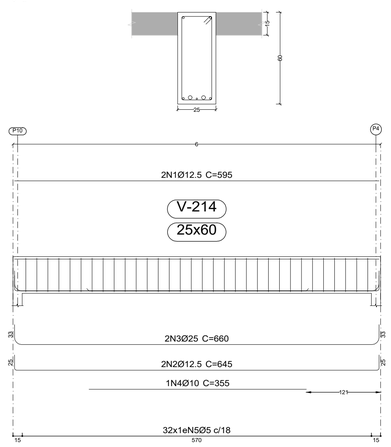
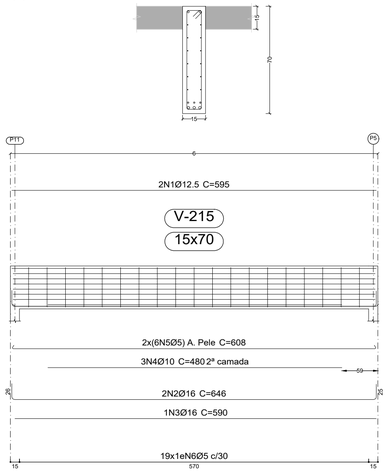
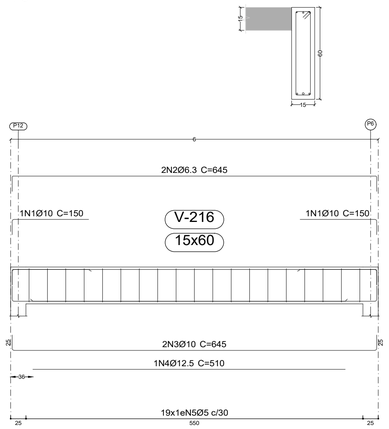
V 6



