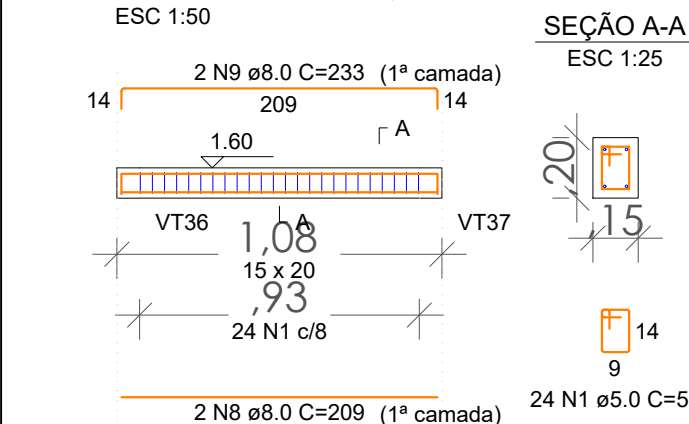
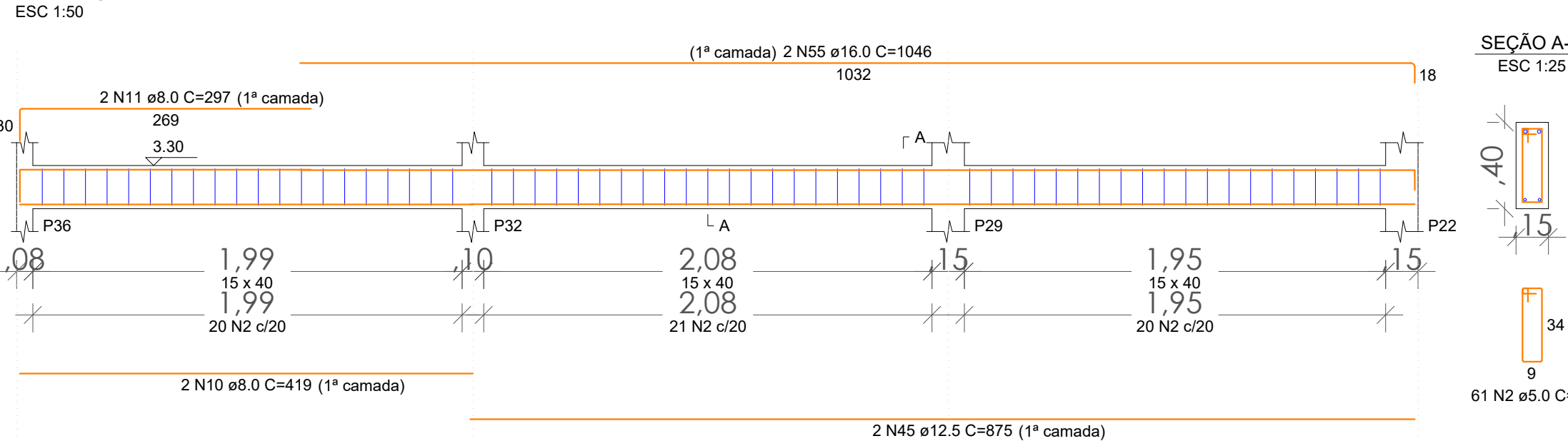


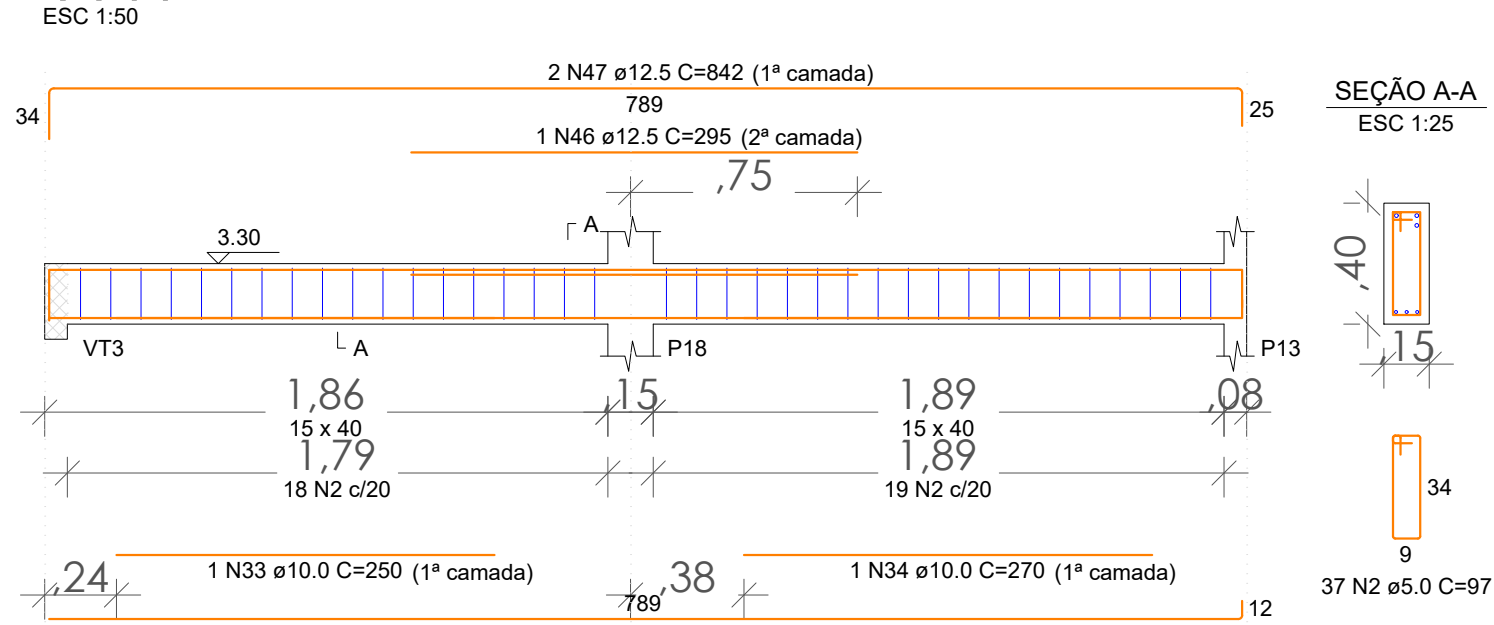
**VA - ARRANQUE RAMPA**



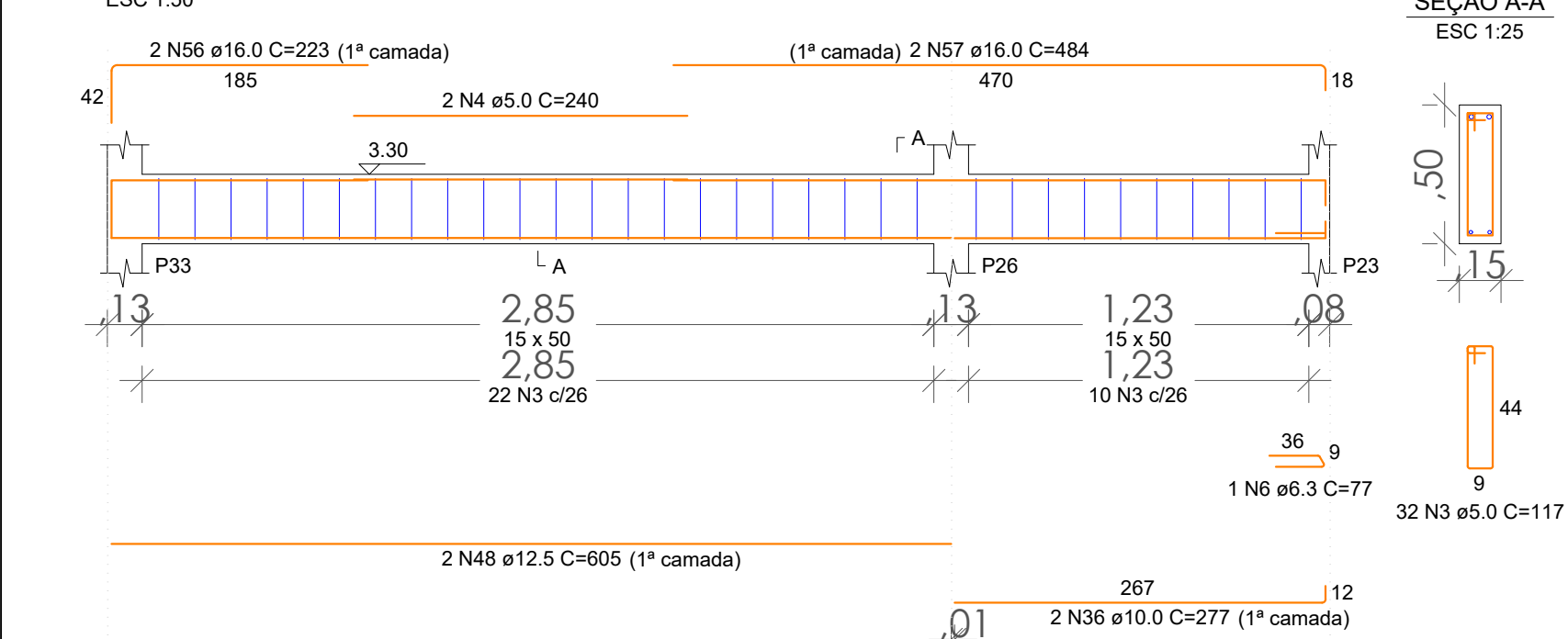
**VT10**



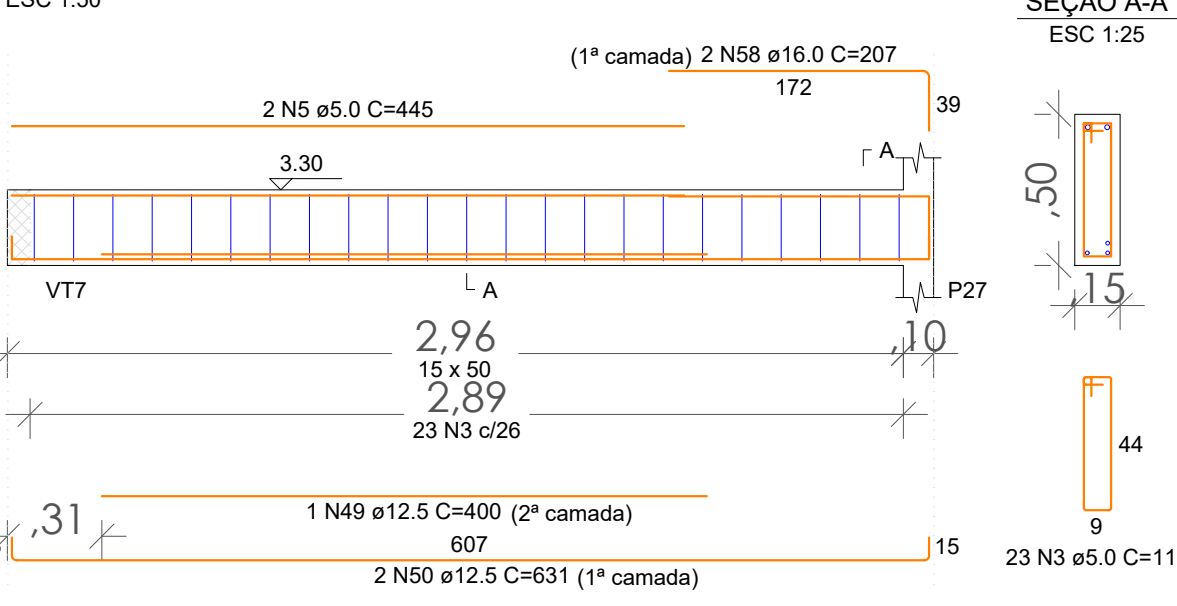
**VT11**



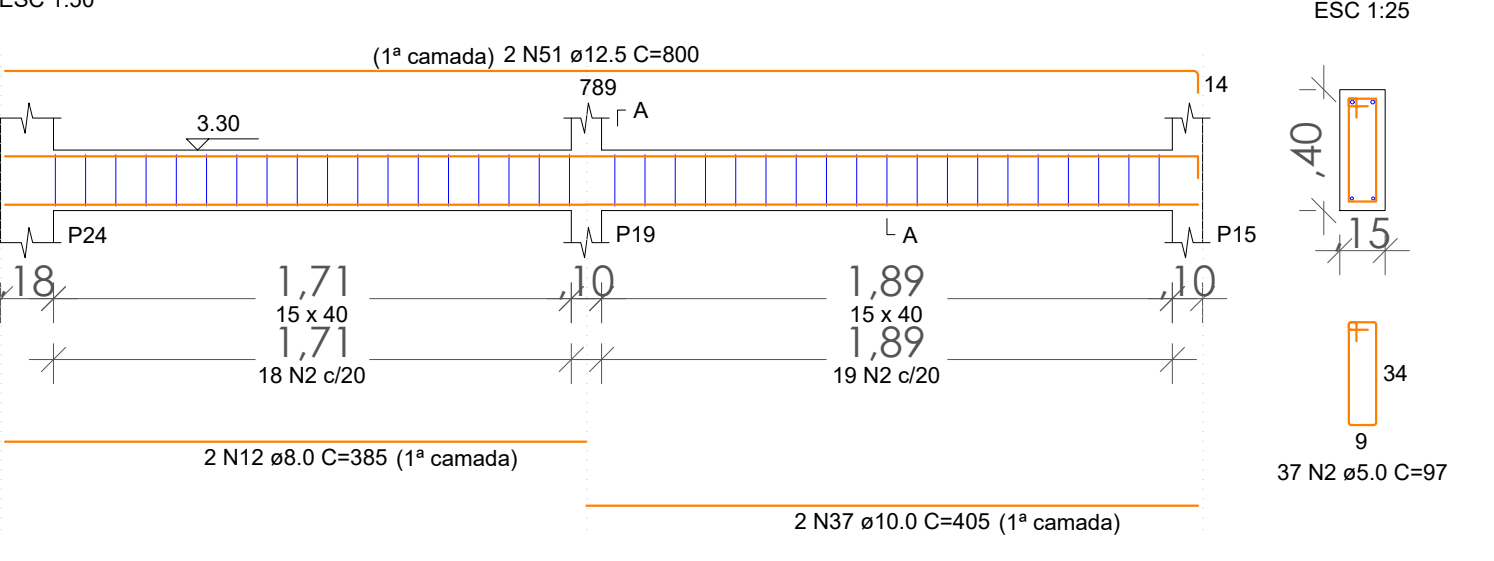
**VT12**



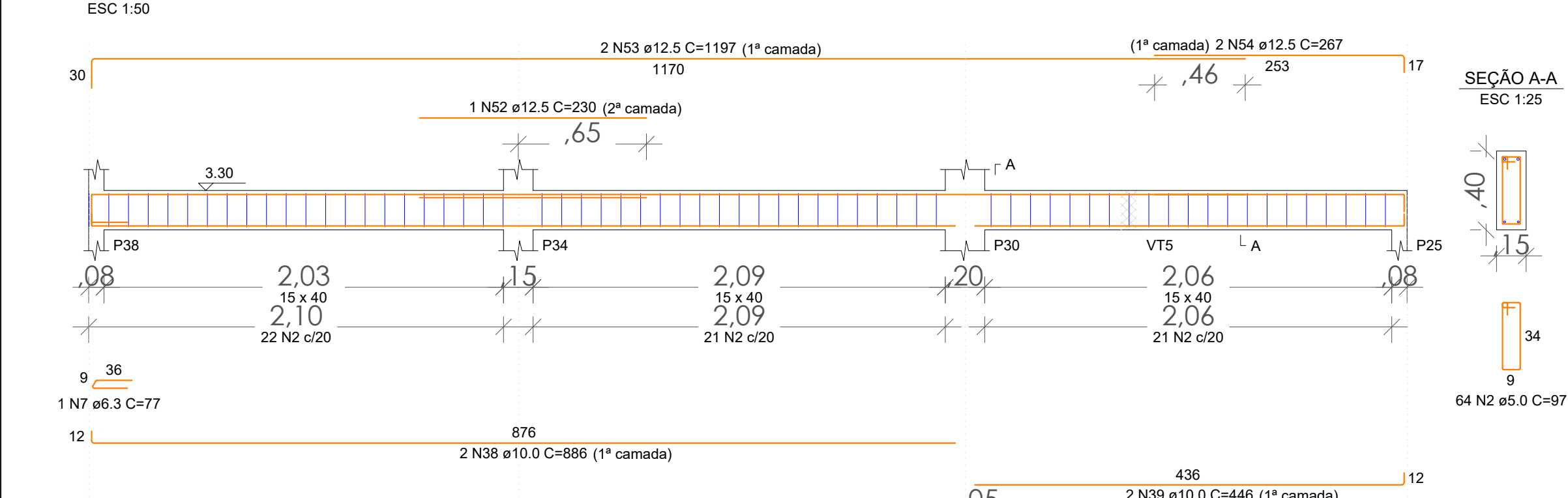
**VT13**



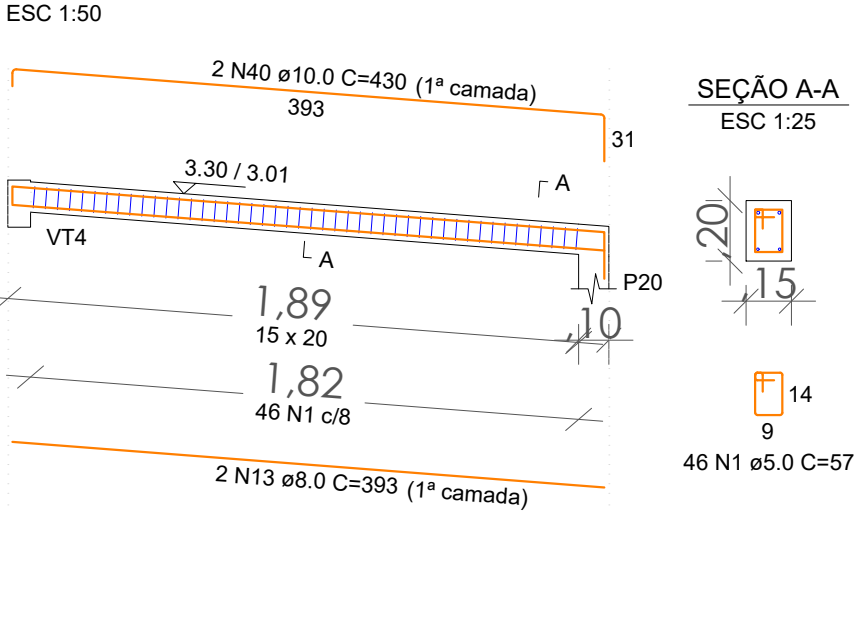
**VT14**



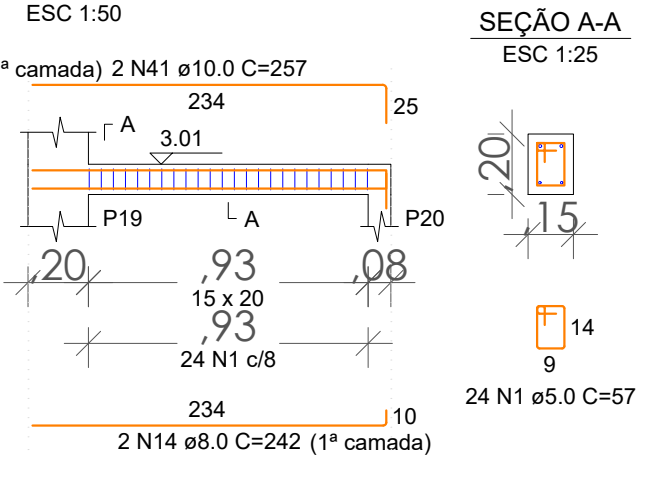
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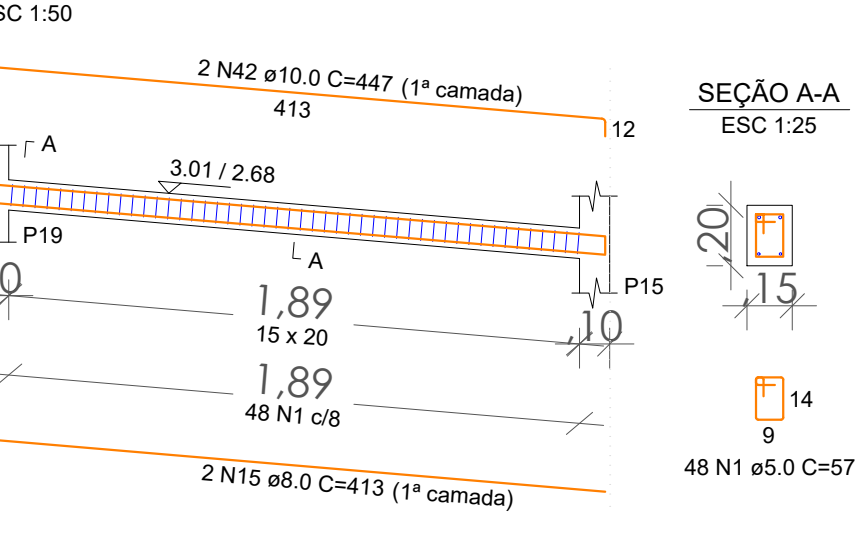
**VT16**



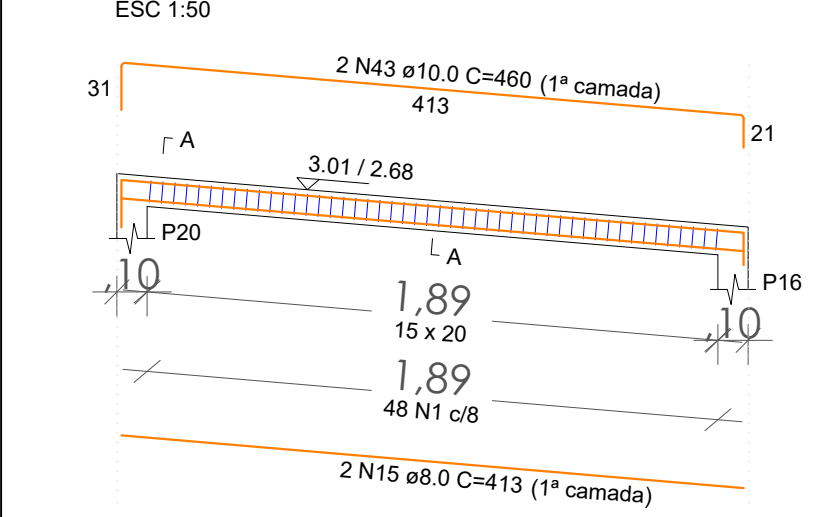
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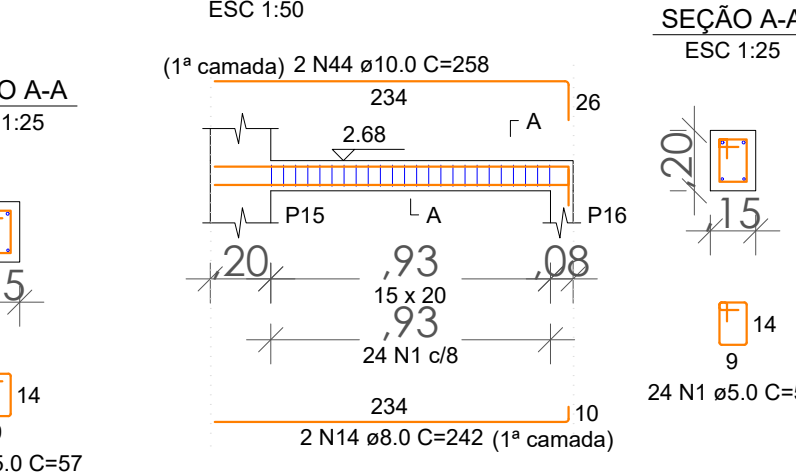
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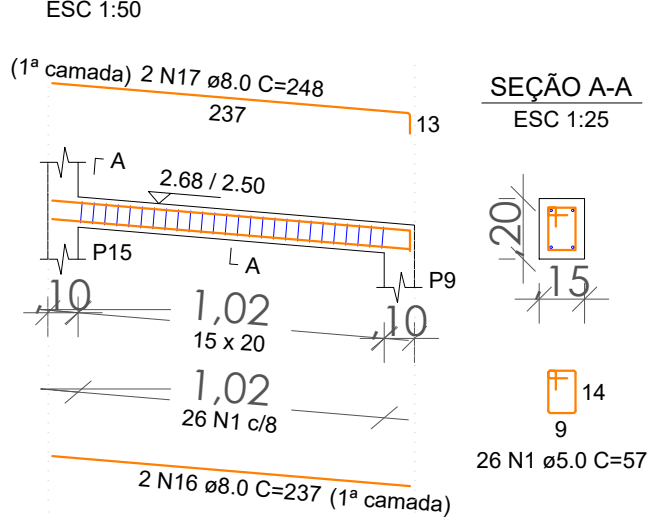
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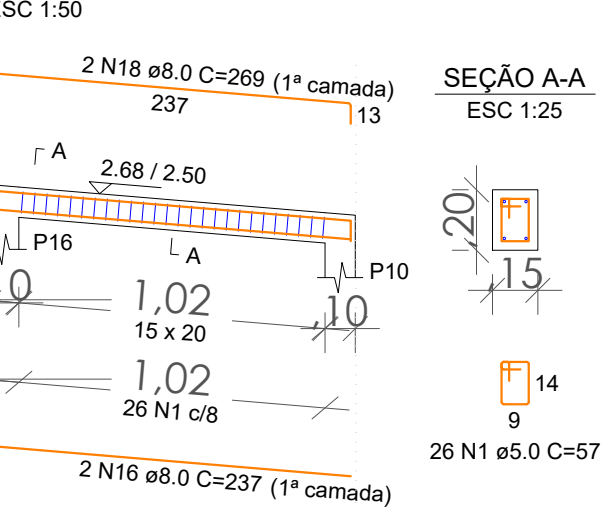
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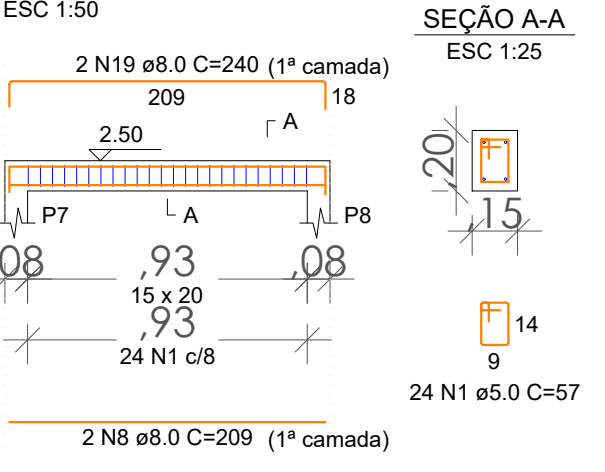
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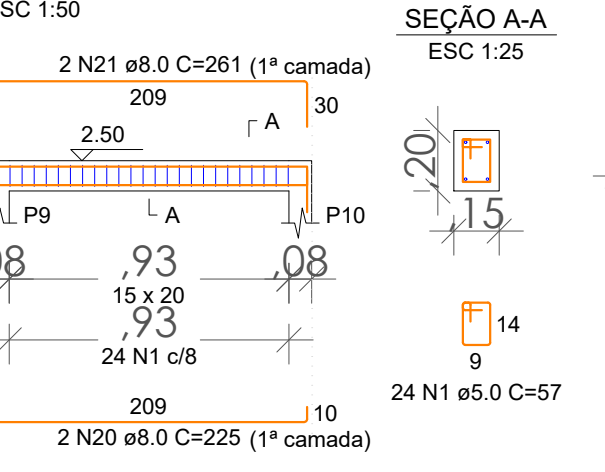
**VT22**



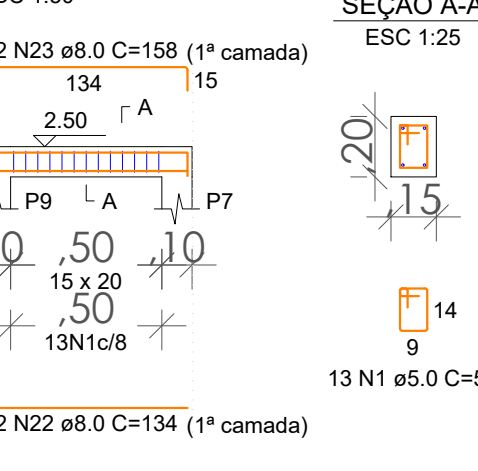
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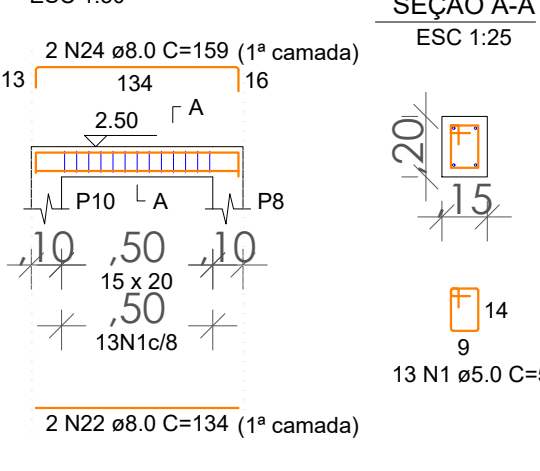
**VT24**



