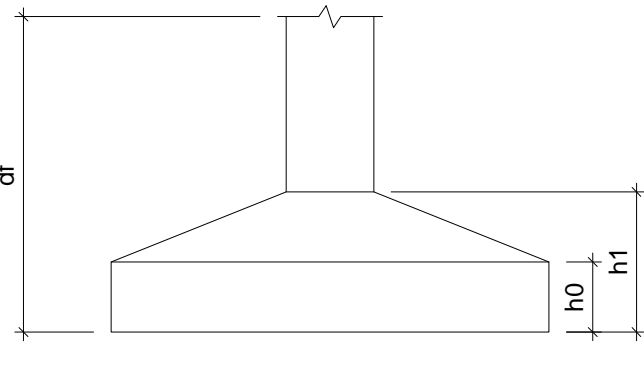


9 Planta de locação
escala: 1/75

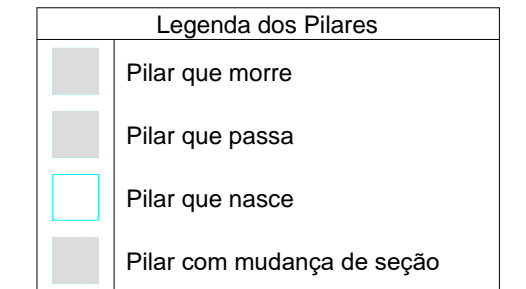
Pilar		Lado B		Lado H		Fundação		
Nome	Seção (cm)	X (cm)	Y (cm)	Lado B (cm)	Lado H (cm)	h0 / ha (cm)	h1 / hb (cm)	df (cm)
P1	15x35	193.50	3746.30	65	80	20	20	150
P2	15x35	748.50	3756.30	65	80	20	20	150
P3	20x20	986.00	3753.80	75	75	20	20	150
P4	20x20	1408.50	3753.80	85	85	15	25	150
P5	20x20	1773.50	3753.80	85	85	15	25	150
P6	20x20	2196.00	3753.80	75	75	20	20	150
P7	15x35	2433.50	3756.30	85	105	15	25	150
P8	17x35	2987.50	3746.30	65	80	20	20	150
P9	17x35	192.50	3591.35	100	120	15	30	150
P10	17x35	757.50	3591.35	100	120	15	30	150
P11	17x35	2554.70	3446.30	85	105	15	25	150
P12	17x35	2978.50	3446.29	85	105	15	25	150
P13	17x35	192.50	3146.30	100	120	15	30	150
P14	17x35	757.50	3146.30	100	120	15	30	150
P15	20x20	981.00	3133.80	65	65	20	20	150
P16	20x20	1408.50	3133.80	65	65	20	20	150
P17	20x20	1773.50	3133.80	65	65	20	20	150
P18	20x20	2201.00	3133.80	65	65	20	20	150
P19	15x35	2423.51	3126.30	90	110	15	25	150
P20	17x35	2989.50	3126.30	75	90	20	20	150
P21	15x35	193.50	2742.55	90	110	15	25	150
P22	15x35	758.50	2742.55	100	120	15	30	150
P23	20x20	981.00	2742.55	65	65	20	20	150
P24	20x20	1408.50	2742.55	65	65	20	20	150
P25	15x35	2423.50	2742.55	100	120	15	30	150
P26	17x35	2989.50	2742.55	75	90	20	20	150
P27	17x35	192.50	2321.33	95	110	15	30	150
P28	17x35	757.50	2321.33	100	120	15	30	150
P29	20x20	981.00	2321.33	65	65	20	20	150
P30	20x20	1408.50	2321.33	65	65	20	20	150
P31	17x35	2423.50	2321.33	100	120	15	30	150
P32	17x35	2989.50	2321.33	85	105	15	25	150
P33	15x35	193.50	1900.05	85	105	15	25	150
P34	15x35	758.50	1900.05	100	120	15	30	150
P35	20x20	981.00	1900.05	65	65	20	20	150
P36	20x20	1408.50	1900.05	65	65	20	20	150
P37	17x35	2424.50	1900.05	90	110	15	25	150
P38	15x35	2989.50	1900.05	85	105	15	25	150
P39	20x20	981.00	1603.80	65	65	20	20	150
P40	20x20	1408.50	1603.80	65	65	20	20	150
P41	20x20	1773.50	1603.80	65	65	20	20	150
P42	20x20	2201.00	1603.80	65	65	20	20	150
P43	17x35	192.50	1516.30	85	105	15	25	150
P44	17x35	757.50	1516.30	90	110	15	25	150
P45	17x35	2424.50	1516.30	85	105	15	25	150
P46	17x35	2989.50	1516.30	85	105	15	25	150
P47	15x35	758.97	1371.30	100	120	15	30	150
P48	17x35	1412.50	1371.30	90	110	15	25	150
P49	17x35	1769.50	1371.30	90	110	15	25	150
P50	15x35	2423.50	1371.30	90	110	15	25	150
P51	17x35	192.50	1106.30	95	110	15	30	150
P52	15x35	1413.50	1108.80	90	110	15	25	150
P53	15x35	1768.50	1108.80	90	110	15	25	150
P54	15x35	2423.50	1098.80	100	120	15	30	150
P55	15x35	2989.50	1098.80	90	110	15	25	150
P56	15x35	758.50	956.30	85	105	15	25	150
P57	15x35	893.50	956.30	100	120	15	30	150
P58	17x35	194.50	701.30	85	105	15	25	150
P59	15x35	748.50	691.30	100	120	15	30	150
P60	15x35	1413.50	701.30	100	120	15	30	150
P61	15x35	1768.50	701.30	100	120	15	30	150
P62	15x35	2433.50	691.30	100	120	15	30	150
P63	17x35	2987.50	701.30	85	105	15	25	150
P64	15x30	1426.00	171.30	75	90	20	20	150
P65	15x30	1796.00	171.30	75	90	20	20	150

Localção no eixo X		Localção no eixo Y	
Coordenadas (cm)	Nome	Coordenadas (cm)	Nome
192.50	P9, P13, P27, P43, P51	3756.30	P2, P7
193.50	P1, P21, P33	3753.80	P3, P4, P5, P6
194.50	P58	3746.30	P1, P8
748.50	P2, P59	3591.35	P9, P10
757.50	P10, P14, P28, P44	3446.30	P11
758.50	P22, P34, P56	3446.29	P12
758.97	P47	3146.30	P13, P14
893.50	P57	3136.80	P15, P16, P17, P18
981.00	P15, P23, P29, P35, P39	3126.30	P19, P20
986.00	P3	2742.55	P21, P22, P33, P24, P25, P26
1408.50	P4, P16, P40	2321.33	P28, P29, P30, P31, P32
1412.50	P48	2321.33	P27
1413.50	P52, P60	1900.05	P33, P34, P35, P36, P37, P38
1426.00	P64	1603.80	P39, P40, P41, P42
1756.00	P65	1516.30	P43, P44, P45, P46
1768.50	P53, P61	1371.30	P47, P48, P49, P50
1769.50	P49	1108.80	P52, P53
1773.50	P5, P17, P41	1106.30	P51
1796.00	P6	1098.80	P54, P55
2201.00	P18, P24, P30, P36, P42	956.30	P56, P57
2423.50	P25, P50, P54	701.30	P58, P59, P60, P61, P63
2423.51	P19	691.30	P59, P62
2424.50	P31, P37, P45	171.30	P64, P65
2433.50	P7, P62		
2554.70	P11		
2978.50	P12		
2987.50	P8, P63		
2989.50	P26, P38		

Vigas				Pilares			
Nome	Seção	Elevação (cm)	Nível (cm)	Nome	Seção	Elevação (cm)	Nível (cm)
V1	15x30	0	0	P1	15x35	0	0
V2	15x30	0	0	P2	15x35	0	0
V3	15x30	0	0	P3	20x20	0	0
V4	15x30	0	0	P4	20x20	0	0
V5	15x30	0	0	P5	20x20	0	0
V6	15x30	0	0	P6	20x20	0	0
V7	15x30	0	0	P7	15x35	0	0
V8	15x30	0	0	P8	17x35	0	0
V9	15x30	0	0	P9	17x35	0	0
V10	15x30	0	0	P10	17x35	0	0
V11	15x30	0	0	P11	17x35	0	0
V12	15x30	0	0	P12	17x35	0	0
V13	15x30	0	0	P13	17x35	0	0
V14	15x30	0	0	P14	17x35	0	0
V15	15x30	0	0	P15	20x20	0	0
V16	15x30	0	0	P16	20x20	0	0
V17	15x30	0	0	P17	20x20	0	0
V18	15x30	0	0	P18	20x20	0	0
V19	15x30	0	0	P19	15x35	0	0
V20	15x30	0	0	P20	17x35	0	0
V21	15x30	0	0	P21	15x35	0	0
V22	15x30	0	0	P22	15x35	0	0
V23	15x30	0	0	P23	20x20	0	0
V24	15x40	0	0	P24	20x20	0	0
V25	15x40	0	0	P25	15x35	0	0
V26	15x40	0	0	P26	15x35	0	0
V27	15x40	0	0	P27	17x35	0	0
V28	15x40	0	0	P28	17x35	0	0
V29	15x30	0	0	P29	20x20	0	0
V30	15x30	0	0	P30	20x20	0	0
V31	15x30	0	0	P31	17x35	0	0
V32	15x30	0	0	P32	17x35	0	0
V33	15x30	0	0	P33	15x35	0	0
V34	15x30	0	0	P34	15x35	0	0
V35	15x30	0	0	P35	20x20	0	0
V36	15x30	0	0	P36	20x20	0	0
V37	15x30	0	0	P37	17x35	0	0
V38	15x30	0	0	P38	15x35	0	0
V39	15x30	0	0	P39	20x20	0	0
V40	15x30	0	0	P40	20x20	0	0
V41	15x30	0	0	P41	20x20	0	0
V42	15x30	0	0	P42	20x20	0	0
V43	15x30	0	0	P43	17x35	0	0
V44	15x30	0	0	P44	17x35	0	0
V45	15x30	0	0	P45	17x35	0	0
V46	15x30	0	0	P46	17x35	0	0
V47	15x30	0	0	P47	15x35	0	0
V48	15x30	0	0	P48	17x35	0	0
V49	15x30	0	0	P49	17x35	0	0
V50	15x30	0	0	P50	15x35	0	0
V51	15x30	0	0	P51	17x35	0	0
V52	15x30	0	0	P52	15x35	0	0
V53	15x30	0	0	P53	15x35	0	0
V54	15x30	0	0	P54	15x35	0	0
V55	15x30	0	0	P55	17x35	0	0
V56	15x30	0	0	P56	15x35	0	0
V57	15x30	0	0	P57	15x35	0	0
V58	15x30	0	0	P58	17x35	0	0
V59	15x30	0	0	P59	15x35	0	0
V60	15x30	0	0	P60	15x35	0	0
				P61	15x35	0	0
				P62	15x35	0	0
				P63	17x35	0	0
				P64	15x30	0	0
				P65	15x30	0	0

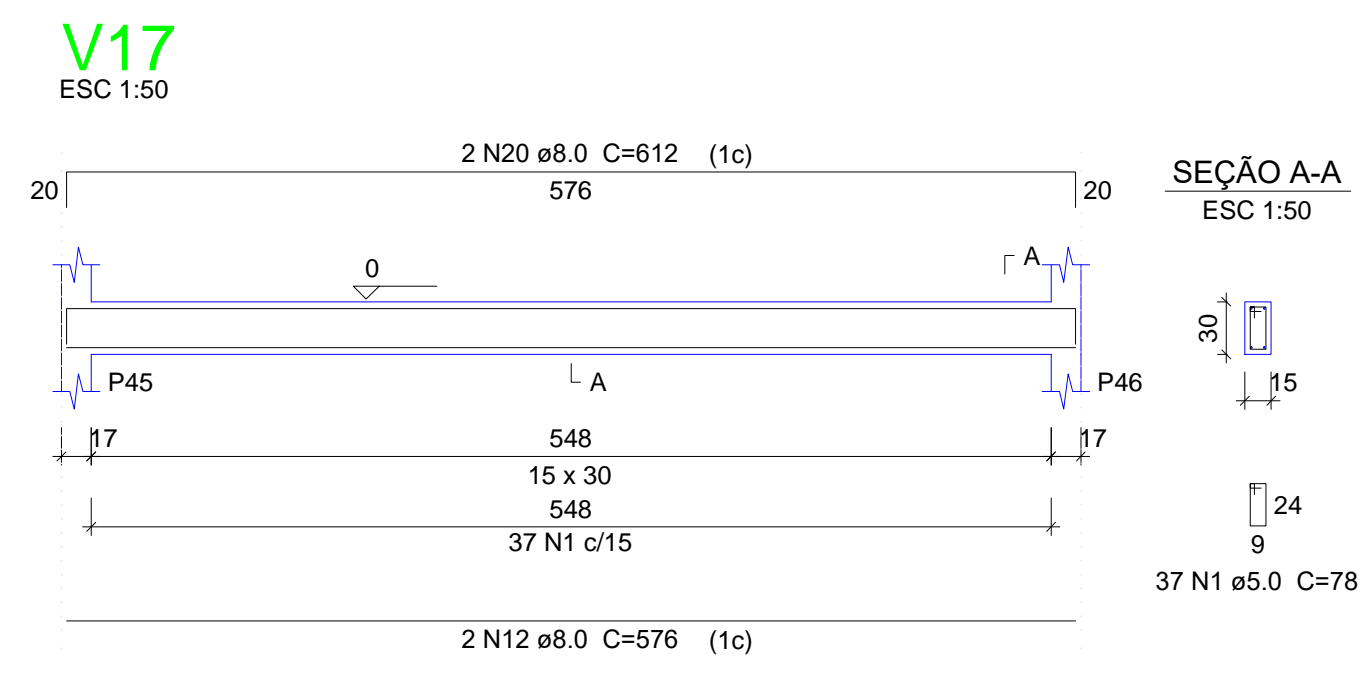
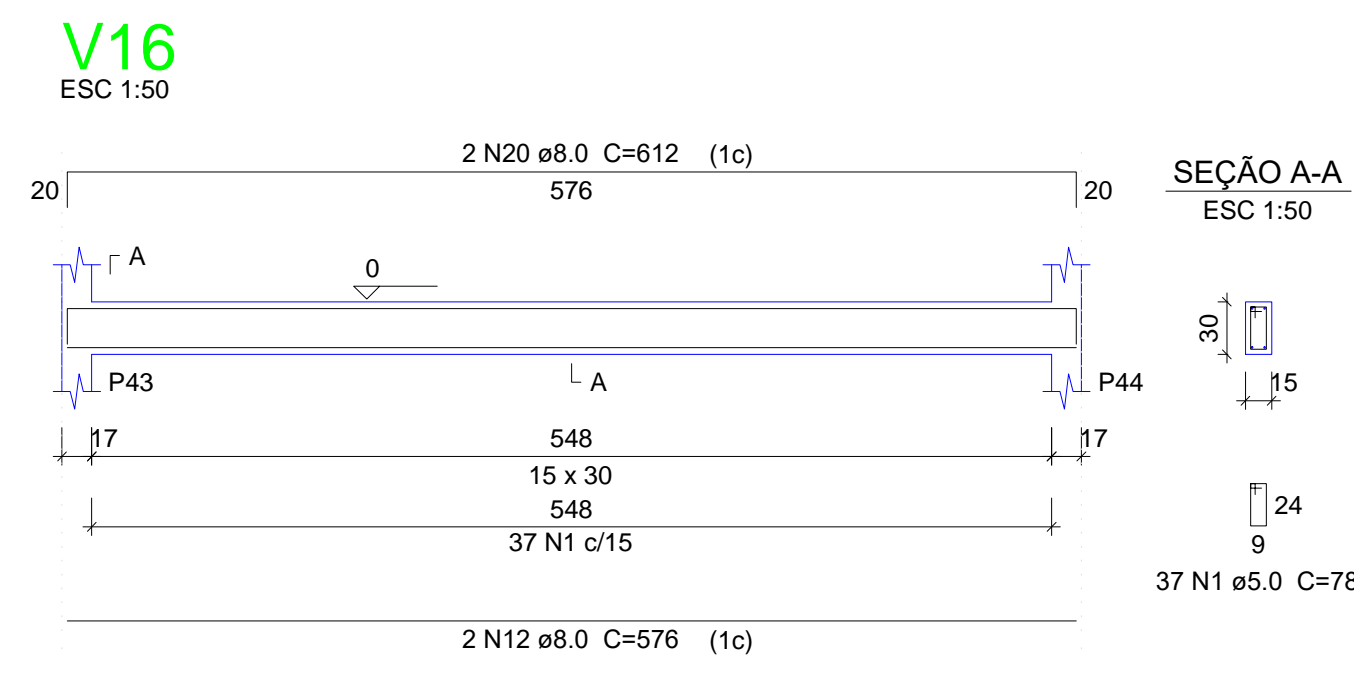
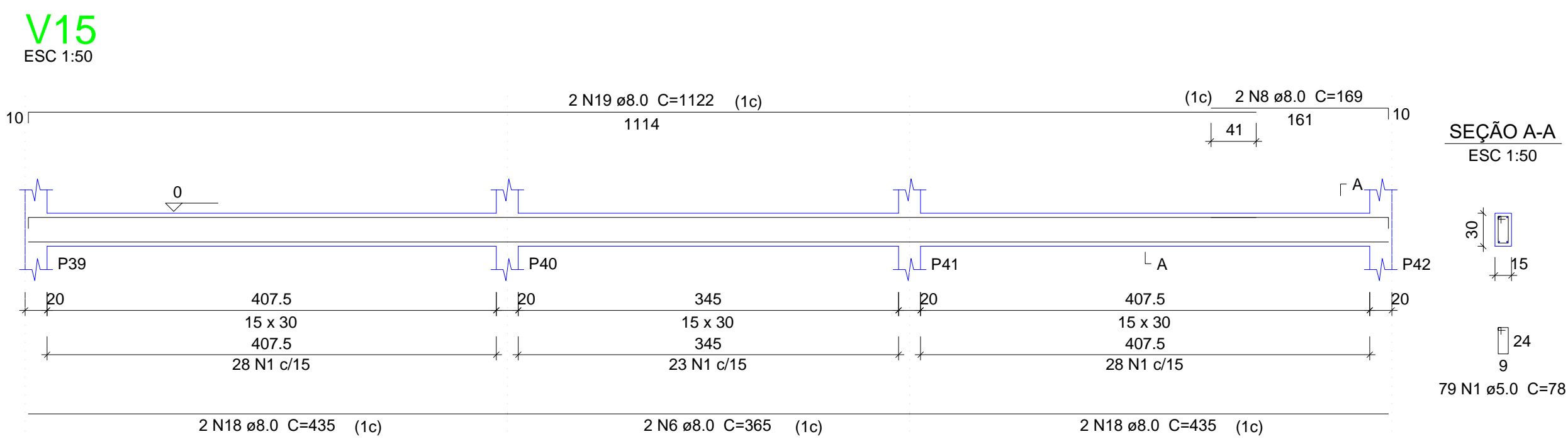
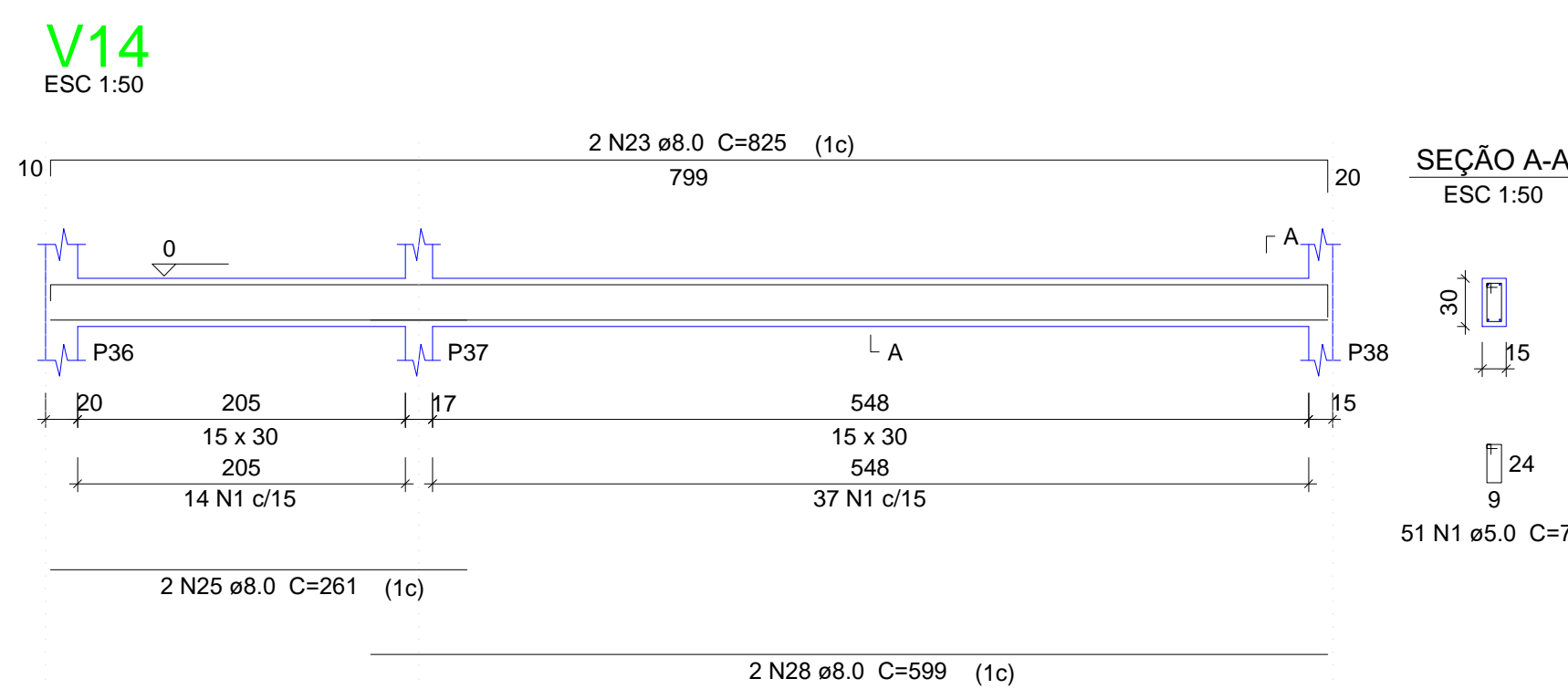
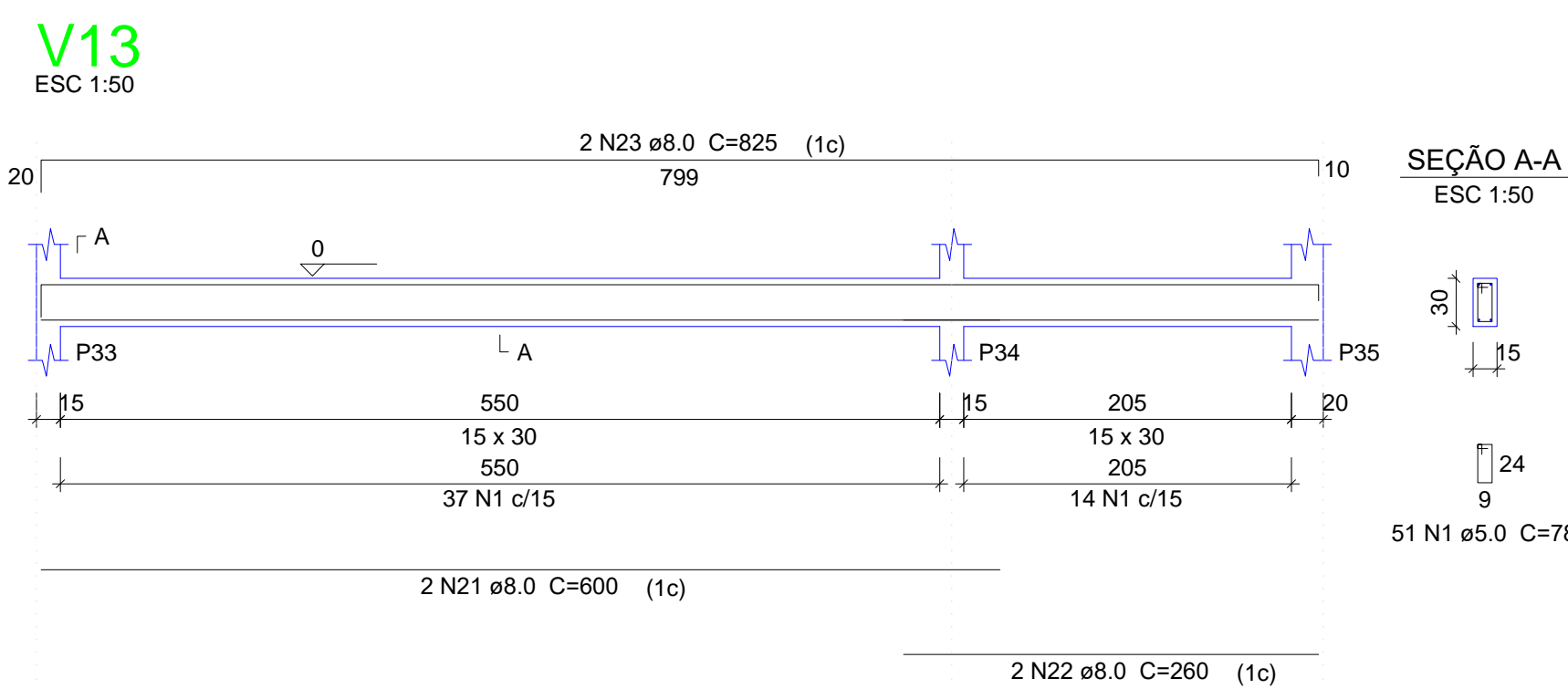
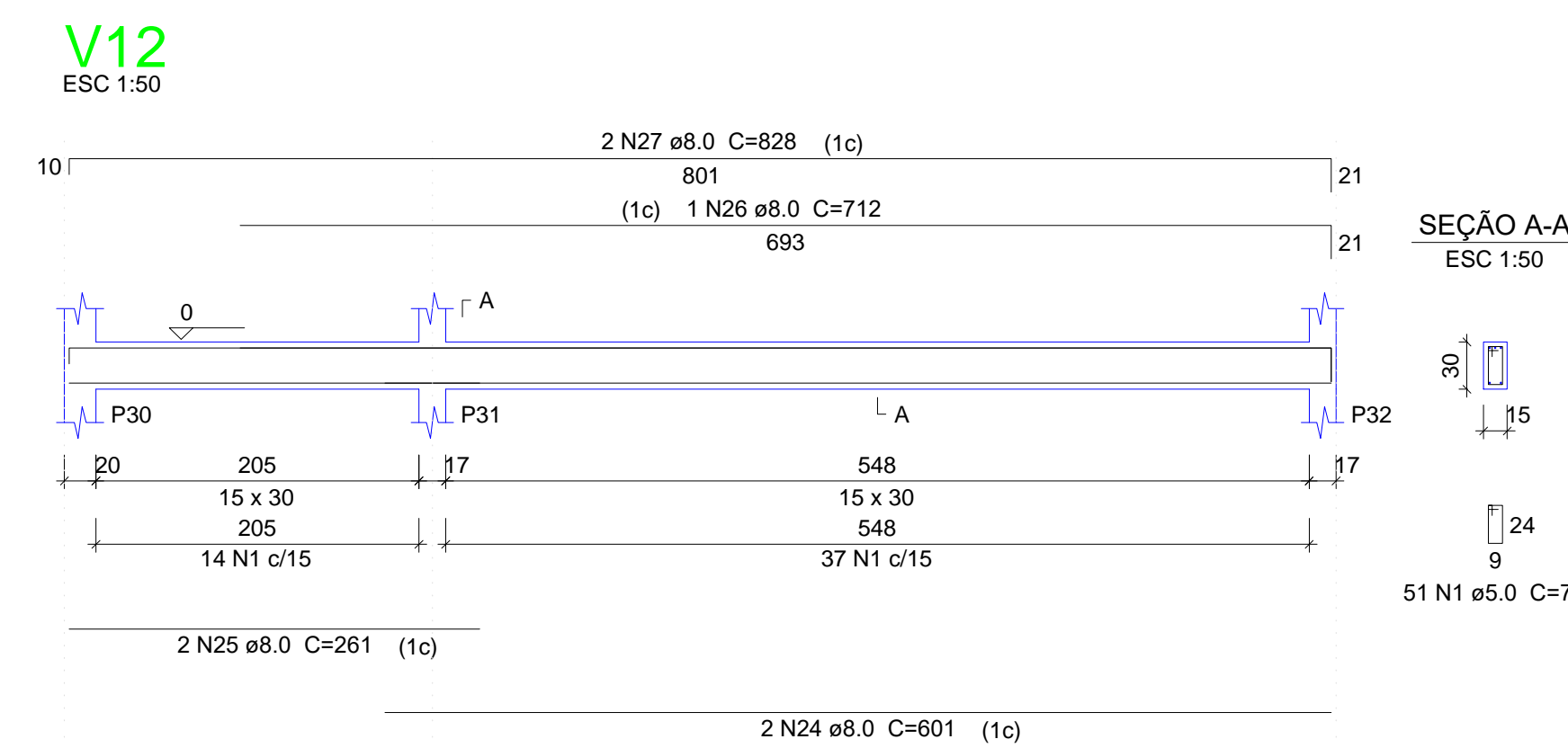
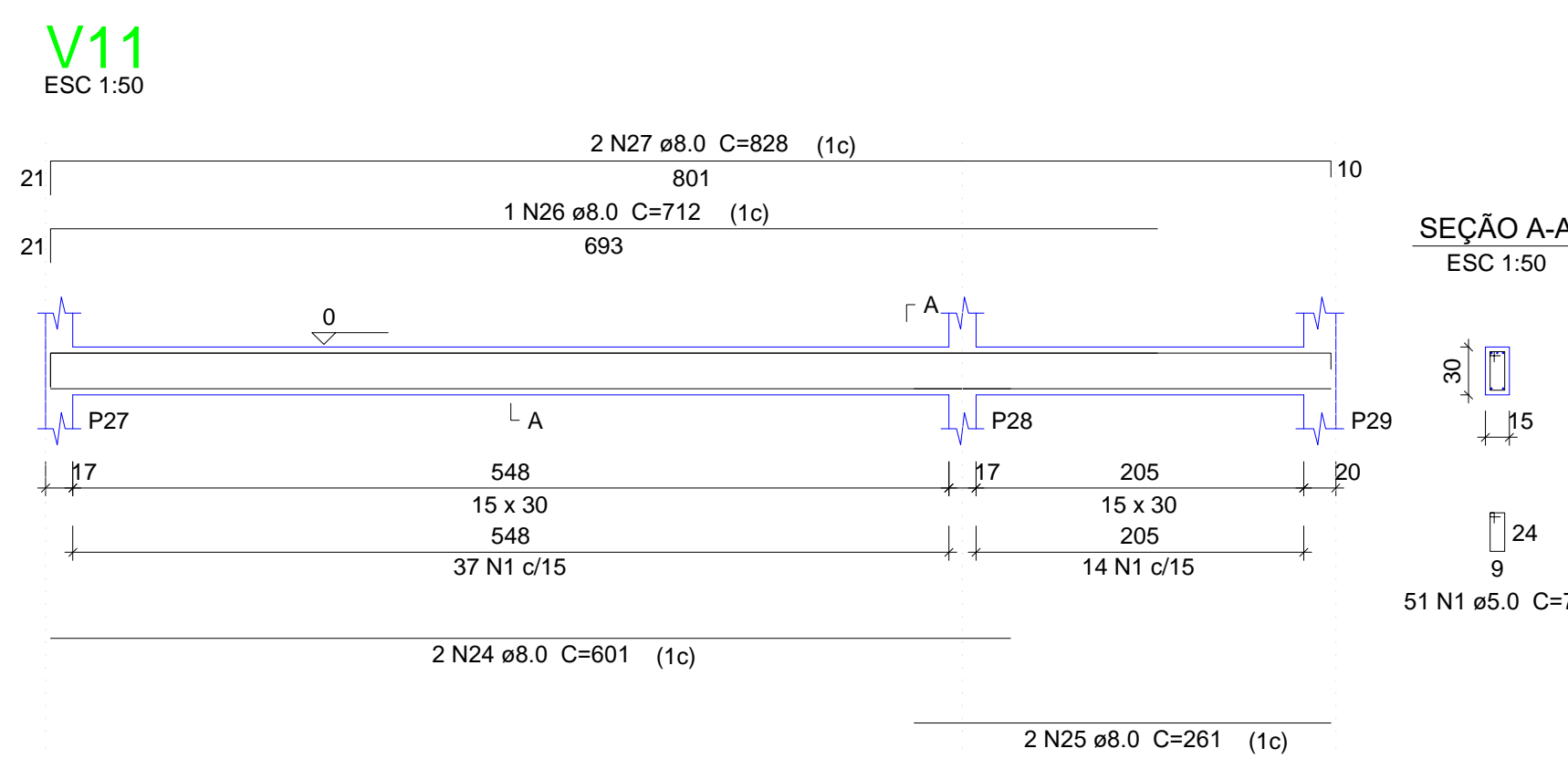
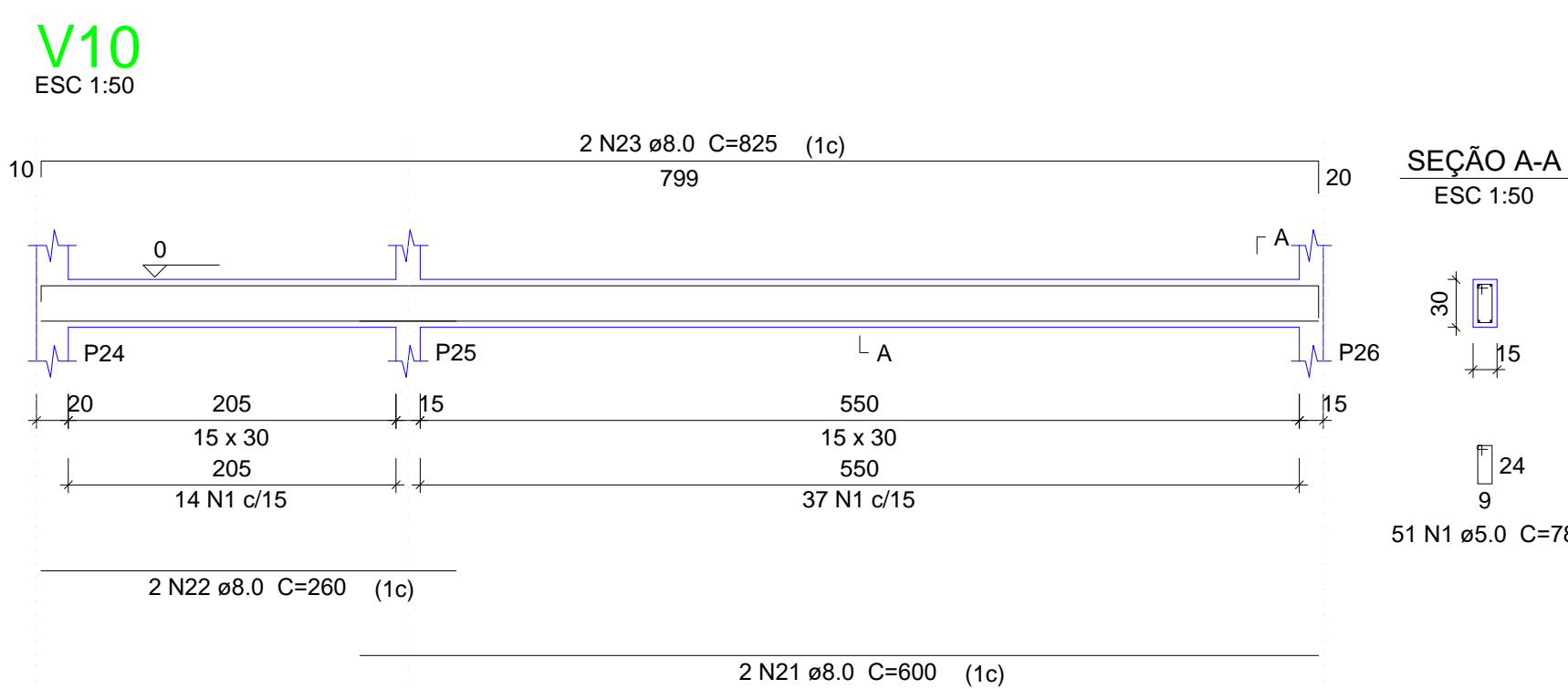
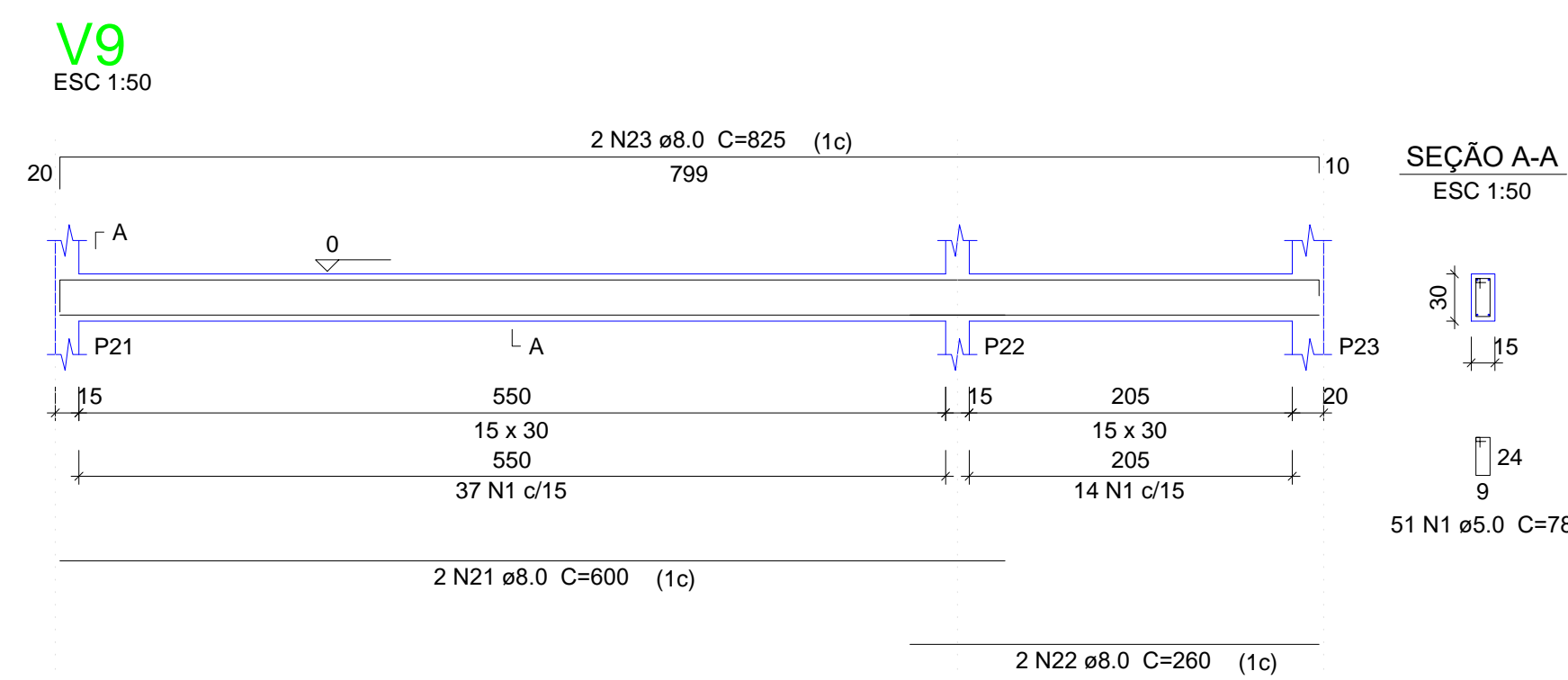
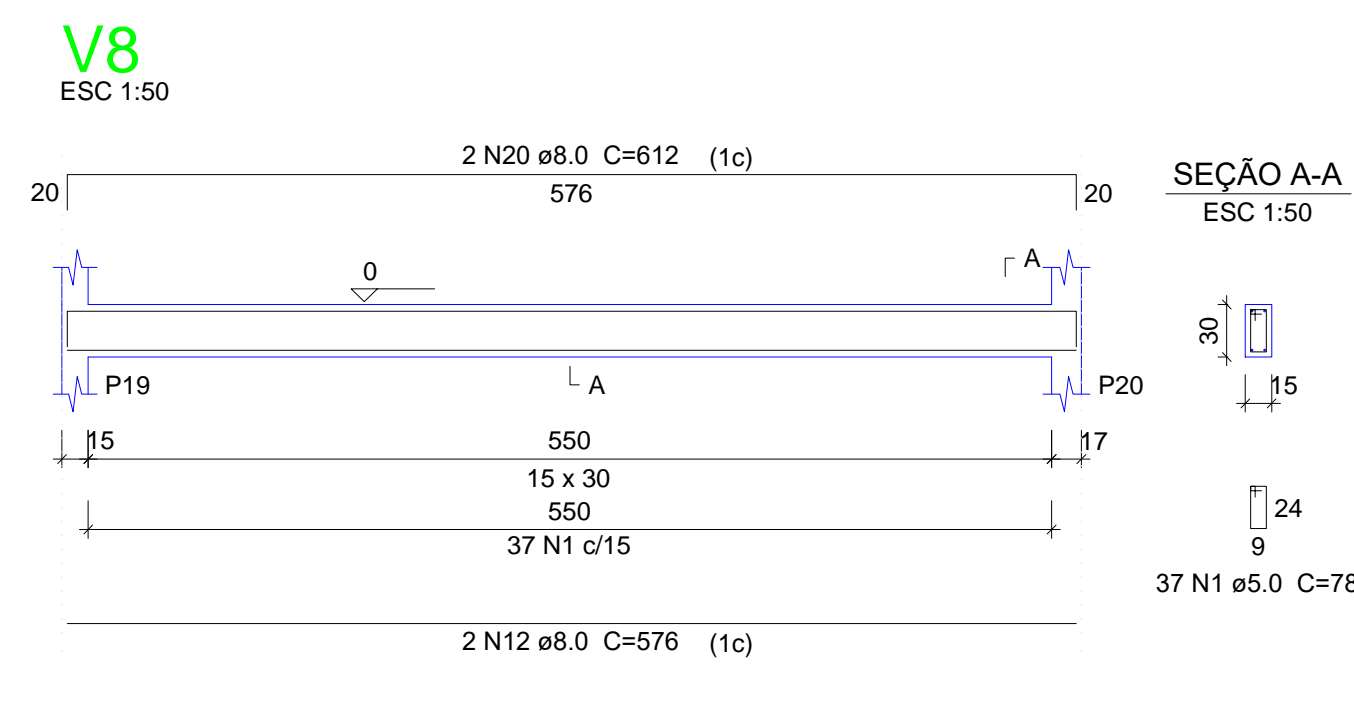
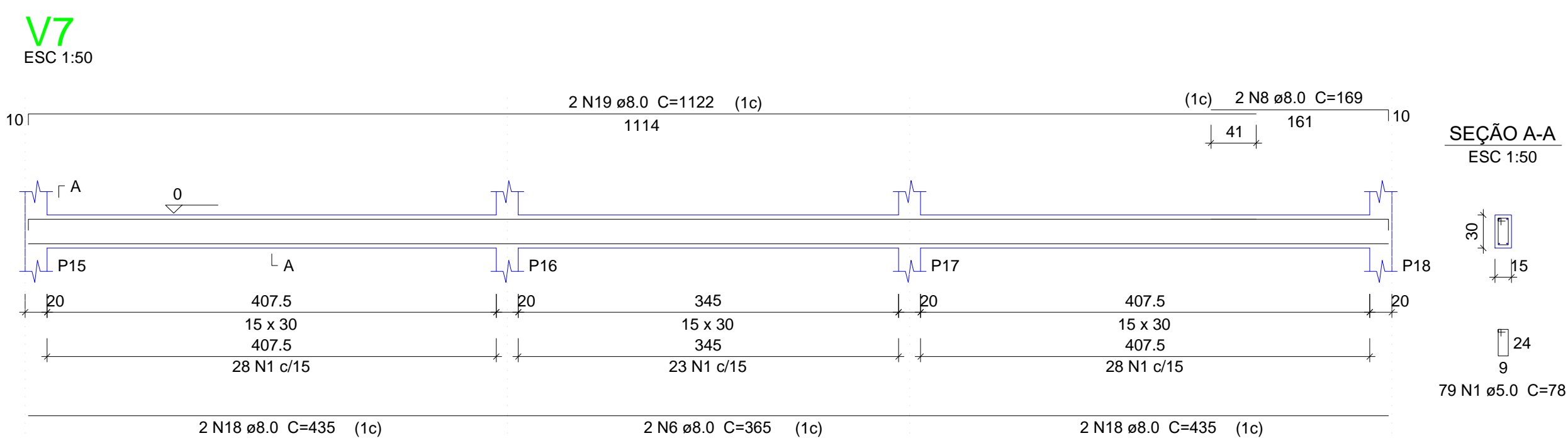
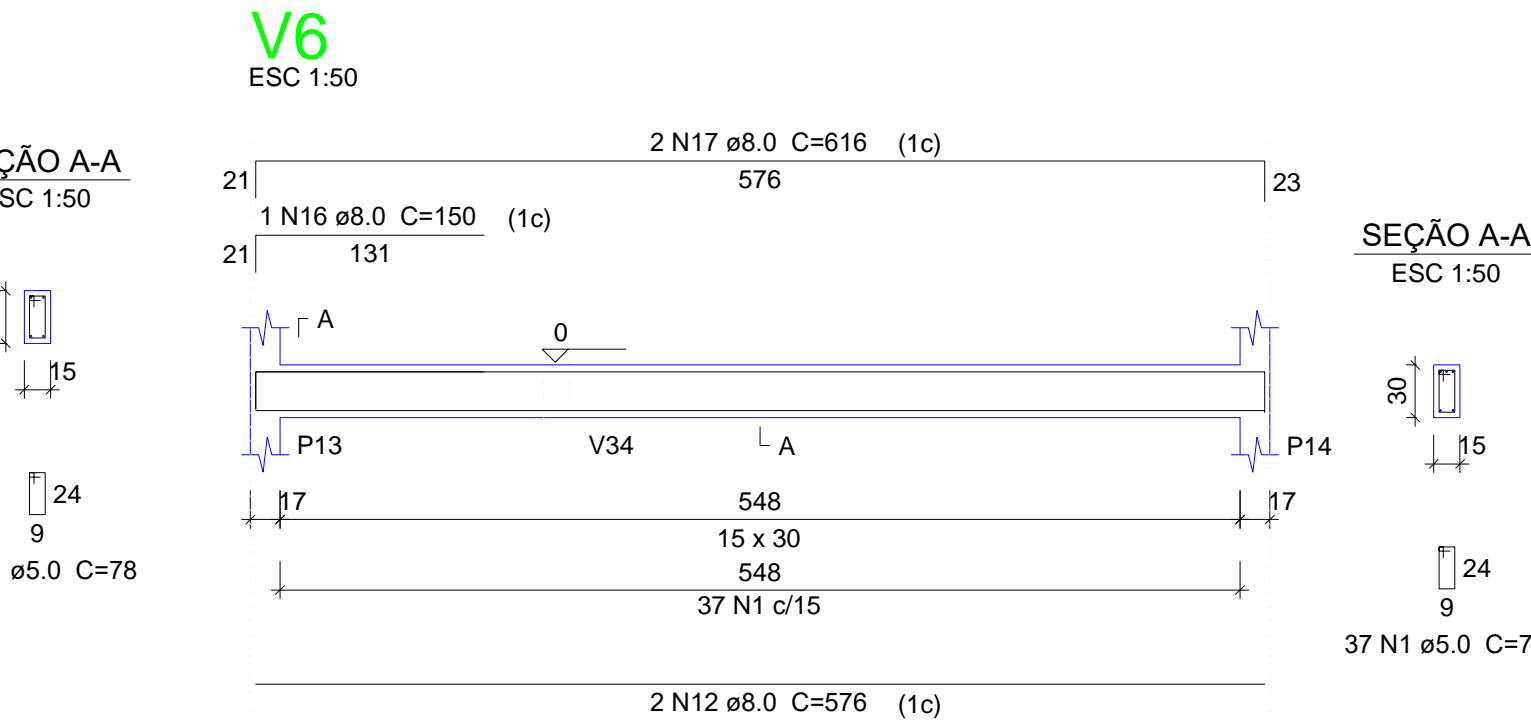
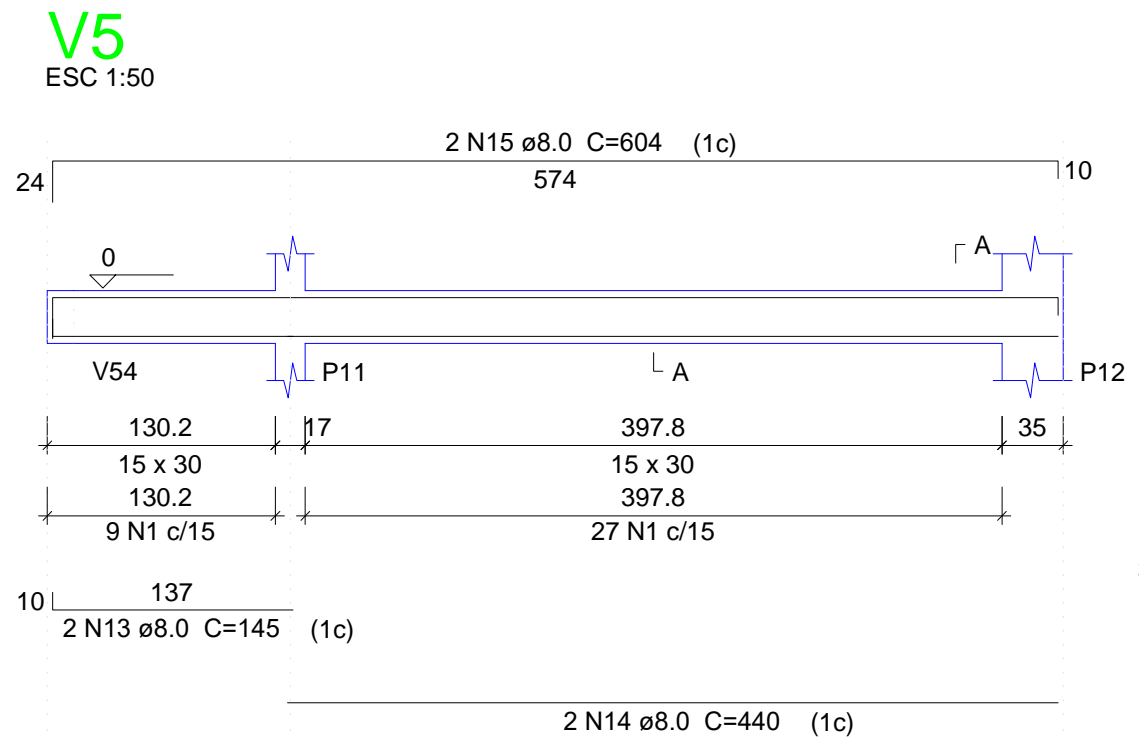
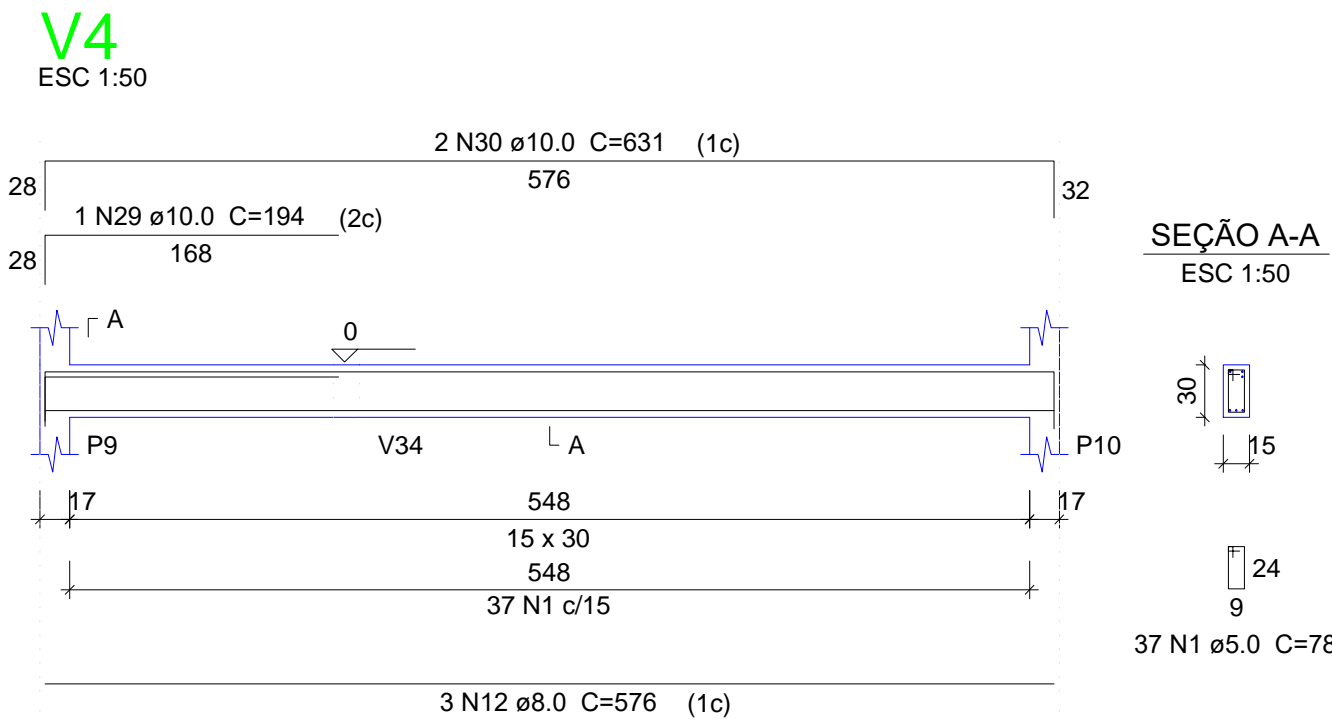
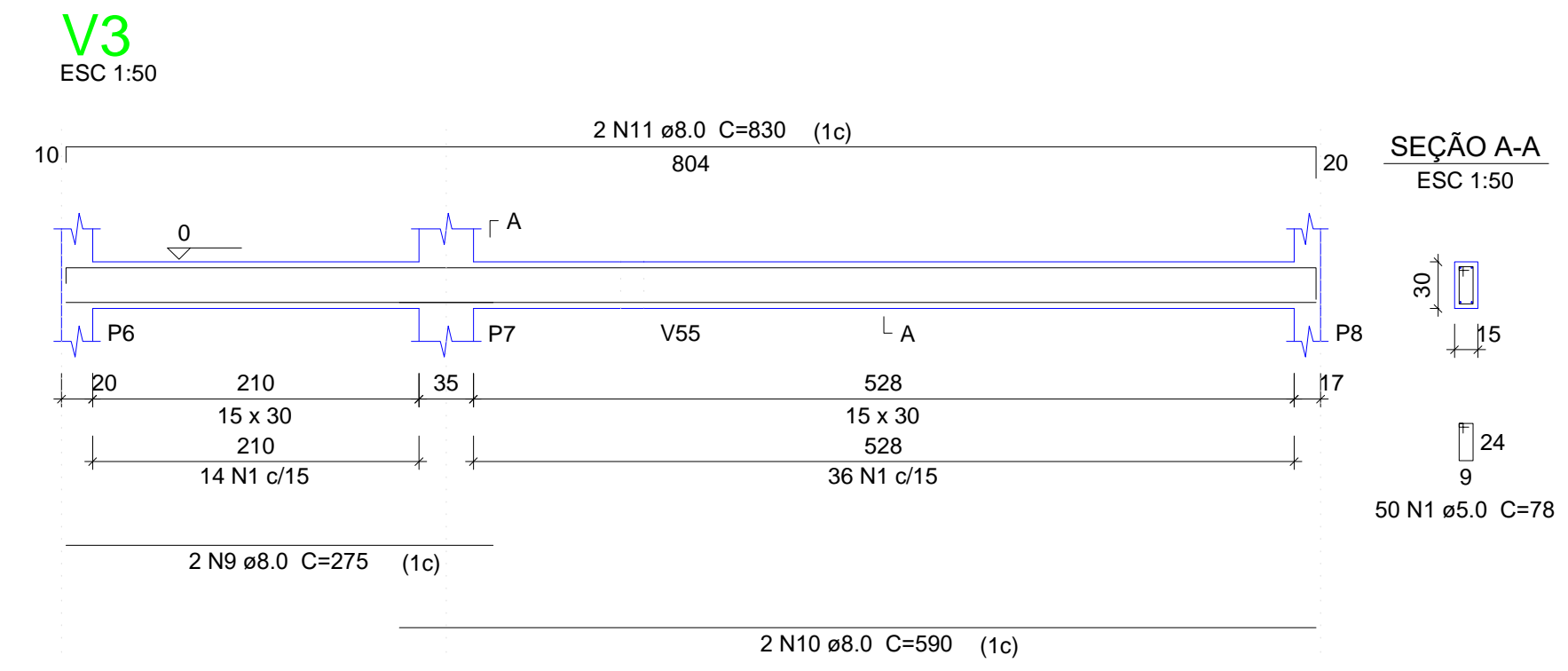
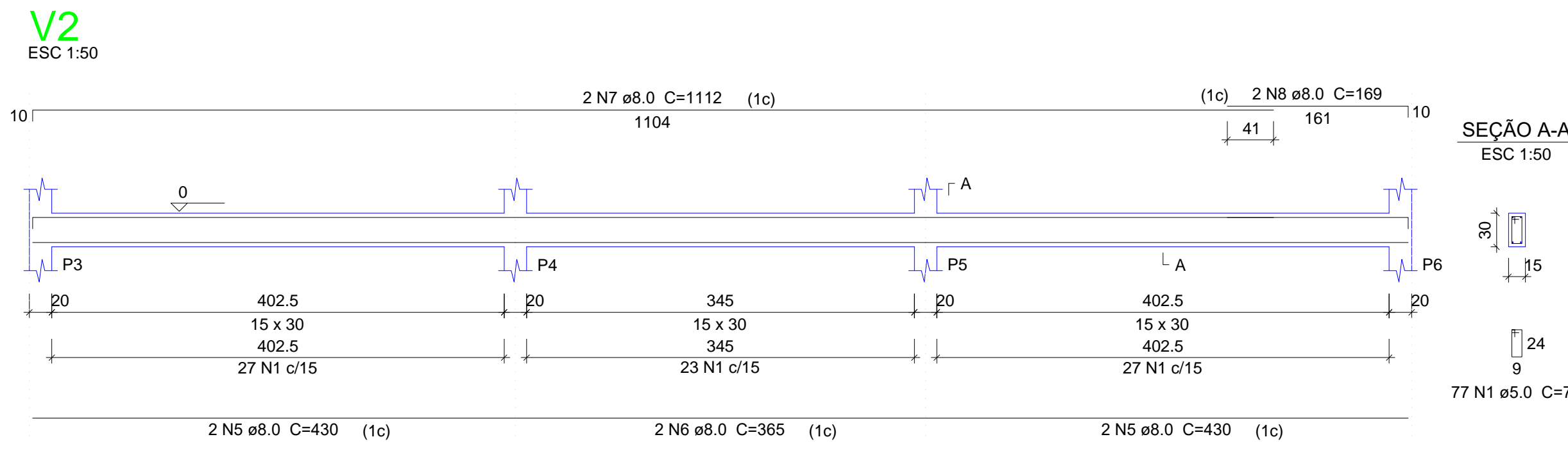
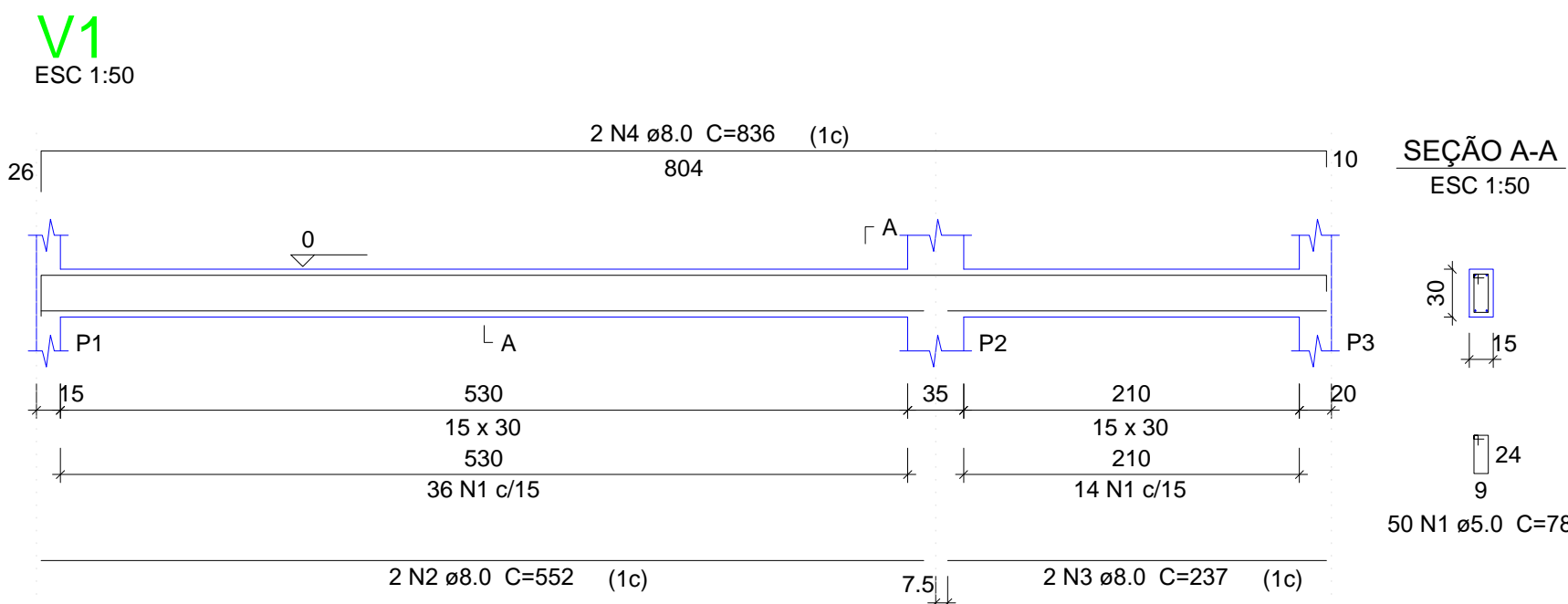


