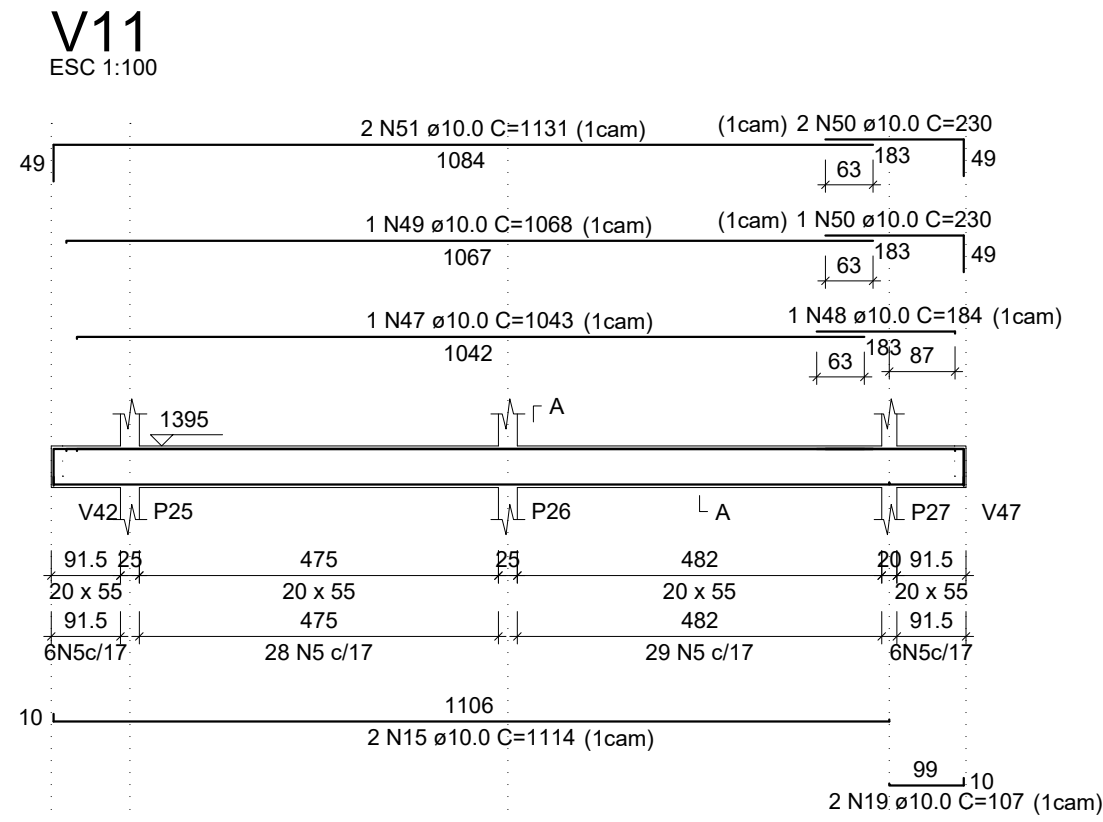
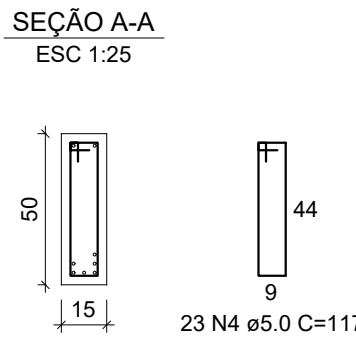
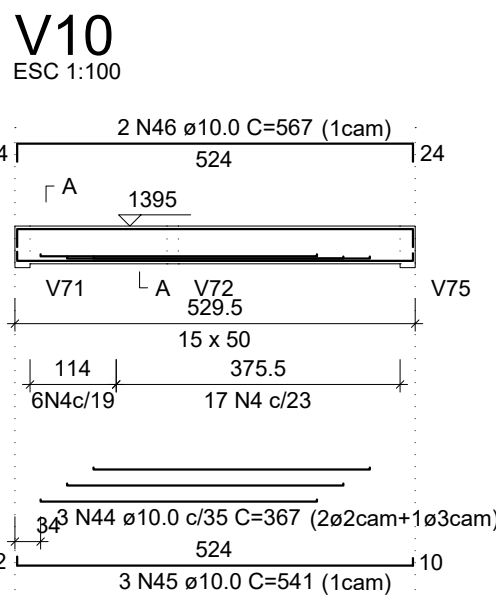
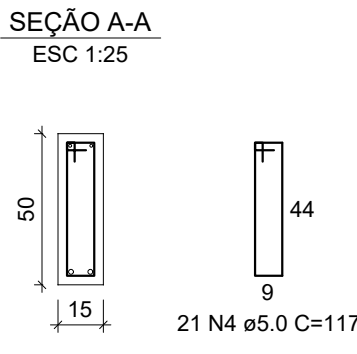
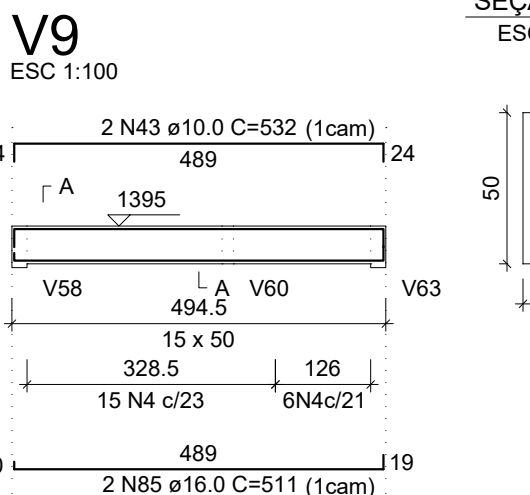
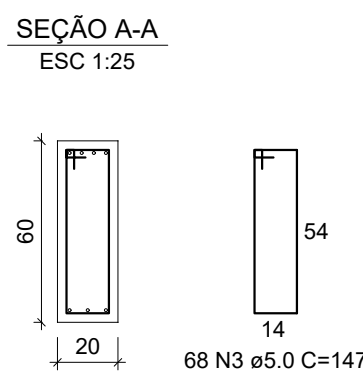
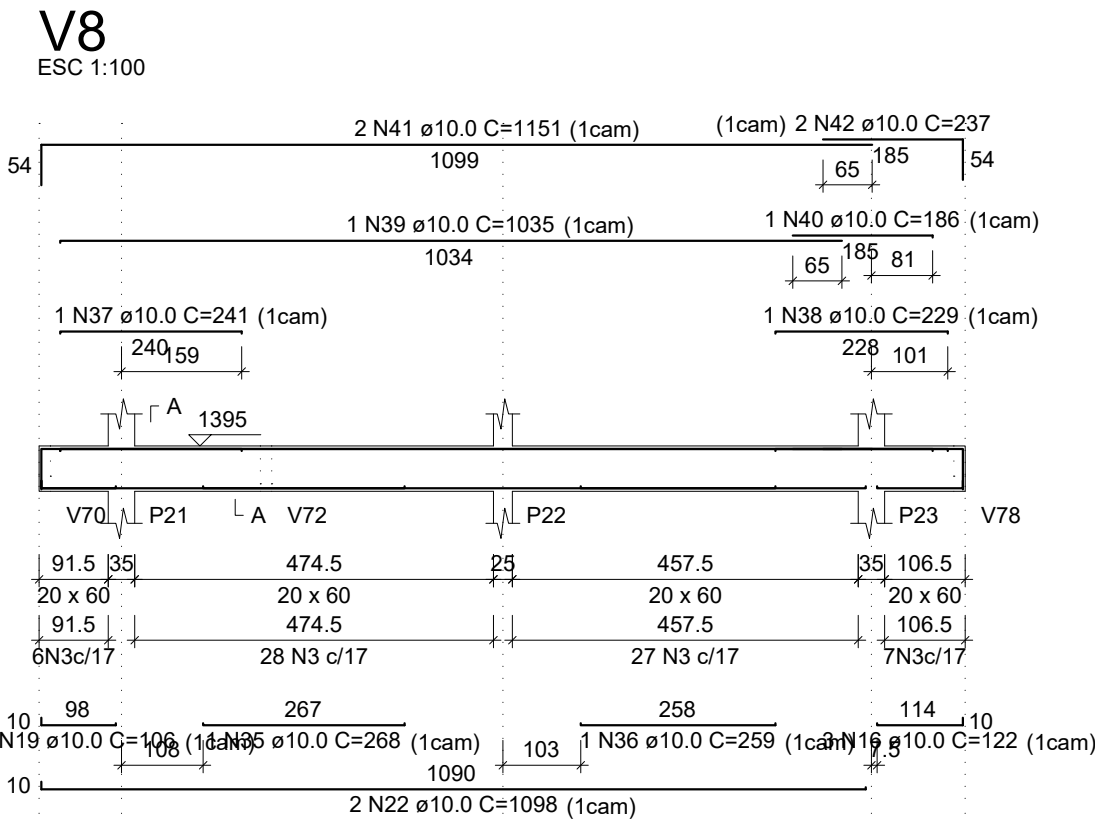
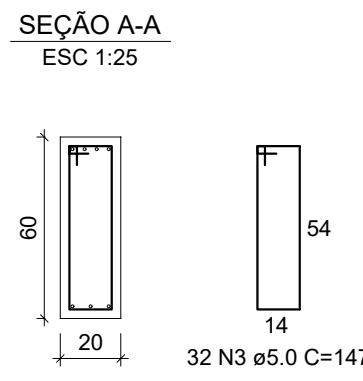
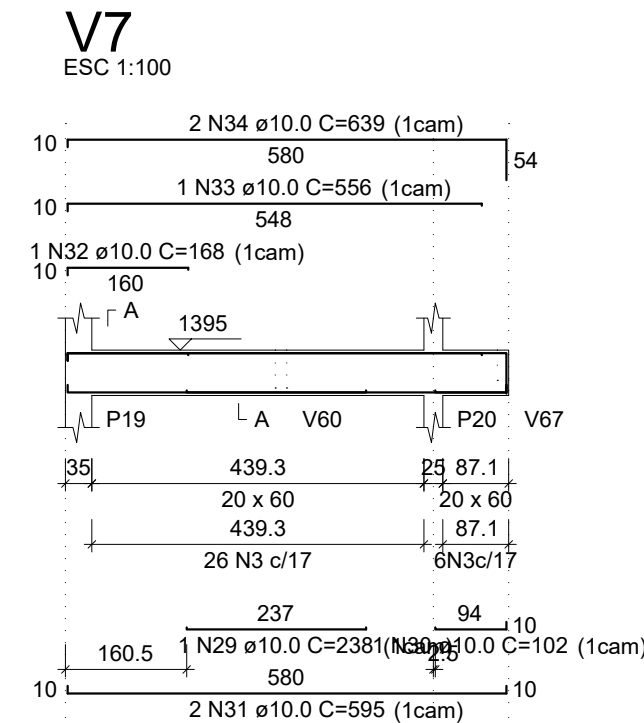
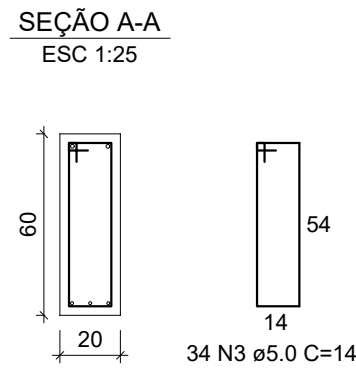
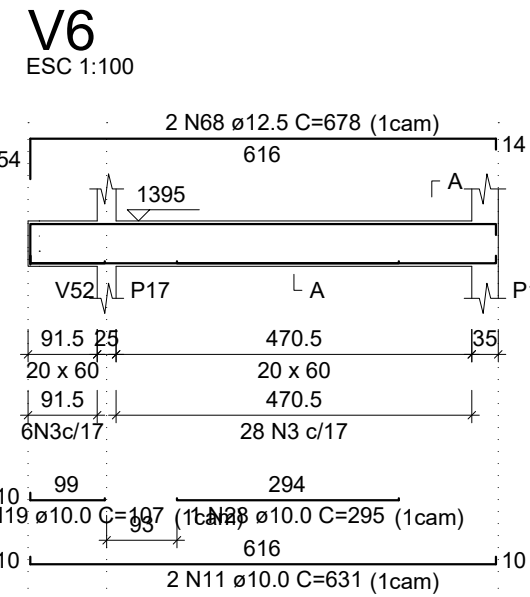
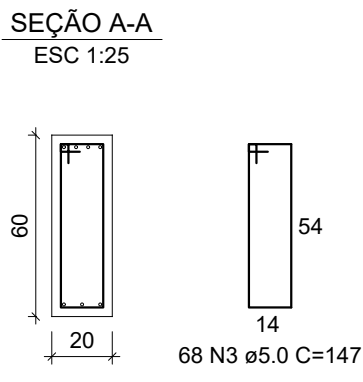
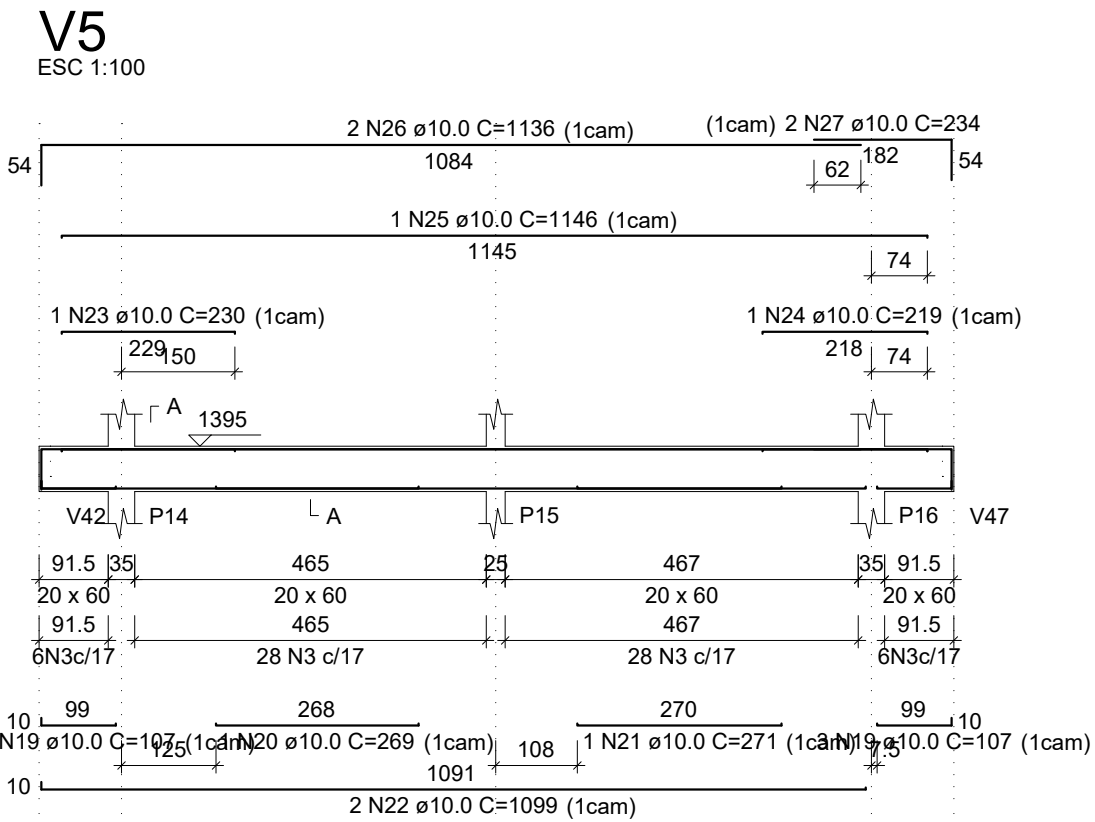
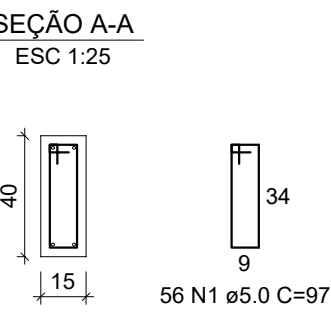
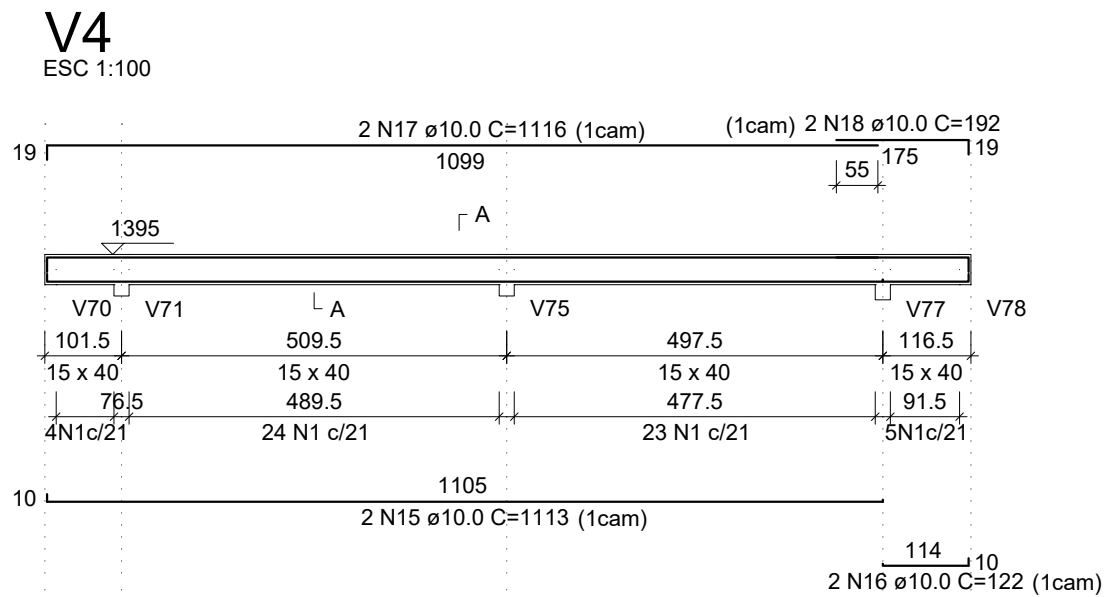
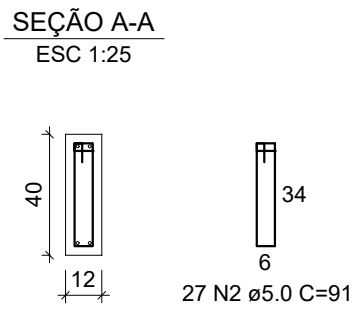
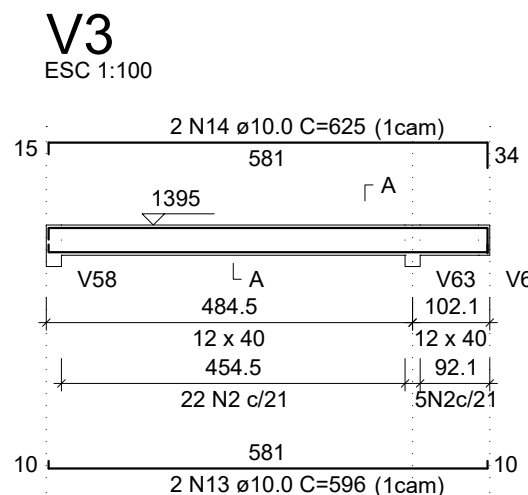
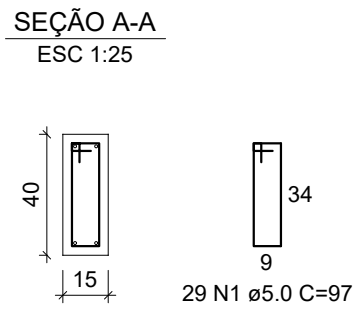
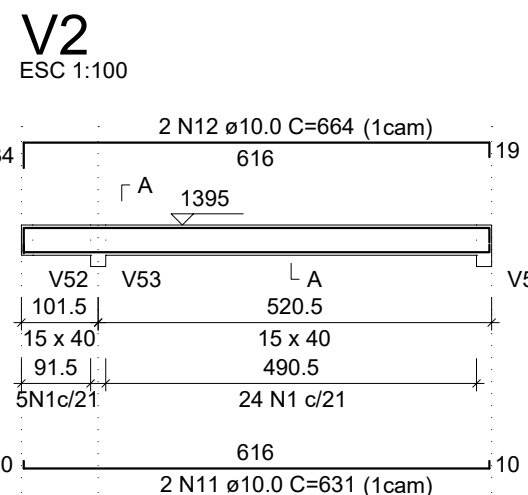
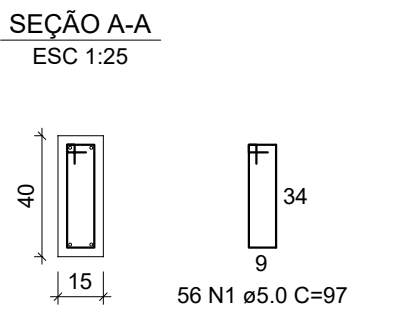
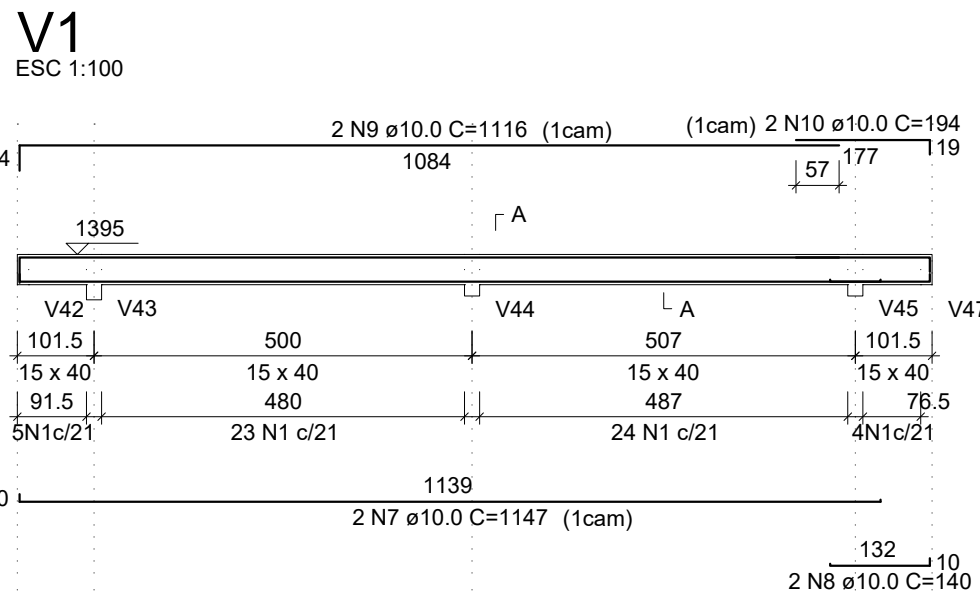
ESC 1:25