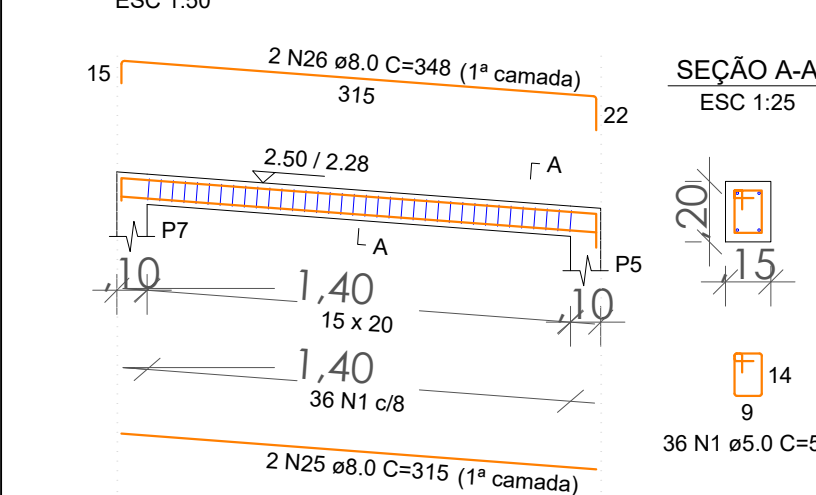
**VT25**



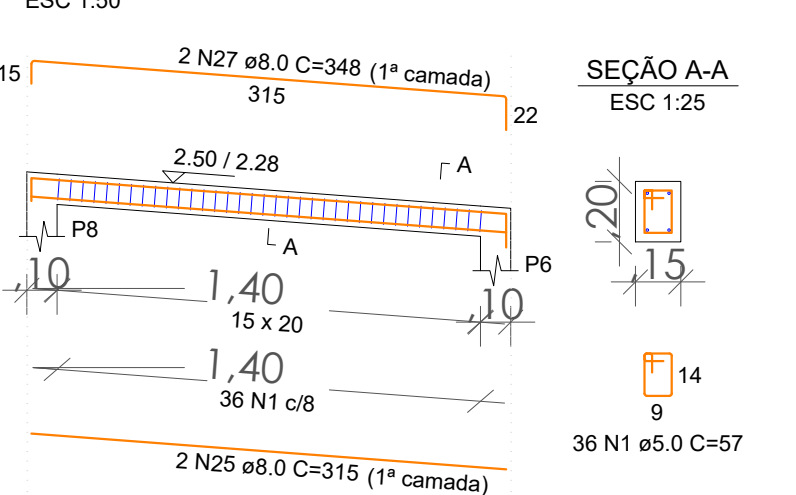
**VT26**



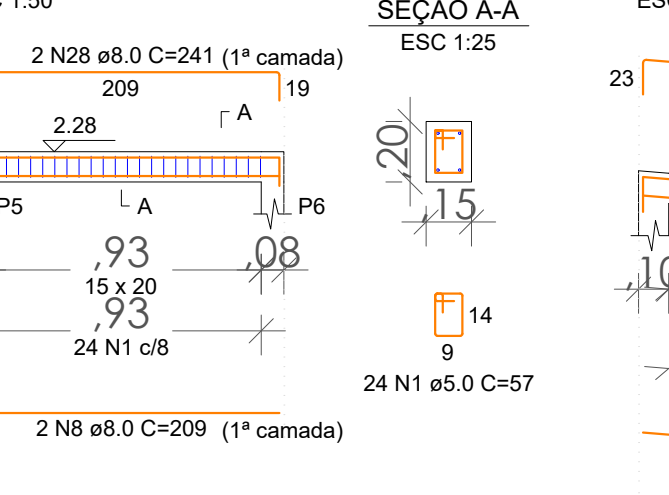
**VT27**



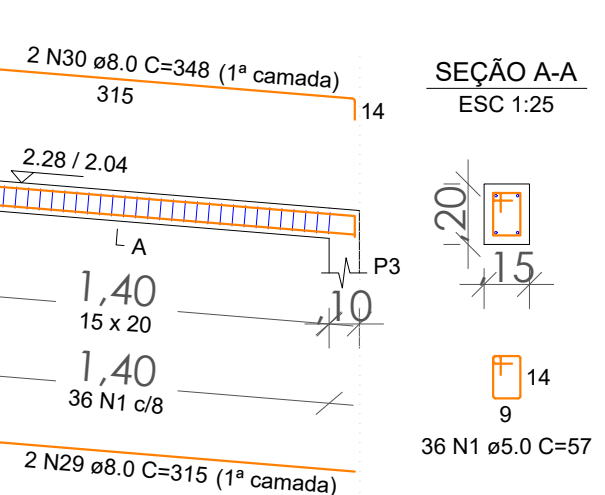
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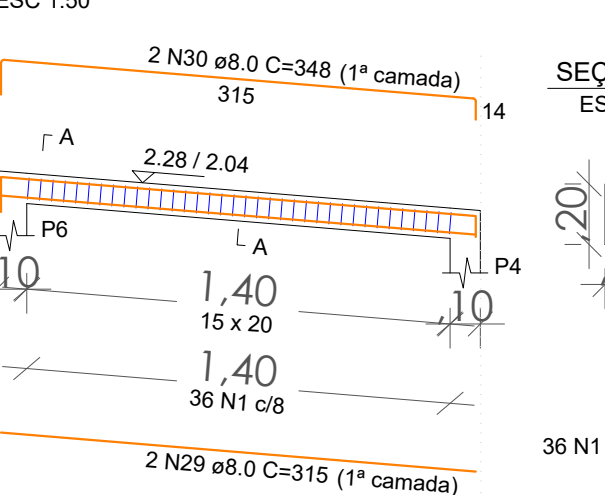
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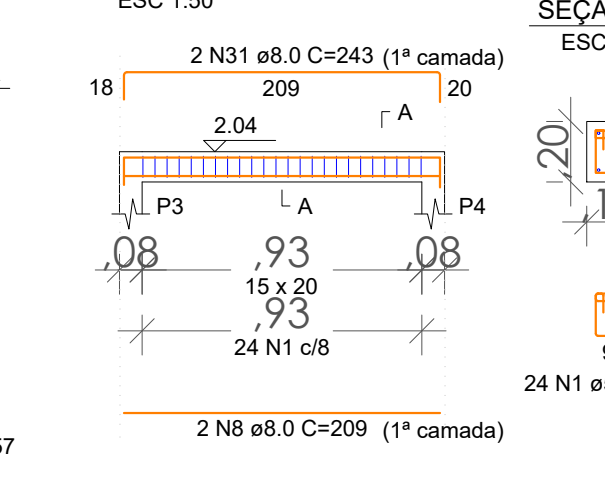
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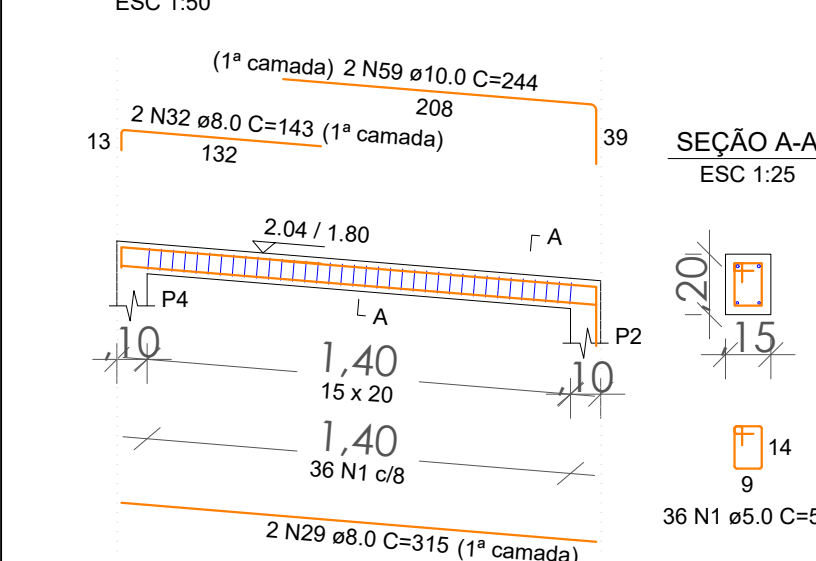
**VT31**



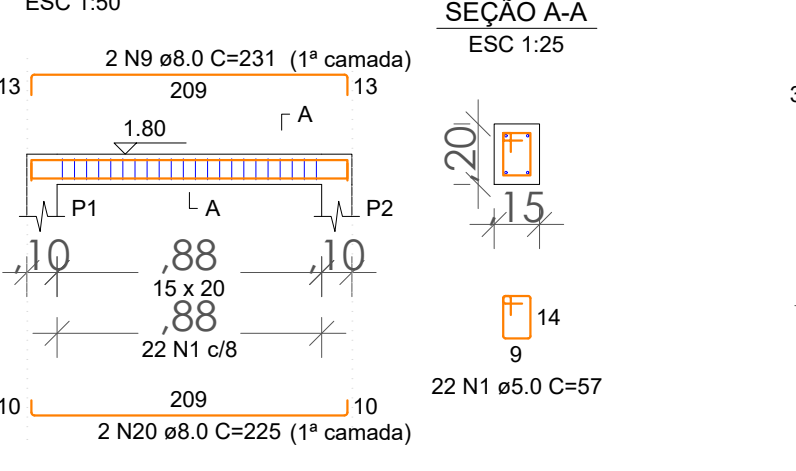
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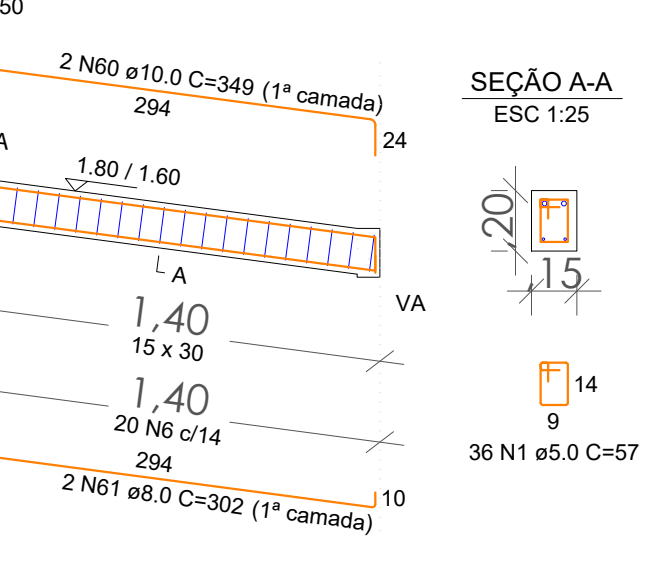
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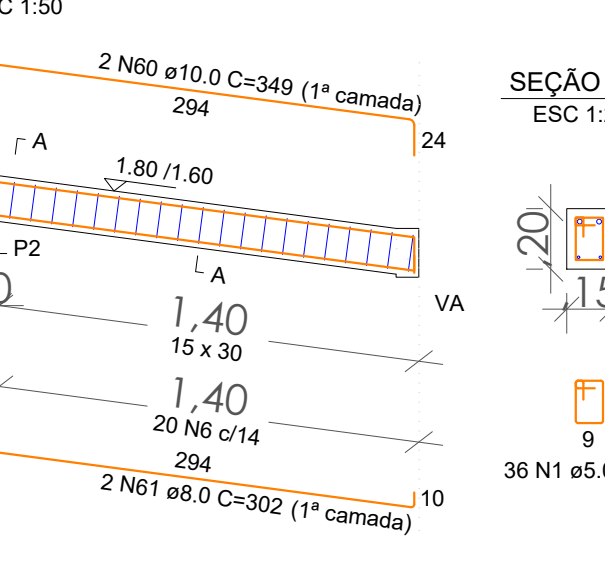
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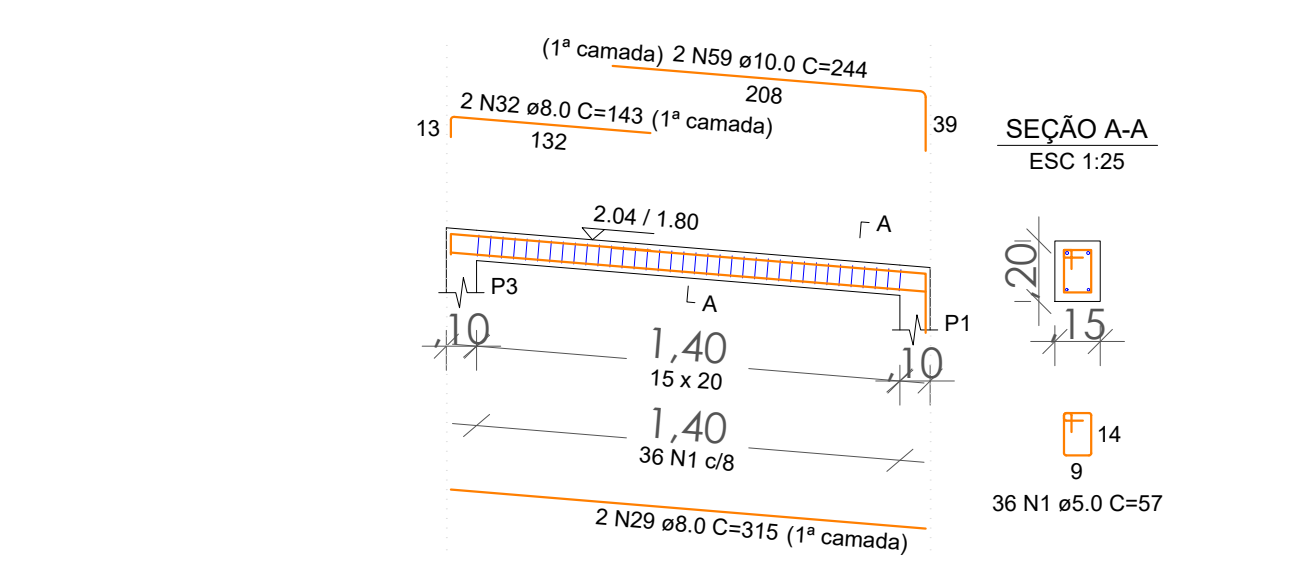
**VT36**



**VT37**



**VT33**



ACO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	698	57	39788
CA60	2	5.0	199	97	19303
CA60	3	5.0	55	117	6435
CA60	4	5.0	2	240	480
CA60	5	5.0	2	445	890
CA50	6	6.3	1	77	77
CA50	7	6.3	1	77	77
CA50	8	8.0	8	209	1672
CA50	9	8.0	4	233	932
CA50	10	8.0	2	419	838
CA50	11	8.0	2	297	594
CA50	12	8.0	2	365	730
CA50	13	8.0	2	393	786
CA50	14	8.0	4	242	968
CA50	15	8.0	4	242	968
CA50	16	8.0	4	237	948
CA50	17	8.0	2	248	496
CA50	18	8.0	2	269	538
CA50	19	8.0	2	240	480
CA50	20	8.0	4	225	900
CA50	21	8.0	2	261	522
CA50	22	8.0	4	215	860
CA50	23	8.0	2	158	316
CA50	24	8.0	2	159	318
CA50	25	8.0	2	134	268
CA50	26	8.0	2	348	696
CA50	27	8.0	2	348	696
CA50	28	8.0	2	241	482
CA50	29	8.0	6	315	1890
CA50	30	8.0	4	348	1392
CA50	31	8.0	2	243	486
CA50	32	8.0	4	215	860
CA50	33	10.0	1	250	250
CA50	34	10.0	1	270	270
CA50	35	10.0	2	799	1598
CA50	36	10.0	2	277	554
CA50	37	10.0	2	405	810
CA50	38	10.0	2	886	1772
CA50	39	10.0	2	446	892
CA50	40	10.0	2	430	860
CA50	41	10.0	2	257	514
CA50	42	10.0	2	447	894
CA50	43	10.0	2	460	920
CA50	44	10.0	2	258	516
CA50	45	12.5	2	875	1750
CA50	46	12.5	1	295	295
CA50	47	12.5	2	842	1684
CA50	48	12.5	2	605	1210
CA50	49	12.5	1	400	400
CA50	50	12.5	2	631	1262
CA50	51	12.5	2	800	1600
CA50	52	12.5	1	230	230
CA50	53	12.5	2	1197	2394
CA50	54	12.5	2	267	534
CA50	55	16.0	2	1046	2092
CA50	56	16.0	2	223	446
CA50	57	16.0	2	484	968
CA50	58	16.0	2	207	414
CA50	59	10.0	4	244	976
CA50	60	10.0	4	349	1396
CA50	61	10.0	4	302	1208

RESUMO DO AÇO

ACO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	1.5	0.4
CA50	8.0	225.8	97.9
CA50	10.0	112.5	76.3
CA50	12.5	113.6	120.4
CA50	15.0	38.3	68.1
CA50	5.0	668.9	113.5
PESO TOTAL (kg)			
CA50		363.1	
CA60		113.5	

Volume de concreto (C-25) = 5.36 m³  
Área de forma = 88.58 m²

REVISÃO: 00 DATA: 09/04/2020 DESCRIÇÃO: Emissão Inicial

CARIMBOS: ASSINATURAS:

Proprietário:  
MUNICÍPIO DE RIO DOS CEDROS  
CNPJ: 83.102.806/0001-18

Responsável Técnico:  
FELIPE ROSSI TROJAN  
CREA: 164307-3

PROJETO: Projeto Estrutural

DISCRIMINAÇÃO: DETALHAMENTO VIGAS TÉRREO - PRÉDIO NOVO

PROPRIETÁRIO(O): MUNICÍPIO DE RIO DOS CEDROS CPF / CNPJ: 83.102.806/0001-18

ENDEREÇO: Rua Tibério Bertoldi

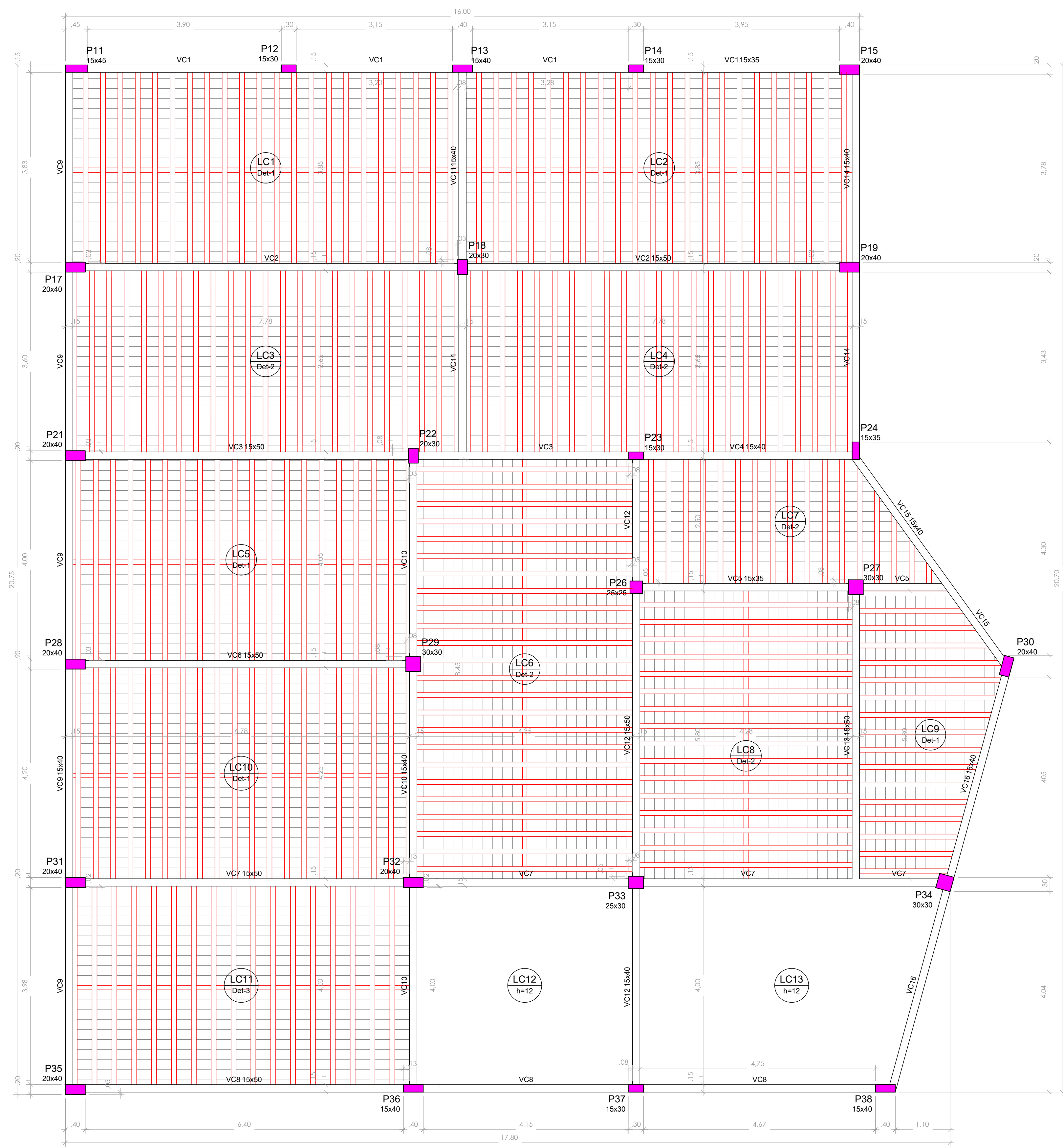
Nº: 150 CEP: 89.121-000 BAIRRO: Centro CIDADE/UF: Rio dos Cedros/SC

INSCR. IMOBILIÁRIA: DESENHO: FELIPE R. TROJAN

Rua Almirante Jacueguay - 1320  
Costa e Silva - Joinville - SC  
Fone : (47) 3278-5886  
CREA: 099890-8-SC  
E-mail : comercial@marcostrojan.com.br  
www.marcostrojan.com.br

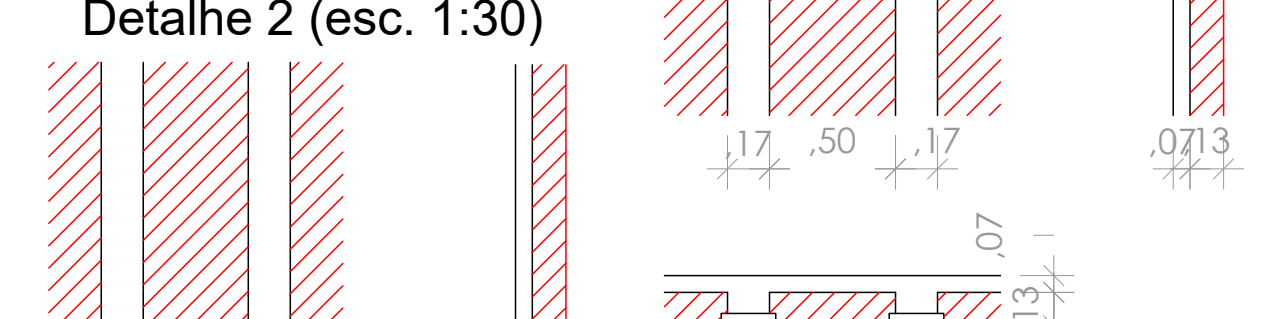
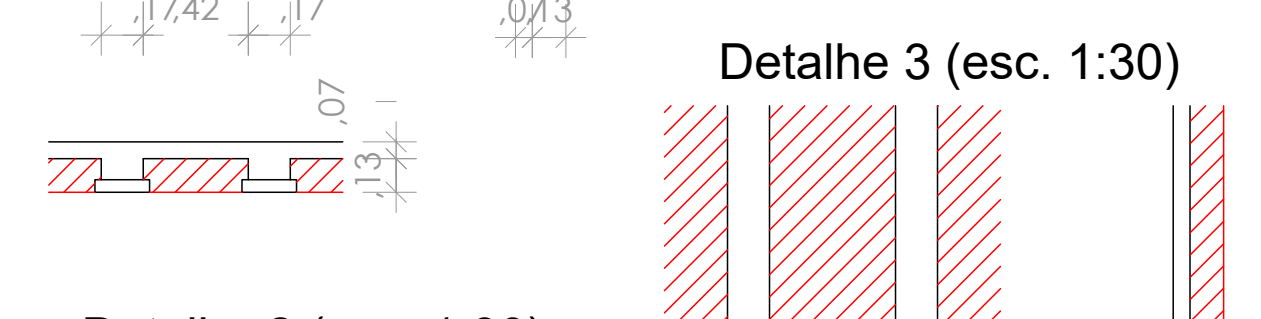
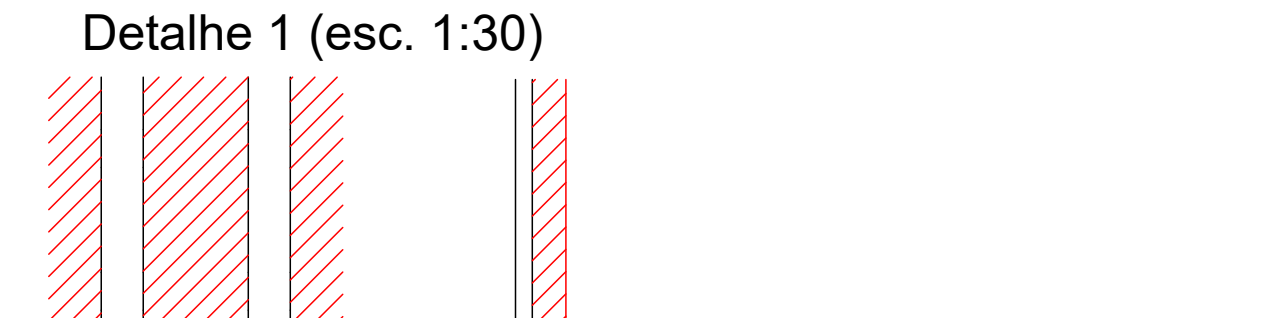
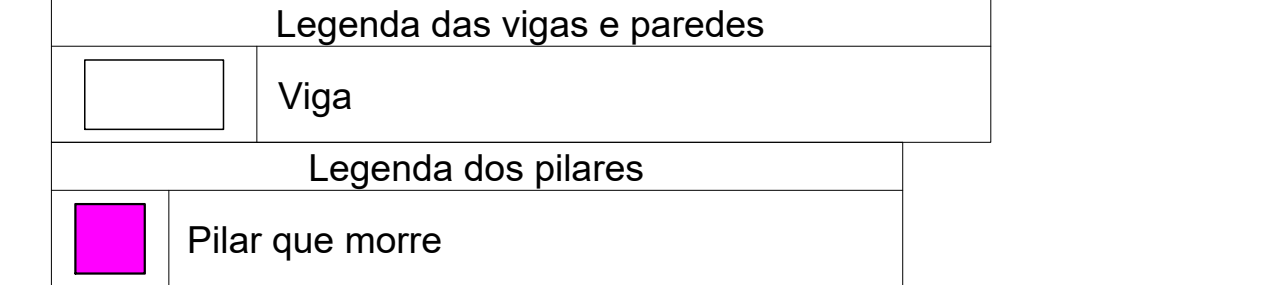
FOLHA: 6/13



