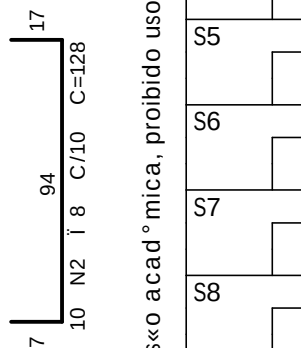
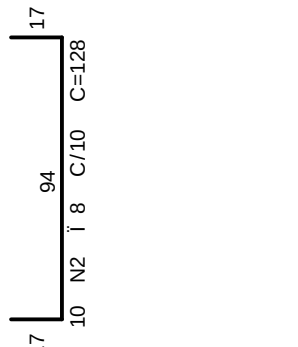


Desenho produzido por vers^o acad^omica, proibido uso comercial



RESUMO DE AÇO			
AÇO	BIT mm	COMPR m	PESO kgf
50A	8	244	96
Peso Total	50A =		96 kgf

Desenho produzido por vers^o acad^o mica, proibido uso comercial



ANDRÉ RODRIGUES

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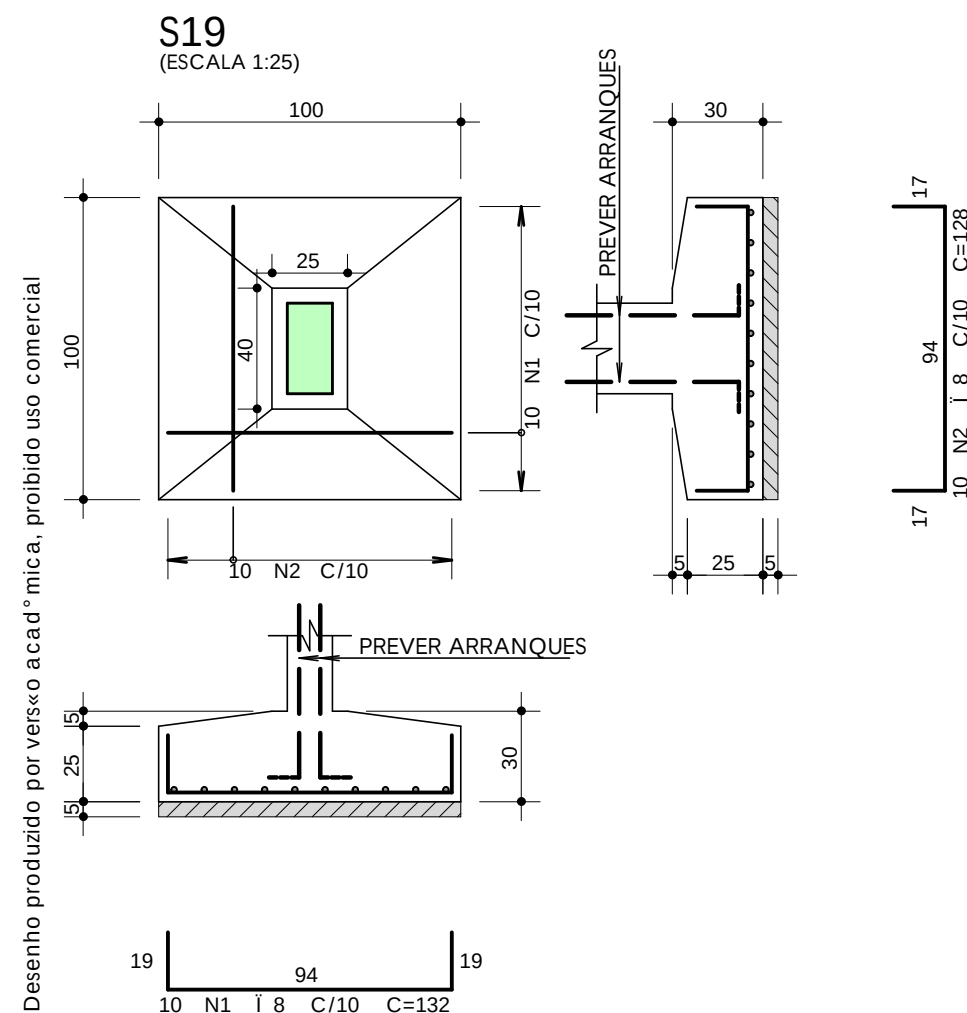
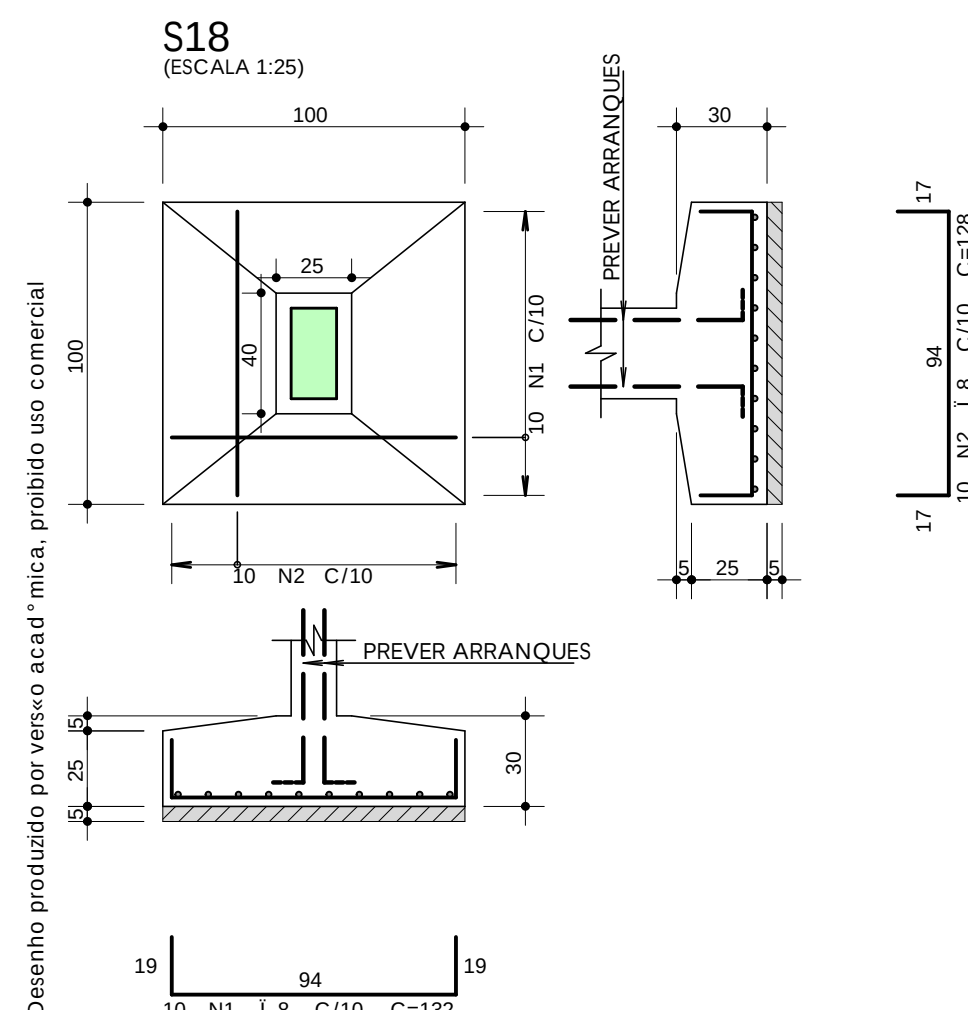
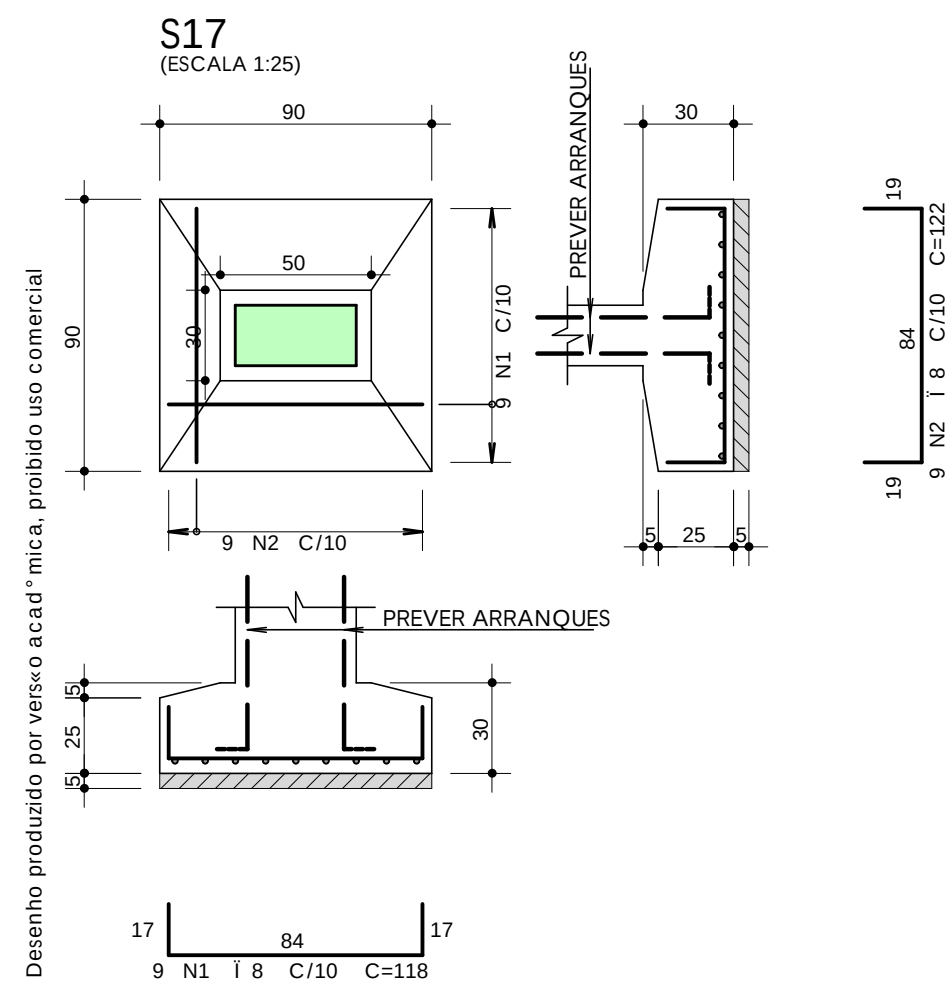
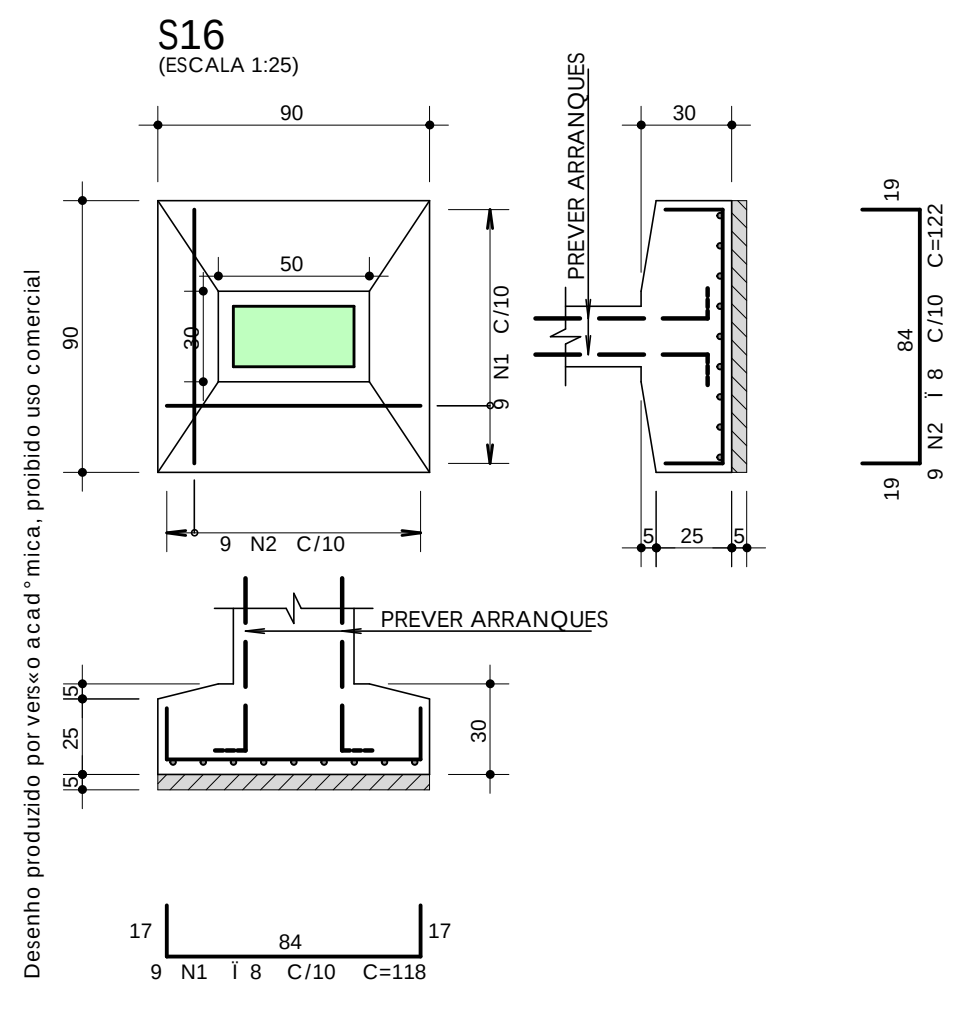
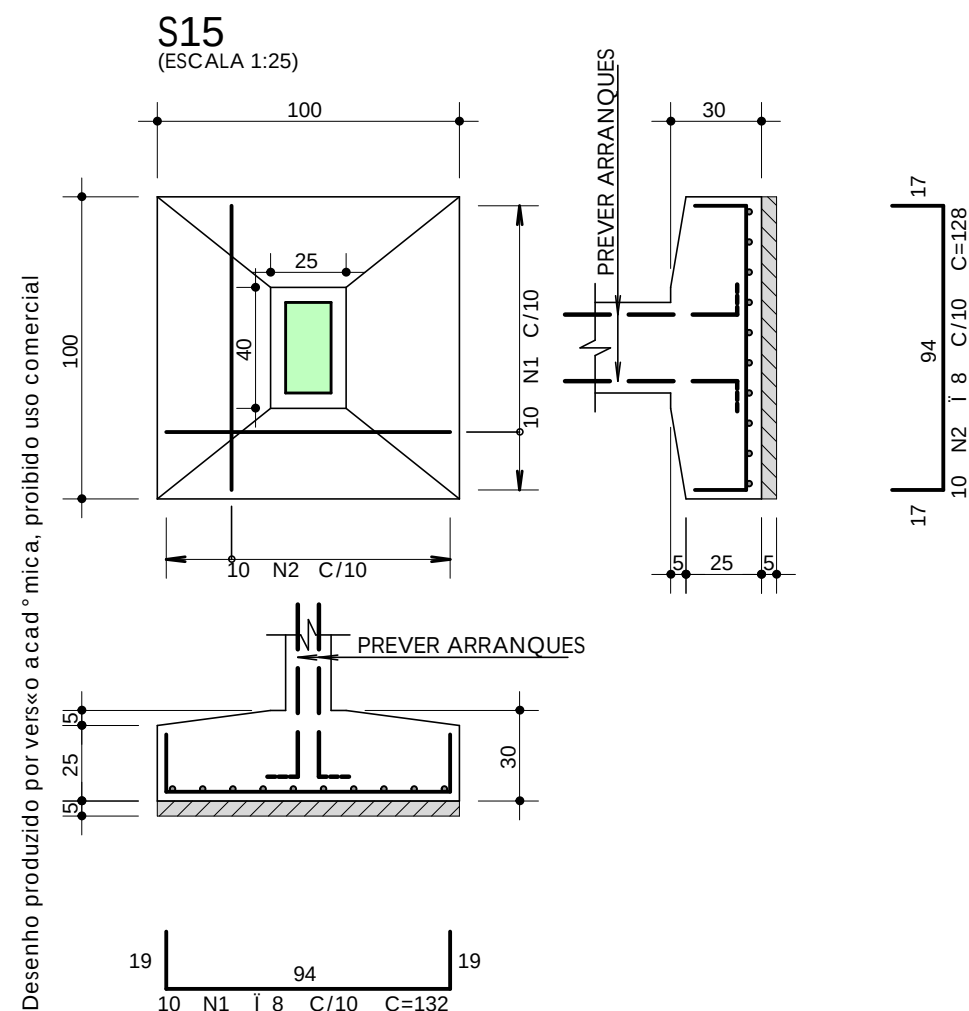
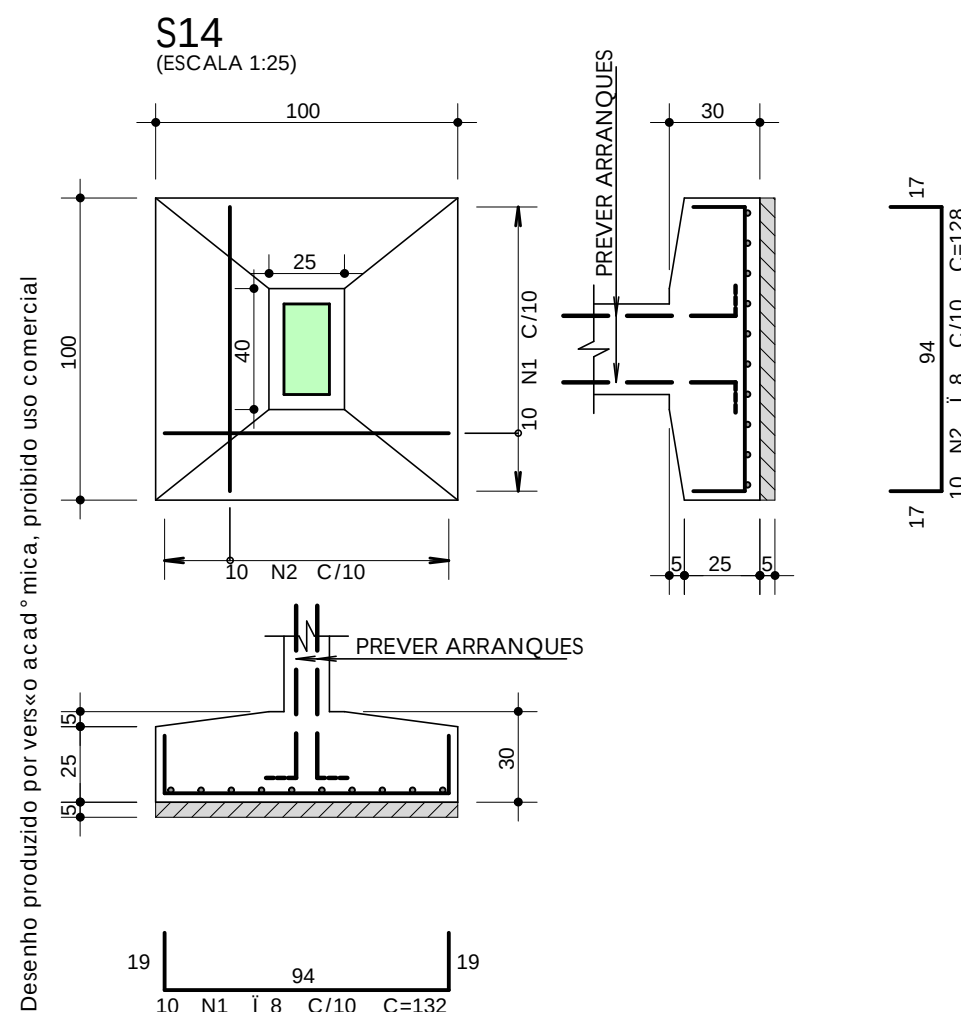
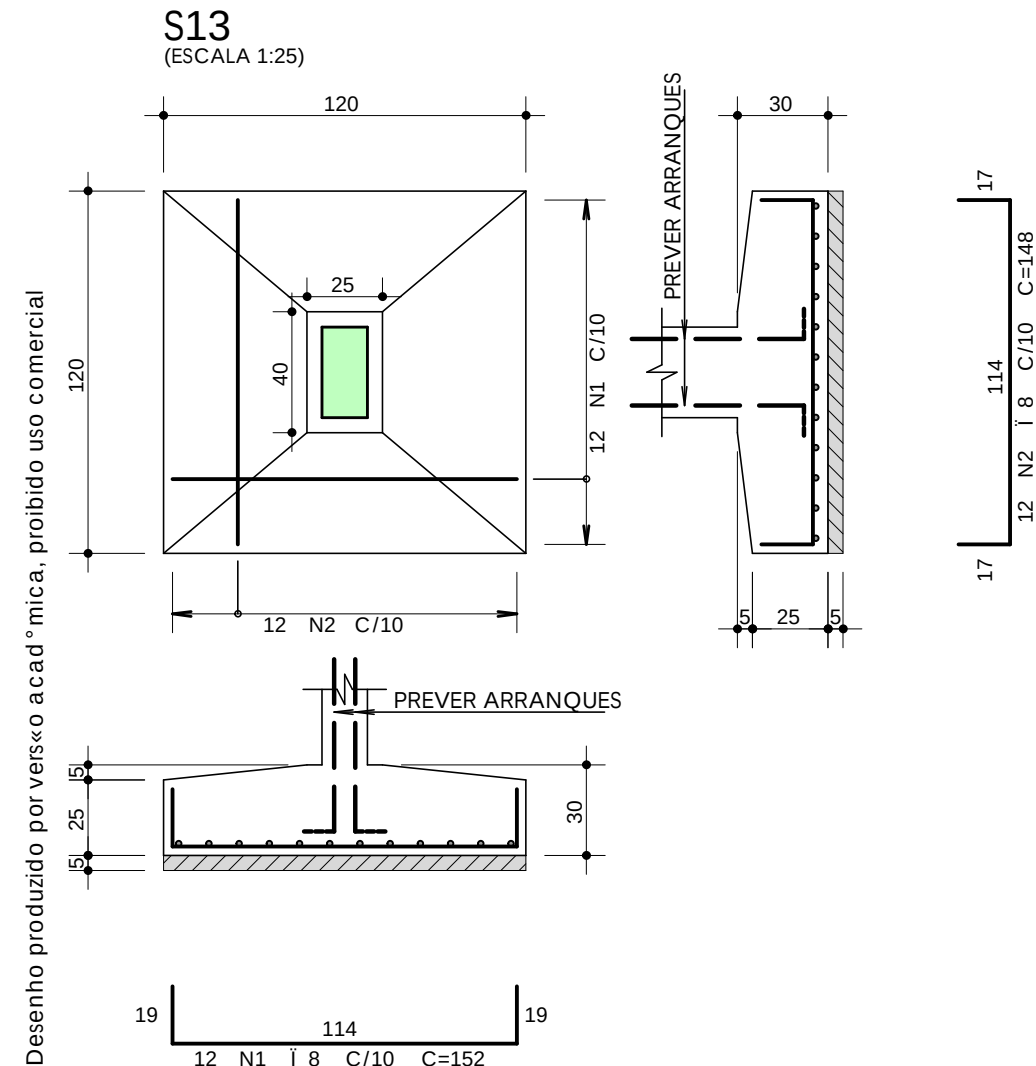
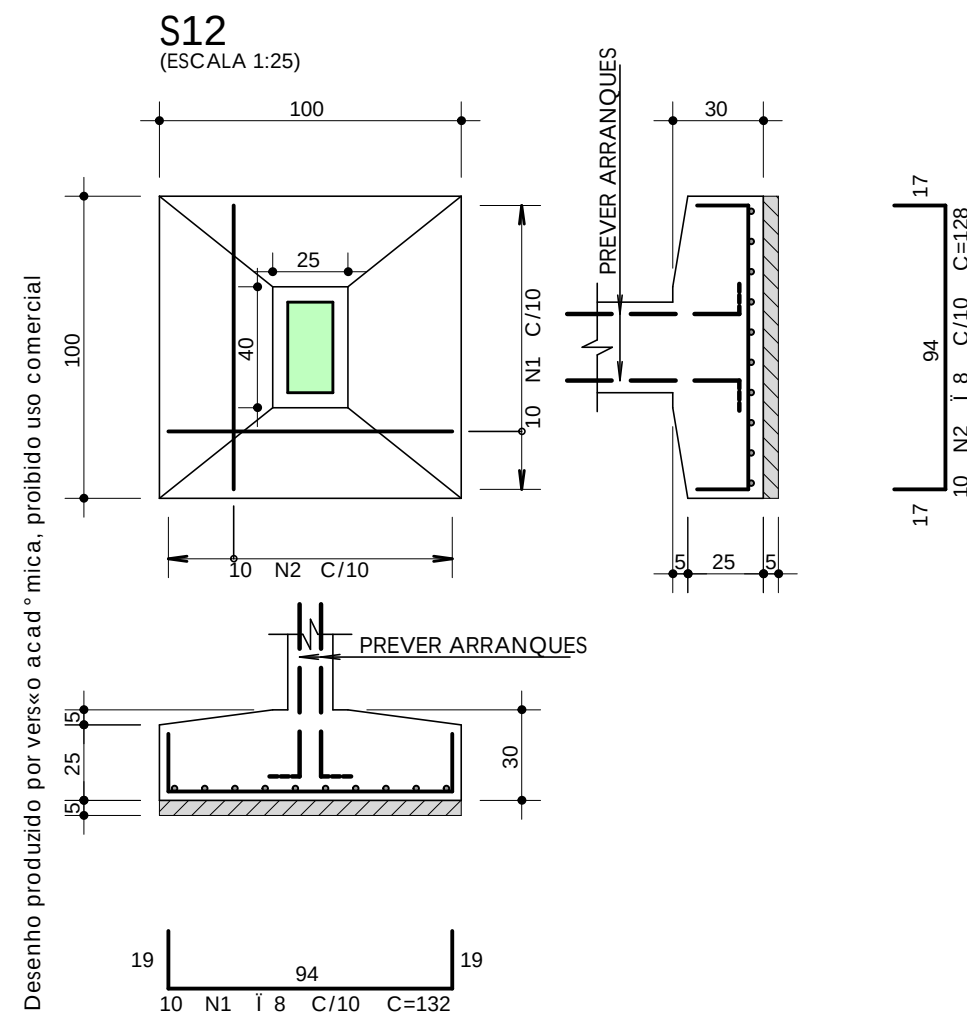
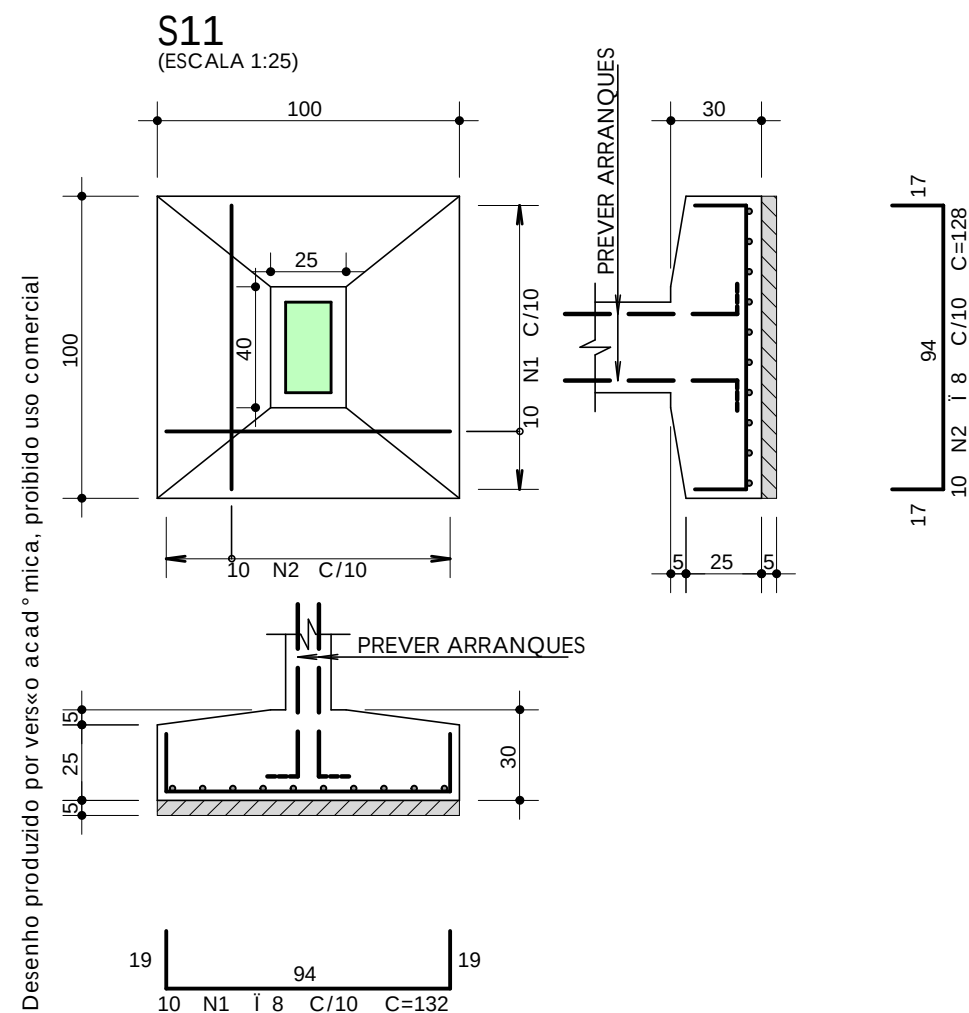
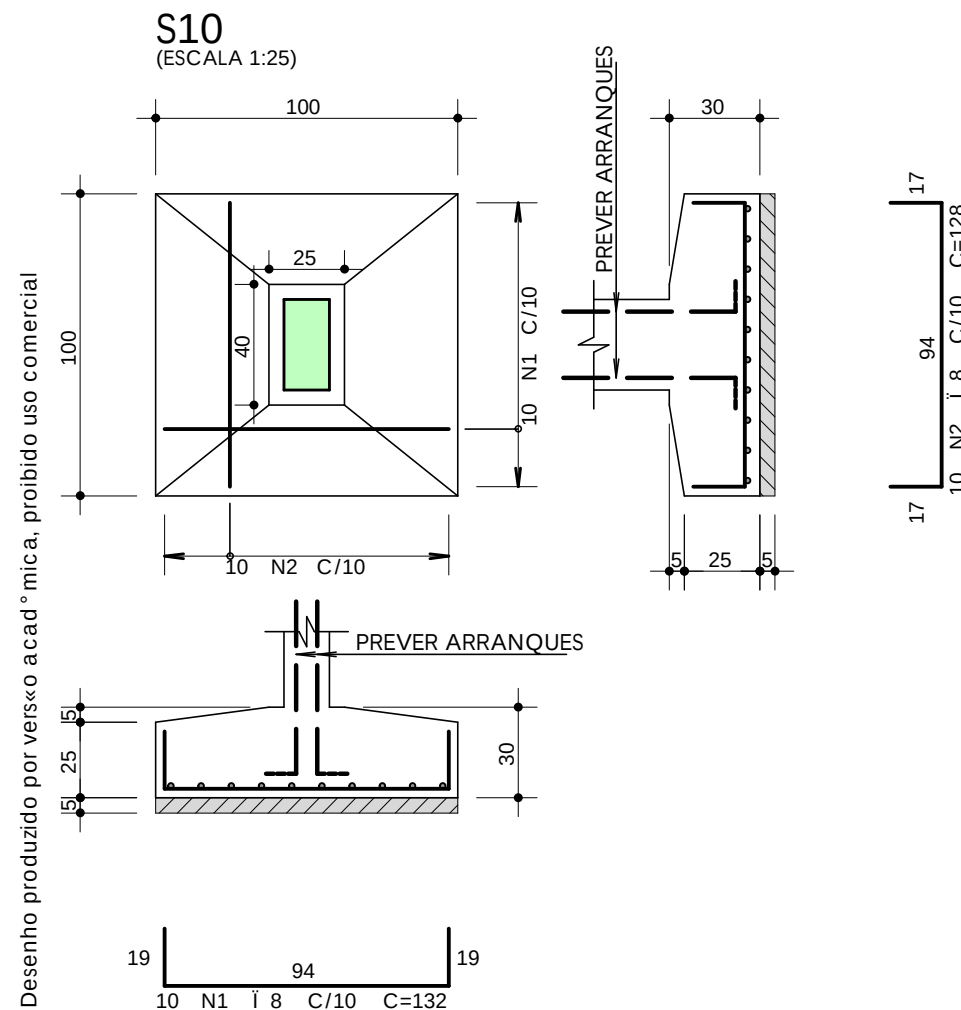
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CLIENTE: Isis	DESENHO Nº: 001
OBRA: Residência unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO: Locação de sapatas e detalhamento de sapatas S1 / S2 / S3 / S4 / S5 S6 / S7 / S8 / S9 / S10	
DATA: 17/12/2020	ESCALA: 1:25 / 1:50