Elemento	fck (kgf/cm²)	Ecs (kgf/cm²)
Vigas	250	238000
Pilares	250	238000
Sapatas	250	238000



COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
10	1.08
11	1.08
12	1.08
13	1.08

02			
01			
Nº	DATA	REVISÃO	DESENHO APROVAÇÃO
PROJETO: PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO			
CLIENTE: MUNICÍPIO DE MARCO			
LOCAL: LOCALIDADE DE FEIJÃO BRAVO			
CONTEÚDO: PLANTA DE PAGINAÇÃO			
1 Planta de Loc			



Relação do aço

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
V1	1	5.0	862	78	67236
V4	2	8.0	2	552	1104
V7	3	8.0	2	237	474
V10	4	8.0	2	836	1672
V13	5	8.0	4	430	1720
V16	6	8.0	6	365	2190
	7	8.0	2	1112	2224
	8	8.0	6	169	1014
	9	8.0	2	275	550
	10	8.0	2	590	1180
	11	8.0	2	830	1660
	12	8.0	11	576	6336
	13	8.0	2	145	290
	14	8.0	2	440	880
	15	8.0	2	604	1208
	16	8.0	1	150	150
	17	8.0	2	616	1232
	18	8.0	8	435	3480
	19	8.0	4	1122	4488
	20	8.0	6	612	3972
	21	8.0	6	600	3600
	22	8.0	6	260	1560
	23	8.0	8	825	6600
	24	8.0	4	601	2404
	25	8.0	6	261	1566
	26	8.0	2	712	1424
	27	8.0	4	828	3312
	28	8.0	2	599	1198
	29	10.0	1	194	194
	30	10.0	2	631	1262

Resumo do aço

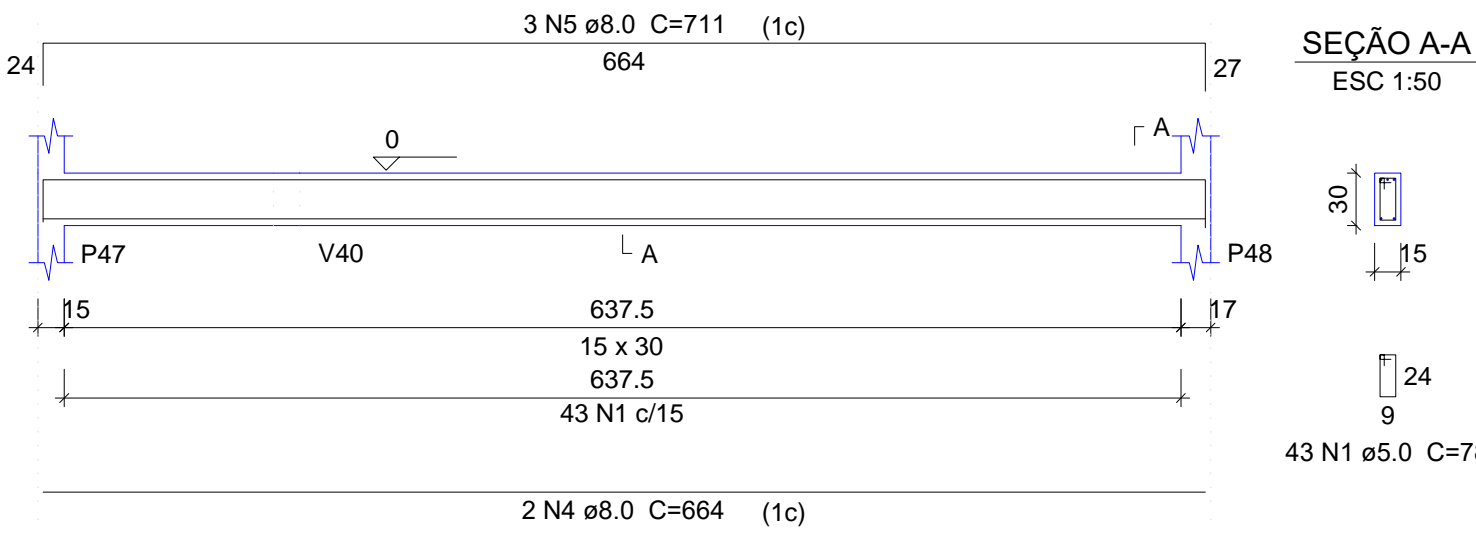
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	571.9	248.2
CA60	10.0	14.6	9.9
CA60	5.0	672.4	114
PESO TOTAL (kg)			
CA50	258.1		
CA60	114		

Volume de concreto (C-25) = 6.14 m³
Área de forma = 102.4 m²

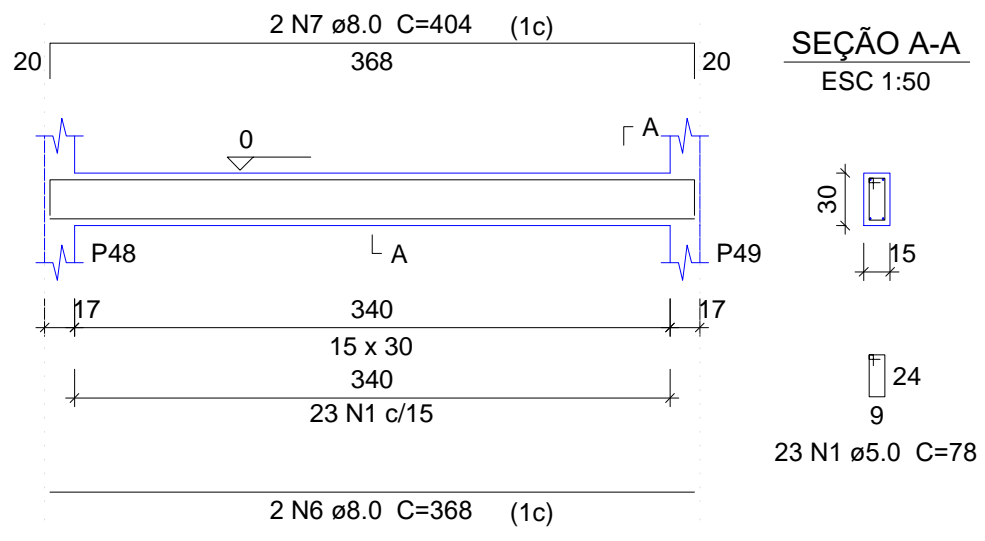
COR	ESP.PENA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
10	1.08
11	1.08
12	1.08
13	1.08

02			
01			
Nº	DATA	REVISÃO	DESENHO APROVAÇÃO
PROJETO:		E.E.F. FEIJÃO BRAVO	
CLIENTE:		MUNICÍPIO DE MARCO	
LOCAL:		LOCALIDADE DE FEIJÃO BRAVO	
CONTEÚDO:		PLANTA DE PAGINAÇÃO	
1		Detalhamento das Vigas Nível 000	
			
<small>AV. PREFEITO GUIDO DOTTRENO, S/N CENTRO - MARCO - CE - 14090-000 BR 364A-1210 E BR 364A-1915 www.marco-ce.gov.br CNPJ: 07.346.516/0001-47</small>			
ESCALA:	DESENHO:	PRANCHAL:	
INDICADA:	RODRIGO NUNES		
	DATA:		03/15
			MARÇO/2021

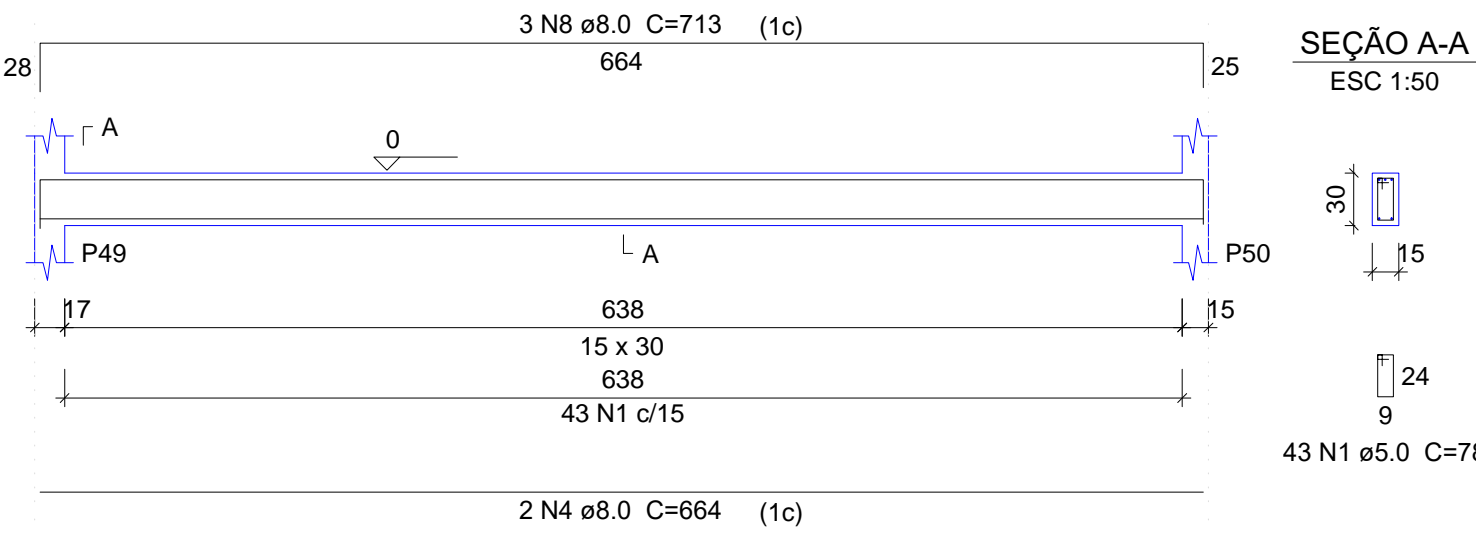
V18
ESC 1:50



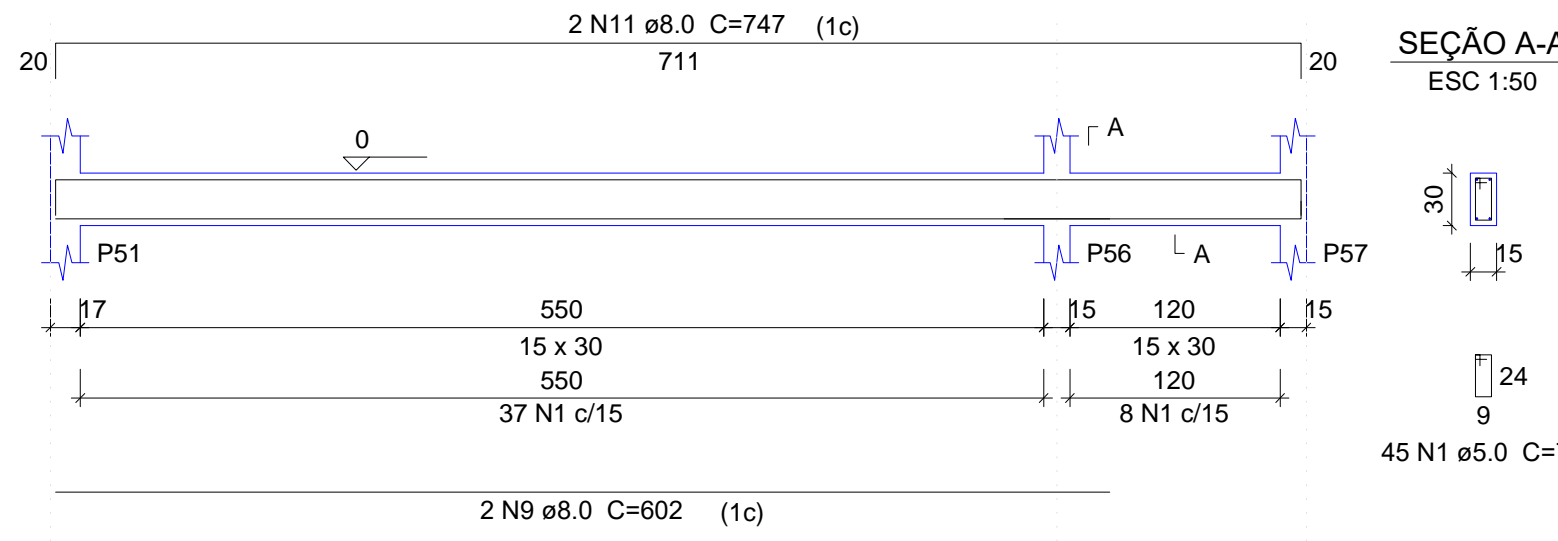
V19
ESC 1:50



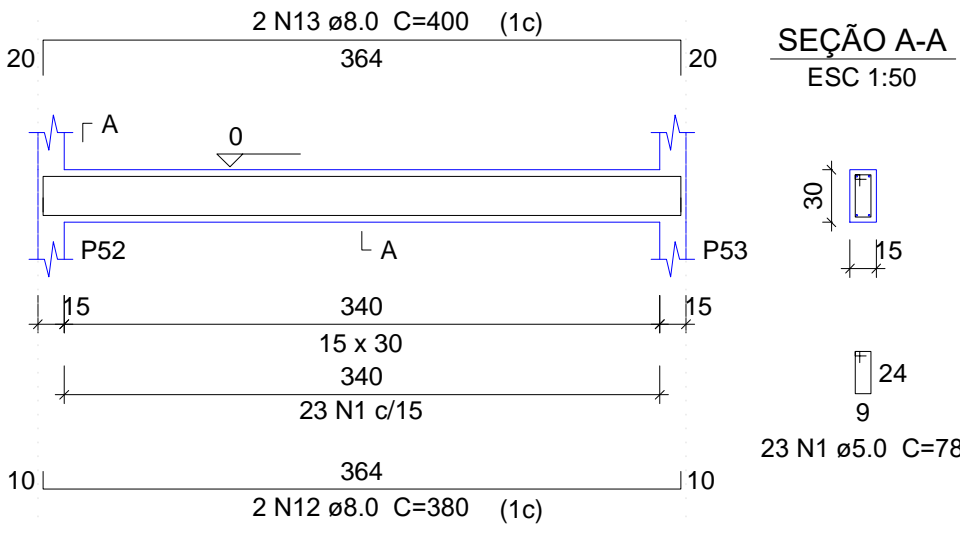
V20
ESC 1:50



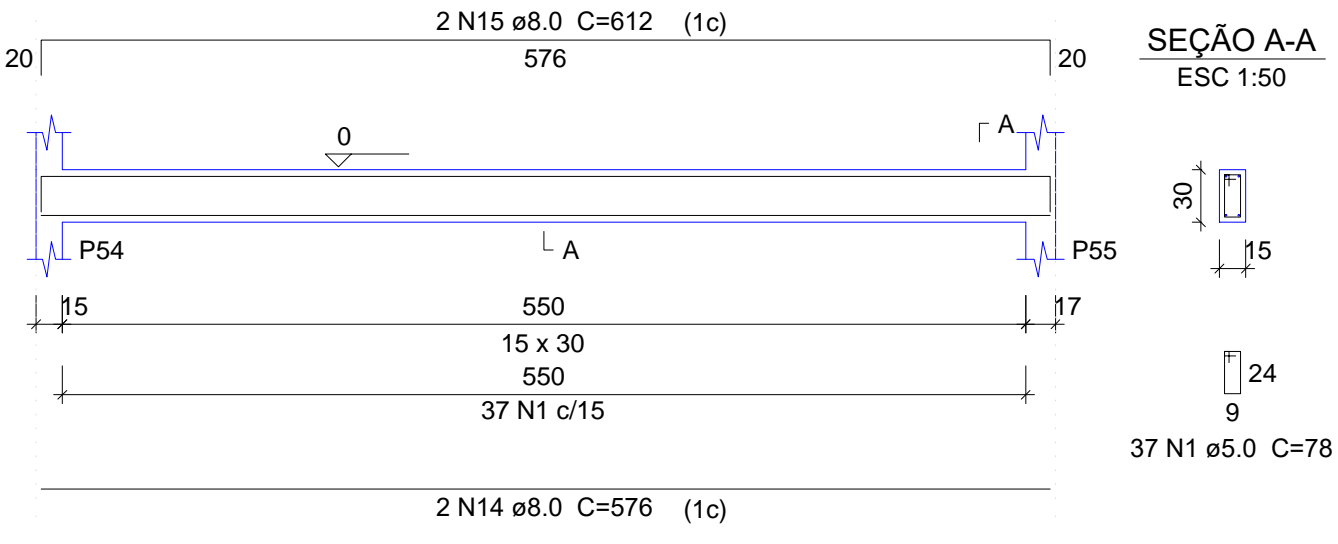
V21
ESC 1:50



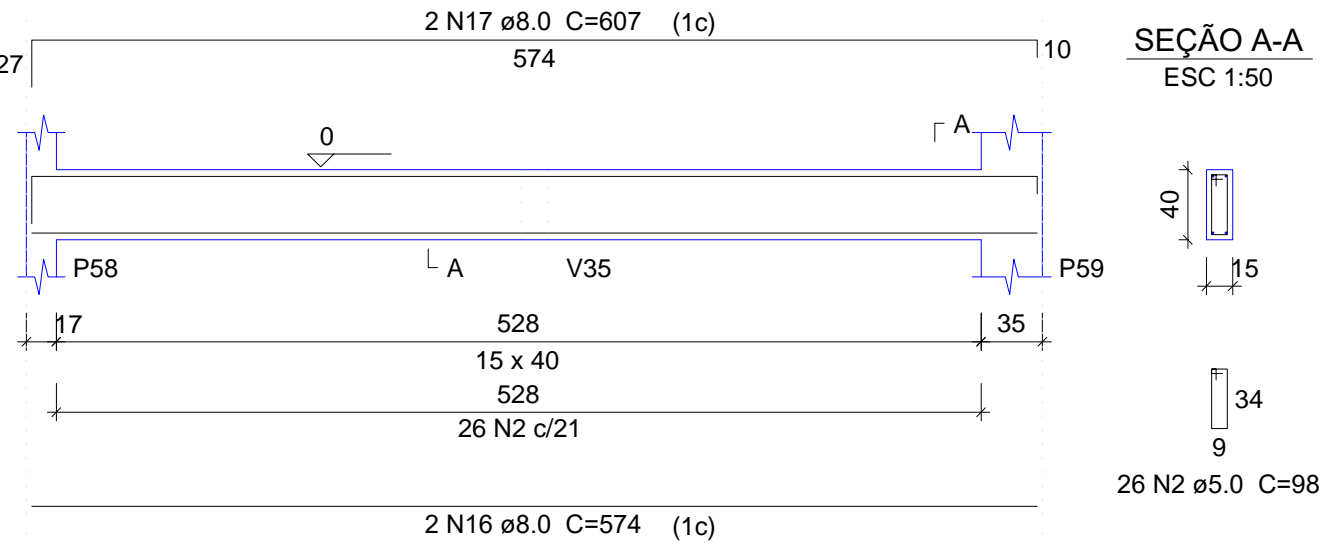
V22
ESC 1:50



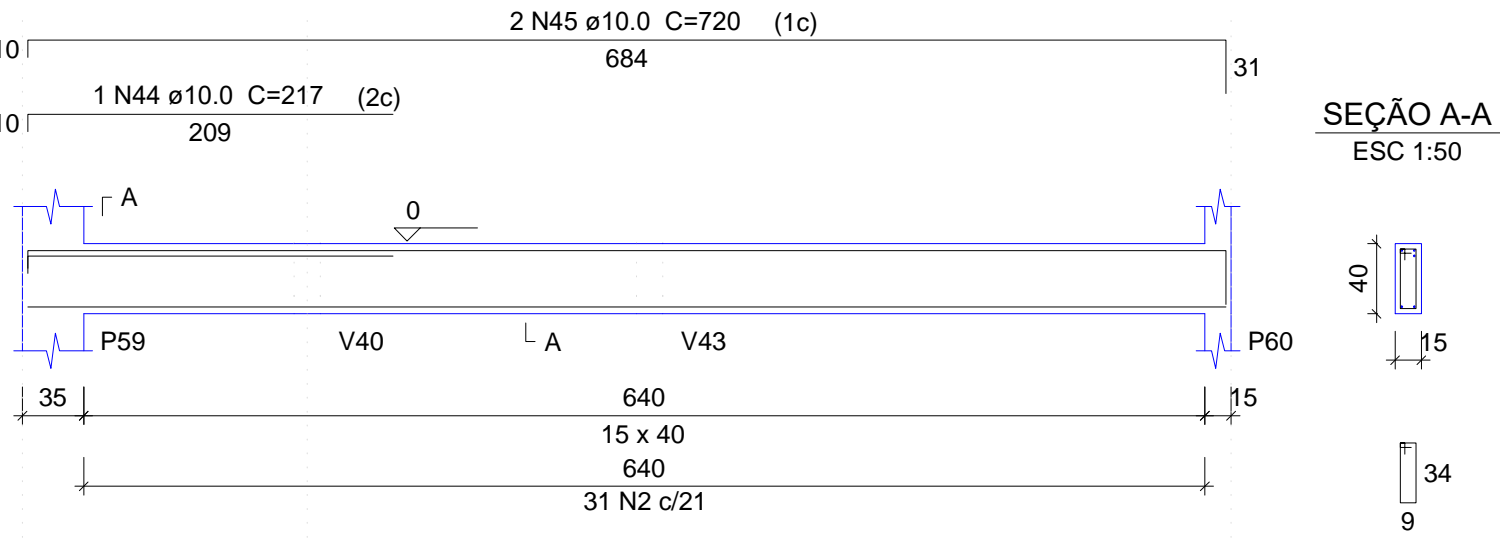
V23
ESC 1:50



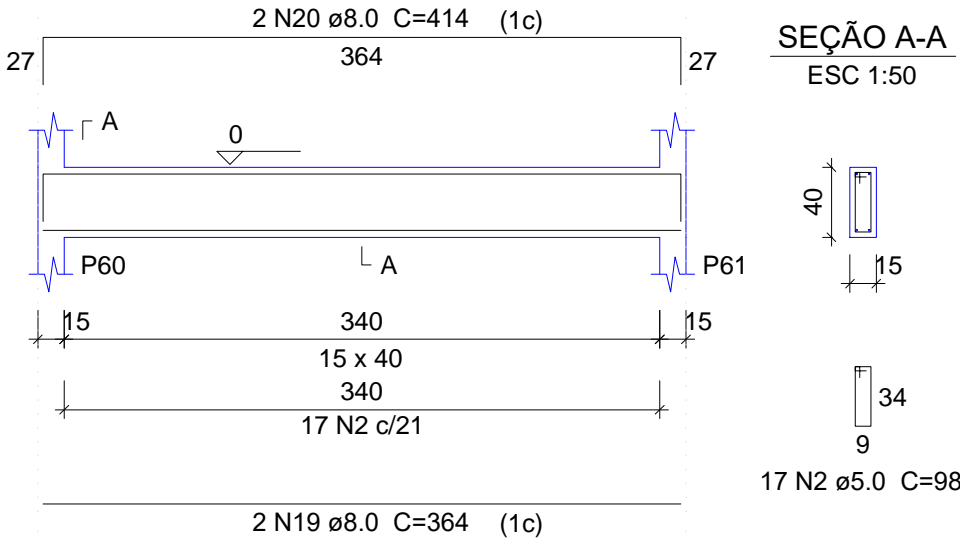
V24
ESC 1:50



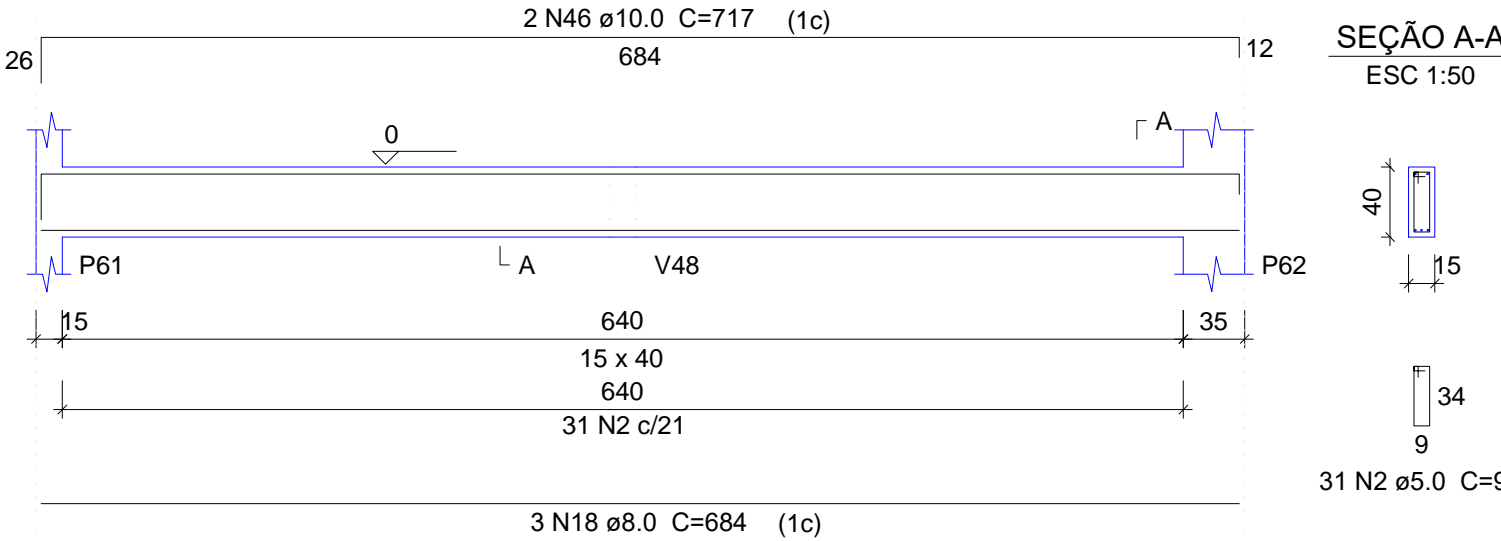
V25
ESC 1:50



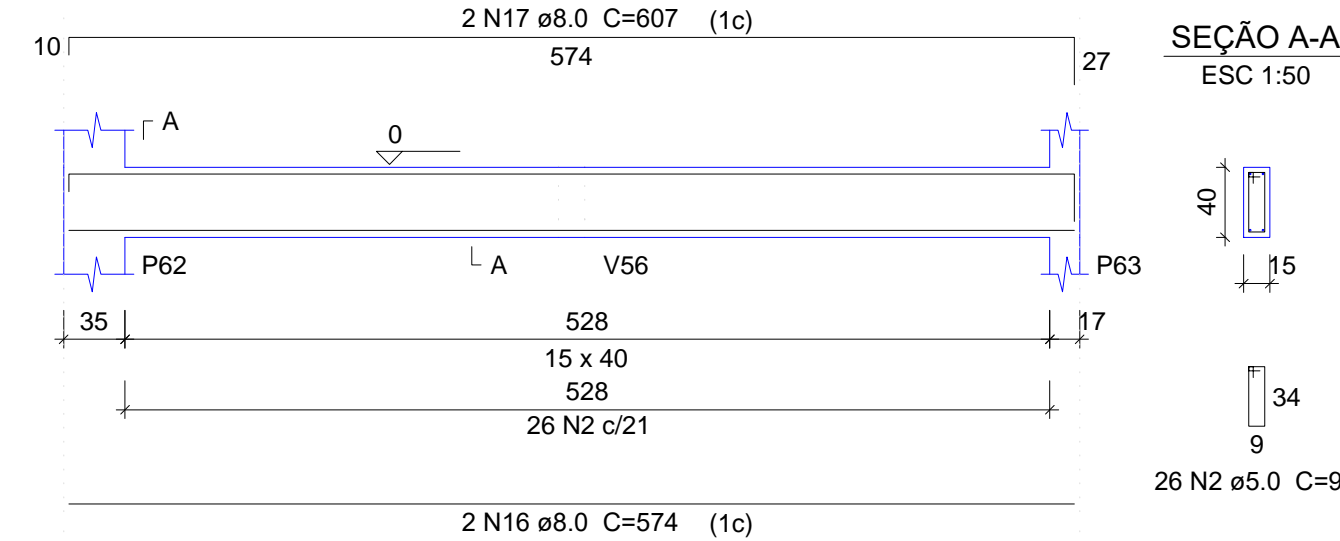
V26
ESC 1:50



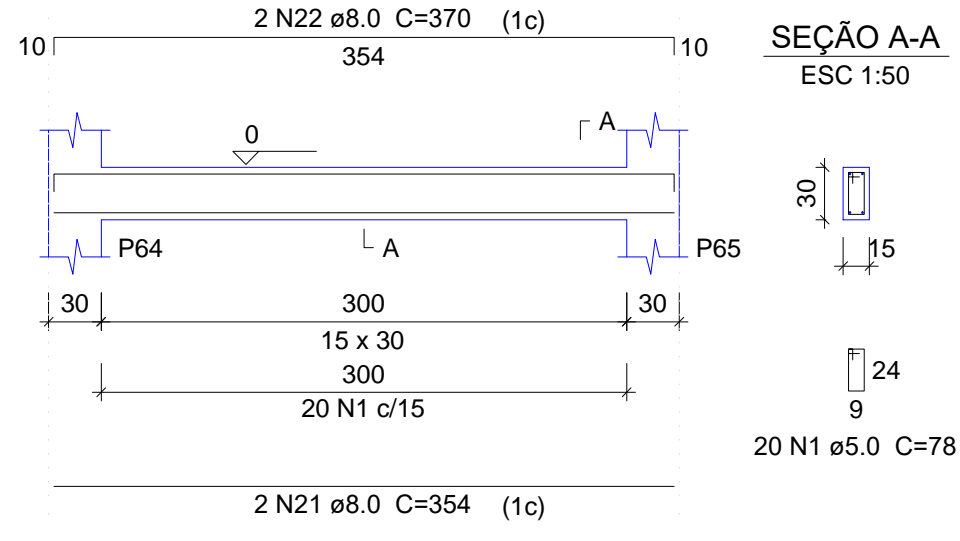
V27
ESC 1:50



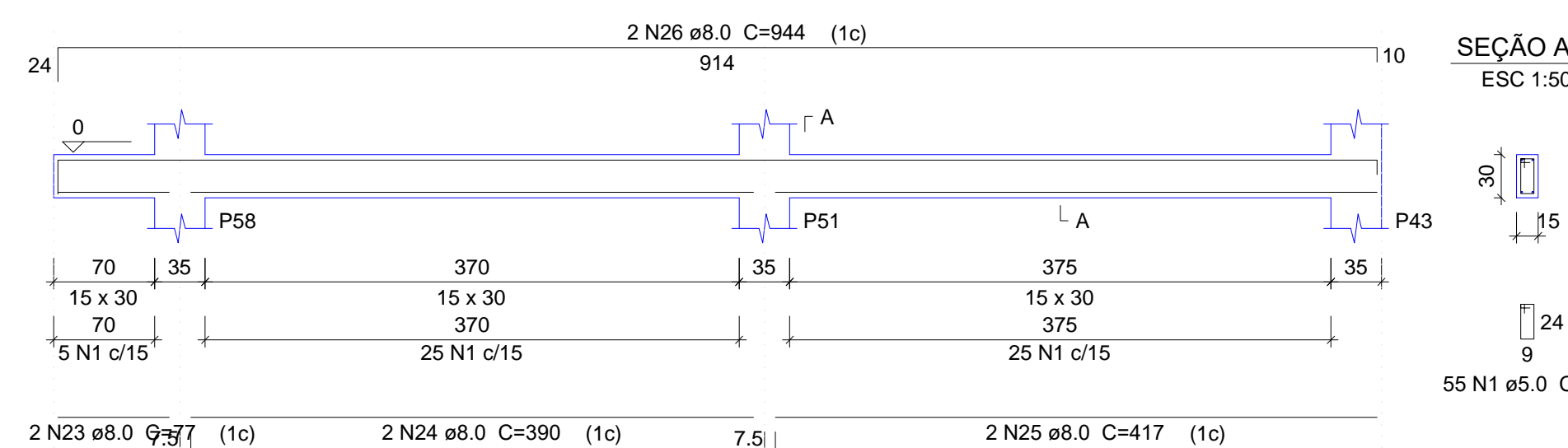
V28
ESC 1:50



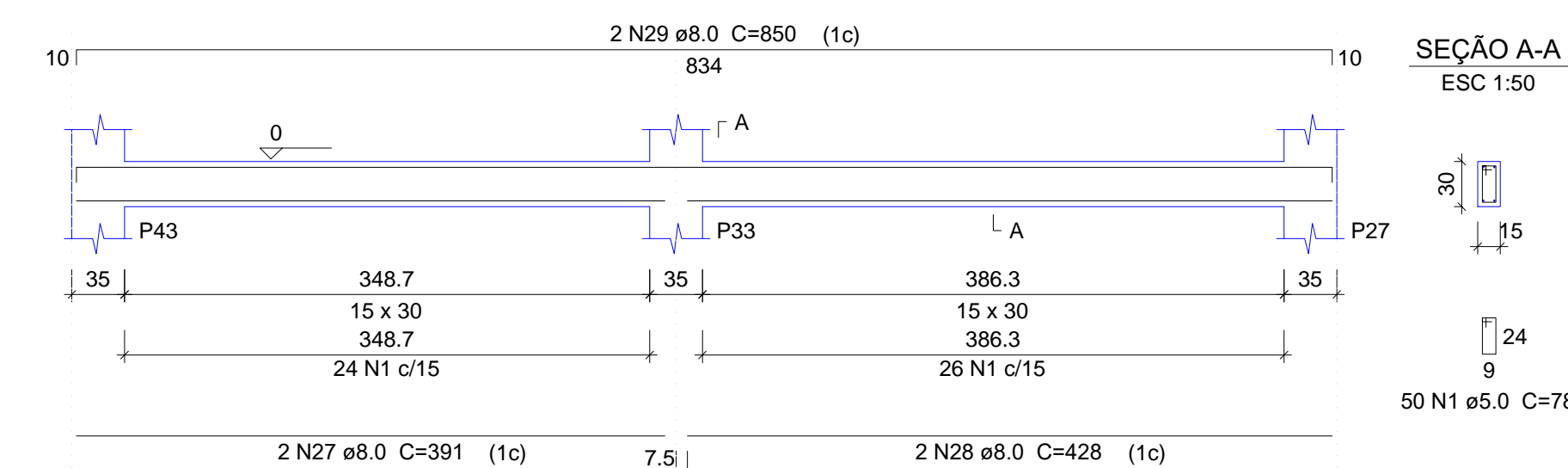
V29
ESC 1:50



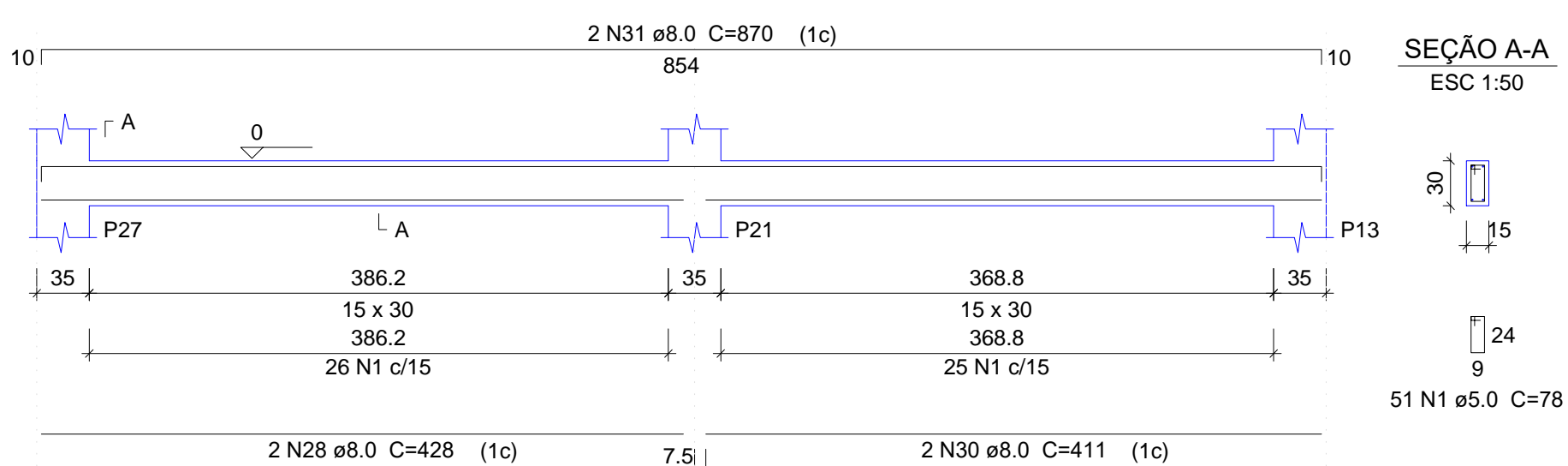
V30
ESC 1:50



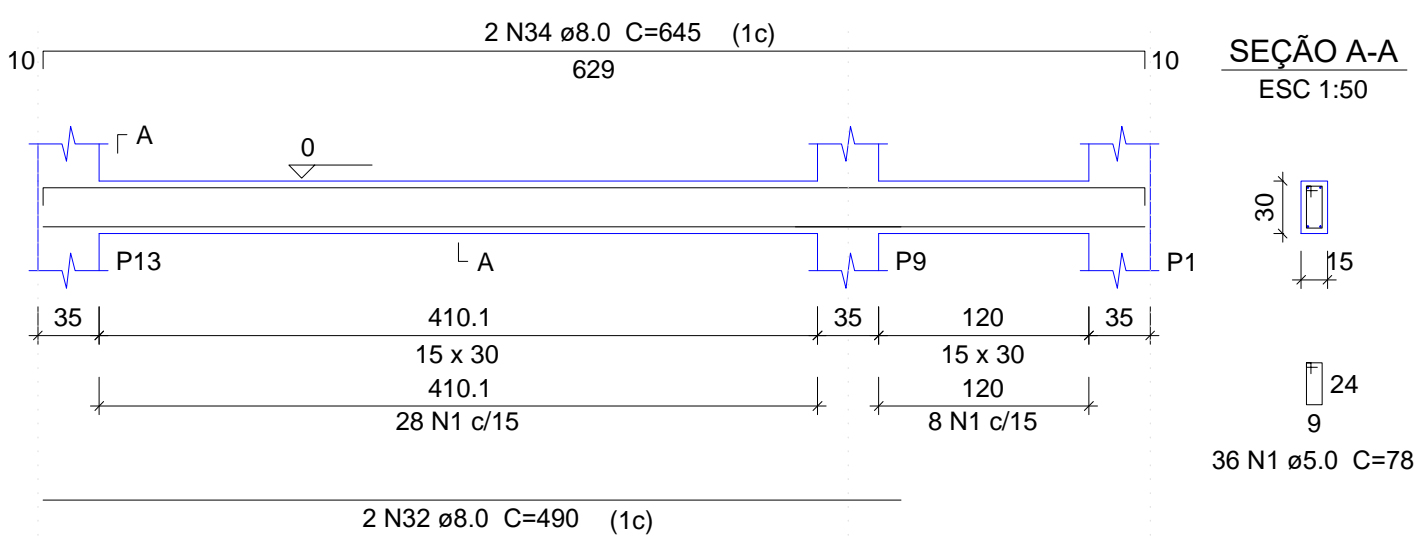
V31
ESC 1:50



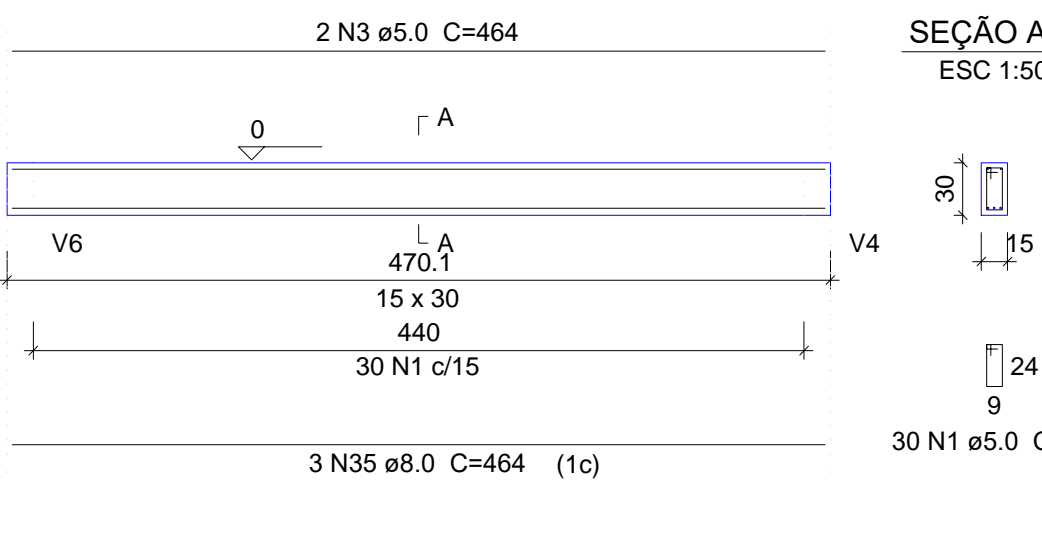
V32
ESC 1:50



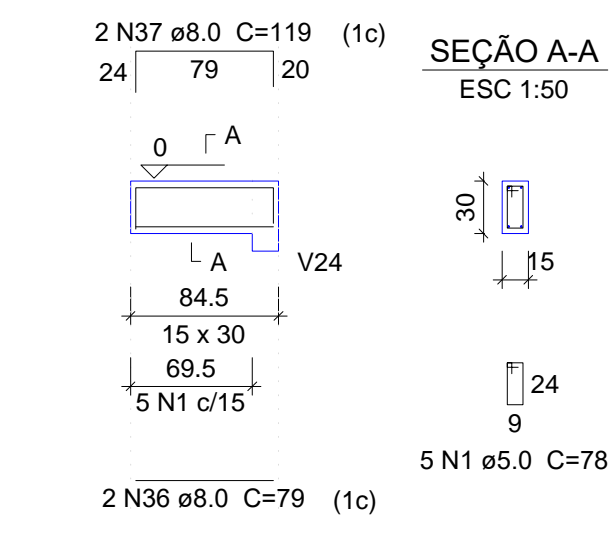
V33
ESC 1:50



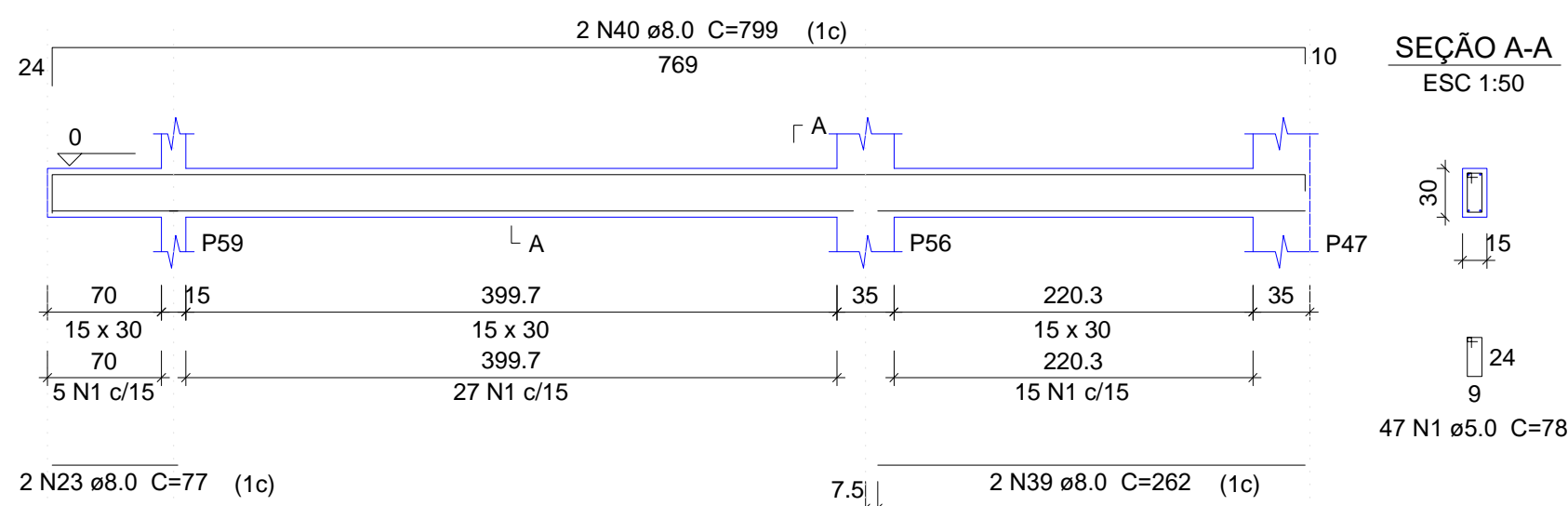
V34
ESC 1:50



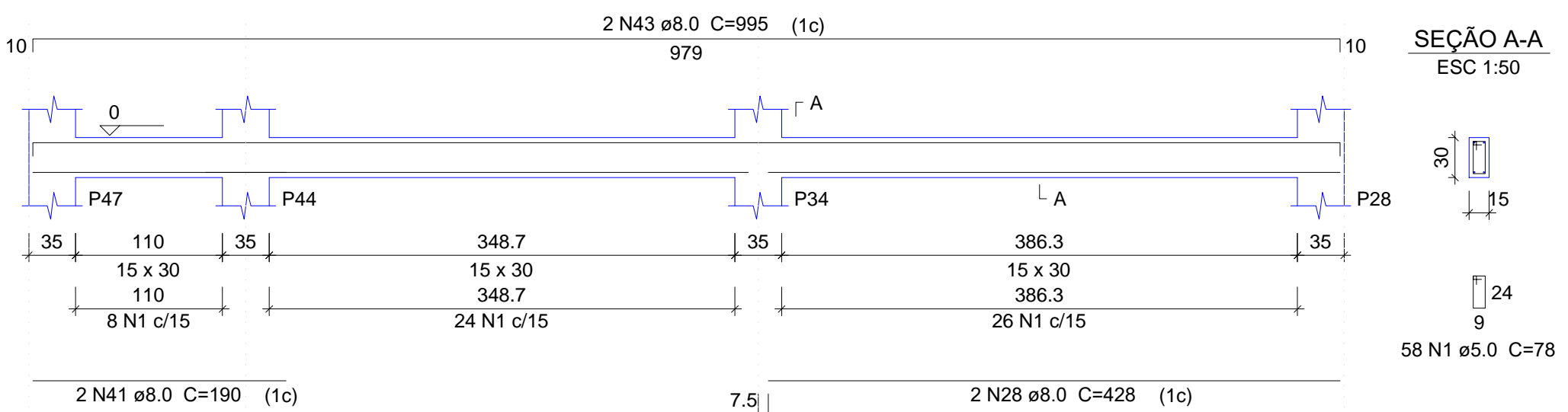
V35
ESC 1:50



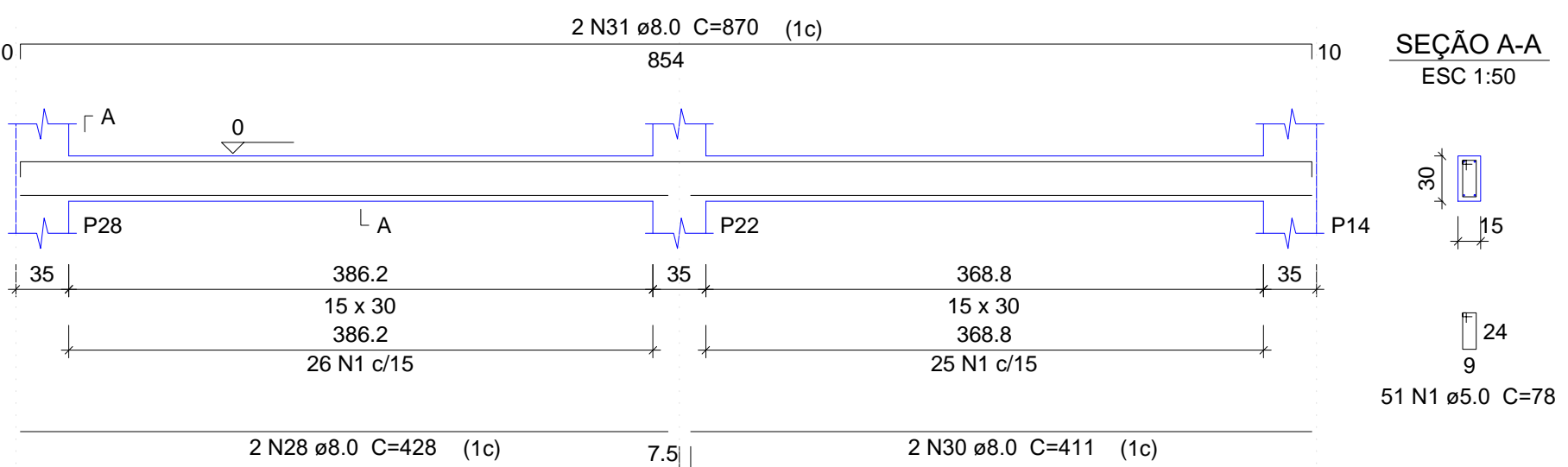
V36
ESC 1:50



V37
ESC 1:50



V38
ESC 1:50



Relação do aço

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
V18					
V21					
V24					
V27					
V30					
V33					
V36					
V19					
V22					
V25					
V28					
V31					
V34					
V37					
CA60	1	5.0	617	78	48126
	2	5.0	131	98	12838
	3	5.0	2	464	928
CA50	4	8.0	4	664	2656
	5	8.0	3	711	2133
	6	8.0	2	368	736
	7	8.0	2	404	808
	8	8.0	3	713	2139
	9	8.0	2	602	1204
	10	8.0	2	178	356
	11	8.0	2	747	1494
	12	8.0	2	390	780
	13	8.0	2	400	800
	14	8.0	2	576	1152
	15	8.0	2	612	1224
	16	8.0	4	574	2296
	17	8.0	4	607	2428
	18	8.0	5	684	3420
	19	8.0	2	364	728
	20	8.0	2	414	828
	21	8.0	2	354	708
	22	8.0	2	370	740
	23	8.0	4	77	308
	24	8.0	2	390	780
	25	8.0	2	417	834
	26	8.0	2	944	1888
	27	8.0	2	391	782
	28	8.0	8	428	3424
	29	8.0	2	850	1700
	30	8.0	4	411	1644
	31	8.0	4	870	3480
	32	8.0	2	490	980
	33	8.0	2	200	400
	34	8.0	2	645	1290
	35	8.0	3	464	1392
	36	8.0	2	79	158
	37	8.0	2	119	238
	38	8.0	2	420	840
	39	8.0	2	262	524
	40	8.0	2	799	1598
	41	8.0	2	190	380
	42	8.0	2	406	812
	43	8.0	2	995	1990
	44	10.0	1	217	217
	45	10.0	2	720	1440
	46	10.0	2	717	1434

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	520.6	225.9
	10.0	31	21
CA60	5.0	619	104.9
PESO TOTAL (kg)			
CA50			246.9
CA60			104.9

Volume de concreto (C-25) = 6.32 m³
Área de forma = 103.94 m²

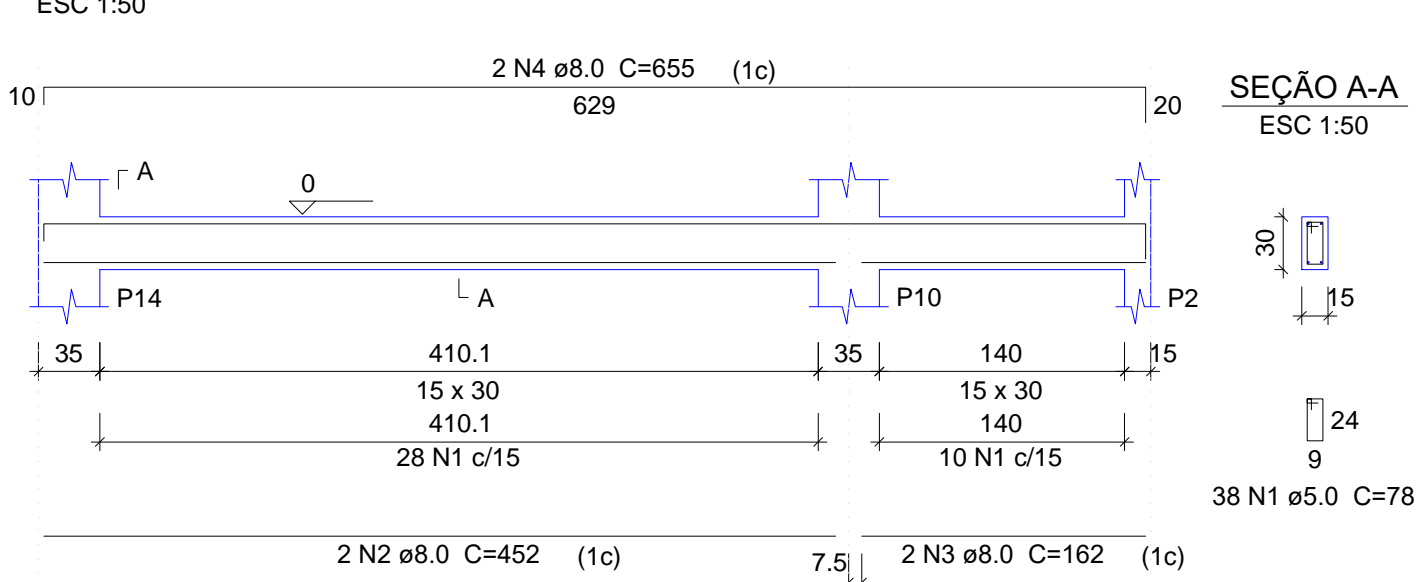
COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
10	1.06
11	1.06
12	1.06
13	1.06