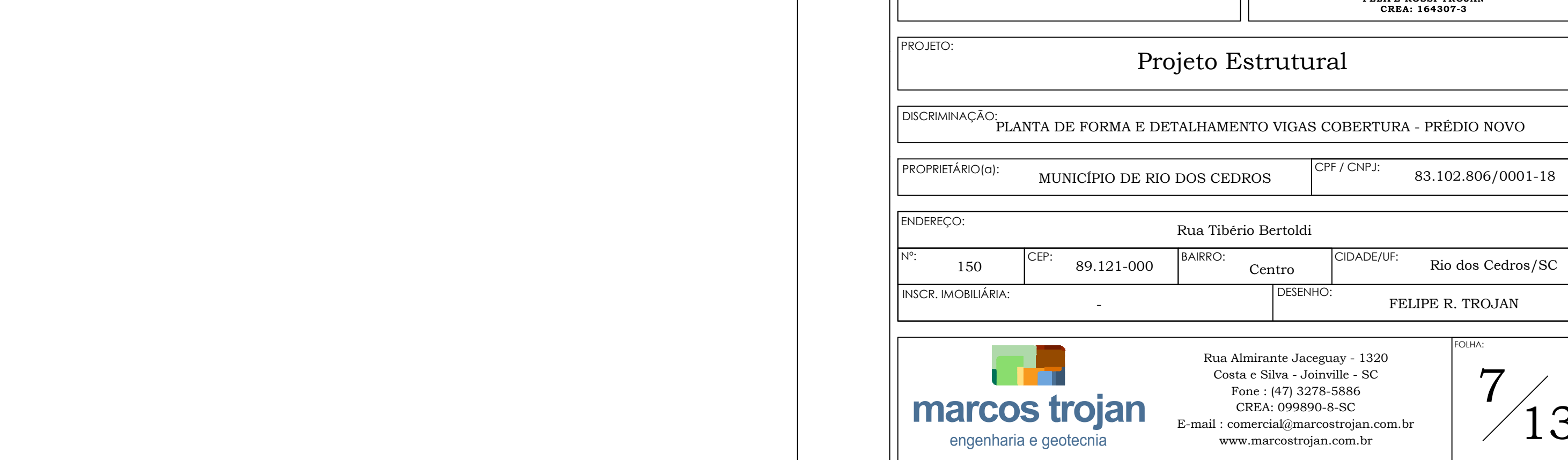
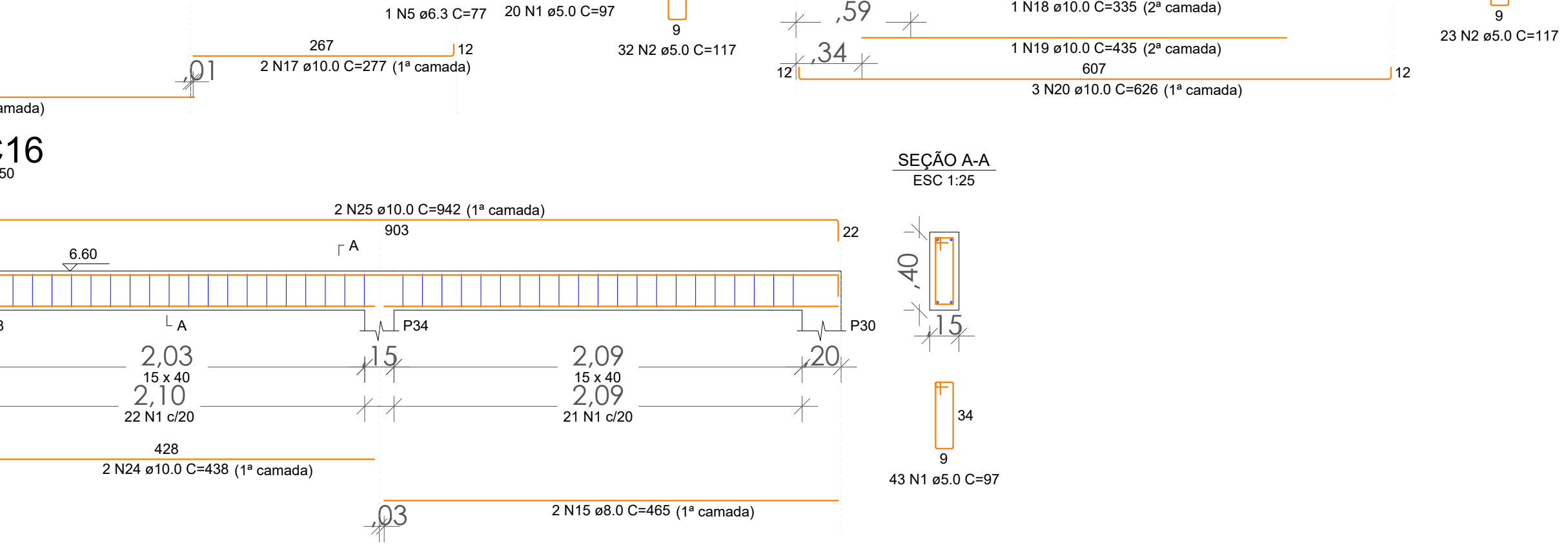
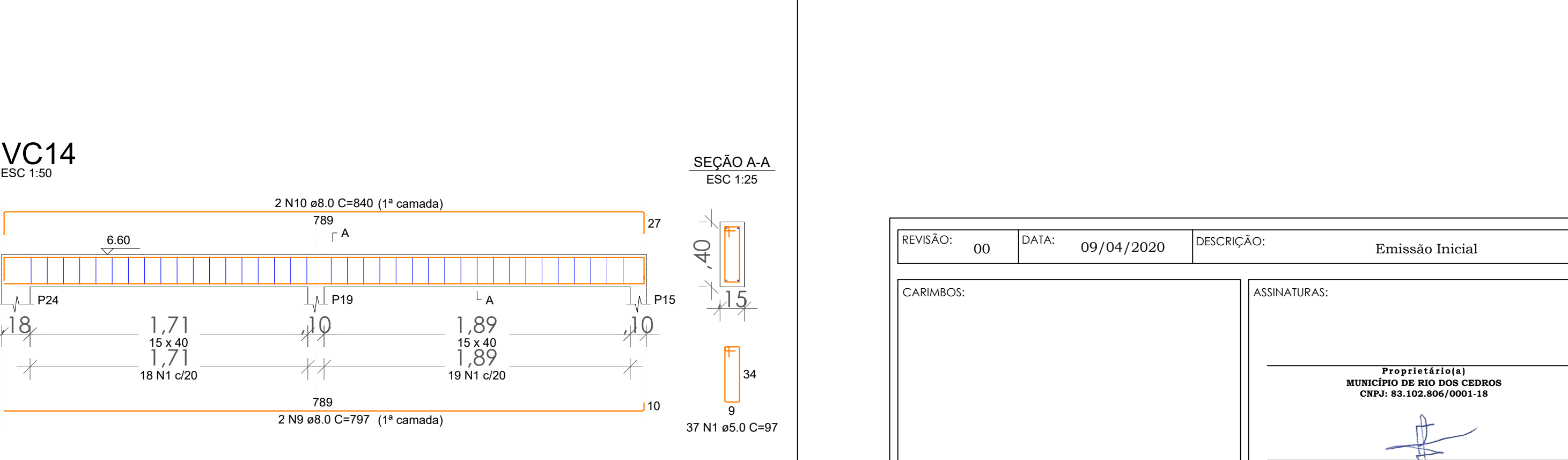
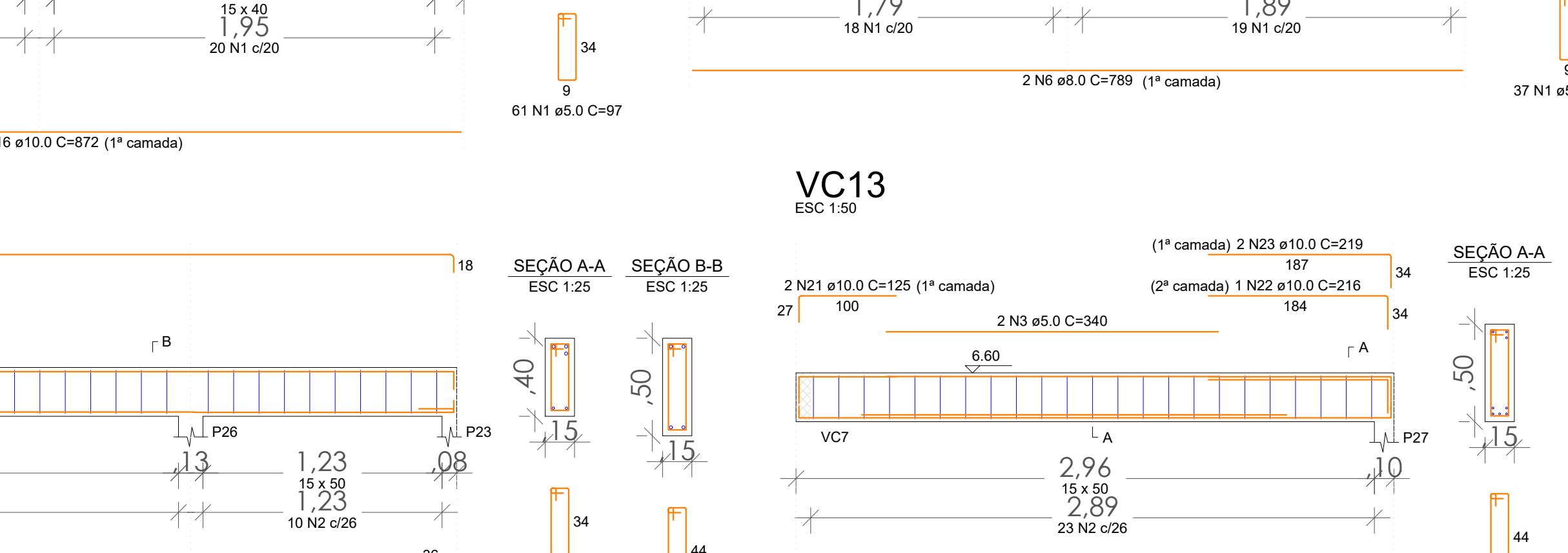
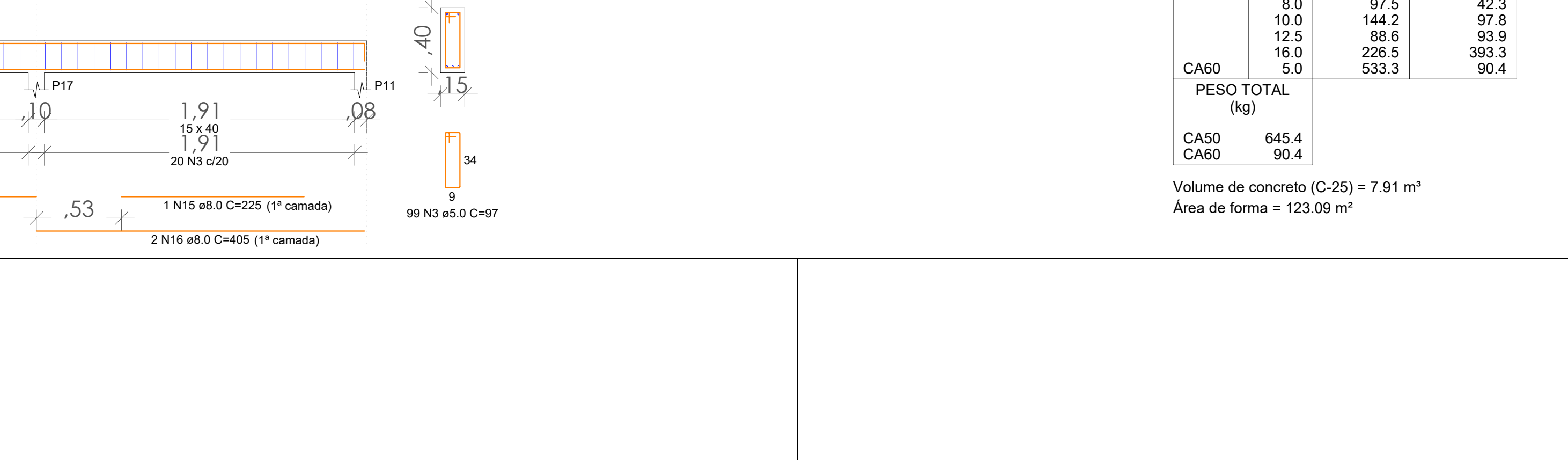
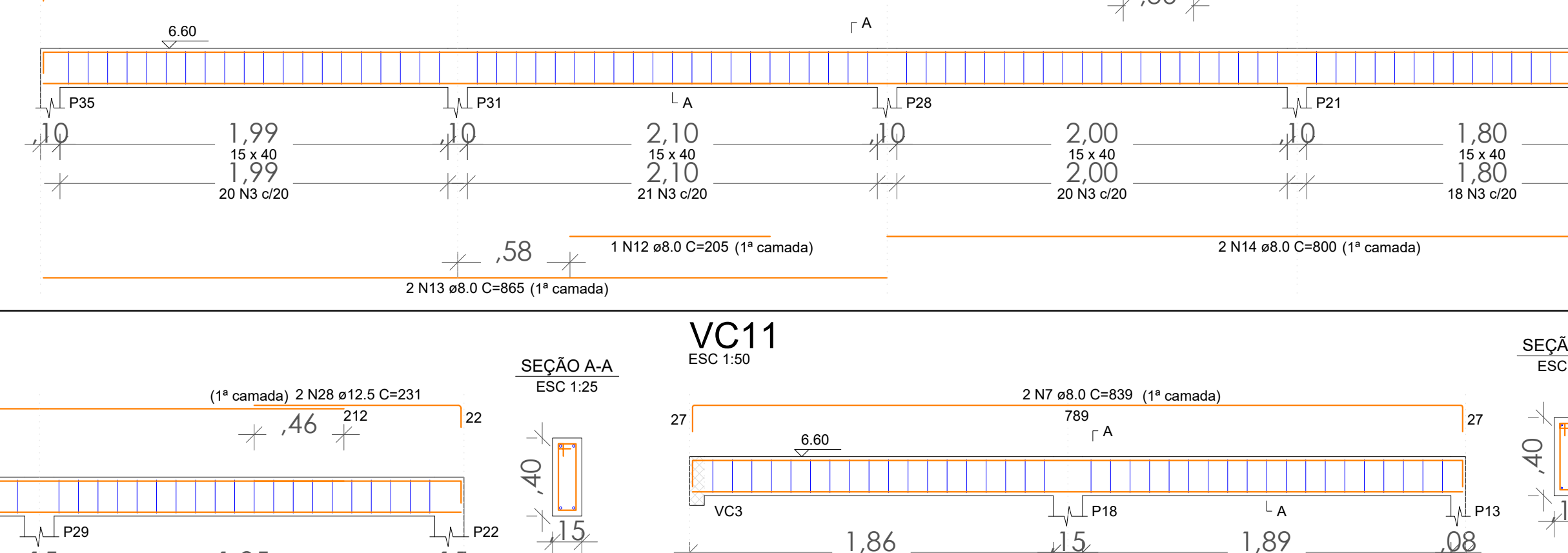
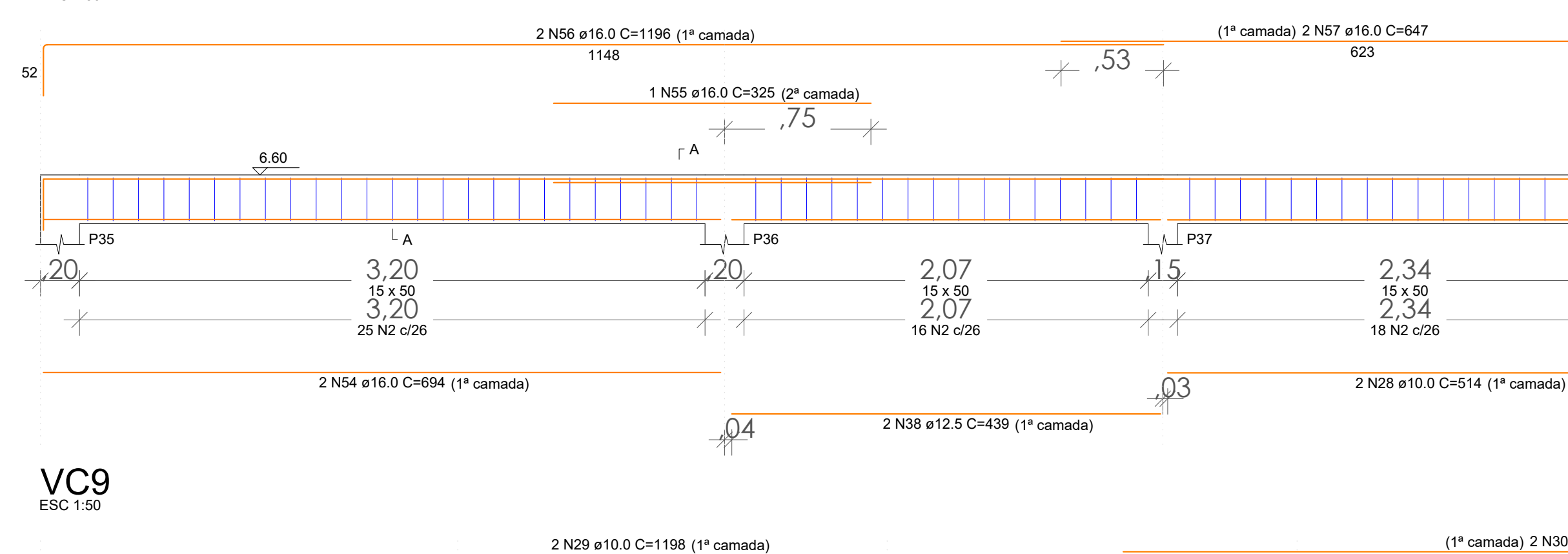
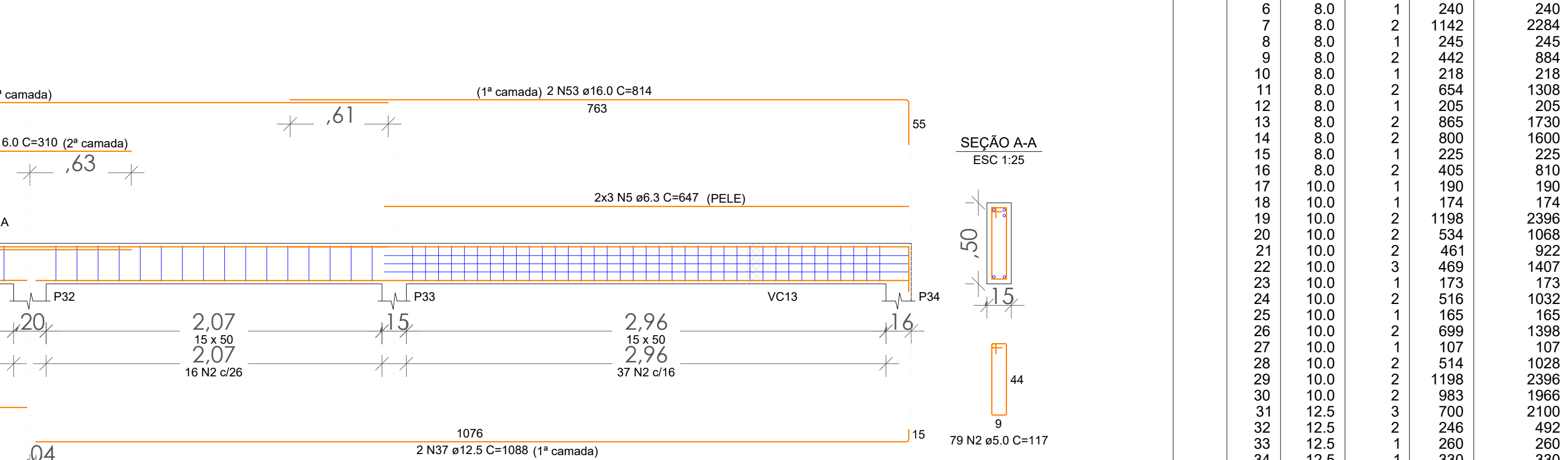
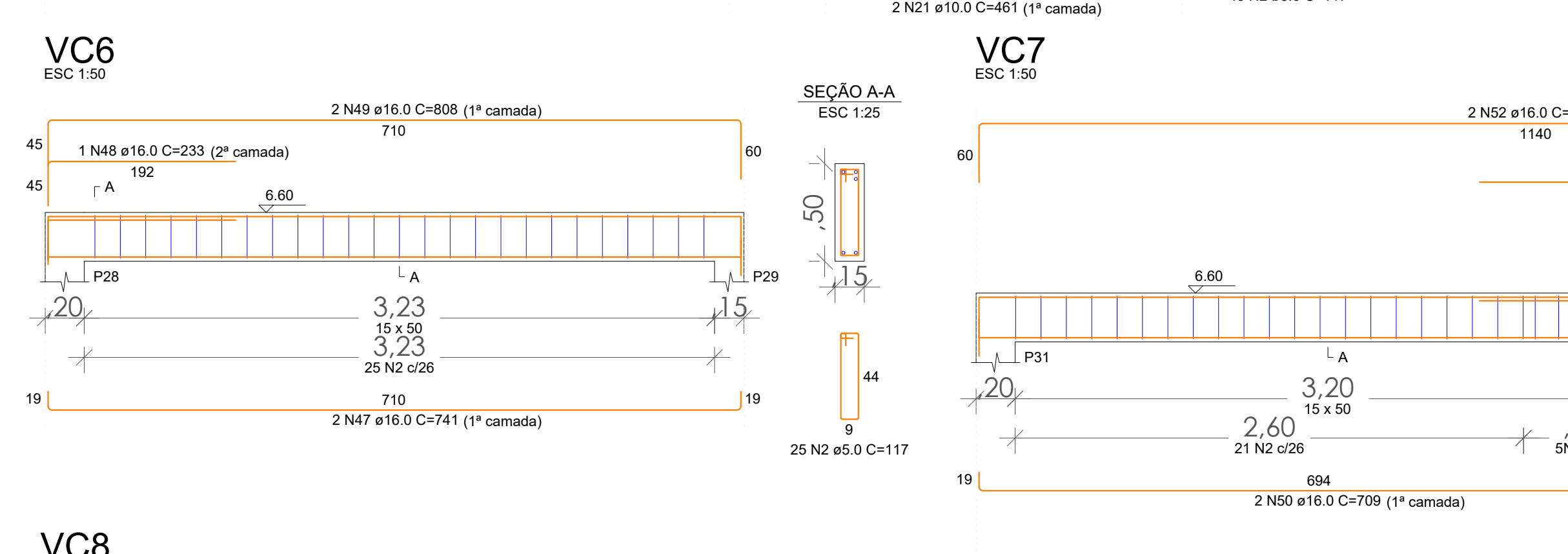
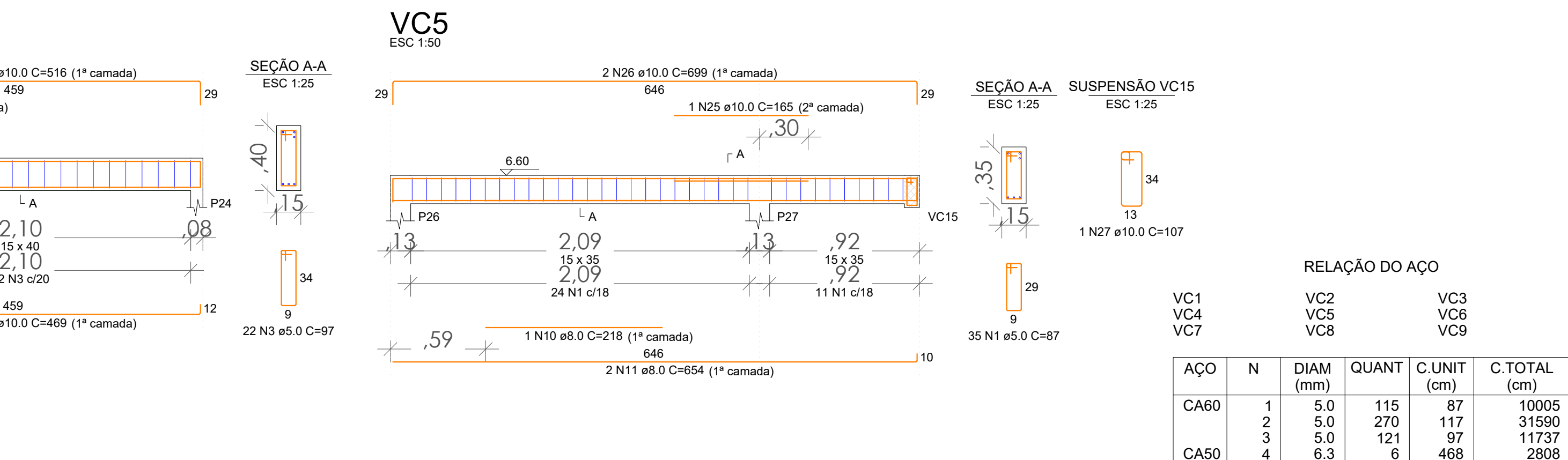
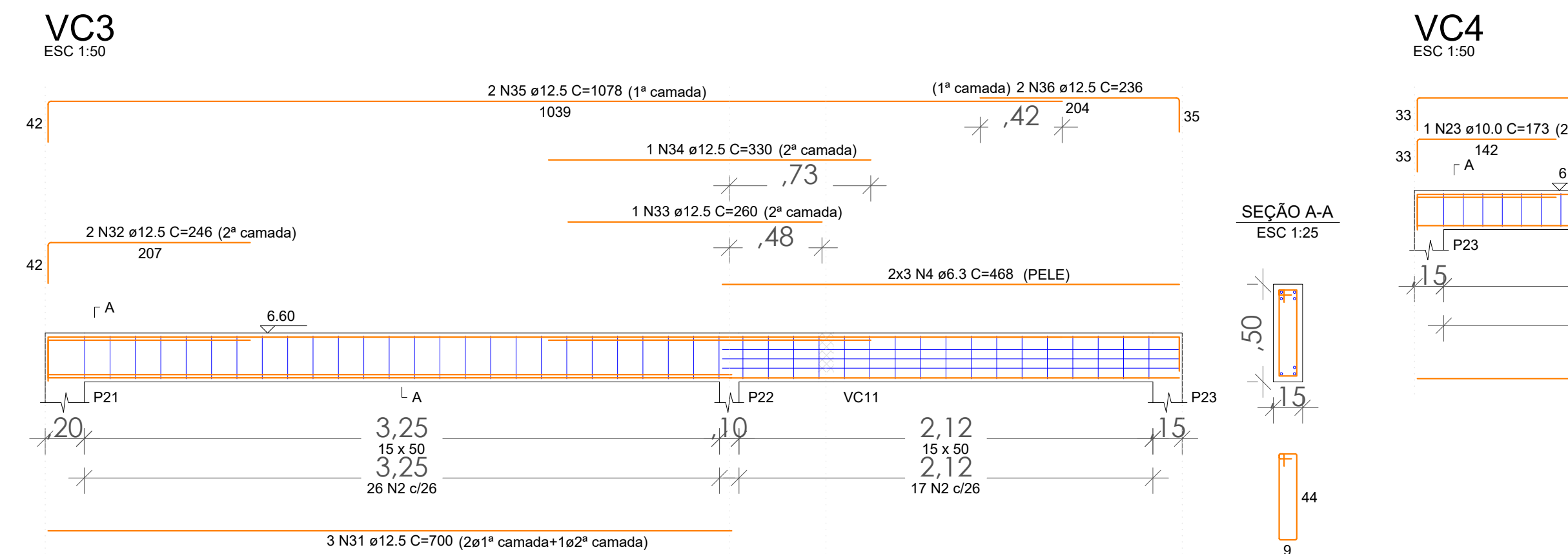
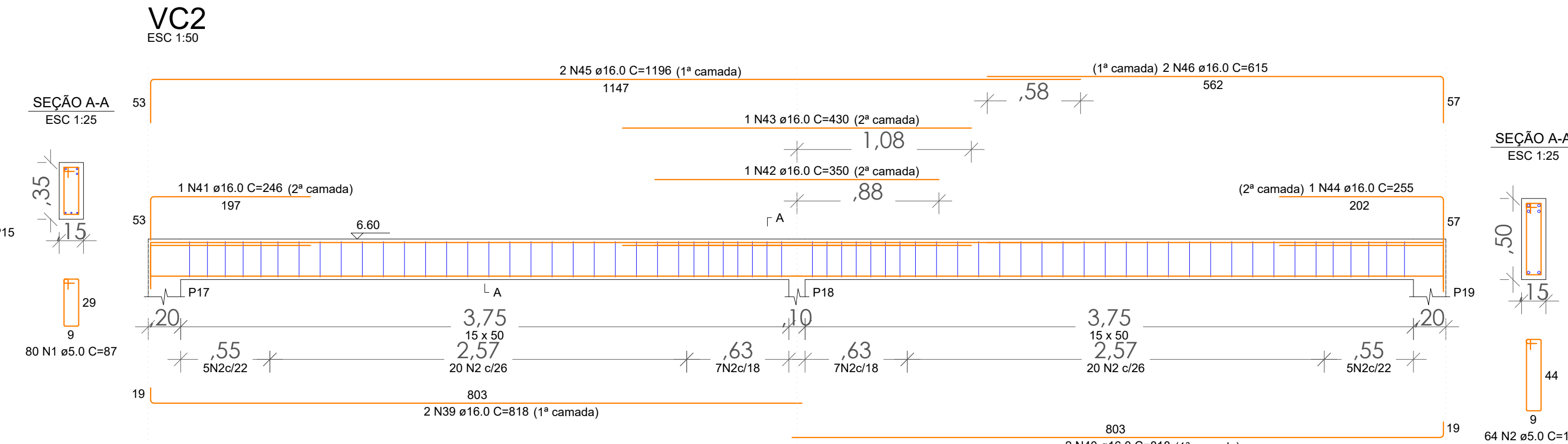
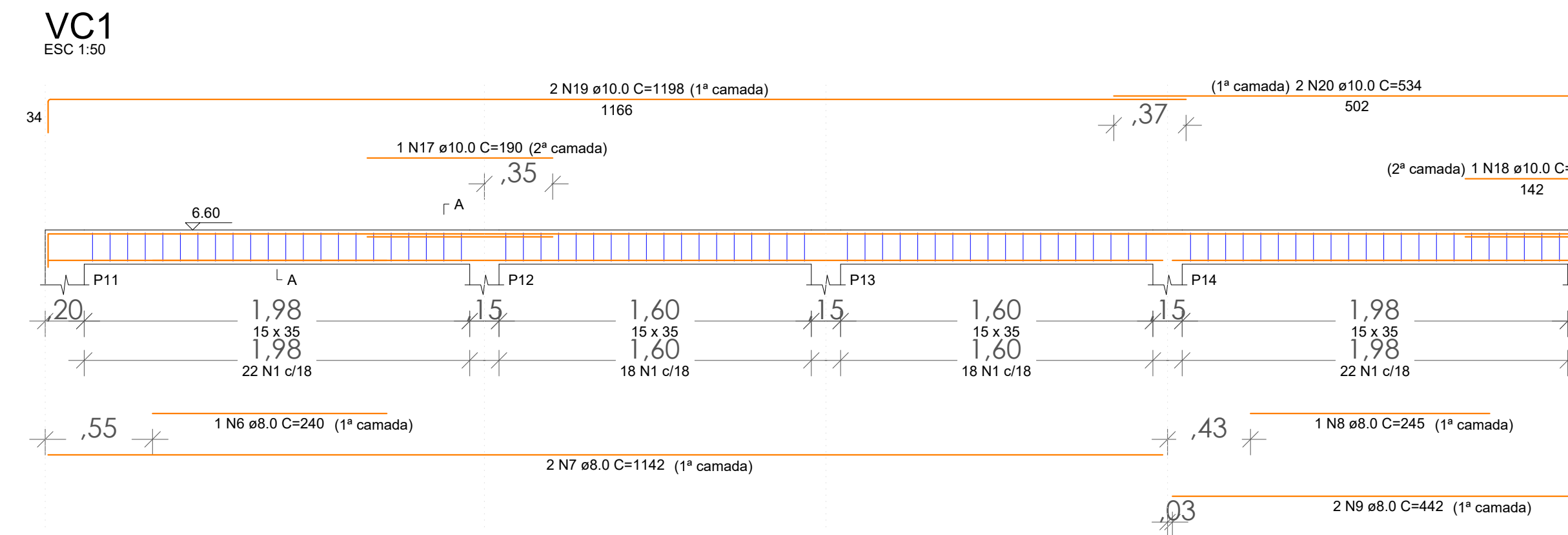


**Blocos de enchimento**

Detalhe	Tipo	Nome	Dimensões(cm)	Quantidade
			hb bx by	
1/2	Lajota cerâmica	B8/25/20	8 25 20	3480
3	Lajota cerâmica	B8/30/20	8 30 20	323



**Forma do pavimento Cobertura**  
escala 1:50



**RELAÇÃO DO AÇO**

VC10	VC11	VC12	VC13	VC14	VC15
CA60	1	5.0	224	97	21728
CA50	2	5.0	55	117	6455
	3	5.0	2	340	680
	4	5.0	2	243	486
	5	6.3	1	77	154
	6	8.0	2	789	1578
	7	8.0	2	836	1672
	8	8.0	2	229	458
	9	8.0	2	797	1594
	10	8.0	2	840	1680
	11	8.0	2	538	1076
	12	8.0	2	180	360
	13	8.0	1	120	120
	14	8.0	2	180	360
	15	8.0	2	465	930
	16	10.0	2	872	1744
	17	10.0	2	277	554
	18	10.0	1	335	335
	19	10.0	1	435	435
	20	10.0	3	626	1878
	21	10.0	2	125	250
	22	10.0	1	216	216
	23	10.0	4	458	1832
	24	10.0	2	438	876
	25	10.0	2	942	1884
	26	12.5	2	434	868
	27	12.5	2	1186	2372
	28	12.5	1	462	462
	29	12.5	2	431	862
	30	16.0	2	614	1228
	31	16.0	1	320	320
	32	16.0	2	1104	2208

**RESUMO DO AÇO**

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	0.8	0.2
	8.0	98.3	42.7
	10.0	86.1	58.4
	12.5	45.6	48.4
	16.0	37.6	65.2
	5.0	253.3	49.7
<b>PESO TOTAL (kg)</b>			
CA50		214.9	
CA60		49.7	

**RELAÇÃO DO AÇO**

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	115	87	10005
	2	5.0	270	117	31590
	3	5.0	2	340	680
	4	6.3	6	468	2808
	5	6.3	6	647	3882
	6	8.0	1	240	240
	7	8.0	2	1142	2284
	8	8.0	1	245	245
	9	8.0	2	442	884
	10	8.0	1	218	218
	11	8.0	2	654	1308
	12	8.0	1	205	205
	13	8.0	2	865	1730
	14	8.0	2	800	1600
	15	8.0	1	225	225
	16	8.0	2	405	810
	17	10.0	1	190	190
	18	10.0	2	461	922
	19	10.0	2	1198	2396
	20	10.0	2	534	1068
	21	10.0	2	461	922
	22	10.0	3	469	1407
	23	10.0	1	173	173
	24	10.0	2	516	1032
	25	10.0	1	165	165
	26	10.0	2	699	1398
	27	10.0	1	107	107
	28	10.0	2	514	1028
	29	10.0	2	1198	2396
	30	10.0	2	983	1966
	31	12.5	3	700	2100
	32	12.5	2	246	492
	33	12.5	1	260	260
	34	12.5	1	330	330
	35	12.5	2	1078	2156
	36	12.5	2	236	472
	37	12.5	2	1088	2176
	38	12.5	2	439	878
	39	16.0	2	818	1636
	40	16.0	2	818	1636
	41	16.0	1	246	246
	42	16.0	1	350	350
	43	16.0	1	430	430
	44	16.0	1	255	255
	45	16.0	2	1196	2392
	46	16.0	2	615	1230
	47	16.0	2	741	1482
	48	16.0	1	233	233
	49	16.0	2	808	1616
	50	16.0	2	709	1418
	51	16.0	1	310	310
	52	16.0	2	1196	2392
	53	16.0	2	814	1628
	54	16.0	2	694	1388
	55	16.0	1	325	325
	56	16.0	2	1196	2392
	57	16.0	2	647	1294

**RESUMO DO AÇO**

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	66.9	18
	8.0	97.5	42.3
	10.0	144.2	97.8
	12.5	88.6	93.9
	16.0	226.5	393.3
	5.0	533.3	90.4
<b>PESO TOTAL (kg)</b>			
CA50		645.4	
CA60		90.4	

Volume de concreto (C-25) = 7.91 m³  
Área de forma = 123.09 m²

**Projeto Estrutural**

REVISÃO: 00 DATA: 09/04/2020 DESCRIÇÃO: Emissão Inicial

CARIMBOS: (Assinaturas)

PROJETO: Projeto Estrutural

DISCRIMINAÇÃO: PLANTA DE FORMA E DETALHAMENTO VIGAS COBERTURA - PREDIO NOVO

PROPRIETÁRIO: MUNICIPIO DE RIO DOS CEDROS CPF/CNPJ: 83.102.806/0001-18

ENDEREÇO: Rua Tibério Bertoldi

RP: 150 CEP: 89.121-000 BARRIO: Centro CIDADE/UF: Rio dos Cedros/SC

INSCR. IMOBILIAR: - DESENHO: FELIPE R. TROJAN

marcos trojan engenharia e geotecnia

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CIBEX: 099990-8-SC  
E-mail: comercial@marcstrojan.com.br  
www.marcstrojan.com.br

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RELAÇÃO DO AÇO

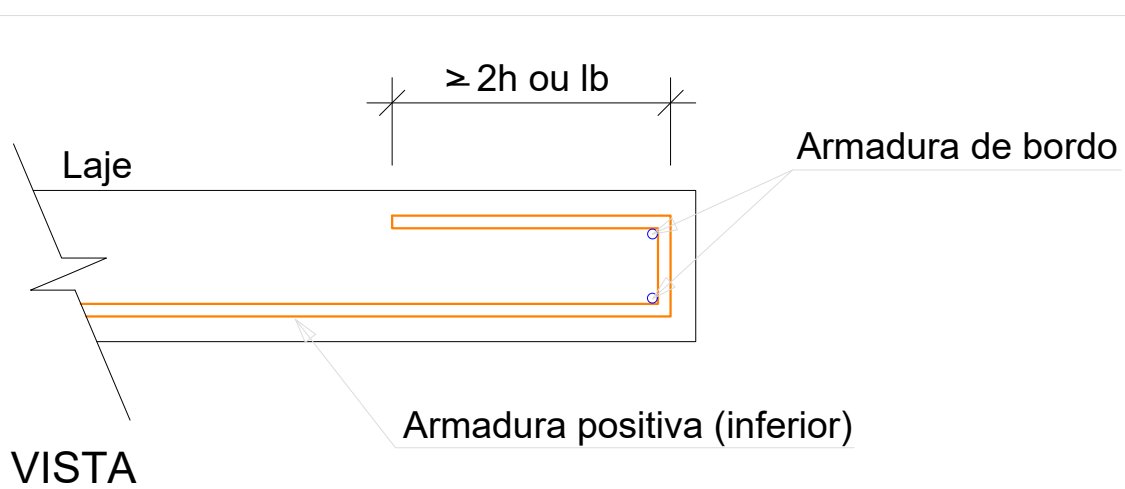
Positivos	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	11	136	1496	
	2	5.0	72	209	15048	
	3	5.0	21	240	5040	
	4	5.0	11	422	4642	
	5	5.0	11	246	2706	
	6	5.0	11	310	3410	
	7	5.0	21	317	6657	
	8	5.0	10	290	2900	
	9	6.3	86	802	68972	
	10	6.3	23	702	16146	
CA50	11	6.3	14	VAR	VAR	
	12	6.3	32	VAR	VAR	
	13	6.3	12	607	7284	
	14	6.3	7	VAR	VAR	
	15	6.3	30	209	6270	
	16	8.0	98	389	38122	
	17	8.0	38	432	16416	
	18	8.0	22	869	19118	
	19	8.0	32	452	14464	
	20	8.0	22	607	13354	
	21	8.0	53	702	37206	
	22	8.0	20	VAR	VAR	
	23	8.0	10	402	4020	
	24	8.0	2	390	780	
	25	10.0	65	409	26585	
	26	10.0	61	458	27938	
	27	10.0	32	VAR	VAR	
	28	10.0	11	283	3113	
29	10.0	57	452	25764		
30	10.0	95	424	40280		
31	10.0	4	VAR	VAR		
32	12.5	39	409	15951		