TQS VERSÃO EDUCACIONAL INT COMERCIAL PL TST-FUN-FUN-026-ROO-PLT 21/12/2020 14:13:37



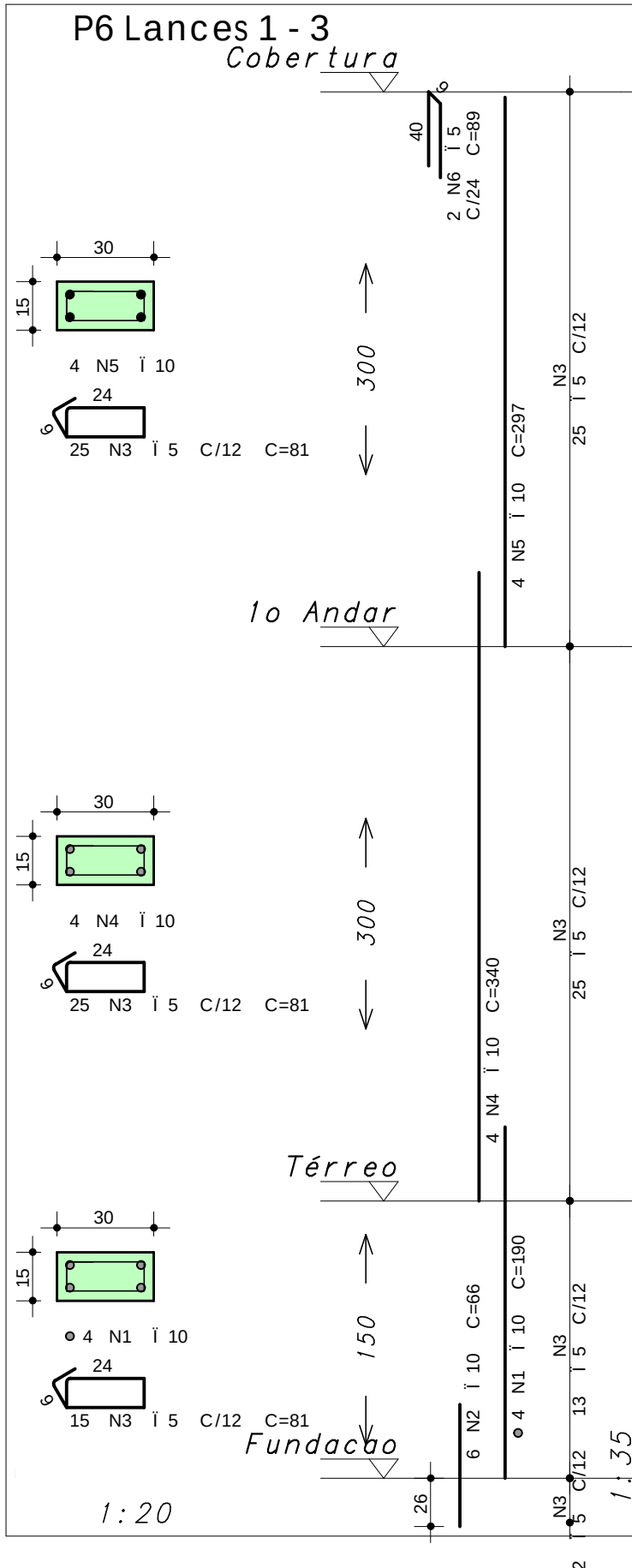
A ¢ O	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
S10	50A	1	8	10	1320
	50A	2	8	10	1280
S11	50A	1	8	10	1320
	50A	2	8	10	1280
S12	50A	1	8	10	1320
	50A	2	8	10	1280
S13	50A	1	8	12	1824
	50A	2	8	12	1776
S14	50A	1	8	10	1320
	50A	2	8	10	1280
S15	50A	1	8	10	1320
	50A	2	8	10	1280
S16	50A	1	8	9	1062
	50A	2	8	9	1098
S17	50A	1	8	9	1062
	50A	2	8	9	1098
S18	50A	1	8	10	1320
	50A	2	8	10	1280
S19	50A	1	8	10	1320
	50A	2	8	10	1280

RESUMO DE A ¢ O			
A ¢ O	BIT	COMPR	PESO
50A	8 mm	261 m	103 kgf
Peso Total 50A =			103 kgf

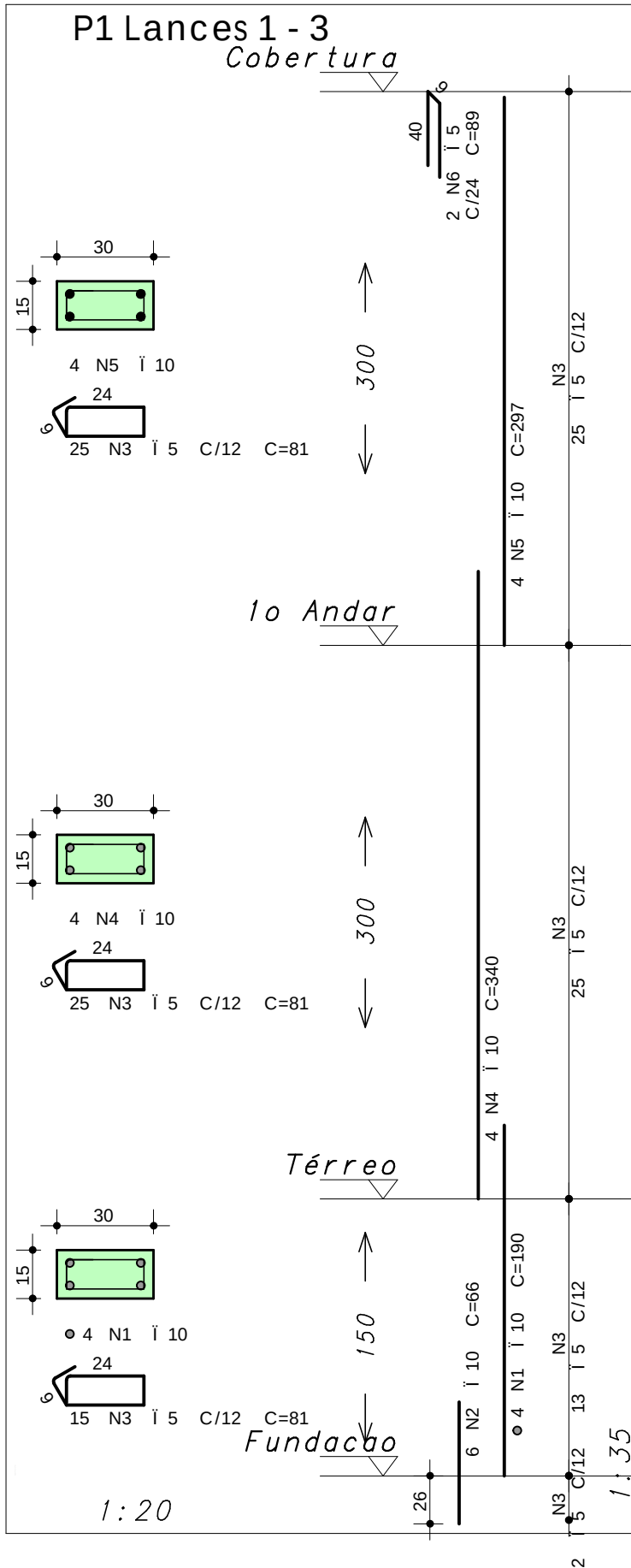
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CLIENTE:	Isis	DESENHO Nº: 002
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Detalhamento de sapatas	
	S11 / S12 / S13 / S14 / S15 S16 / S17 / S18 / S19	
DATA:	17/12/2020	ESCALA: 1:25 / 1:50

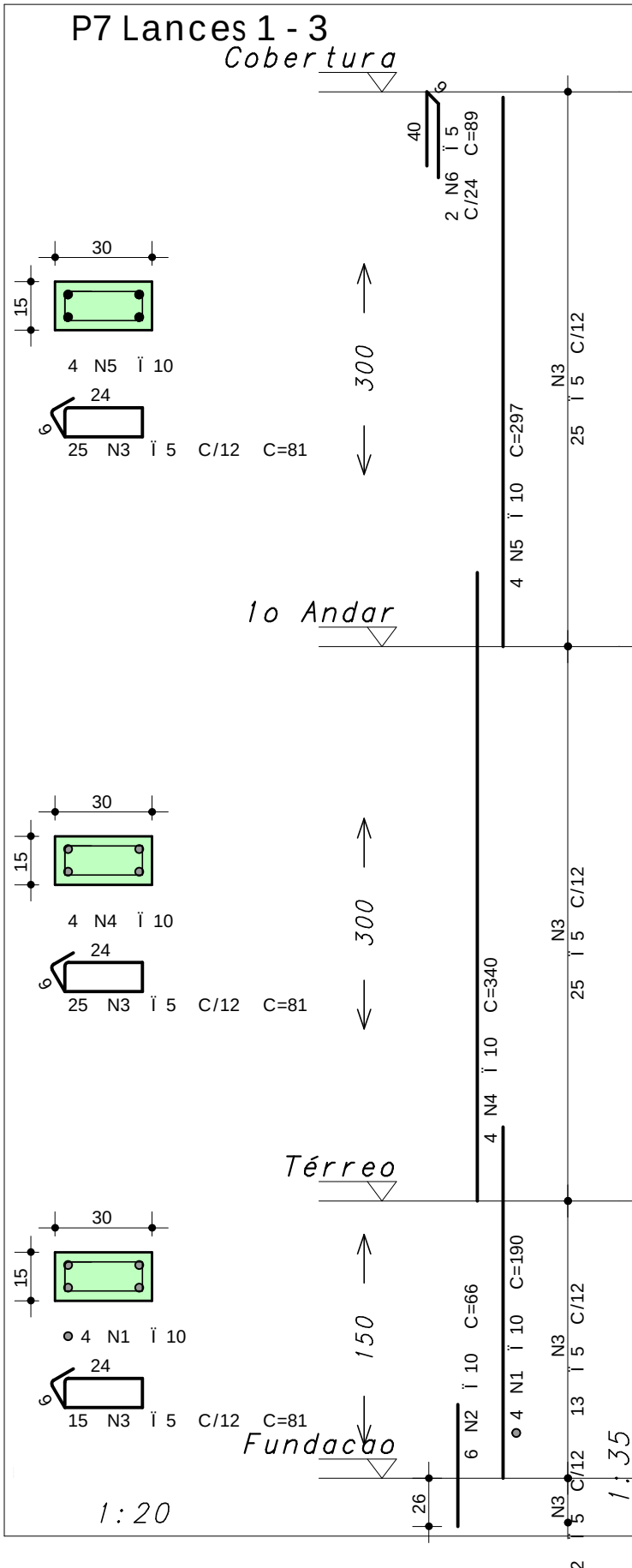
Desenho produzido por vers»o acad»mica, proibido uso comercial



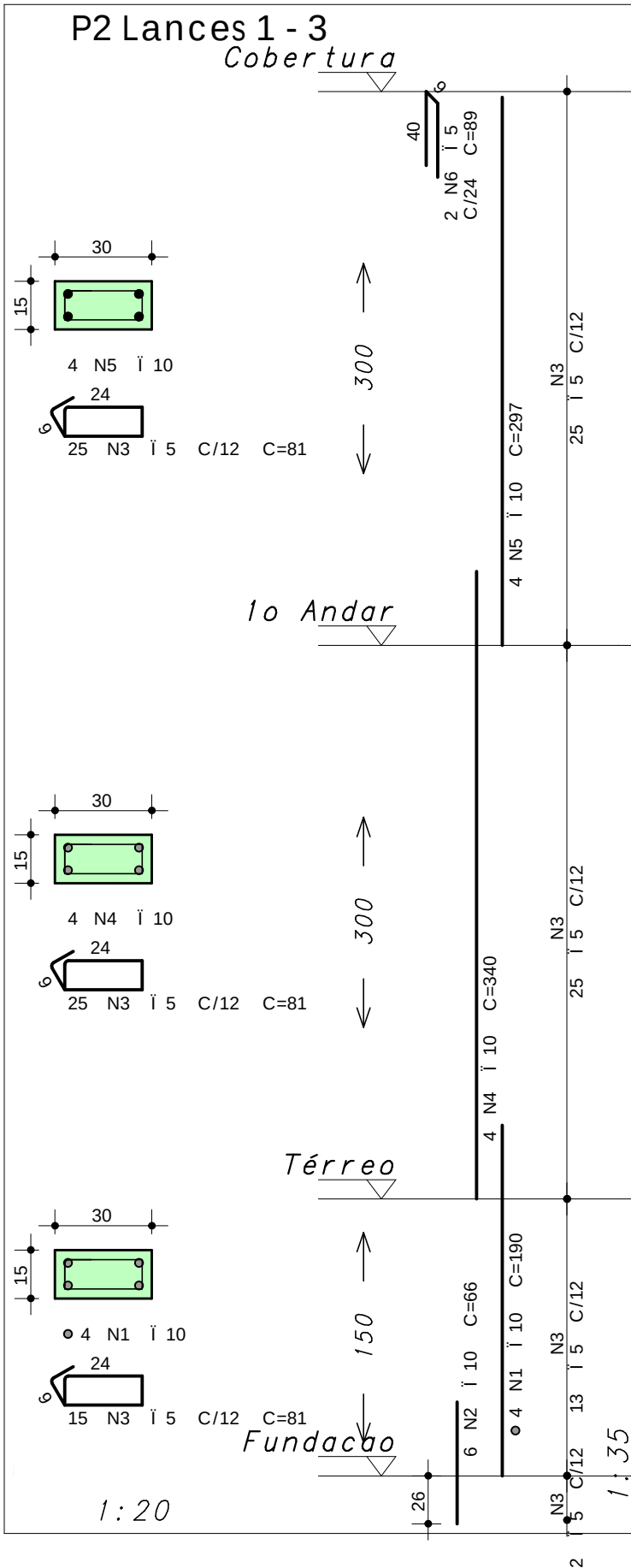
Desenho produzido por vers»o acad»mica, proibido uso comercial



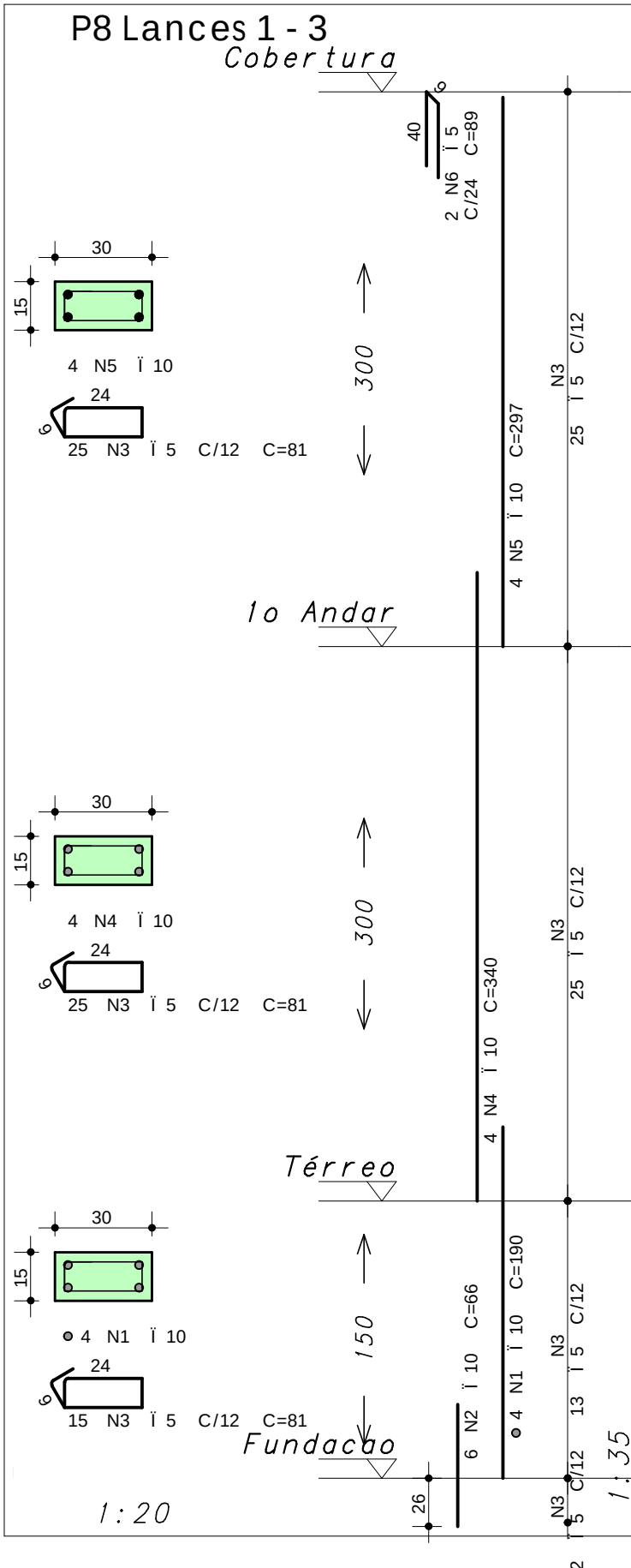
Desenho produzido por vers»o acad»mica, proibido uso comercial



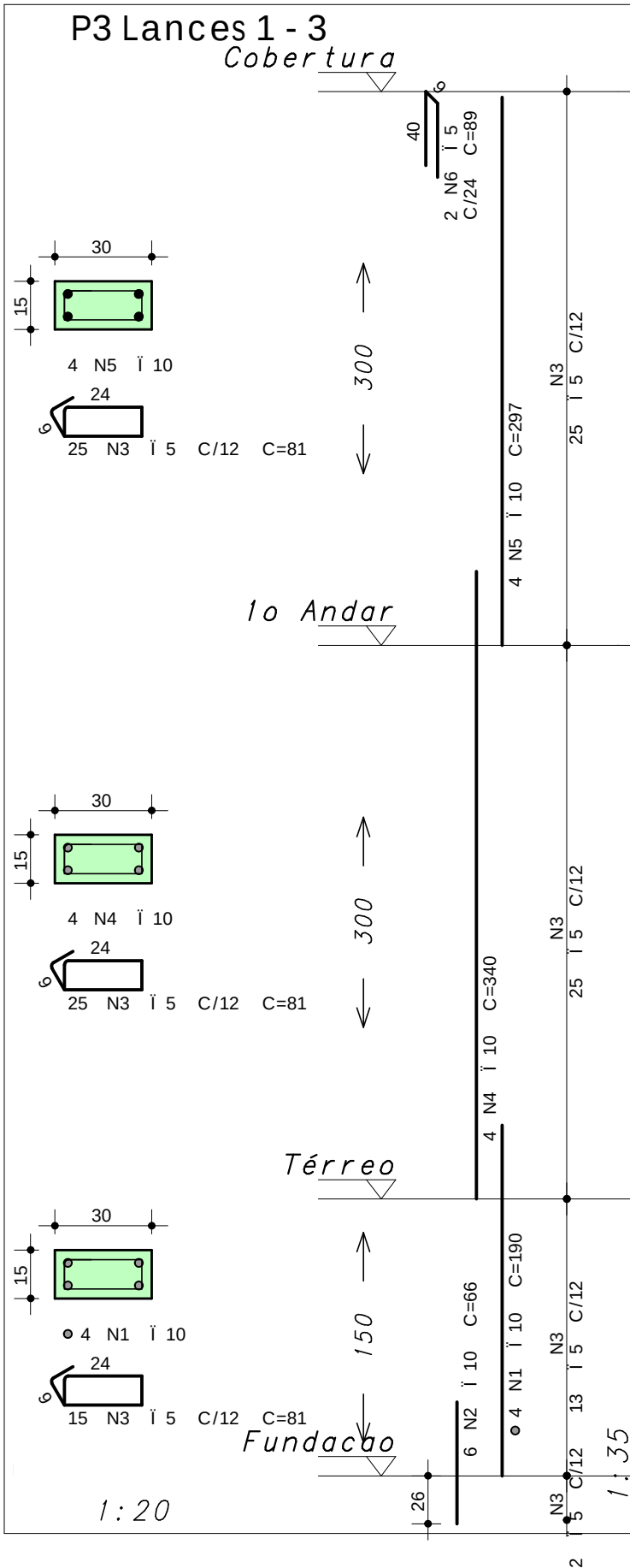
Desenho produzido por vers»o acad»mica, proibido uso comercial



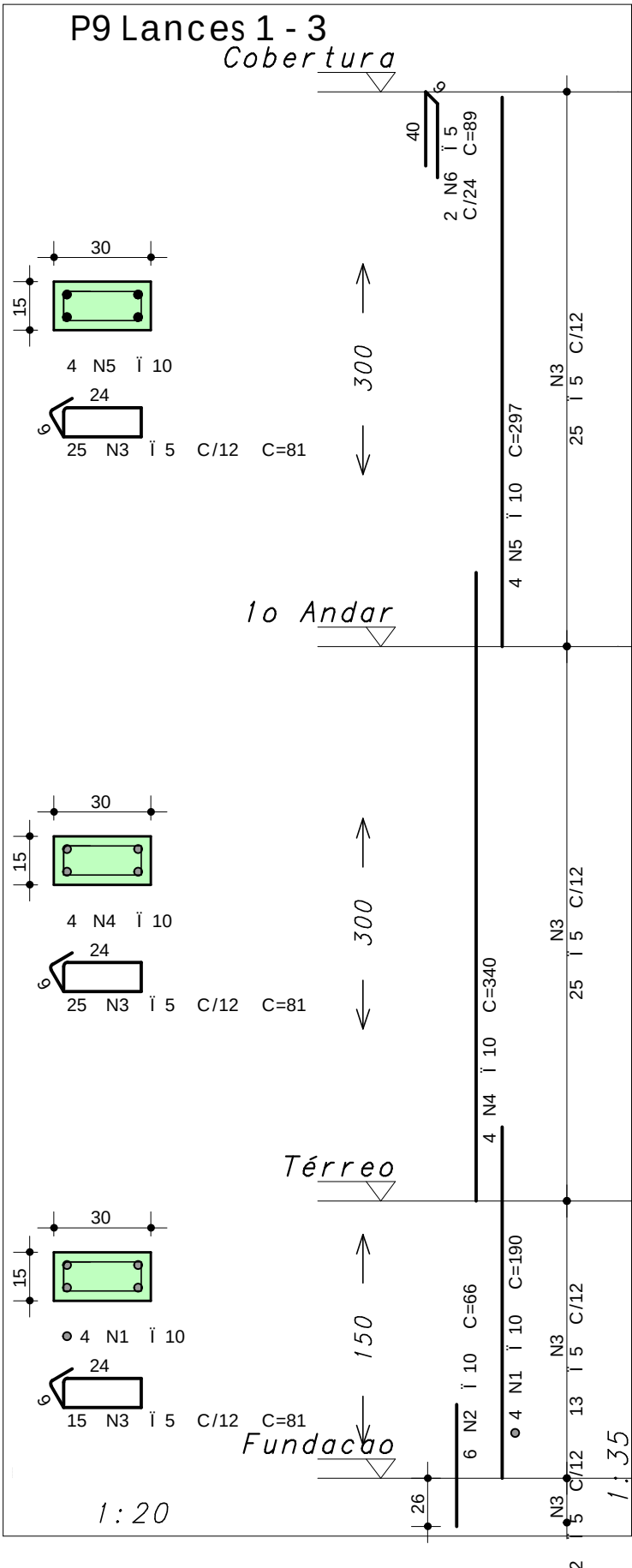
Desenho produzido por vers»o acad»mica, proibido uso comercial



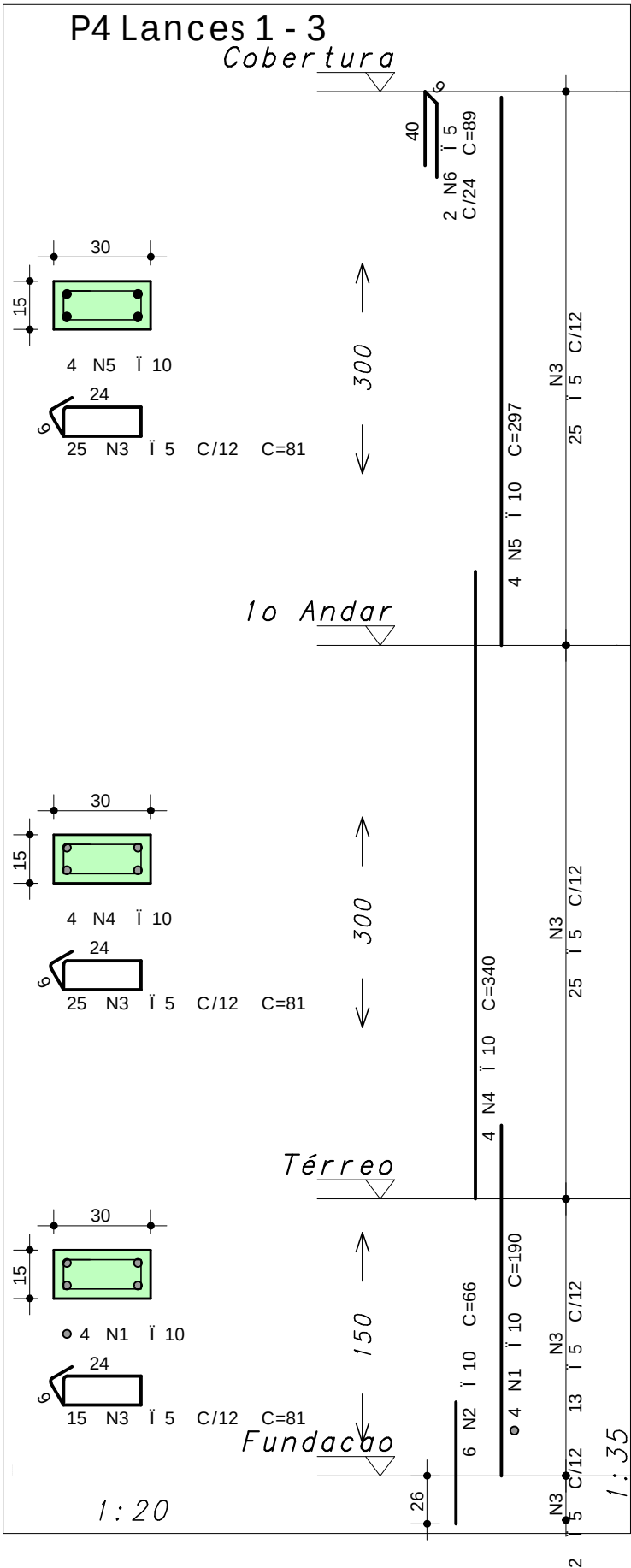
Desenho produzido por vers»o acad»mica, proibido uso comercial