02			
01			
Nº	DATA	REVISÃO	DESENHO APROVAÇÃO
		PROJETO:	PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO
		CLIENTE:	MUNICÍPIO DE MARCO
		LOCAL:	LOCALIDADE DE FEIJÃO BRAVO
		CONTEÚDO:	PLANTA DE PAGINAÇÃO 1 Detalhamento das Vigas Nível 000
		ESCALA:	INDICADA: RODRIGO NUNES DATA: MARÇO/2021
		PRANCHAS:	04/15

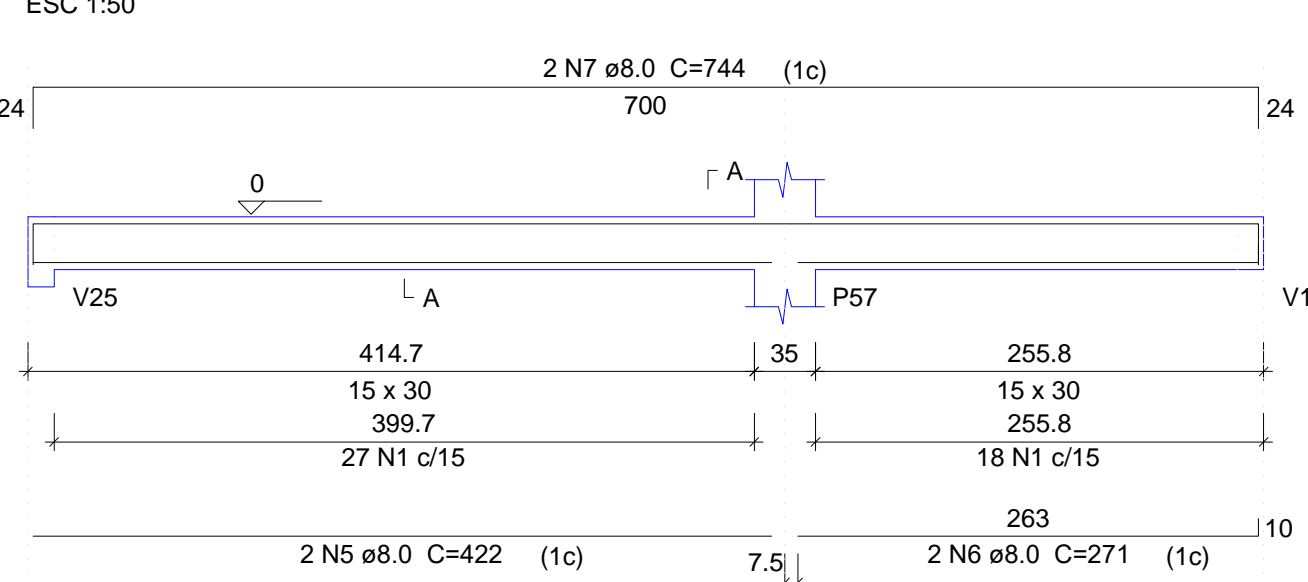


AV. PREFEITO GUIDO DOTTRENG, 519
CENTRO - MARCO - CE 14090-000
BR 366A-1210 | BR 366A-1415
WWW.MARCO.CE.GOV.BR
CNPJ: 07.368.516/0001-47

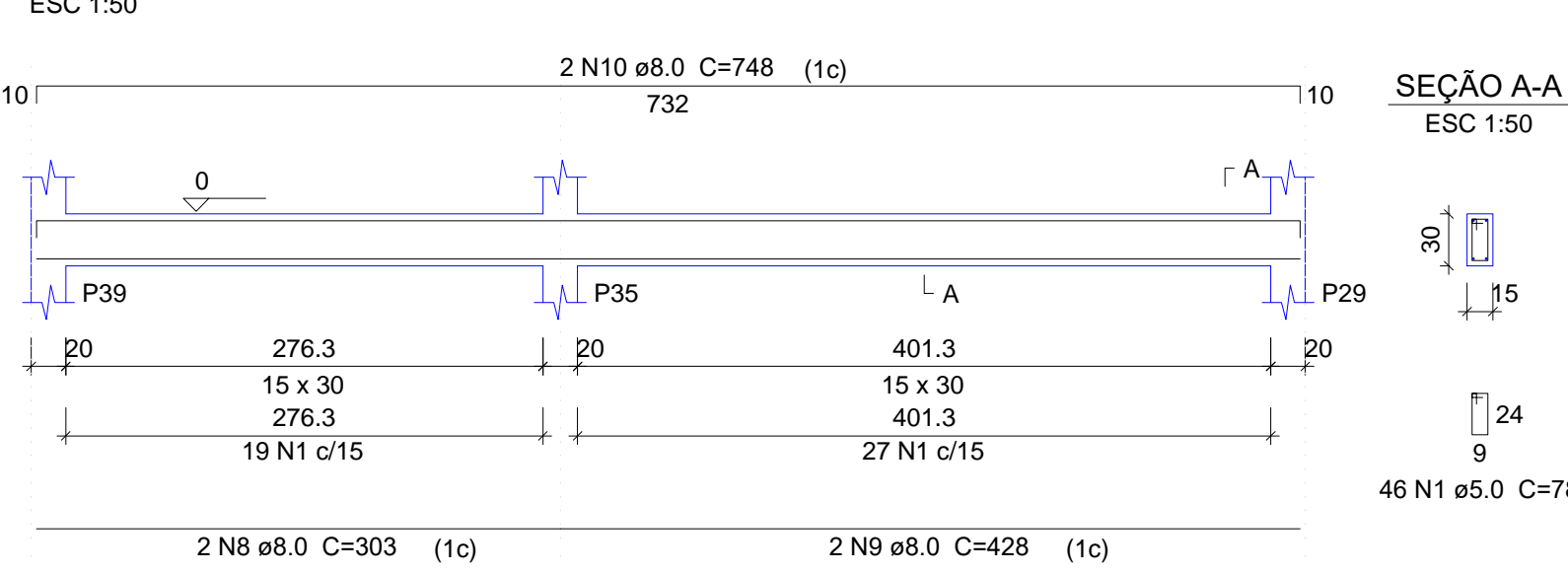
V39



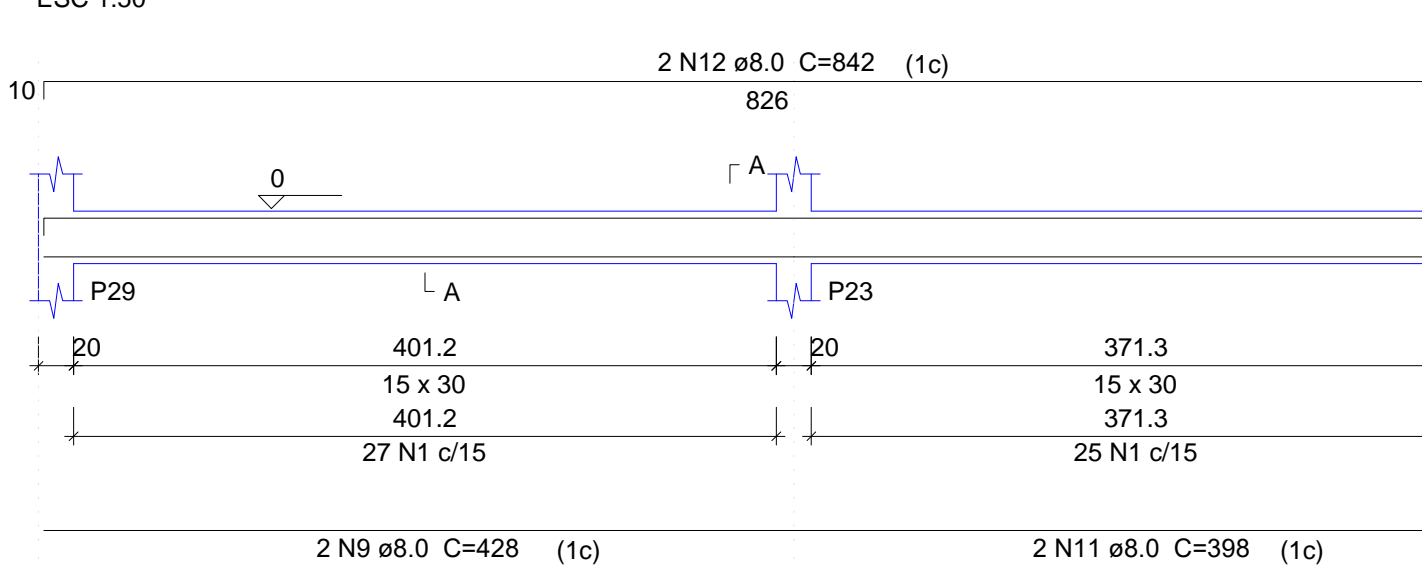
V40



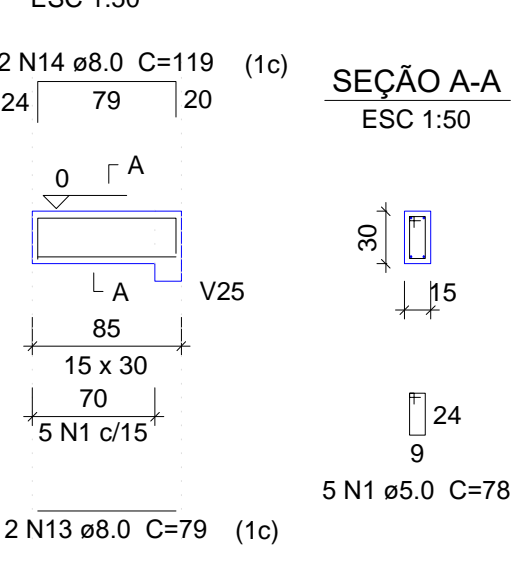
V41



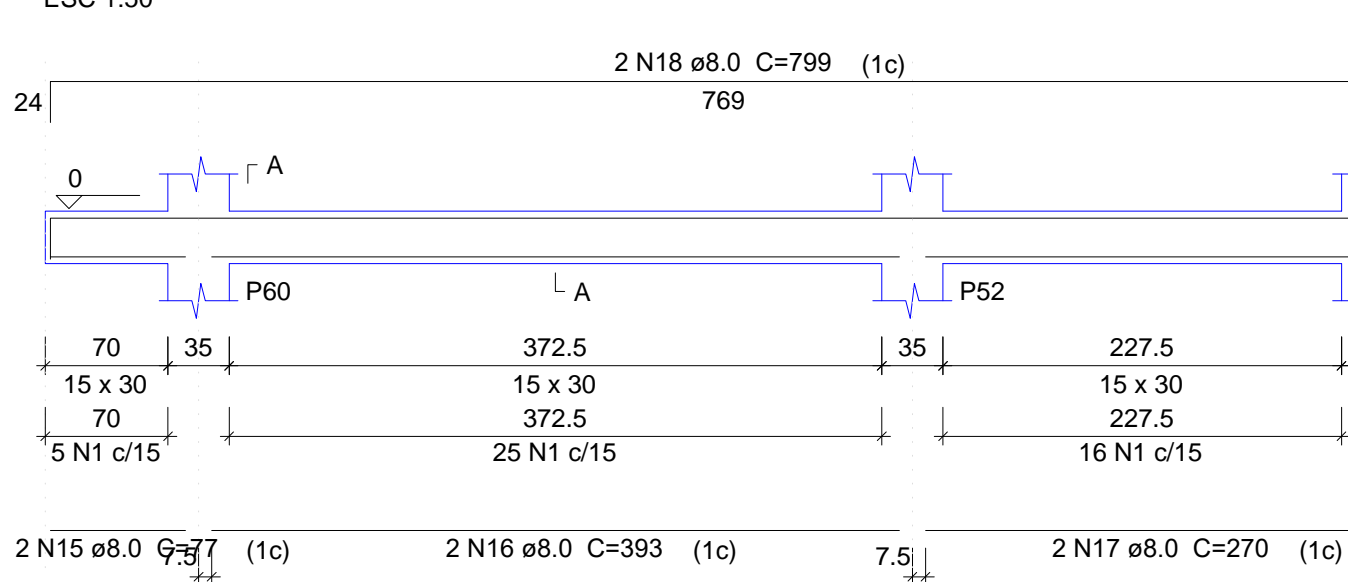
V42



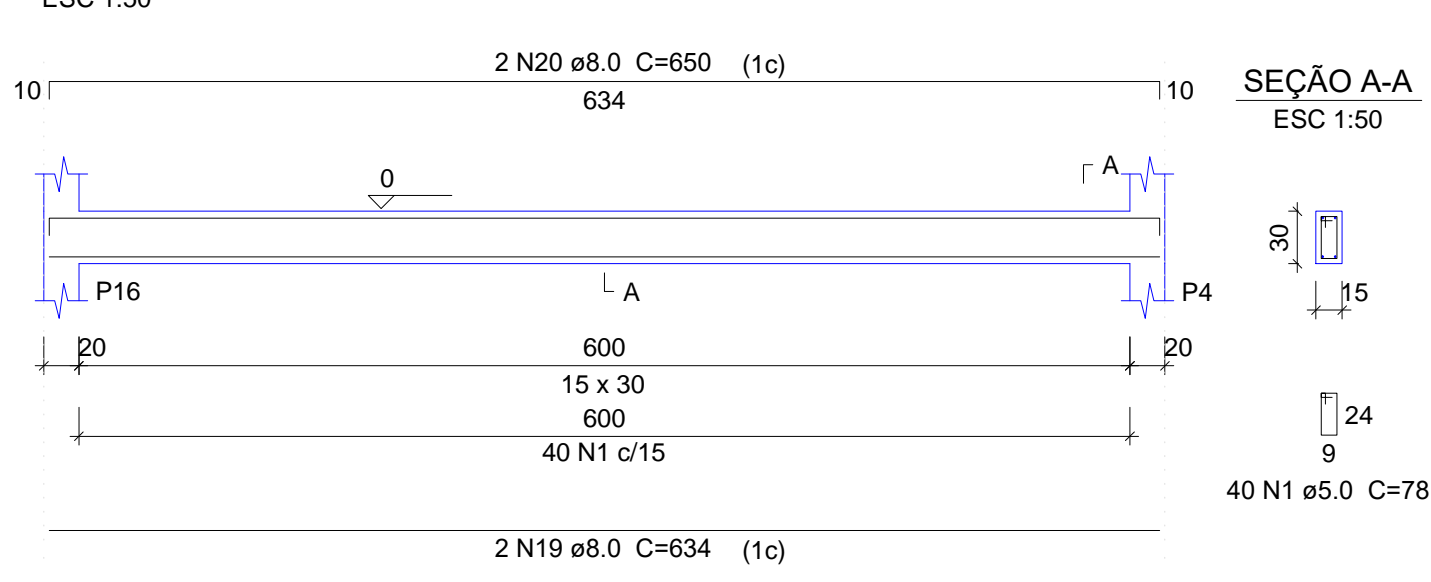
V43



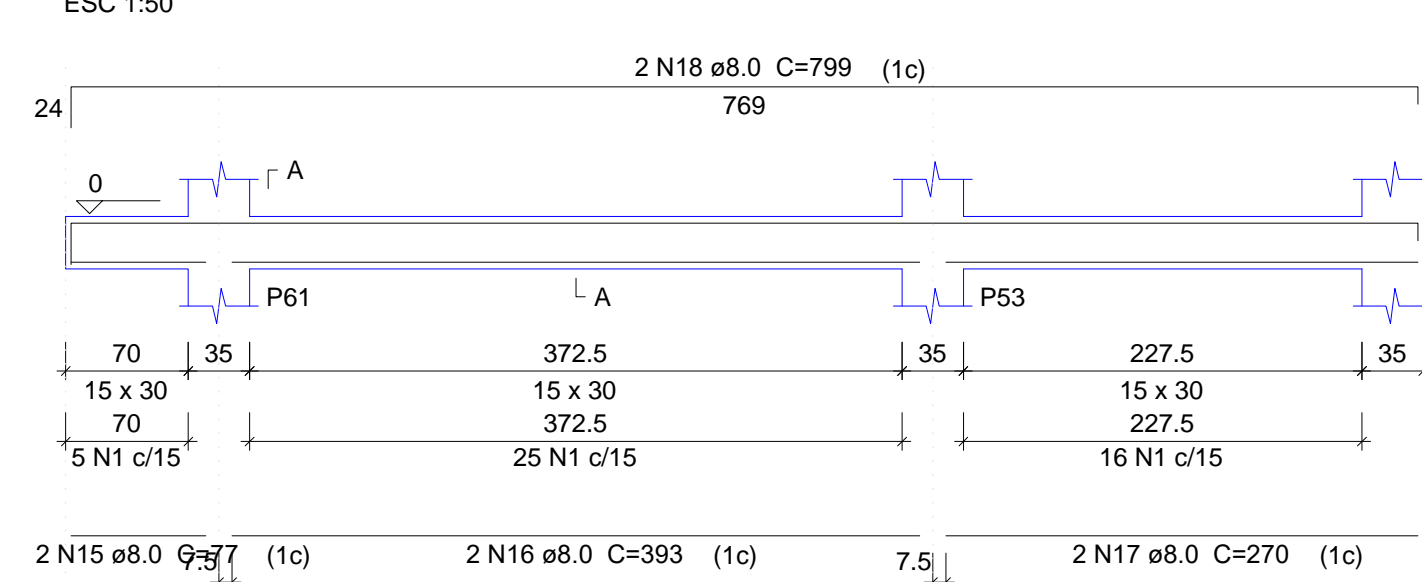
V44



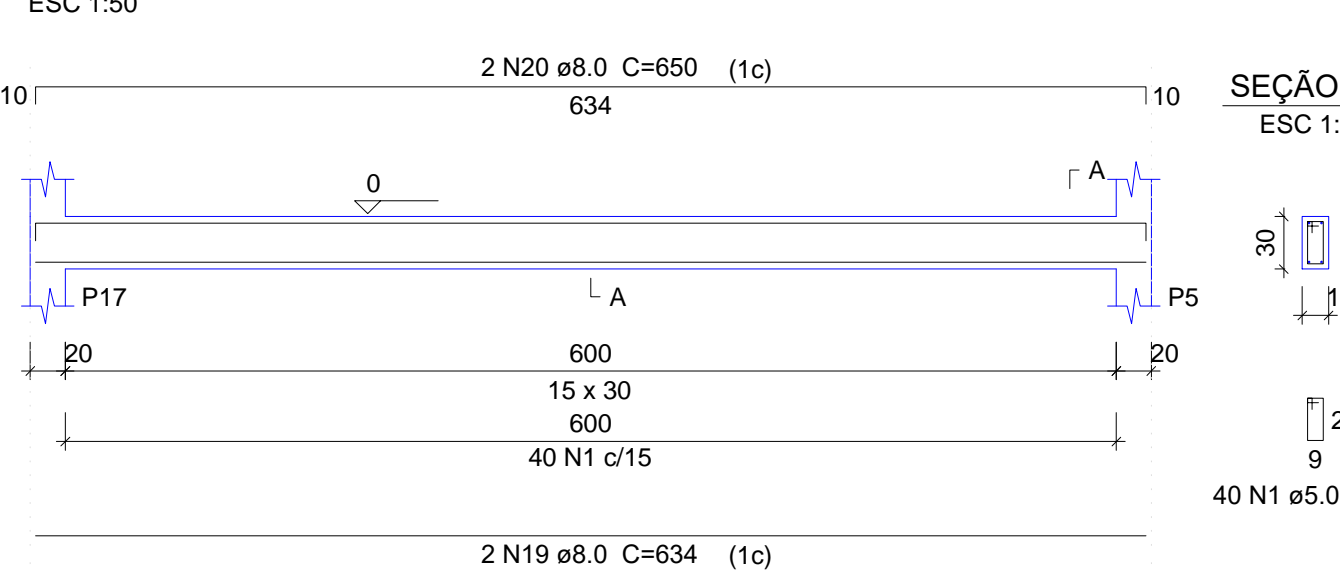
V45



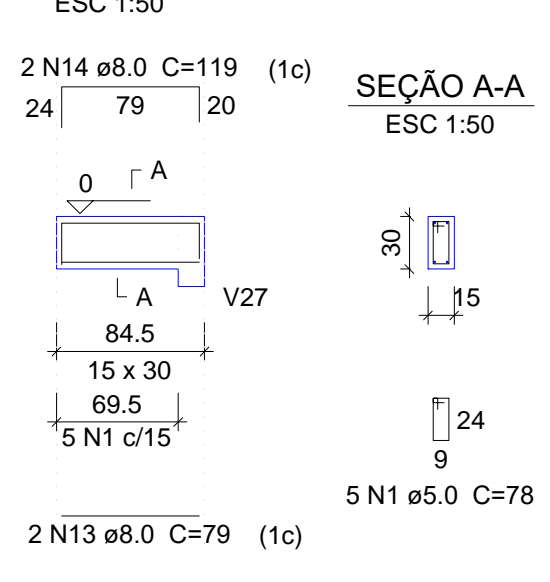
V46



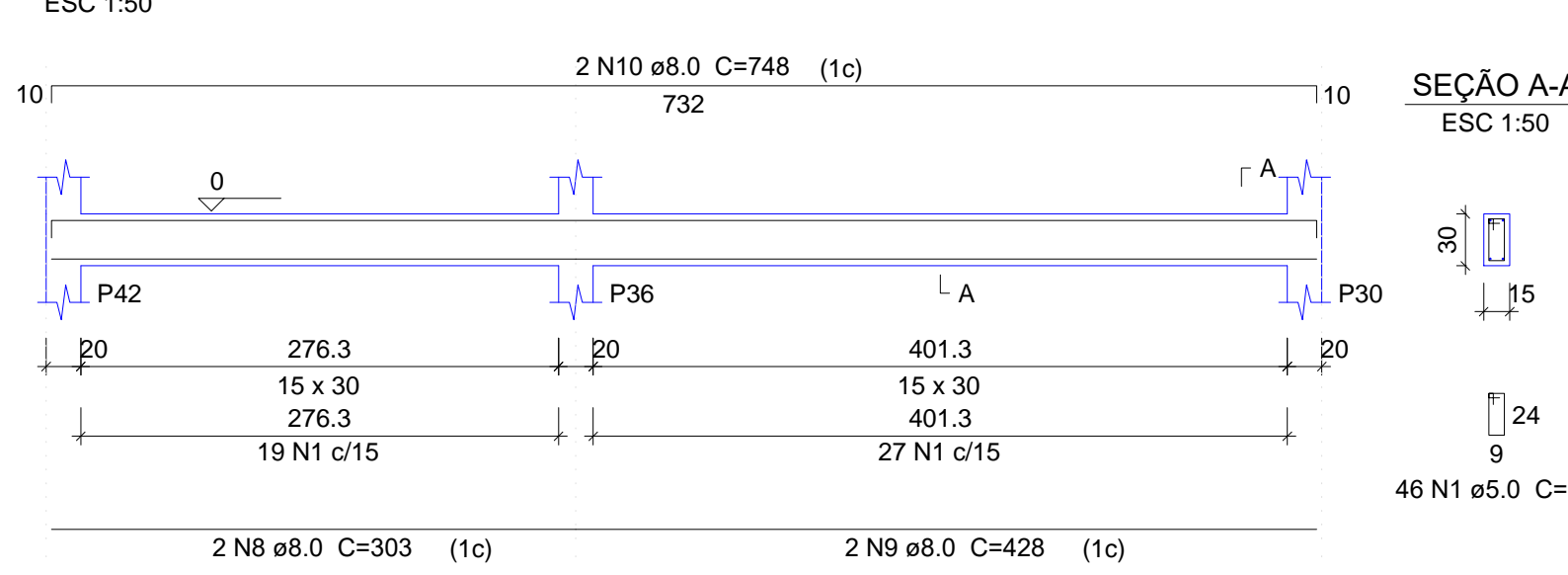
V47



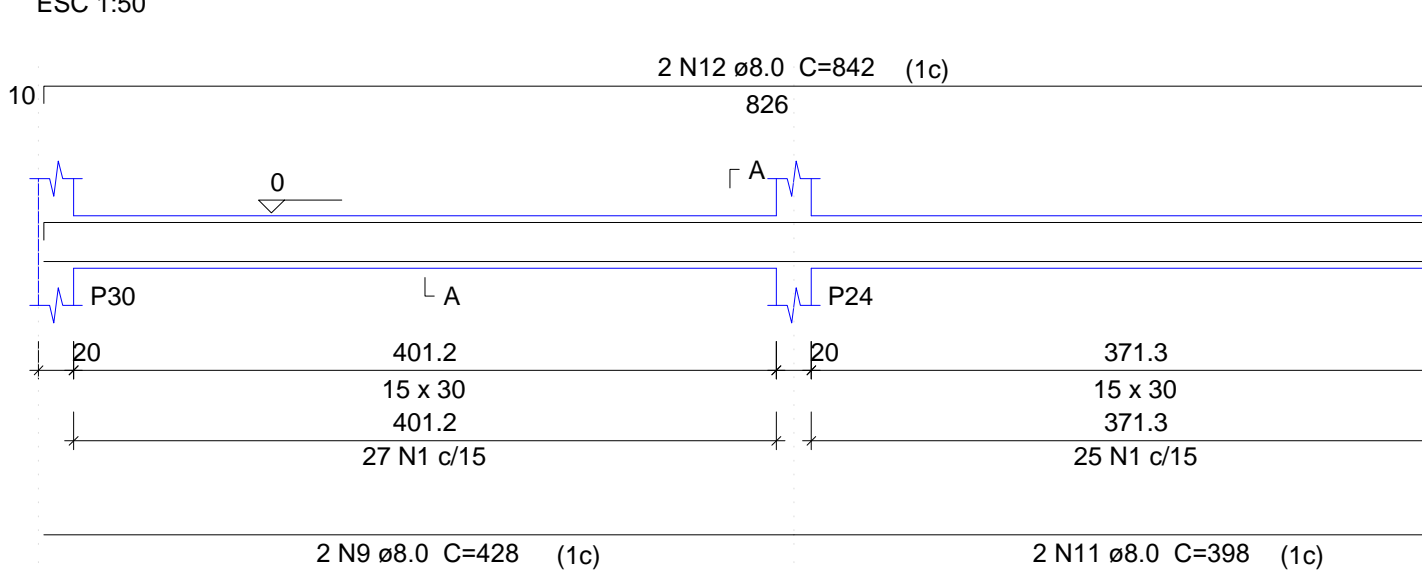
V48



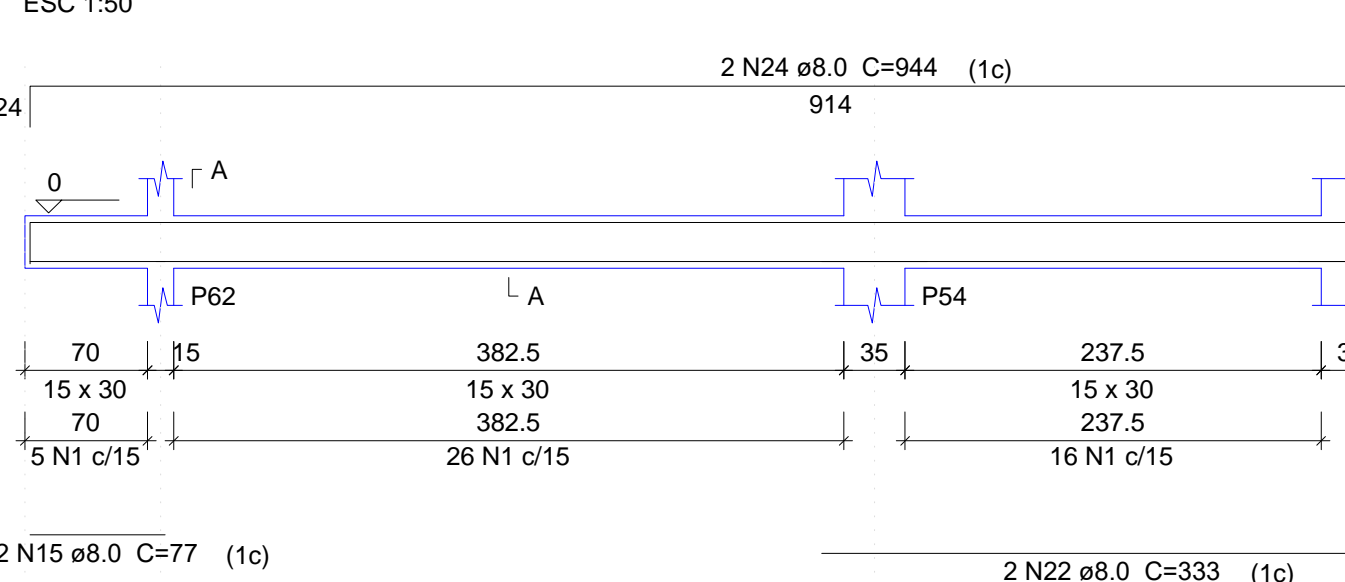
V49



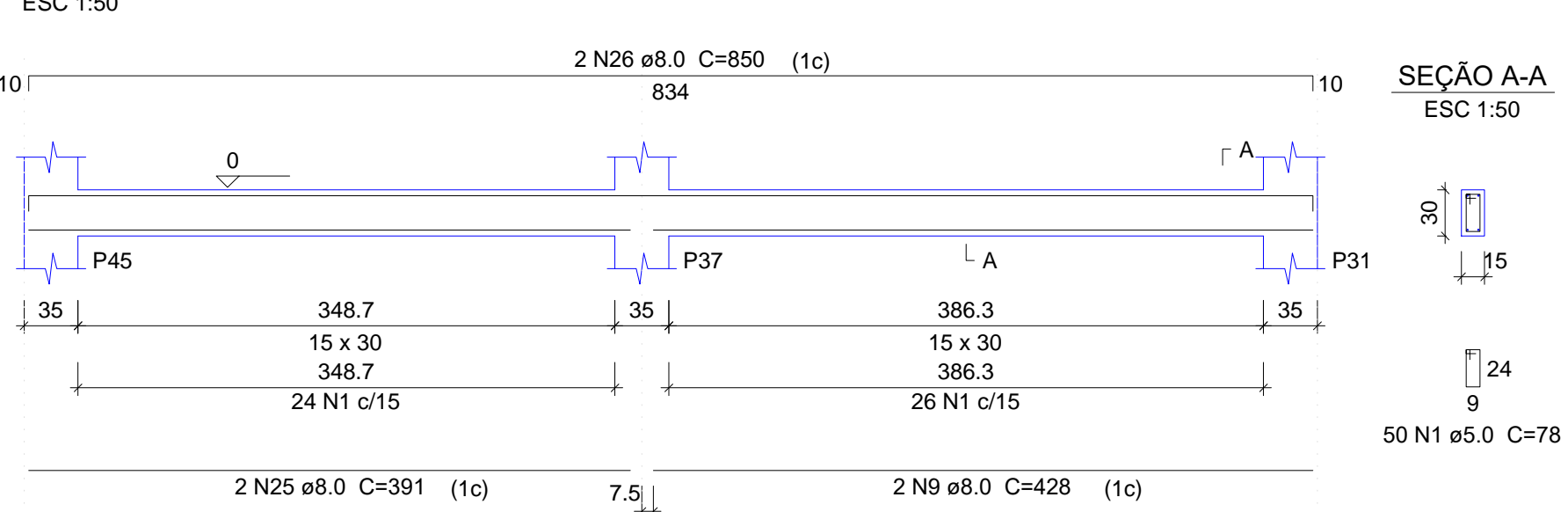
V50



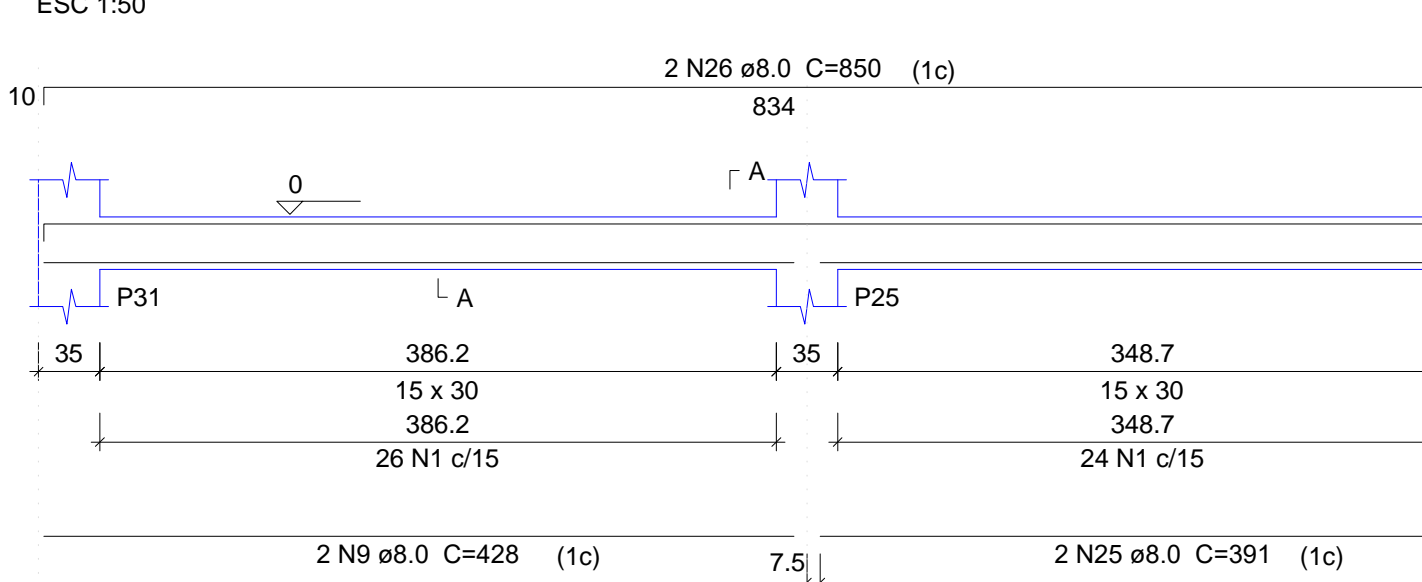
V51



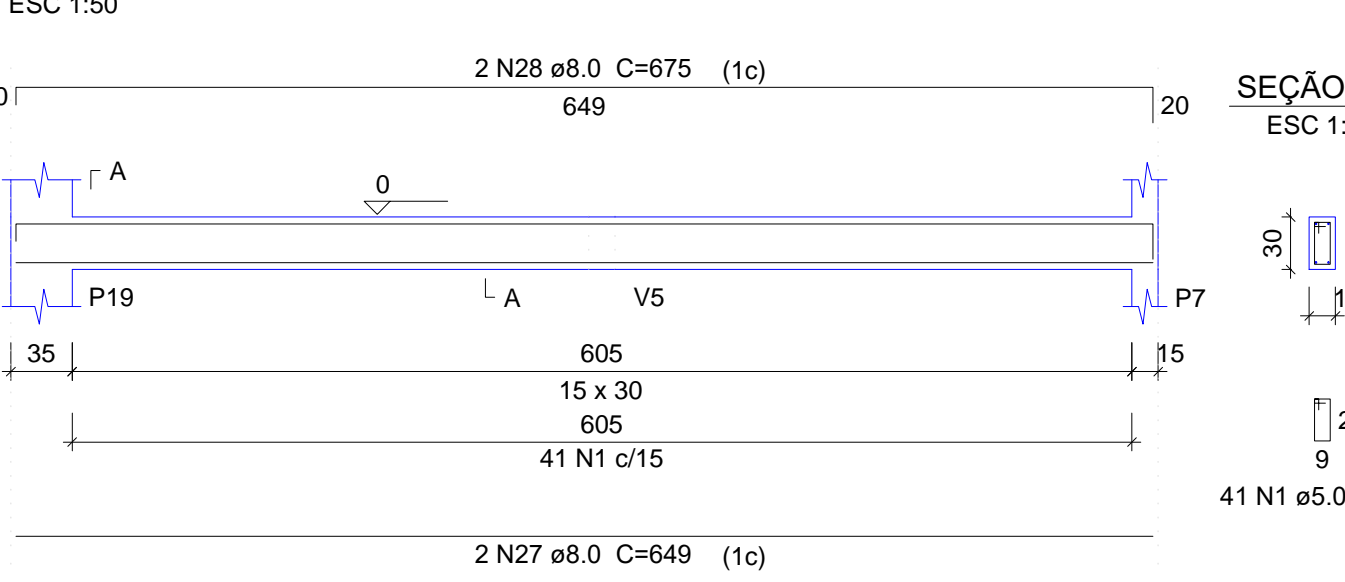
V52



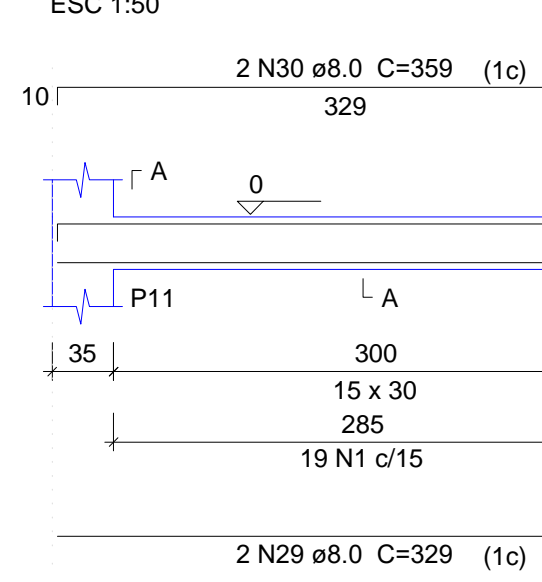
V53



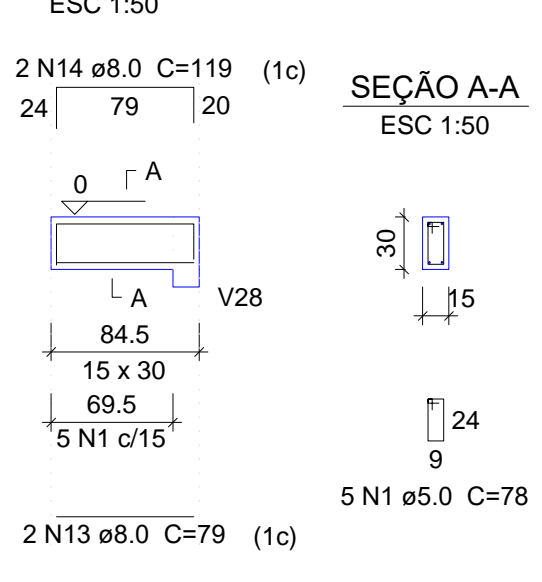
V54



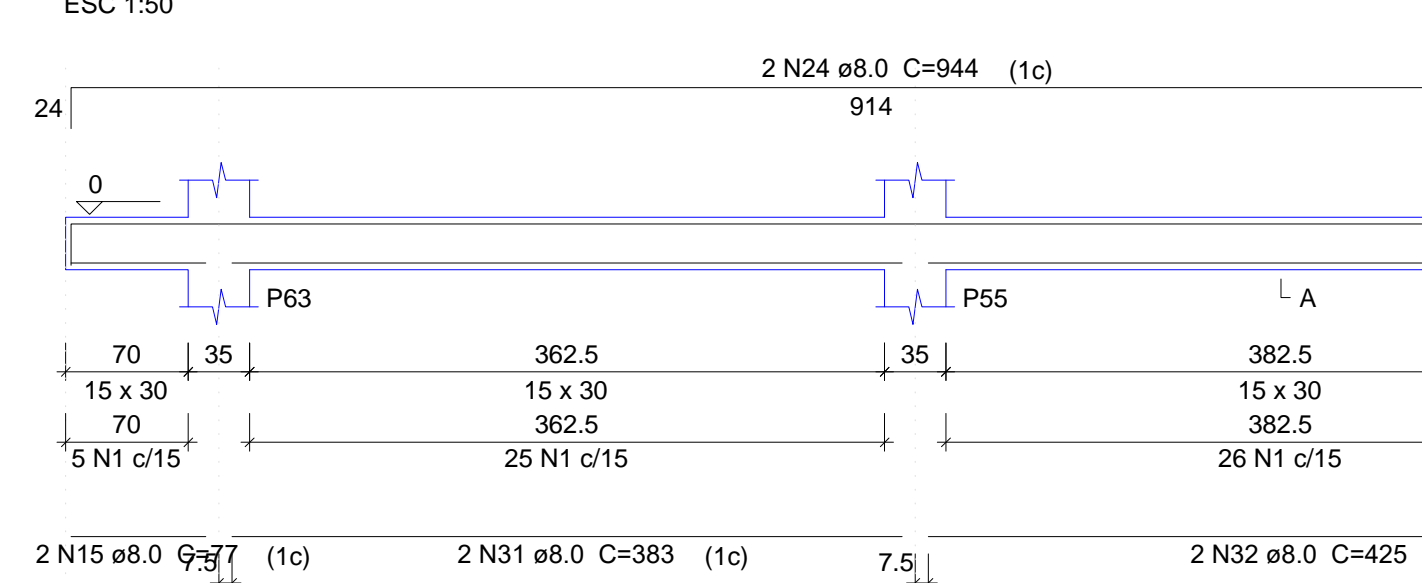
V55



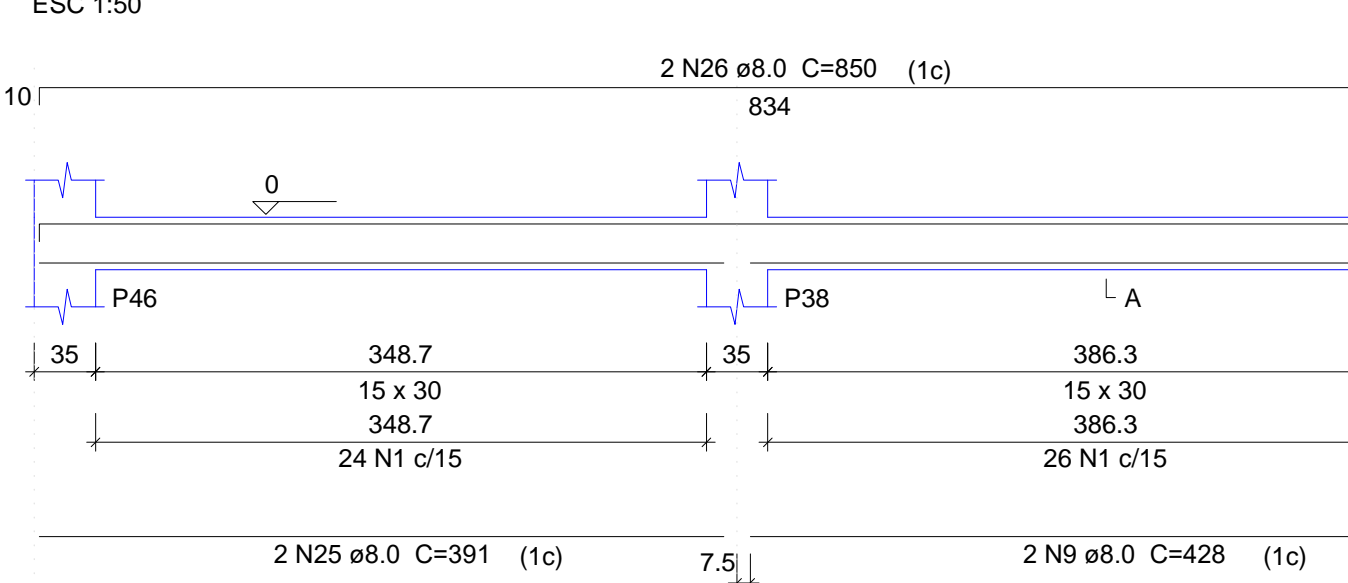
V56



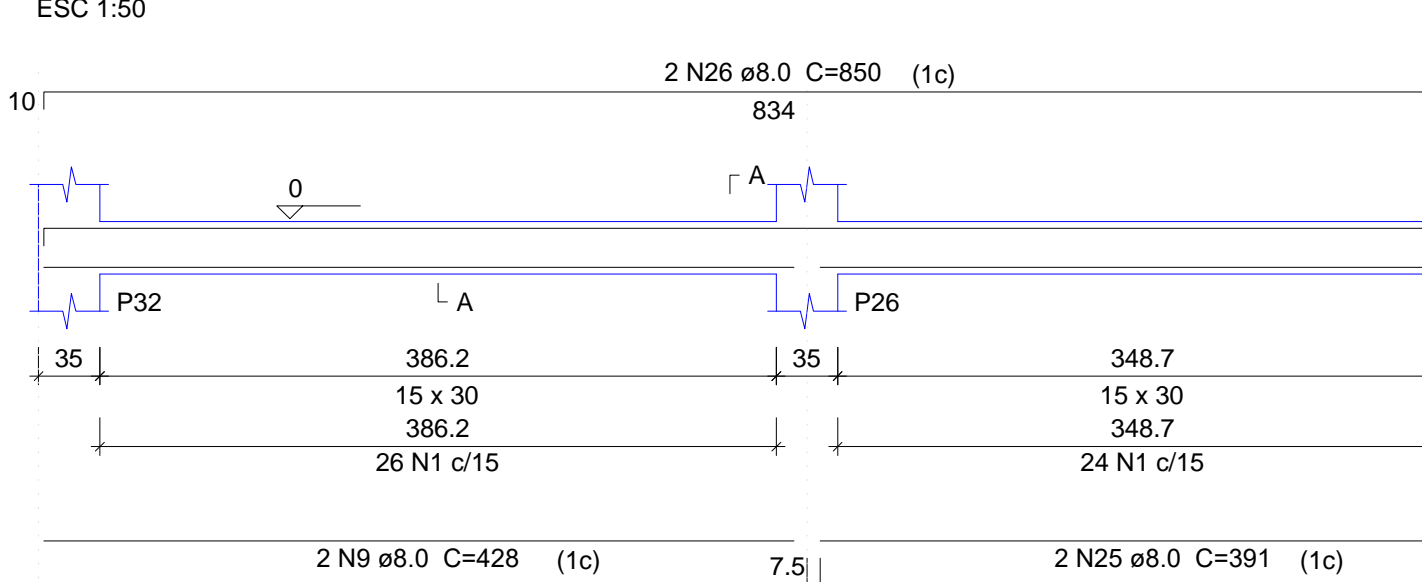
V57



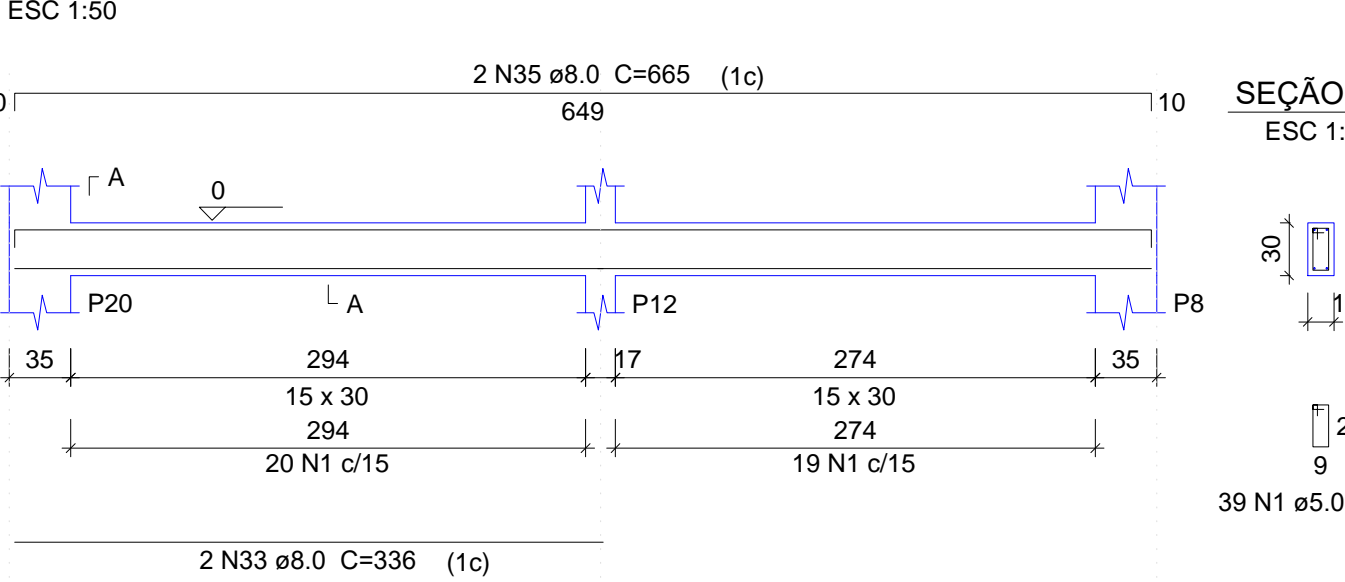
V58



V59



V60



Relação do aço

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	876	78	68328
CA50	2	8.0	2	452	904
	3	8.0	2	162	324
	4	8.0	2	655	1310
	5	8.0	2	422	844
	6	8.0	2	271	542
	7	8.0	2	744	1488
	8	8.0	4	303	1212
	9	8.0	16	428	6848
	10	8.0	4	748	2992
	11	8.0	4	398	1592
	12	8.0	4	842	3368
	13	8.0	6	79	474
	14	8.0	6	119	714
	15	8.0	8	77	616
	16	8.0	4	383	1572
	17	8.0	4	270	1080
	18	8.0	4	799	3196
	19	8.0	4	634	2536
	20	8.0	4	650	2600
	21	8.0	2	440	880
	22	8.0	2	333	666
	23	8.0	2	190	380
	24	8.0	4	944	3776
	25	8.0	8	391	3128
	26	8.0	8	850	6800
	27	8.0	2	649	1298
	28	8.0	2	675	1350
	29	8.0	2	329	658
	30	8.0	2	359	718
	31	8.0	2	383	766
	32	8.0	2	425	850
	33	8.0	2	336	672
	34	8.0	2	316	632
	35	8.0	2	665	1330

Resumo do aço

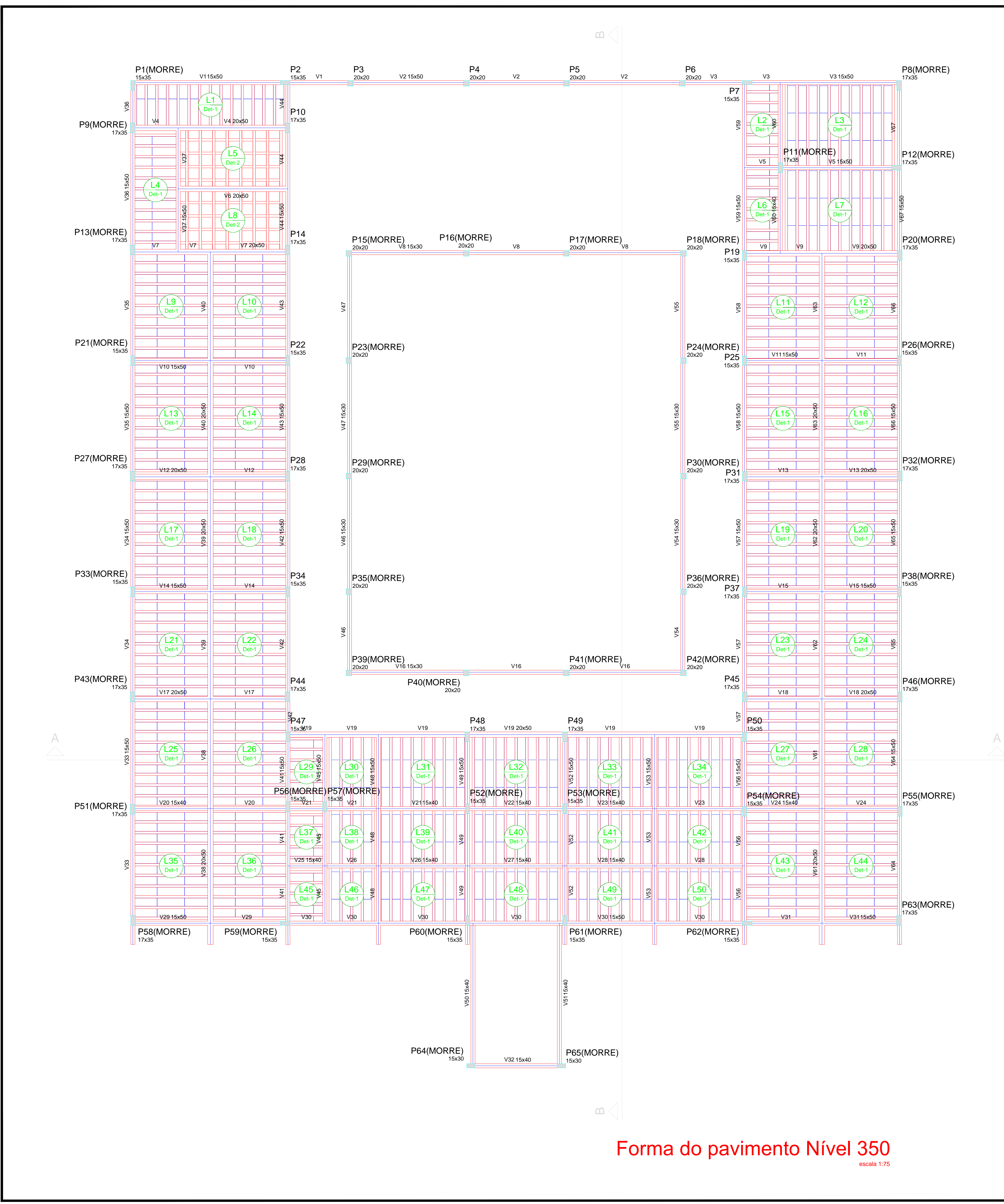
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA60	8.0	581.2	252.2
CA60	5.0	683.3	115.8
PESO TOTAL			
CA50			252.2
CA60			115.8

Volume de concreto (C-25) = 6.48 m³
Área de forma = 108.07 m²

COR	ESP.PENA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
10	1.06
11	1.06
12	1.06
13	1.06

02				
01				
Nº	DATA	REVISÃO	DESENHO	APROVAÇÃO
		PROJETO: PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO		
		CLIENTE: MUNICÍPIO DE MARCO		
		LOCAL: LOCALIDADE DE FEIJÃO BRAVO		
		CONTEÚDO: PLANTA DE PAGINAÇÃO 1 Detalhamento das Vigas Nível 000		
				
		AV. PREFEITO GUIDO DOTTRENI, 519 CENTRO - MARCO - CE 14070-000 BR 368A-1210 E BR 368A-1115 WWW.MUNICIPIO-DE-MARCO.CE.GOV.BR CNPJ: 07.346.516/0001-47		
ESCALA:	INDICADA:	DESENHO:	PRANCHAS:	
		RODRIGO NUNES		
		DATA:		
		MARÇO/2021		

COR	ESP. PENNA
01	0,70
02	0,50
03	0,30
04	0,40
05	0,70
06	0,20
07	0,20
08	0,08
09	0,10
10	1,08
11	1,08
12	1,08
13	1,08

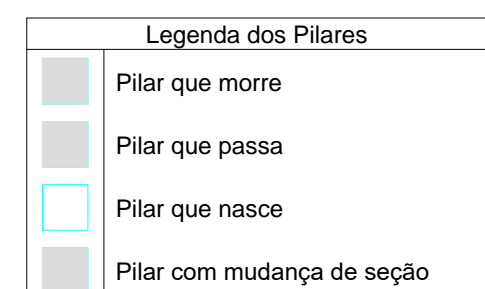


Blocos de enchimento				
Detalhe	Tipo	Nome	Dimensões (cm)	Quantidade
1	EPS Unidirecional	B8/20/100	8 30 100	1221
2	EPS Bidirecional	B8/40/40	8 40 40	90