RESUMO DO AÇO

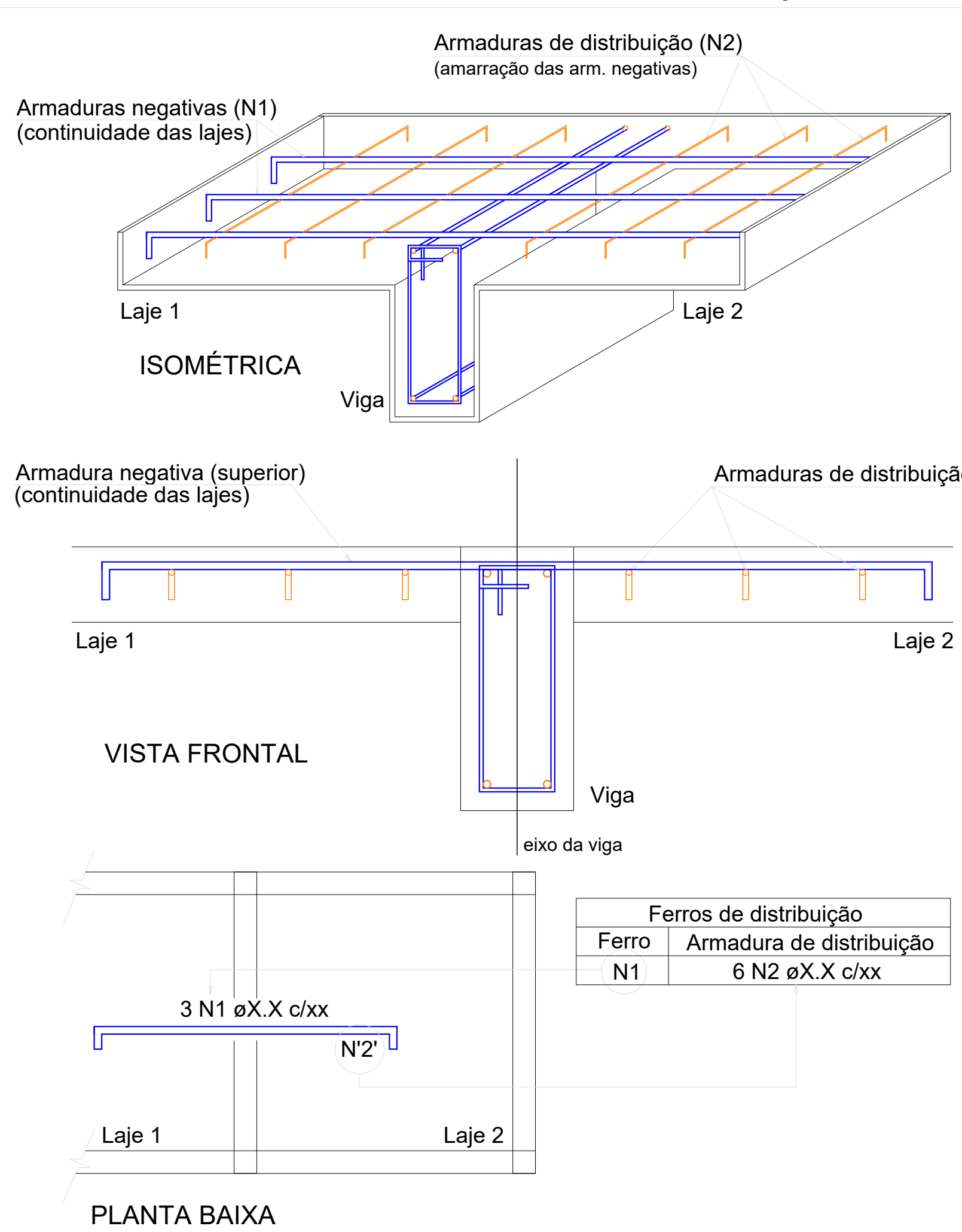
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	1236.1	332.7
	8.0	1636.8	710.4
	10.0	1336.5	906.4
	12.5	159.5	169
CA60	5.0	419	71
<b>PESO TOTAL (kg)</b>			
CA50		2118.6	
CA60		71	

Volume de concreto (C-25) = 37.74 m³  
Área de forma = 377.76 m²

DETALHE DA ARMADURA DE BORDO LIVRE DA LAJE



DETALHE DA ARMADURA SUPERIOR DE CONTINUIDADE DA LAJE E MONTAGEM DA ARMADURA DE DISTRIBUIÇÃO



NOTA: A ARMADURA DE DISTRIBUIÇÃO DAS CONTINUIDADES DEVE SER ININTERRUPTA E COM TRASPASSE (CASO HAJA EMENDAS).

RELAÇÃO DO AÇO

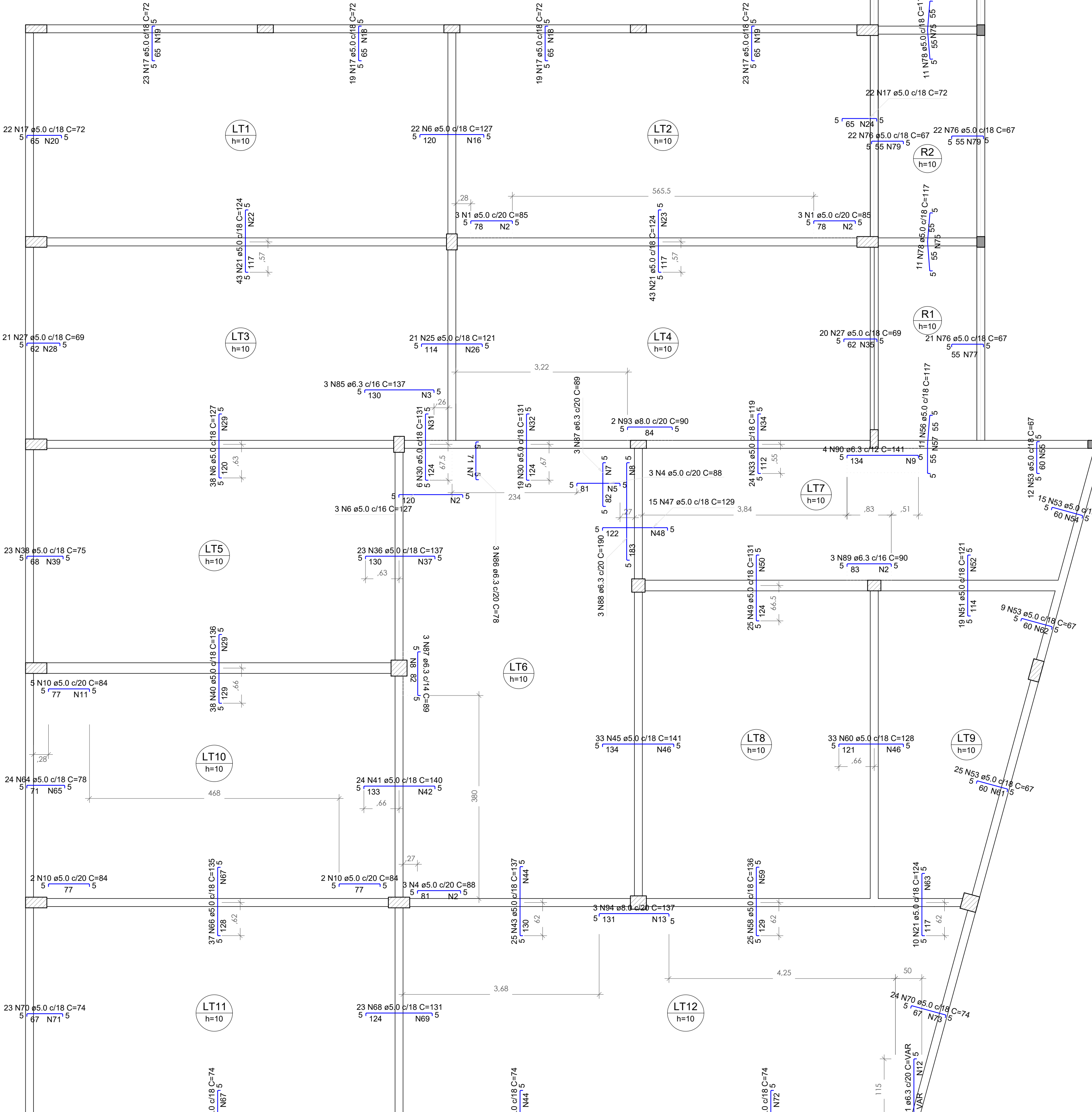
Negativos	AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	6	85	510	
	2	5.0	35	43	1505	
	3	5.0	7	40	280	
	4	5.0	6	88	528	
	5	5.0	4	51	204	
	6	5.0	63	127	8001	
	7	5.0	9	50	450	
	8	5.0	14	42	588	
	9	5.0	7	46	322	
	10	5.0	9	84	756	
	11	5.0	4	88	352	
	12	5.0	5	VAR	VAR	
	13	5.0	7	44	308	
	14	5.0	6	126	756	
	15	5.0	16	93	1458	
	16	5.0	6	397	2382	
	17	5.0	128	72	9216	
	18	5.0	8	344	2752	
	19	5.0	8	419	3352	
	20	5.0	4	400	1600	
	21	5.0	96	124	11904	
	22	5.0	6	775	4650	
	23	5.0	6	775	4650	
	24	5.0	4	398	1592	
	25	5.0	21	121	2541	
	26	5.0	6	377	2262	
	27	5.0	41	69	2829	
	28	5.0	4	380	1520	
	29	5.0	13	676	8788	
	30	5.0	25	131	3275	
	31	5.0	7	99	693	
	32	5.0	7	350	2450	
	33	5.0	24	119	2856	
	34	5.0	6	437	2622	
	35	5.0	4	365	1460	
	36	5.0	23	137	3151	
	37	5.0	7	414	2898	
	38	5.0	23	75	1725	
	39	5.0	4	420	1680	
	40	5.0	38	136	5168	
	41	5.0	24	140	3360	
	42	5.0	7	437	3059	
	43	5.0	25	137	3425	
	44	5.0	11	444	4884	
	45	5.0	33	141	4653	
	46	5.0	13	595	7735	
	47	5.0	15	129	1935	
	48	5.0	7	265	1855	
	49	5.0	25	131	3275	
	50	5.0	7	442	3094	
	51	5.0	19	121	2299	
	52	5.0	6	350	2100	
	53	5.0	73	67	4891	
	54	5.0	3	275	825	
	55	5.0	3	210	630	
	56	5.0	117	381	4509	
	57	5.0	9	200	1800	
	58	5.0	25	136	3400	
	59	5.0	7	443	3101	
	60	5.0	33	128	4224	
	61	5.0	3	442	1326	
	62	5.0	3	158	474	
	63	5.0	6	179	1074	
	64	5.0	24	78	1872	
	65	5.0	4	440	1760	
	66	5.0	37	135	4995	
	67	5.0	11	671	7381	
	68	5.0	23	131	3013	
	69	5.0	7	415	2905	
	70	5.0	137	74	10138	
	71	5.0	4	418	1672	
	72	5.0	4	497	1988	
	73	5.0	4	425	1700	
	74	5.0	6	112	672	
	75	5.0	36	197	7092	
	76	5.0	215	67	14405	
	77	5.0	3	376	1128	
	78	5.0	54	117	6318	
	79	5.0	6	390	2340	
	80	5.0	6	215	1290	
	81	5.0	18	292	5256	
	82	5.0	6	187	1122	
	83	5.0	6	276	1656	
	84	5.0	11	67	737	
	85	6.3	3	137	411	
	86	6.3	3	78	234	
	87	6.3	6	89	534	
	88	6.3	3	190	570	
	89	6.3	3	90	270	
	90	6.3	4	141	564	
	91	6.3	3	VAR	VAR	
	92	8.0	14	166	2324	
	93	8.0	2	90	180	
	94	8.0	3	137	411	

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	52.3	14.1
	8.0	5.9	2.6
CA60	5.0	2510.3	425.6
<b>PESO TOTAL (kg)</b>			
CA50		16.7	
CA60		425.6	



Armação positiva das lajes do pavimento Térreo escala 1:50



Armação negativa das lajes do pavimento Térreo escala 1:50

REVISÃO: 00 DATA: 09/04/2020 DESCRIÇÃO: Emissão Inicial

CARIMBO: ASINATURAS:

PROJETO: Projeto Estrutural

DISCRIMINAÇÃO: DETALHAMENTO LAJES TÉRREO - PRÉDIO NOVO

PROPRIETÁRIO: MUNICÍPIO DE RIO DOS CEDROS CPF/CNPJ: 83.102.806/0001-18

ENDEREÇO: Rua Tibério Bertoldi

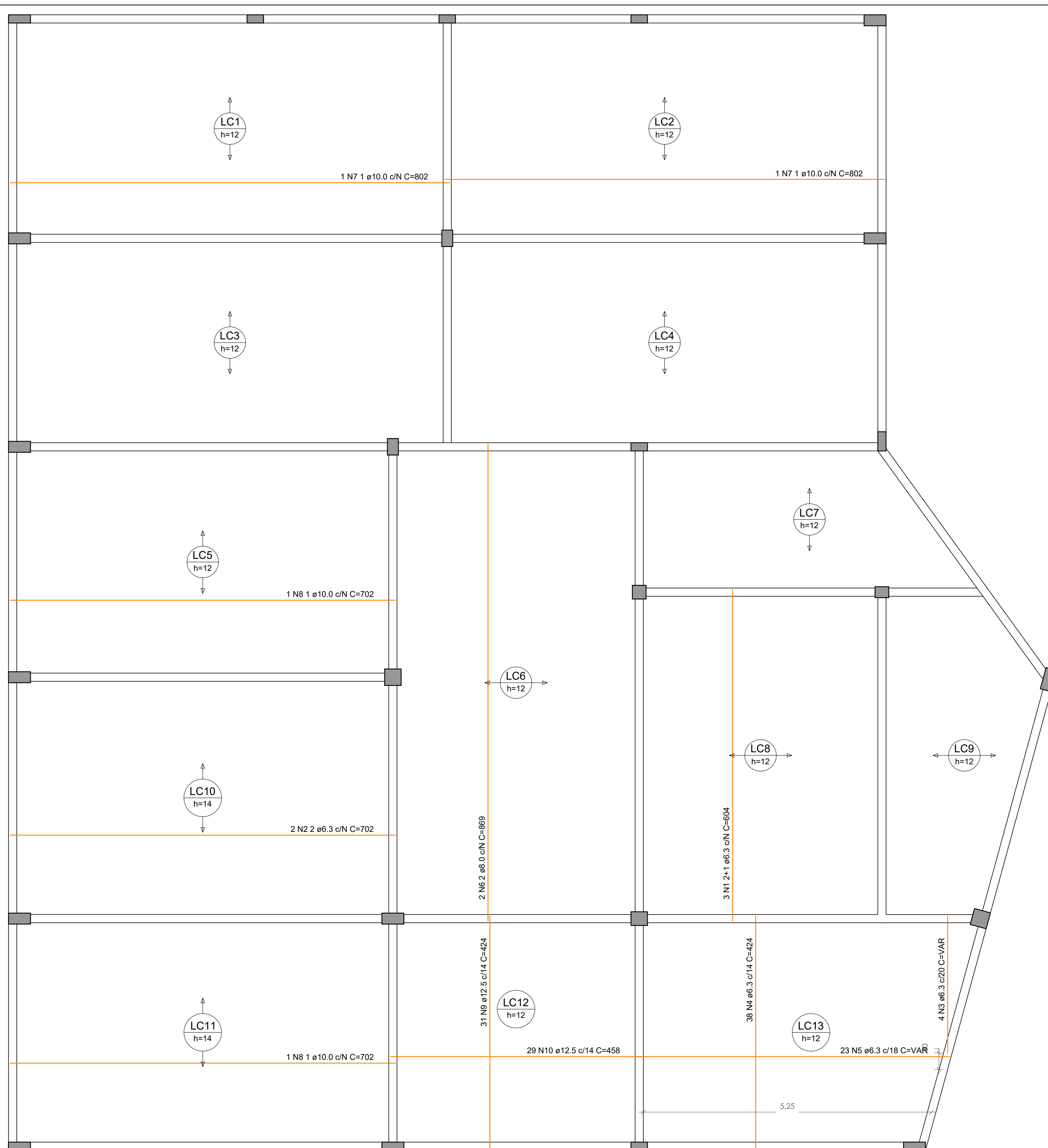
RP: 150 CEP: 89.121-000 BARRIO: Centro CIDADE/UF: Rio dos Cedros/SC

INSCR. IMOBILIAR: - DESENHO: FELIPE R. TROJAN

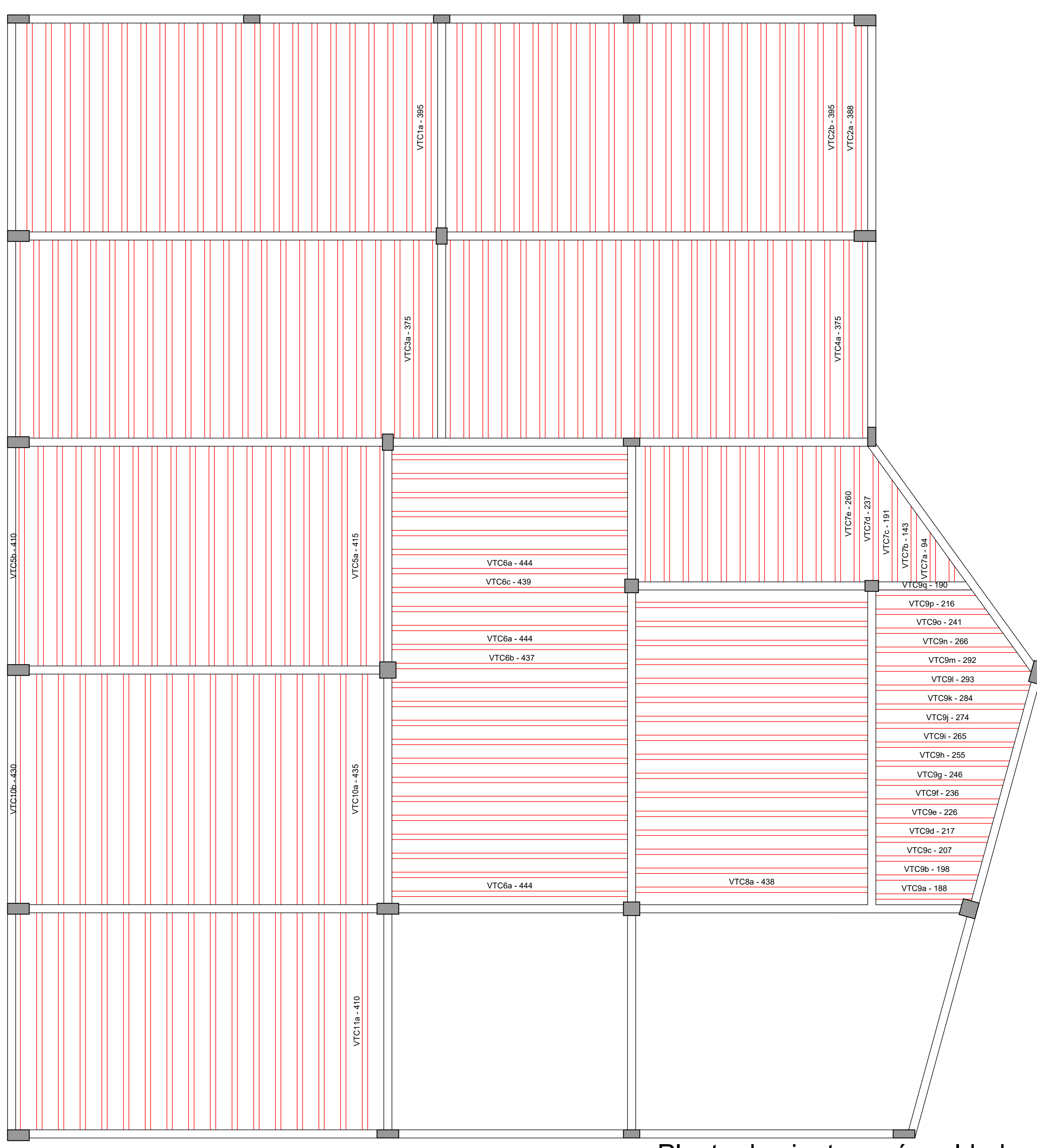
marcos trojan engenharia e geotecnia Rua Almirante Joerges - 1.320 Costa e Silva - Joinville - SC Fone: (47) 3278-5886 CREA: 099990-6/SC E-mail: comercial@marcotrojan.com.br www.marcotrojan.com.br

8/13





Armação positiva das lajes do pavimento Cobertura  
escala 1:50



Planta de vigotas pré-moldadas  
escala 1:50

**RELAÇÃO DO AÇO**

Positivos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	3	604	1812
	2	6.3	2	702	1404
	3	6.3	4	VAR	VAR
	4	6.3	38	424	16112
	5	6.3	23	VAR	VAR
	6	8.0	2	869	1738
	7	10.0	2	802	1604
	8	10.0	2	702	1404
	9	12.5	31	424	13144
	10	12.5	29	458	13282

**RESUMO DO AÇO**

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	6.3	334.3	90
	8.0	17.4	7.5
	10.0	30.1	20.4
	12.5	264.3	280

**PESO TOTAL (kg)**  
CA50 398

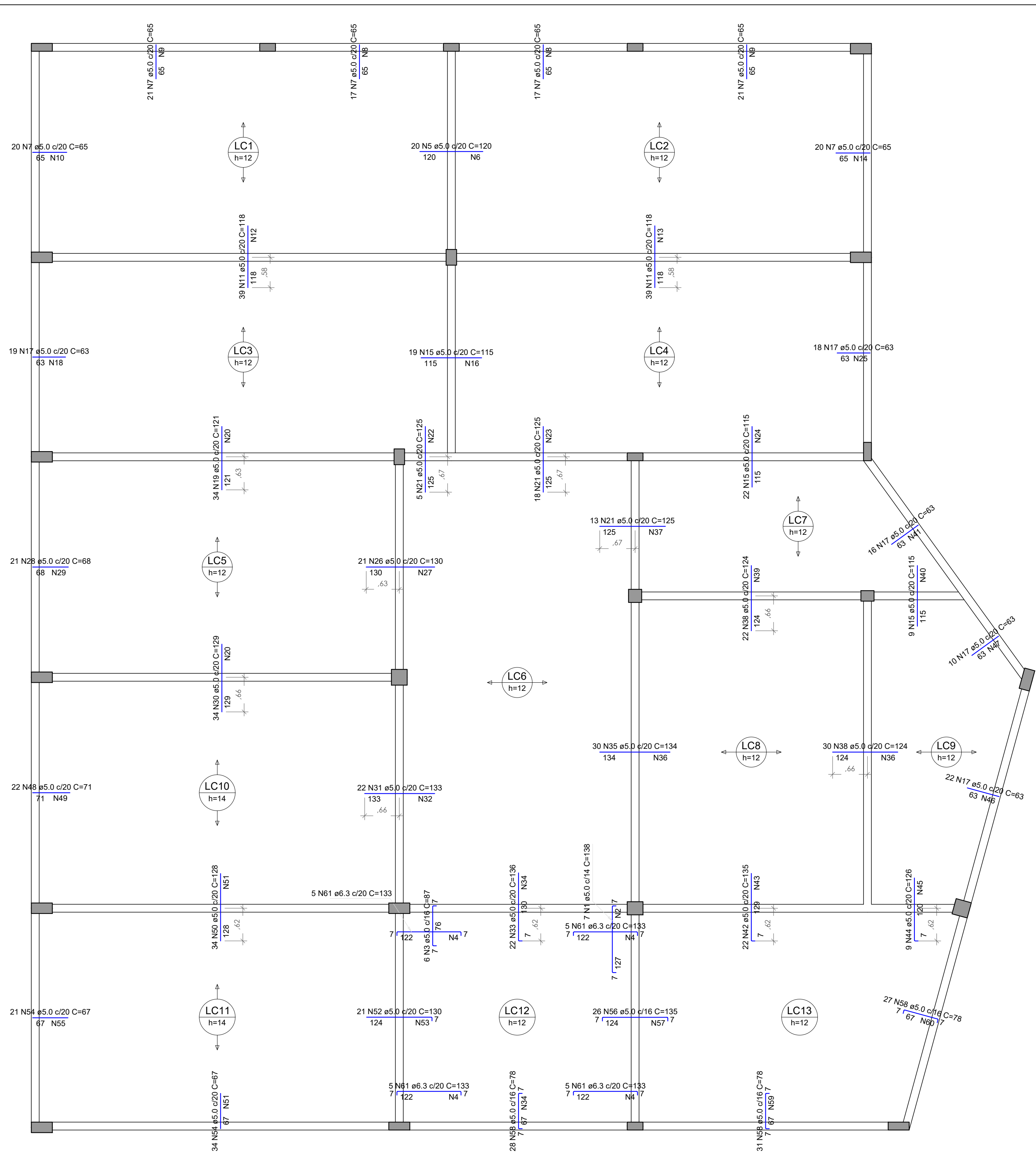
Volume de concreto (C-25) = 20.85 m<sup>3</sup>  
Área de forma = 39.70 m<sup>2</sup>

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	TR 06644	43	403	17329
	2	TR 06644	1	395	395
	3	TR 06644	42	383	16086
	4	TR 06644	18	423	7614
	5	TR 06644	17	418	7106
	6	TR 06644	22	452	9944
	7	TR 06644	1	444	444
	8	TR 06644	1	447	447
	9	TR 06644	1	102	102
	10	TR 06644	1	150	150
	11	TR 06644	1	199	199
	12	TR 06644	1	245	245
	13	TR 06644	12	268	3216
	14	TR 06644	16	445	7120
	15	TR 06644	1	196	196
	16	TR 06644	1	205	205
	17	TR 06644	1	215	215
	18	TR 06644	1	225	225
	19	TR 06644	1	234	234
	20	TR 06644	1	244	244
	21	TR 06644	1	253	253
	22	TR 06644	1	263	263
	23	TR 06644	1	272	272
	24	TR 06644	1	282	282
	25	TR 06644	1	292	292
	26	TR 06644	1	301	301
	27	TR 06644	1	299	299
	28	TR 06644	1	274	274
	29	TR 06644	1	249	249
	30	TR 06644	1	224	224
	31	TR 06644	1	198	198
	32	TR 06644	18	443	7974
	33	TR 06644	1	438	438
	34	5.0	1	111	111
	35	5.0	1	159	159
	36	5.0	1	208	208
	37	5.0	1	254	254
	38	5.0	12	277	3324
	39	5.0	1	205	205
	40	5.0	1	214	214
	41	5.0	1	224	224
	42	5.0	1	234	234
	43	5.0	1	243	243
	44	5.0	1	253	253
	45	5.0	1	262	262
	46	5.0	1	272	272
	47	5.0	1	281	281
	48	5.0	1	291	291
	49	5.0	1	301	301
	50	5.0	1	310	310
	51	5.0	1	308	308
	52	5.0	1	283	283
	53	5.0	1	258	258
	54	5.0	1	233	233
	55	5.0	1	207	207
CA50	56	8.0	42	397	16674
	57	8.0	44	466	20504
	58	8.0	2	458	916
	59	8.0	2	461	922
	60	10.0	43	422	18146
	61	10.0	1	414	414
	62	10.0	18	442	7956
	63	10.0	17	437	7429
	64	10.0	16	464	7424
	65	10.0	18	462	8316
	66	10.0	1	457	457

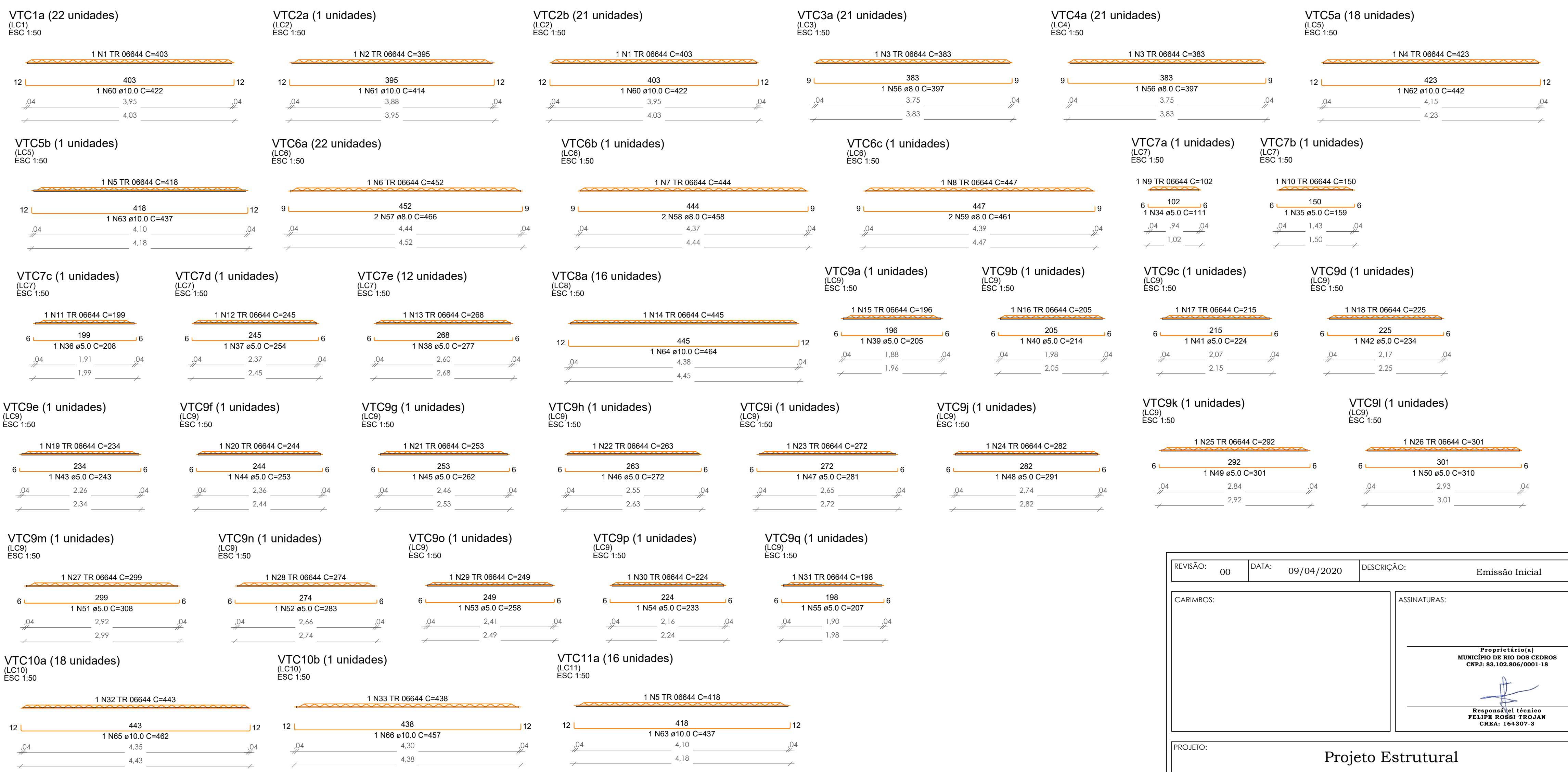
**RESUMO DO AÇO**

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CA50	8.0	390.2	169.3
	10.0	501.4	340.1
CA60	5.0	84.4	14.3
	TR 06644	830.4	649.4