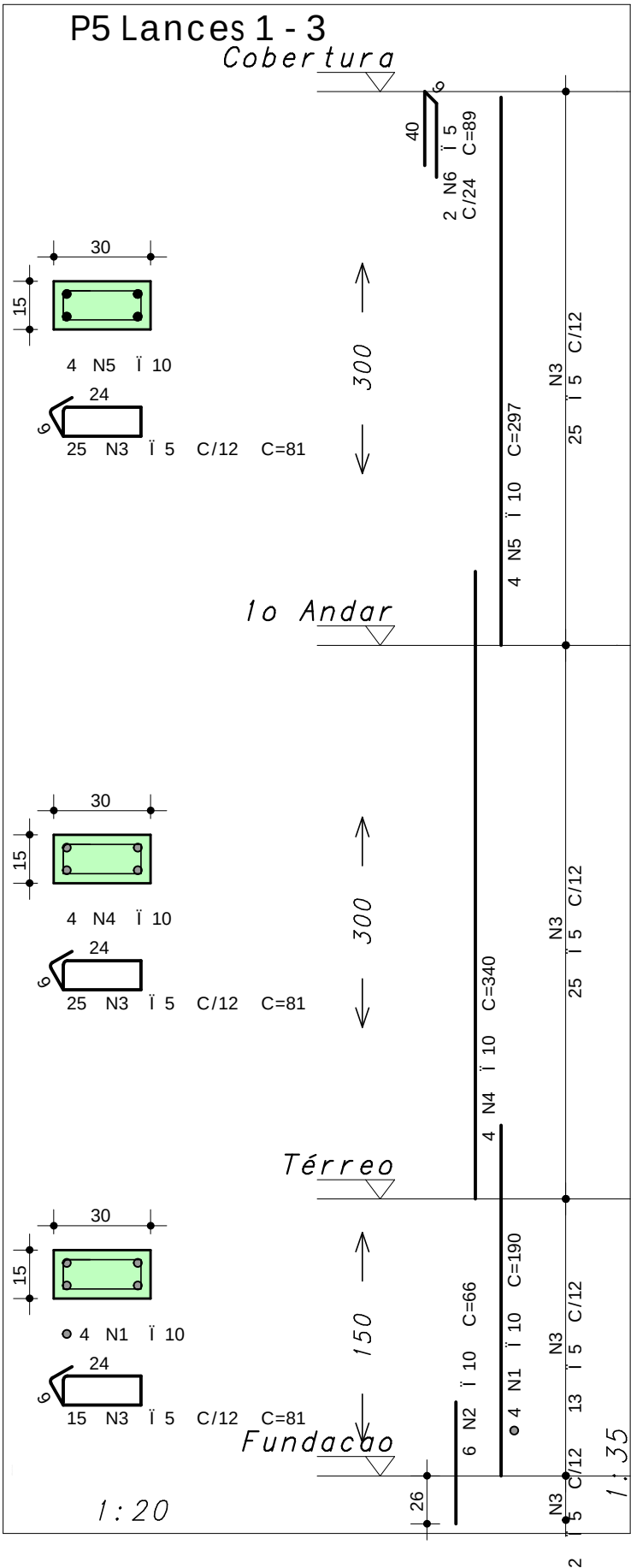
Desenho produzido por vers»o acad»mica, proibido uso comercial



Desenho produzido por vers»o acad»mica, proibido uso comercial



Desenho produzido por vers»o acad»mica, proibido uso comercial

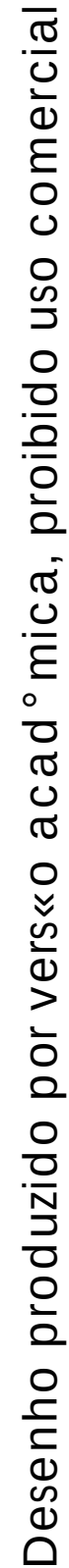
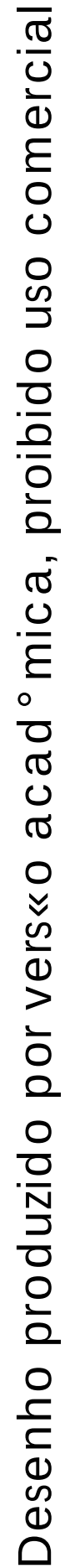
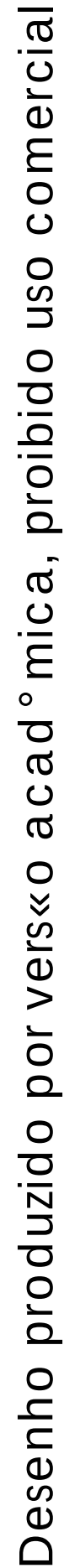
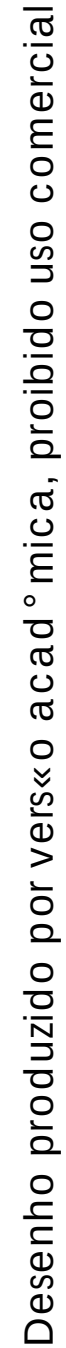
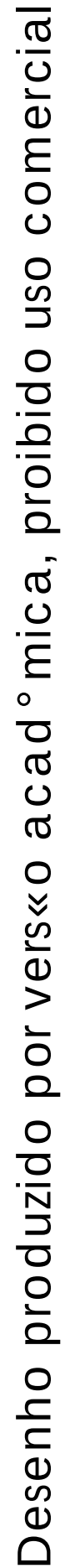


CLIENTE:	Isis	DESENHO Nº: 003
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Detalhamento de Pilares	
DATA:	17/12/2020	ESCALA: 1:20

Desenho produzido por vers»o acad»mica, proibido uso comercial

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
60A	5	490	75
50A	10	333	206
Peso Total	60A =		75 kgf
Peso Total	50A =		206 kgf

AÇO	POS	BIT	QUANT	COMPRIMENTO	TOTAL
		mm		UNIT	TOTAL
				cm	cm
P1 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P2 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P3 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P4 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P5 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P6 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P7 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P8 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P9 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178



RESUMO DE AÇO			
AÇO	BIT mm	COMPR m	PESO kgf
60A	5	550	85
50A	10	369	228
Peso Total	60A =	85 kgf	
Peso Total	50A =	228 kgf	



ANDRÉ RODRIGUES

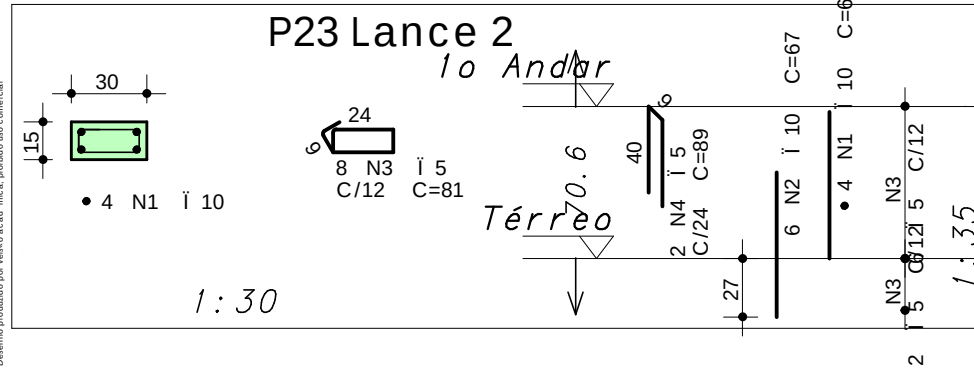
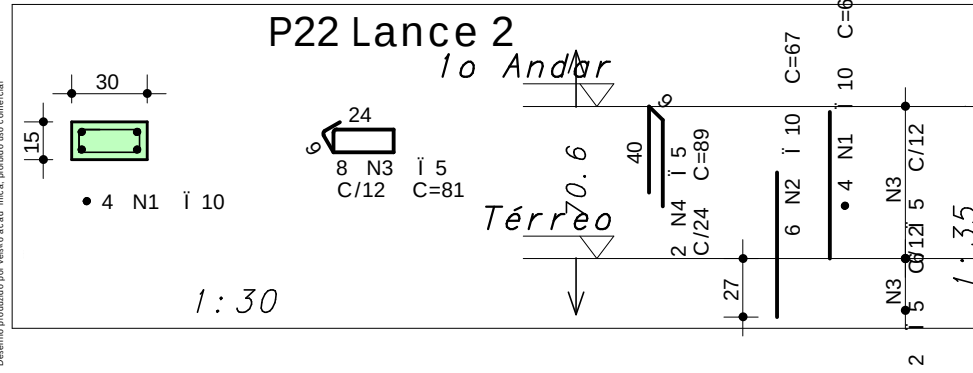
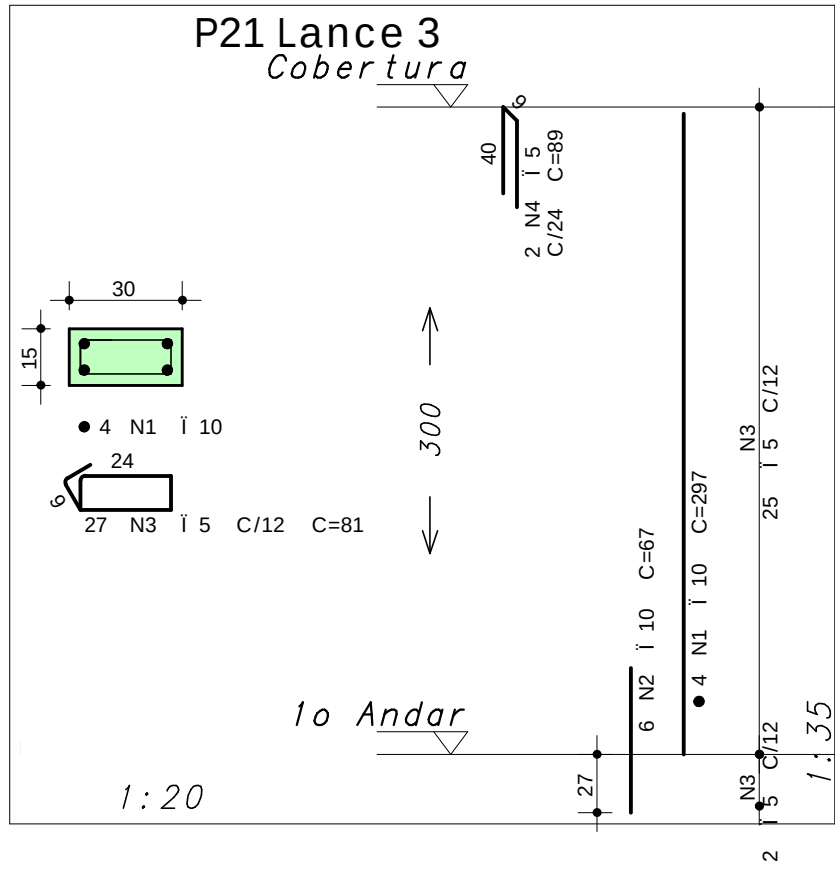
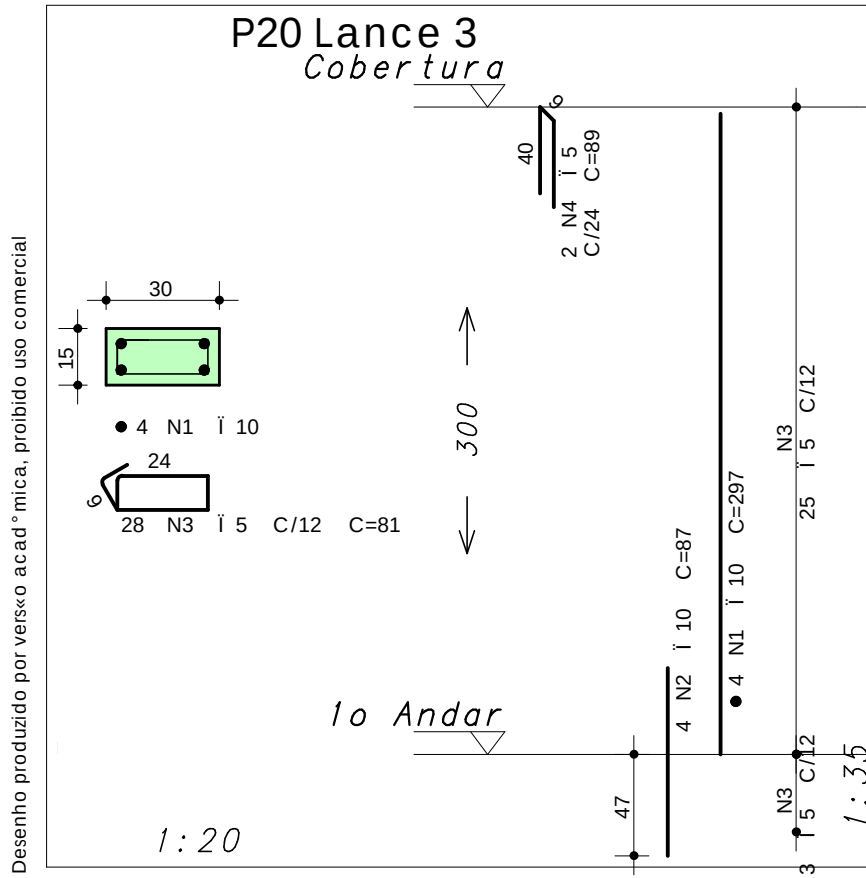
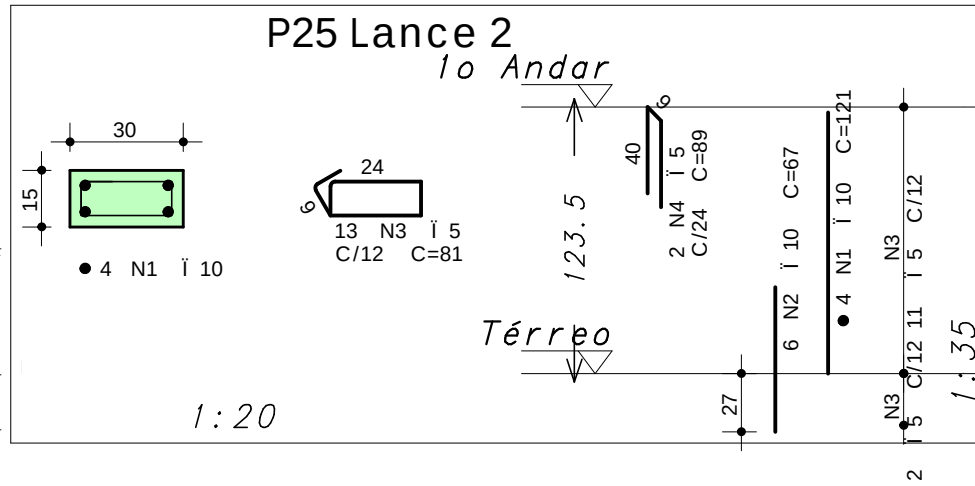
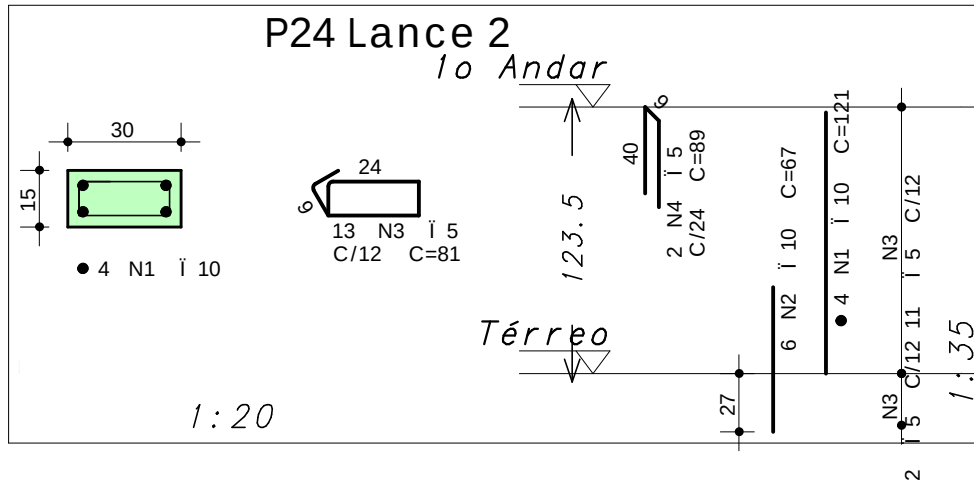
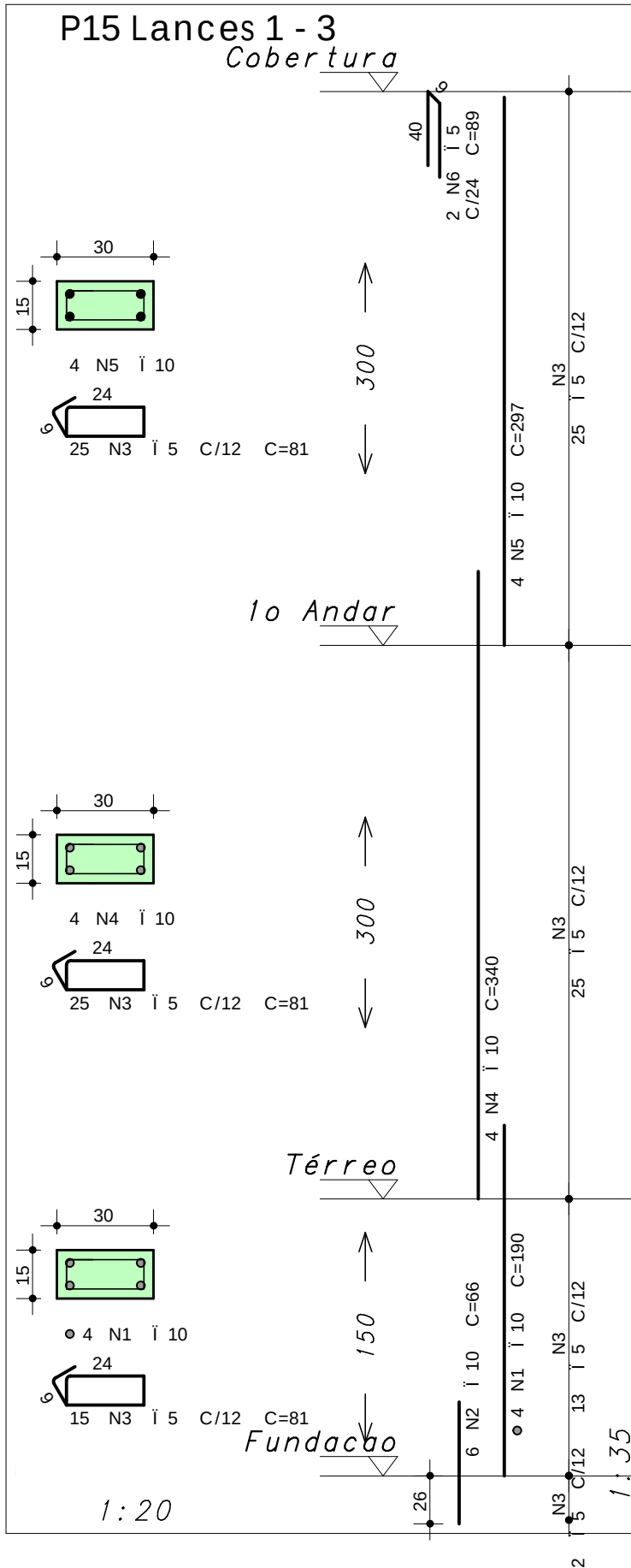
Engenheiro Estrutural

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CLIENTE: Isis	DESENHO Nº: 004
OBRA: Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO: Detalhamento de Pilares P10 / P11 / P12 / P13 / P14 P16 / P17 / P18 / P19	
DATA: 17/12/2020	ESCALA: 1:20

Desenho produzido por verso acad° mica, proibido uso comercial



Aço	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
P15 Lances 1 - 3					
50A	1	10	4	190	760
50A	2	10	6	66	396
60A	3	5	65	81	5265
50A	4	10	4	340	1360
50A	5	10	4	297	1188
60A	6	5	2	89	178
P20 Lance 3					
50A	1	10	4	297	1188
50A	2	10	4	87	348
60A	3	5	28	81	2268
60A	4	5	2	89	178
P21 Lance 3					
50A	1	10	4	297	1188
50A	2	10	6	67	402
60A	3	5	27	81	2187
60A	4	5	2	89	178
P22 Lance 2					
50A	1	10	4	68	272
50A	2	10	6	67	402
60A	3	5	9	81	648
60A	4	5	2	89	178
P23 Lance 2					
50A	1	10	4	68	272
50A	2	10	6	67	402
60A	3	5	8	81	648
60A	4	5	2	89	178
P24 Lance 2					
50A	1	10	4	121	484
50A	2	10	6	67	402
60A	3	5	13	81	1053
60A	4	5	2	89	178
P25 Lance 2					
50A	1	10	4	121	484
50A	2	10	6	67	402
60A	3	5	13	81	1053
60A	4	5	2	89	178