V 7

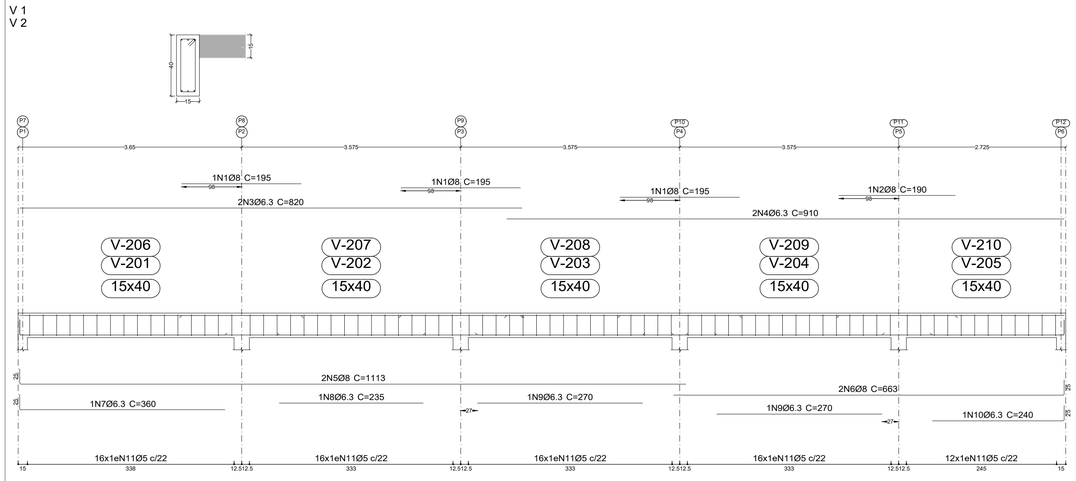


V 8

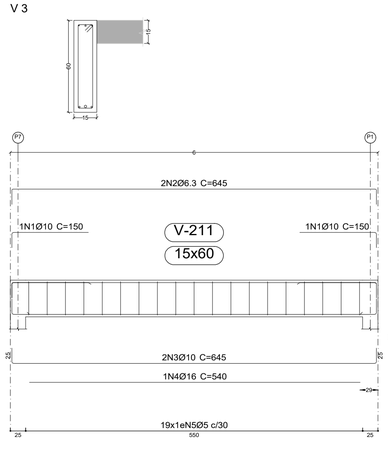


Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 1=V 2	1	Ø8	3	195	195	585	2.3	
	2	Ø8	1	190	190	190	0.8	
	3	Ø6.3	2	820	820	1640	4.0	
	4	Ø6.3	2	910	910	1820	4.5	
	5	Ø8	2	20 1088 20	1113	2226	8.8	
	6	Ø8	2	638 20	663	1326	5.2	
	7	Ø6.3	1	20 335	360	360	0.9	
	8	Ø6.3	1	235	235	235	0.6	
	9	Ø6.3	2	270	270	540	1.3	
	10	Ø6.3	1	215 20	240	240	0.6	
	11	Ø5	76	35 9 10	98	7448		11.7
						Total:	29.0	11.7
						(x2):	58.0	23.4
V 3	1	Ø10	2	20 125 20	150	300	1.8	
	2	Ø6.3	2	20 595 20	645	1290	3.2	
	3	Ø10	2	20 595 20	645	1290	7.9	
	4	Ø16	1	540	540	540	8.5	
	5	Ø5	19	35 9 10	138	2622		4.1
						Total:	21.4	4.1
V 4	1	Ø12.5	2	595	595	1190	11.5	
	2	Ø25	2	20 595 20	660	1320	50.9	
	3	Ø20	1	565	565	565	13.9	
	4	Ø10	2	405	405	810	5.0	
	5	Ø5	32	35 9 20	158	5056		7.9
						Total:	81.3	7.9
V 5	1	Ø12.5	2	595	595	1190	11.5	
	2	Ø16	2	20 595 20	647	1294	20.4	
	3	Ø16	1	595	595	595	9.4	
	4	Ø10	3	485	485	1455	9.0	
	5	Ø5	12	595 4	608	7296		11.5
	6	Ø5	19	35 9 10	158	3002		4.7
						Total:	50.3	16.2
V 6	1	Ø12.5	2	595	595	1190	11.5	
	2	Ø12.5	2	20 595 20	645	1290	12.4	
	3	Ø25	2	20 595 20	660	1320	50.9	
	4	Ø10	1	355	355	355	2.2	
	5	Ø5	32	35 9 20	158	5056		7.9
						Total:	77.0	7.9
V 7	1	Ø12.5	2	595	595	1190	11.5	
	2	Ø16	2	20 595 20	646	1292	20.4	
	3	Ø16	1	590	590	590	9.3	
	4	Ø10	3	480	480	1440	8.9	
	5	Ø5	12	595 4	608	7296		11.5
	6	Ø5	19	35 9 10	158	3002		4.7
						Total:	50.1	16.2
V 8	1	Ø10	2	20 125 20	150	300	1.8	
	2	Ø6.3	2	20 595 20	645	1290	3.2	
	3	Ø10	2	20 595 20	645	1290	7.9	
	4	Ø12.5	1	510	510	510	4.9	
	5	Ø5	19	35 9 10	138	2622		4.1
						Total:	17.8	4.1
						Ø5:	0.0	79.8
						Ø6.3:	30.2	0.0
						Ø8:	34.2	0.0
						Ø10:	44.5	0.0
						Ø12.5:	63.3	0.0
						Ø16:	68.0	0.0
						Ø20:	13.9	0.0
						Ø25:	101.8	0.0
						Total:	355.9	79.8

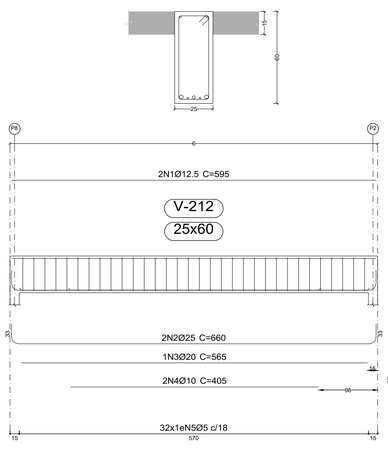
V 1
V 2



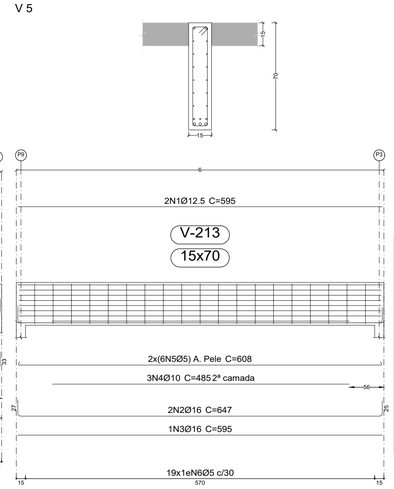
V 3



V 4



V 5



COBERTURA
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60
Escala vigas 1:50
Escala seções 1:20
Escala aberturas 1:20
Cobrimentos: 2.5 cm

Resumo Aço Desenho de vigas		Comp. total (m)	Peso (kg)	Total
CA-50	Ø6.3	122.5	30	
	Ø8	86.5	34	
	Ø10	72.4	45	
	Ø12.5	65.6	63	
	Ø16	43.1	68	
	Ø20	5.7	14	
	Ø25	26.4	102	356
CA-60	Ø5	508.5	80	80
Total				436

Projeto: 022/2025	EDUCACIONAL	Data: 09/2026
Local:	Novorizonte - MG	
Nome:	Prefeitura Municipal de Novorizonte - MG	
Des.no.:	Planta: Cálculo Estrutural Reforma/Adequação e Ampliação da Escola Municipal de Havana	
Autor: Paloma Almeida Duarte - CREA-MG 366944		07/08