**PESO TOTAL (kg)**  
CA50 509.4  
CA60 663.7

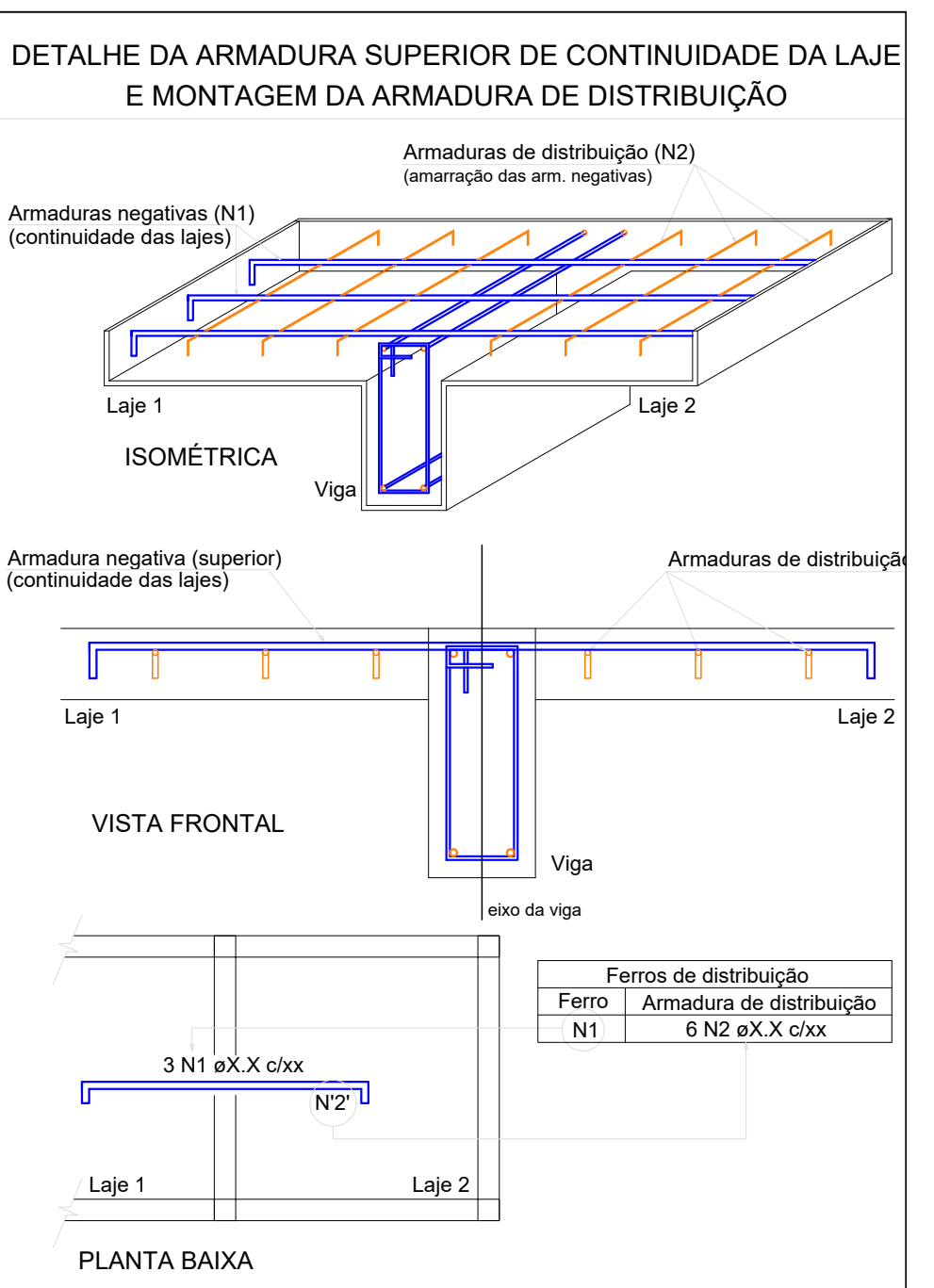


Armação negativa das lajes do pavimento Cobertura  
escala 1:50



**Armaduras de distribuição**

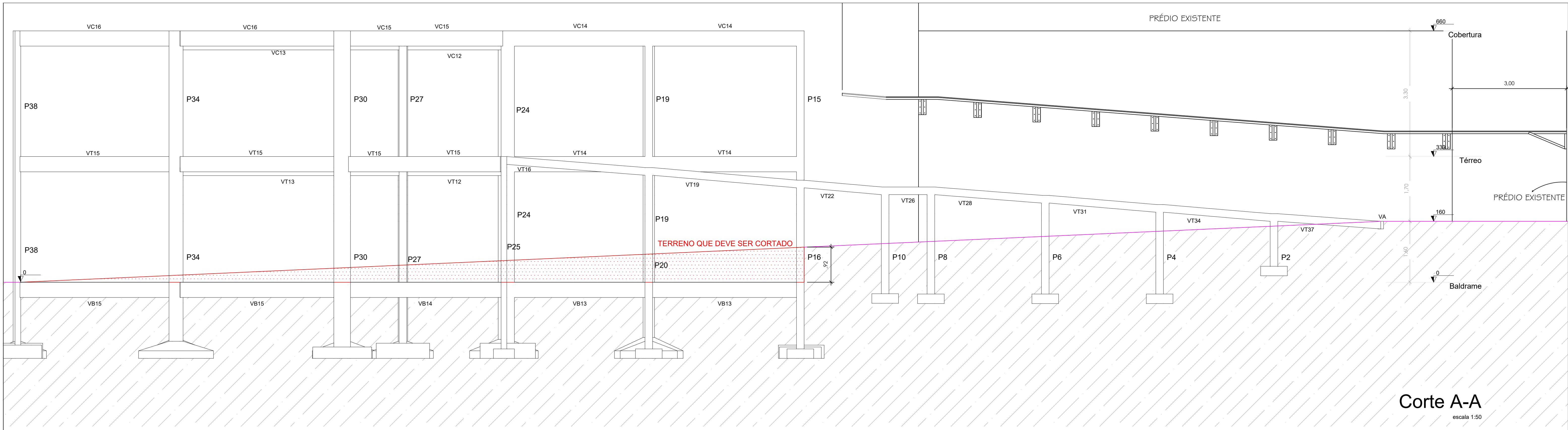
Armadura	Armadura de distribuição
N1	7 N2 ø5.0 c/20 C=92
N61	7 N4 ø5.0 c/20 C=96
N61	7 N4 ø5.0 c/20 C=96
N61	7 N4 ø5.0 c/20 C=96
N61	7 N4 ø5.0 c/20 C=96
N5	6 N6 ø5.0 c/20 C=397
N7	4 N8 ø5.0 c/20 C=341
N7	4 N9 ø5.0 c/20 C=416
N7	4 N10 ø5.0 c/20 C=400
N11	6 N12 ø5.0 c/20 C=775
N11	6 N13 ø5.0 c/20 C=775
N7	4 N14 ø5.0 c/20 C=398
N7	4 N9 ø5.0 c/20 C=416
N7	4 N8 ø5.0 c/20 C=341
N15	6 N16 ø5.0 c/20 C=377
N17	4 N18 ø5.0 c/20 C=380
N19	6 N20 ø5.0 c/20 C=676
N21	7 N22 ø5.0 c/20 C=99
N21	7 N23 ø5.0 c/20 C=350
N15	6 N24 ø5.0 c/20 C=440
N17	4 N25 ø5.0 c/20 C=365
N26	7 N27 ø5.0 c/20 C=414
N28	4 N29 ø5.0 c/20 C=420
N30	7 N20 ø5.0 c/20 C=676
N31	7 N32 ø5.0 c/20 C=437
N33	7 N34 ø5.0 c/20 C=444
N35	7 N36 ø5.0 c/20 C=595
N21	7 N37 ø5.0 c/20 C=265
N38	7 N39 ø5.0 c/20 C=439
N15	6 N40 ø5.0 c/20 C=186
N17	4 N41 ø5.0 c/20 C=326
N38	7 N36 ø5.0 c/20 C=595
N42	7 N43 ø5.0 c/20 C=443
N44	6 N45 ø5.0 c/20 C=179
N17	4 N46 ø5.0 c/20 C=442
N17	4 N47 ø5.0 c/20 C=196
N48	4 N49 ø5.0 c/20 C=440
N50	7 N51 ø5.0 c/20 C=671
N52	7 N53 ø5.0 c/20 C=415
N54	4 N55 ø5.0 c/20 C=418
N54	4 N51 ø5.0 c/20 C=671
N56	7 N57 ø5.0 c/20 C=414
N58	4 N34 ø5.0 c/20 C=444
N58	4 N59 ø5.0 c/20 C=497
N58	4 N60 ø5.0 c/20 C=425



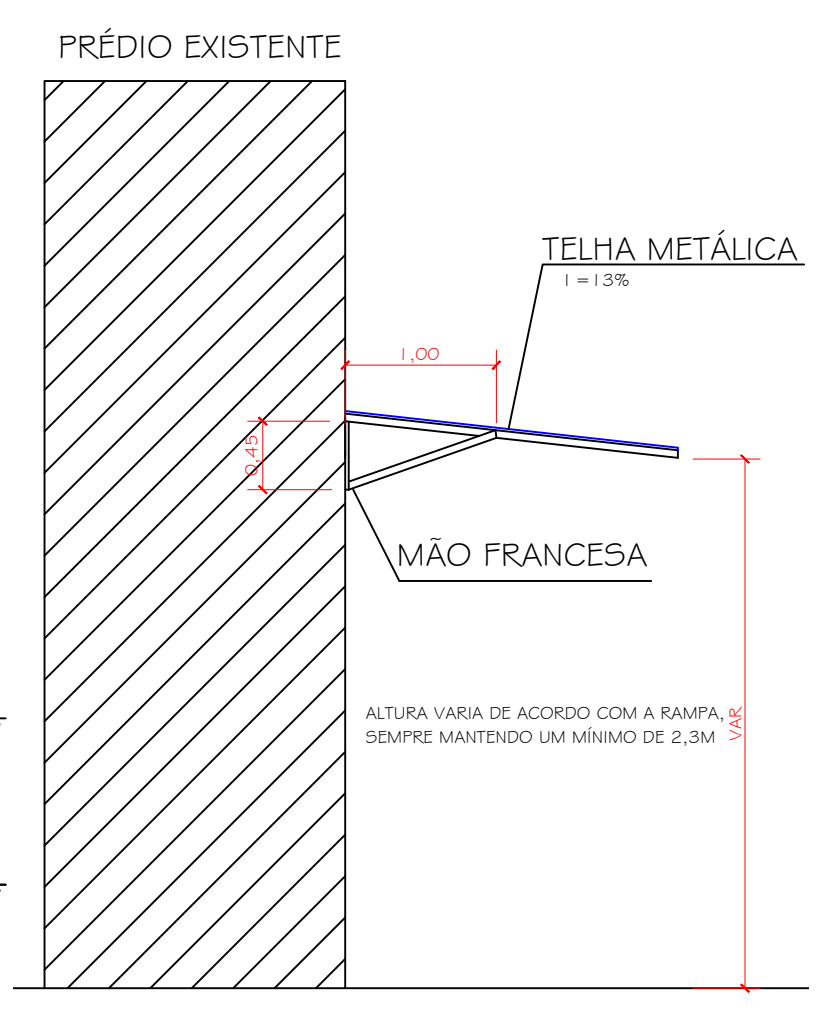
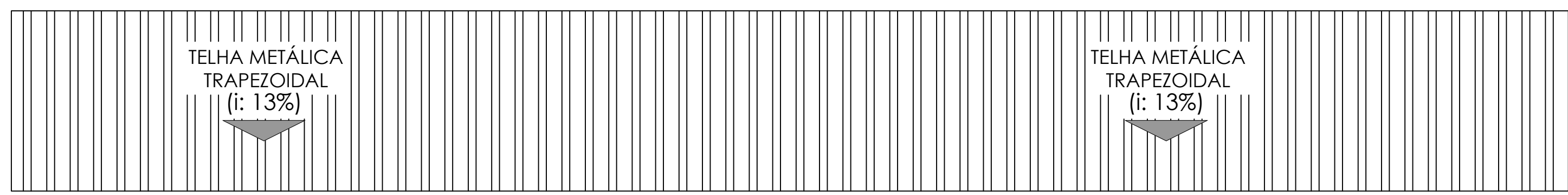
DETALHE DA ARMADURA SUPERIOR DE CONTINUIDADE DA LAJE E MONTAGEM DA ARMADURA DE DISTRIBUIÇÃO

REVISÃO: 00	DATA: 09/04/2020	DESCRIÇÃO: Emissão Inicial
CARIMBO:	ASSINATURAS:	
 Responsável Técnico FELIPE ROJAN CREA: 164070-5		
<b>Projeto Estrutural</b>		
DISCRIMINAÇÃO: DETALHAMENTO LAJES COBERTURA - PRÉDIO NOVO		
PROPRIETÁRIO: MUNICÍPIO DE RIO DOS CEDROS	CPF / CNPJ: 83.102.806/0001-18	
ENDEREÇO: Rua Tibério Bertoldi		
RP: 150	CEP: 89.121-000	BARRIO: Centro
INSCR. IMOBILIÁRIA:		CIDADE/UF: Rio dos Cedros/SC
		DESENHO: FELIPE R. ROJAN
 Rua Almirante Joazeiro - 1.320 Costa e Silva - Joinville - SC Fone: (47) 3278-5886 CREA: 099890-4-SC E-mail: comercial@marcostrojan.com.br www.marcostrojan.com.br		

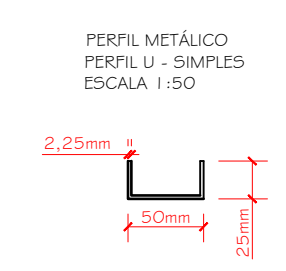
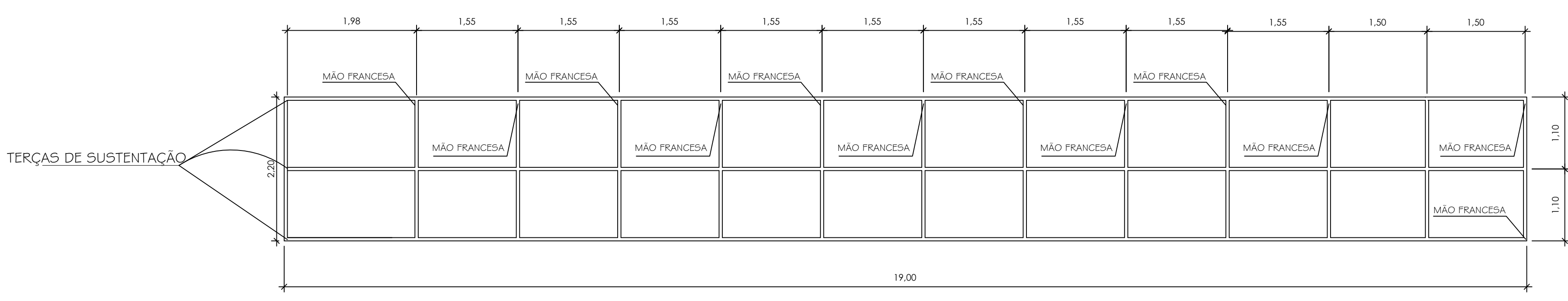




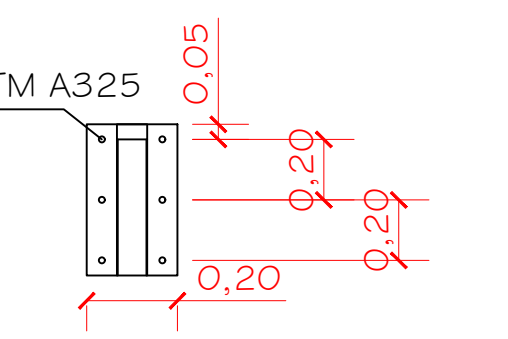
**Corte A-A**  
escala 1:50



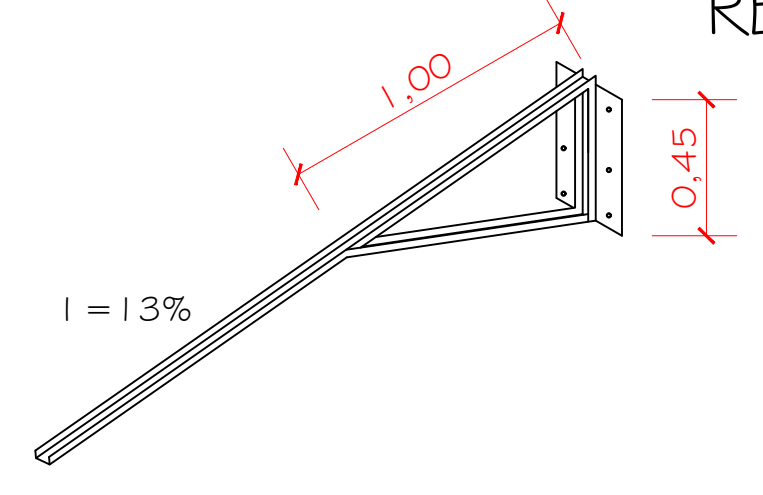
**COBERTURA DA RAMPA**  
escala 1:50



PARAFUSO AUTOBROCANTE ASTM A325

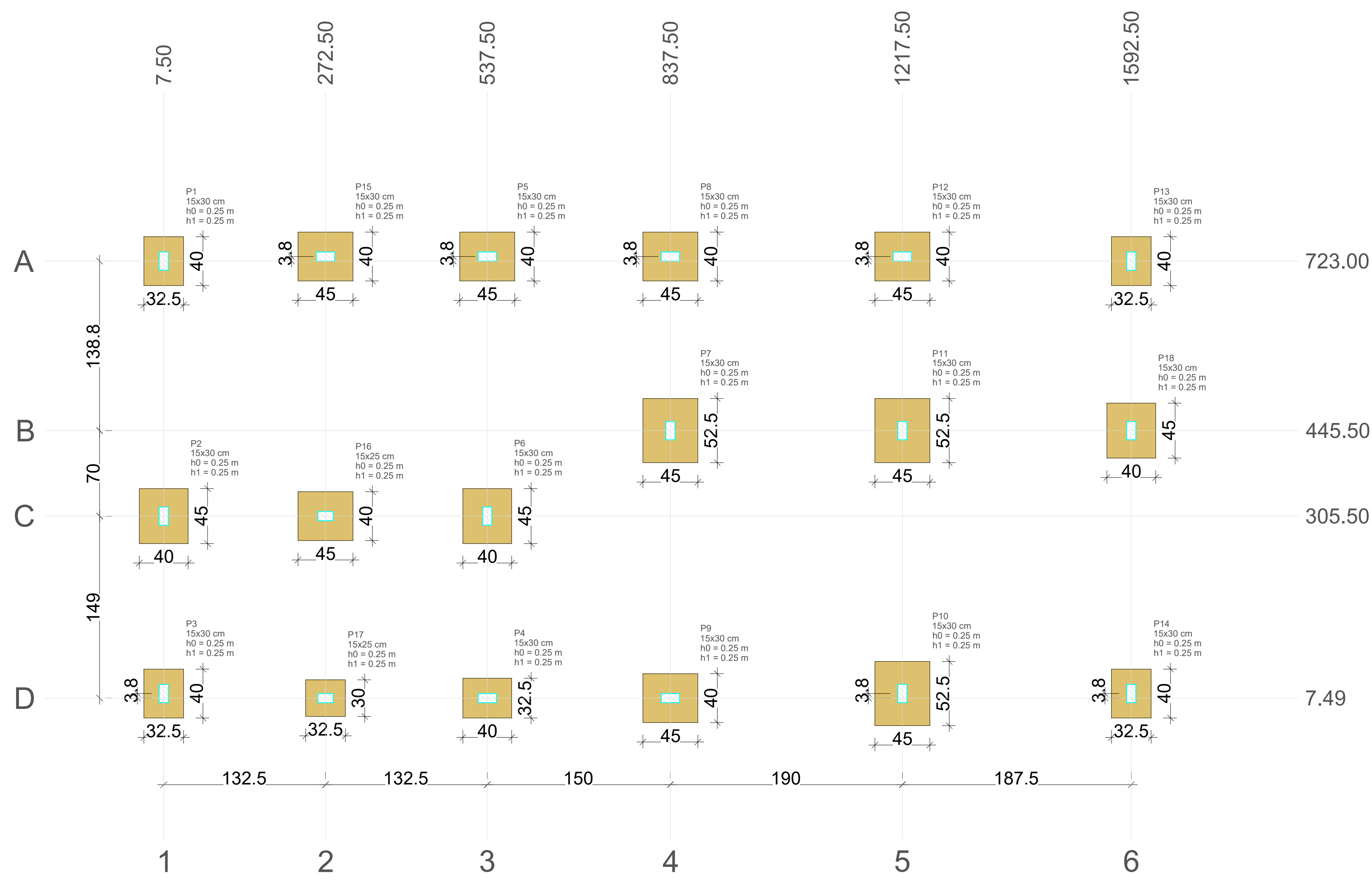


**REPRESENTAÇÃO MÃO FRANCESA**  
ESCALA 1:25

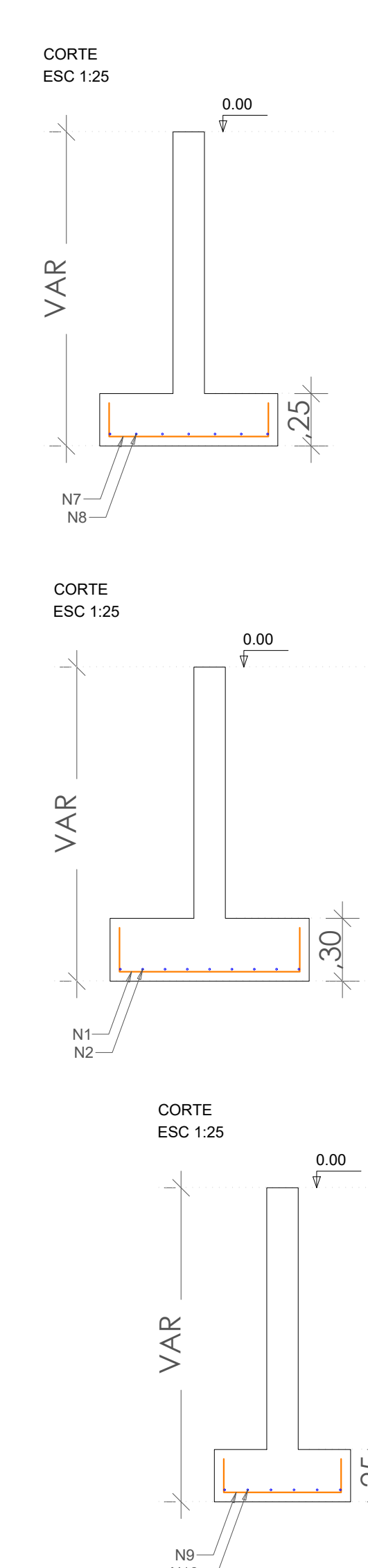
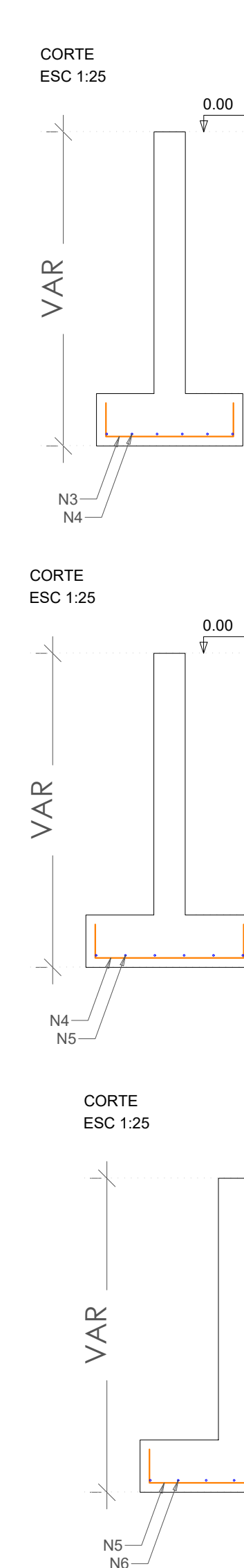
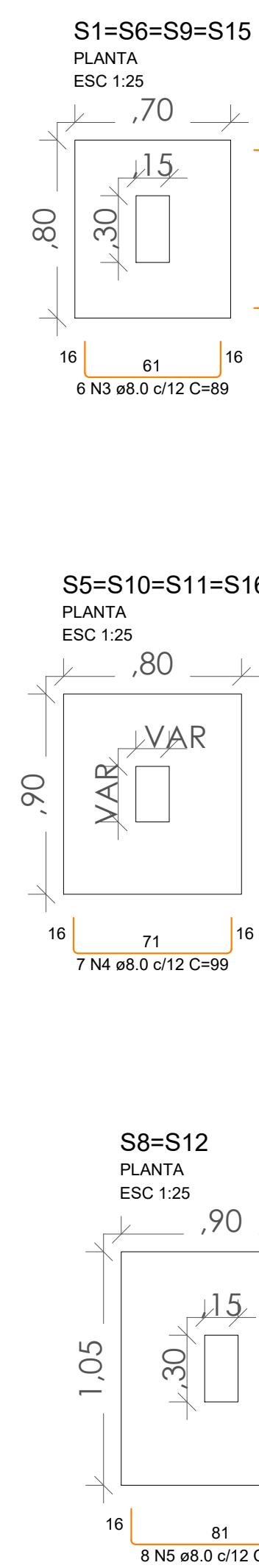


O PROJETO BASEIA-SE NAS NORMAS VIGENTES RELACIONADAS AO SEU DIMENSIONAMENTO AS LIGAÇÕES DEVEM SER EXECUTADAS COM PARAFUSOS OU SOLDAS, SEGUINDO AS EXIGÊNCIAS INDICADAS NA NBR8800/2006

REVISÃO: 00	DATA: 09/04/2020	DESCRIÇÃO: Emissão Inicial
CARIMBOS:	ASSINATURAS:	
Proprietário MUNICÍPIO DE RIO DOS CEDROS CNPJ: 83.102.806/0001-18		
Responsável Técnico FELIPE ROSSI TROJAN CREA: 164307-3		
<b>Projeto Estrutural</b>		
DISCRIMINAÇÃO: DETALHAMENTO ESTRUTURA METÁLICA E CORTE DA ESTRUTURA - PRÉDIO NOVO		
PROPRIETÁRIO(O): MUNICÍPIO DE RIO DOS CEDROS	CPF / CNPJ: 83.102.806/0001-18	
ENDEREÇO: Rua Tibério Bertoldi		
Nº: 150	CEP: 89.121-000	BAIRRO: Centro
CIDADE/UF: Rio dos Cedros/SC		
INSCR. IMOBILIÁRIA: -	DESENHO: FELIPE R. TROJAN	
Rua Almirante Jaceguay - 1320 Costa e Silva - Joinville - SC Fone : (47) 3278-5886 CREA: 099890-8-SC E-mail : comercial@marcostrojan.com.br www.marcostrojan.com.br		FOLHA: <b>10</b> / <b>13</b>



Planta de localização  
escala 1:50



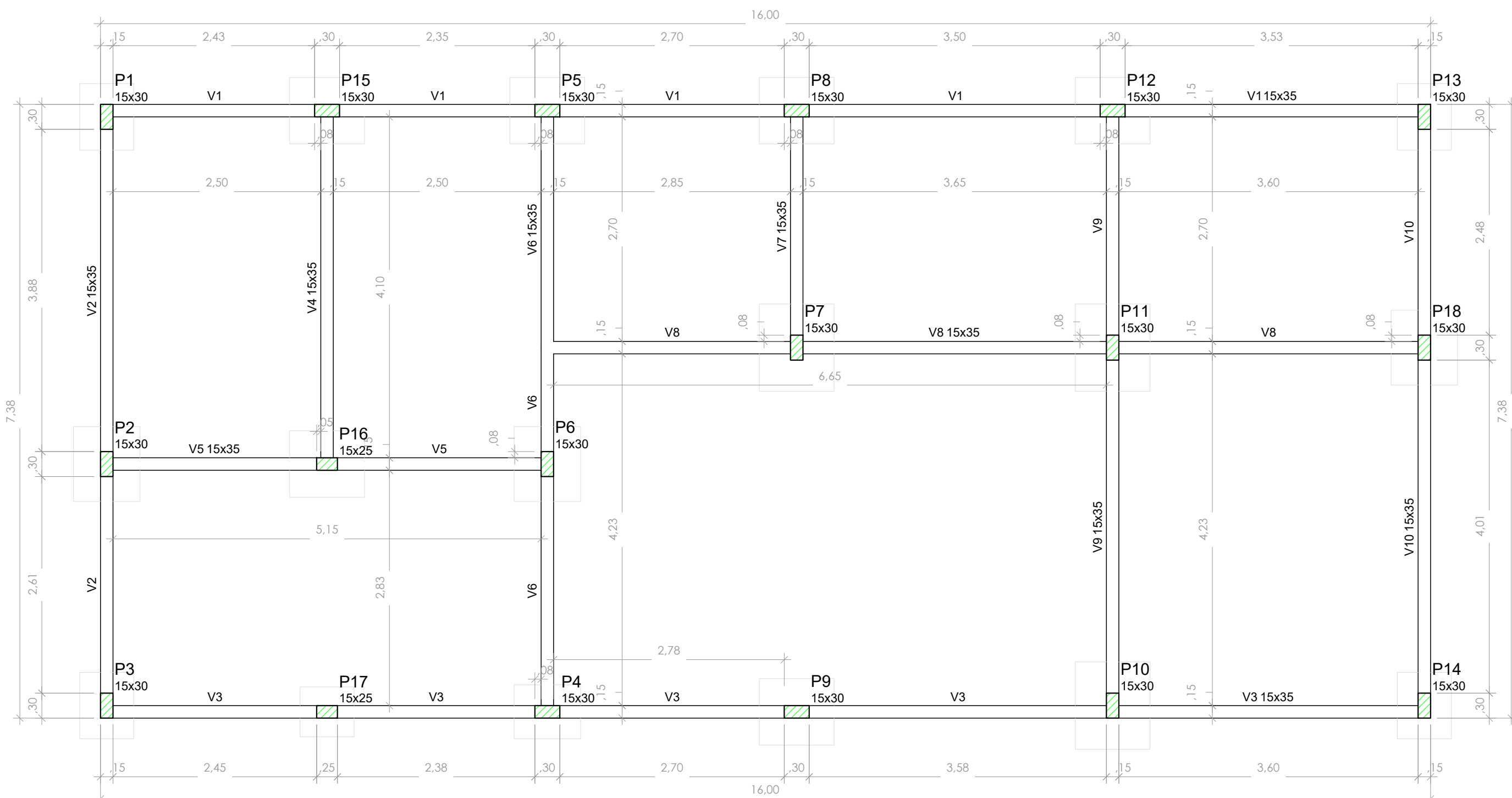
RELAÇÃO DO AÇO

CASO	N	DIAM (mm)	QUANT	C UNIT (cm)	C TOTAL (cm)
CA50	1	8.0	11	124	1364
CA50	2	8.0	5	125	625
CA50	3	8.0	24	89	2136
CA50	4	8.0	22	99	2178
CA50	5	8.0	14	124	1736
CA50	6	8.0	20	104	2080
CA50	7	8.0	28	104	2912
CA50	8	8.0	18	94	1692
CA50	9	8.0	18	94	1692