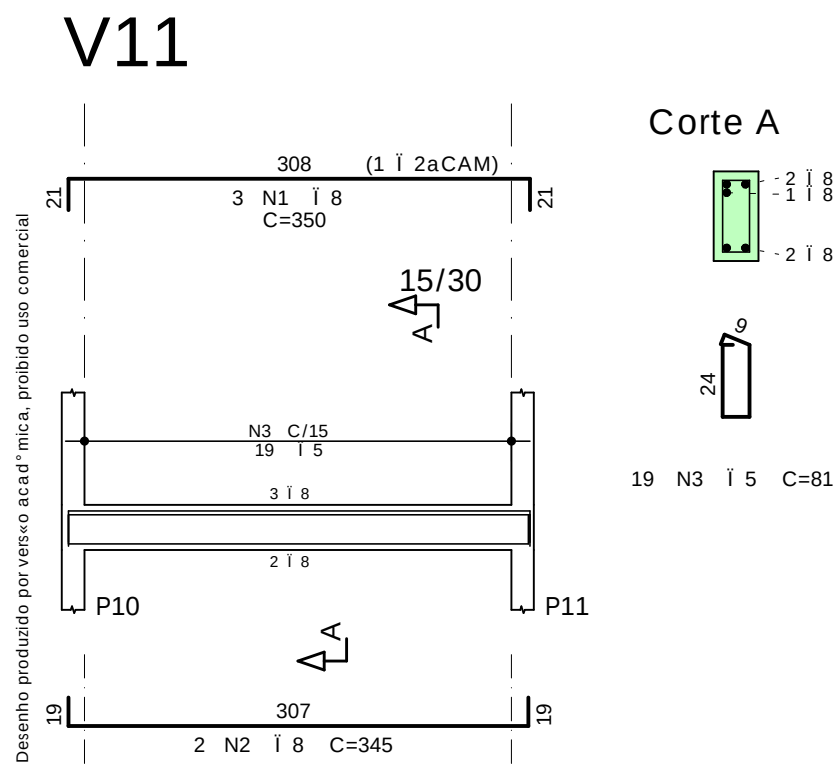
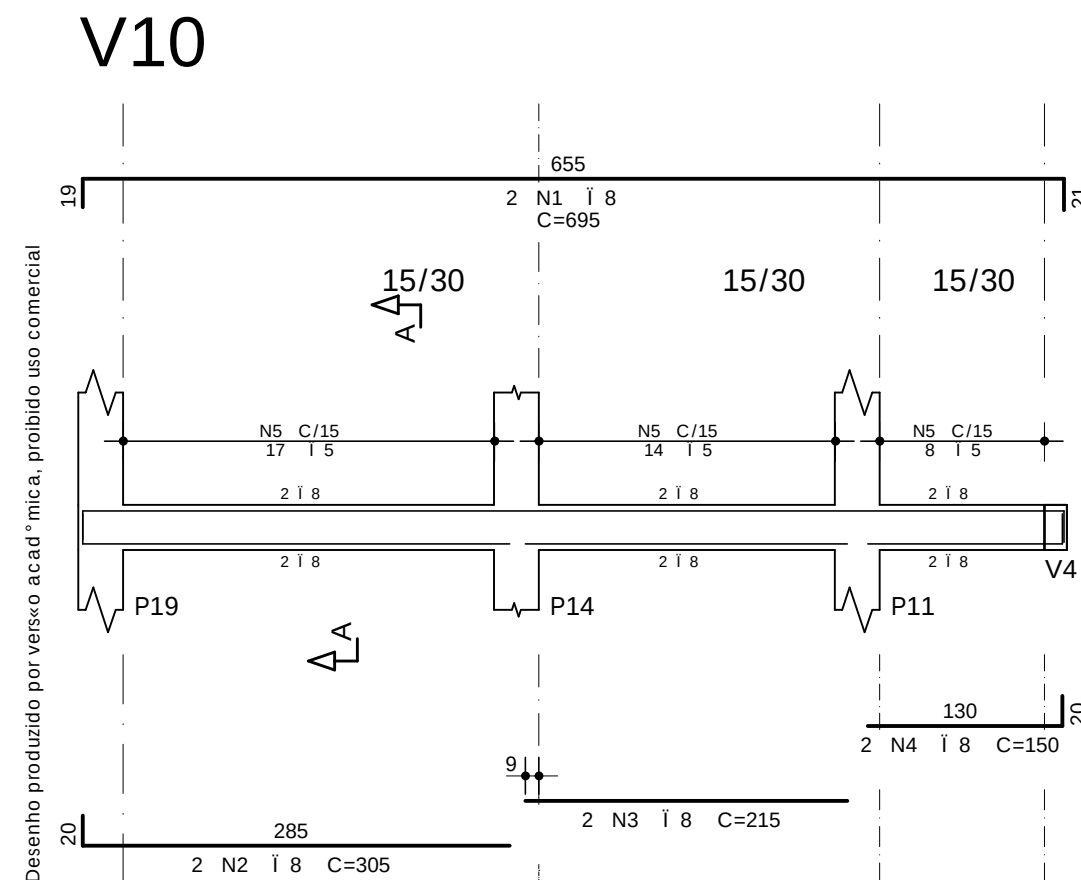
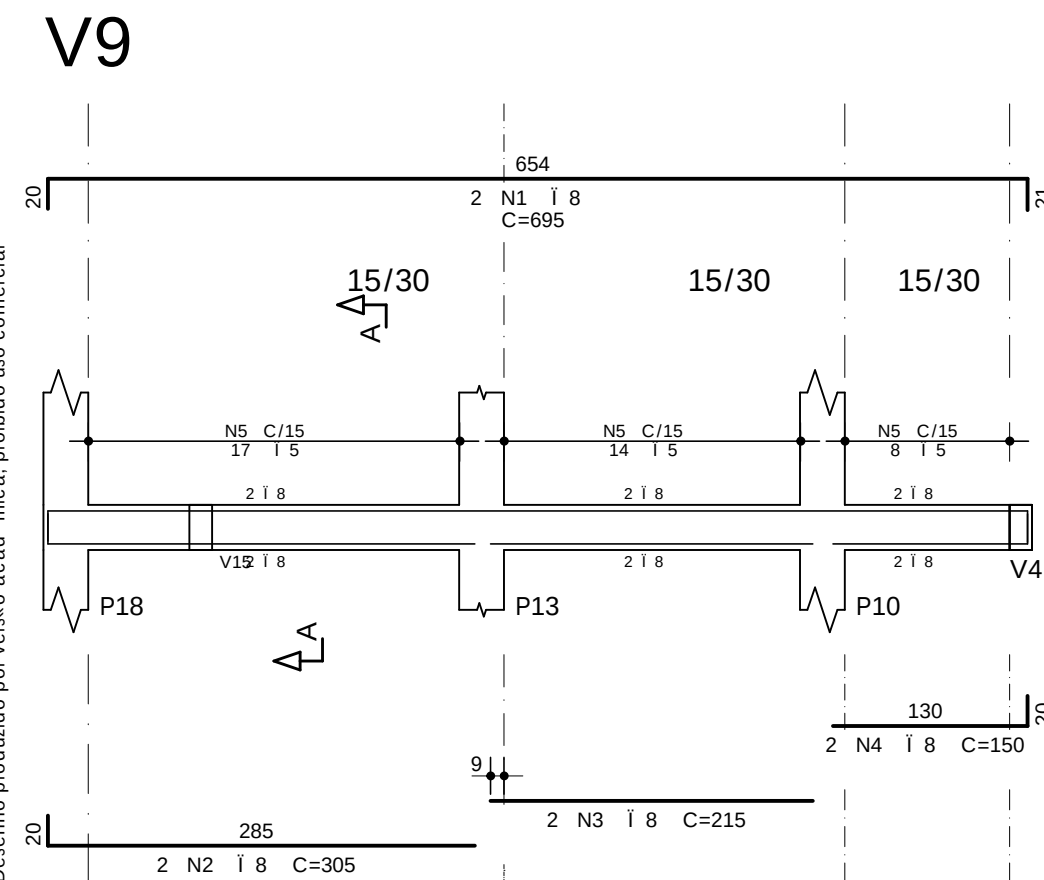
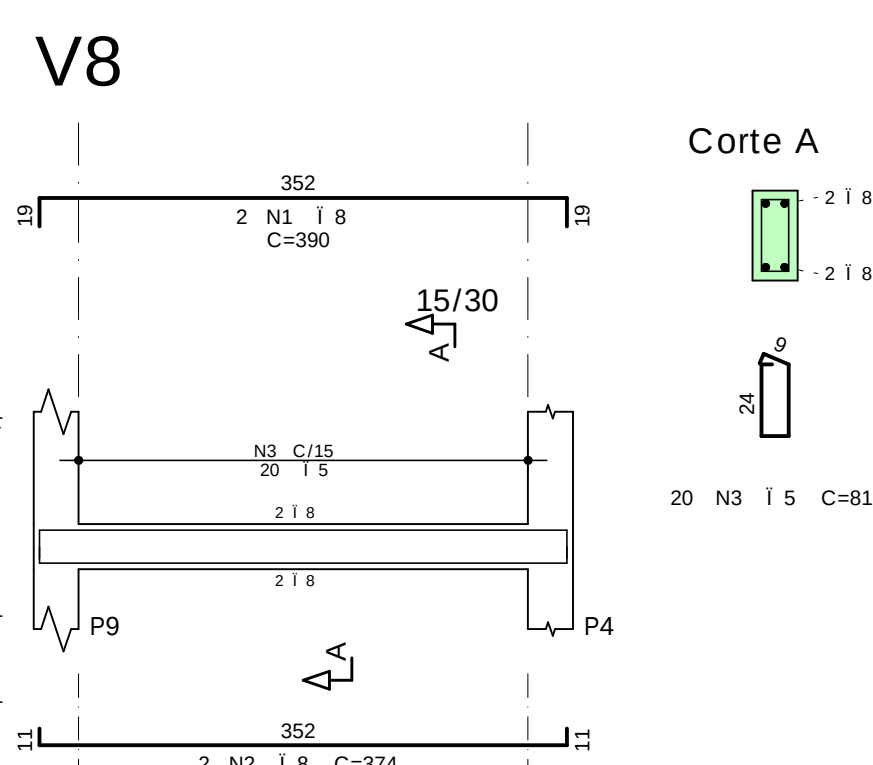
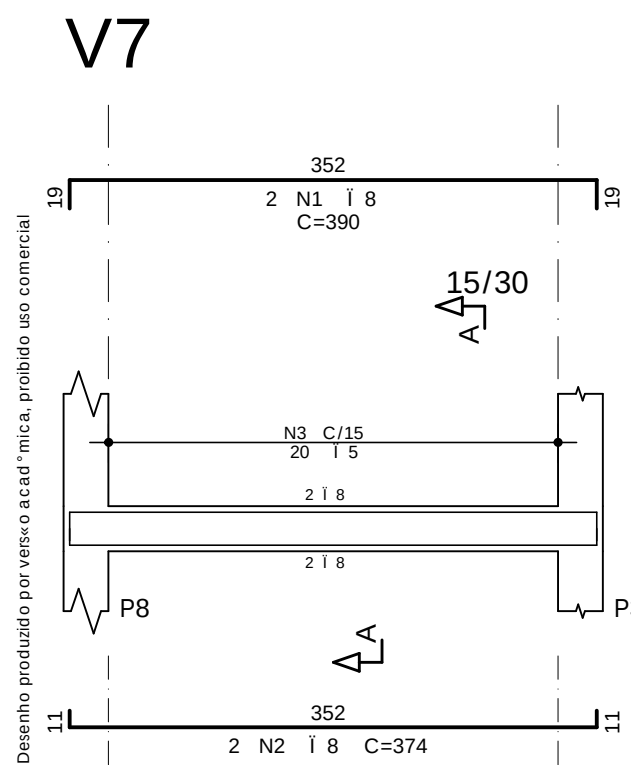
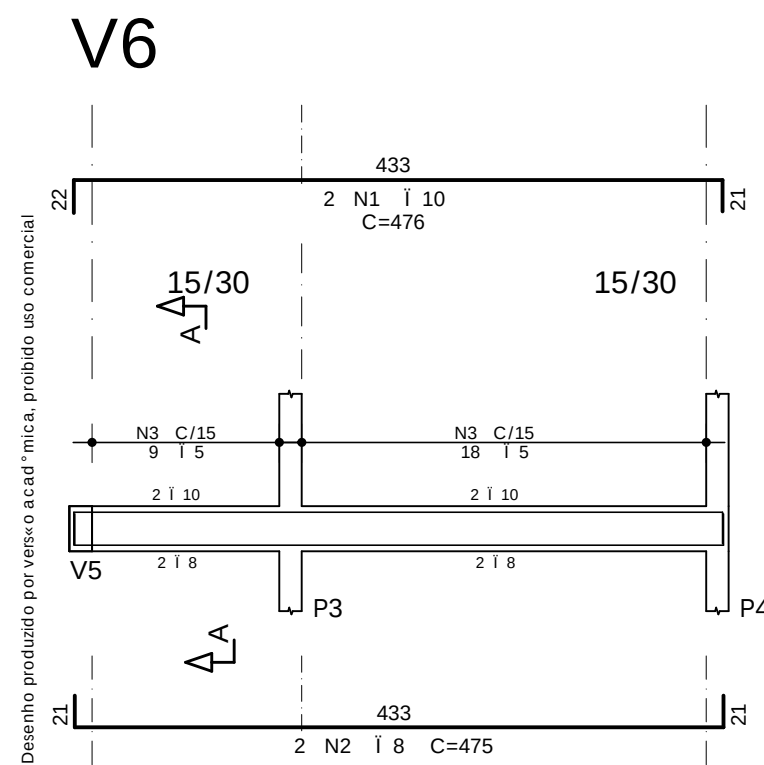
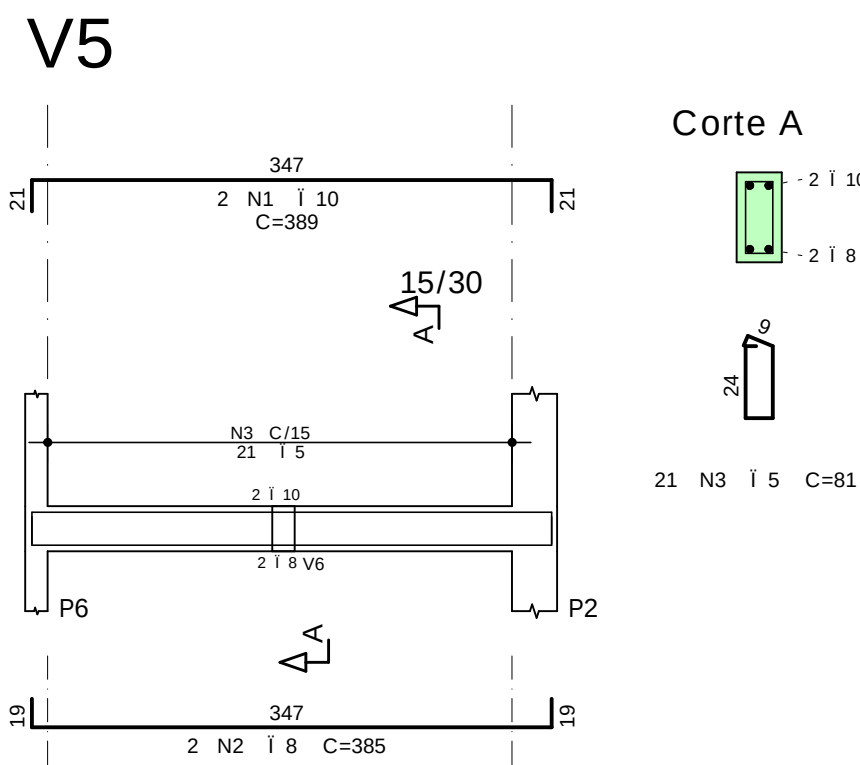
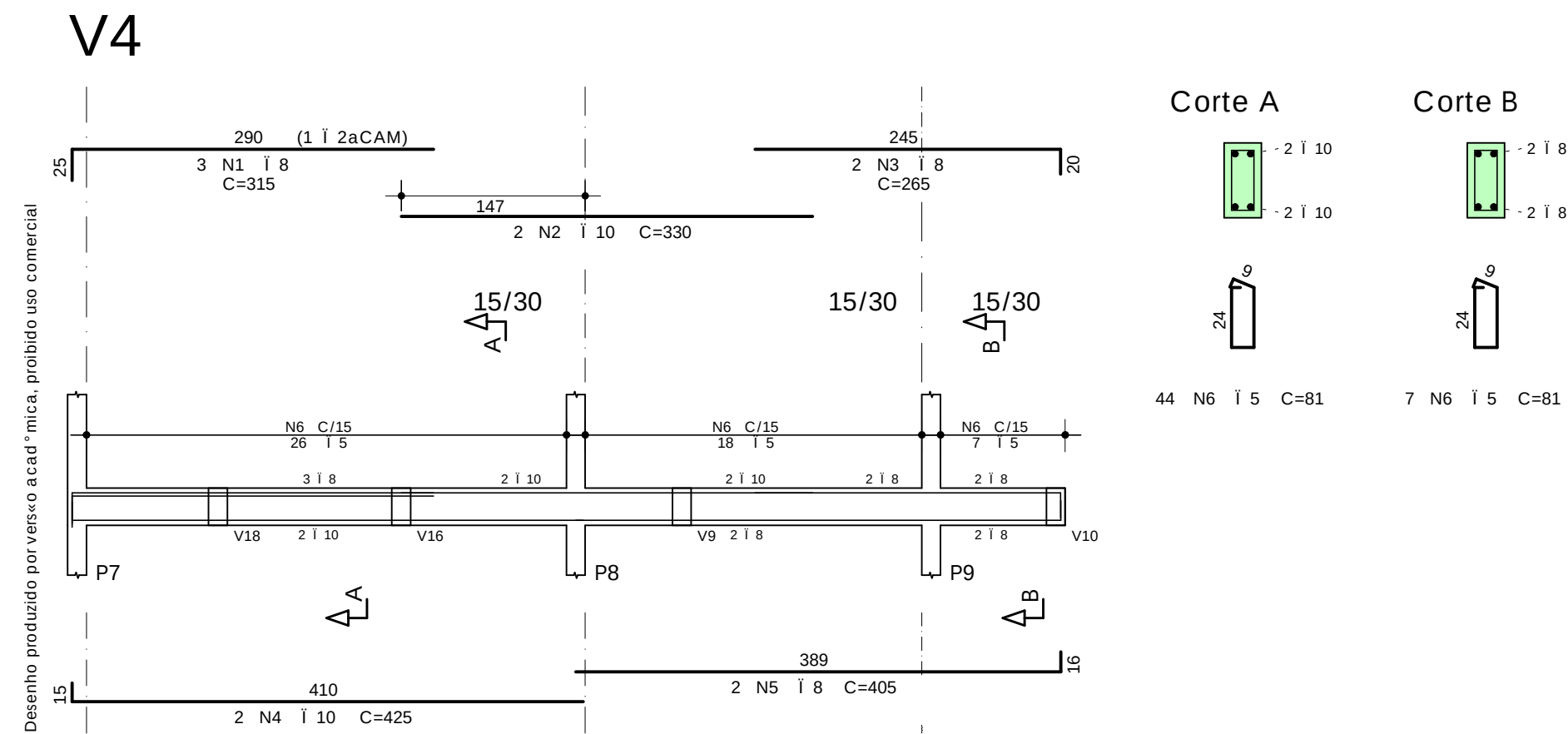
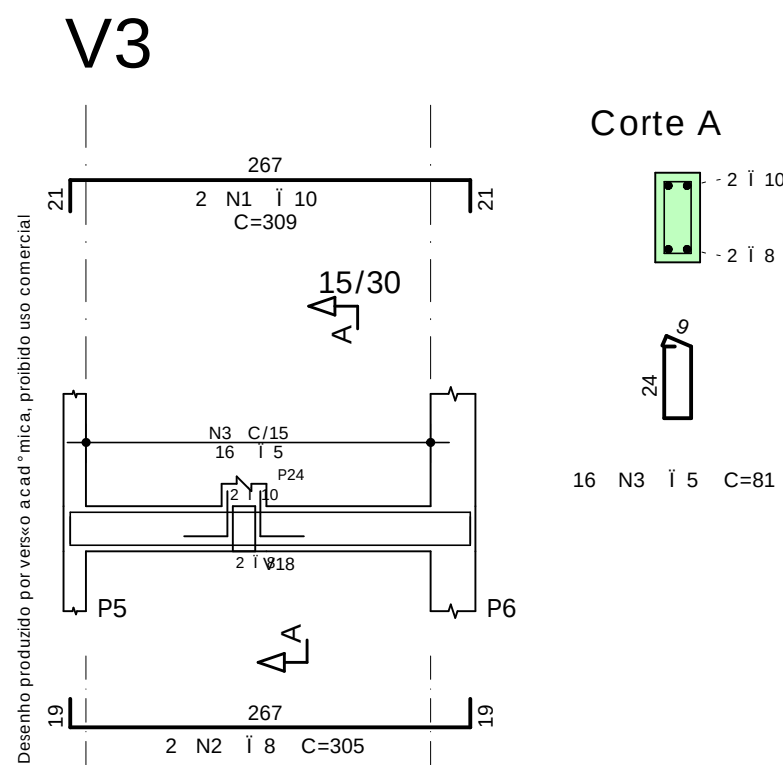
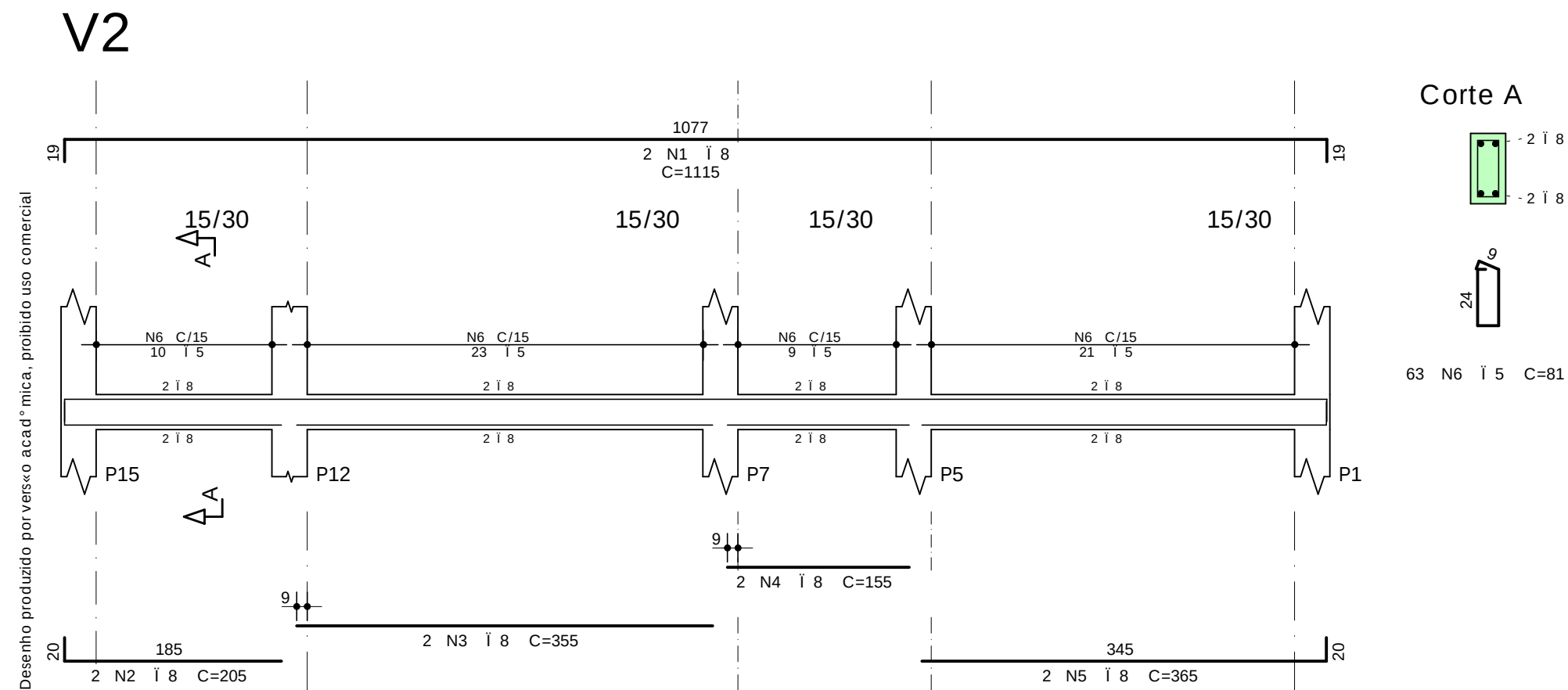
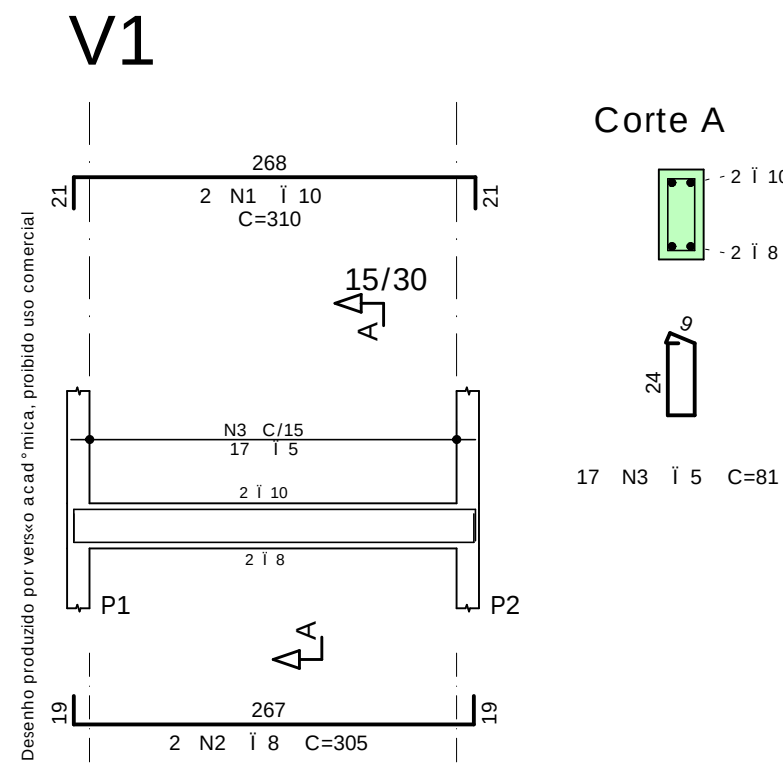
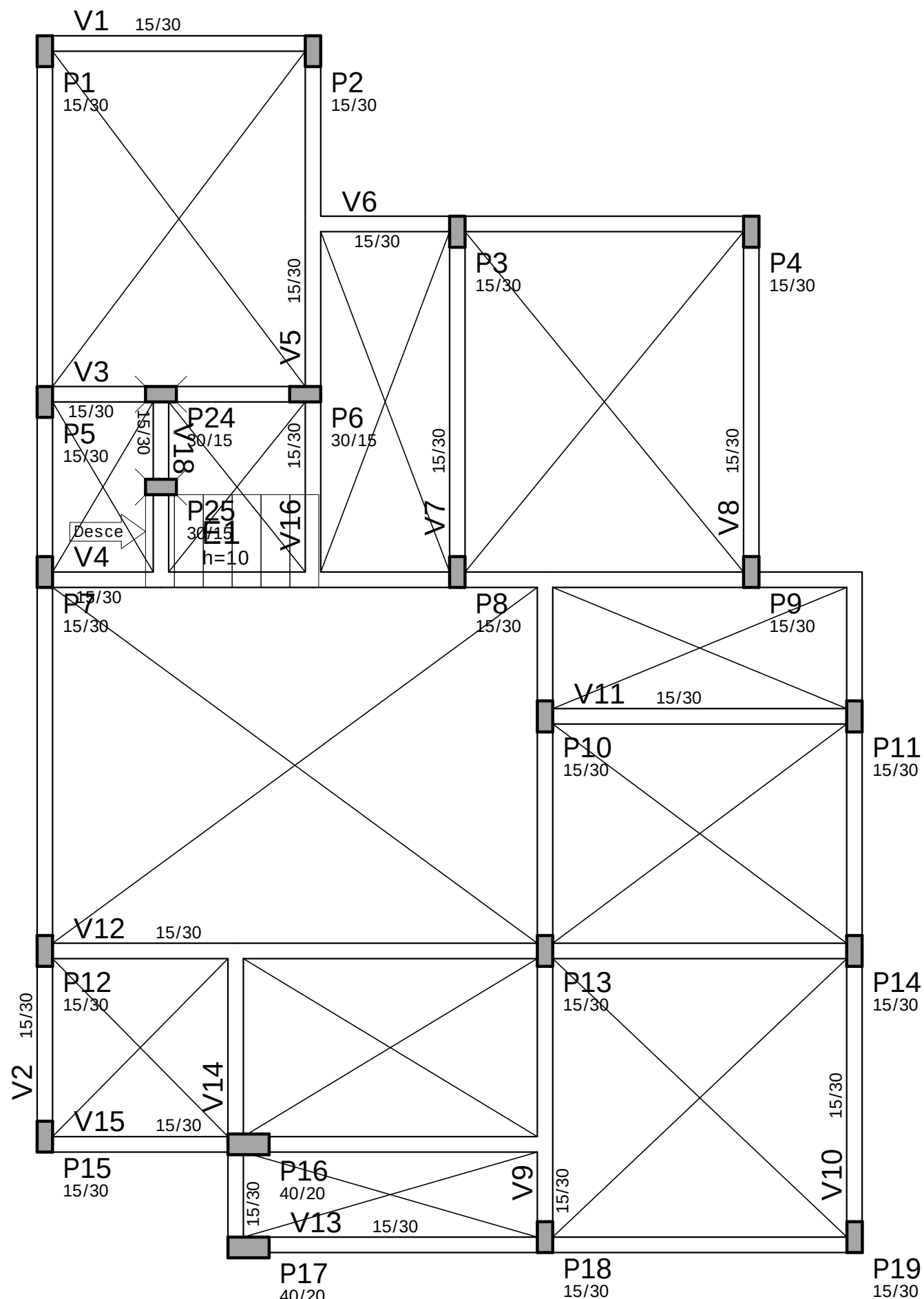
Desenho produzido por verso acad° mica, proibido uso comercial

RESUMO DE Aço			
Aço	BIT	COMPR	PESO
	mm	m	kgf
60A	5	144	22
50A	10	100	61
Peso Total	60A =		22 kgf
Peso Total	50A =		61 kgf



CLIENTE:	Isis	DESENHO Nº: 005
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Detalhamento de Pilares	
	P15 / P24 / P25 / P20 / P21 / P22 / P23	
DATA:	17/12/2020	ESCALA: 1:20

Desenho produzido por vers o acad mica, proibido uso comercial



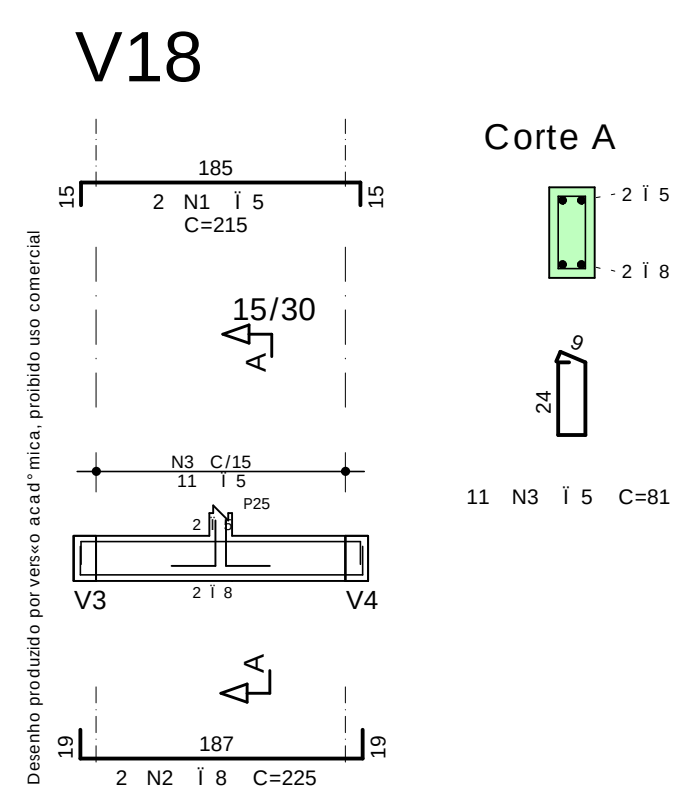
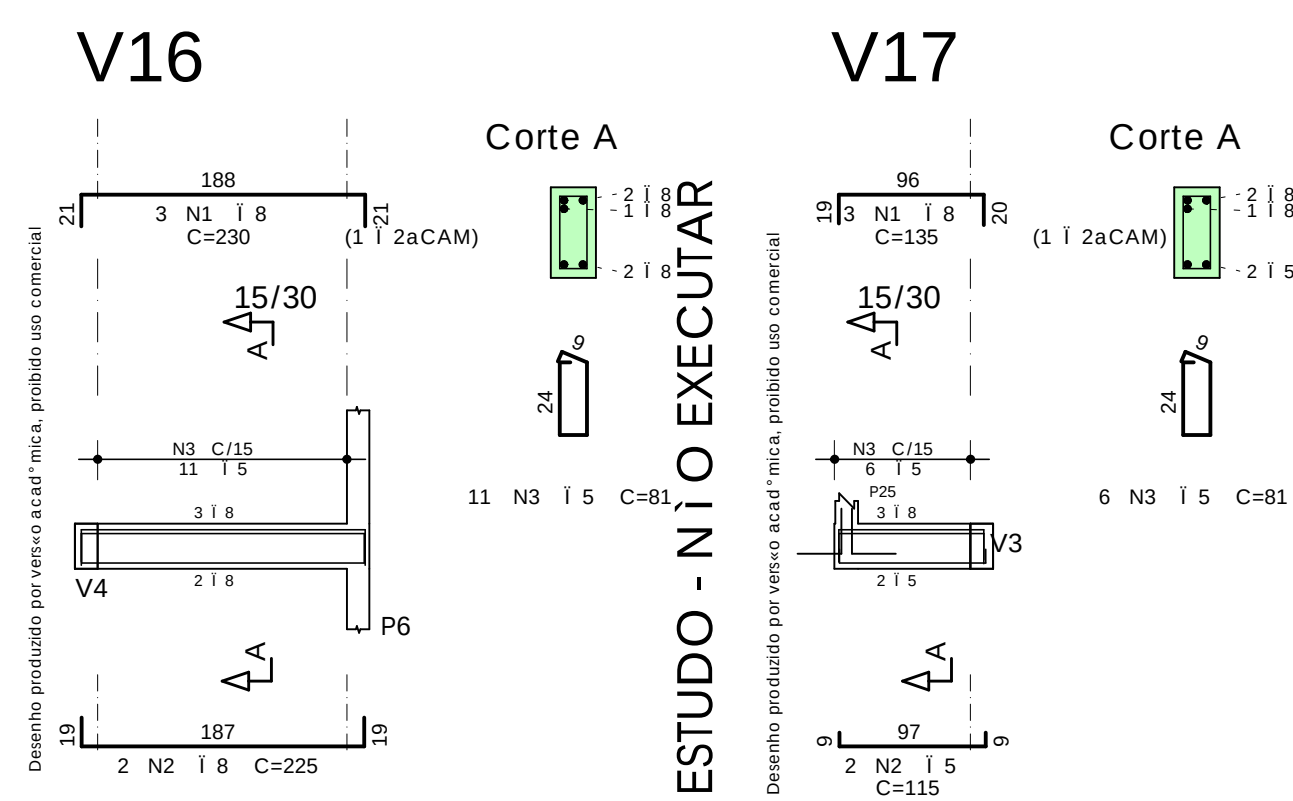
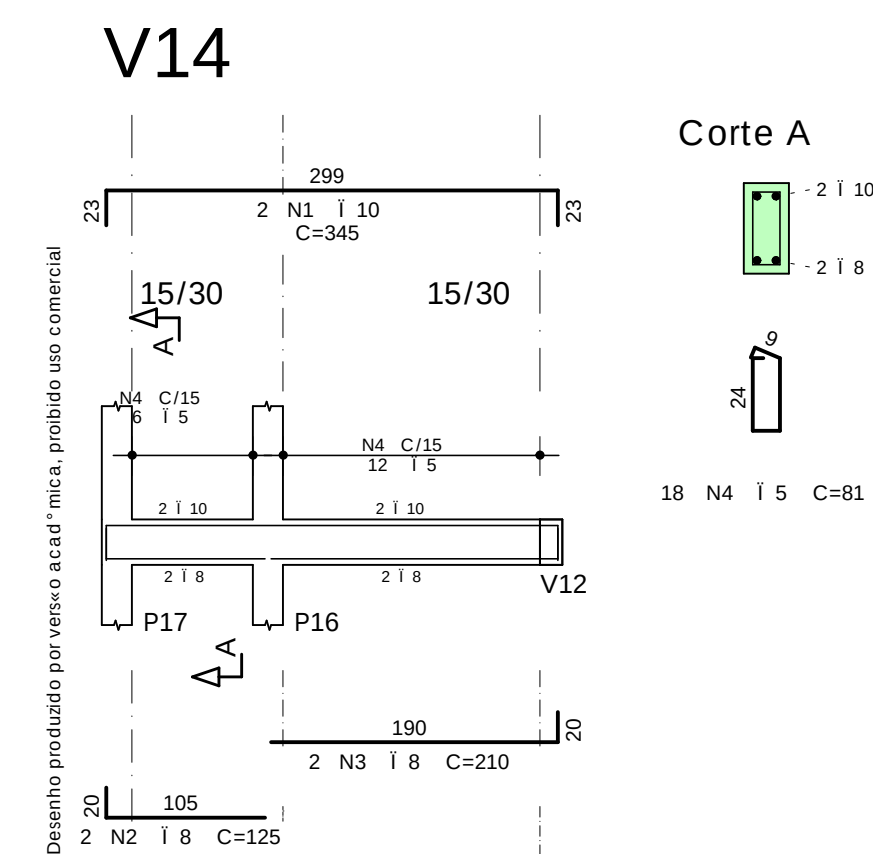
zido por vers« o acad ° mica, proibido uso comercial

