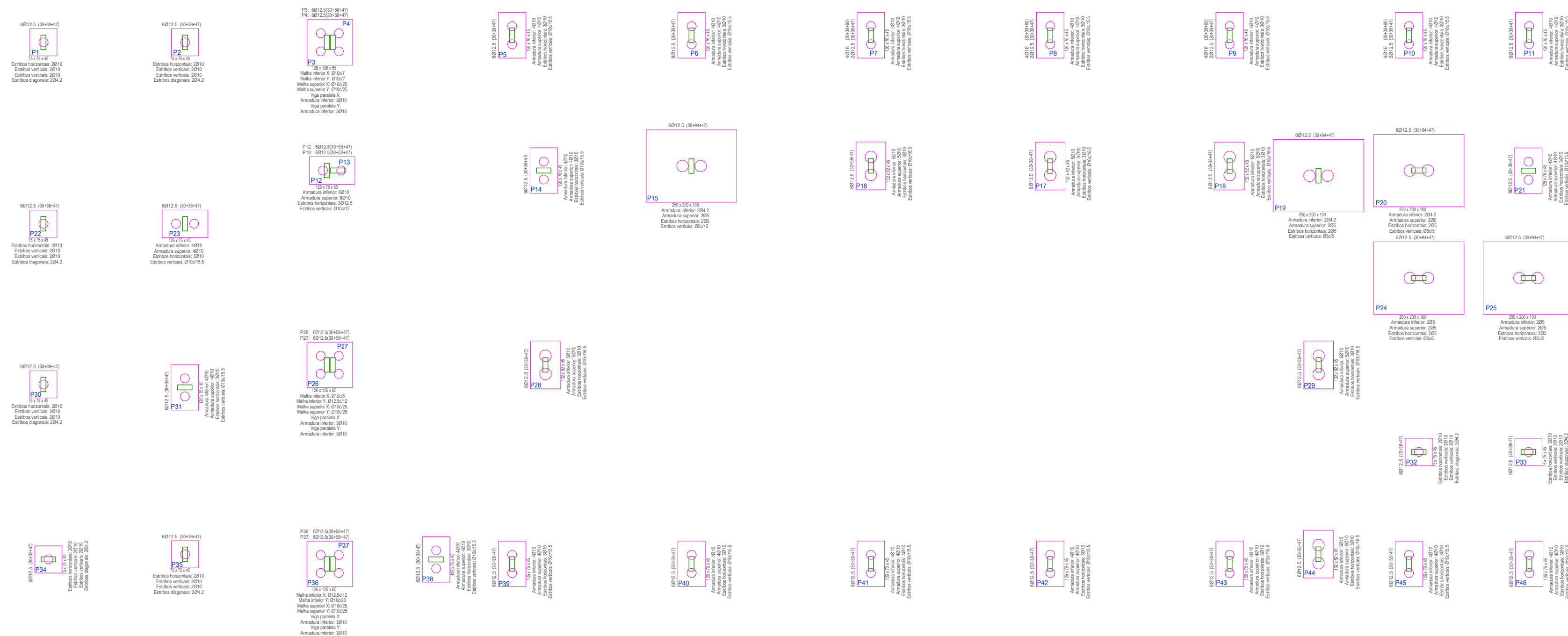
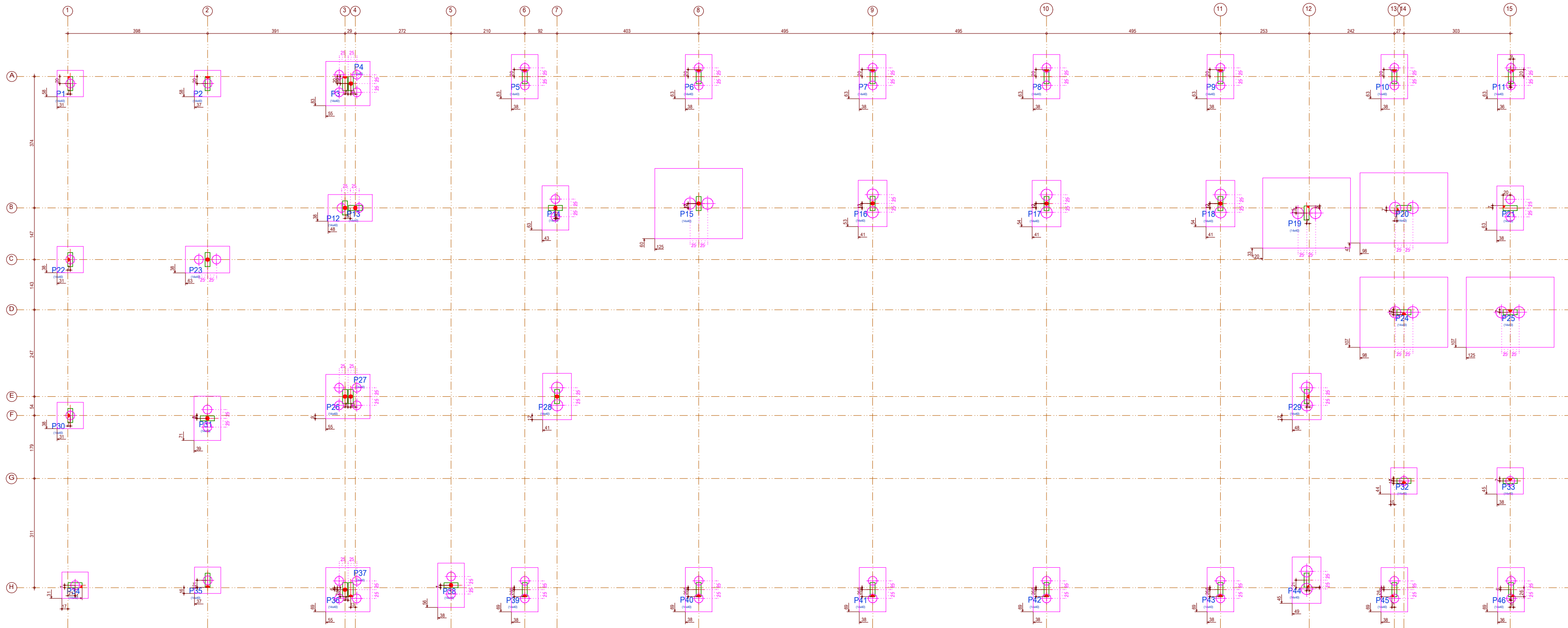
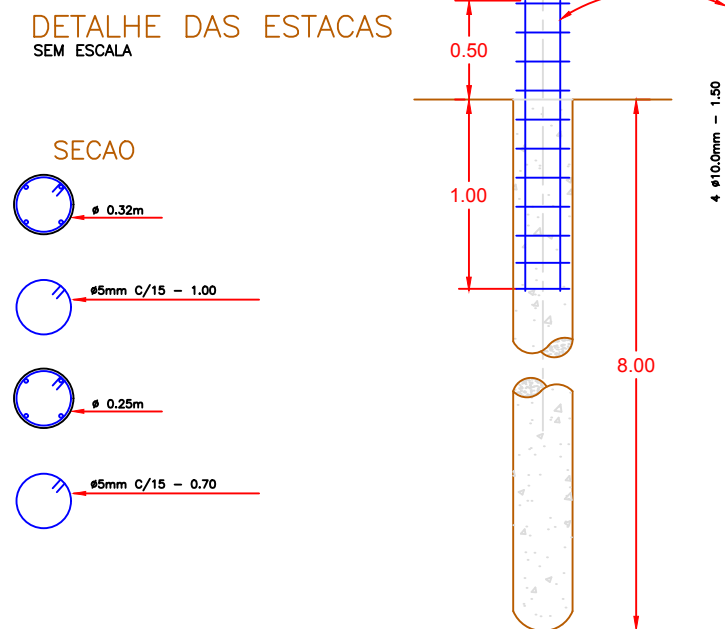
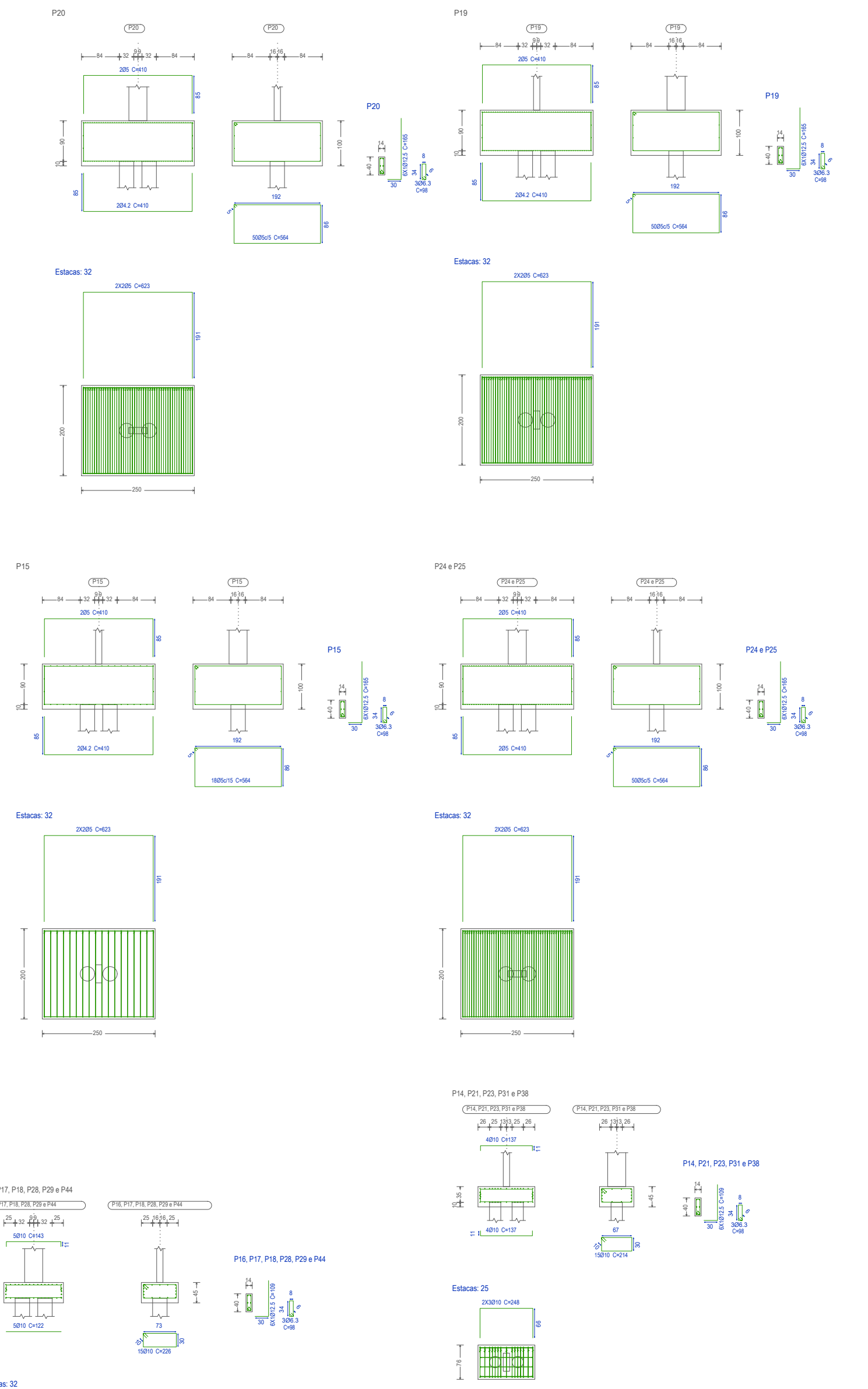
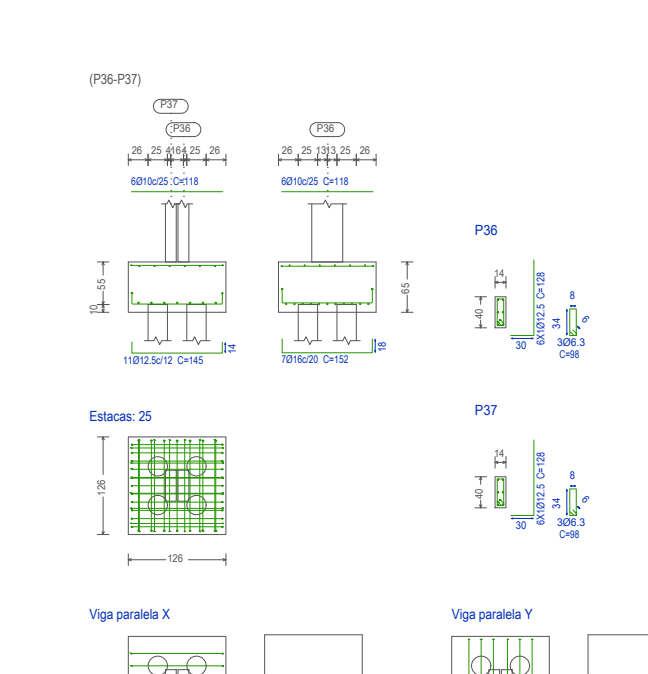
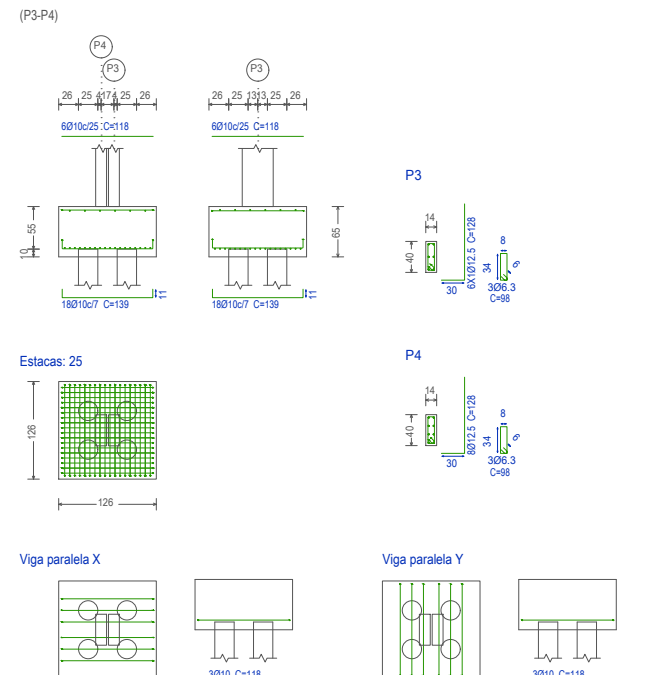
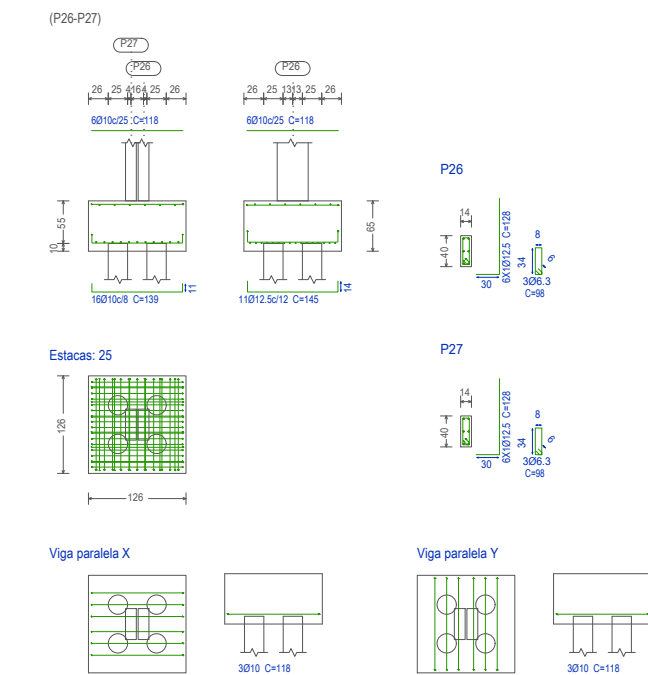
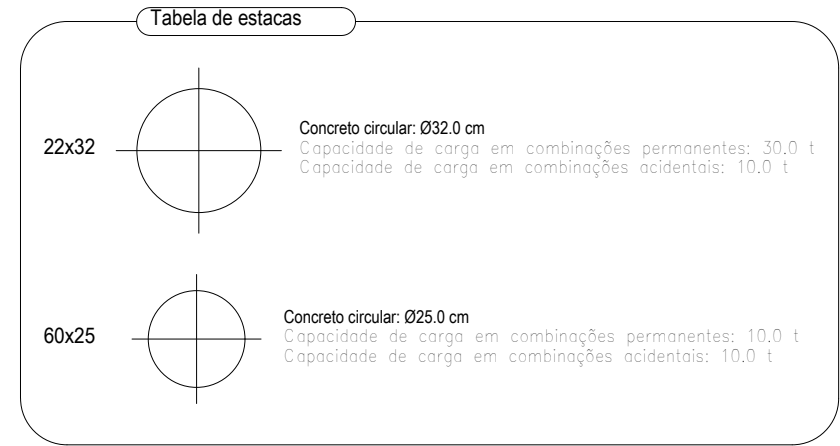


QUADRO DE ELEMENTOS DE FUNDAM.										
Referências	Dimensões (cm)	Altura (m)	Estacas	Armadura inf. X	Armadura inf. Y	Armadura sup. X	Armadura sup. Y	Armadura perimetral	Vigas paralelas X	Vigas paralelas Y
P1, P2, P22, P30, P32, P33, P34 e P35	75 x 75	45	Tipo 25, Penetração 10 cm					Estribos xy 20/10, Estribos xz 20/10, Estribos yz 20/10, Estribos diagonais 20/4.2		
P5, P6, P7, P8, P9, P10, P11, P12, P23, P31, P36, P38, P40, P41, P42, P43, P44 e P46	125 x 75	45	Tipo 25, Penetração 10 cm	40/10		40/10		Lateral 30/10, Estribos Ø10x15.5		
P15	250 x 200	100	Tipo 32, Penetração 10 cm	20/4.2		20/5		Lateral 20/5, Estribos Ø5x15		
P16, P17, P18, P28 e P44	132 x 82	45	Tipo 32, Penetração 10 cm	50/10		50/10		Lateral 30/10, Estribos Ø10x15.5		
P19 e P20	250 x 200	100	Tipo 32, Penetração 10 cm	20/4.2		20/5		Lateral 20/5, Estribos Ø5x15		
P24 e P25	250 x 200	100	Tipo 32, Penetração 10 cm	20/5		20/5		Lateral 20/5, Estribos Ø5x15		
(P3, P4)	125 x 125	65	Tipo 25, Penetração 10 cm	Ø10x7	Ø10x7	Ø10x25	Ø10x25		Inferior 30/10	Inferior 30/10
(P12, P13)	125 x 125	80	Tipo 25, Penetração 10 cm	Ø10x7	Ø10x7	Ø10x25	Ø10x25	Lateral 30/12.5, Estribos Ø10x12		
(P26, P27)	125 x 125	65	Tipo 25, Penetração 10 cm	Ø10x8	Ø12.5x12	Ø10x25	Ø10x25		Inferior 30/10	Inferior 30/10
(P36, P37)	125 x 125	65	Tipo 25, Penetração 10 cm	Ø12.5x12	Ø16x20	Ø10x25	Ø10x25		Inferior 30/10	Inferior 30/10





UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

TÍTULO

AÇÃO B3 - RESTAURANTE UNIVERSITÁRIO

PROJETO

ESTRUTURAL

LOCAL

UNIDADE UNIVERSITÁRIA DE AQUIDAUANA

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO

WAGNER LUIZ

Assinado de forma digital por WAGNER LUIZ MANARA-63393425900
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PROPRIETÁRIO

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Dados: 2024.09.11 07:49:48 -04'00'

PROPRIETÁRIO

LAERCIO ALVES DE CARVALHO-90465822568

Assinado de forma digital por LAERCIO ALVES DE CARVALHO-90465822568
Dados: 2024.09.11 07:49:48 -04'00'

REFERENCIA

RESTAURANTE UNIVERSITÁRIO

Localização das Estacas, Detalhamento dos Blocos e Formas da Estrutura

ESCALA:

INDICADA

UNIDADE:

METRO

ARQUIVO:

DATA:

RETEMOR/2024

DESENHO:

TIAGO

REVISÃO:

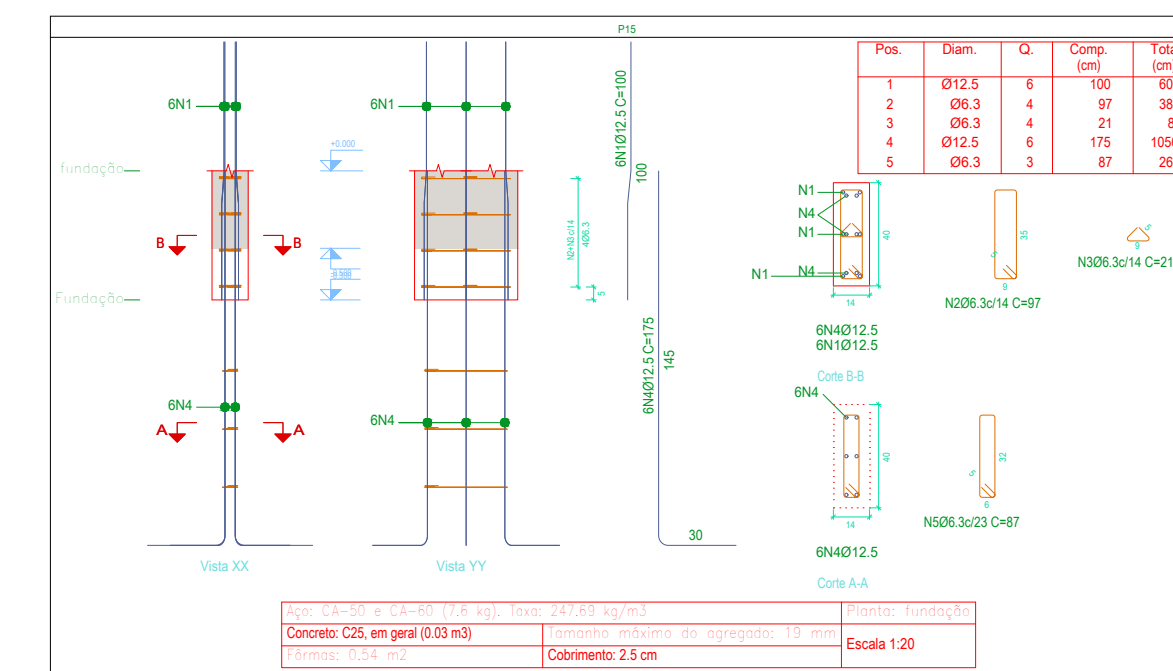
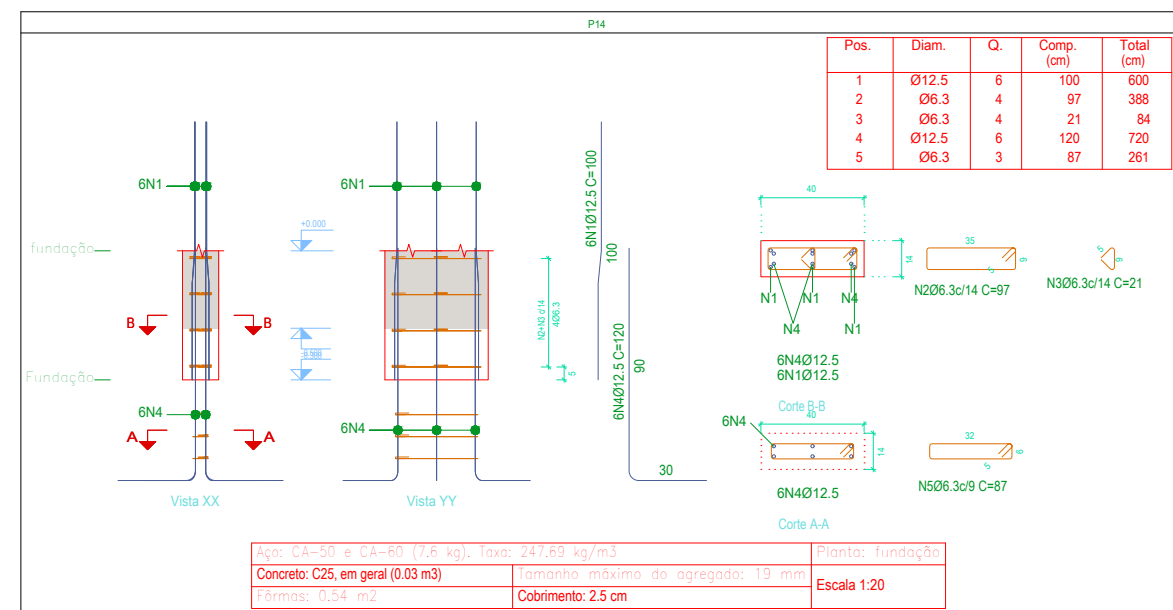
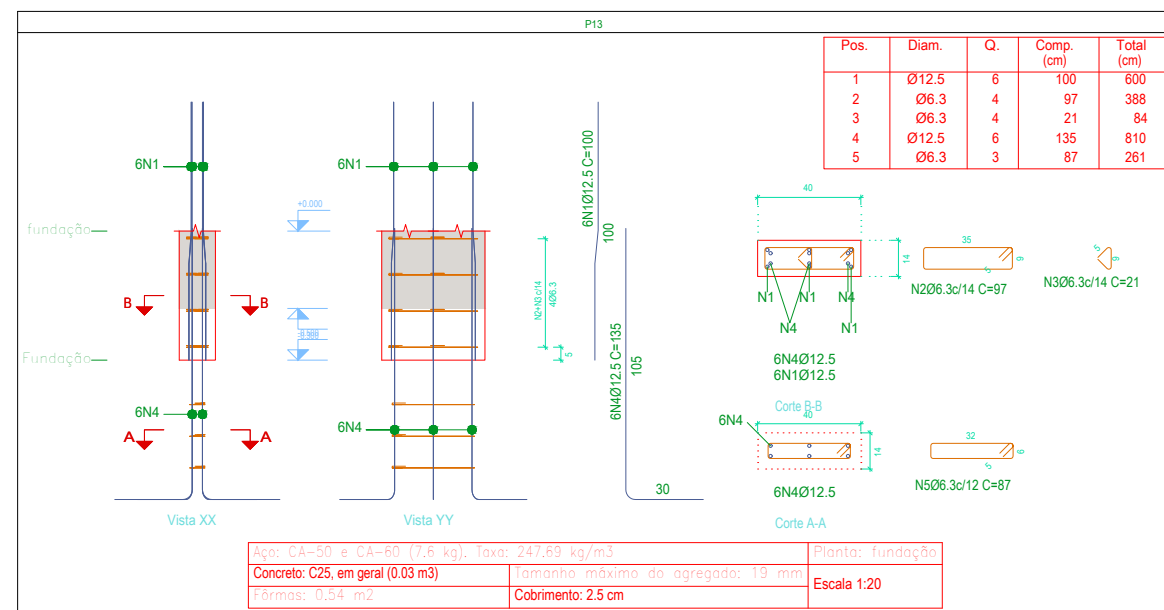
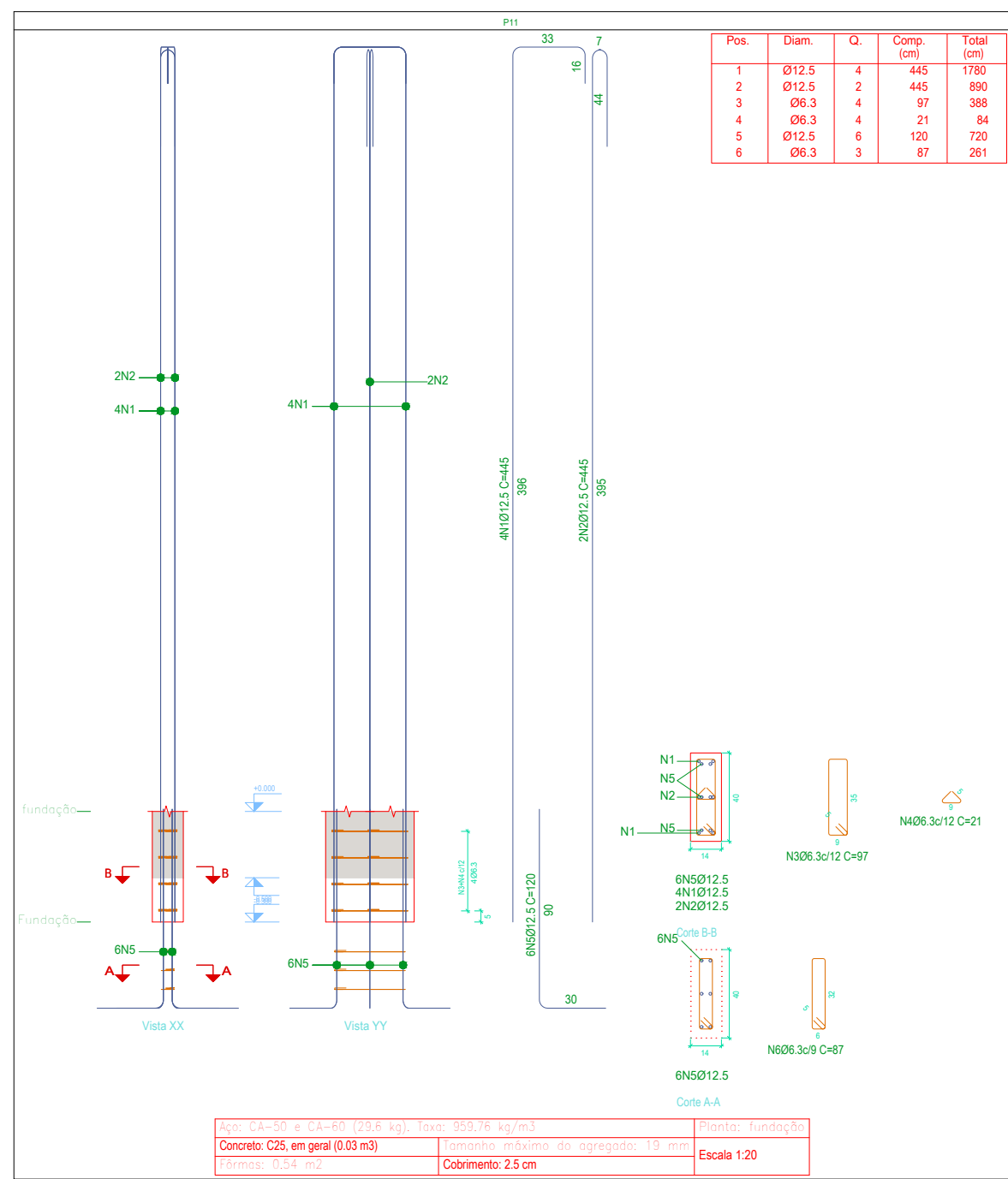
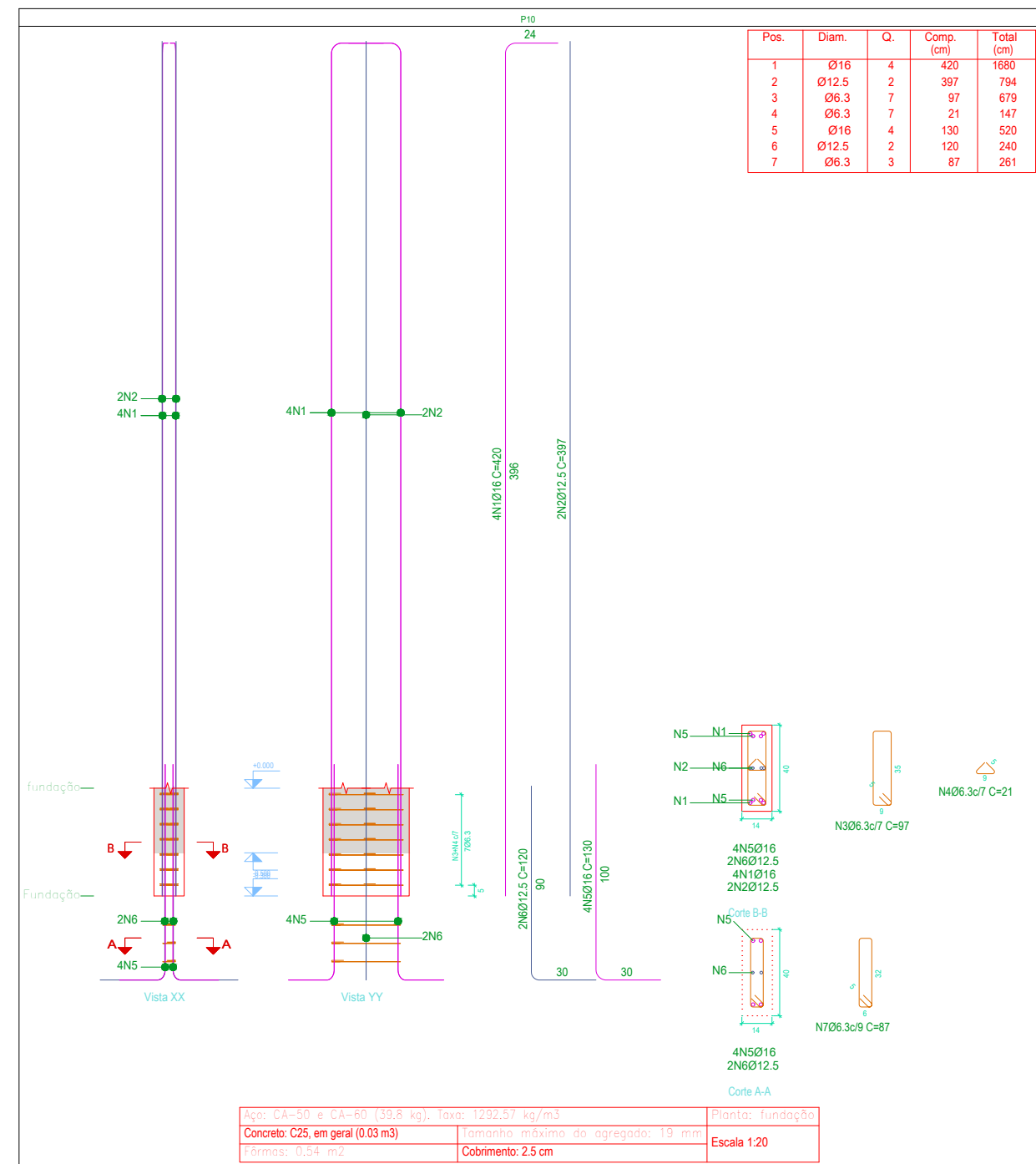
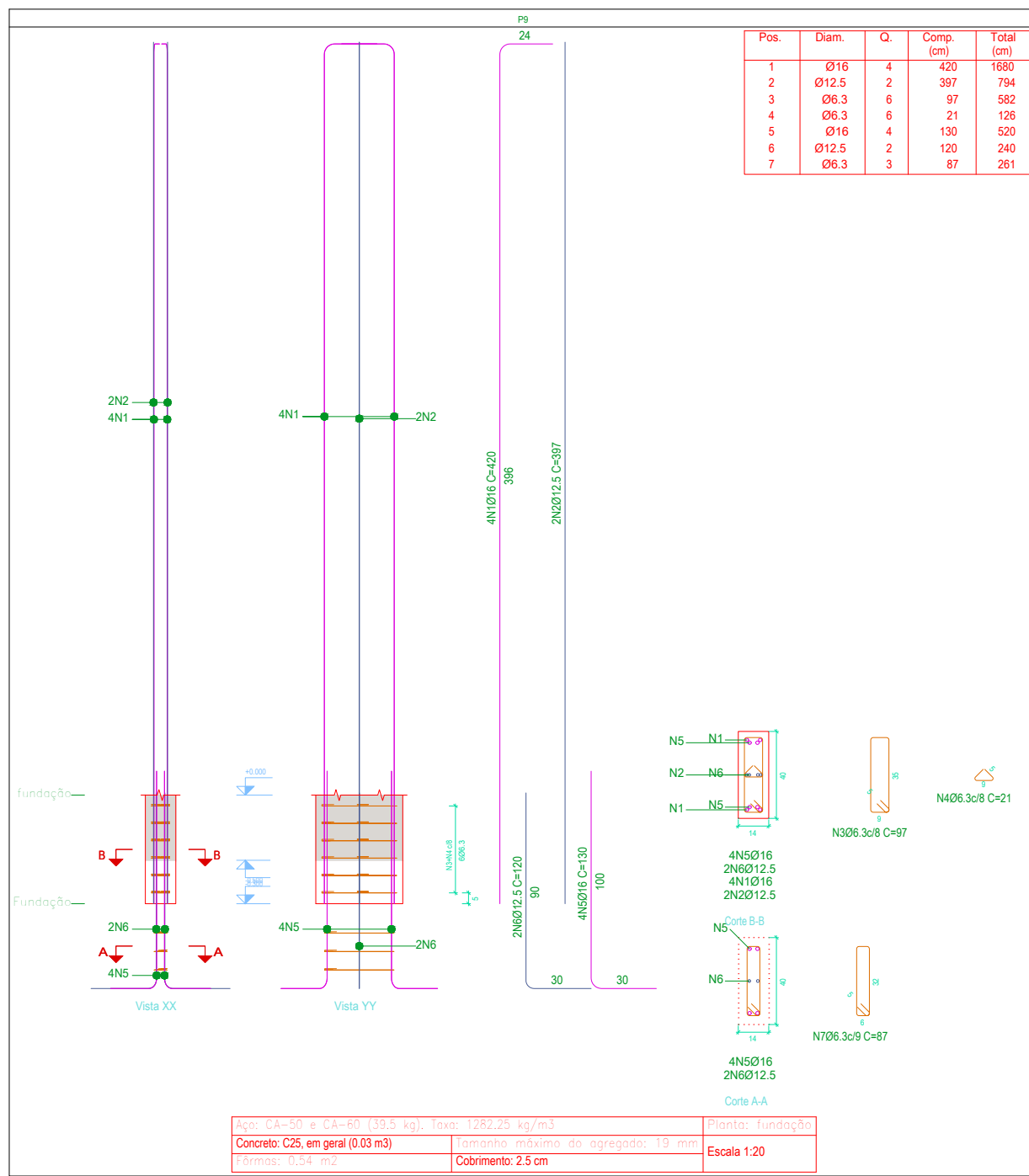
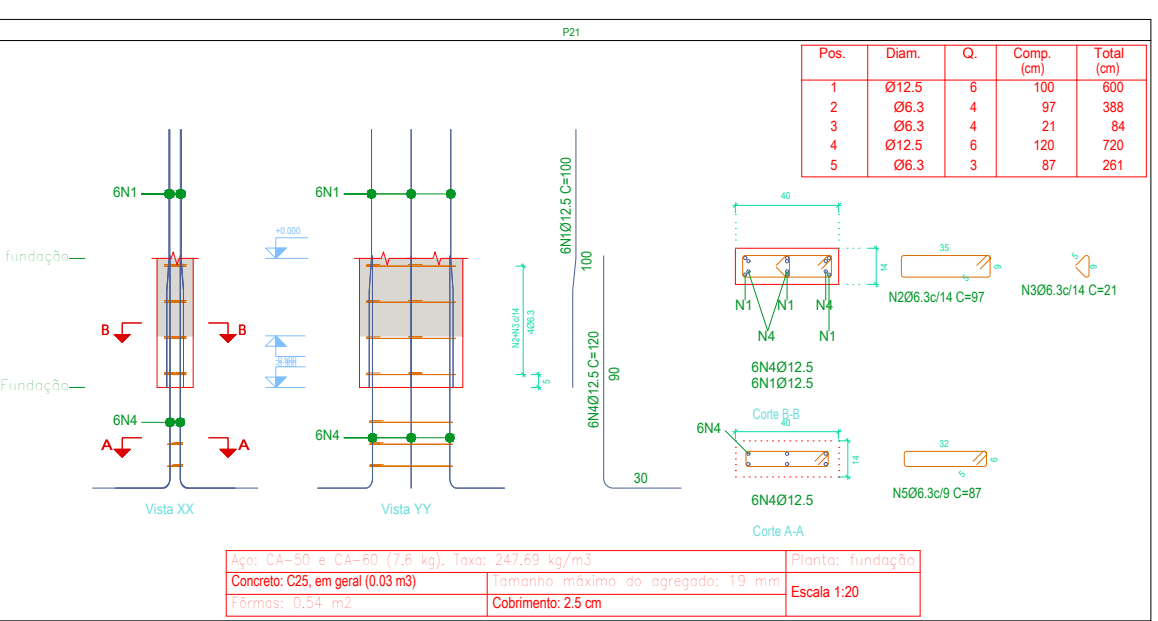
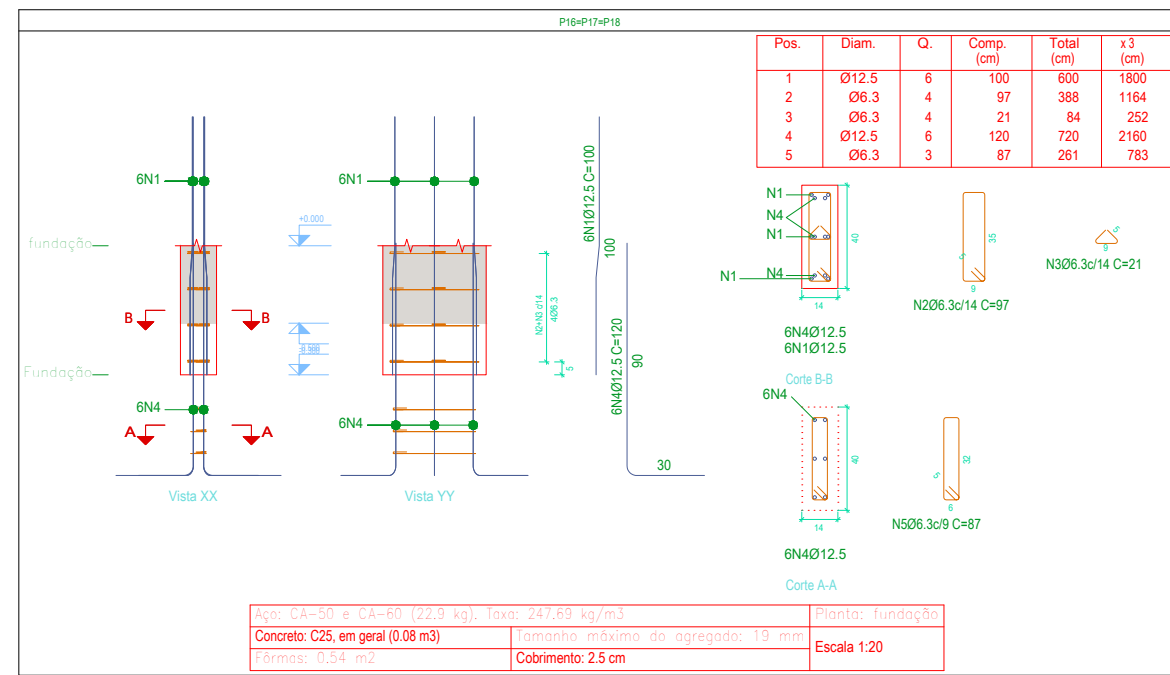
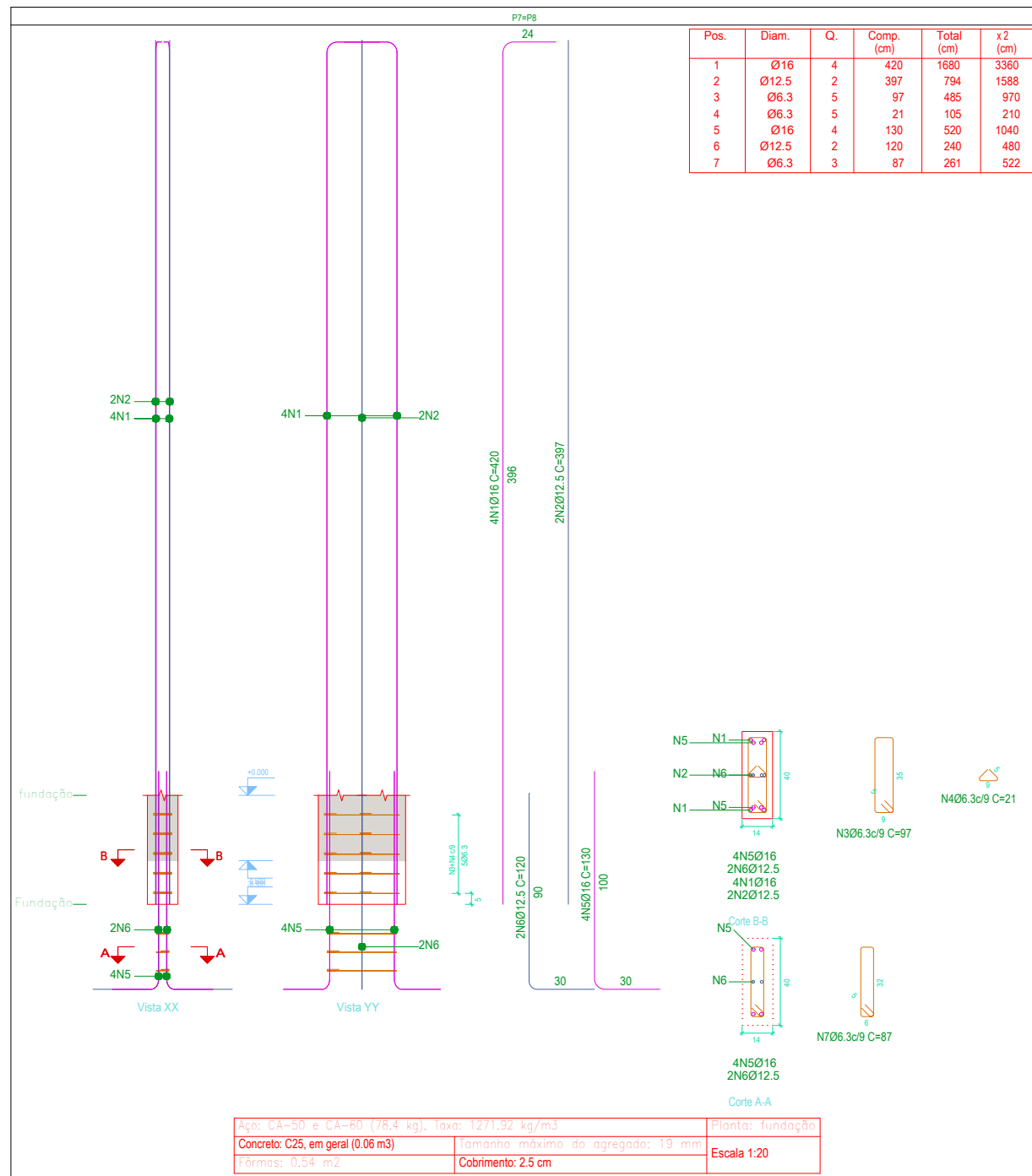
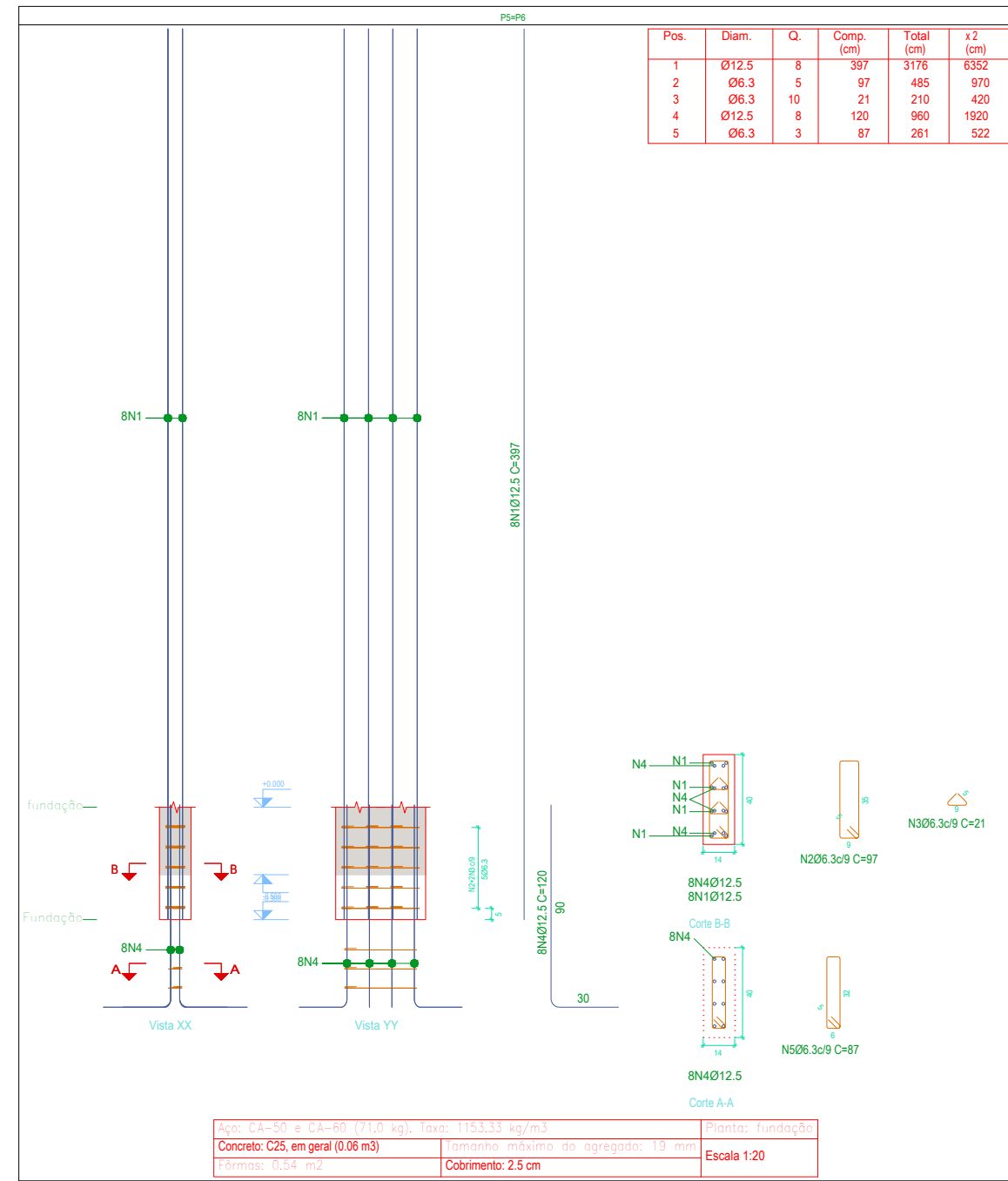
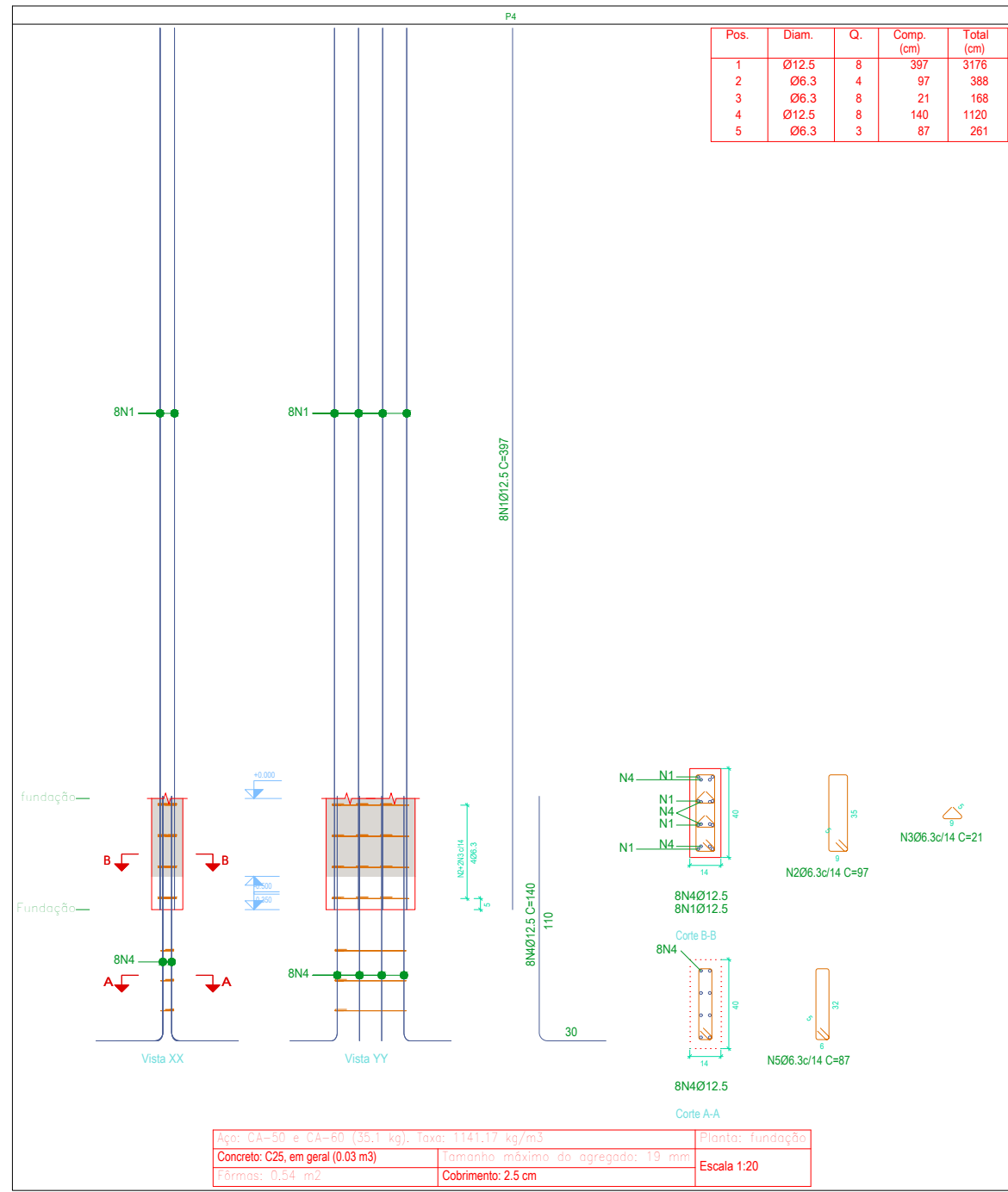
R00