RESUMO DO AÇO

AÇO	DIAM (mm)	C TOTAL (m)	PESO + 10% (kg)
CA50	8.0	258.6	112.2
PESO TOTAL (kg)			112.2

Volume de concreto (C-25) = 3.28 m<sup>3</sup>  
Área de forma = 13.38 m<sup>2</sup>



Forma do pavimento Baldrame  
escala 1:50

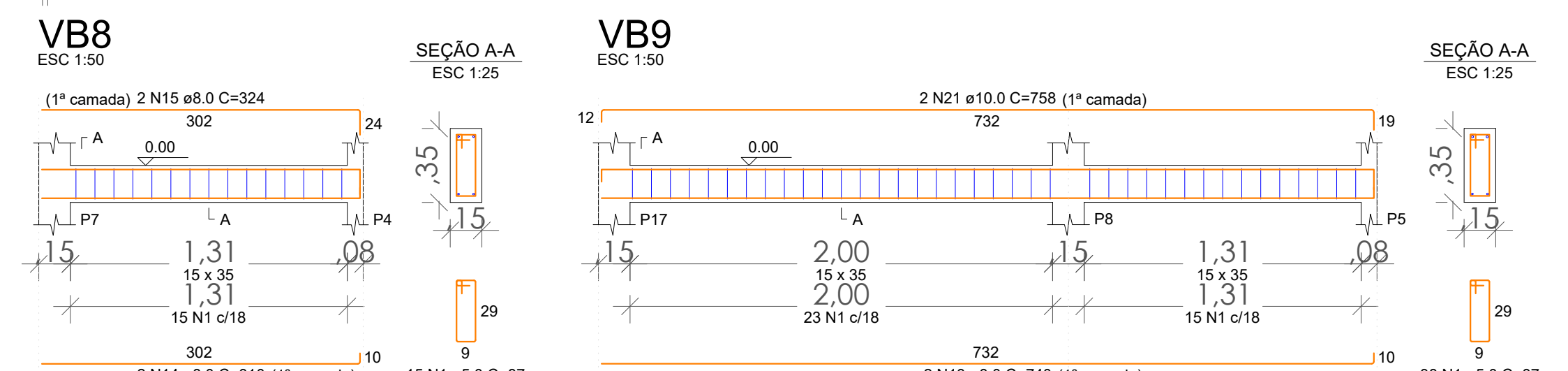
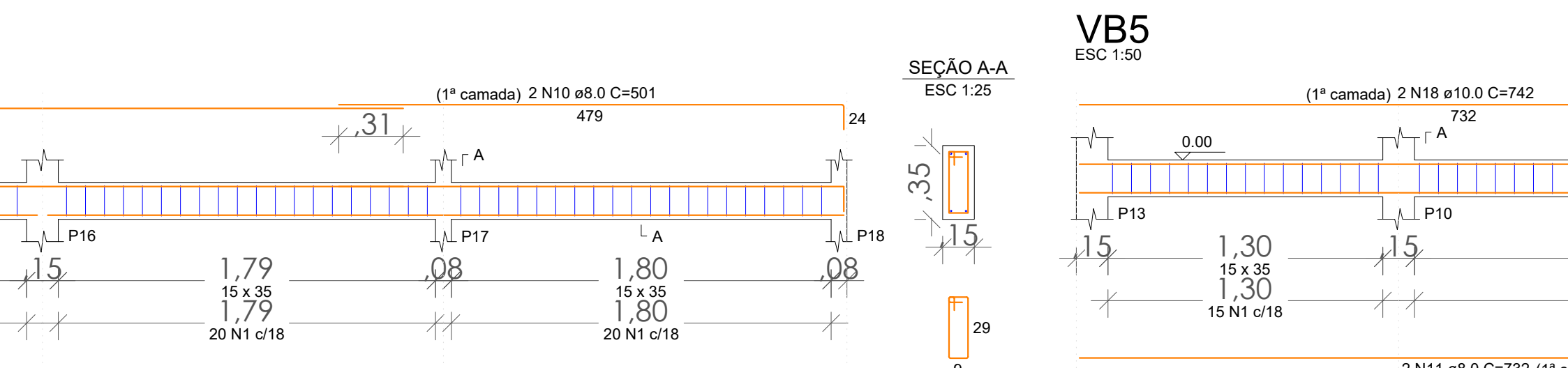
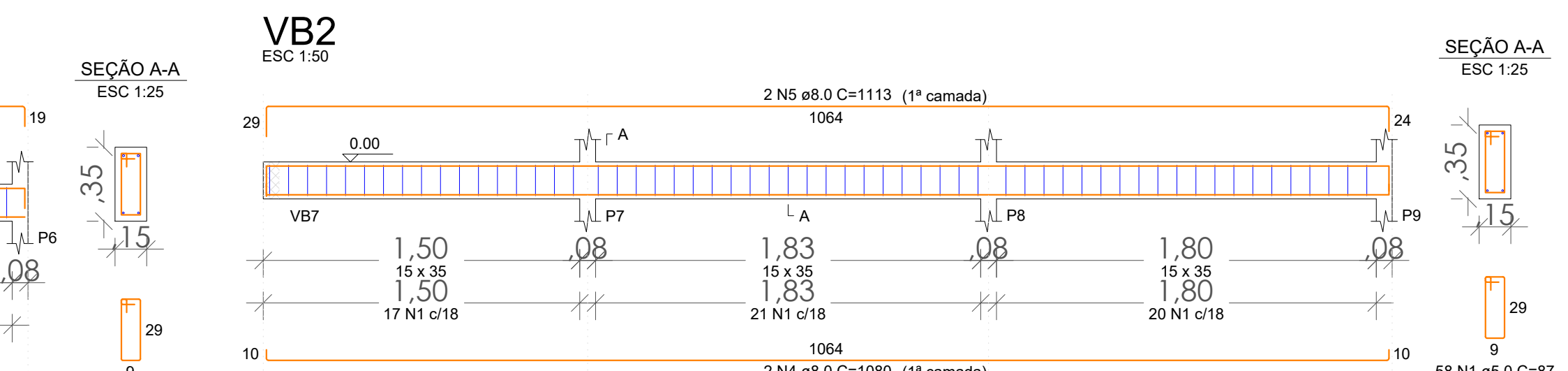
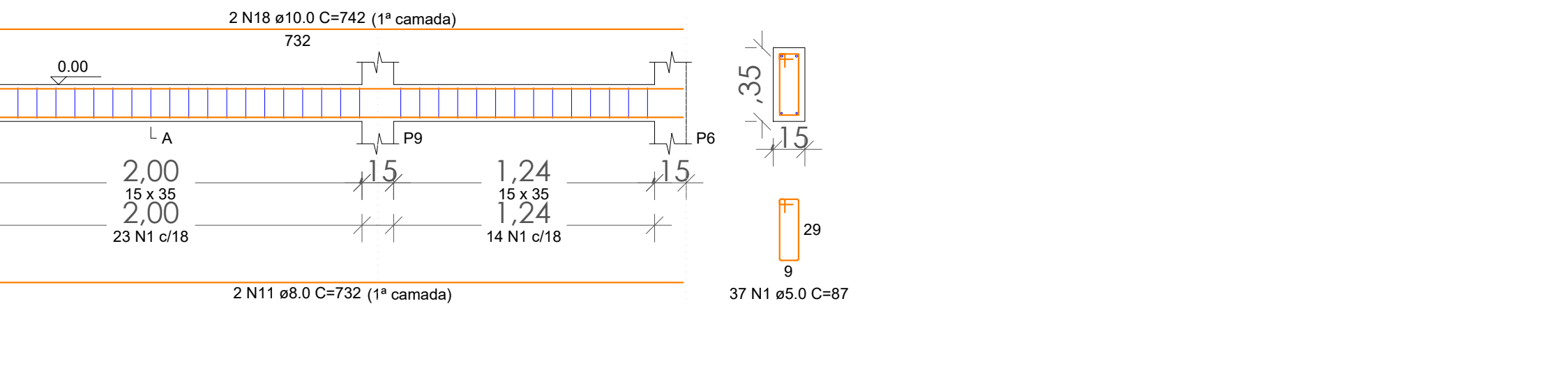
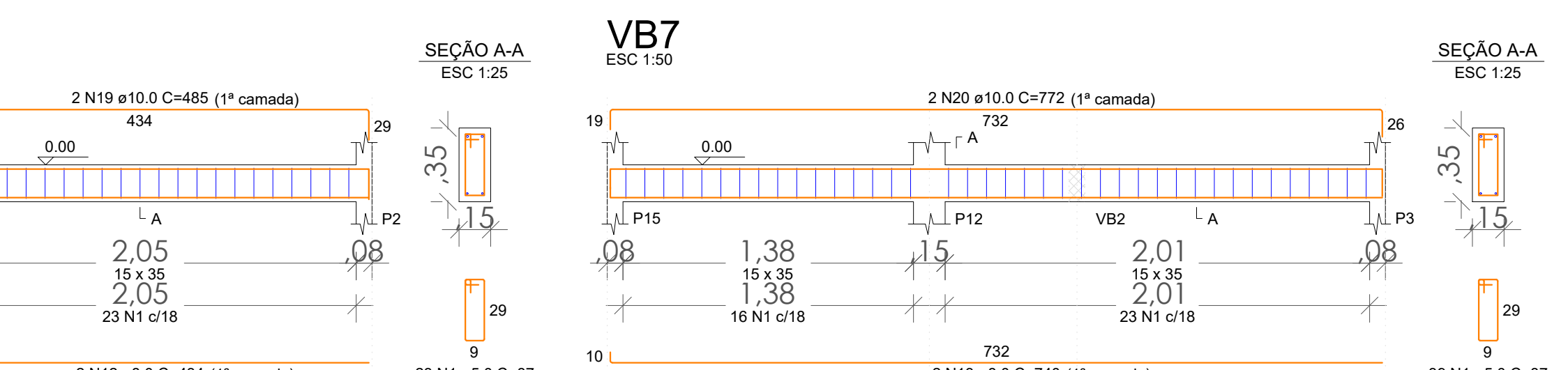
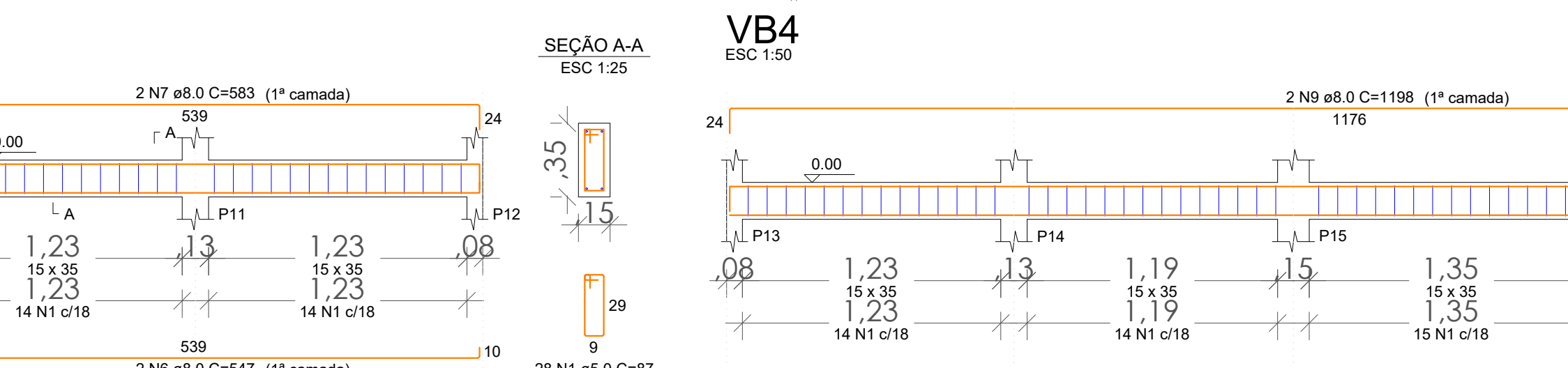
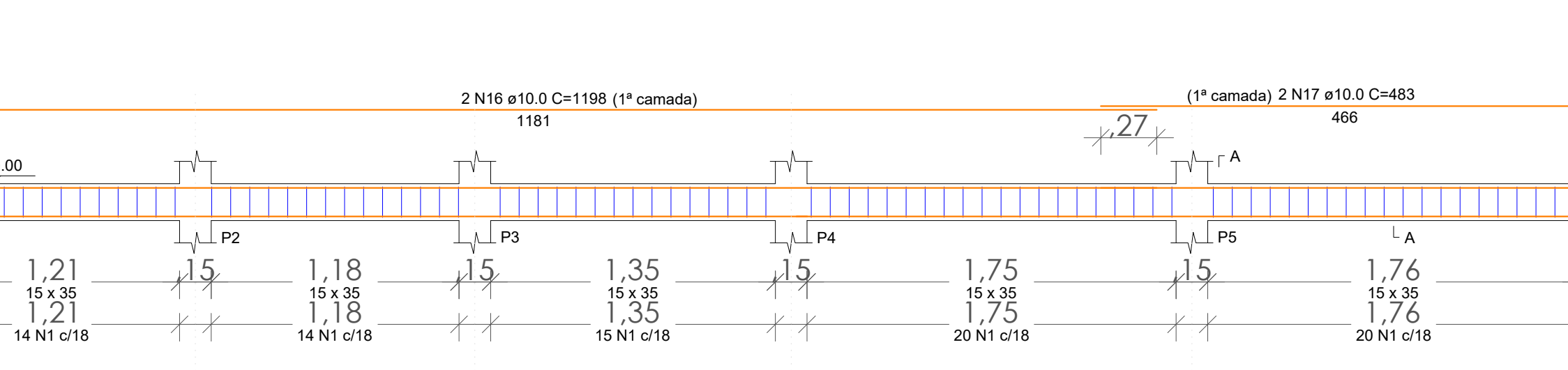
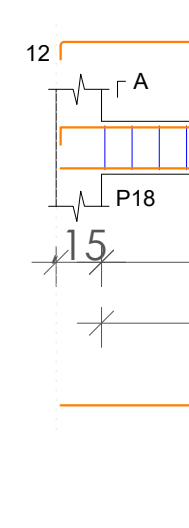
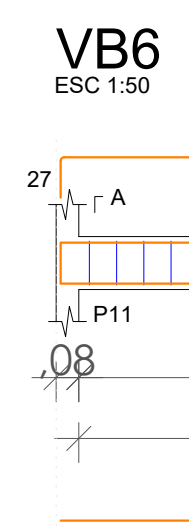
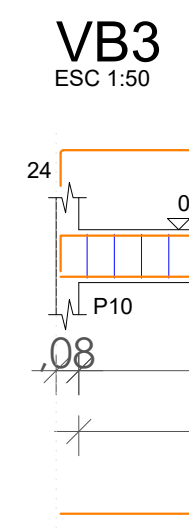
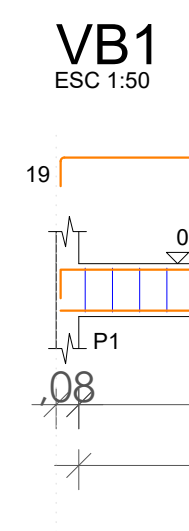
RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	C UNIT (cm)	C TOTAL (cm)
CA60	1	5.0	441	87	38367
CA60	2	8.0	2	850	1700
CA60	3	8.0	4	755	3020
CA60	4	8.0	2	1080	2160
CA60	5	8.0	2	1113	2226
CA60	6	8.0	2	547	1094
CA60	7	8.0	2	583	1166
CA60	8	8.0	2	630	1260
CA60	9	8.0	2	1198	2396
CA60	10	8.0	2	501	1002
CA60	11	8.0	4	732	2928
CA60	12	8.0	2	434	868
CA60	13	8.0	4	740	2960
CA60	14	8.0	2	310	620
CA60	15	8.0	2	324	648
CA60	16	10.0	2	1198	2396
CA60	17	10.0	2	483	966
CA60	18	10.0	2	742	1484
CA60	19	10.0	2	485	970
CA60	20	10.0	2	772	1544
CA60	21	10.0	2	758	1516

RESUMO DO AÇO

AÇO	DIAM (mm)	C TOTAL (m)	PESO + 10% (kg)
CA50	8.0	244.5	106.1
CA60	10.0	103.8	70.3
CA60	5.0	383.7	55.1
PESO TOTAL (kg)			231.5

Volume de concreto (C-25) = 4.47 m<sup>3</sup>  
Área de forma = 72.37 m<sup>2</sup>