Vigas			Pilares		
Nome	Seção (cm)	Elevação (cm)	Nome	Seção (cm)	Elevação (cm)
V1	15x50	0 350	P1	15 x 35	0 350
V2	15x50	0 350	P2	15 x 35	0 350
V3	15x50	0 350	P3	20 x 20	0 350
V4	20x50	0 350	P4	20 x 20	0 350
V5	15x50	0 350	P5	20 x 20	0 350
V6	20x50	0 350	P6	20 x 20	0 350
V7	20x50	0 350	P7	15 x 35	0 350
V8	15x30	0 350	P8	17 x 35	0 350
V9	20x50	0 350	P9	17 x 35	0 350
V10	15x50	0 350	P10	17 x 35	0 350
V11	15x50	0 350	P11	17 x 35	0 350
V12	20x50	0 350	P12	17 x 35	0 350
V13	20x50	0 350	P13	17 x 35	0 350
V14	15x50	0 350	P14	17 x 35	0 350
V15	15x50	0 350	P15	20 x 20	0 350
V16	15x30	0 350	P16	20 x 20	0 350
V17	20x50	0 350	P17	20 x 20	0 350
V18	20x50	0 350	P18	20 x 20	0 350
V19	15x40	0 350	P19	15 x 35	0 350
V20	15x40	0 350	P20	17 x 35	0 350
V21	15x40	0 350	P21	15 x 35	0 350
V22	15x40	0 350	P22	15 x 35	0 350
V23	15x40	0 350	P23	20 x 20	0 350
V24	15x40	0 350	P24	20 x 20	0 350
V25	15x40	0 350	P25	15 x 35	0 350
V26	15x40	0 350	P26	15 x 35	0 350
V27	15x40	0 350	P27	17 x 35	0 350
V28	15x40	0 350	P28	17 x 35	0 350
V29	15x50	0 350	P29	20 x 20	0 350
V30	15x50	0 350	P30	20 x 20	0 350
V31	15x50	0 350	P31	17 x 35	0 350
V32	15x40	0 350	P32	17 x 35	0 350
V33	15x50	0 350	P33	15 x 35	0 350
V34	15x50	0 350	P34	15 x 35	0 350
V35	15x50	0 350	P35	20 x 20	0 350
V36	15x50	0 350	P36	20 x 20	0 350
V37	15x50	0 350	P37	17 x 35	0 350
V38	20x50	0 350	P38	15 x 35	0 350
V39	20x50	0 350	P39	20 x 20	0 350
V40	20x50	0 350	P40	20 x 20	0 350
V41	15x50	0 350	P41	20 x 20	0 350
V42	15x50	0 350	P42	20 x 20	0 350
V43	15x50	0 350	P43	17 x 35	0 350
V44	15x50	0 350	P44	17 x 35	0 350
V45	15x50	0 350	P45	17 x 35	0 350
V46	15x30	0 350	P46	17 x 35	0 350
V47	15x30	0 350	P47	15 x 35	0 350
V48	15x50	0 350	P48	17 x 35	0 350
V49	15x50	0 350	P49	17 x 35	0 350
V50	15x40	0 350	P50	15 x 35	0 350
V51	15x40	0 350	P51	17 x 35	0 350
V52	15x50	0 350	P52	15 x 35	0 350
V53	15x50	0 350	P53	15 x 35	0 350
V54	15x30	0 350	P54	15 x 35	0 350
V55	15x30	0 350	P55	17 x 35	0 350

Lajes									
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Peso próprio (kgf/m²)	Adicional (kgf/m²)	Sobrecarga (kgf/m²)	Localizada	Água
L1	Treliçada 1D	12	0	350	147	100	50	-	0
L2	Treliçada 1D	12	0	350	147	100	50	-	0
L3	Treliçada 1D	12	0	350	147	100	50	-	0
L4	Treliçada 1D	12	0	350	147	100	50	-	800
L5	Treliçada 2D	12	0	350	168	100	50	-	0
L6	Treliçada 1D	12	0	350	147	100	50	-	0
L7	Treliçada 1D	12	0	350	147	100	50	-	0
L8	Treliçada 2D	12	0	350	168	100	50	-	0
L9	Treliçada 1D	12	0	350	147	100	50	-	0
L10	Treliçada 1D	12	0	350	147	100	50	-	0
L11	Treliçada 1D	12	0	350	147	100	50	-	0
L12	Treliçada 1D	12	0	350	147	100	50	-	0
L13	Treliçada 1D	12	0	350	147	100	50	-	0
L14	Treliçada 1D	12	0	350	147	100	50	-	0
L15	Treliçada 1D	12	0	350	147	100	50	-	0
L16	Treliçada 1D	12	0	350	147	100	50	-	0
L17	Treliçada 1D	12	0	350	147	100	50	-	0
L18	Treliçada 1D	12	0	350	147	100	50	-	0
L19	Treliçada 1D	12	0	350	147	100	50	-	0
L20	Treliçada 1D	12	0	350	147	100	50	-	0
L21	Treliçada 1D	12	0	350	147	100	50	-	0
L22	Treliçada 1D	12	0	350	147	100	50	-	0
L23	Treliçada 1D	12	0	350	147	100	50	-	0
L24	Treliçada 1D	12	0	350	147	100	50	-	0
L25	Treliçada 1D	12	0	350	147	100	50	-	0
L26	Treliçada 1D	12	0	350	147	100	50	-	0
L27	Treliçada 1D	12	0	350	147	100	50	-	0
L28	Treliçada 1D	12	0	350	147	100	50	-	0
L29	Treliçada 1D	12	0	350	147	100	50	-	0
L30	Treliçada 1D	12	0	350	147	100	50	-	0
L31	Treliçada 1D	12	0	350	147	100	50	-	0
L32	Treliçada 1D	12	0	350	147	100	50	-	0
L33	Treliçada 1D	12	0	350	147	100	50	-	0
L34	Treliçada 1D	12	0	350	147	100	50	-	0
L35	Treliçada 1D	12	0	350	147	100	50	-	0
L36	Treliçada 1D	12	0	350	147	100	50	-	0
L37	Treliçada 1D	12	0	350	147	100	50	-	0
L38	Treliçada 1D	12	0	350	147	100	50	-	0
L39	Treliçada 1D	12	0	350	147	100	50	-	0
L40	Treliçada 1D	12	0	350	147	100	50	-	0
L41	Treliçada 1D	12	0	350	147	100	50	-	0
L42	Treliçada 1D	12	0	350	147	100	50	-	0
L43	Treliçada 1D	12	0	350	147	100	50	-	0
L44	Treliçada 1D	12	0	350	147	100	50	-	0
L45	Treliçada 1D	12	0	350	147	100	50	-	0
L46	Treliçada 1D	12	0	350	147	100	50	-	0
L47	Treliçada 1D	12	0	350	147	100	50	-	0
L48	Treliçada 1D	12	0	350	147	100	50	-	0
L49	Treliçada 1D	12	0	350	147	100	50	-	0
L50	Treliçada 1D	12	0	350	147	100	50	-	0

Características dos materiais		
Elemento	fk (kgf/cm²)	Ecs (kgf/cm²)
Vigas	260	238000
Pilares	250	238000
Lajes	250	238000

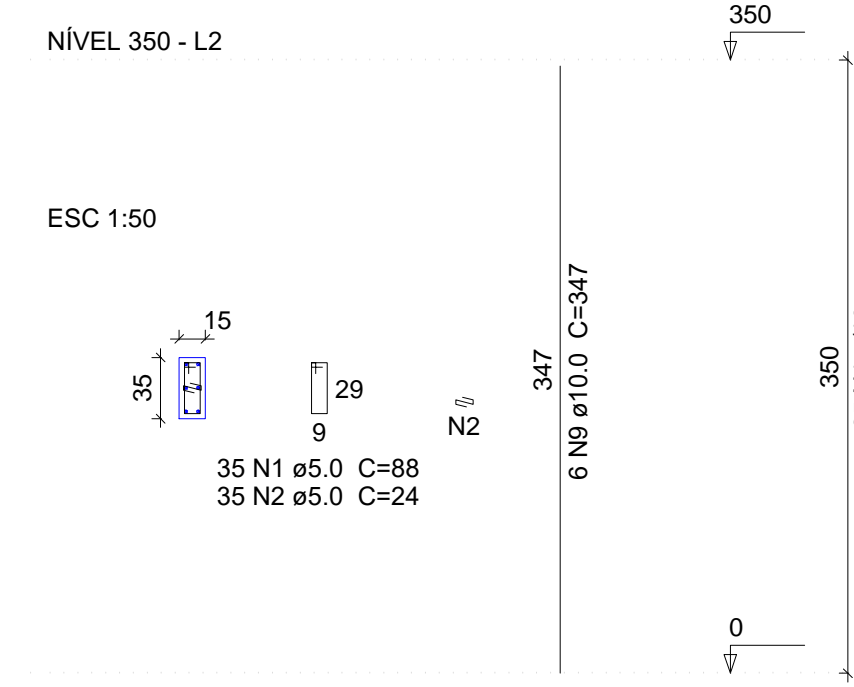


Forma do pavimento Nível 350

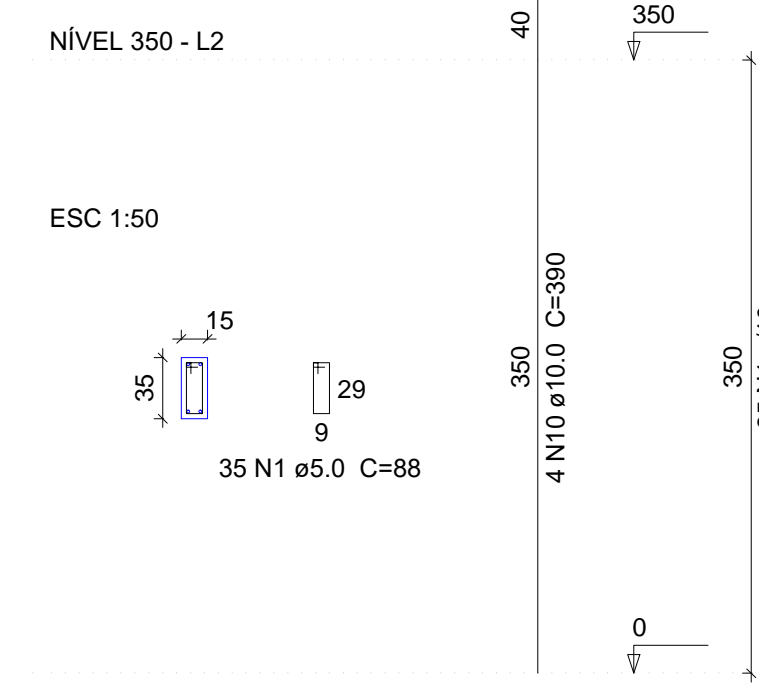
escala 1/75

02				
01				
Nº	DATA	REVISÃO	DESENHO	APROVAÇÃO
		PROJETO: PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO		
		CLIENTE: MUNICÍPIO DE MARCO		
		LOCAL: LOCALIDADE DE FEIJÃO BRAVO		
		CONTEÚDO: PLANTA DE PAGINAÇÃO 1 Forma do pavimento Nível 350		
				
		AV. PREFEITO GUSTO DUTRA, S/N CENTRO - MARCO - CE 14780-000 BR 364-A, 220 J B 364-A-1415 www.marco.ce.gov.br CNPJ: 07.546.516/0001-47		
ESCALA:	DESENHO:	PRANCHAS:		
INDICADA:	RODRIGO NUNES			
	DATA:			06/15
	MARÇO/2021			

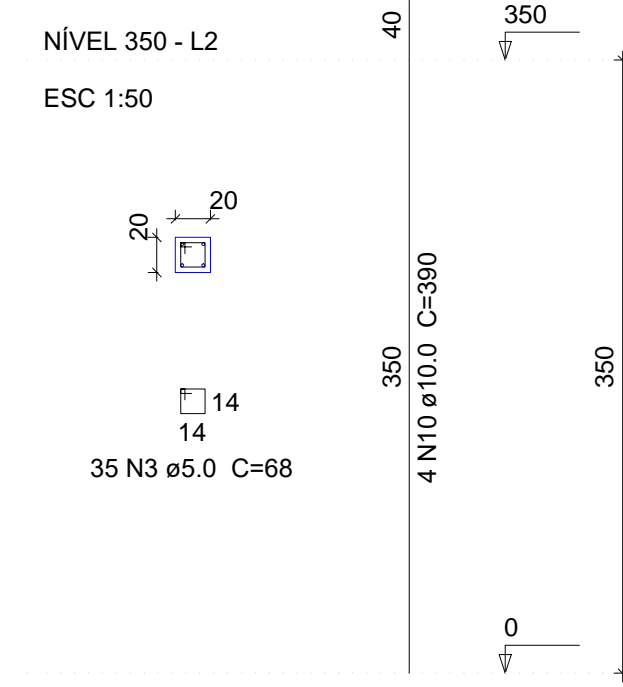
P1



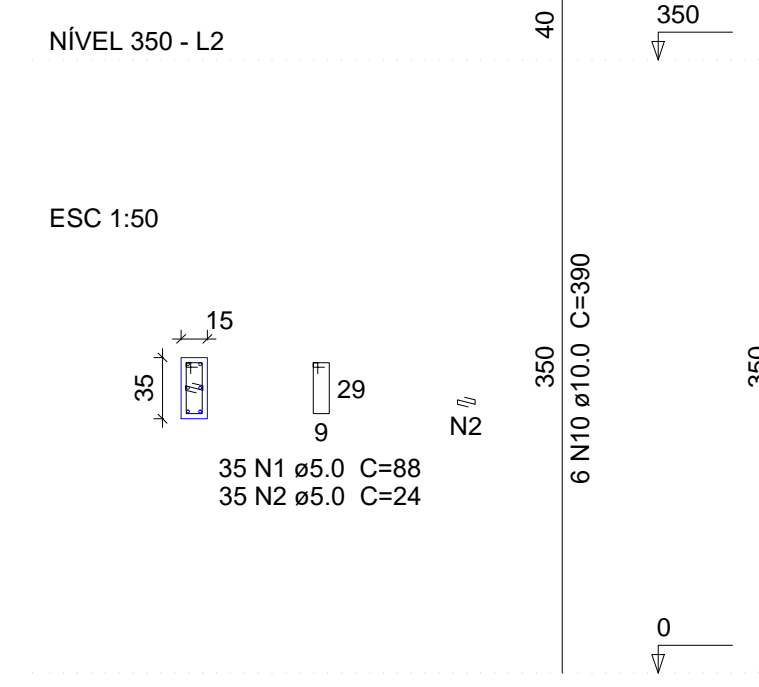
P2



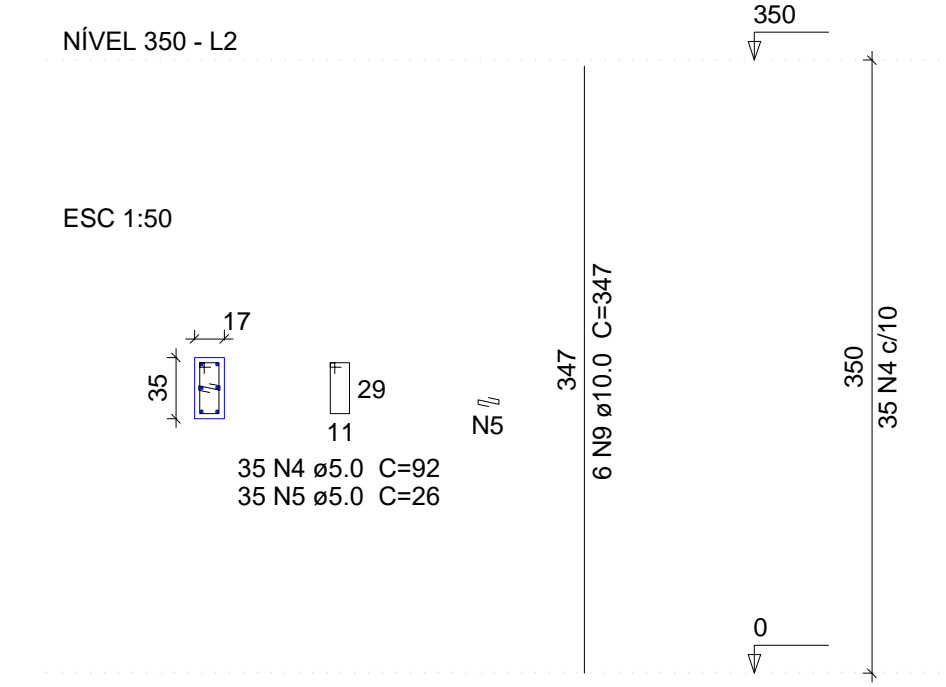
P3=P4=P5=P6



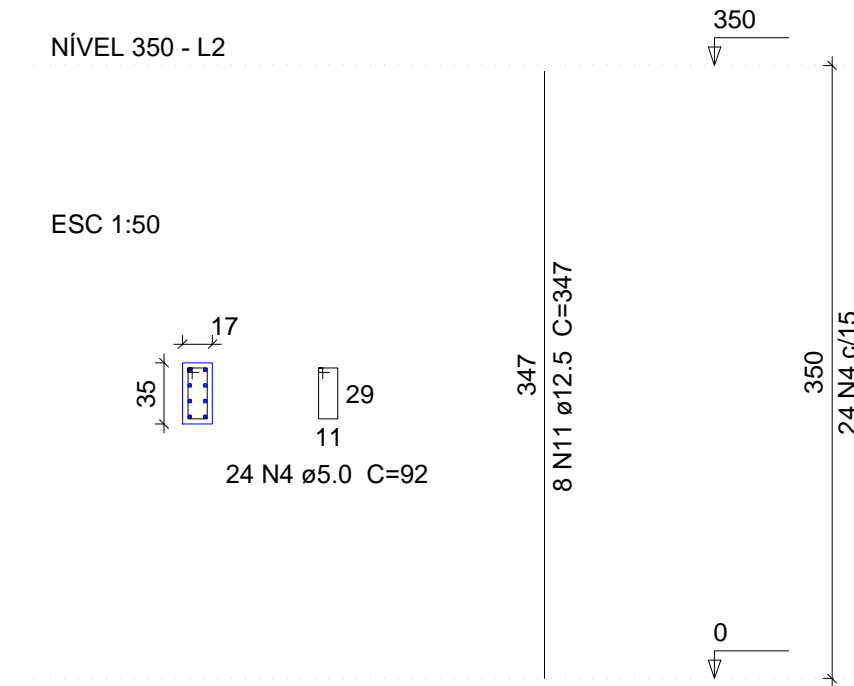
P7=P50



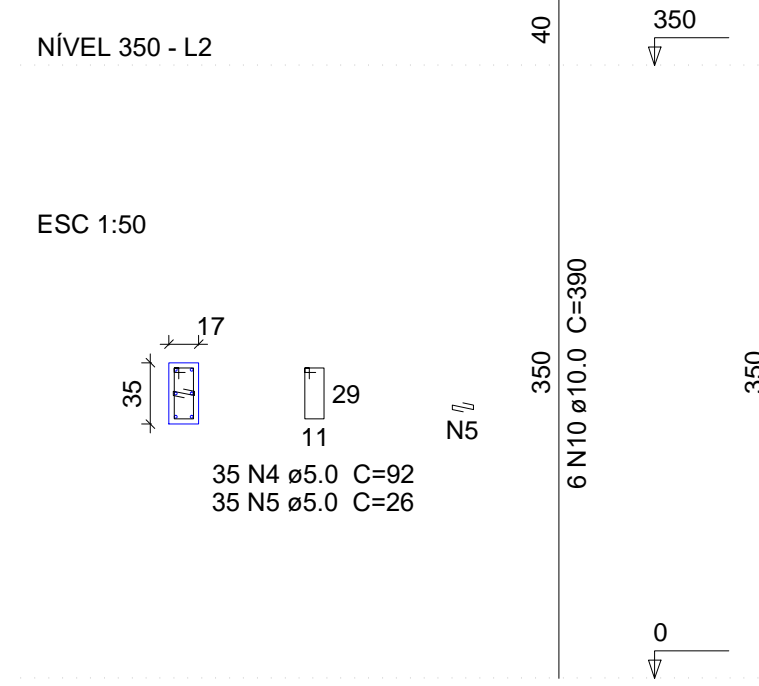
P8=P43=P46=P58=P63



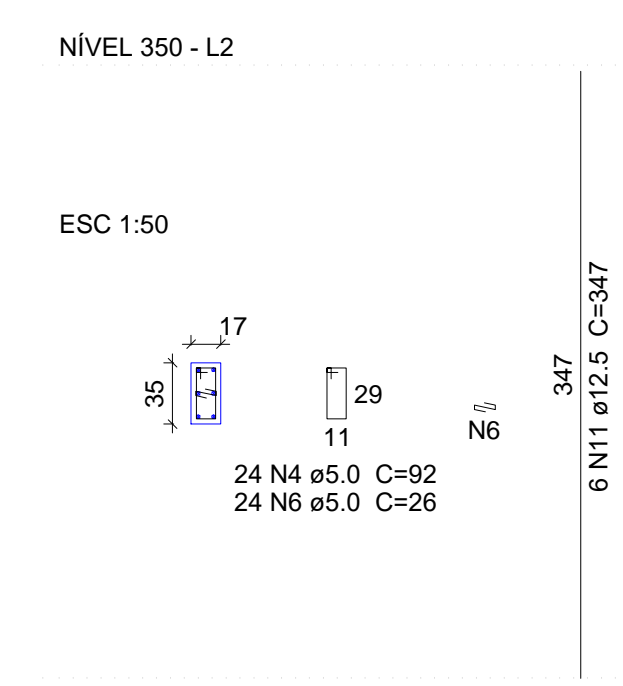
P9=P51



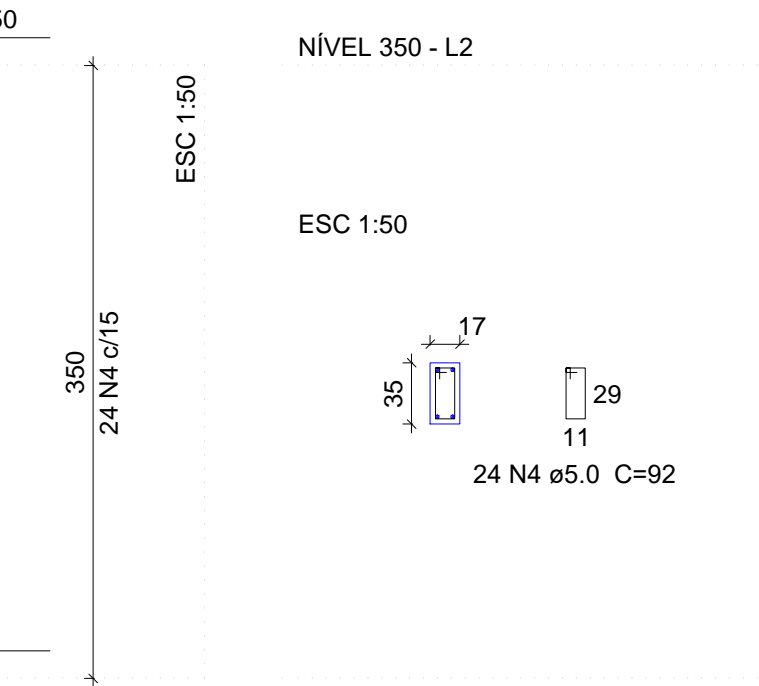
P10=P28=P31=P48=P49



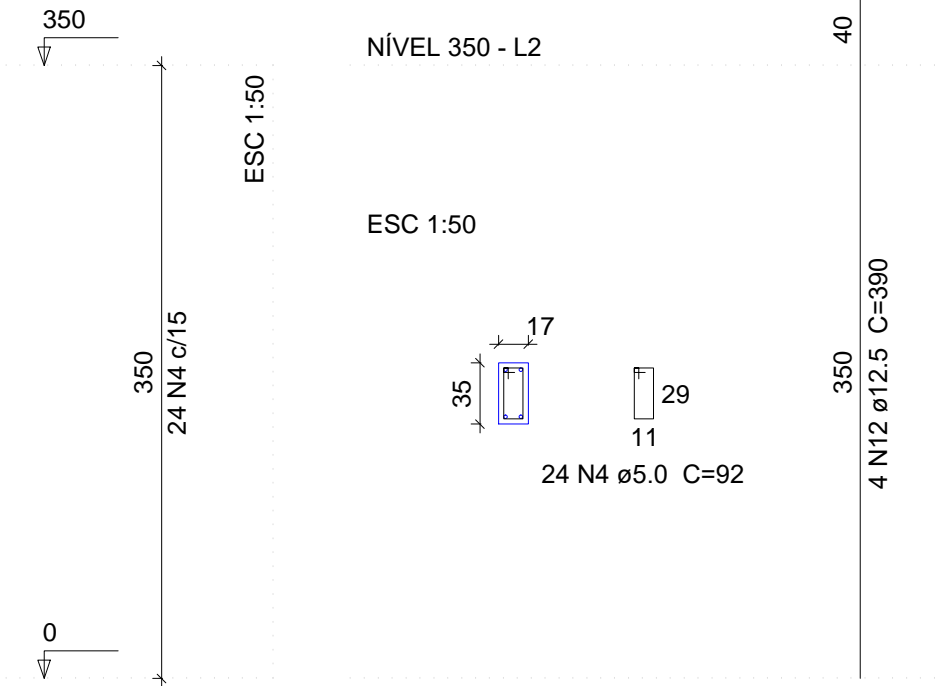
P11=P13=P32=P55



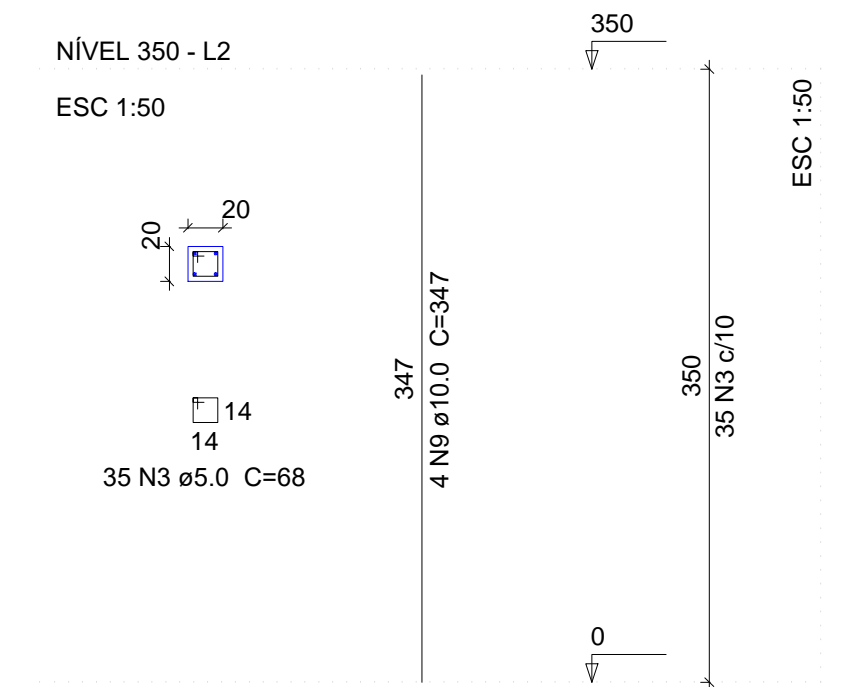
P12=P20=P27



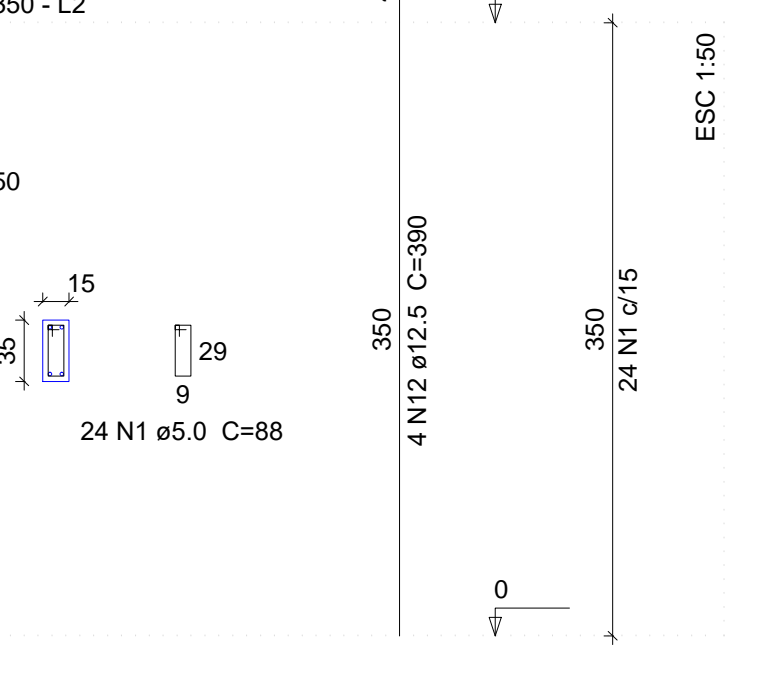
P14



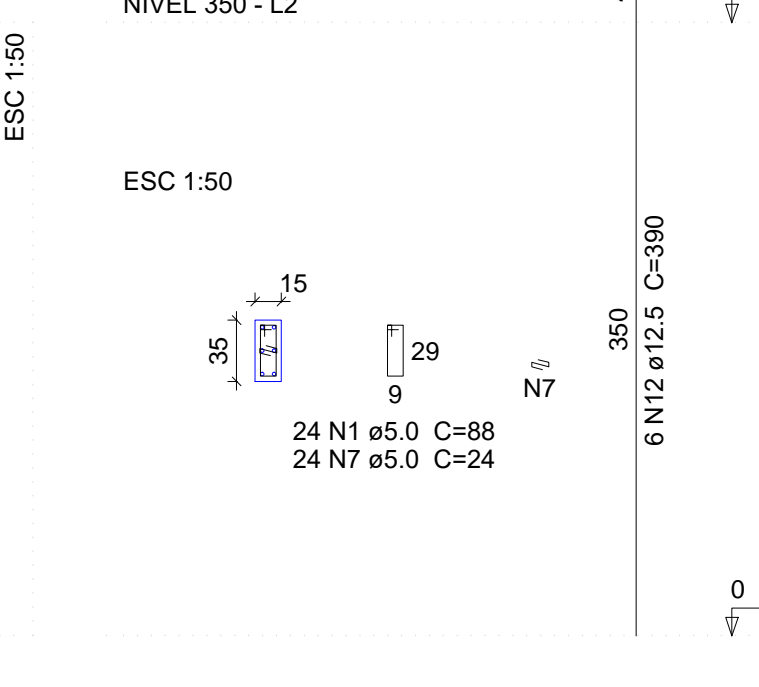
P15=P16=P17=P18=P23=P24=P29=P30=P35=P38=P39=P40=P41=P42



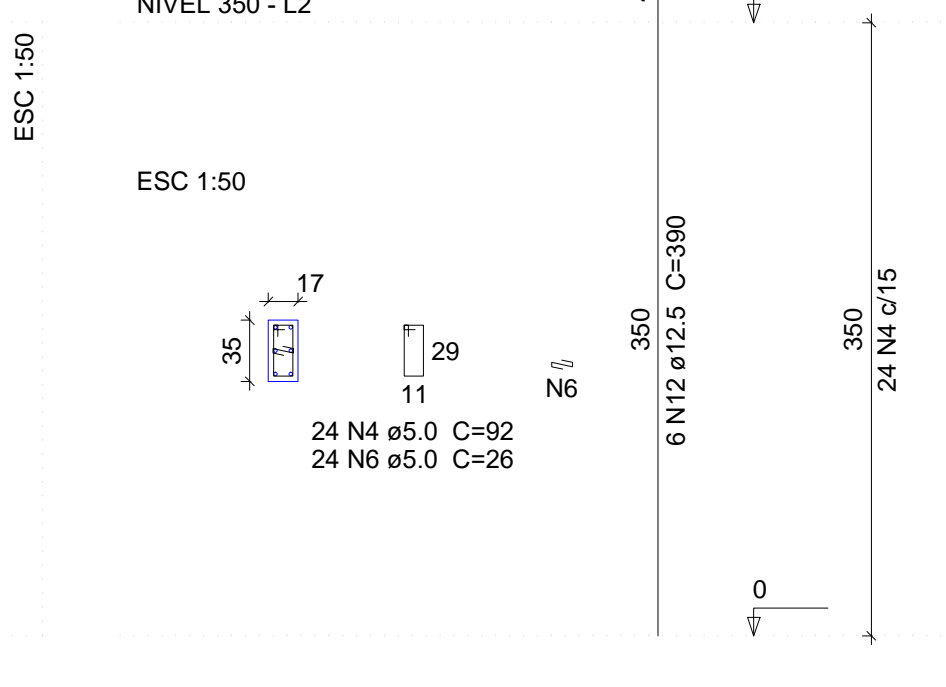
P21=P26=P33=P38



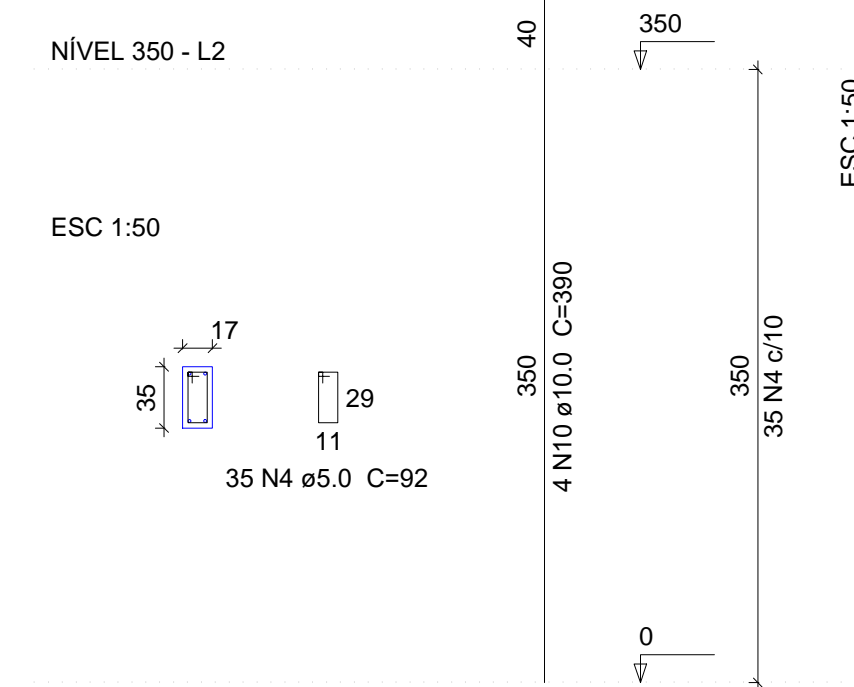
P22=P25=P34=P47



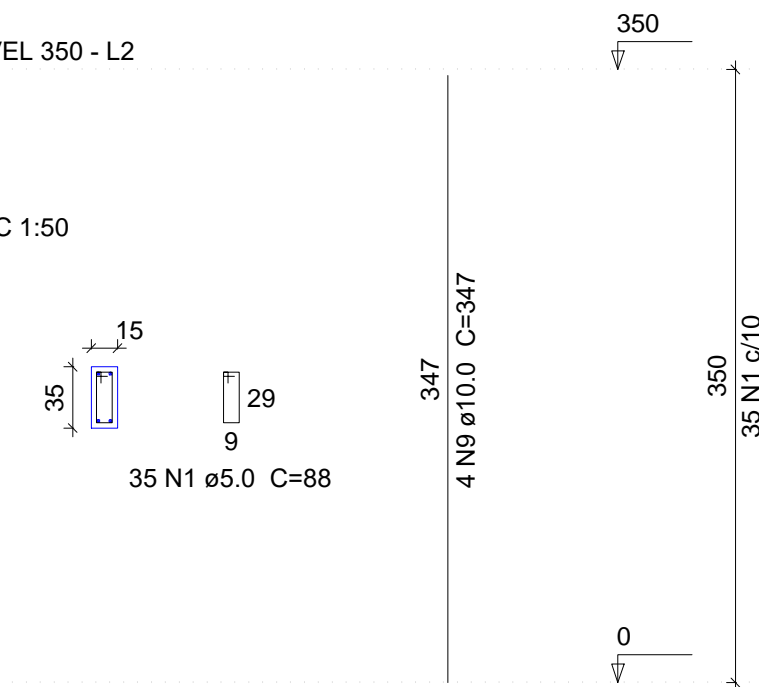
P37=P44



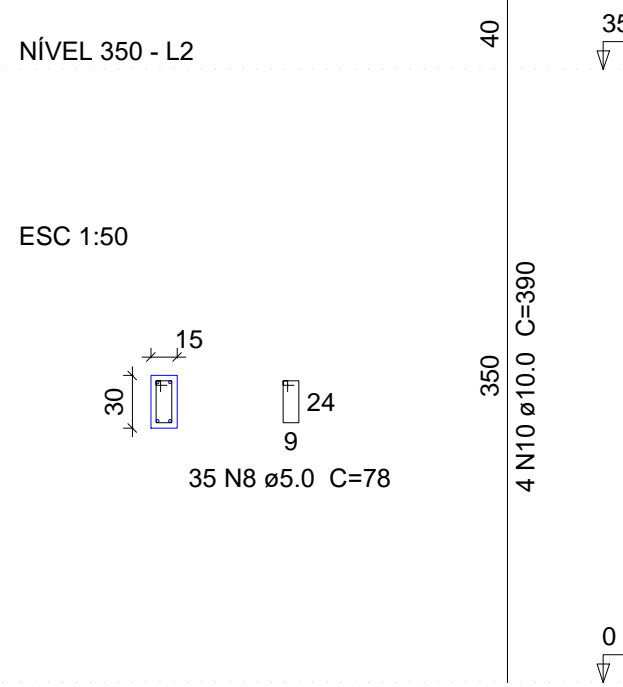
P45



P52=P53=P54=P56=P57=P59=P60=P61=P62



P64=P65



Relação do aço

ACO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	871	88	59048
	2	5.0	105	24	2520
	3	5.0	630	68	42840
	4	5.0	673	92	61916
	5	5.0	350	26	9100
	6	5.0	144	26	3744
	7	5.0	192	24	4608
	8	5.0	70	78	5460
	9	10.0	128	347	44416
	10	10.0	74	390	28860
	11	12.5	76	347	26372
	12	12.5	44	390	17160

Resumo do aço

ACO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	10.0	732.8	497
CA60	5.0	435.4	461.3
PESO TOTAL (kg)			320.8
CA50		968.2	
CA60		320.8	

Volume de concreto (C-25) = 11.67 m³
Área de forma = 217.42 m²

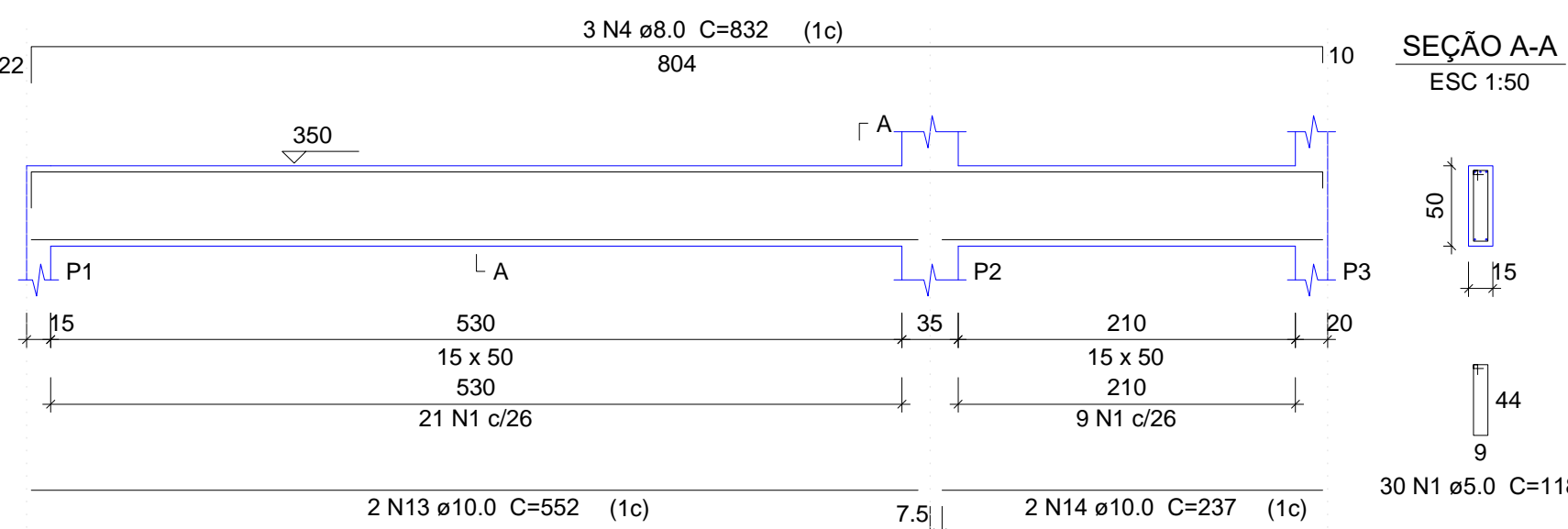
COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
10	1.06
11	1.06
12	1.06
13	1.06

02			
01			
Nº	DATA	REVISÃO	DESENHO APROVAÇÃO
		PROJETO:	PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO
		CLIENTE:	MUNICÍPIO DE MARCO
		LOCAL:	LOCALIDADE DE FEIJÃO BRAVO
		CONTEÚDO:	PLANTA DE PAGINAÇÃO 1 Detalhamento dos Pilares Nível 350
		ESCALA:	INDICADA: RODRIGO NUNES DATA: MARÇO/2021
		PRANCHA:	07/15

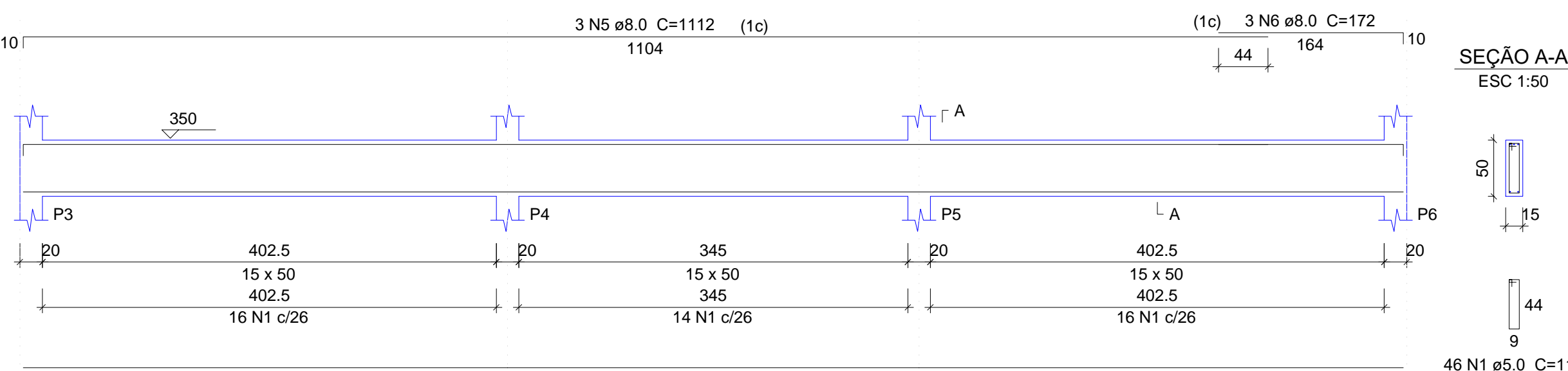


AV. PREFEITO GUIDO DOTTRENG, 519
CENTRO - MARCO - CE 14090-000
BR 366A, 1210 e BR 366A-1915
WWW.MARCO-CE.GOV.BR
CNPJ: 07.568.516/0001-47