VISTO

FOLHA Nº / PE

01/14

EST-AP



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P4	1	Ø12.5	8		397	3176	30.6	
	2	Ø6.3	4		97	388	1.0	
	3	Ø6.3	8		21	168	0.4	
	4	Ø12.5	8		140	1120	10.8	
	5	Ø6.3	3		87	261	0.6	
					Total+10%:		47.7	
P5-P6	1	Ø12.5	8		397	3176	30.6	
	2	Ø6.3	5		97	485	1.2	
	3	Ø6.3	10		21	210	0.5	
	4	Ø12.5	8		120	960	9.2	
	5	Ø6.3	3		87	261	0.6	
					Total+10%:		46.3	
P7-P8	1	Ø16	4		420	1680	26.5	
	2	Ø12.5	2		397	794	7.6	
	3	Ø6.3	5		97	485	1.2	
	4	Ø6.3	5		21	105	0.3	
	5	Ø16	4		130	520	8.2	
	6	Ø12.5	2		120	240	2.3	
	7	Ø6.3	3		87	261	0.6	
					Total+10%:		51.4	
P16-P17-P18	1	Ø12.5	6		100	600	5.8	
	2	Ø6.3	4		97	388	1.0	
	3	Ø6.3	4		21	84	0.2	
	4	Ø12.5	6		120	720	6.9	
	5	Ø6.3	3		87	261	0.6	
					Total+10%:		16.0	
P21	1	Ø12.5	6		100	600	5.8	
	2	Ø6.3	4		97	388	1.0	
	3	Ø6.3	4		21	84	0.2	
	4	Ø12.5	6		120	720	6.9	
	5	Ø6.3	3		87	261	0.6	
					Total+10%:		16.0	
P15	1	Ø12.5	6		100	600	5.8	
	2	Ø6.3	4		97	388	1.0	
	3	Ø6.3	4		21	84	0.2	
	4	Ø12.5	6		175	1050	10.1	
	5	Ø6.3	3		87	261	0.6	
					Total+10%:		19.5	
					Ø6.3:	13.2	0.0	
					Ø12.5:	104.2	0.0	
					Ø16:	75.4	0.0	
					Total:	193.8	0.0	

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

RESTAURANTE UNIVERSITÁRIO

PROJETO

ESTRUTURAL

LOCAL

UNIDADE UNIVERSITÁRIA DE AQUIDAUANA

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO

WAGNER LUIZ MANARA-6339425900

Assinado de forma digital por WAGNER LUIZ MANARA-6339425900
Dados: 2024.09.10 15:27:08 -0400

PROPRIETÁRIO

LAERCIO ALVES DE CARVALHO-90465822568

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Dados: 2024.09.11 07:50:31 -0400

WAGNER LUIZ MANARA - CREA 27.190/D-PR

FUNDAÇÃO UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

REFERENCIA

RESTAURANTE UNIVERSITÁRIO

Pilares 2/6

ESCALA:

INDICADA

UNIDADE:

METRO

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DATA:

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DESENHO:

TIAGO

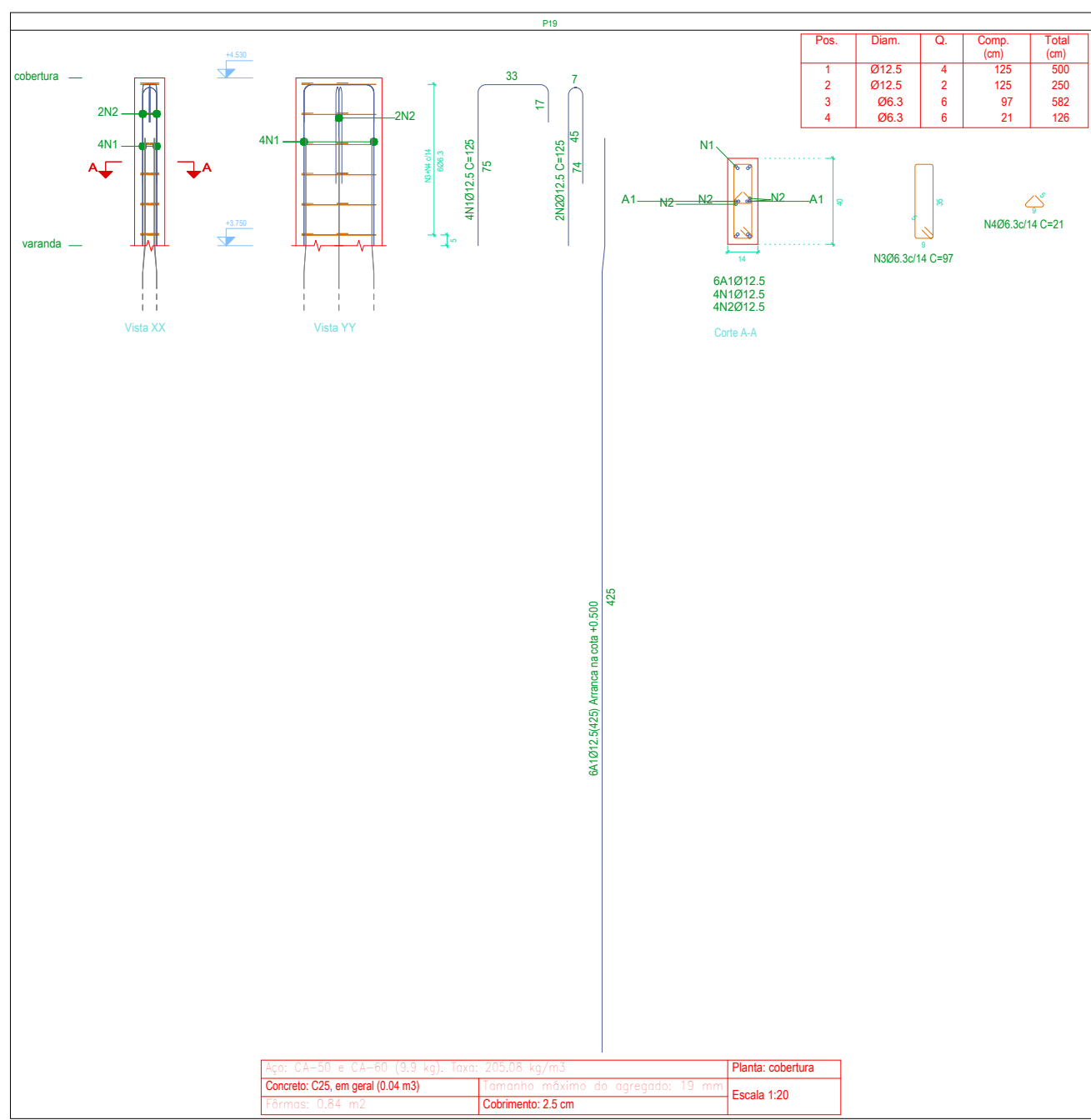
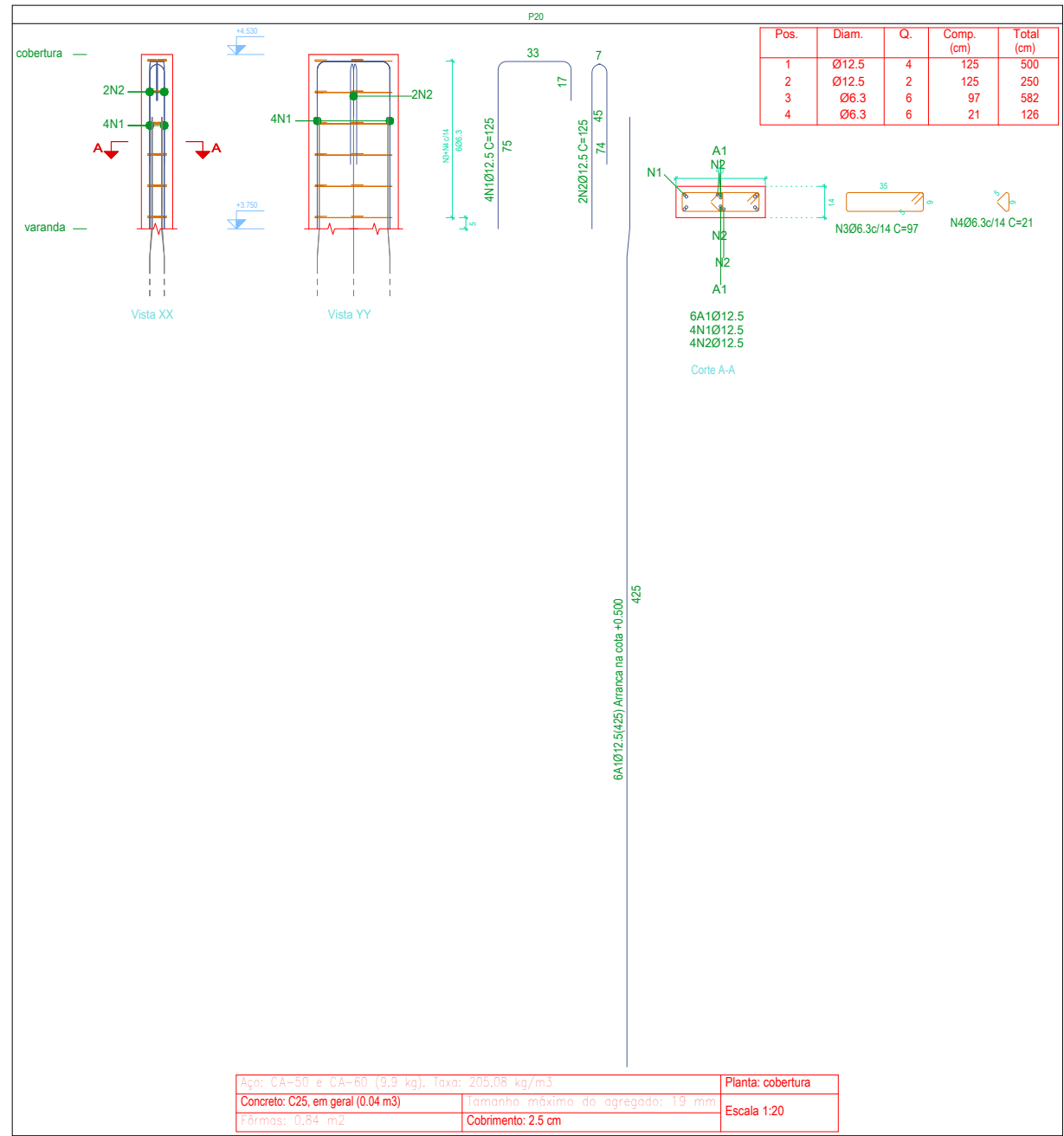
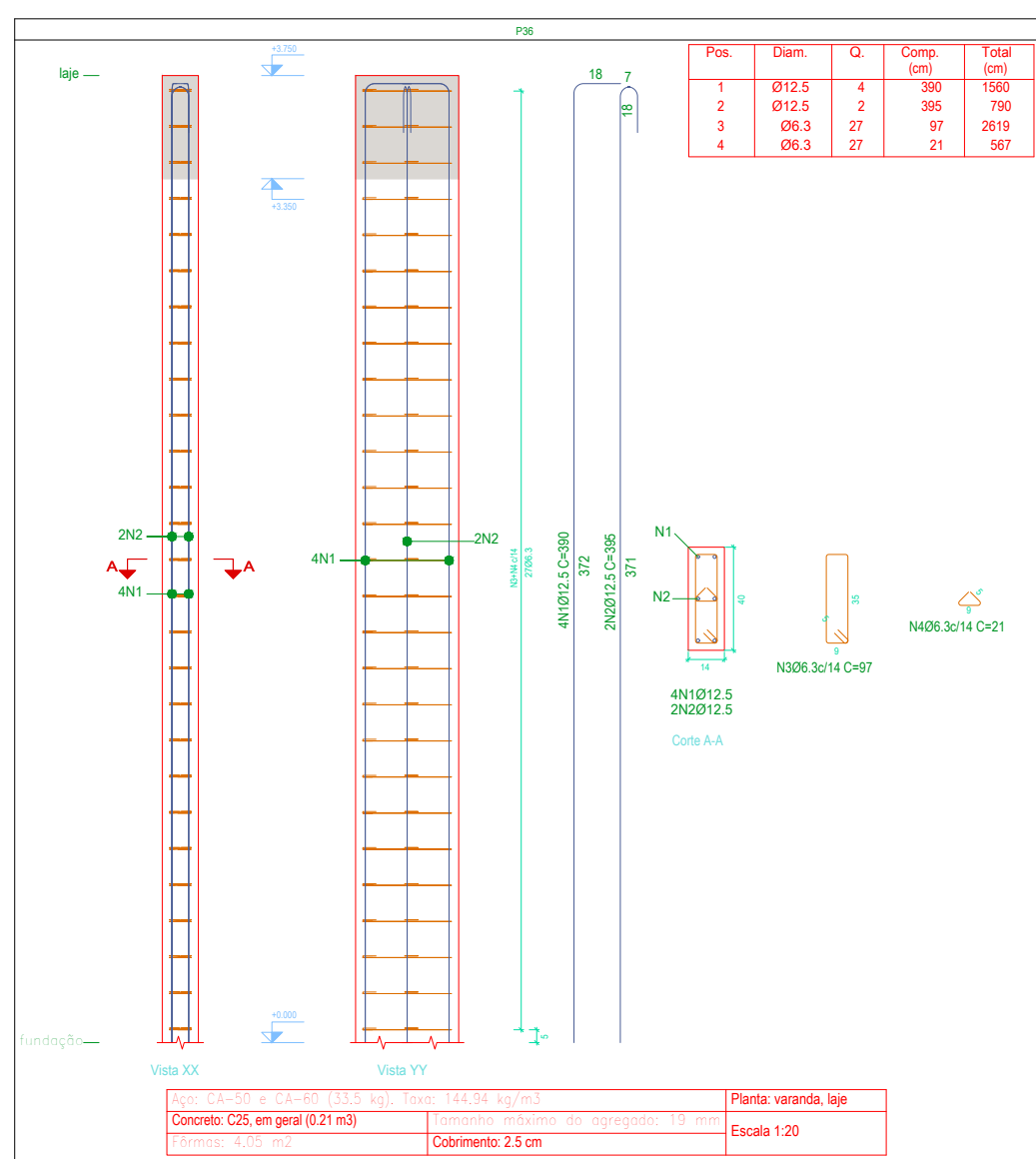
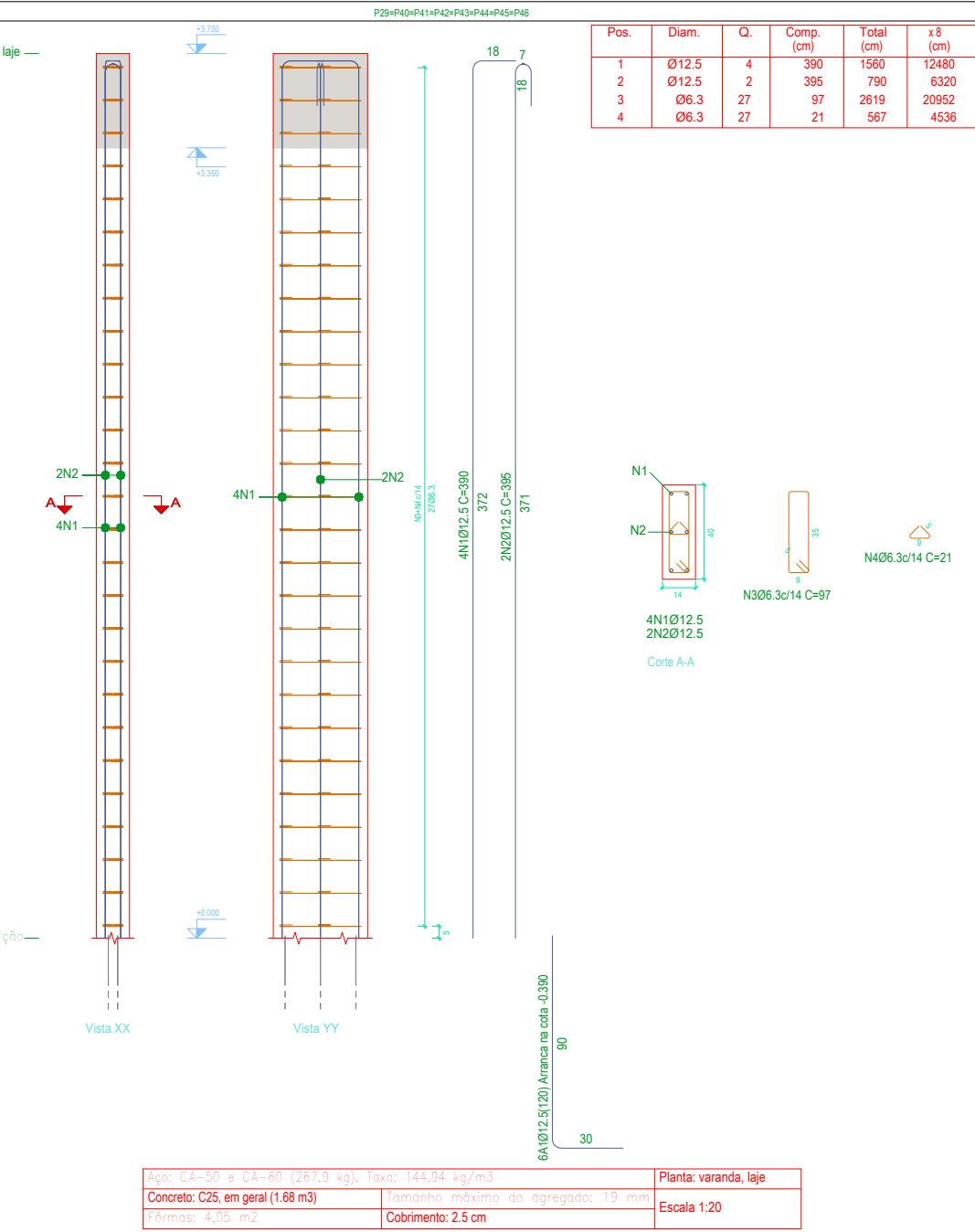
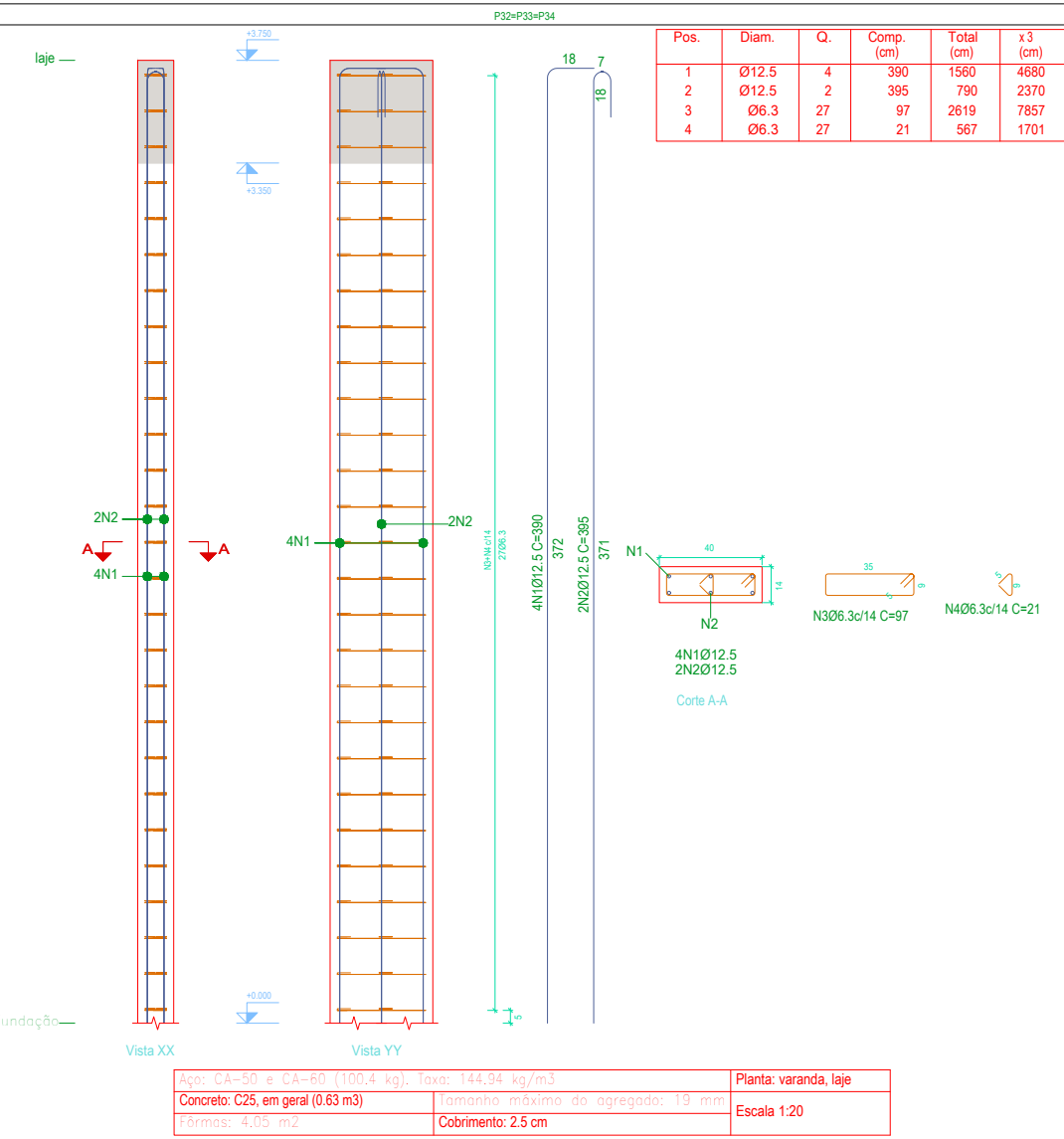
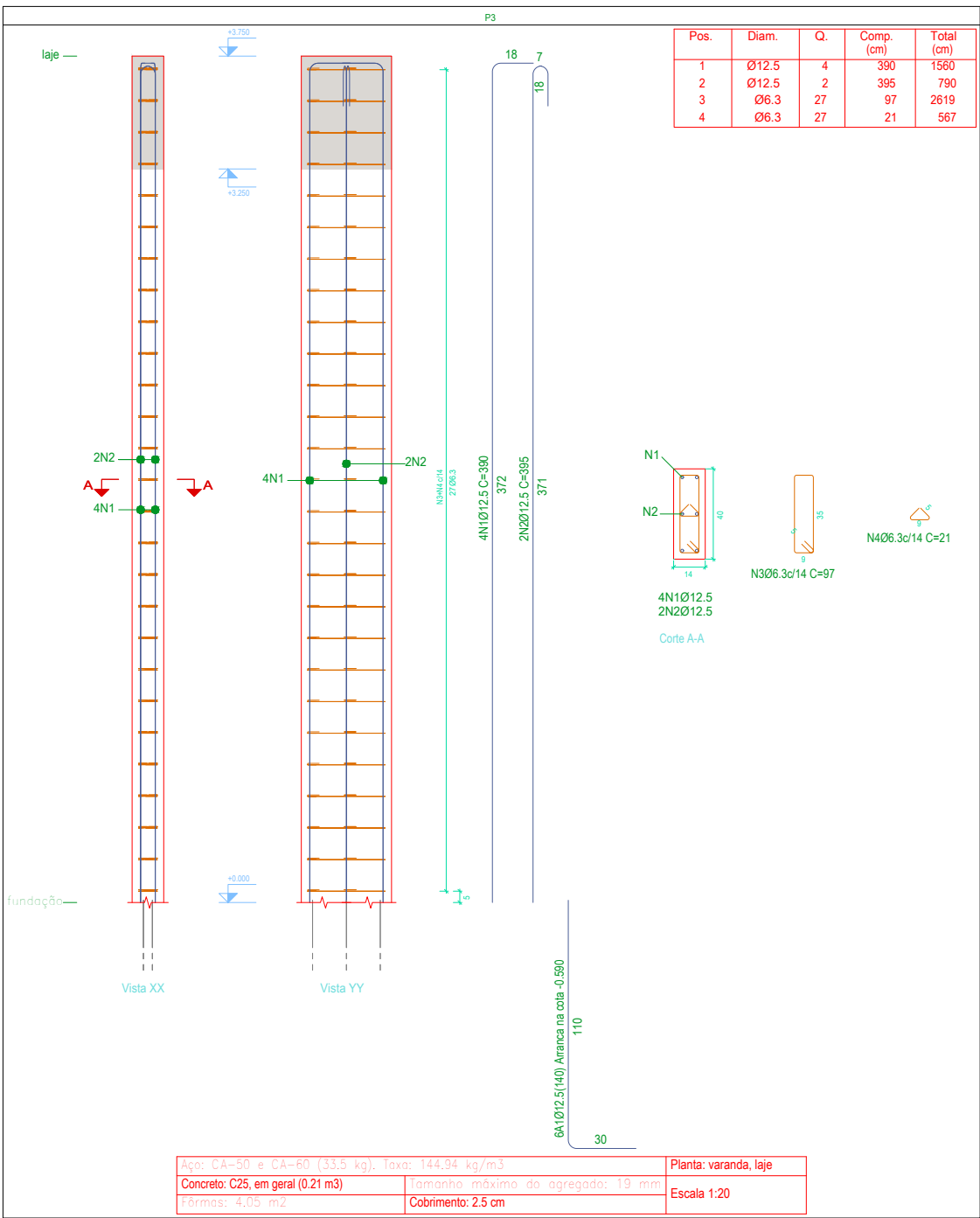
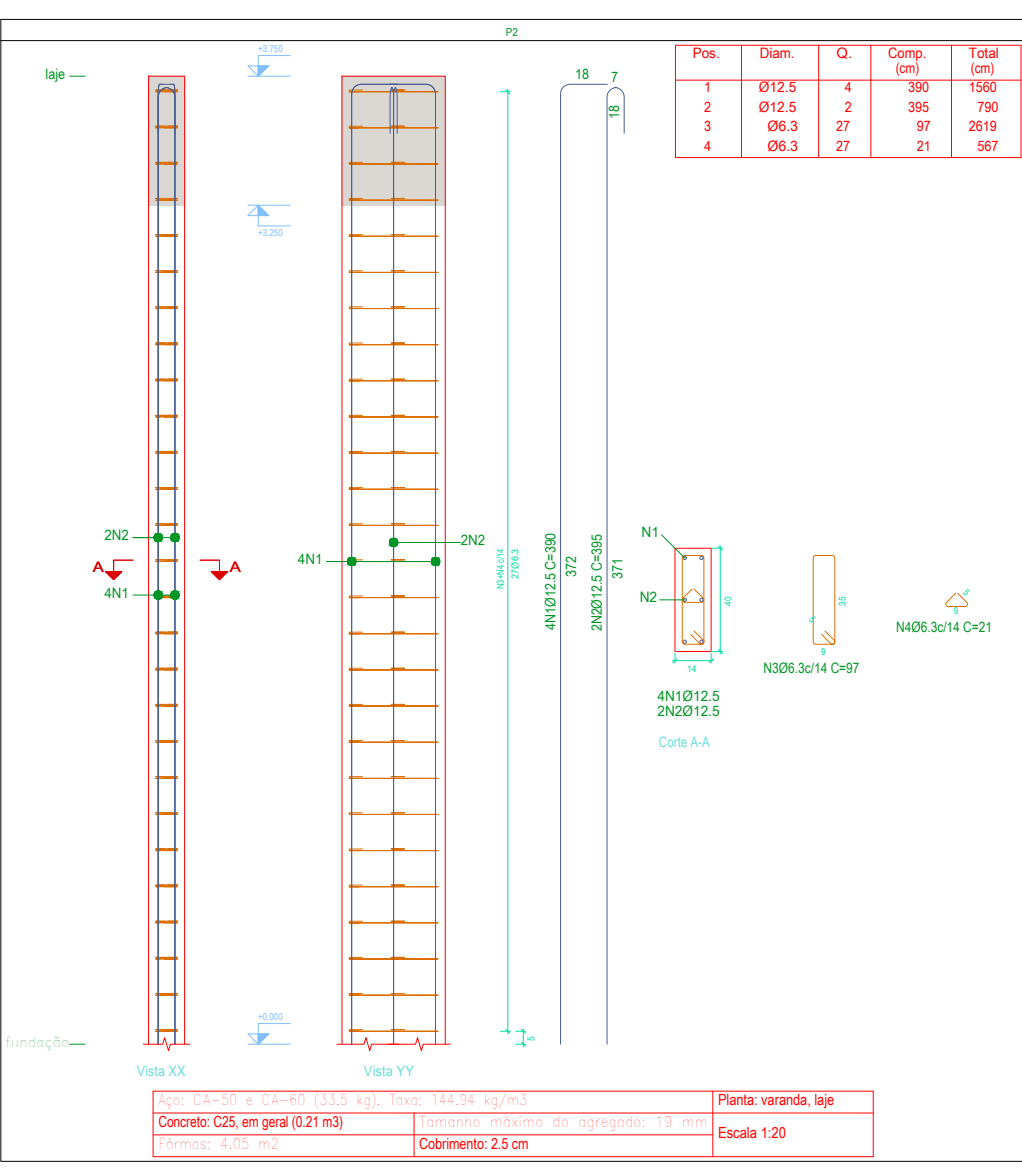
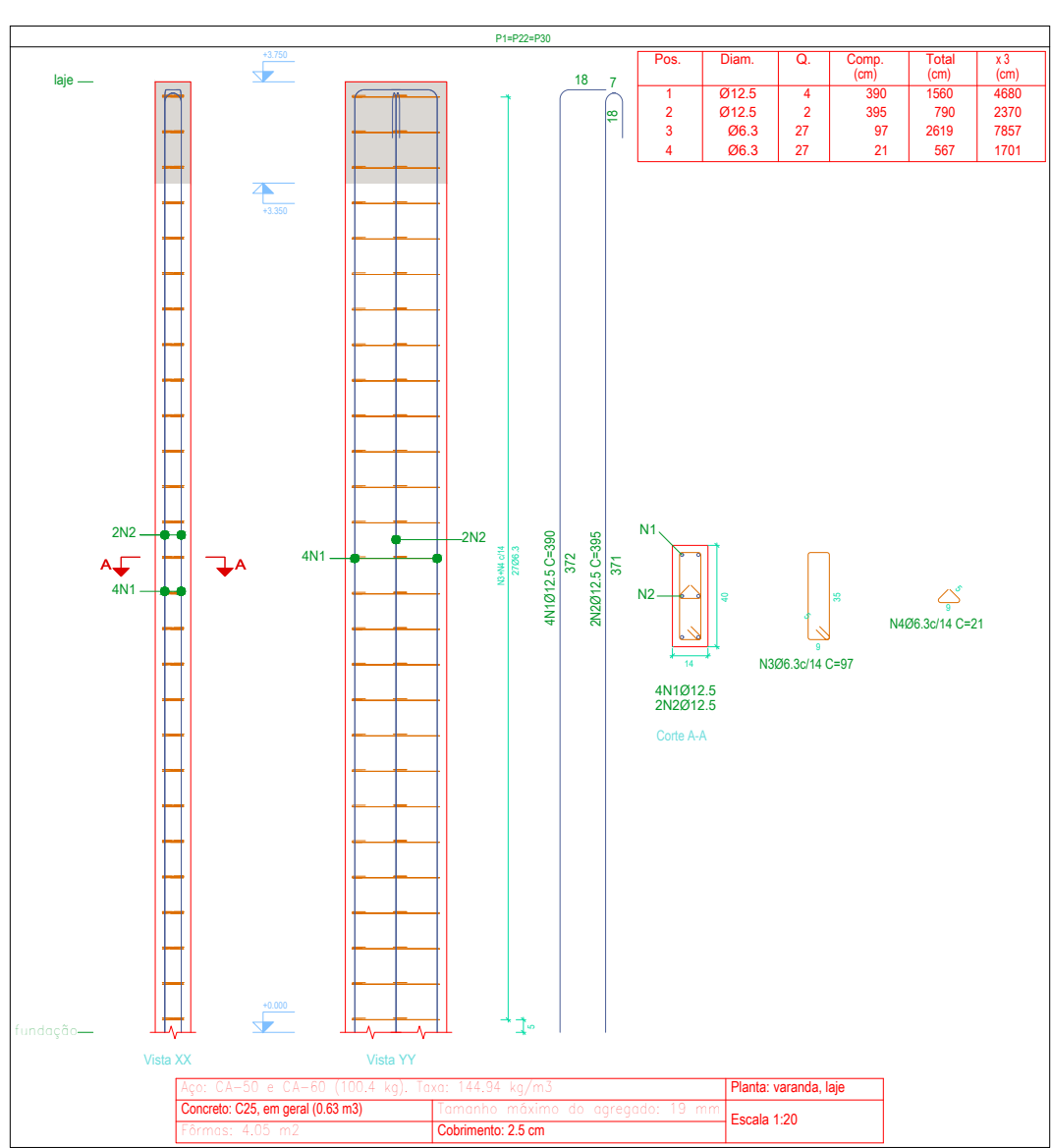
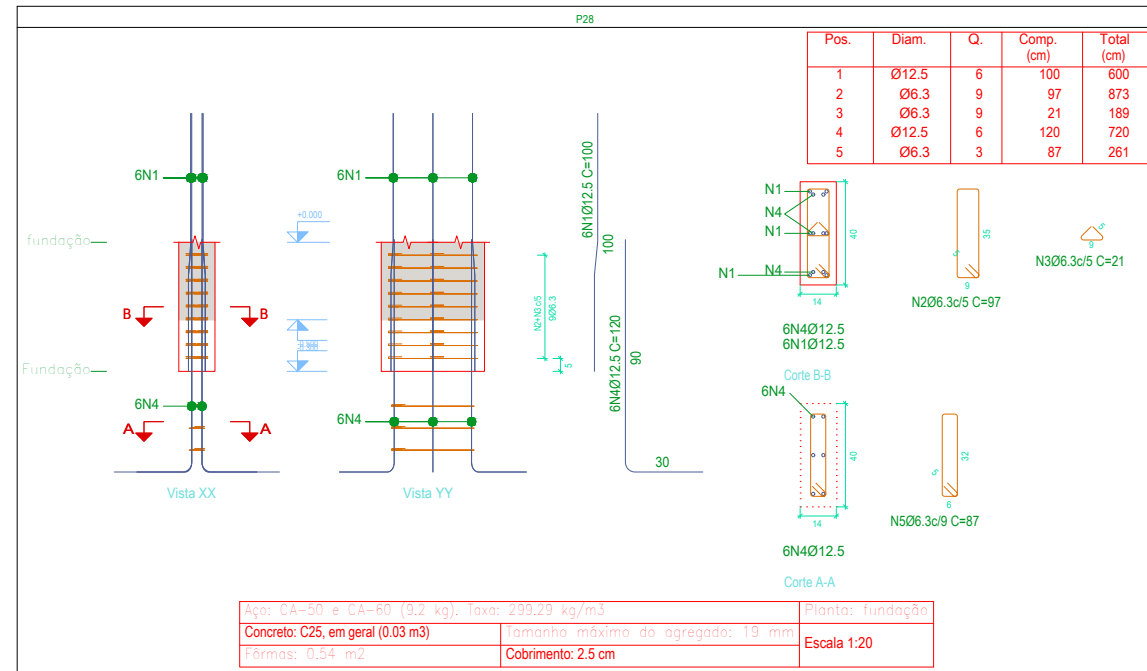
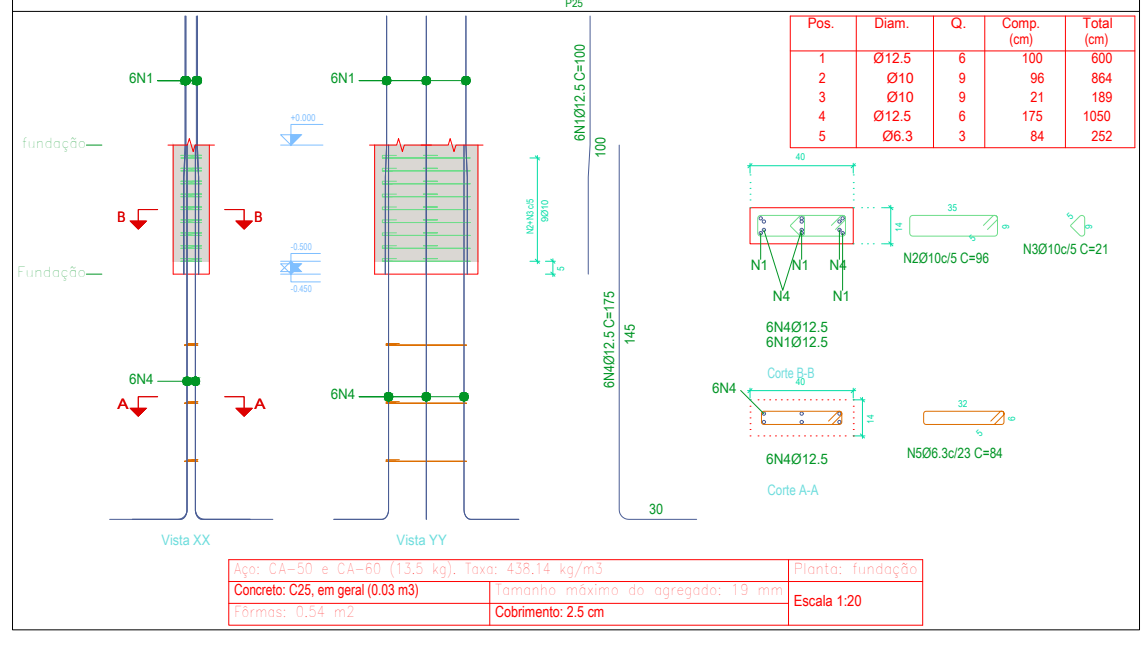
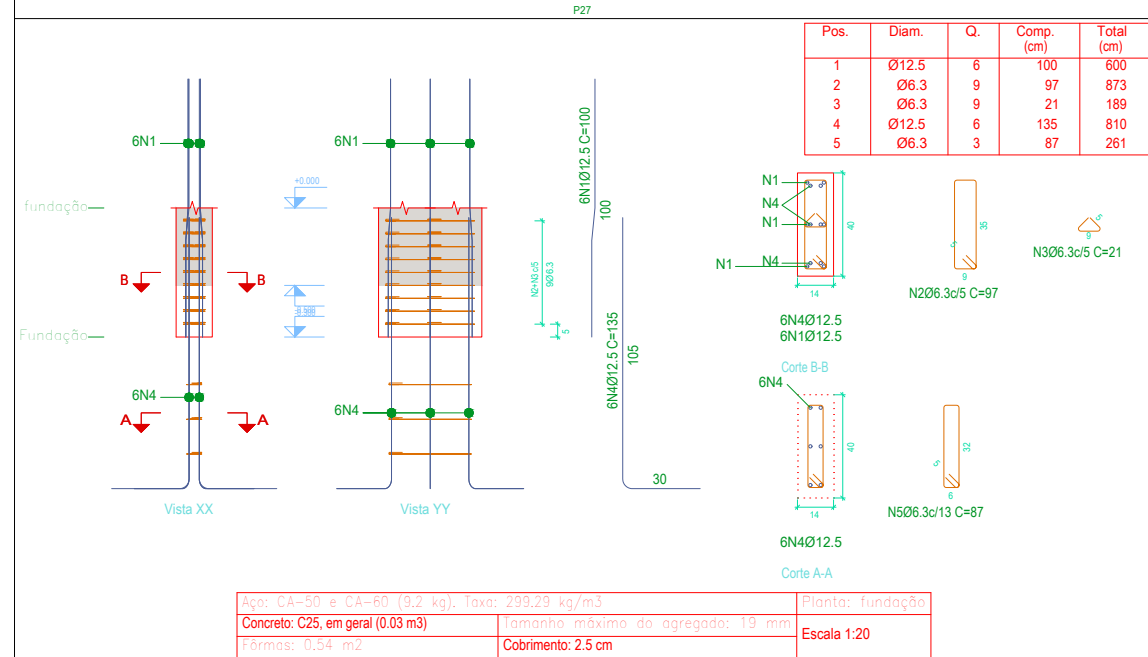
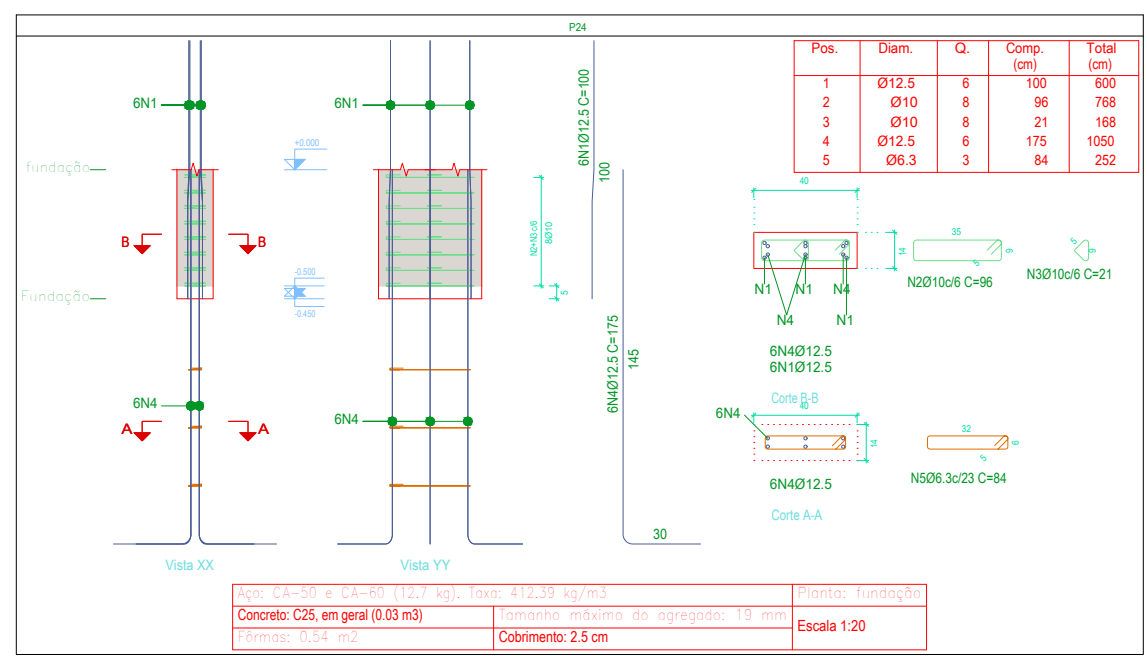
REVISÃO

