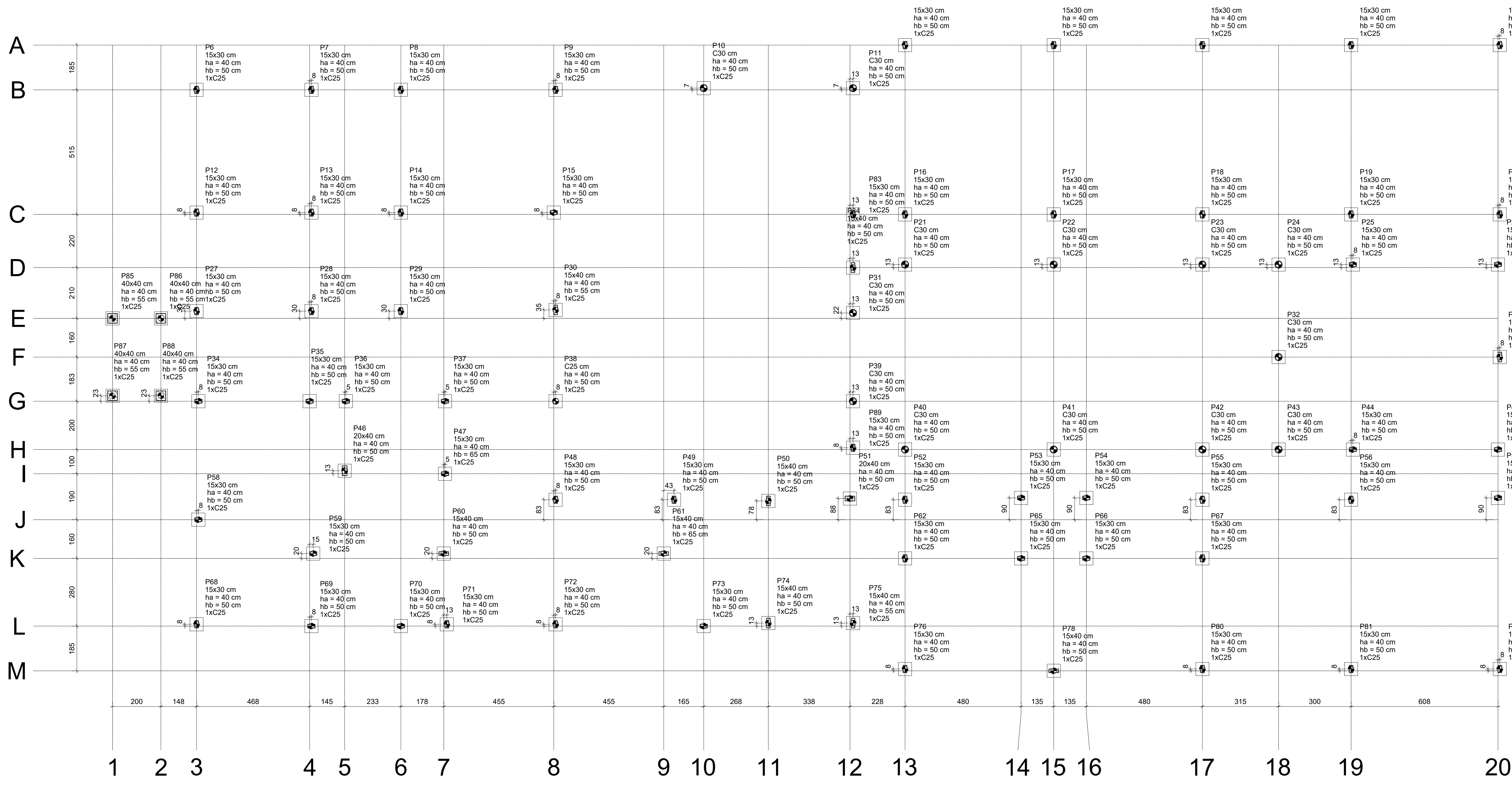

CENTRAL DE LICITAÇÃO E CONTRATOS

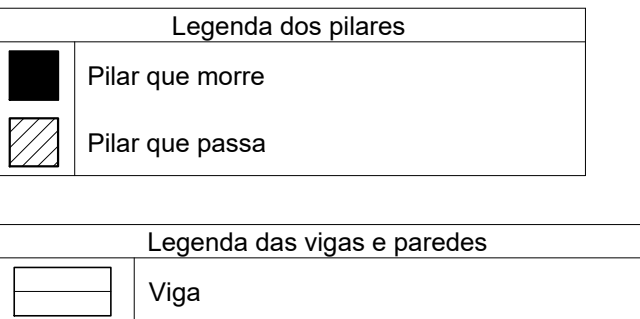
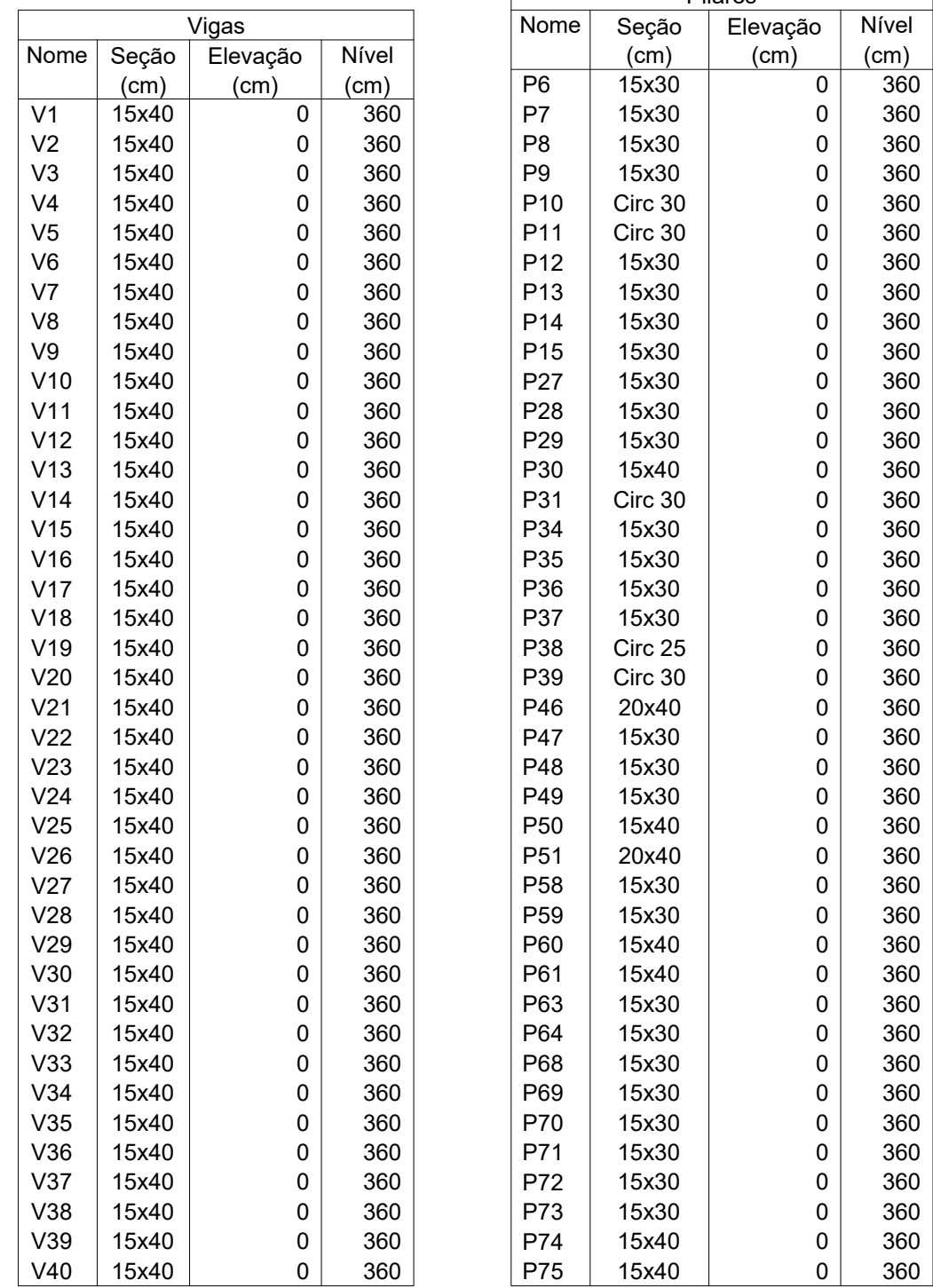
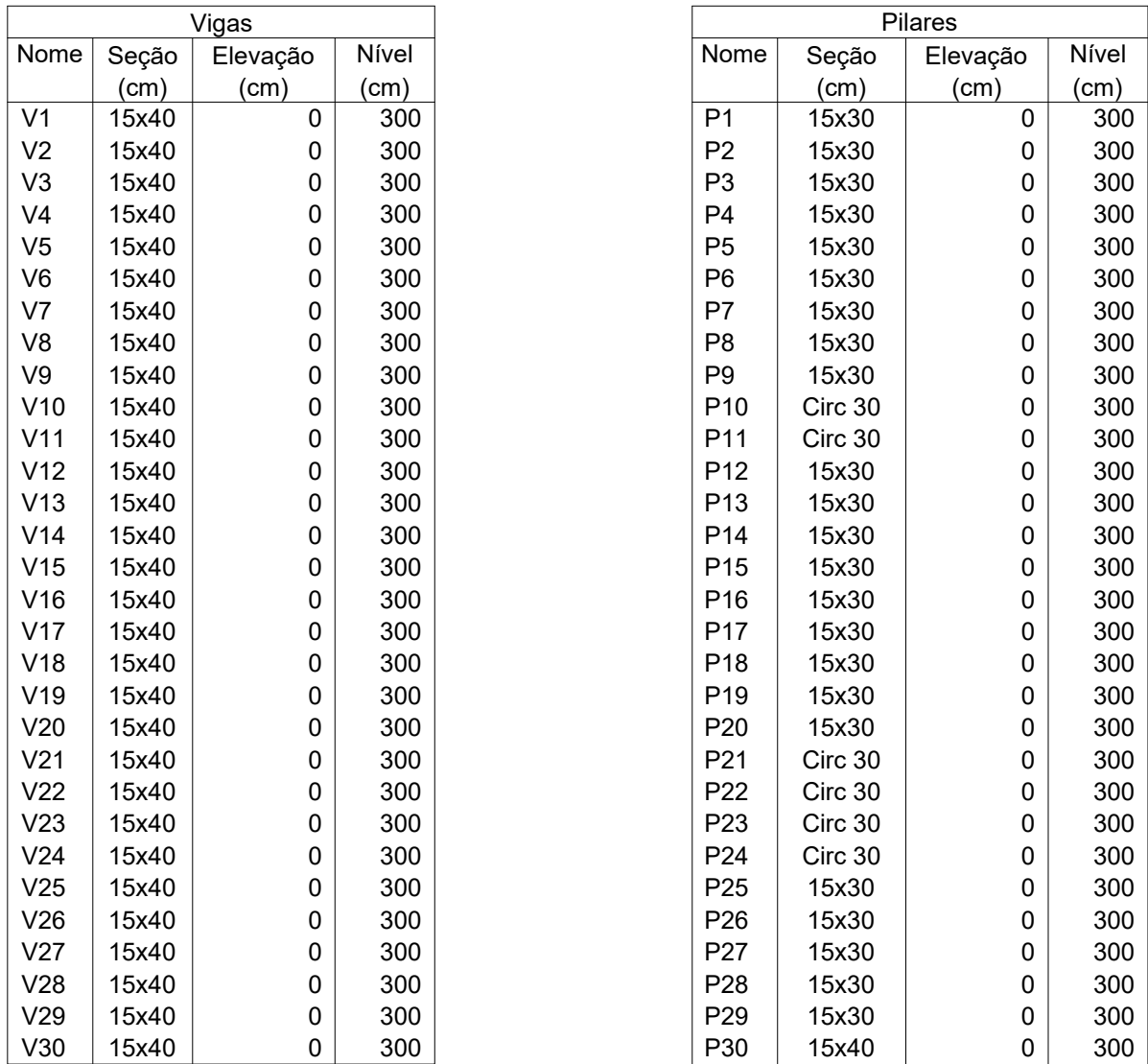
ANEXO I-A – 1A1-PROJETOS/PLANTAS (PROJETO ESTRUTURAL)



PLANTA DE LOCAÇÃO

Escala 1:100

Nome	Seção	X (cm)	Y (cm)	Carga Máx (t)	Carga Mín. (t)	Px				Py				Fundação				Bloco			
						Positivo	Negativo	Positivo	Negativo	Positivo	Negativo	Positivo	Negativo	Lado B (cm)	Lado H (cm)	h1 (cm)	h2 (cm)		h1/h2	nb	Estaca (ca)
P1	15x30	4320.88	3384.05	8.8	8.4	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P2	15x30	4935.88	3384.05	9.8	9.6	0	0	0	0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P3	15x30	5550.88	3384.05	9.7	9.4	0	0	0.1	-0.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P4	15x30	6165.88	3384.05	9.8	9.6	0	0	0.3	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P5	15x30	6780.88	3384.05	8.5	8.4	0	0	0	0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P6	15x30	1390.53	3199.05	8.3	8.0	0	0	0	0.0	-0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P7	15x30	1965.53	3199.05	8.8	8.6	0	0	0	0.3	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P8	15x30	2235.53	3199.05	9.1	8.8	0	0	0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P9	15x30	2875.53	3199.05	9.5	9.2	0	0	0	0.2	-0.1	0.0	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P10	C30	3488.03	3206.15	8.8	8.7	0	0	0	0.0	-0.3	0.0	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P11	C30	4105.53	3206.15	9.1	9.0	0	0	0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P12	15x30	1390.53	2691.55	8.8	8.4	0	0	0	0.0	-0.9	0.4	-0.2	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P13	15x30	1965.53	2691.55	14.2	14.0	0	0	0	0.0	-4.3	0.5	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P14	15x30	2235.53	2691.55	13.5	13.4	0	0	0	0.1	-0.4	0.4	0.5	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P15	15x30	2868.03	2691.55	14.7	14.4	0	0	0	0	6.9	0.0	0.5	-0.6	0.0	0.0	0.0	0.0	50	1	C25	-75
P16	15x30	4320.88	2684.05	8.8	8.7	0	0	0	0.0	-0.4	0.0	-0.7	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P17	15x30	4935.88	2684.05	9.5	9.3	0	0	0	0.1	-0.2	0.0	-0.8	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P18	15x30	5550.88	2684.05	9.3	9.1	0	0	0	0.0	-0.2	0.0	-0.8	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P19	15x30	6165.88	2684.05	9.5	9.3	0	0	0	0.0	0.0	-0.3	0.0	-0.8	0.5	0.0	0.0	0.0	50	1	C25	-75
P20	15x30	6780.88	2684.05	9.6	9.1	0	0	0	0.4	0.0	0.1	-0.5	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P21	C30	4320.88	2076.55	9.3	9.1	0	0	0	0.0	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P22	C30	4935.88	2476.55	8.7	8.7	0	0	0	0.0	-0.2	0.0	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P23	C30	5550.88	2476.55	8.3	8.1	0	0	0	0.4	0.0	0.1	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P24	C30	5865.88	2476.55	8.6	7.9	0	0	0	0.0	0.0	0.2	-0.2	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P25	15x30	6173.38	2476.55	9.1	9.0	0	0	0	0.0	-0.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P26	15x30	6773.38	2476.55	7.9	7.8	0	0	0	0.0	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P27	15x30	1390.53	2284.05	8.4	8.3	0	0	0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P28	15x30	1965.53	2284.05	12.7	12.2	0	0	0	0.0	-3.4	0.2	-0.1	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P29	15x30	2235.53	2284.05	12.7	12.3	0	0	0	0.0	-1.9	0.1	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P30	15x40	2875.53	2289.05	13.1	12.5	0	0	0	0	5.6	0.0	0.5	0.0	0.0	0.0	0.0	0.0	50	1	C25	-80
P31	C30	4105.53	2276.50	7.8	7.4	0	0	0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P32	C30	5865.88	2094.05	8.0	8.0	0	0	0	0.0	0.1	0.0	1.3	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P33	15x40	6780.88	2094.05	8.0	7.9	0	0	0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P34	15x30	1396.03	1911.55	8.5	8.3	0	0	0	0.0	0.2	0.0	0.2	0.1	0.0	0.0	0.0	0.0	50	1	C25	-75
P35	15x30	1968.03	1911.55	8.8	8.3	0	0	0	0.0	0.5	0.0	0.4	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P36	15x30	2058.03	1911.55	8.5	8.0	0	0	0	0.1	-0.4	0.4	-0.6	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P37	15x30	2416.03	1911.55	8.4	8.0	0	0	0	0.1	-0.1	0.5	-0.9	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P38	C25	2875.53	1911.55	8.2	7.8	0	0	0	0.0	0.3	0.0	0.3	-0.1	0.0	0.0	0.0	0.0	50	1	C25	-75
P39	C30	4105.53	1911.55	8.4	8.0	0	0	0	0.1	-0.2	0.1	-0.2	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P40	C30	4320.88	1711.55	9.3	9.0	0	0	0	0.0	-0.6	0.0	-1.2	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P41	C30	4935.88	1711.55	8.7	8.7	0	0	0	0.1	-0.2	0.1	-1.1	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P42	C30	5550.88	1711.55	8.3	8.2	0	0	0	0.4	0.0	0.1	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P43	C30	5865.88	1711.55	7.7	6.9	0	0	0	0.0	0.2	0.0	0.0	-1.4	0.5	0.0	0.0	0.0	50	1	C25	-75
P44	15x30	6173.38	1711.55	8.9	8.7	0	0	0	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P45	15x30	6773.38	1711.55	8.1	8.0	0	0	0	0.0	0.6	0.0	0.4	-0.3	0.5	0.0	0.0	0.0	50	1	C25	-75
P46	20x40	2203.03	1624.05	13.4	12.4	0	0	0	0.0	-7.5	0.5	0.0	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P47	15x30	2418.03	1611.55	17.0	16.8	0	0	0	0.0	7.1	0.0	0.5	0.2	0.0	0.0	0.0	0.0	50	1	C25	-80
P48	15x30	2875.53	1504.05	8.3	8.1	0	0	0	0.0	0.8	0.0	0.9	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P49	15x30	3365.43	1504.05	15.2	14.3	0	0	0	0.0	-3.4	1.4	0.0	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P50	15x40	3755.53	1499.05	22.8	22.3	0	0	0	0	2.3	0.0	1.1	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P51	20x40	4093.03	1509.05	19.5	19.1	0	0	0	0.0	2.1	0.0	1.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P52	15x30	4320.88	1504.05	8.1	7.7	0	0	0	0.0	-0.3	0.3	-0.1	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P53	15x30	4800.88	1511.55	8.2	7.7	0	0	0	0.0	0.4	0.0	0.2	-0.2	0.5	0.0	0.0	0.0	50	1	C25	-75
P54	15x30	5070.88	1511.55	8.0	7.6	0	0	0	0.0	0.2	0.2	0.2	-0.2	0.5	0.0	0.0	0.0	50	1	C25	-75
P55	15x30	5550.88	1504.05	9.3	8.6	0	0	0	0.0	-0.2	0.2	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P56	15x30	6165.88	1504.05	8.8	8.5	0	0	0	0.1	-0.1	0.7	0.0	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P57	15x30	6773.38	1511.55	8.8	8.7	0	0	0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P58	15x30	1396.03	1421.55	9.4	9.0	0	0	0	0.0	-0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P59	15x30	1973.03	1281.55	14.3	13.5	0	0	0	0.0	-8.5	0.2	-0.3	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P60	15x40	2413.03	1281.55	19.0	18.4	0	0	0	0	8.9	0.0	0.0	-2.2	0.5	0.0	0.0	0.0	50	1	C25	-75
P61	15x40	3222.93	1281.55	14.5	13.8	0	0	0	0.0	-0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-90
P62	15x30	4320.88	1281.55	8.2	7.7	0	0	0	0.0	-0.5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P63	15x30	4800.88	1261.55	8.4	8.3	0	0	0	0.4	0.0	0.7	0.0	0.5	0.0	0.0	0.0	0.0	50	1	C25	-75
P64	15x30	5070.88	1261.55	8.3	8.3	0	0	0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P65	15x30	5550.88	1261.55	8.3	7.8	0	0	0	0.0	0.4	0.0	0.9	0.0	0.0	0.0	0.0	0.0	50	1	C25	-75
P66	15x30	1390.53																			



Vilaças				Piares			
Nome	Sessão	Elevação (cm)	Nível (cm)	Nome	Sessão	Elevação (cm)	Nível (cm)
V1	15x40	0	300	P1	15x30	0	300
V2	15x40	0	300	P2	15x30	0	300
V3	15x40	0	300	P3	15x30	0	300
V4	15x40	0	300	P4	15x30	0	300
V5	15x40	0	300	P5	15x30	0	300
V6	15x40	0	300	P6	15x30	0	300
V7	15x40	0	300	P7	15x30	0	300
V8	15x40	0	300	P8	15x30	0	300
V9	15x40	0	300	P9	15x30	0	300
V10	15x40	0	300	P10	Circ 30	0	300
V11	15x40	0	300	P11	Circ 30	0	300
V12	15x40	0	300	P12	15x30	0	300
V13	15x40	0	300	P13	15x30	0	300
V14	15x40	0	300	P14	15x30	0	300
V15	15x40	0	300	P15	15x30	0	300
V16	15x40	0	300	P16	15x30	0	300
V17	15x40	0	300	P17	15x30	0	300
V18	15x40	0	300	P18	15x30	0	300
V19	15x40	0	300	P19	15x30	0	300
V20	15x40	0	300	P20	15x30	0	300
V21	15x40	0	300	P21	Circ 30	0	300
V22	15x40	0	300	P22	Circ 30	0	300
V23	15x40	0	300	P23	Circ 30	0	300
V24	15x40	0	300	P24	Circ 30	0	300
V25	15x40	0	300	P25	15x30	0	300
V26	15x40	0	300	P26	15x30	0	300
V27	15x40	0	300	P27	15x30	0	300
V28	15x40	0	300	P28	15x30	0	300
V29	15x40	0	300	P29	15x30	0	300
V30	15x40	0	300	P30	15x40	0	300

Legenda dos pilares

	Pilar que morre
	Pilar que passa

Legenda das vigas e paredes

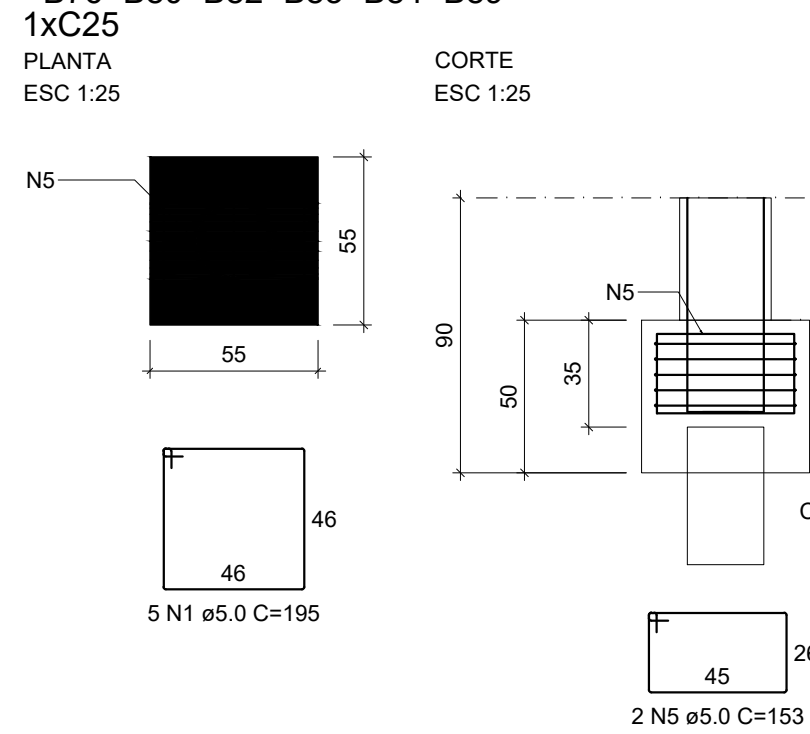
	Viga
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APROVAÇÕES:			
REVISÕES:			
Nº:	Data:	Descrição:	Autor:

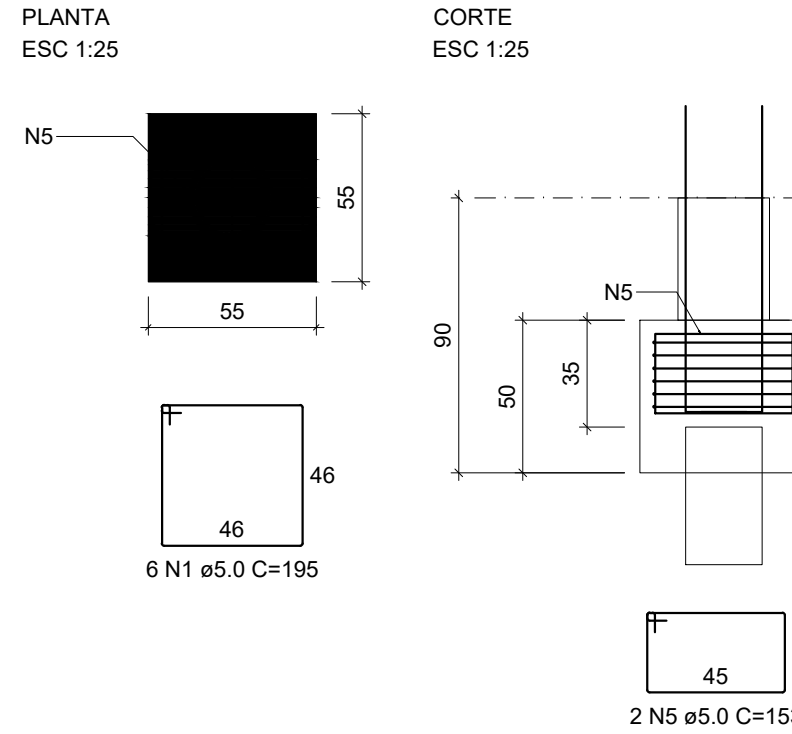
 PREFEITURA MUNICIPAL DE BARCARENA SECRETARIA MUNICIPAL DE EDUCAÇÃO, CULTURA E DESENVOLVIMENTO SOCIAL SEMED	RESPONSÁVEL TÉCNICO PROJETO: JOSÉ VALBER GOMES DA SILVA ENGENHEIRO CIVIL PORTARIA nº 1055/2025-SEMAT
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ANO: 2026	TIPO: EST Estrutural	FOLHA: 02/13	MODIFICAÇÕES: A
			B
CLIENTE: PREFEITURA DE BARCARENA - SEMED		LOCAL: AV. BEIRA MAR, VILA ITUPANEMA, BARCARENÁRIA.	C
OBRA: PROJETO PARA CONSTRUÇÃO DA NOVA EMEI CHAPEUZINHO VERMELHO		ÁREAS: TERRENO: 2.705,20m² CONSTRUIDA: 1.200,00m² URBANIZADA: 651,13m²	D
DESCRIÇÃO DA PRANCHA: FORMA NÍVEL 300 E 360. CORTES			E
DESENHO	ENG. CIVIL JOSÉ VALBER GOMES DA SILVA	DATA: 13/07/2026	ESCALA: INDICADA

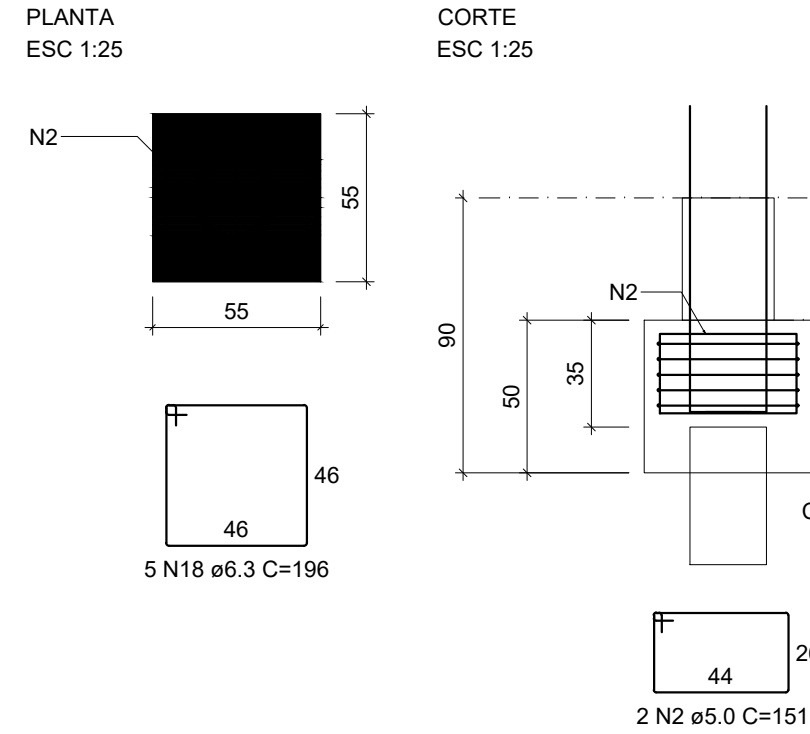
B1=B5=B6=B7=B12=B16=B26=B27=B33=B34=B35
=B36=B37=B44=B45=B48=B52=B53=B54=B57
=B62=B65=B66=B67=B68=B69=B70=B71=B72
=B76=B80=B82=B83=B84=B89



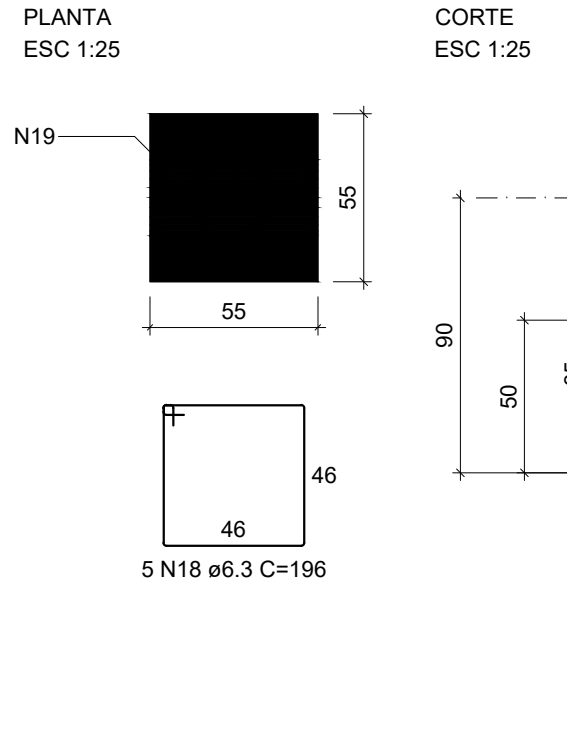
B2=B3=B4=B8=B9=B17=B18=B19=B20=B25=B31
=B43=B55=B56=B58=B78=B81
1xC25



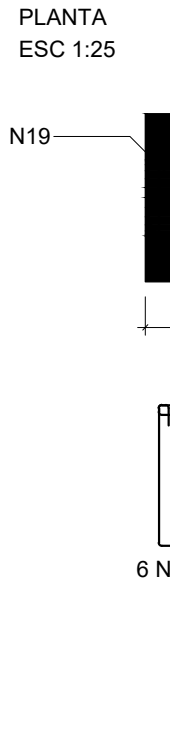
B10=B11=B21=B22=B23=B24=B32=B38=B39=B40
=B41=B42
1xC25



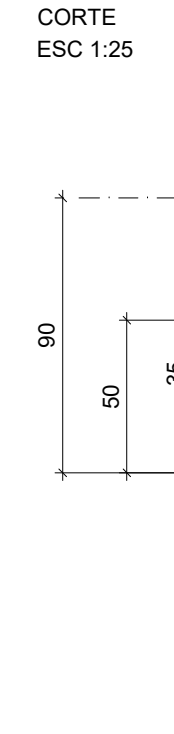
B13=B14=B28=B29=B46=B59=B73
1xC25



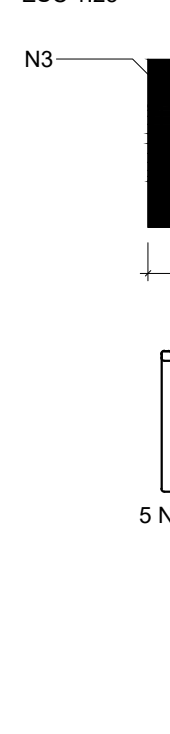
B15=B49
1xC25



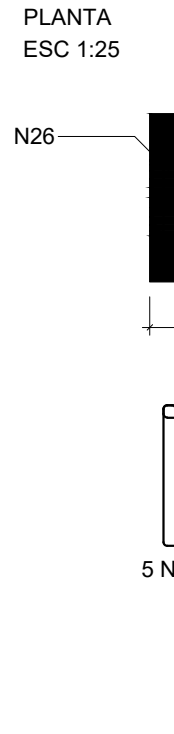
B30
1xC25



B47
1xC25



B50=B74
1xC25



RELAÇÃO DO AÇO

ACO	N	DIAM (mm)	QUANT	C.LIMIT (cm)	C.TOTAL (cm)
CA50	1	5.0	310	186	60450
	2	5.0	32	151	4832
	3	5.0	4	181	734
	4	5.0	4	161	644
	5	5.0	104	153	15912
	6	5.0	8	163	1304
	7	5.0	788	63	47280
	8	5.0	81	99	8009
	9	5.0	85	36	2210
	10	5.0	70	70	4900
	11	5.0	7	83	581
	12	5.0	20	31	620
	13	5.0	30	80	1600
	14	5.0	18	26	468
	15	5.0	2	164	328
	16	5.0	48	120	5760
	17	6.3	2	156	2904
	18	6.3	124	196	24304
	19	6.3	12	136	1632
	20	6.3	2	184	368
	21	6.3	72	26	2016
	22	6.3	70	71	4970
	23	6.3	2	156	2904
	24	6.3	18	61	1098
	25	6.3	15	136	1740
	26	8.0	4	152	608
	27	8.0	35	17	595
	28	8.0	20	81	1620
	29	10.0	455	19	8415
	30	10.0	14	86	1204
	31	12.5	32	151	4162
	32	12.5	24	90	2160
	33	16.0	14	150	2100

RESUMO DO AÇO

ACO	N	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	1	5.0	365.2	86.3
	2	5.0	69.2	30
	3	5.0	553.5	376.4
	4	5.0	63.5	67.3
	5	5.0	1575.2	267.1
CA50	TOTAL			
CA50	607.5			
CA50	257.1			

Volume de concreto (C-25) = 14.31 m³

Área de forma = 127.52 m²

B51
1xC25



B60
1xC25



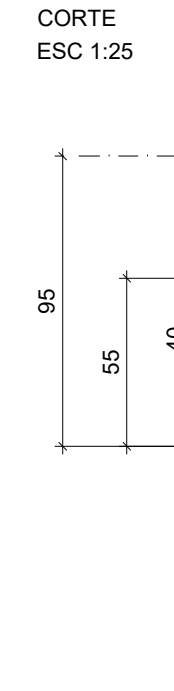
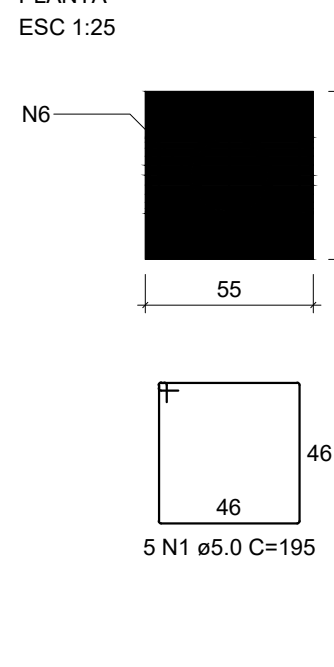
B61
1xC25



B75
1xC25

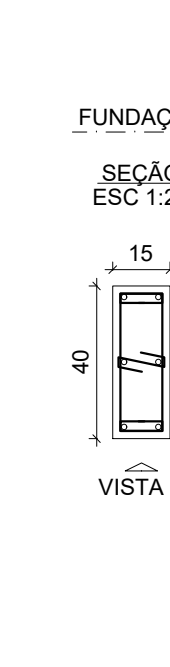


B85=B86=B87=B88
1xC25

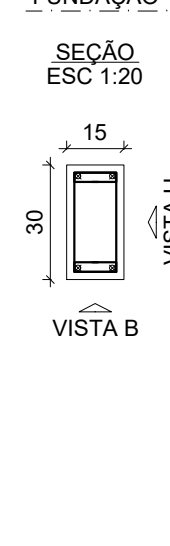


P1=P5=P6=P7=P12=P16=P26=P27=
=P34=P35=P36=P37=P44=P45=
=P48=P52=P53=P54=P57=P62=
=P65=P66=P67=P68=P69=P70=
=P71=P72=P76=P80=P82

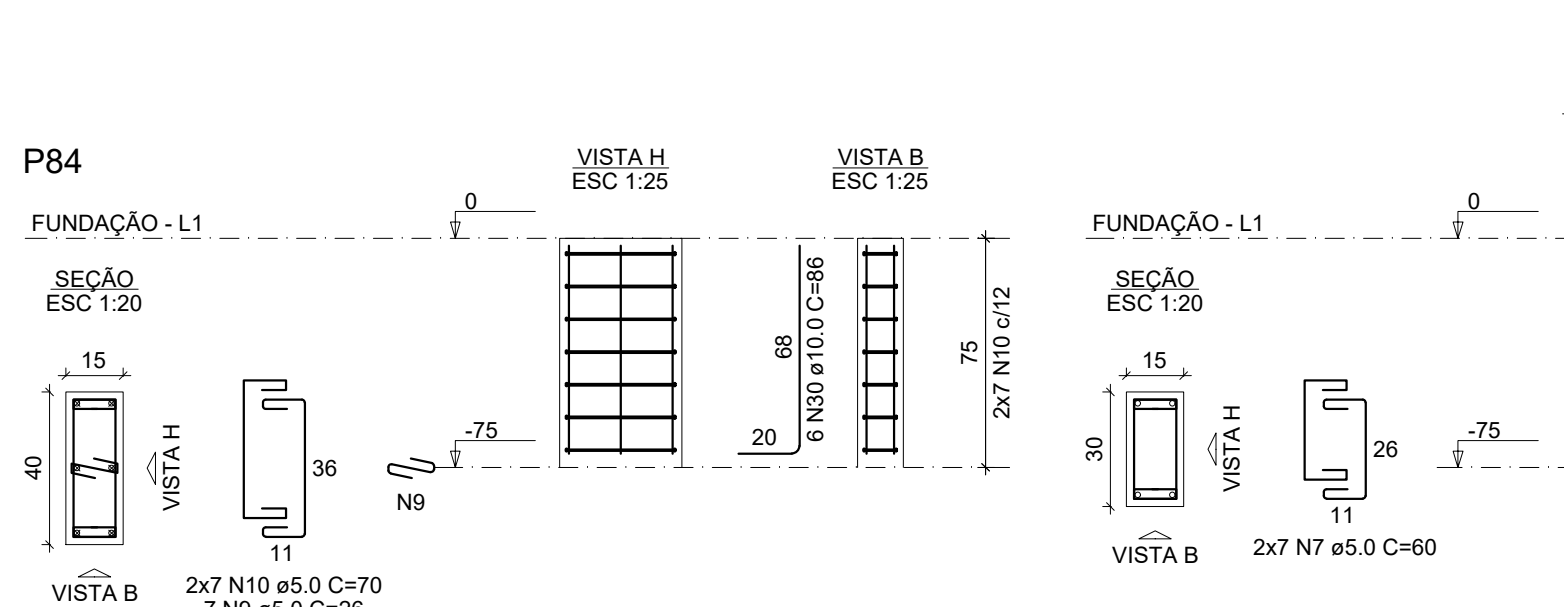
P33



P83=P89



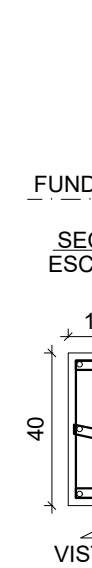
P2=P3=P4=P6=P9=P17=P18=P19=
=P20=P25=P55=P56=P58=P81



