

PROJETO ESTRUTURAL

CASA CS

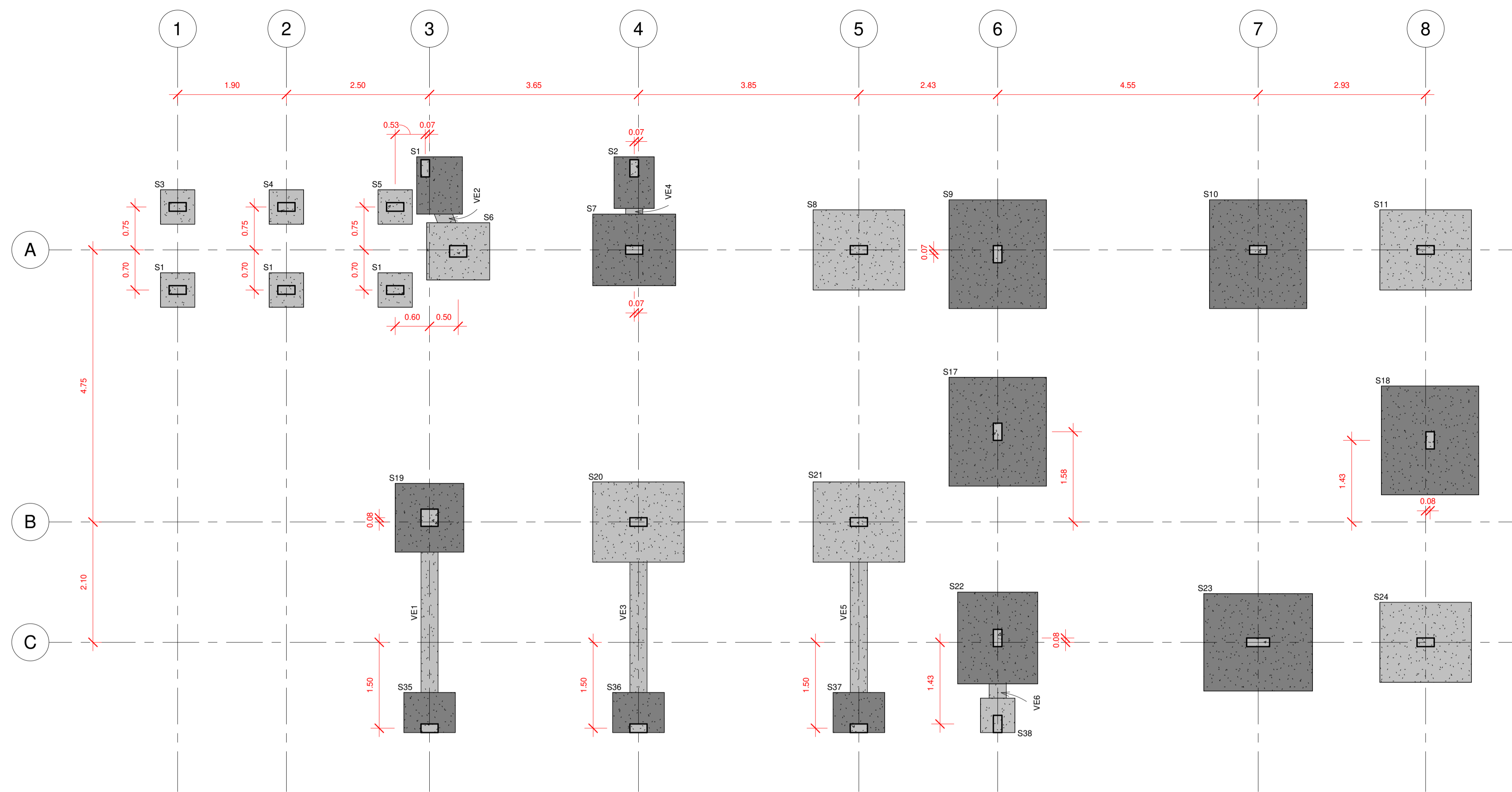
ANDRÉ RODRIGUES
Engenheiro Estrutural

SUMÁRIO:

- 01 - Localização das Sapatas
- 02 - Planta de Formas: Nível Casa
- 03 - Planta de Formas: Pavimento 1
- 04 - Planta de Formas: Coberta
- 05 - Planta de Formas: Telhado e Caixa D'água
- 06 - Fachadas e Perspectivas

DETALHAMENTOS:

- 07 - Detalhamento: Sapatas
- 08 - Detalhamento: Pilares
- 09 - Detalhamento: Pilares
- 10 - Detalhamento: Pilares
- 11 - Detalhamento: Vigas de Equilíbrio / Nível Casa
- 12 - Detalhamento: Vigas / Nível Casa
- 13 - Detalhamento: Vigas / Nível Casa
- 14 - Detalhamento: Vigas / Pavimento 1
- 15 - Detalhamento: Vigas / Pavimento 1
- 16 - Detalhamento: Vigas / Coberta
- 17 - Detalhamento: Vigas / Coberta
- 18 - Detalhamento: Vigas / Telhado e Caixa D'água
- 19 - Detalhamento: Lajes / Piscina
- 20 - Detalhamento: Lajes / Pavimento 1
- 21 - Detalhamento: Lajes / Pavimento 1
- 22 - Detalhamento: Lajes / Coberta
- 23 - Detalhamento: Lajes / Coberta
- 24 - Detalhamento: Lajes / Telhado
- 25 - Detalhamento: Lajes / Caixa D'água
- 26 - Detalhamento: Escadas



DIMENSÕES DAS SAPATAS		
Título	Dimensão em X	Dimensão em Y
S1	0.80	1.00
S2	0.70	0.90
S3	0.60	0.60
S4	0.60	0.60
S5	0.60	0.60
S6	1.00	1.10
S7	1.25	1.45
S8	1.40	1.60
S9	1.70	1.90
S10	1.70	1.90
S11	1.40	1.60
S12	0.60	0.60
S13	0.60	0.60
S14	0.60	0.60
S16	1.70	1.90
S17	1.70	1.90
S18	1.70	1.90
S19	1.20	1.20
S20	1.40	1.60
S21	1.40	1.60
S22	1.40	1.60
S23	1.70	1.90
S24	1.40	1.60
S35	0.70	0.90
S36	0.70	0.90
S37	0.70	0.90
S38	0.60	0.60