R00

FOLHA Nº / PE

03/14

EST-AP



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P1+P22+P30	1	Ø12.5	4		390	1560	15.0	
	2	Ø12.5	2		395	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
				Total+10%:	33.4			
				(x3):	100.2			
P32+P33+P34	1	Ø12.5	4		390	1560	15.0	
	2	Ø12.5	2		395	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
				Total+10%:	33.4			
				(x3):	100.2			
P2	1	Ø12.5	4		390	1560	15.0	
	2	Ø12.5	2		395	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
				Total+10%:	33.4			
P3	1	Ø12.5	4		390	1560	15.0	
	2	Ø12.5	2		395	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
				Total+10%:	33.4			
P28+P40+P41+P42 P43+P44+P45+P46	1	Ø12.5	4		390	1560	15.0	
	2	Ø12.5	2		395	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
				Total+10%:	33.4			
				(x8):	267.2			
P36	1	Ø12.5	4		390	1560	15.0	
	2	Ø12.5	2		395	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
				Total+10%:	33.4			
				Ø6.3:	144.5	0.0		
				Ø12.5:	423.3	0.0		
				Total:	567.8	0.0		

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P19	1	Ø12.5	4		125	500	4.8	
	2	Ø12.5	2		125	250	2.4	
	3	Ø6.3	6		97	582	1.4	
	4	Ø6.3	6		21	126	0.3	
				Total+10%:	9.8			
P20	1	Ø12.5	4		125	500	4.8	
	2	Ø12.5	2		125	250	2.4	
	3	Ø6.3	6		97	582	1.4	
	4	Ø6.3	6		21	126	0.3	
				Total+10%:	9.8			
				Ø6.3:	3.8	0.0		
				Ø12.5:	15.8	0.0		
				Total:	19.6	0.0		

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

PRÓPRIETÁRIO

TÍTULO

RESTAURANTE UNIVERSITÁRIO

PROJETO

ESTRUTURAL

LOCAL

UNIDADE UNIVERSITÁRIA DE AQUIDAUANA

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO

WAGNER LUIZ MANARA-63399425900

Assinado de forma digital por WAGNER LUIZ MANARA-63399425900
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PROPRIETÁRIO

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Data: 2024.09.11 07:56:47 -0400

REFERENCIA

RESTAURANTE UNIVERSITÁRIO

Pilares 3/6

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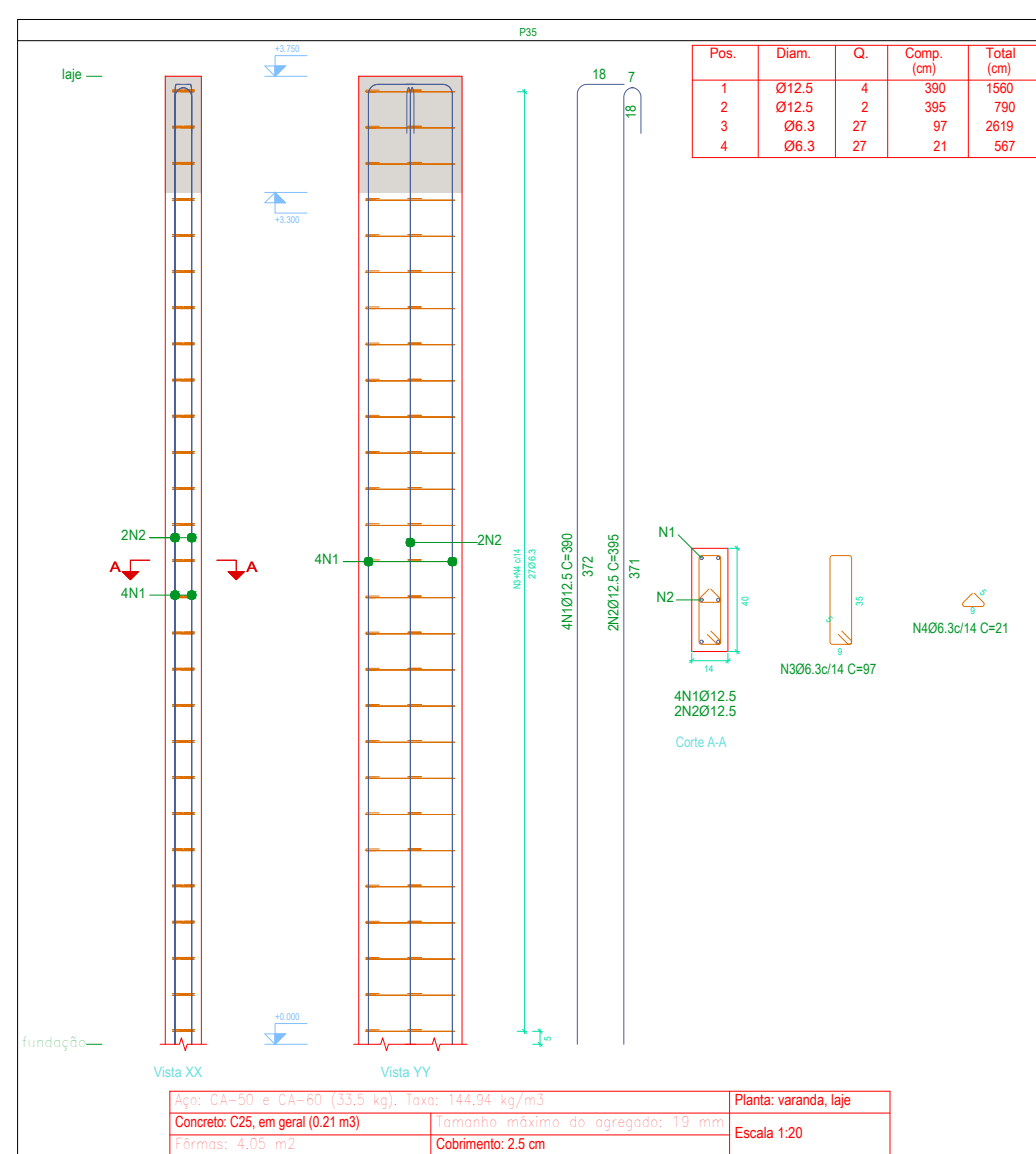
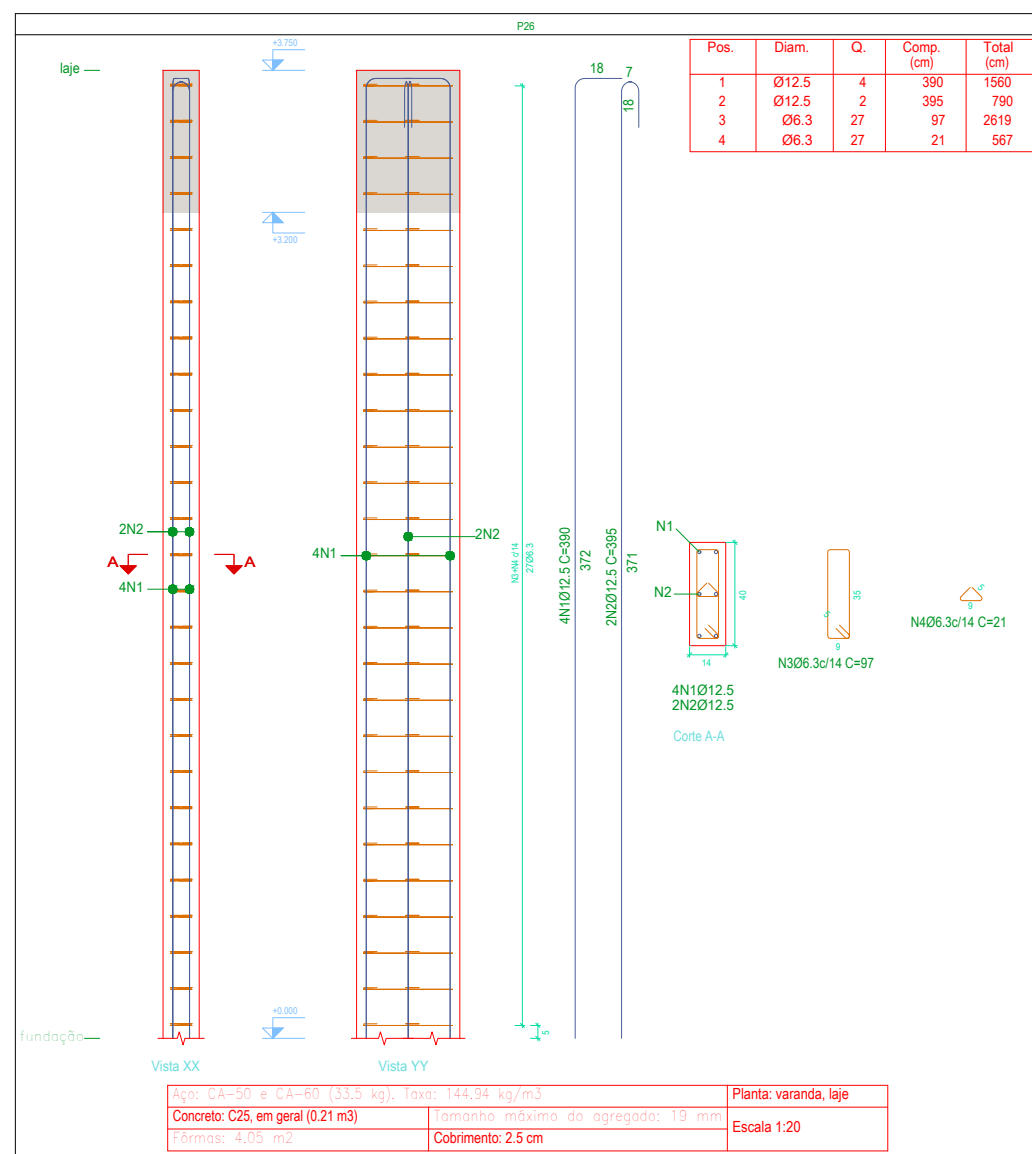
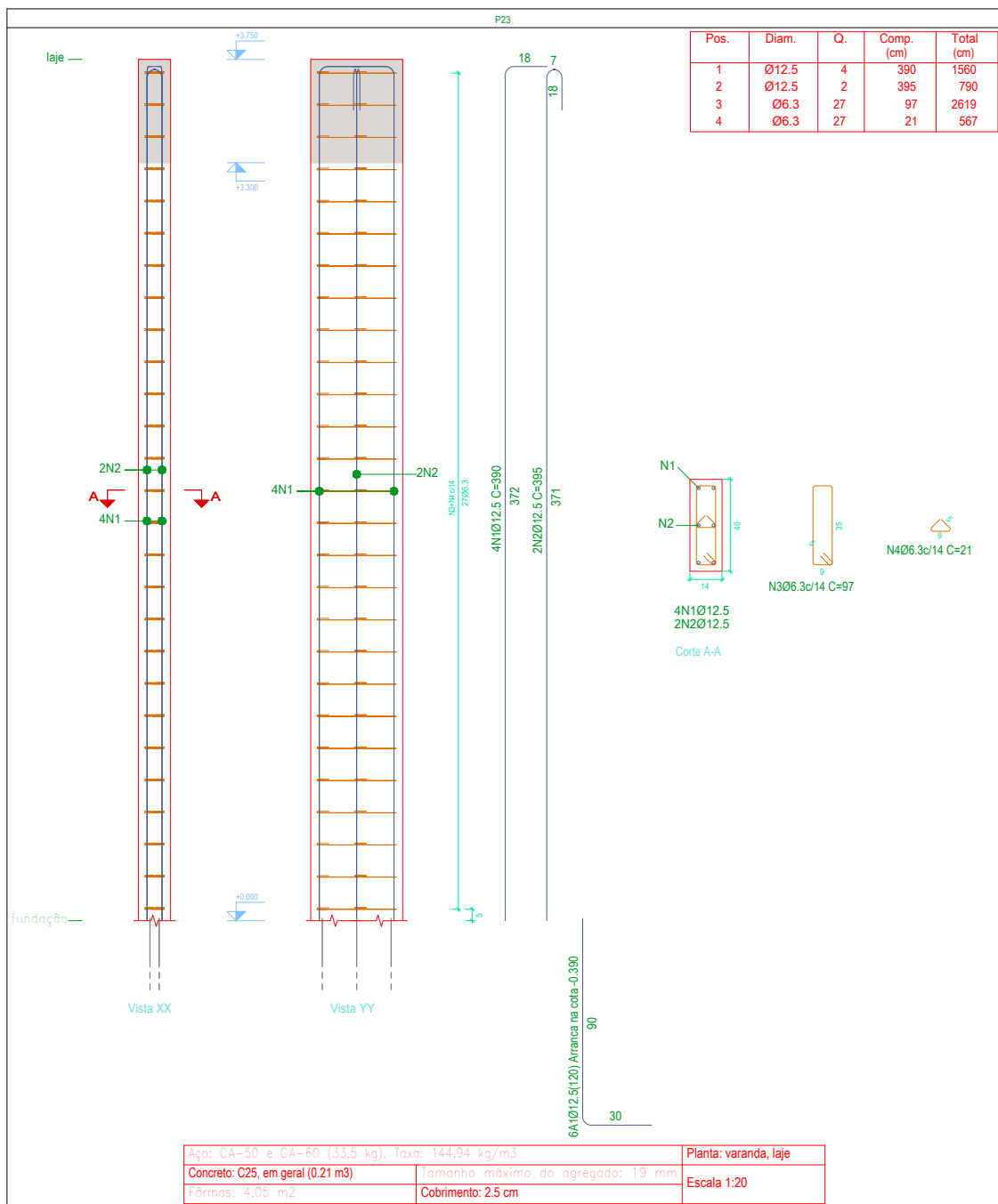
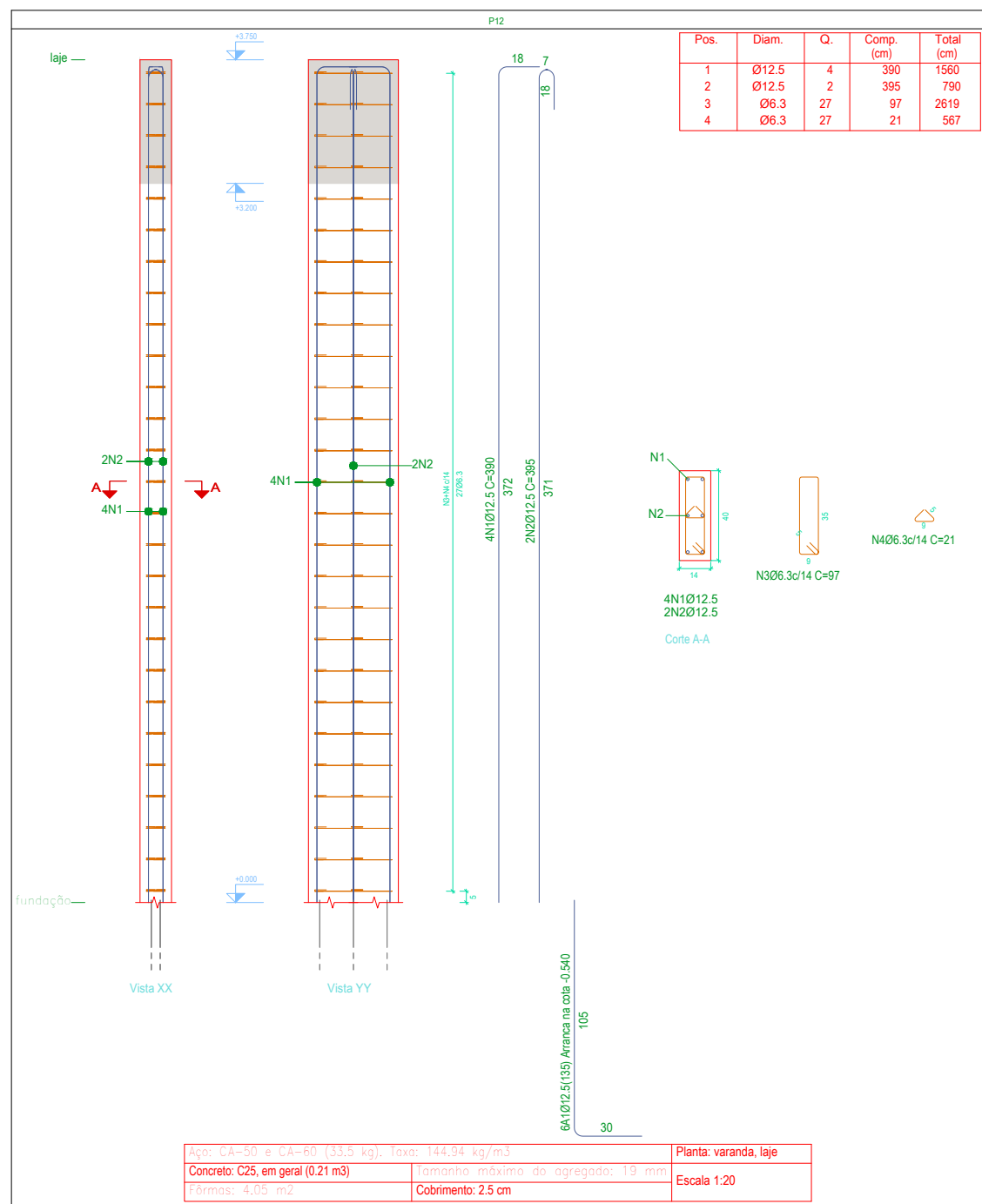
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VISTO