RELAÇÃO DO AÇO

V80	V81	V82
V83	V84	V85
V86	V87	V88
V89	V90	V91
V92	V93	V94
V95	V96	V97
V98	V99	V100
V101	V102	V103
V104	V105	V106
V107	V108	

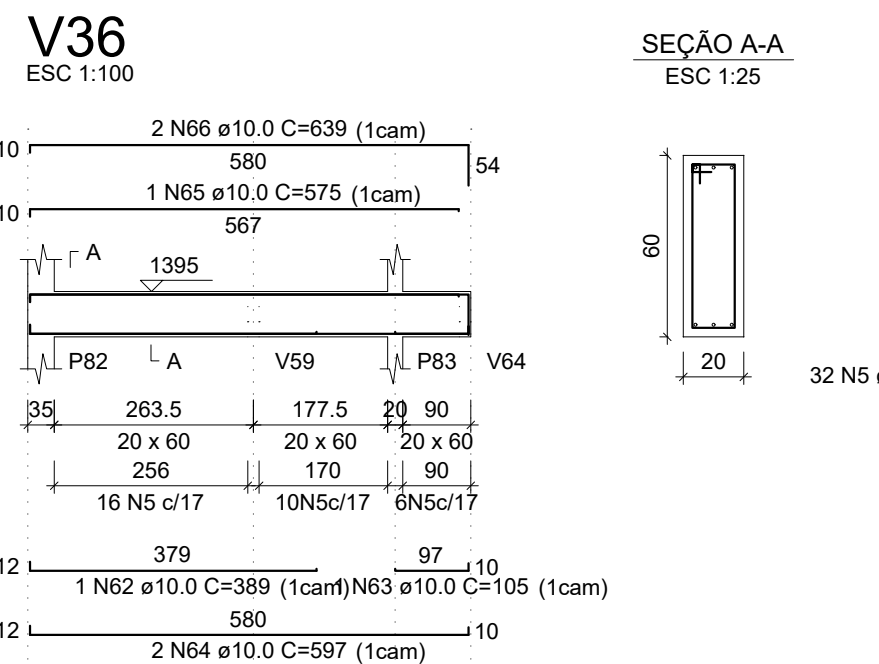
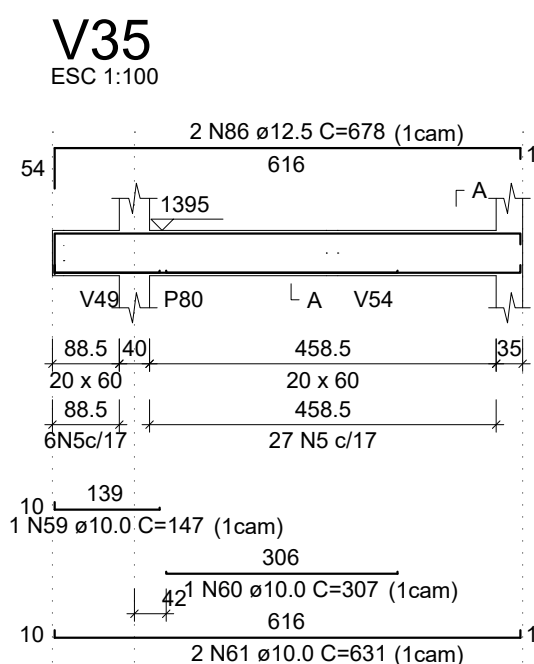
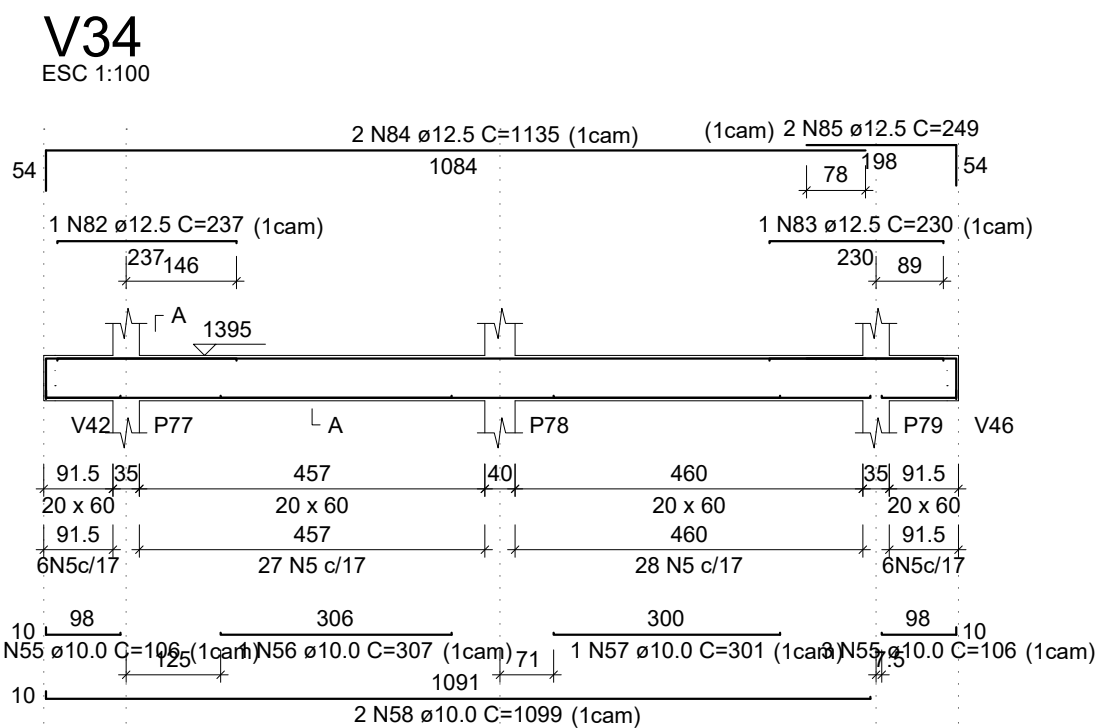
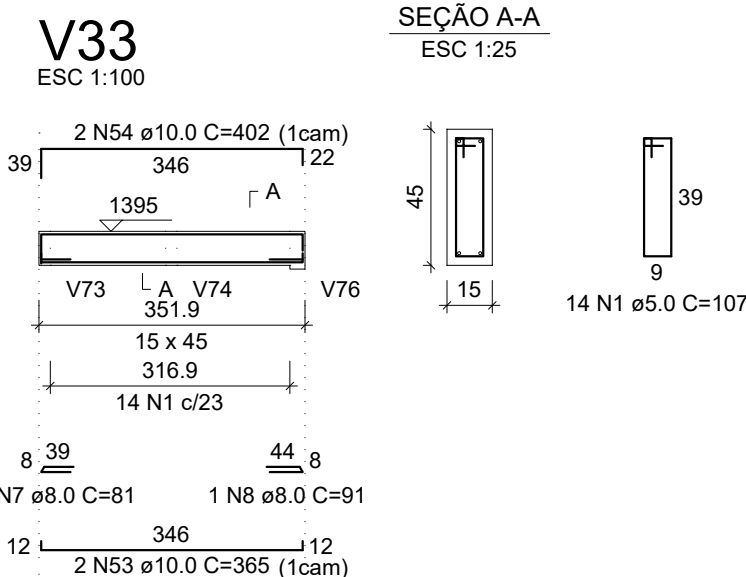
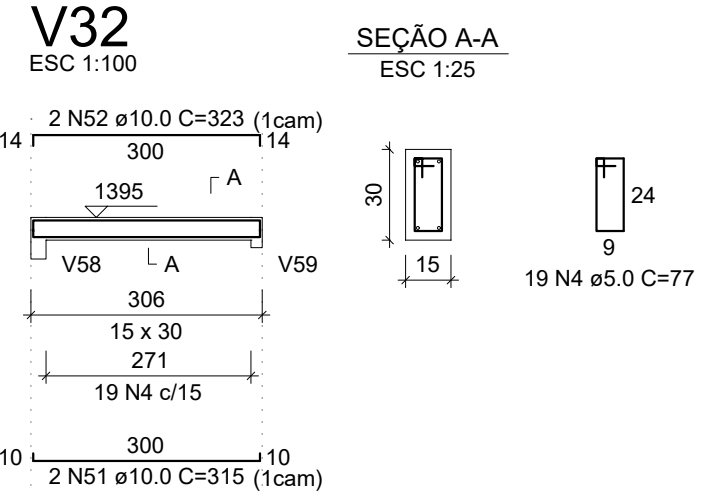
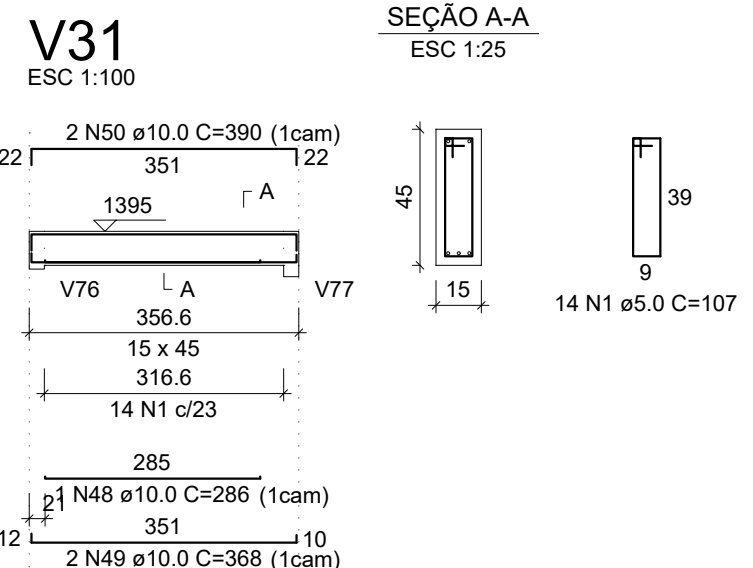
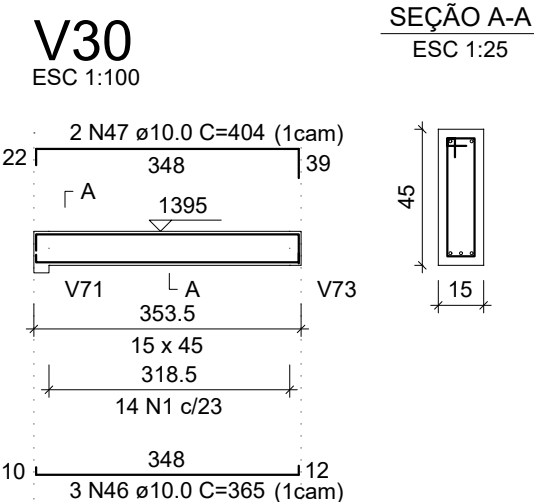
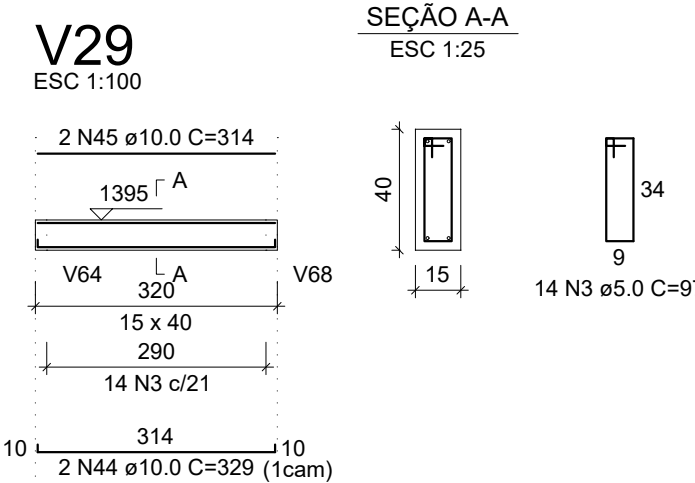
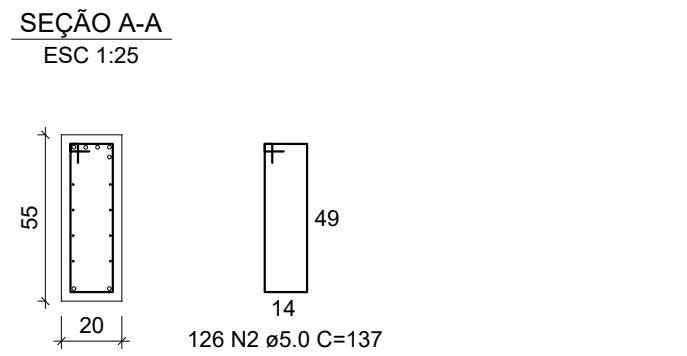
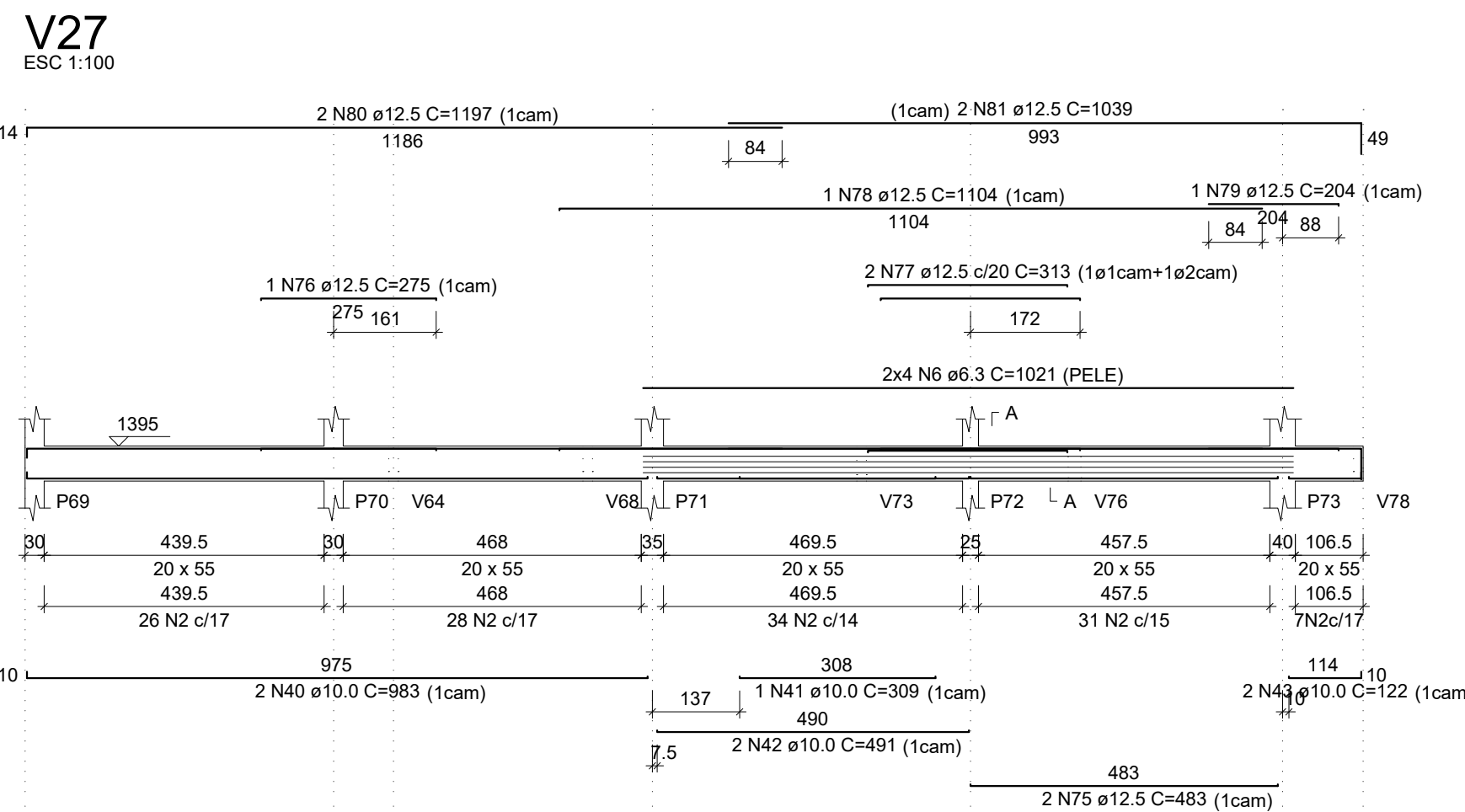
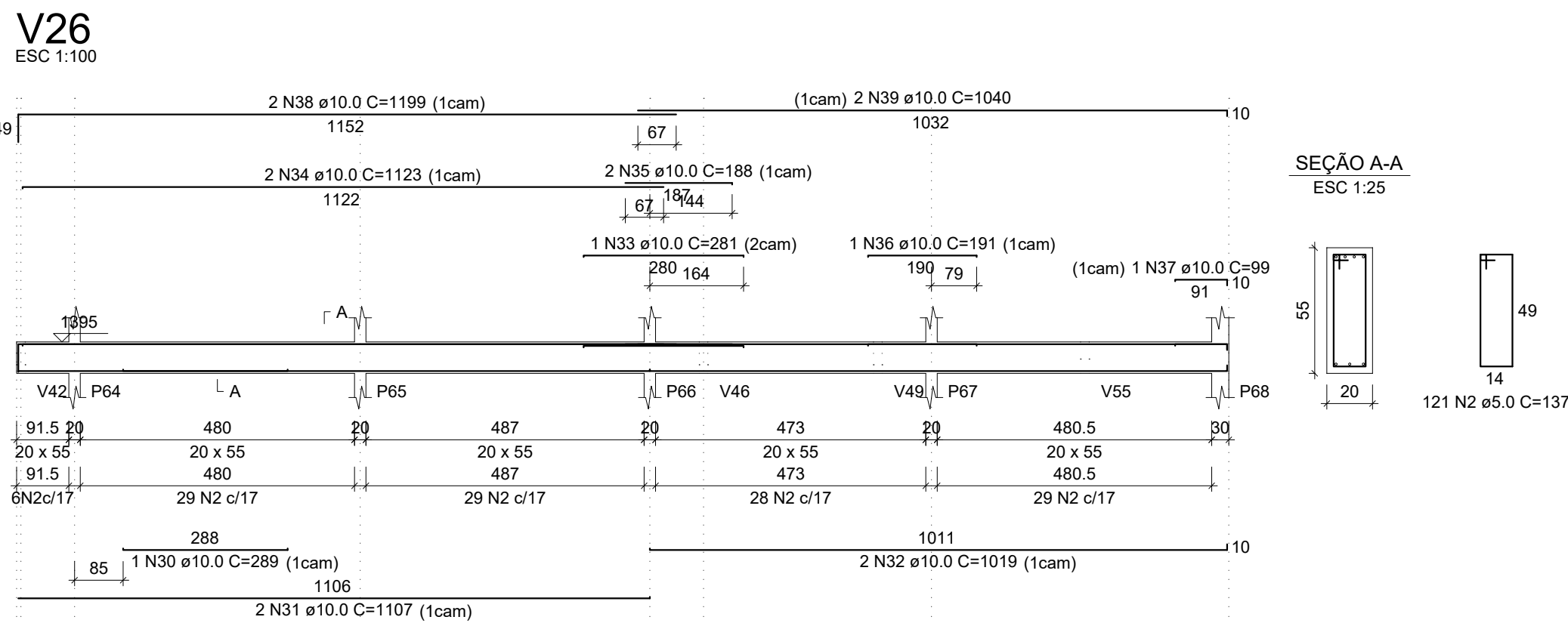
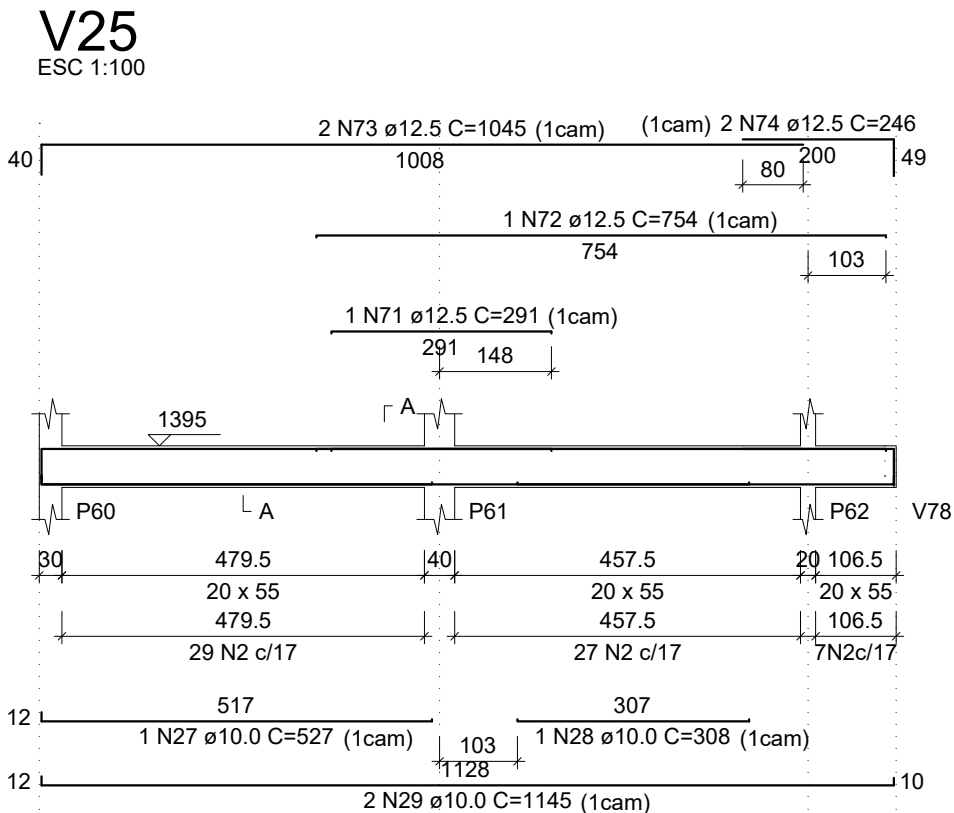
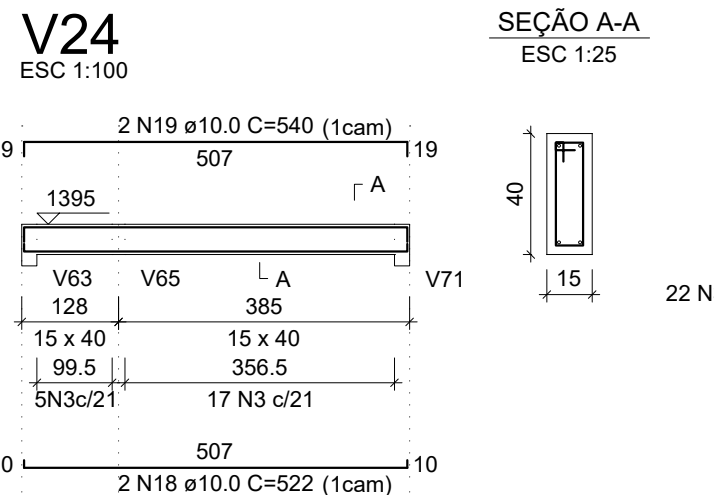
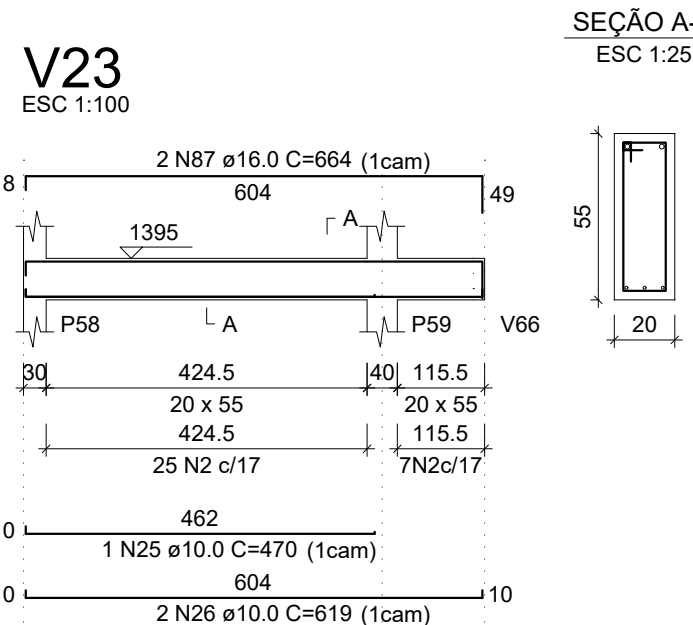
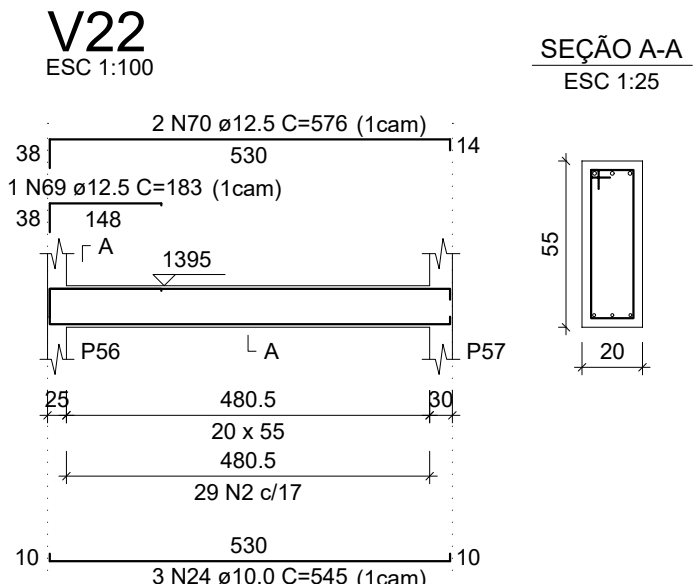
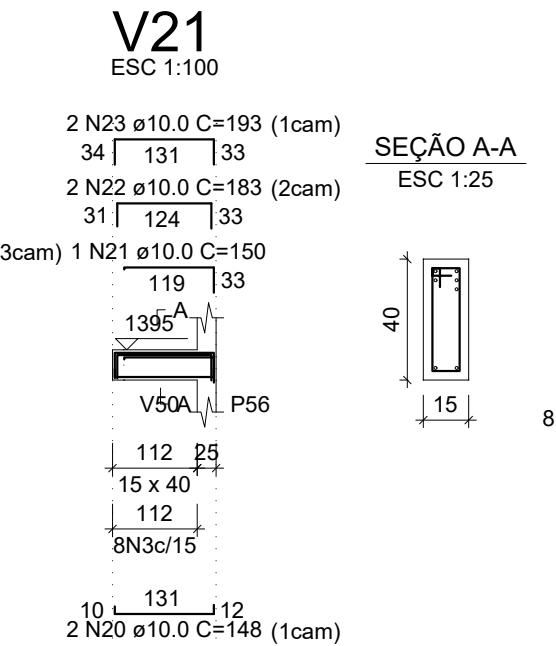
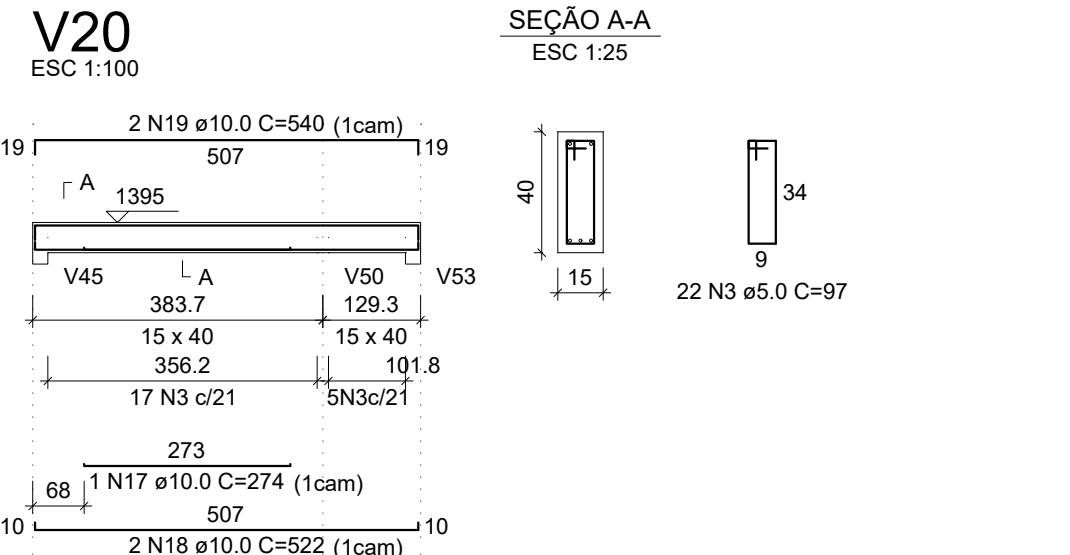
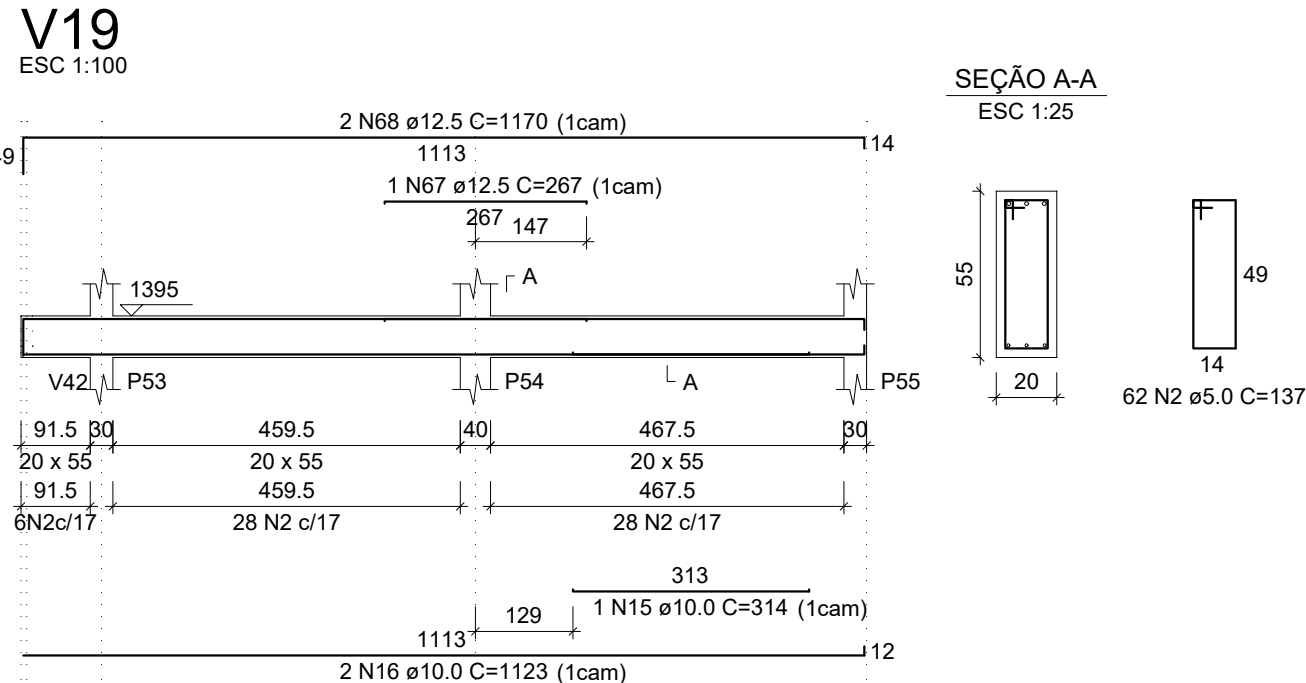
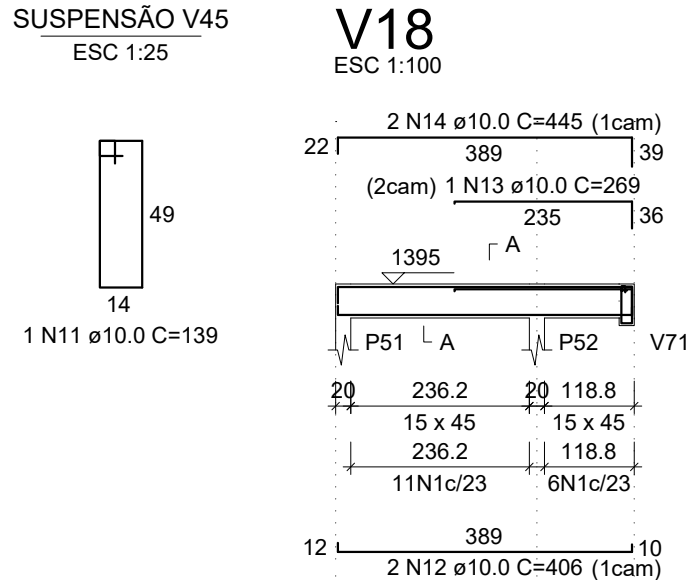
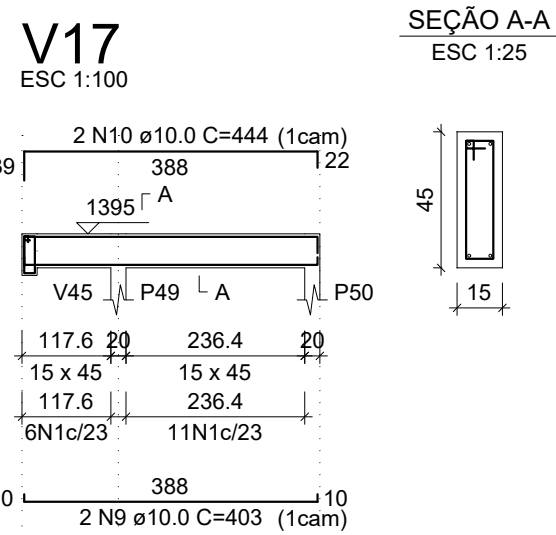