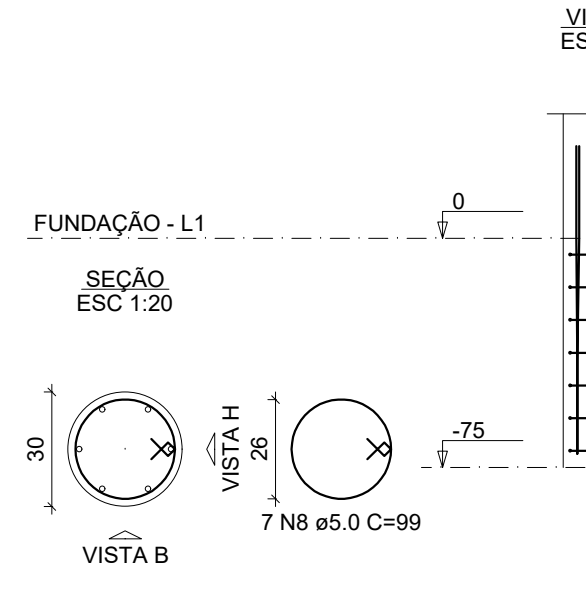
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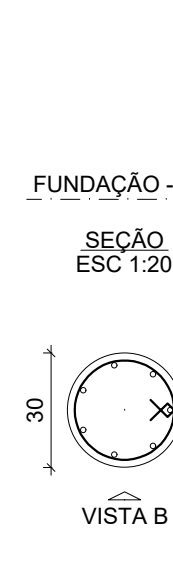
P78



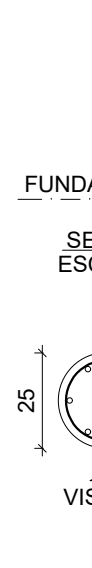
P10=P11=P21=P22=P23=P24=P39=
=P40=P41=P42



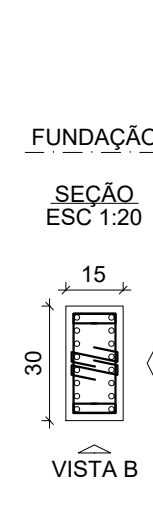
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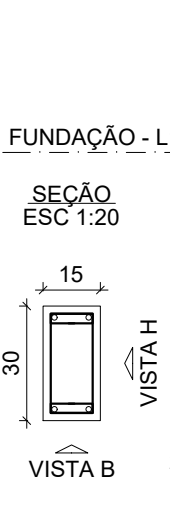
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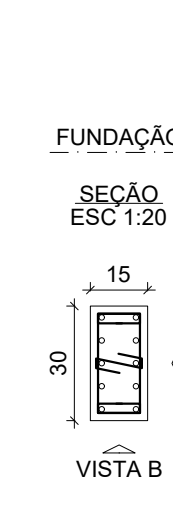
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P14=P29



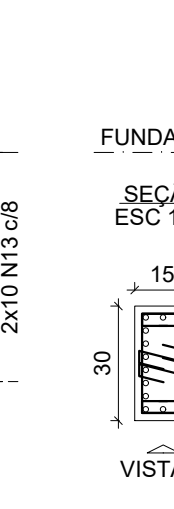
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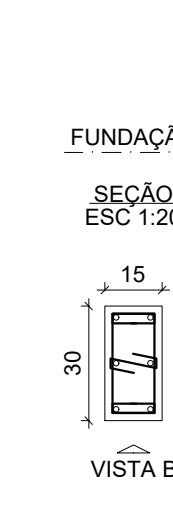
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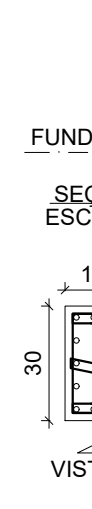
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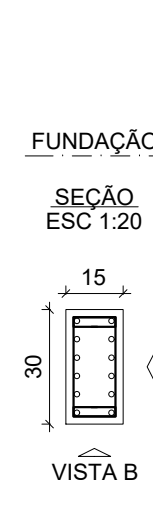
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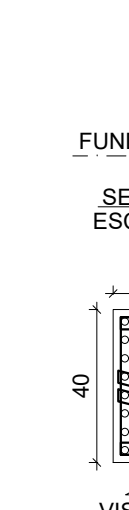
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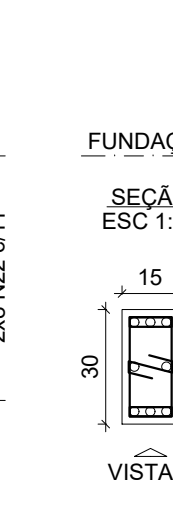
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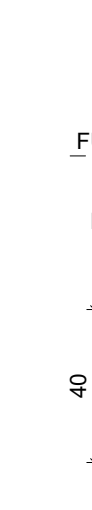
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P47



P50



P74



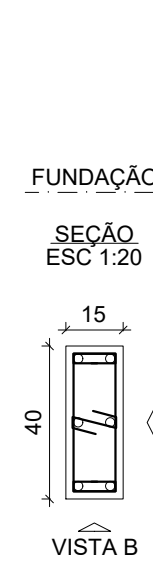
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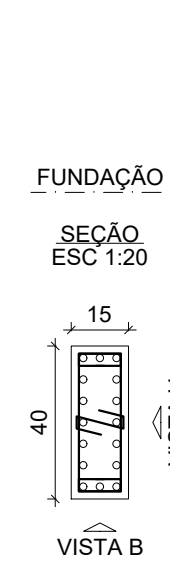
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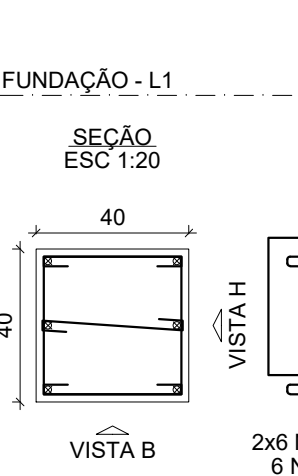
P61



P75



P85=P86=P87=P88



APROVAÇÕES

REVISÕES

Nº: Data: Descrição: Autor:

RESPONSÁVEL TÉCNICO PROJETO:

JOSÉ VALBER GOMES DA SILVA
ENGENHEIRO CIVIL
PORTARIA nº 1055/2025-SEMAT

ANO: 2026

TIPO: EST

FOLHA: 03/13

MODIFICAÇÕES: A, B

CLIENTE: PREFEITURA DE BARGARENA - SEMED

LOCAL: AV. BEIRA MAR, VILA ITUPANEMA, BARGARENA/PA.

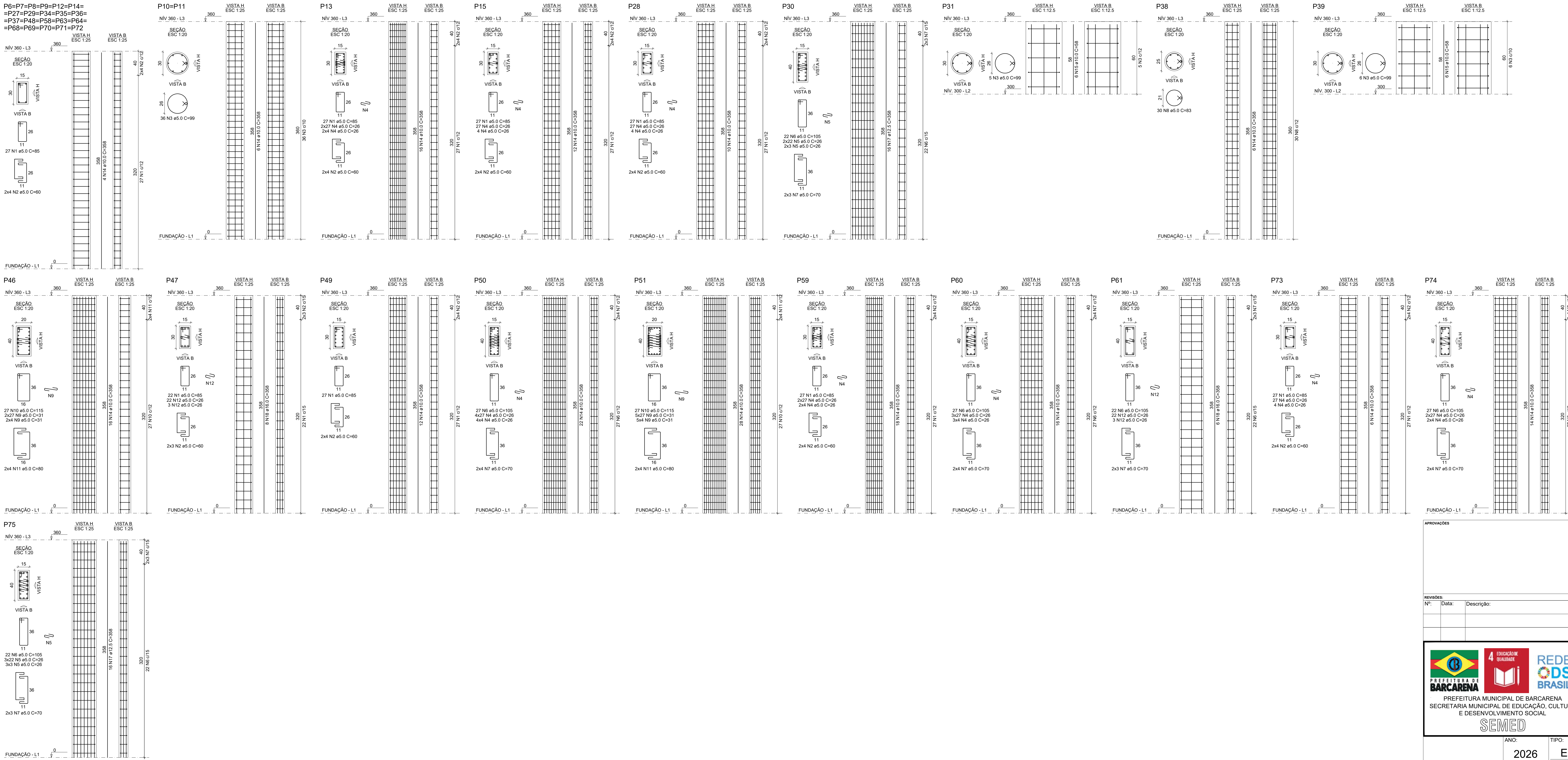
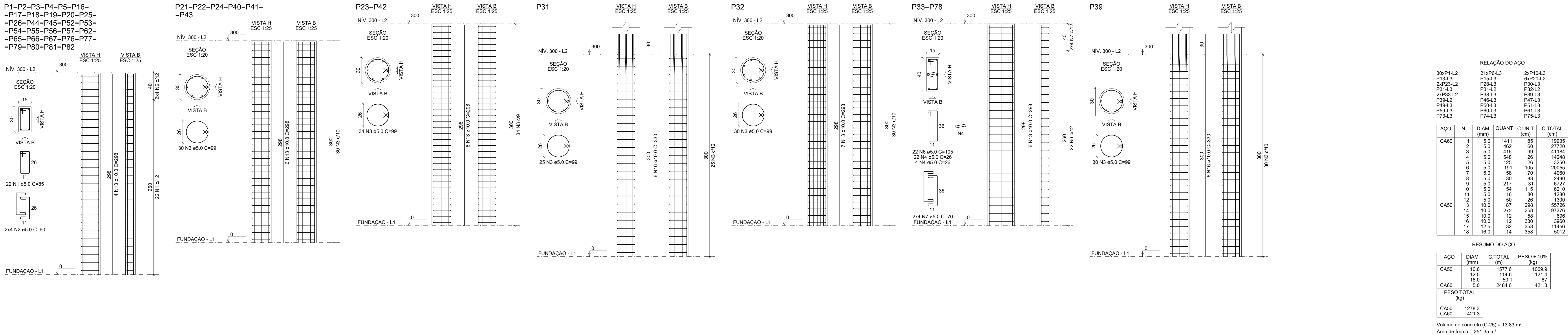
OBRA: PROJETO PARA CONSTRUÇÃO DA NOVA EMEI CHAPLUDINHO VERMELHO

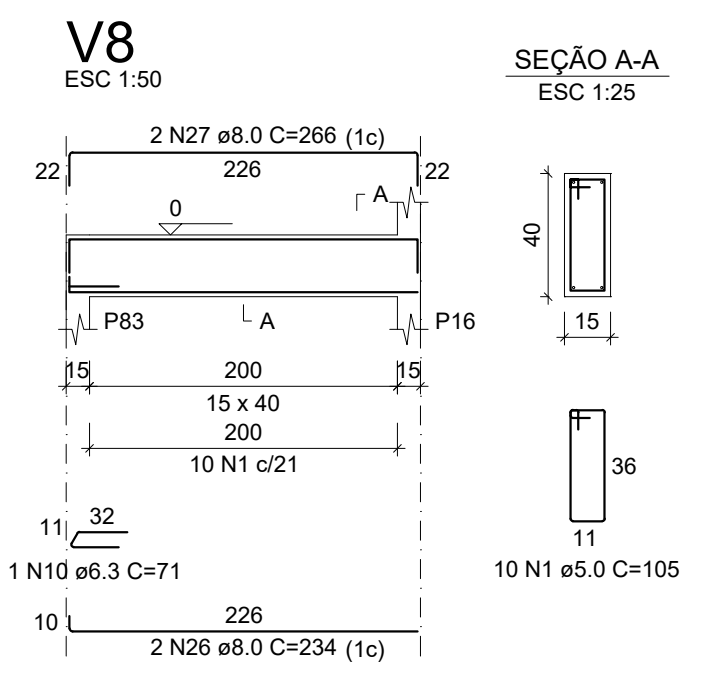
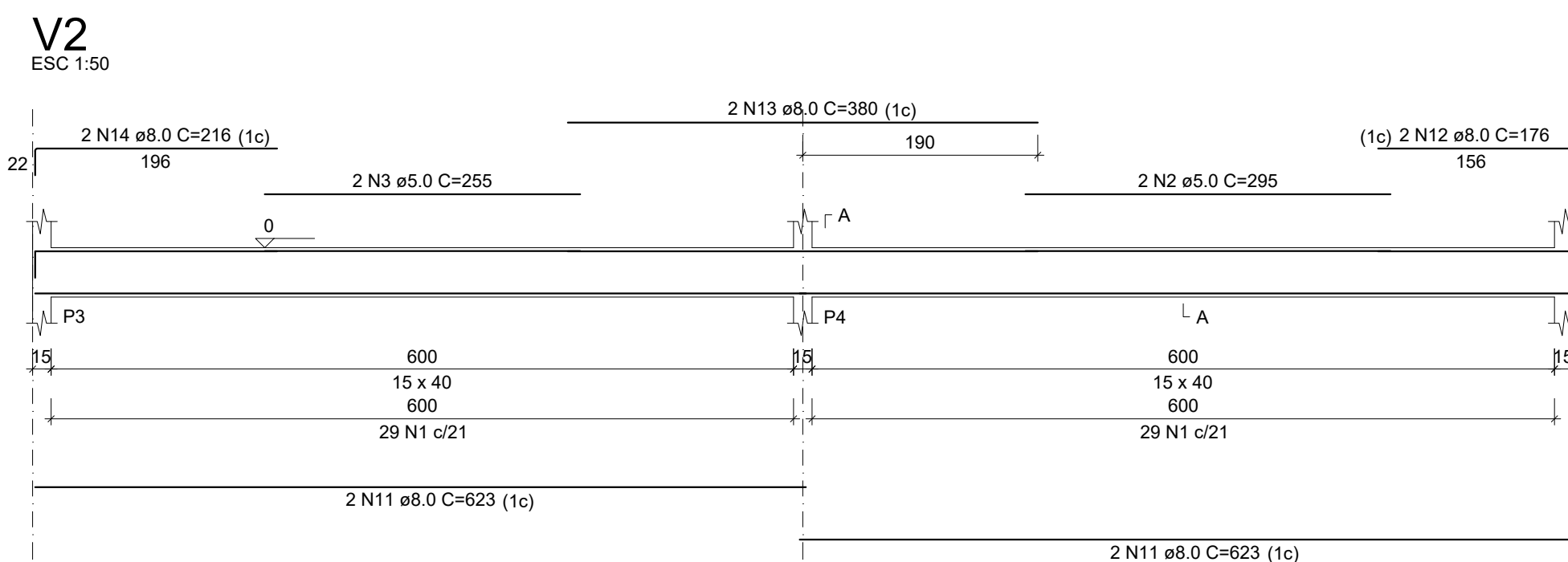
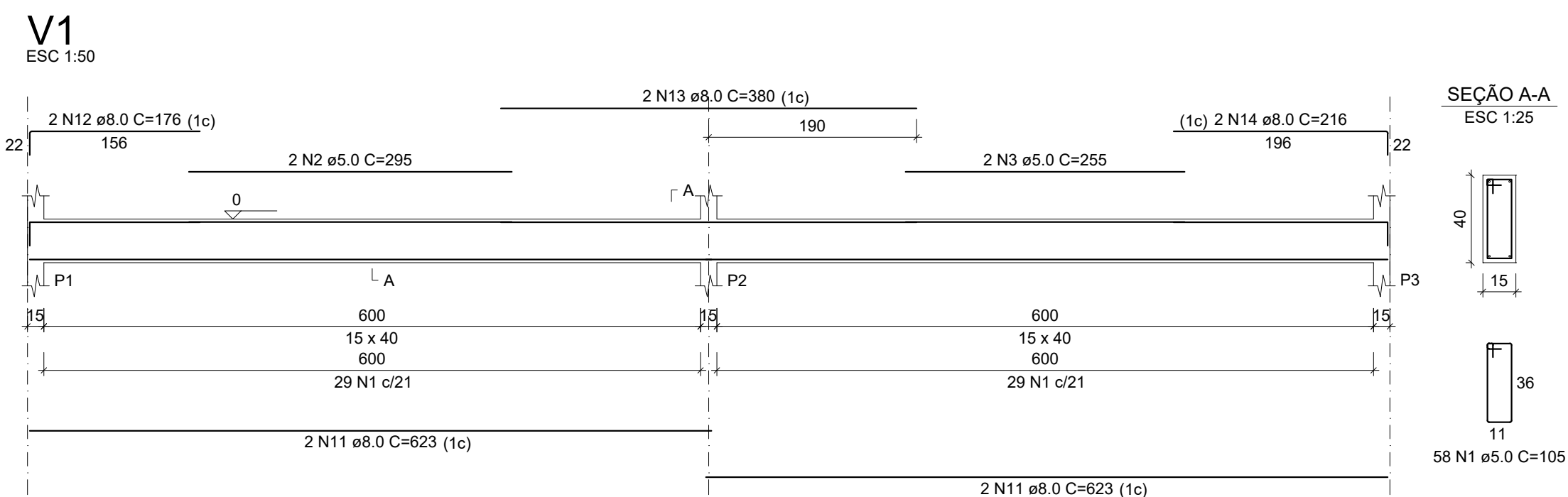
DESCRIÇÃO DA FRANQUIA: ARMAÇÃO DOS BLOCOS E ARRANQUES

DESENHO: ENG. CIVIL JOSÉ VALBER GOMES DA SILVA

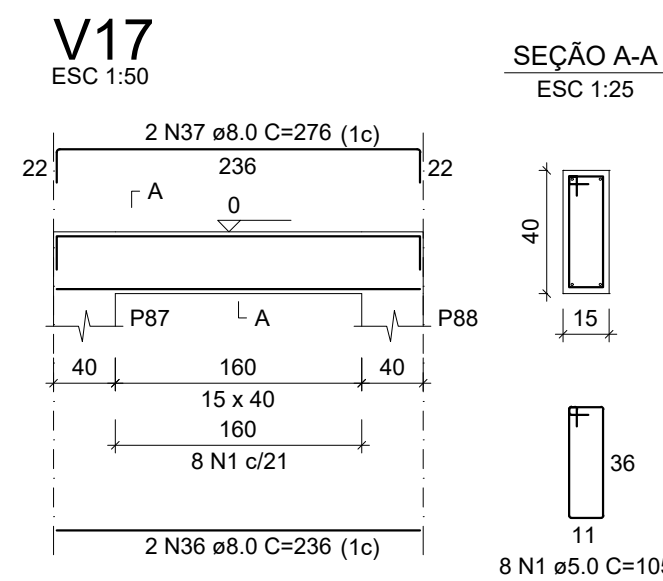
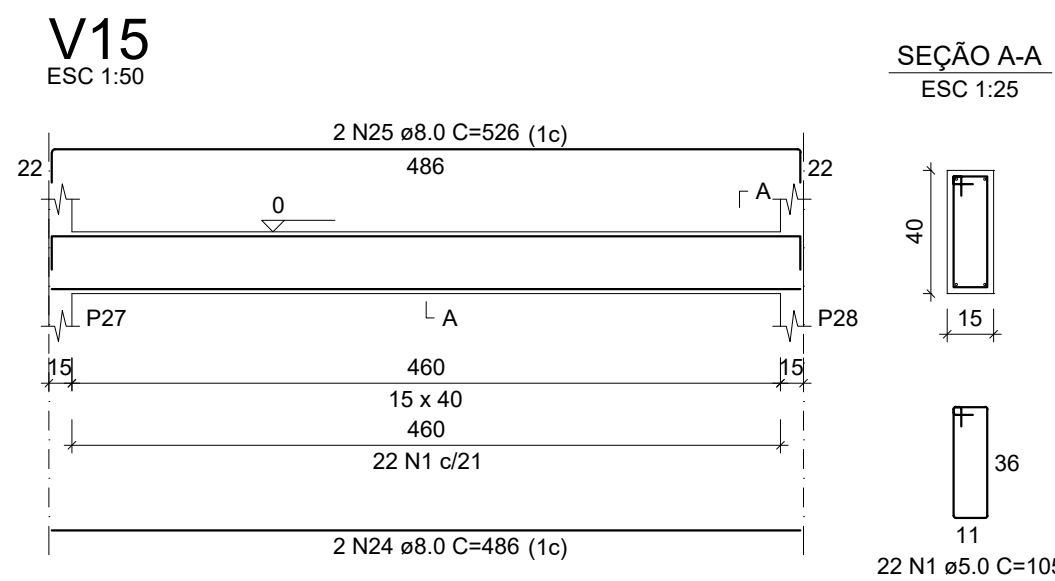
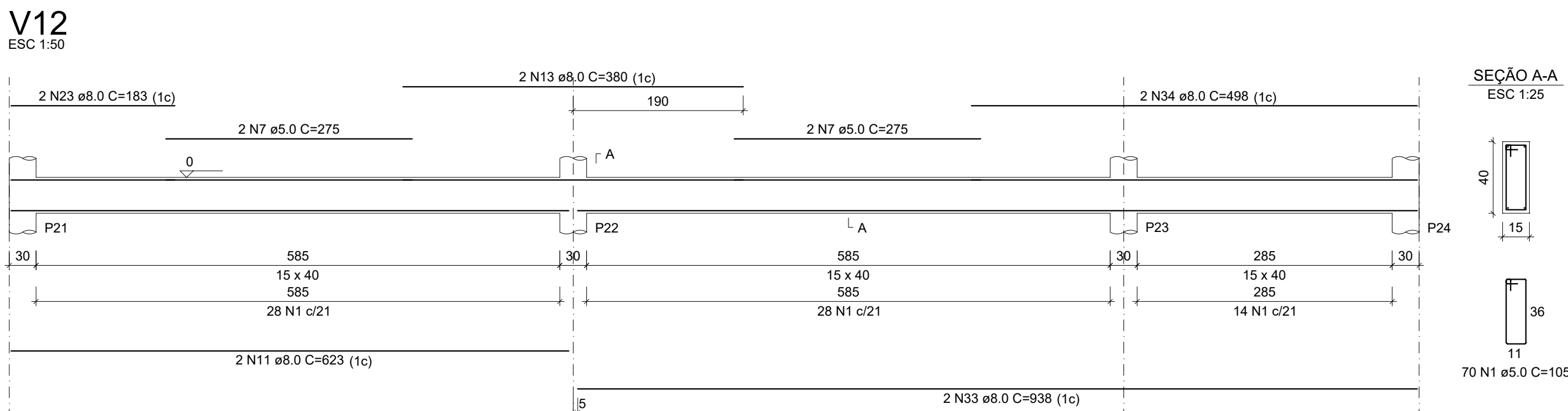
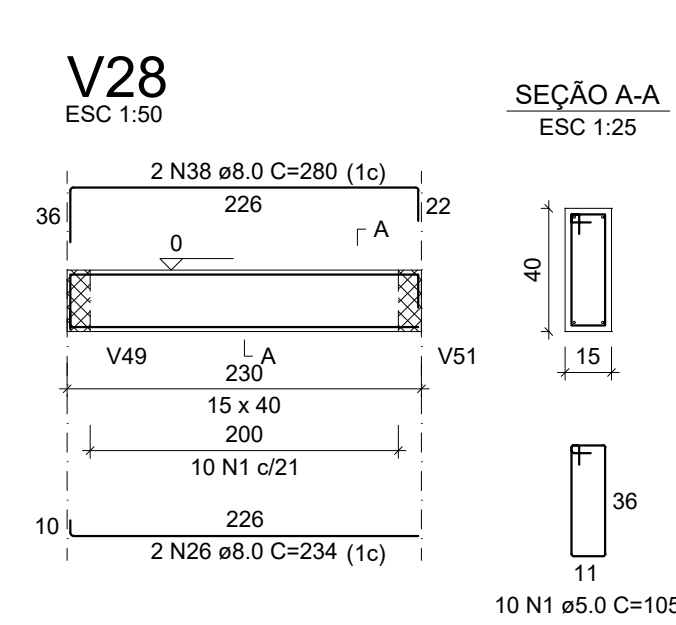
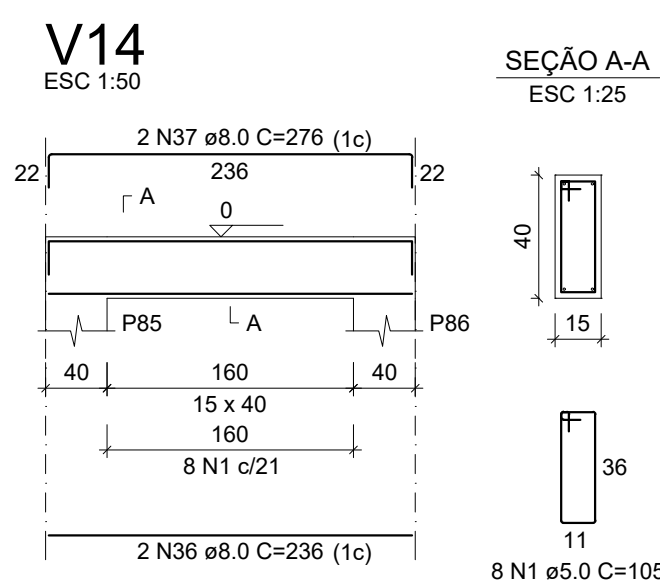
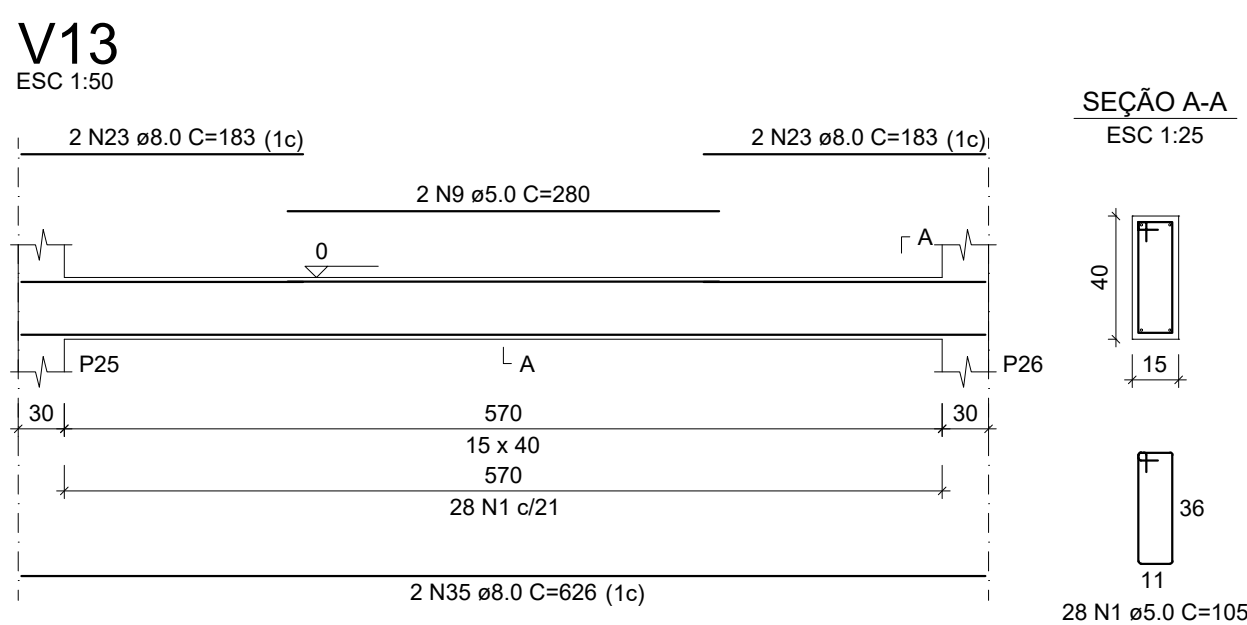
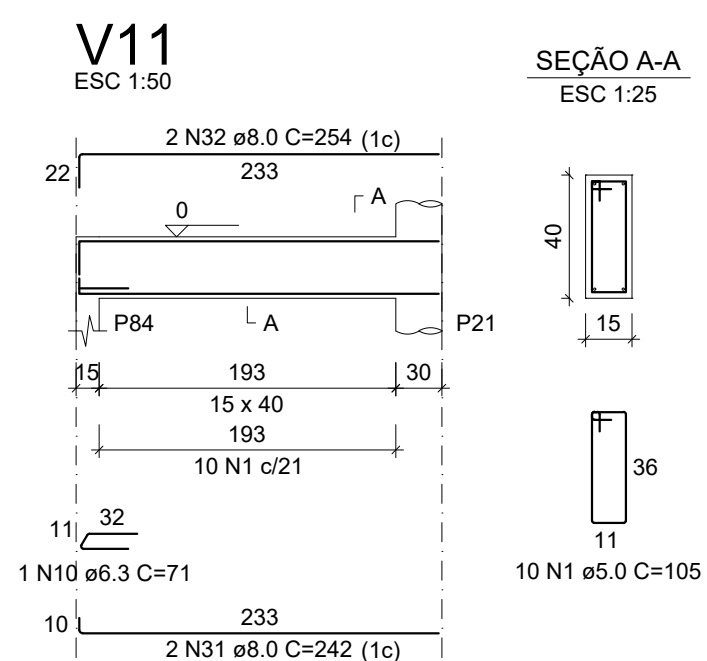
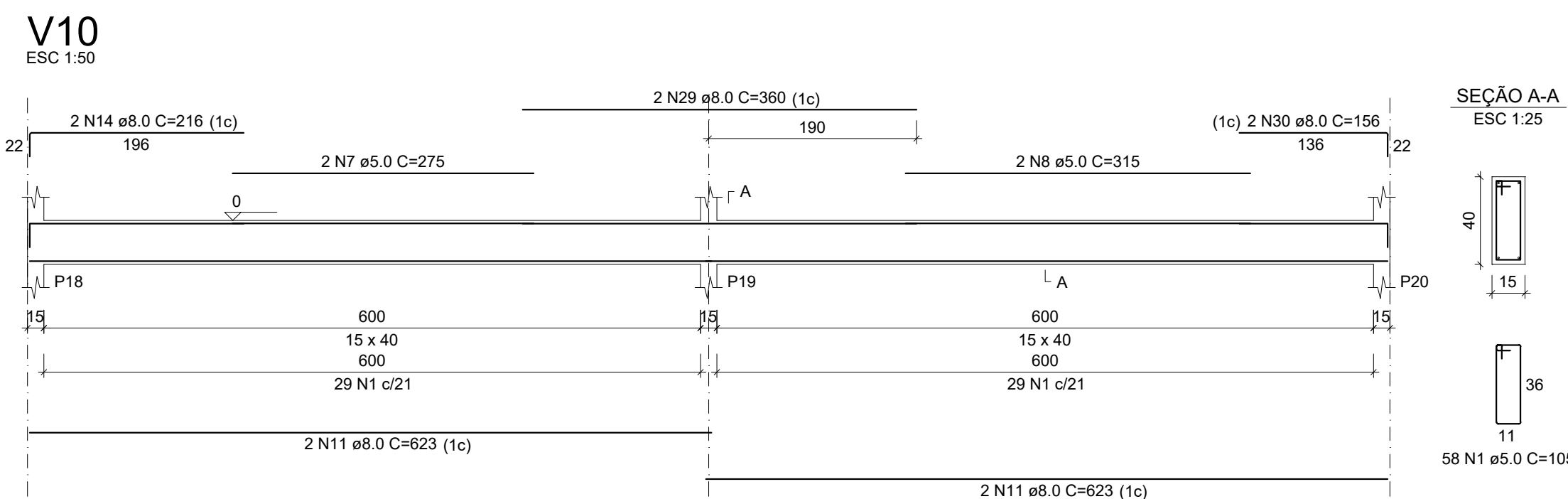
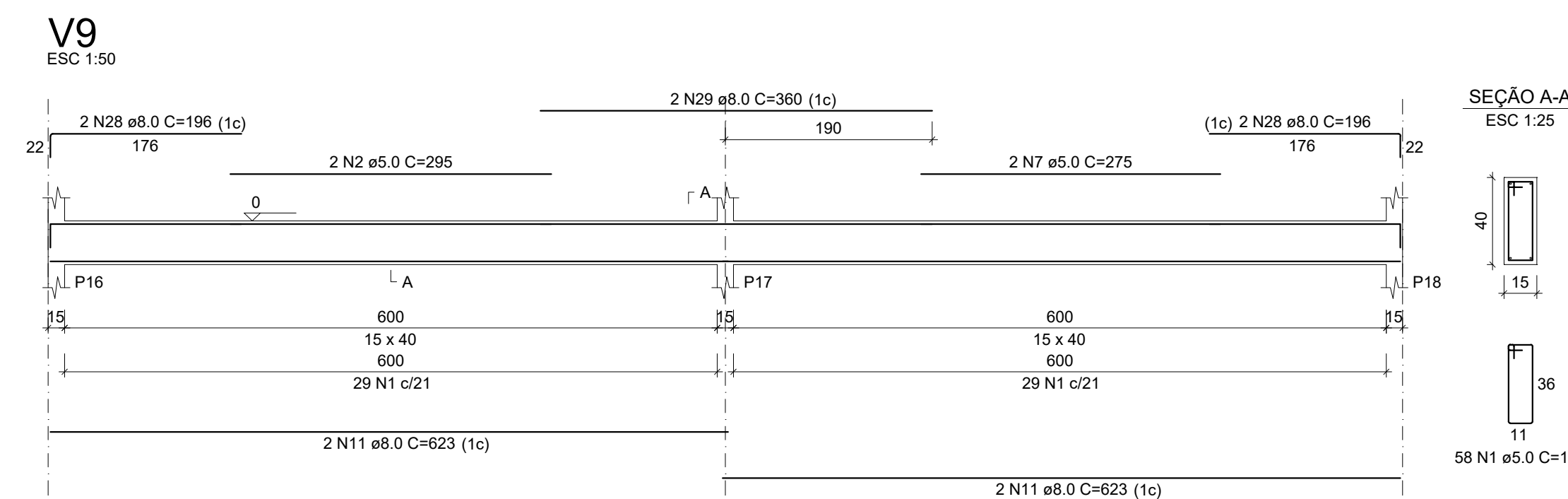
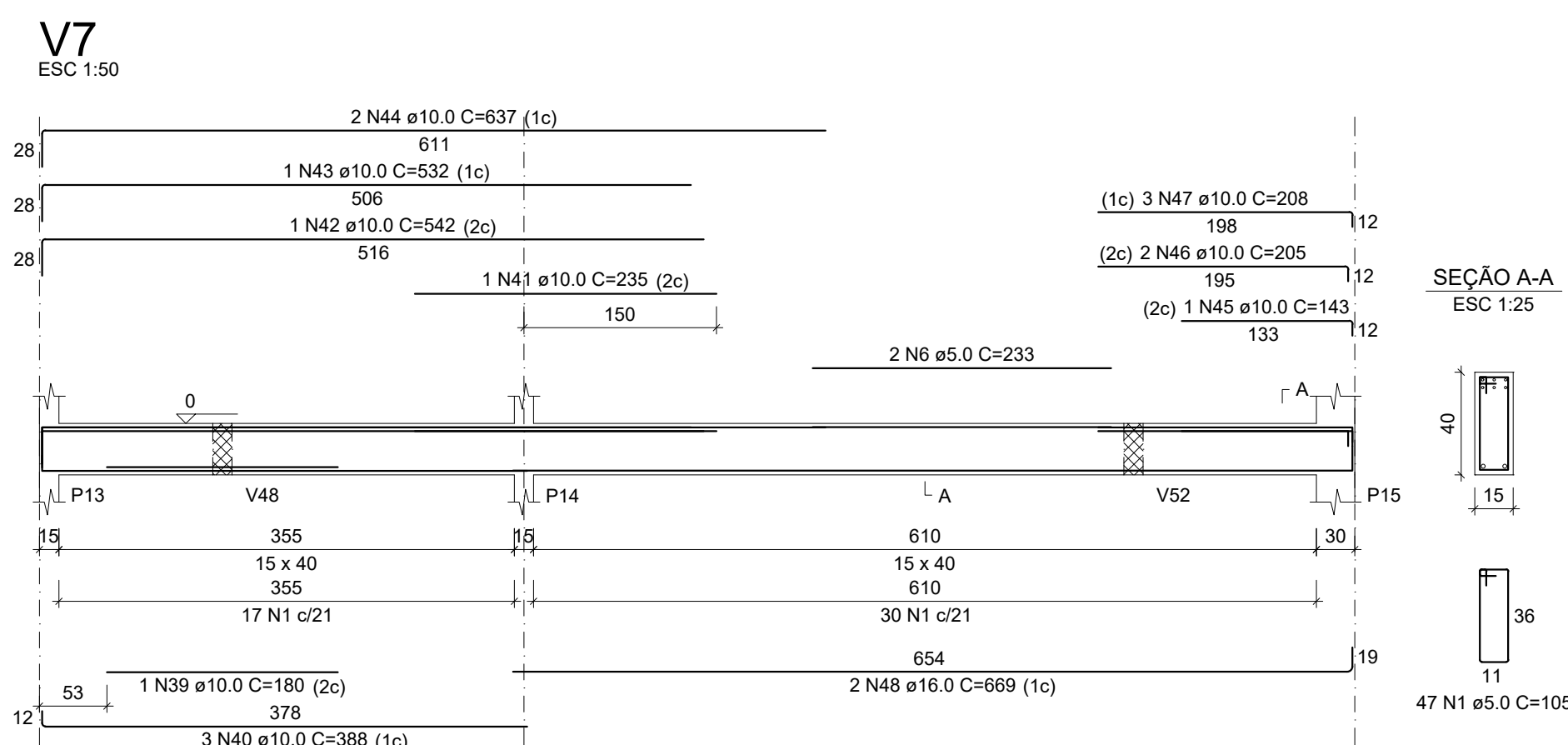
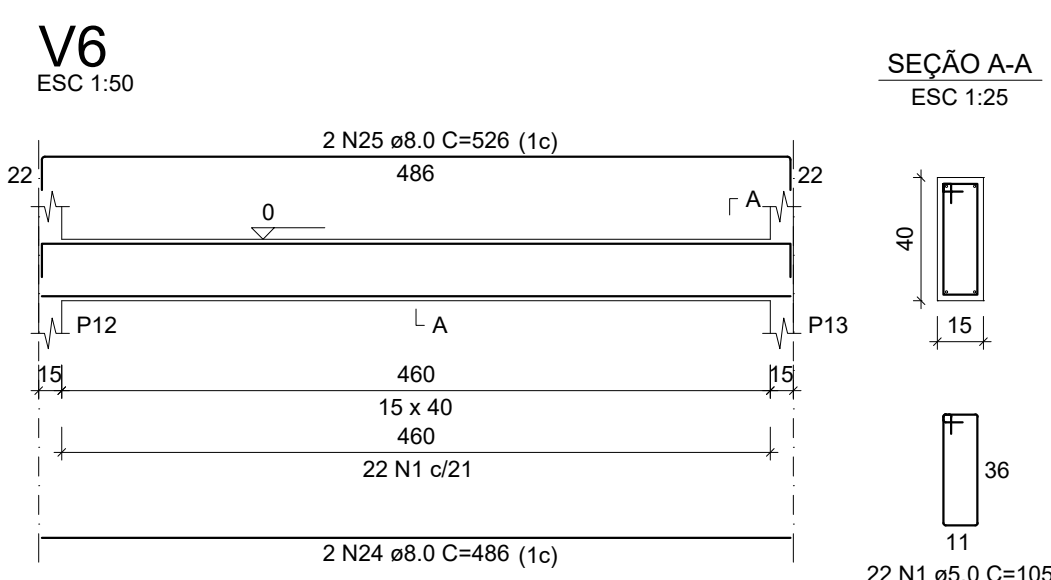
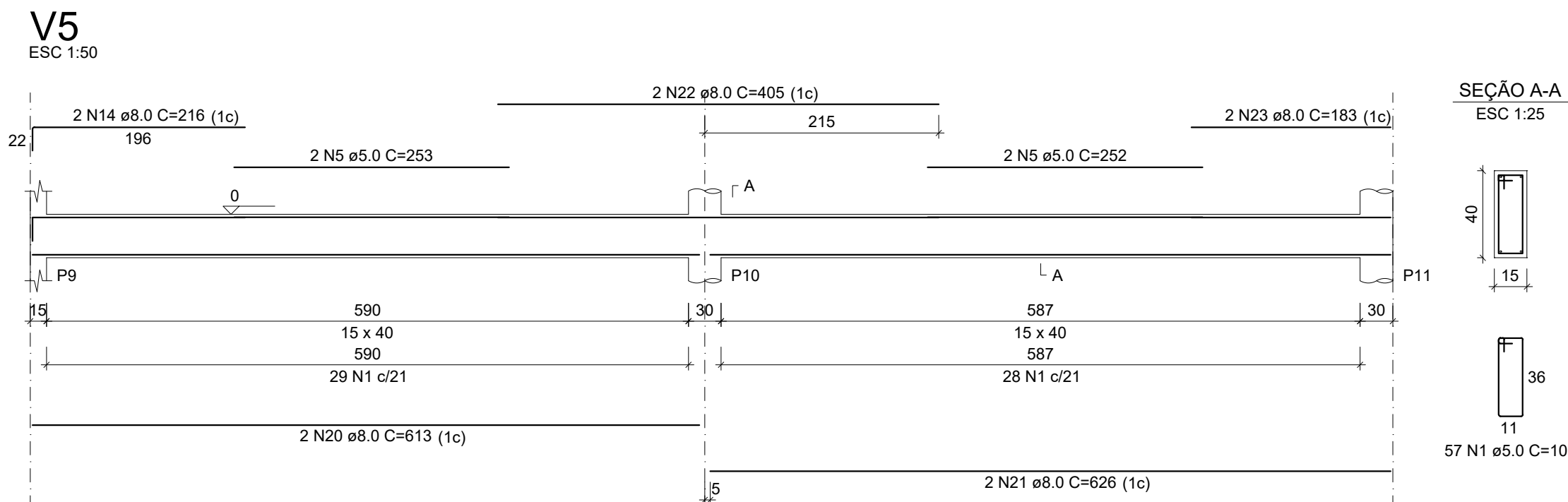
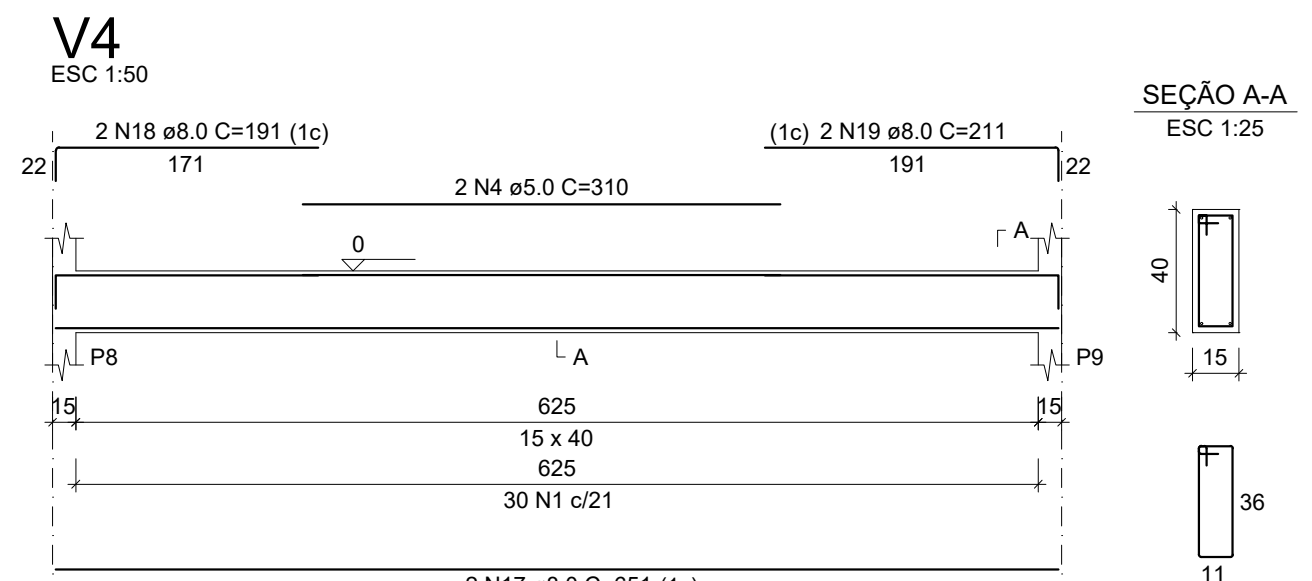
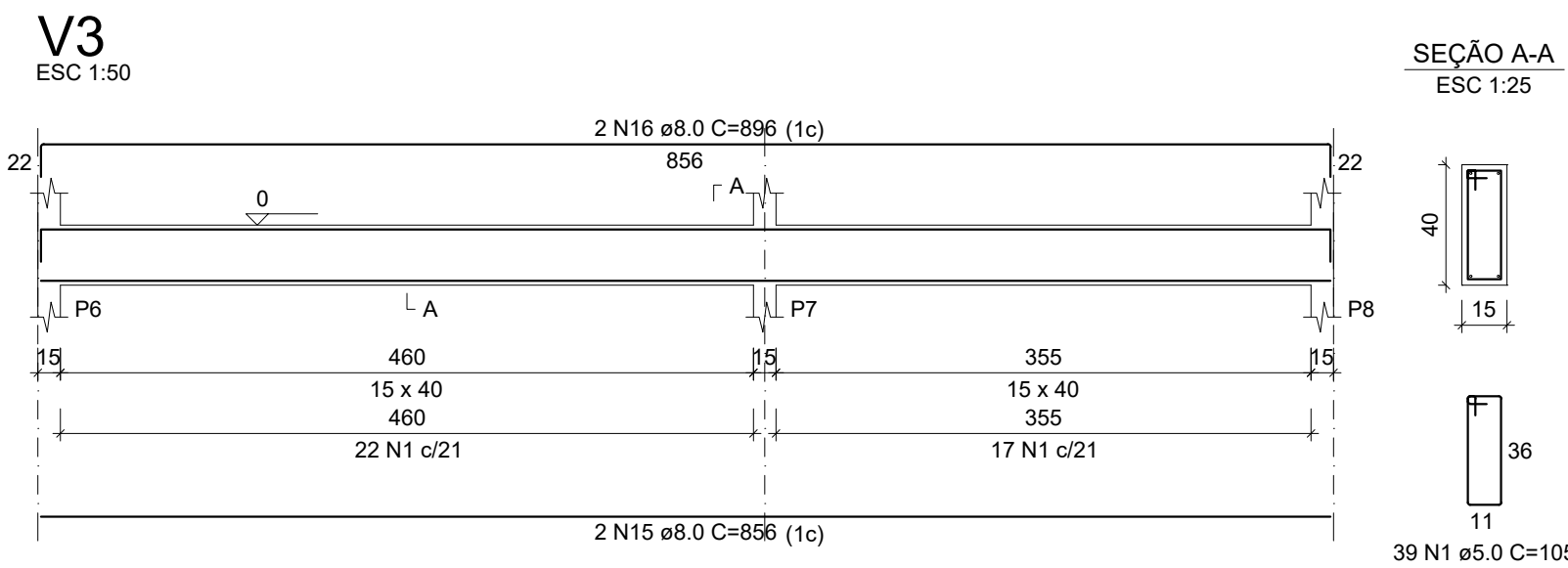
DATA: 13/07/2026