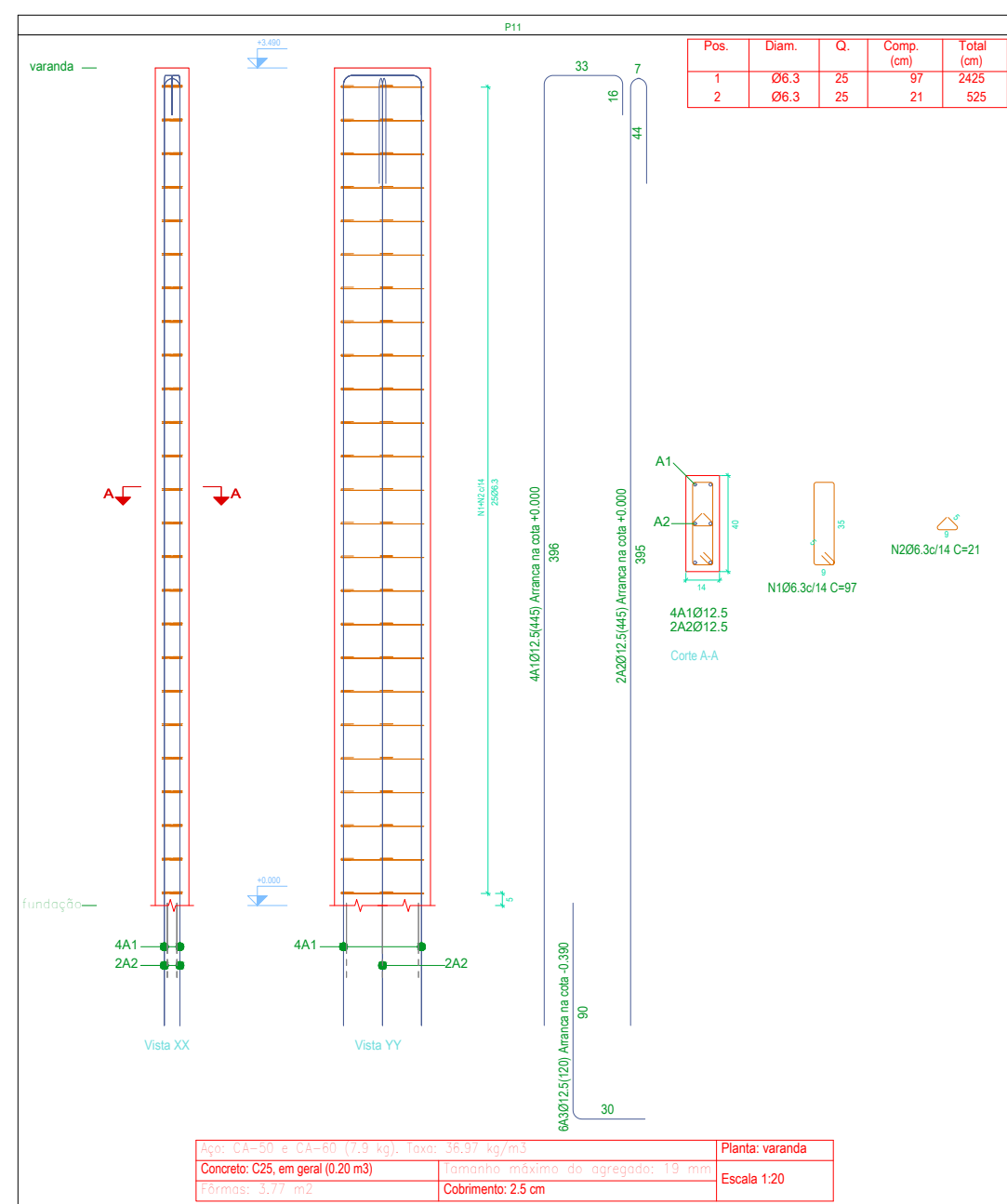
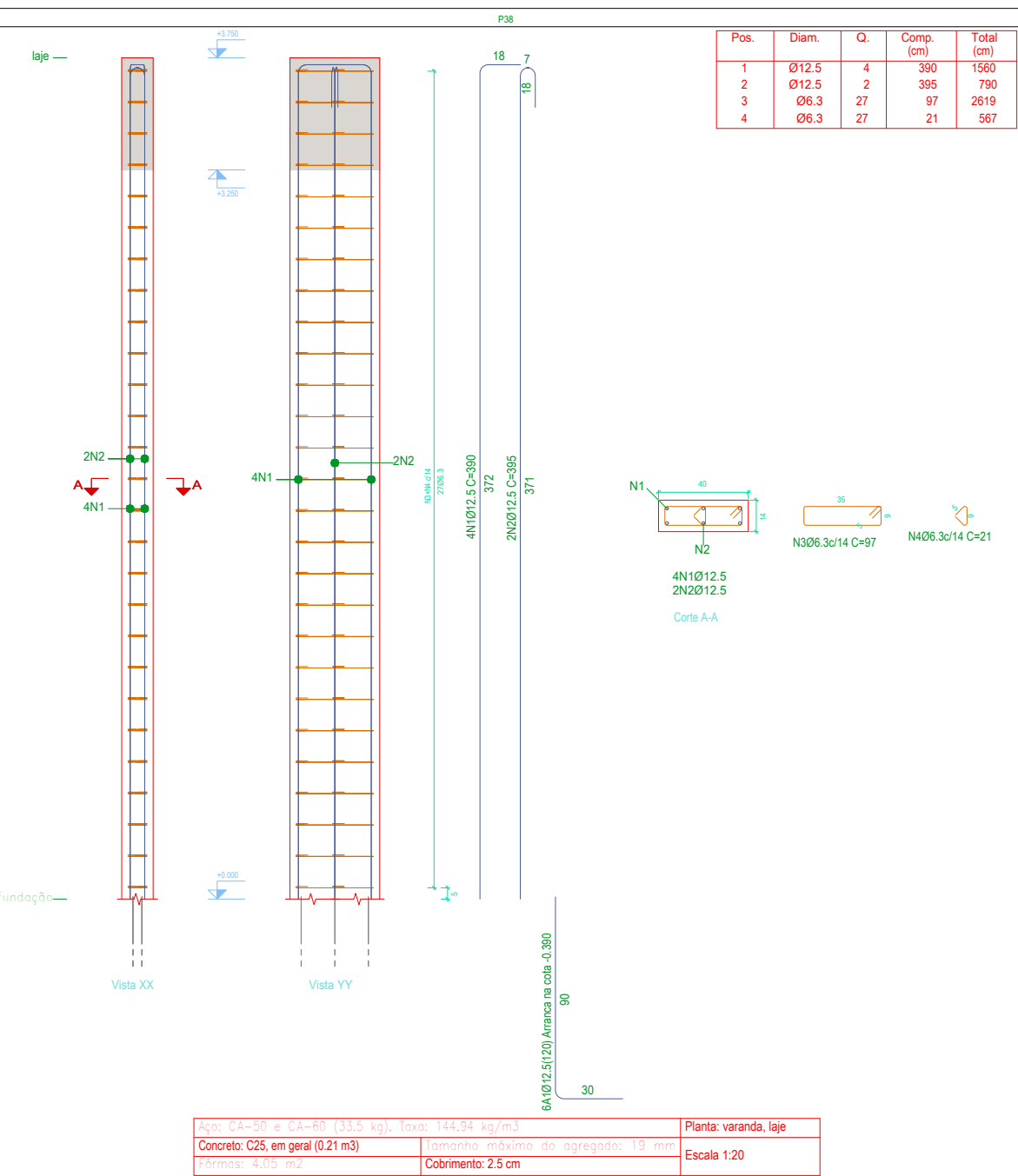
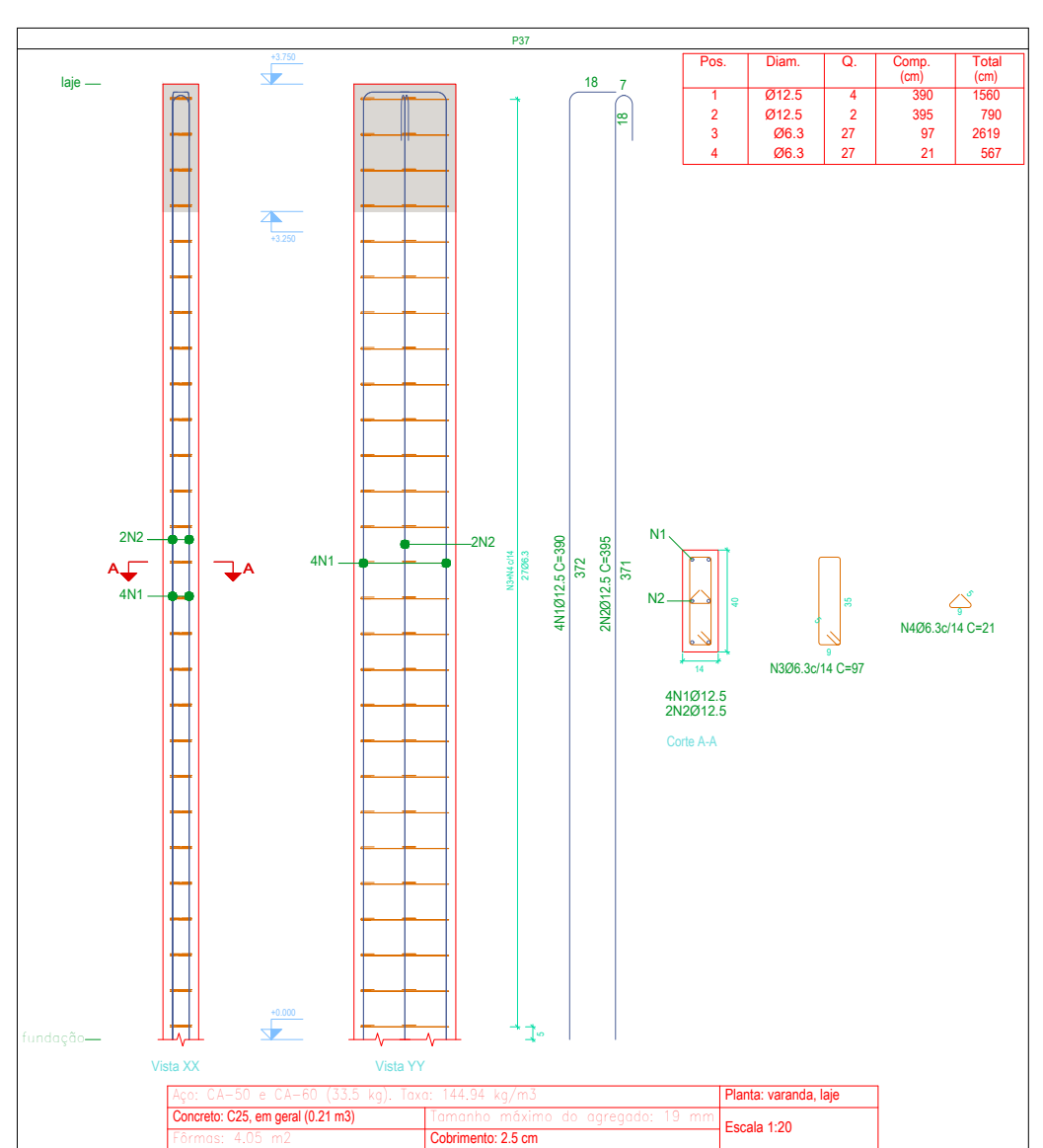
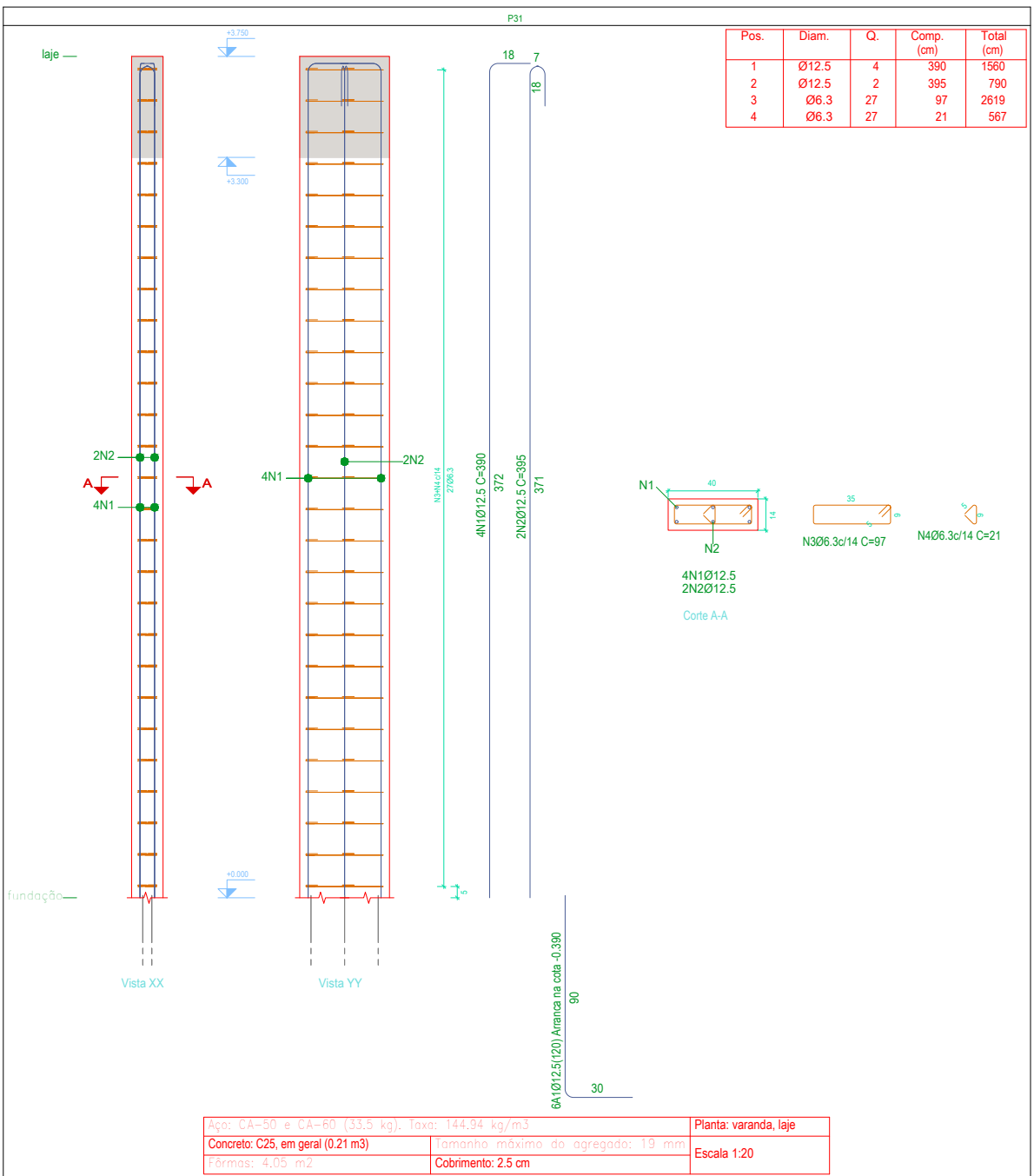
FOLHA Nº 1 PE

04/14

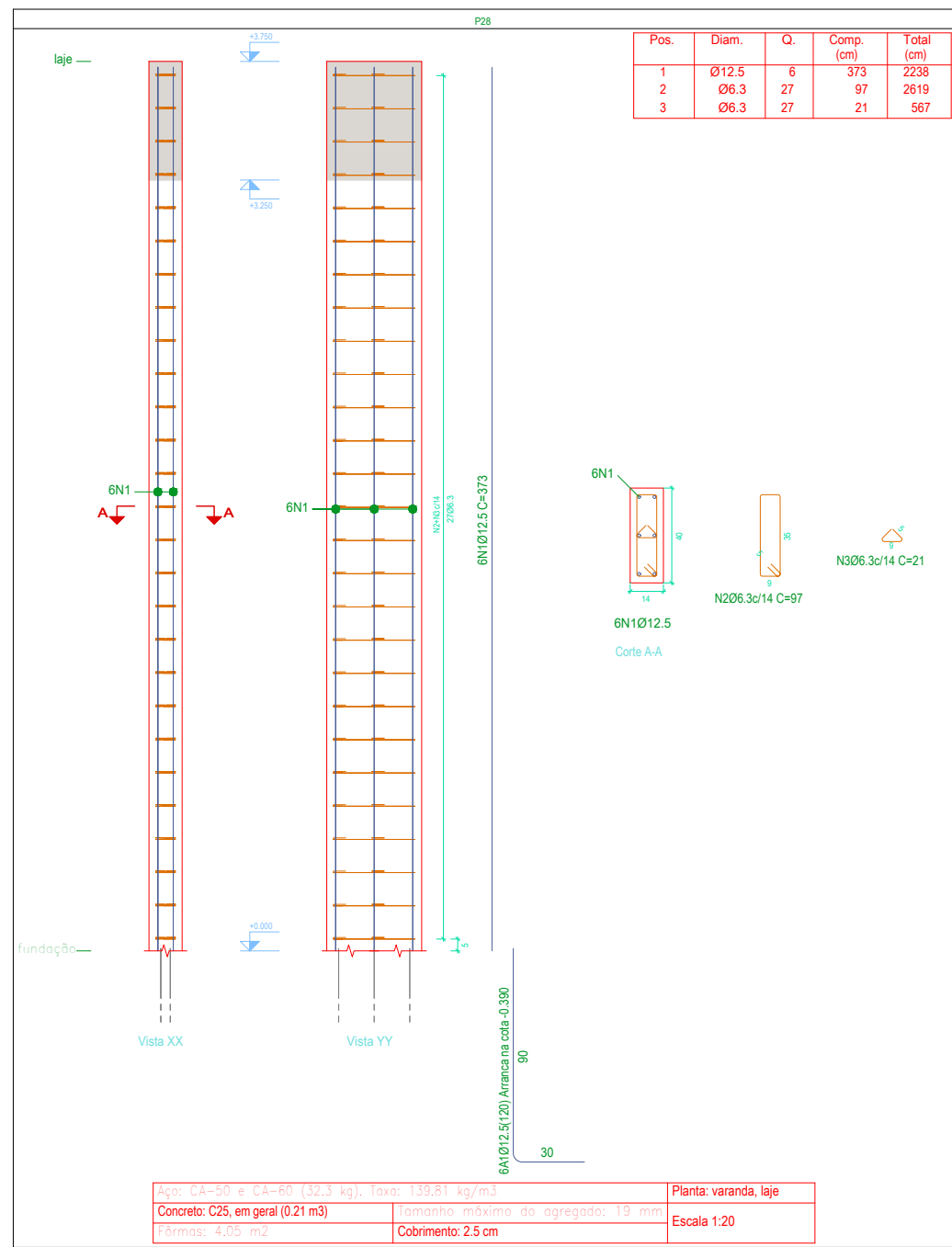
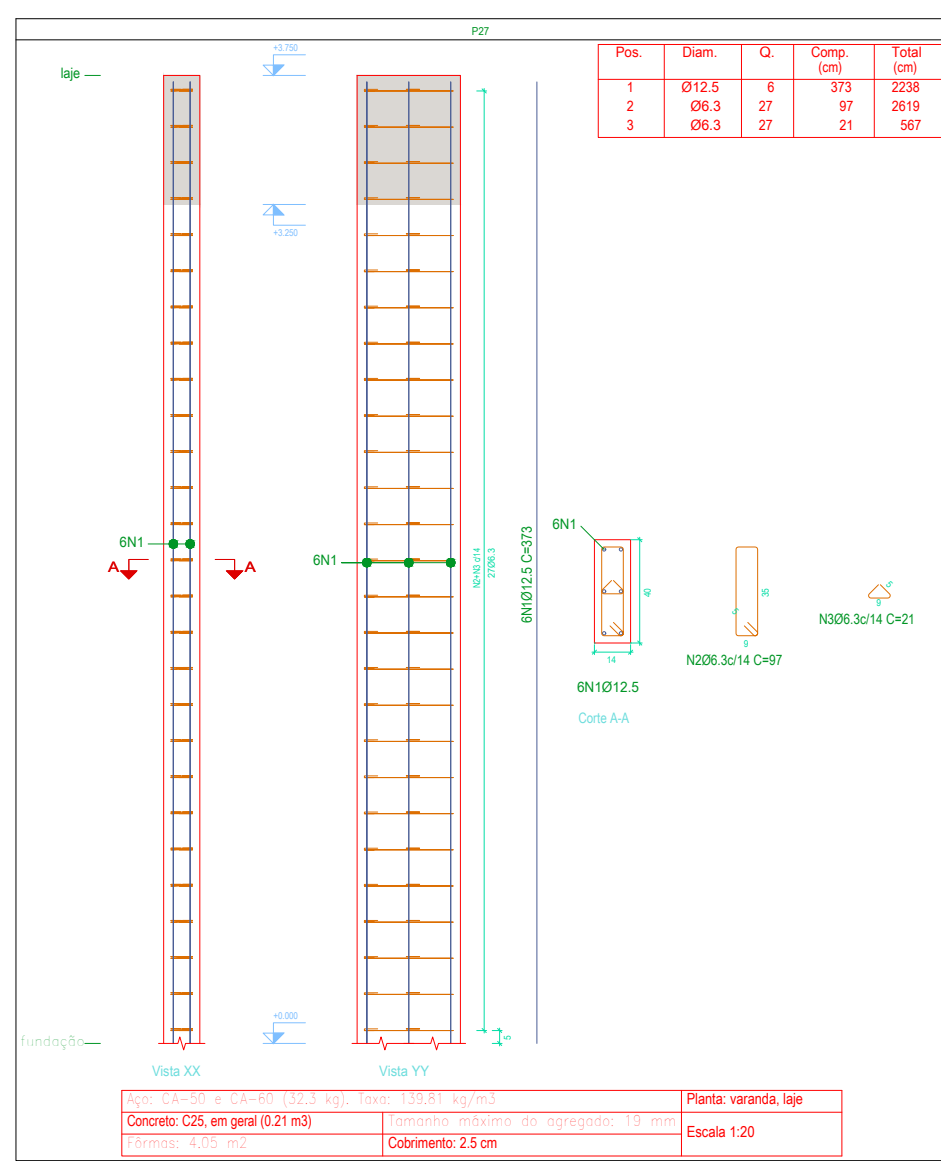
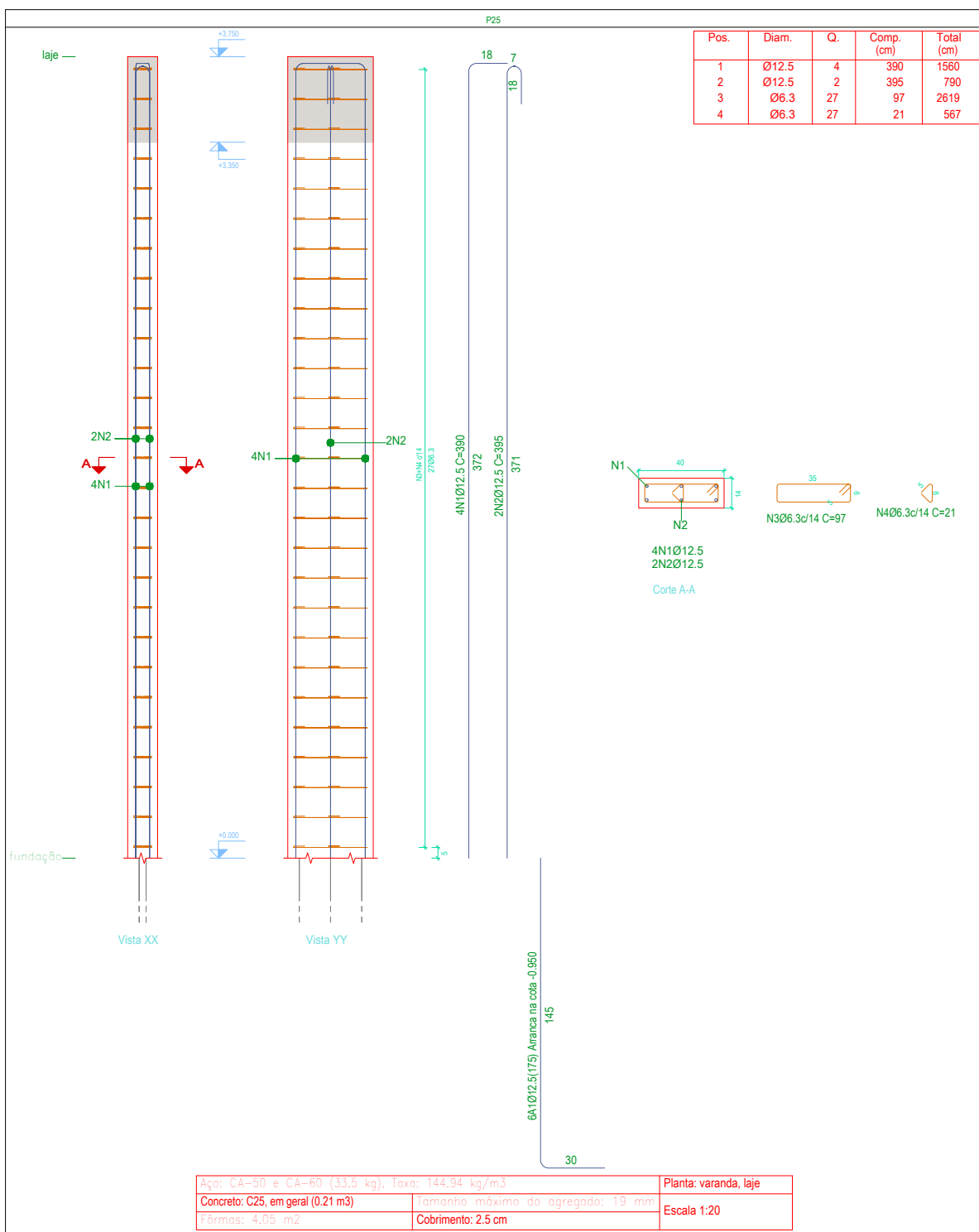
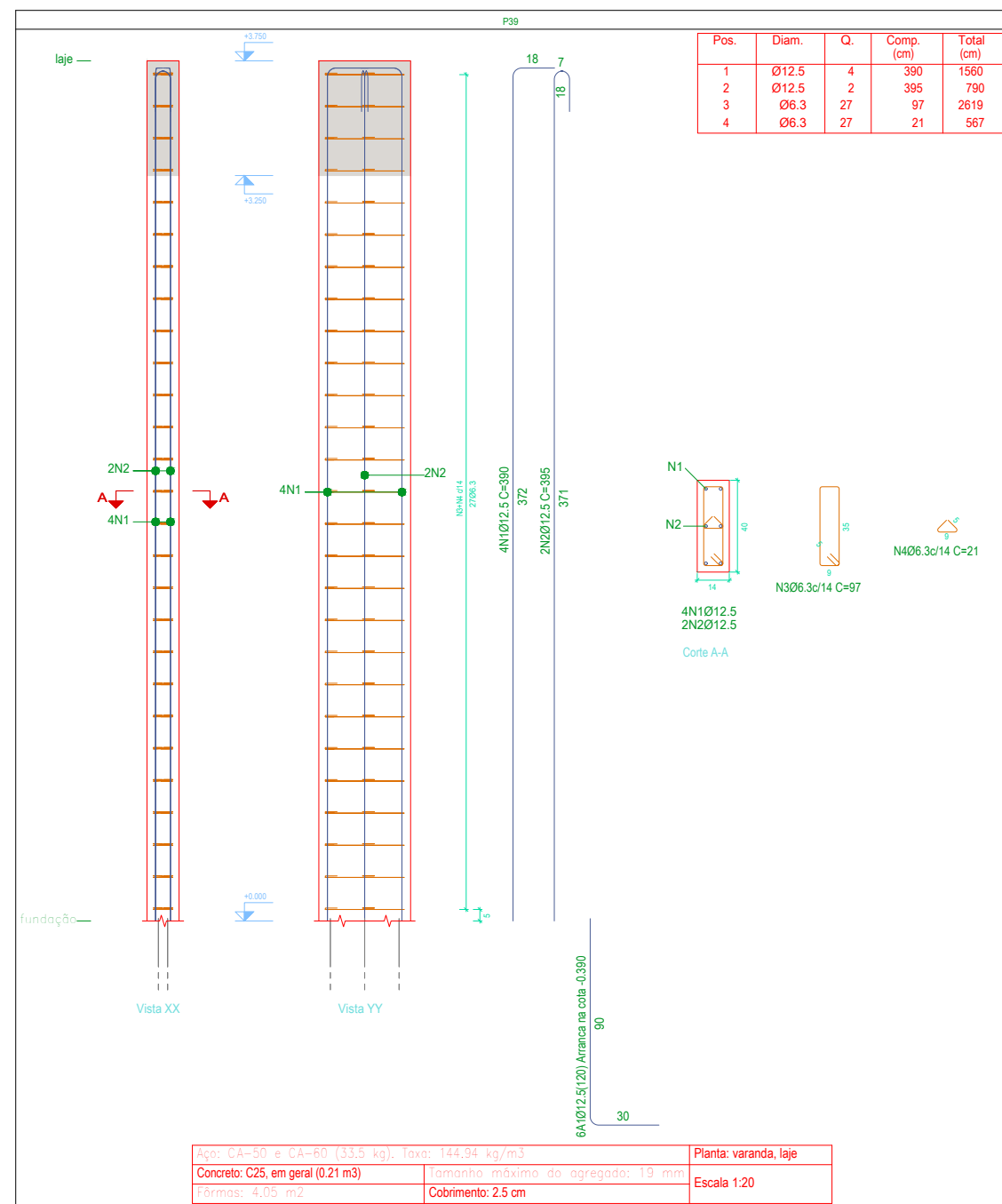
EST-AP



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (m³)	Total (m³)	CA-50 (kg)	CA-60 (kg)
P12	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
P23	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
P31	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
P26	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
P35	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
							Ø6.3: 42.5	0.0
							Ø12.5: 124.5	0.0
							Total: 167.0	0.0



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (m³)	Total (m³)	CA-50 (kg)	CA-60 (kg)
P37	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
P38	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
P39	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
P11	1	Ø6.3	25		97	2425	5.9	
	2	Ø6.3	25		21	525	1.3	
Total+10%:							7.9	
							Ø6.3: 33.4	0.0
							Ø12.5: 74.7	0.0
							Total: 108.1	0.0



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (m³)	Total (m³)	CA-50 (kg)	CA-60 (kg)
P25	1	Ø12.5	4		360	1560	15.0	
	2	Ø12.5	2		360	790	7.6	
	3	Ø6.3	27		97	2619	6.4	
	4	Ø6.3	27		21	567	1.4	
Total+10%:							33.4	
P27	1	Ø12.5	6		375	2238	21.6	
	2	Ø6.3	27		97	2619	6.4	
	3	Ø6.3	27		21	567	1.4	
Total+10%:							32.3	
P28	1	Ø12.5	6		375	2238	21.6	
	2	Ø6.3	27		97	2619	6.4	
	3	Ø6.3	27		21	567	1.4	
Total+10%:							32.3	
							Ø6.3: 25.5	0.0
							Ø12.5: 72.5	0.0
							Total: 98.0	0.0

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

RESTAURANTE UNIVERSITÁRIO

ESTRUTURAL

UNIDADE UNIVERSITÁRIA DE AQUIDAUANA
UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

LOCAL: UNIDADE UNIVERSITÁRIA DE AQUIDAUANA, AV. NÍQUEL, 1000, JARDIM UNIVERSITÁRIO, AQUIDAUANA, MATO GROSSO DO SUL, BRASIL

AUTOR DO PROJETO: WAGNER LUIZ
MANARA-63393425900

Assinado de forma digital por WAGNER LUIZ
MANARA-63393425900
Data: 2024.09.10 15:27:38 -0400

PROPRIETÁRIO: LAERCIO ALVES DE
CARVALHO-90465822568

Assinado de forma digital por LAERCIO ALVES DE CARVALHO-90465822568
Data: 2024.09.10 15:27:38 -0400