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CA60	1	5.0	138	147	20286
	2	5.0	399	97	38703
	3	5.0	127	1143	14433
	4	5.0	55	107	5885
	5	5.0	4	170	680
	6	5.0	4	116	464
	7	5.0	4	116	464
	8	5.0	4	168	672
	9	5.0	22	77	1694
	10	6.3	4	528	2112
CA50	11	6.3	8	54	432
	12	6.3	4	61	244
	13	6.3	4	194	776
	14	6.3	4	53	212
	15	8.0	1	86	86
	16	8.0	2	81	162
	17	10.0	1	90	90
	18	10.0	1	330	330
	19	10.0	1	108	108
	20	10.0	2	882	1764
	21	10.0	1	323	323
	22	10.0	1	305	305
	23	10.0	2	1077	2154
	24	10.0	1	331	331
	25	10.0	1	107	107
	26	10.0	2	644	1288
	27	10.0	2	858	1716
	28	10.0	2	1003	2006
	29	10.0	2	608	1216
	30	10.0	2	1199	2398
	31	10.0	2	1200	2400
	32	10.0	2	237	474
	33	10.0	4	543	2172
	34	10.0	1	126	126
	35	10.0	1	189	189
	36	10.0	1	350	350
	37	10.0	2	241	482
	38	10.0	1	403	806
	39	10.0	1	124	124
	40	10.0	2	432	864
41	10.0	2	150	300	
42	10.0	2	197	394	
43	10.0	2	98	196	
44	10.0	2	522	1044	
45	10.0	2	566	1132	
46	10.0	4	177	708	
47	10.0	2	144	288	