ESCALA: INDICADA





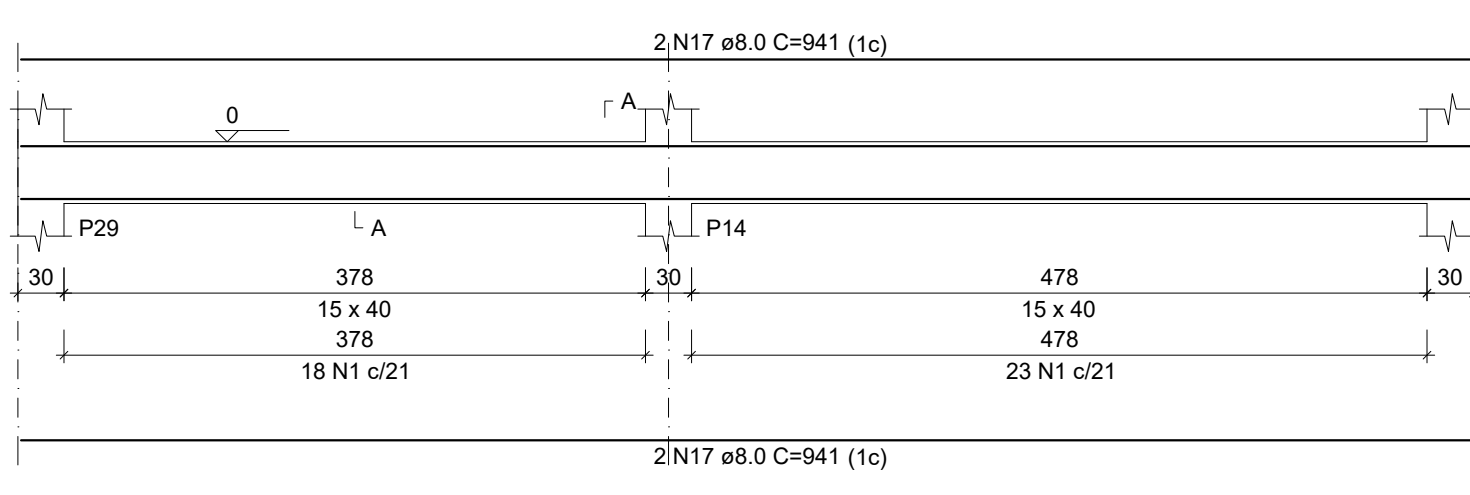
RELAÇÃO DO AÇO						
V1	V2	V3				
V6	V5	V6				
V7	V8	V9				
V10	V11	V12				
V13	V14	V15				
V17	V28					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)	
CA60	1	5.0	593	105	62265	
	2	5.0	6	295	1770	
	3	5.0	4	253	1020	
	4	5.0	2	310	620	
	5	5.0	4	253	1020	
	6	5.0	3	313	466	
CA50	7	5.0	8	275	2202	
	8	5.0	2	315	630	
	9	5.0	2	280	560	
	10	6.3	2	651	1302	
	11	8.0	18	623	11214	
	12	8.0	4	176	704	
	13	8.0	6	380	2280	
	14	8.0	8	216	1728	
	15	8.0	2	856	1712	
	16	8.0	2	896	1792	
	17	8.0	2	191	382	
	18	8.0	2	211	422	
	20	8.0	2	613	1226	
	21	8.0	2	626	1252	
	22	8.0	2	405	810	
	23	8.0	8	183	1464	
	24	8.0	4	486	1944	
	25	8.0	4	2104	2104	
	26	8.0	4	234	936	
	27	8.0	2	266	532	
	28	8.0	4	196	784	
	29	8.0	4	360	1440	
	30	8.0	2	156	312	
	31	8.0	2	242	484	
	32	8.0	2	586	586	
	33	8.0	2	938	1876	
	34	8.0	2	498	996	
	35	8.0	2	626	1252	
	36	8.0	4	236	944	
	37	8.0	4	276	1104	
	38	8.0	1	280	560	
	39	10.0	1	180	180	
	40	10.0	3	388	1164	
	41	10.0	1	235	235	
	42	10.0	1	542	542	
	43	10.0	1	532	532	
	44	10.0	2	637	1274	
	45	10.0	1	143	143	
	46	10.0	2	205	410	
	47	10.0	3	384	1152	
	48	16.0	2	669	1338	



REVISÕES:					
Nº:	Data:	Descrição:		Autor:	
   PREFEITURA MUNICIPAL DE BARCARENA SECRETARIA MUNICIPAL DE EDUCAÇÃO, CULTURA E DESENVOLVIMENTO SOCIAL SEMED				RESPONSÁVEL TÉCNICO PROJETO: JOSÉ VALBER GOMES DA SILVA ENGENHEIRO CIVIL PORTARIA nº 1055/2025-SEMAT	
ANO:		TIPO:	FOLHA:	MODIFICAÇÕES	
2026		ARQ	05/13	A	
		Arquitetura		B	
CLIENTE:		LOCAL:	C		
PREFEITURA DE BARCARENA - SEMED		AV. BEIRA MAR, VILA ITUPANEMA, BARCARENA/PA			
OBRA:			ÁREAS:	D	
PROJETO PARA CONSTRUÇÃO DA NOVA EMEI CHAPEUZINHO VERMELHO			TERRENO: 2.750,22m² CONSTRUÍDA: 1.206,05m² URBANIZADA: 551,13m²	E	
DESCRIÇÃO DA PRANCHA:				DIM:	
VIGAS DE FUNDAÇÃO				METRO	
DESENHO			DATA:	ESCALA:	
ENG. CIVIL JOSÉ VALBER GOMES DA SILVA			13/07/2026	INDICADA	

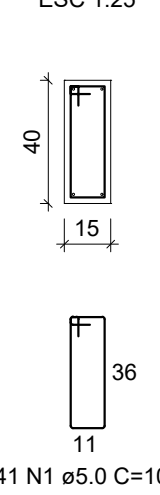
V50

ESC 1:50



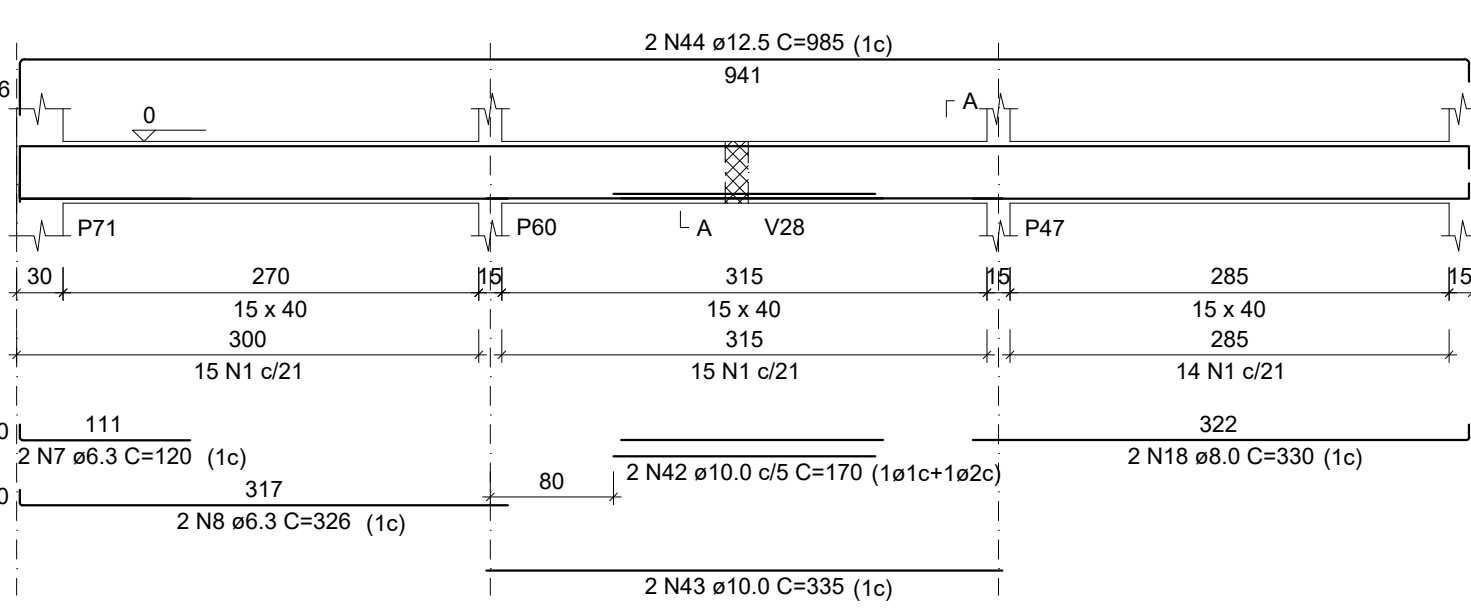
SEÇÃO A-A

ESC 1:25



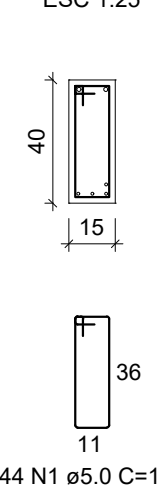
V51

ESC 1:50



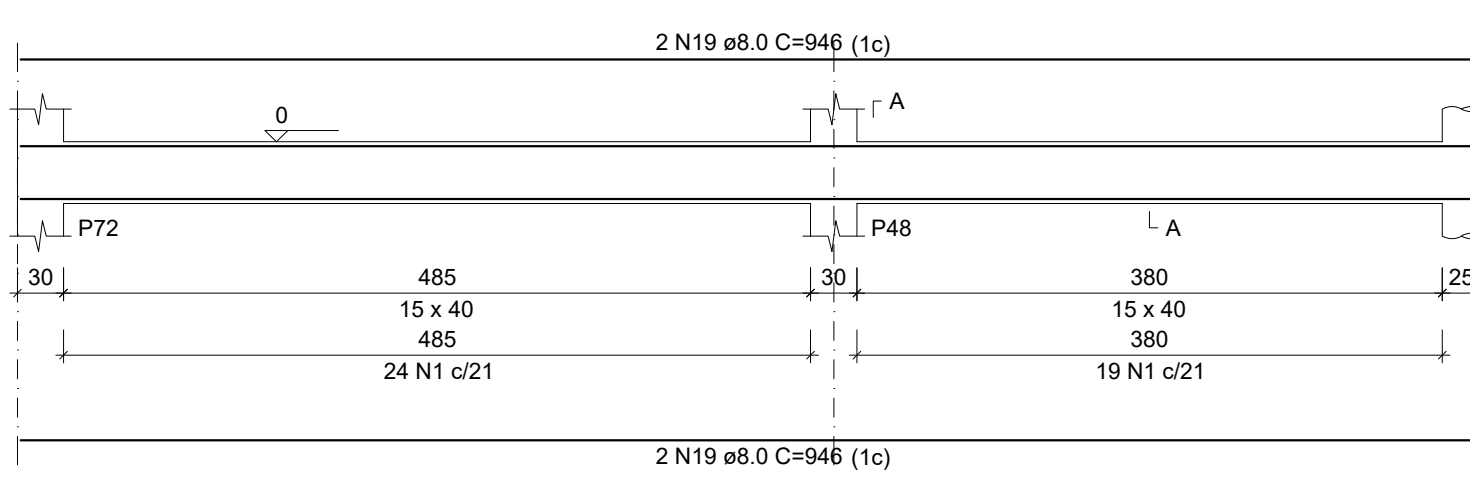
SEÇÃO A-A

ESC 1:25



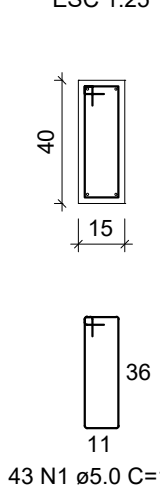
V53

ESC 1:50



SEÇÃO A-A

ESC 1:25

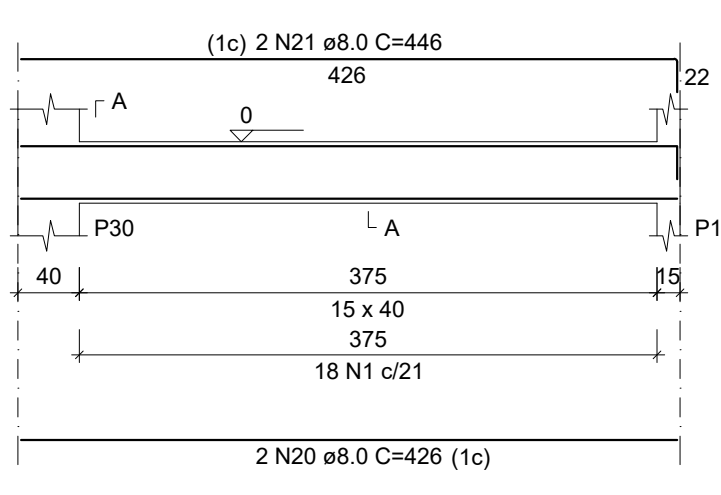


RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
V50	1	5.0	639	105	67095
V54	2	5.0	2	441	882
V58	3	5.0	2	247	494
V61	4	5.0	2	335	670
V65	5	5.0	4	300	1200
V68	6	5.0	2	410	820
V71	7	6.3	2	120	240
	8	6.3	2	326	652
	9	6.3	1	71	71
	10	6.3	47	106	4982
	11	6.3	4	143	572
	12	6.3	2	288	576
	13	6.3	2	103	206
	14	6.3	2	163	326
	15	6.3	2	288	576
	16	6.3	4	283	1132
	17	8.0	4	941	3764
	18	8.0	2	330	660
	19	8.0	4	946	3784
	20	8.0	2	426	852
	21	8.0	2	446	892
	22	8.0	2	534	1068
	23	8.0	2	546	1092
	24	8.0	2	131	262
	25	8.0	2	274	548
	26	8.0	2	320	640
	27	8.0	2	294	588
	28	8.0	2	340	680
	29	8.0	2	227	454
	30	8.0	2	273	546
	31	8.0	2	548	1096
	32	8.0	2	73	146
	33	8.0	12	726	8712
	34	8.0	6	791	4746
	35	8.0	2	188	376
	36	8.0	4	163	652
	37	8.0	4	734	2936
	38	8.0	4	766	3064
	39	8.0	2	776	1552
	40	8.0	2	156	312
	41	8.0	2	273	546
	42	10.0	2	170	340
	43	10.0	2	335	670
	44	12.5	2	985	1970
	45	12.5	4	400	1600
	46	12.5	2	553	1106
	47	12.5	1	158	158
	48	12.5	1	163	163
	49	12.5	3	572	1716
	50	12.5	3	576	1728
	51	16.0	2	260	520
	52	16.0	3	556	1668
	53	20.0	1	290	280
	54	20.0	2	541	1082
	55	20.0	1	606	606
	56	20.0	2	615	1230

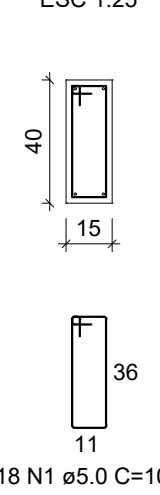
V54

ESC 1:50



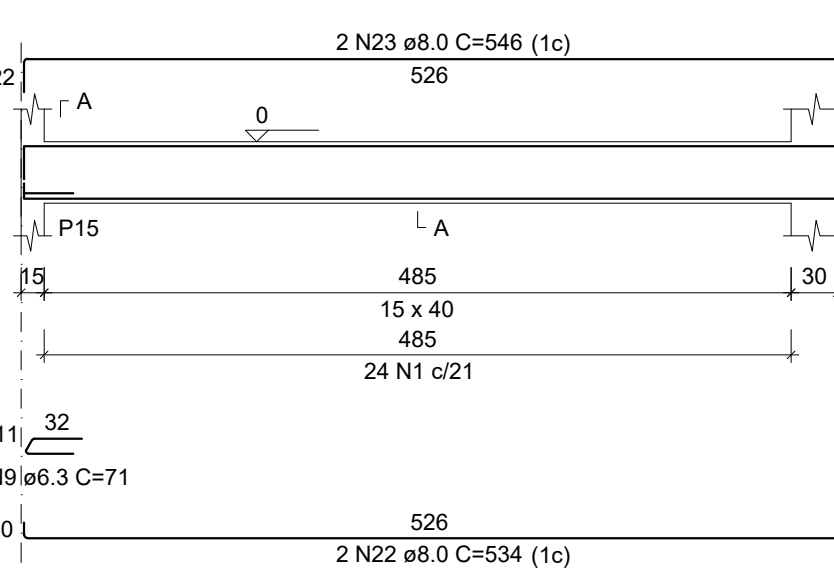
SEÇÃO A-A

ESC 1:25



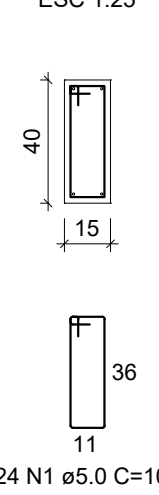
V55

ESC 1:50



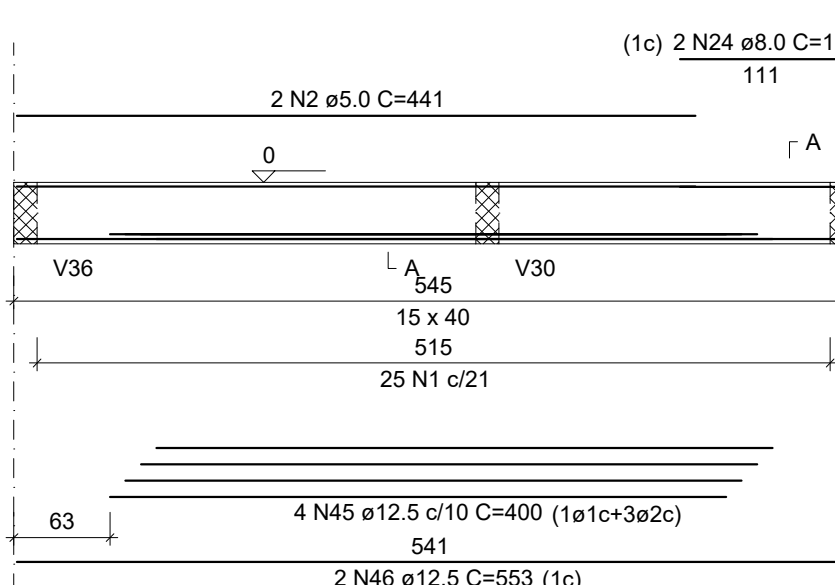
SEÇÃO A-A

ESC 1:25



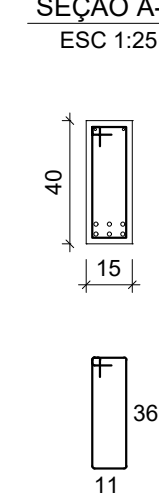
V57

ESC 1:50



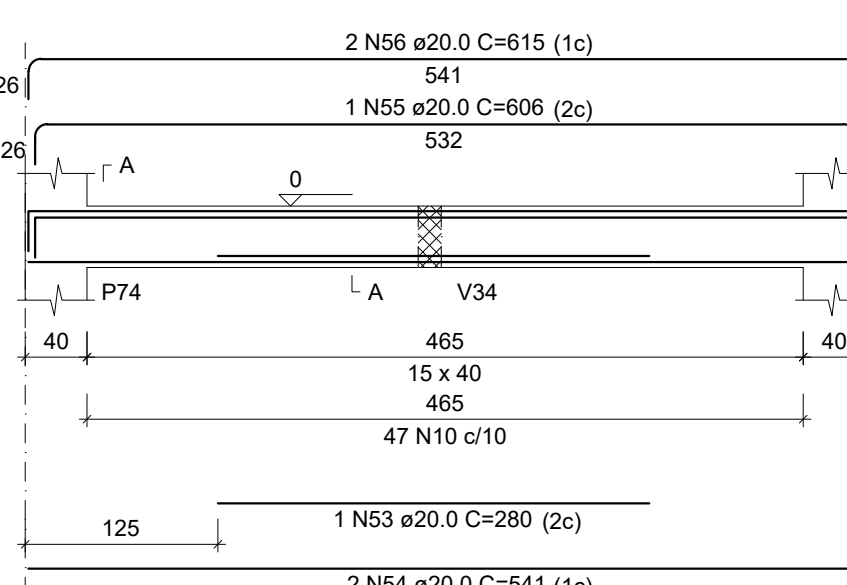
SEÇÃO A-A

ESC 1:25



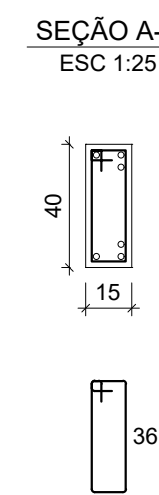
V58

ESC 1:50



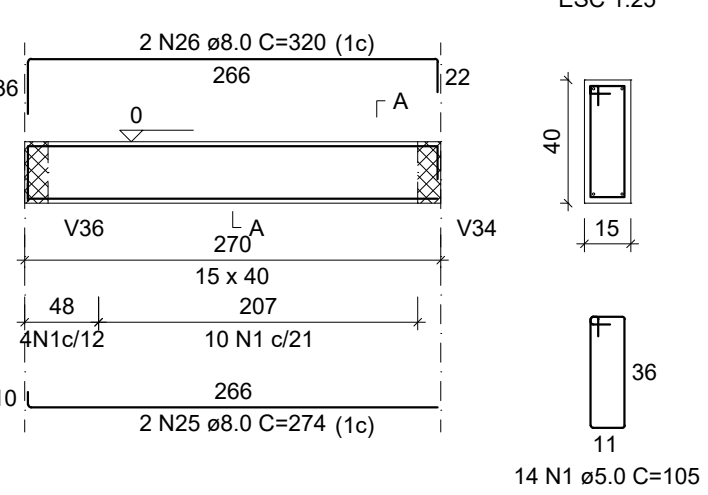
SEÇÃO A-A

ESC 1:25



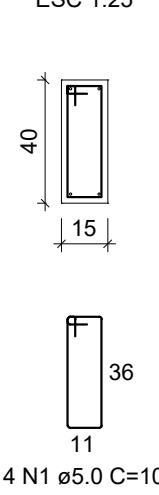
V59

ESC 1:50



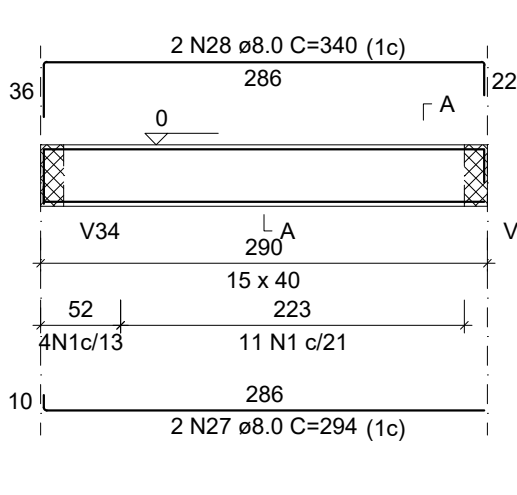
SEÇÃO A-A

ESC 1:25



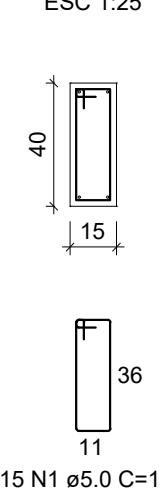
V60

ESC 1:50



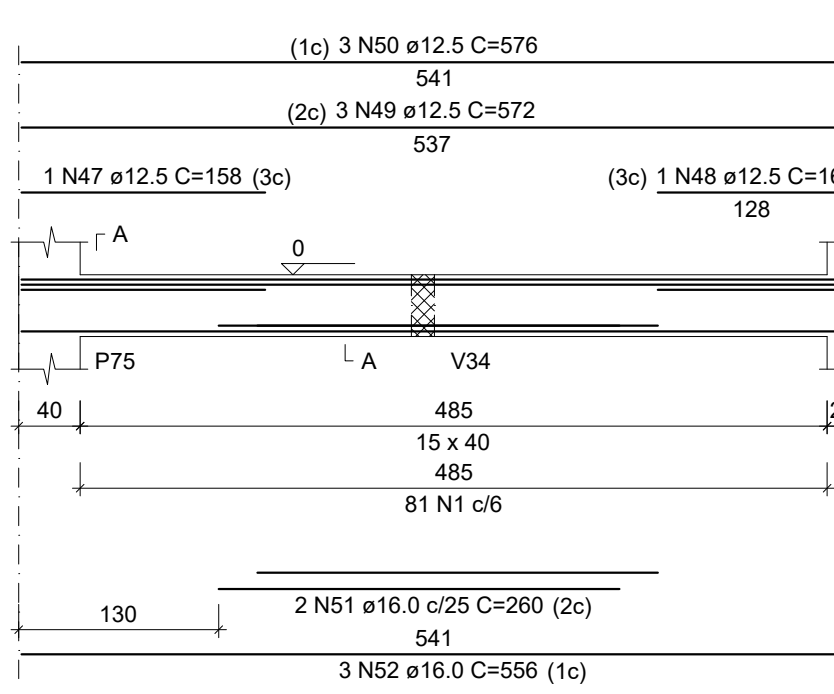
SEÇÃO A-A

ESC 1:25



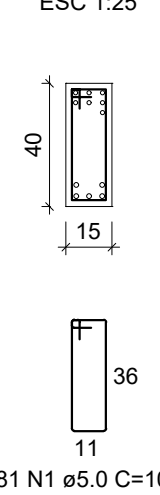
V61

ESC 1:50



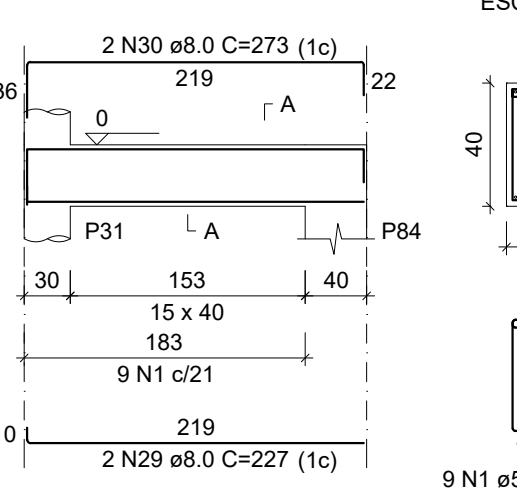
SEÇÃO A-A

ESC 1:25



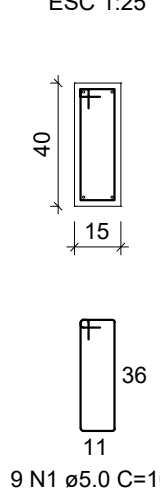
V63

ESC 1:50



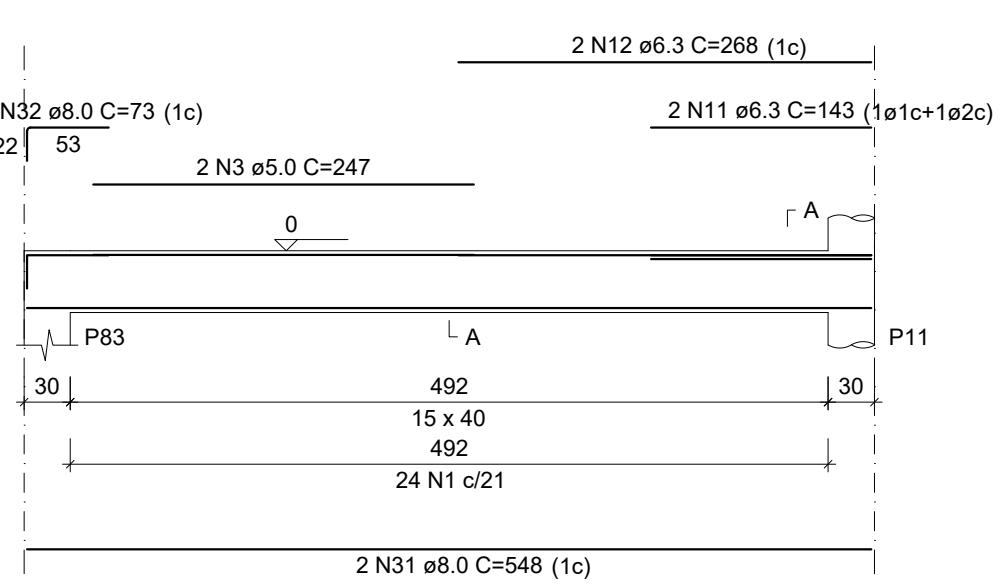
SEÇÃO A-A

ESC 1:25



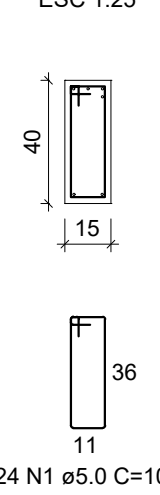
V64

ESC 1:50



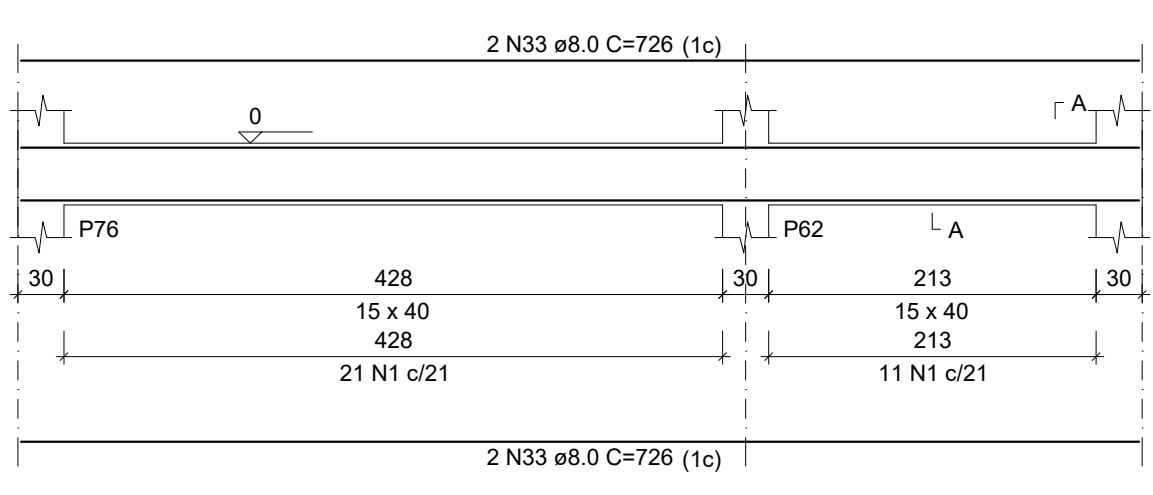
SEÇÃO A-A

ESC 1:25



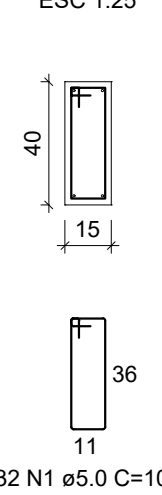
V65

ESC 1:50



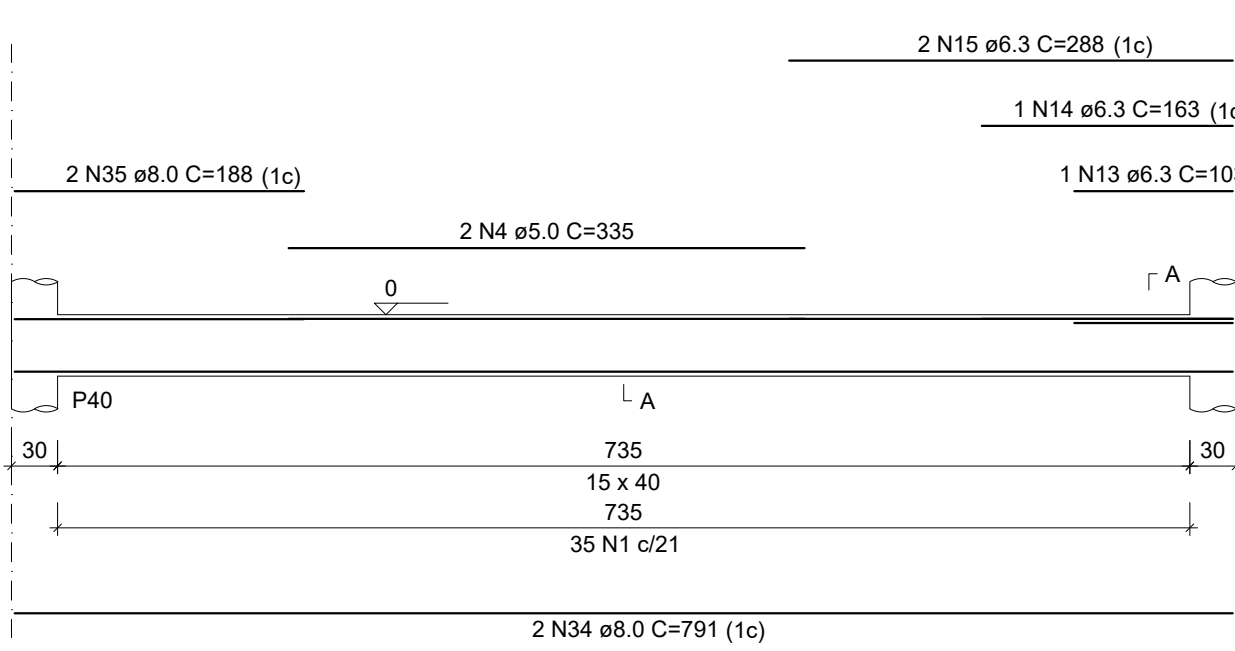
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ESC 1:25