V1
ESC 1:50



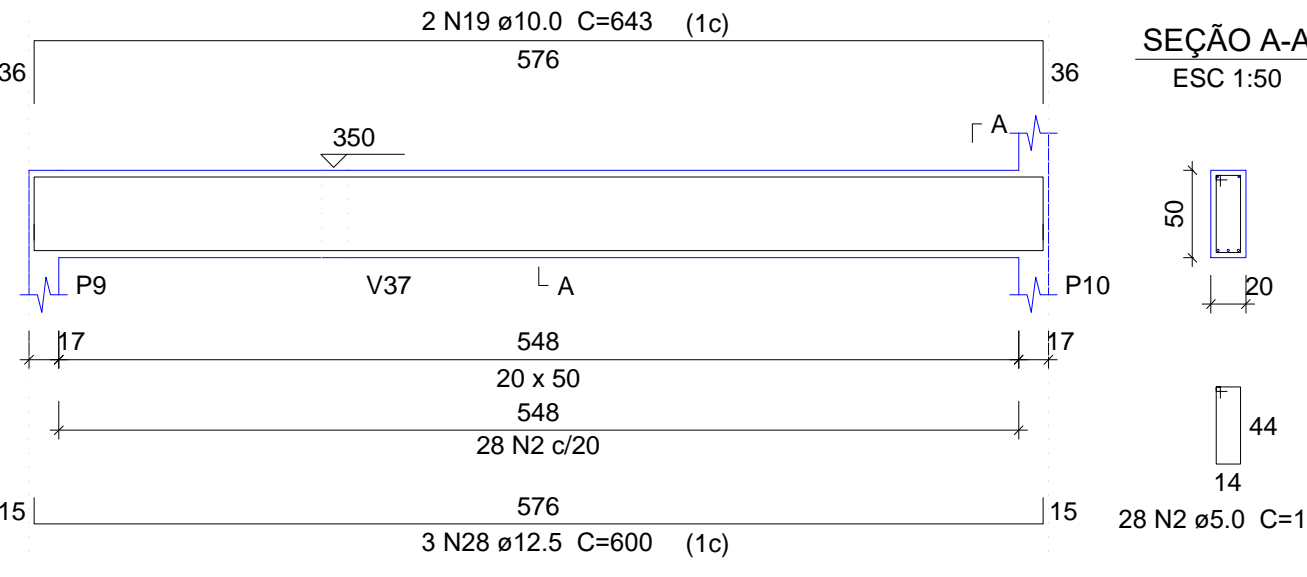
V2
ESC 1:50



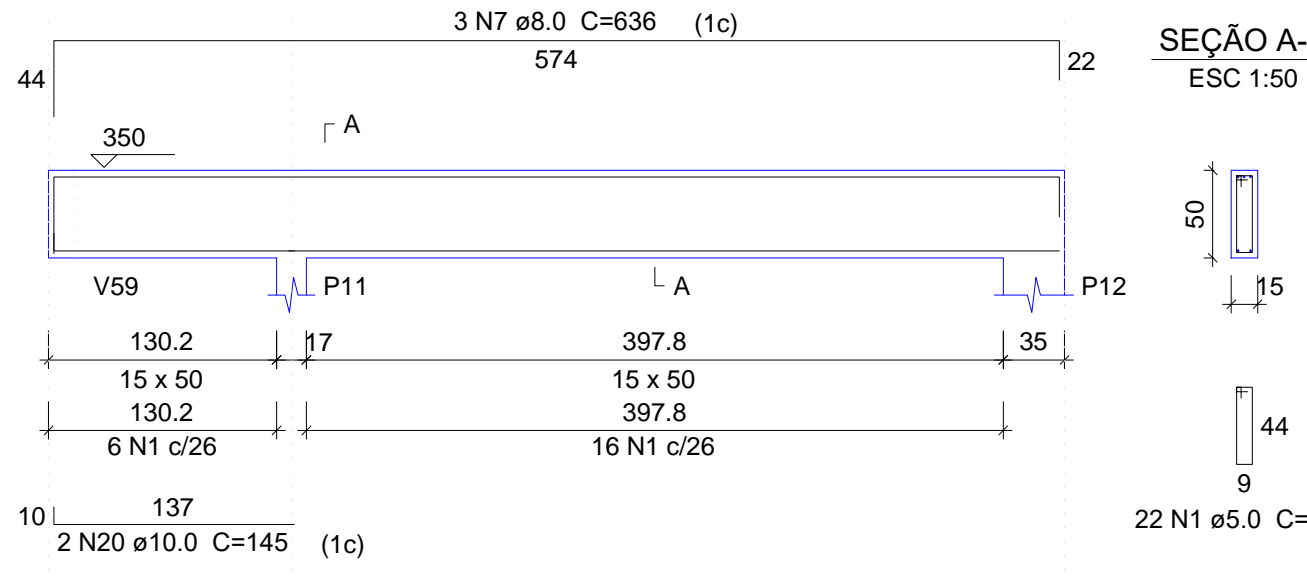
V3
ESC 1:50



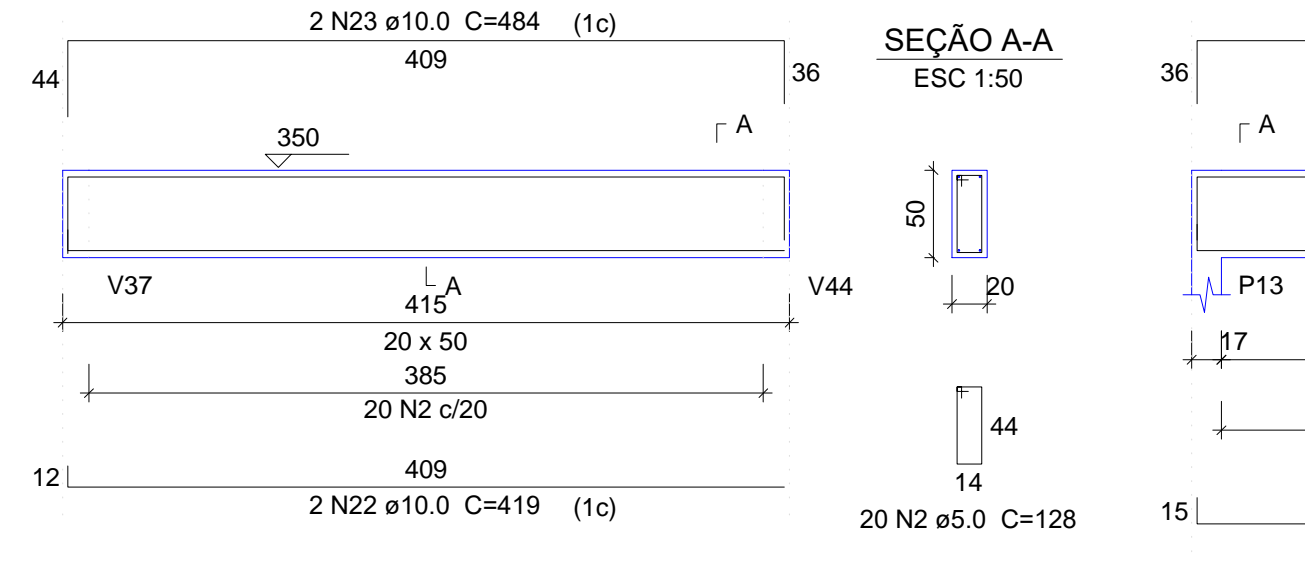
V4
ESC 1:50



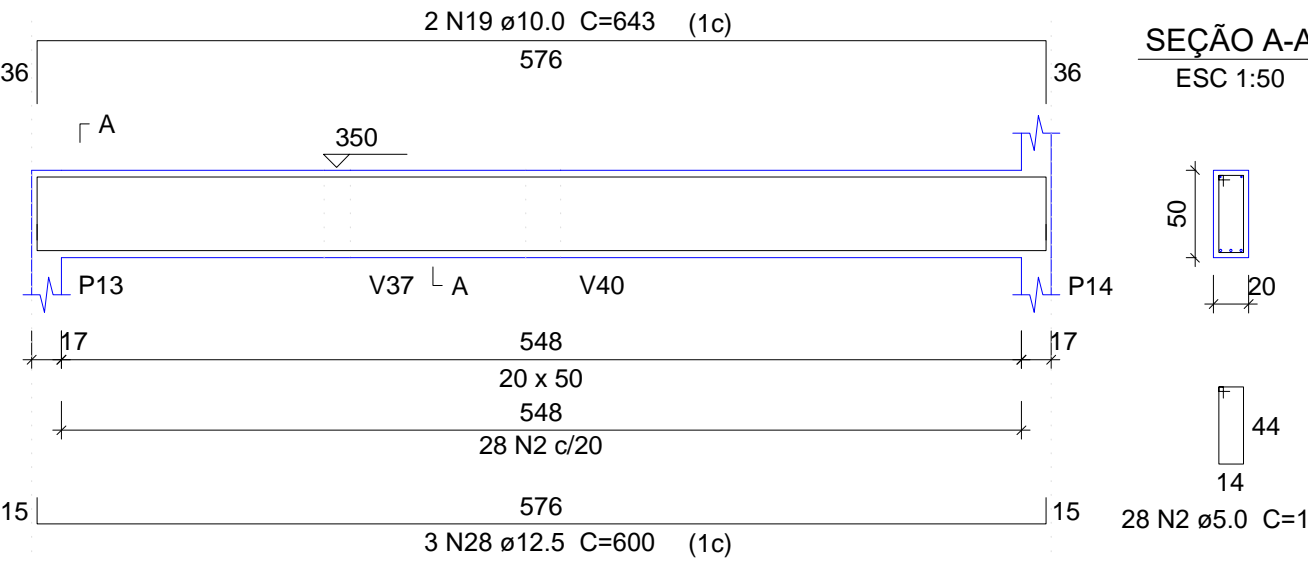
V5
ESC 1:50



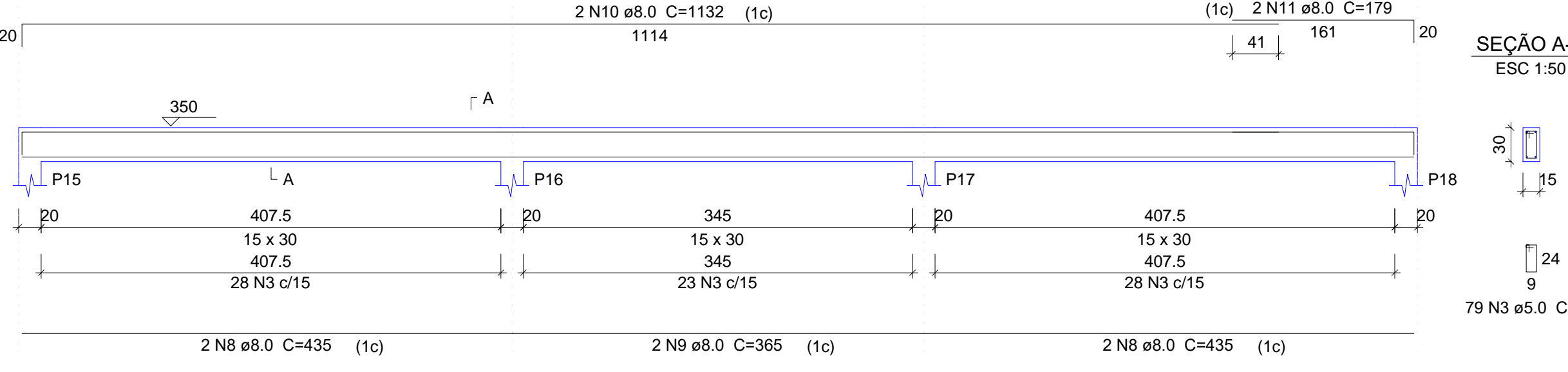
V6
ESC 1:50



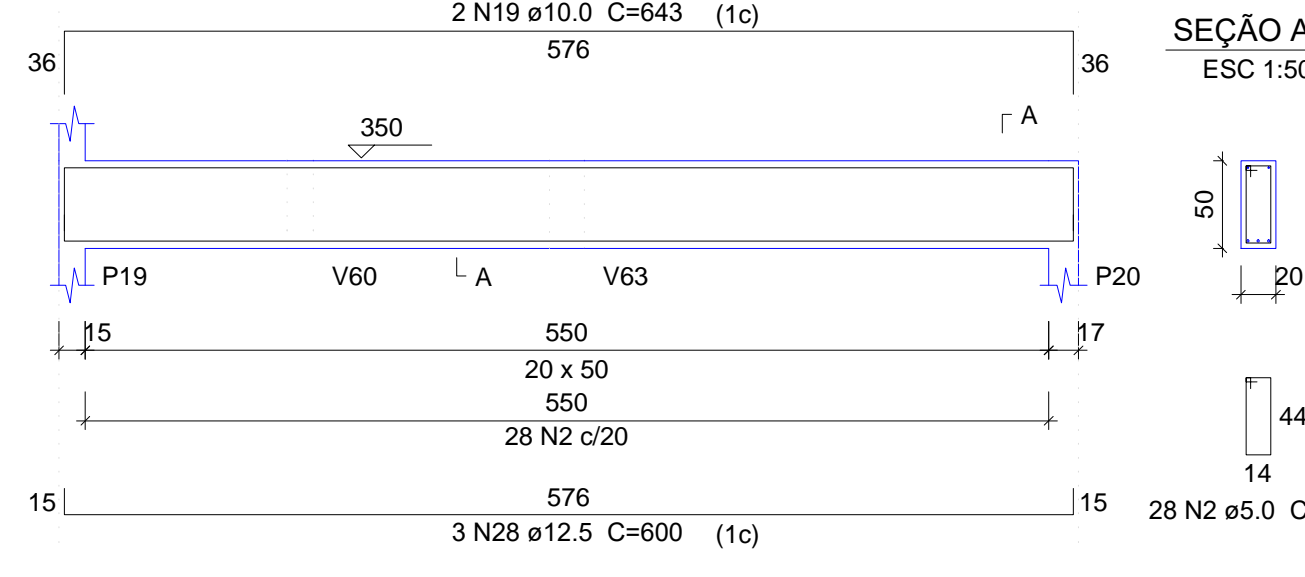
V7
ESC 1:50



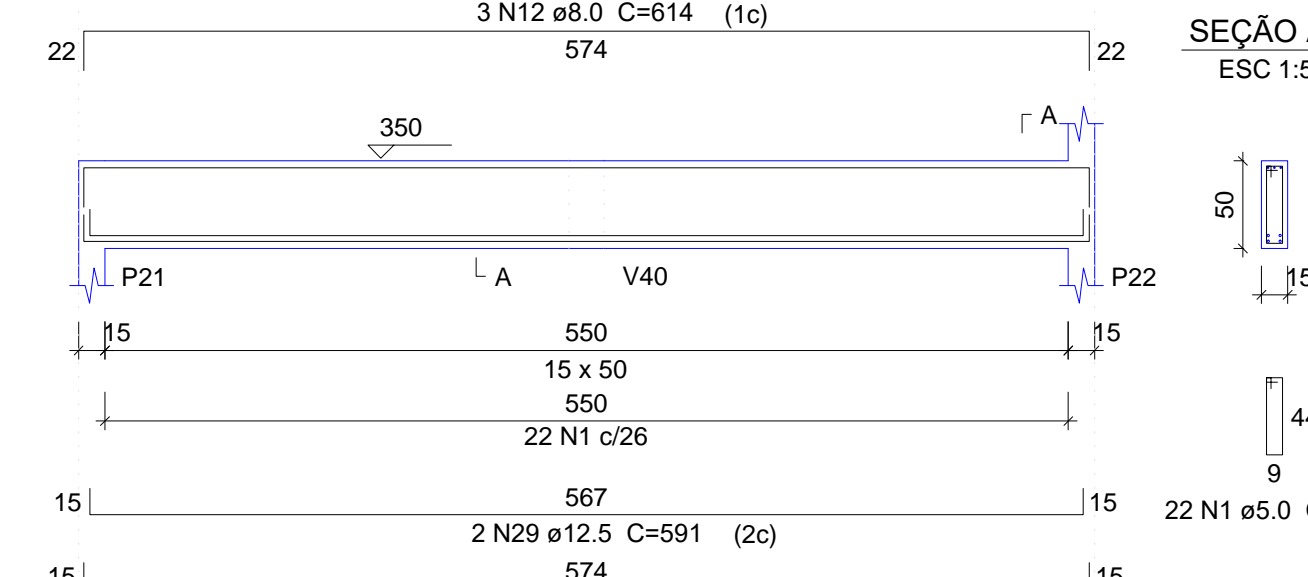
V8
ESC 1:50



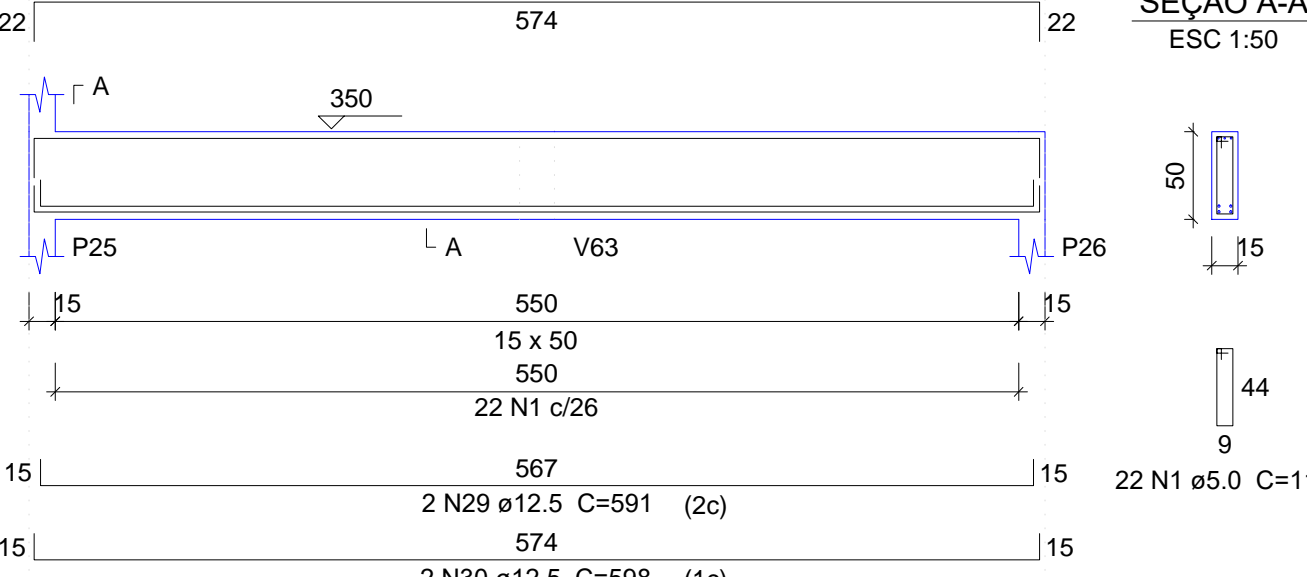
V9
ESC 1:50



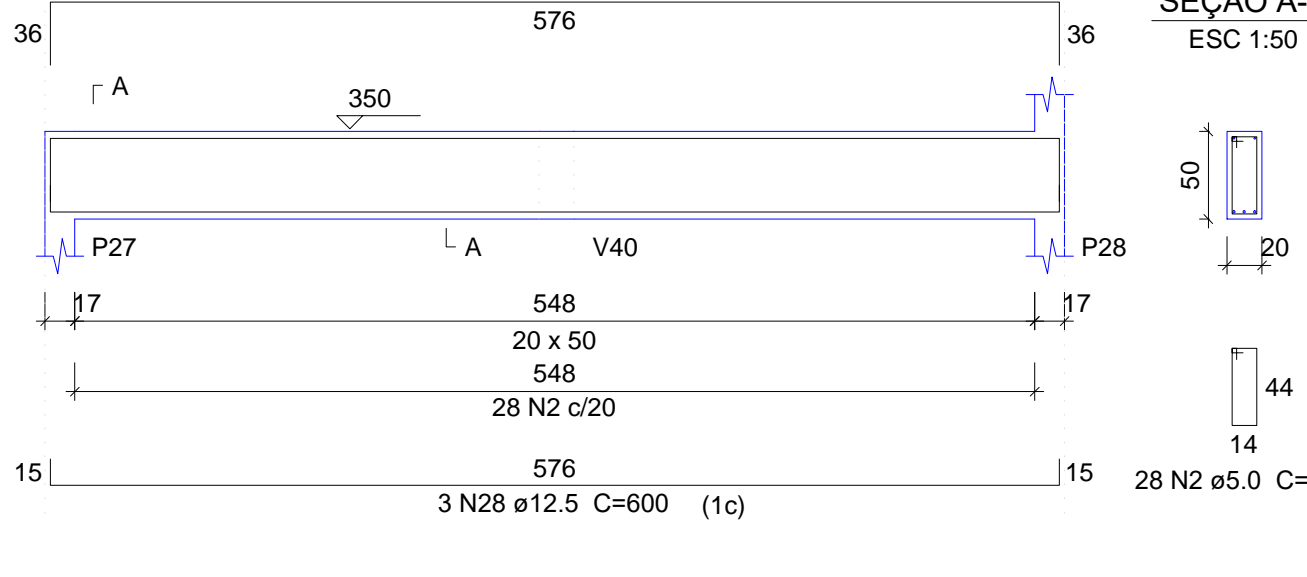
V10
ESC 1:50



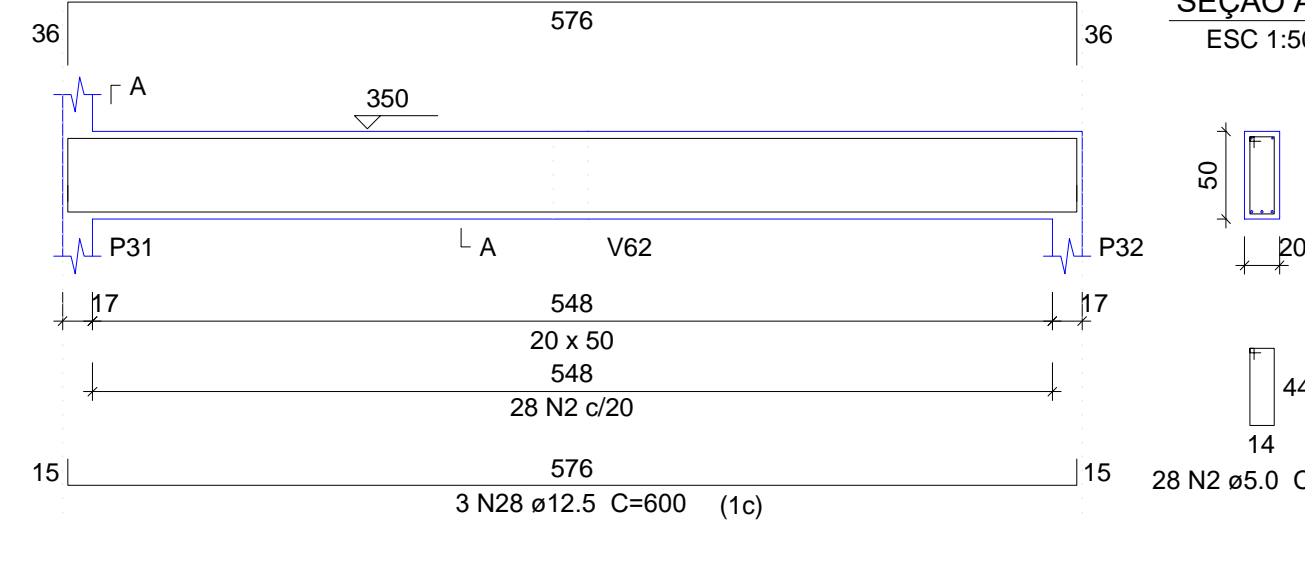
V11
ESC 1:50



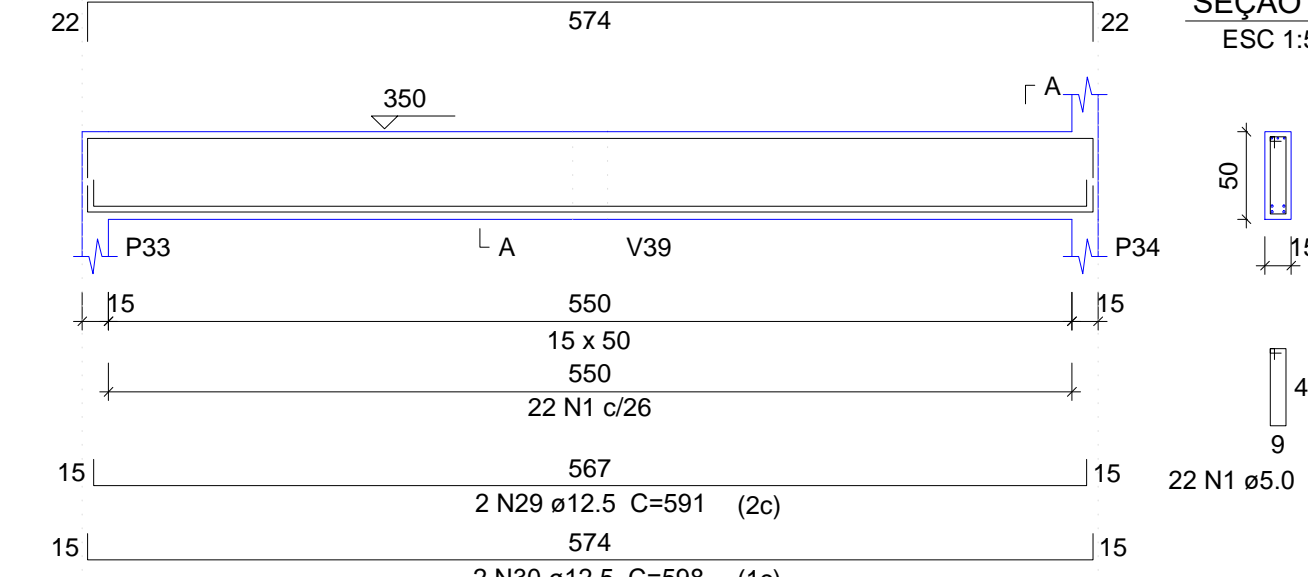
V12
ESC 1:50



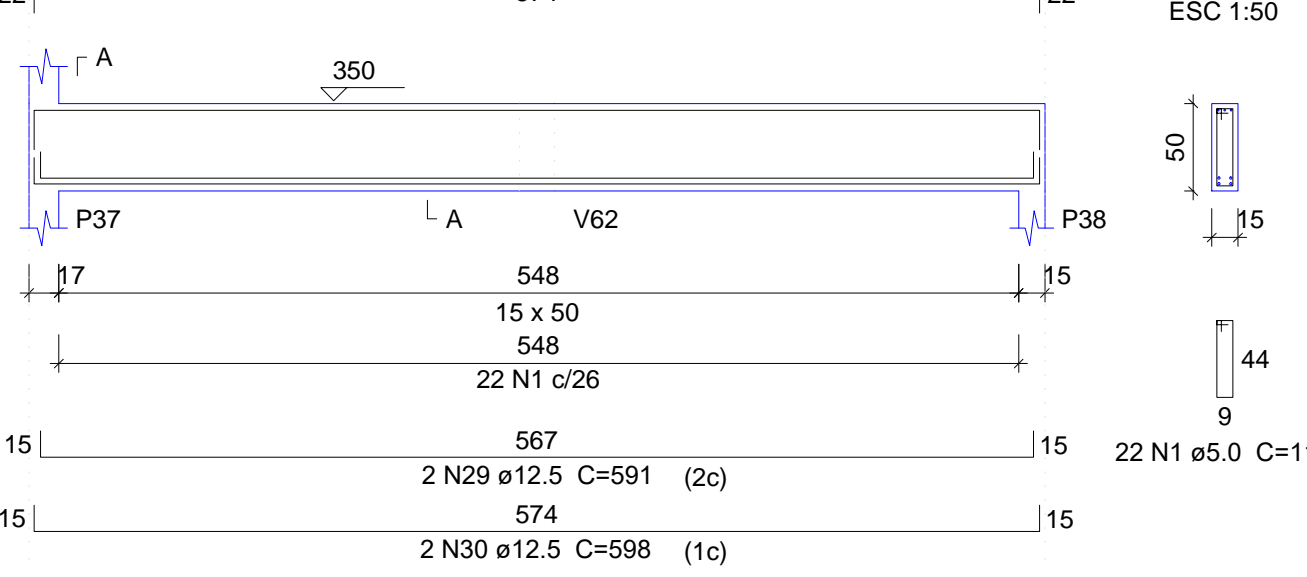
V13
ESC 1:50



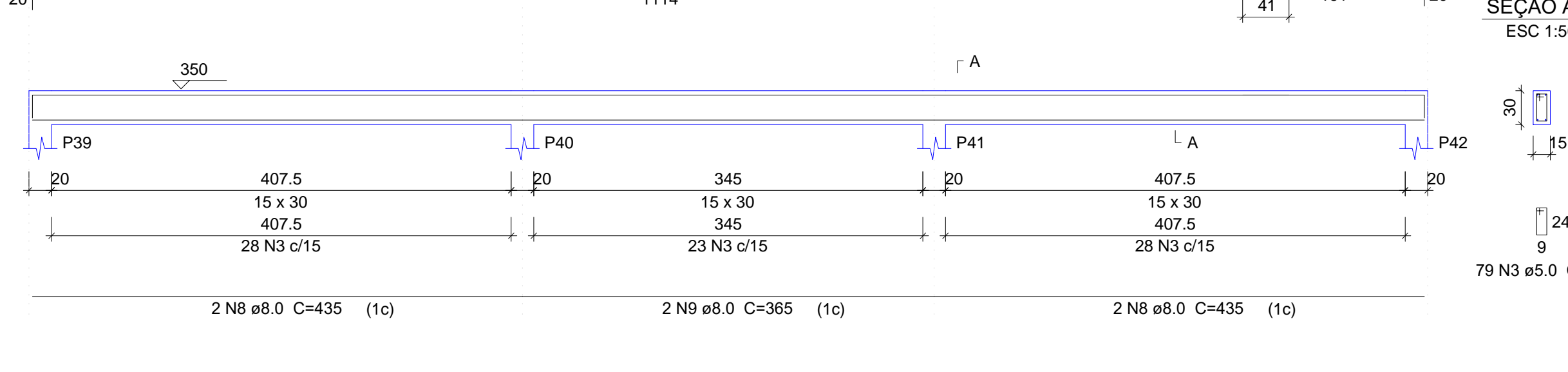
V14
ESC 1:50



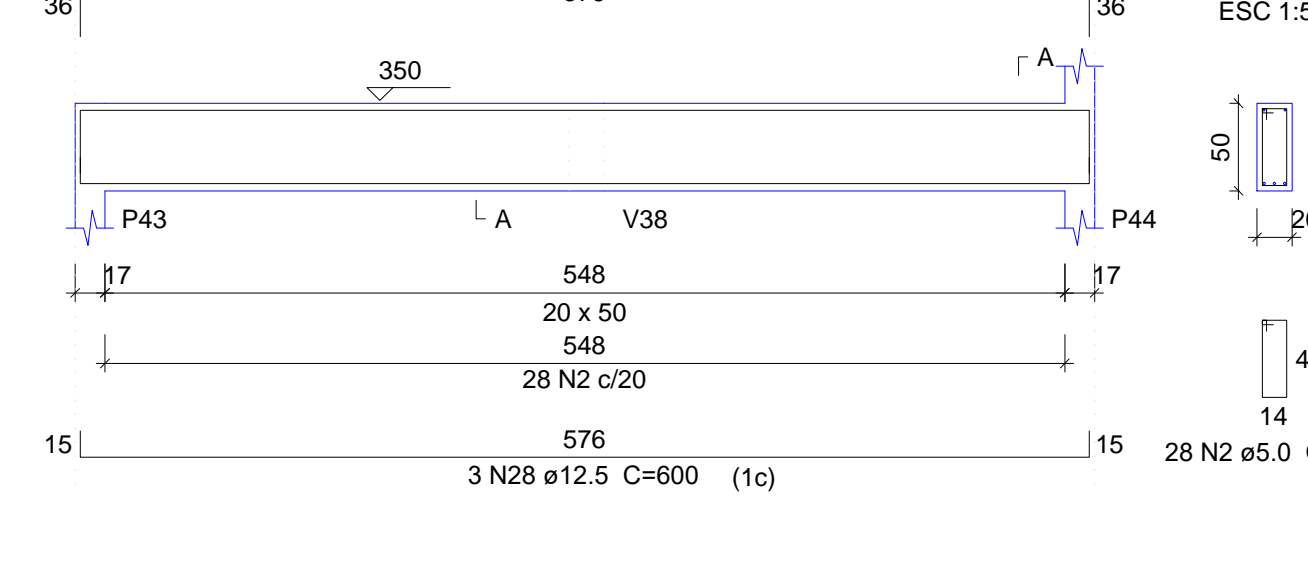
V15
ESC 1:50



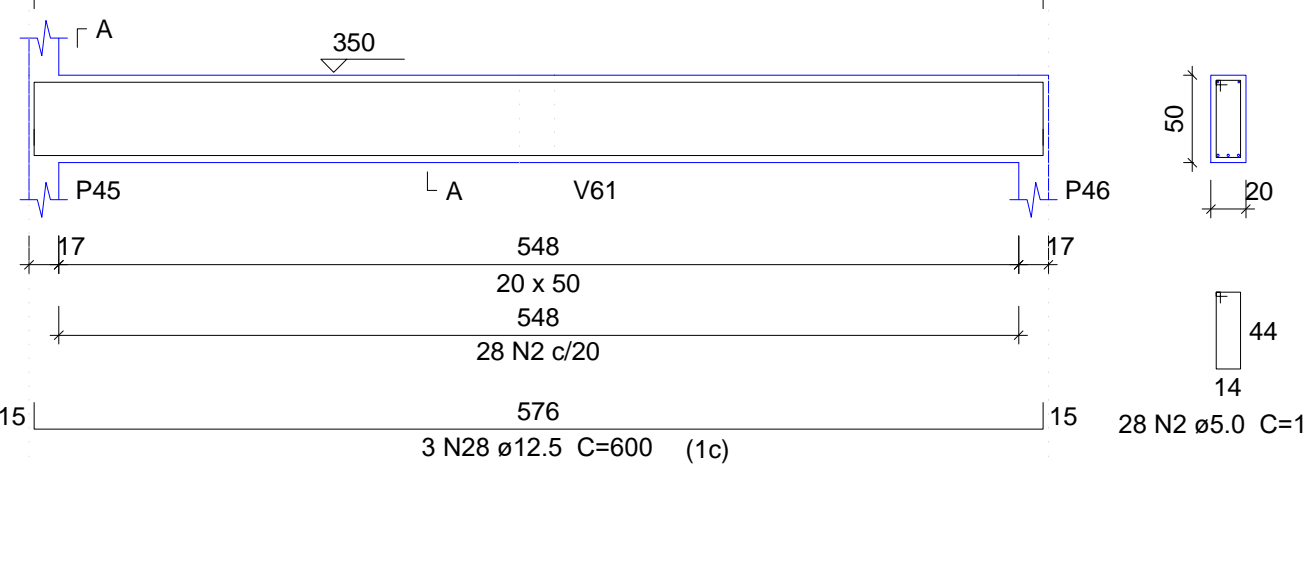
V16
ESC 1:50



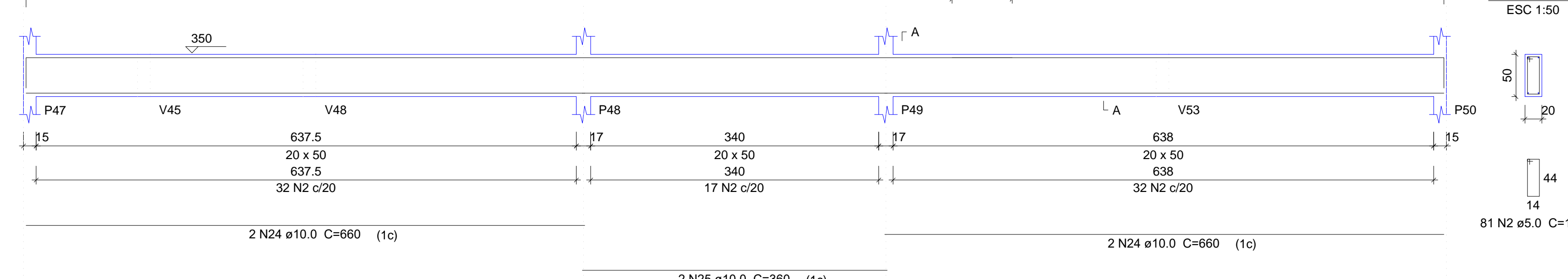
V17
ESC 1:50



V18
ESC 1:50



V19
ESC 1:50



Relação do aço

DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
5.0	216	118	25488
5.0	297	128	38016
5.0	158	78	12324
8.0	6	832	4992
8.0	3	1112	3336
8.0	3	172	516
8.0	3	636	1908
8.0	8	435	3480
8.0	4	365	1460
8.0	4	1132	4528
8.0	4	179	716
8.0	12	614	7368
10.0	2	552	1104
10.0	2	237	474
10.0	4	430	1720
10.0	2	365	730
10.0	2	282	564
10.0	2	597	1194
10.0	14	643	9002
10.0	2	145	290
10.0	2	440	880
10.0	2	419	838
10.0	2	464	928
10.0	4	660	2640
10.0	2	360	720
10.0	2	1198	2396
10.0	2	615	1230
12.5	21	600	12600
12.5	8	591	4728
12.5	8	598	4784

Resumo do aço

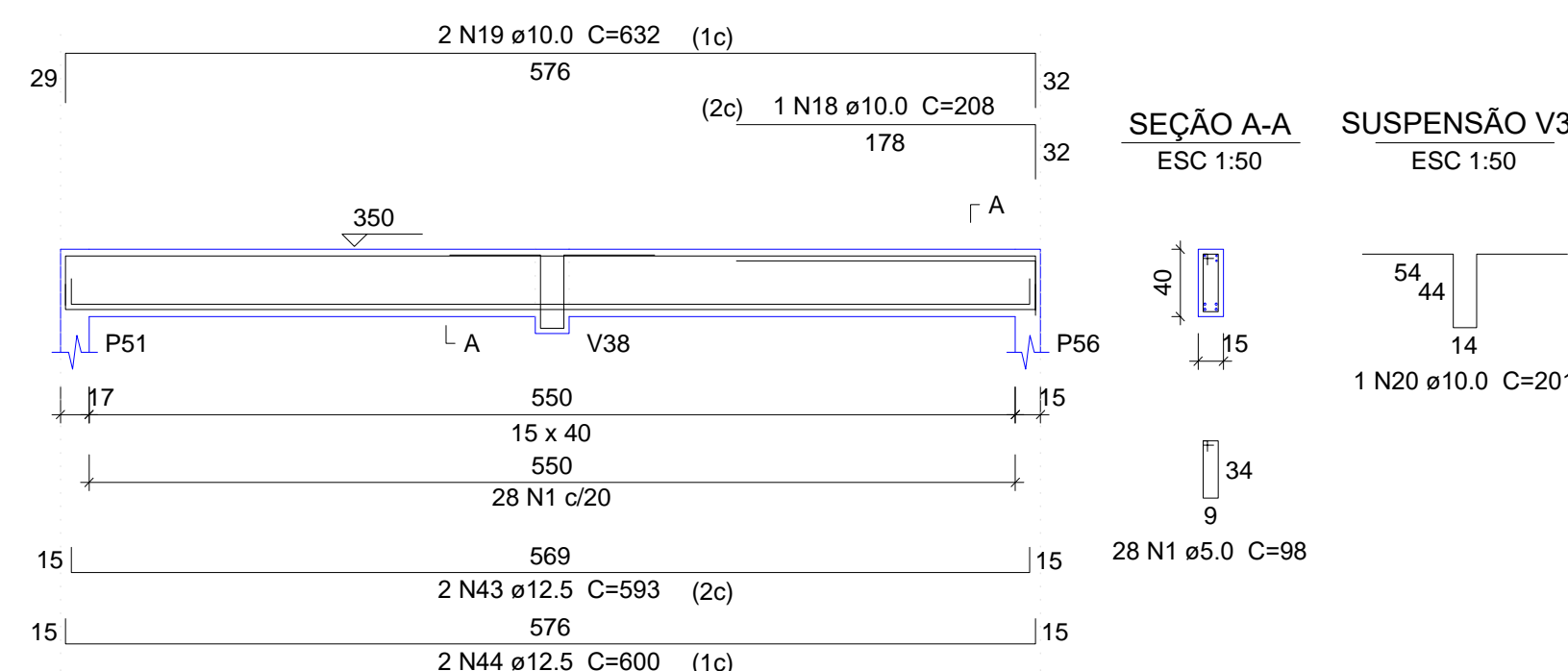
DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
8.0	283.1	122.9
10.0	247.5	167.9
12.5	221.2	234.3
5.0	758.3	128.6
PESO TOTAL		
CA50	525	
CA60	128.6	

Volume de concreto (C-25) = 11.6 m³
Área de forma = 158.75 m²

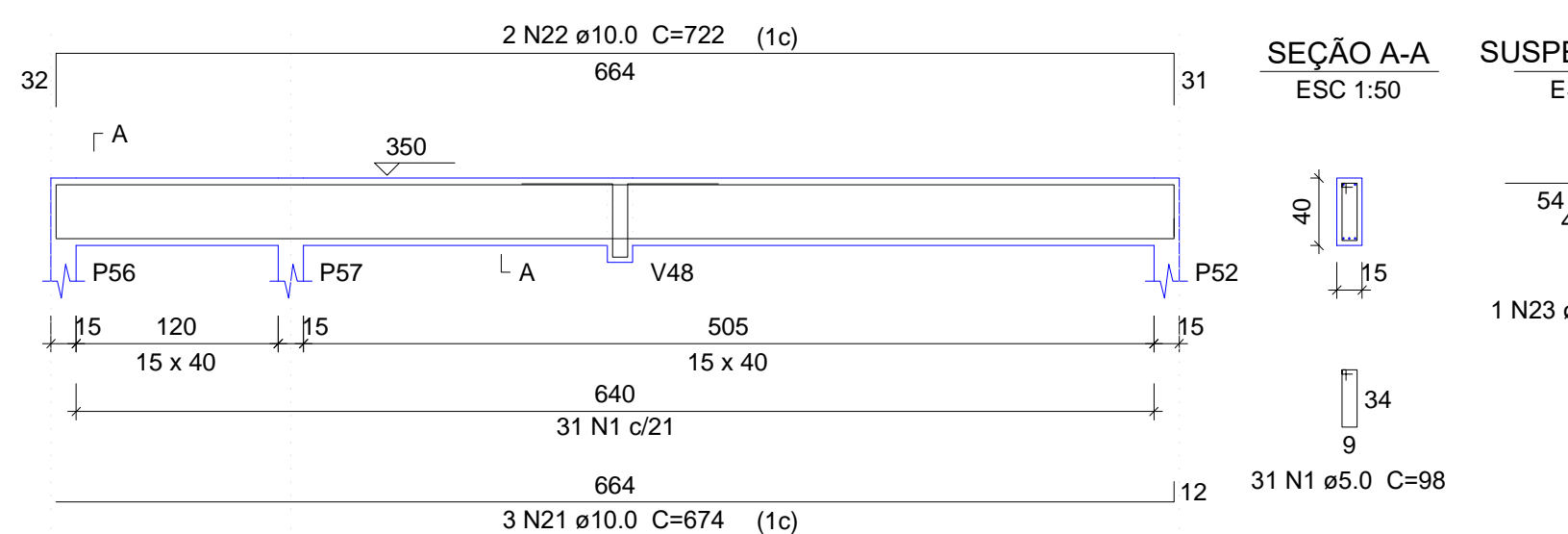
COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
10	1.08
11	1.08
12	1.08
13	1.08

02			
01	DATA	REVISÃO	DESENHO APROVAÇÃO
PROJETO: PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO			
CLIENTE: MUNICÍPIO DE MARCO			
LOCAL: LOCALIDADE DE FEIJÃO BRAVO			
CONTEÚDO: PLANTA DE PAGINAÇÃO 1 Detalhamento das Vigas Nível 350			
 <p>MUNICÍPIO DE MARCO</p> <p>AV. PREFEITO GUIDO DOTTRENI, S/N CENTRO - MARCO - CE - 14090-000 BR 364-1210 F 01 3641-1115 WWW.MARCO.SP.GOV.BR CNPJ: 07.346.516/0001-47</p>			
ESCALA:	DESENHO:	PRANCHAS:	
INDICADA:	RODRIGO NUNES	DATA:	08/15
	MARÇO/2021		