48	10.0	2	153	306	
49	10.0	2	285	570	
50	10.0	2	289	578	
51	10.0	2	401	802	
52	10.0	2	411	822	
53	10.0	2	246	492	
54	10.0	1	182	182	
55	10.0	2	192	384	
56	10.0	2	177	354	
57	10.0	2	157	314	
58	10.0	2	515	1030	
59	10.0	2	533	1066	
60	10.0	2	510	1020	
61	10.0	2	528	1056	
62	10.0	2	205	410	
63	10.0	2	238	476	
64	10.0	2	398	796	
65	10.0	2	397	794	
66	10.0	2	206	412	
67	10.0	1	154	154	
68	10.0	2	252	504	
69	10.0	4	306	1224	
70	10.0	2	422	844	
71	10.0	2	66	132	
72	10.0	2	90	180	
73	10.0	2	136	272	
74	10.0	2	108	216	
75	10.0	2	575	1150	
76	10.0	2	203	406	
77	10.0	2	604	1208	
78	10.0	2	405	810	
79	10.0	2	548	1096	
80	10.0	2	235	470	
81	10.0	2	542	1084	
82	10.0	2	542	1084	
83	10.0	2	238	476	
84	10.0	2	536	1072	
85	10.0	2	559	1118	
86	12.5	1	247	494	
87	12.5	1	936	936	
88	12.5	1	183	183	
89	12.5	1	215	215	
90	12.5	1	236	236	
91	12.5	2	1200	2400	
92	12.5	2	325	650	
93	12.5	4	262	1048	
94	12.5	1	201	201	
95	12.5	2	258	516	
96	16.0	1	101	101	
97	16.0	2	250	500	