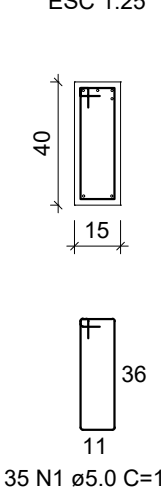
V66

ESC 1:50



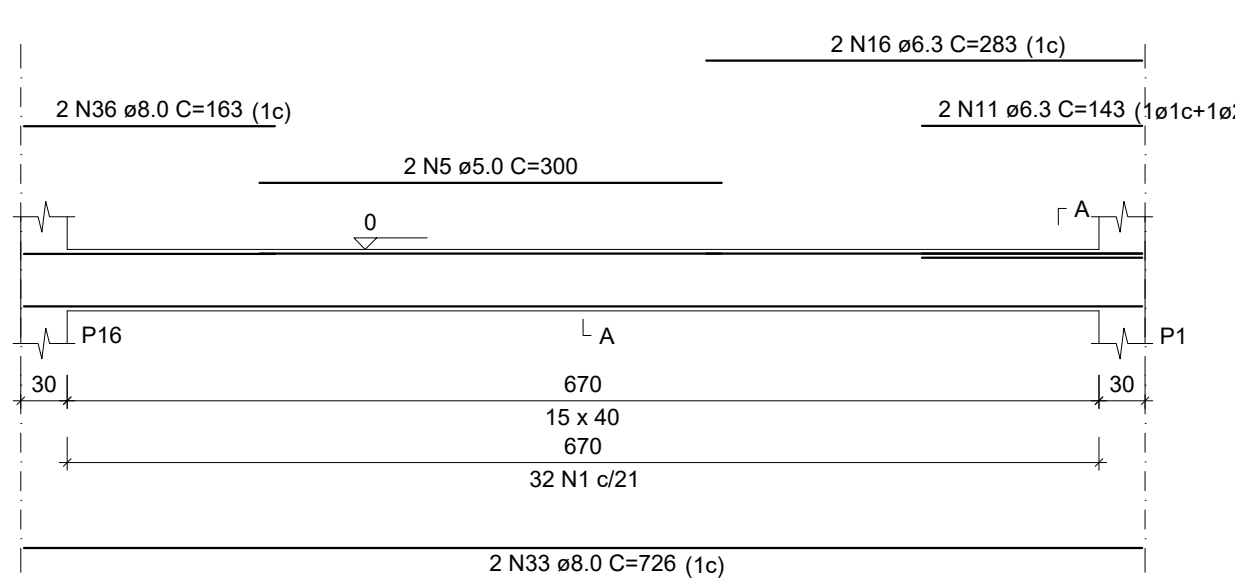
SEÇÃO A-A

ESC 1:25



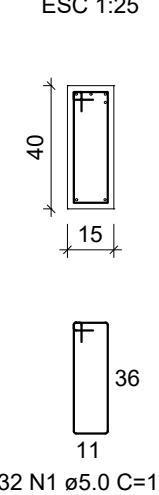
V67

ESC 1:50



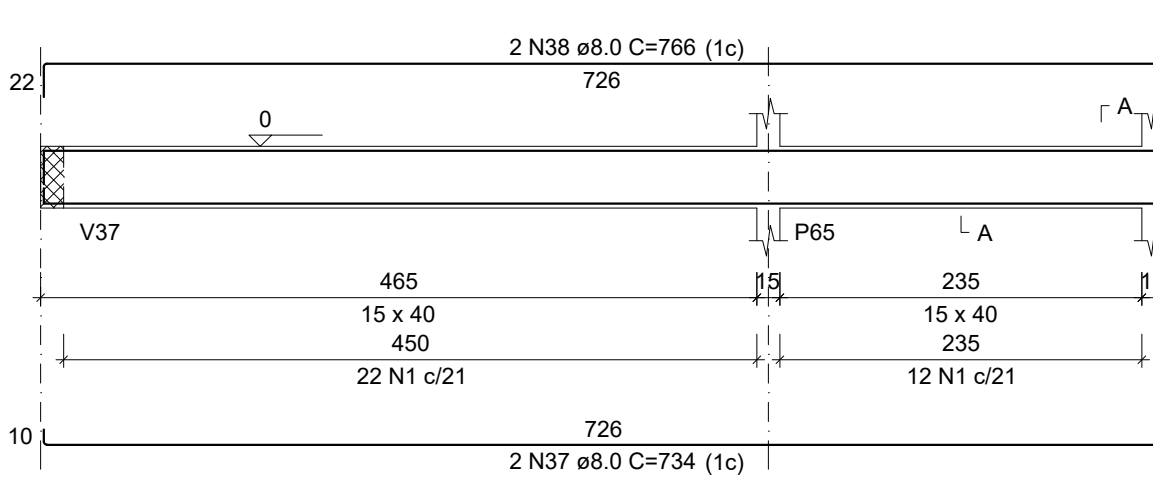
SEÇÃO A-A

ESC 1:25



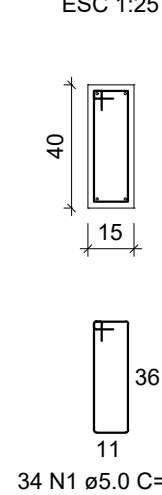
V68

ESC 1:50



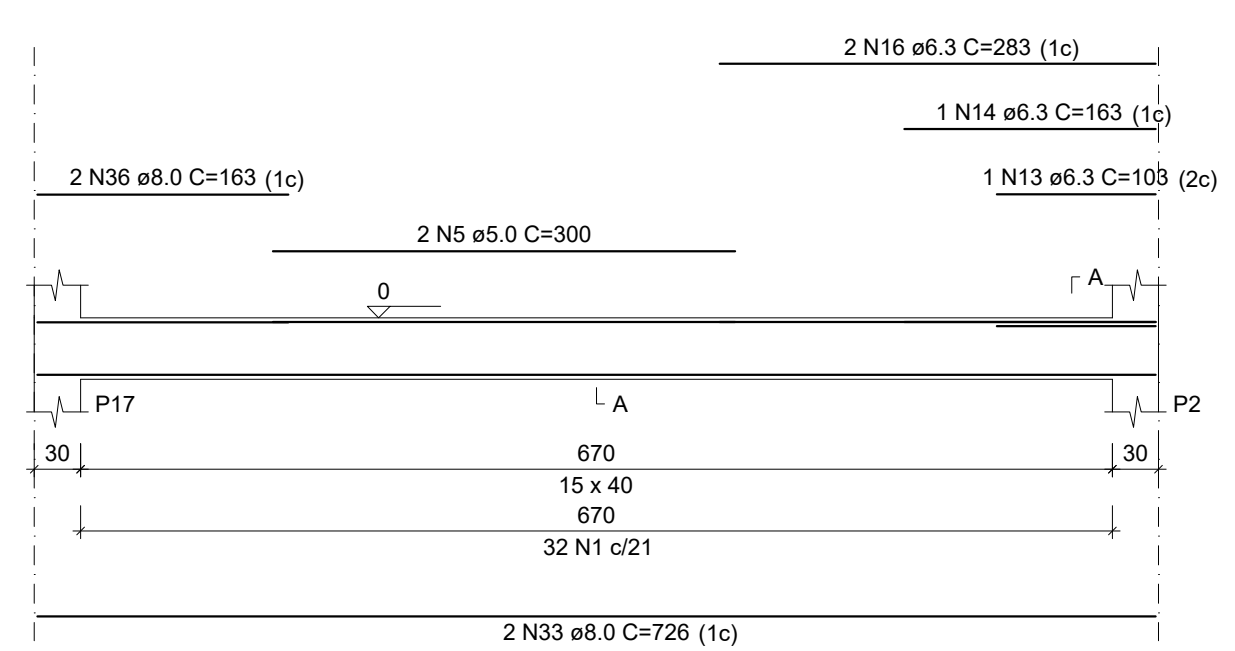
SEÇÃO A-A

ESC 1:25



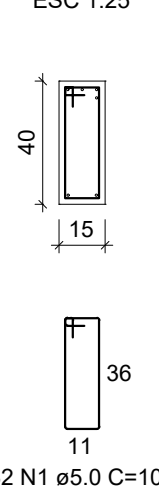
V69

ESC 1:50



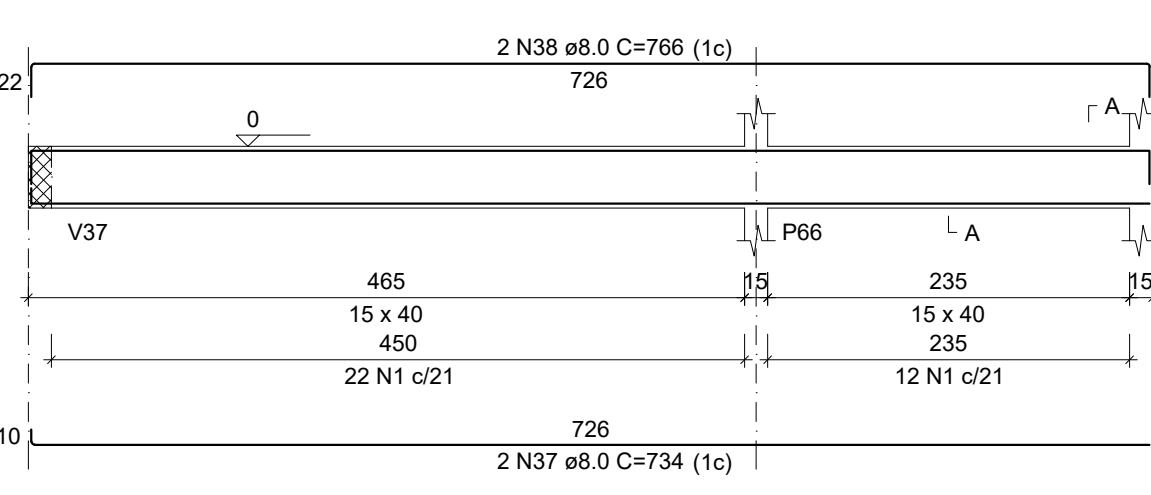
SEÇÃO A-A

ESC 1:25



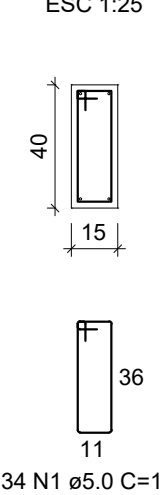
V70

ESC 1:50



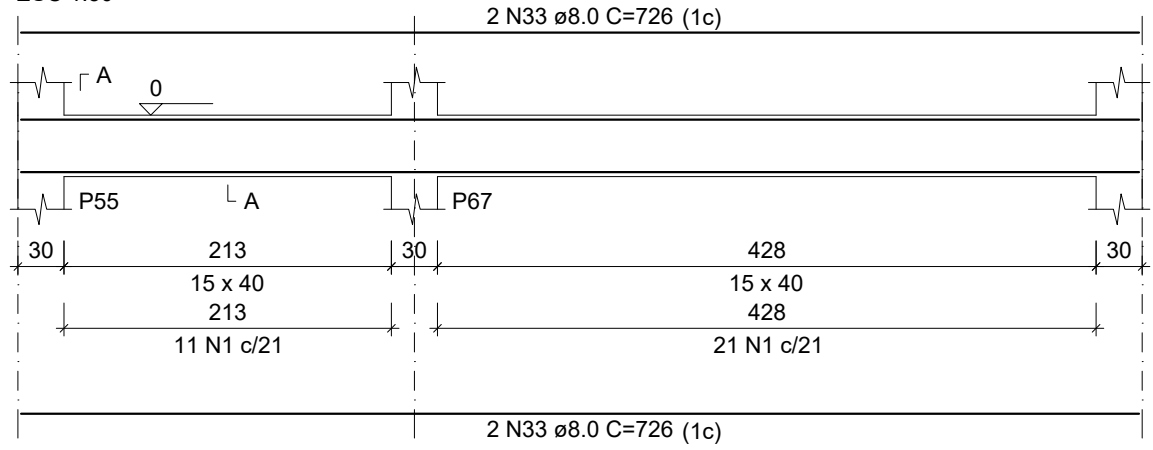
SEÇÃO A-A

ESC 1:25



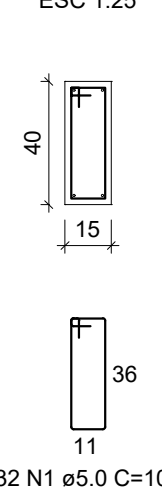
V71

ESC 1:50



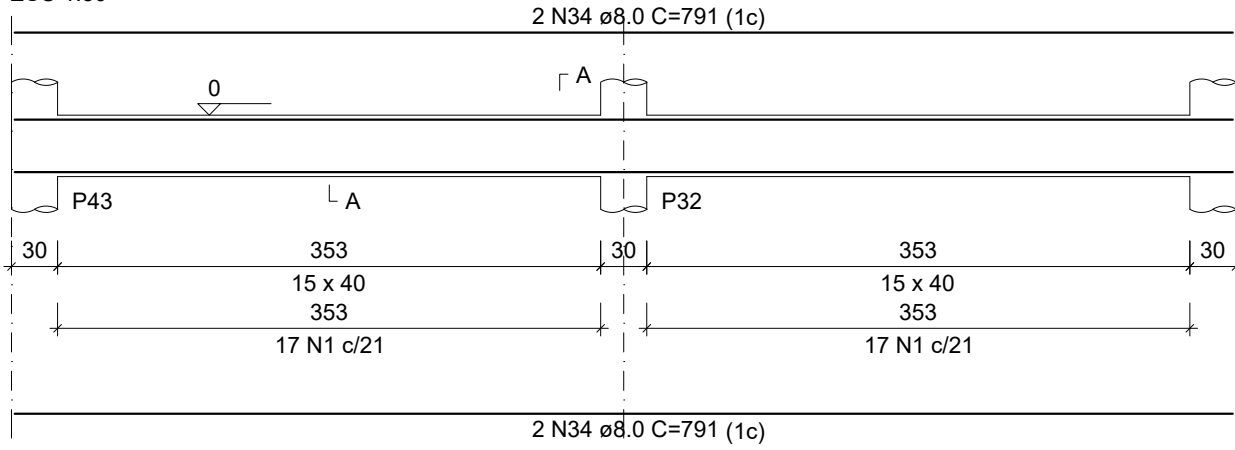
SEÇÃO A-A

ESC 1:25



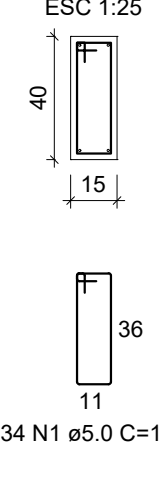
V73

ESC 1:50



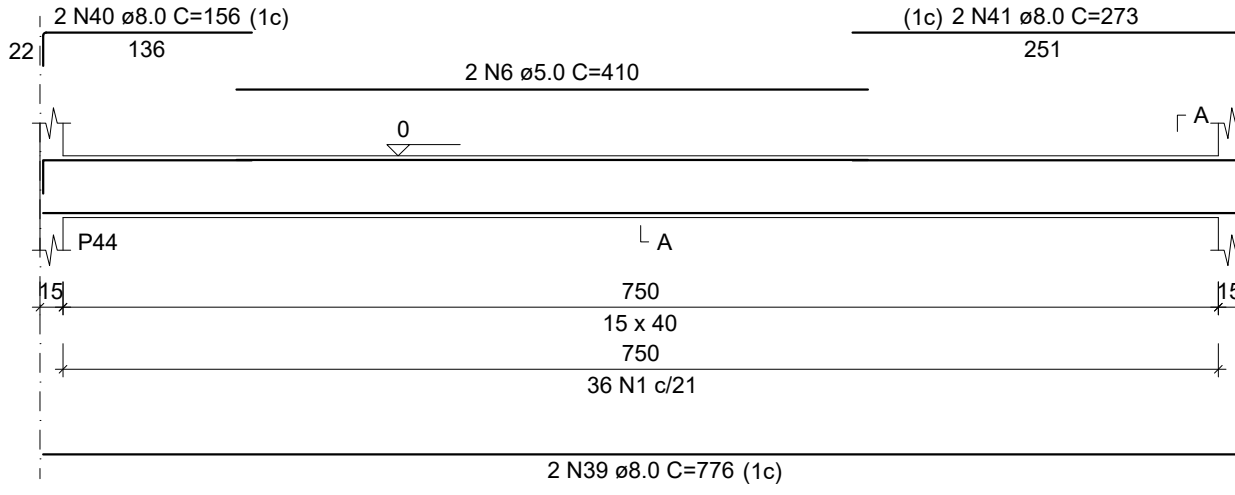
SEÇÃO A-A

ESC 1:25



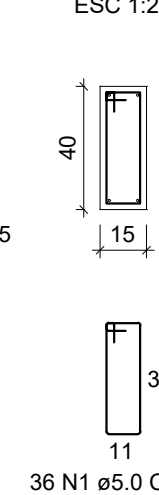
V75

ESC 1:50

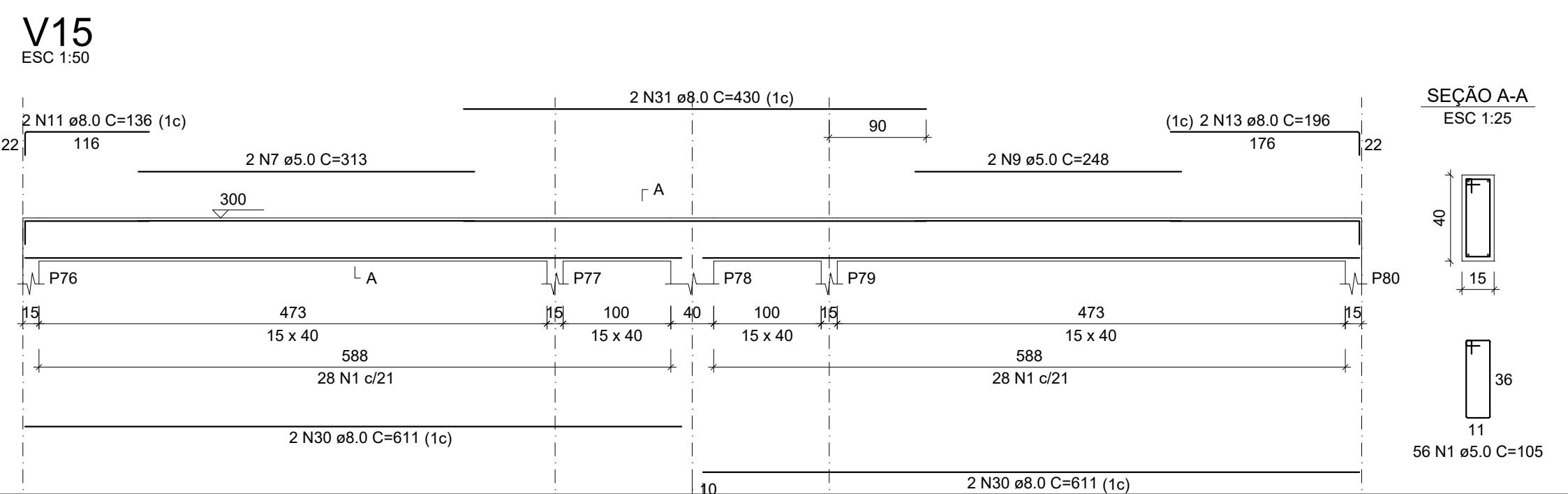
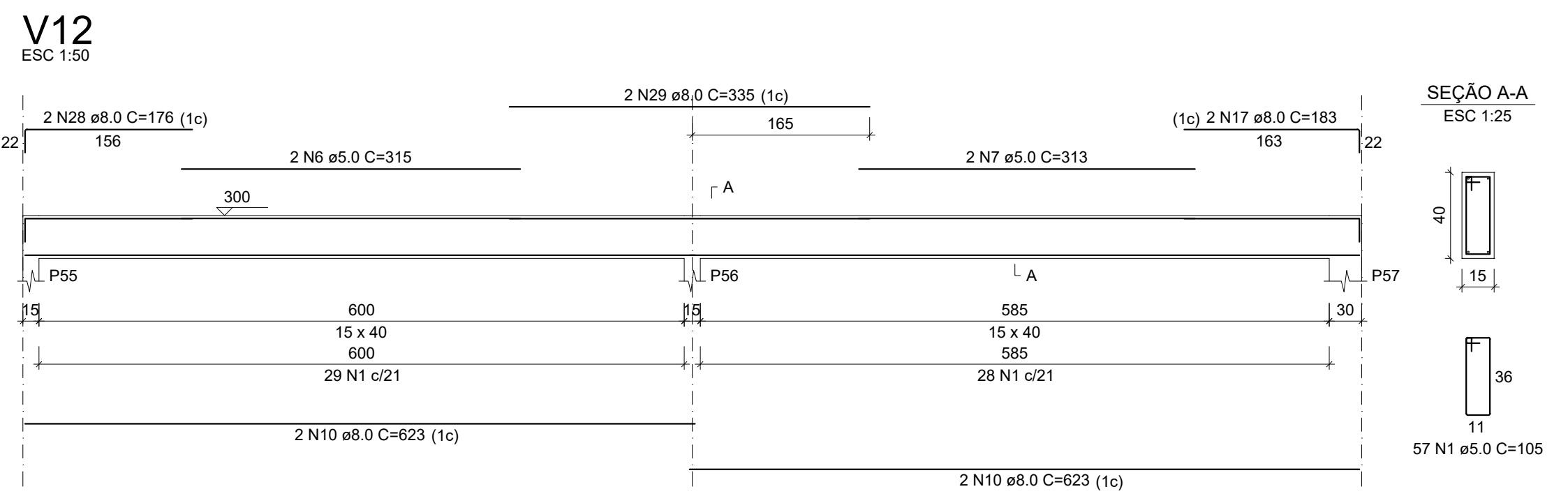
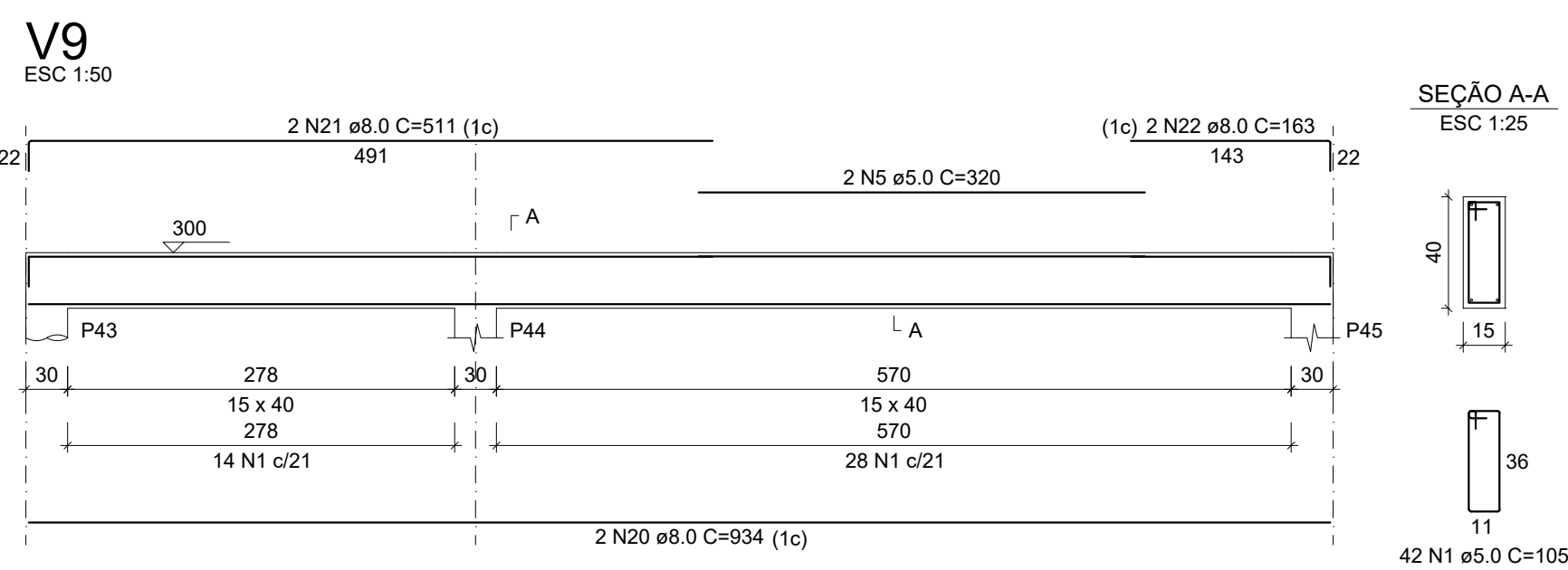
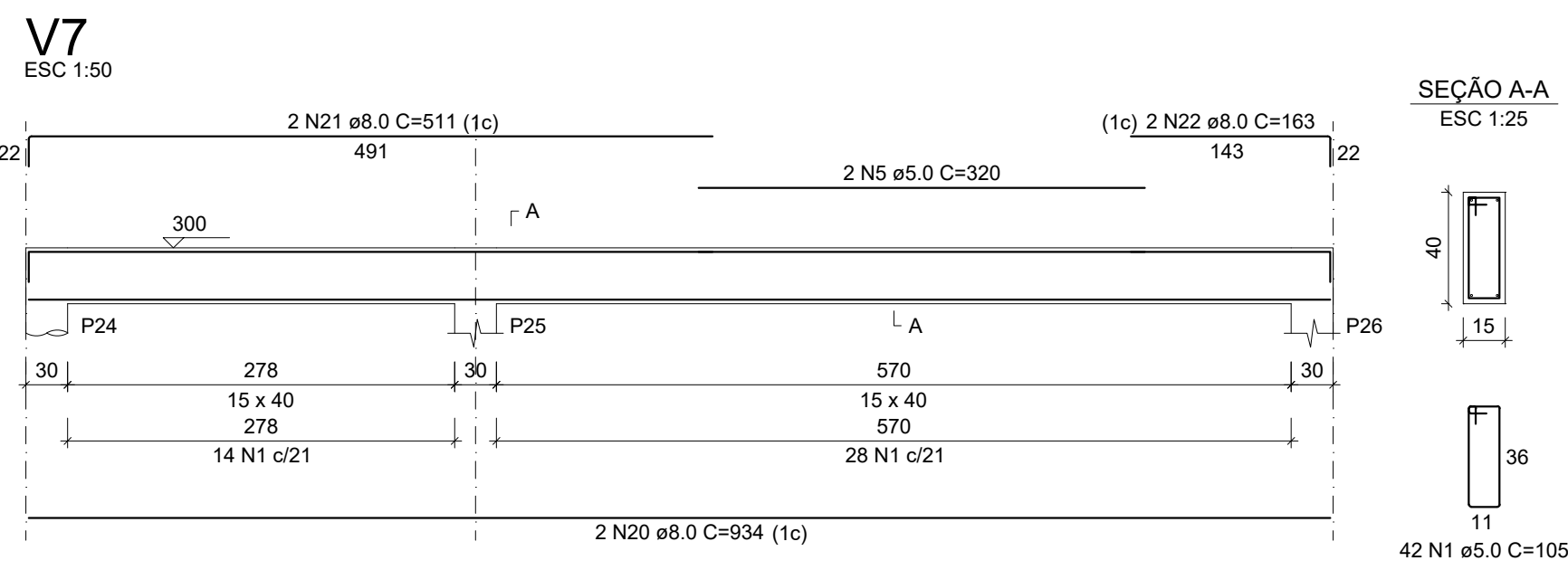
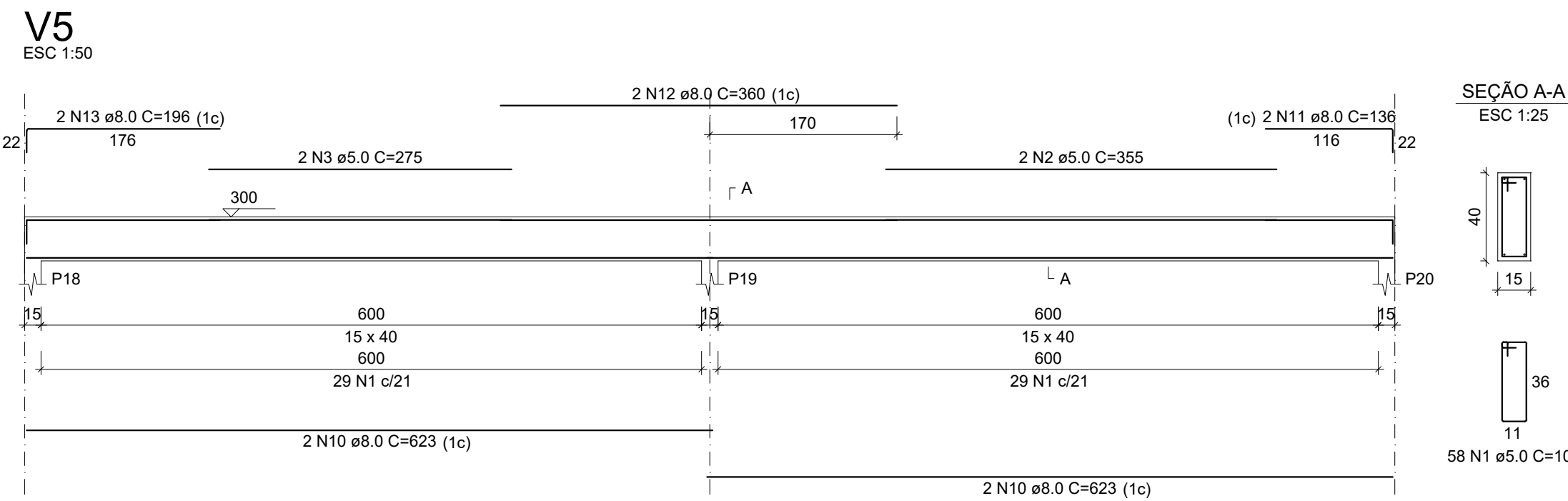
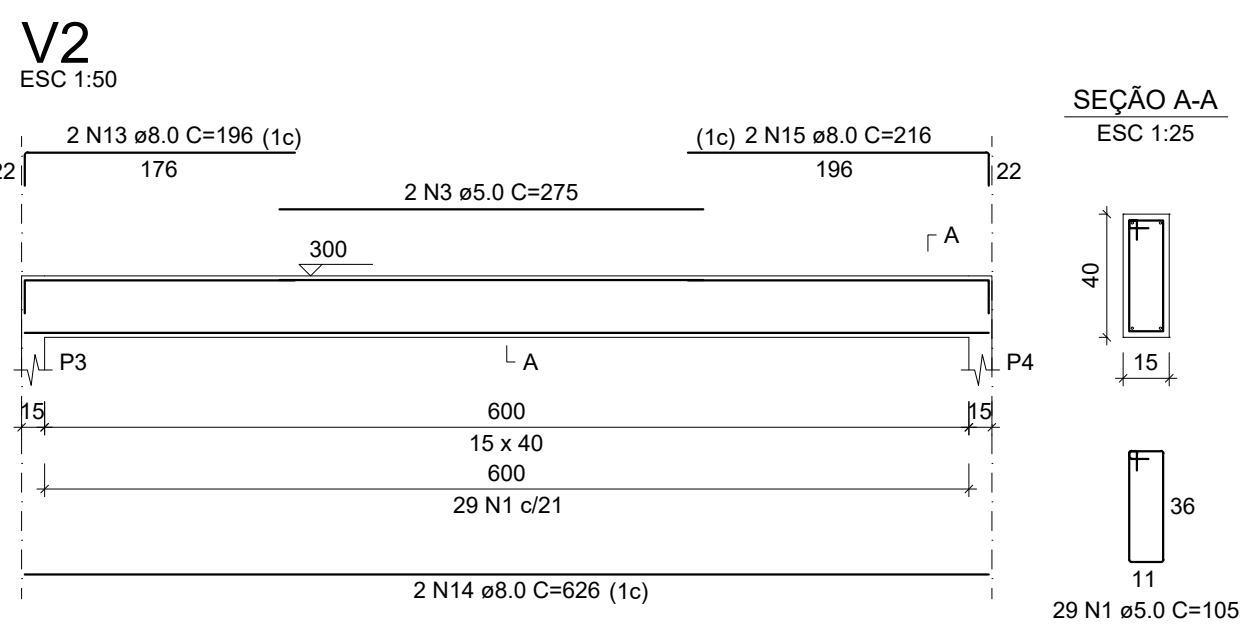
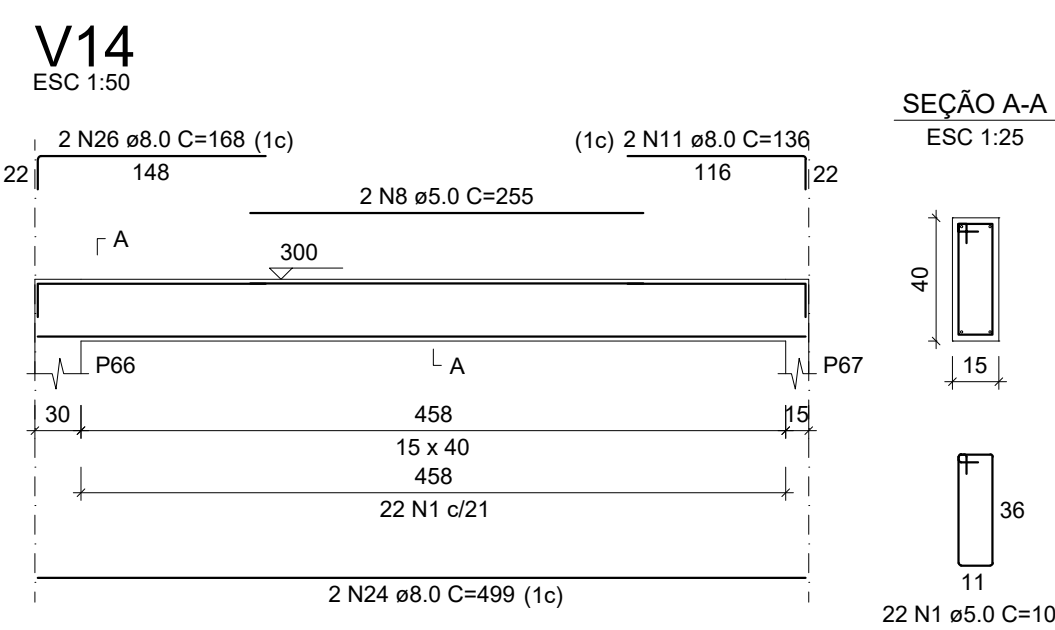
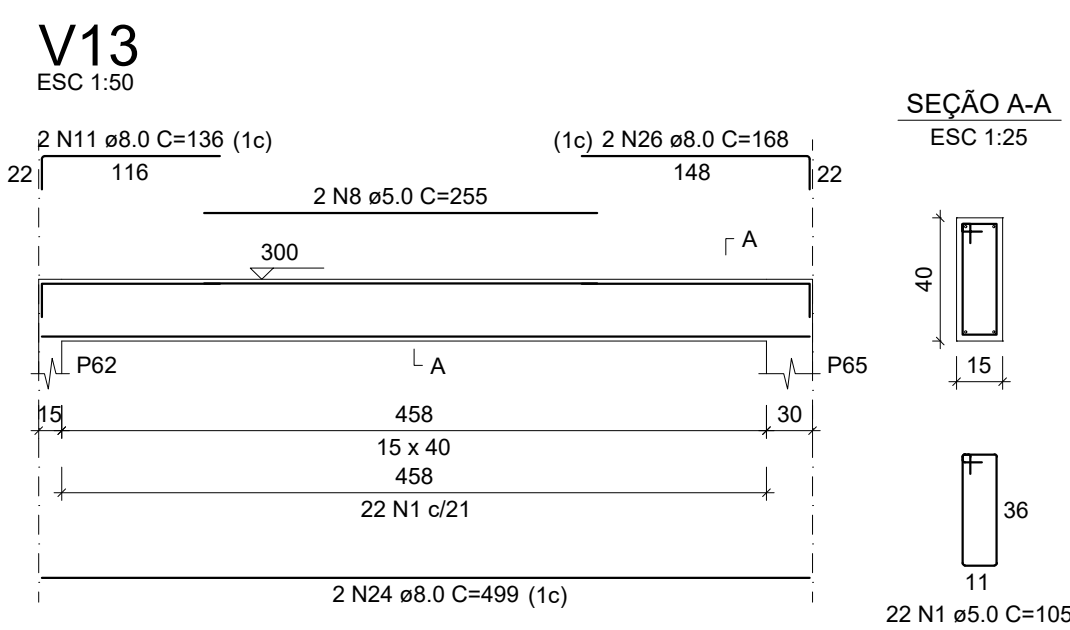
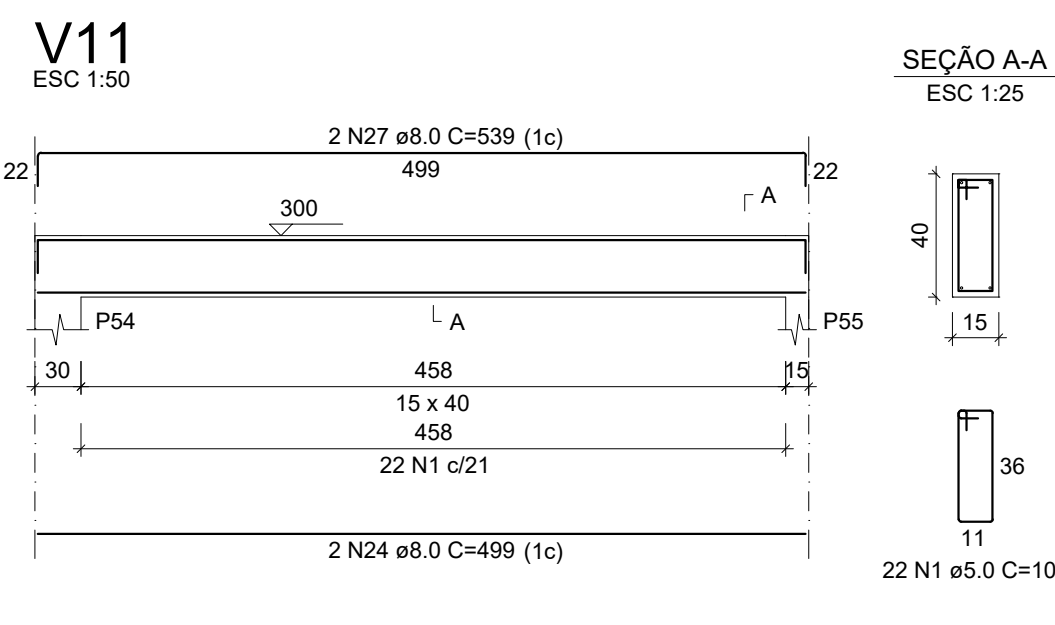
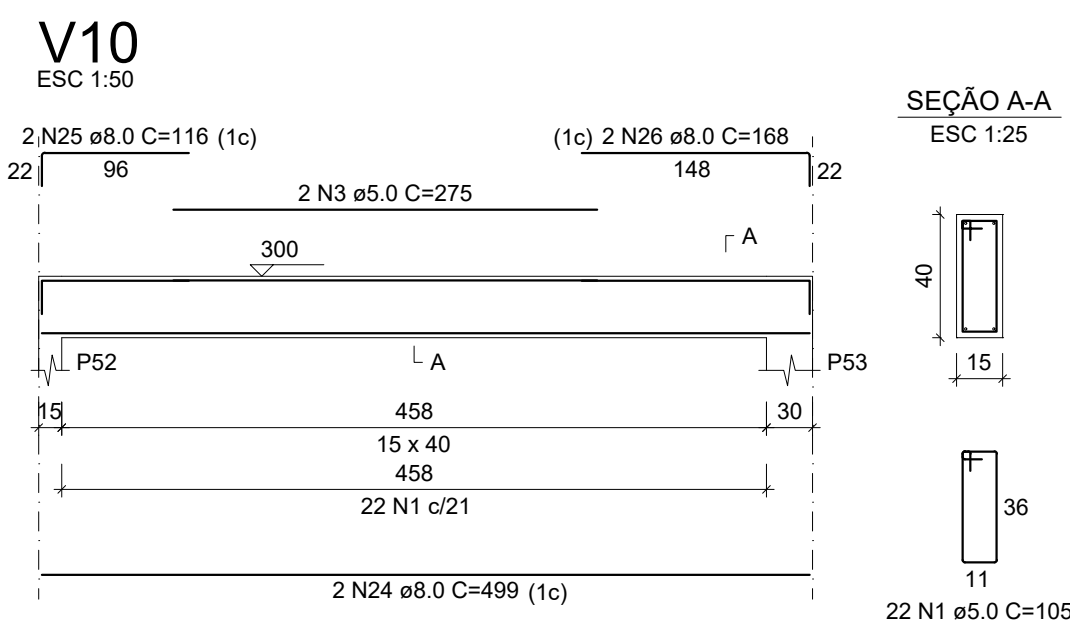
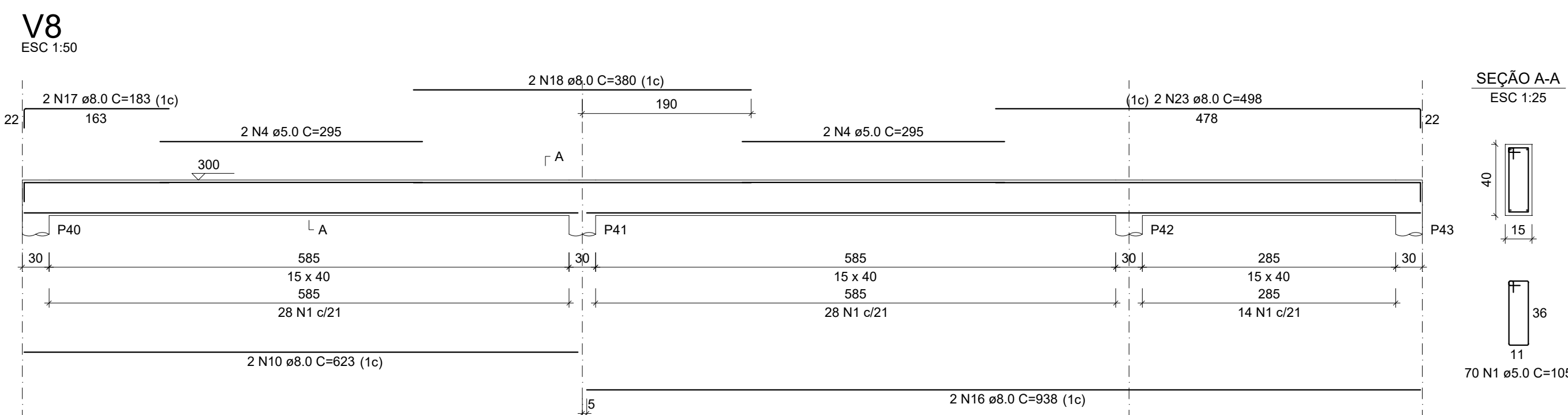
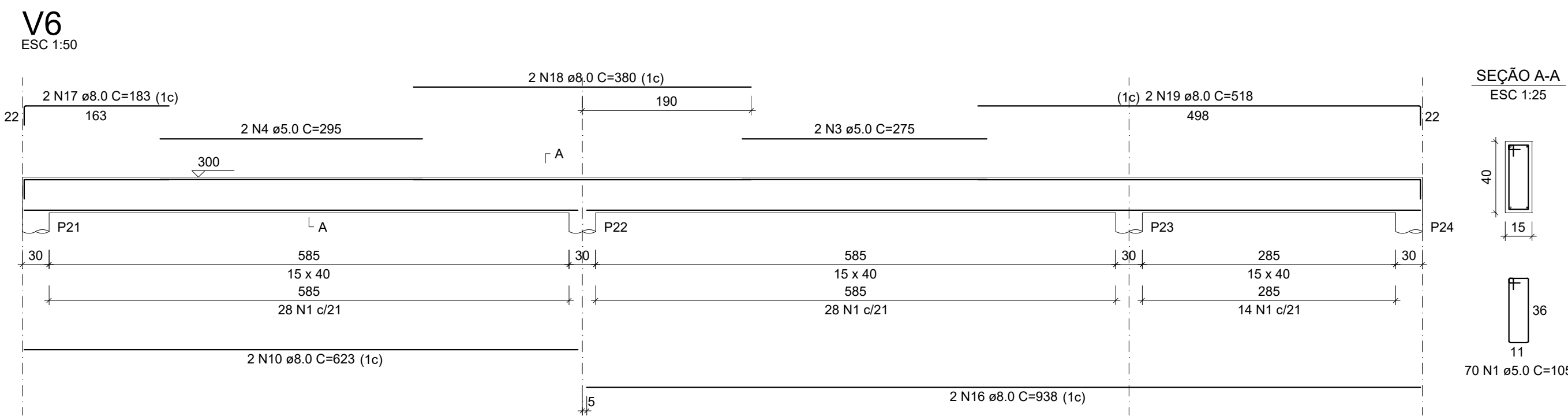
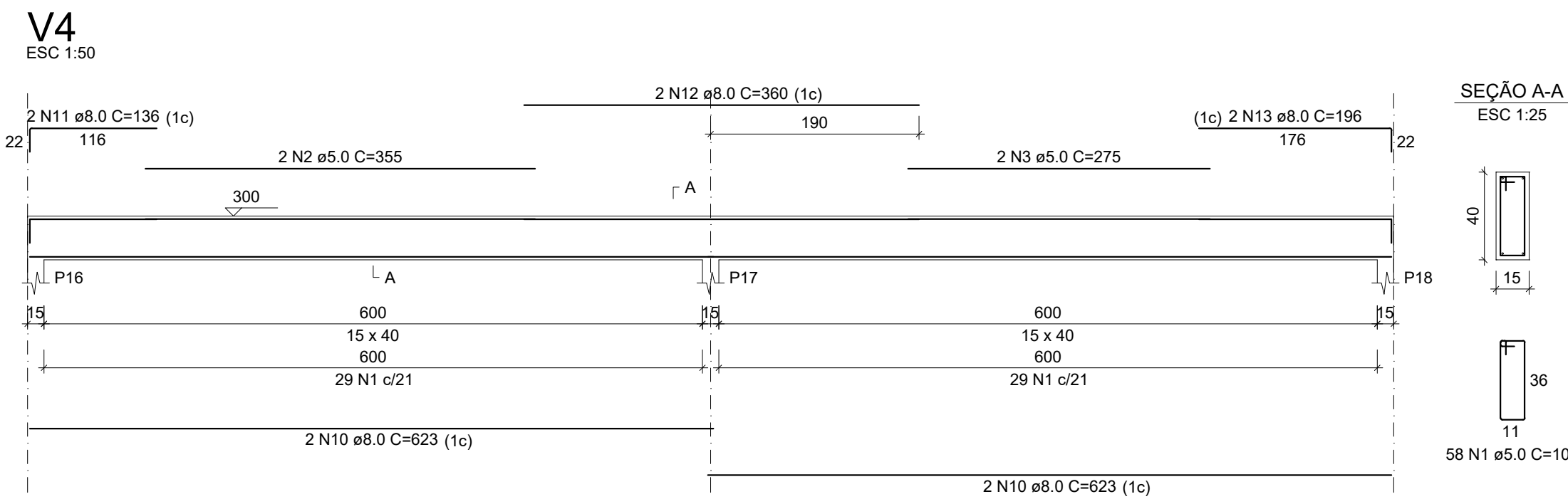
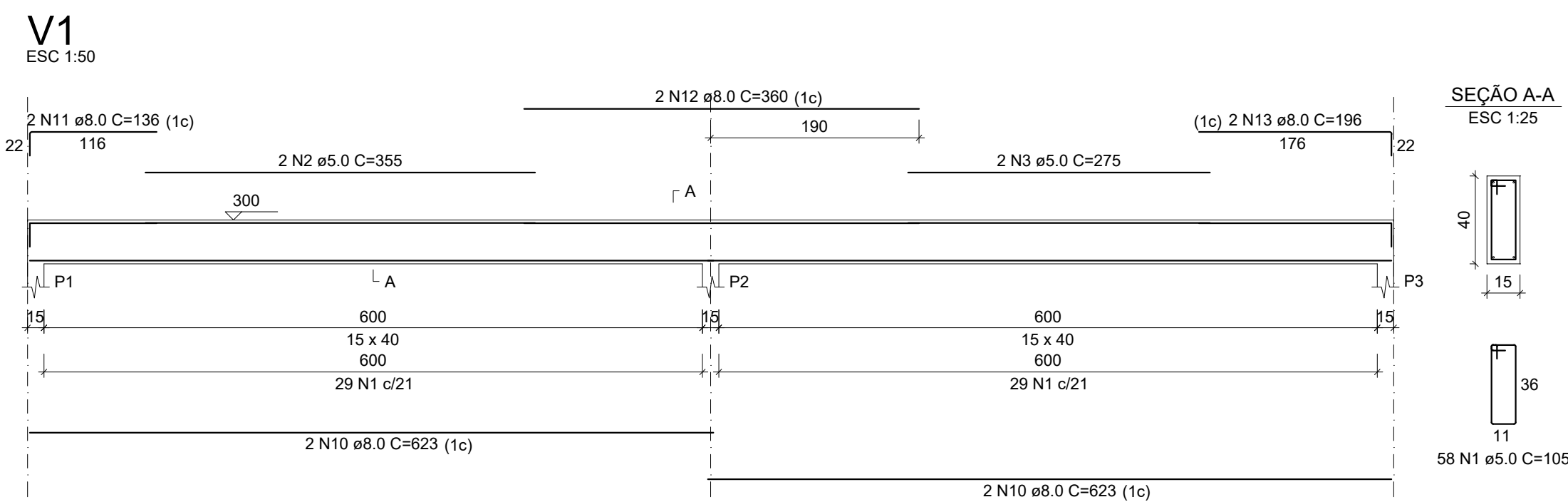