	A � O	POS	BIT	QUANT	COMPRIMENTO	
					UNIT	TOTAL
					cm	cm
V1	50A	1	10	2	310	620
	50A	2	8	2	305	610
	60A	3	5	17	81	1377
V2	50A	1	8	2	1115	2230
	50A	2	8	2	205	410
	50A	3	8	2	355	710
	50A	4	8	2	155	310
	50A	5	8	2	365	730
	60A	6	5	63	81	5103
V3	50A	1	10	2	309	618
	50A	2	8	2	305	610
	60A	3	5	16	81	1296
V4	50A	1	8	3	315	945
	50A	2	10	2	330	660
	50A	3	8	2	265	530
	50A	4	10	2	425	850
	50A	5	8	2	405	810
	60A	6	5	51	81	4131
V5	50A	1	10	2	389	778
	50A	2	8	2	385	770
	60A	3	5	21	81	1701
V6	50A	1	10	2	476	952
	50A	2	8	2	475	950
	60A	3	5	27	81	2187
V7	50A	1	8	2	390	780
	50A	2	8	2	374	748
	60A	3	5	20	81	1620
V8	50A	1	8	2	390	780
	50A	2	8	2	374	748
	60A	3	5	20	81	1620
V9	50A	1	8	2	695	1390
	50A	2	8	2	305	610
	50A	3	8	2	215	430
	50A	4	8	2	150	300
	60A	5	5	39	81	3159
V10	50A	1	8	2	695	1390
	50A	2	8	2	305	610
	50A	3	8	2	215	430
	50A	4	8	2	150	300
	60A	5	5	39	81	3159
V11	50A	1	8	3	350	1050
	50A	2	8	2	345	690
	60A	3	5	19	81	1539

RESUMO DE A � O			
A � O	BIT	COMPR	PESO
60A	5	269	41
50A	8	199	78
50A	10	45	28
Peso Total	60A =		41 kgf
Peso Total	50A =		106 kgf



CLIENTE:	Isis	DESENHO N�: 007
OBRA:	Resid�ncia Unifamiliar	
T�TULO:	Planta de forma e detalhamento das vigas (T�rreo)	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
DATA:	17/12/2020	ESCALA: 1:50



	A e O	POS	BIT	QUANT	COMPRIMENTO	
					UNIT	TOTAL
					cm	cm
V12	60A	1	5	2	255	510
	50A	2	8	3	145	435
	50A	3	10	2	375	750
	50A	4	8	3	160	480
	60A	5	8	2	835	1670
V13	60A	6	5	51	81	4131
	50A	1	6,3	2	120	240
	50A	2	8	2	400	800
	50A	3	8	3	180	540
	50A	4	8	2	625	1250
V14	60A	5	5	37	81	2997
	50A	1	10	2	345	690
V15	50A	2	8	2	125	250
	50A	3	8	2	210	420
	60A	4	5	18	81	1458
V16	50A	1	6,3	2	120	240
	50A	2	8	2	455	910
	50A	3	8	2	210	420
	50A	4	8	2	300	600
	60A	5	5	30	81	2430
V17	50A	1	8	3	230	690
	50A	2	8	2	225	450
	60A	3	5	11	81	891
V18	50A	1	8	3	135	405
	60A	2	5	2	115	230
	60A	3	5	6	81	486
	50A	1	5	2	215	430
	50A	2	8	2	225	450
	60A	3	5	11	81	891

RESUMO DE AÇO			
AÇO	BIT mm	COMPR m	PESO kgf
60A	5	145	22
50A	6.3	5	1
50A	8	98	39
50A	10	14	9
Peso Total	60A =		22 kgf
Peso Total	50A =		49 kgf

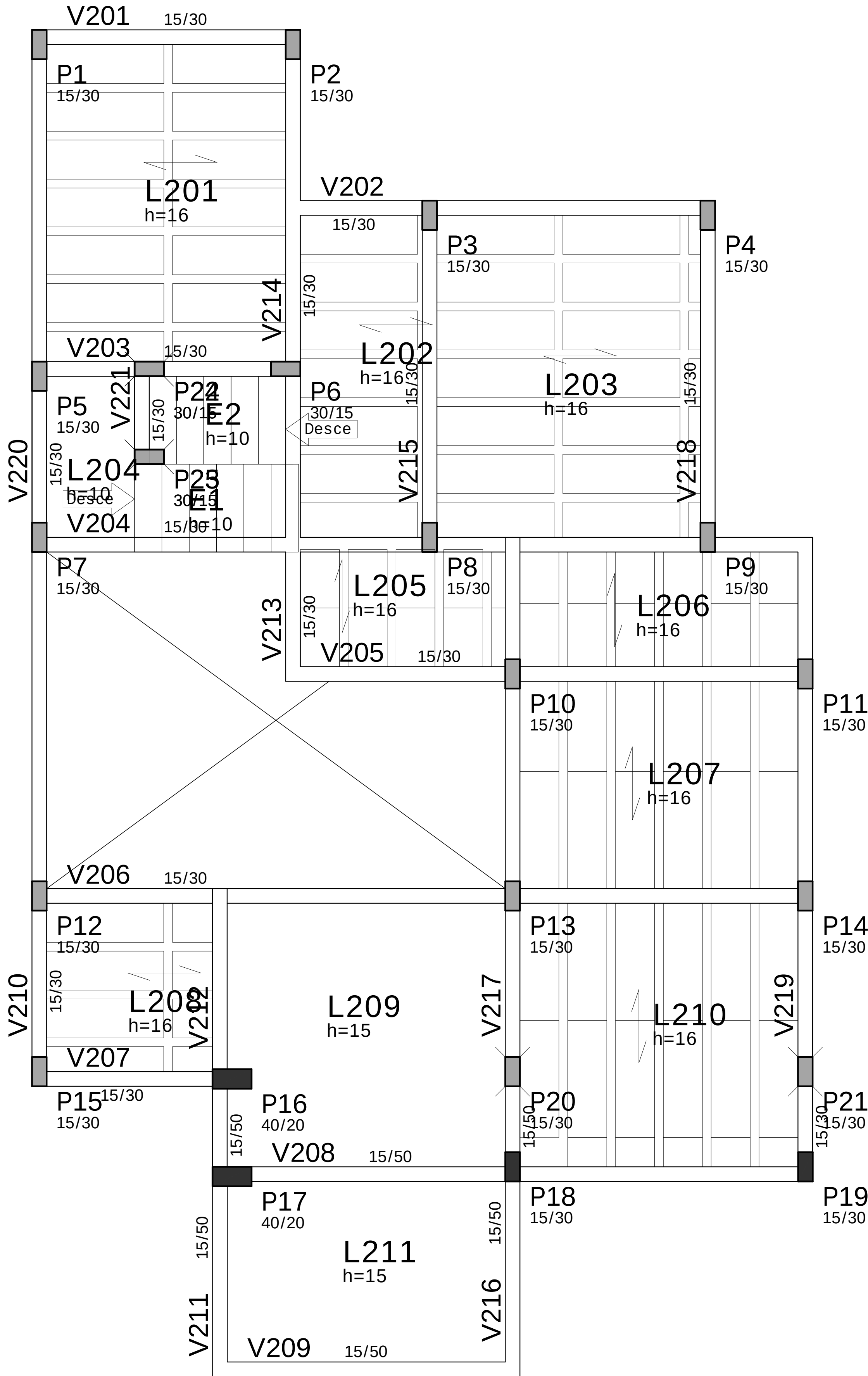
Desenho produzido por vers^o acad^o mica, proibido uso comercial

ESTUDO - NÍO EXECUTAR

 ANDRÉ RODRIGUES Engenheiro Estrutural (83) 9 6444 2240 andrerodrigues.eng.br contato@andrerodrigues.eng.br		
CLIENTE:	Isis	DESENHO Nº: 007
OBRA:	Residência Unifamiliar	
TÍTULO:	Detalhamento de Vigas (Térreo) V12 / V13 / V14 / V15 V16 / V17 / V18	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
DATA:	17/12/2020	ESCALA: 1:50

ESTUDO - NÃO EXECUTAR

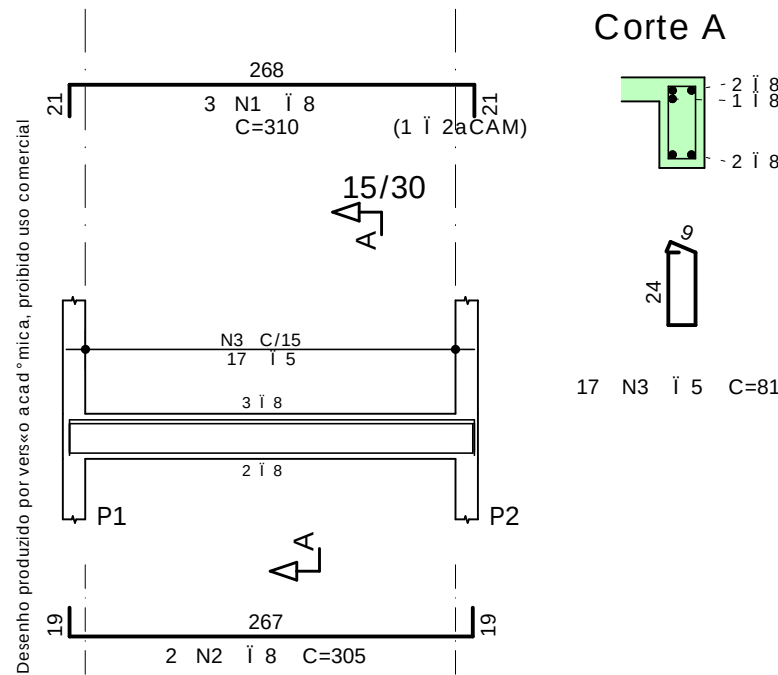
Desenho produzido por versão acadêmica, proibido uso comercial



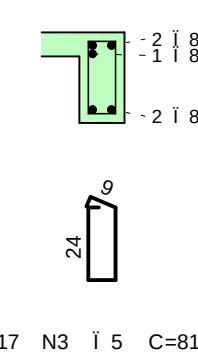
ANDRÉ RODRIGUES
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(83) 9 9644 2240
andrerodrigues.eng.br
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CLIENTE:	Isis	DESENHO Nº: 008
OBRA:	Residência Unifamiliar	OBS:
TÍTULO:	Planta de formas (1º Pavimento)	Concreto: fck: 25 MPa ECS: 24150 MPa
DATA:	17/12/2020	ESCALA: 1:30