RELAÇÃO DO AÇO					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	141	97	13677
	2	5.0	27	91	2457
	3	5.0	202	147	29694
	4	5.0	44	117	5148
	5	5.0	205	137	28085
	6	5.0	255	141	35955
	7	10.0	2	1147	2294
	8	10.0	2	140	280
	9	10.0	2	1116	2232
	10	10.0	2	194	388
CA50	11	10.0	4	631	2524
	12	10.0	2	664	1328
	13	10.0	2	596	1192
	14	10.0	2	625	1250
	15	10.0	4	1113	4452
	16	10.0	5	122	610
	17	10.0	2	1116	2232
	18	10.0	2	192	384
	19	10.0	9	107	963
	20	10.0	1	269	269
	21	10.0	1	271	271
	22	10.0	4	1099	4396
	23	10.0	1	230	230
	24	10.0	1	219	219
	25	10.0	1	1146	1146
	26	10.0	2	1136	2272
	27	10.0	2	234	468
	28	10.0	1	295	295
	29	10.0	1	238	238
	30	10.0	1	102	102
	31	10.0	2	595	1190
	32	10.0	1	168	168
	33	10.0	1	556	556
	34	10.0	2	639	1278
	35	10.0	2	268	536
	36	10.0	2	259	518
	37	10.0	1	241	241
	38	10.0	1	229	229
	39	10.0	1	1035	1035
	40	10.0	1	186	186
	41	10.0	2	1151	2302
	42	10.0	2	237	474
	43	10.0	2	532	1064
	44	10.0	3	367	1101
	45	10.0	3	541	1623
	46	10.0	2	567	1134
	47	10.0	1	1043	1043
	48	10.0	1	184	184
	49	10.0	1	1068	1068
	50	10.0	3	230	690
	51	10.0	2	1131	2262
	52	10.0	2	513	1026
	53	10.0	1	201	201
	54	10.0	4	1146	4584
	55	10.0	4	234	936
	56	10.0	1	99	99
	57	10.0	1	292	292
	58	10.0	1	306	306
	59	10.0	2	1107	2214
	60	10.0	1	246	246
	61	10.0	1	295	295
	62	10.0	2	1014	2028
	63	10.0	1	270	270
	64	10.0	2	983	1966
	65	10.0	1	273	273
	66	10.0	1	262	262
	67	10.0	2	1129	2258
	68	12.5	2	678	1356
	69	12.5	2	632	1264
	70	12.5	1	234	234
	71	12.5	3	673	2019
	72	12.5	2	595	1190
	73	12.5	2	638	1276
	74	12.5	2	1097	2194
	75	12.5	2	121	242
	76	12.5	1	1084	1084
	77	12.5	1	204	204
	78	12.5	1	219	219
	79	12.5	2	1198	2396
	80	12.5	2	1087	2174
	81	12.5	1	1099	1099
	82	12.5	1	247	247
	83	12.5	2	1197	2394
	84	12.5	2	1036	2072
	85	16.0	2	511	1022