WAGNER LUIZ MANARA - CREA 27.190/D-PR

LAERCIO ALVES DE CARVALHO - CREA 27.190/D-PR

RESTAURANTE UNIVERSITÁRIO
Pilares 4/6

REFERENCIA: 05/14

ESCALA: INDICADA

UNIDADE: METRO

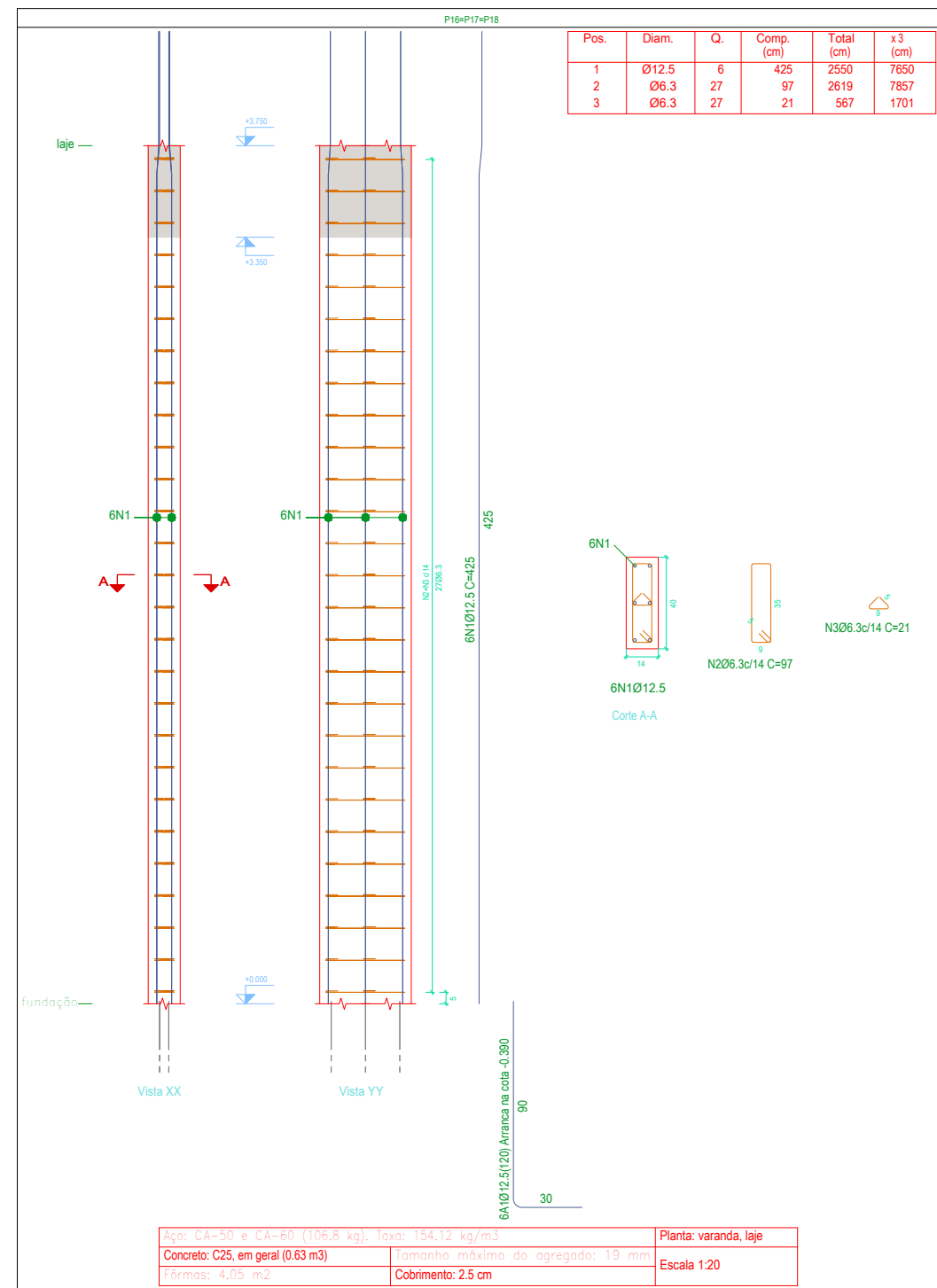
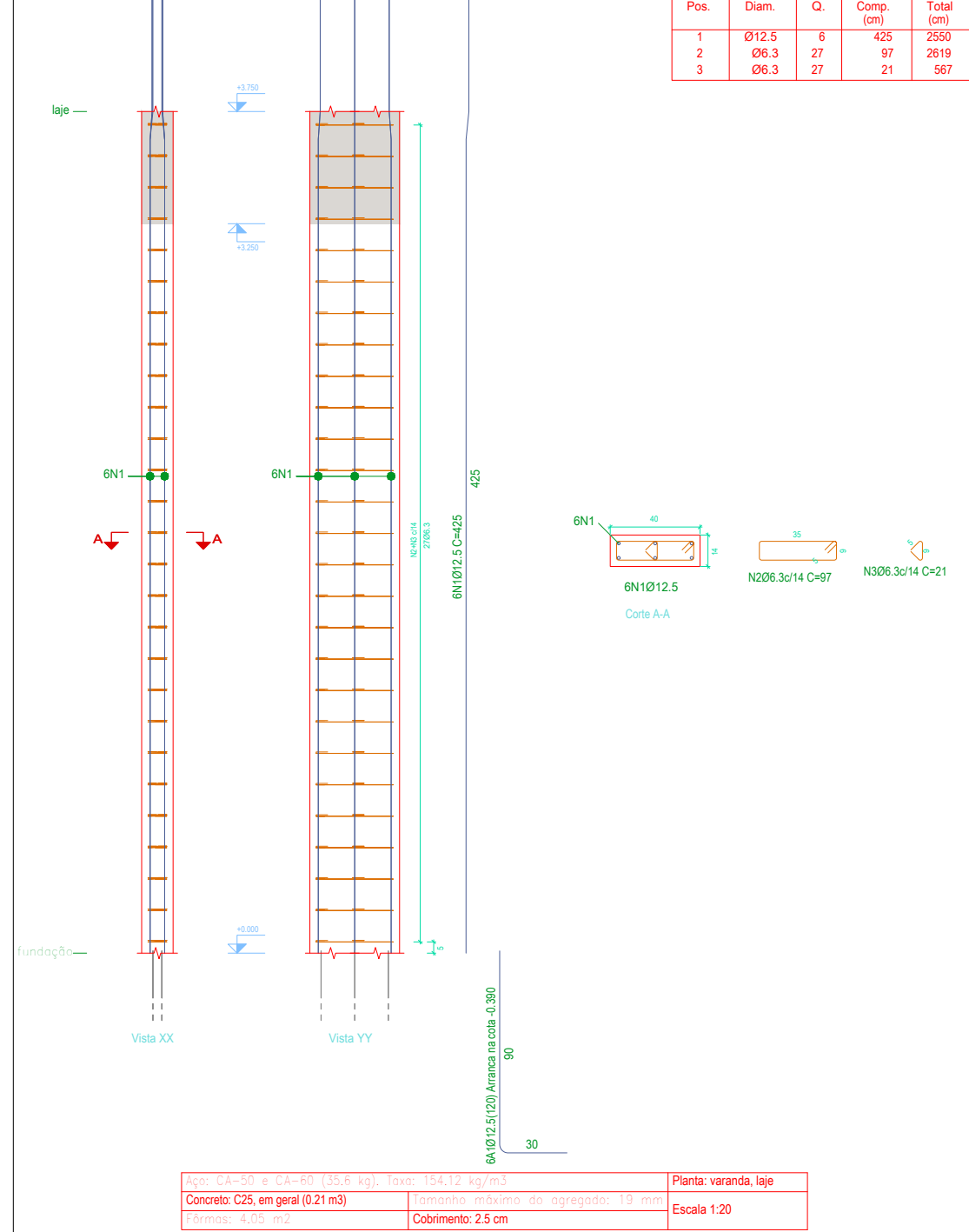
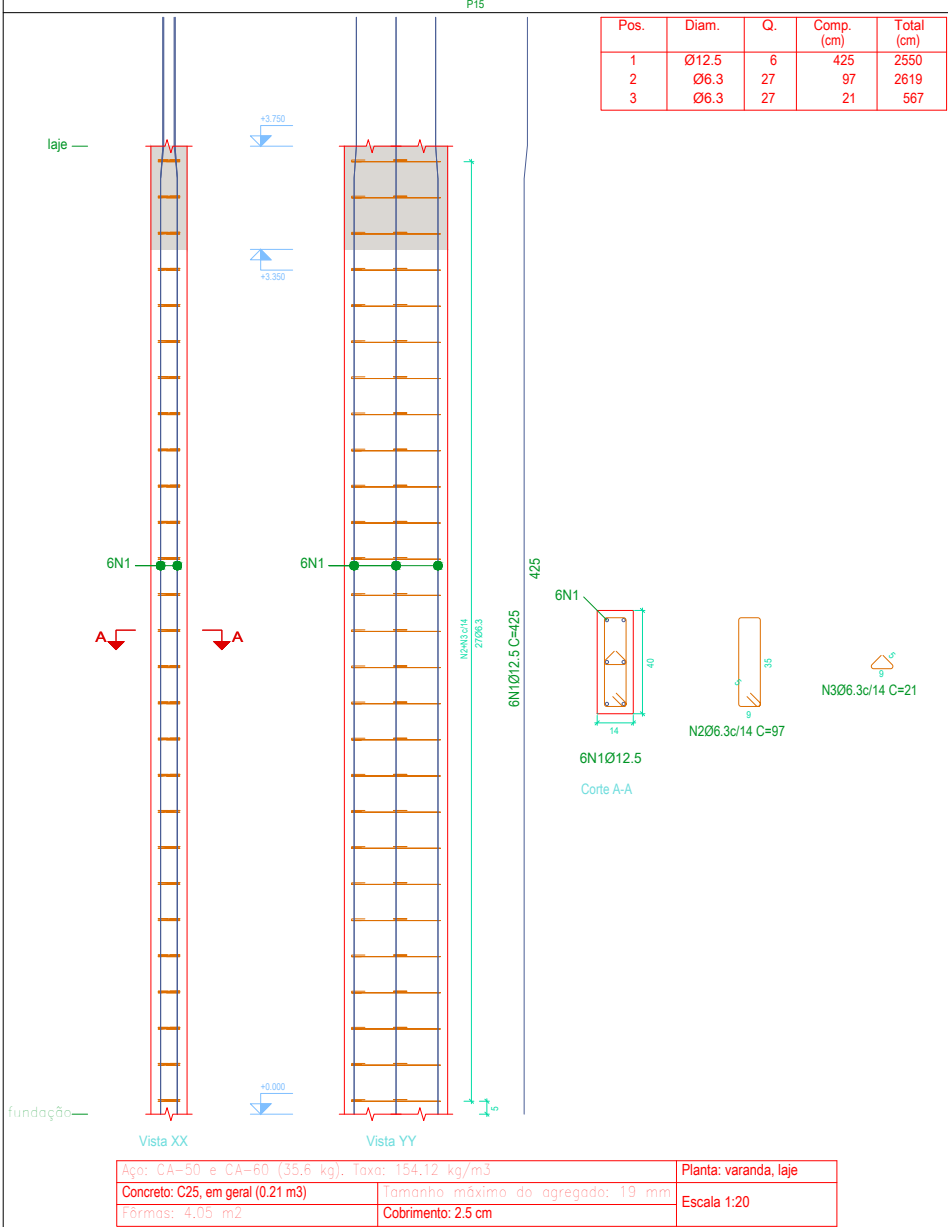
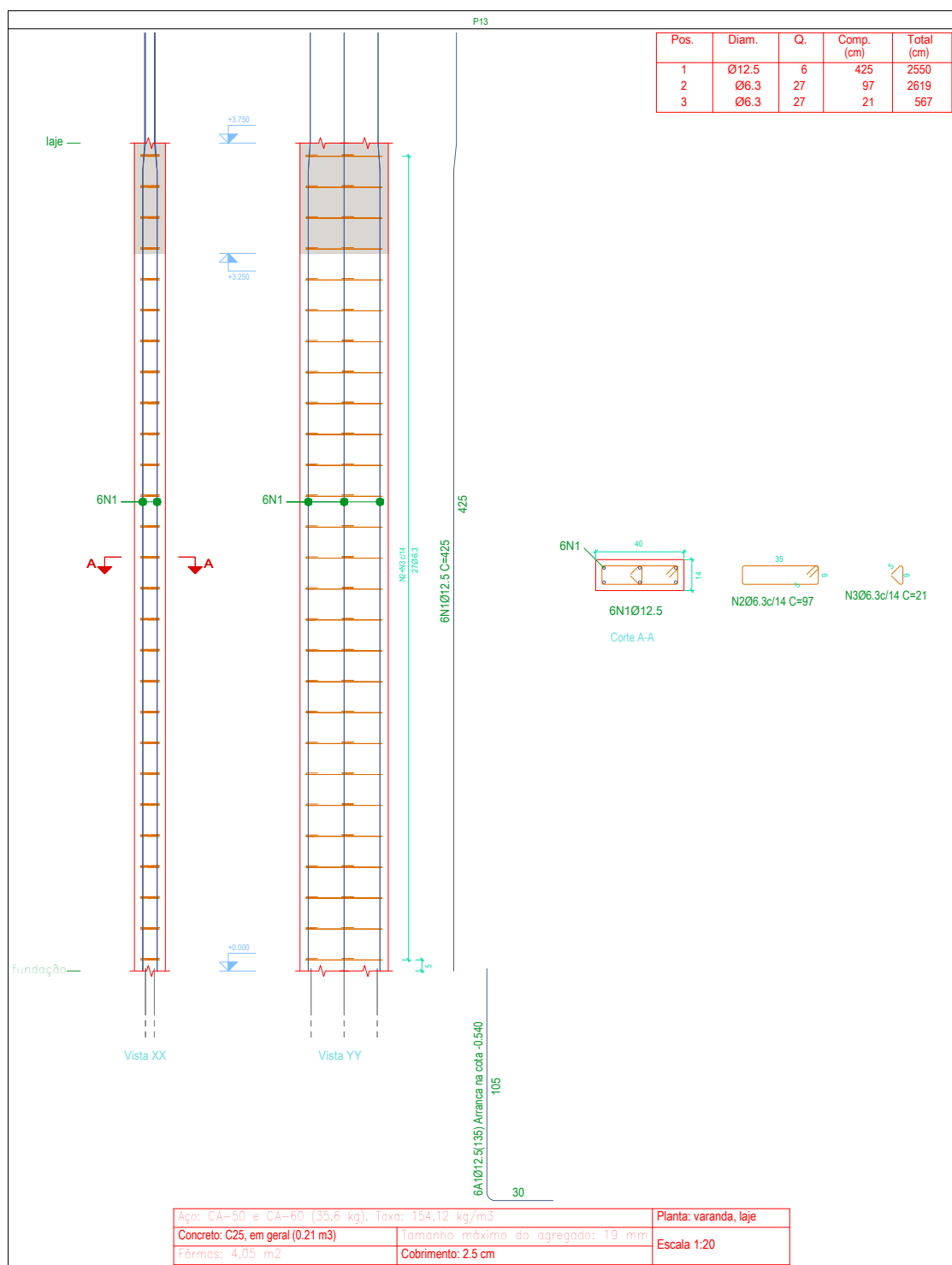
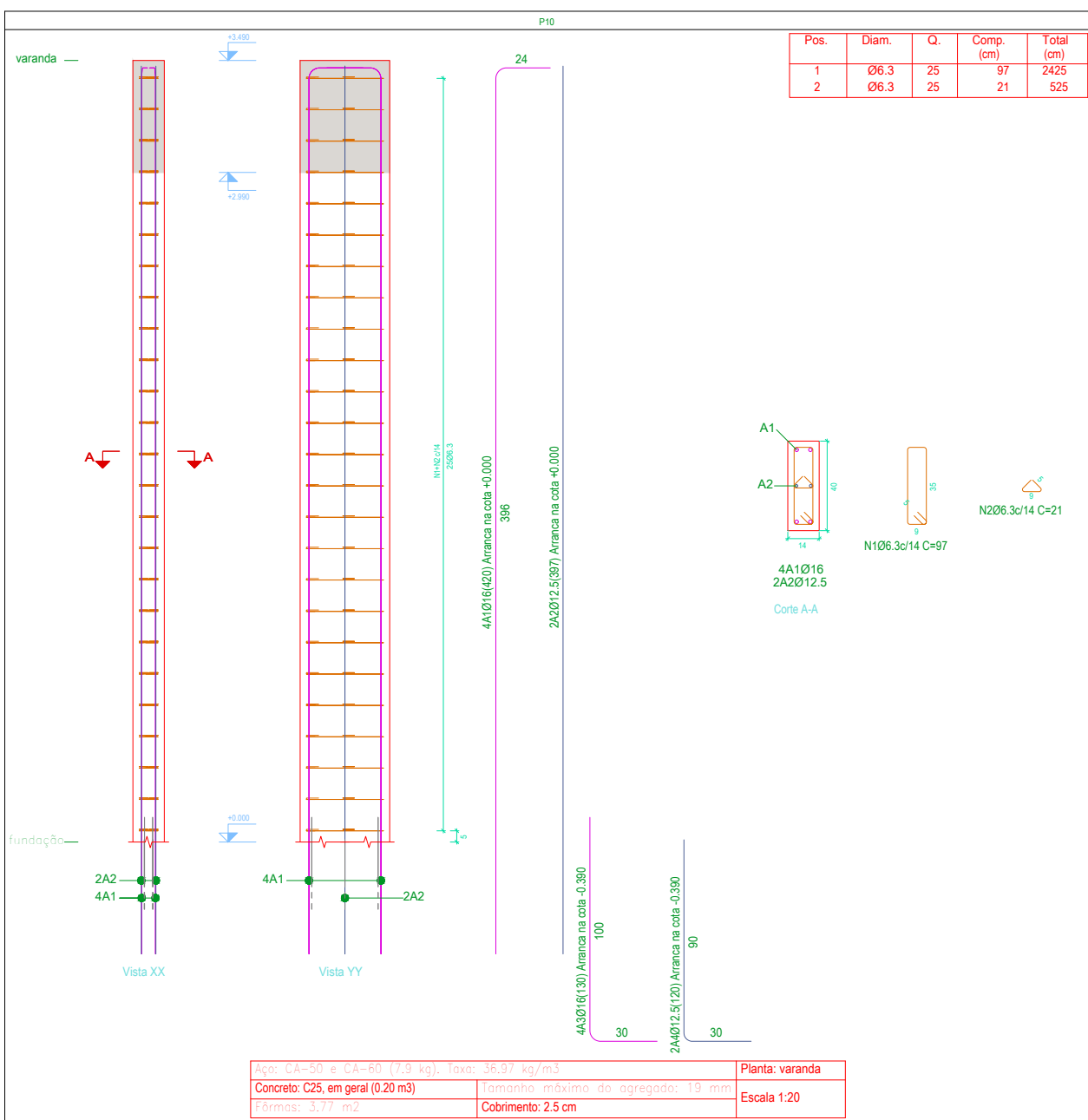
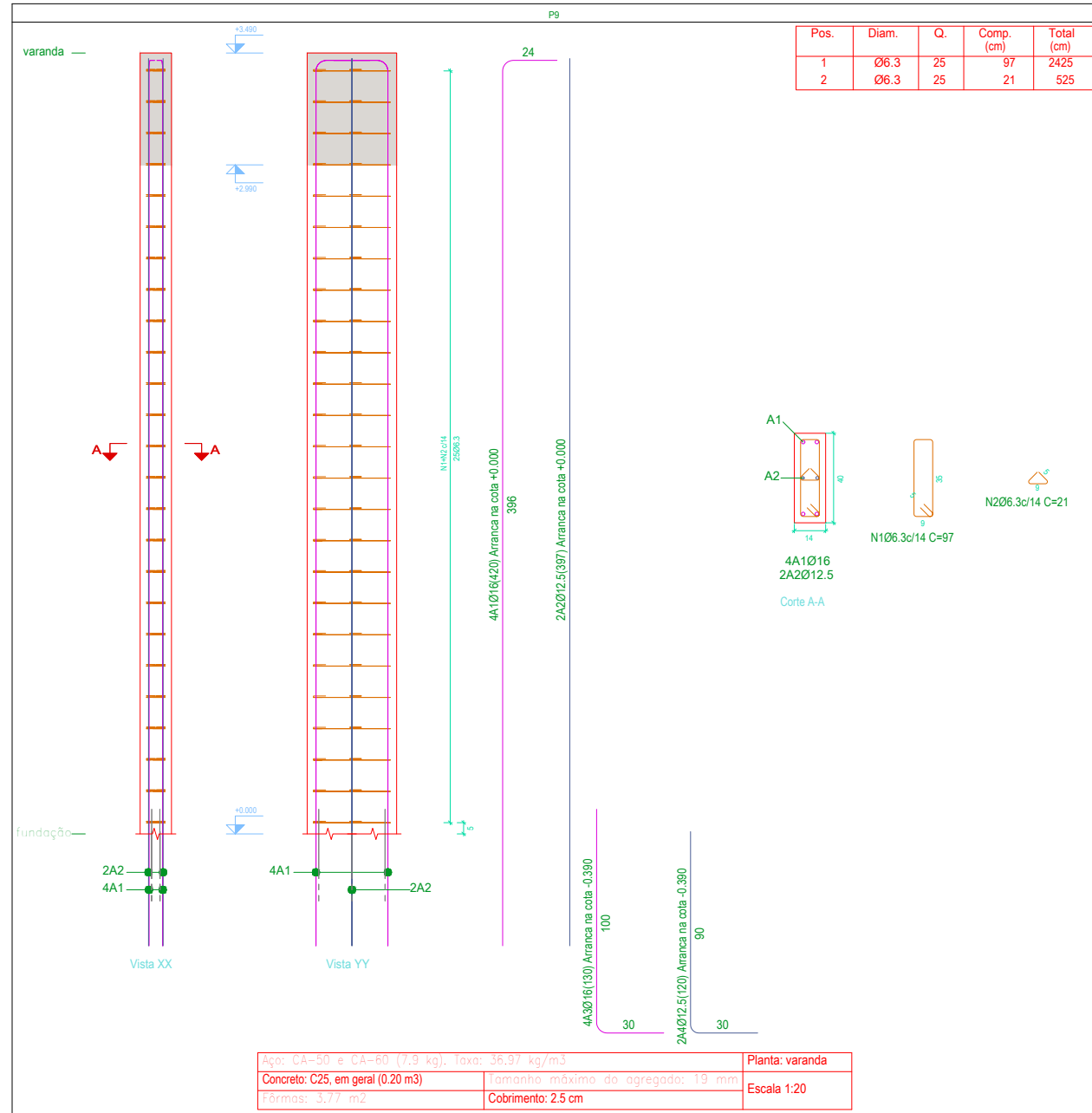
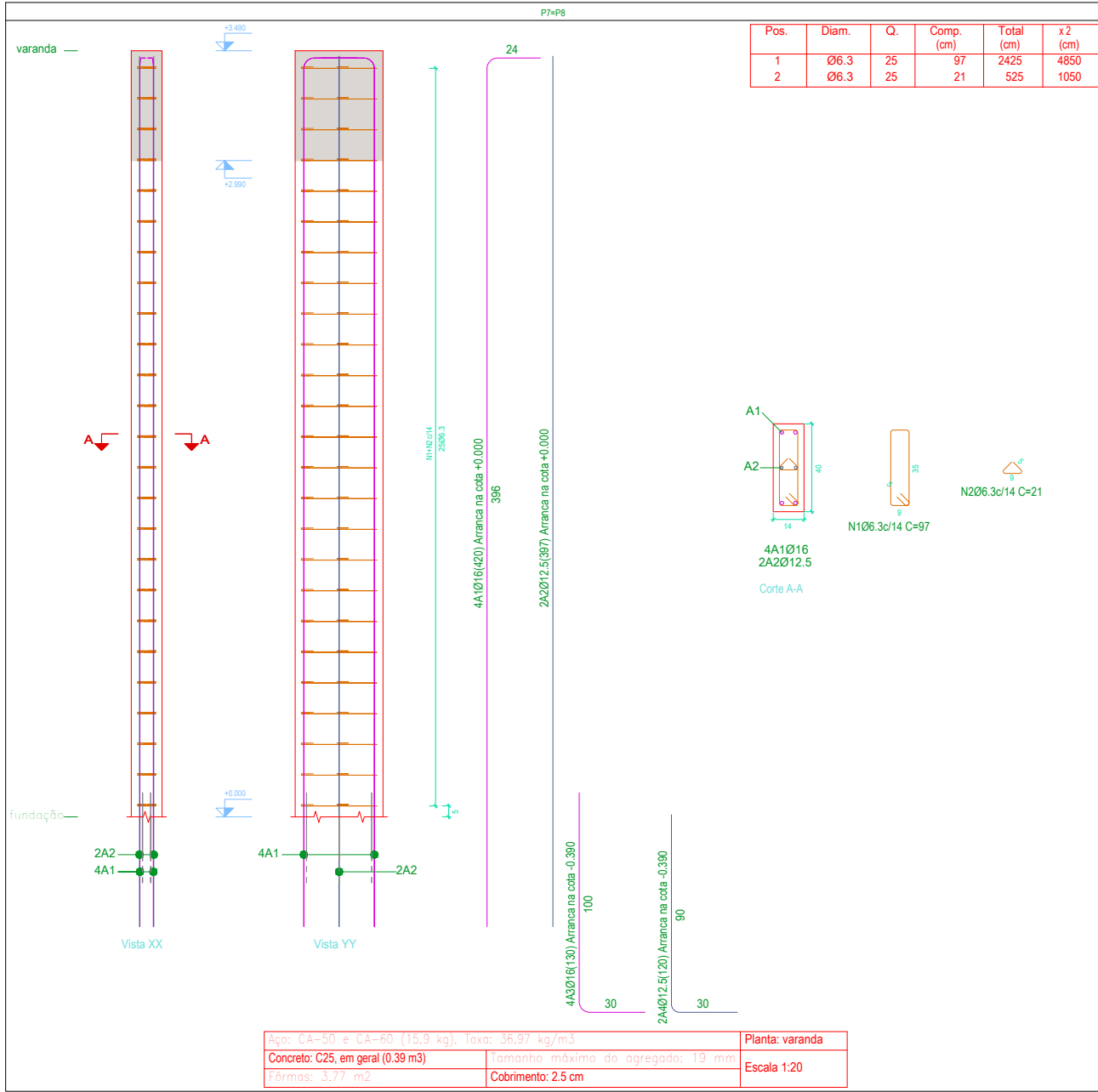
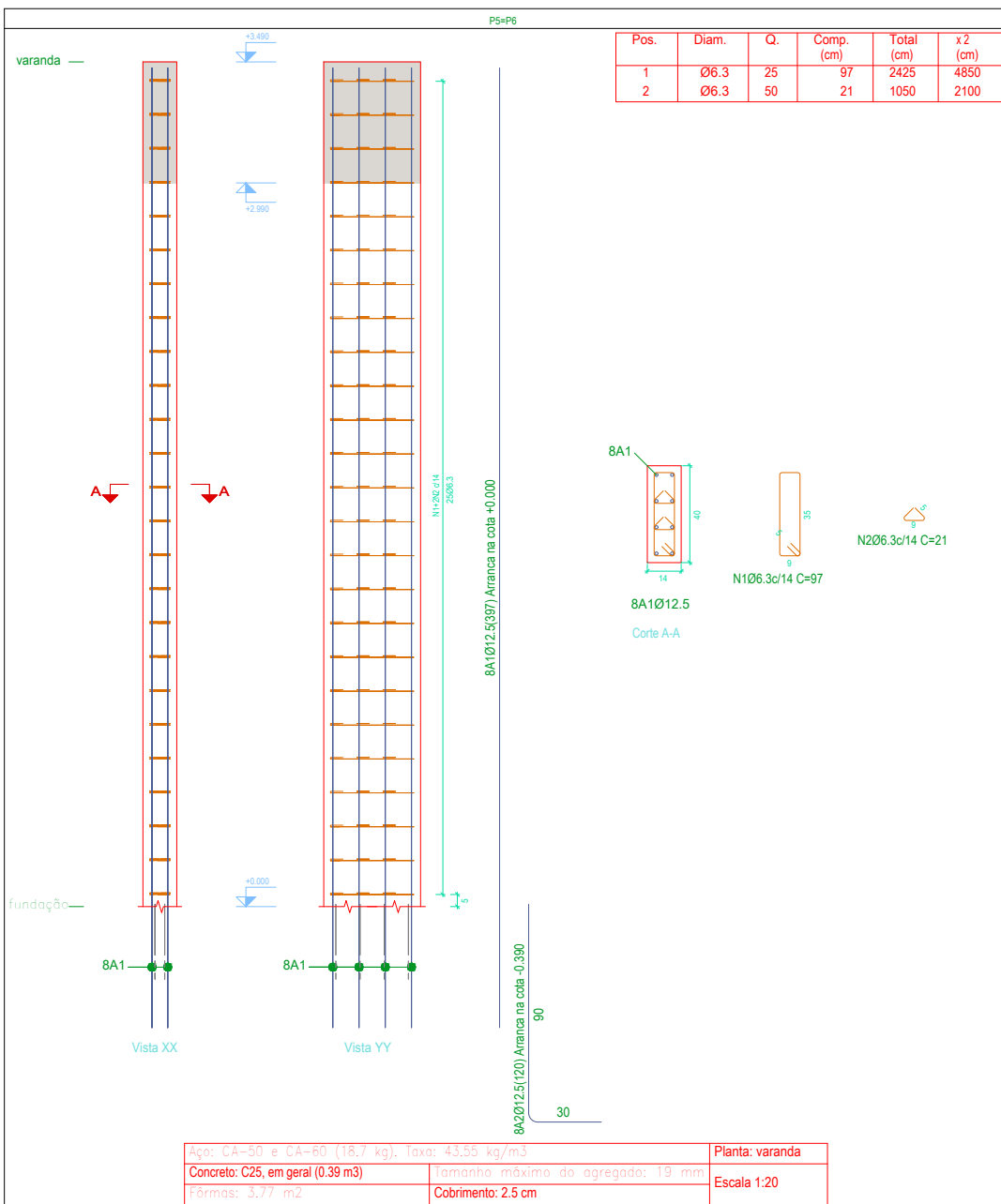
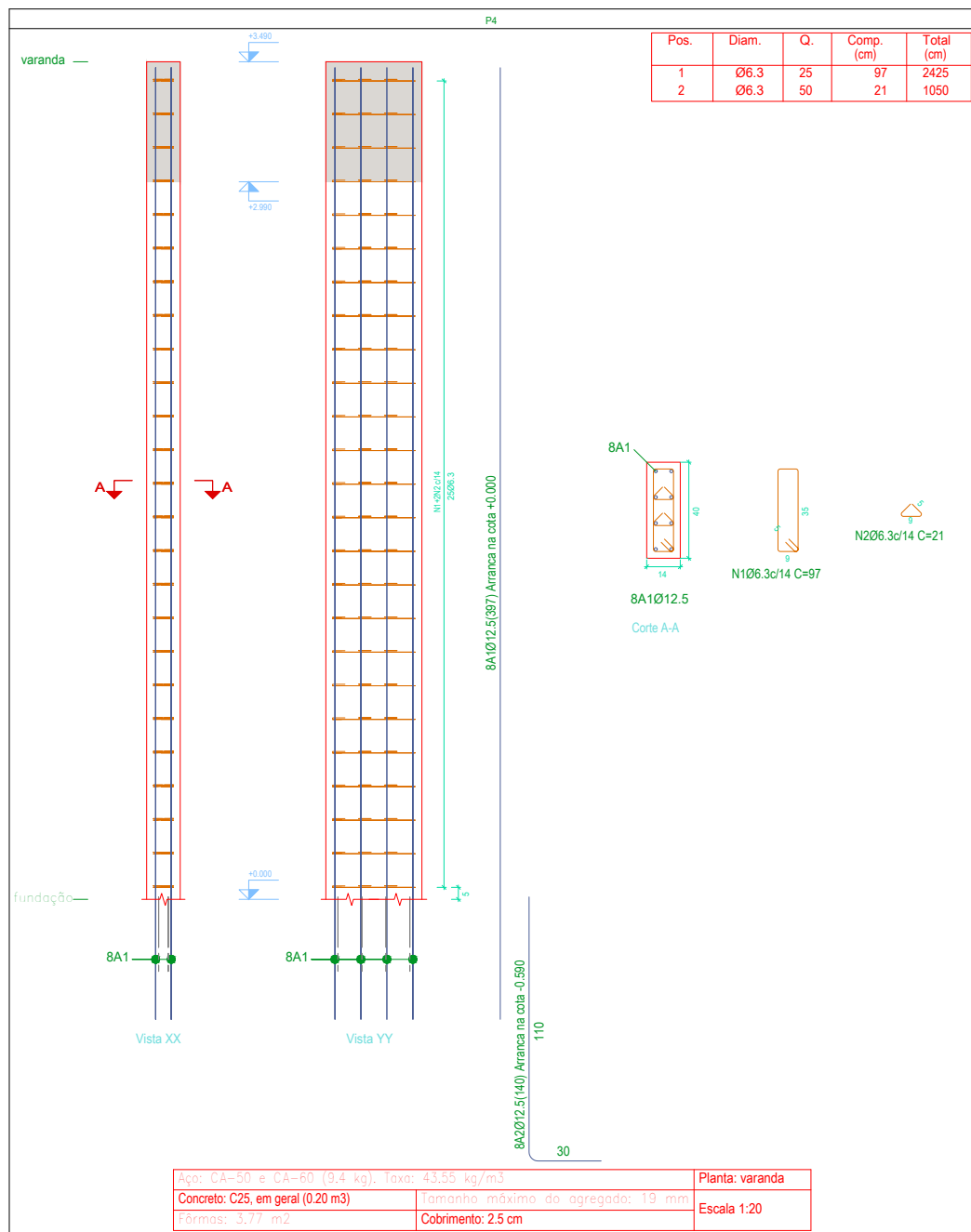
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DATA: SETEMBRO/2024

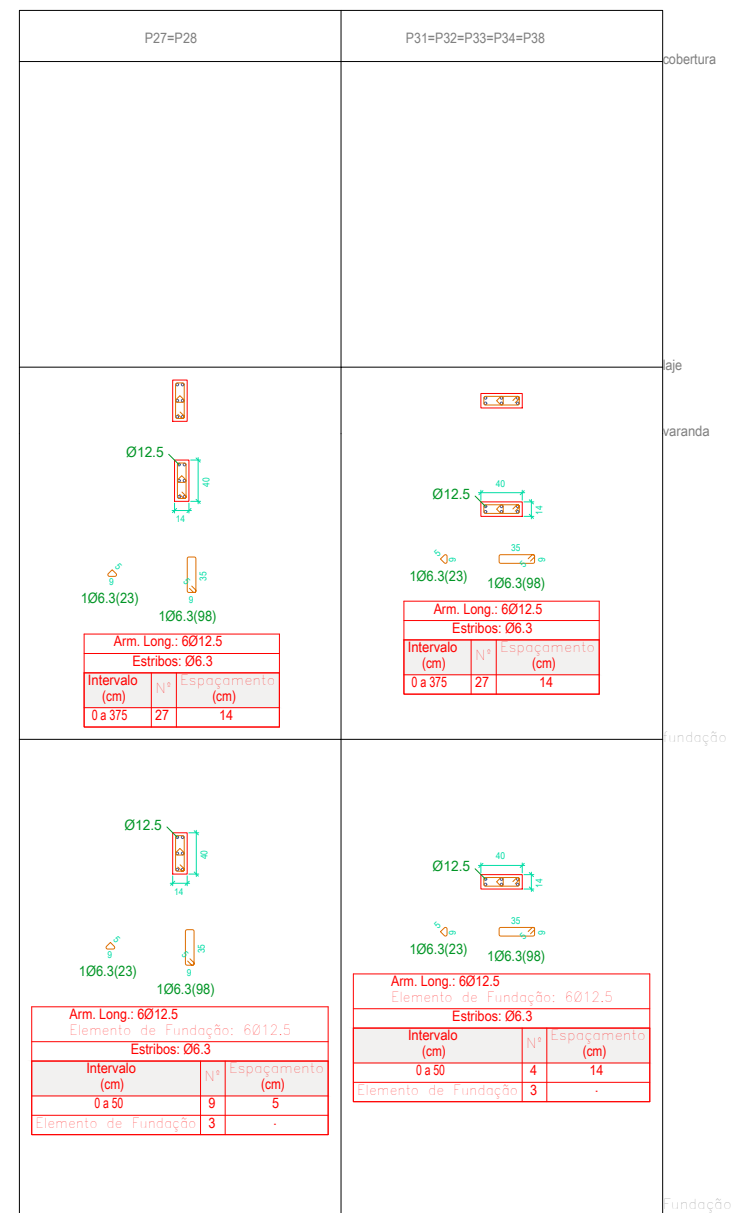
DESENHO: THIAGO

REVISÃO: R00

VISTO:



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P4	1	Ø6.3	25		97	2425	5.9	
	2	Ø6.3	50		21	1050	2.6	
Total+10%:							9.4	
P5+P6	1	Ø6.3	25		97	2425	5.9	
	2	Ø6.3	50		21	1050	2.6	
Total+10%:							9.4	
P7+P8	1	Ø6.3	25		97	2425	5.9	
	2	Ø6.3	25		21	525	1.3	
Total+10%:							7.9	
P9	1	Ø6.3	25		97	2425	5.9	
	2	Ø6.3	25		21	525	1.3	
Total+10%:							7.9	
P10	1	Ø6.3	25		97	2425	5.9	
	2	Ø6.3	25		21	525	1.3	
Total+10%:							7.9	
Ø6.3: 59.8							0.0	
Total:							59.8	0.0
Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
P13	1	Ø12.5	6		425	2550	24.6	
	2	Ø6.3	27		97	2619	6.4	
	3	Ø6.3	27		21	567	1.4	
Total+10%:							35.6	
P14	1	Ø12.5	6		425	2550	24.6	
	2	Ø6.3	27		97	2619	6.4	
	3	Ø6.3	27		21	567	1.4	
Total+10%:							35.6	
P15	1	Ø12.5	6		425	2550	24.6	
	2	Ø6.3	27		97	2619	6.4	
	3	Ø6.3	27		21	567	1.4	
Total+10%:							35.6	
P16+P17+P18	1	Ø12.5	6		425	2550	24.6	
	2	Ø6.3	27		97	2619	6.4	
	3	Ø6.3	27		21	567	1.4	
Total+10%:							35.6	
Ø6.3: 57.0							0.0	
Ø12.5: 162.6							0.0	
Total:							213.6	0.0



UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

PROPRIETÁRIO

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

TÍTULO

RESTAURANTE UNIVERSITÁRIO

PROJETO

ESTRUTURAL

LOCAL

UNIDADE UNIVERSITÁRIA DE AQUIDAUANA
UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO

WAGNER LUIZ MANARA-63399425900

Assinado de forma digital por WAGNER LUIZ MANARA-63399425900
Dados: 2024.09.10 15:27:56 -0400

PROPRIETÁRIO

LAERCIO ALVES DE CARVALHO-90465822568

Assinado de forma digital por LAERCIO ALVES DE CARVALHO-90465822568
Dados: 2024.09.10 15:27:56 -0400

FUNDAÇÃO UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

CNPJ: 06.963.905/0001-80

WAGNER LUIZ MANARA - CREA 27.190/D-PR

REFERENCIA

RESTAURANTE UNIVERSITÁRIO
Pílares 5/6

FOLHA Nº / PE

06/14

ESCALA:

INDICADA

UNIDADE:

METRO

ARQUIVO

DATA:

16/09/2024

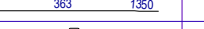
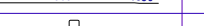
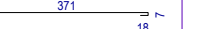
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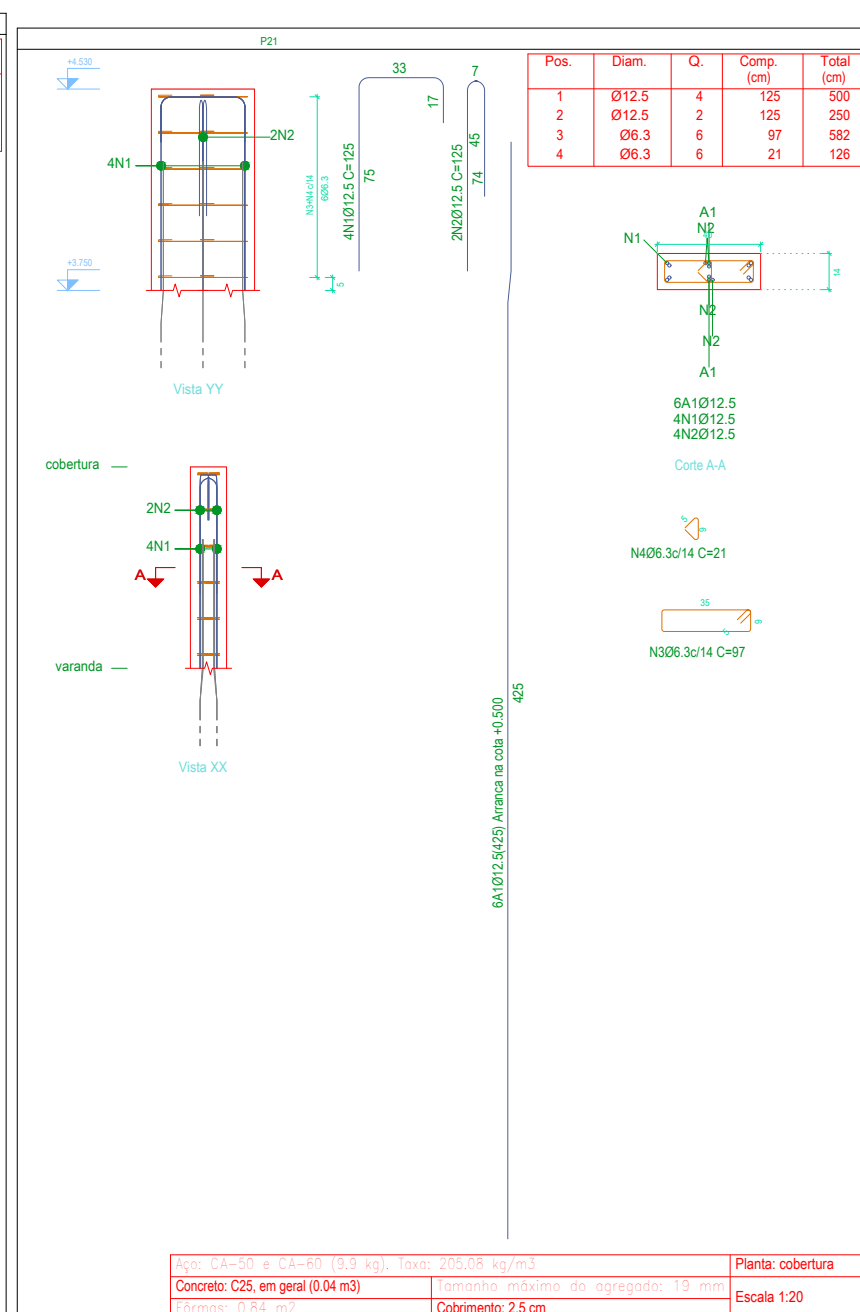
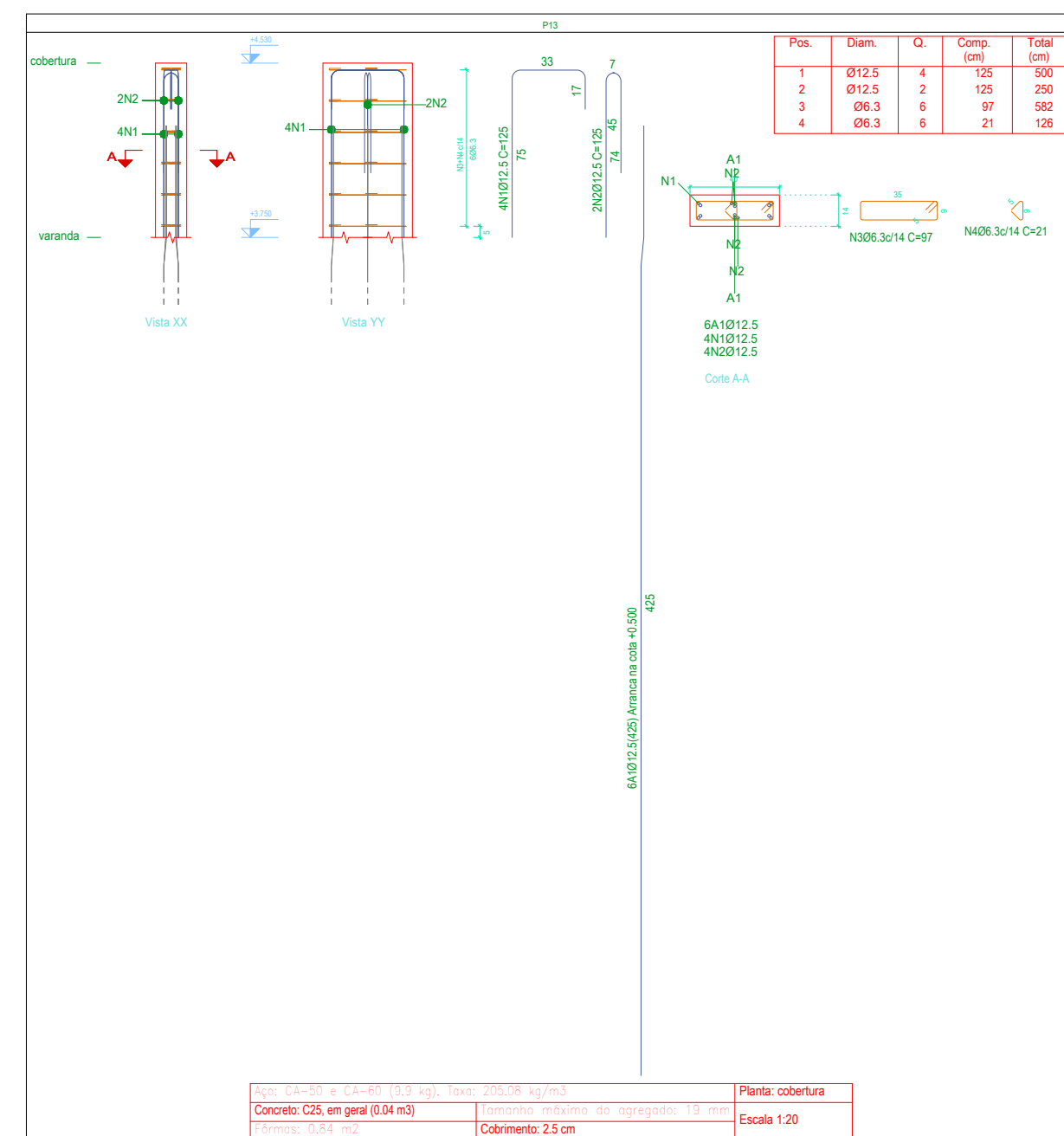
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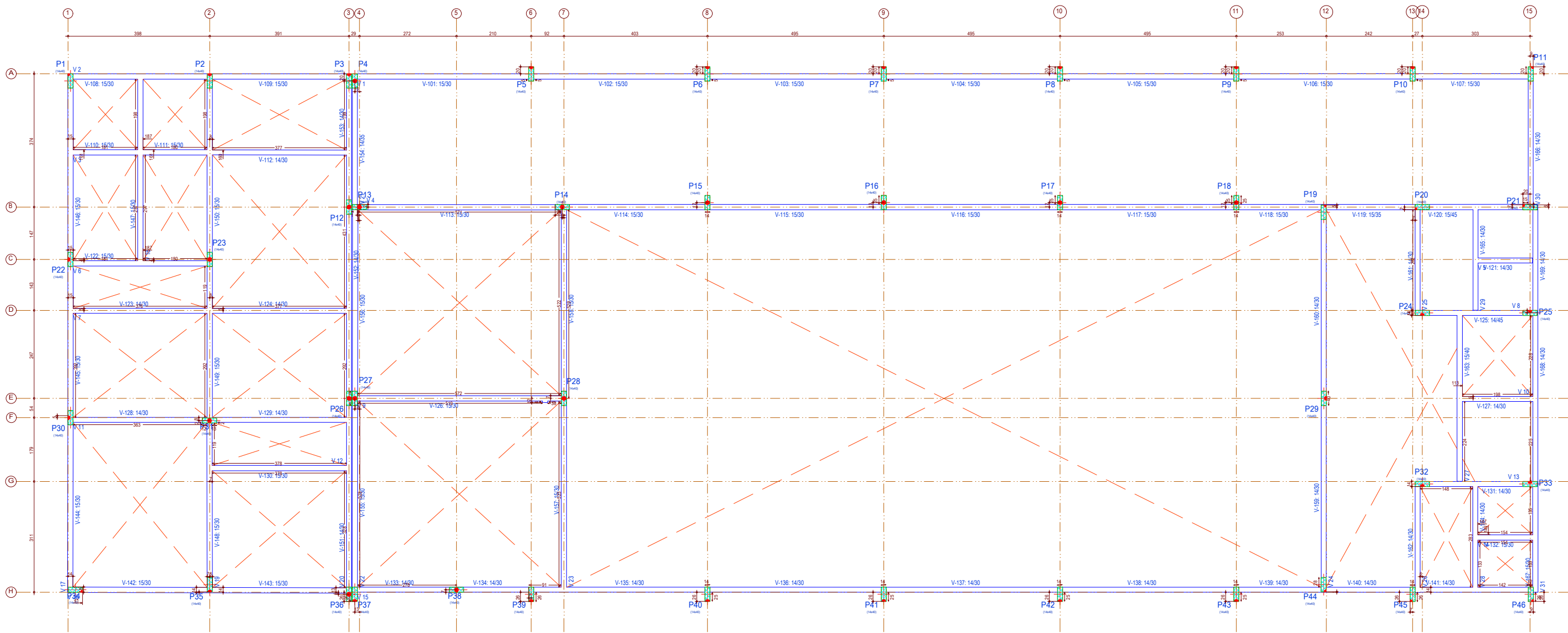
REVISÃO