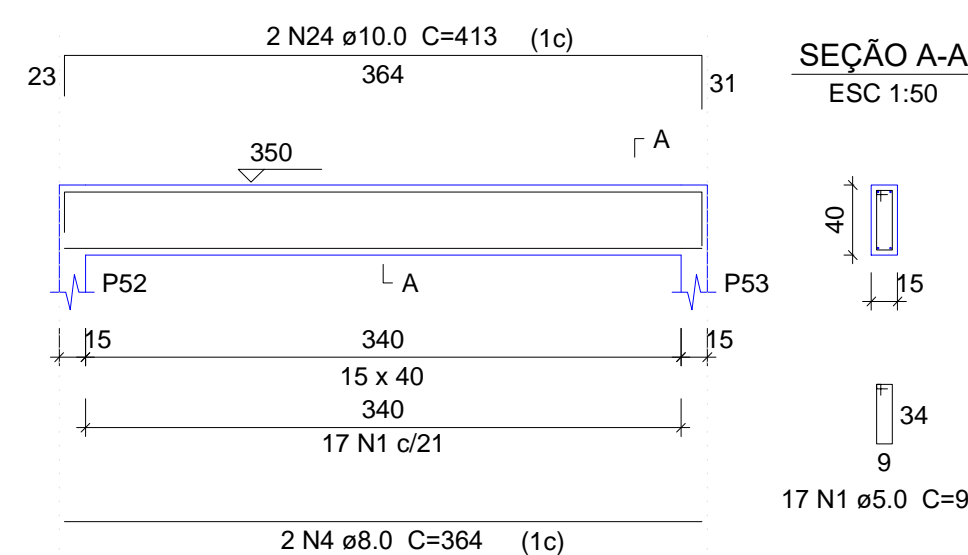
V20
ESC 1:50



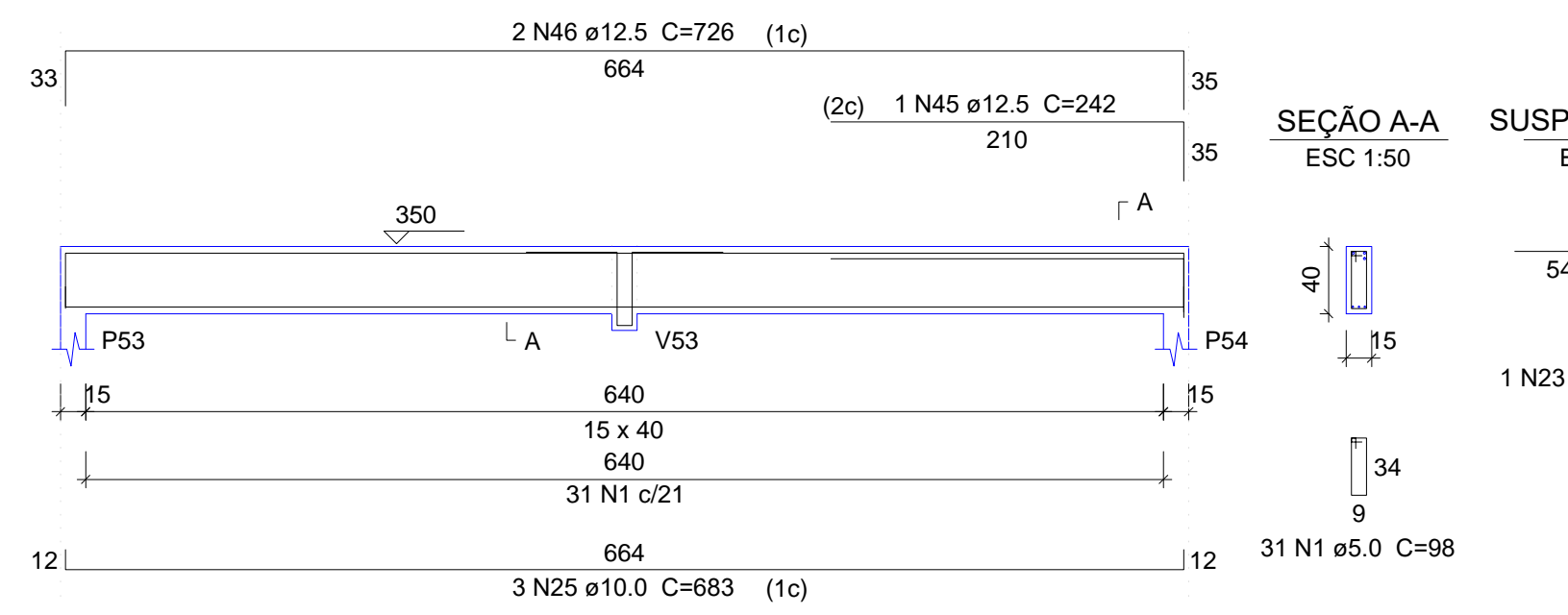
V21
ESC 1:50



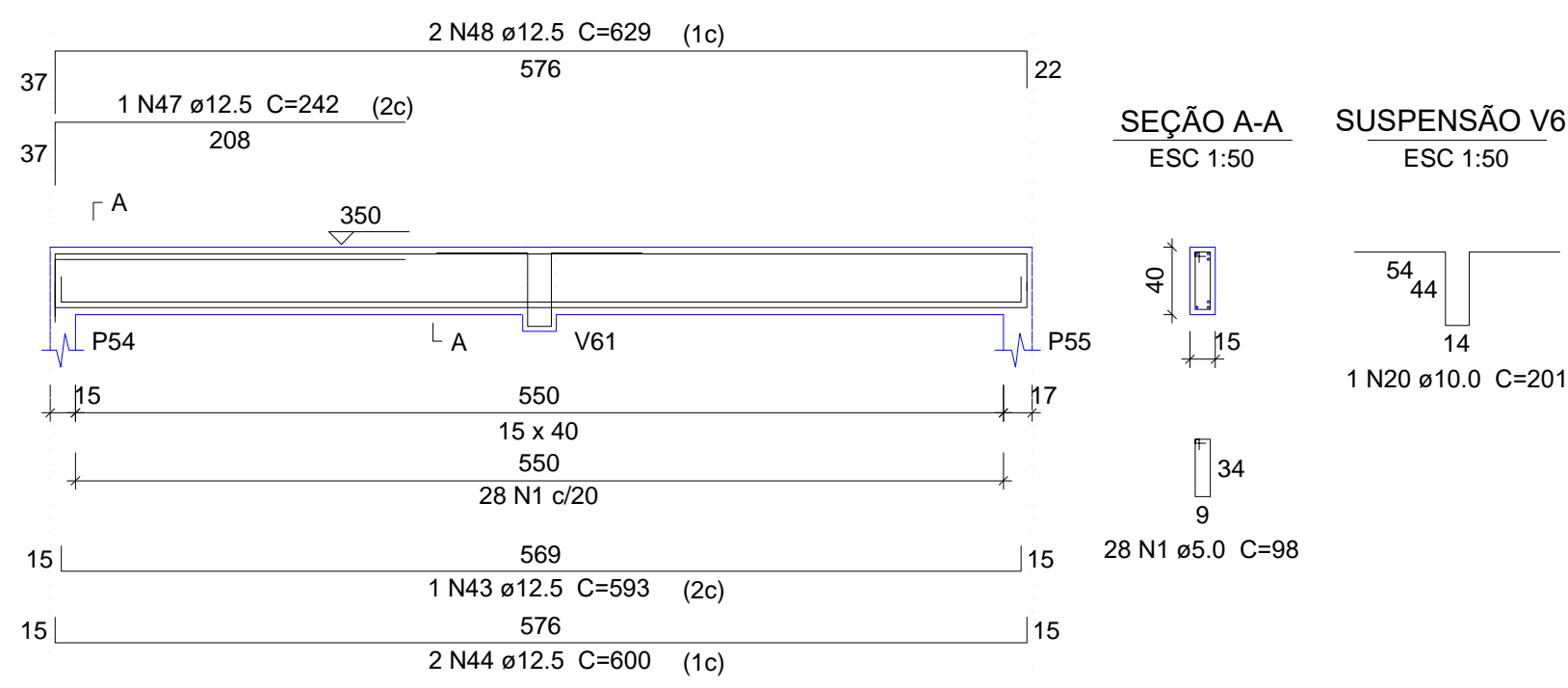
V22
ESC 1:50



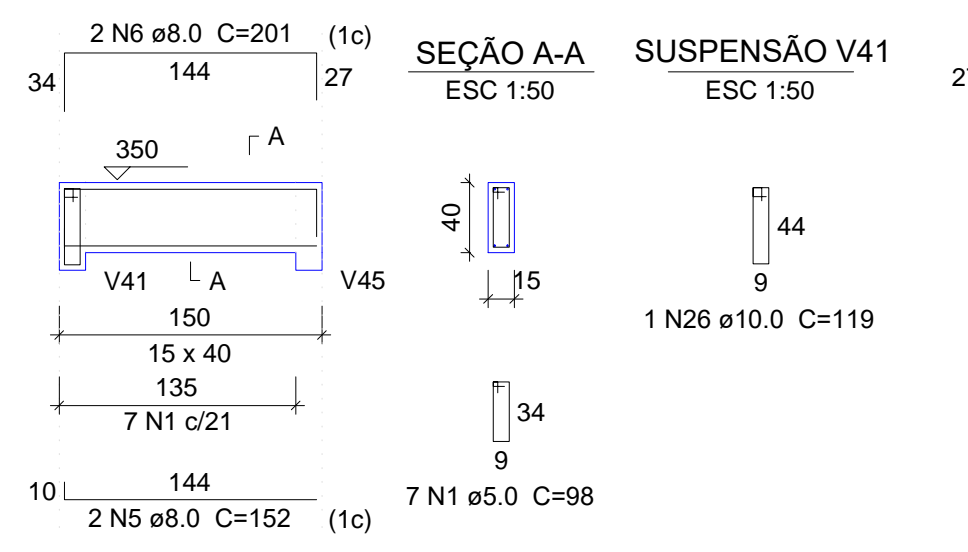
V23
ESC 1:50



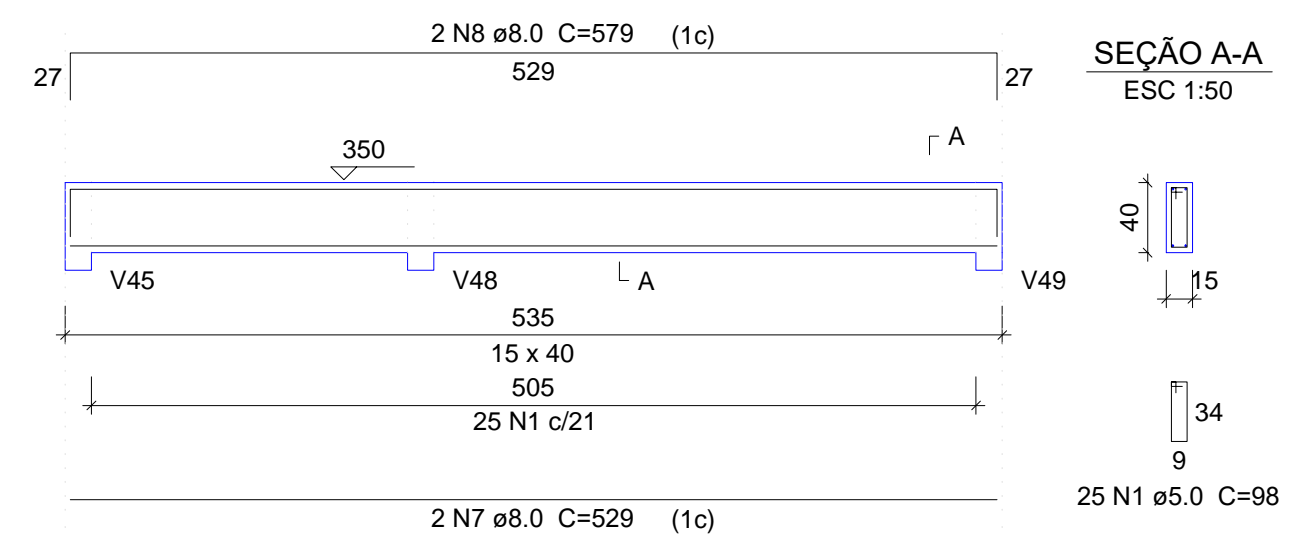
V24
ESC 1:50



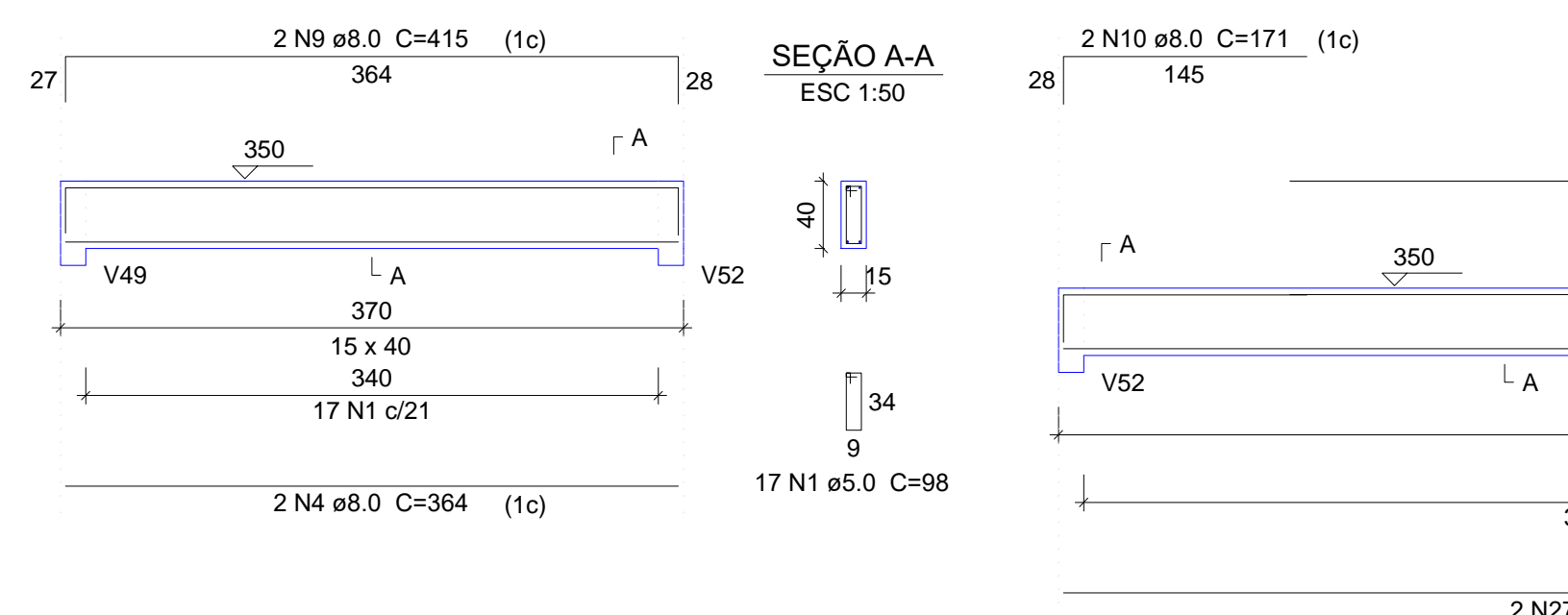
V25
ESC 1:50



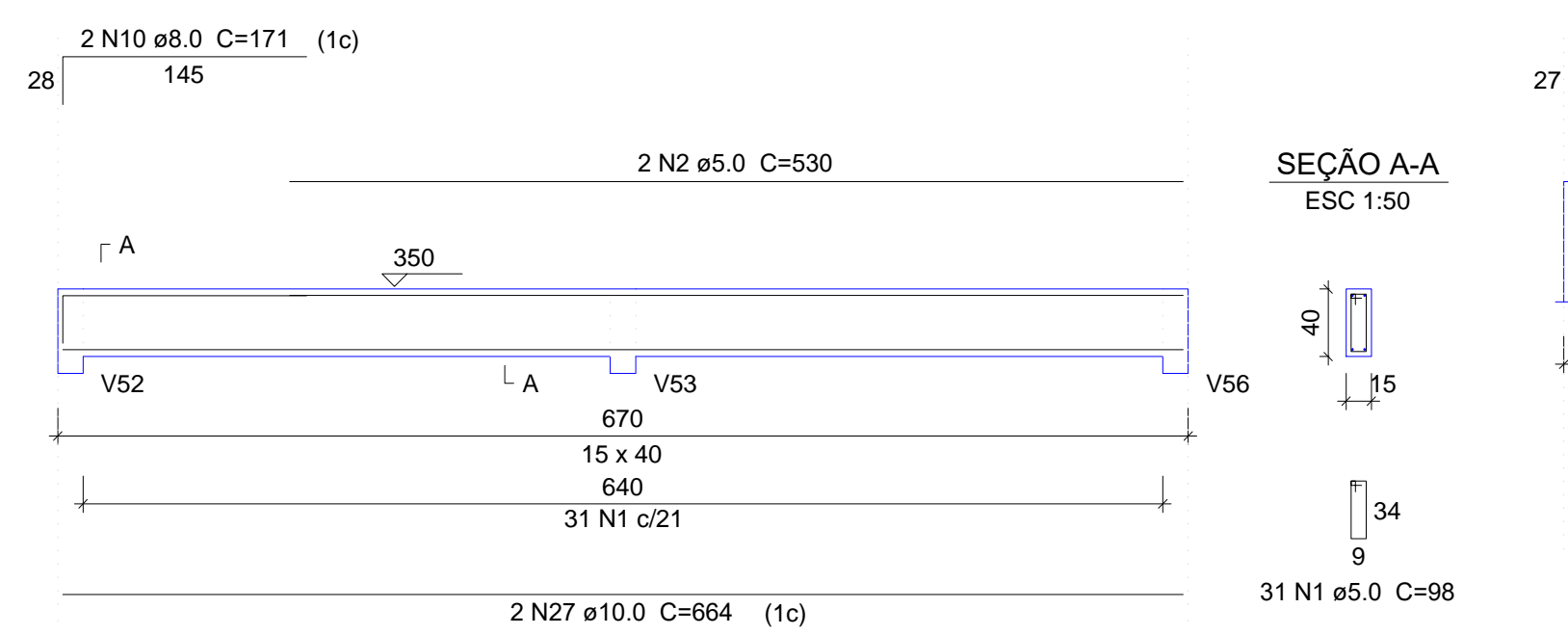
V26
ESC 1:50



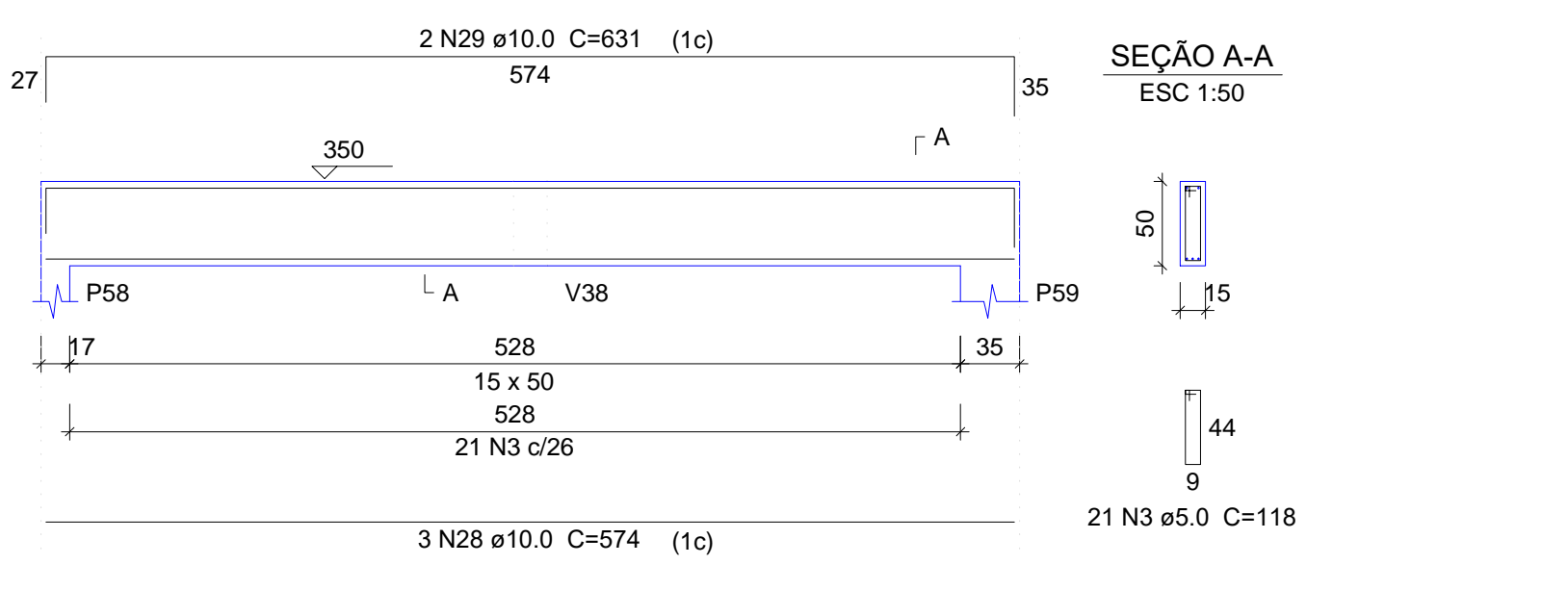
V27
ESC 1:50



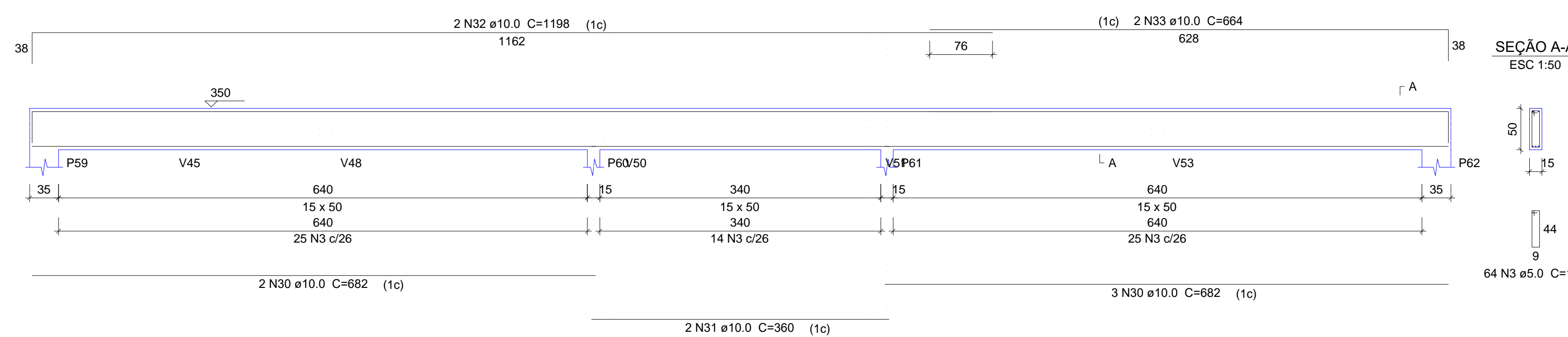
V28
ESC 1:50



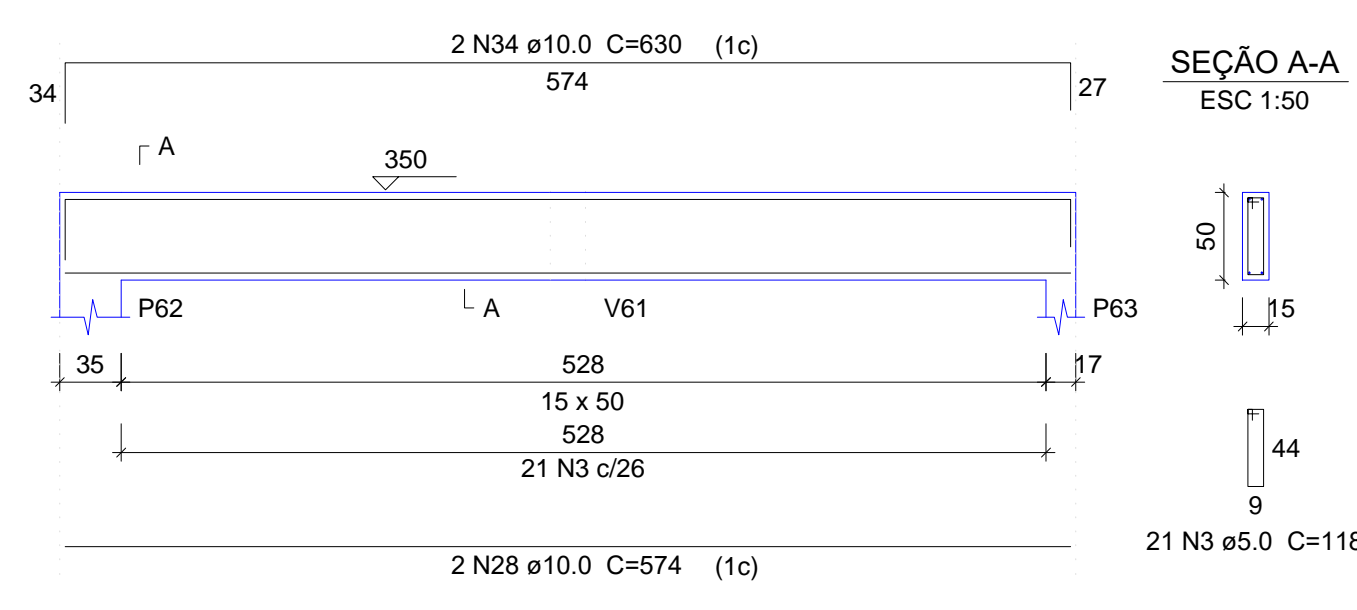
V29
ESC 1:50



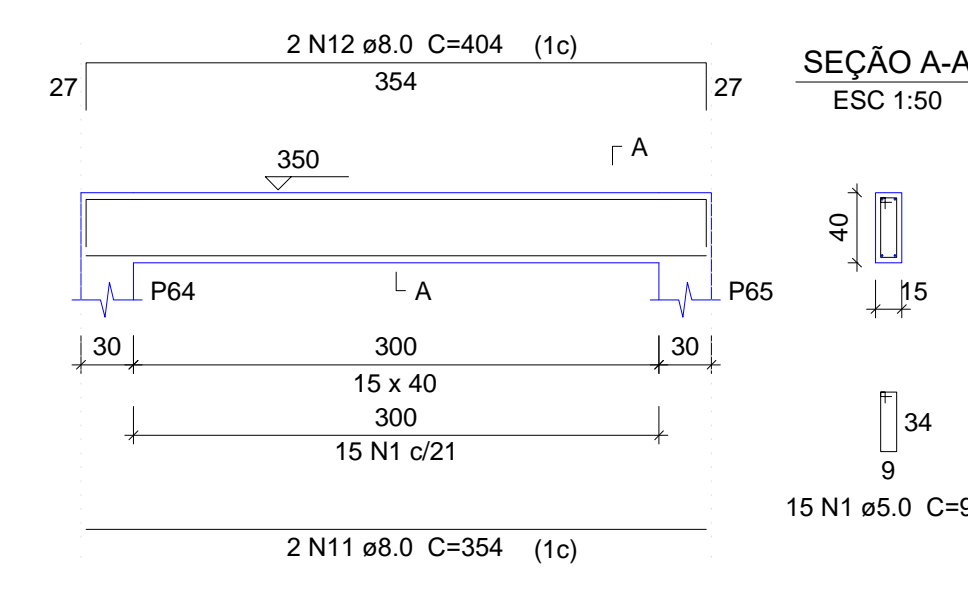
V30
ESC 1:50



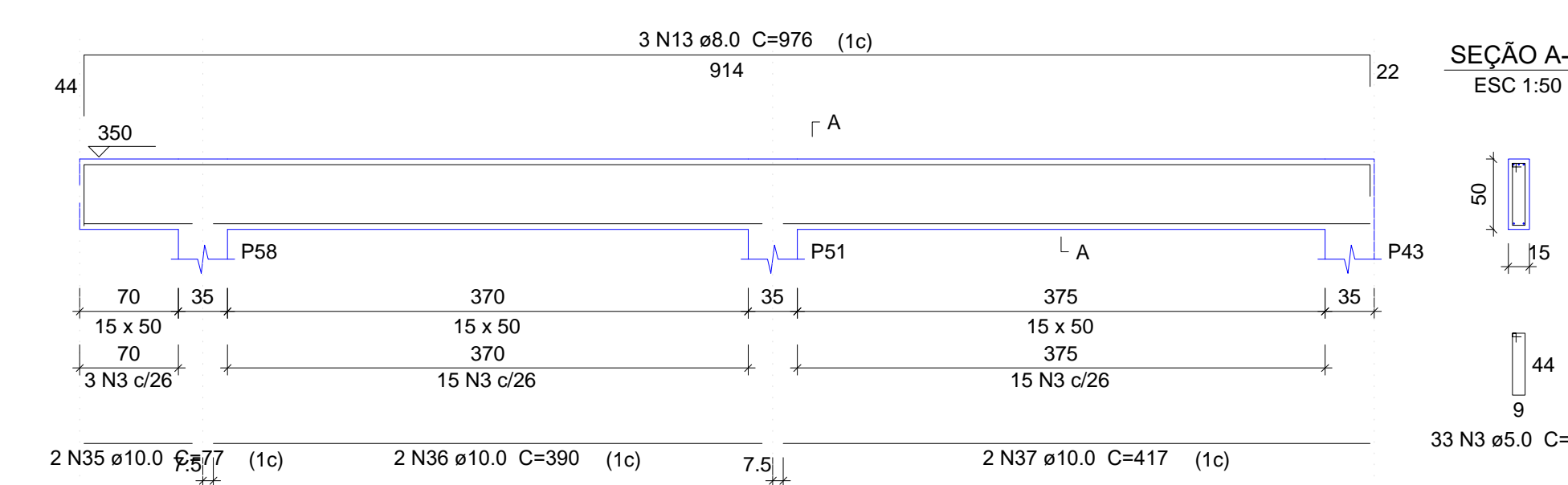
V31
ESC 1:50



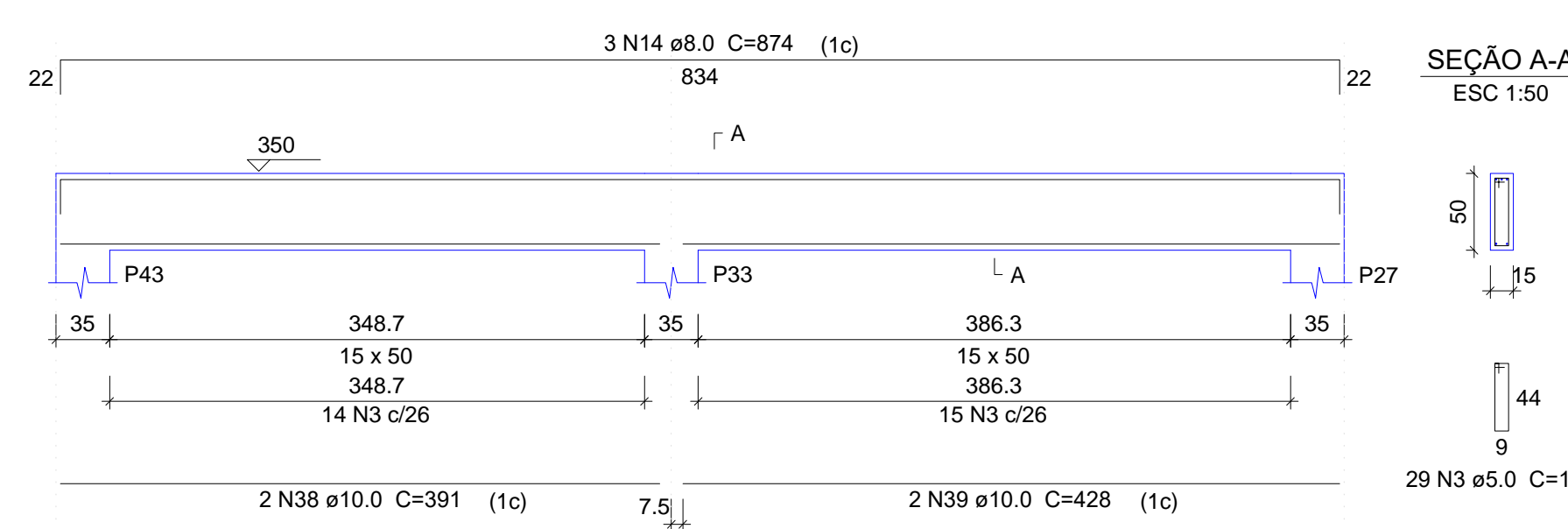
V32
ESC 1:50



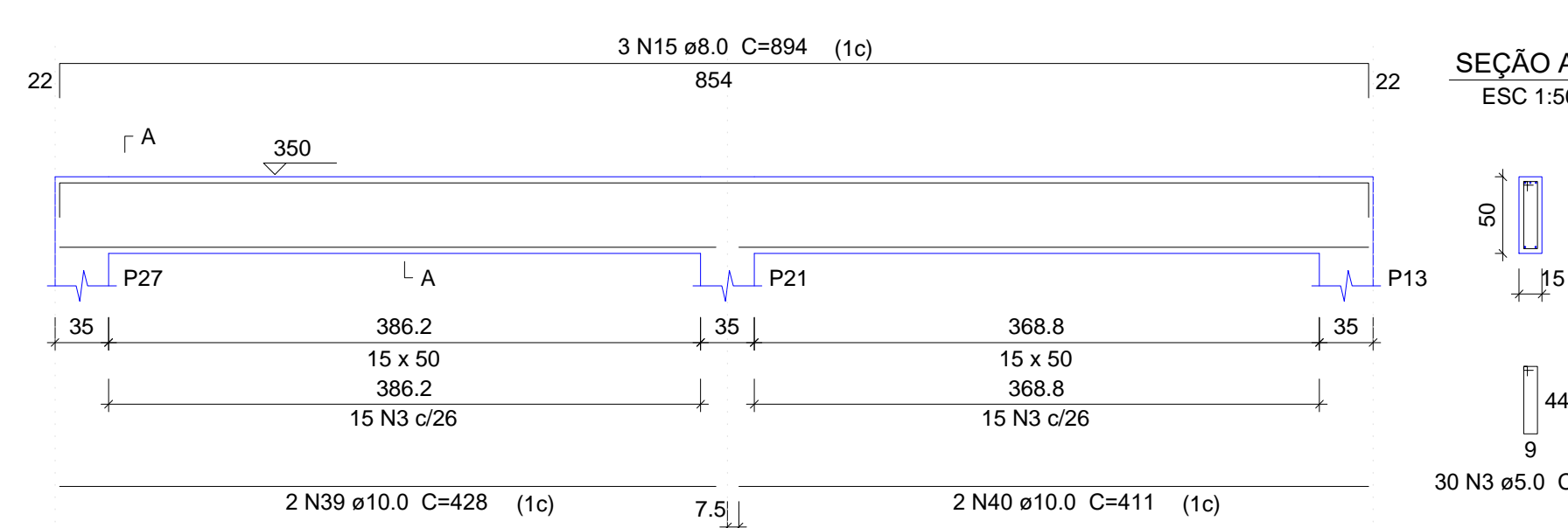
V33
ESC 1:50



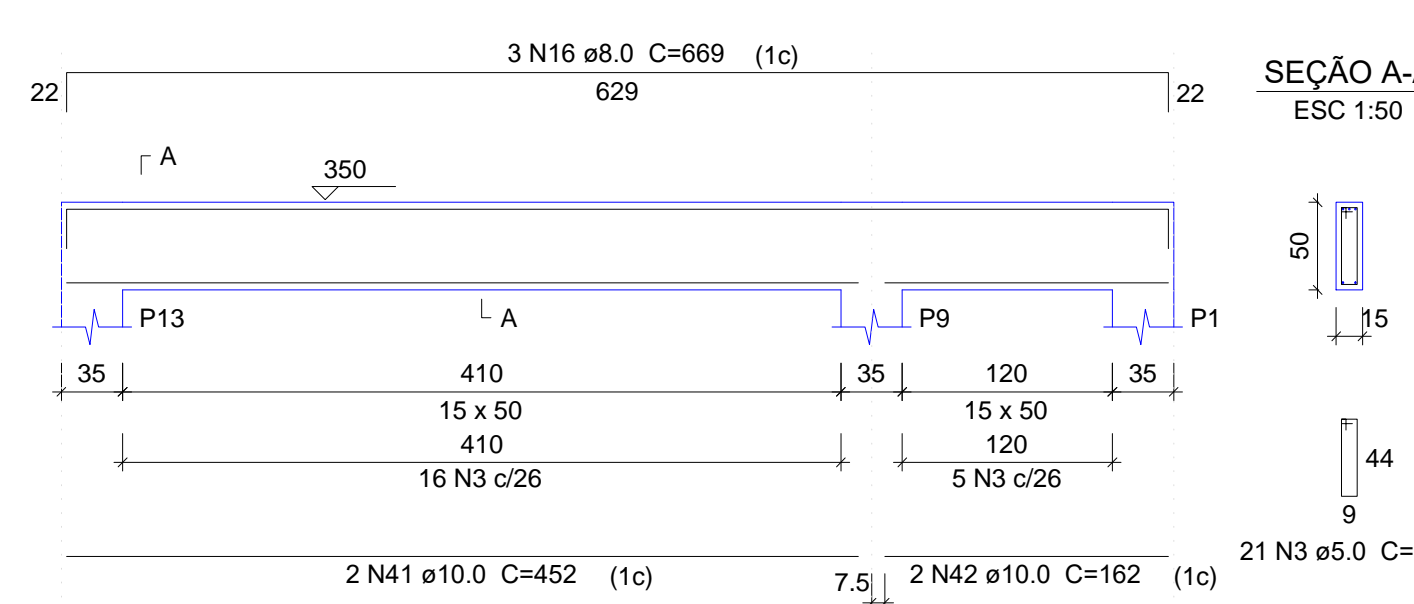
V34
ESC 1:50



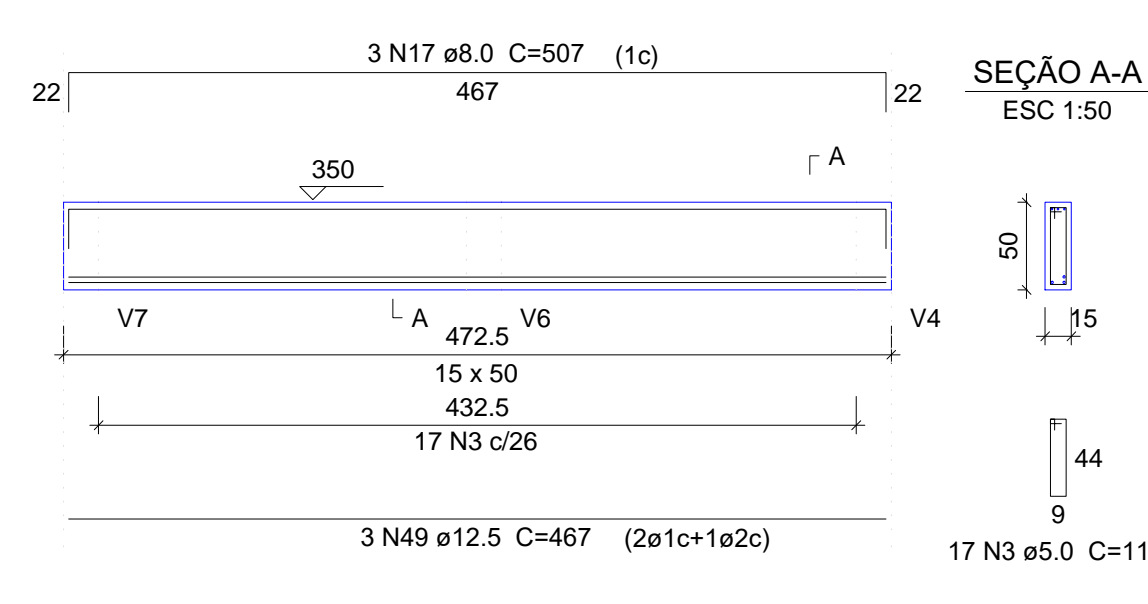
V35
ESC 1:50



V36
ESC 1:50



V37
ESC 1:50



Relação do aço

ACO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
V20	V21	V22	V23	V24	V25
V26	V27	V28	V29	V30	V31
V32	V33	V34	V35	V36	V37
CA60	1	5.0	230	98	22540
	2	5.0	2	530	1060
	3	5.0	236	118	27848
CA50	4	8.0	4	364	1456
	5	8.0	2	152	304
	6	8.0	2	201	402
	7	8.0	2	529	1058
	8	8.0	2	579	1158
	9	8.0	2	415	830
	10	8.0	2	171	342
	11	8.0	2	354	708
	12	8.0	2	404	808
	13	8.0	3	976	2928
	14	8.0	3	874	2622
	15	8.0	3	894	2682
	16	8.0	3	669	2007
	17	8.0	3	507	1521
	18	10.0	1	208	208
	19	10.0	2	632	1264
	20	10.0	2	201	402
	21	10.0	3	674	2022
	22	10.0	2	722	1444
	23	10.0	2	196	392
	24	10.0	5	574	2870
	25	10.0	3	683	2049
	26	10.0	1	119	119
	27	10.0	2	664	1328
	28	10.0	5	574	2870
	29	10.0	2	631	1262
	30	10.0	5	682	3410
	31	10.0	2	360	720
	32	10.0	2	1198	2396
	33	10.0	2	664	1328
	34	10.0	2	630	1260
	35	10.0	2	77	154
	36	10.0	2	390	780
	37	10.0	2	417	834
	38	10.0	2	391	782
	39	10.0	4	428	1712
	40	10.0	2	411	822
	41	10.0	2	452	904
	42	10.0	2	162	324
	43	12.5	3	593	1779
	44	12.5	4	600	2400
	45	12.5	1	242	242
	46	12.5	2	726	1452
	47	12.5	1	242	242
	48	12.5	2	629	1258
	49	12.5	3	467	1401

Resumo do aço

ACO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	188.3	81.7
	10.0	296.2	200.8
	12.5	87.8	93
CA60	5.0	514.5	87.2
CA50			375.5
CA60			87.2

Volume de concreto (C-25) = 7.93 m³
Área de forma = 123.1 m²

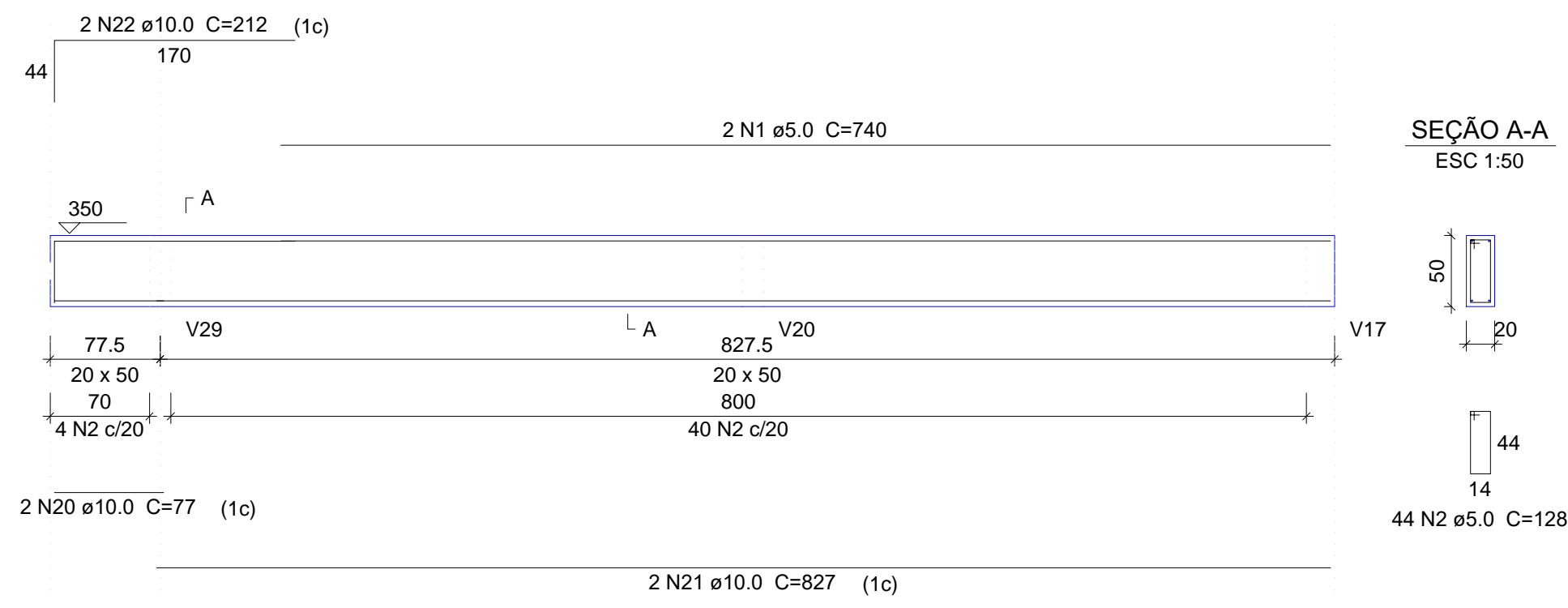
COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
11	1.06
13	1.5%

02			
01	DATA	REVISÃO	DESENHO APROVAÇÃO
PROJETO:		PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO	
CLIENTE:		MUNICÍPIO DE MARCO	
LOCAL:		LOCALIDADE DE FEIJÃO BRAVO	
CONTEÚDO:		PLANTA DE PAGINAÇÃO 1 Detalhamento das Vigas Nível 350	
ESCALA:		DESENHO:	PRANCHAS:
INDICADA:		RODRIGO NUNES	09/15
DATA:		MARÇO/2021	

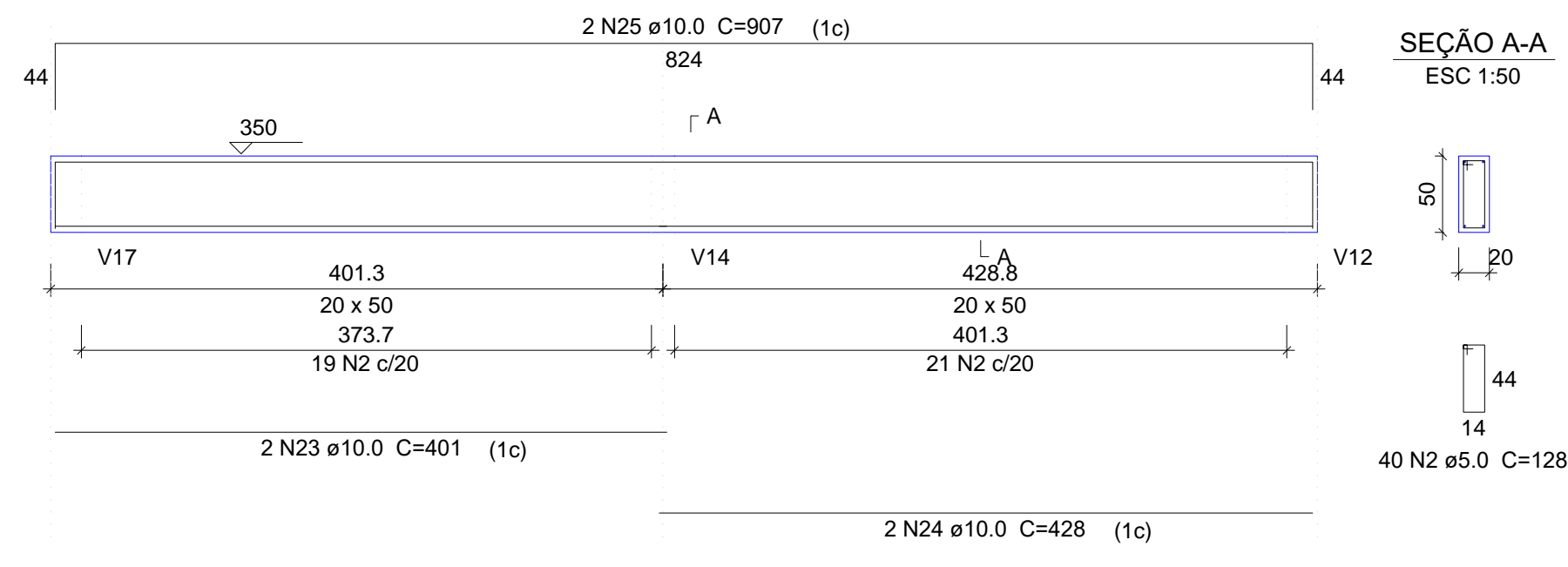


AV. PREFEITO GUIDO DOTTRENI, S/N
CENTRO - MARCO - CE - 63090-000
BR 364A, 1210 E BR 364A-1915
WWW.MARCO-CE.GOV.BR
CNPJ: 07.346.516/0001-47