REVISÃO: 00 DATA: 09/04/2020 DESCRIÇÃO: Emissão Inicial

CARIMBOS: \_\_\_\_\_ ASSINATURAS: \_\_\_\_\_

PROJETO: **Projeto Estrutural**

DISCRIMINAÇÃO: LOCAÇÃO E DETALHAMENTO DAS SAPATAS, PLANTA DE FORMA E DETALHAMENTO VIGAS BALDRAME - AMPLIAÇÃO COZINHA

PROPRIETÁRIO: MUNICÍPIO DE RIO DOS CEDROS CPF/CP/E: 83.102.806/0001-18

ENDEREÇO: Rua Tibério Bertoldi

NR: 150 CEP: 89.121-000 BARRIO: Centro CIDADE/UF: Rio dos Cedros/SC

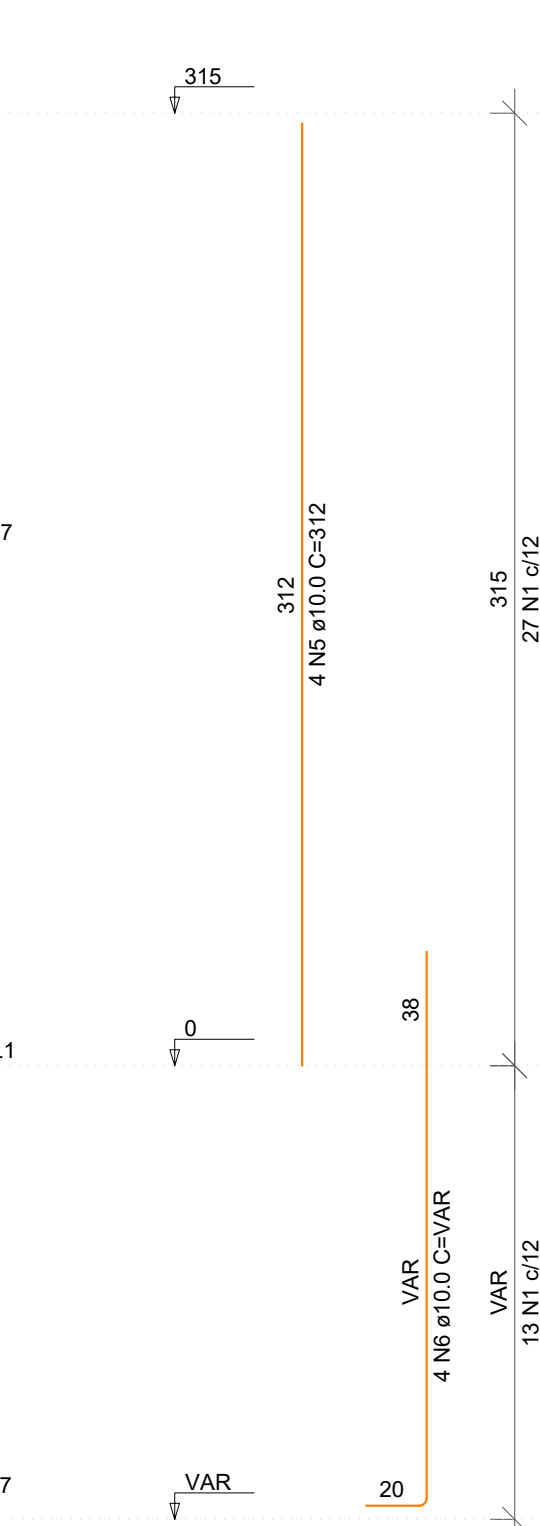
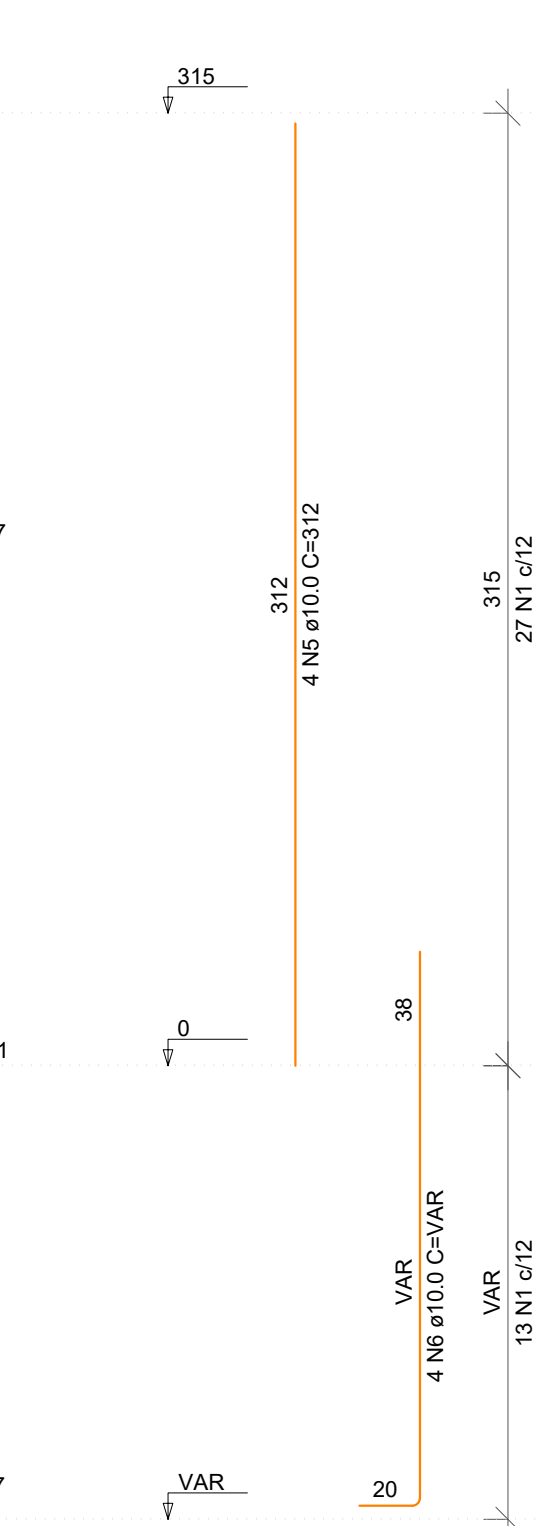
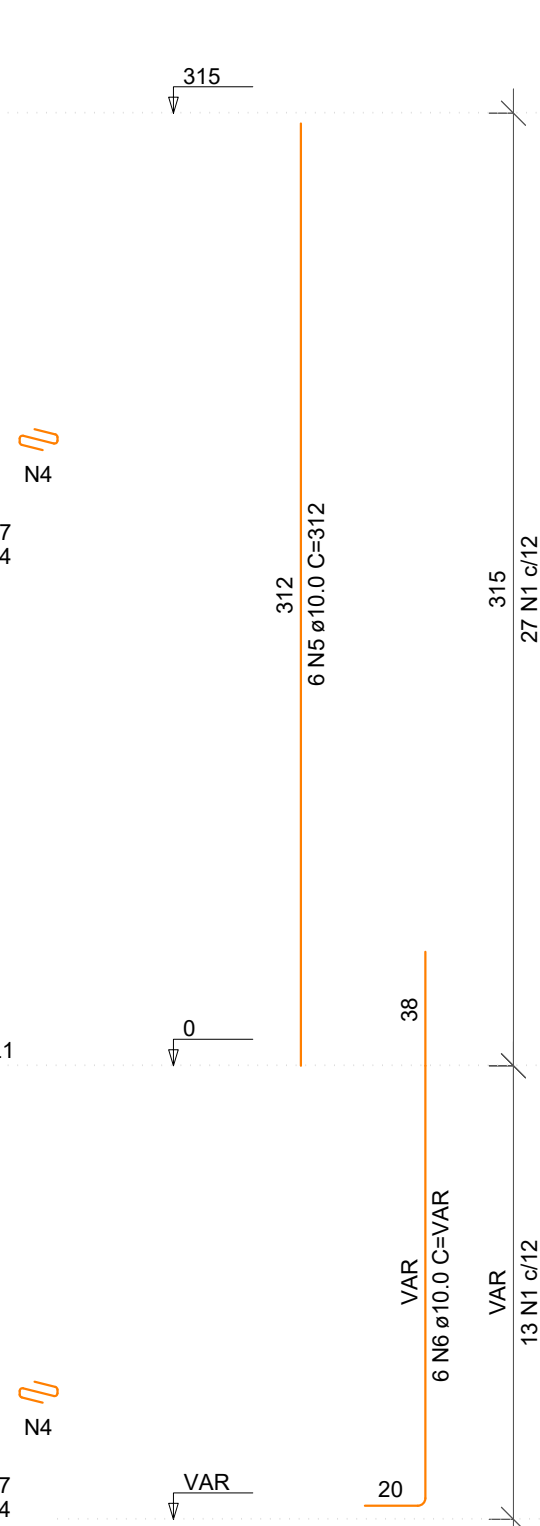
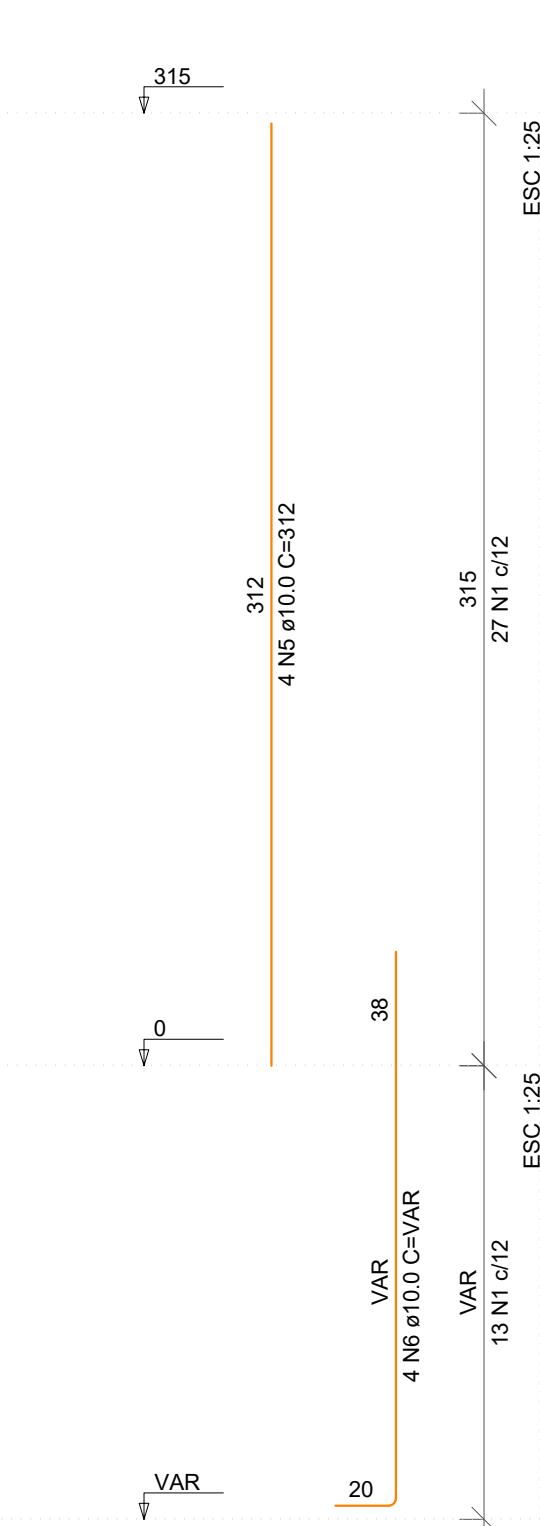
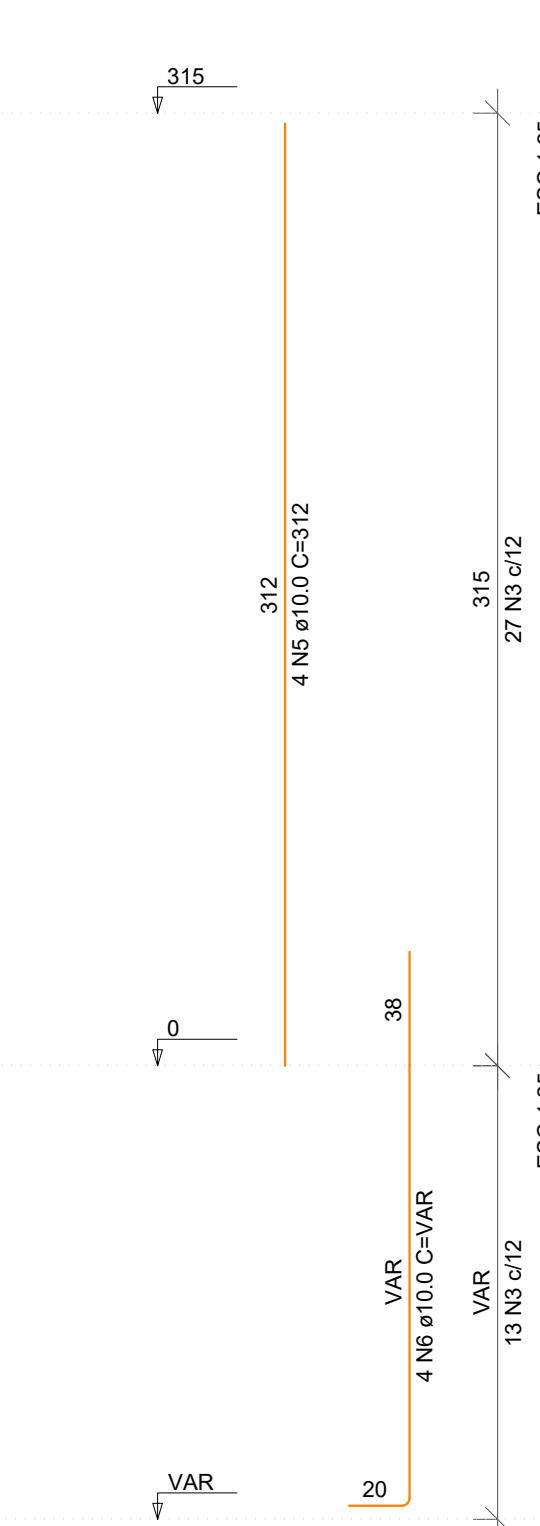
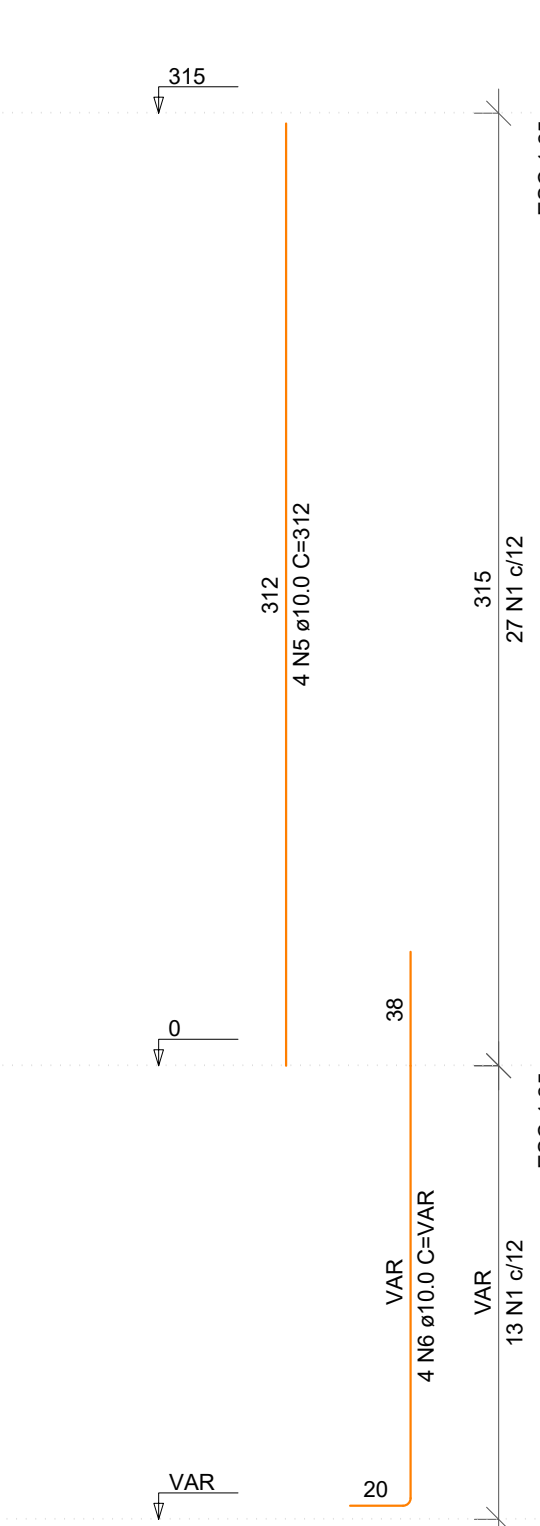
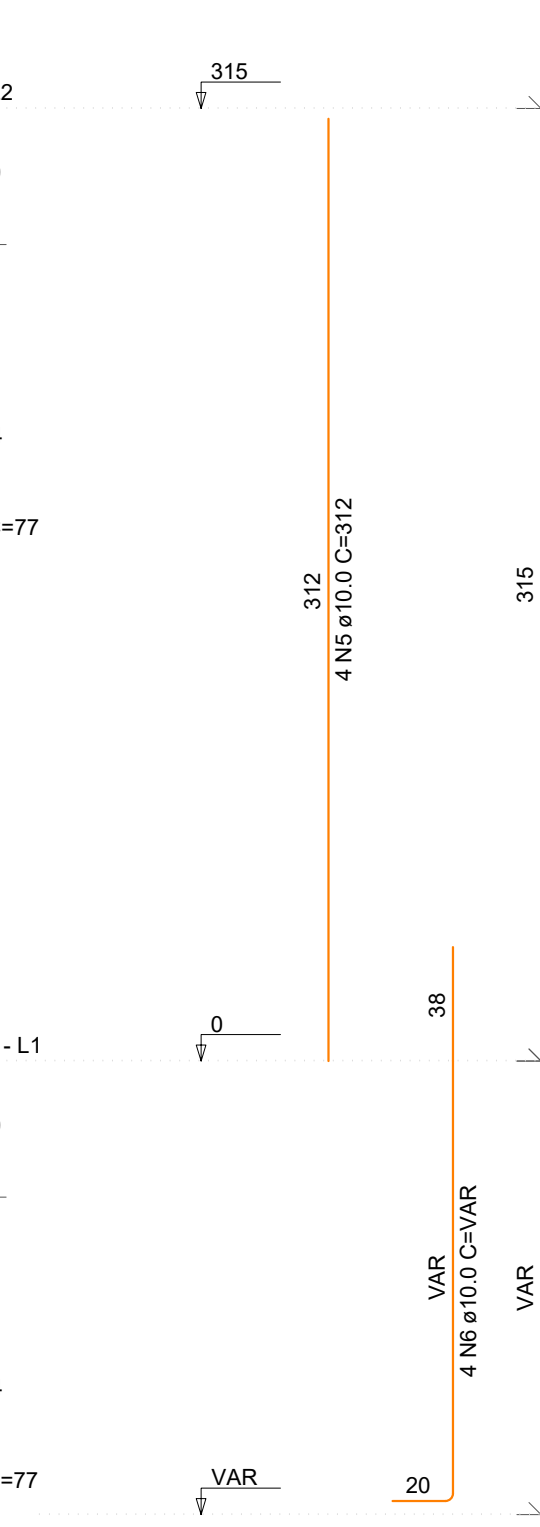
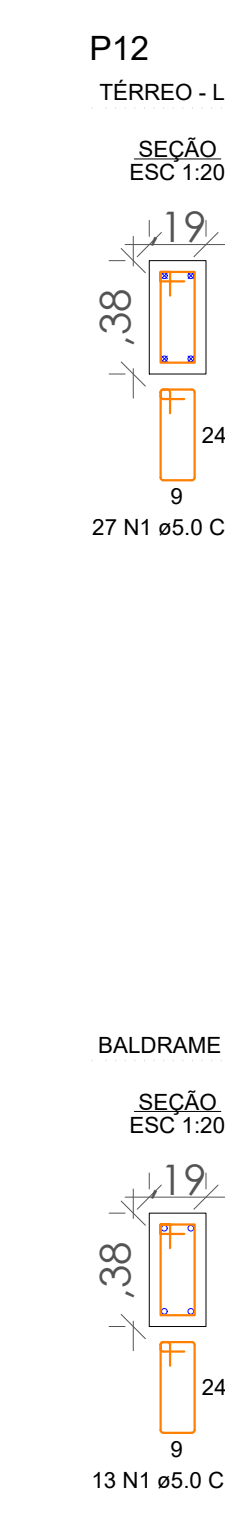
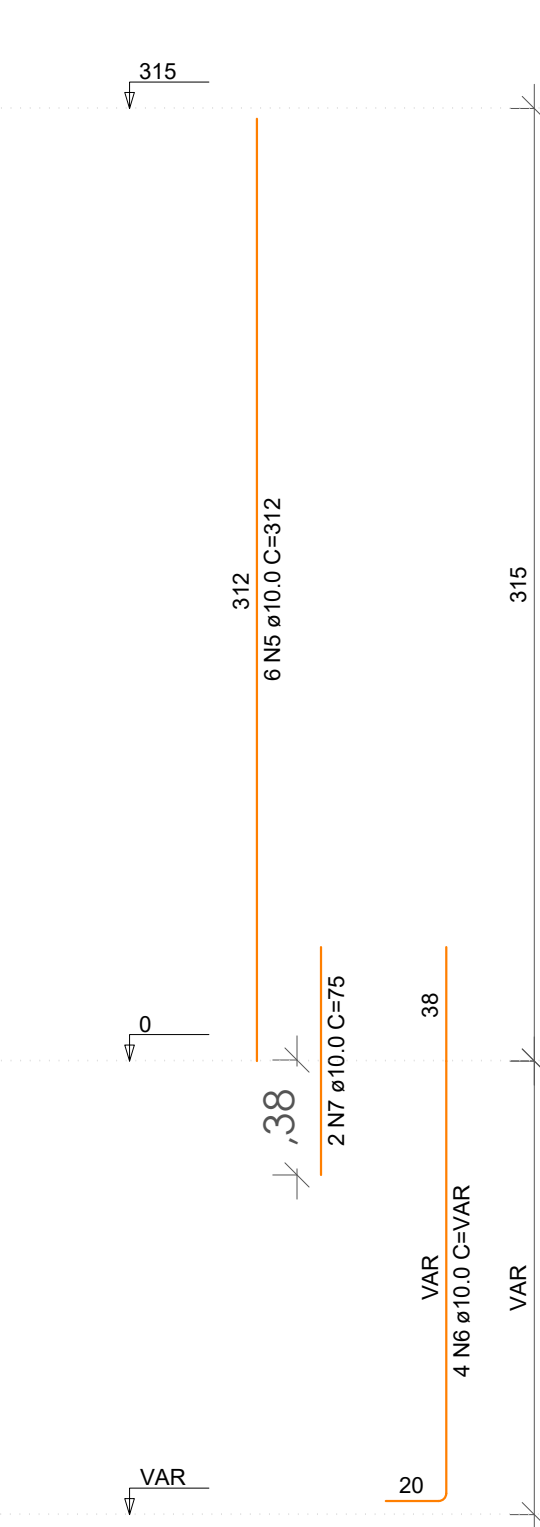
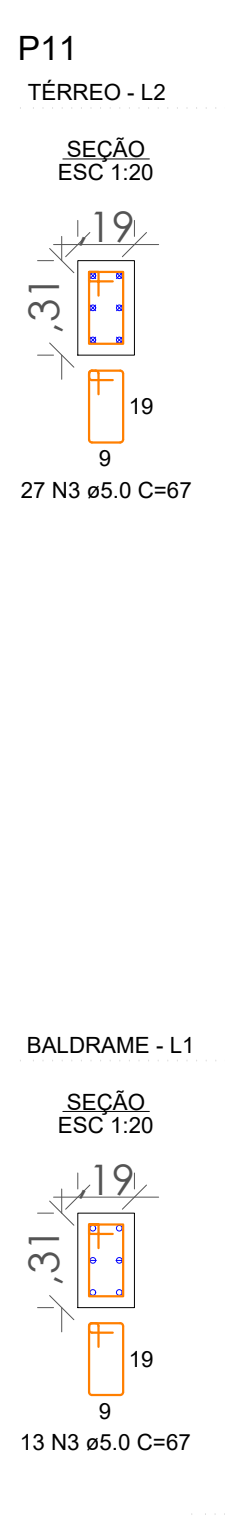
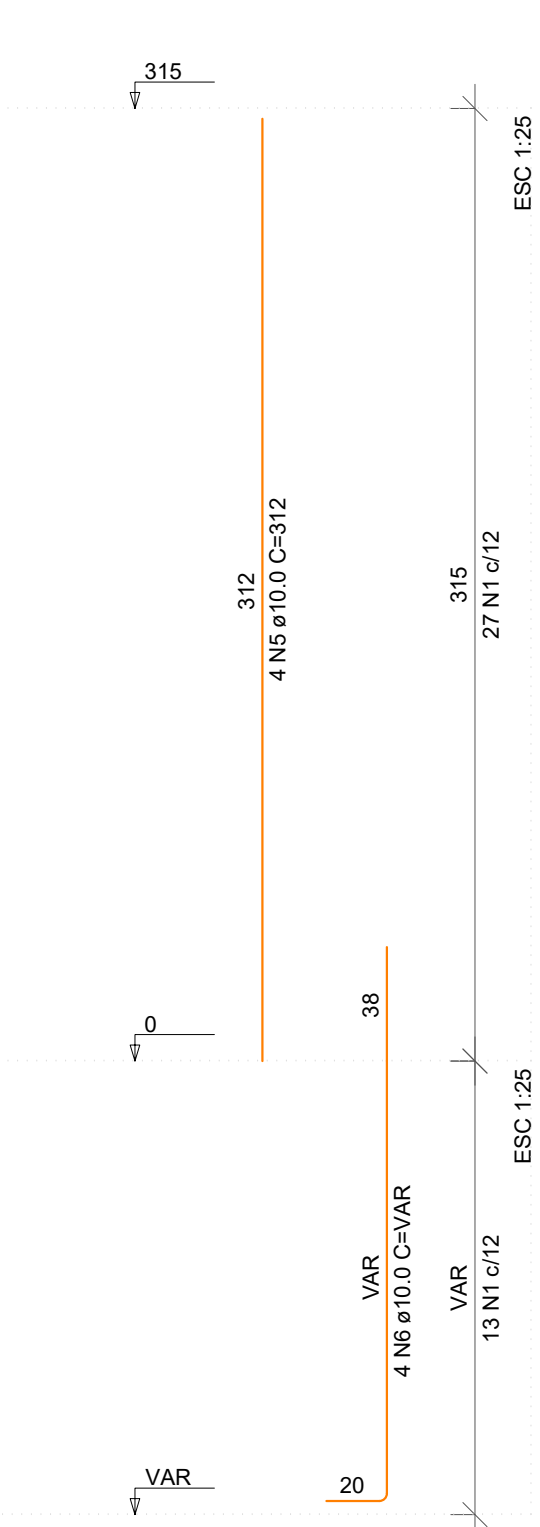
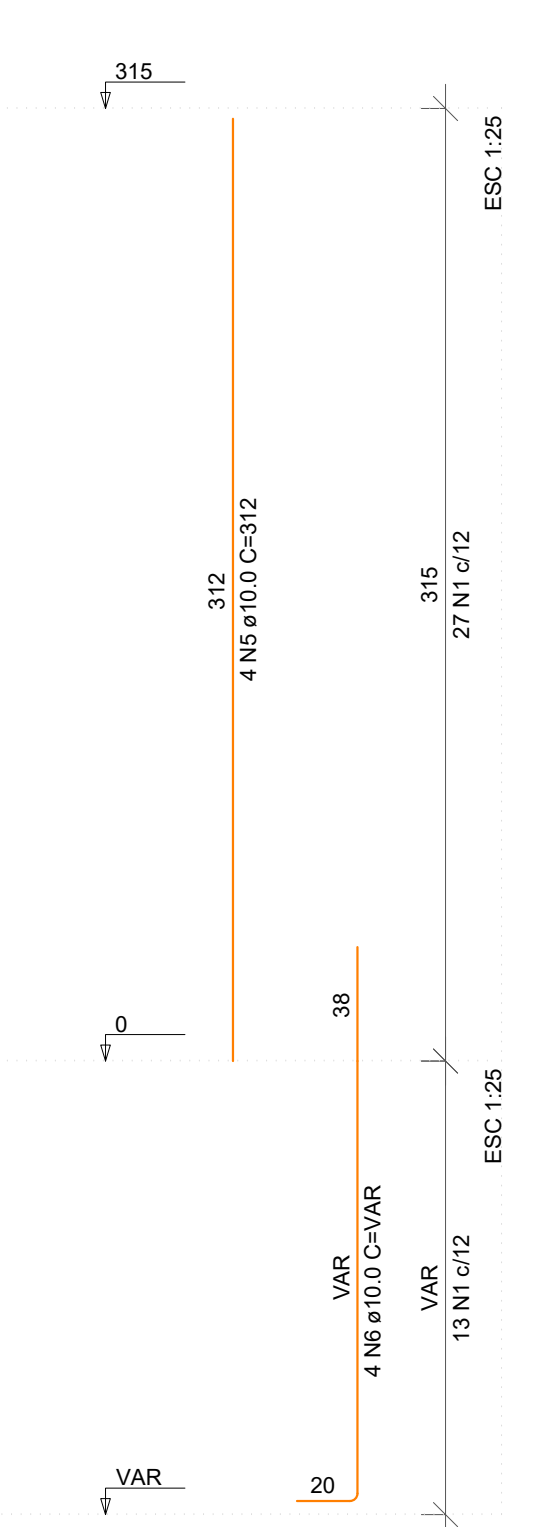
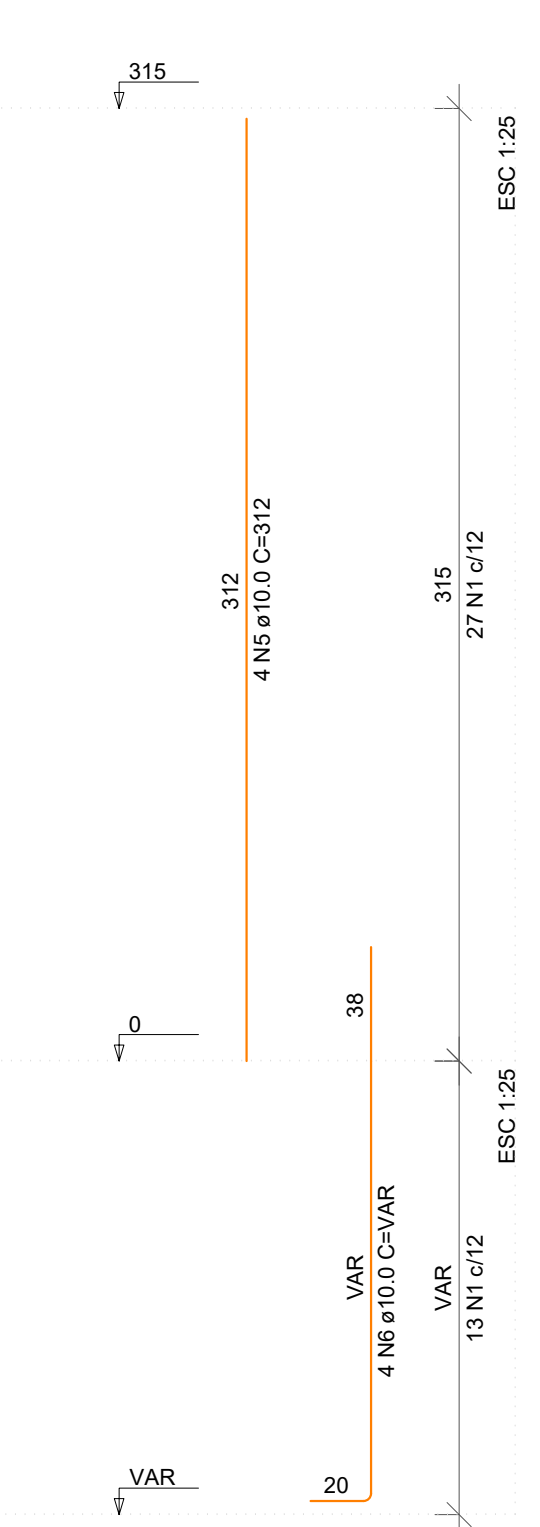
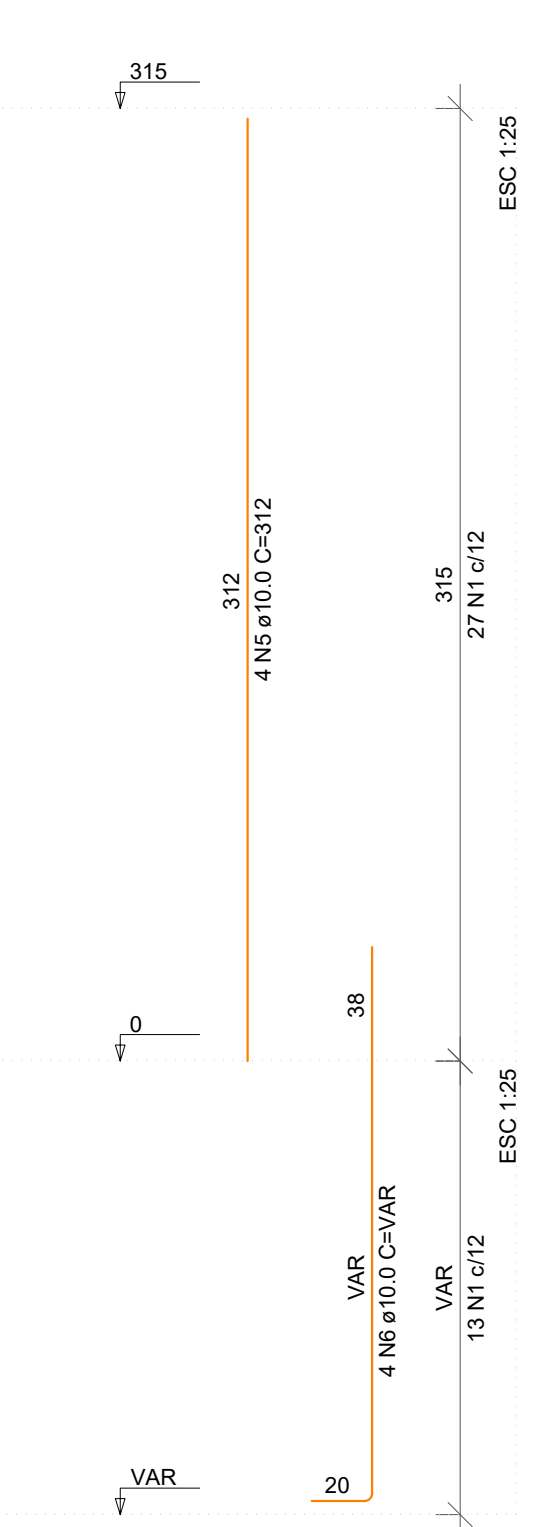
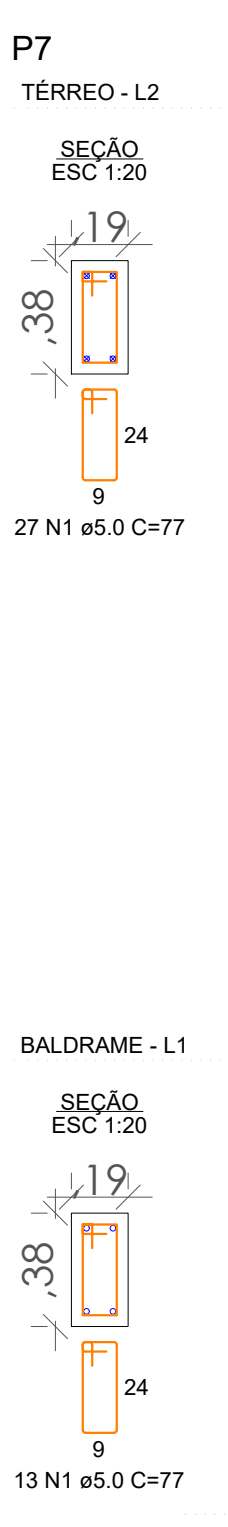
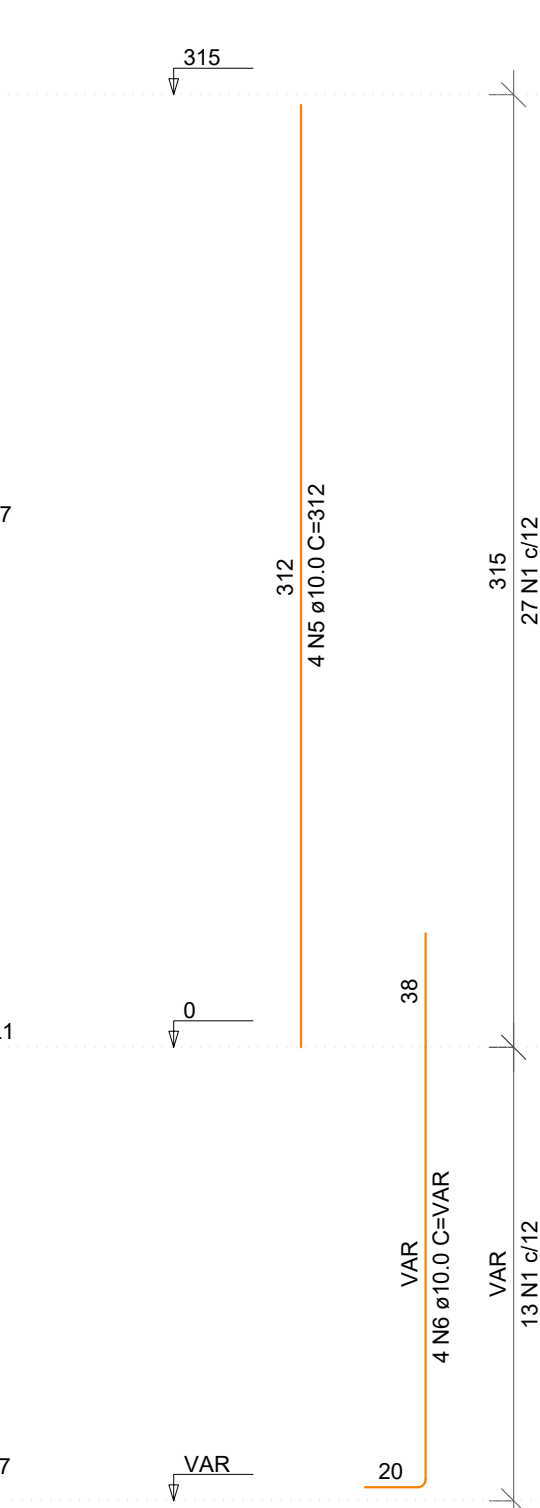
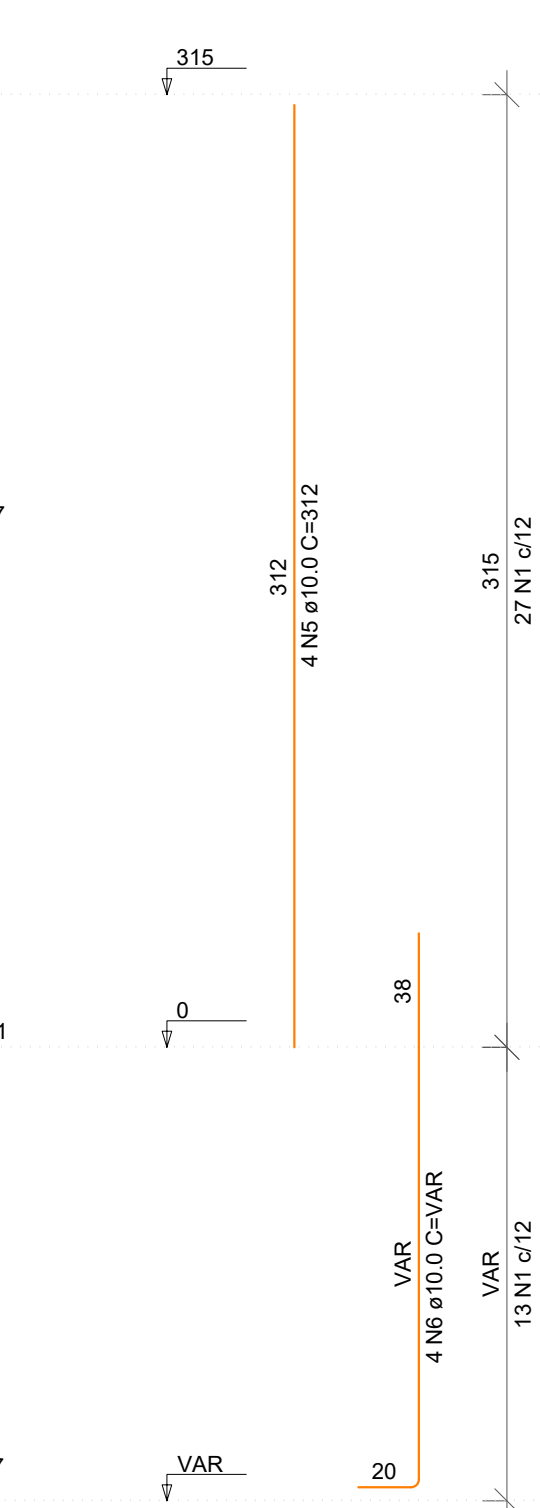
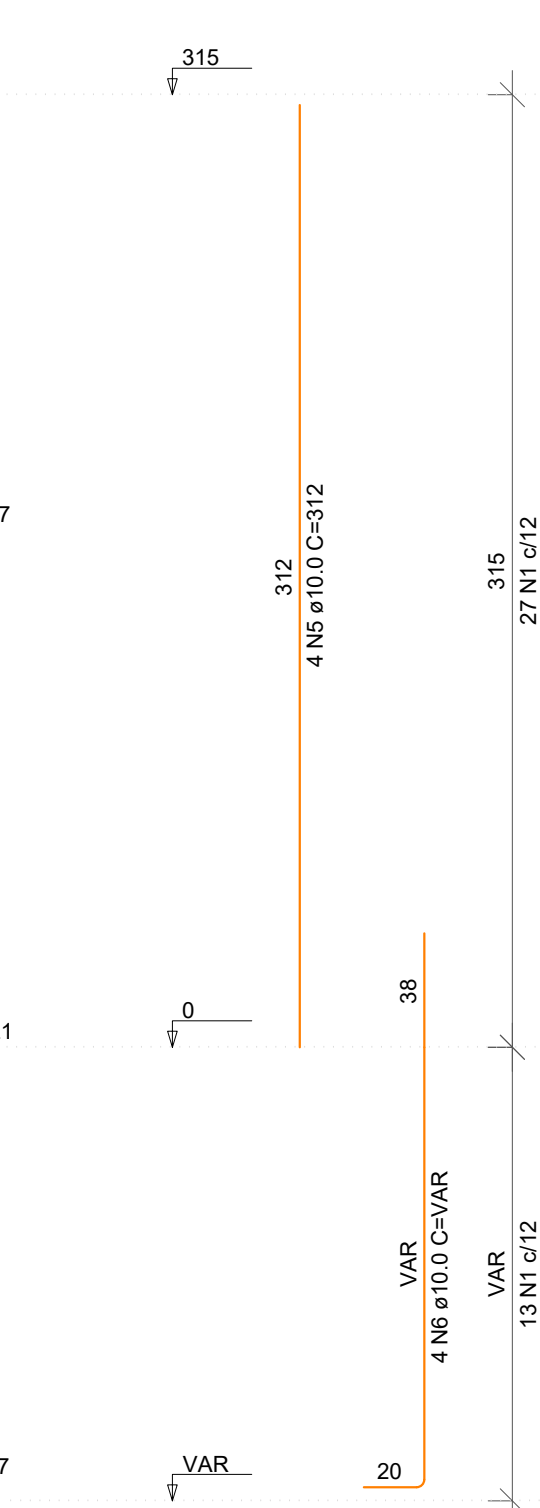
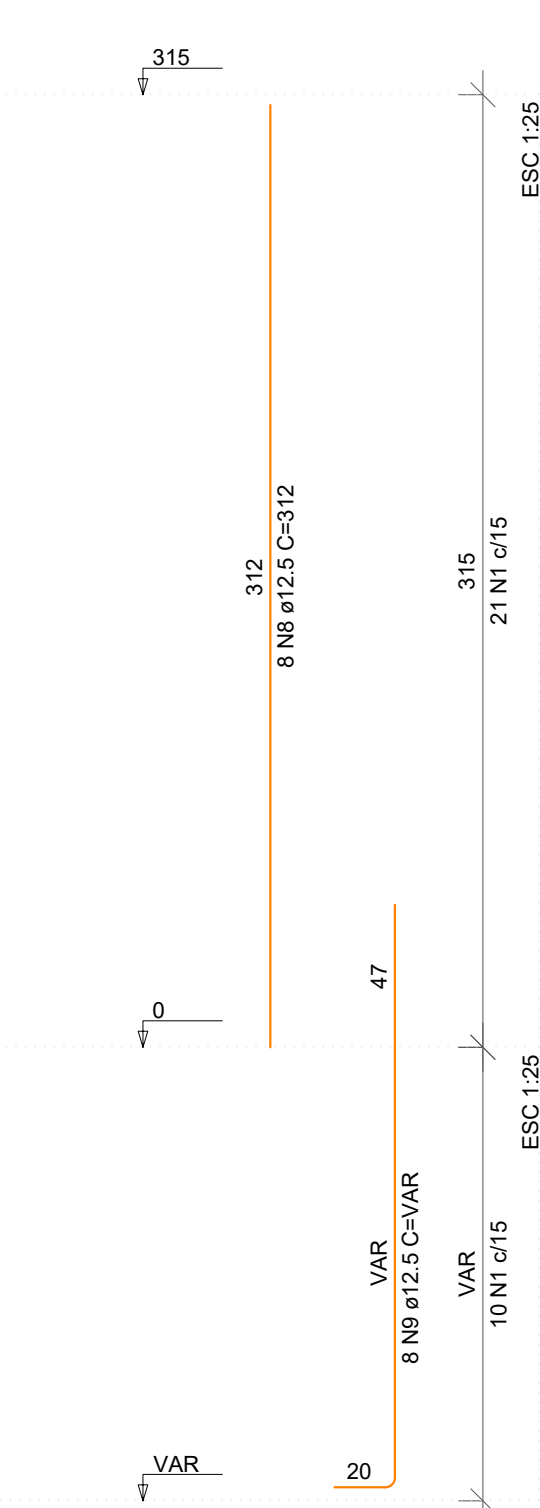
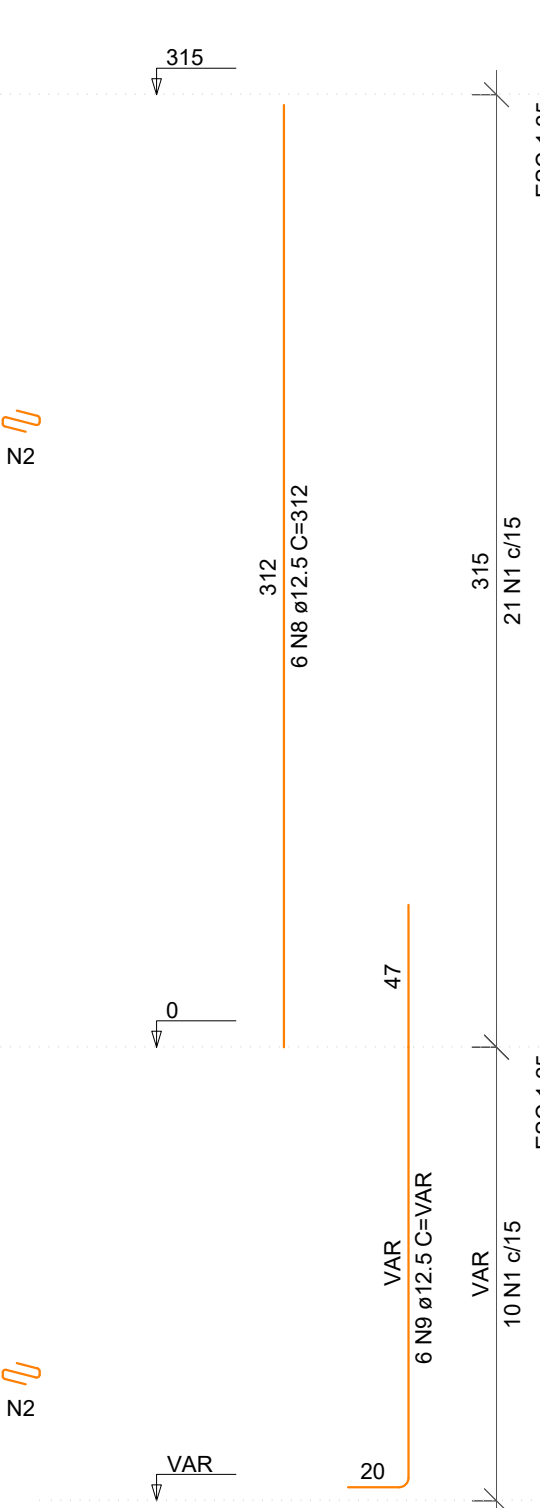
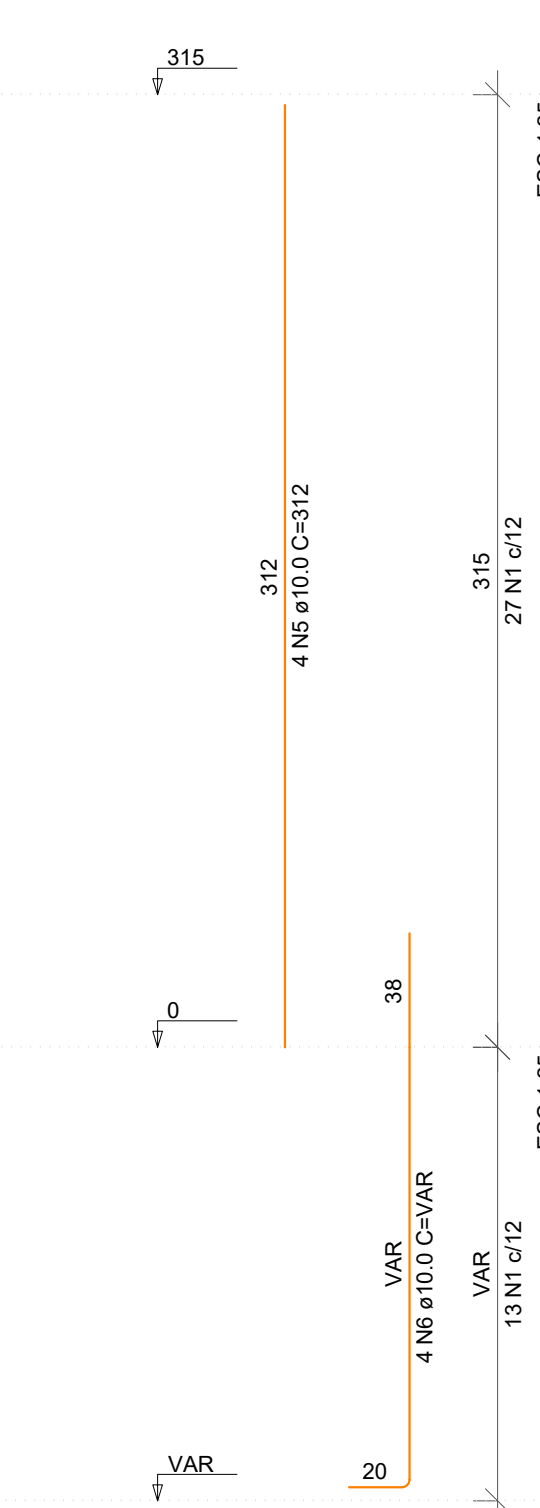
INSCR. IMOBILIAR: - DESENHO: FELIPE R. TROJAN