R00

VISTO

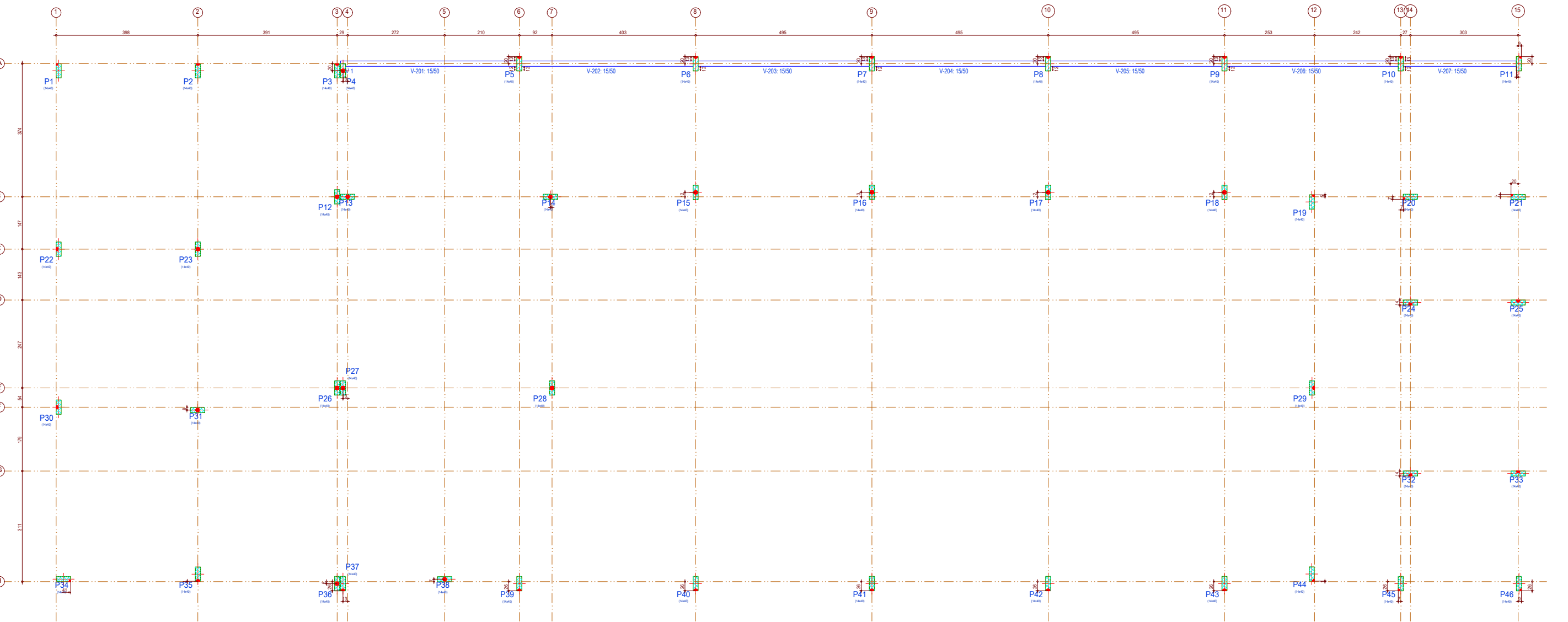
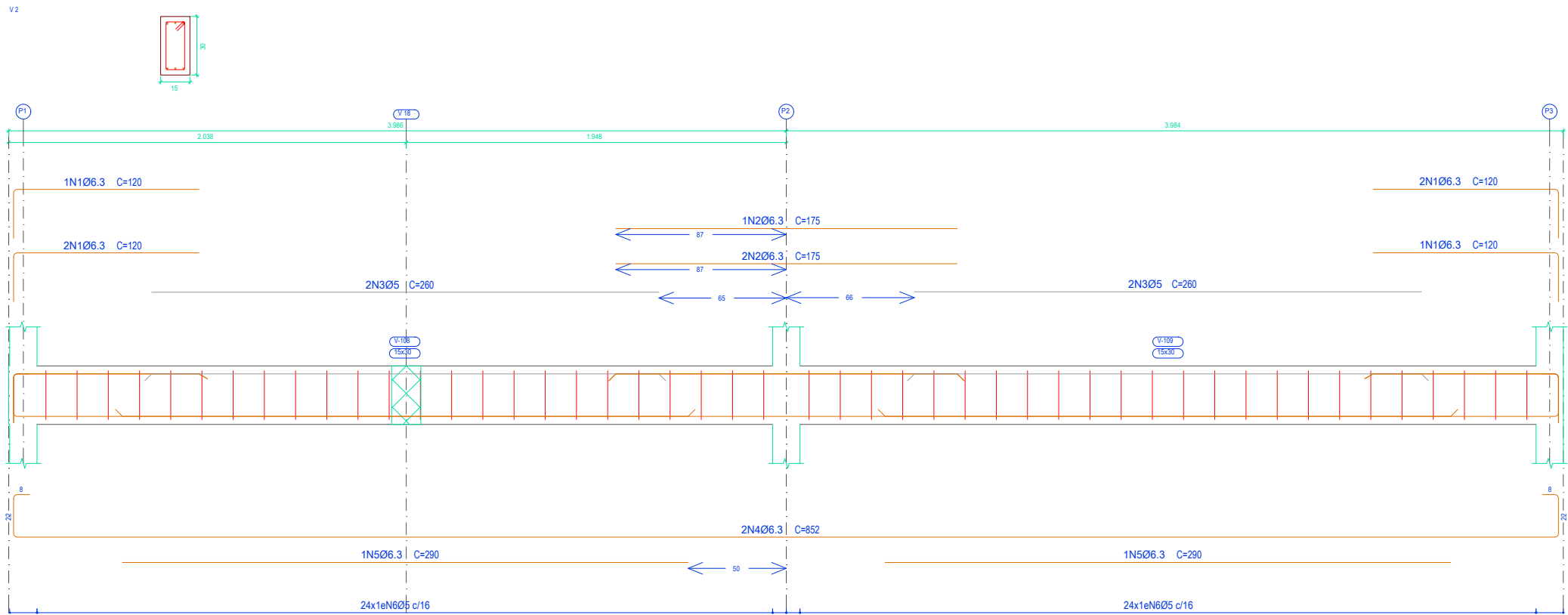
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P21	1	Ø12.5	6		425	2550	24.6		P13	1	Ø12.5	4		125	500	4.8	
	2	Ø6.3	27		97	2619	6.4			2	Ø12.5	2		125	250	2.4	
	3	Ø6.3	27		21	567	1.4			3	Ø6.3	6		97	582	1.4	
	Total+10%: 35.6									4	Ø6.3	6		21	126	0.3	
P19	1	Ø12.5	6		425	2550	24.6		P14	1	Ø12.5	4		125	500	4.8	
	2	Ø6.3	27		97	2619	6.4			2	Ø12.5	2		125	250	2.4	
	3	Ø6.3	27		21	567	1.4			3	Ø6.3	6		97	582	1.4	
	Total+10%: 35.6									4	Ø6.3	6		21	126	0.3	
P20	1	Ø12.5	6		425	2550	24.8		P15	1	Ø12.5	4		125	500	4.8	
	2	Ø6.3	27		97	2619	6.4			2	Ø12.5	2		125	250	2.4	
	3	Ø6.3	27		21	567	1.4			3	Ø6.3	6		97	582	1.4	
	Total+10%: 35.6									4	Ø6.3	6		21	126	0.3	
P24	1	Ø12.5	4		390	1560	15.0		P16+P17+P18	1	Ø12.5	4		125	500	4.8	
	2	Ø12.5	2		395	790	7.6			2	Ø12.5	2		125	250	2.4	
	3	Ø6.3	27		97	2619	6.4			3	Ø6.3	6		97	582	1.4	
	4	Ø6.3	27		21	567	1.4			4	Ø6.3	6		21	126	0.3	
Total+10%: 33.4									Total+10%: 9.8								
Ø6.3: 34.0							0.0		(x3): 29.4								
Ø12.5: 106.2							0.0										
Total: 140.2							0.0										
									P21	1	Ø12.5	4		125	500	4.8	
										2	Ø12.5	2		125	250	2.4	
										3	Ø6.3	6		97	582	1.4	
										4	Ø6.3	6		21	126	0.3	
									Total+10%: 9.8								
									Ø6.3: 13.3							0.0	
									Ø12.5: 55.3							0.0	
									Total: 68.6							0.0	



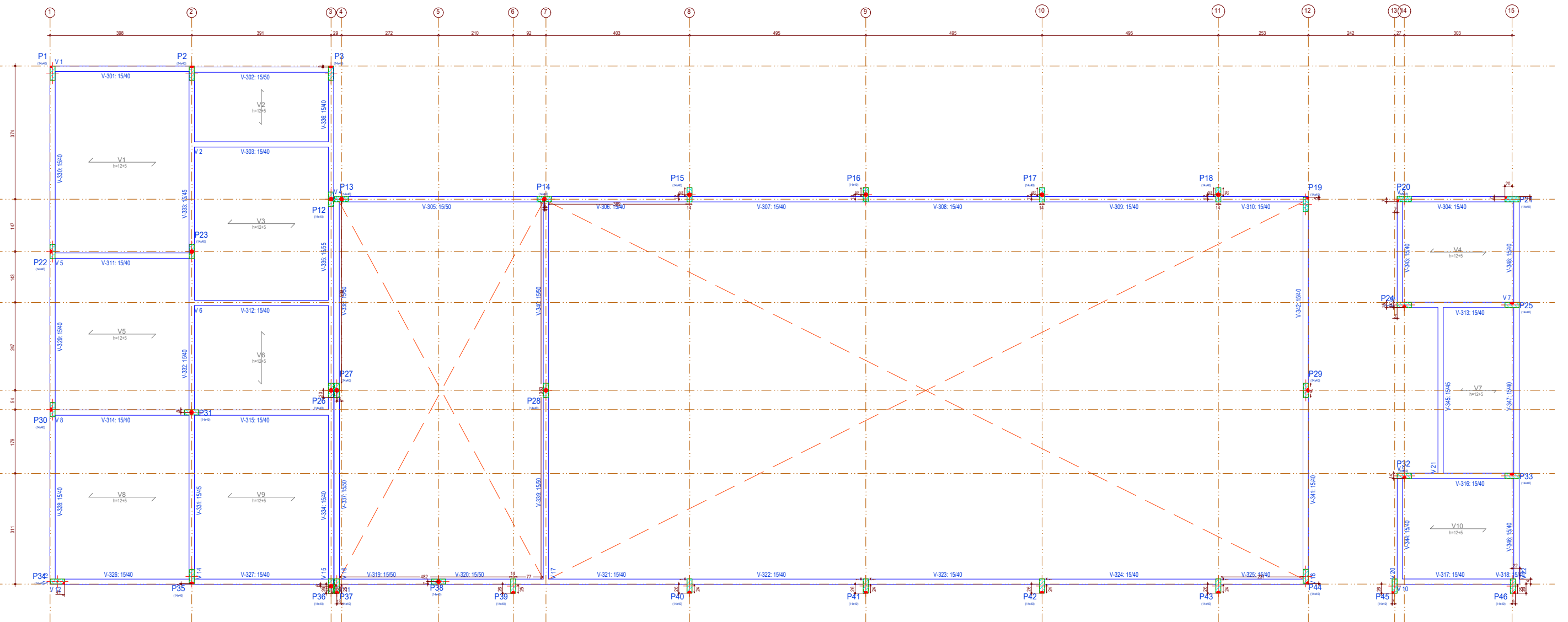
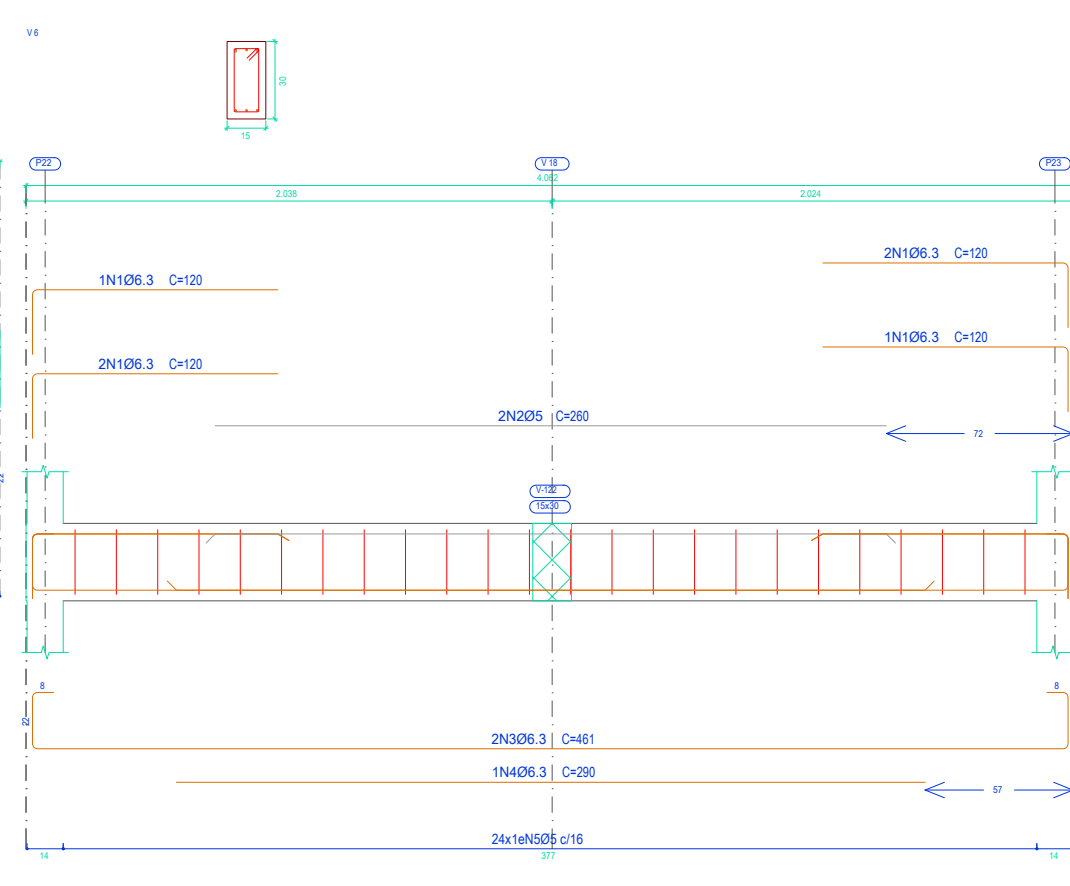
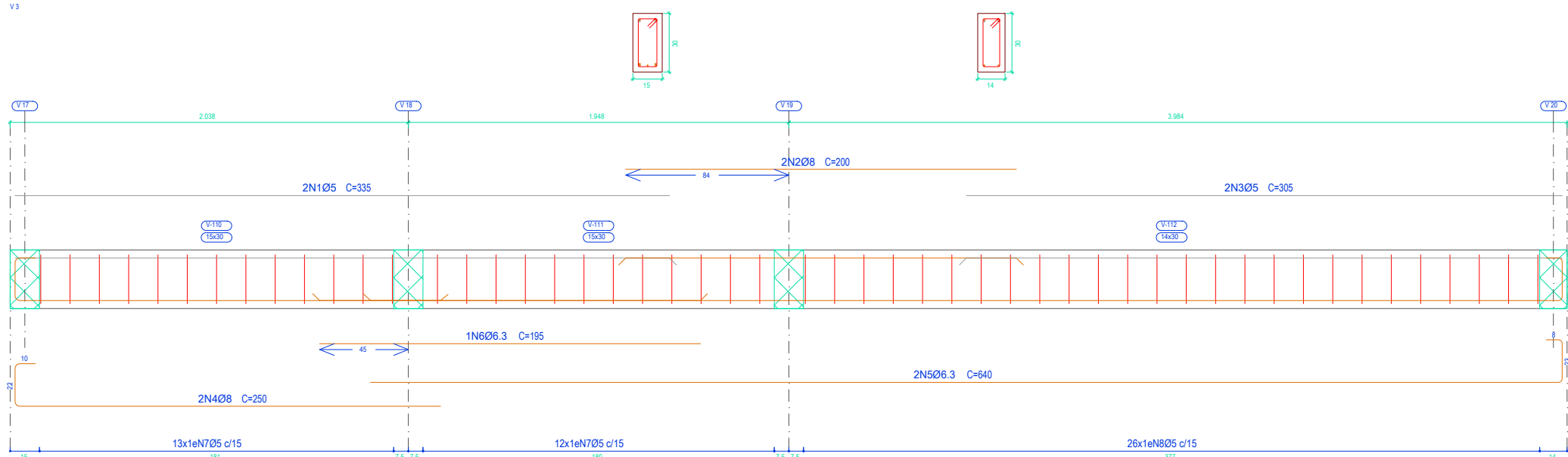


fundação				
Elemento	Formas (m²)	Superfície (m²)	Volume (m³)	Barras (kg)
Vigas	156.28	46.81	12.540	663
Pilares	-	-	0.460	604
Total	-	46.81	13.000	1267
Índices (por m²)	-	-	0.263	25.65
Superfície total: 49.39 m²				

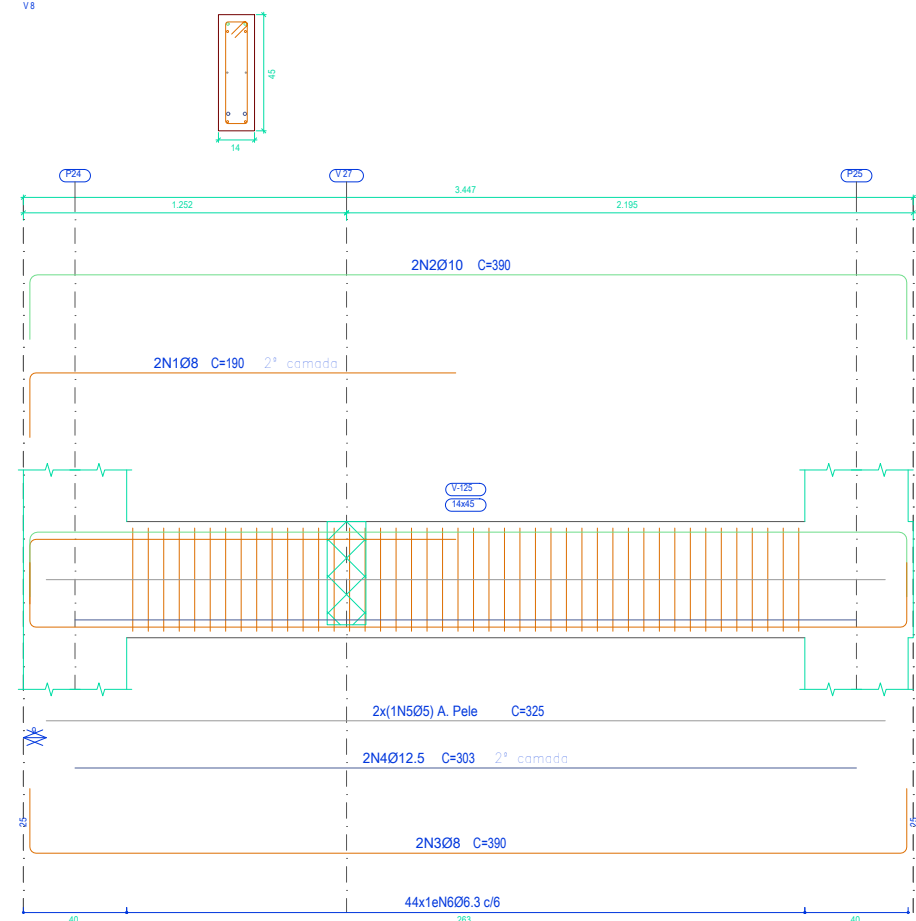
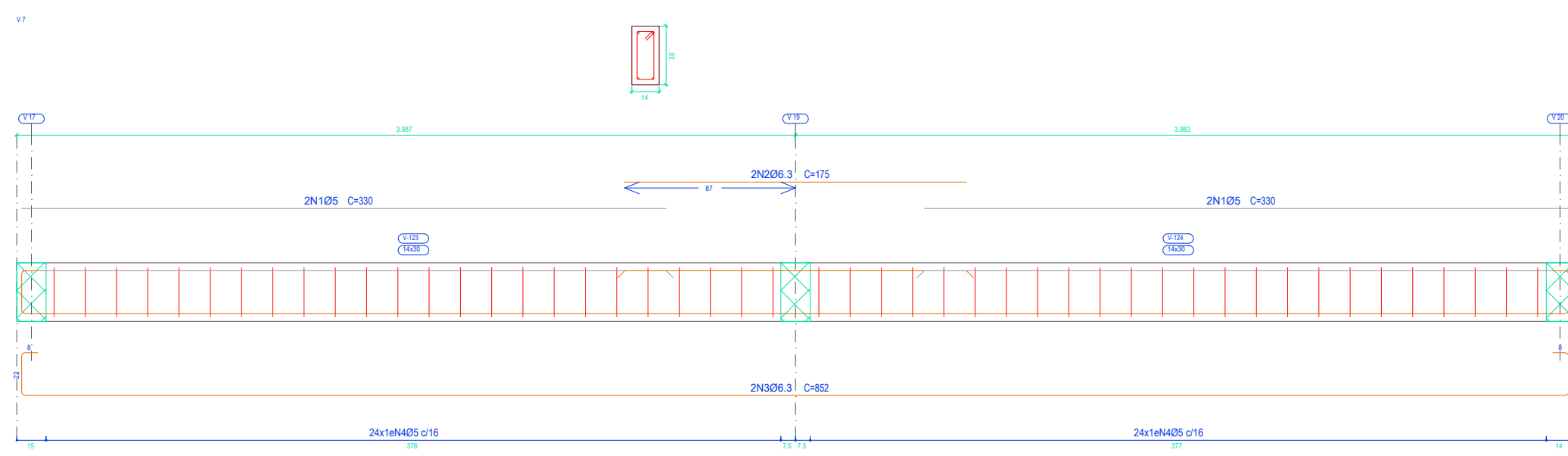
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60



varanda				
Elemento	Formas (m²)	Superfície (m²)	Volume (m³)	Barras (kg)
Vigas	32.20	4.81	2.480	83
Pilares	-	-	8.470	1357
Total	-	4.81	10.950	1440
Índices (por m²)	-	-	1.482	194.86
Superfície total: 7.39 m²				



laje				
Elemento	Formas (m²)	Superfície (m²)	Volume (m³)	Barras (kg)
Lajes de vigotas	-	131.32	6.960	124
Vigas	141.24	28.12	12.930	560
Pilares	0.00	-	-	-
Total	-	159.44	19.890	684
Índices (por m²)	-	-	0.123	4.23
Superfície total: 181.57 m²				



cobertura				
Elemento	Formas (m²)	Superfície (m²)	Volume (m³)	Barras (kg)
Pilares	7.56	0.360	89	-
Total	-	0.360	89	-
Índices (por m²)	-	-	0.720	178.00
Superfície total: 0.50 m²				

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V2	1	Ø6.3	6		120	720	1.8	-
	2	Ø6.3	3		175	525	1.3	-
	3	Ø5	4		260	1040	-	1.8
	4	Ø6.3	2		852	1704	4.2	-
	5	Ø6.3	2		290	580	1.4	-
	6	Ø5	48		78	3744	-	5.9
Total*10%:							9.6	8.3
V3	1	Ø5	2		335	670	-	1.1
	2	Ø8	2		200	400	1.6	-
	3	Ø5	2		305	610	-	1.0
	4	Ø8	2		250	500	2.0	-
	5	Ø6.3	2		640	1280	3.1	-
	6	Ø6.3	1		195	195	0.5	-
	7	Ø5	25		78	1950	-	3.1
	8	Ø5	26		76	1976	-	3.1
Total*10%:							7.9	9.1
V6	1	Ø6.3	6		120	720	1.8	-
	2	Ø5	2		260	520	-	0.8
	3	Ø6.3	2		461	922	2.3	-
	4	Ø6.3	1		290	290	0.7	-
	5	Ø5	24		78	1872	-	2.9
Total*10%:							5.3	4.1
V7	1	Ø5	4		330	1320	-	2.1
	2	Ø6.3	2		175	350	0.9	-
	3	Ø6.3	2		852	1704	4.2	-
	4	Ø5	48		76	3648	-	5.7
	Total*10%:						5.6	8.6
V8	1	Ø8	2		190	380	1.5	-
	2	Ø10	2		390	780	4.8	-
	3	Ø8	2		390	780	3.1	-
	4	Ø12.5	2		303	606	5.8	-
	5	Ø5	2		325	650	-	1.0
	6	Ø6.3	44		108	4752	11.6	-
Total*10%:							29.5	1.1
Ø6:							0.0	31.2
Ø6.3:							37.2	0.0
Ø8:							9.1	0.0
Ø12.5:							5.2	0.0
Ø10:							6.4	0.0
Total:							57.9	31.2

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

RESTAURANTE UNIVERSITÁRIO

ESTRUTURAL

LOCAL: UNIDADE UNIVERSITÁRIA DE AQUIDAUANA, UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO: WAGNER LUIZ MANARA:63393425900

PROPRIETÁRIO: LAERCIO ALVES DE CARVALHO:90465822568

REFERENCIA: RESTAURANTE UNIVERSITÁRIO Vigas da Fundação 1/4

ESCALA: INDICADA

UNIDADE: METRO

ARQUIVO:

DATA: SETEMBRO/2023

DESENHO: THIAGO

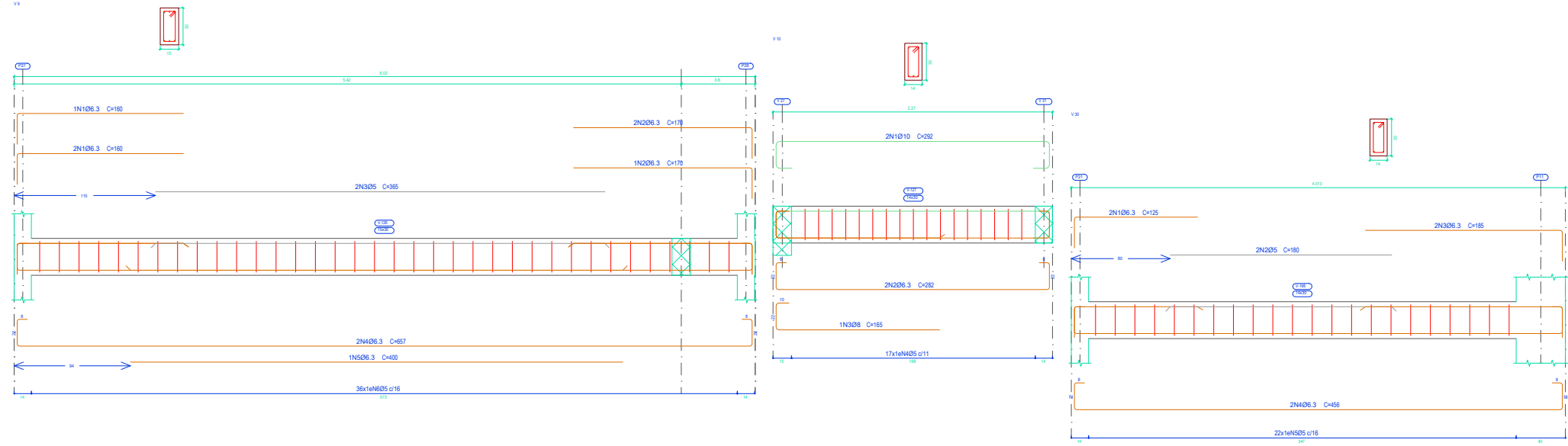
REVISÃO: R00

VISTO:

FOLHA Nº: 14

EST-AP

08/14



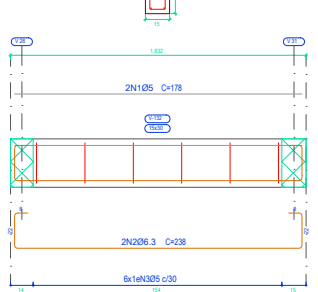
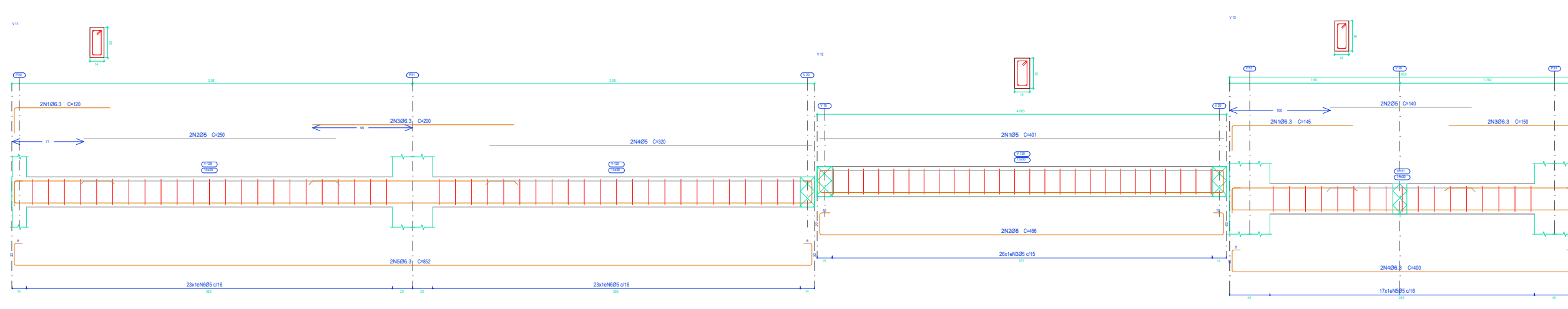
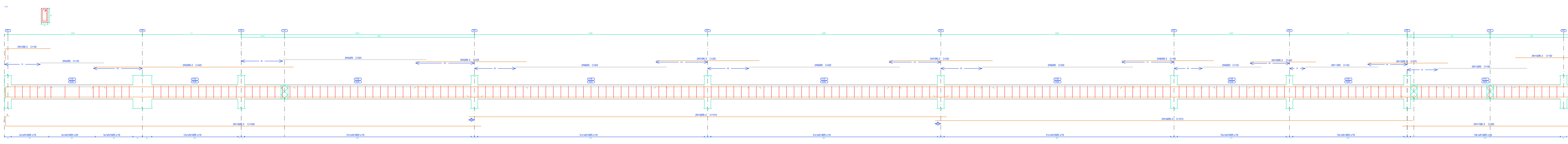
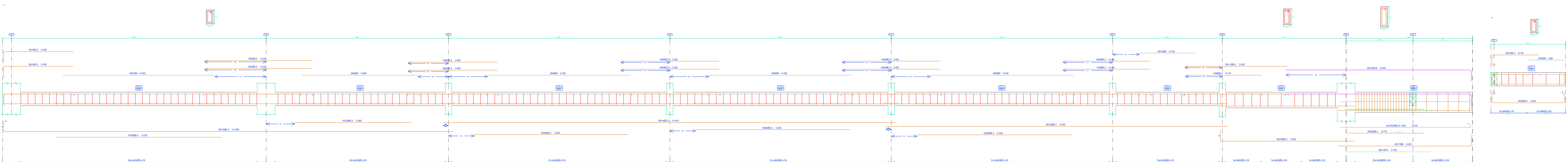
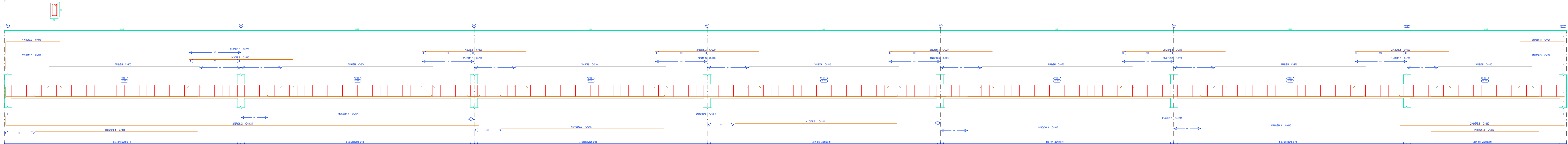
Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 9	1	Ø6.3	3		180	480	1.2	
	2	Ø6.3	3		170	510	1.2	
	3	Ø5	2		360	720		1.1
	4	Ø6.3	2		657	1314	3.2	
	5	Ø6.3	1		400	400	1.0	
	6	Ø5	36		78	2808		4.4
Total+10%:					7.3	6.1		
V 10	1	Ø10	2		292	584	3.6	
	2	Ø6.3	2		282	564	1.4	
	3	Ø5	1		150	150	0.7	
	4	Ø5	17		76	1292		2.0
Total+10%:					6.3	2.2		
V 11	1	Ø6.3	2		120	240	0.6	
	2	Ø5	2		250	500		0.8
	3	Ø6.3	2		200	400	1.0	
	4	Ø5	2		320	640		1.0
	5	Ø6.3	2		852	1704	4.2	
	6	Ø5	46		76	3496		5.5
Total+10%:					6.4	8.0		
V 12	1	Ø5	2		491	982		1.3
	2	Ø6	2		456	912	3.7	
	3	Ø5	26		76	2028		3.2
Total+10%:					4.1	5.0		
V 13	1	Ø6.3	2		140	280	0.7	
	2	Ø5	2		140	280		0.4
	3	Ø6.3	2		150	300	0.7	
	4	Ø6.3	2		400	800	2.0	
	5	Ø5	17		76	1292		2.0
Total+10%:					3.7	2.6		
V 14	1	Ø5	2		176	356		0.6
	2	Ø6.3	2		238	476	1.2	
	3	Ø5	6		76	456		0.7
Total+10%:					1.3	1.4		
V 30	1	Ø6.3	2		125	250	0.6	
	2	Ø5	2		160	320		0.6
	3	Ø6.3	2		185	370	0.9	
	4	Ø6.3	2		450	912	2.2	
	5	Ø5	22		76	1872		2.6
Total+10%:					4.1	3.5		
Ø5:					0.0	28.8		
Ø6.3:					24.3	0.0		
Ø8:					4.0	0.0		
Ø10:					4.0	0.0		
Total:					33.2	28.8		

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 5	1	Ø6.3	2		135	270	0.7	
	2	Ø5	2		80	160		0.3
	3	Ø6.3	2		222	444	1.1	
	4	Ø5	8		76	608		1.0
Total+10%:					2.8	1.4		
V 15	1	Ø6.3	2		120	240	0.6	
	2	Ø5	2		135	270		0.4
	3	Ø6.3	2		425	850	2.1	
	4	Ø5	2		365	730		1.0
	5	Ø6.3	2		235	470	1.2	
	6	Ø5	6		320	1920		3.0
	7	Ø6.3	4		220	880	2.2	
	8	Ø6.3	2		195	390	1.0	
	9	Ø5	2		125	250		0.4
	10	Ø6.3	2		140	280	0.7	
	11	Ø5	1		135	270		0.5
	12	Ø6.3	2		170	340	0.8	
	13	Ø5	2		190	380		0.6
	14	Ø6.3	2		150	300	0.7	
	15	Ø6.3	2		1040	2080	5.1	
	16	Ø6.3	4		1015	4060	9.9	
	17	Ø6.3	2		390	780	1.9	
Total+10%:					38.8	32.6		
Ø5:					0.0	32.6		
Ø6.3:					28.8	0.0		
Total:					28.8	32.6		

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 4	1	Ø6.3	3		180	540	1.3	
	2	Ø6.3	3		240	720	1.8	
	3	Ø5	2		200	600	1.5	
	4	Ø6.3	6		220	1320	3.2	
	5	Ø6.3	3		195	585	1.4	
	6	Ø6.3	1		170	170	0.4	
	7	Ø5	2		340	680		1.1
	8	Ø5	2		260	520		0.6
	9	Ø5	6		320	1920		3.0
	10	Ø5	2		125	250		0.4
	11	Ø6.3	2		250	500	1.1	
	12	Ø16	2		440	880	13.9	
	13	Ø6.3	2		1035	2070	5.1	
	14	Ø6.3	2		1575	3150	8.9	
	15	Ø6.3	2		795	1590	3.7	
	16	Ø6.3	2		324	648	1.6	
	17	Ø30	2		323	646	2.6	
	18	Ø6.3	1		275	275	0.9	
	19	Ø6.3	1		260	260	0.8	
	20	Ø6.3	3		345	1035	2.5	
Total+10%:					61.8	37.2		
Ø5:					0.0	32.6		
Ø6.3:					44.4	0.0		
Ø8:					2.8	0.0		
Ø10:					1.3	0.0		
Ø16:					15.2	0.0		
Total:					63.8	32.6		

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 1	1	Ø6.3	3		140	420	1.0	
	2	Ø6.3	15		220	3300	8.1	
	3	Ø6.3	3		200	600	1.5	
	4	Ø6.3	3		120	360	0.9	
	5	Ø5	12		320	3840		6.0
	6	Ø5	2		200	400		0.6
	7	Ø6.3	2		1035	2070	5.1	
	8	Ø6.3	4		1015	4060	9.9	
	9	Ø6.3	2		380	760	1.9	
	10	Ø6.3	6		345	2070	5.1	
	11	Ø6.3	1		230	230	0.6	
	12	Ø5	208		76	16068		25.2
Total+10%:					37.5	35.0		
Ø5:					0.0	35.0		
Ø6.3:					37.5	0.0		
Total:					37.5	35.0		

Legenda:
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60



UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

TÍTULO

RESTAURANTE UNIVERSITÁRIO

PROJETO

ESTRUTURAL

LOCAL

UNIDADE UNIVERSITÁRIA DE AQUIDAUANA
UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO

WAGNER LUIZ MANARA-63393425900

PROPRIETÁRIO

LAERCIO ALVES DE CARVALHO-90465822568

REFERÊNCIA

RESTAURANTE UNIVERSITÁRIO
Vigas da Fundação 214

ESCALA:

INDICADA

UNIDADE:

METRO

ARQUIVO

DATA:

15/09/2024

DESENHO:

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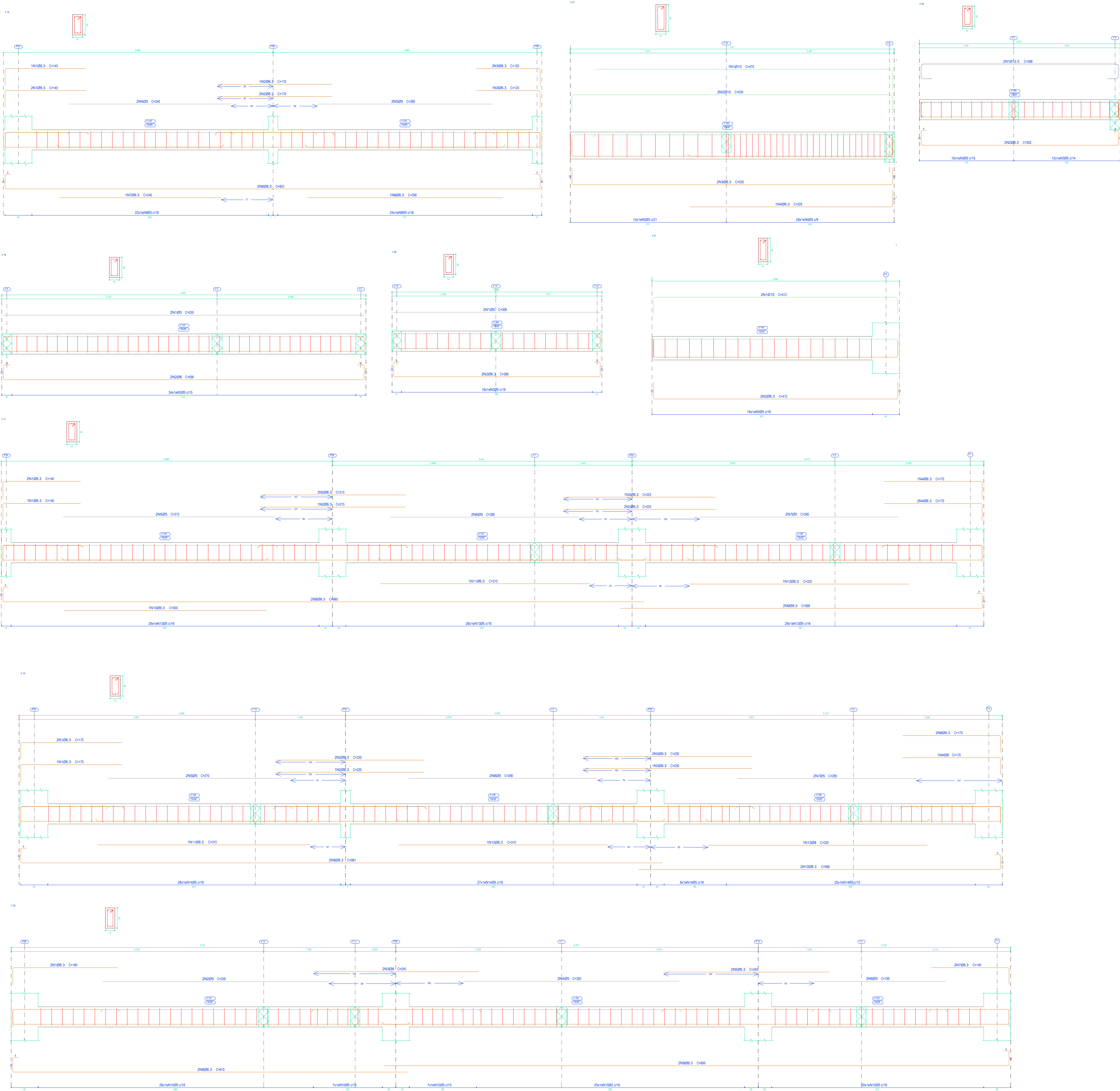
REVISÃO