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	10.0	659.1	55	12 m	406.4
	12.5	216.6	19	12 m	208.7
	16.0	10.2	1	12 m	16.1
CA60	5.0	1150.2	-	rolo (170 kg)	177.3
PESO TOTAL (kg)					
CA50		631.2			
CA60		177.3			

Volume de concreto (C-30) = 16.37 m³
Área de forma = 200.33 m²



RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	76	107	8132
	2	5.0	433	137	59321
	3	5.0	80	97	7760
	4	5.0	19	77	1463
	5	5.0	132	147	19404
	6	6.3	8	1021	8168
	7	8.0	1	81	81
	8	8.0	1	91	91
	9	10.0	2	403	806
	10	10.0	2	444	888
	11	10.0	2	139	278
	12	10.0	2	406	812
	13	10.0	1	269	269
	14	10.0	2	445	890
	15	10.0	1	314	314
	16	10.0	2	1123	2246
	17	10.0	1	274	274
	18	10.0	4	522	2088
	19	10.0	4	540	2160
	20	10.0	2	448	296
	21	10.0	1	150	150
	22	10.0	2	183	366
	23	10.0	2	193	386
	24	10.0	3	545	1635
	25	10.0	1	470	470
	26	10.0	2	619	1238
	27	10.0	1	527	527
	28	10.0	1	308	308
	29	10.0	2	1145	2290
	30	10.0	2	289	578
	31	10.0	2	1107	2214
	32	10.0	2	1019	2038
	33	10.0	2	281	562
	34	10.0	2	1123	2246
	35	10.0	2	188	376
	36	10.0	1	191	191
	37	10.0	1	99	99
	38	10.0	2	1199	2398
	39	10.0	2	1040	2080
	40	10.0	2	963	1926
	41	10.0	1	309	309
	42	10.0	2	991	1982
	43	10.0	2	122	244
	44	10.0	4	329	1316
	45	10.0	4	314	1256
	46	10.0	3	365	1095
	47	10.0	2	404	808
	48	10.0	1	286	286
	49	10.0	2	368	736
	50	10.0	2	390	780
	51	10.0	2	315	630
	52	10.0	2	323	646
	53	10.0	2	365	730
	54	10.0	2	402	804
	55	10.0	4	106	424
	56	10.0	1	307	307
	57	10.0	1	301	301
	58	10.0	2	1099	2198
	59	10.0	1	147	147
	60	10.0	1	307	307
	61	10.0	2	631	1262
	62	10.0	1	389	389
	63	10.0	1	105	105
	64	10.0	2	597	1194
	65	10.0	1	575	575
	66	10.0	2	639	1278
	67	12.5	1	267	267
	68	12.5	2	1170	2340
	69	12.5	1	183	183
	70	12.5	2	576	1152
	71	12.5	1	291	291
	72	12.5	1	754	754
	73	12.5	2	1045	2090
	74	12.5	2	246	492
	75	12.5	2	483	966
	76	12.5	1	275	275
	77	12.5	2	313	626
	78	12.5	1	1104	1104
	79	12.5	1	204	204
	80	12.5	2	1197	2394
	81	12.5	2	1039	2078
	82	12.5	1	237	237
	83	12.5	1	230	230
	84	12.5	2	1135	2270
	85	12.5	2	249	498
	86	12.5	2	678	1356
	87	16.0	2	664	1328

