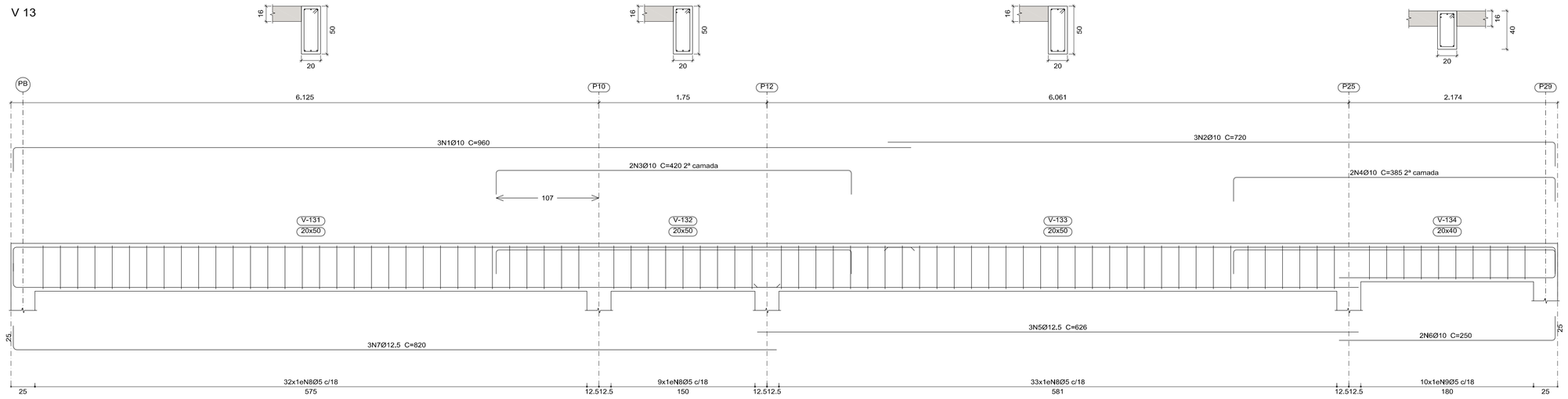
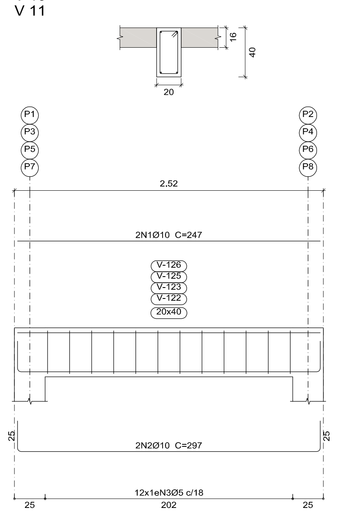
Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 1	1	Ø10	3	20 480	505	1515	9.3	
	2	Ø10	3	1175	1175	3525	21.7	
	3	Ø10	3	900 20	925	2775	17.1	
	4	Ø10	2	20 375 20	425	850	5.2	
	5	Ø10	3	20 790	815	2445	15.1	
	6	Ø10	3	529	529	1587	9.8	
	7	Ø10	3	679	679	2037	12.6	
	8	Ø10	3	395 20	420	1260	7.8	
	9	Ø5	94	30 S 15	108	10152		15.9
	10	Ø5	27	45 S 15	128	3456		5.4
					Total+10%:	108.5		23.4
V 3=V 4	1	Ø10	3	20 960	985	2955	18.2	
	2	Ø10	3	835 20	860	2580	15.9	
	3	Ø12.5	2	20 190 20	245	490	4.7	
	4	Ø12.5	2	20 215 20	265	530	5.1	
	5	Ø12.5	2	20 220 20	270	540	5.2	
	6	Ø6.3	2	20 247	272	544	1.3	
	7	Ø16	2	20 528 20	578	1156	18.2	
	8	Ø10	3	1052 20	1077	3231	19.9	
	9	Ø5	66	30 S 15	108	7128		11.2
	10	Ø5	27	45 S 15	128	3456		5.4
					Total+10%:	97.4		18.3
					(x2):	194.8		36.6
V 7=V 8=V 10=V 11	1	Ø10	2	247	247	494	3.0	
	2	Ø10	2	20 247 20	297	594	3.7	
	3	Ø5	12	30 S 15	108	1296		2.0
					Total+10%:	7.4		2.2
					(x4):	29.6		8.8
V 12	1	Ø10	3	20 935	960	2880	17.7	
	2	Ø10	3	665 20	690	2070	12.8	
	3	Ø10	2	20 370 20	420	840	5.2	
	4	Ø10	2	20 335 20	385	770	4.7	
	5	Ø12.5	3	640	640	1920	18.5	
	6	Ø10	2	179 20	204	408	2.5	
	7	Ø12.5	3	20 795	820	2460	23.7	
	8	Ø5	75	45 S 15	128	9600		15.1
	9	Ø5	8	30 S 15	108	864		1.4
					Total+10%:	93.6		18.2
V 13	1	Ø10	3	20 935	960	2880	17.7	
	2	Ø10	3	695 20	720	2160	13.3	
	3	Ø10	2	20 370 20	420	840	5.2	
	4	Ø10	2	20 335 20	385	770	4.7	
	5	Ø12.5	3	626	626	1878	18.1	
	6	Ø10	2	20 225 20	250	500	3.1	
	7	Ø12.5	3	20 795	820	2460	23.7	
	8	Ø5	74	45 S 15	128	9472		14.9
	9	Ø5	10	30 S 15	108	1080		1.7
					Total+10%:	94.4		18.3