R00

EST-AP

09/14

VISTO



fundação
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60

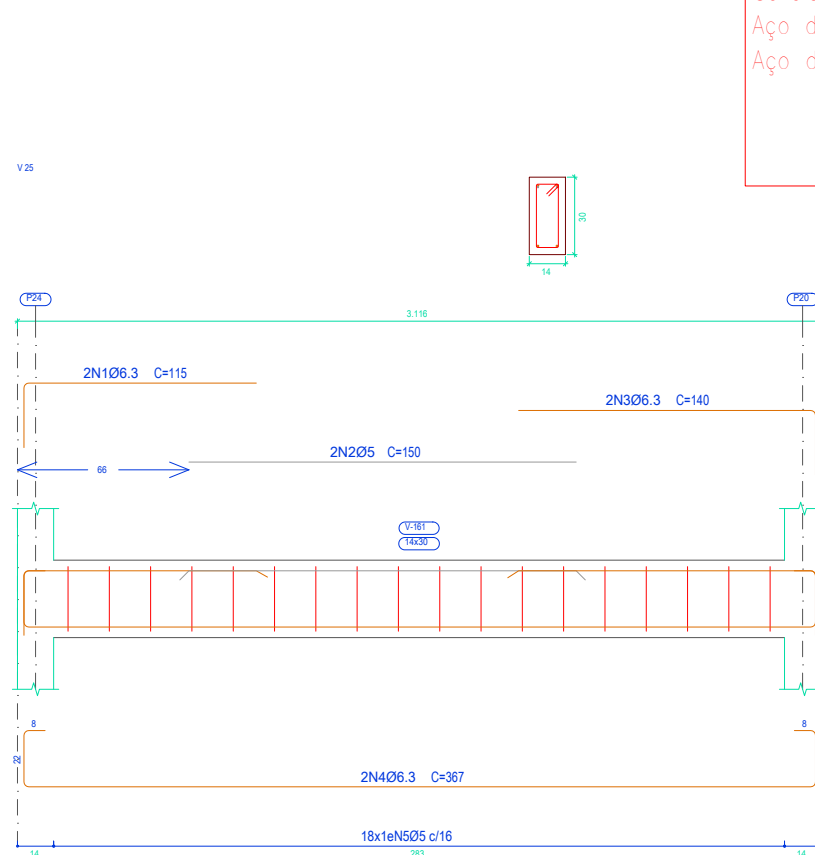
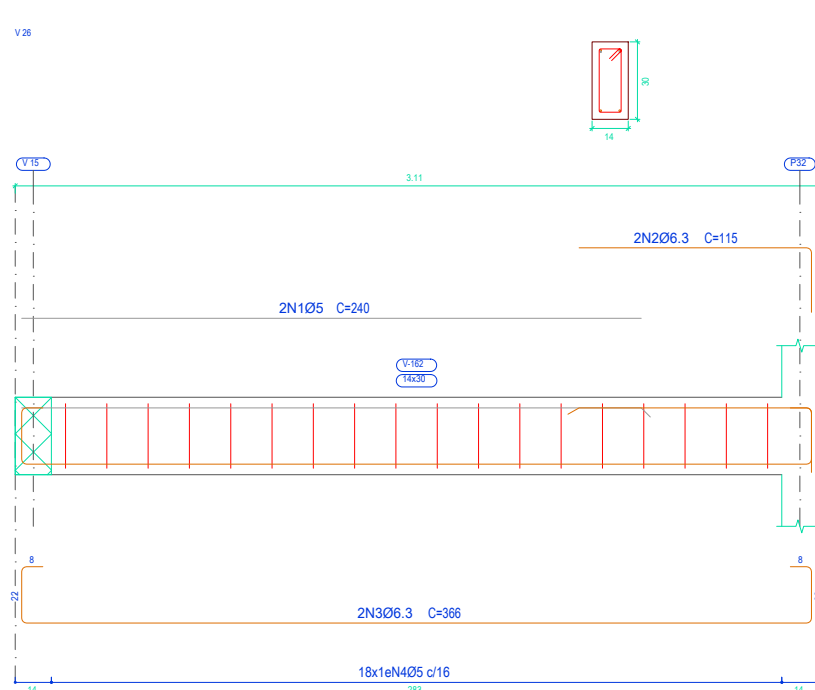
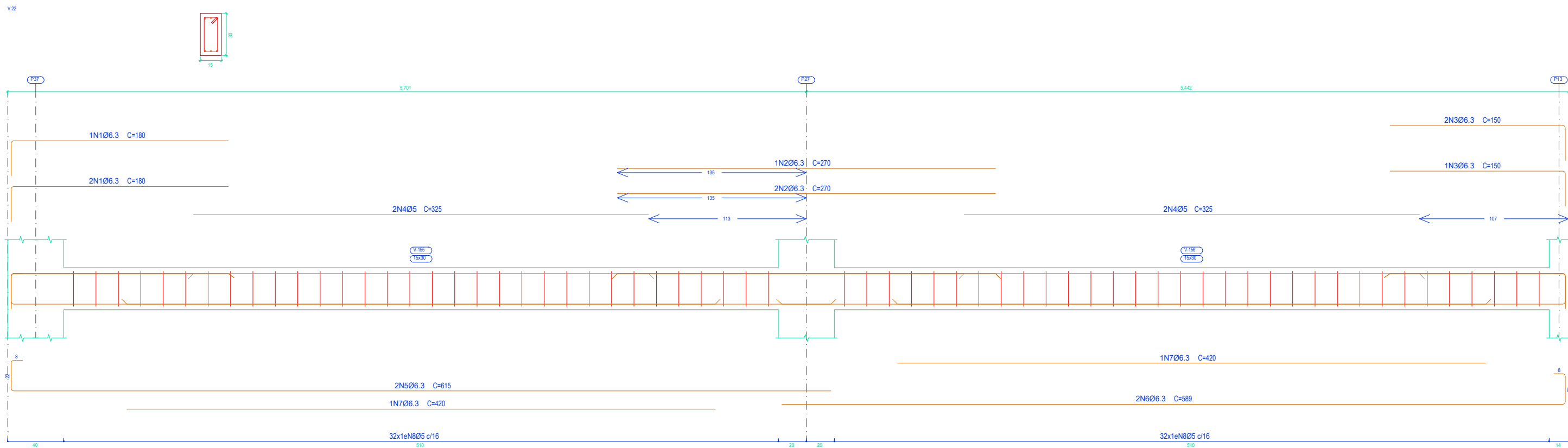
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V 16	1	Ø6.3	3		145	435	1.1	
	2	Ø6.3	3		170	510	1.2	
	3	Ø6.3	3		120	360	0.9	
	4	Ø5	2		240	480		0.8
	5	Ø5	2		260	520		0.8
	6	Ø6.3	2		853	1706	4.2	
	7	Ø6.3	1		240	240	0.6	
	8	Ø6.3	1		290	290	0.7	
	9	Ø5	46		78	3588		5.6
	Total*10%:						9.6	7.9
V 17	1	Ø6.3	3		140	420	1.0	
	2	Ø6.3	3		215	645	1.6	
	3	Ø6.3	3		225	675	1.7	
	4	Ø6.3	3		170	510	1.2	
	5	Ø5	2		315	630		1.0
	6	Ø5	2		280	560		0.9
	7	Ø5	2		295	590		0.9
	8	Ø6.3	2		980	1960	4.8	
	9	Ø6.3	2		566	1132	2.8	
	10	Ø6.3	1		300	300	0.7	
	11	Ø6.3	1		310	310	0.8	
	12	Ø6.3	1		325	325	0.8	
	13	Ø5	84		78	6552		10.3
Total*10%:						16.9	14.4	
V 18	1	Ø5	2		535	1070		1.7
	2	Ø8	2		599	1198		4.7
	3	Ø5	34		78	2652		4.2
Total*10%:						5.2	6.5	
V 27	1	Ø10	1		470	470		2.9
	2	Ø10	2		530	1060		6.5
	3	Ø6.3	2		525	1050		2.6
	4	Ø6.3	1		325	325		0.8
	5	Ø5	40		98	3920		6.2
Total*10%:						14.1	6.8	
V 28	1	Ø5	2		306	612		1.0
	2	Ø6.3	2		366	732		1.8
	3	Ø5	18		76	1368		2.1
Total*10%:						2.0	3.4	
V 29	1	Ø12.5	2		368	736		7.1
	2	Ø6.3	2		352	704		1.7
	3	Ø5	22		76	1672		2.6
Total*10%:						9.7	2.9	
						Ø5:	0.0	41.9
						Ø6.3:	34.2	0.0
						Ø8:	5.2	0.0
						Ø10:	10.3	0.0
						Ø12.5:	7.8	0.0
						Total:	57.5	41.9
Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 19	1	Ø6.3	3		175	525	1.3	
	2	Ø6.3	3		220	660	1.6	
	3	Ø6.3	3		250	750	1.8	
	4	Ø8	1		170	170		0.7
	5	Ø5	2		270	540		0.8
	6	Ø5	2		280	560		0.9
	7	Ø5	2		285	570		0.8
	8	Ø6.3	2		170	340		0.8
	9	Ø6.3	2		981	1962	4.8	
	10	Ø6.3	2		566	1132	2.8	
	11	Ø6.3	1		315	315	0.8	
	12	Ø6.3	1		310	310	0.8	
	13	Ø8	1		325	325	1.3	
	14	Ø5	86		78	6708		10.5
Total*10%:						18.4	14.3	
V 20	1	Ø6.3	2		180	360		0.9
	2	Ø5	2		335	670		1.1
	3	Ø8	2		245	490		1.9
	4	Ø5	2		320	640		1.0
	5	Ø6.3	2		245	490		1.2
	6	Ø5	2		195	390		0.6
	7	Ø6.3	2		140	280		0.7
	8	Ø6.3	2		615	1230		3.0
	9	Ø6.3	2		956	1912		4.7
	10	Ø5	85		76	6460		10.1
Total*10%:						13.6	14.1	
V 21	1	Ø10	2		412	824		5.1
	2	Ø6.3	2		412	824		2.0
	3	Ø5	19		86	1634		2.6
Total*10%:						7.8	2.9	
						Ø5:	0.0	31.3
						Ø6.3:	30.0	0.0
						Ø8:	4.2	0.0
						Ø10:	5.6	0.0
						Total:	39.8	31.3



PROPRIETÁRIO
UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL
TÍTULO
RESTAURANTE UNIVERSITÁRIO
PROJETO
ESTRUTURAL

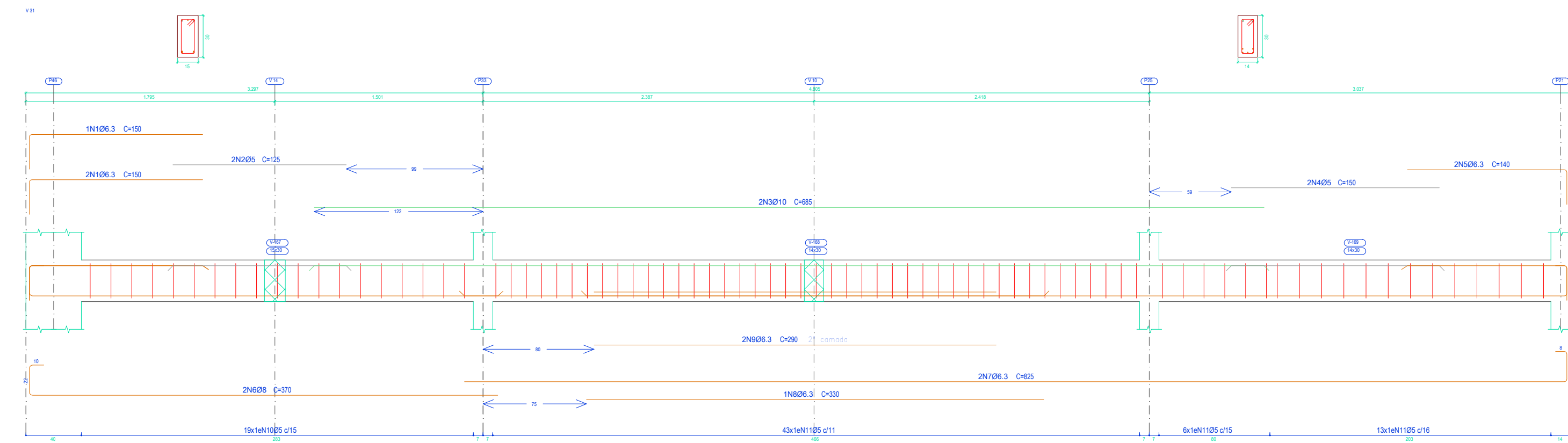
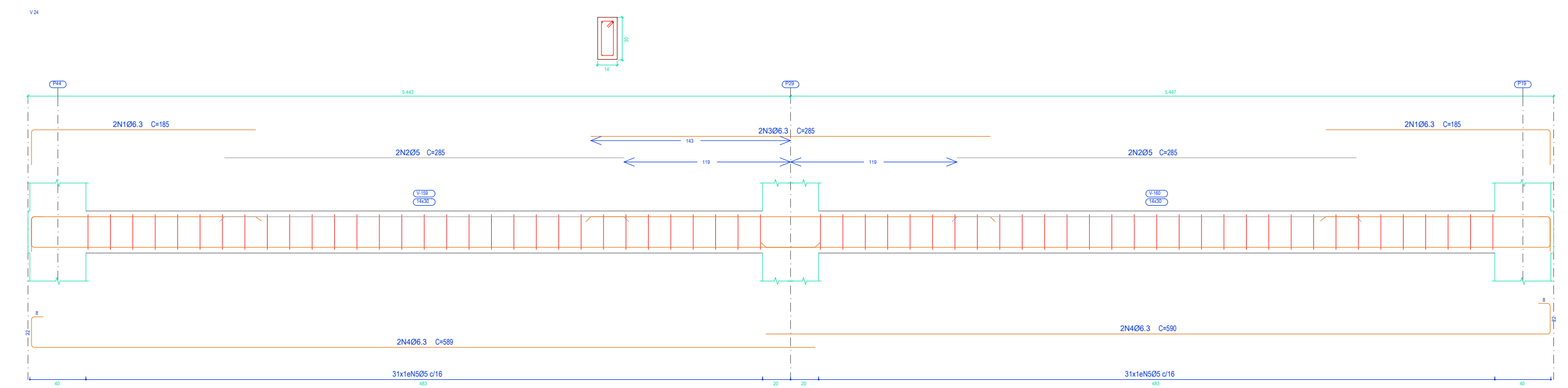
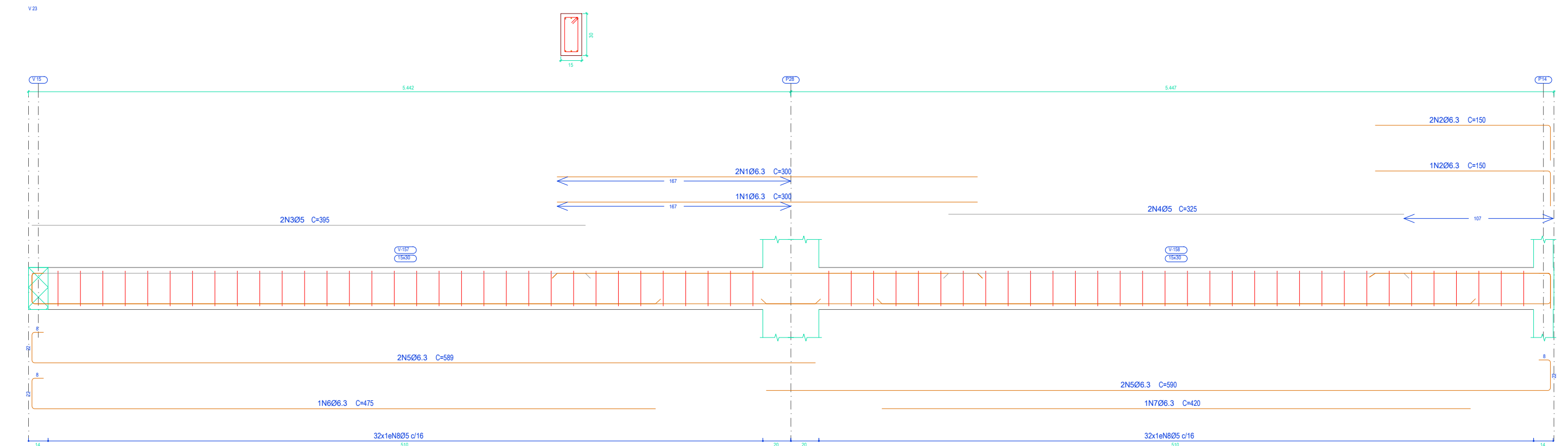
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UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL
AUTOR DO PROJETO
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FUNDAÇÃO UNIVERSIDADE ESTADUAL DE MATO GROSSO DO SUL
CNPJ: 06.963.303/0001-80

REFERÊNCIA
RESTAURANTE UNIVERSITÁRIO
Vigas da Fundação 3/4
FOLHA Nº / PE
EST-AP
10/14
ESCALA:
INDICADA
UNIDADE:
METRO
ARQUIVO:
DATA:
16/09/2024
DESENHO:
TIAGO
REVISÃO
R00
VISTO



Fundação
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 22	1	Ø6.3	3		180	540	1.3	
	2	Ø6.3	3		270	810	2.0	
	3	Ø6.3	3		150	450	1.1	
	4	Ø5	4		325	1300		2.0
	5	Ø6.3	2		615	1230	3.0	
	6	Ø6.3	2		589	1178	2.9	
	7	Ø6.3	2		420	840	2.1	
	8	Ø5	64		78	4992		7.8
Total+10%:							13.6	10.8
V 23	1	Ø6.3	3		300	900	2.2	
	2	Ø6.3	3		150	450	1.1	
	3	Ø5	2		395	790		1.2
	4	Ø5	2		325	650		1.0
	5	Ø6.3	4		589	2356	5.8	
	6	Ø6.3	1		475	475	1.2	
	7	Ø6.3	1		420	420	1.0	
	8	Ø5	64		78	4992		7.8
Total+10%:							12.4	11.0
V 24	1	Ø6.3	4		185	740	1.8	
	2	Ø5	4		285	1140		1.8
	3	Ø6.3	2		285	570	1.4	
	4	Ø6.3	4		589	2356	5.8	
	5	Ø5	62		76	4712		7.4
Total+10%:							9.9	10.1
V 25	1	Ø6.3	2		115	230	0.6	
	2	Ø5	2		150	300		0.5
	3	Ø6.3	2		140	280	0.7	
	4	Ø6.3	2		367	734	1.8	
	5	Ø5	18		76	1368		2.1
Total+10%:							3.4	2.9
V 26	1	Ø5	2		240	480		0.8
	2	Ø6.3	2		115	230	0.6	
	3	Ø6.3	2		366	732	1.8	
	4	Ø5	18		76	1368		2.1
Total+10%:							2.6	3.2
Ø5:							0.0	
Ø6.3:							41.9	0.0
Total:							41.9	38.0



varanda
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 31	1	Ø6.3	3		150	450	1.1	
	2	Ø5	2		125	250		0.4
	3	Ø10	2		685	1370	8.4	
	4	Ø5	2		150	300		0.5
	5	Ø6.3	2		140	280	0.7	
	6	Ø8	2		370	740	2.9	
	7	Ø6.3	2		825	1650	4.0	
	8	Ø6.3	1		330	330	0.8	
	9	Ø6.3	2		280	560	1.4	
	10	Ø5	19		78	1482		2.3
	11	Ø5	62		76	4712		7.4
Total+10%:							21.2	11.7
Ø5:							0.0	11.7
Ø6.3:							8.8	0.0
Ø8:							3.2	0.0
Ø10:							9.2	0.0
Total:							21.2	11.7

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 1	1	Ø5	2		325	650		1.0
	2	Ø10	2		430	860	5.3	
	3	Ø5	2		180	360		0.6
	4	Ø10	8		255	2040	12.6	
	5	Ø5	6		280	1680		2.6
	6	Ø5	2		145	290		0.5
	7	Ø10	2		615	1230	7.6	
	8	Ø6.3	2		1030	2060	5.0	
	9	Ø6.3	2		1015	2030	5.0	
	10	Ø6.3	2		515	1030	2.5	
	11	Ø6.3	2		855	1710	4.2	
	12	Ø8	1		395	395	1.6	
	13	Ø8	2		300	600	2.4	
	14	Ø8	2		335	670	2.6	
	15	Ø5	121		118	14278		22.4
Total+10%:							53.7	29.8

Ø5:	0.0	29.8
Ø6.3:	18.5	0.0
Ø8:	7.3	0.0
Ø10:	28.1	0.0
Total:	53.7	29.8

PROPRIETÁRIO
UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

TÍTULO
RESTAURANTE UNIVERSITÁRIO

PROJETO
ESTRUTURAL

LOCAL
UNIDADE UNIVERSITÁRIA DE AQUIDAUANA
UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

PROPRIETÁRIO
LÁERCIO ALVES DE
CARVALHO:90465822568

AUTOR DO PROJETO
WAGNER LUIZ
MANARA:633934225900

Assinado de forma digital por WAGNER LUIZ MANARA:633934225900
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REFERÊNCIA
RESTAURANTE UNIVERSITÁRIO
Vigas da Fundação 4/4

Assinado de forma digital por LÁERCIO ALVES DE CARVALHO:90465822568
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INDICADA

UNIDADE:
METRO

ARQUIVO:

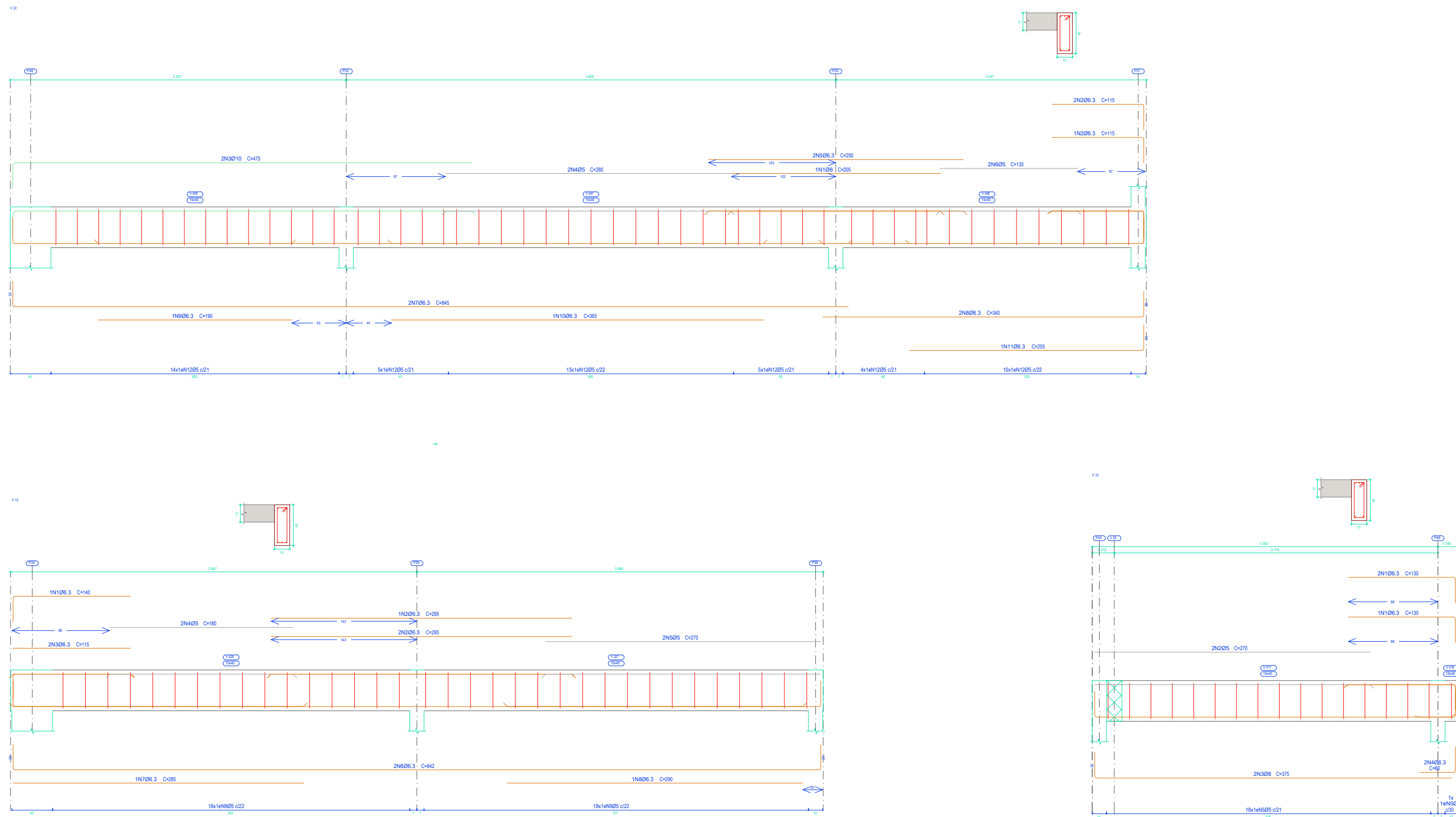
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15/09/2024

DESENHO:
TÍAGO

REVISÃO:
R00

EST-AP
11/14

VISTO:



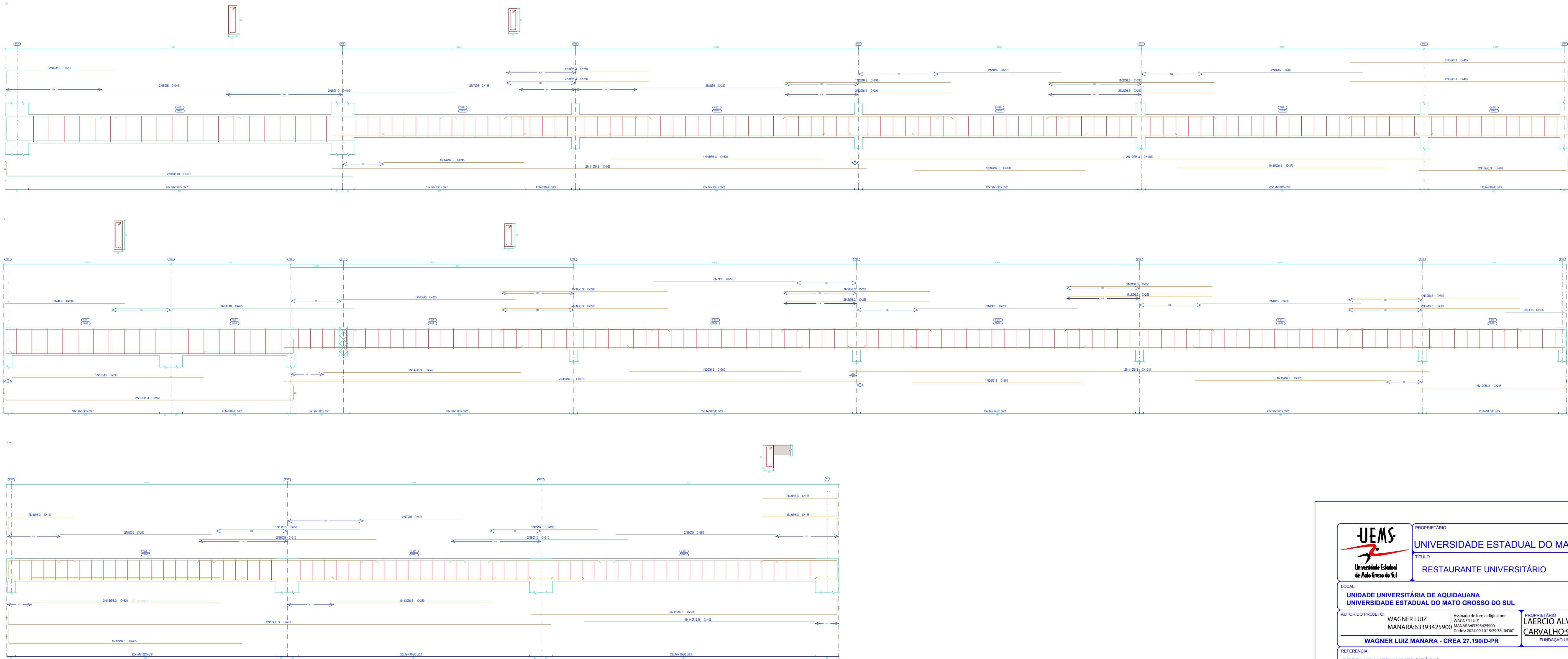
Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 10	1	Ø6.3	3		130	390	1.0	
	2	Ø5	2		270	540		0.8
	3	Ø8	2		375	750	3.0	
	4	Ø6.3	2		60	120	0.3	
	5	Ø5	17		98	1666		2.6
Total*10%:							4.7	3.7
V 12	1	Ø6.3	1		115	140	0.3	
	2	Ø6.3	3		295	885	2.2	
	3	Ø6.3	2		115	230	0.6	
	4	Ø5	2		180	360		0.6
	5	Ø5	2		270	540		0.8
	6	Ø6.3	2		842	1684	4.1	
	7	Ø6.3	1		285	285	0.7	
	8	Ø6.3	1		290	290	0.7	
	9	Ø5	34		98	3332		5.2
Total*10%:							9.5	7.3
V 13	1	Ø10	1		250	250	1.5	
	2	Ø6.3	1		190	190	0.5	
	3	Ø6.3	3		155	465	1.1	
	4	Ø6.3	2		140	280	0.7	
	5	Ø5	2		265	530		0.8
	6	Ø8	2		310	620	2.4	
	7	Ø5	2		175	350		0.5
	8	Ø10	2		310	620	3.8	
	9	Ø5	2		280	560		0.9
	10	Ø6.3	2		976	1952	4.8	
	11	Ø6.3	2		561	1122	2.7	
	12	Ø6.3	1		435	435	1.1	
	13	Ø6.3	1		280	280	0.7	
	14	Ø12.5	1		405	405	3.9	
	15	Ø6.3	2		330	660	1.6	
	16	Ø5	64		98	6272		9.8
Total*10%:							27.3	13.2
Ø5:							0.0	24.2
Ø6.3:							25.5	0.0
Ø8:							5.9	0.0
Ø10:							5.8	0.0
Ø12.5:							4.3	0.0
Total:							41.5	24.2

laje
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 11	1	Ø6.3	3		290	870	2.1	
	2	Ø6.3	6		255	1530	3.7	
	3	Ø6.3	5		300	1500	3.7	
	4	Ø5	2		210	420		0.7
	5	Ø10	2		425	850	5.2	
	6	Ø5	2		305	610		1.0
	7	Ø5	2		250	500		0.8
	8	Ø5	4		280	1120		1.8
	9	Ø5	2		105	210		0.3
	10	Ø6.3	2		555	1110	2.7	
	11	Ø6.3	4		1015	4060	9.9	
	12	Ø6.3	2		285	570	1.4	
	13	Ø8	1		335	335	1.3	
	14	Ø6.3	1		345	345	0.8	
	15	Ø6.3	1		335	335	0.8	
	16	Ø5	17		118	2006		3.1
	17	Ø5	100		98	9800		15.4
Total*10%:							34.8	25.4
Ø5:							0.0	25.4
Ø6.3:							27.6	0.0
Ø8:							1.5	0.0
Ø10:							5.7	0.0
Total:							34.8	25.4

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 4	1	Ø6.3	3		250	750	1.8	
	2	Ø6.3	6		290	1740	4.3	
	3	Ø6.3	3		360	1215	3.0	
	4	Ø10	2		215	430	2.6	
	5	Ø5	2		240	480		0.8
	6	Ø10	2		400	800	4.9	
	7	Ø5	2		135	270		0.4
	8	Ø5	4		280	1120		1.8
	9	Ø5	2		215	430		0.7
	10	Ø10	2		631	1262	7.8	
	11	Ø6.3	2		935	1870	4.6	
	12	Ø6.3	2		1015	2030	5.0	
	13	Ø6.3	2		285	570	1.4	
	14	Ø6.3	1		245	245	0.6	
	15	Ø6.3	2		370	740	1.8	
	16	Ø6.3	1		300	300	0.7	
	17	Ø5	20		118	2360		3.7
	18	Ø5	96		98	9408		14.8
Total*10%:							42.4	24.4
Ø5:							0.0	24.4
Ø6.3:							25.5	0.0
Ø10:							16.9	0.0
Total:							42.4	24.4

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 22	1	Ø8	1		205	205	0.8	
	2	Ø6.3	3		115	345	0.8	
	3	Ø10	2		475	950	5.9	
	4	Ø5	2		280	560		0.9
	5	Ø6.3	2		250	500	1.2	
	6	Ø5	2		135	270		0.4
	7	Ø6.3	2		845	1690	4.1	
	8	Ø6.3	2		340	680	1.7	
	9	Ø6.3	1		190	190	0.5	
	10	Ø6.3	1		365	365	0.9	
	11	Ø6.3	1		255	255	0.6	
	12	Ø5	51		98	4998		7.8
Total*10%:							16.2	10.0
Ø5:							0.0	10.0
Ø6.3:							10.8	0.0
Ø8:							0.9	0.0
Ø10:							6.5	0.0
Total:							16.2	10.0



UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

PROPRIETÁRIO

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

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PROJETO

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LOCAL

UNIDADE UNIVERSITÁRIA DE AQUIDAUANA
UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO

WAGNER LUIZ
MANARA:63393425900

PROPRIETÁRIO

LAERCIO ALVES DE
CARVALHO:90465822568

REFERÊNCIA

RESTAURANTE UNIVERSITÁRIO
Vigas da Laje 1/3

ESCALA:

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UNIDADE:

METRO

ARQUIVO

DATA:

16/09/2024

DESENHO:

TIAGO

REVISÃO

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VISTO

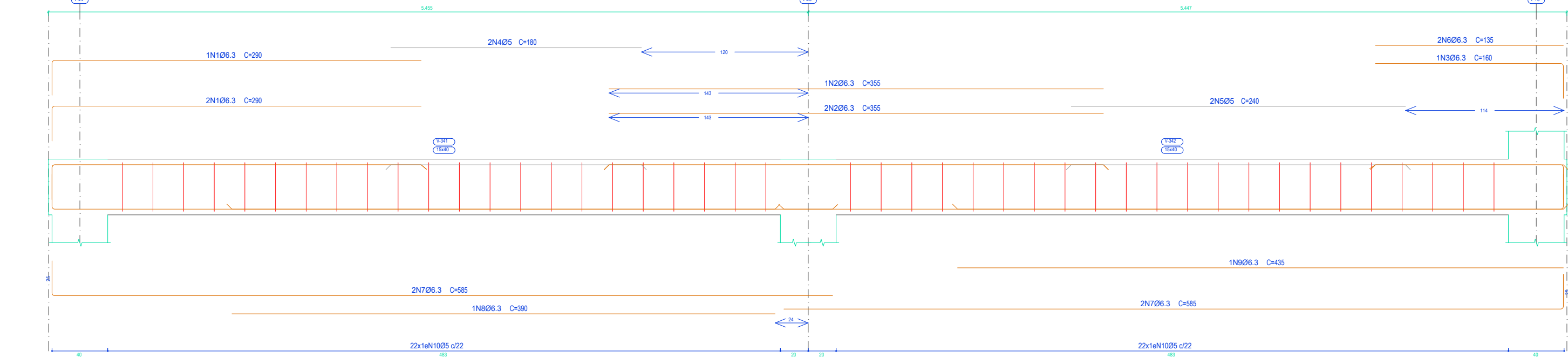
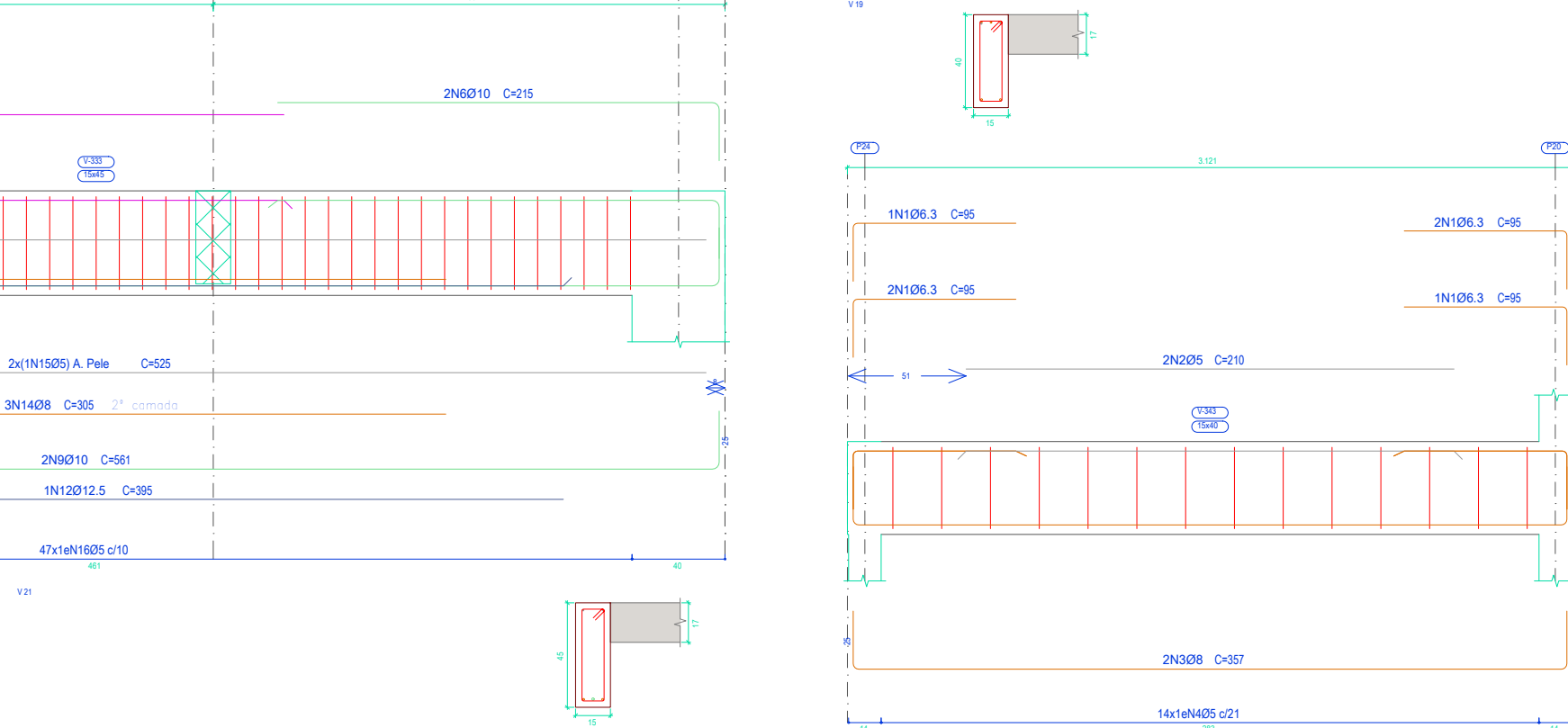
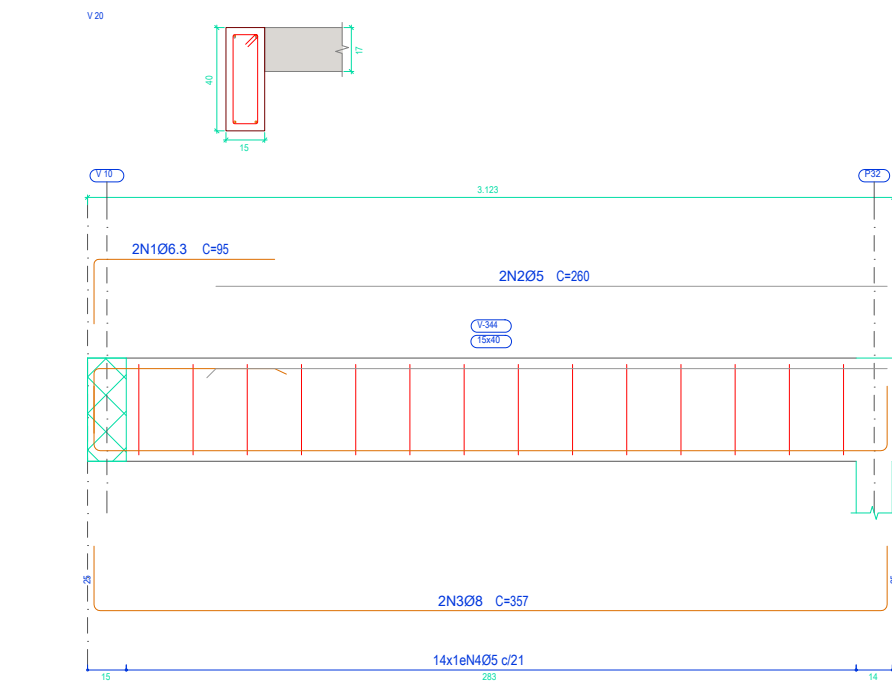
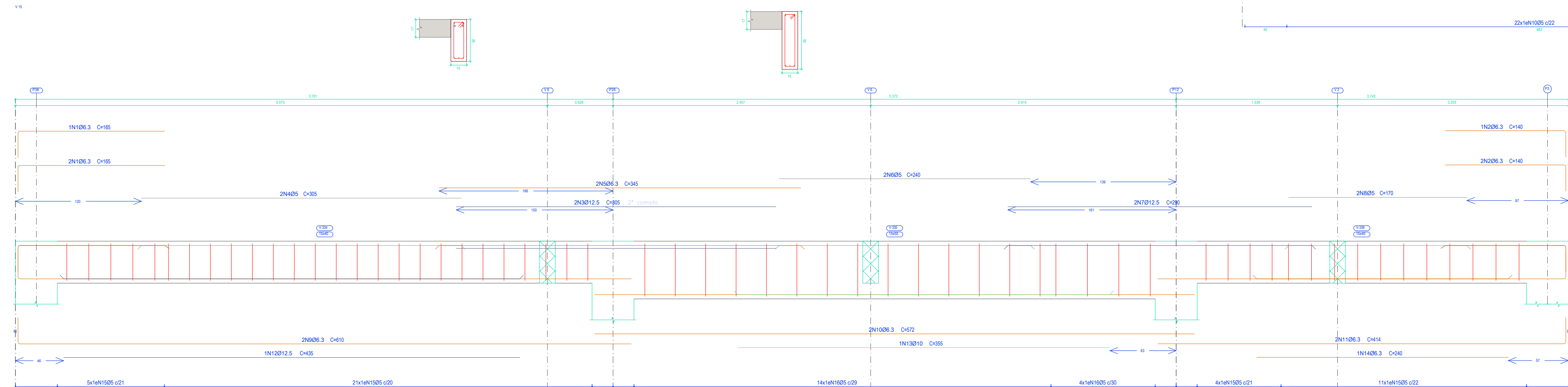
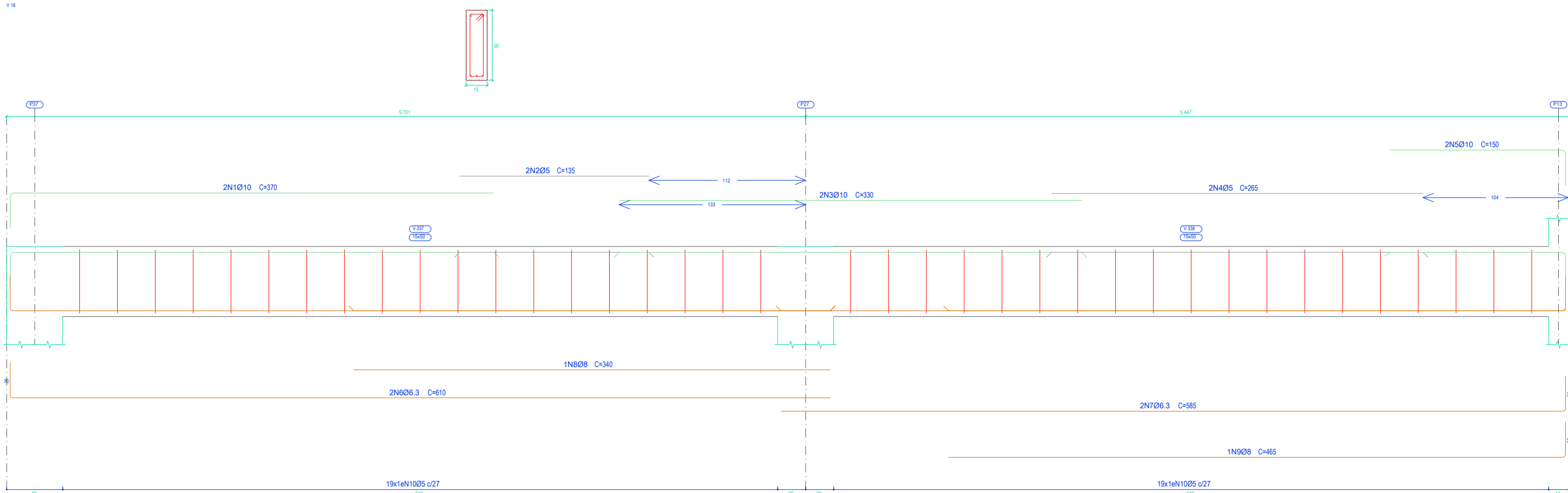
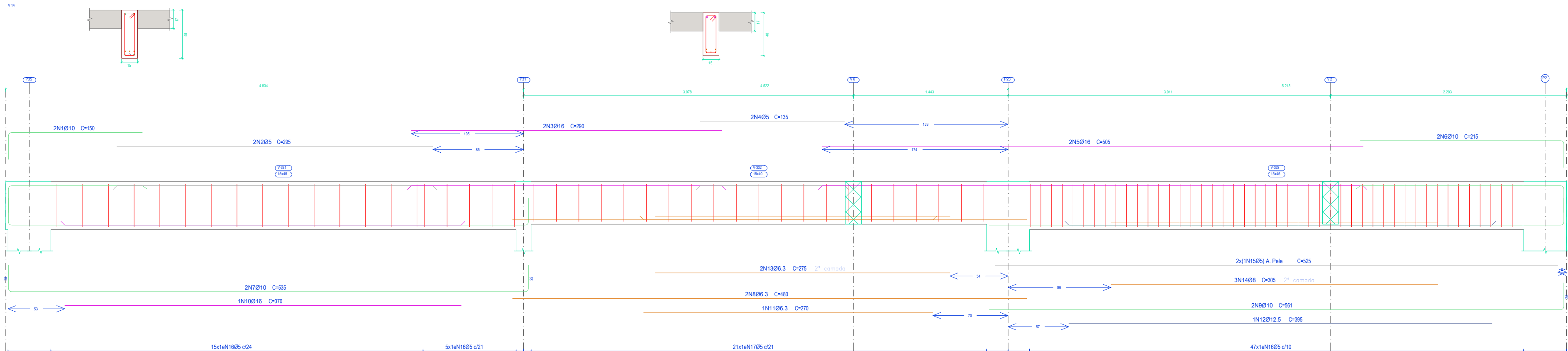
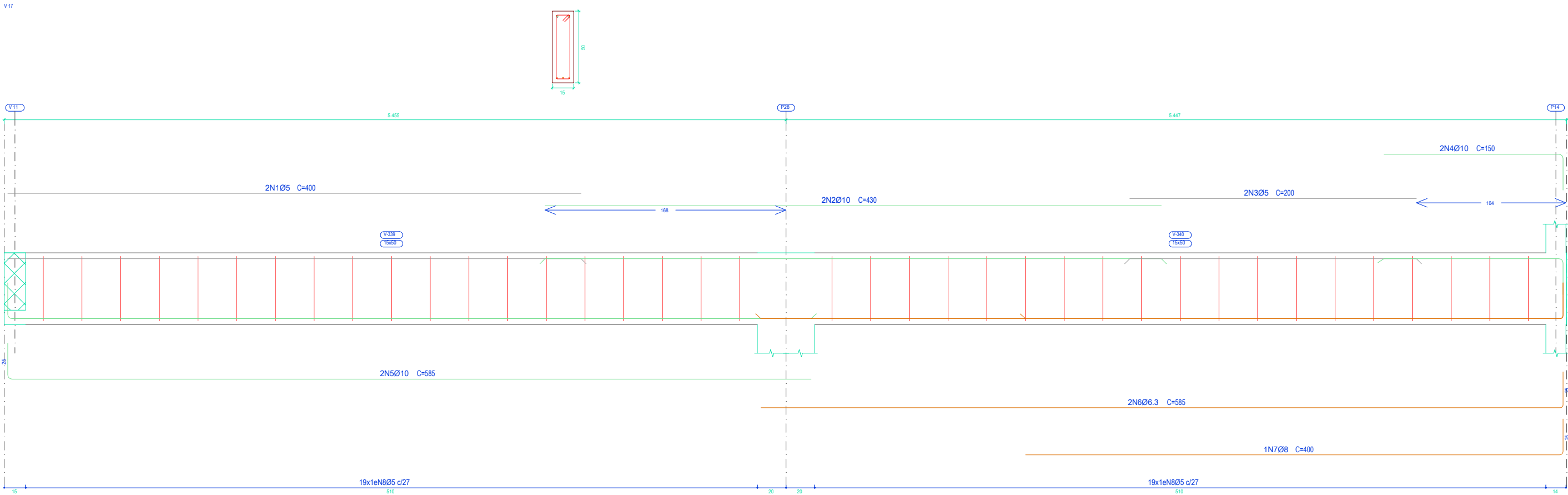
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FE

12/14

EST-AP



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 18	1	Ø6.3	3		290	870	2.1	
	2	Ø6.3	3		355	1065	2.6	
	3	Ø6.3	1		160	160	0.4	
	4	Ø5	2		180	360		0.6
	5	Ø5	2		240	480		0.8
	6	Ø6.3	2		135	270	0.7	
	7	Ø6.3	4		585	2340	5.7	
	8	Ø6.3	2		390	390	1.0	
	9	Ø6.3	1		435	435	1.1	
	10	Ø5	44		98	4312		6.8
Total*100%:							15.0	9.0
V 19	1	Ø6.3	6		95	570	1.4	
	2	Ø5	2		210	420		0.7
	3	Ø8	2		357	714	2.8	
	4	Ø5	14		98	1372		2.2
Total*100%:							4.6	3.2
V 20	1	Ø6.3	2		95	190	0.5	
	2	Ø5	2		260	520		0.8
	3	Ø8	2		357	714	2.8	
	4	Ø5	14		98	1372		2.2
Total*100%:							3.6	3.3
V 21	1	Ø5	2		490	980		1.5
	2	Ø8	2		540	1080	4.3	
	3	Ø10	1		405	405	2.5	
	4	Ø5	20		108	2160		3.4
Total*100%:							7.5	5.4
							Ø5: 0.0	20.9
							Ø6.3: 17.1	0.0
							Ø8: 10.8	0.0
							Ø10: 2.8	0.0
							Total: 30.7	20.9

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V 15	1	Ø6.3	3		165	495	1.2	
	2	Ø6.3	3		140	420	1.0	
	3	Ø12.5	2		305	610	5.9	
	4	Ø5	2		305	610		1.0
	5	Ø6.3	2		345	690	1.7	
	6	Ø5	2		240	480		0.8
	7	Ø12.5	2		290	580	5.6	
	8	Ø5	2		170	340		0.5
	9	Ø6.3	2		610	1220	3.0	
	10	Ø6.3	2		572	1144	2.8	
	11	Ø6.3	2		414	828	2.0	
	12	Ø12.5	1		435	435	4.2	
	13	Ø10	1		355	355	2.2	
	14	Ø6.3	1		240	240	0.6	
	15	Ø5	41		98	4018		6.3
	16	Ø5	18		128	2304		3.6
Total*100%:							33.2	13.4
V 16	1	Ø10	2		370	740	4.6	
	2	Ø5	2		135	270		0.4
	3	Ø10	2		330	660	4.1	
	4	Ø5	2		265	530		0.8
	5	Ø10	2		150	300	1.8	
	6	Ø6.3	2		610	1220	3.0	
	7	Ø6.3	2		585	1170	2.9	
	8	Ø8	1		340	340	1.3	
	9	Ø8	1		465	465	1.8	
	10	Ø5	38		118	4484		7.0
Total*100%:							21.5	9.0
							Ø5: 0.0	22.4
							Ø6.3: 19.9	0.0
							Ø8: 3.5	0.0
							Ø10: 14.0	0.0
							Ø12.5: 17.3	0.0
							Total: 54.7	22.4

laje
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

TÍTULO

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UNIDADE UNIVERSITÁRIA DE AQUIDAUANA
UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO

WAGNER LUIZ MANARA-63393425900
Assinado de forma digital por WAGNER LUIZ MANARA-63393425900
Dados: 2024.09.10 15:29:59 -0400'

PROPRIETÁRIO

LAERCIO ALVES DE CARVALHO-90465822568
Assinado de forma digital por LAERCIO ALVES DE CARVALHO-90465822568
Dados: 2024.09.11 07:53:19 -0400'

REFERENCIA

RESTAURANTE UNIVERSITÁRIO
Vigas da Laje 2/3

FOLHA Nº / FE

13/14

ESCALA:

INDICADA

UNIDADE:

METRO

ARQUIVO

DATA:

SETEMBRO/2020

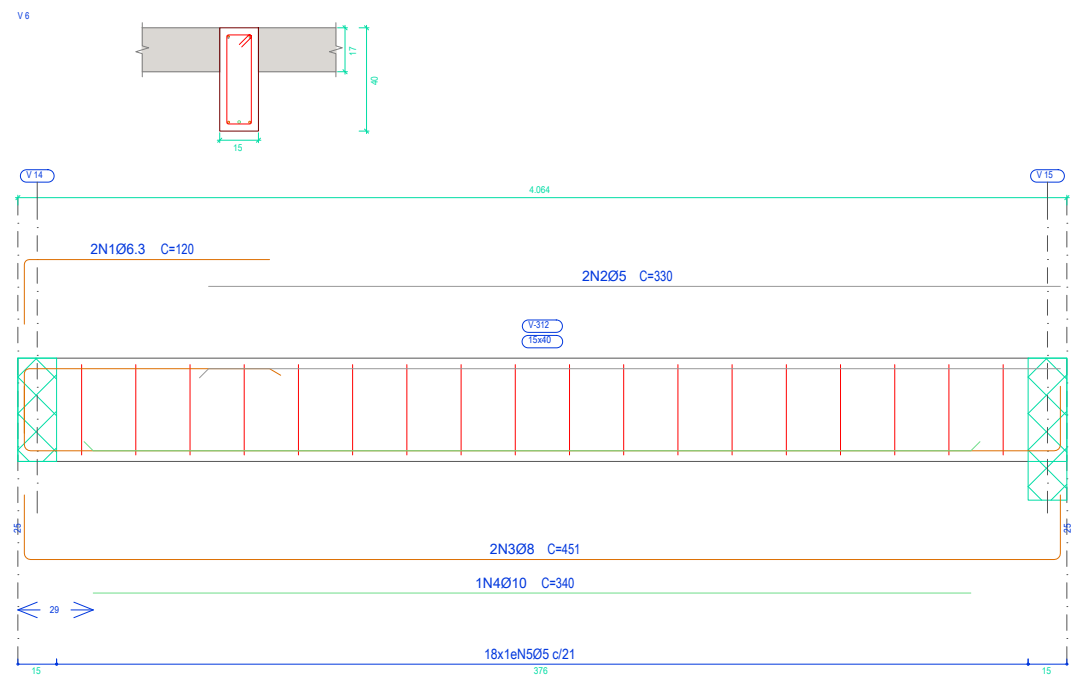
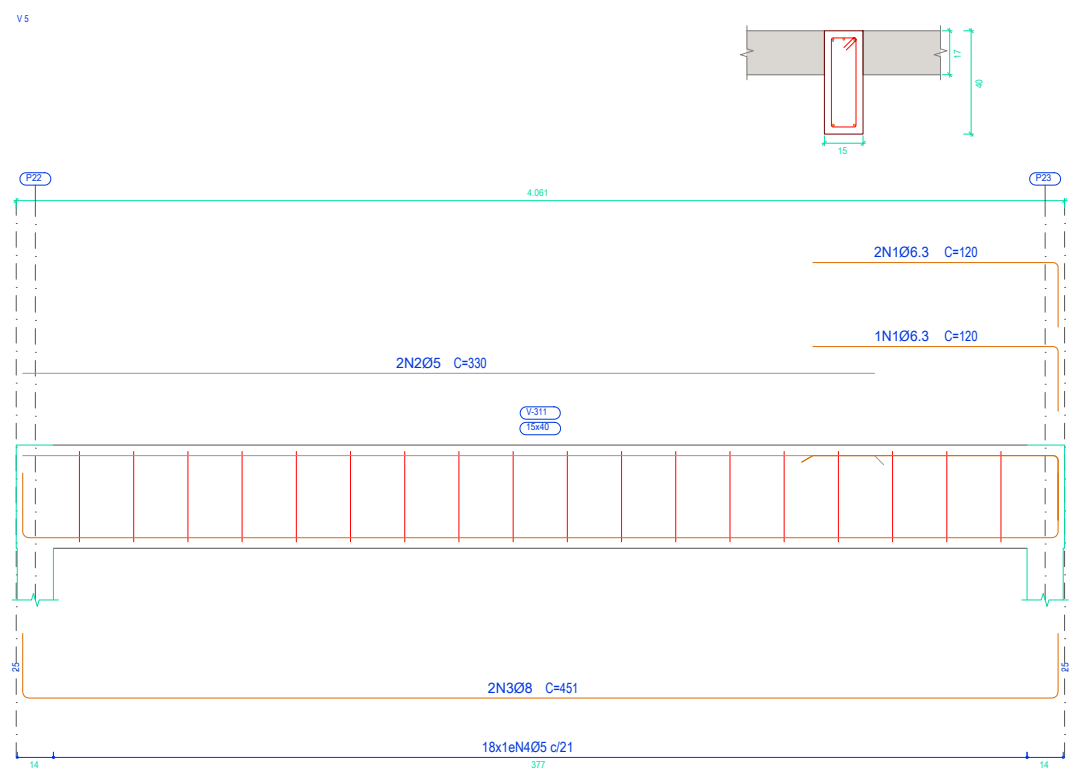
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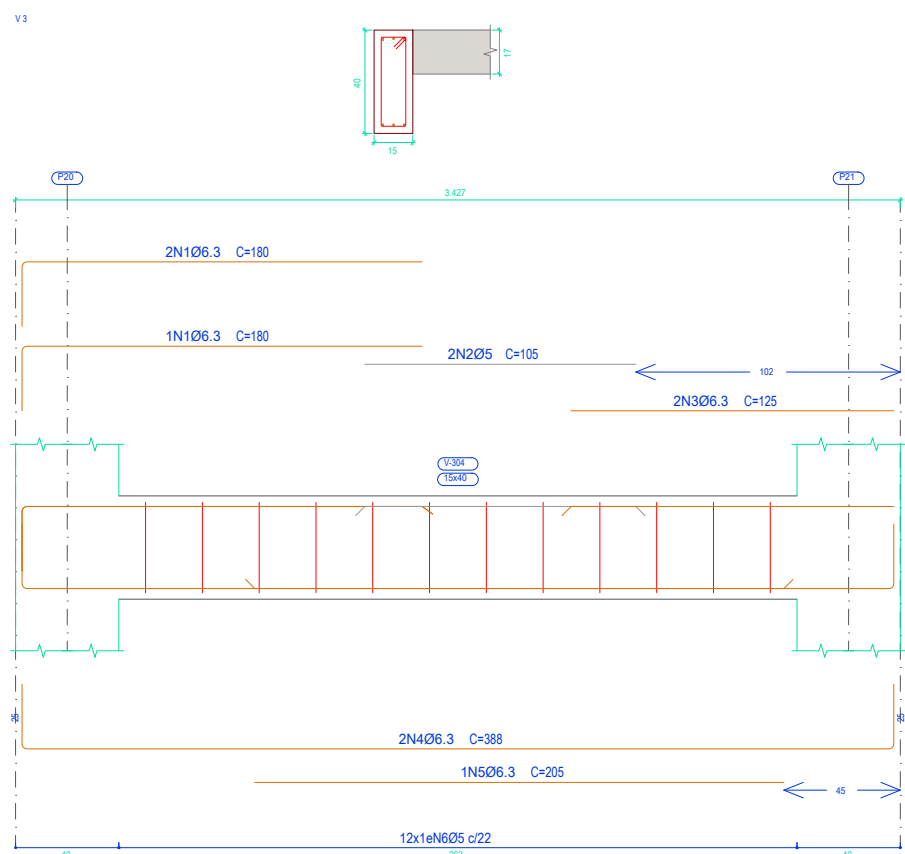
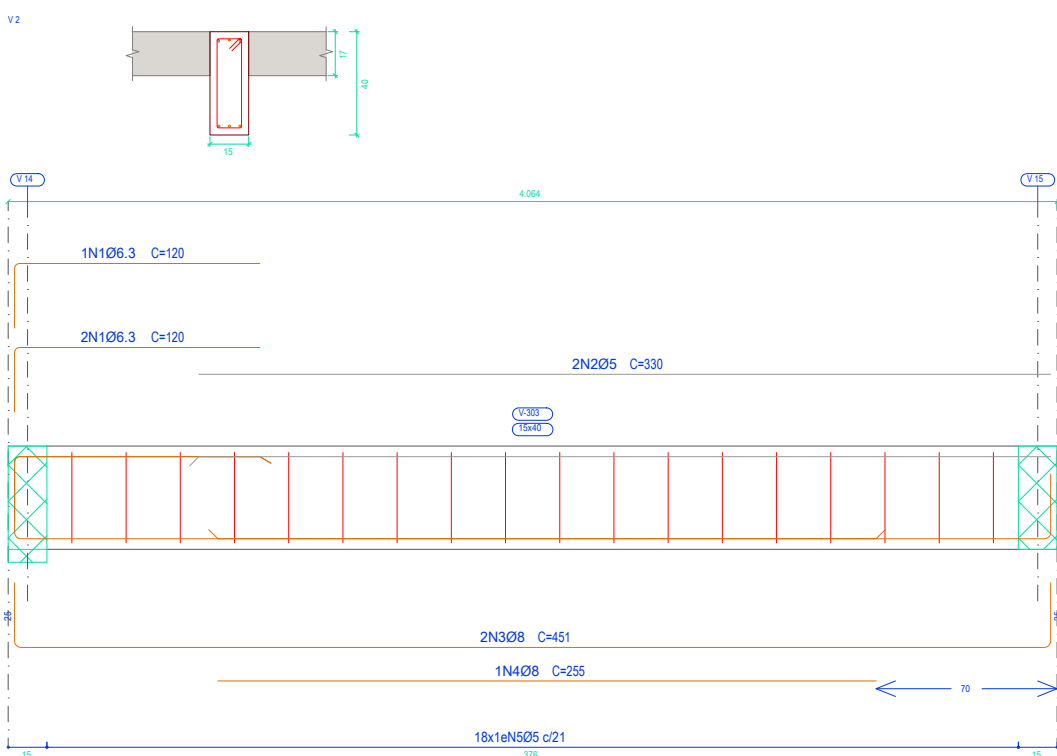
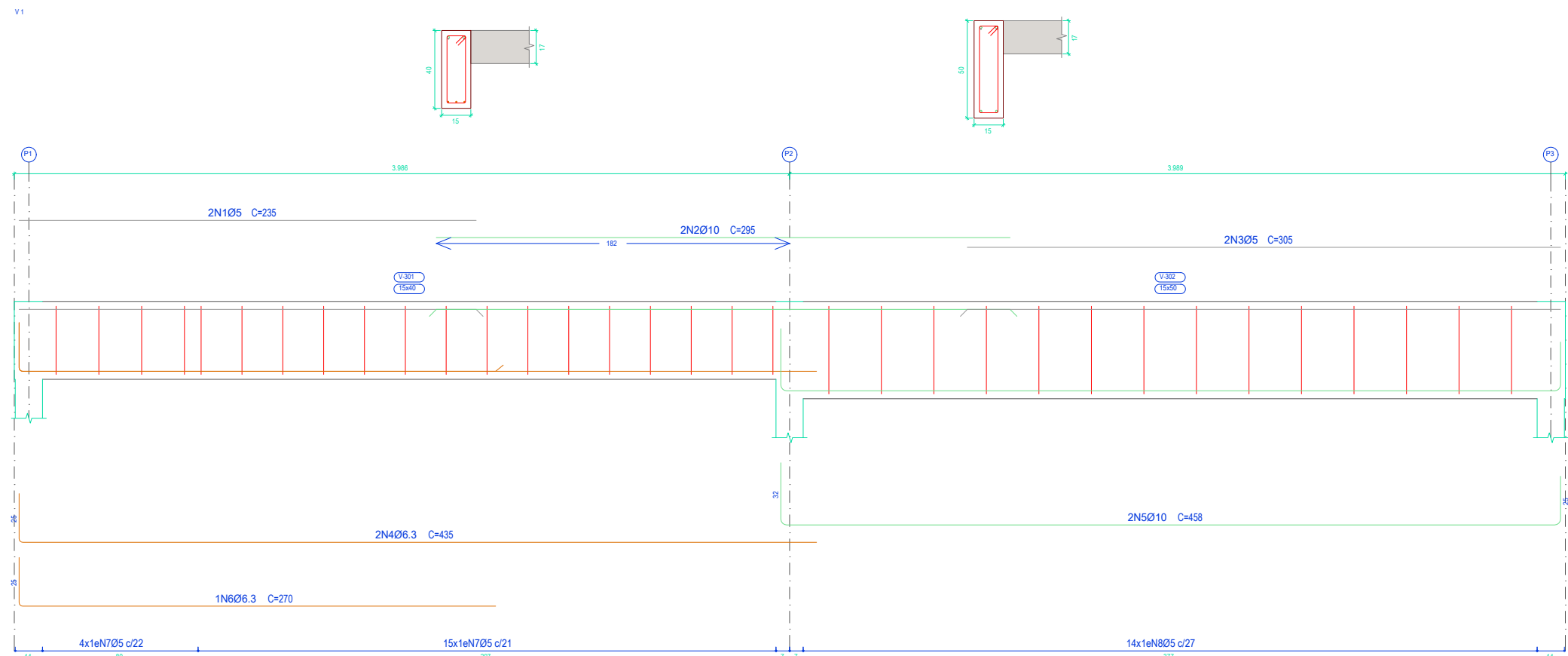
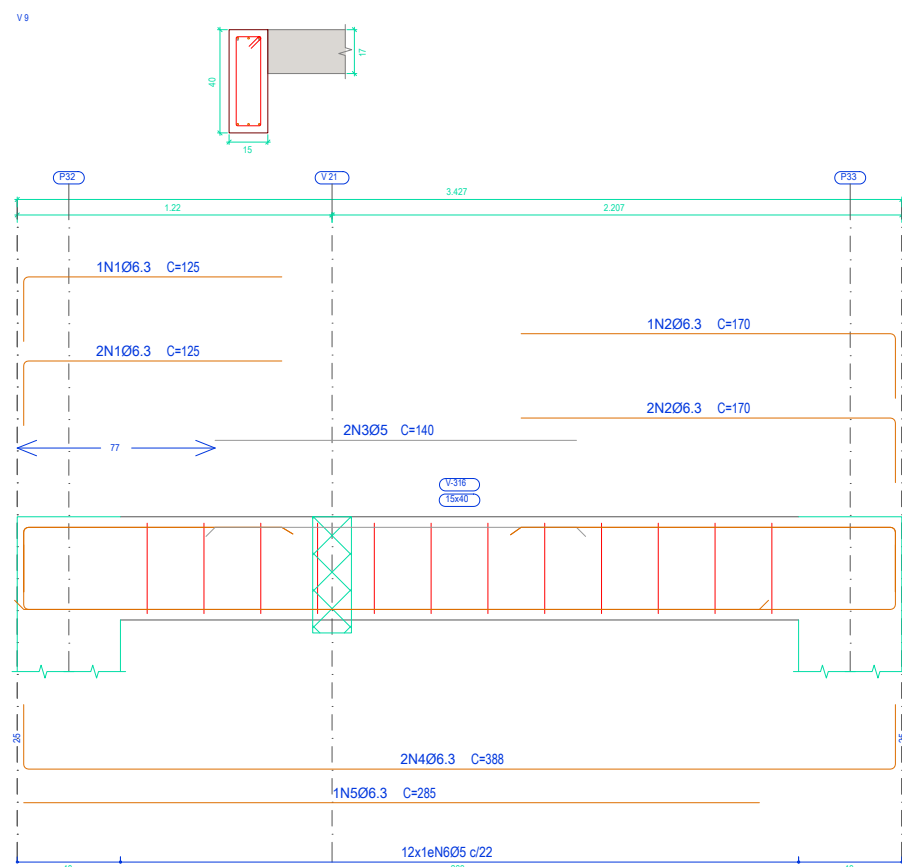
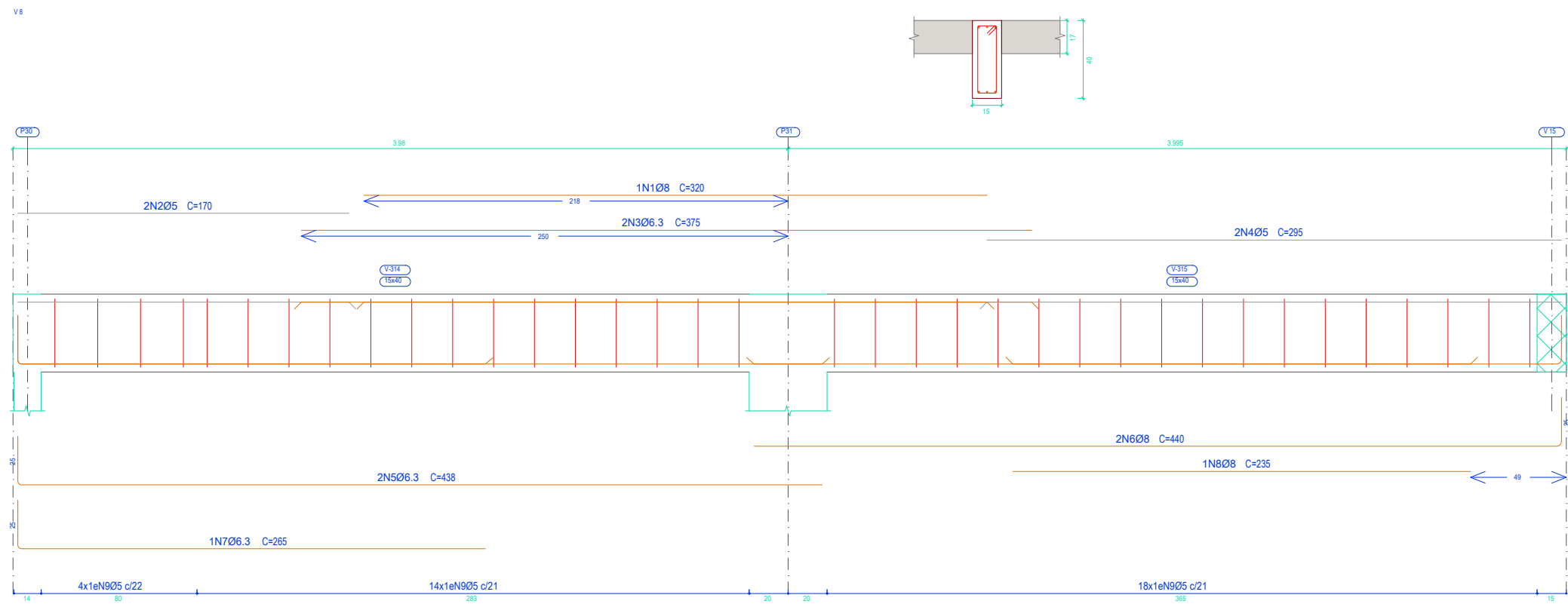
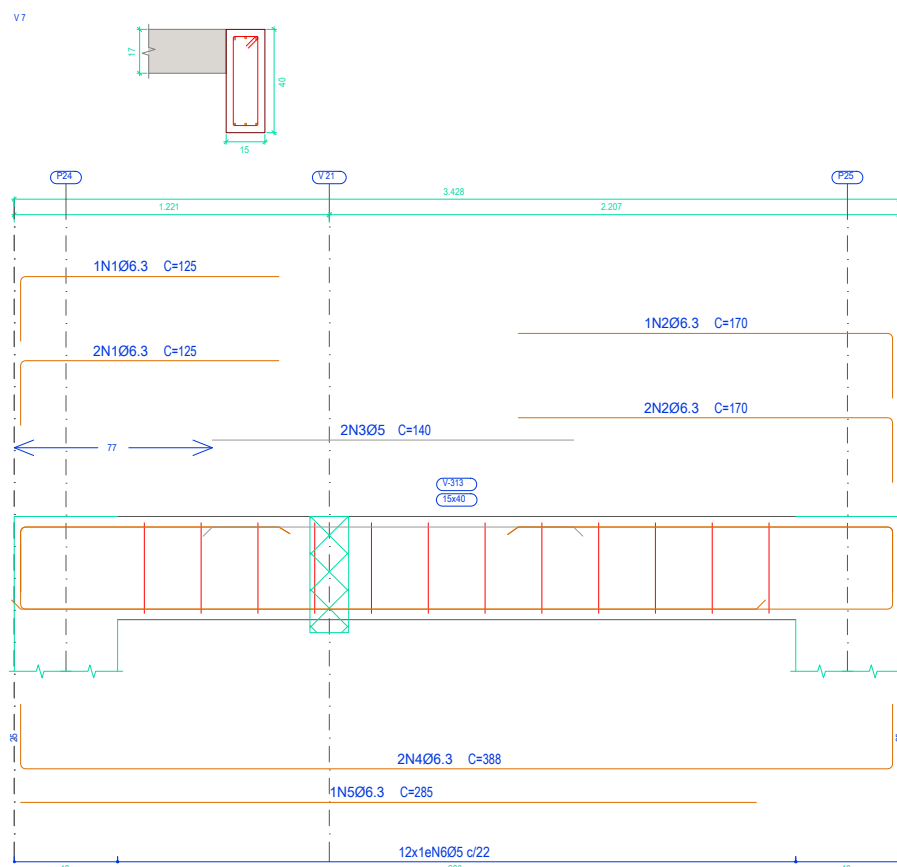
REVISÃO

R00

VISTO



laje
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V1	1	Ø25	2		235	470		0.7
	2	Ø10	2		265	590	3.6	
	3	Ø25	2		305	610		1.0
	4	Ø6.3	2		435	870	2.1	
	5	Ø10	2		458	916	5.6	
	6	Ø6.3	1		270	270	0.7	
	7	Ø5	19		98	1862		2.9
	8	Ø5	14		118	1652		2.6
Total*10%:							13.2	7.9
V2	1	Ø6.3	3		120	360	0.9	
	2	Ø25	2		330	660		1.0
	3	Ø8	2		451	902	3.6	
	4	Ø8	1		255	255	1.0	
	5	Ø5	18		98	1764		2.8
Total*10%:							6.1	4.2
V3	1	Ø6.3	3		180	540	1.3	
	2	Ø25	2		105	210		0.3
	3	Ø6.3	2		125	250	0.6	
	4	Ø6.3	2		388	776	1.9	
	5	Ø6.3	1		205	205	0.5	
V5	1	Ø6.3	3		96	288	0.9	
	2	Ø25	2		330	660		1.0
	3	Ø8	2		451	902	3.6	
	4	Ø5	18		98	1764		2.8
	Total*10%:							5.0
V6	1	Ø6.3	2		120	240	0.6	
	2	Ø25	2		330	660		1.0
	3	Ø8	2		451	902	3.6	
	4	Ø10	1		340	340	2.1	
	5	Ø5	18		98	1764		2.8
Total*10%:							6.9	4.2
V7	1	Ø6.3	3		125	375	0.9	
	2	Ø6.3	3		170	510	1.2	
	3	Ø25	2		140	280		0.4
	4	Ø6.3	2		388	776	1.9	
	5	Ø6.3	1		285	285	0.7	
V8	1	Ø5	12		98	1176		1.8
	Total*10%:							5.2
V8	1	Ø8	1		320	320	1.3	
	2	Ø5	2		170	340		0.5
	3	Ø6.3	2		375	750	1.8	
	4	Ø5	2		295	590		0.9
	5	Ø6.3	2		438	876	2.1	
	6	Ø8	2		440	880	3.5	
	7	Ø6.3	1		265	265	0.6	
	8	Ø8	1		235	235	0.9	
	9	Ø5	36		98	3528		5.5
Total*10%:							11.2	7.6
V9	1	Ø6.3	3		125	375	0.9	
	2	Ø6.3	3		170	510	1.2	
	3	Ø25	2		140	280		0.4
	4	Ø6.3	2		388	776	1.9	
	5	Ø6.3	1		285	285	0.7	
V9	6	Ø5	12		98	1176		1.8
	Total*10%:							5.2
Ø5:							0.0	35.2
Ø6.3:							25.9	0.0
Ø8:							19.3	0.0
Ø10:							12.4	0.0
Total:							57.5	35.2

UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

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UNIVERSIDADE ESTADUAL DO MATO GROSSO DO SUL

AUTOR DO PROJETO

WAGNER LUIZ MANARA-63393425900

PROPRIETÁRIO

LAERCIO ALVES DE CARVALHO-90465822568

REFERÊNCIA

RESTAURANTE UNIVERSITÁRIO
Vigas da Laje 3/3

FOLHA Nº / PE

14/14

ESCALA:

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