SEÇÃO A-A

ESC 1:25



APROVAÇÕES			
REVISÕES:			
Nº:	Data:	Descrição:	Autor:
RESPONSÁVEL TÉCNICO PROJETO:			
		JOSÉ VALBER GOMES DA SILVA ENGENHEIRO CIVIL PORTARIA nº 1055/2025-SEMAT	
ANO:	TIPO:	FOLHA:	MODIFICAÇÕES:
2026	EST Estrutural	08/13	A B C D E DIM: METRO ESCALA: INDICADA
CLIENTE:	LOCAL:		
PREFEITURA DE BARCARENA - SEMED	AV. BEIRA MAR, VILA ITUPANEMA, BARCARENA/PA		
OBRA:	ÁREAS:		
PROJETO PARA CONSTRUÇÃO DA NOVA EMEI CHAPEUZINHO VERMELHO	TERRENO: 2.750,22m² CONSTRUIDA: 1.206,05m² URBANIZADA: 551,13m²		
DESCRIÇÃO DA PRANCHA:	DATA:		
VIGAS DE FUNDAÇÃO	13/07/2026		
DESENHO	ENG. CIVIL JOSÉ VALBER GOMES DA SILVA		



RELAÇÃO DO AÇO					
V1	V2	V3			
V4	V5	V6			
V7	V11	V12			
V10	V14	V15			
AÇO	N	DIA (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5,0	657	105	68985
	2	5,0	8	355	2840
	3	5,0	12	375	3300
	4	5,0	6	295	1770
	5	5,0	4	320	1280
	6	5,0	2	630	1260
CA50	7	5,0	4	315	1260
	8	5,0	4	253	1012
	9	5,0	2	248	496
	10	6,23	20	623	12460
	11	8,0	14	136	1904
	12	8,0	6	360	2160
	13	8,0	12	236	2832
	14	8,0	4	626	2504
	15	8,0	2	216	432
	16	8,0	4	638	2552
	17	8,0	8	183	1464
	18	8,0	4	380	1520
	19	8,0	2	518	1036
	20	8,0	4	834	3736
	21	8,0	4	504	2016
	22	8,0	4	163	652
	23	8,0	2	986	1972
	24	8,0	8	499	3992
	25	8,0	2	116	232
	26	8,0	6	168	1008
	27	8,0	2	539	1078
	28	8,0	2	176	352
	29	8,0	2	335	670
	30	8,0	4	611	2444
	31	8,0	2	430	860

RESUMO DO AÇO			
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	472.8	205.2
CA60	5.0	815.7	138.3
PESO TOTAL (kg)			
CA50	205.2		
CA60	138.3		

Volume de concreto (C-25) = 8.22 m³
Área de forma = 130.12 m²

APROVAÇÕES			

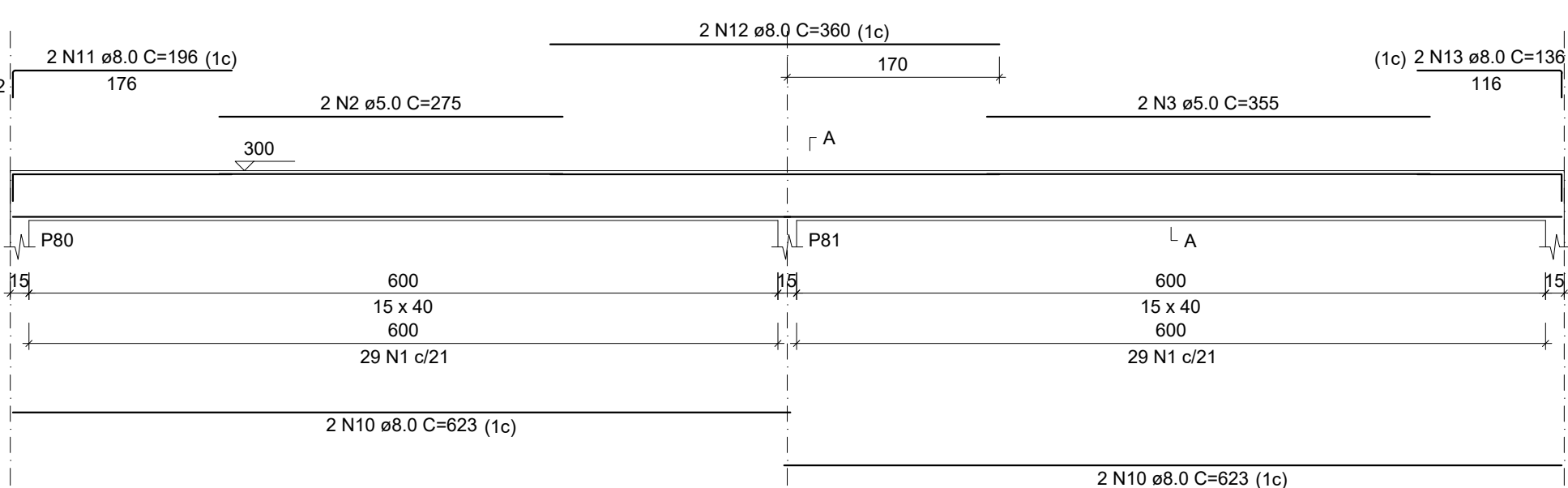
REVISÕES:			
Nº:	Data:	Descrição:	Autor:

 PREFEITURA DE BARCARENA	 REDE ODS BRASIL	RESPONSÁVEL TÉCNICO PROJETO: JOSÉ VALBER GOMES DA SILVA ENGENHEIRO CIVIL PORTARIA nº 1055/2025-SEMAT
PREFEITURA MUNICIPAL DE BARCARENA SECRETARIA MUNICIPAL DE EDUCAÇÃO, CULTURA E DESENVOLVIMENTO SOCIAL SEMED		

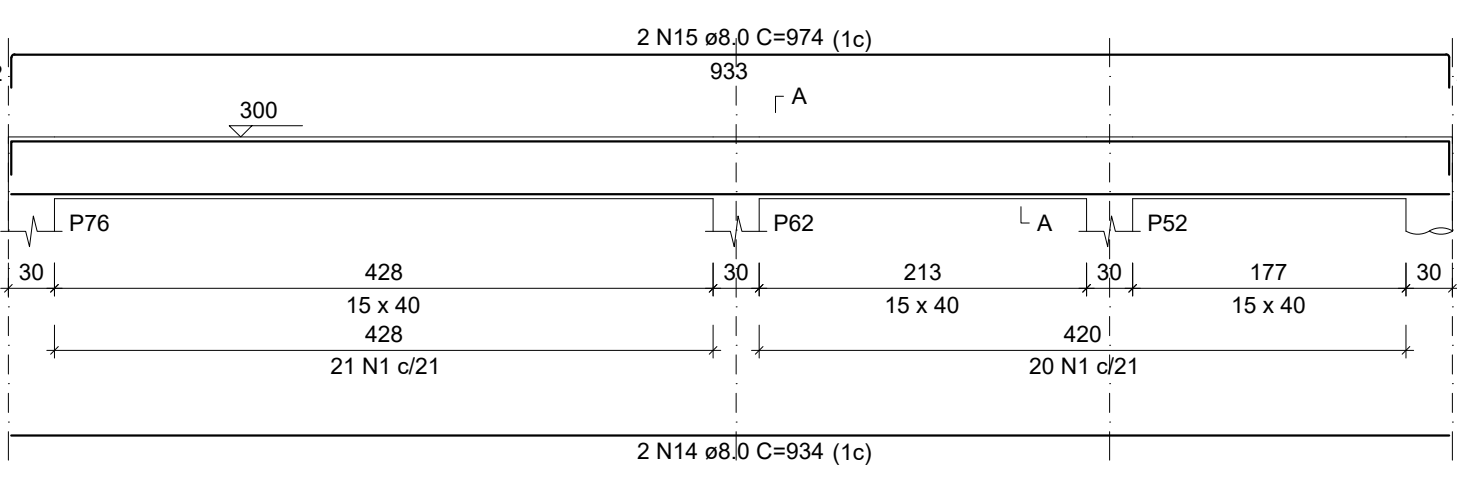
	ANO:	TIPO:	FOLHA:	MODIFICAÇÃO:
	2026	EST	10/13	A
		Estrutural		B

CLIENTE: PREFEITURA DE BARCARENA - SEMED	LOCAL:	AV. BEIRA MAR, VILA ITUPANEMA, BARCARENA/PA	C
OBRA: PROJETO PARA CONSTRUÇÃO DA NOVA EMEI CHAPEUZINHO VERMELHO		ÁREAS: TERRENO: 2.750,22m² CONSTRUÍDA: 1.206,05m² URBANIZADA: 551,13m²	D
DESCRIÇÃO DA PRANCHA: VIGAS NÍVEL 300			E
DESENHO ENG. CIVIL JOSÉ VALBER GOMES DA SILVA		DATA: 13/07/2026	DIM: METRO
			ESCALA: INDICADA