NOTAS ESPECÍFICAS

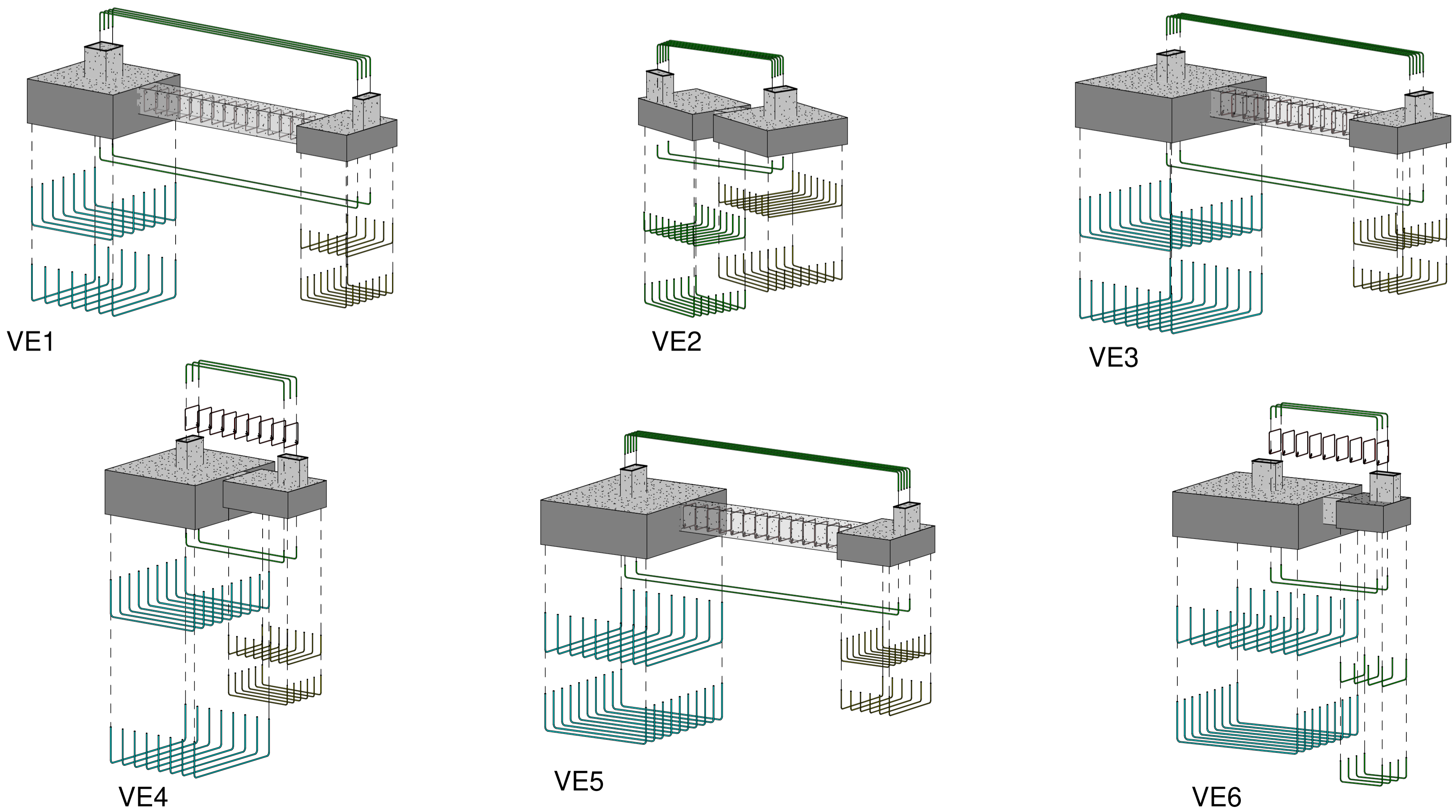
- ABNT NBR 6118:2014 - PROJETO DE ESTRUTURAS DE CONCRETO - PROCEDIMENTO
- ABNT NBR 6120:1980 VERSÃO CORRIGIDA:2000 - CARGAS PARA O CÁLCULO DE ESTRUTURAS DE EDIFICAÇÕES - PROCEDIMENTO
- ABNT NBR 6122:2010 - PROJETO E EXECUÇÃO DE FUNDAÇÕES - PROCEDIMENTO
- ABNT NBR 6123:1988 VERSÃO CORRIGIDA 2:2013 - FORÇAS DEVIDAS AO VENTO EM EDIFICAÇÕES - PROCEDIMENTO
- ABNT NBR 8681:2003 VERSÃO CORRIGIDA:2004 - AÇÕES E SEGURANÇA NAS ESTRUTURAS - PROCEDIMENTO
- ABNT NBR 8953:2015 - CONCRETO PARA FINS ESTRUTURAIS - CLASSIFICAÇÃO POR GRUPOS DE RESISTÊNCIA E CONSISTÊNCIA
- ABNT NBR 12655:2015 VERSÃO CORRIGIDA:2015 - CONCRETO DE CIMENTO PORTLAND - PREPARO, CONTROLE, RECEBIMENTO E ACEITAÇÃO - PROCEDIMENTO

CONSIDERAÇÕES GERAIS

1. CONFERIR MEDIDAS DO PROJETO ARQUITETÔNICO. QUALQUER ALTERAÇÃO DEVE SER NOTIFICADA AOS AUTORES;
2. A EXECUÇÃO DEVERÁ SER FEITA POR PROFISSIONAL HABILITADO E O MESMO DEVERÁ TOMAR CONHECIMENTO DE TODAS AS FOLHAS REFERENTES À OBRA;
3. A RESPONSABILIDADE PELA FISCALIZAÇÃO DA OBRA É DO ENGENHEIRO RESPONSÁVEL TÉCNICO;
4. TODA E QUALQUER ALTERAÇÃO NO RESPECTIVO PROJETO, DEVERÁ PRIMEIRAMENTE, SER CONSULTADO O ENGENHEIRO RESPONSÁVEL TÉCNICO PELO PROJETO E O MESMO DEVERÁ EMITIR PARACER SOBRE A POSSÍVEL ALTERAÇÃO;
5. TODOS OS DIREITOS DE REPRODUÇÃO ESTÃO RESERVADOS AOS AUTORES DOS PROJETOS SENDO QUE A CÓPIA NÃO AUTORIZADA SERÁ ENQUADRA COMO VIOLAÇÃO DE DIREITOS AUTORIAIS.
6. OBSERVAR OS NÍVEIS DAS LAJES E VIGAS E VERIFICAR INDICAÇÃO DE DESNÍVEL E CORTES;
7. NAS PEÇAS EM CONTATO COM O SOLO, UTILIZAR 5 cm DE CONCRETO MAGRO.