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	81.7	7	12 m	20
	8.0	1.7	1	12 m	0.7
	10.0	519.8	44	12 m	320.5
	12.5	198.1	17	12 m	190.8
	16.0	2.1	2	12 m	2.1
CA60	5.0	960.8	-	rolo (170 kg)	148.1

PESO TOTAL (kg)

CA50	552.9
CA60	148.1

Volume de concreto (C-30) = 13.75 m³
Área de forma = 171.78 m²

2 N15 ø10.0 C=1151 (1cam) 1 N16 ø10.0 C=239 (1cam)

1099 67 187 54

1 N14 ø10.0 C=1061 (1cam) 1 N12 ø10.0 C=188 (1cam)

1060 67 187 92

1 N13 ø10.0 C=1039 (1cam) 1 N12 ø10.0 C=188 (1cam)

1038 67 187 70

1 N11 ø10.0 C=1036 (2cam) 1 N12 ø10.0 C=188 (2cam)

1035 67 187 70

1 N10 ø10.0 C=744 (2cam)

743 164

2x4 N4 ø6.3 C=520 (PELE)

1395

A-A

V68 P84 V73 P85 V76 P86 V78

91.5 35 466 481 101.5

20 x 60 20 x 60 20 x 60 20 x 60

91.5 466 481 101.5

6N1 c/17 32 N1 c/15 29 N1 c/17 6N1 c/17

99 66 10

2 N6 ø10.0 C=107 (1cam) 2 N7 ø10.0 c/21 C=320 (1cam) 1 N8 ø10.0 C=74 (1cam)

491 57 615 10

2 N9 ø10.0 C=491 (1cam) 2 N9 ø10.0 C=623 (1cam)

2.5

[illegible]

Technical drawing of a reinforced concrete slab (V1) showing reinforcement details. The drawing includes a plan view with dimensions and reinforcement specifications, and a cross-section view (V1) showing the slab thickness and reinforcement layout.

Plan View Dimensions and Reinforcement:

- Overall dimensions: 1152 x 1039.
- Reinforcement specifications:
 - Top bars: 2 N72 ø12.5 C=1198 (1cam), 2 N73 ø12.5 C=1200 (1cam), (1cam) 2 N80 ø12.5 C=313, 1 N78 ø12.5 C=1039 (1cam), 1 N79 ø12.5 C=203 (1cam), 1 N77 ø12.5 C=241 (1cam).
 - Bottom bars: 1 N76 ø12.5 C=661 (1cam), 2x4 N5 ø6.3 C=281 (PELE), 2 N30 ø10.0 C=859 (1cam), 2 N32 ø10.0 C=608 (1cam).
- Other dimensions: 83, 83, 267, 83, 203, 80, 241, 80, 1395, 661, 80, 452, 227, 469.5, 351, 457, 466.5, 351, 91.5, 20 x 55, 27 N3 c/17, 23 N3 c/10, 28 N3 c/17, 27 N3 c/17, 28 N3 c/17, 6 N3 c/17, 851, 981, 600.

Cross-section View (V1):

- Slab thickness: 100 mm.
- Reinforcement layout: Shows the vertical position of the top and bottom bars, including the 2x4 N5 ø6.3 C=281 (PELE) bars.

Technical drawing of a 17 N2 C21 beam. The drawing includes a side elevation and two cross-sections. The side elevation shows a beam with a total length of 379 cm, with a 19 cm extension on the right. The height is 345 cm, with a 20 cm section at the top and a 365 cm section below. The bottom flange has a width of 15 cm and a thickness of 40 mm. The web has a height of 343.5 cm and a thickness of 9 mm. The top flange has a width of 17 cm and a thickness of 21 mm. The beam is labeled with '2 N61 ø10.0 C=412 (1cam)' at the top and '2 N60 ø10.0 C=394 (1cam)' at the bottom. The cross-sections show a height of 34 cm and a width of 9 cm. The beam is labeled with '17 N2 ø5.0 C=9'.

2 N63 ø10.0 C=235 (1cam)

203

100.1

15 x 40

90.1

5N2 c/21

2 N63 ø10.0 C=418

1395

A

V39

V35

517

15 x 40

487

24 N2 c/21

611

2 N81 ø12.5 C=625 (1cam)

10

N66 $\phi 10.0$ C=247 (1cam) ESC 1:25
191 127
n) 1 N65 $\phi 10.0$ C=128
103 27
A 1395
20/21 P50
49.5 127.5 20
15 x 40 5 x 40
42 120
N2c/2 N2Nc/21
191 10
N64 $\phi 10.0$ C=206 (1cam)

4
 2 N33 $\phi 10.0$ C=1199 (1cam)
 1167
 52
 2 N34 $\phi 10.0$ C=1200 (1cam)
 (1cam) 2 N35 $\phi 10.0$ C=222
 190
 52
 34
 1395
 V38 V34 A V26 V19 V15 V11 V5
 100.1 507 247 502 499.5 501.5 101.5
 15 x 40 15 x 40 15 x 40 15 x 40 15 x 40 15 x 40 15 x 40
 90.1 487 227 481 478.5 481.5 91.5
 5N2c/21 24 N2 c/21 11N2c/21 23 N2 c/21 23 N2 c/21 23 N2 c/21 5N2c/21
 851
 2 N30 $\phi 10.0$ C=859 (1cam)
 1001
 2 N31 $\phi 10.0$ C=1002 (1cam)
 600
 2 N32 $\phi 10.0$ C=608 (1cam)
 10

Technical drawing of a bridge deck cross-section showing reinforcement details. The drawing includes a top view of the deck with reinforcement bars (N72, N73, N75, N70, N71) and stirrups (P78, P65, P54, P38, P26, P15). Dimensions are given in millimeters and centimeters. The deck width is 10.0m. The drawing shows the layout of reinforcement bars and stirrups for the deck and the bridge piers.

2 N55 ø10.0 C=238 (1cam)

206

2 N56 ø10.0 C=415

A

1395

V38 V34 V28 V26

100.1 517

15 x 40 15 x 40

90.1 487

5N2C/21 24 N2 c/21

611

2 N81 ø12.5 C=625 (1cam)

10

Technical drawing of a window frame assembly, showing front and side views with dimensions and material specifications.

Front View (Left):

- Top horizontal member: 2 N26 $\phi 10.0$ C=519
- Bottom horizontal member: 2 N24 $\phi 10.0$ C=595 (1cam)
- Vertical member (left): V58
- Vertical member (right): V64
- Internal vertical member: V61
- Internal horizontal member: 15 x 40
- Internal vertical member: 551
- Internal horizontal member: 27 N2 $\phi 21$
- Internal vertical member: 580
- Internal horizontal member: 586
- Internal vertical member: 1395
- Internal horizontal member: 72
- Internal vertical member: 119
- Internal horizontal member: 1cam
- Internal vertical member: 2 N25 $\phi 10.0$ C=89

Side View (Right):

- Vertical member: 27 N2 $\phi 5.0$ C=97
- Internal vertical member: 34
- Internal vertical member: 9
- Internal vertical member: 15
- Internal vertical member: 40

Scale: ESC 1:25

RELAÇÃO DO AÇO					
V37	V38	V39			
V40	V41	V42			
V43	V44	V45			
V46	V47	V48			
V49	V50	V51			
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5,0	210	147	30870
	2	5,0	432	97	41904
CA50	3	5,0	283	137	38771
	4	6,3	8	520	4160
	5	6,3	8	281	2249
	6	10,0	4	107	428
	7	10,0	2	320	640
	8	10,0	1	74	74
	9	10,0	2	623	1246
	10	10,0	1	744	744
	11	10,0	1	1036	1036
	12	10,0	4	168	672
	13	10,0	1	1039	1039
	14	10,0	1	1061	1061
	15	10,0	2	1151	2302
	16	10,0	3	239	717
	17	10,0	4	1147	4588
	18	10,0	2	1150	2300
	19	10,0	2	1116	2232
	20	10,0	2	189	378
	21	10,0	6	631	3786
	22	10,0	2	180	360
	23	10,0	2	463	926
	24	10,0	2	595	1190
	25	10,0	2	89	178
	26	10,0	2	155	310
	27	10,0	1	166	166
	29	10,0	2	201	402
	30	10,0	8	859	6872
	31	10,0	2	1004	2008
	32	10,0	6	608	3648
	33	10,0	2	1199	2398
	34	10,0	5	1200	6000
	35	10,0	2	222	444
	36	10,0	1	105	105
	37	10,0	1	313	313
	38	10,0	1	145	145
	39	10,0	1	288	288
	40	10,0	1	301	301
	41	10,0	2	989	1978
	42	10,0	1	314	314
	43	10,0	2	607	1214
	44	10,0	2	867	1734
	45	10,0	1	1070	1070
	46	10,0	1	1175	1175
	47	10,0	1	1199	1199
	48	10,0	1	282	282
49	10,0	1	337	337	
50	10,0	1	300	300	
51	10,0	1	329	329	
52	10,0	2	988	1976	
53	10,0	2	307	607	
54	10,0	2	982	1964	
55	10,0	2	337	674	
56	10,0	2	415	830	
57	10,0	2	1123	2246	
58	10,0	2	784	1568	
59	10,0	2	366	732	
60	10,0	2	394	788	
61	10,0	1	412	412	
62	10,0	2	235	470	
63	10,0	2	418	836	
64	10,0	3	206	618	
65	10,0	1	128	128	
66	10,0	1	247	247	
67	10,0	1	282	282	
68	10,0	2	419	838	
69	12,5	2	491	982	
70	12,5	1	254	254	
71	12,5	1	299	299	
72	12,5	5	1198	5990	
73	12,5	5	1200	6000	
74	12,5	1	249	249	
75	12,5	2	315	630	
76	12,5	1	661	661	
77	12,5	1	241	241	
78	12,5	1	1039	1039	
79	12,5	1	203	203	
80	12,5	2	313	626	
81	12,5	4	625	2500	

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	64.1	6	12 m	15.7
	10.0	735.3	62	12 m	453.4
	12.5	196.7	17	12 m	189.5
CA60	5.0	1115.5	-	rolo (170 kg)	171.9