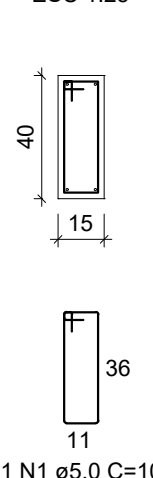
V16
ESC 1:50



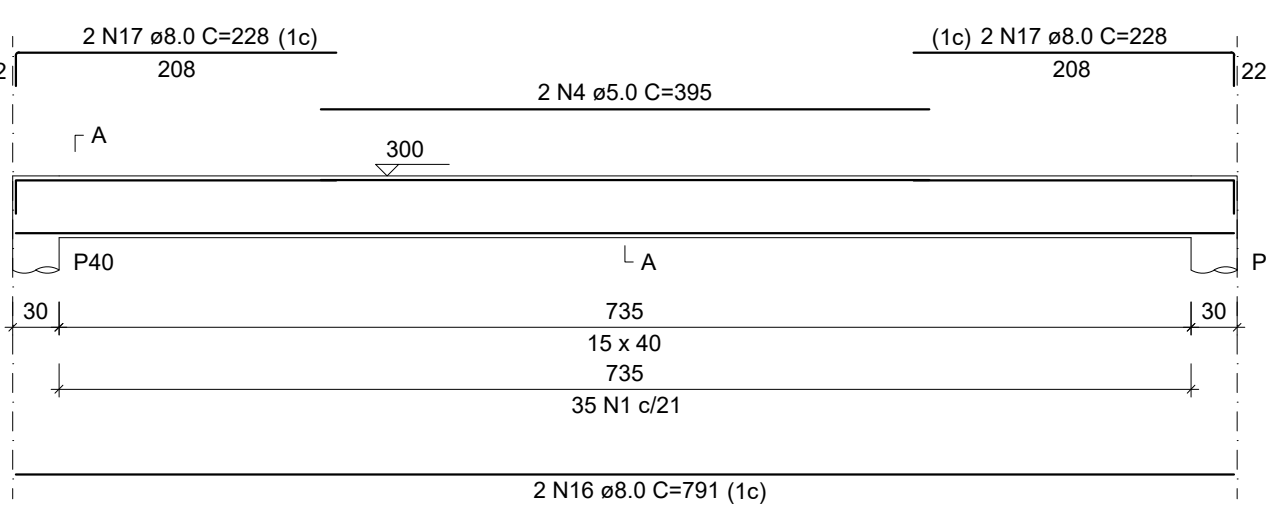
V17
ESC 1:50



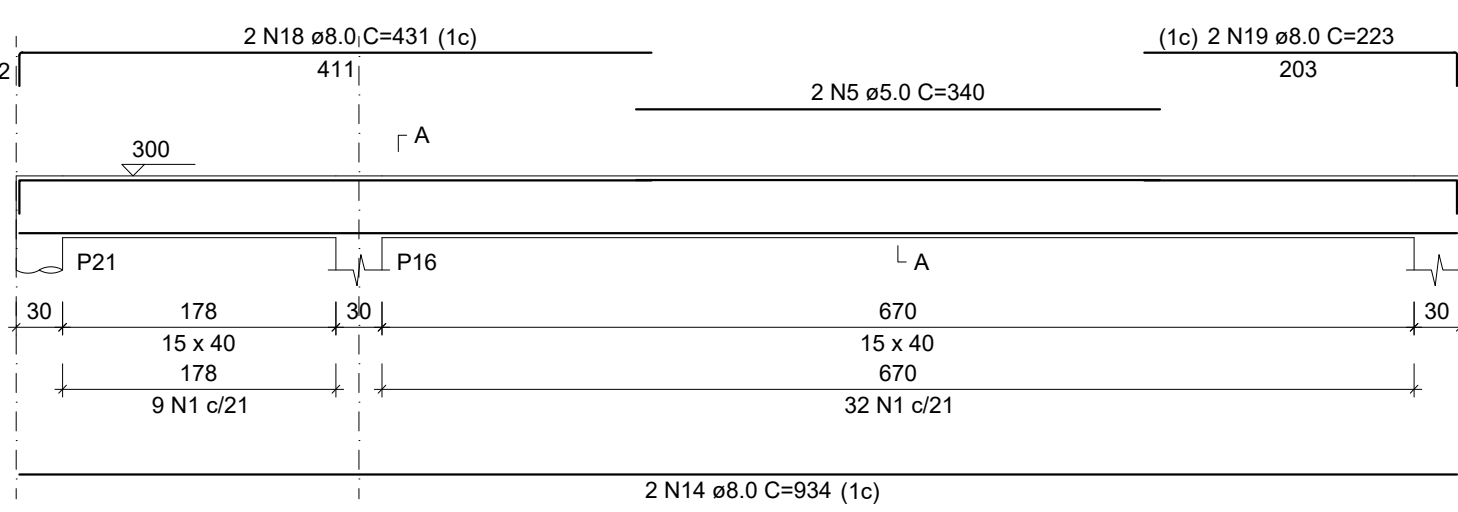
SEÇÃO A-A
ESC 1:25



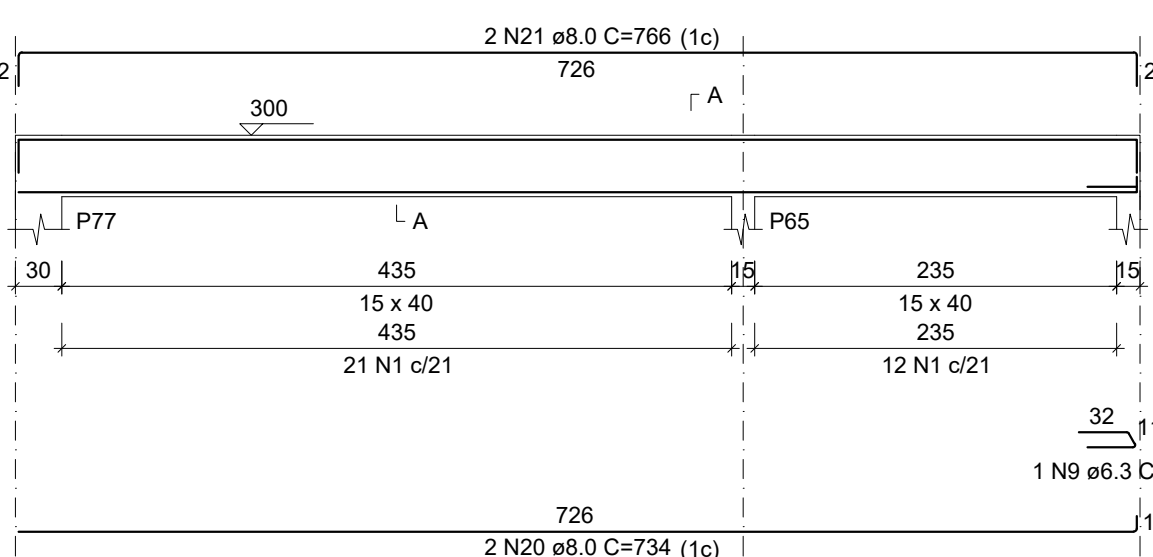
V18
ESC 1:50



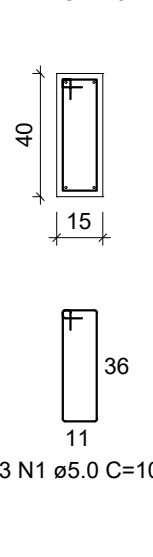
V19
ESC 1:50



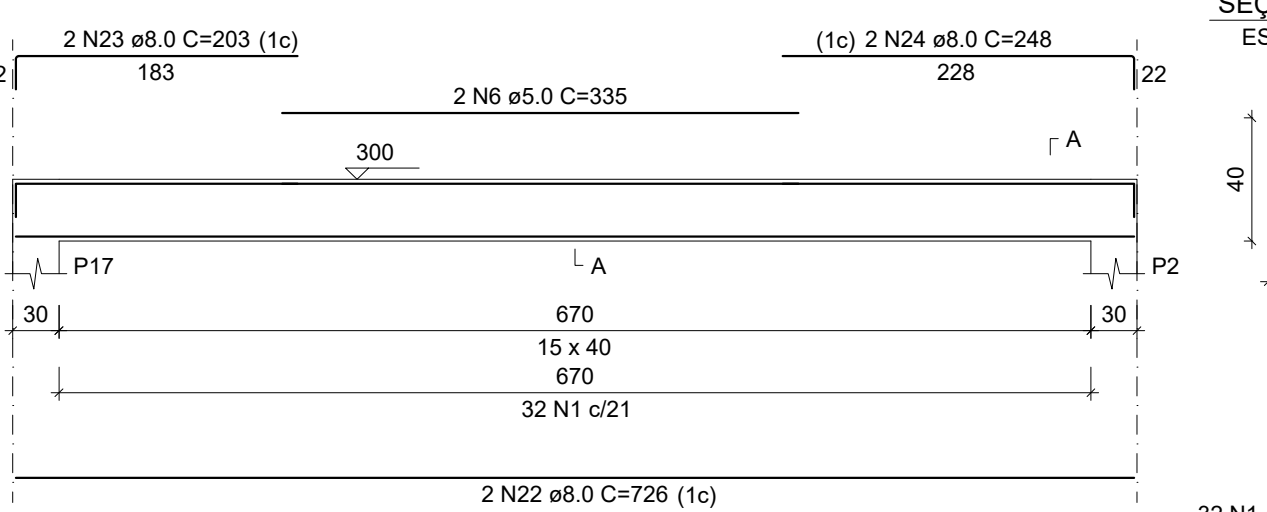
V20
ESC 1:50



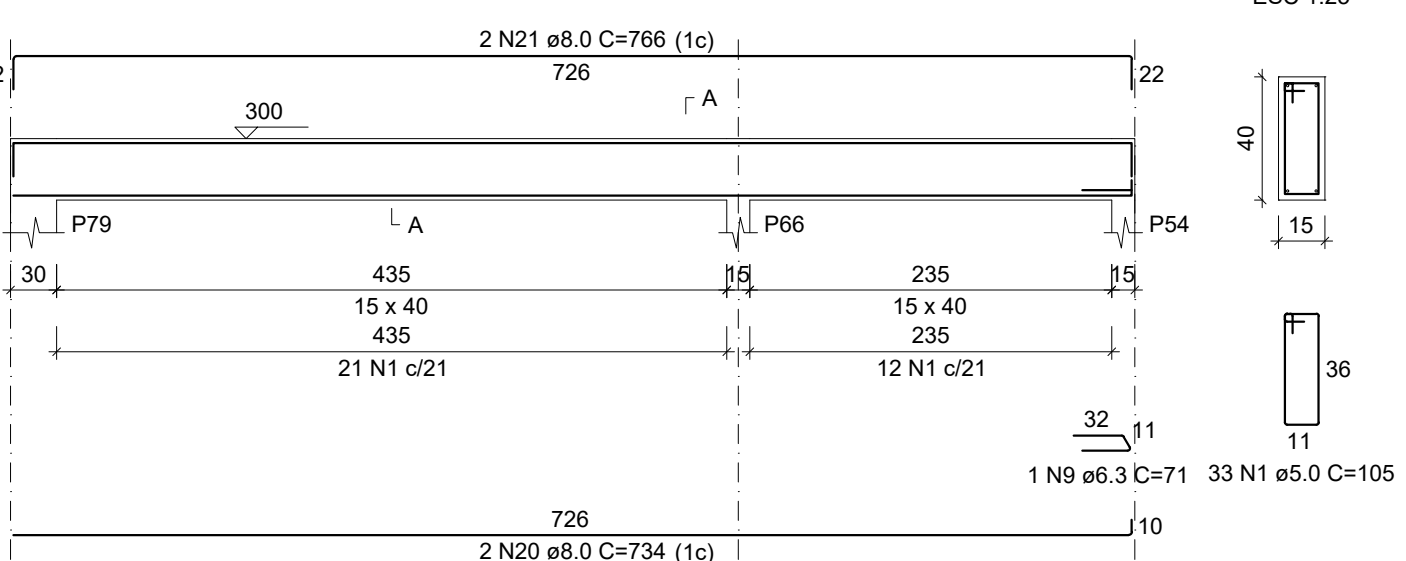
SEÇÃO A-A
ESC 1:25



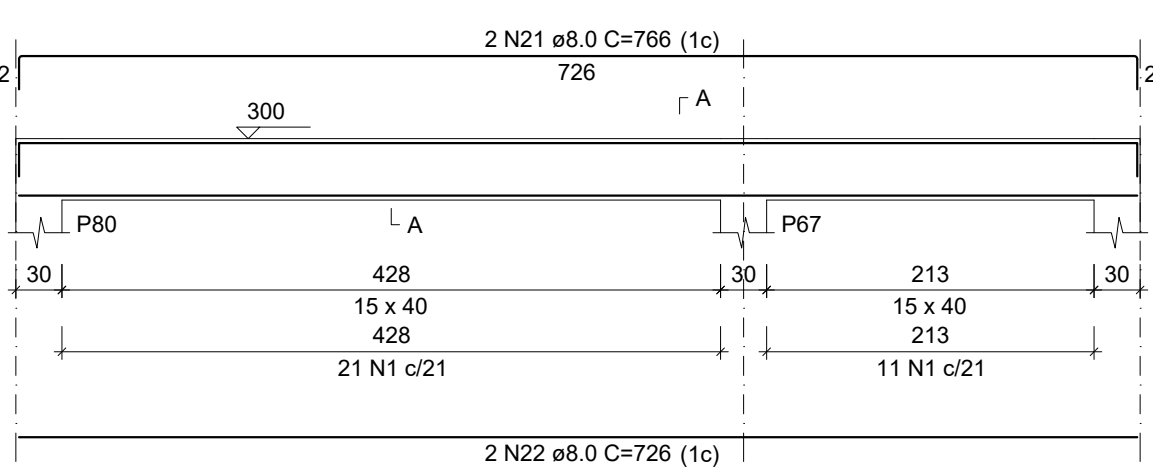
V21
ESC 1:50



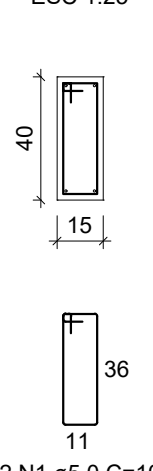
V22
ESC 1:50



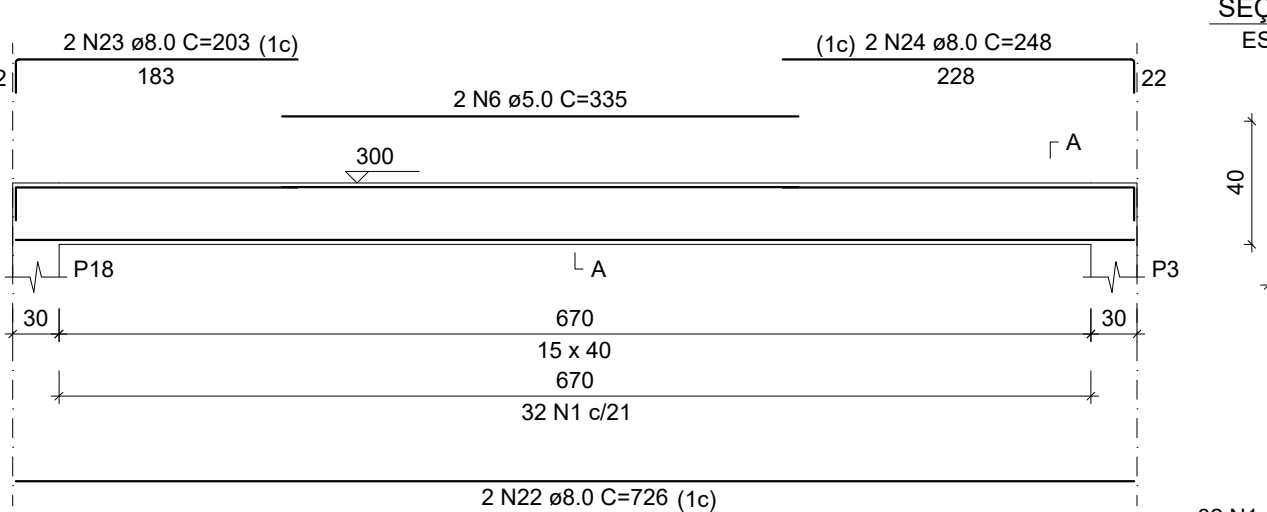
V23
ESC 1:50



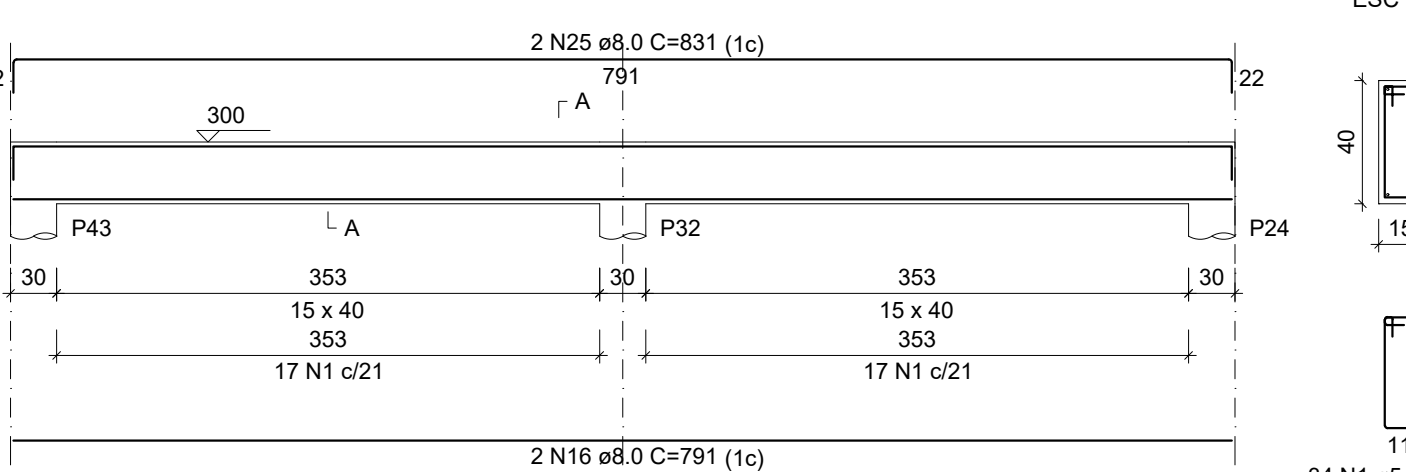
SEÇÃO A-A
ESC 1:25



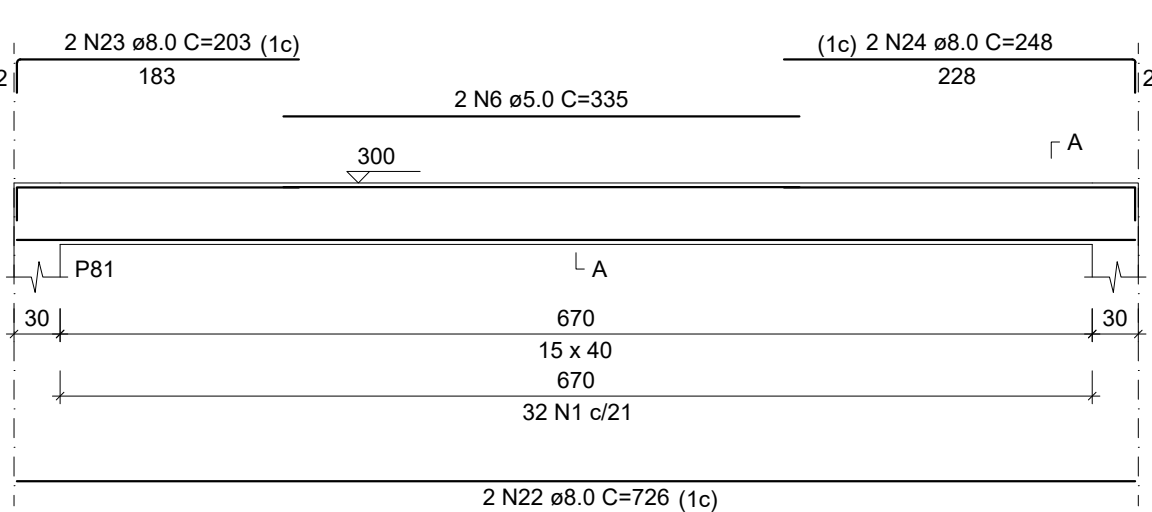
V24
ESC 1:50



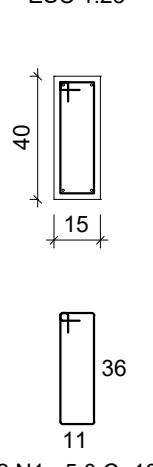
V25
ESC 1:50



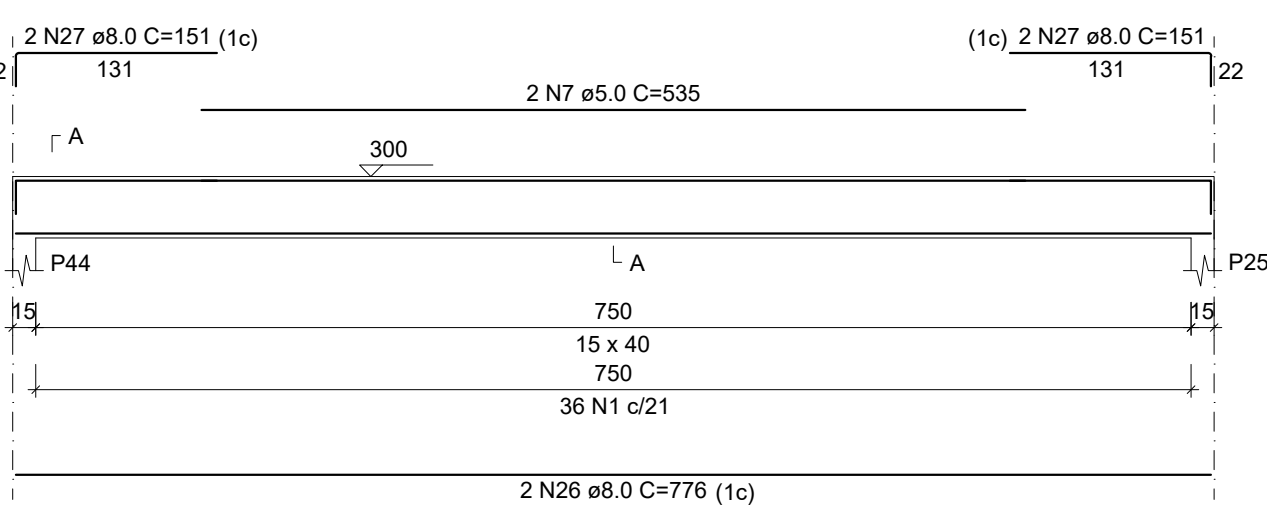
V26
ESC 1:50



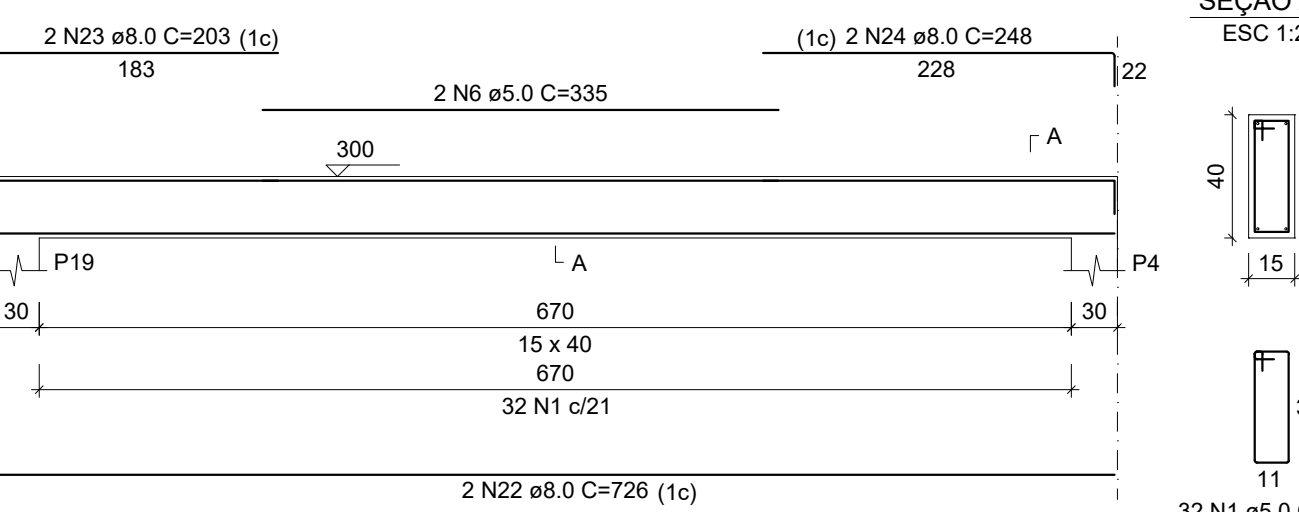
SEÇÃO A-A
ESC 1:25



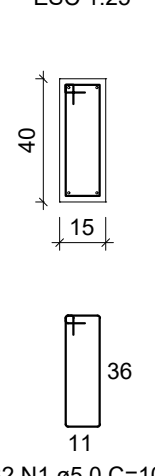
V27
ESC 1:50



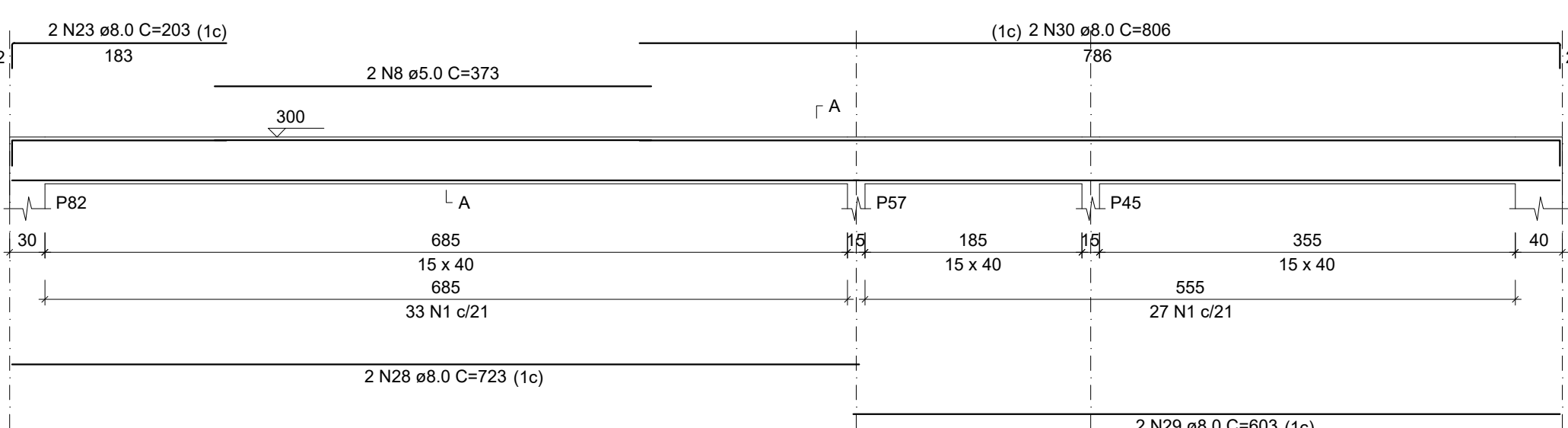
V28
ESC 1:50



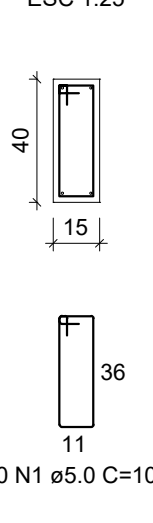
SEÇÃO A-A
ESC 1:25



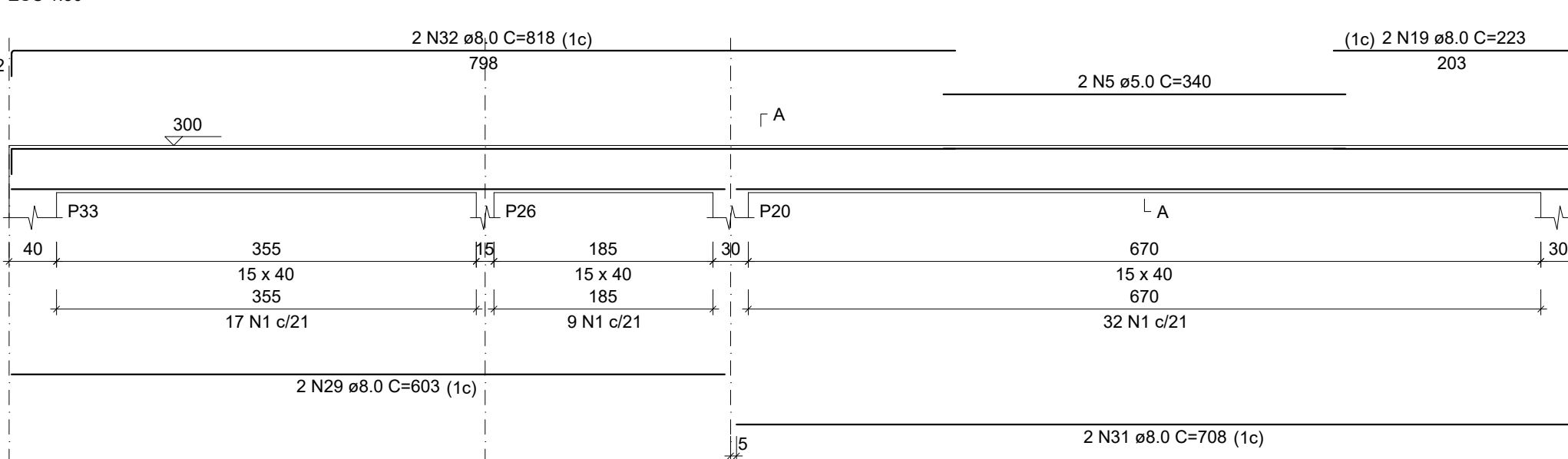
V29
ESC 1:50



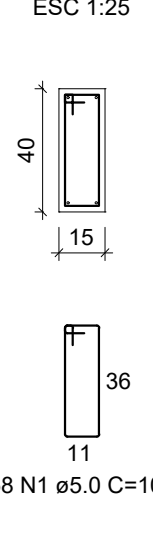
SEÇÃO A-A
ESC 1:25



V30
ESC 1:50



SEÇÃO A-A
ESC 1:25



RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
V16	1	5.0	589	105	61845
V17	2	5.0	2	275	550
V18	3	5.0	2	355	710
V19	4	5.0	2	395	790
V20	5	5.0	4	340	1360
V21	6	5.0	8	335	2680
V22	7	5.0	2	535	1070
V23	8	5.0	2	373	746
V24	9	6.3	2	71	142
V25	10	8.0	4	623	2492
V26	11	8.0	2	196	392
V27	12	8.0	2	360	720
V28	13	8.0	2	136	272
V29	14	8.0	4	934	3736
V30	15	8.0	2	974	1948
	16	8.0	4	791	3164
	17	8.0	4	228	912
	18	8.0	2	431	862
	19	8.0	4	223	892
	20	8.0	4	734	2936
	21	8.0	6	766	4596
	22	8.0	10	726	7260
	23	8.0	10	203	2030
	24	8.0	8	248	1984
	25	8.0	2	831	1662
	26	8.0	2	776	1552
	27	8.0	4	151	604
	28	8.0	2	723	1446
	29	8.0	4	603	2412
	30	8.0	2	806	1612
	31	8.0	2	708	1416
	32	8.0	2	818	1636

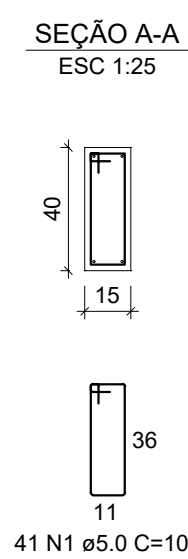
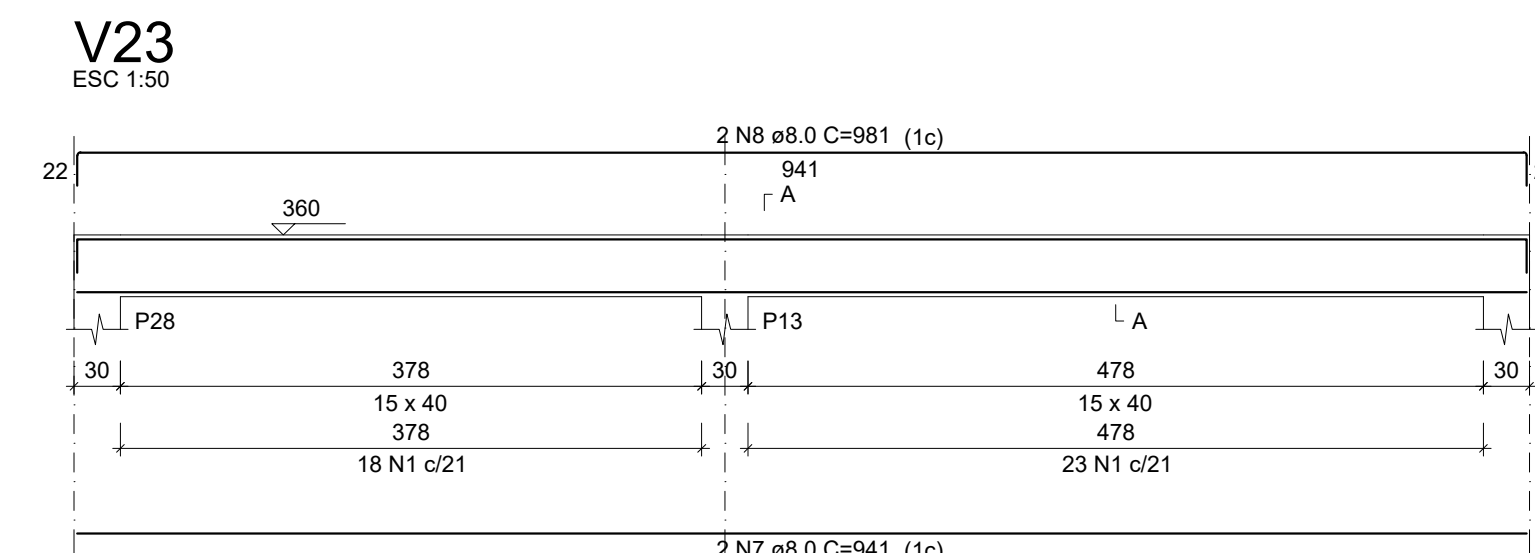
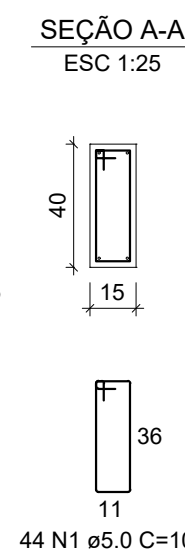
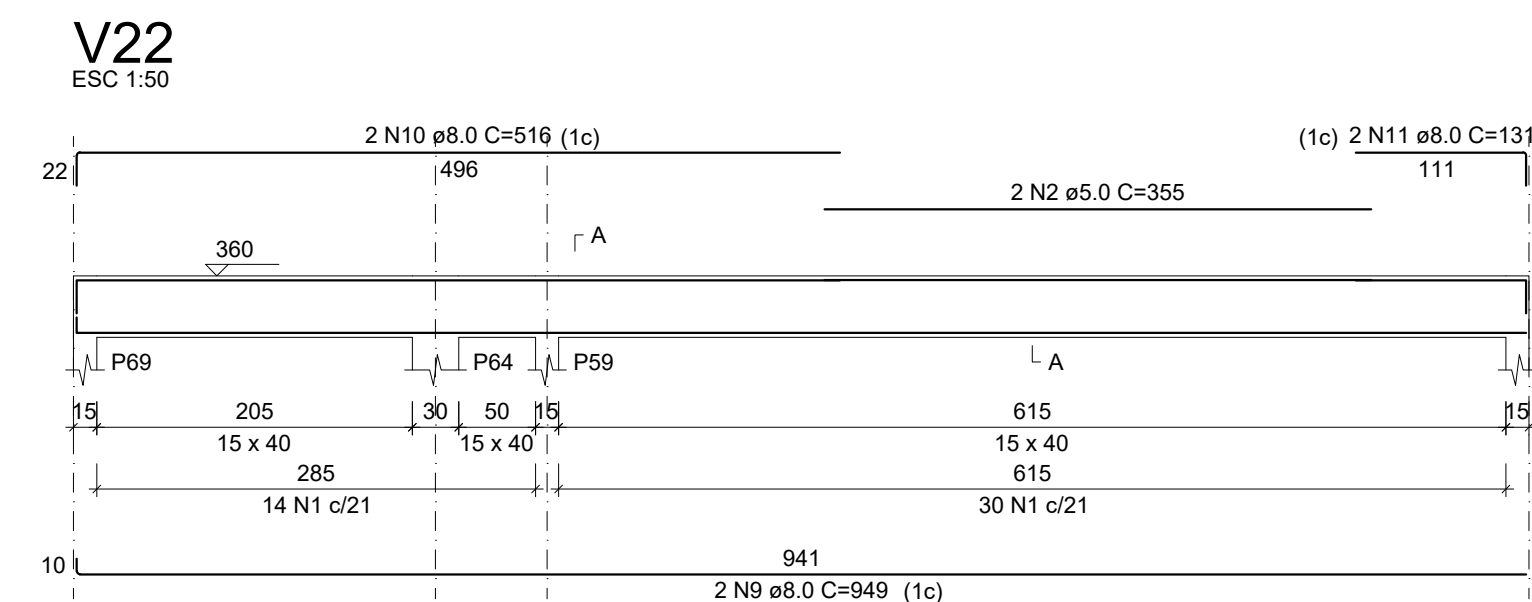
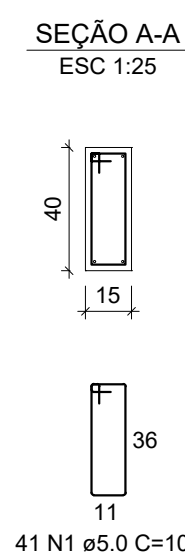
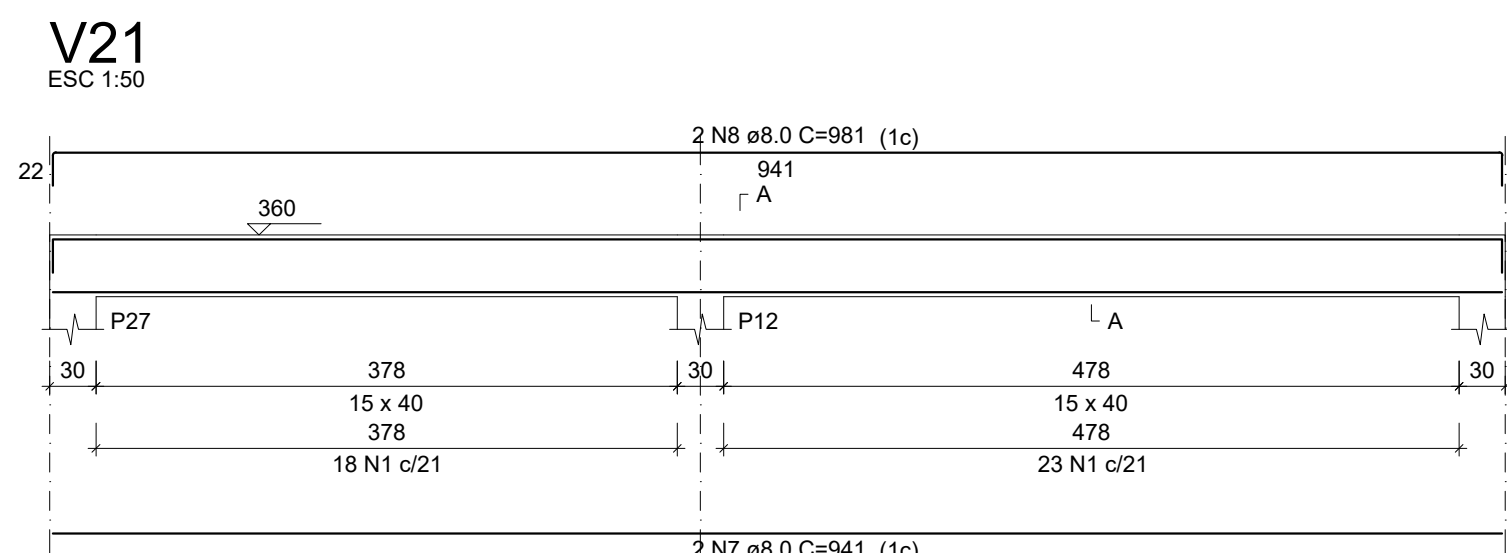
RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	1.4	0.4
CA60	8.0	465.4	202
CA60	5.0	697.5	118.3
PESO TOTAL (kg)		202.4	118.3

Volume de concreto (C-25) = 7.32 m³
Área de forma = 115.82 m²

APROVAÇÕES			
REVISÕES:			
Nº:	Data:	Descrição:	Autor:

		RESPONSÁVEL TÉCNICO PROJETO:	
PREFEITURA MUNICIPAL DE BARCARENA SECRETARIA MUNICIPAL DE EDUCAÇÃO, CULTURA E DESENVOLVIMENTO SOCIAL		JOSÉ VALBER GOMES DA SILVA ENGENHEIRO CIVIL PORTARIA nº 1055/2025-SEMAT	
ANO: 2026		TIPO: EST Estrutural	FOLHA: 11/13
CLIENTE: PREFEITURA DE BARCARENA - SEMED		LOCAL: AV. BEIRA MAR, VILA ITUPANEMA, BARCARENA/PA	MODIFICAÇÕES: A B C
OBRA: PROJETO PARA CONSTRUÇÃO DA NOVA EMEI CHAPEUZINHO VERMELHO		ÁREAS: TERRENO: 2.750,22m² CONSTRUÍDA: 1.206,05m² URBANIZADA: 551,13m²	D E
DESCRIÇÃO DA PRANCHA: VIGAS NÍVEL 300		DATA: 13/07/2026	DIM: METRO ESCALA: INDICADA
DESENHO: ENG. CIVIL JOSÉ VALBER GOMES DA SILVA			