LOCAÇÃO DAS SAPATAS

1 : 50



COBRIMENTO MÍNIMO DAS ARMADURAS

LAJES	2,0 cm
VIGAS E PILARES	2,5 cm
ELEMENTOS EM CONTATO COM O SOLO	4,0 cm

OBSERVAÇÕES

CONCRETO CLASSE Eci FATOR A/C	VIGAS E PILARES C25 (25 MPa) 28000 MPa < 0,60	FUNDAÇÕES C25 (25 MPa) 28000 MPa < 0,60	LAJES C25 (25 MPa) 28000 MPa < 0,60
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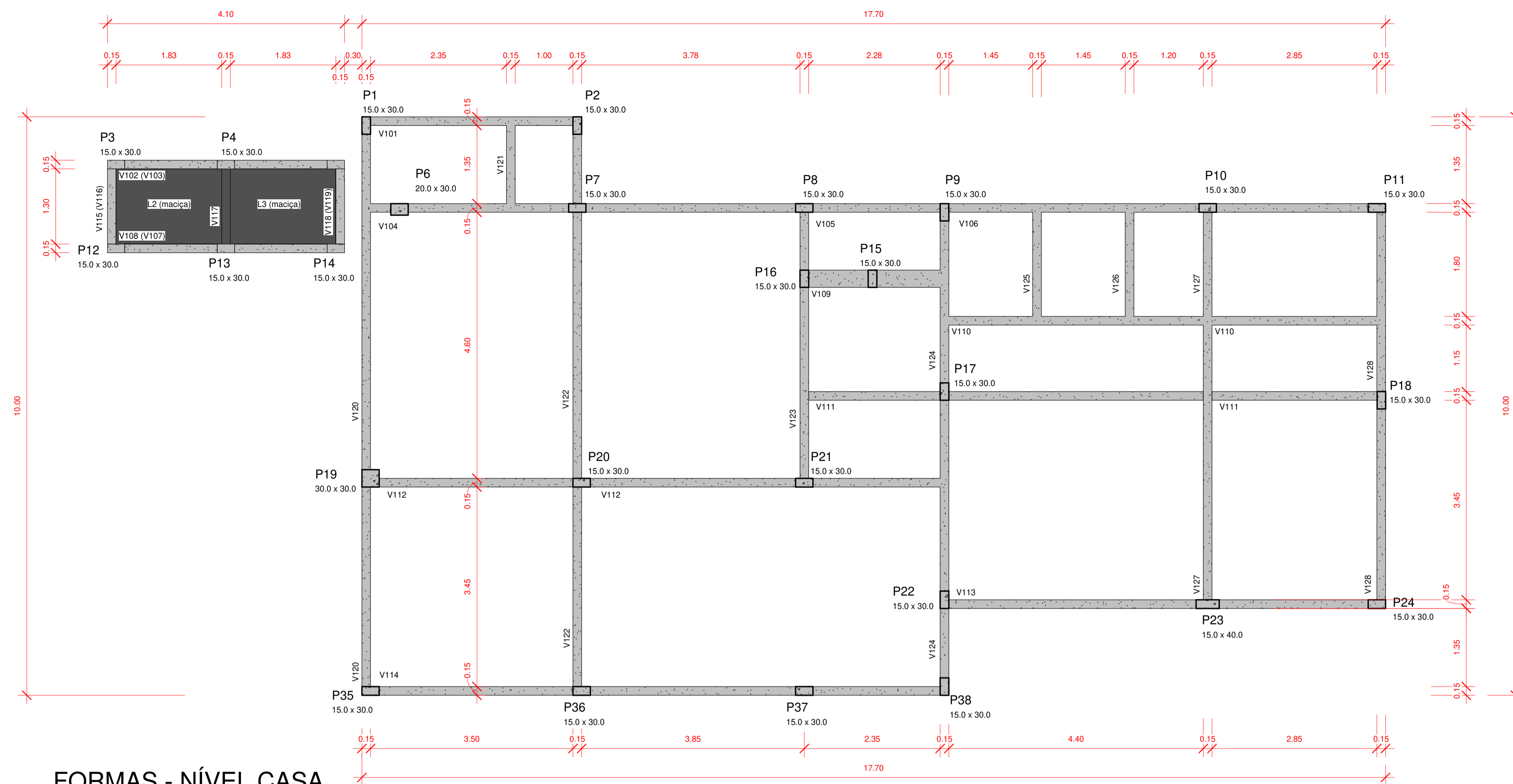
NÃO É PERMITIDO A PASSAGEM DE TUBULAÇÕES EM VIGAS E PILARES