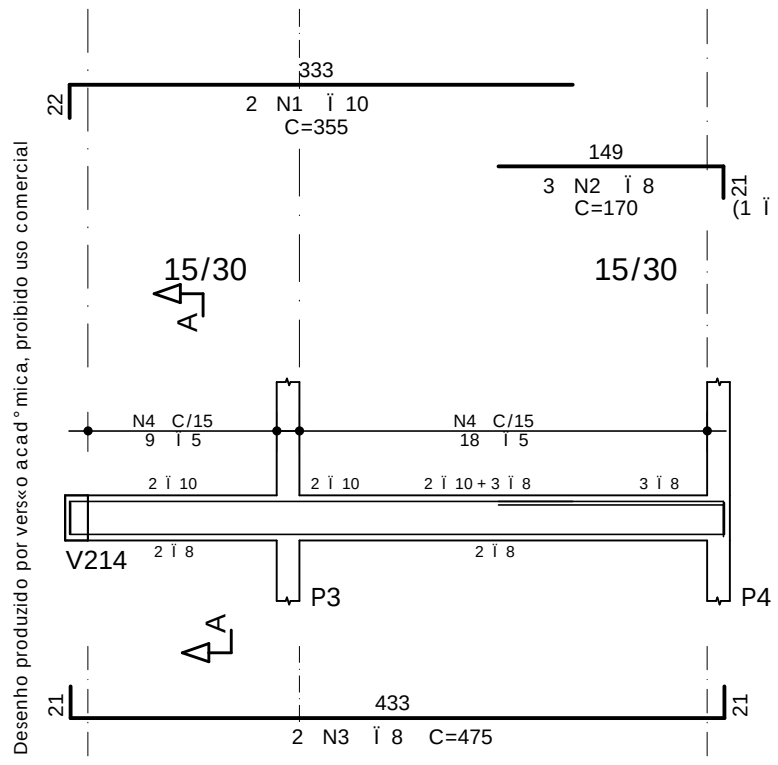
V201



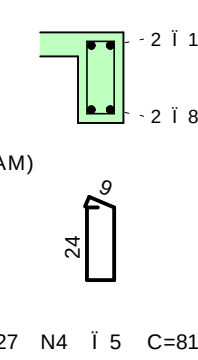
Corte A



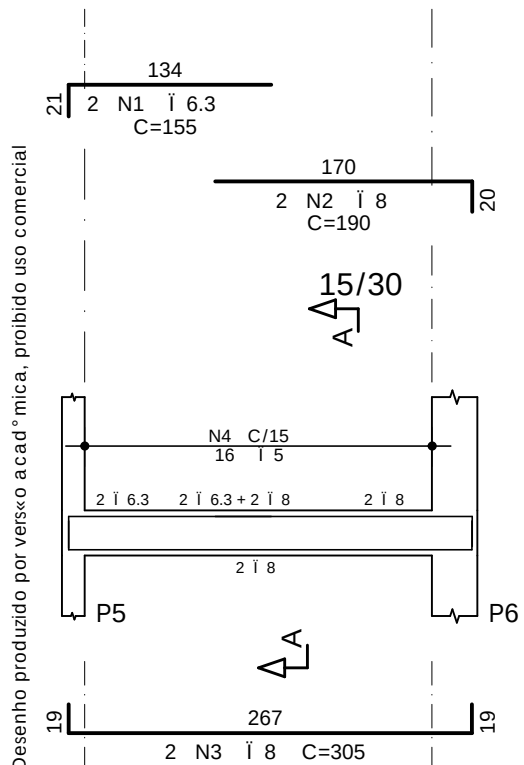
V202



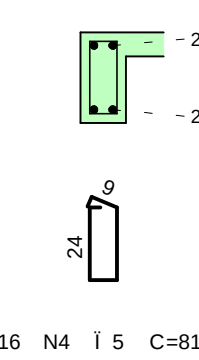
Corte A



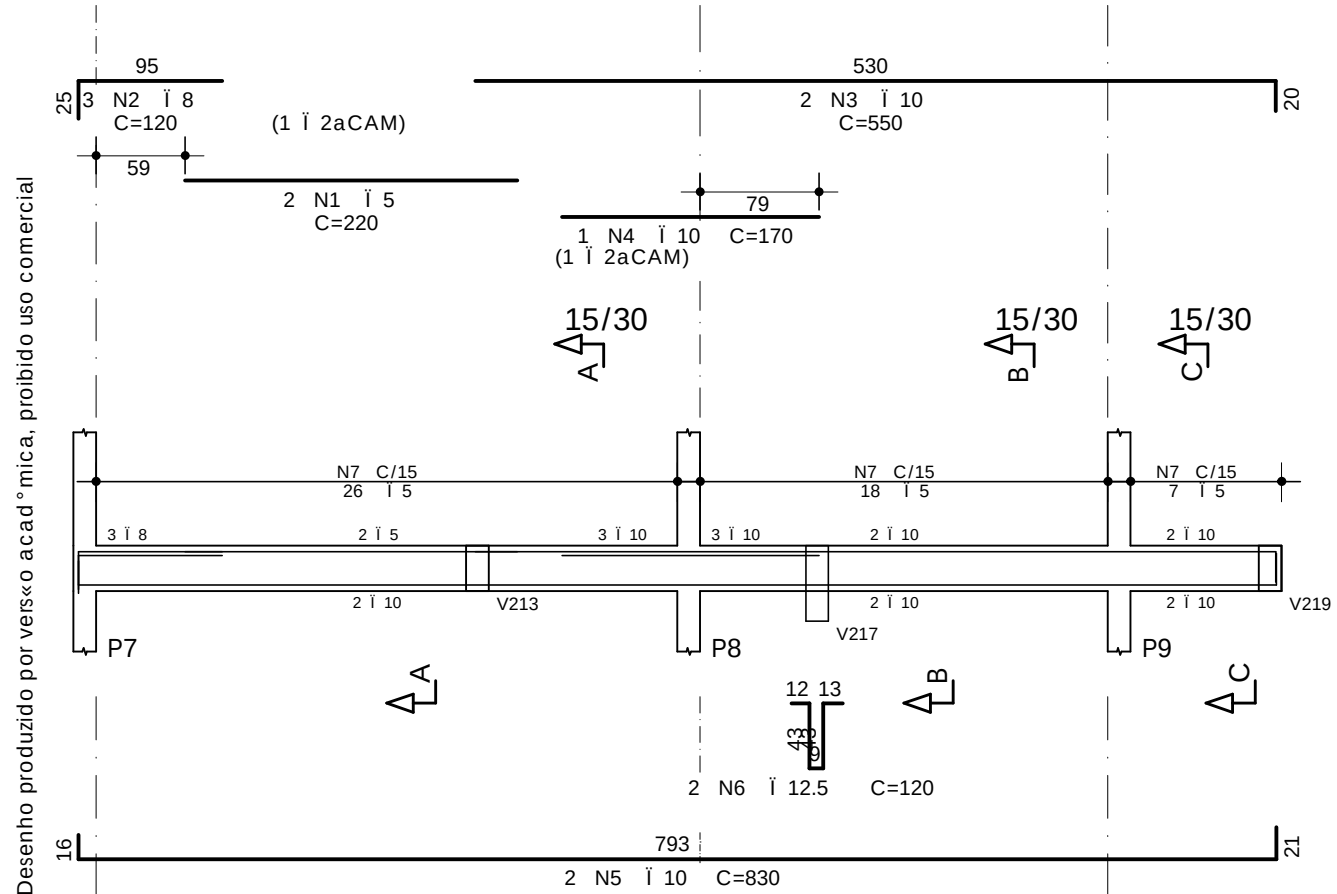
V203



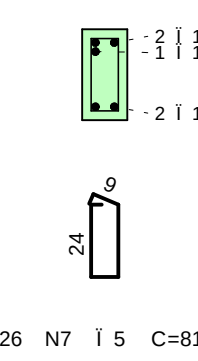
Corte A



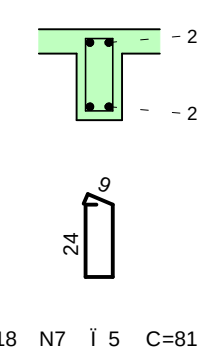
V204



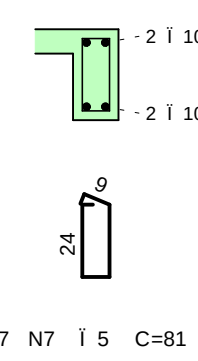
Corte A



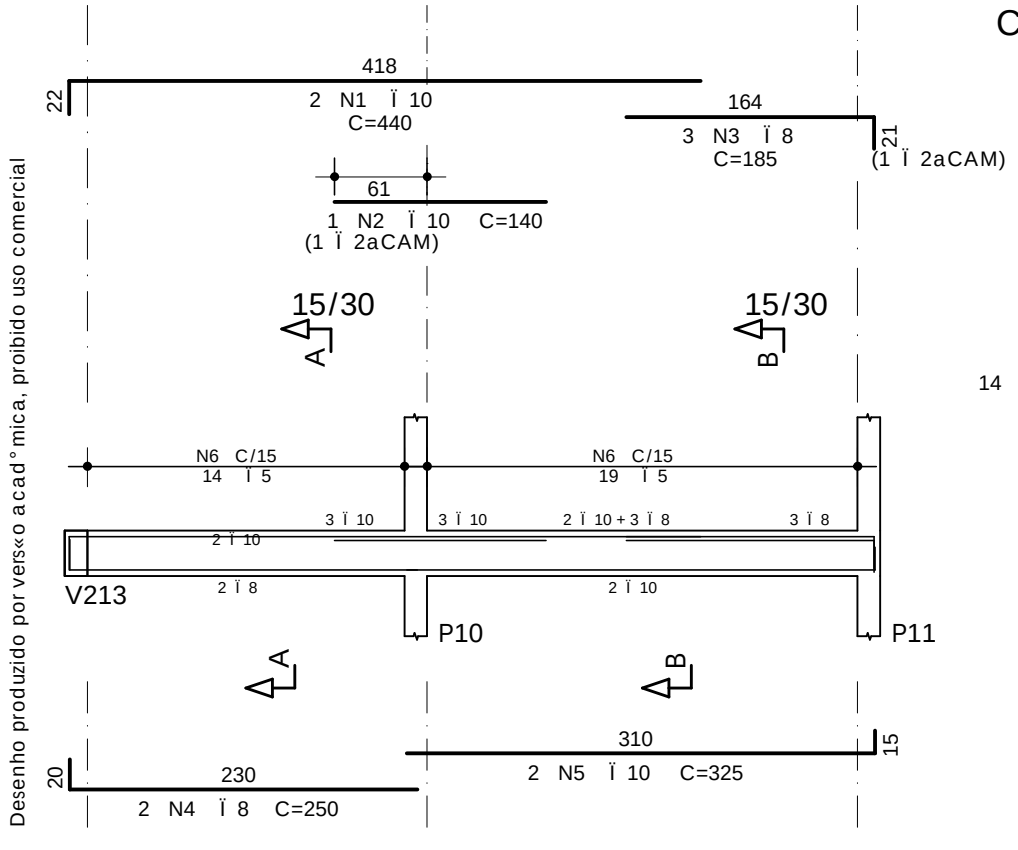
Corte B



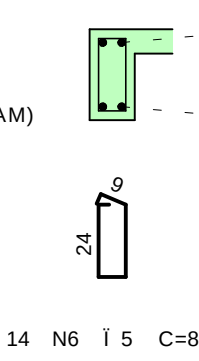
Corte C



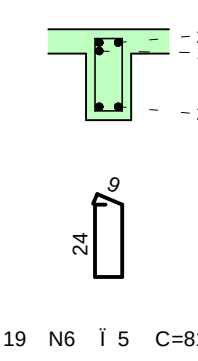
V205



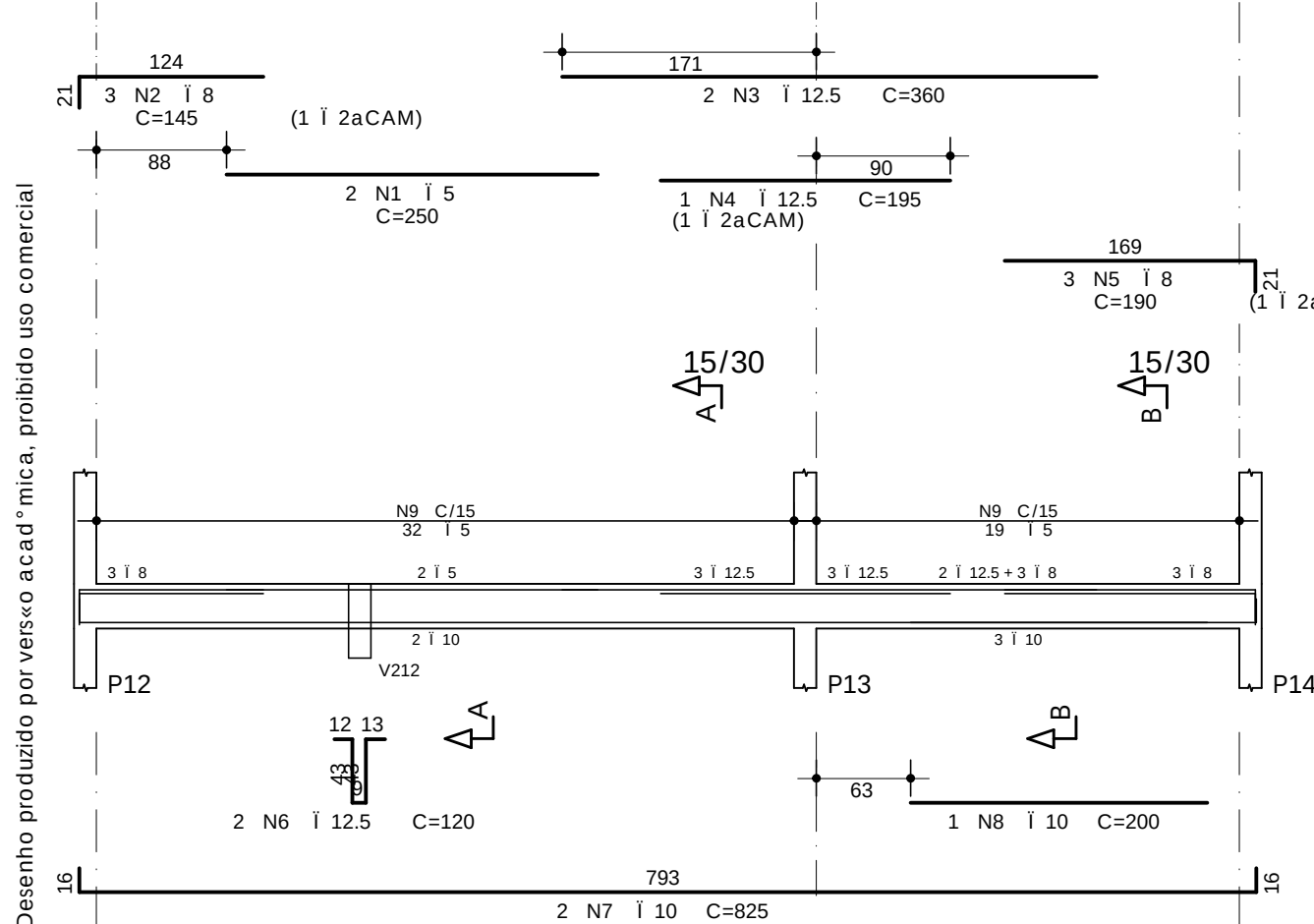
Corte A



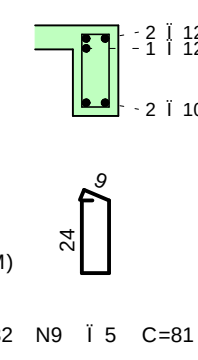
Corte B



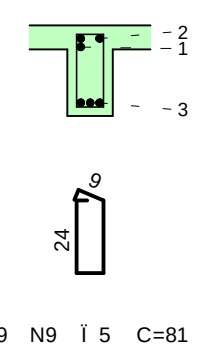
V206



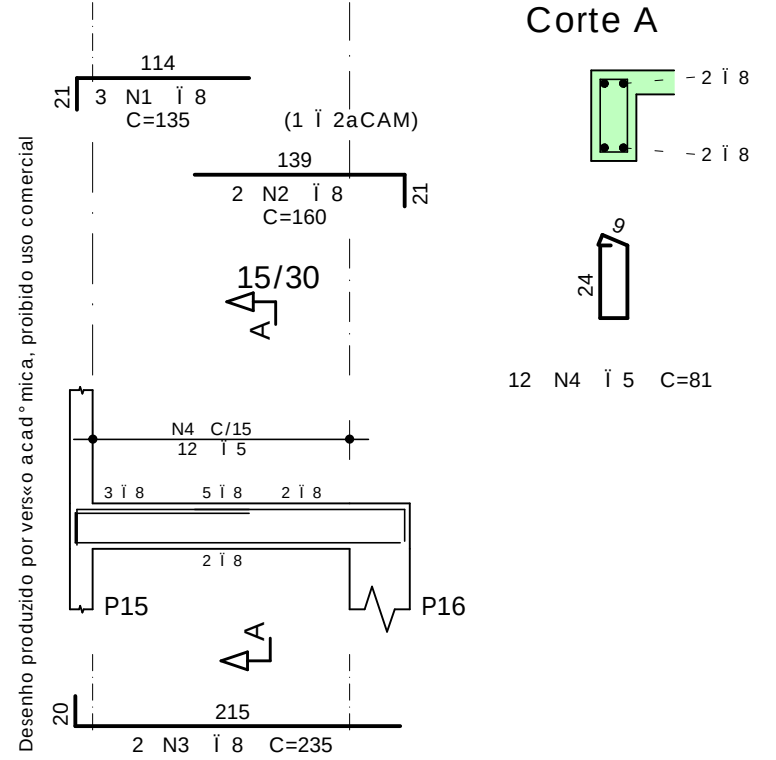
Corte A



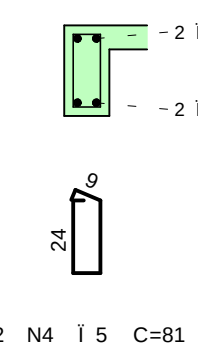
Corte B



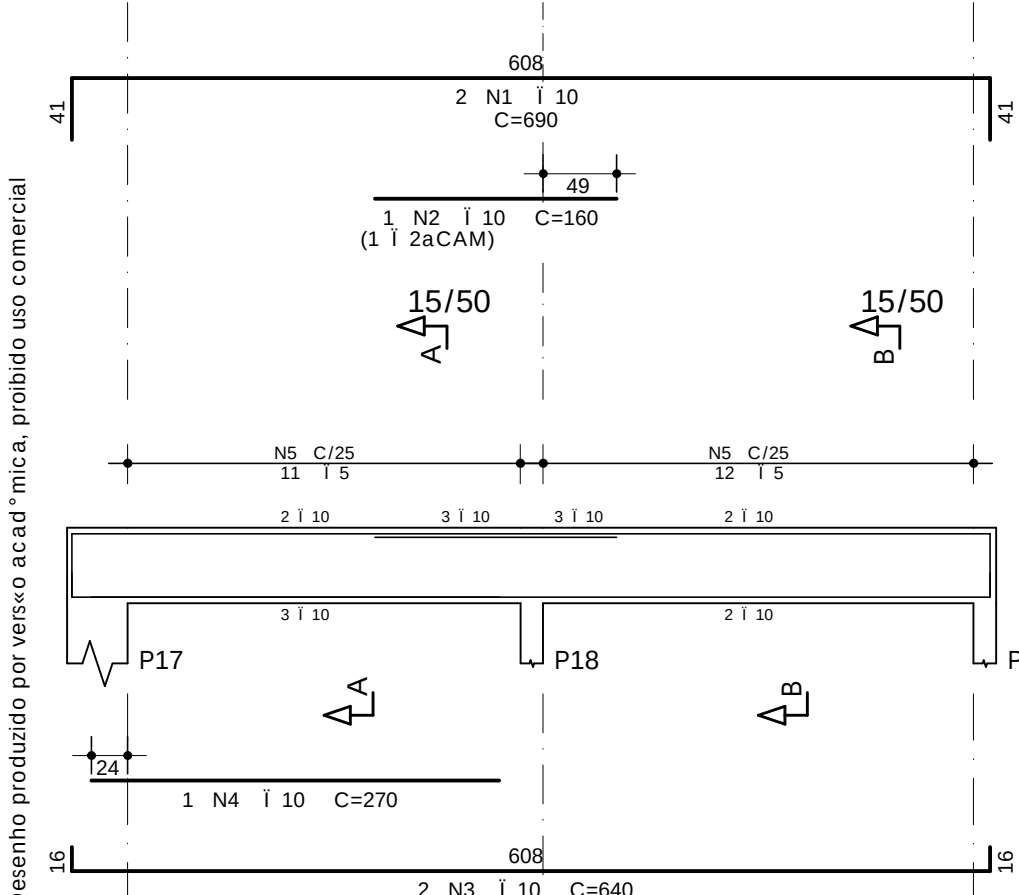
V207



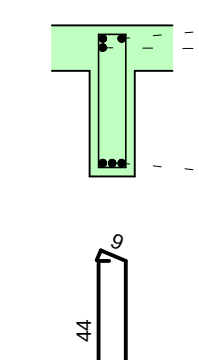
Corte A



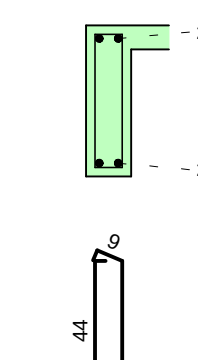
V208



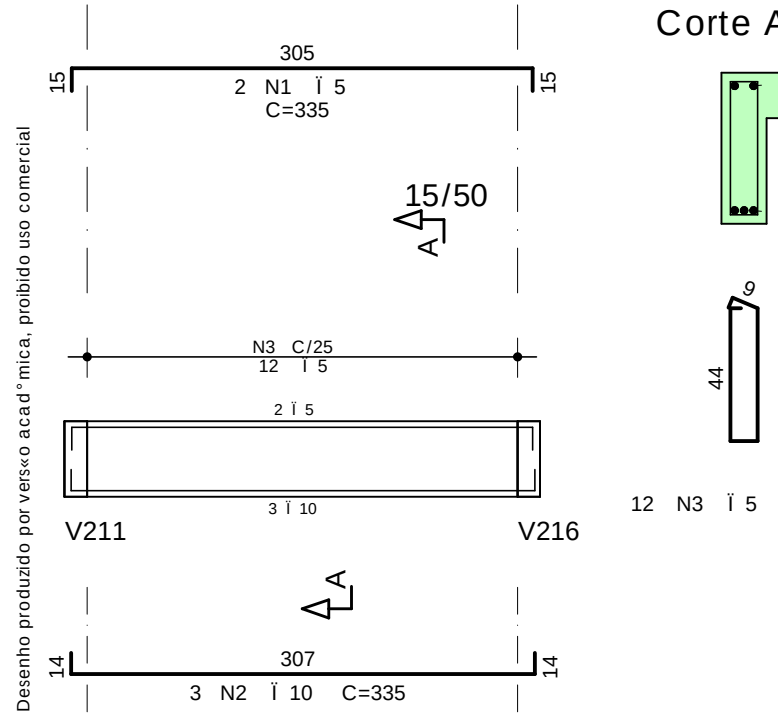
Corte A



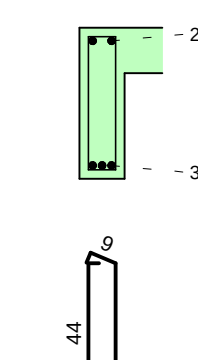
Corte B



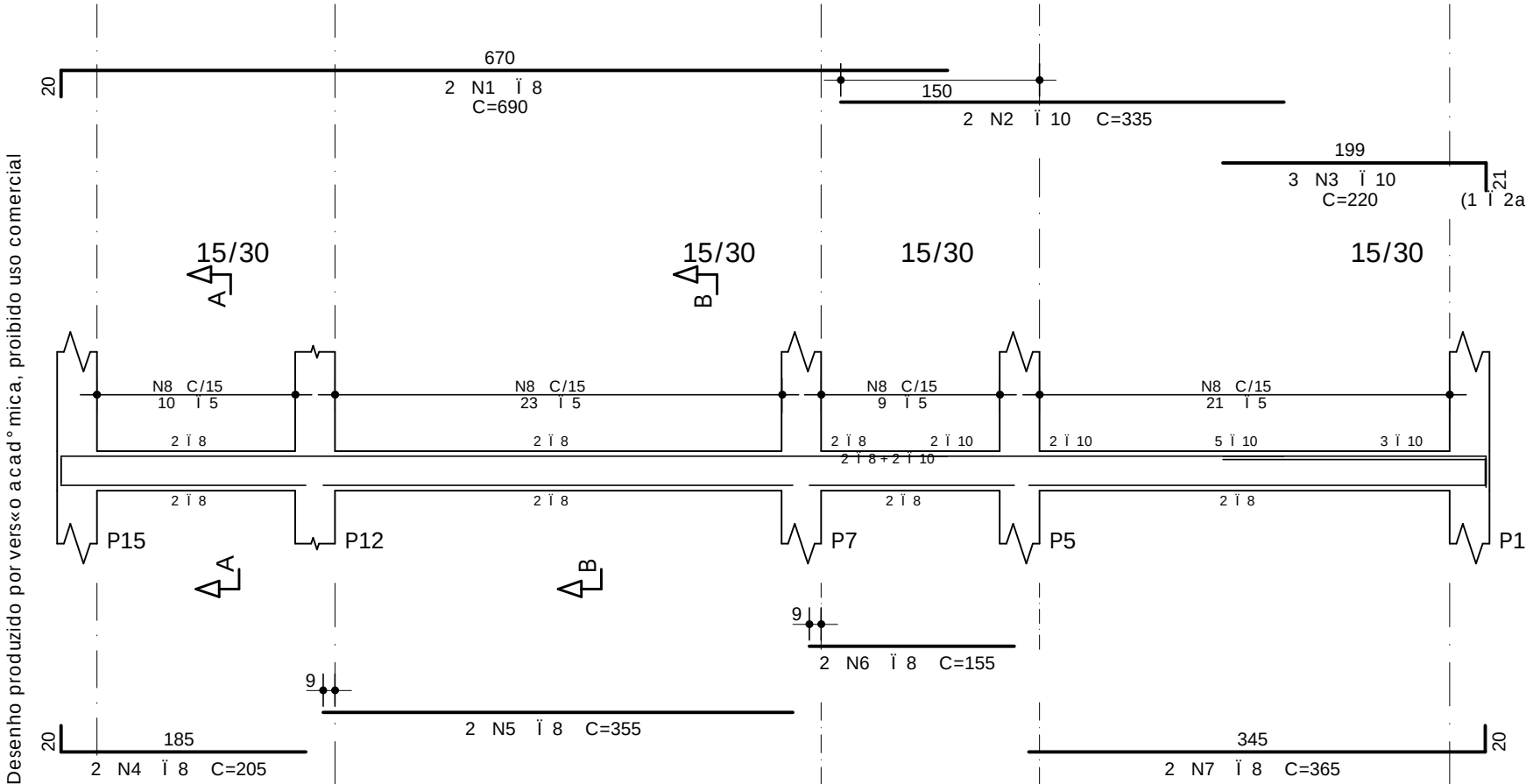
V209



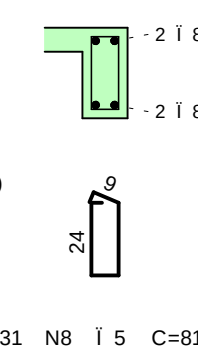
Corte A



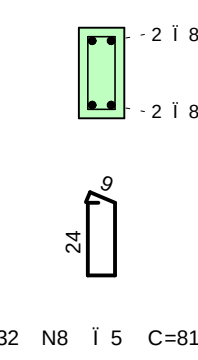
V210



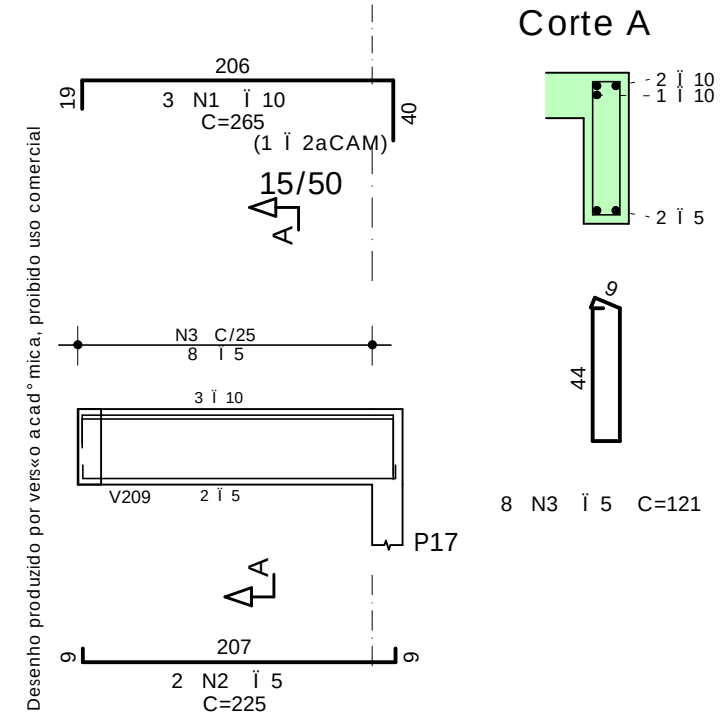
Corte A



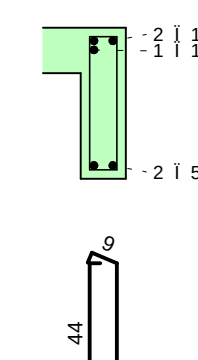
Corte B



V211



Corte A



Desenho produzido por verso acad* mica, proibido uso comercial

AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
V201					
50A	1	8	3	310	930
50A	2	8	2	305	610
60A	3	5	17	81	1377
V202					
50A	1	10	2	355	710
50A	2	8	3	170	510
50A	3	8	2	475	950
60A	4	5	27	81	2187
V203					
50A	1	6.3	2	155	310
50A	2	8	2	190	380
50A	3	8	2	305	610
60A	4	5	16	81	1296
V204					
60A	1	5	2	220	440
50A	2	8	3	120	360
50A	3	10	2	550	1100
50A	4	10	1	170	170
50A	5	10	2	830	1660
50A	6	12.5	2	120	240
60A	7	5	51	81	4131
V205					
50A	1	10	2	440	880
50A	2	10	1	140	140
50A	3	8	3	185	555
50A	4	8	2	250	500
50A	5	10	2	325	650
60A	6	5	33	81	2673
V206					
60A	1	5	2	250	500
50A	2	8	3	145	435
50A	3	12.5	2	360	720
50A	4	12.5	1	195	195
50A	5	8	3	190	570
50A	6	12.5	2	120	240
50A	7	10	2	825	1650
50A	8	10	1	200	200
60A	9	5	51	81	4131
V207					
50A	1	8	3	135	405
50A	2	8	2	160	320
50A	3	8	2	235	470
60A	4	5	12	81	972
V208					
50A	1	10	2	690	1380
50A	2	10	1	160	160
50A	3	10	2	640	1280
50A	4	10	1	270	270
60A	5	5	23	121	2783
V209					
60A	1	5	2	335	670
50A	2	10	3	335	1005
60A	3	5	12	121	1452
V210					
50A	1	8	2	690	1380
50A	2	10	2	335	670
50A	3	10	3	220	660
50A	4	8	2	205	410
50A	5	8	2	355	710
50A	6	8	2	155	310
50A	7	8	2	365	730
60A	8	5	63	81	5103
V211					
50A	1	10	3	265	795
60A	2	5	2	225	450
60A	3	5	8	121	968

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
60A	5	291	45
50A	6.3	3	1
50A	8	111	44
50A	10	134	83
50A	12.5	14	13
Peso Total	60A =		45 kgf
Peso Total	50A =		141 kgf



CLIENTE:	Isis	DESENHO Nº: 009
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Detalhamento de Vigas (1º Pavimento)	
DATA:	17/12/2020	ESCALA: 1:50

The drawings show the layout of two adjacent rooms, Cortes A and Cortes B. Cortes A is on the left and Cortes B is on the right. The drawings include:

- Top Floor Plan:** Shows the overall layout of the two rooms. Cortes A is 245 units wide and 10 units high. Cortes B is 110 units wide and 10 units high. The total width is 355 units.
- Section 1-1:** A vertical section through the center of the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 2-2:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 3-3:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 4-4:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 5-5:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 6-6:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 7-7:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 8-8:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 9-9:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 10-10:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 11-11:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 12-12:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 13-13:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 14-14:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 15-15:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 16-16:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 17-17:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 18-18:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 19-19:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.
- Section 20-20:** A vertical section through the rooms, showing the ceiling height of 2.10 and the floor height of 0.00. It also shows the location of the 2aCAM camera.

Technical drawing of a mechanical part, showing a side view and a cross-section (Corte A).

Side View Dimensions:

- Top horizontal dimension: 179
- Top horizontal dimension: 3 N1 | 8 C=200
- Top horizontal dimension: (1 | 2aCAM)
- Bottom horizontal dimension: 219
- Bottom horizontal dimension: 3 N2 | 10 C=240
- Bottom horizontal dimension: (1 | 2aCAM)
- Vertical dimension: 15/30
- Vertical dimension: A
- Bottom horizontal dimension: 347
- Bottom horizontal dimension: 2 N3 | 10 C=375

Corte A Dimensions:

- Top horizontal dimension: 2 | 10
- Bottom horizontal dimension: 2 | 10
- Vertical dimension: 9
- Vertical dimension: 24

Other Labels:

- 21 N4 | 5 C=81
- P6
- P2

[illegible]

Technical drawing of a mechanical part, showing a side view and a cross-section view (Corte A).

Side View Dimensions:

- Top edge: 221
- Bottom edge: 219
- Left edge: 3 N1 I 10
- Right edge: 40
- Internal feature: (1 I 2aCAM)
- Feature 1: 15/50
- Feature 2: 8 I 5
- Feature 3: 3 I 10
- Feature 4: 2 I 5
- Feature 5: 2 I 5
- Feature 6: 2 I 5
- Feature 7: 2 I 5
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- Feature 239: 2 I 5
- Feature 240

The schematic diagram illustrates the test rig setup. It features three main horizontal sections representing different parts of the system, connected by vertical lines indicating flow paths. The top section includes a pump assembly labeled 'P18' and a valve assembly labeled 'A'. The middle section contains two valve assemblies labeled 'B' and 'C'. The bottom section shows a pump assembly labeled 'P10' and a valve assembly labeled 'A'. Various flow rates are indicated at different points, such as 'N5 C/25 10 l/s' and 'N4 1 l/s'. A central vertical line indicates the flow direction from left to right.

[illegible][illegible]

Corte A

97 3 N1 1 8 N
C=140
(1 2aCAM)
2 1 8
2 1 8
15/30
24
9
5 N3 1 5 C=81
2 1 8
P23 P22
97 2 N2 1 8 C=135

	A °C	POS	BIT	QUANT	COMPIMENTO	
					UNIT	TOTAL
			mm		cm	c m
V212	50A	1	10	2	380	760
	50A	2	10	1	210	210
	50A	3	10	2	330	660
	60A	4	5	11	121	1331
V213	50A	1	10	2	265	530
	50A	2	8	3	140	420
	50A	3	8	2	355	710
	60A	4	5	20	81	1620
V214	50A	1	8	3	200	600
	50A	2	10	3	240	720
	50A	3	10	2	375	750
	60A	4	5	21	81	1701
V215	50A	1	10	2	395	790
	50A	2	10	2	160	320
	50A	3	10	2	145	290
	50A	4	10	2	380	760
V216	60A	5	5	20	81	1620
	50A	1	10	3	280	840
	60A	2	5	2	229	458
	60A	3	5	8	121	968
V217	50A	1	10	2	735	1470
	50A	2	10	1	160	160
	50A	3	10	2	685	1370
	50A	4	10	1	215	215
V218	60A	5	5	23	121	2783
	50A	1	10	3	395	1185
	50A	2	10	2	380	760
	60A	3	5	20	81	1620
V219	50A	1	8	2	695	1390
	50A	2	8	2	610	305
	50A	3	8	2	215	430
	50A	4	8	2	150	300
V220	60A	5	5	39	81	3159
	50A	1	8	2	140	280
	50A	2	6,3	2	120	240
	50A	3	8	2	225	450
V221	60A	4	5	9	81	729
	50A	1	8	2	140	420
	50A	2	8	2	135	270
	60A	3	5	5	81	405

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
60A	5	164	25
50A	6.3	2	1
50A	8	59	23
50A	10	118	73
Peso Total	60A =	25 kgf	
Peso Total	50A =	97 kgf	

Desenho produzido por versão acadêmica, proibido uso comercial



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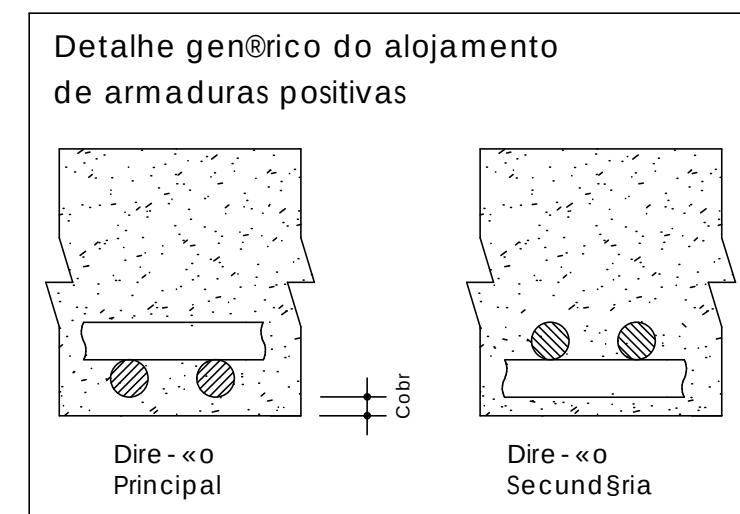




CLIENTE: Isis	DESENHO Nº: 010
OBRA: Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO: Detalhamento de Vigas (1ª Pavimento)	
V212 / V213 / V214 / V215 / V216 V217 / V218 / V219 / V220 / V221	
DATA: 17/12/2020	ESCALA: 1:50

Desenho produzido por vers^o acad^o mica, proibido uso comercial³
Desenho produzido por vers^o acad^o mica, proibido uso comercial³

Desenho produzido por verso-acad[®] mica, proibido uso comercial

Desenho produzido por versão acadêmica, proibido uso comercial

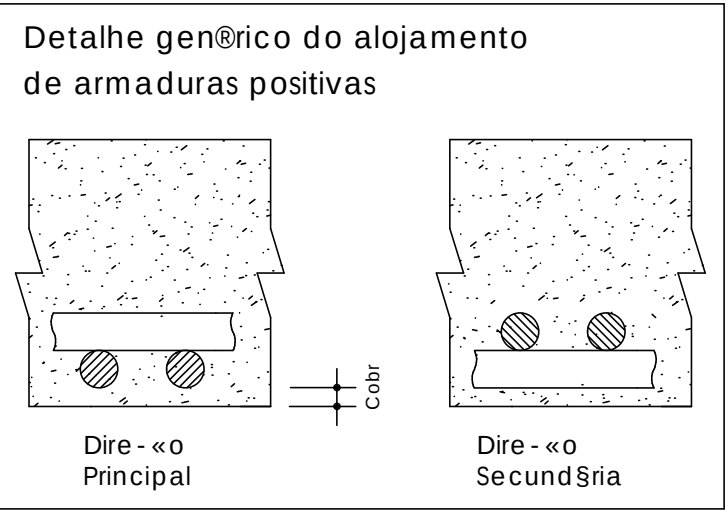
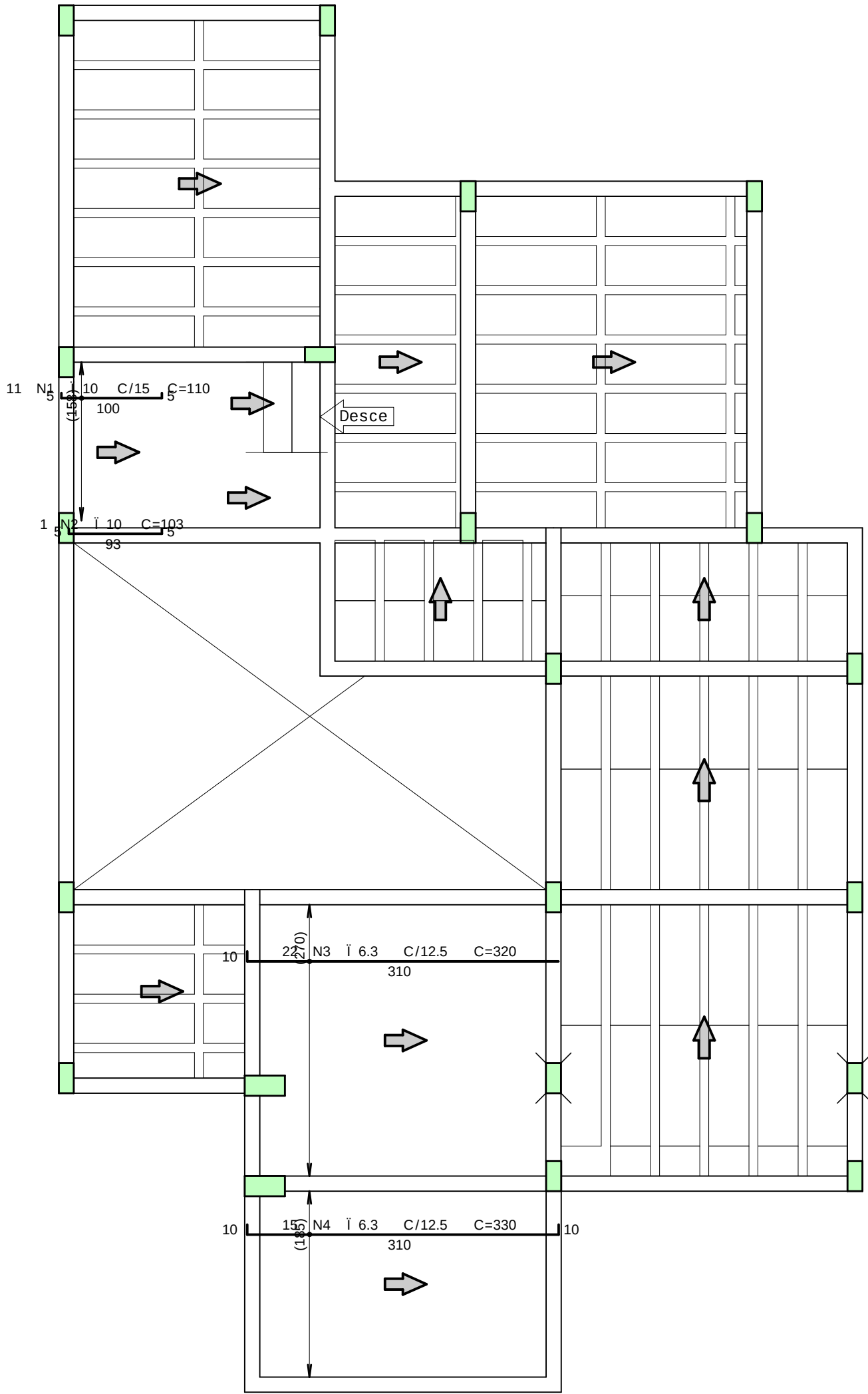
RESUMEN DE A C O			
A c o	BIT	COMPR	PESO
	mm	m	kgf
50A	6.3	205	50
50A	10	8	5
50A	12.5	15	14
Peso Total	50A =		69 kgf

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CLIENTE:	Isis	DESENHO Nº: 011
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Detalhamento das Armaduras Negativas Principais nas lajes do 1º Pavimento	
DATA:	17/12/2020	ESCALA: 1:50

Desenho produzido por verso acadmica, proibido uso comercial

1o Pavimento - Armadura positiva principal

1X



AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
1o Pavimento - Armadura positiva principal					
50A	1	10	11	110	1210
50A	2	10	1	103	103
50A	3	6.3	22	320	7040
50A	4	6.3	15	330	4950

RESUMO DE A ¢ O			
A ¢ O	BIT mm	COMPR m	PESO
			kgf
50A	6.3	120	29
50A	10	13	8
Peso Total 50A =			37 kgf