Ø5:	0.0	105.3
Ø6.3:	2.8	0.0
Ø10:	352.5	0.0
Ø12.5:	125.4	0.0
Ø16:	40.2	0.0
Total:	520.9	105.3

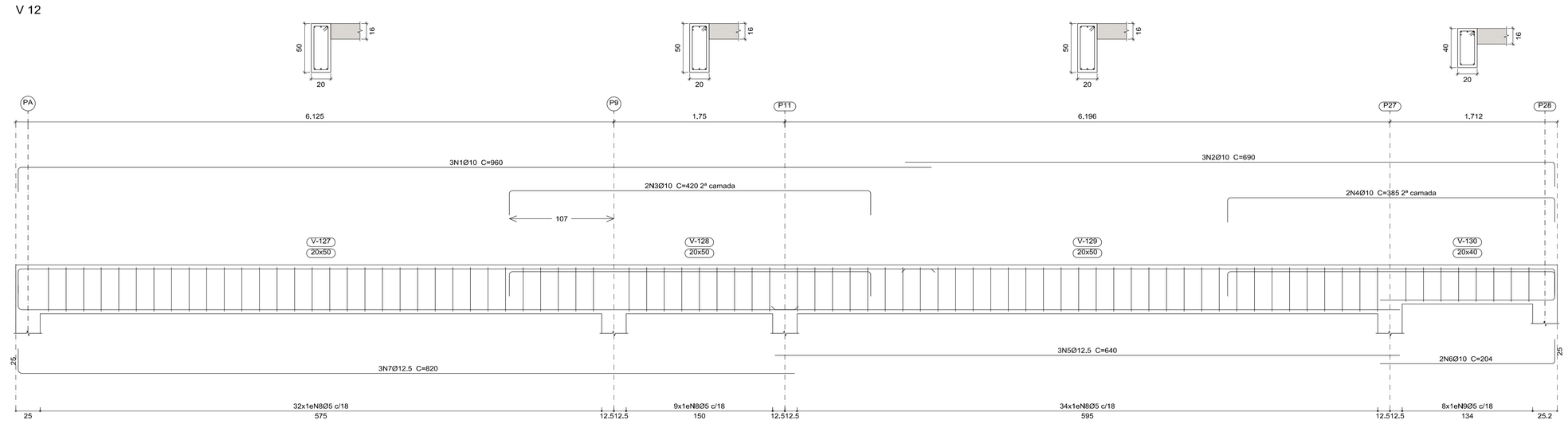
V 13



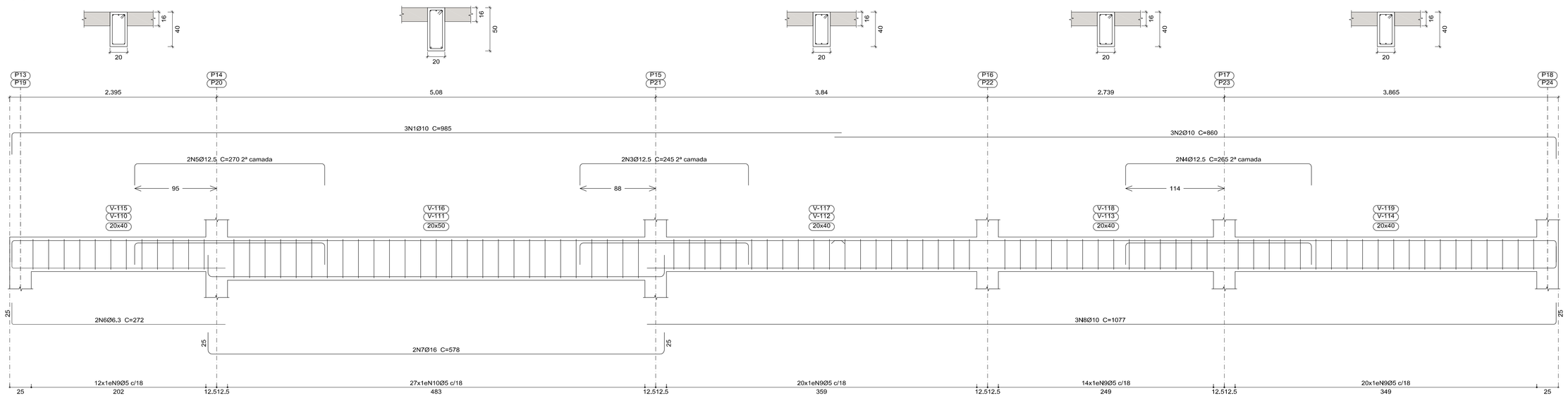
V 7
V 8
V 10
V 11



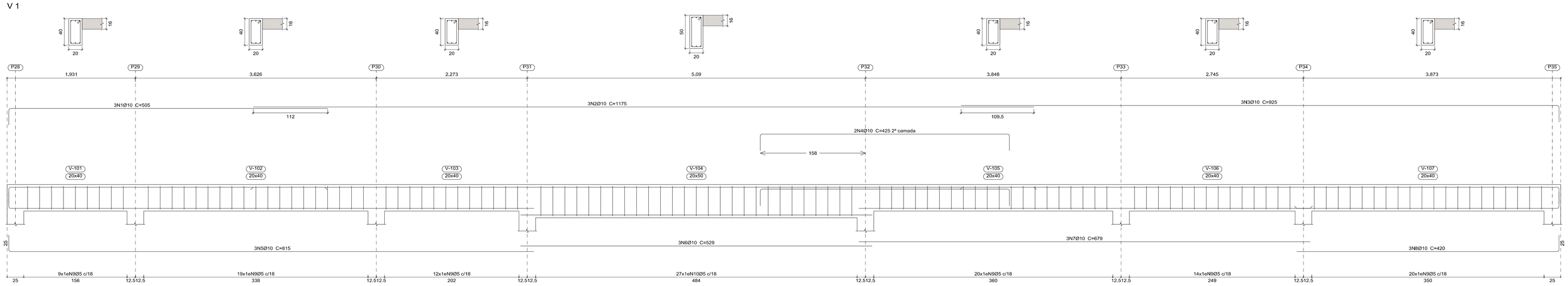
V 12



V 3
V 4



V 1



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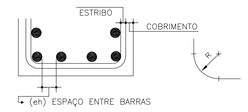
CARACTERÍSTICAS DO CONCRETO

Concreto: C-30
Fator água/cimento máximo: 0,55
Consumo de cimento teórico: >= 320 kg/m3
Consumo de cimento recomendado: >= 350 kg/m3
Módulo de deformação mín na desforma: 27 GPa
Massa específica aparente: 2.5 Tf/m3
Coef. segurança (Aço): 1.15
Corf. segurança (Concreto): 1.40

OBSERVAÇÕES

- Respeitar o cobrimento das armaduras.
- Executar o controle tecnológico dos materiais.
- Executar a cura úmida do concreto por 7 dias.
- Prever lastro de concreto 5 cm em peças de concreto.
- Implantação ver projeto de arquitetura.
- Conferir as medidas no local.



COEF. DE SEGURANÇA: AÇO.....1.15
CONCRETO.....1.40

COBRIMENTO DAS ARMADURAS				COB cm
DIÂMETRO	ø12.5	ø16	ø20	ø25	ø30
RAIO (R)	6	8	10	13	15

eh >= DIÂMETRO DAS BARRAS
eh >= 2cm

NORMAS TÉCNICAS

ABNT NBR 6118/2014
ABNT NBR 6120/2019
ABNT NBR 6123/1988
ABNT NBR 6122/2019
ABNT NBR 7480/2007
ABNT NBR 8808/2008

Número	Descrição	Data

Projeto Estrutural

Armação Vigas Piso

FL-6_EST_0

Número do projeto	
Data	25/09/2022
Autor	Eng. Civil Airton Sonego Jr
Verificado por	

FL-6

Escala	1/25

Folha A0