Volume de concreto (C-30) = 15.48 m³
Área de forma = 204.94 m²

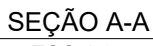
ESC 1:100



ESC 1:100



ESC 1:10



ESC 1:100



ESC 1:100



ESC 1:100



ESC 1:100



ESC 1:100



ESC 1:10



ESC 1:100



ESC 1:100



ESC 1:100



ESC 1:100



V52	V53	V54
V55	V56	V57
V58	V59	V60
V61	V62	V63
V64		

ACO	N	D (mm)	QUANT	C.UNIT	C.TOTAL
CA60	1	5.0	125	97	12125
	2	5.0	528	137	72336
CA50	3	5.0	40	27	3080
	4	5.0	11	117	1287
	5	5.0	19	127	2413
	6	6.3	8	271	2168
	7	6.3	8	264	2121
	8	8.0	4	312	3124
	9	8.0	1	96	96
	10	10.0	2	1123	2246
	11	10.0	2	786	1572
	12	10.0	2	364	728
	13	10.0	1	126	126
	14	10.0	2	865	1770
	15	10.0	2	1040	2080
	16	10.0	2	607	1214
	17	10.0	2	265	530
	18	10.0	2	237	474
	19	10.0	1	1173	2350
	20	10.0	1	597	597
	21	10.0	1	1183	1183
	22	10.0	1	186	186
	23	10.0	2	300	600
	24	10.0	2	160	320
	25	10.0	2	282	564
	26	10.0	2	274	548
	27	10.0	1	162	162
	28	10.0	1	165	165
	29	10.0	1	262	264
	30	10.0	1	300	300
	31	10.0	1	184	184
	32	10.0	1	139	139
	33	10.0	2	224	448
	34	10.0	2	232	464
35	10.0	2	899	1798	
36	10.0	2	1062	2124	
37	10.0	2	641	1282	
38	10.0	2	830	1760	
39	10.0	2	1036	2072	
40	10.0	2	108	216	
41	10.0	1	201	201	
42	10.0	1	242	242	
43	10.0	1	212	212	
44	10.0	1	273	273	
45	10.0	1	188	188	
46	10.0	1	581	581	
47	10.0	1	322	764	
48	10.0	1	149	149	
49	10.0	1	280	560	
50	10.0	1	336	672	
51	10.0	1	326	326	
52	10.0	1	333	999	
53	10.0	1	336	999	
54	10.0	1	2078	2078	
55	10.0	2	275	550	
56	10.0	2	606	1216	
57	10.0	1	196	196	
58	10.0	1	1077	1077	
59	10.0	1	1097	1097	
60	10.0	2	1196	3594	
61	10.0	1	718	718	
62	10.0	2	796	1592	
63	10.0	2	624	1248	
64	10.0	2	236	472	
65	10.0	2	415	830	
66	12.5	1	188	188	
67	12.5	1	1186	2396	
68	12.5	1	1200	2400	
69	12.5	2	315	630	
70	12.5	2	492	984	
71	12.5	1	219	219	
72	12.5	2	408	816	
73	12.5	2	308	616	
74	16.0	2	327	654	
75	16.0	2	192	384	
76	16.0	2	228	456	
77	16.0	1	148	148	
78	16.0	1	243	243	
79	16.0	1	253	253	
80	20.0	2	243	486	
81	20.0	2	243	486	
82	20.0	2	243	486	

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6,3	42,8	4	12 m	10,5
	8,0	4,2	1	12 m	1,7
	10,0	583,7	49	12 m	359,9
	12,5	82,5	7	12 m	78,4
	16,0	29,1	3	12 m	45,9
CA60	20,0	7,8	1	12 m	19,2
	5,0	912,4	-	rolo (170 kg)	140,6
PESO TOTAL (kg) CA50 516,6 CA60 140,6					

Volume de concreto (C-30) = 12.32 m³
Área de forma = 154.26 m²

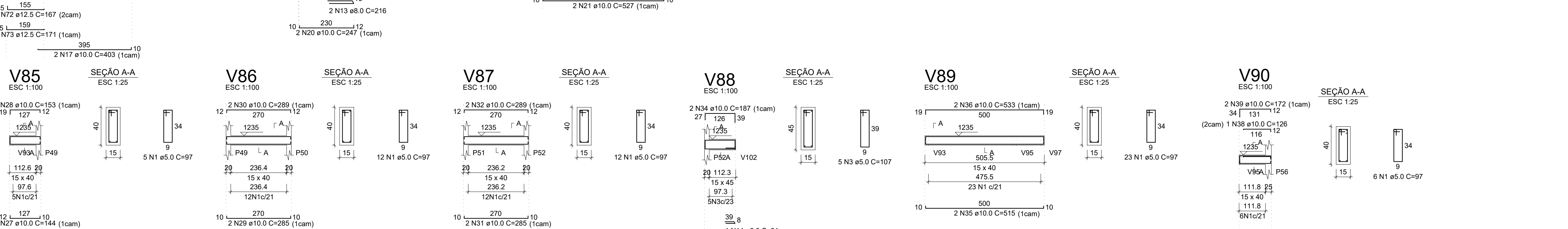
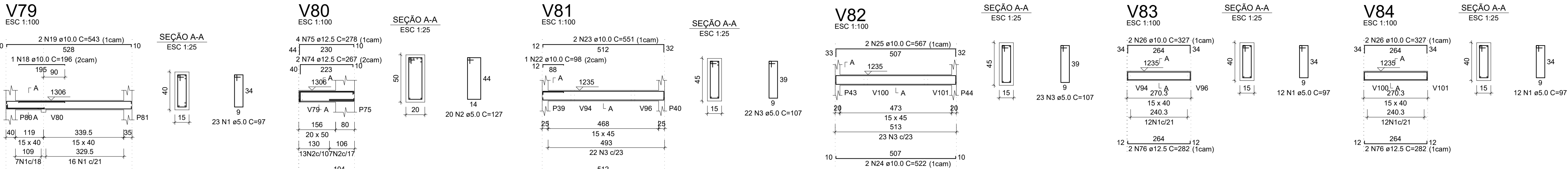


RELAÇÃO DO AÇO					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	5	101	505
	2	5.0	4	120	480
	3	5.0	283	97	27451
	4	5.0	251	137	34387
	5	5.0	11	117	1287
	6	5.0	22	107	2354
	7	5.0	29	127	3683
	8	5.0	138	147	20286
	9	6.3	8	266	2128
	10	6.3	21	108	2268
CA50	11	8.0	1	119	119
	12	8.0	1	81	81
	13	8.0	6	131	786
	14	10.0	2	68	136
	15	10.0	2	111	222
	16	10.0	2	532	1064
	17	10.0	2	196	392
	18	10.0	2	553	1106
	19	10.0	2	1125	2250
	20	10.0	2	785	1570
	21	10.0	2	365	730
	22	10.0	2	238	476
	23	10.0	2	415	830
	24	10.0	2	392	784
	25	10.0	2	410	820
	26	10.0	1	1123	2246
	27	10.0	2	787	1574
	28	10.0	2	363	726
	29	10.0	1	271	271
	30	10.0	2	256	512
	31	10.0	2	280	560
	32	10.0	2	325	650
	33	10.0	2	560	1120
	34	10.0	2	345	690
	35	10.0	1	334	334
	36	10.0	2	760	1520
	37	10.0	2	270	540
	38	10.0	2	1107	2214
	39	10.0	1	301	301
	40	10.0	1	1101	1101
	41	10.0	2	188	376
	42	10.0	4	1175	4700
	43	10.0	1	565	565
	44	10.0	1	663	663
	45	10.0	2	1199	2398
	46	10.0	2	781	1562
	47	10.0	2	1160	2320
	48	10.0	1	90	90
	49	10.0	1	325	325
	50	10.0	1	97	97
	51	10.0	2	882	1764
	52	10.0	1	306	306
	53	10.0	1	293	293
	54	10.0	2	1041	2082
	55	10.0	1	308	308
	56	10.0	1	107	107
	57	10.0	4	608	2432
	58	10.0	1	212	212
	59	10.0	1	1184	1184
	60	10.0	5	1200	6000
	61	10.0	1	250	250
	62	10.0	2	1199	2398
	63	10.0	2	292	584
	64	10.0	2	458	916
	65	10.0	2	1003	2006
	66	10.0	2	1199	2398
	67	10.0	2	233	466
	68	12.5	2	625	1250
	69	12.5	2	891	1782
	70	12.5	2	1030	2060
	71	12.5	2	607	1214
	72	16.0	1	253	253
	73	16.0	2	1197	2394
	74	16.0	2	1200	2400
	75	16.0	2	356	712
	76	16.0	1	351	351
	77	16.0	2	552	1104
	78	20.0	2	561	1122
	79	20.0	1	291	291
	80	20.0	2	396	792

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	44	4	12 m	10.8
	8.0	9.9	1	12 m	3.9
	10.0	611.8	51	12 m	377.2
	12.5	63.1	6	12 m	60.7
	16.0	72.1	7	12 m	113.9
CA60	20.0	22.1	2	12 m	54.4
	5.0	904.3	-	rolo (170 kg)	139.4

PESO TOTAL (kg)
CA50 620.9
CA60 139.4

Volume de concreto (C-30) = 12.78 m³
Área de forma = 168.59 m²



RELAÇÃO DO AÇO					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	290	97	28130
	2	5.0	20	127	2540
	3	5.0	65	107	6955
	4	5.0	4	170	680
	5	5.0	4	116	464
	6	5.0	4	116	464
	7	5.0	4	168	672
	8	5.0	28	107	2996
	9	6.3	8	54	432
	10	6.3	4	61	244
CA50	11	6.3	4	201	804
	12	6.3	4	53	212
	13	8.0	2	216	432
	14	8.0	1	81	81
	15	8.0	1	91	91
	16	8.0	1	211	211
	17	10.0	2	403	806
	18	10.0	1	196	196
	19	10.0	2	543	1086
	20	10.0	2	247	494
	21	10.0	2	527	1054
	22	10.0	1	98	98
	23	10.0	2	551	1102
	24	10.0	2	522	1044
	25	10.0	2	567	1134
	26	10.0	4	327	1308
	27	10.0	2	144	288
	28	10.0	2	153	306
	29	10.0	2	285	570
	30	10.0	2	289	578
	31	10.0	2	285	570
	32	10.0	2	289	578
	33	10.0	2	145	290
	34	10.0	2	187	374
	35	10.0	2	515	1030
	36	10.0	2	533	1066
	37	10.0	2	146	292
	38	10.0	1	126	126
	39	10.0	2	172	344
	40	10.0	2	510	1020
	41	10.0	2	528	1056
	42	10.0	2	117	234
	43	10.0	2	157	314
	44	10.0	2	203	406
	45	10.0	2	236	472
	46	10.0	2	398	796
	47	10.0	2	30	60
	48	10.0	2	206	412
	49	10.0	1	154	154
	50	10.0	2	253	506
	51	10.0	6	396	2376
	52	10.0	2	422	844
	53	10.0	2	66	132
	54	10.0	2	66	132
	55	10.0	2	108	216
	56	10.0	2	208	416
	57	10.0	2	183	366
	58	10.0	2	253	506
	59	10.0	2	106	212
	60	10.0	1	106	106
	61	10.0	4	405	1620
	62	10.0	2	202	404
	63	10.0	2	235	470
	64	10.0	1	166	166
	65	10.0	2	542	1084
	66	10.0	2	542	1084
	67	10.0	2	241	482
	68	10.0	1	173	173
	69	10.0	2	540	1080
	70	10.0	2	551	1102
	71	10.0	2	245	490
	72	12.5	1	167	167
	73	12.5	2	171	342
	74	12.5	2	267	534
	75	12.5	4	278	1112
	76	12.5	4	282	1128
	77	16.0	1	119	119
	78	16.0	1	249	249
	79	16.0	2	261	522
	80	16.0	1	268	268
	81	16.0	2	272	544

RESUMO DO AÇO					
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNIT	PESO + 0% (kg)
CA50	6.3	16.9	2	12 m	4.1
	8.0	8.2	1	12 m	3.2
	10.0	343.5	29	12 m	211.8
	12.5	32.8	3	12 m	31.6
CA60	5.0	429	-	rolo (170 kg)	66.1

PESO TOTAL (kg)		VOLUME DE CONCRETO (C-30) = 5.33 m³	
CA50	277.6	Área de forma = 81.83 m²	
CA60	66.1		