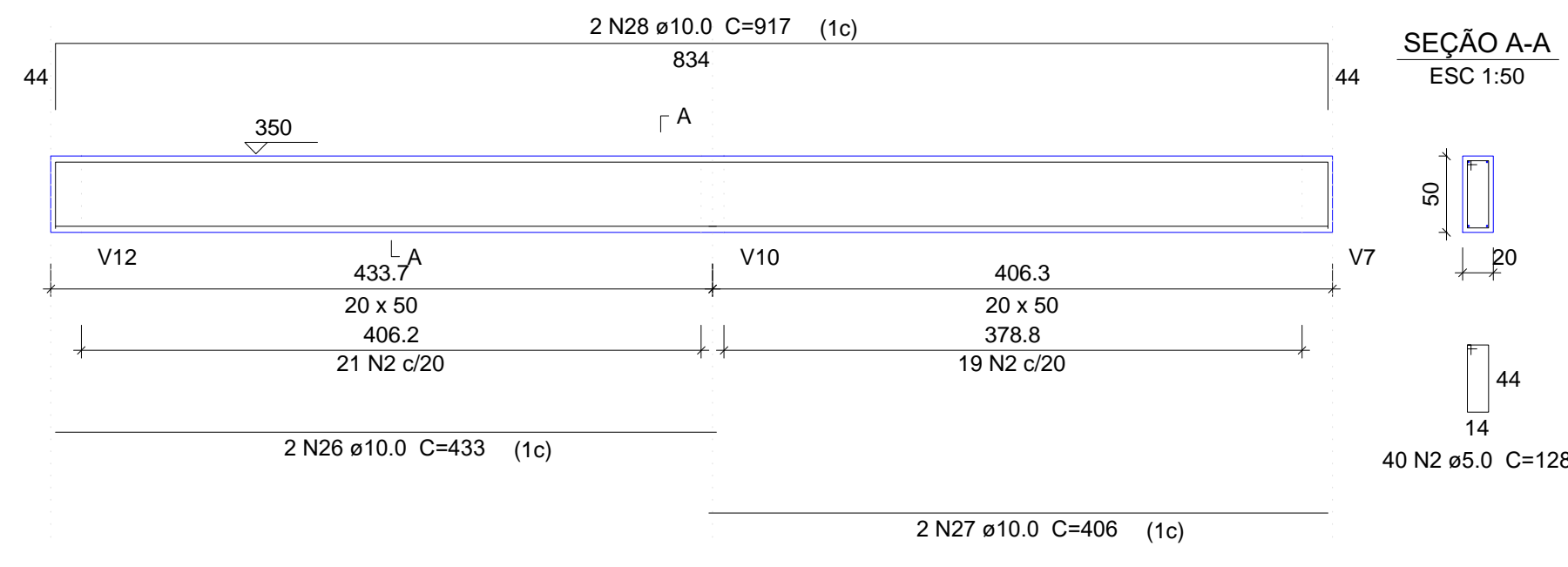
V38
ESC 1:50



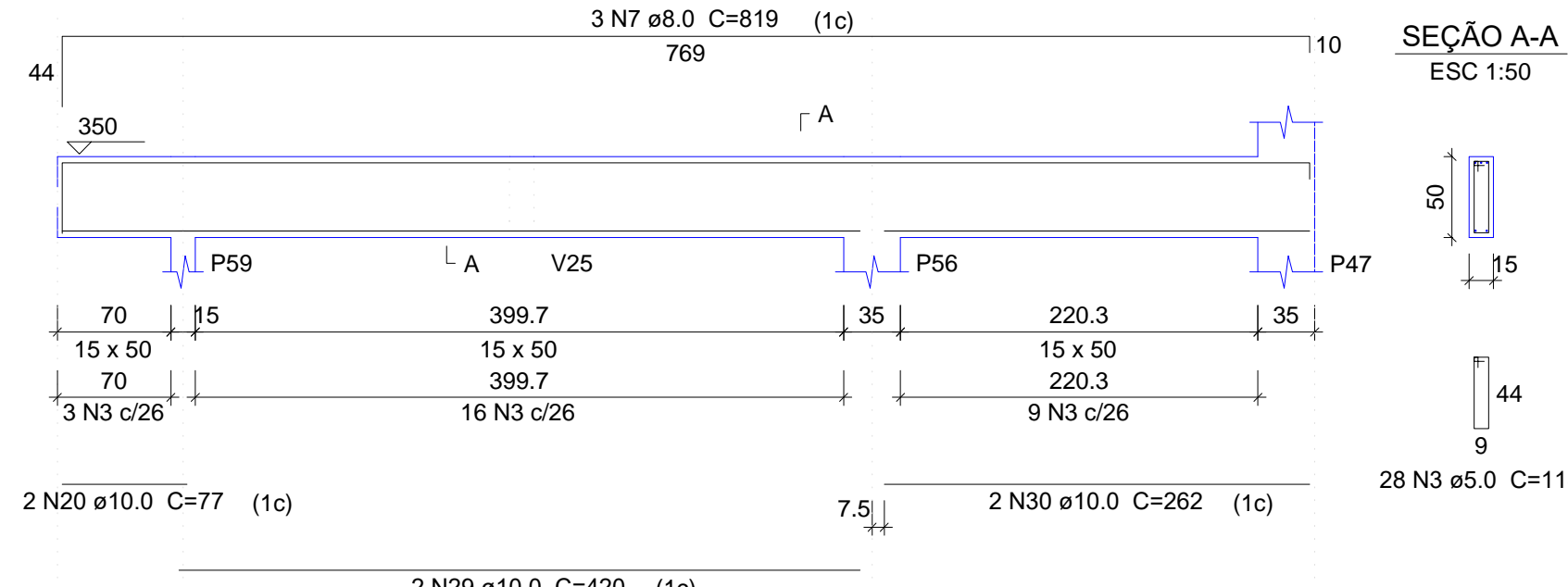
V39
ESC 1:50



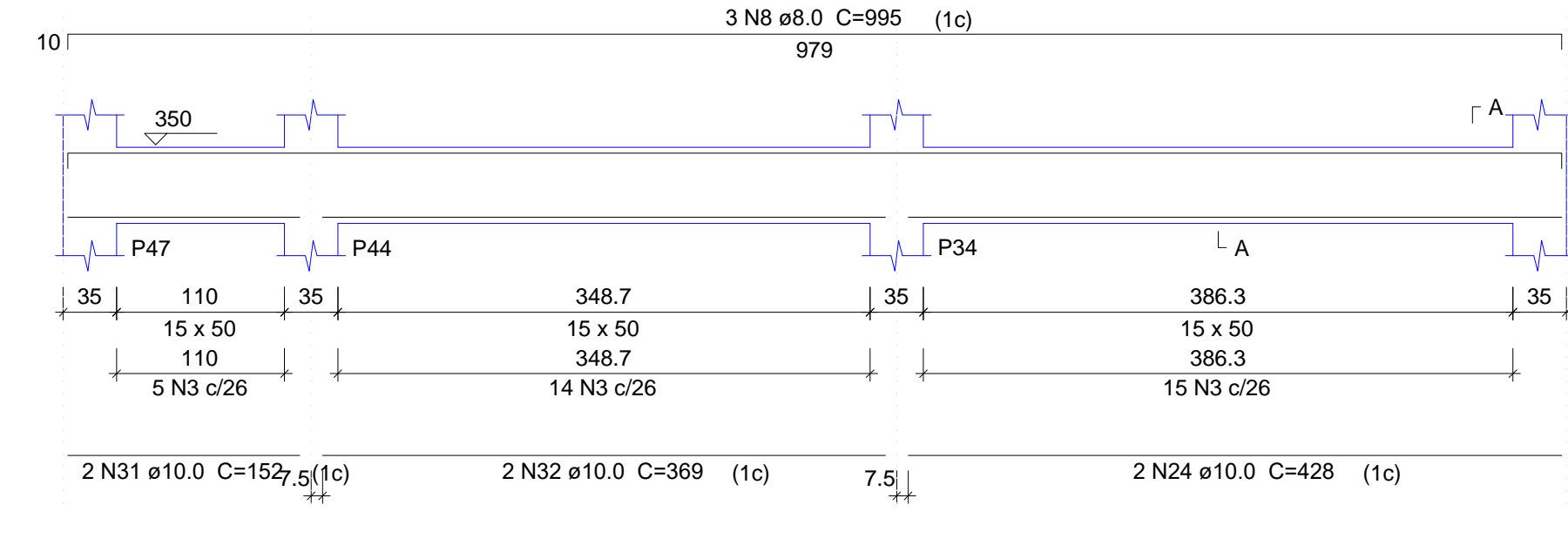
V40
ESC 1:50



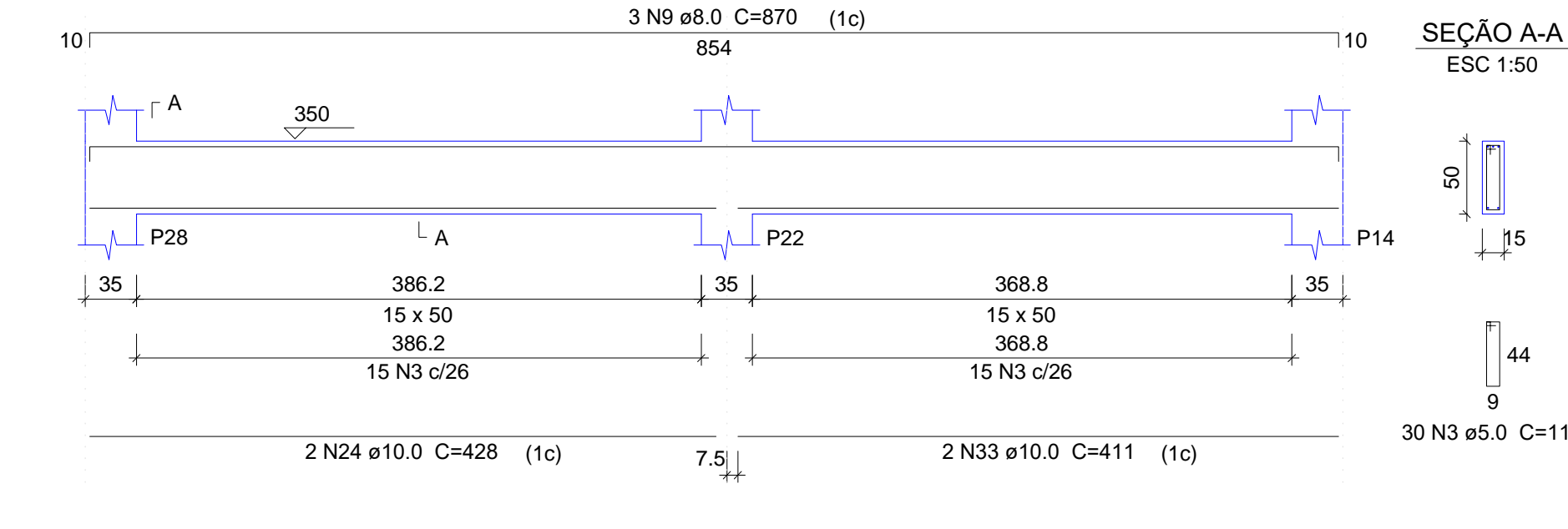
V41
ESC 1:50



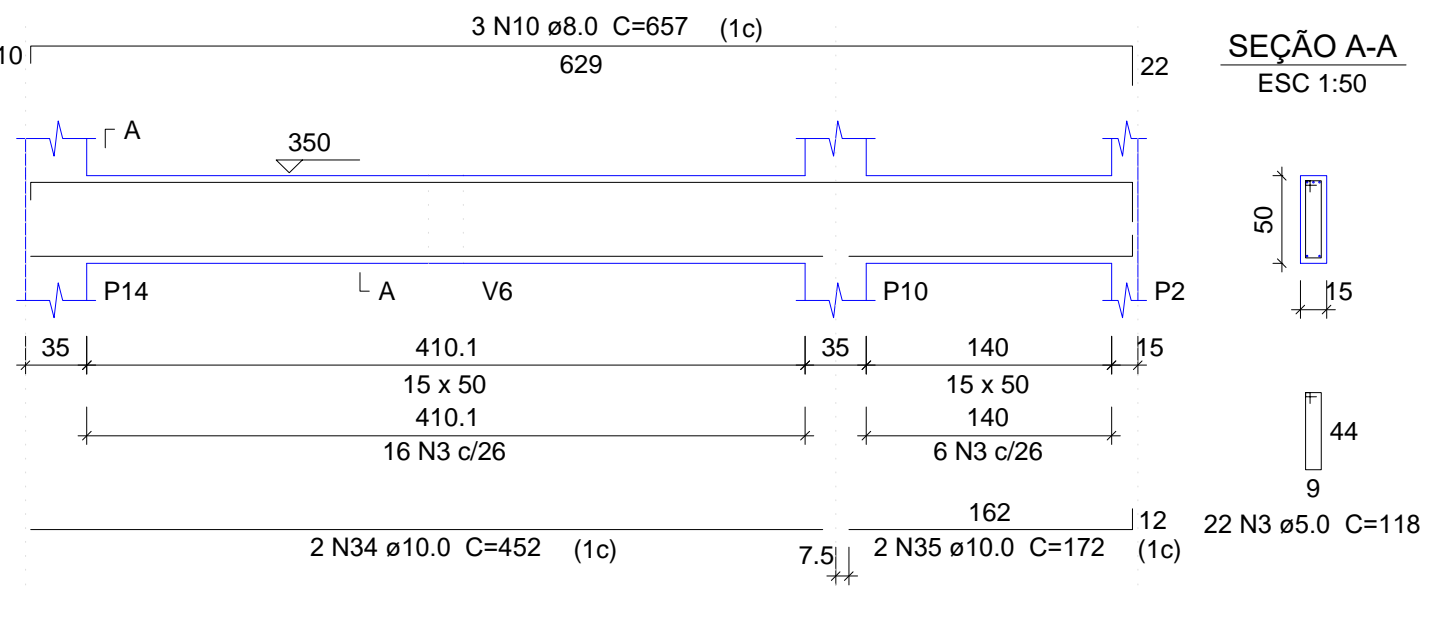
V42
ESC 1:50



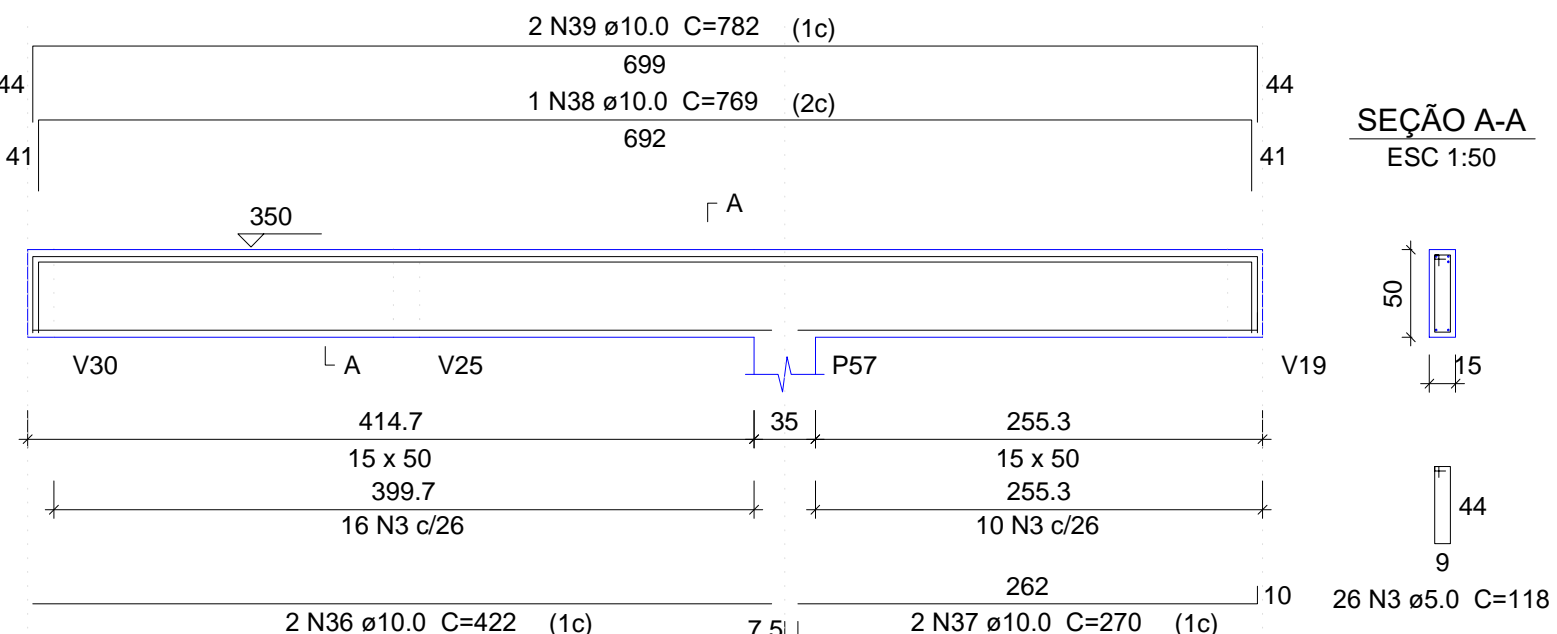
V43
ESC 1:50



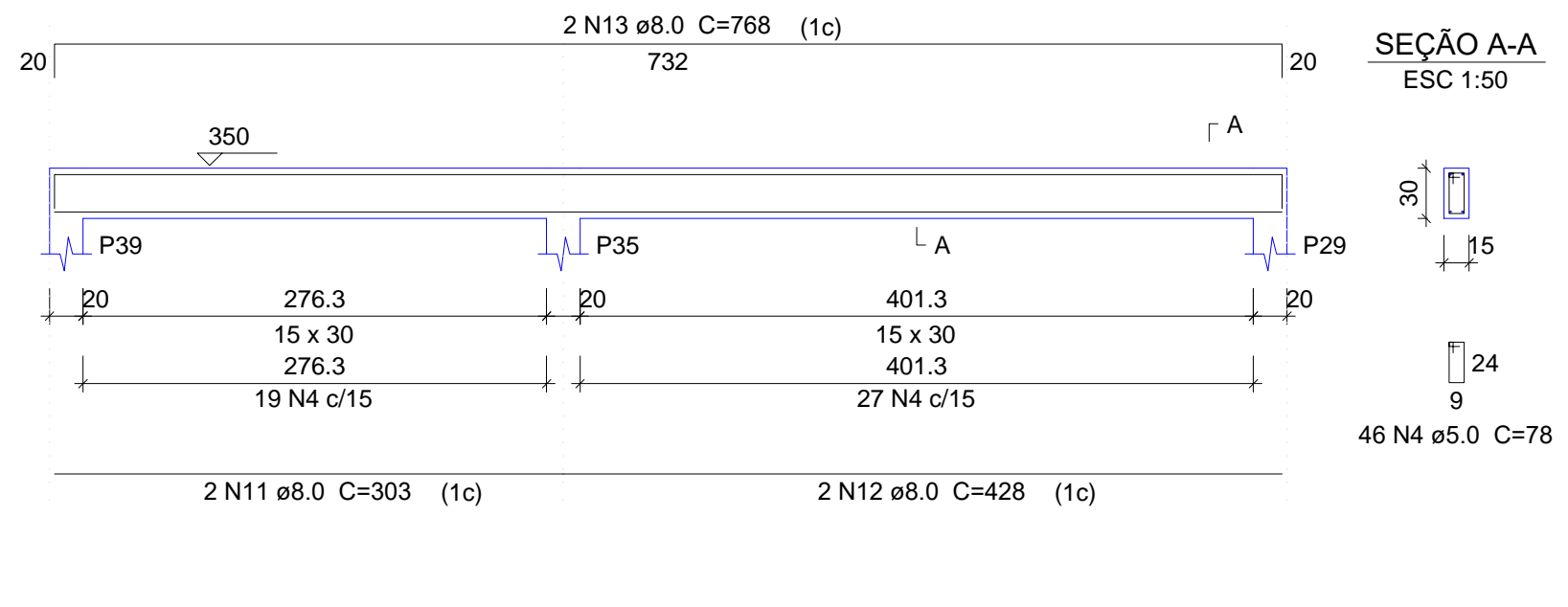
V44
ESC 1:50



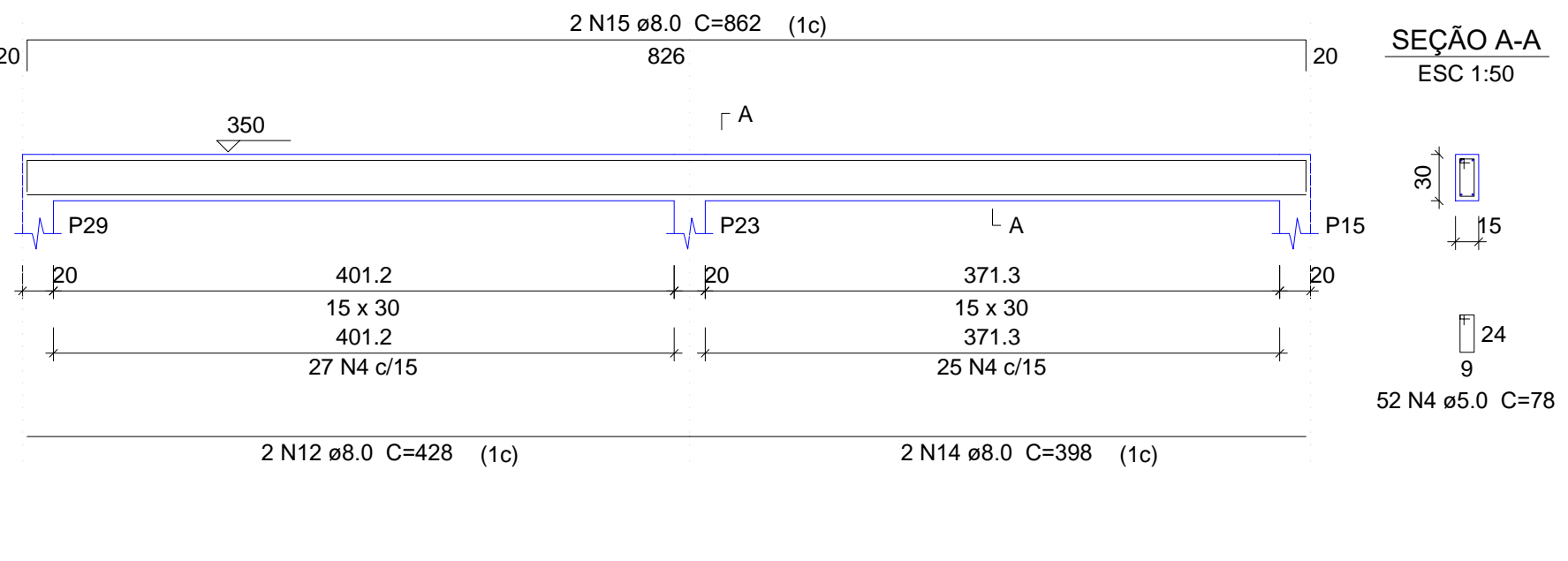
V45
ESC 1:50



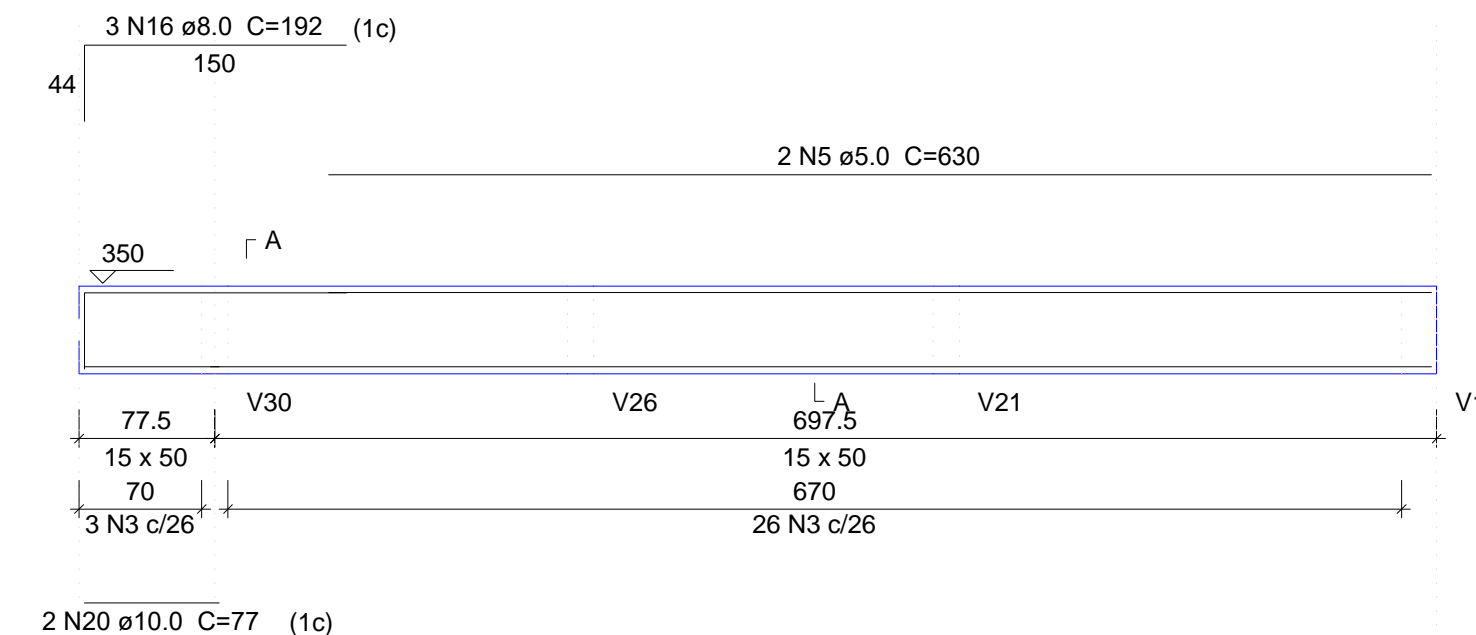
V46
ESC 1:50



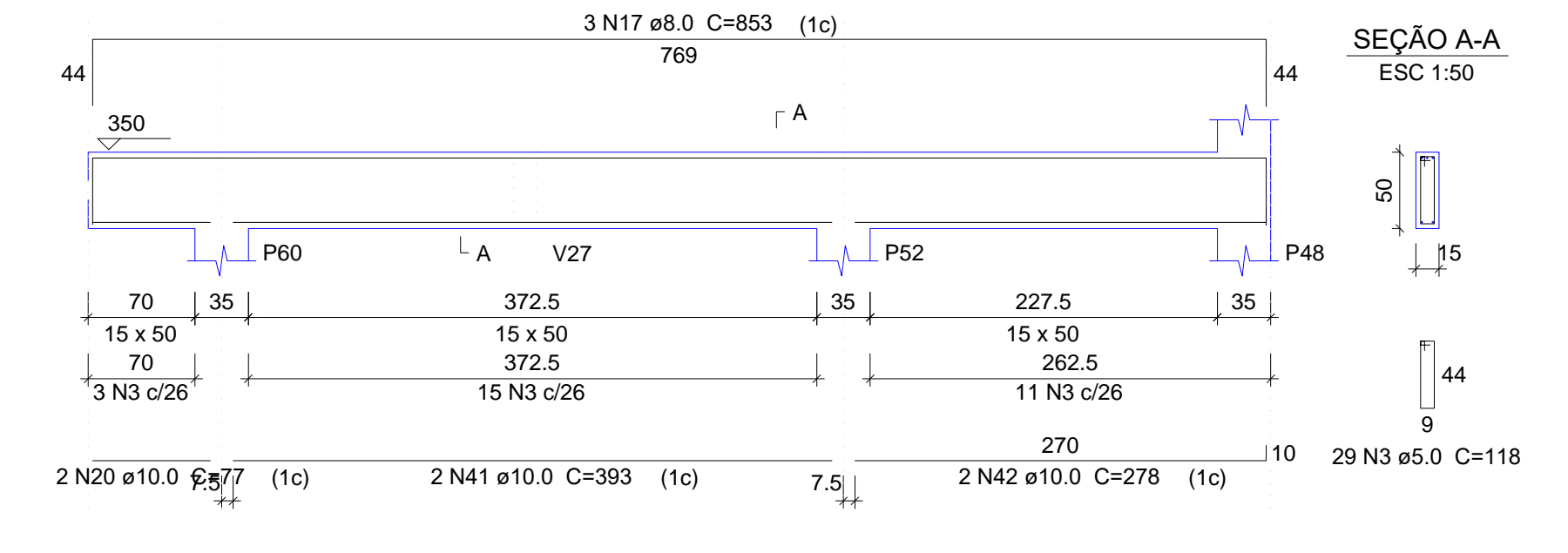
V47
ESC 1:50



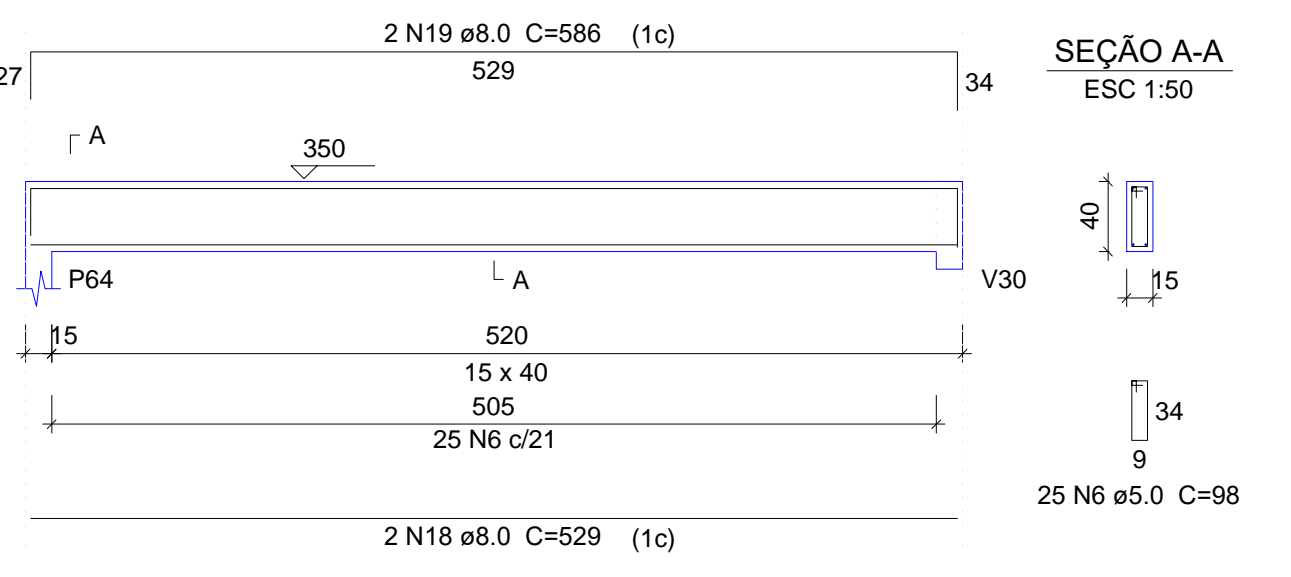
V48
ESC 1:50



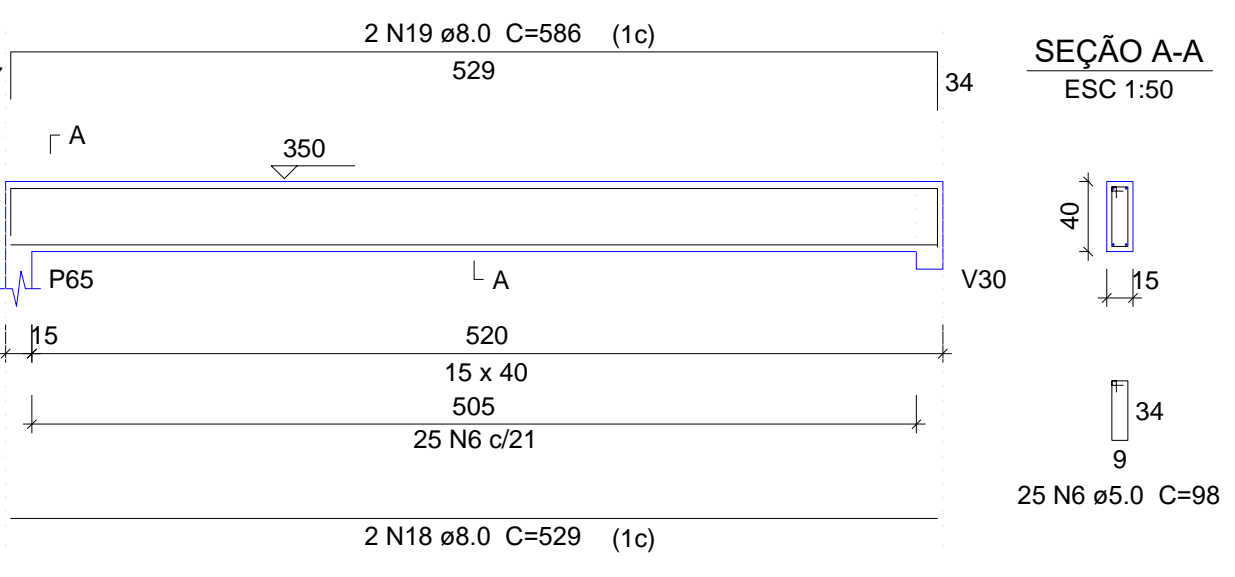
V49
ESC 1:50



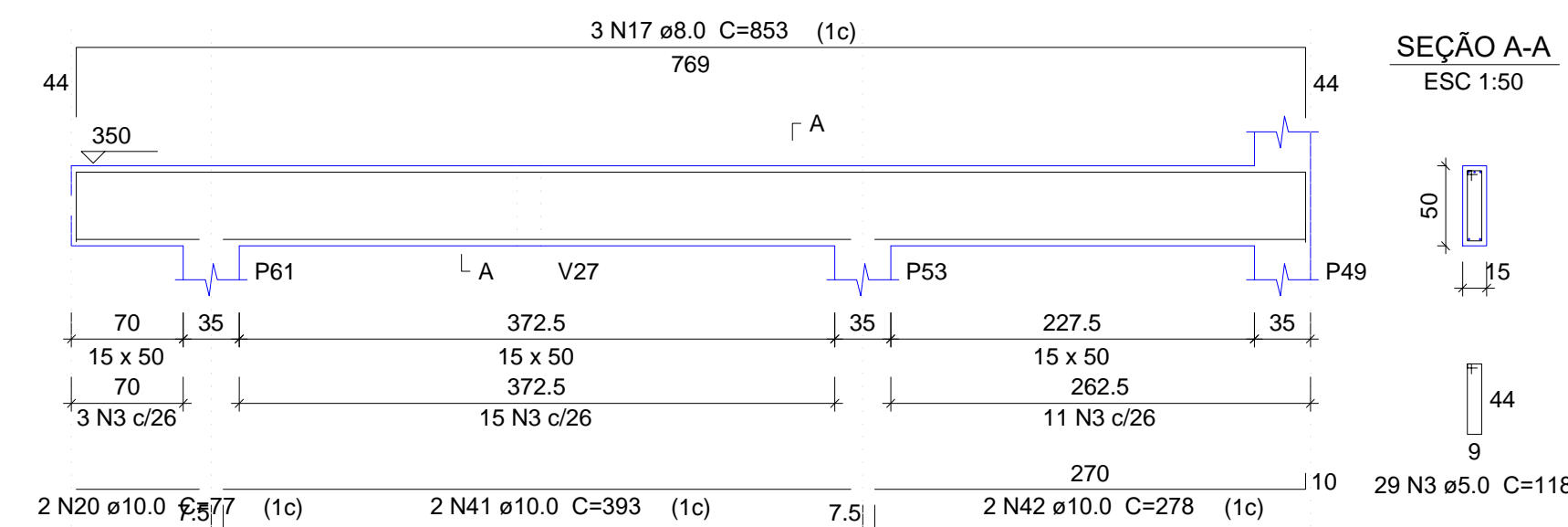
V50
ESC 1:50



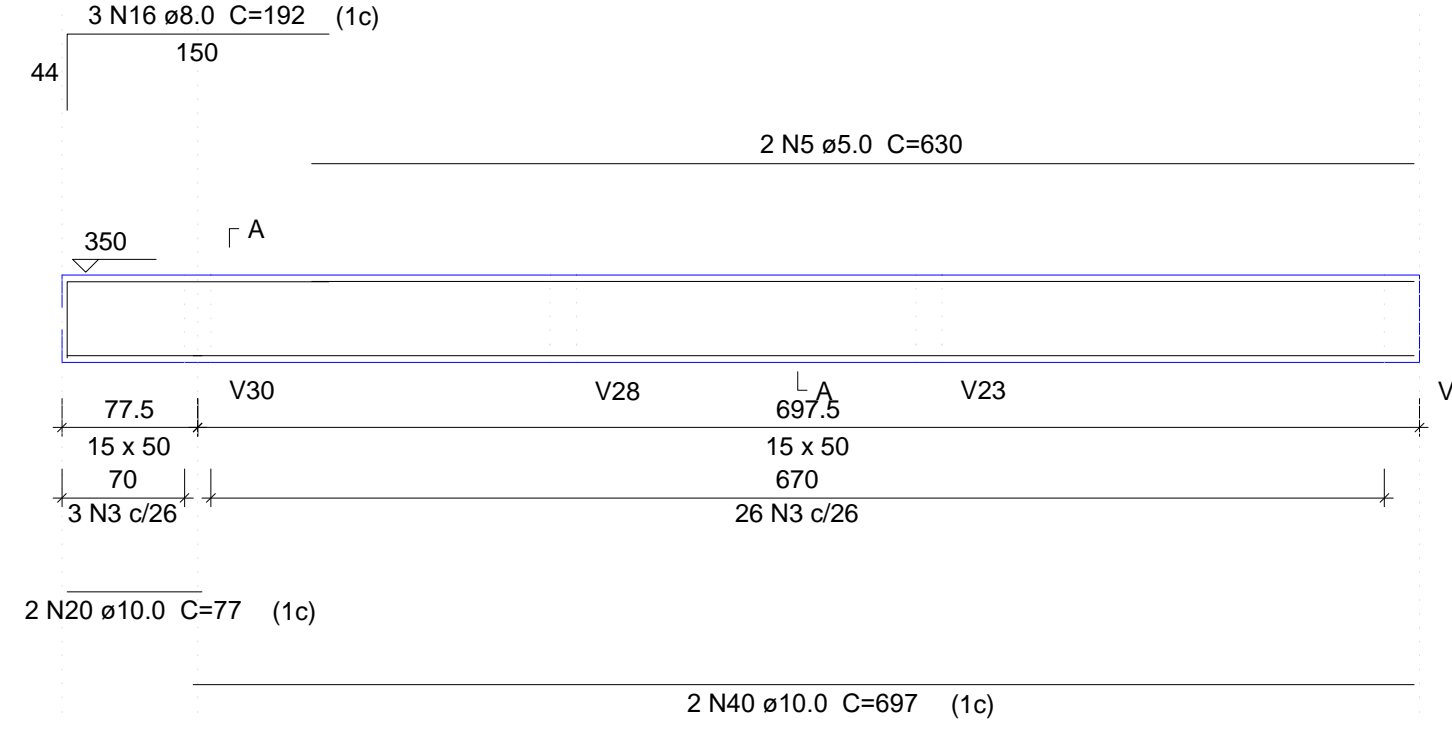
V51
ESC 1:50



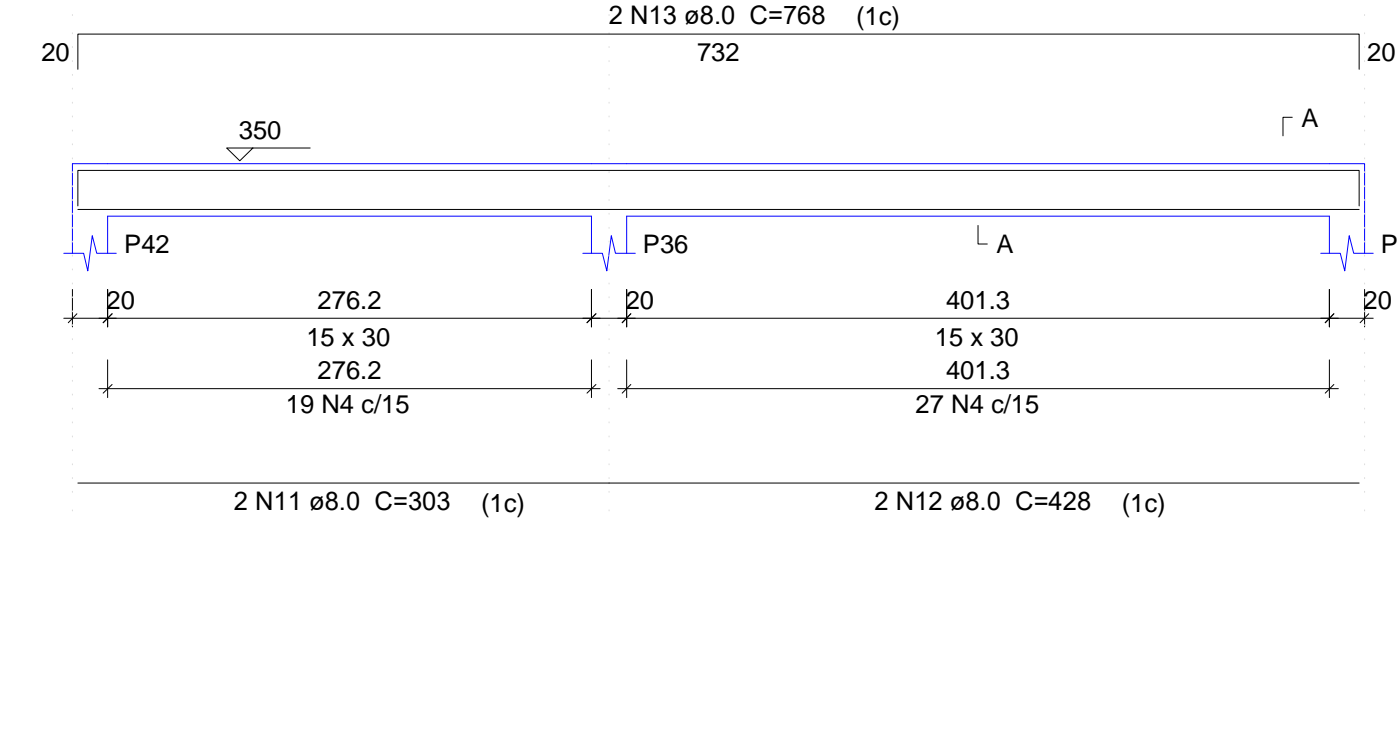
V52
ESC 1:50



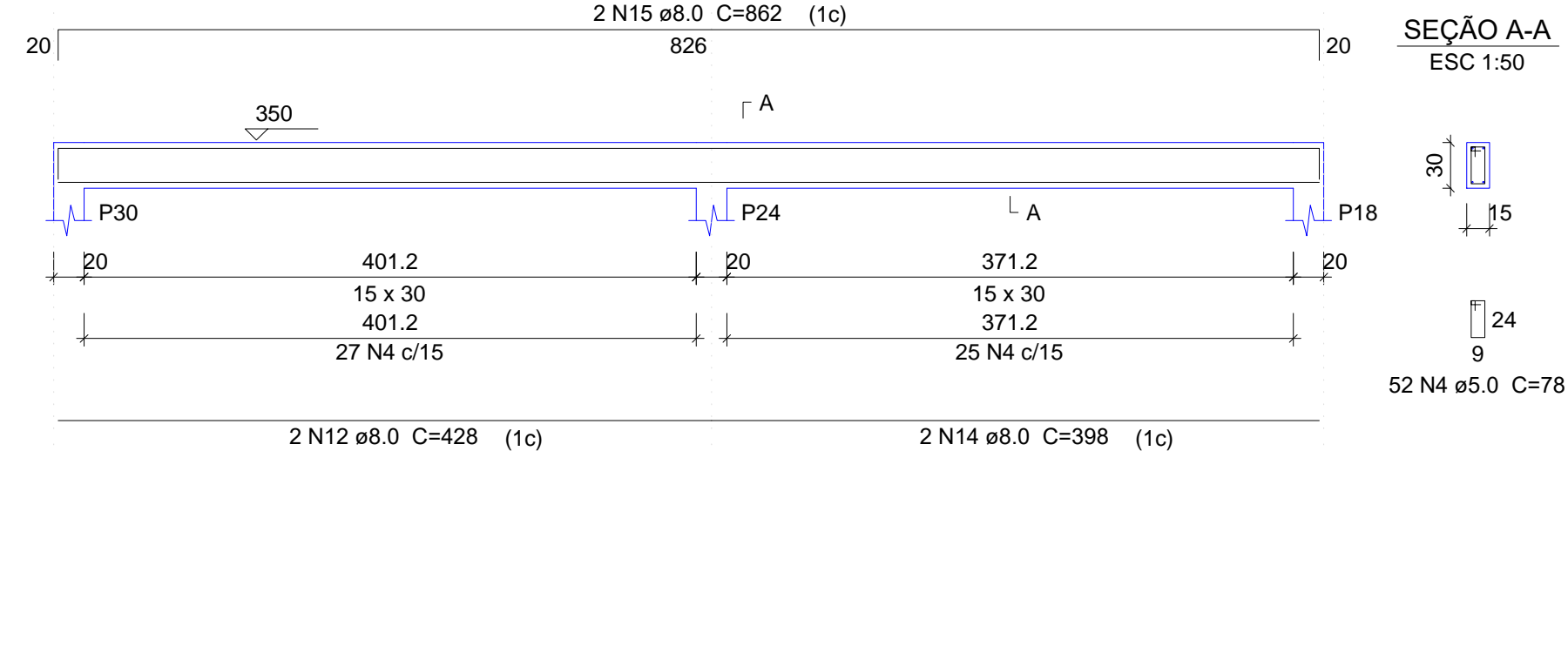
V53
ESC 1:50



V54
ESC 1:50



V55
ESC 1:50



Relação do aço

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
V38	1	5.0	2	740	1480
V41	2	5.0	124	128	15872
V44	3	5.0	256	118	30208
V47	4	5.0	196	78	15288
V50	5	5.0	4	630	2520
V53	6	5.0	50	98	4900
CA50	7	8.0	3	819	2457
	8	8.0	3	995	2985
	9	8.0	3	870	2610
	10	8.0	3	657	1971
	11	8.0	4	862	3448
	12	8.0	8	428	3424
	13	8.0	4	768	3072
	14	8.0	4	398	1592
	15	8.0	4	862	3448
	16	8.0	6	192	1152
	17	8.0	6	853	5118
	18	8.0	4	529	2116
	19	8.0	4	586	2344
	20	10.0	12	77	924
	21	10.0	2	827	1654
	22	10.0	2	212	424
	23	10.0	2	401	802
	24	10.0	6	428	2568
	25	10.0	2	907	1814
	26	10.0	2	433	866
	27	10.0	2	406	812
	28	10.0	2	917	1834
	29	10.0	2	420	840
	30	10.0	2	262	524
	31	10.0	2	152	304
	32	10.0	2	369	738
	33	10.0	2	411	822
	34	10.0	2	452	904
	35	10.0	2	172	344
	36	10.0	2	422	844
	37	10.0	2	270	540
	38	10.0	1	769	769
	39	10.0	2	782	1564
	40	10.0	4	697	2788
	41	10.0	4	353	1572
	42	10.0	4	278	1112

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	335.1	145.4
CA60	10.0	253.7	172
CA60	5.0	702.7	119.1
PESO TOTAL (kg)			
CA50		317.4	
CA60		119.1	

Volume de concreto (C-25) = 9.93 m³
Área de forma = 145.81 m²

COR	ESP.PENA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
10	1.08
11	1.08
12	1.08
13	1.08

02			
01	DATA	REVISÃO	DESENHO APROVAÇÃO
PROJETO:		PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO	
CLIENTE:		MUNICÍPIO DE MARCO	
LOCAL:		LOCALIDADE DE FEIJÃO BRAVO	
CONTEÚDO:		PLANTA DE PAGINAÇÃO	
1		Detalhamento das Vigas Nível 350	
 <p>AV. PREFEITO GUIDO DOTTRENI, S/N CENTRO - MARCO - CE 14090-000 BR 368A-1210 BR 368A-1915 WWW.MARCO-CE.GOV.BR CNPJ: 07.346.516/0001-47</p>			
ESCALA:	INDICADA	DESENHO: RODRIGO NUNES	PRANCHAL: 10/15
		DATA: MARÇO/2021	

Relação do aço

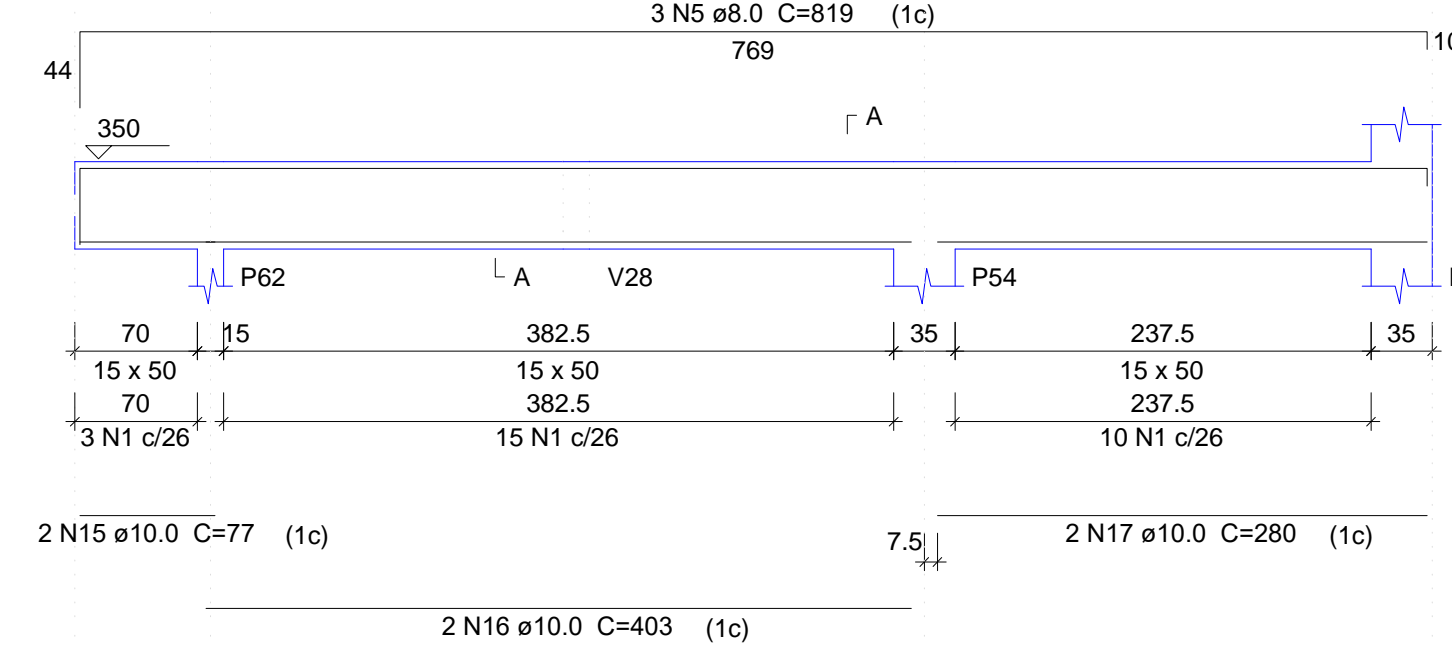
AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
V56	1	5.0	228	118	26904
V59	2	5.0	28	98	2744
V62	3	5.0	2	740	1480
V65	4	5.0	124	128	15872
CA50	5	8.0	3	819	2457
	6	8.0	3	995	2985
	7	8.0	3	850	2550
	8	8.0	3	677	2031
	9	8.0	2	312	624
	10	8.0	2	307	614
	11	8.0	2	698	1396
	12	8.0	3	976	2928
	13	8.0	6	874	5244
	14	8.0	3	889	2067
	15	10.0	6	77	462
	16	10.0	2	403	806
	17	10.0	2	280	560
	18	10.0	2	152	304
	19	10.0	2	369	738
	20	10.0	10	428	4280
	21	10.0	6	391	2346
	22	10.0	2	649	1298
	23	10.0	2	827	1654
	24	10.0	2	212	424
	25	10.0	4	401	1604
	26	10.0	2	907	1814
	27	10.0	2	433	866
	28	10.0	2	912	1824
	29	10.0	2	383	766
	30	10.0	2	425	850
	31	10.0	2	336	672
	32	10.0	2	316	632

Resumo do aço

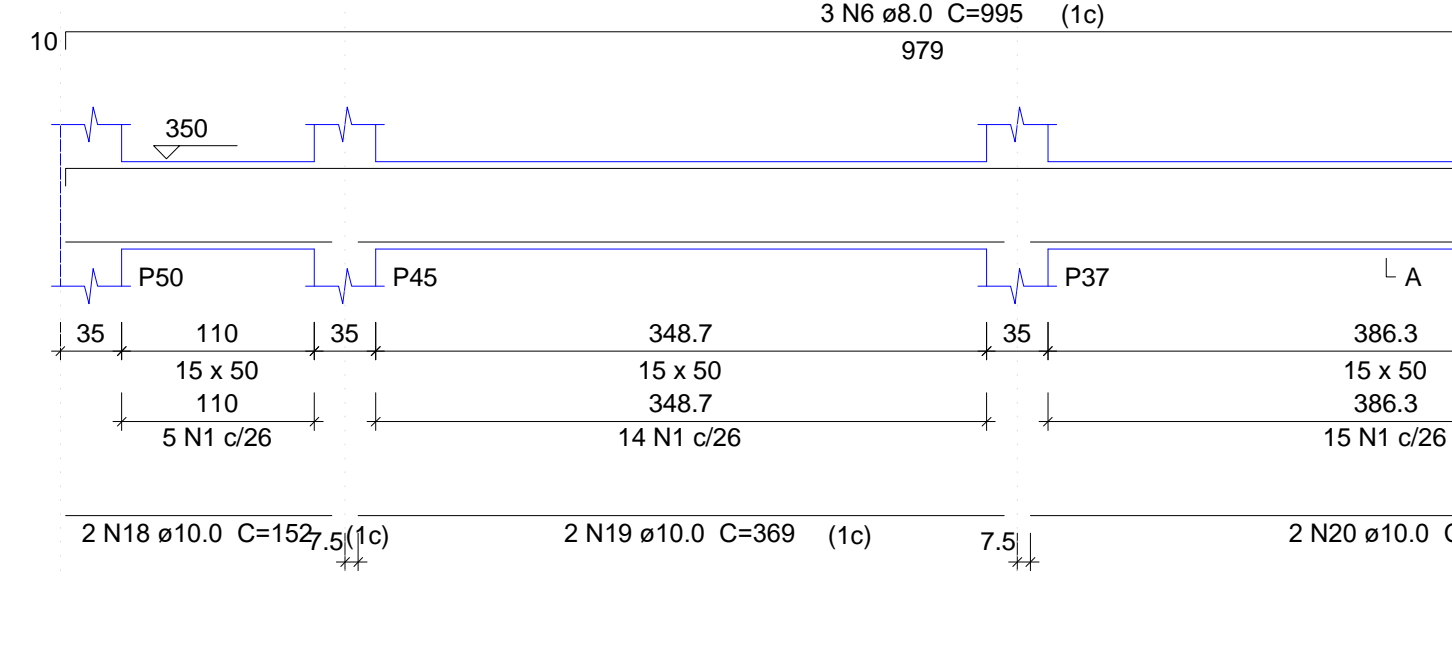
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	229	99.4
CA50	10.0	219	148.5
CA60	5.0	470	79.7
PESO TOTAL (kg)			
CA50	247.8		
CA60	79.7		

Volume de concreto (C-25) = 7.84 m³
Área de forma = 111.79 m²

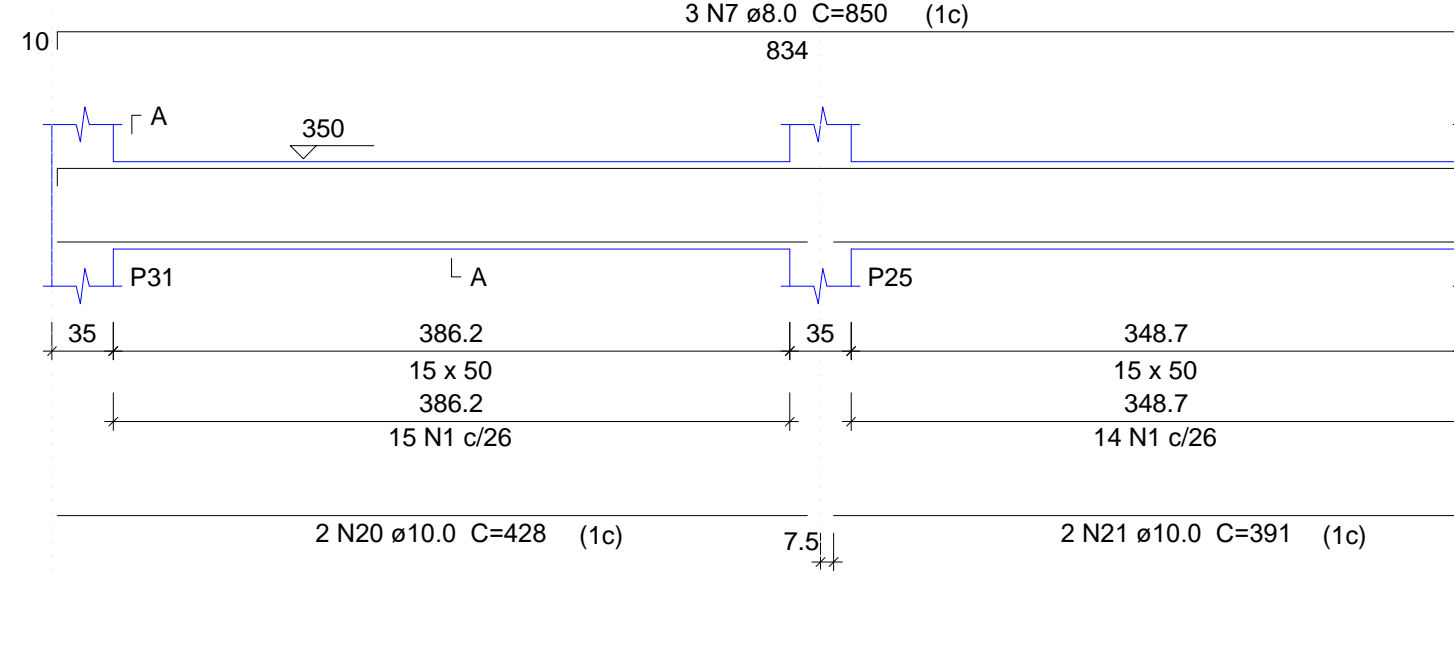
V56 ESC 1:50



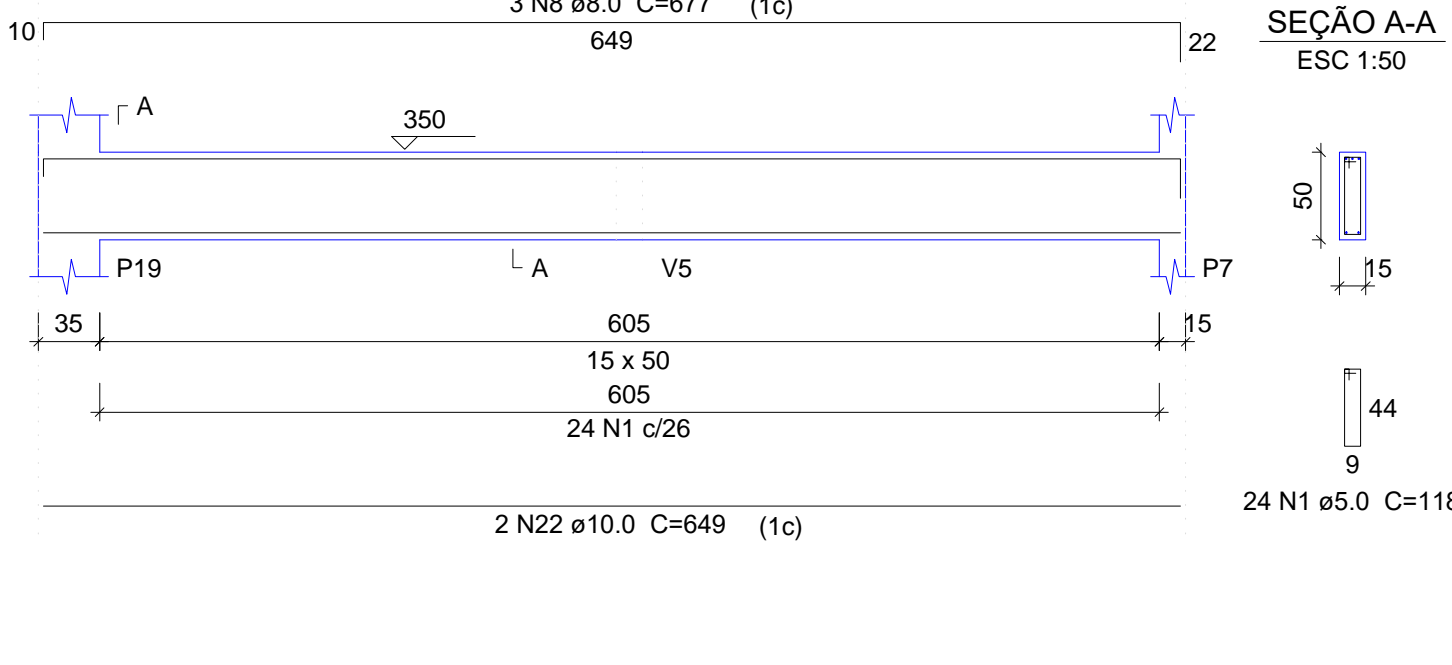
V57 ESC 1:50



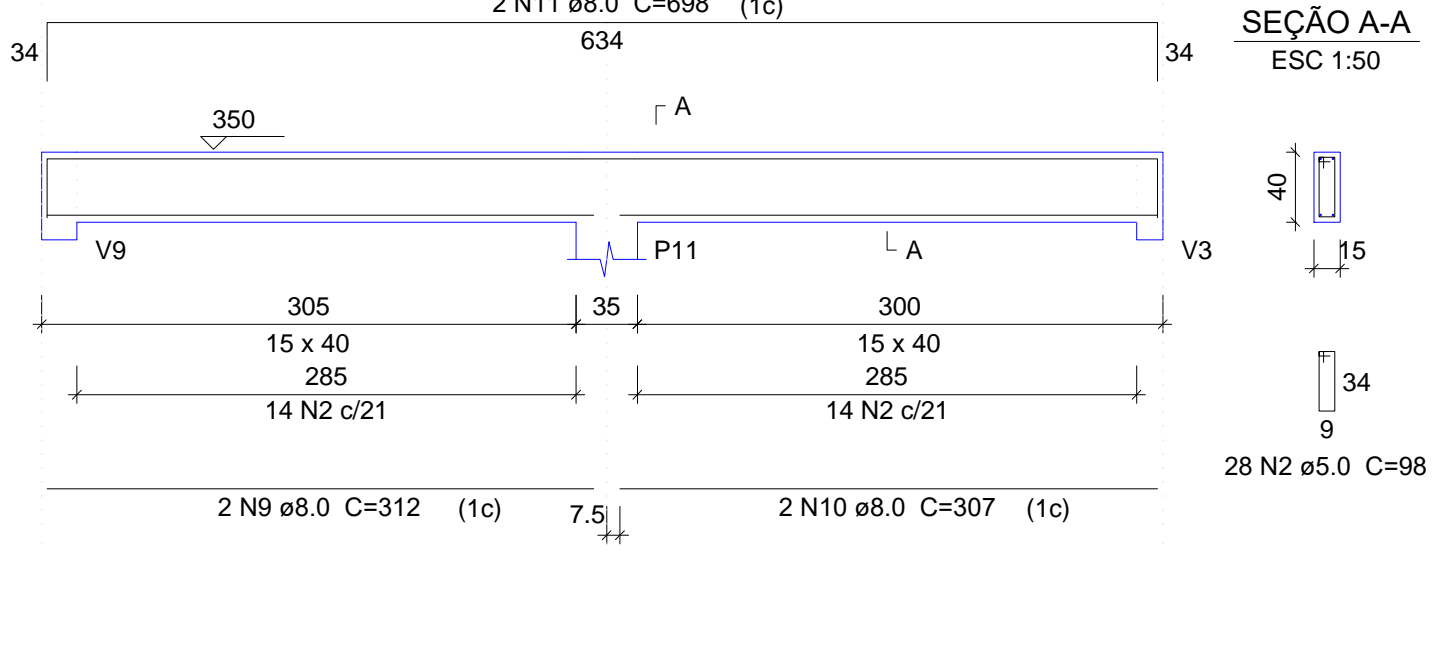
V58 ESC 1:50



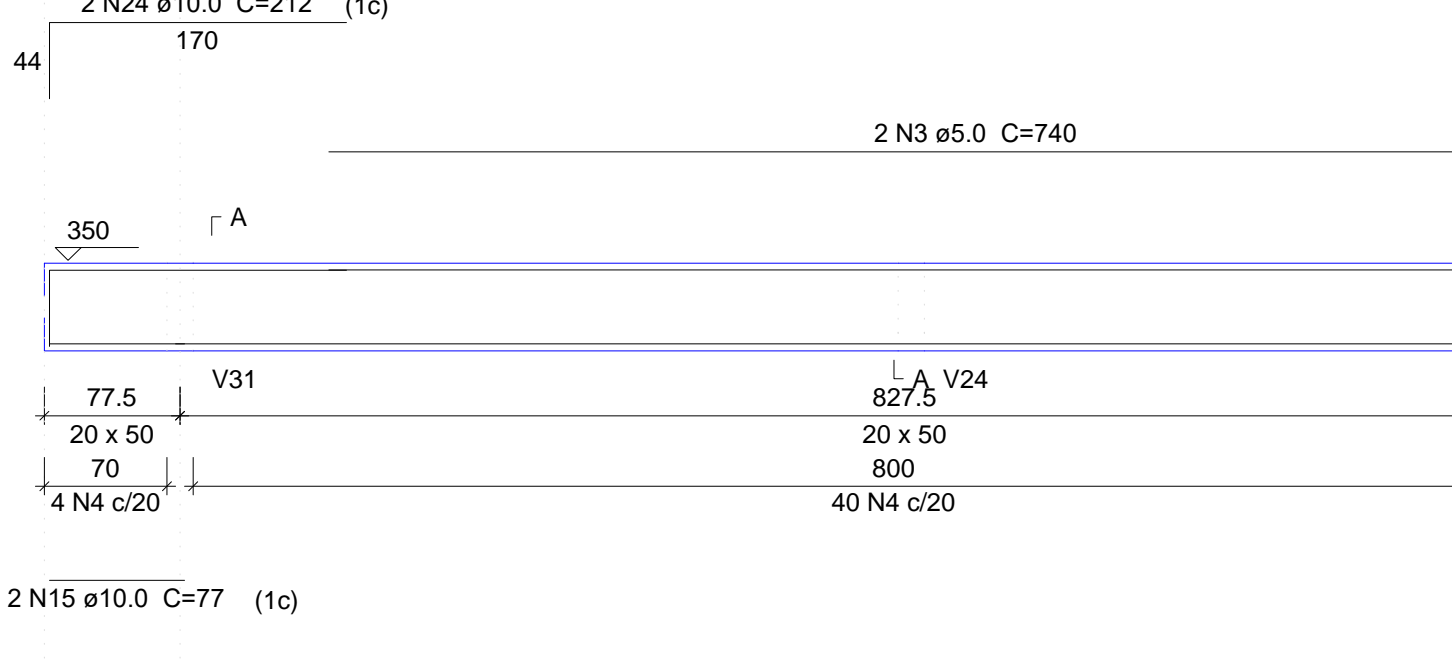
V59 ESC 1:50



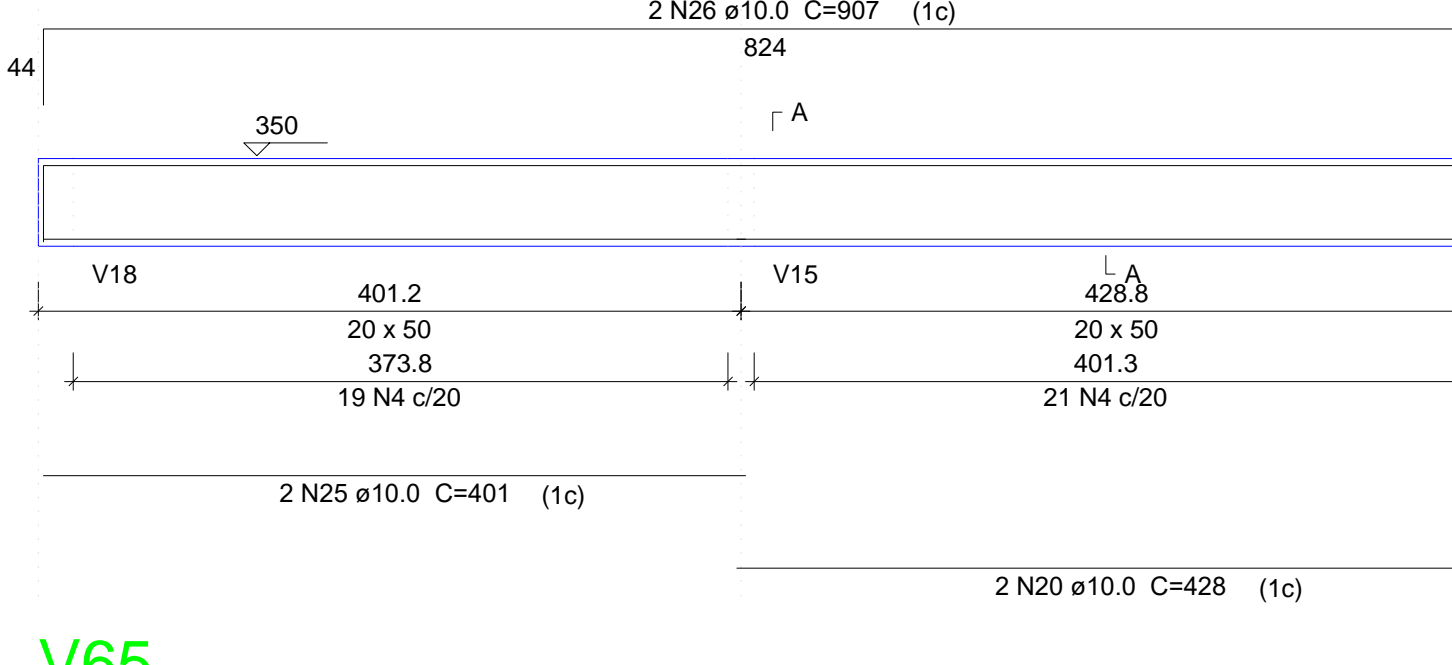
V60 ESC 1:50



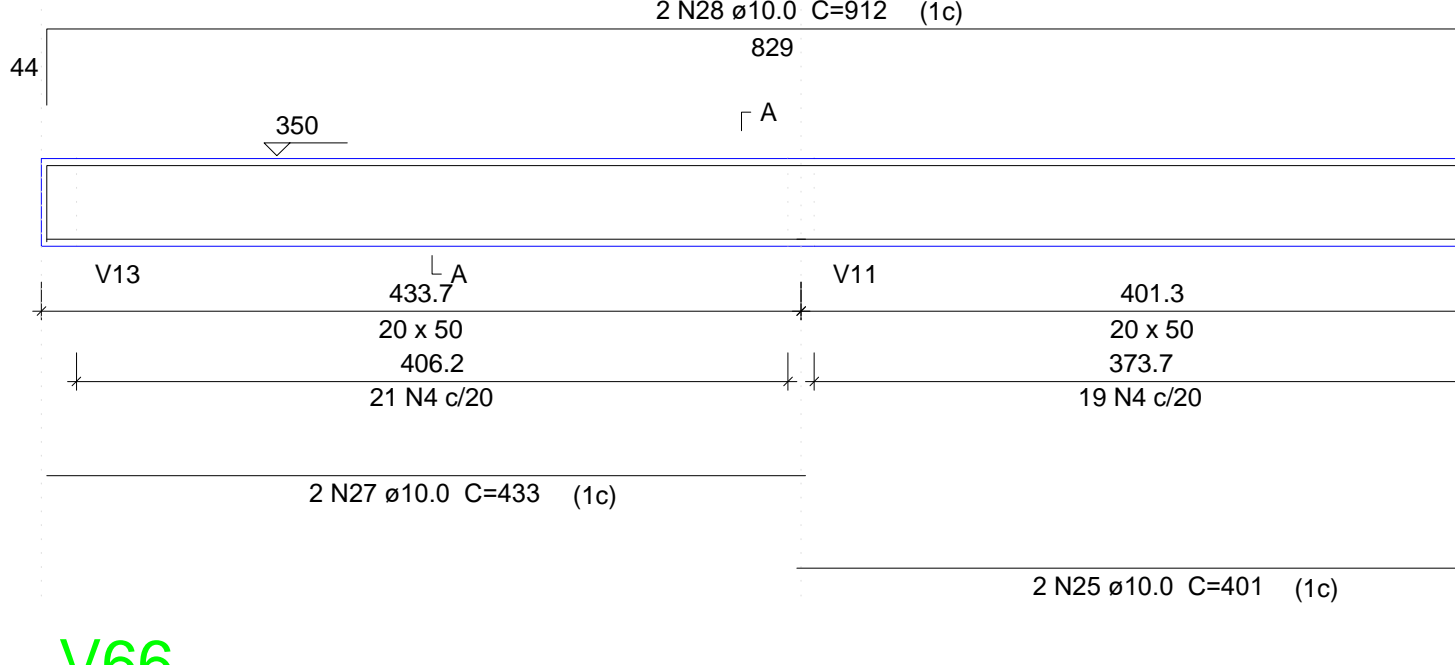
V61 ESC 1:50



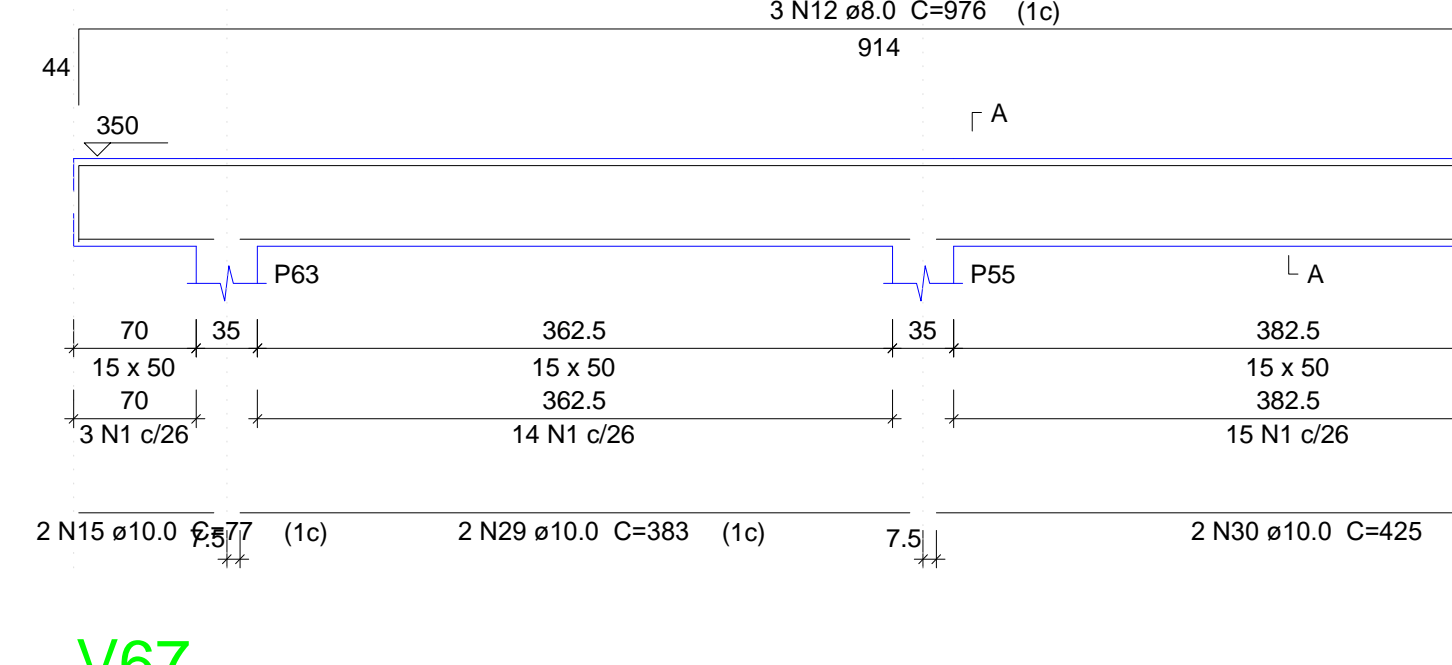
V62 ESC 1:50



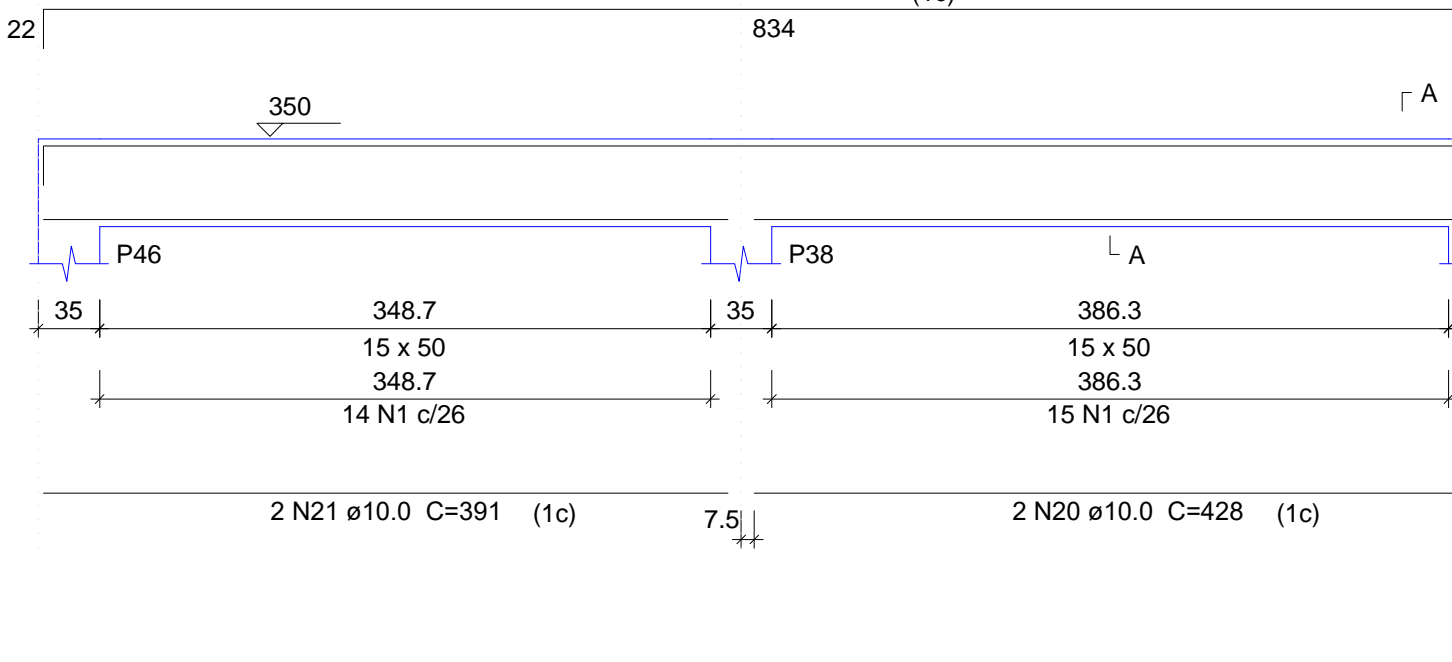
V63 ESC 1:50



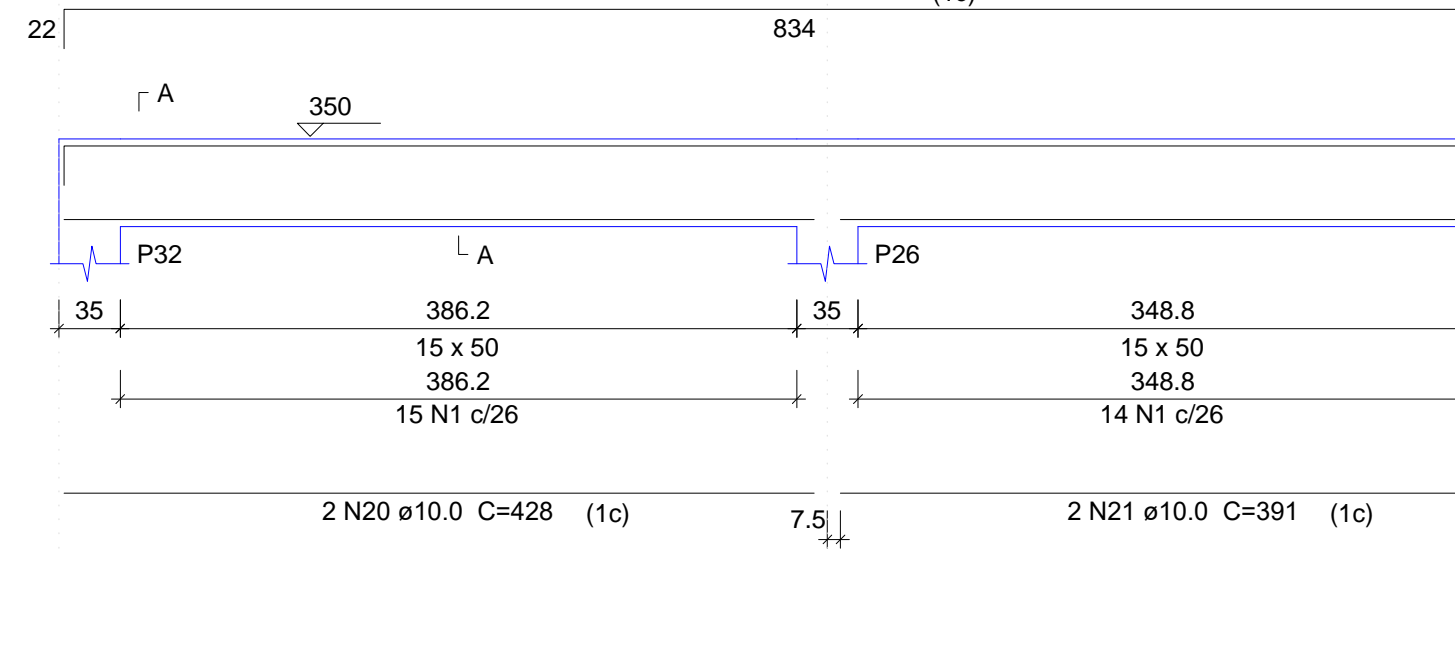
V64 ESC 1:50



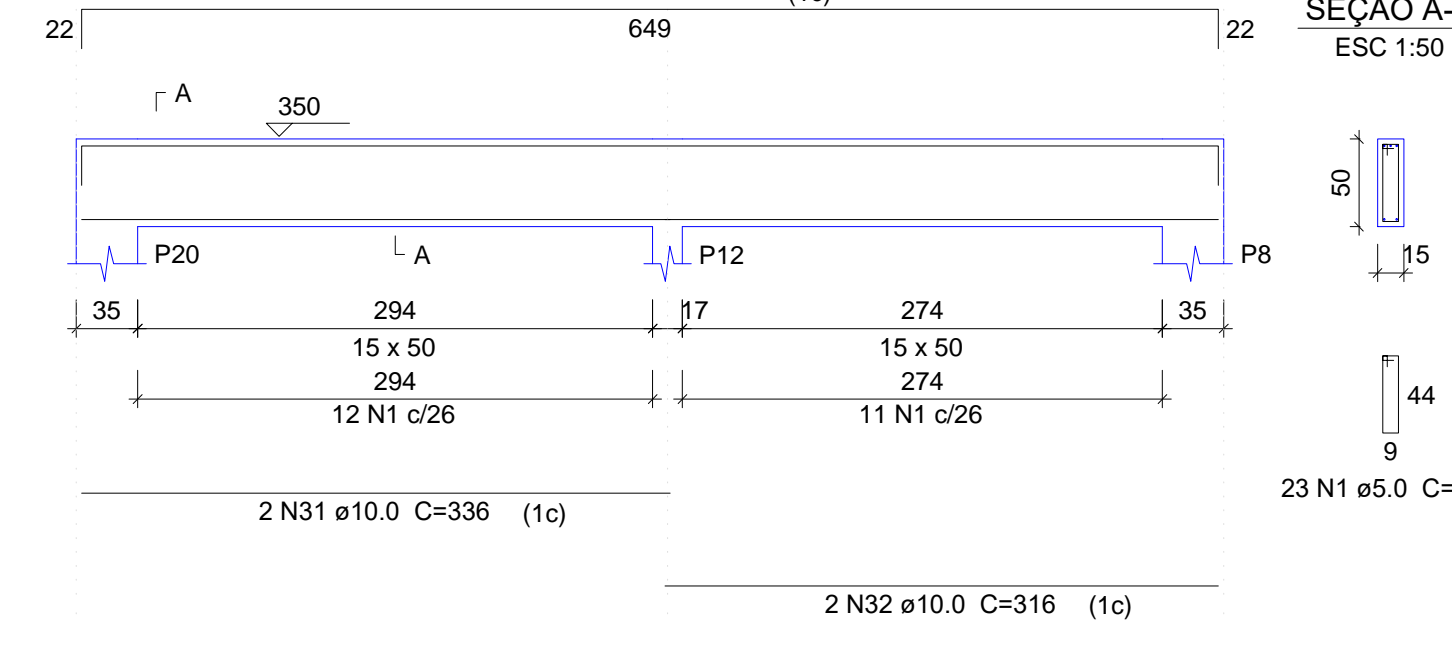
V65 ESC 1:50



V66 ESC 1:50



V67 ESC 1:50

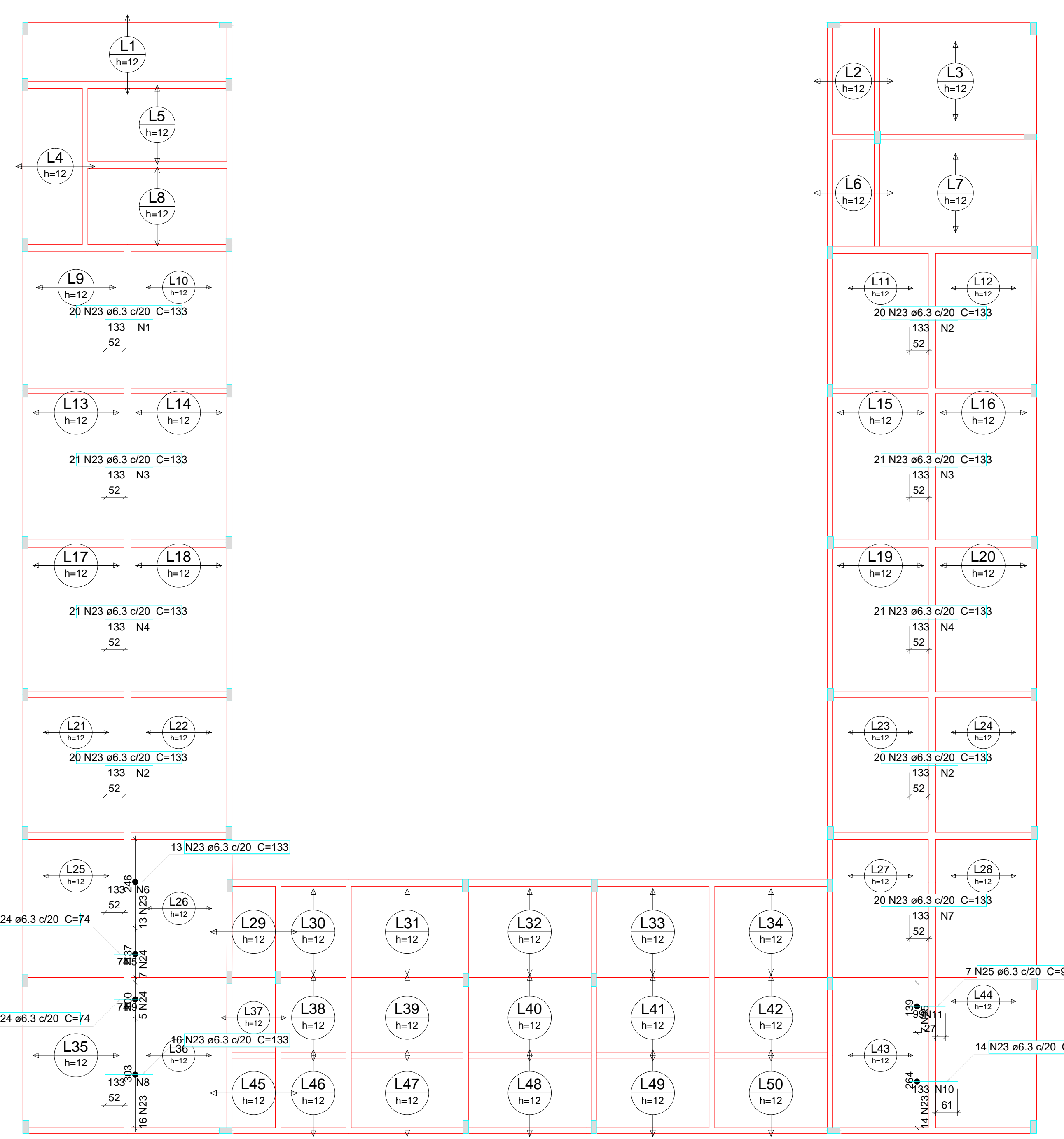


COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
11	1.08
13	1.58

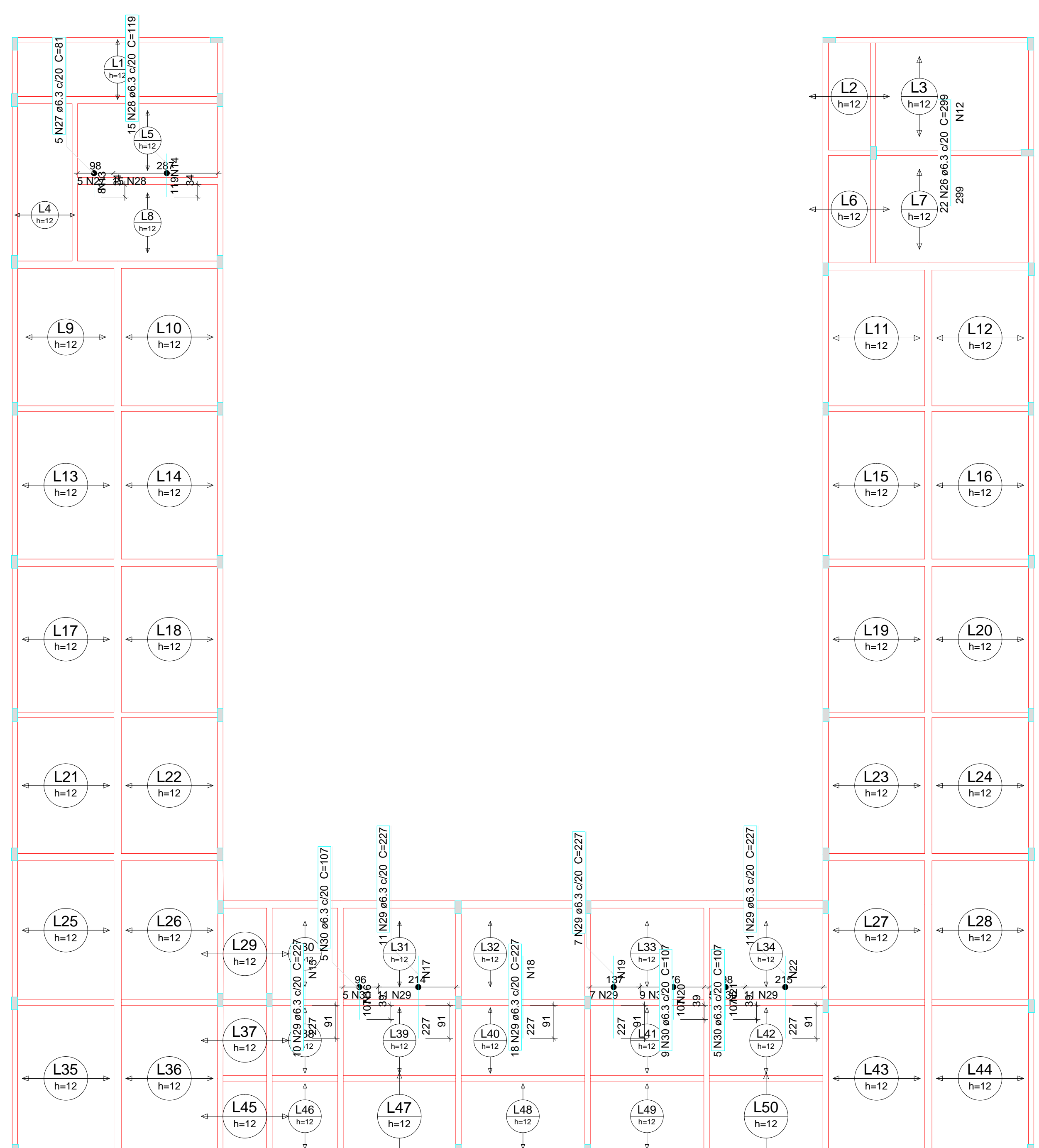
02			
01			
Nº	DATA	REVISÃO	DESENHO APROVAÇÃO
PROJETO:		PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO	
CLIENTE:		MUNICÍPIO DE MARCO	
LOCAL:		LOCALIDADE DE FEIJÃO BRAVO	
CONTEÚDO:		PLANTA DE PAGINAÇÃO 1 Detalhamento das Vigas Nível 350	
ESCALA:		DESENHO:	PRANCHAS:
INDICADA:		RODRIGO NUNES	11/15
		DATA:	MARÇO/2021



AV. PREFEITO GUIDO DOTTRENI, S/N
CENTRO - MARCO - CE 14.090-000
BR 364-1210 F 33 364-1-115
www.marco.ce.gov.br
CNPJ: 07.346.516/0001-47



Ferro	Armadura de distribuição
N23	7 N1 ø5.0 c/20 C=396
N23	7 N2 ø5.0 c/20 C=391
N23	7 N3 ø5.0 c/20 C=424
N23	7 N4 ø5.0 c/20 C=419
N23	7 N4 ø5.0 c/20 C=419
N23	7 N2 ø5.0 c/20 C=391
N23	7 N2 ø5.0 c/20 C=391
N24	4 N5 ø5.0 c/20 C=145
N23	7 N6 ø5.0 c/20 C=255
N23	7 N7 ø5.0 c/20 C=400
N23	7 N8 ø5.0 c/20 C=311
N24	4 N9 ø5.0 c/20 C=107
N23	7 N10 ø5.0 c/20 C=272
N25	5 N11 ø5.0 c/20 C=146