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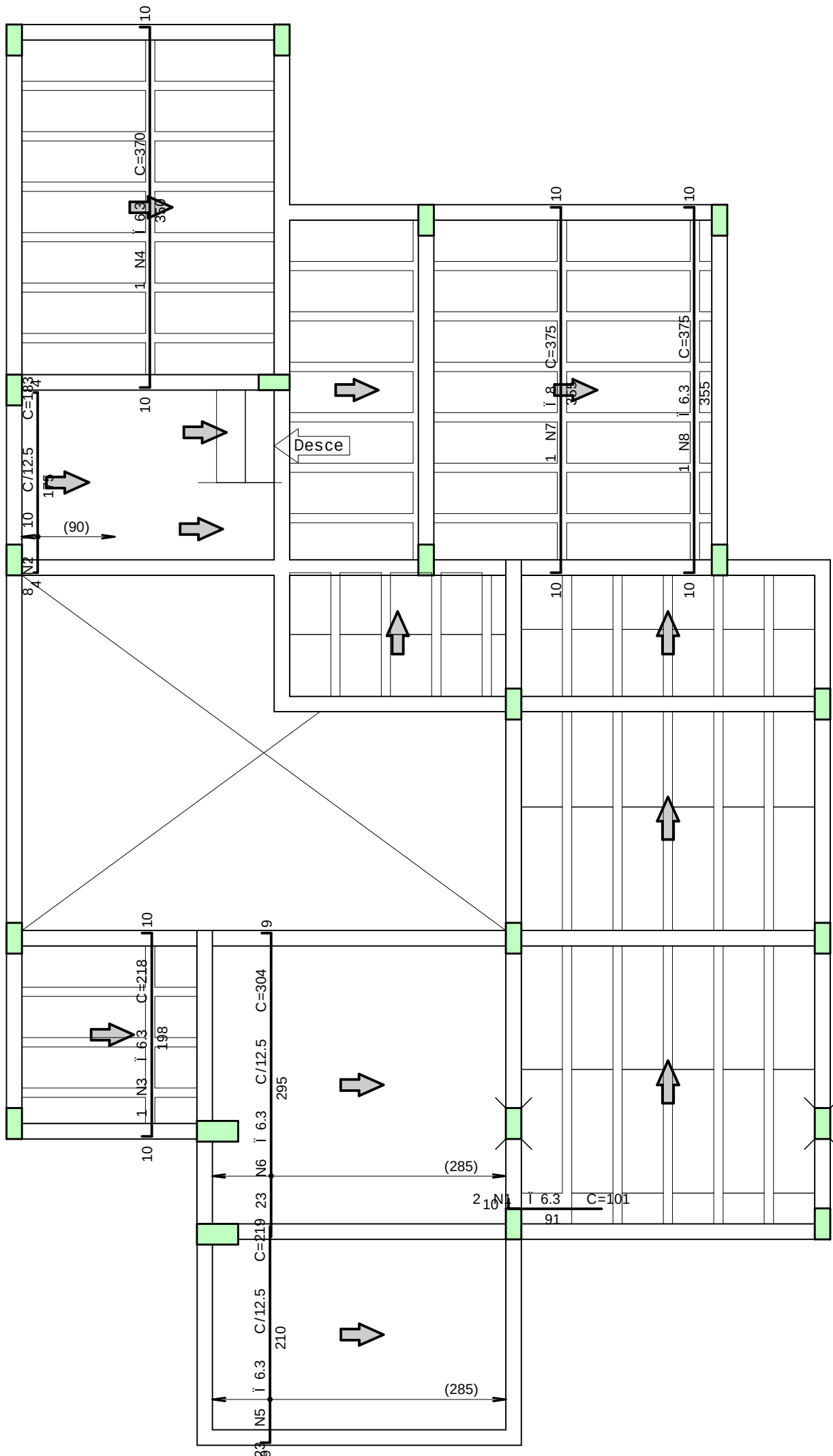
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CLIENTE:	Isis	DESENHO N: 013
OBRA:	Residncia Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TTULO:	Detalhamento das Armaduras Positivas Principais nas lajes do 1 Pavimento	
DATA:	17/12/2020	ESCALA: 1:50

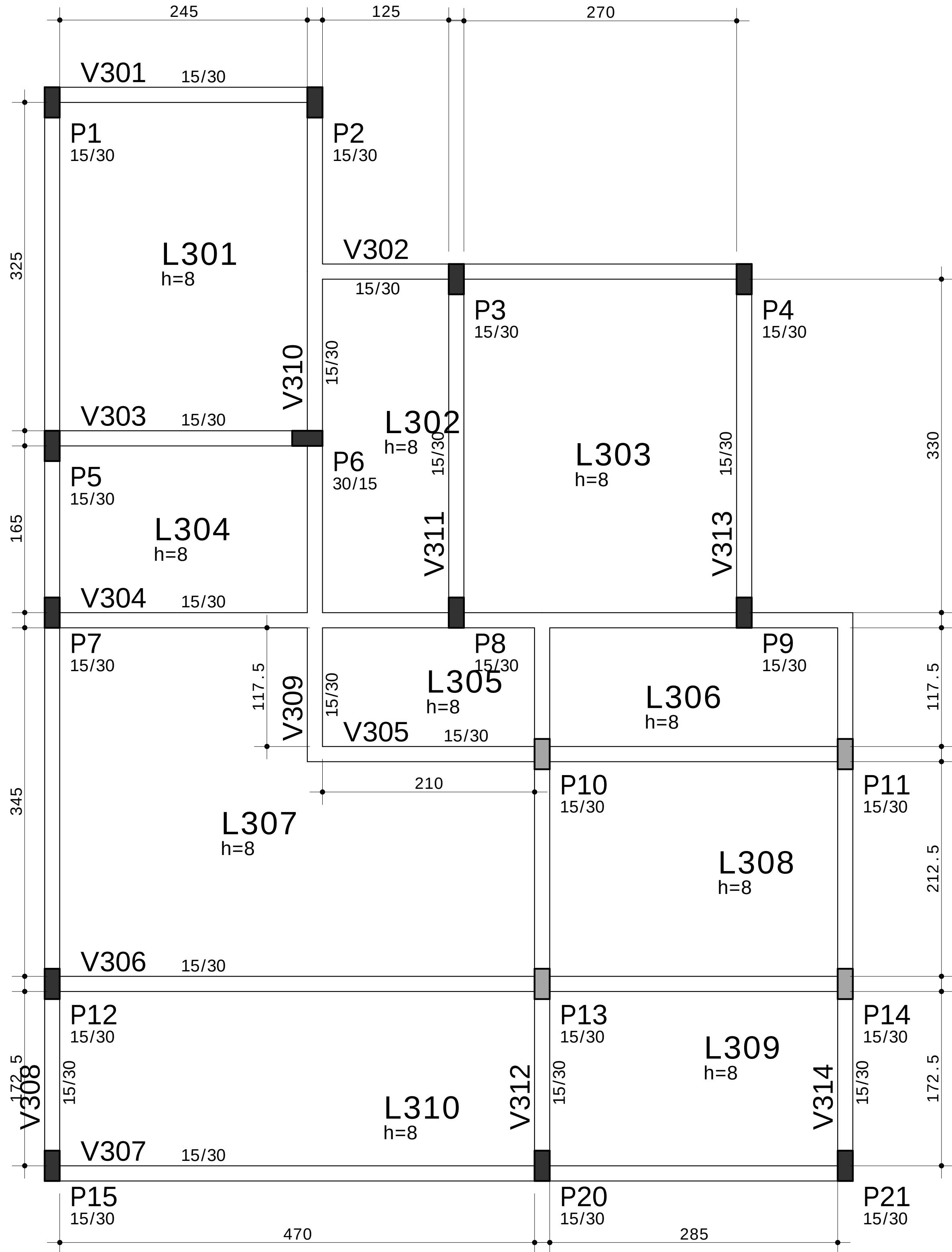
Desenho produzido por versão acadêmica, proibido uso comercial

1o Pavimento - Armadura positiva secundaria

1X



Desenho produzido por vers»o acad»mica, proibido uso comercial
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CLIENTE:	Isis	DESENHO Nº: 015
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Planta de formas - Cobertura	
DATA:	17/12/2020	ESCALA: 1:30

V301

Dimensões em milímetros

Front View: Total width 268, 3 N1 18, C=310, (1 T 2uCAM), 21, 21

Side View: Height 15/30, A

Top View: Total width 318, N3 C/15 17 15, 19, 2 N2 18 C=305, 19

Corte A: Section A-A, 2 1/2 808, 2 1/2 8, 9, 24, 17 N3 15 C=81

Detalhamento produzido por versão a cad mics, proibido uso comercial

[illegible]

V303

Desenho produzido por verso acad* mica, proibido uso comercial

Corte A

Dimensions and specifications:

- Top flange: 21, 144, 3 N1, 8, C=165
- Web: 159, 2 N2, 8, C=180
- Bottom flange: 15/30, 31
- Side view dimensions: 16, N4, 5, C=81, 31, 8, 5, 8, 21, 8, 21, 10, P5, P6, 14, 267, 2 N3, 10, C=295
- Material: 16 N4 15 C=81

V304

Technical drawing of a V304 window frame, showing elevation and section views.

Elevation View (Top):

- Top profile: 95, 25, 3, N2 1 8 C=120, (1 1 2aCAM), 59, 2 N1 1 5 C=220, 1 N4 1 10 (1 1 2aCAM), 79, 15/30, 530, 2 N3 1 10 C=550, 20.
- Bottom profile: 15, 48, 1 N6 1 10 C=265, 793, 2 N5 1 10 C=830, 21.
- Intermediate profile: 17, 3 1 8, 2 1 5, 3 1 10, 3 1 10, 2 1 10, 2 1 10, 2 1 10, 20.
- Labels: P7, V309, P8, V312 1 10, P9, V314.

Section Views (Right):

- Corte A:** Shows a cross-section of the frame with dimensions: 2 1 10, 1 1 10, 3 1 10, 9, 24, 44, N7 1 5 C=81.
- Corte B:** Shows a cross-section of the frame with dimensions: 2 1 10, 1 1 10, 3 1 10, 9, 24, 7, N7 1 5 C=81.

Text:

- Desenho produzido por verso acad mica, proibido uso comercial

[illegible]

Desenho produzido por verso acad mica. proibido uso comercial

V306

Corte A

21 94
N2 1 8
C=115
59
(1 1 2aCAM)
2 N1 1 5
C=280
171
2 N3 12.5
C=395
60
C=165
1 N4 12.5
(1 1 2aCAM)
15/30
134
3 N5 1 8
C=155
(1 1 2aCAM)
15/30
N9 C/15
32 1 5
3 1 8
1 1 6.3
P12
3 1 10
3 1 12.5
2 1 10
P13
N9 C/15
19 1 5
2 1 12.5
3 1 8
P14
1 N8 1 6.3
C=81
36
57
1 N7 1 10
C=285
793
2 N6 1 10
C=825
15

V307

Desenho produzido por vésio acau" mica, proibido uso comercial

Corte A

94
21 3 N2 1 8
C=115
(1 l 2aCAM)

169
2 N3 1 10
C=385

129
3 N5 1 8
C=150
(1 l 2aCAM)

59
2 N1 1 5
C=280

49
1 N4 1 10
C=140
(1 l 2aCAM)

15/30

15/30

24

51 N8 1 5
C=81

3 1 8
2 1 5
3 1 10
3 1 10
2 1 10
3 1 8

P15

P20

P21

15
2 N6 1 10
C=510

495

305
2 N7 1 8
C=325

[illegible]

V309

Corte A

318
2 N1 10
C=338

220
1 N2 10
C=240

(1 2aCAM)

109
4 N3 10
C=130

24
2 2aCAM, 2 3aCAM

9 N5 15 C=31

15/30

15/30

N5 C/15
9 1 5

N5 C/15
11 1 5

3 1 10
V305 2 1 8

3 1 10 6 1 10
V304 2 1 8

P6

319
2 N4 1 8
C=355

Desenho produzido por verso a acadêmica, proibido uso comercial

[illegible]

V311

Desenho produzido por verso-o acadêmico, proibido uso comercial

Corte A

21 3 N1 10 C=235 214 (1 2aCAM) 184 2 N2 18 C=205 21

15/30 A A

20 N4 15 C=81 24 8

14 352 2 N3 10 C=380 P8 P3

[illegible][illegible]

V314

Desenho produzido por verso acadêmica, proibido uso comercial

Corte A

557
2 N1 1/8 C=600
15/30
15/30
15/30
N5 C/15 10 1/5 21/8
N5 C/15 14 1/5 21/8
N5 C/15 8 1/5 21/8
P21
P14
P11
V304
21
20
185
2 N2 1/8 C=205
2 N3 1/8 C=215
130
2 N4 1/8 C=150
9
21/8
32 N5 1/5 C=81

RESUMIO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
60A	5	383	59
50A	6,3	190	0
50A	8	190	75
50A	10	158	98
50A	12,5	10	9
Peso Total	60A =		59 kgf
Peso Total	50A =		182 kgf

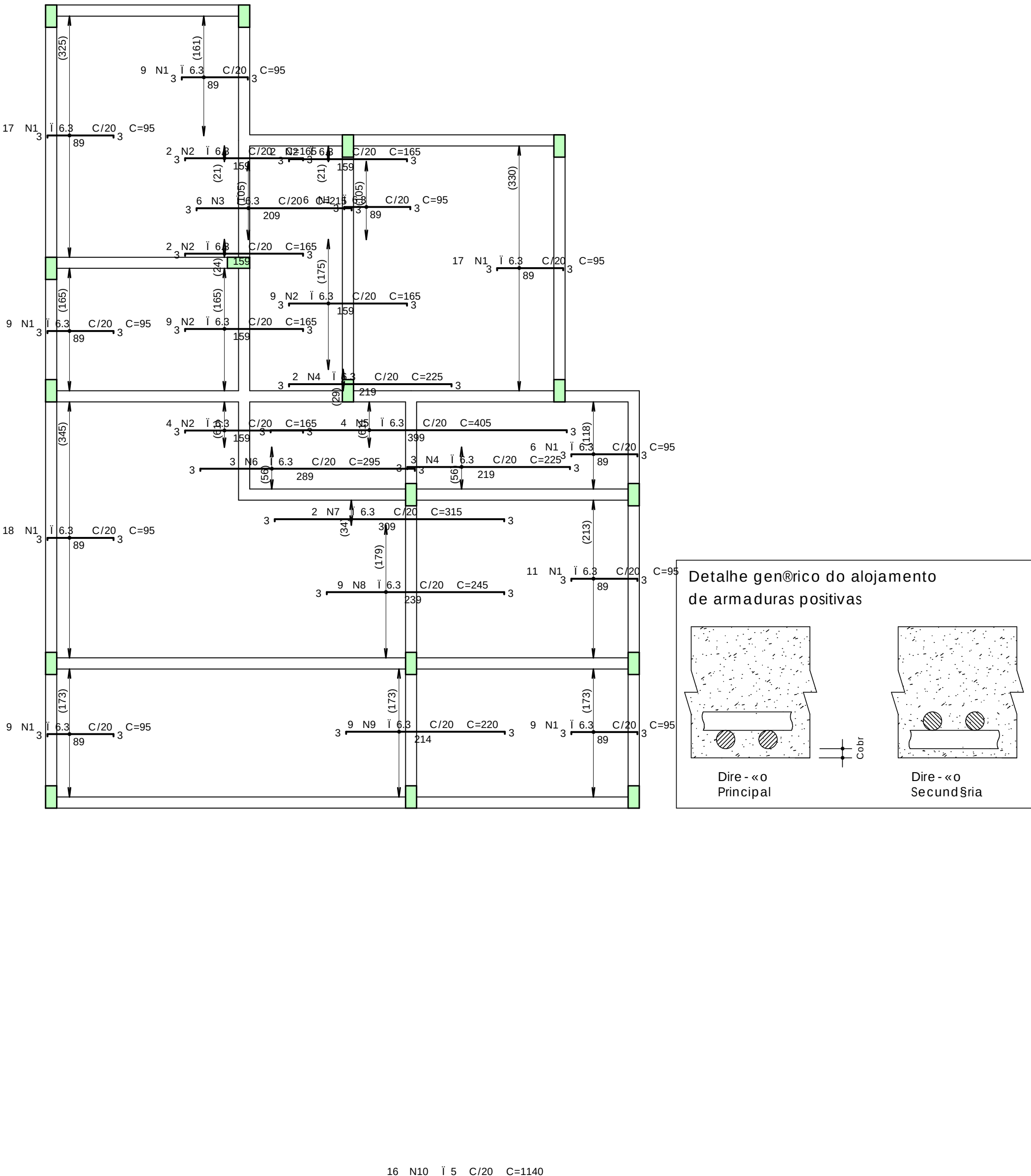
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CLIENTE:	Isis	DESENHO Nº: 016
OBRA:	Residência Unifamiliar	
TÍTULO:	Detalhamento de vigas - Cobertura V301 / V302 / V303 / V304 / V305 / V306 V307 / V308 / V309 / V310 / V311 / V312 V313 / V314	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
DATA:	17/12/2020	ESCALA: 1:50

Cobertura - Armadura negativa principal

1X

Desenho produzido por versão acadêmica, proibido uso comercial



A ¢ O	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
Cobertura - Armadura negativa principal					
50A	1	6.3	111	95	10545
50A	2	6.3	28	165	4620
50A	3	6.3	6	215	1290
50A	4	6.3	5	225	1125
50A	5	6.3	4	405	1620
50A	6	6.3	3	295	885
50A	7	6.3	2	315	630
50A	8	6.3	9	245	2205
50A	9	6.3	9	220	1980
60A	10	5	16	1140	18240

RESUMO DE A ¢ O			
A ¢ O	BIT	COMPR	PESO
	mm	m	kgf
60A	5	182	28
50A	6.3	249	61
Peso Total	60A =		28 kgf
Peso Total	50A =		61 kgf

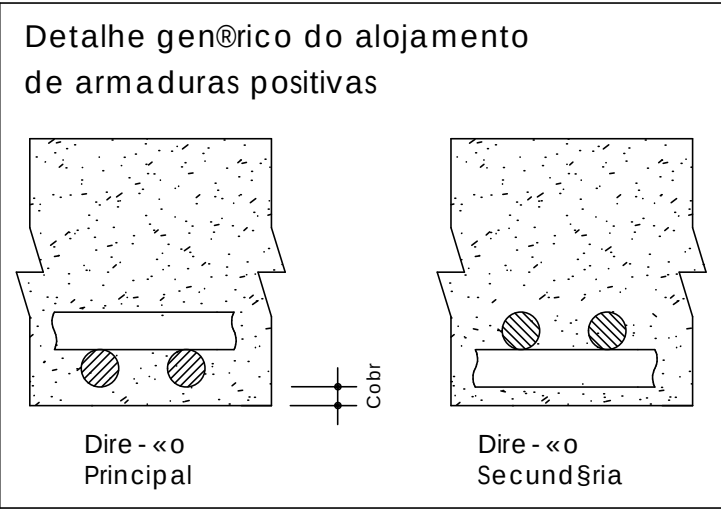
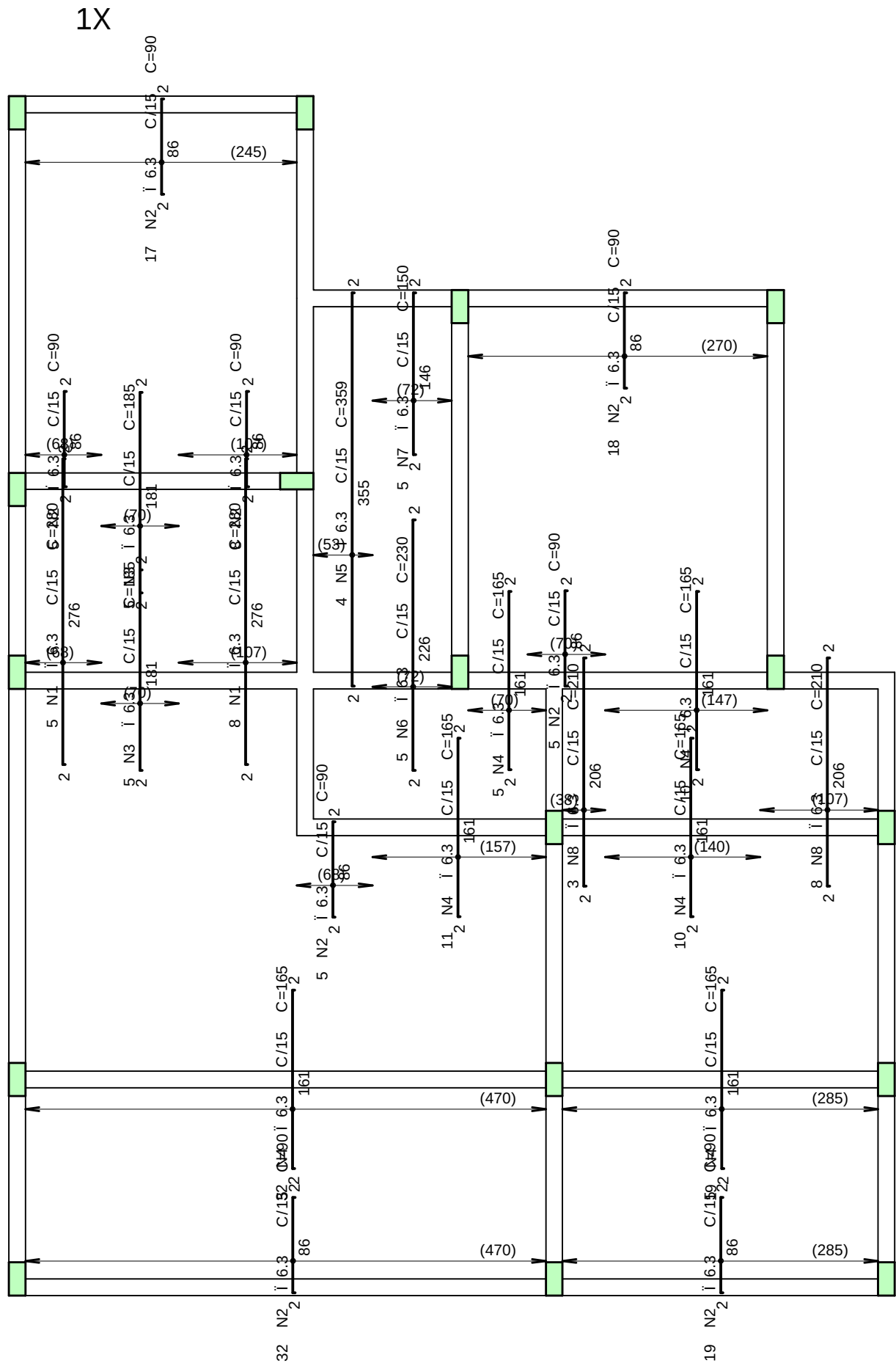
Desenho produzido por versão acadêmica, proibido uso comercial



CLIENTE:	Isis	DESENHO Nº: 017
OBRA:	Residência Unifamiliar	
TÍTULO:	Detalhamento de Armaduras Negativas Principais nas lajes da Cobertura	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
DATA:	17/12/2020	ESCALA: 1:50

Desenho produzido por versão acadêmica, proibido uso comercial

Cobertura - Armadura negativa secundaria



Aço	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
Cobertura - Armadura negativa secundaria					
50A	1	6.3	13	280	3640
50A	2	6.3	109	90	9810
50A	3	6.3	10	185	1850
50A	4	6.3	87	165	14355
50A	5	6.3	4	359	1436
50A	6	6.3	5	230	1150
50A	7	6.3	5	150	750
50A	8	6.3	11	210	2310

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
50A	6.3 mm	353 m	86 kgf
Peso Total	50A =		86 kgf

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CLIENTE:	Isis	DESENHO Nº: 018
OBRA:	Residência Unifamiliar	
TÍTULO:	Detalhamento de Armaduras Negativas Secundárias nas lajes da Cobertura	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
DATA:	17/12/2020	ESCALA: 1:50

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1X

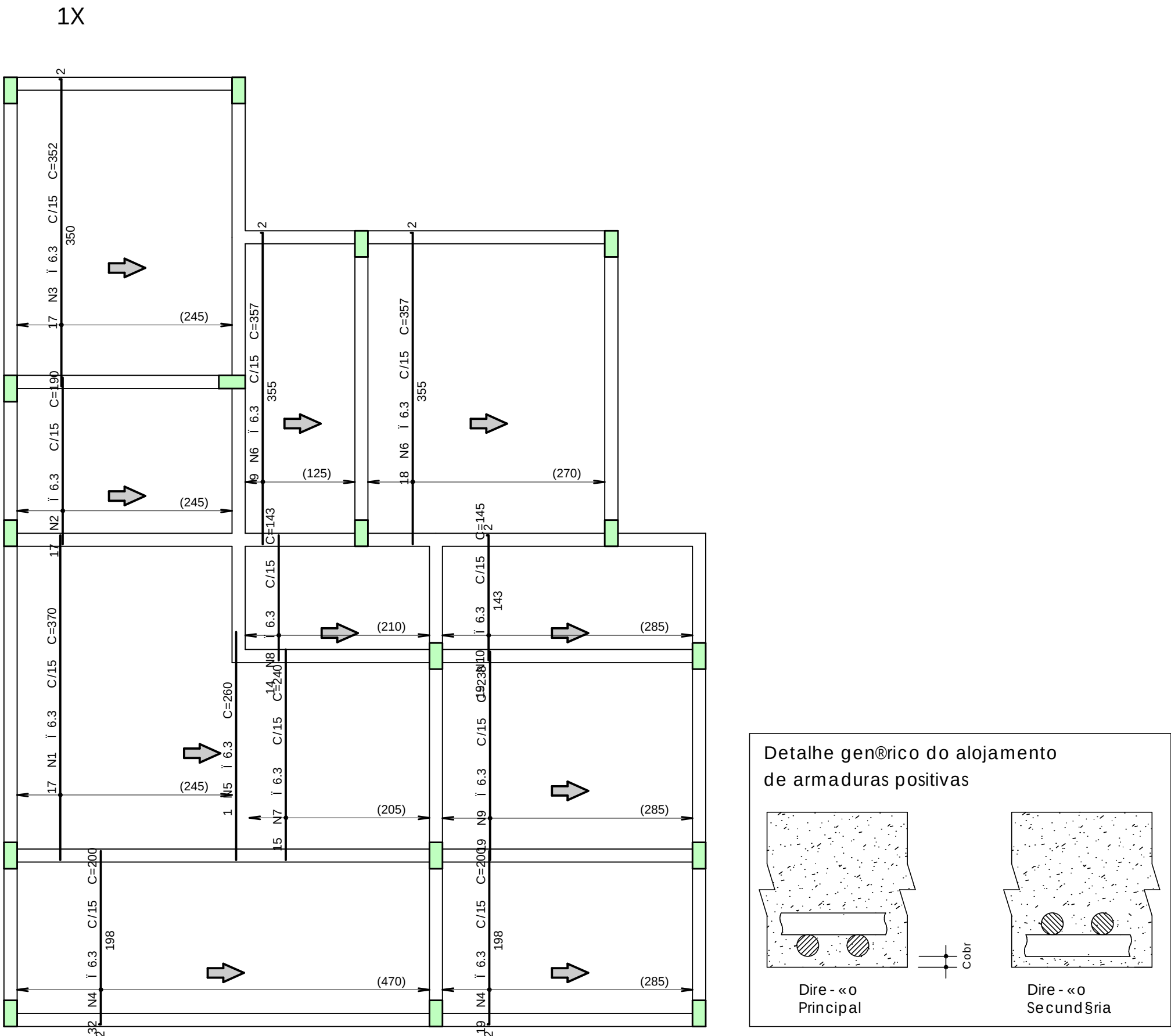


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Desenho produzido por vers«o acad° mica, proibido uso comercial

Cobertura - Armadura positiva secundaria



A ¢ O	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
Cobertura - Armadura positiva secundaria					
50A	1	6.3	17	370	6290
50A	2	6.3	17	190	3230
50A	3	6.3	17	352	5984
50A	4	6.3	51	200	10200
50A	5	6.3	1	260	260
50A	6	6.3	27	357	9639
50A	7	6.3	15	240	3600
50A	8	6.3	14	143	2002
50A	9	6.3	19	238	4522
50A	10	6.3	19	145	2755

RESUMO DE A ¢ O			
A ¢ O	BIT	COMPR	PESO
	mm	m	kgf
50A	6.3	485	119
Peso Total	50A =		119 kgf