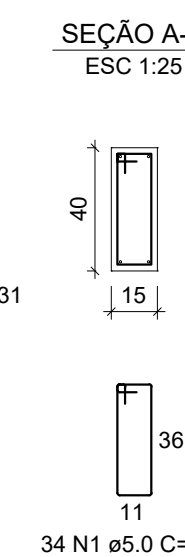
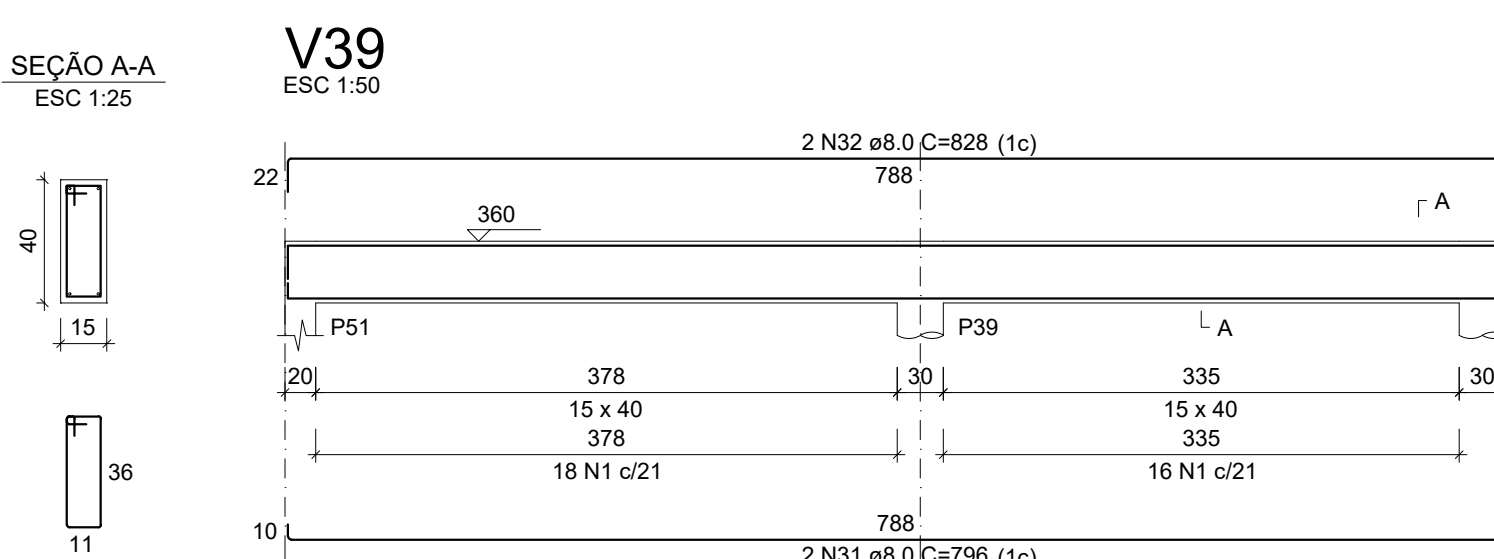
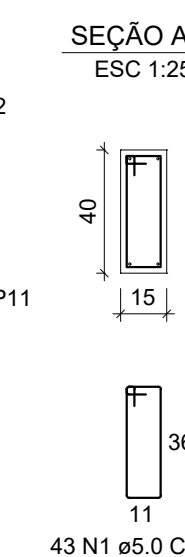
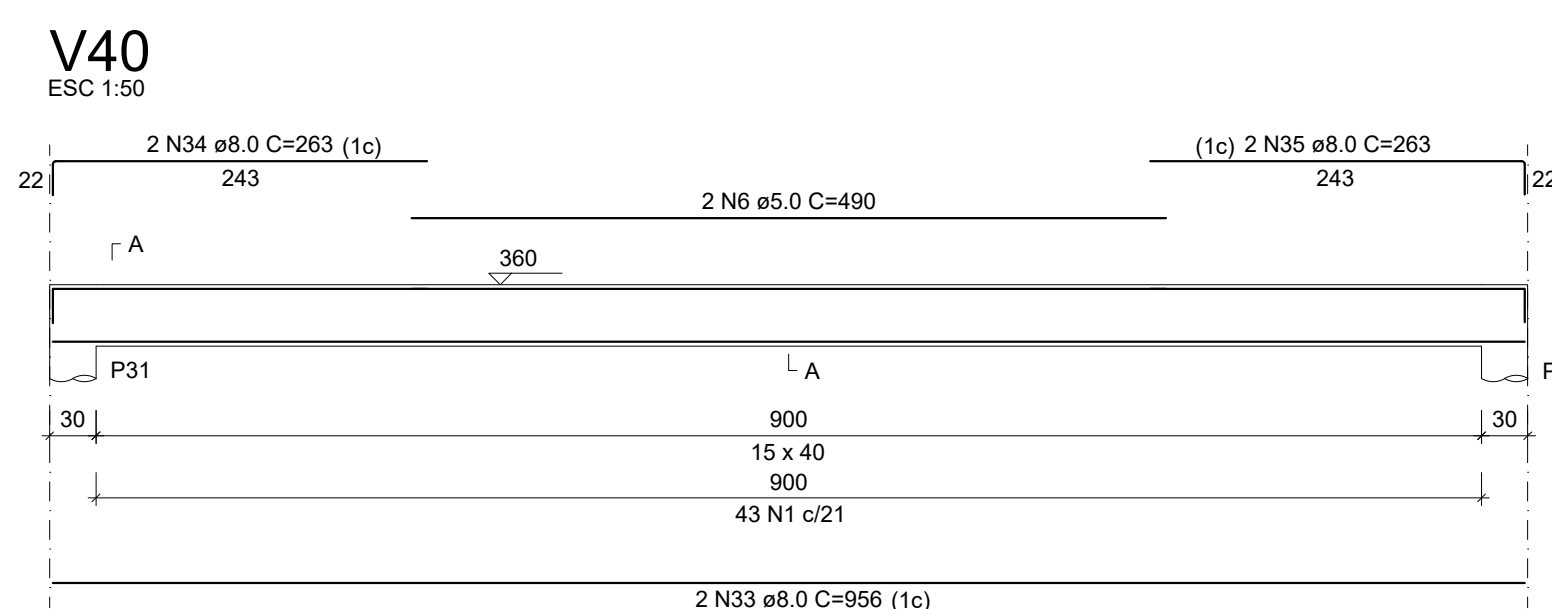
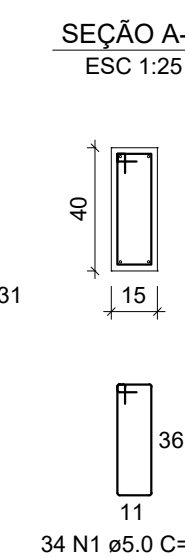
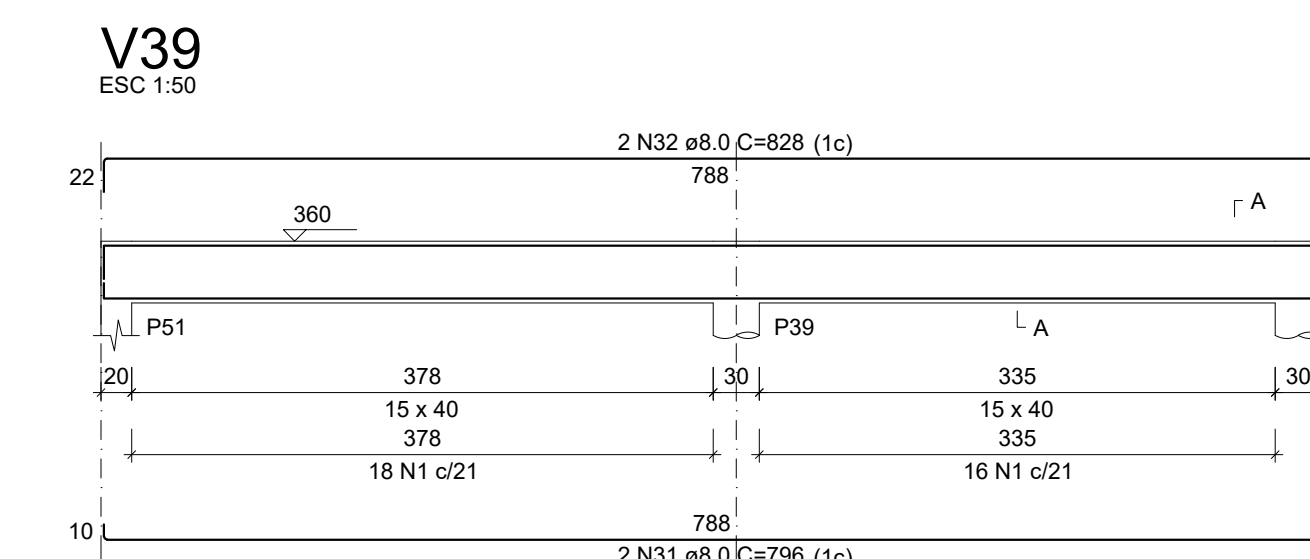
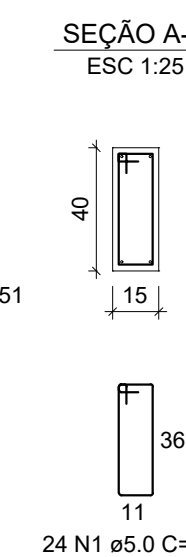
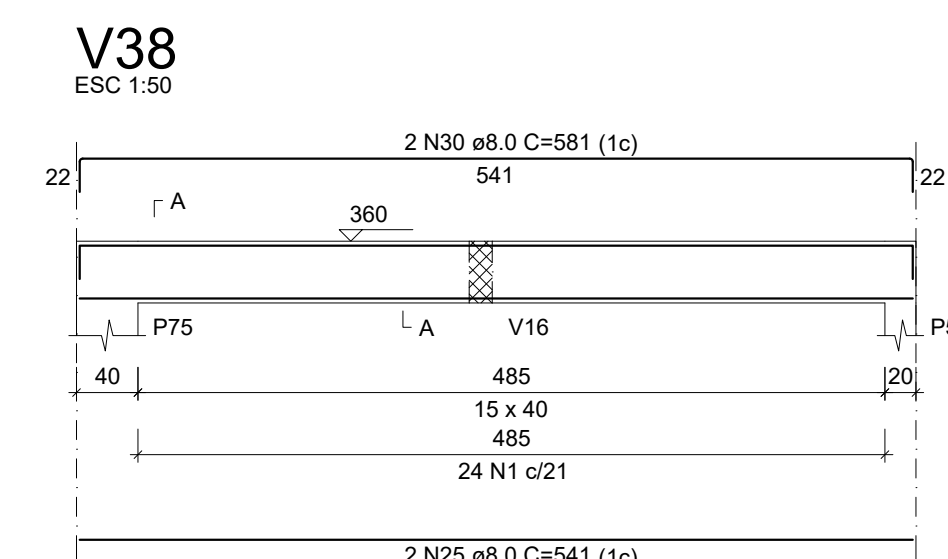
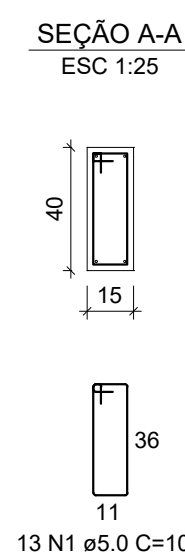
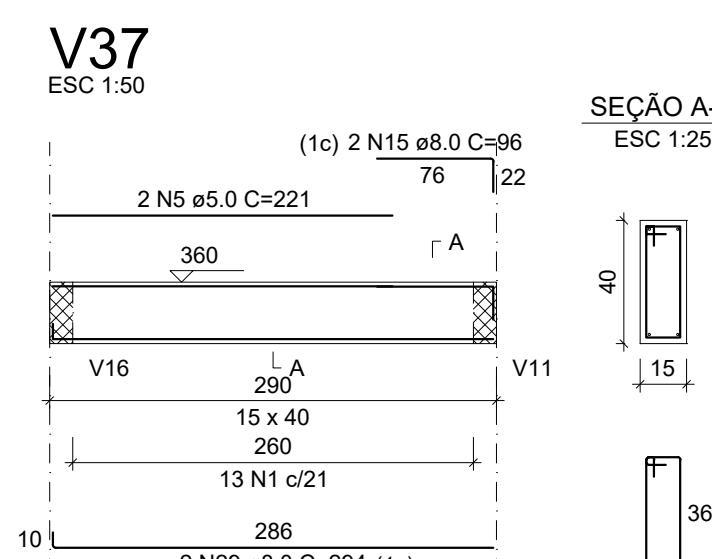
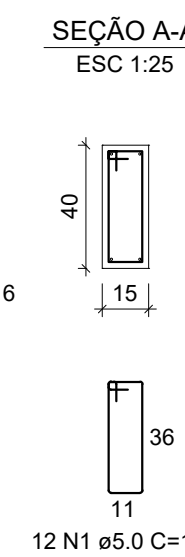
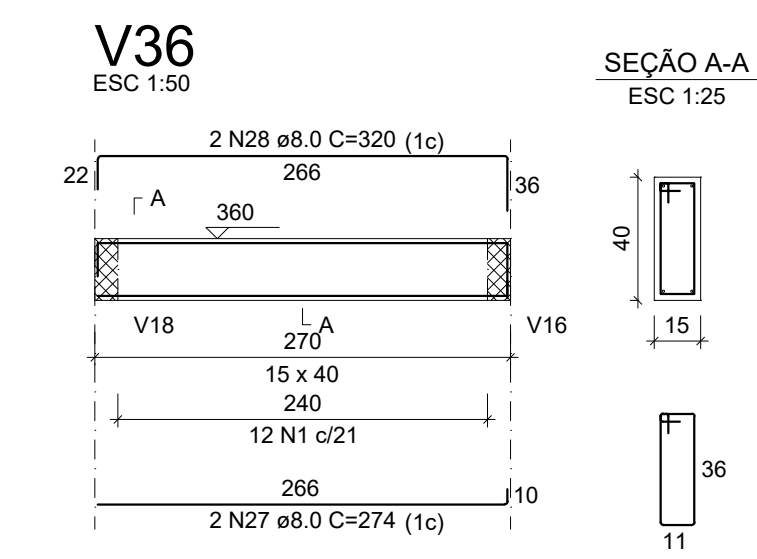
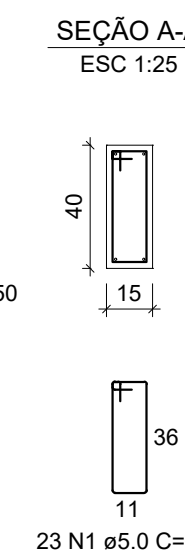
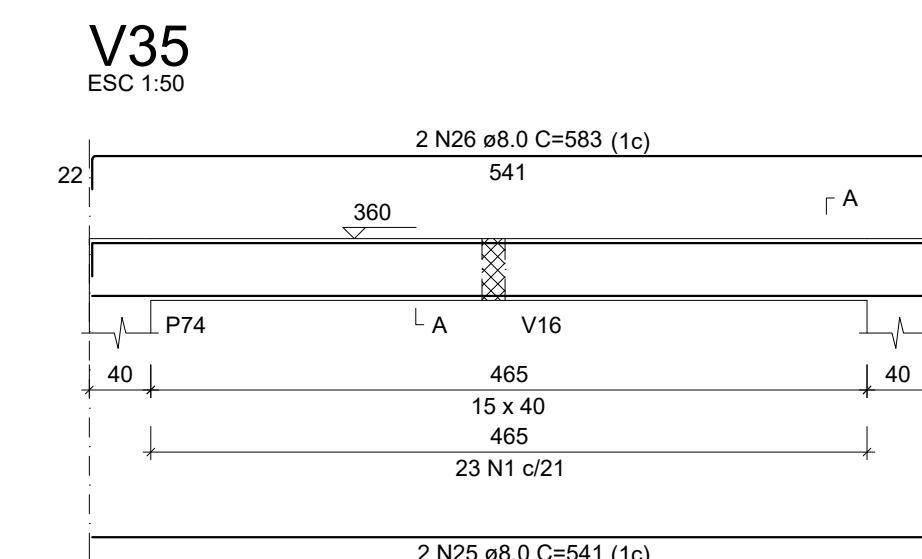
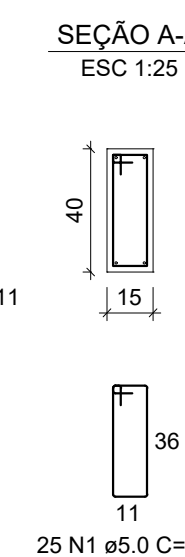
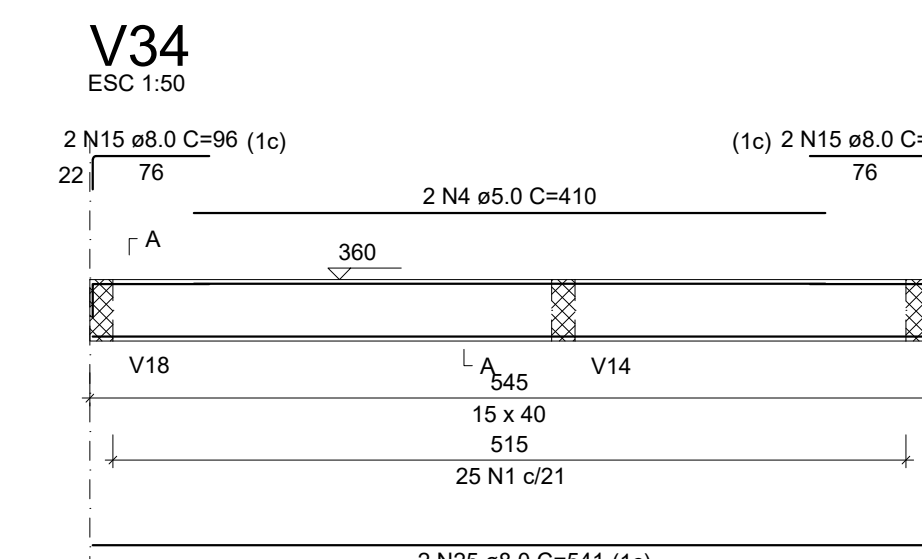
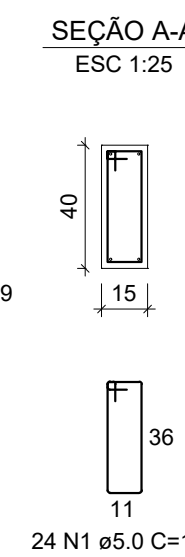
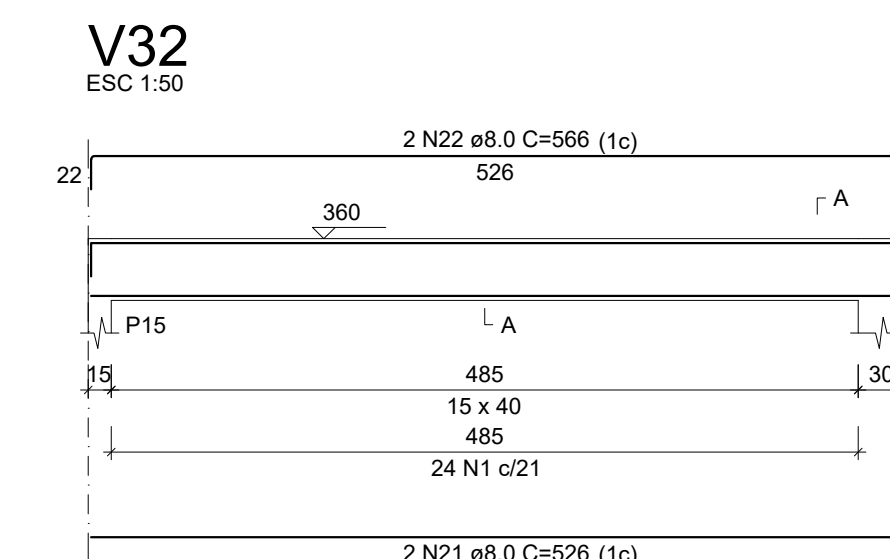
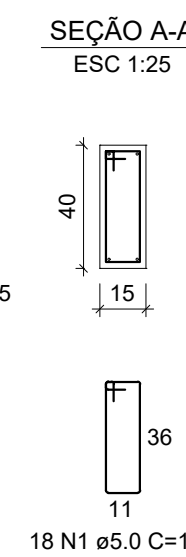
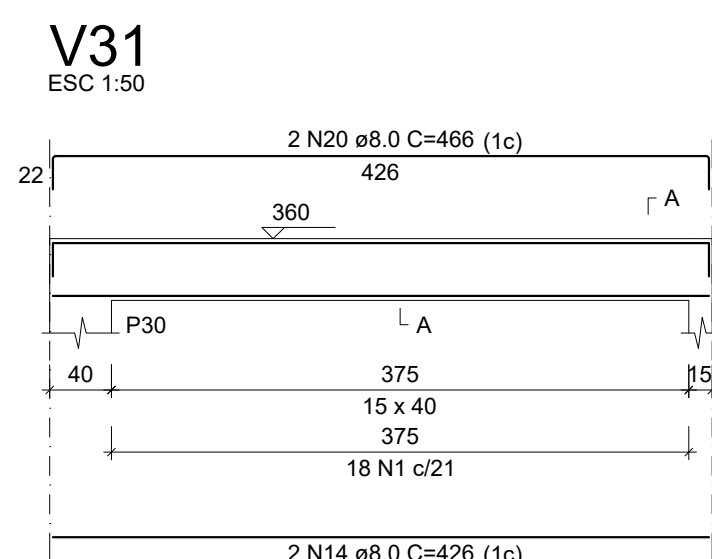
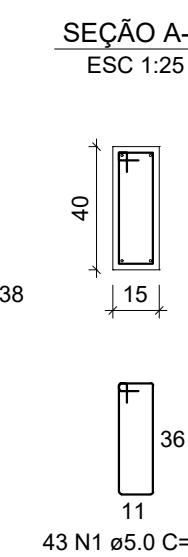
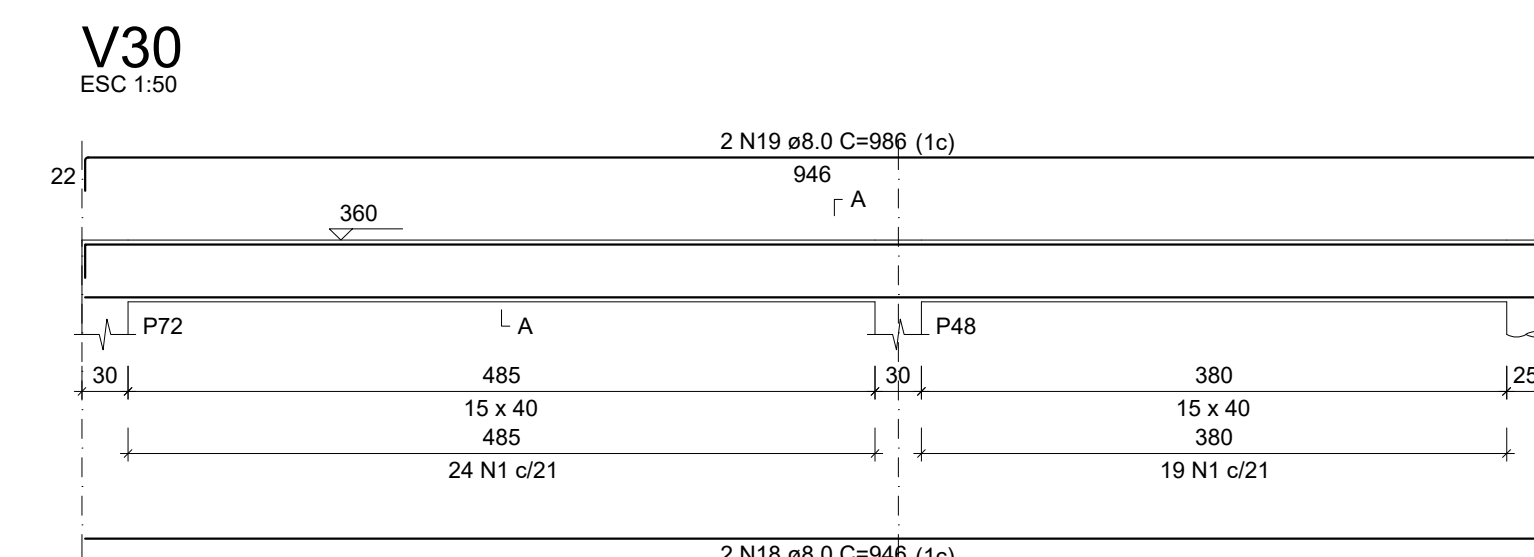
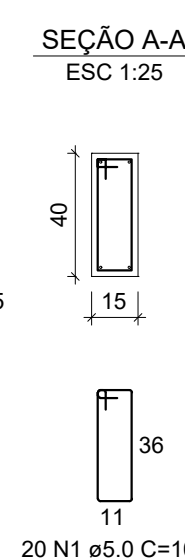
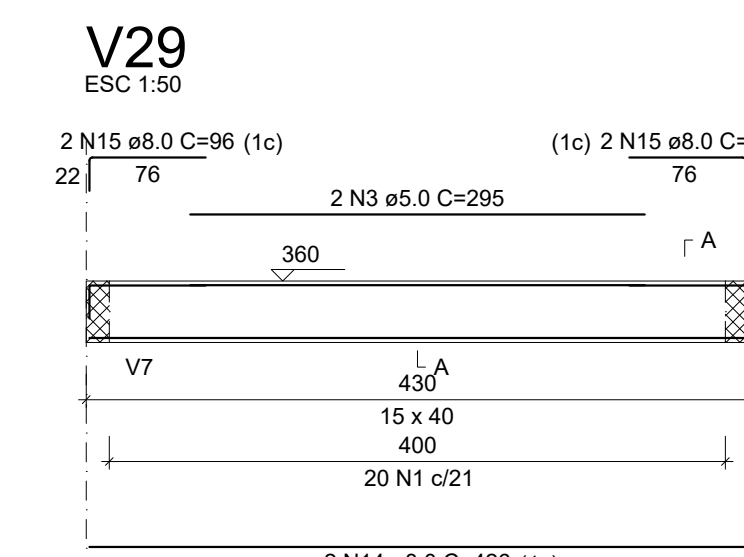
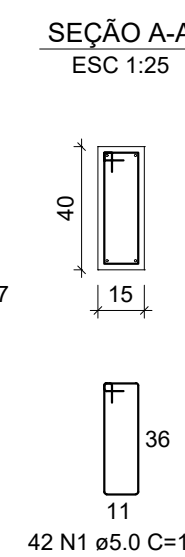
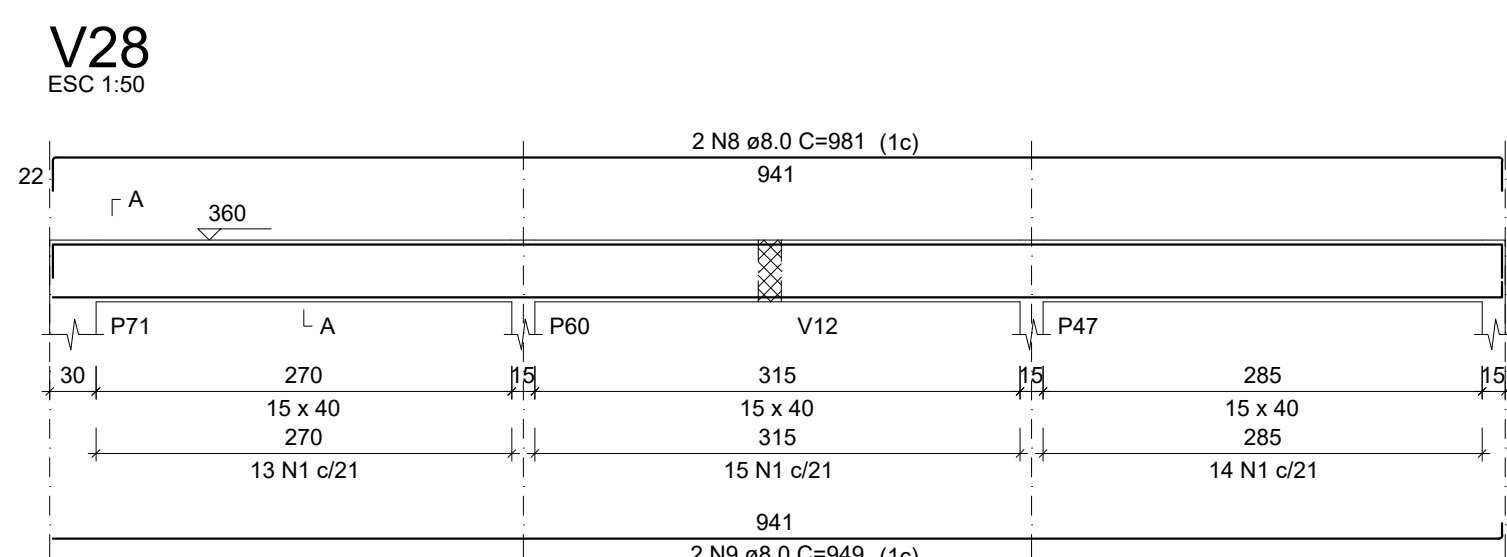
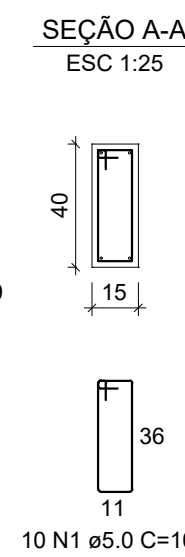
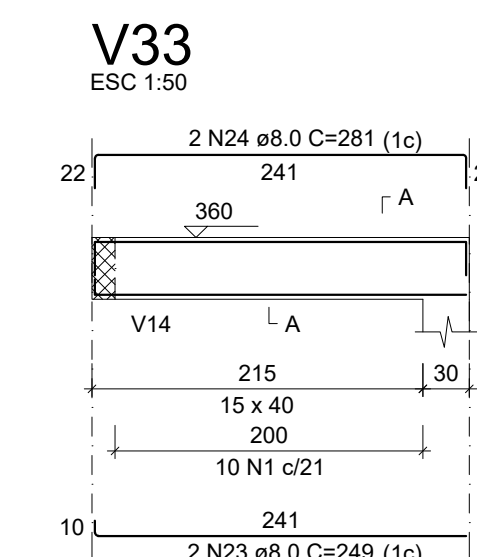
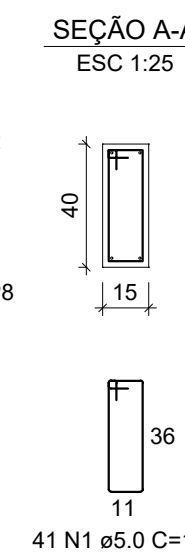
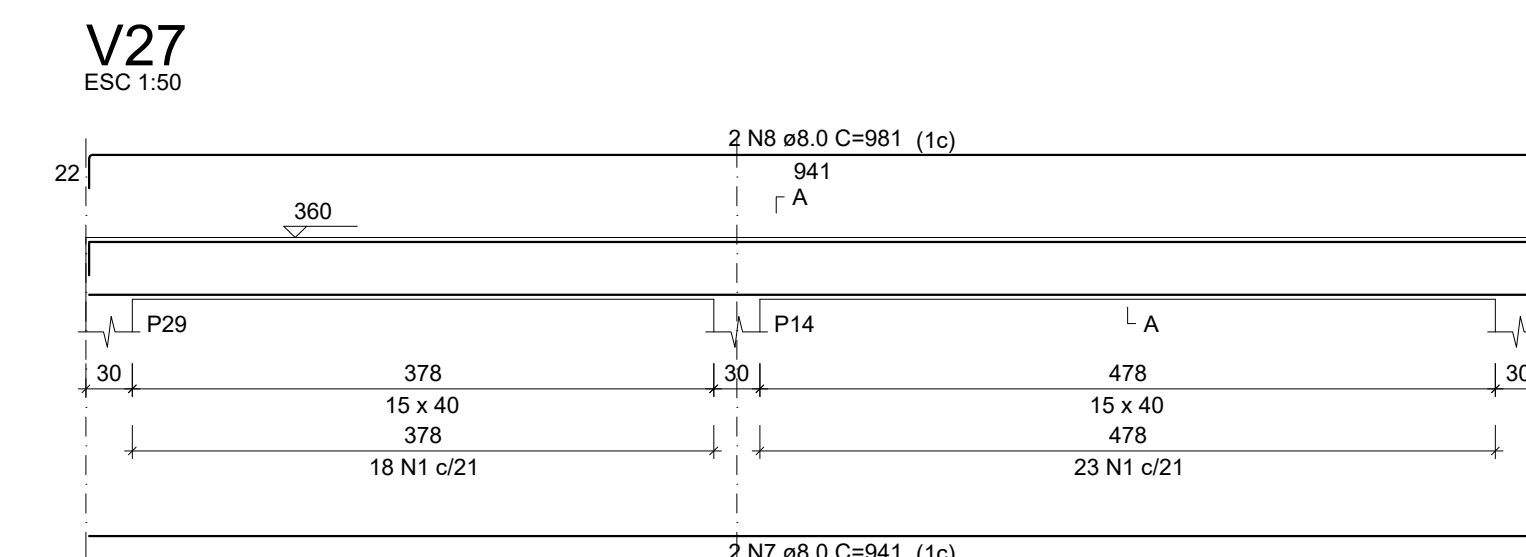
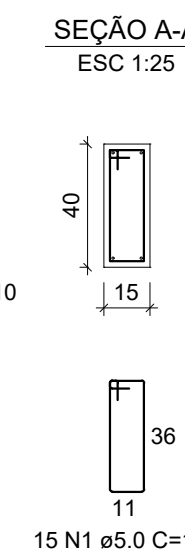
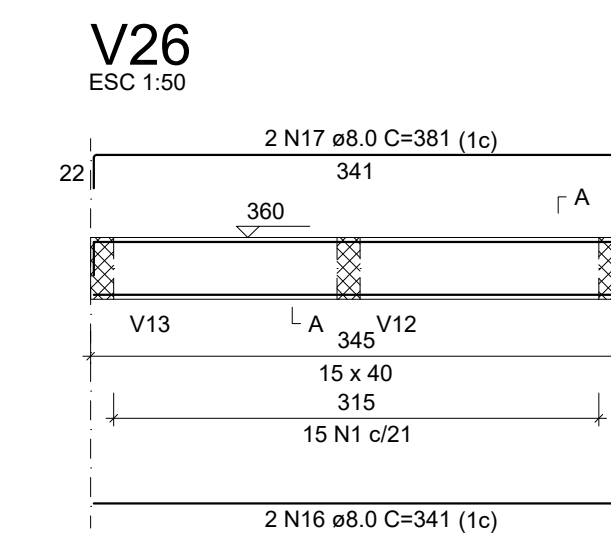
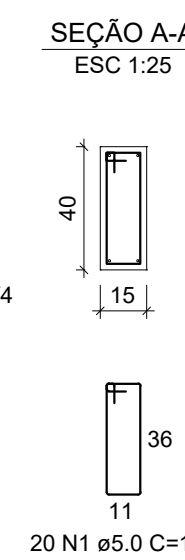
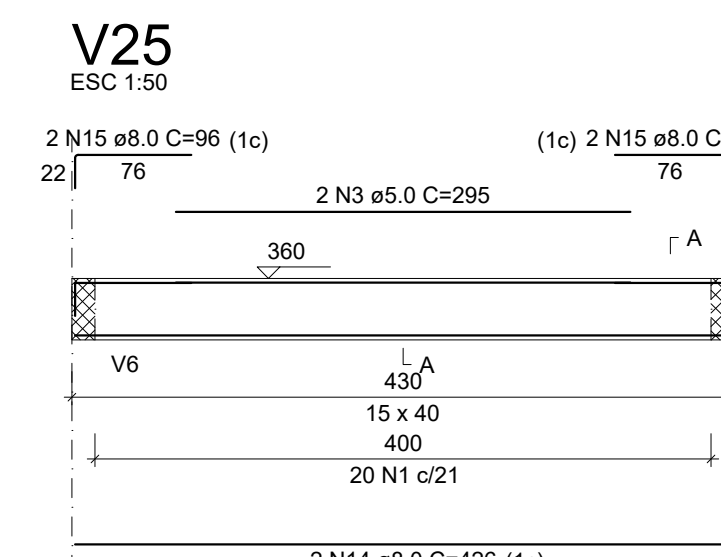
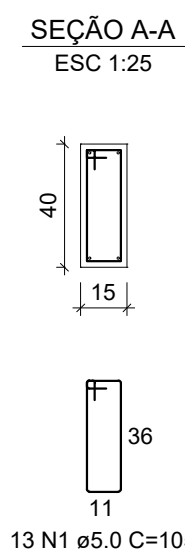
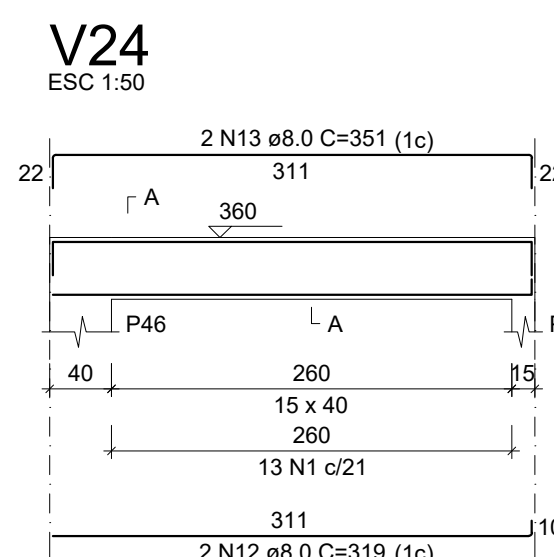


RELAÇÃO DO AÇO					
		V22	V23		
		V25	V26		
		V28	V29		
		V31	V32		
		V34	V35		
		V37			
		V40			
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5,0	546	105	57330
	2	5,0	2	355	710
	3	5,0	2	295	1180
	4	5,0	2	410	820
	5	5,0	2	221	442
CA50	6	5,0	2	490	980
	7	8,0	6	941	5646
	8	8,0	8	981	7848
	9	8,0	4	949	3796
	10	8,0	2	516	1032
	11	8,0	2	131	262
	12	8,0	2	319	638
	13	8,0	2	351	702
	14	8,0	5	426	2556
	15	8,0	14	96	1344
	16	8,0	2	341	682
	17	8,0	2	381	762
	18	8,0	2	646	1292
	19	8,0	2	988	1972
	20	8,0	2	466	932
	21	8,0	2	526	1052
	22	8,0	2	566	1132
	23	8,0	2	249	498
	24	8,0	2	281	562
	25	8,0	6	541	3246
	26	8,0	2	583	1166
	27	8,0	2	274	548
	28	8,0	2	320	640
	29	8,0	2	294	588
	30	8,0	2	581	1162
	31	8,0	2	796	1592
	32	8,0	2	828	1656
	33	8,0	2	956	1912
	34	8,0	2	983	526
	35	8,0	2	263	526

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	468.7	203.4
CA60	5.0	614.6	104.2
PESO TOTAL (kg)			
CA50	203.4		
CA60	104.2		

Volume de concreto (C-25) = 6.79 m³
Área de forma = 107.31 m²



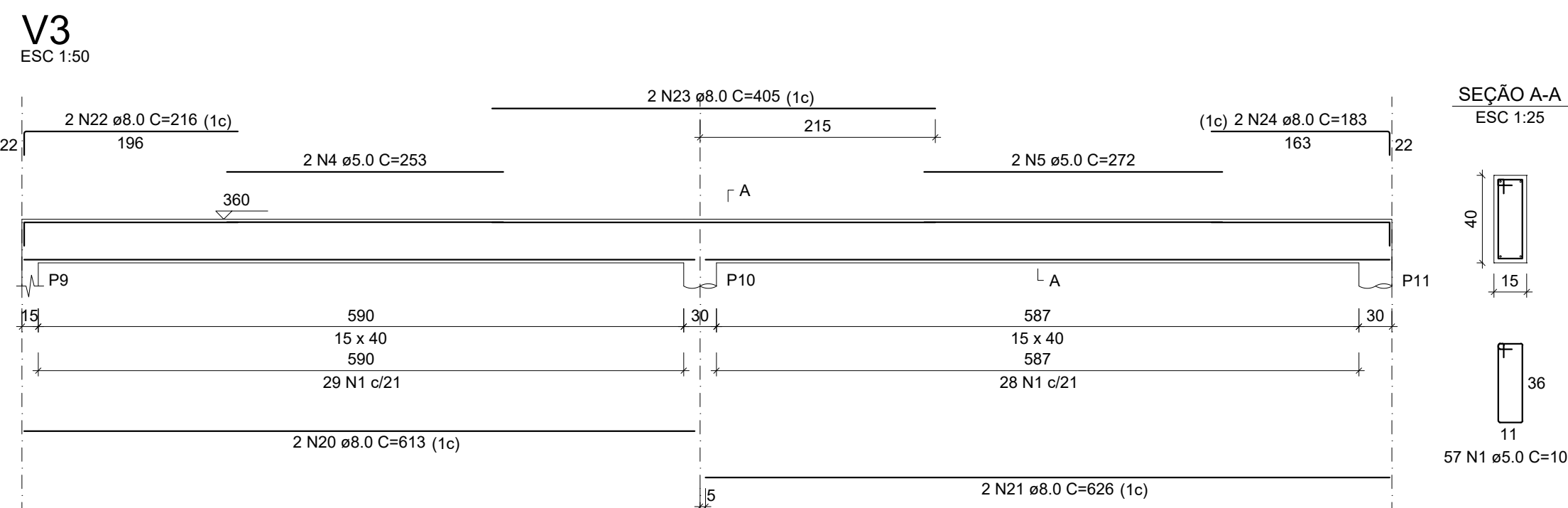
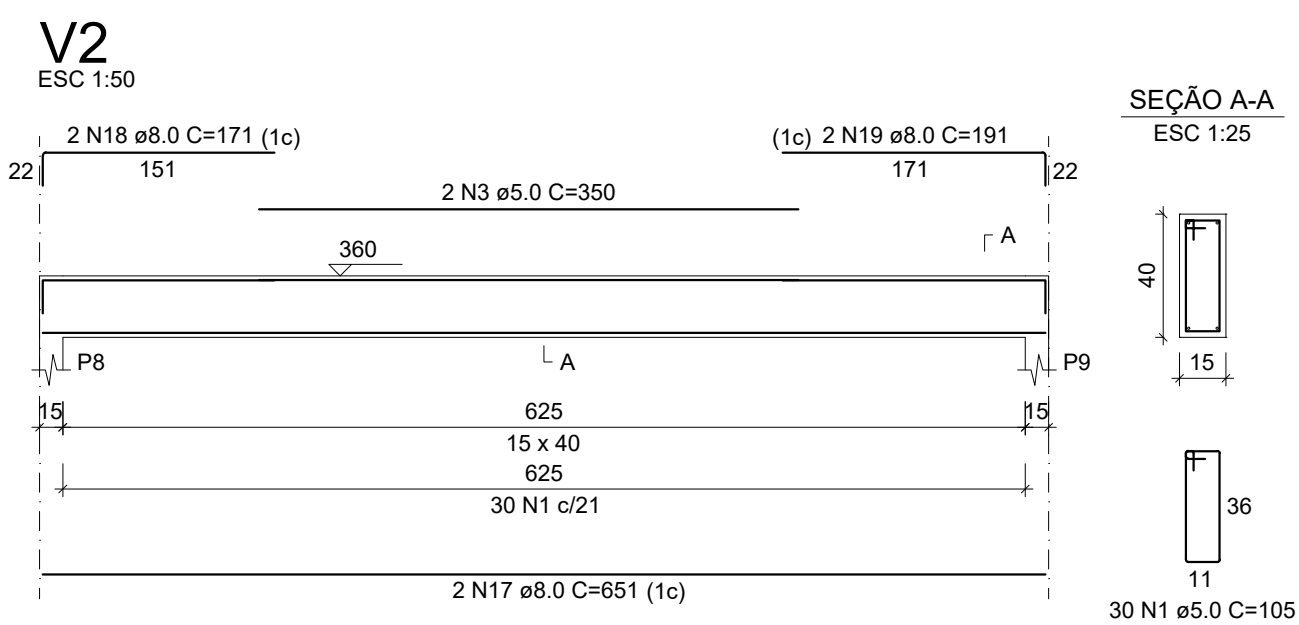
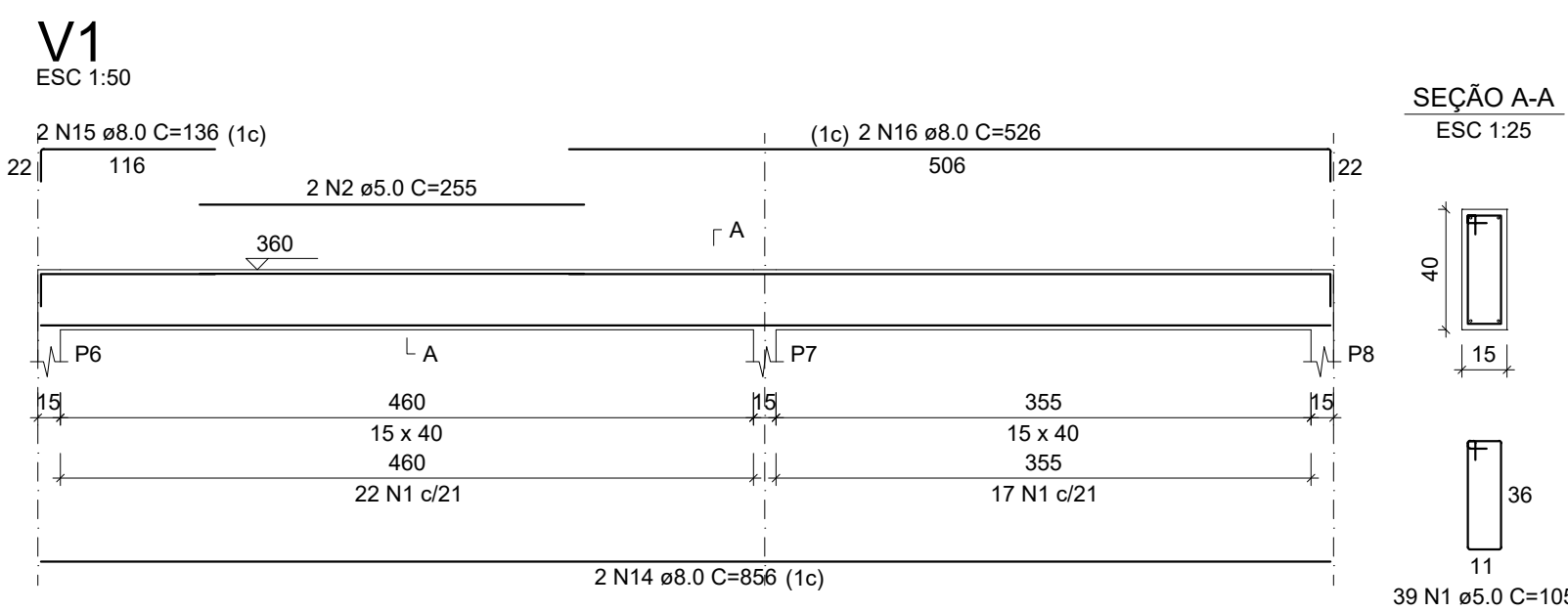
APROVAÇÕES			

REVISÕES:			
Nº:	Data:	Descrição:	Autor:

 PREFEITURA DE BARCARENA	 4 EDUCAÇÃO DE QUALIDADE	 REDE MUNICIPAIS DE EDUCAÇÃO	RESPONSÁVEL TÉCNICO PROJETO: JOSÉ VALBER GOMES DA SILVA ENGENHEIRO CIVIL PORTARIA nº 1055/2025-SEMAT
PREFEITURA MUNICIPAL DE BARCARENA SECRETARIA MUNICIPAL DE EDUCAÇÃO, CULTURA E DESENVOLVIMENTO SOCIAL SEMED			