Ferro	Armadura de distribuição
N26	15 N12 ø5.0 c/20 C=435
N27	4 N13 ø5.0 c/20 C=106
N28	6 N14 ø5.0 c/20 C=295
N29	12 N15 ø5.0 c/20 C=190
N30	6 N16 ø5.0 c/20 C=104
N29	12 N17 ø5.0 c/20 C=221
N29	12 N18 ø5.0 c/20 C=355
N29	12 N19 ø5.0 c/20 C=144
N30	6 N20 ø5.0 c/20 C=183
N30	6 N21 ø5.0 c/20 C=105
N29	12 N22 ø5.0 c/20 C=222

Armação negativa das lajes do pavimento Nível 350 (Eixo X) escala 1:100

Armação negativa das lajes do pavimento Nível 350 (Eixo Y) escala 1:100

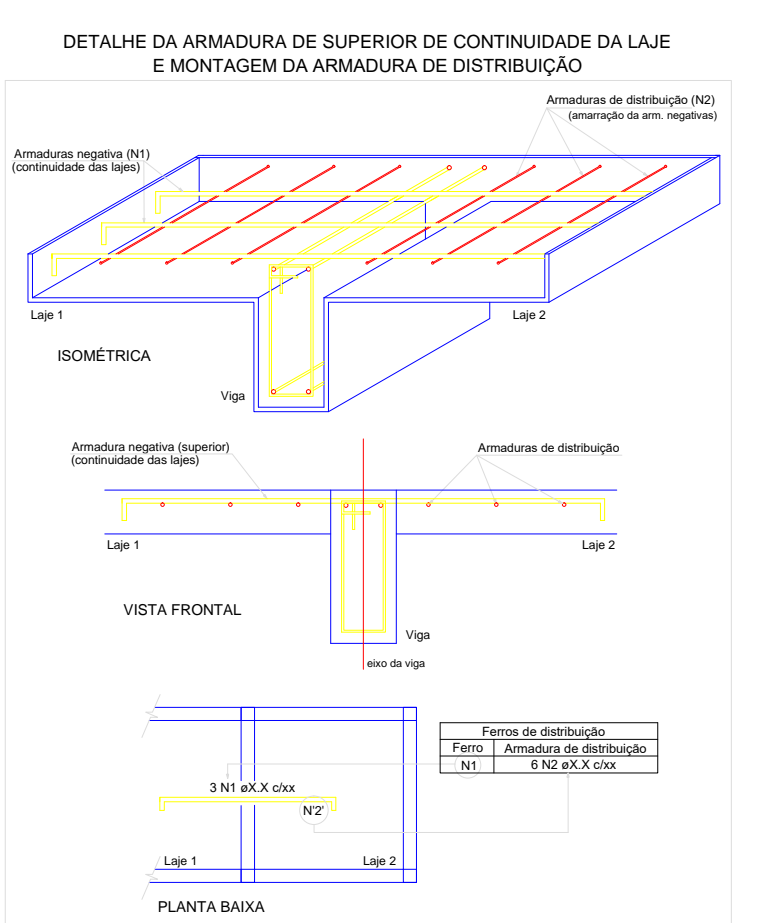
Relação do aço

Negativos X		Negativos Y		UNIT (cm)	C.TOTAL (cm)
CAÇO	N	DIAM (mm)	QUANT (Barras)		
CA60	1	5.0	7	396	2772
	2	5.0	21	391	8211
	3	5.0	14	424	5936
	4	5.0	14	419	5866
	5	5.0	4	145	580
	6	5.0	7	255	1785
	7	5.0	7	400	2800
	8	5.0	7	311	2177
	9	5.0	4	107	428
	10	5.0	7	272	1904
	11	5.0	5	146	730
	12	5.0	15	435	6525
	13	5.0	4	106	424
	14	5.0	6	295	1770
	15	5.0	12	196	2352
	16	5.0	6	104	624
	17	5.0	12	221	2662
	18	5.0	12	355	4260
	19	5.0	12	144	1728
	20	5.0	6	183	1098
	21	5.0	6	105	630
	22	5.0	12	222	2664
CA50	23	6.3	227	133	30191
	24	6.3	12	74	888
	25	6.3	7	99	693
	26	6.3	22	299	6578
	27	6.3	5	81	405
	28	6.3	15	119	1785
	29	6.3	57	227	12939
	30	6.3	19	107	2033

Resumo do aço

CAÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	555.2	149.4
CA60	5.0	679.2	98.2
PESO TOTAL (kg)			
CA50		149.4	
CA60		98.2	

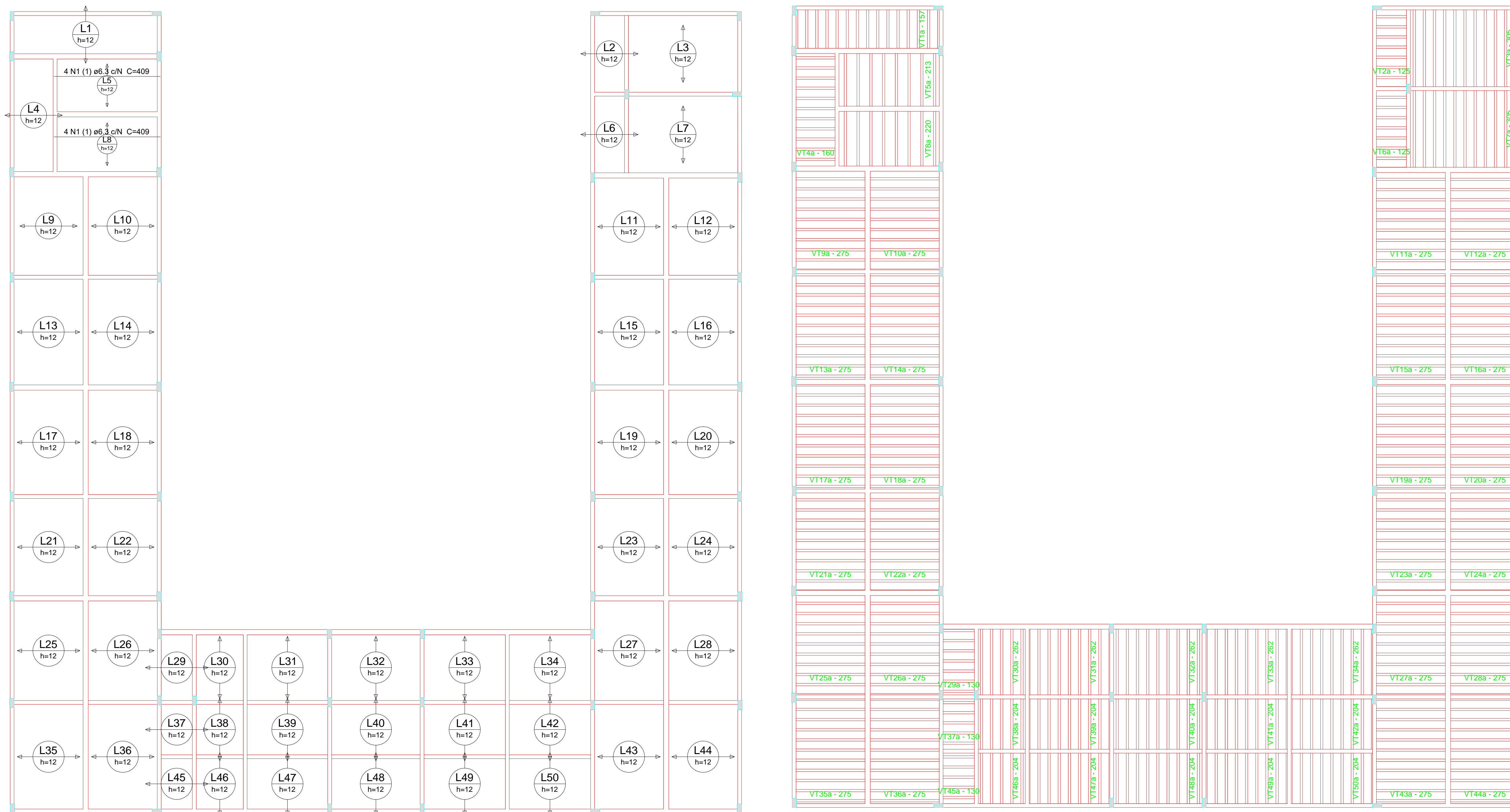
COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
11	1.06
13	1.58



02			
01			
Nº	DATA	REVISÃO	DESENHO APROVAÇÃO
		PROJETO:	PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO
		CLIENTE:	MUNICÍPIO DE MARCO
		LOCAL:	LOCALIDADE DE FEIJÃO BRAVO
		CONTEÚDO:	PLANTA DE PAGINAÇÃO 1 Armação neg. das lajes do Nível 350
		ESCALA:	DESENHO: PRANCHAL:
		INDICADA:	RODRIGO NUNES DATA: 12/15
			MARÇO/2021



AV. PREFEITO GUIDO DOTTREFF, 519
CENTRO - MARCO - CE - 14700-000
BR 364 A, 1210 J e BR 364 A, 1415
www.marco.ce.gov.br
CNPJ: 07.568.516/0001-47



Armação positiva das lajes do pavimento Nível 350 (Eixo X) escala 1:100

Planta de vigotas pré-moldadas escala 1:100

Relação do aço

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	8	409	3272

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	32.8	8.8
PESO TOTAL (kg)			8.8
CA50			8.8

Volume de concreto (C-25) = 21.33 m³

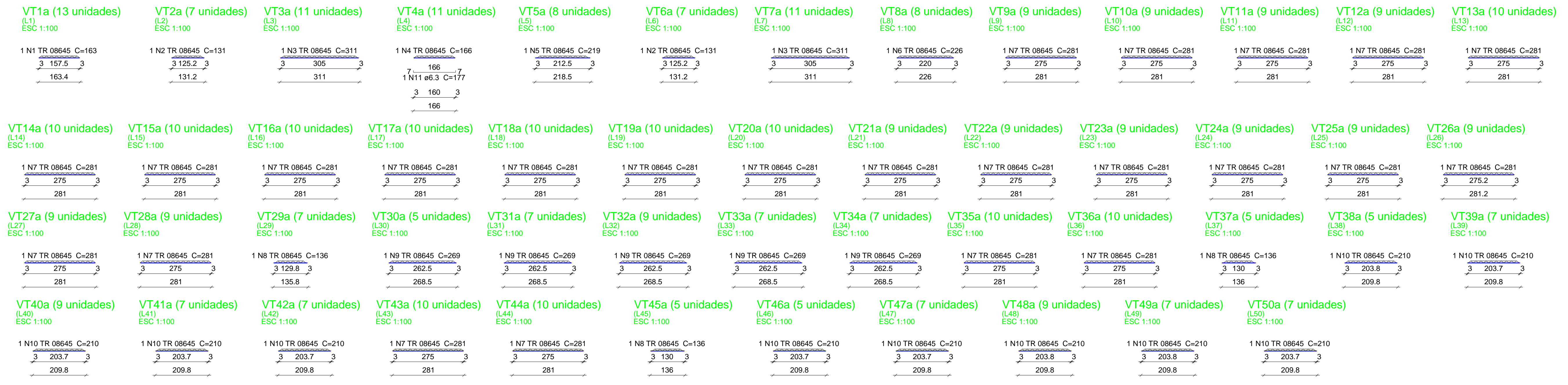
Relação do aço

AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	TR 08645	13	163	2119
CA60	2	TR 08645	14	131	1834
CA60	3	TR 08645	22	311	6842
CA60	4	TR 08645	11	166	1826
CA60	5	TR 08645	8	219	1752
CA60	6	TR 08645	8	226	1808
CA60	7	TR 08645	28	281	6406
CA60	8	TR 08645	17	136	2312
CA60	9	TR 08645	35	269	9415
CA60	10	TR 08645	70	210	14700
CA50	11	6.3	10	177	1947

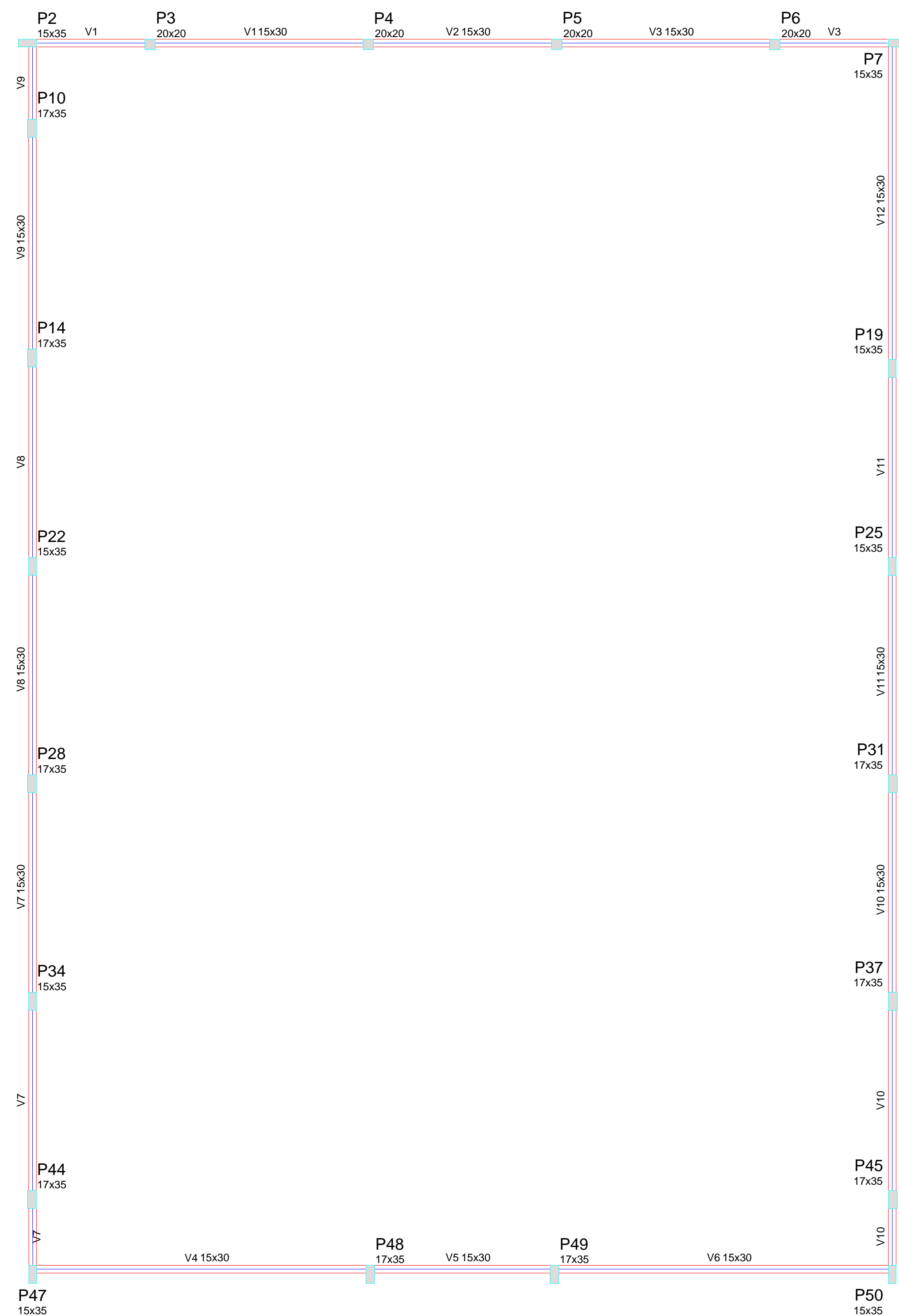
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	19.5	5.2
CA60	TR 08645	1066.8	964.6
PESO TOTAL (kg)			964.6
CA50			5.2
CA60			964.6

COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
10	0.10
11	1.06
12	1.06
13	1.06



02			
01	DATA	REVISÃO	DESENHO APROVAÇÃO
PROJETO: PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO			
CLIENTE: MUNICÍPIO DE MARCO			
LOCAL: LOCALIDADE DE FEIJÃO BRAVO			
CONTEÚDO: PLANTA DE PAGINAÇÃO			
1 Armação pos. das lajes do Nível 350			
2 Planta de vigotas pré-moldadas			
3 Vigotas pré-moldadas			
			
AV. PREFEITO GUSTO DUTRA, S/N CENTRO - MARCO - CE 14700-000 BR 364-A, 1210 e 11 364-A-1115 www.marco.ce.gov.br CNPJ: 07.346.516/0001-47			
ESCALA:	DESENHO:	PRANCHAS:	
INDICADA:	RODRIGO NUNES	13/15	
	DATA:	MARÇO/2021	

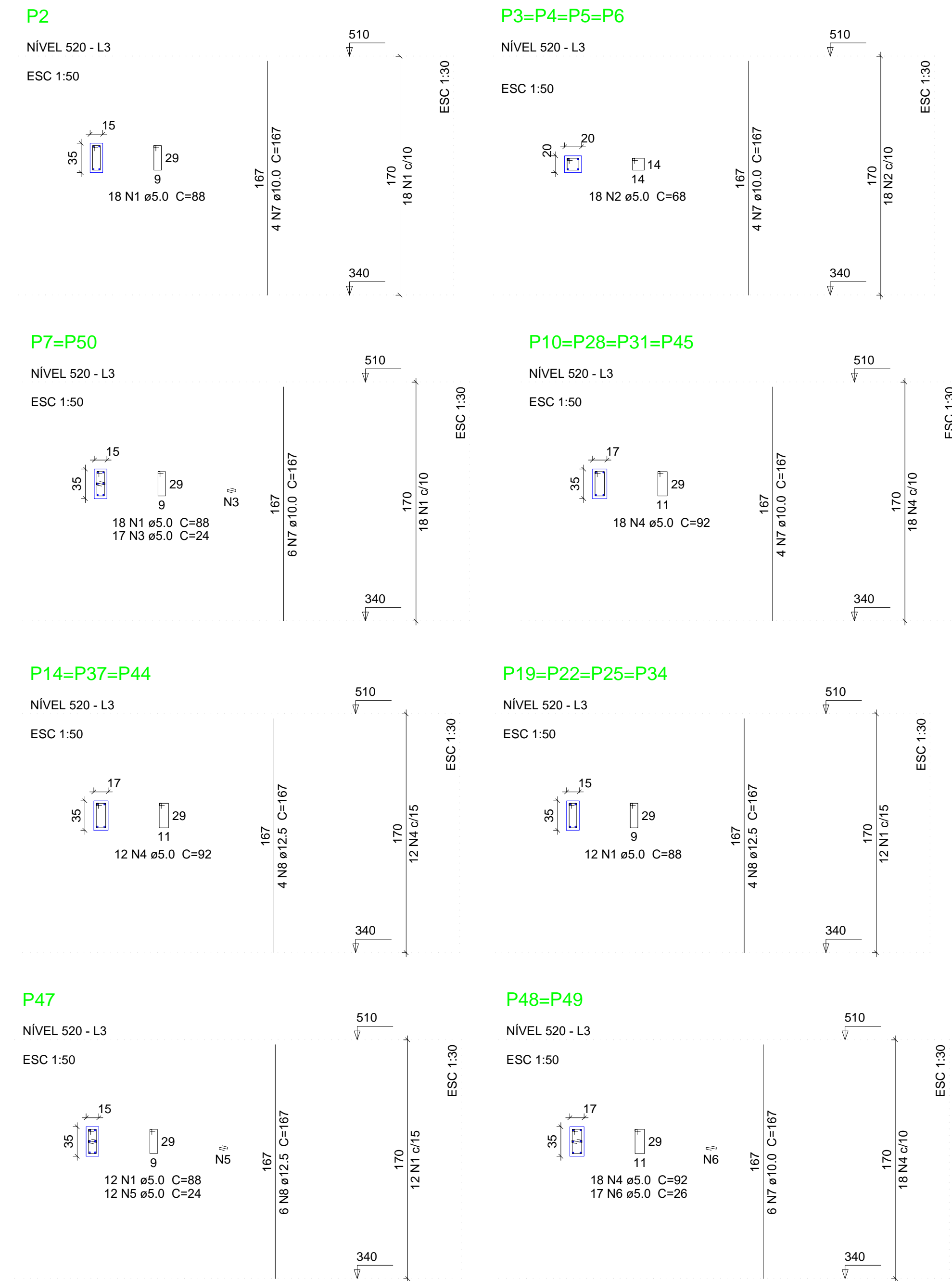


Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	15x30	0	520
V2	15x30	0	520
V3	15x30	0	520
V4	15x30	0	520
V5	15x30	0	520
V6	15x30	0	520
V7	15x30	0	520
V8	15x30	0	520
V9	15x30	0	520
V10	15x30	0	520
V11	15x30	0	520
V12	15x30	0	520

Características dos materiais			
Elemento	Ík	Ecs	
	(kg/cm²)	(kg/cm³)	
Vigas	250	238000	
Pilares	250	238000	

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P2	15 x 35	0	520
P3	20 x 20	0	520
P4	20 x 20	0	520
P5	20 x 20	0	520
P6	20 x 20	0	520
P7	15 x 35	0	520
P10	17 x 35	0	520
P14	17 x 35	0	520
P19	15 x 35	0	520
P22	15 x 35	0	520
P25	15 x 35	0	520
P28	17 x 35	0	520
P31	17 x 35	0	520
P34	15 x 35	0	520
P37	17 x 35	0	520
P44	17 x 35	0	520
P45	17 x 35	0	520
P48	17 x 35	0	520
P49	17 x 35	0	520
P50	15 x 35	0	520

Legenda dos Pilares	
	Pilar que morre
	Pilar que passa
	Pilar que nasce
	Pilar com mudança de seção



Relação do aço					
AÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	114	88	10032
	2	5.0	72	68	4896
	3	5.0	34	24	816
	4	5.0	144	32	13248
	5	5.0	12	24	288
	6	5.0	34	26	884
CA50	7	10.0	60	167	10020
	8	12.5	34	167	5678

Resumo do aço			
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	10.0	100.2	68
CA60	5.0	301.7	60.2
PESO TOTAL (kg)			
CA50	128.4		
CA60	51.1		

Volume de concreto (C-25) = 1.9 m³
Área de forma = 34.95 m²

Forma do pavimento Nível 520
escala 1:75

COR	ESP. PCNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
11	1.06
13	1.56

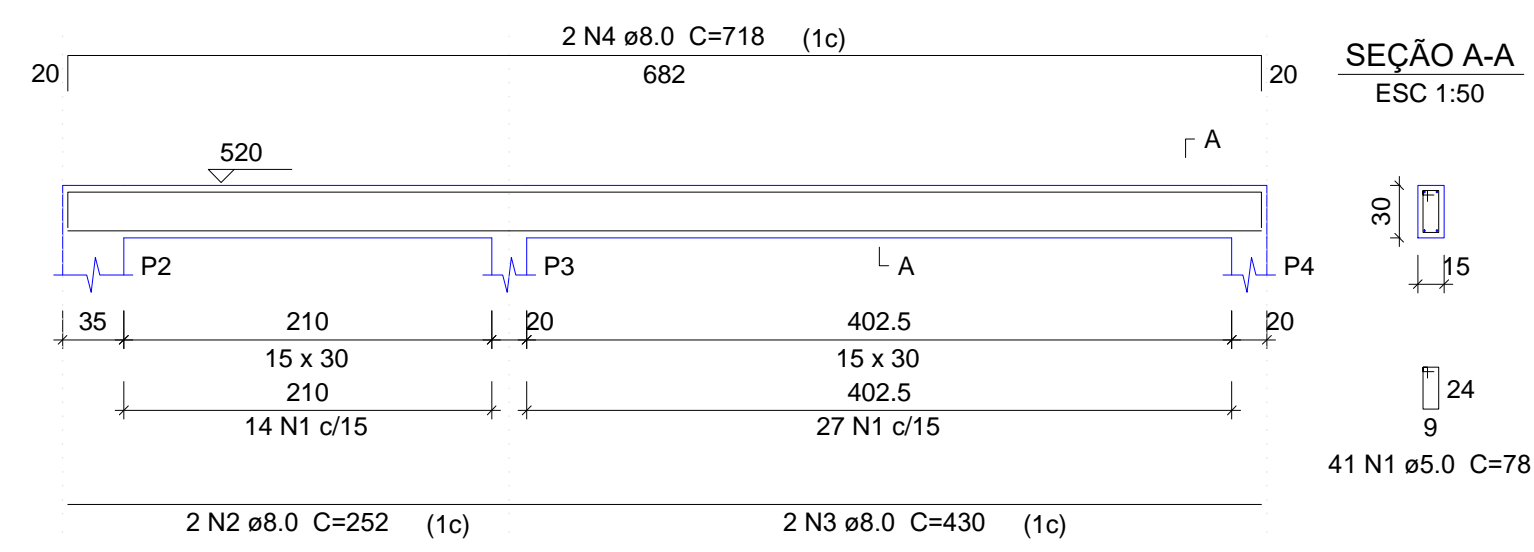
02			
01			
Nº	DATA	REVISÃO	DESENHO APROVAÇÃO
PROJETO:		PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO	
CLIENTE:		MUNICÍPIO DE MARCO	
LOCAL:		LOCALIDADE DE FEIJÃO BRAVO	
CONTEÚDO:		PLANTA DE PAGINAÇÃO 1 Forma do pavimento Nível 520 2 Detalhamento dos Pilares Nível 520	
ESCALA:		DESENHO:	PRANCHAL:
INDICADA:		RODRIGO NUNES	14/15
		DATA:	MARÇO/2021



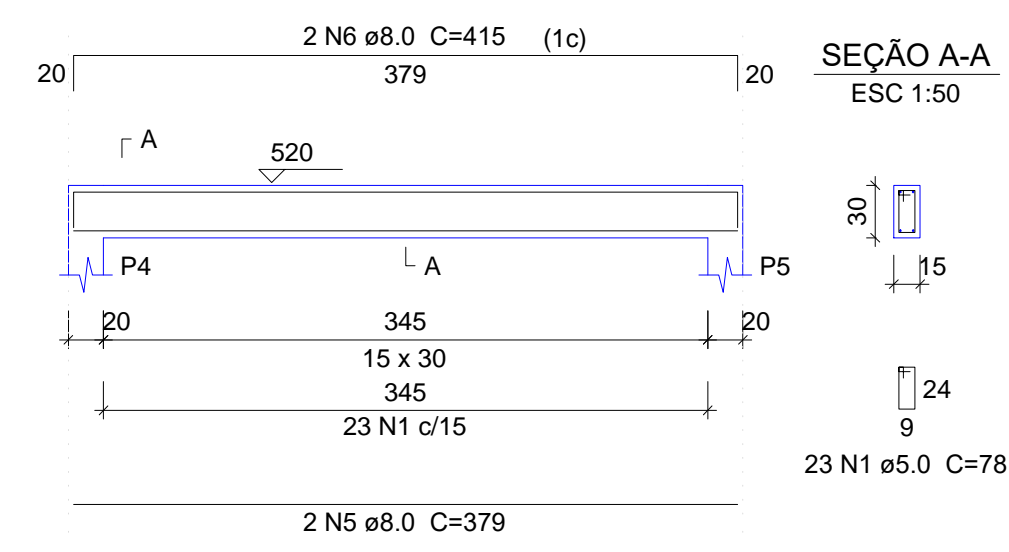
MUNICÍPIO DE MARCO

AV. PREFEITO GUIDO DOTTRENG, 516
CENTRO - MARCO - CE 14.070-000
BR 366A-1210 J B 366A-1415
www.marco.ce.gov.br
CNPJ: 07.346.516/0001-47

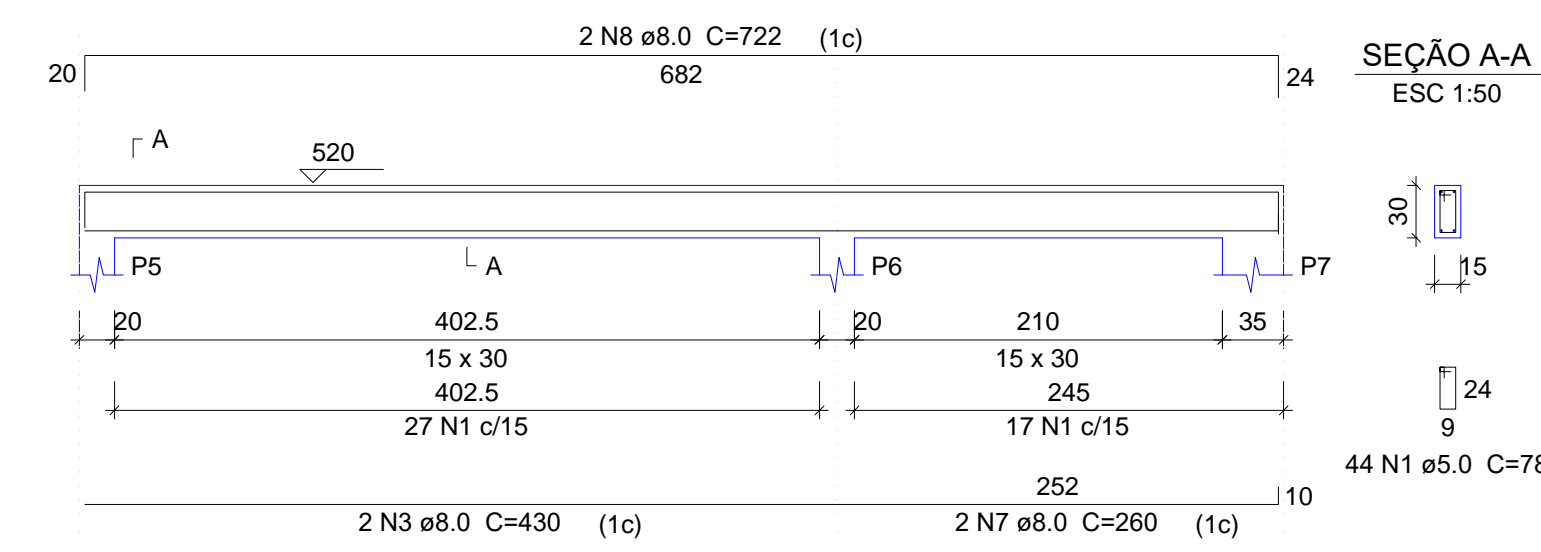
V1
ESC 1:50



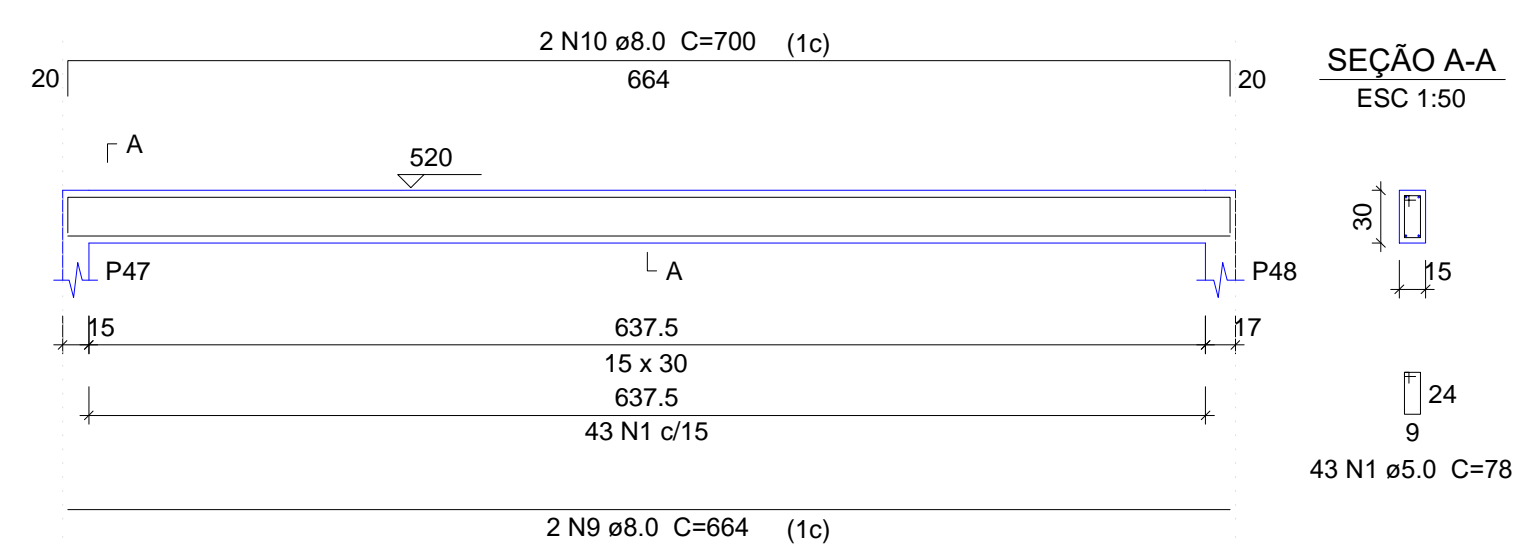
V2
ESC 1:50



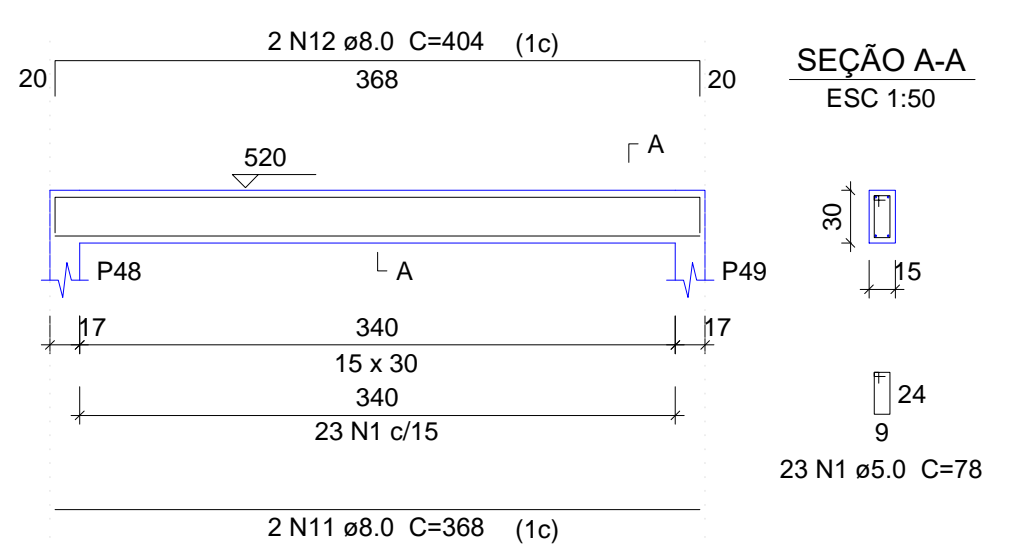
V3
ESC 1:50



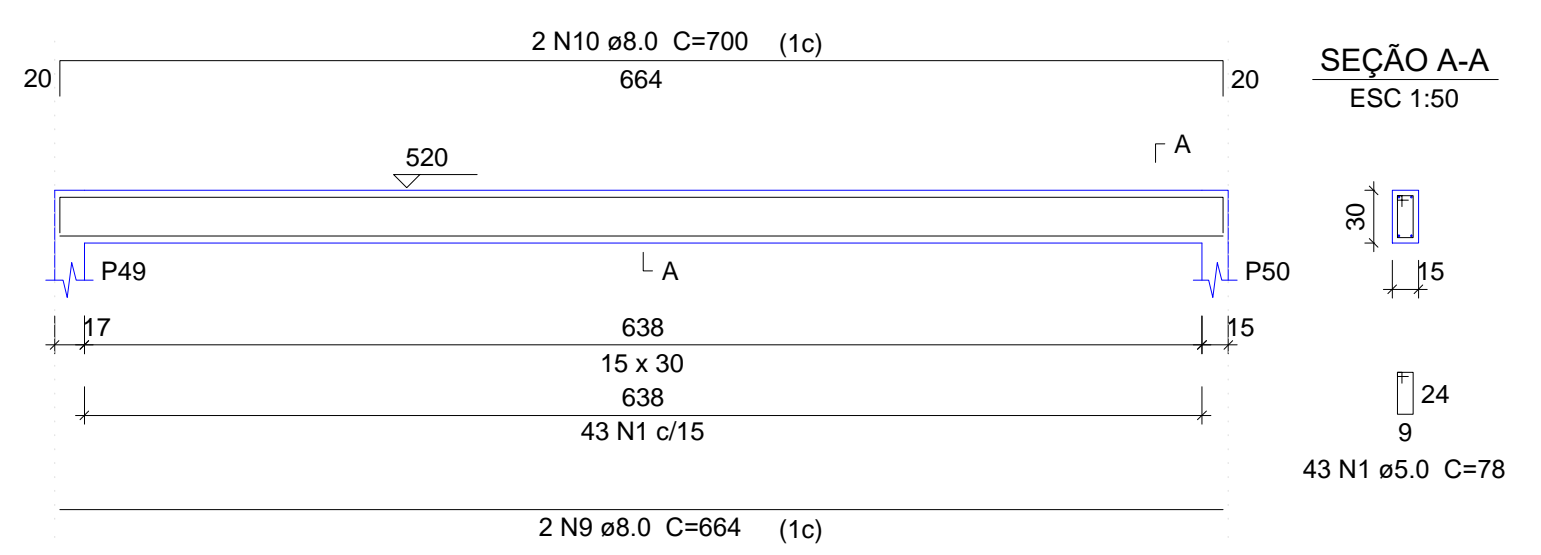
V4
ESC 1:50



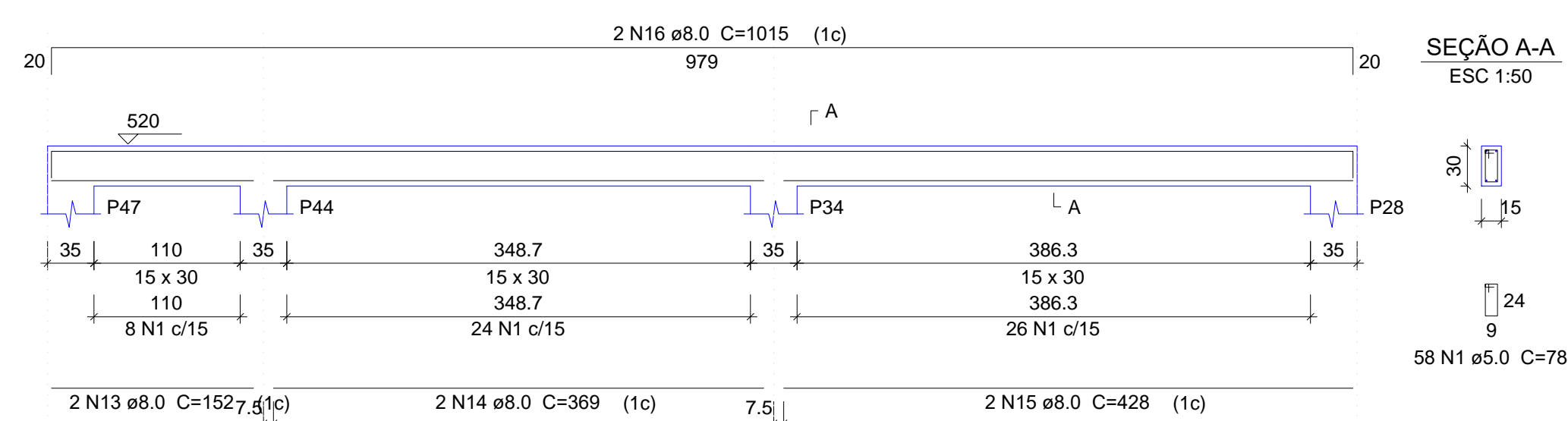
V5
ESC 1:50



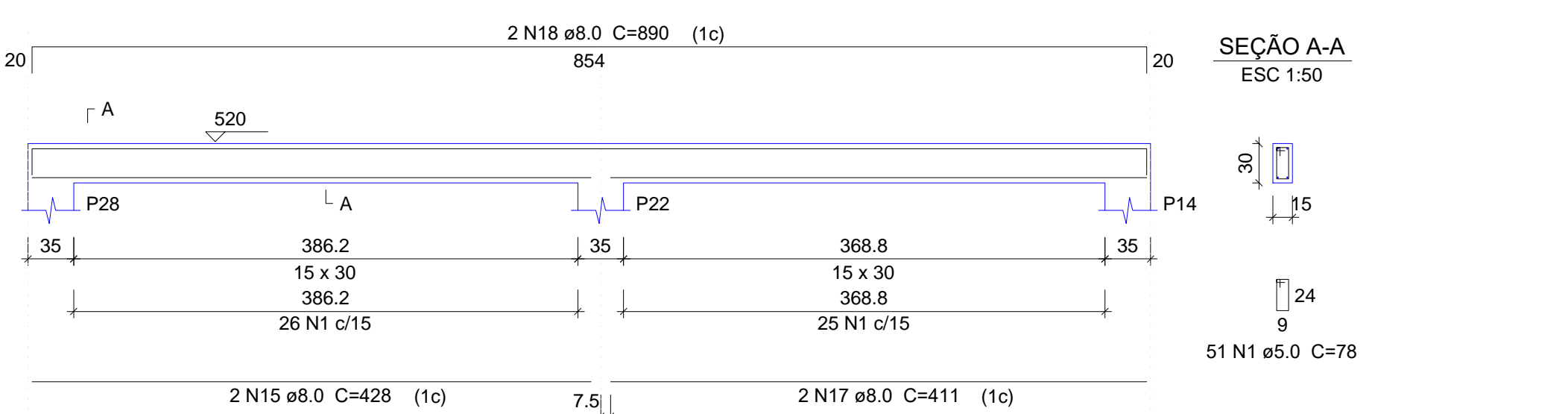
V6
ESC 1:50



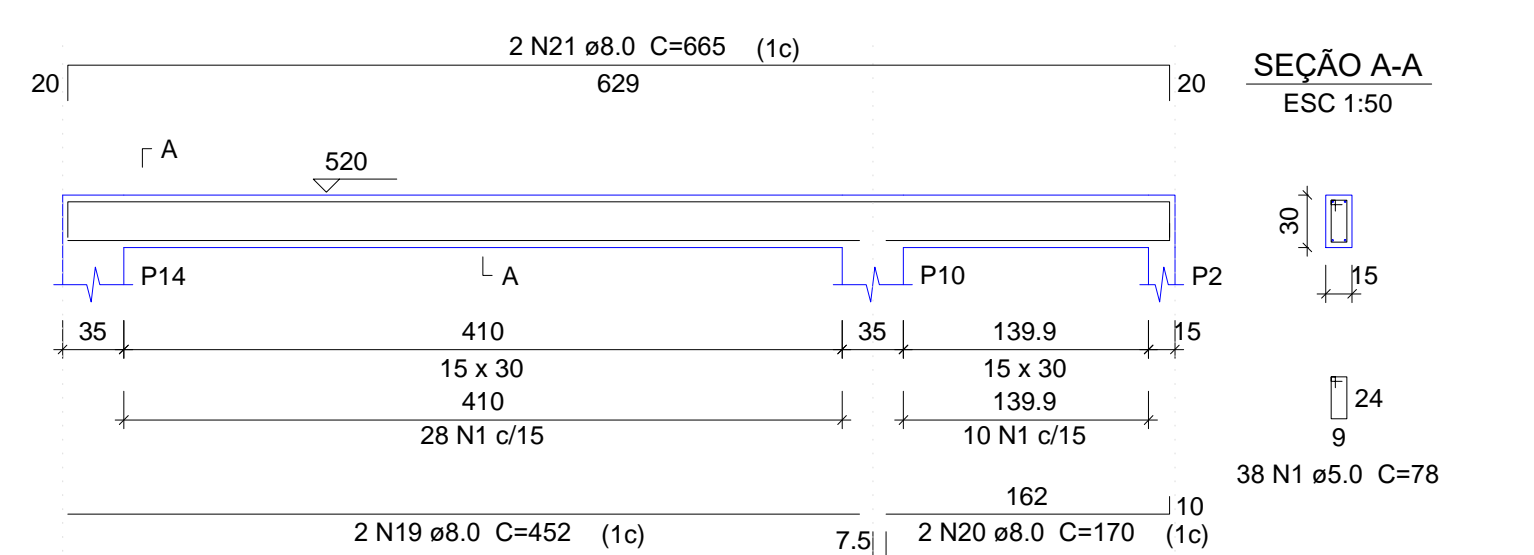
V7
ESC 1:50



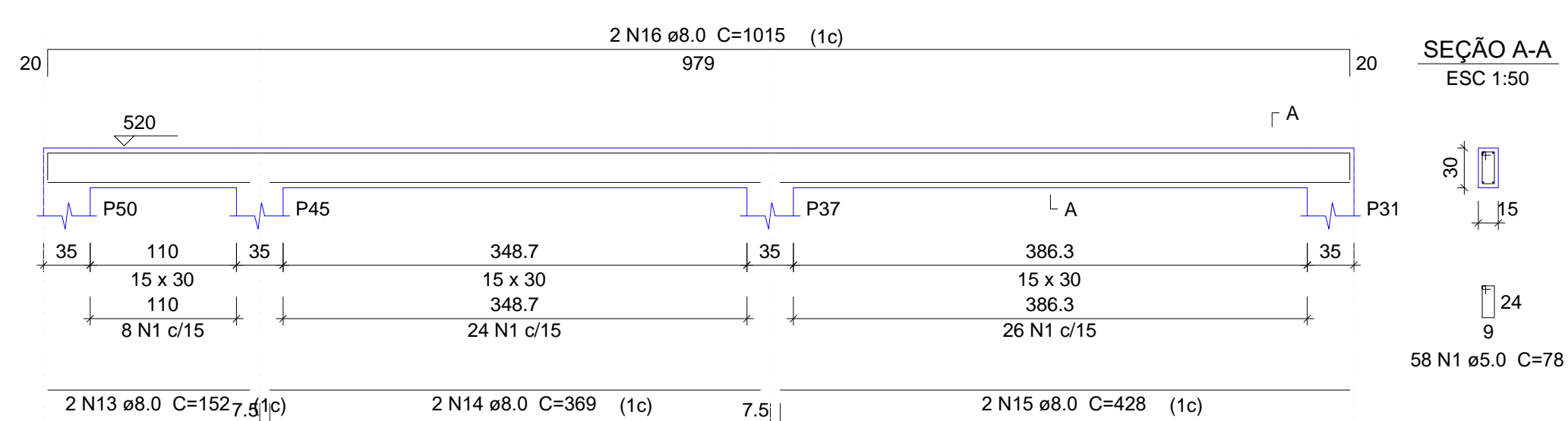
V8
ESC 1:50



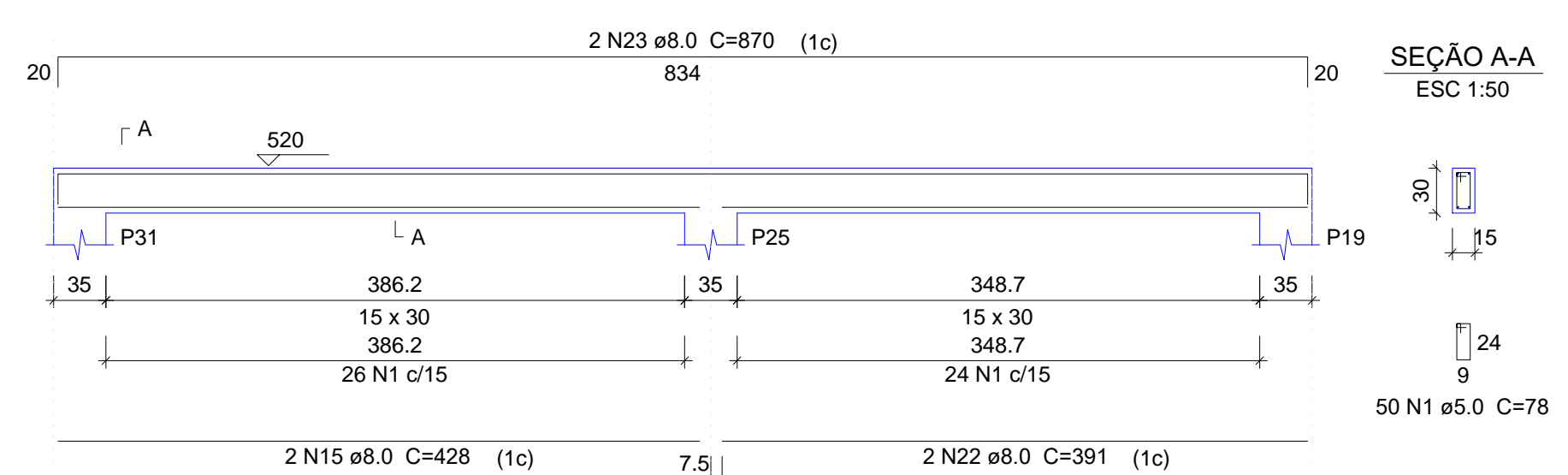
V9
ESC 1:50



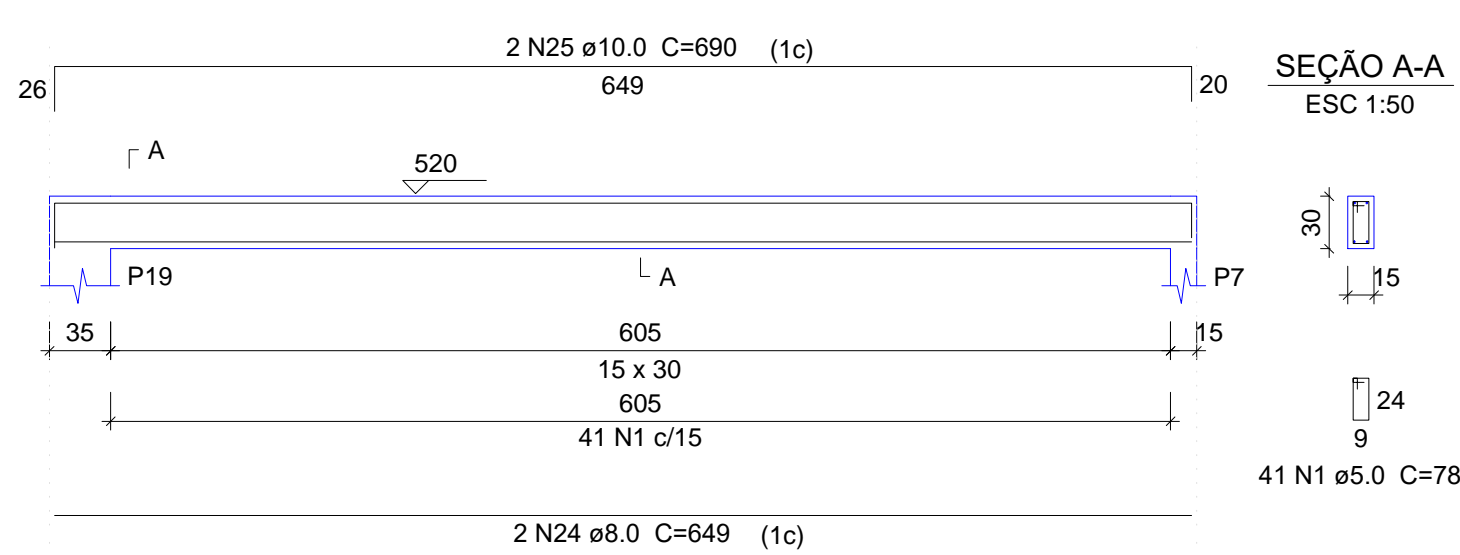
V10
ESC 1:50



V11
ESC 1:50



V12
ESC 1:50



Relação do aço

ÁÇO	N	DIAM (mm)	QUANT (Barras)	UNIT (cm)	C.TOTAL (cm)
V1					
V4					
V7					
V10					
CA60	1	5.0	513	78	40114
CA50	2	8.0	2	252	504
	3	8.0	4	430	1720
	4	8.0	2	718	1436
	5	8.0	2	379	758
	6	8.0	2	415	830
	7	8.0	2	260	520
	8	8.0	2	722	1444
	9	8.0	4	664	2656
	10	8.0	4	700	2800
	11	8.0	2	368	736
	12	8.0	2	404	808
	13	8.0	4	152	608
	14	8.0	4	369	1476
	15	8.0	8	428	3424
	16	8.0	4	1015	4060
	17	8.0	2	411	822
	18	8.0	2	890	1780
	19	8.0	2	452	904
	20	8.0	2	170	340
	21	8.0	2	665	1330
	22	8.0	2	391	782
	23	8.0	2	870	1740
	24	8.0	2	649	1298
	25	10.0	2	690	1380

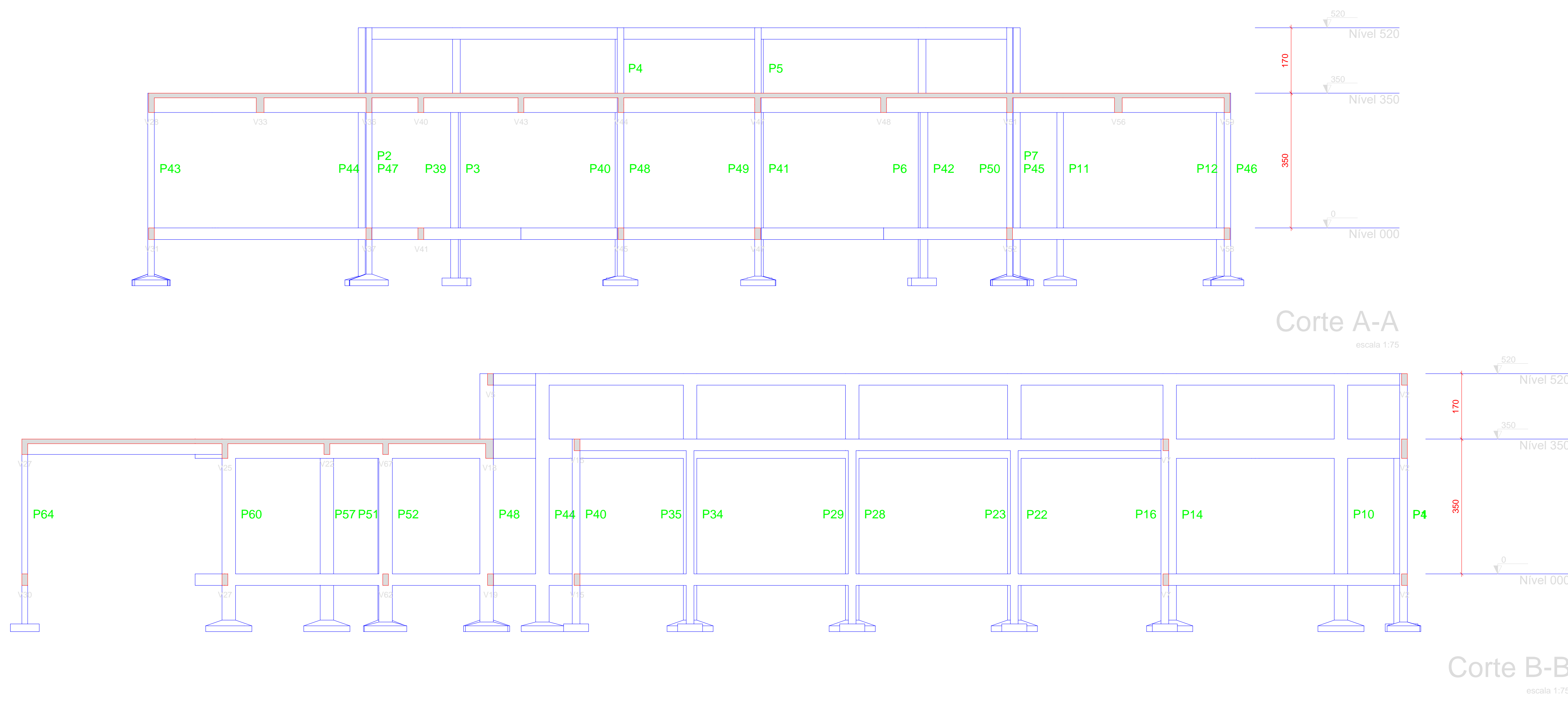
Resumo do aço

ÁÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10 % (kg)
CA50	8.0	327.8	142.3
CA60	5.0	400.2	9.4
PESO TOTAL (kg)			67.8
CA50			151.6
CA60			67.8

Volume de concreto (C-25) = 3.8 m³
Área de forma = 63.25 m²

COR	ESP.PENA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
11	1.08
13	1.58

02				
01				
Nº	DATA	REVISÃO	DESENHO	APROVAÇÃO
		PROJETO: PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO		
		CLIENTE: MUNICÍPIO DE MARCO		
		LOCAL: LOCALIDADE DE FEIJÃO BRAVO		
		CONTEÚDO: PLANTA DE PAGINAÇÃO 1 Detalhamento das Vigas Nível 520		
				
<small>AV. PREFEITO GUIDO DOTTRENG, 5/N CENTRO - MARCO - CE 14.070-000 R# 3664.1210 R# 3664.1415 WWW.MARCO-CE.GOV.BR CNPJ: 07.346.516/0001-47</small>				
ESCALA:	INDICADA	DESENHO:	PRANCHAS:	
		RODRIGO NUNES		
		DATA:		
		MARÇO/2021		15/15



Corte A-A
escala 1:75

Corte B-B
escala 1:75

COR	ESP. PENNA
01	0.70
02	0.50
03	0.30
04	0.40
05	0.70
06	0.20
07	0.20
08	0.08
09	0.10
11	1.08
13	1.08

02				
01				
Nº	DATA	REVISÃO	DESENHO	APROVAÇÃO
		PROJETO:	PROJETO ESTRUTURAL E.E.F. FEIJÃO BRAVO	
		CLIENTE:	MUNICÍPIO DE MARCO	
		LOCAL:	LOCALIDADE DE FEIJÃO BRAVO	
		CONTEÚDO:	PLANTA DE PAGINAÇÃO	
		1	Corte A-A	
		2	Corte B-B	
		3	Vista Isométrica	
		ESCALA:	DESENHO:	PRANCHA:
		INDICADA:	RODRIGO NUNES	01/01
		DATA:	MARÇO/2021	



AV. PREFEITO GUIDO DOTTING, 576
CENTRO - MARCO - CE 14.070-000
BR 366A, 1210 J B 366A-1915
www.marco.ce.gov.br
CNPJ: 07.568.516/0001-47