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Rua Almirante Joazeiro - 1.320  
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E-mail: comercial@marcotrojan.com.br  
www.marcostrojan.com.br

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RELAÇÃO DO AÇO

AÇO	N	DIAM (mm)	QUANT	CLUNT (cm)	C TOTAL (cm)
P1-L2	1	5.0	622	77	4794
P2-L2	2	5.0	31	24	744
P4-L2	3	5.0	80	67	5360
P5-L2	4	5.0	40	24	960
P6-L2	5	10.0	68	312	21216
P7-L2	6	10.0	66	VAR	VAR
P8-L2	7	10.0	2	75	150
P9-L2	8	12.5	14	312	4368
P10-L2	9	12.5	14	VAR	VAR
P11-L2					
P12-L2					
P13-L2					
P14-L2					
P15-L2					
P16-L2					
P17-L2					
P18-L2					

RESUMO DO AÇO

AÇO	DIAM (mm)	C TOTAL (m)	PESO + 10% (kg)
CA50	10.0	347	25.3
CA60	5.0	73.1	77.4
CA60	12.5	549.6	93.2
PESO TOTAL (kg)			195.9
CA50			312.8
CA60			93.2

Volume de concreto (C-25) = 3.70 m³  
 Área de forma = 74.40 m²

REVISÃO: 00 DATA: 09/04/2020 DESCRIÇÃO: Emissão Inicial

CARIMBOS: \_\_\_\_\_ ASSINATURAS: \_\_\_\_\_

PROJETO: **Projeto Estrutural**

DISCRIMINAÇÃO: DETALHAMENTO DOS PILARES - AMPLIAÇÃO COZINHA

PROPRIETÁRIO: MUNICÍPIO DE RIO DOS CEDROS CPF / CNPJ: 83.102.806/0001-18

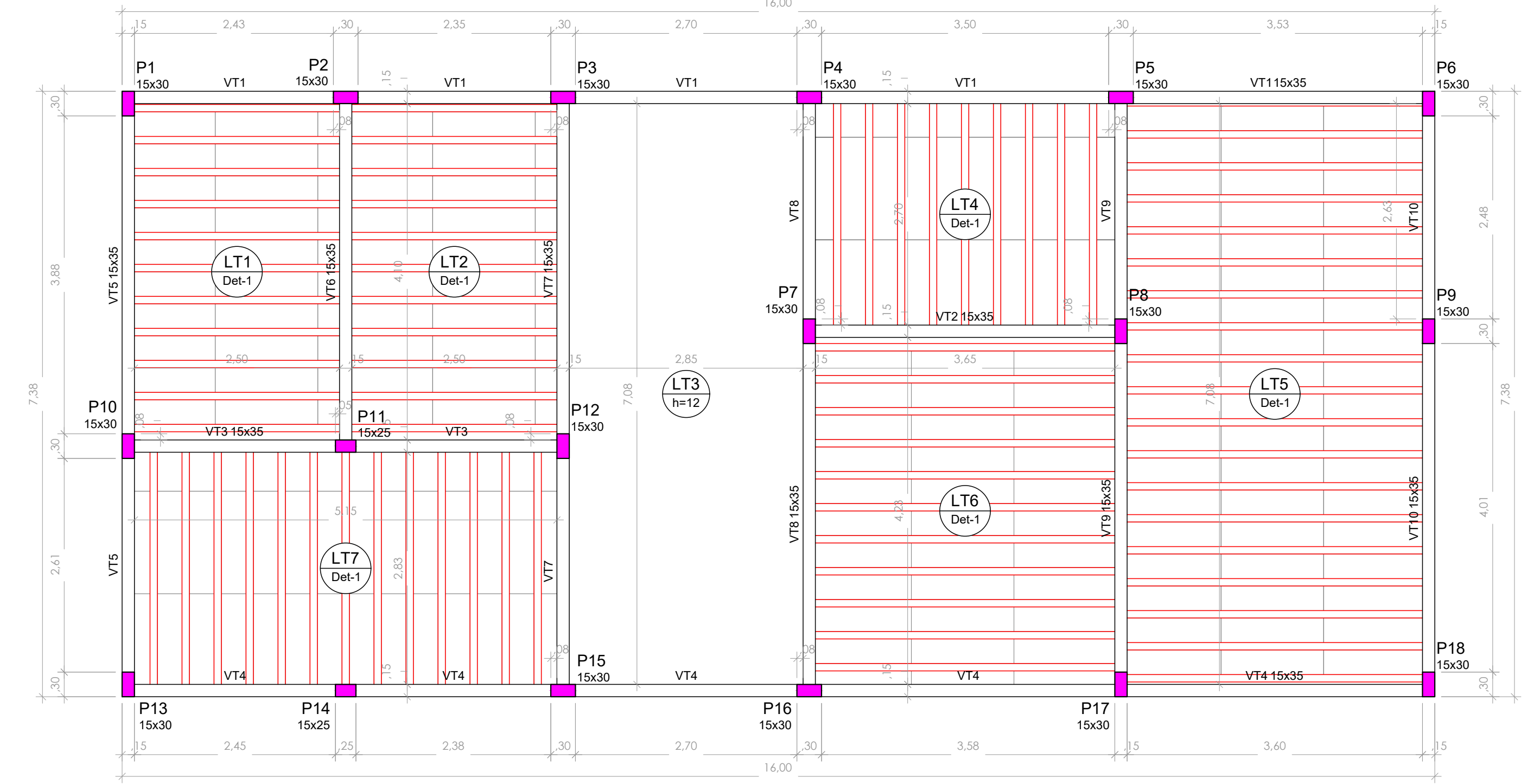
ENDEREÇO: Rua Tibério Bertoldi

NR: 150 CEP: 89.121-000 BARRIO: Centro CIDADE/UF: Rio dos Cedros/SC

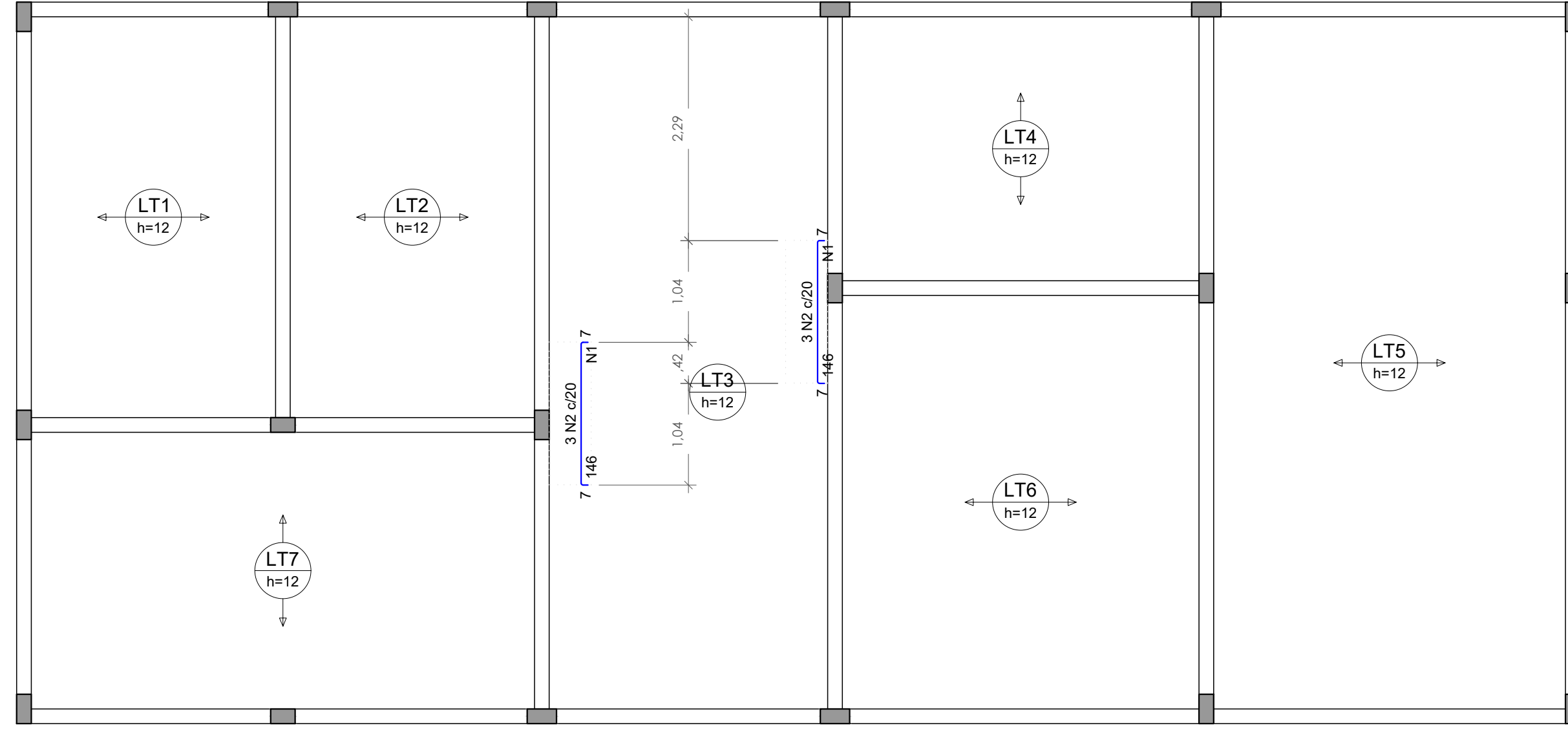
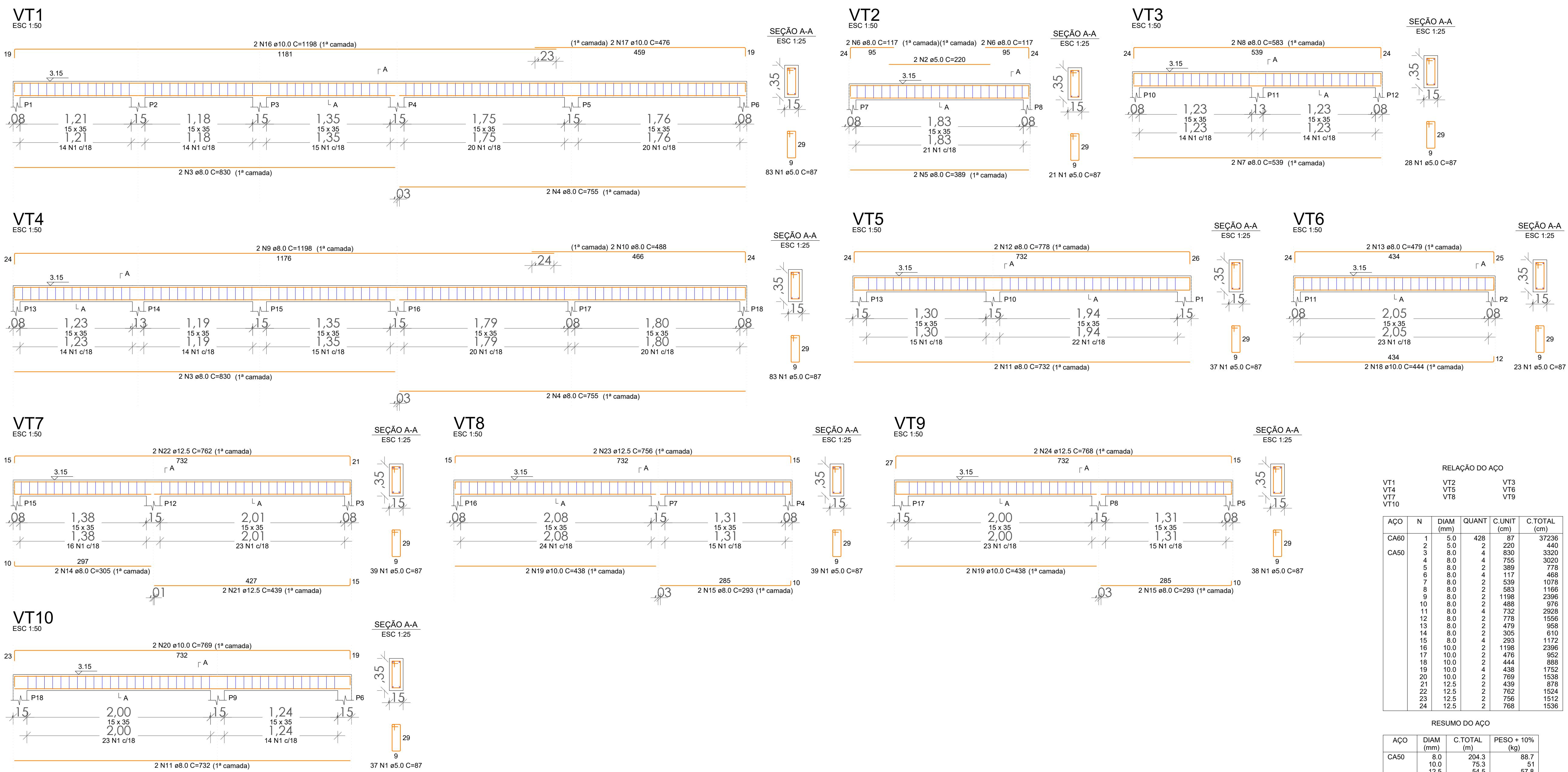
INSCR. IMOBILIAR: - DESENHO: FELIPE R. TROJAN

marcos trojan engenharia e geotecnia Rua Almirante Joazeiro - 1320 Costa e Silva - Joinville - SC Fone: (47) 3278-5885 CREA: 099690-A-SC E-mail: comercial@marcotrojan.com.br www.marcostrojan.com.br

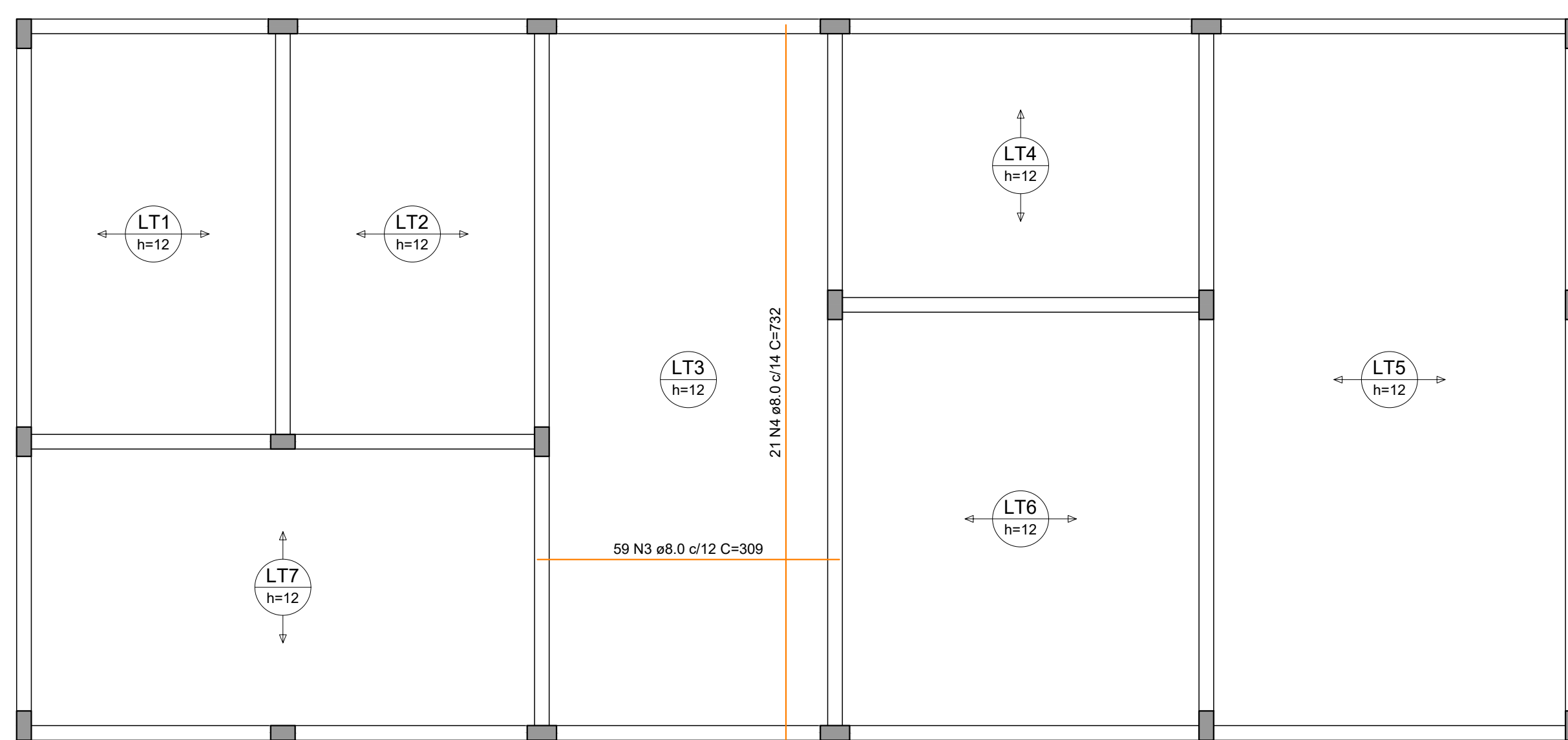
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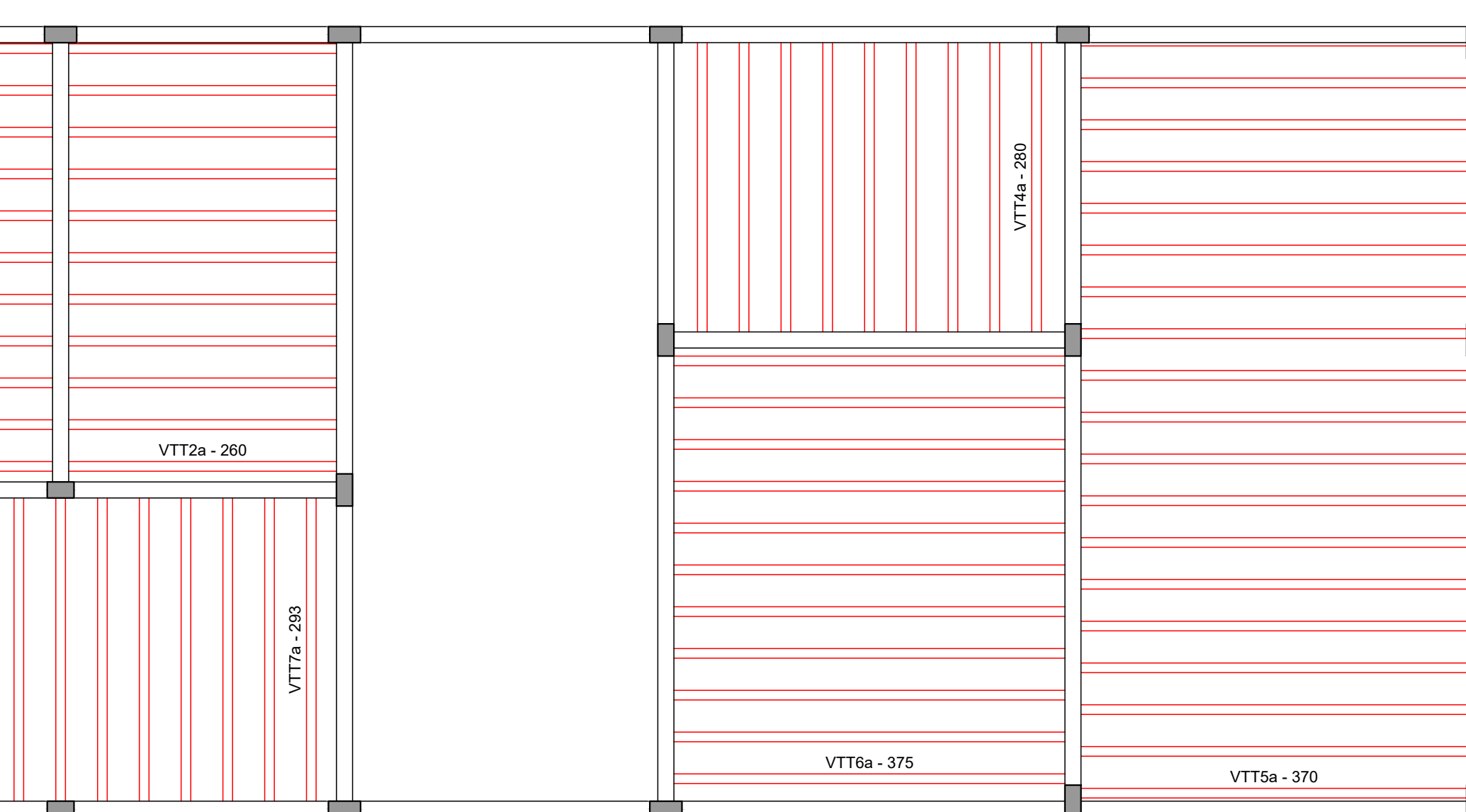
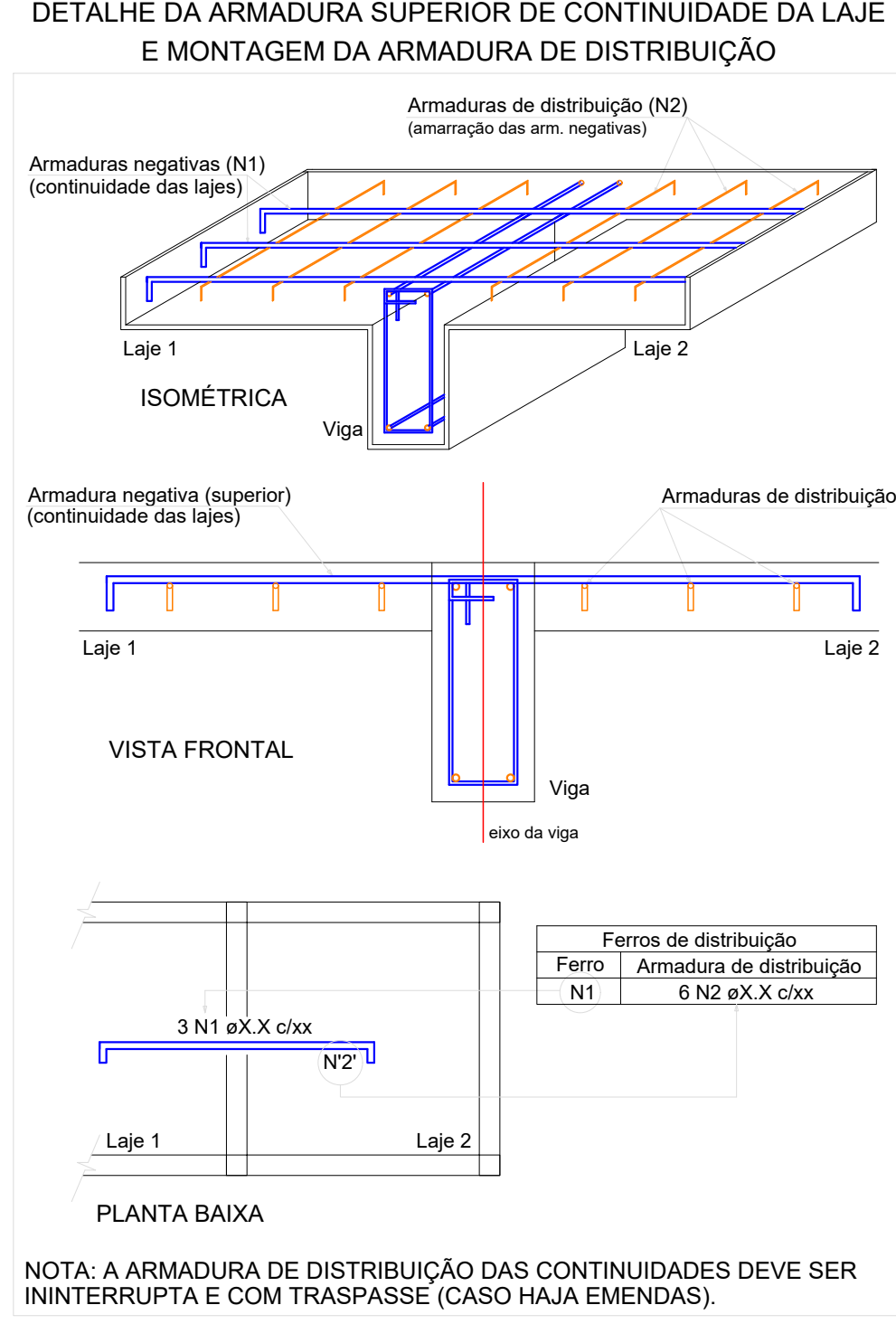
Forma do pavimento Térreo (Nível 3.15)  
escala 1:50



Armação negativa das lajes do pavimento Térreo (Eixo Y)  
escala 1:50



Armação positiva das lajes do pavimento Térreo  
escala 1:50

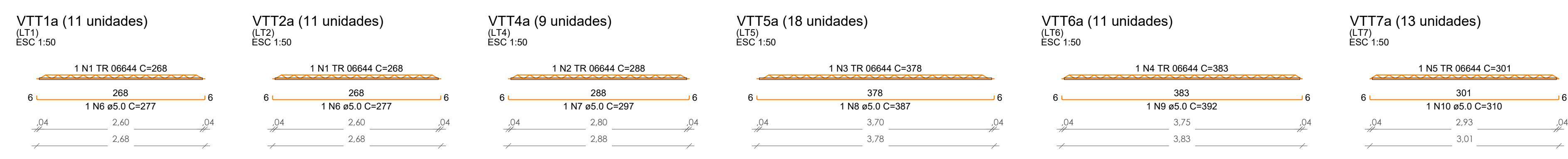


Planta de vigotas pré-moldadas  
escala 1:50

CAO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
11xVTT1a	1	8.0	22	268	5896
18xVTT5a	2	8.0	9	208	2592
	3	8.0	16	378	6048
	4	8.0	11	363	4113
	5	8.0	13	301	3913
	6	8.0	22	277	6094
	7	8.0	8	297	2376
	8	8.0	18	387	6966
	9	8.0	11	392	4312
	10	8.0	13	310	4030

CAO	DIAM (mm)	C.TOTAL (m)	PESO + 10% (kg)
CAO 1	8.0	240.8	88.7
CAO 2	8.0	234.2	83.9
<b>PESO TOTAL (kg)</b>			<b>172.6</b>
CAO		224	

Volume de concreto (C-25) = 0.00 m³  
Área de forma = 0.00 m²



REVISÃO: 00 DATA: 09/04/2020 DESCRIÇÃO: Emissão Inicial

CARIMBOS: \_\_\_\_\_ ASSINATURAS: \_\_\_\_\_

PROJETO: Projeto Estrutural

DISCRIMINAÇÃO: DETALHAMENTO DAS LAJES - AMPLIAÇÃO COZINHA

PROPRIETÁRIO: MUNICÍPIO DE RIO DOS CEDROS CPF/CNPJ: 83.102.806/0001-18

ENDEREÇO: Rua Tibério Bertoldi

NR: 150 CEP: 89.121-000 BARRIO: Centro CIDADE/UF: Rio dos Cedros/SC

INSCR. IMOBILIAR: \_\_\_\_\_ DESENHO: FELIPE R. TROJAN

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