ANO: 2026	TIPO: EST Estrutural	FOLHA: 12/13	MODIFICAÇÃO: A B
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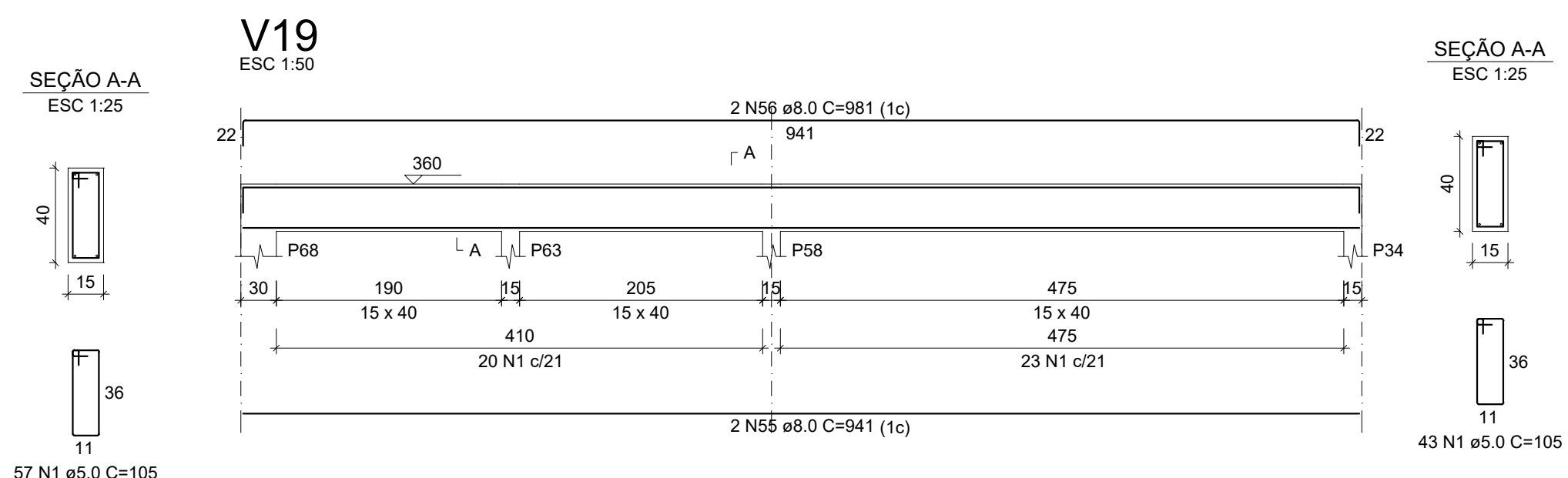
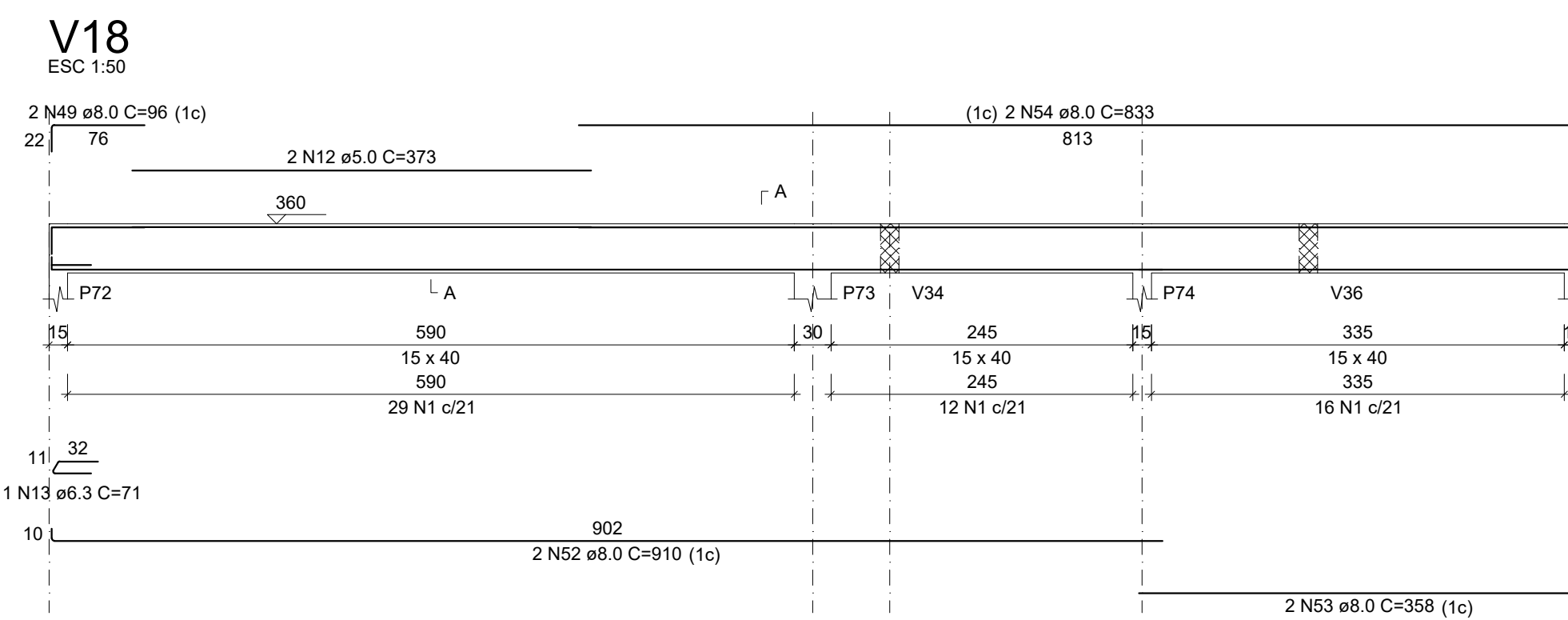
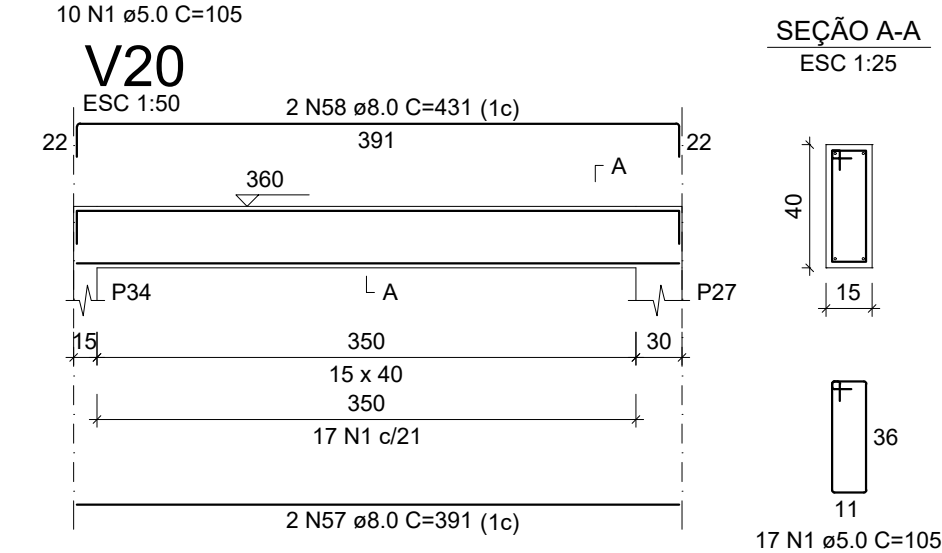
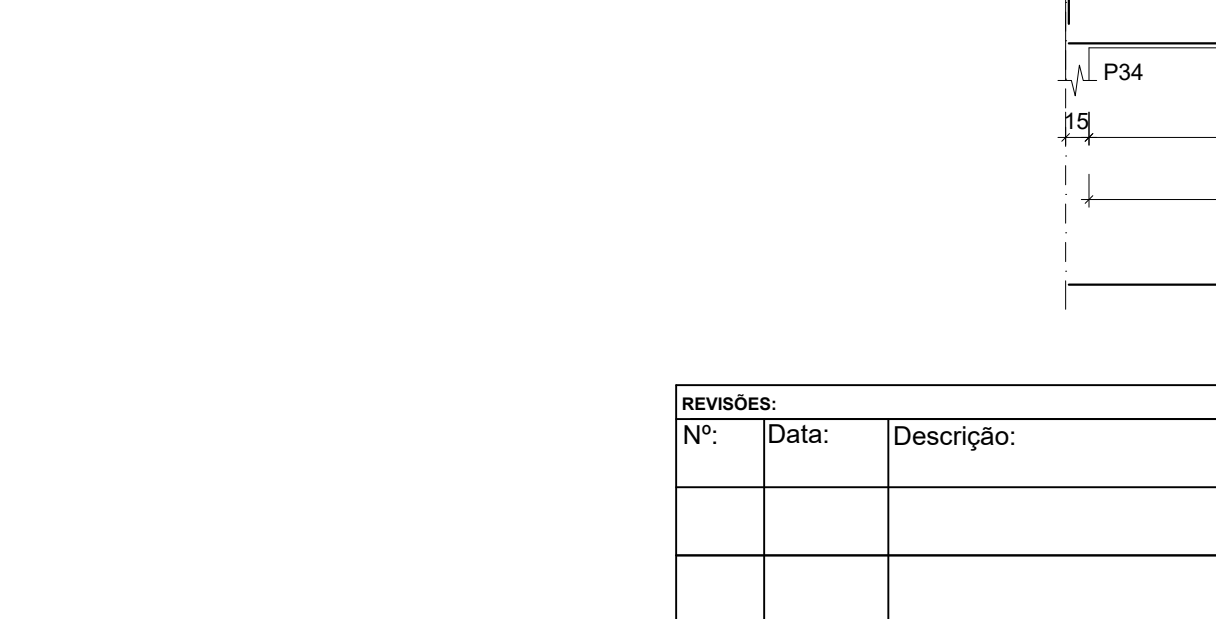
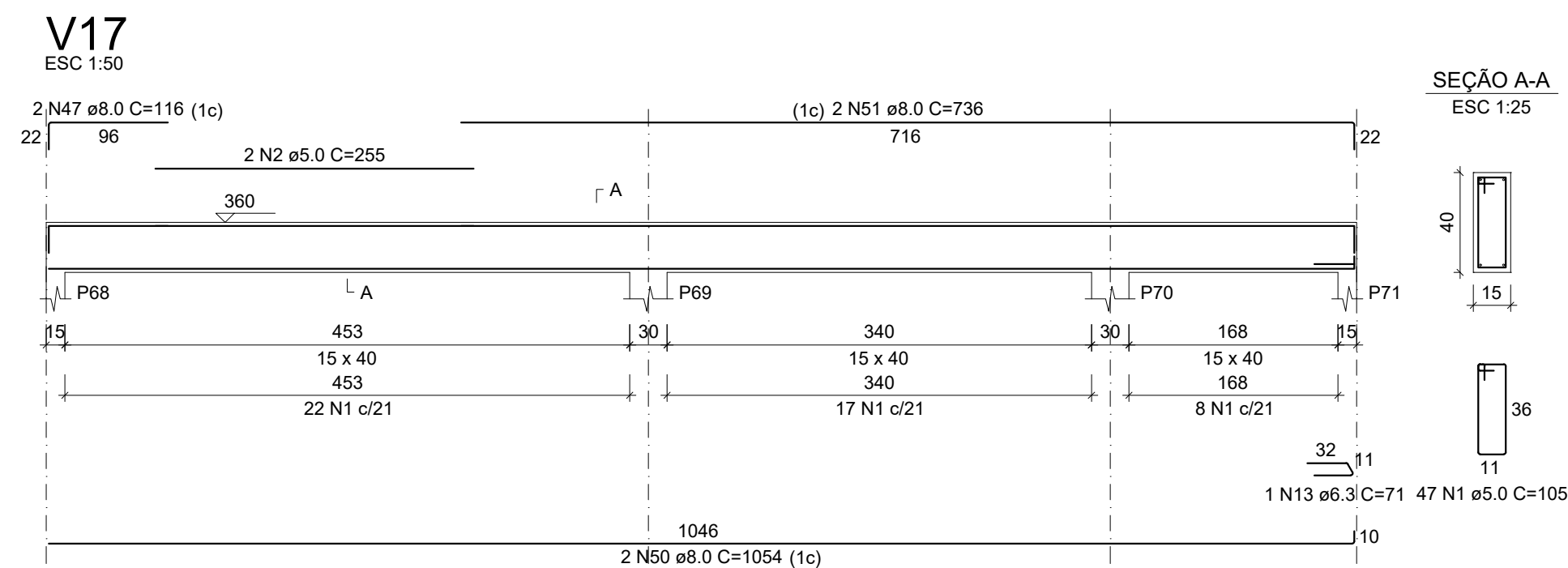
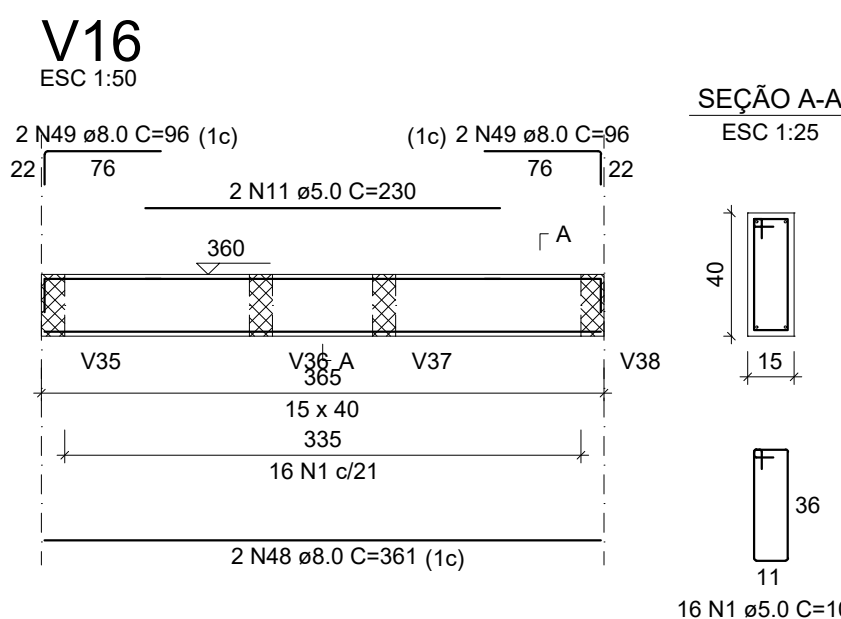
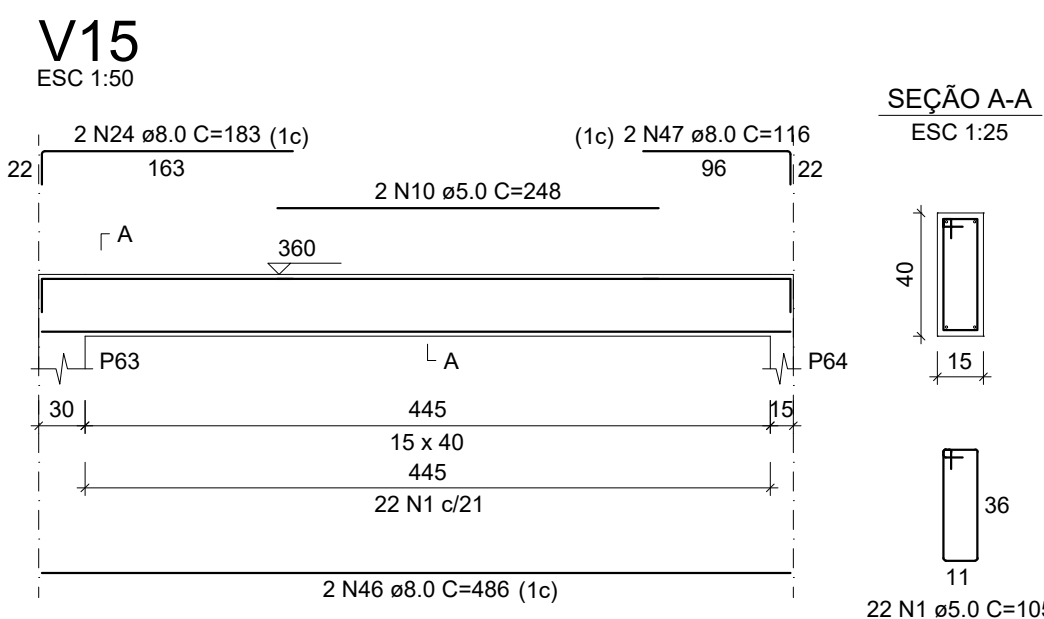
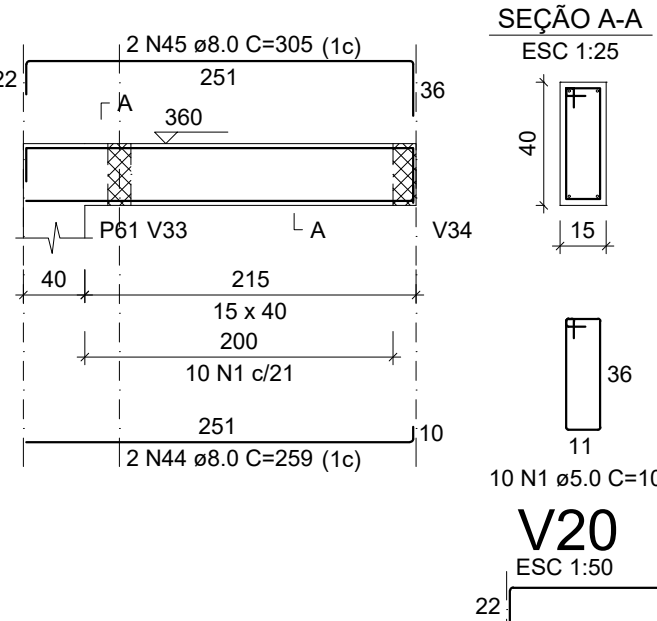
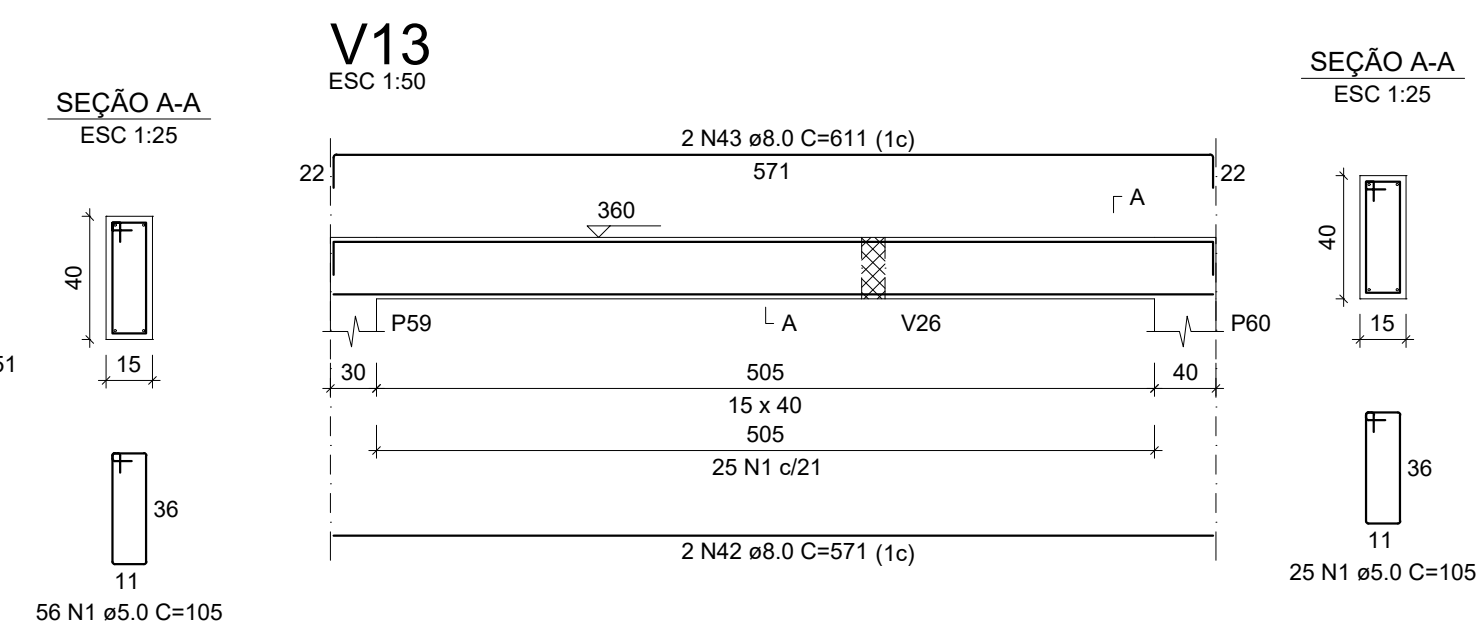
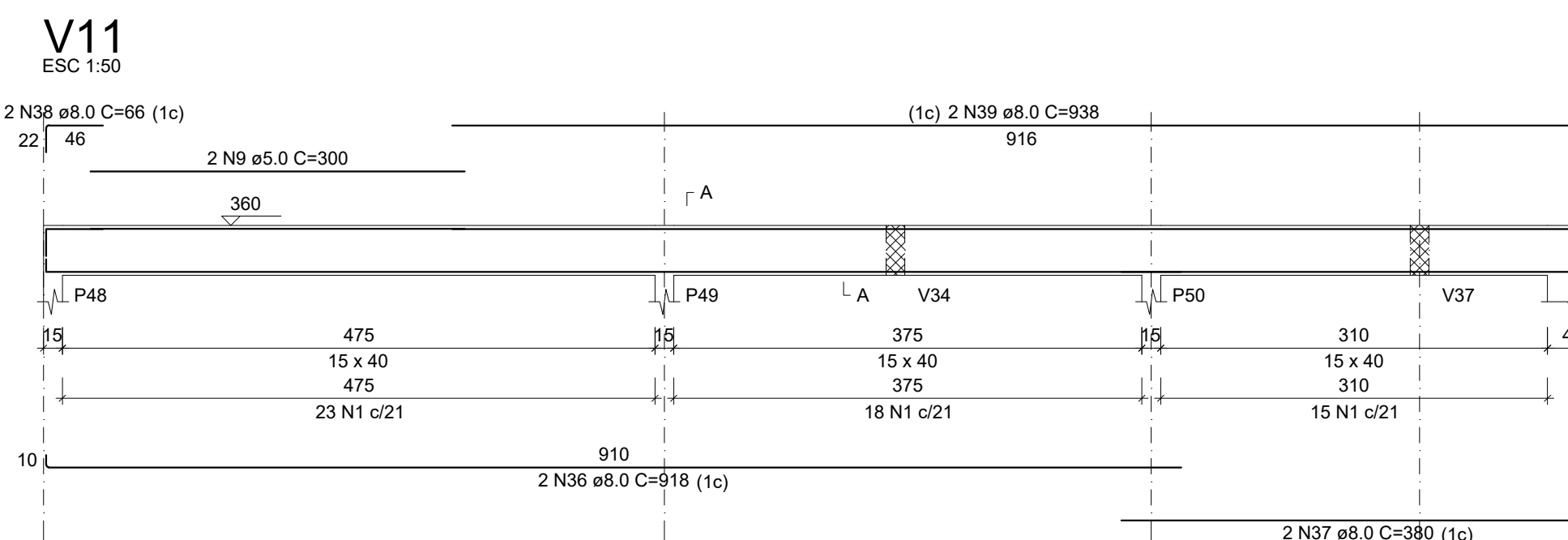
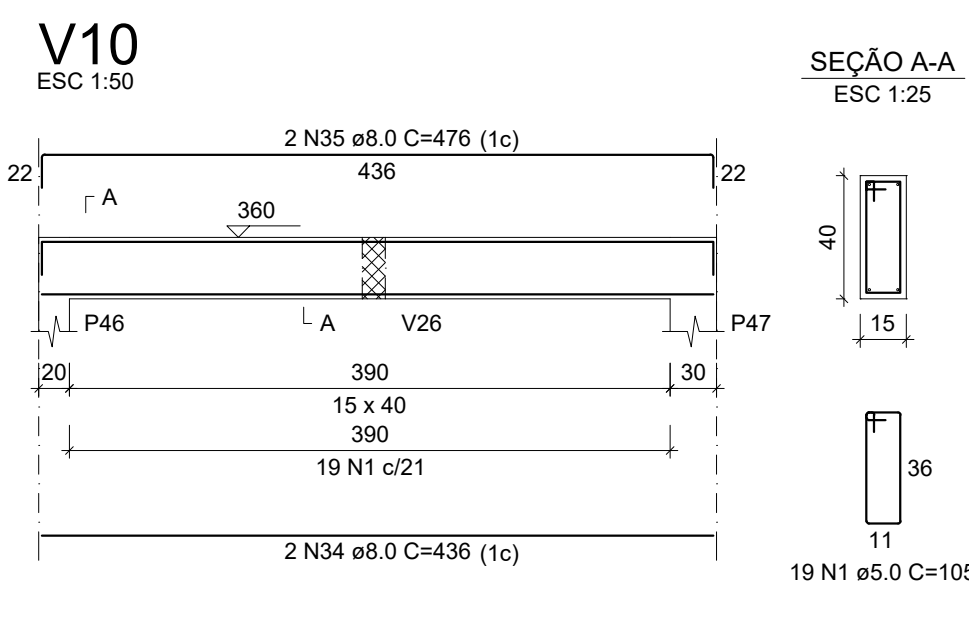
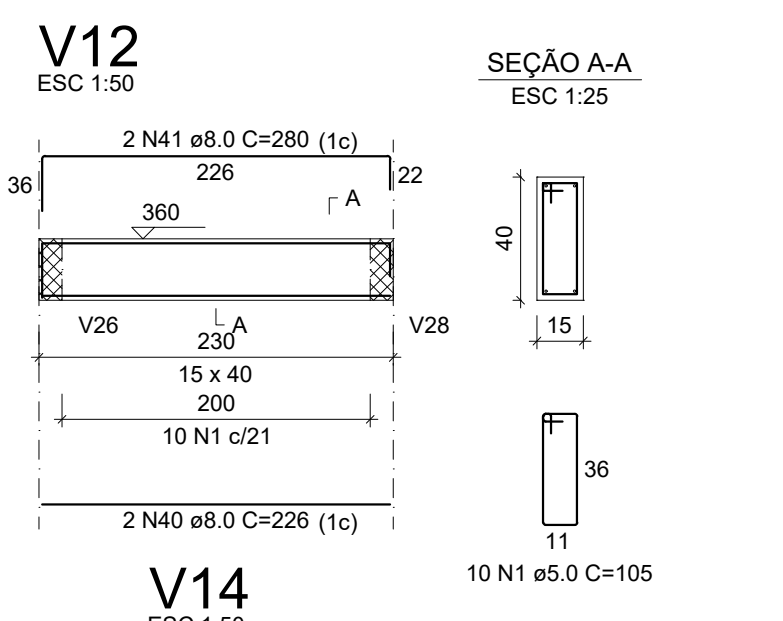
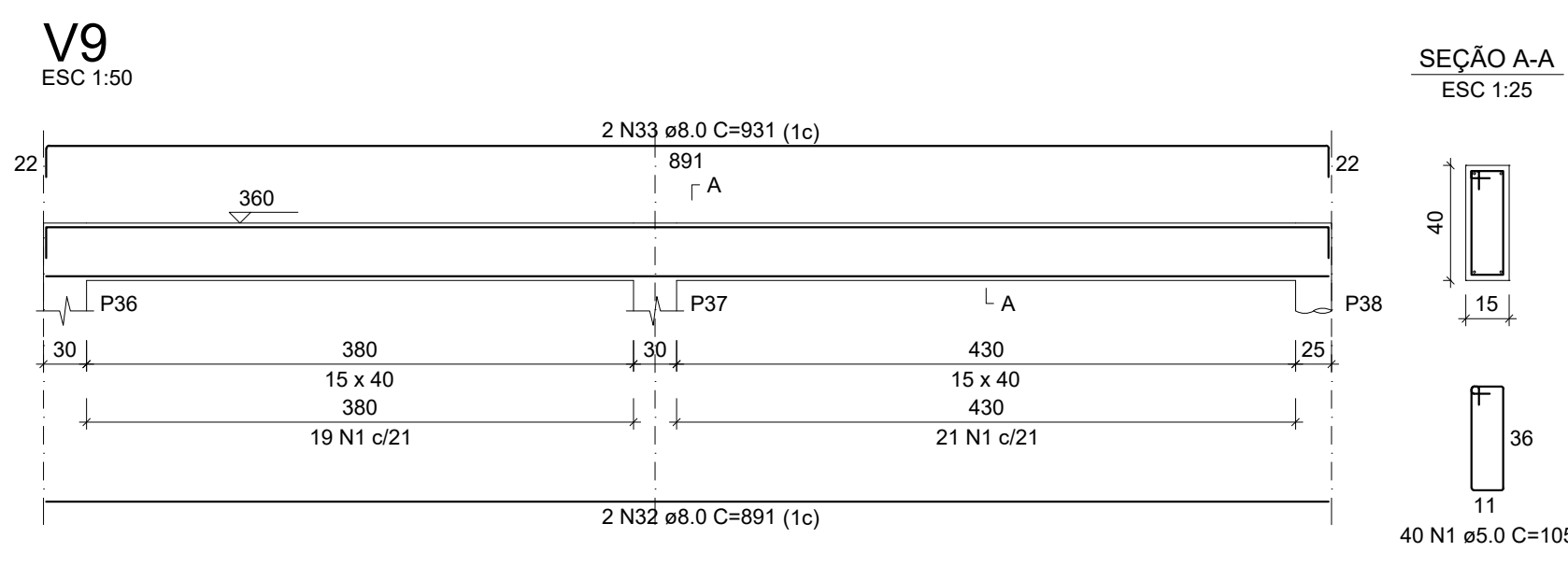
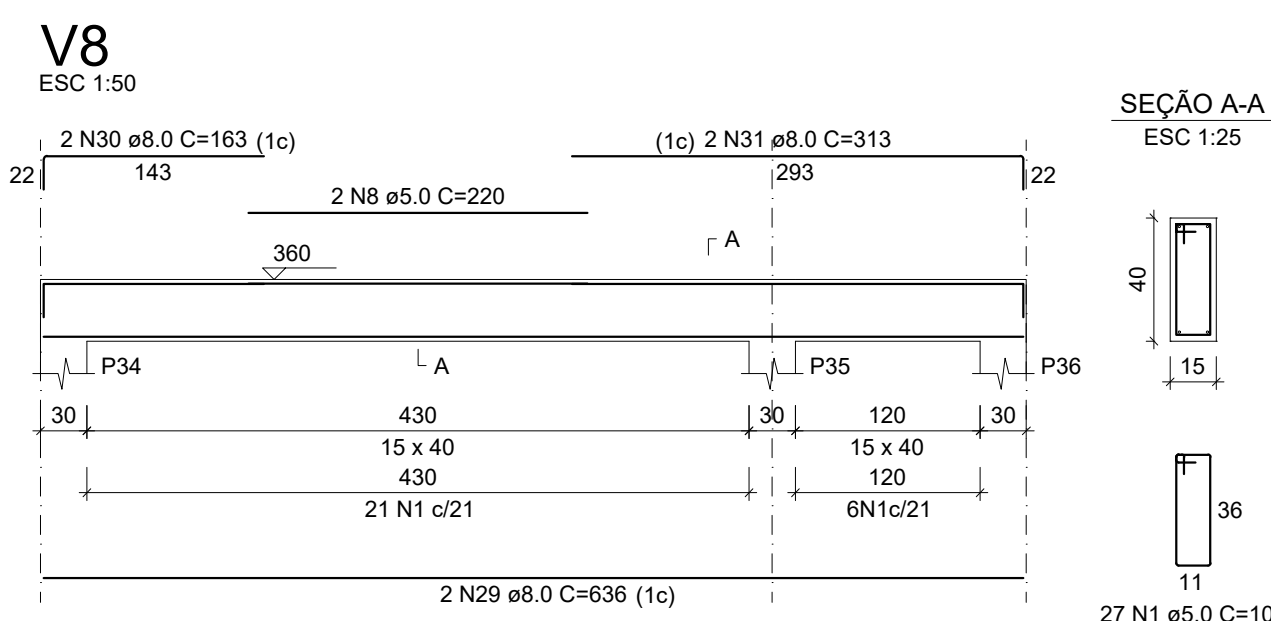
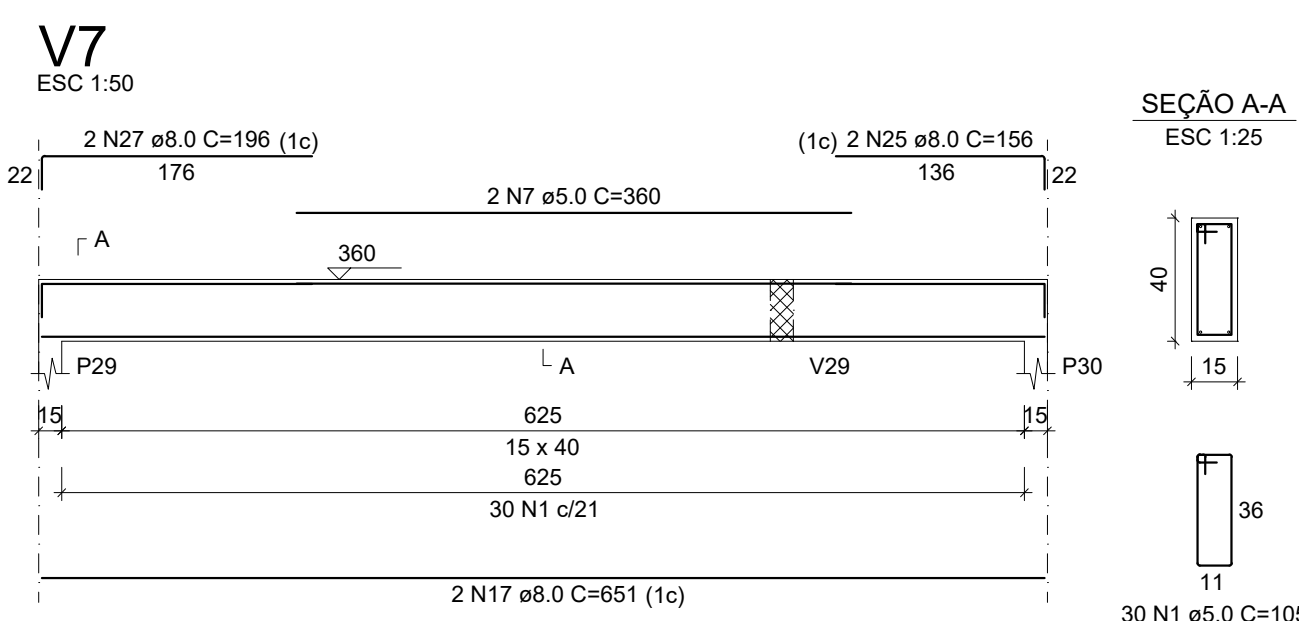
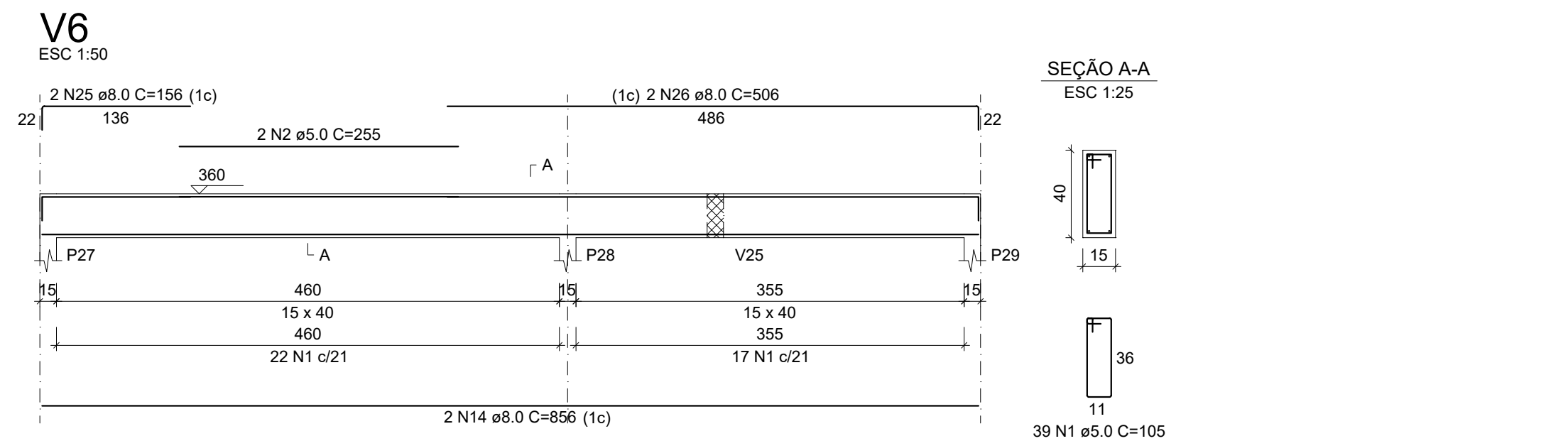
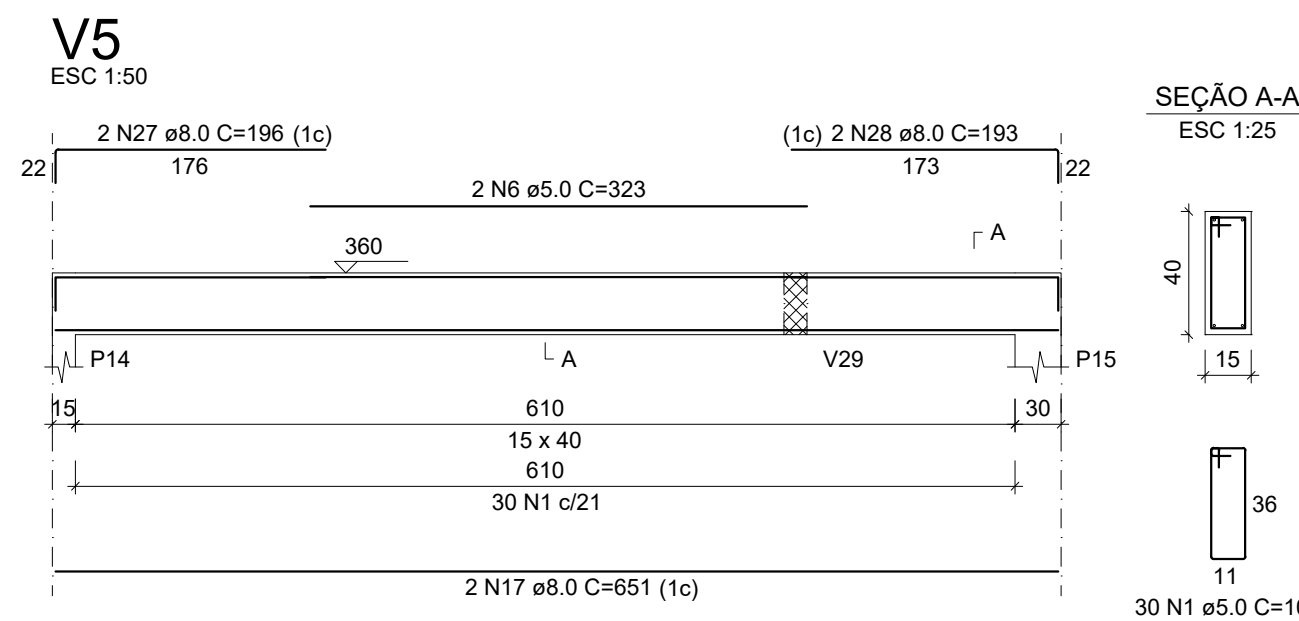
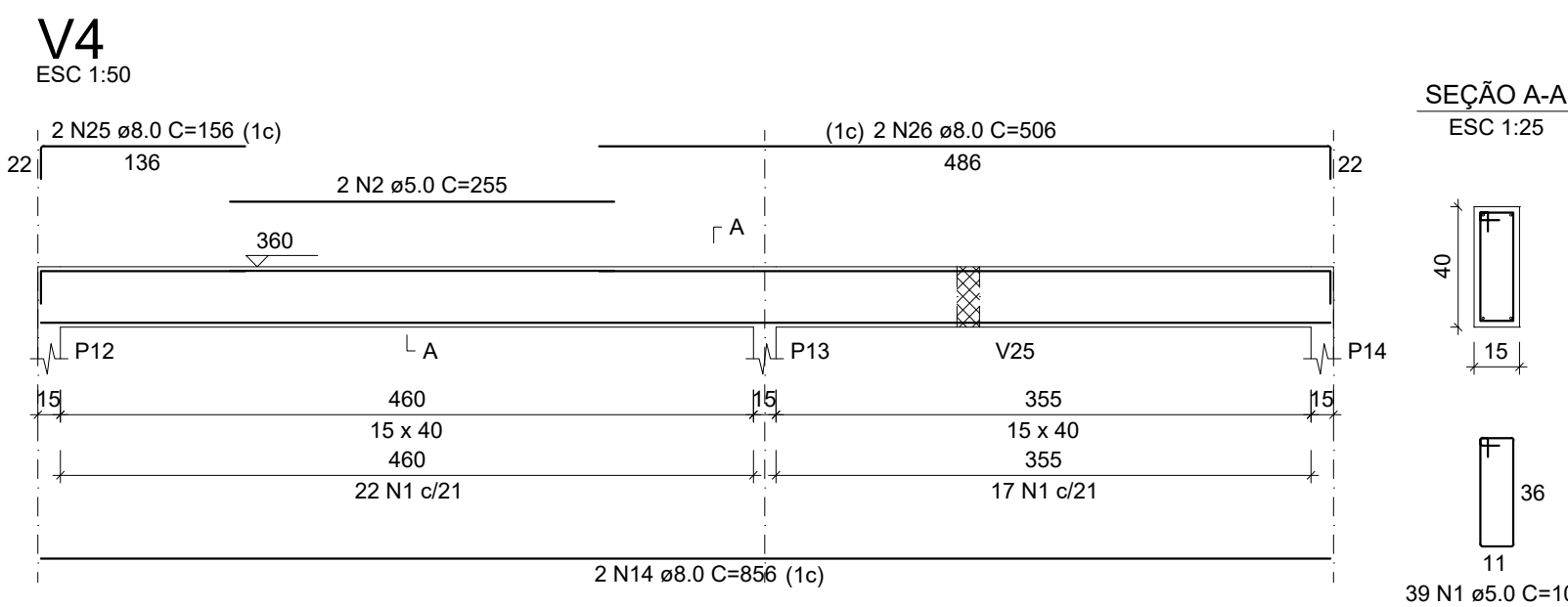
CLIENTE: PREFEITURA DE BARCARENA - SEMED	LOCAL: AV. BEIRA MAR, VILA ITUPANEMA, BARCARENA/PA	C
OBRA: PROJETO PARA CONSTRUÇÃO DA NOVA EMEI CHAPEUZINHO VERMELHO	ÁREAS: TERRENO: 2.750,22m² CONSTRUIDA: 1.206,05m² URBANIZADA: 551,13m²	D E DIM: METRO
DESCRIÇÃO DA PRANCHA: VIGAS NÍVEL 360		
DESENHO		DATA: 13/07/2026
ENG. CIVIL JOSÉ VALBER GOMES DA SILVA		ESCALA: INDICADA



RELAÇÃO DO AÇO					
V1	V2	V3			
V4	V5	V6			
V7	V8	V9			
V10	V11	V12			
V13	V14	V15			
V16	V17	V18			
V19	V20				
AÇO	N	DIAO (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5,0	653	105	68565
	2	5,0	8	255	2040
	3	5,0	2	700	700
	4	5,0	2	253	506
	5	5,0	2	272	544
	6	5,0	2	323	646
	7	5,0	2	300	720
	8	5,0	2	220	440
	9	5,0	2	300	600
	10	5,0	2	248	496
CA50	11	5,0	2	230	460
	12	5,0	2	370	740
	13	6,3	2	71	142
	14	8,0	6	896	5376
	15	8,0	2	136	272
	16	8,0	2	526	1052
	17	8,0	6	651	3906
	18	8,0	2	171	342
	19	8,0	2	191	382
	20	8,0	2	613	1226
	21	8,0	2	626	1252
	22	8,0	2	216	432
	23	8,0	2	405	810
	24	8,0	4	183	732
	25	8,0	4	156	936
	26	8,0	4	506	2024
	27	8,0	4	196	784
	28	8,0	2	193	386
	29	8,0	2	636	1272
	30	8,0	2	183	366
	31	8,0	2	313	626
	32	8,0	2	891	1782
	33	8,0	2	931	1862
	34	8,0	2	876	1752
	35	8,0	2	918	1836
	36	8,0	2	968	1936
	37	8,0	2	880	1760
	39	8,0	2	938	1876
	40	8,0	2	226	452
	41	8,0	2	298	596
	42	8,0	2	571	1142
	43	8,0	2	611	1222
	44	8,0	2	259	518
	45	8,0	2	385	770
	46	8,0	2	406	812
	47	8,0	4	16	64
	48	8,0	2	361	722
	49	8,0	6	96	576
	50	8,0	2	380	760
	51	8,0	2	736	1472
	52	8,0	2	910	1820
	53	8,0	2	358	716
	54	8,0	2	1884	3768
	55	8,0	2	941	1882
	56	8,0	2	981	1962
	57	8,0	2	101	202
	58	8,0	2	931	1862

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	1.4	0.4
	8.0	524.8	227.8
CA60	5.0	764.6	129.6

Volume de concreto (C-25) = 8.11 m³
Área de forma = 128.47 m²



Revisões:			
Nº:	Data:	Descrição:	Autor:

 PREFEITURA DE BARCARENA	4 EDUCAÇÃO DE QUALIDADE 	REDE ODS BRASIL 	RESPONSÁVEL TÉCNICO PROJETO: JOSÉ VALBER GOMES DA SILVA ENGENHEIRO CIVIL PORTARIA nº 1055/2025-SEMAT
PREFEITURA MUNICIPAL DE BARCARENA SECRETARIA MUNICIPAL DE EDUCAÇÃO, CULTURA E DESENVOLVIMENTO SOCIAL SEMED			
ANO: 2026	TIPO: EST Estrutural	FOLHA: 13/13	MODIFICAÇÕES: A B
CLIENTE: PREFEITURA DE BARCARENA - SEMED	LOCAL: AV. BEIRA MAR, VILA ITUPANEMA, BARCARENA/PA	C	
OBRA: PROJETO PARA CONSTRUÇÃO DA NOVA EMEI CHAPEUZINHO VERMELHO		ÁREAS: TERRENO: 2.750,22m² CONSTRUÍDA: 1.206,05m² URBANIZADA: 551,13m²	D E
DESCRIÇÃO DA PRANCHA: VIGAS NÍVEL 360		DIM: METRO	
DESENHO ENG. CIVIL JOSÉ VALBER GOMES DA SILVA	DATA: 13/07/2026		ESCALA: INDICADA