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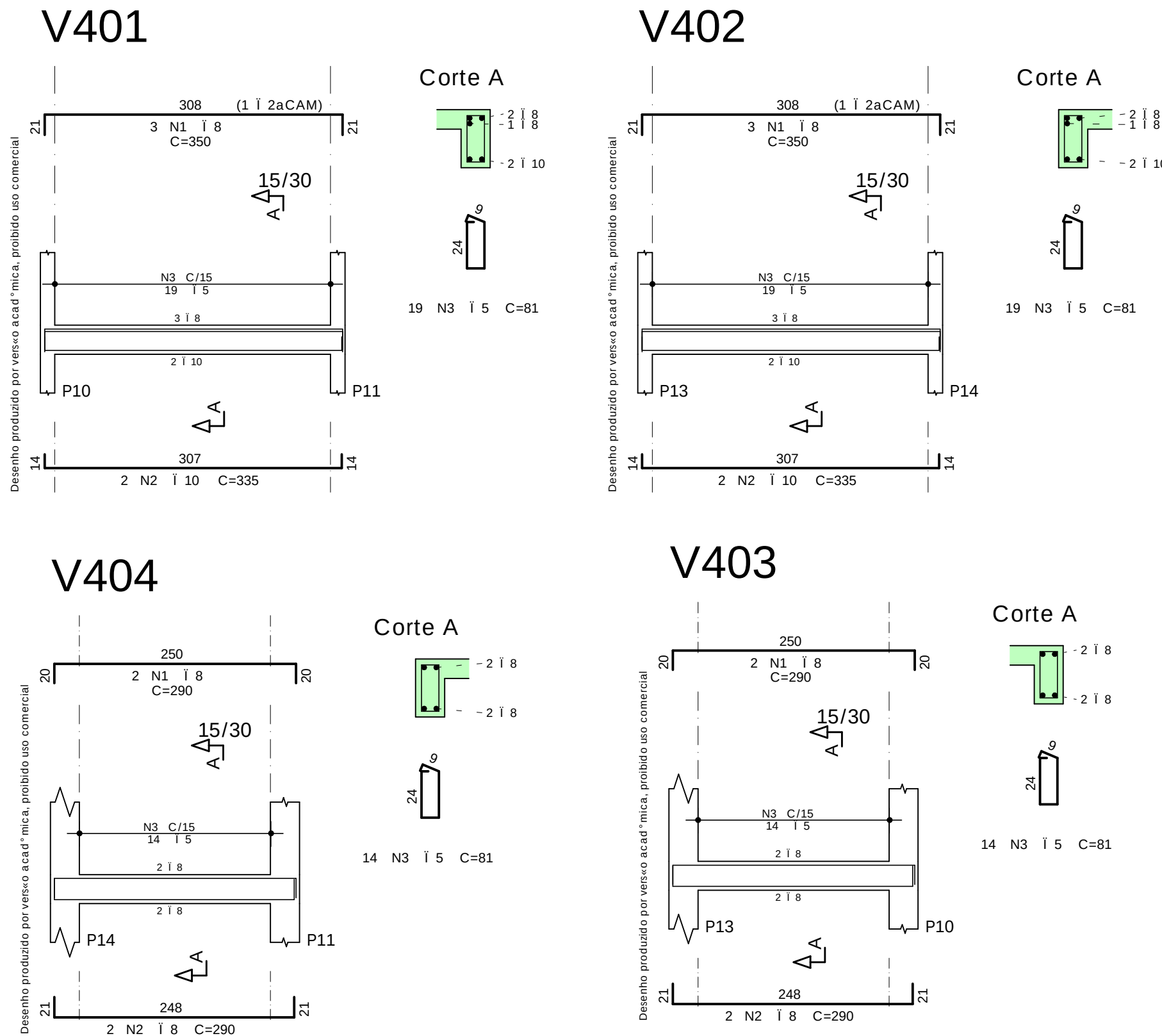
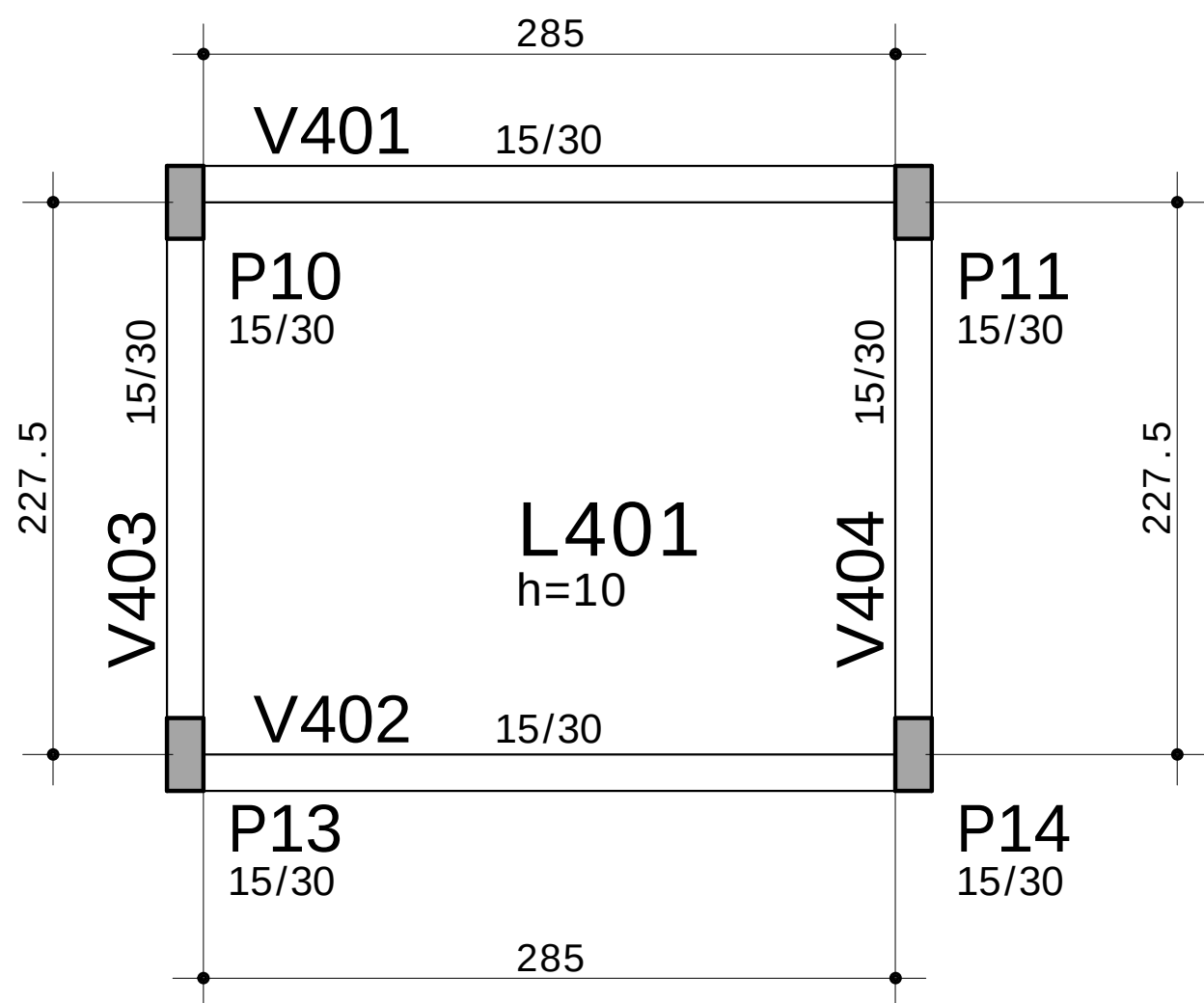
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CLIENTE:	Isis	DESENHO Nº: 020
OBRA:	Residência Unifamiliar	
TÍTULO:	Detalhamento das Armaduras Positivas Secundárias nas lajes da Cobertura	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
DATA:	17/12/2020	ESCALA: 1:50

Desenho produzido por verso acad mica, proibido uso comercial
Desenho produzido por verso acad mica, proibido uso comercial

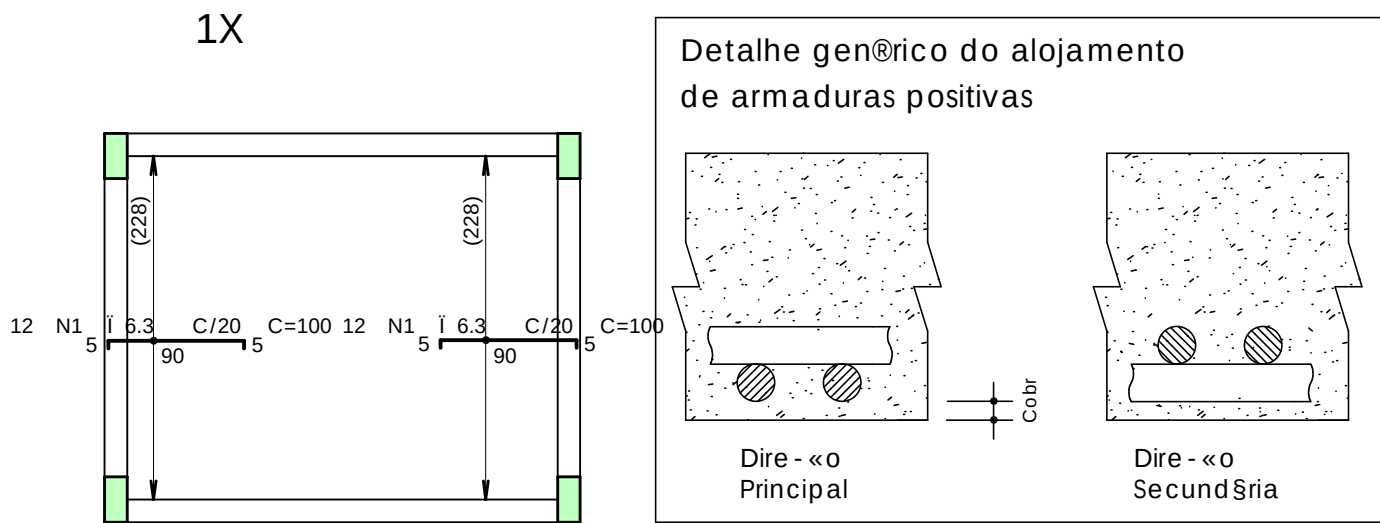


A º O	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
Laje Caixa d'gua - Armadura negativa principal					
50A	1	6.3	24	100	2400
V401					
50A	1	8	3	350	1050
50A	2	10	2	335	670
60A	3	5	19	81	1539
V402					
50A	1	8	3	350	1050
50A	2	10	2	335	670
60A	3	5	19	81	1539
V403					
50A	1	8	2	290	580
50A	2	8	2	290	580
60A	3	5	14	81	1134
V404					
50A	1	8	2	290	580
50A	2	8	2	290	580
60A	3	5	14	81	1134

RESUMO DE A º O			
A º O	BIT	COMPR	PESO
	mm	m	kgf
60A	5	53	8
50A	6.3	24	6
50A	8	44	17
50A	10	13	8
Peso Total 60A =			8 kgf
Peso Total 50A =			32 kgf

Desenho produzido por verso acad mica, proibido uso comercial

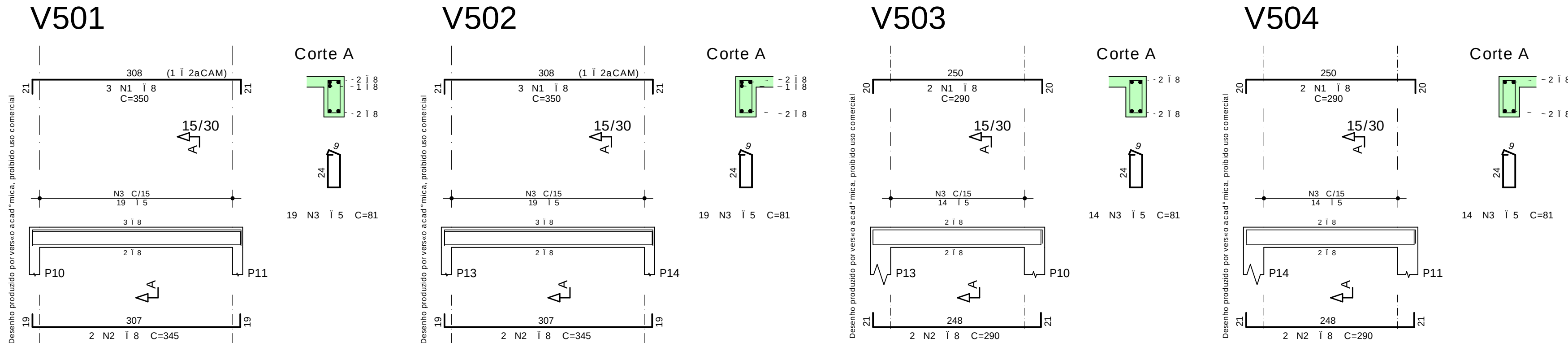
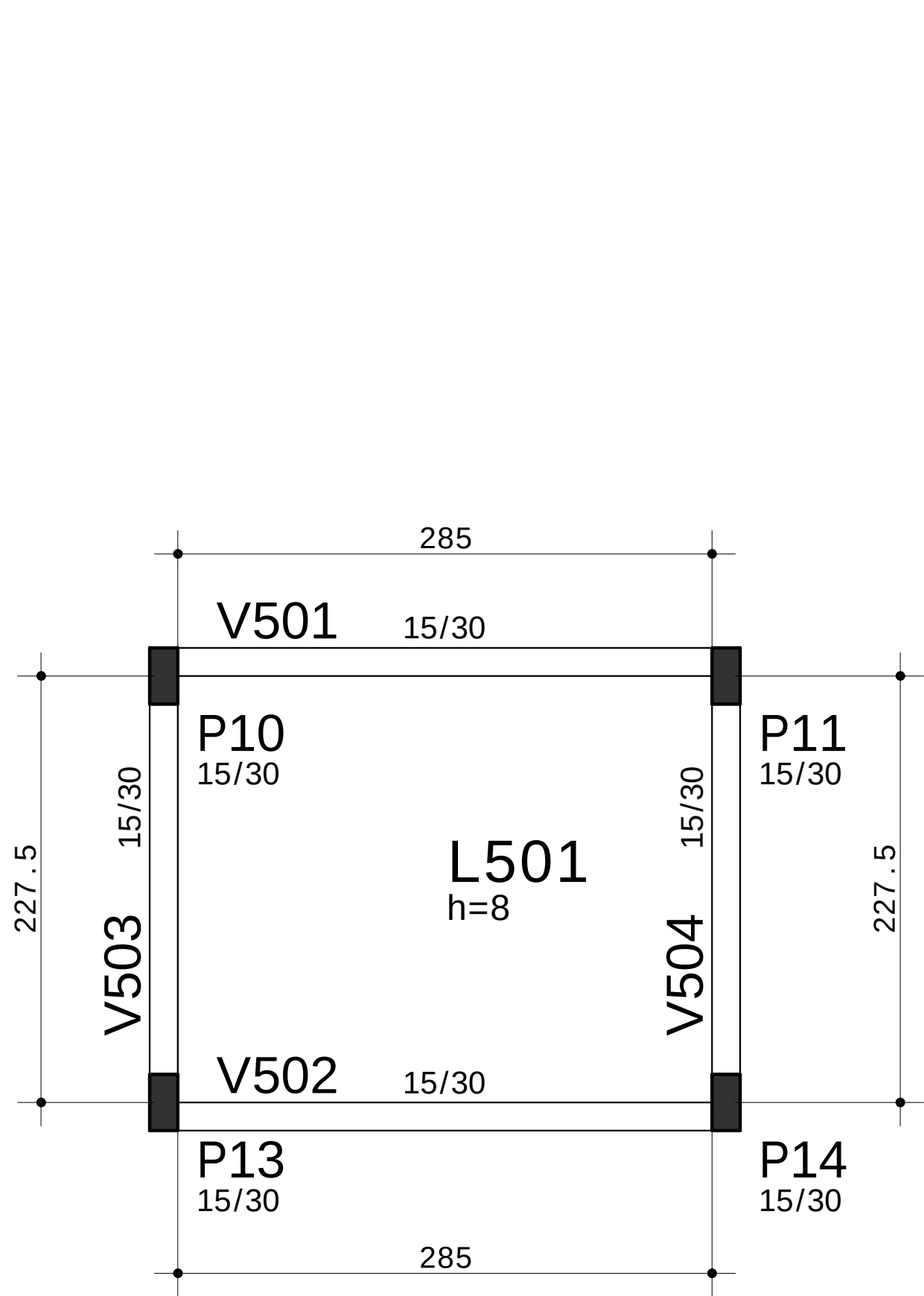
Laje Caixa d'gua - Armadura negativa principal



Desenho produzido por verso acad mica, proibido uso comercial

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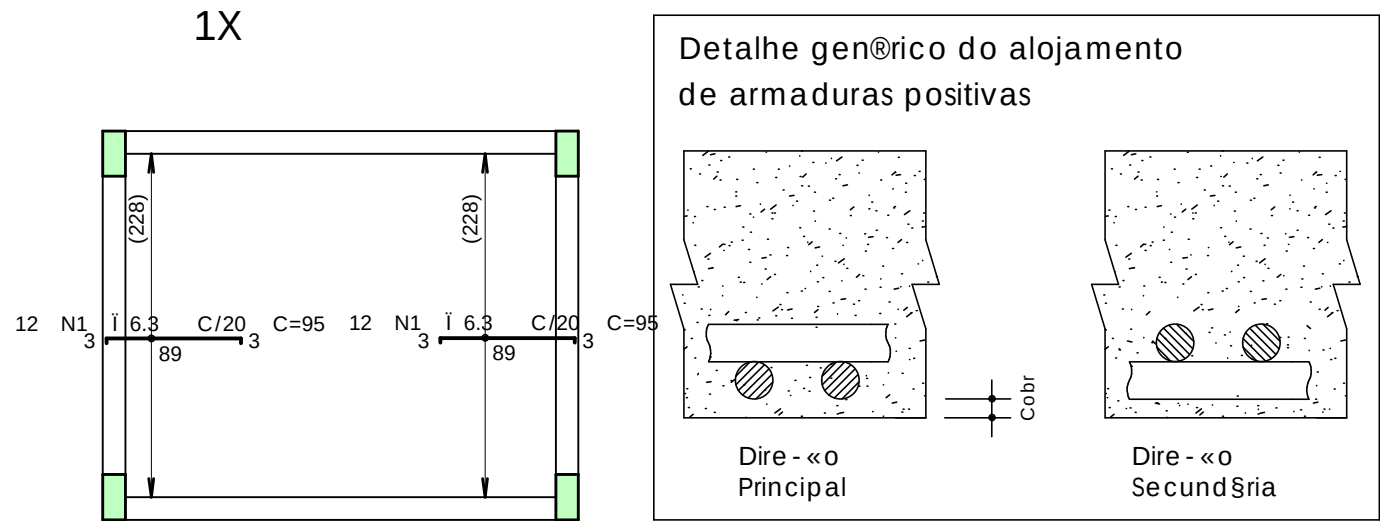
CLIENTE:	Isis	DESENHO Nº: 021
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Planta de forma da Laje - Caixa d'água Detalhamento da Armadura Negativa Principal na Laje - Caixa d'água Detalhamento das vigas: Laje - Caixa d'água	
DATA:	17/12/2020	
ESCALA:	1:30 / 1:50	



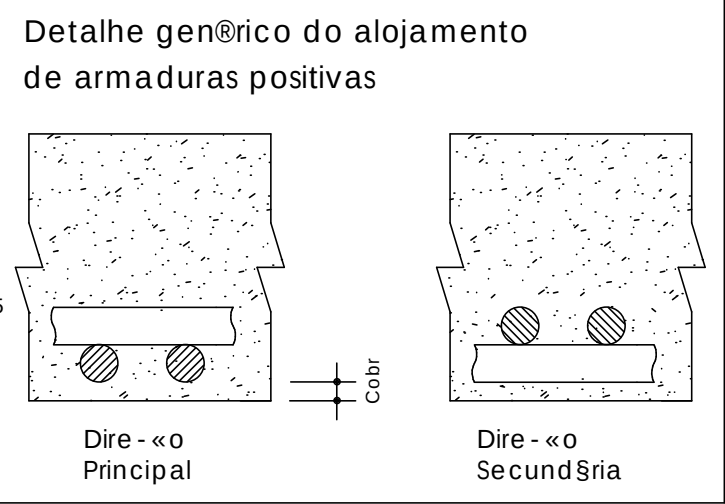
AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
				cm	cm
Cob Caixa d'água - Armadura negativa principal					
50A	1	6.3	24	95	2280
60A	2	5	2	1140	2280
V501					
50A	1	8	3	350	1050
50A	2	8	2	345	690
60A	3	5	19	81	1539
V502					
50A	1	8	3	350	1050
50A	2	8	2	345	690
60A	3	5	19	81	1539
V503					
50A	1	8	2	290	580
50A	2	8	2	290	580
60A	3	5	14	81	1134
V504					
50A	1	8	2	290	580
50A	2	8	2	290	580
60A	3	5	14	81	1134

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
60A	5	76	12
50A	6.3	23	6
50A	8	58	23
Peso Total	60A =		12 kgf
Peso Total	50A =		28 kgf

Cob Caixa d'água - Armadura negativa principal



1X



2 N2 15 C/20 C=1140

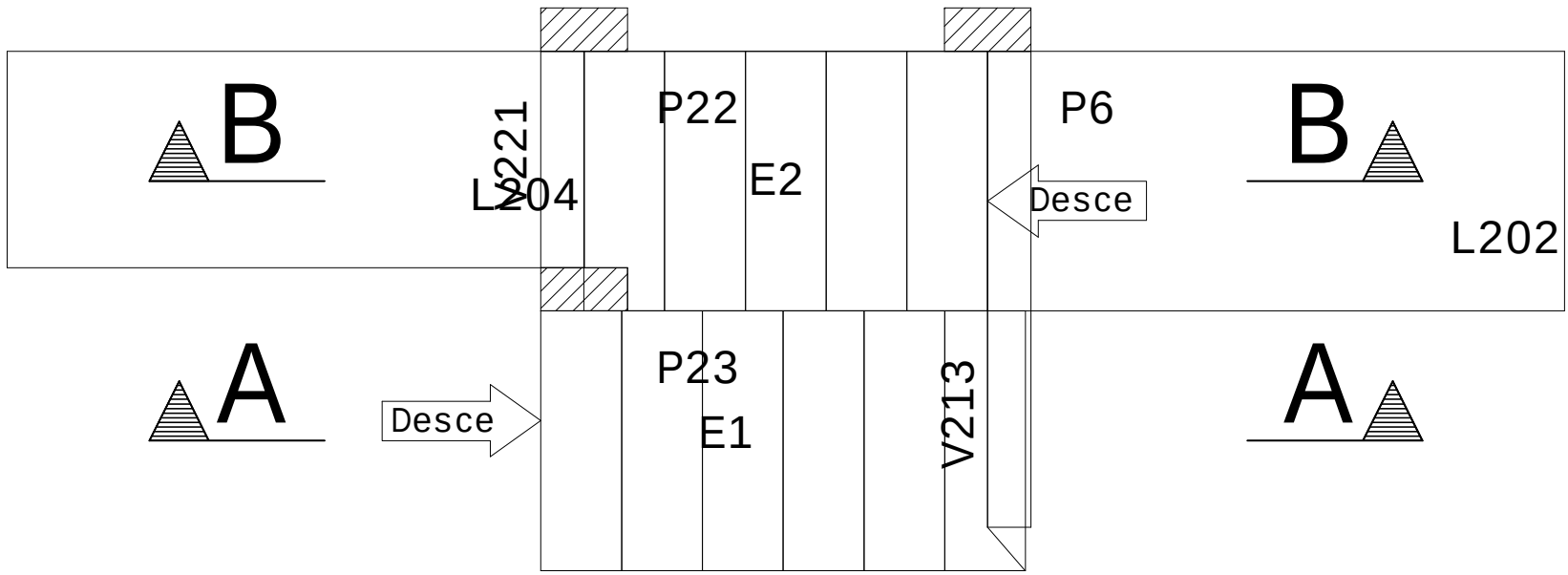


CLIENTE:	Isis	DESENHO Nº: 023
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Planta de formas - Cob. Caixa d'água Detalhamento de Vigas (Cob. Caixa d'água) Detalhamento de Armadura Negativa Principal na laje da Cob. Caixa d'água	
DATA:	17/12/2020	
ESCALA:	1:30 / 1:50	

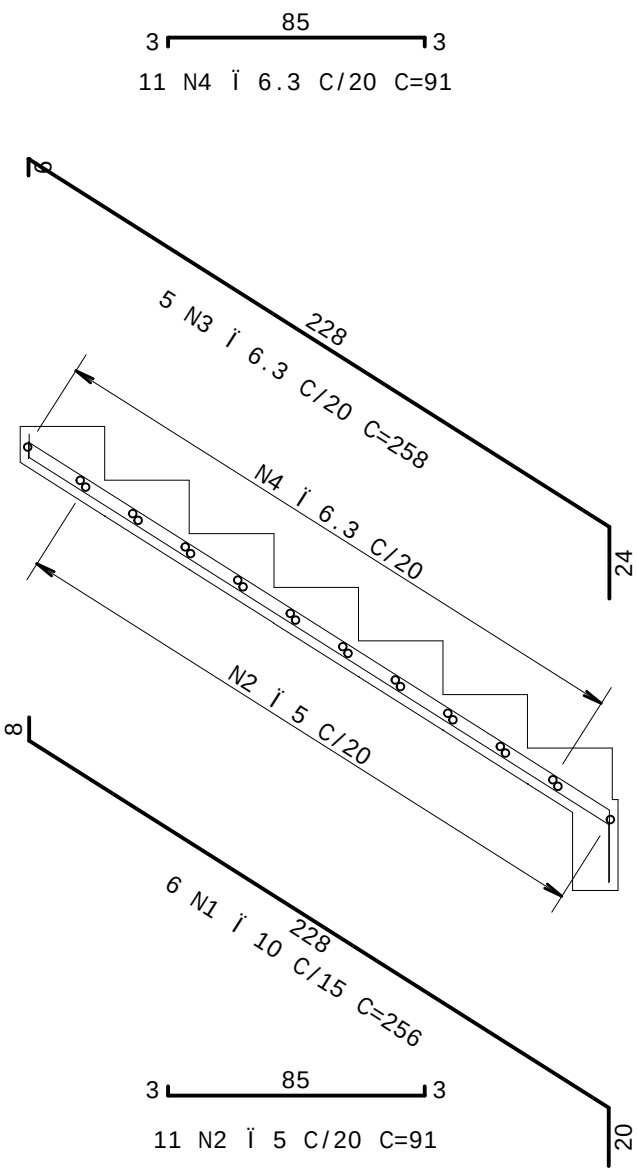
ESTUDO - NÌO EXECUTAR

Desenho produzido por verso acad°mica, proibido uso comercial

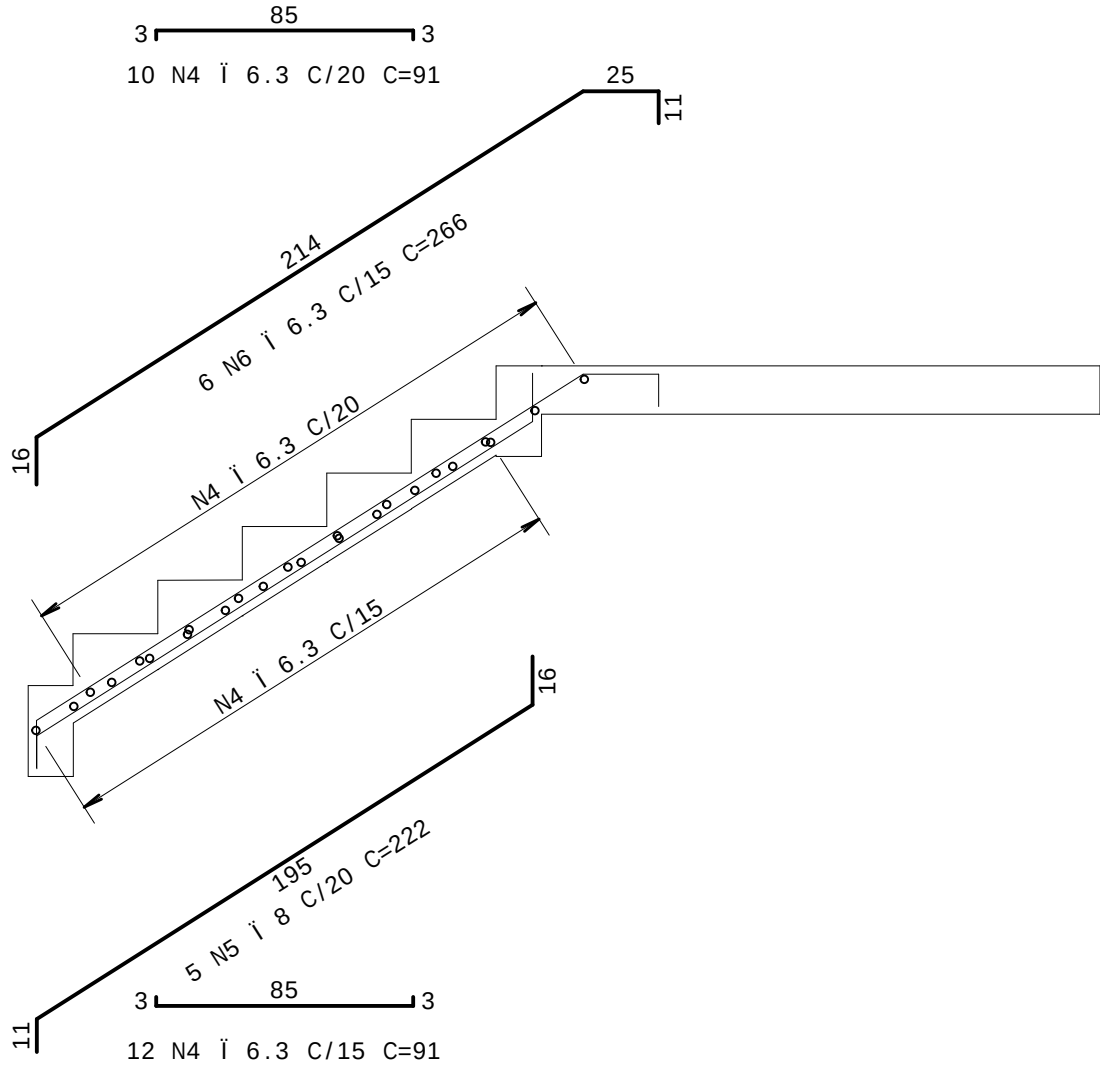
Planta Escada-1 - 1o Pavimento



Corte A-A



Corte B-B



A ¢ O	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
Planta Escada-1 - 1o Pavimento					
50A	1	10	6	256	1536
60A	2	5	11	91	1001
50A	3	6.3	5	258	1290
50A	4	6.3	33	91	3003
50A	5	8	5	222	1110
50A	6	6.3	6	266	1596

RESUMO DE A ¢ O			
A ¢ O	BIT	COMPR	PESO
	mm	m	kgf
60A	5	10	2
50A	6.3	59	14
50A	8	11	4
50A	10	15	9
Peso Total	60A =		2 kgf
Peso Total	50A =		28 kgf

ANDRÉ RODRIGUES

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CLIENTE:	Isis	DESENHO Nº: 025
OBRA:	Residência Unifamiliar	OBS: Concreto: fck: 25 MPa ECS: 24150 MPa
TÍTULO:	Detalhamento das Armaduras da Escada	
DATA:	17/12/2020	ESCALA: 1:25