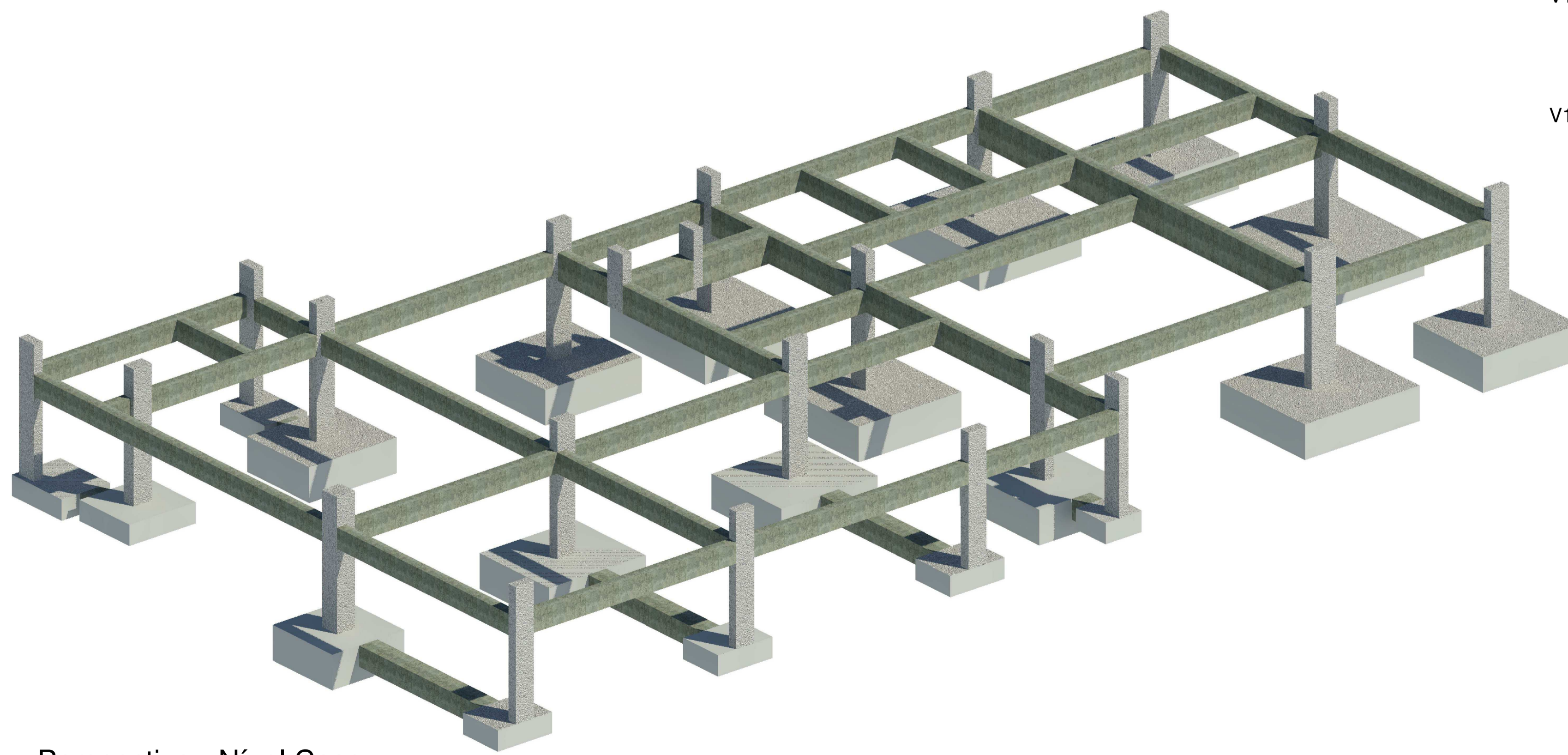
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ANDRÉ RODRIGUES
 Engenheiro Estrutural
 (83) 9 9644 2240
 @andrerodrigueseng
 andrerodrigues.eng.br
 contato@andrerodrigues.eng.br

Ciente: Cleiton Batista Soares de Lima	Francha nº: 01	Revisão nº: 002
Obra: Residência Unifamiliar	Observações: Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo	
Título: • Locação de Sapatas • Perspectivas das Vigas de Equilíbrio		
CREA-PB: 161890343-9	ART nº: Pb20210395879	
Data: 06 / 10 / 2021	Escala: Indicada	

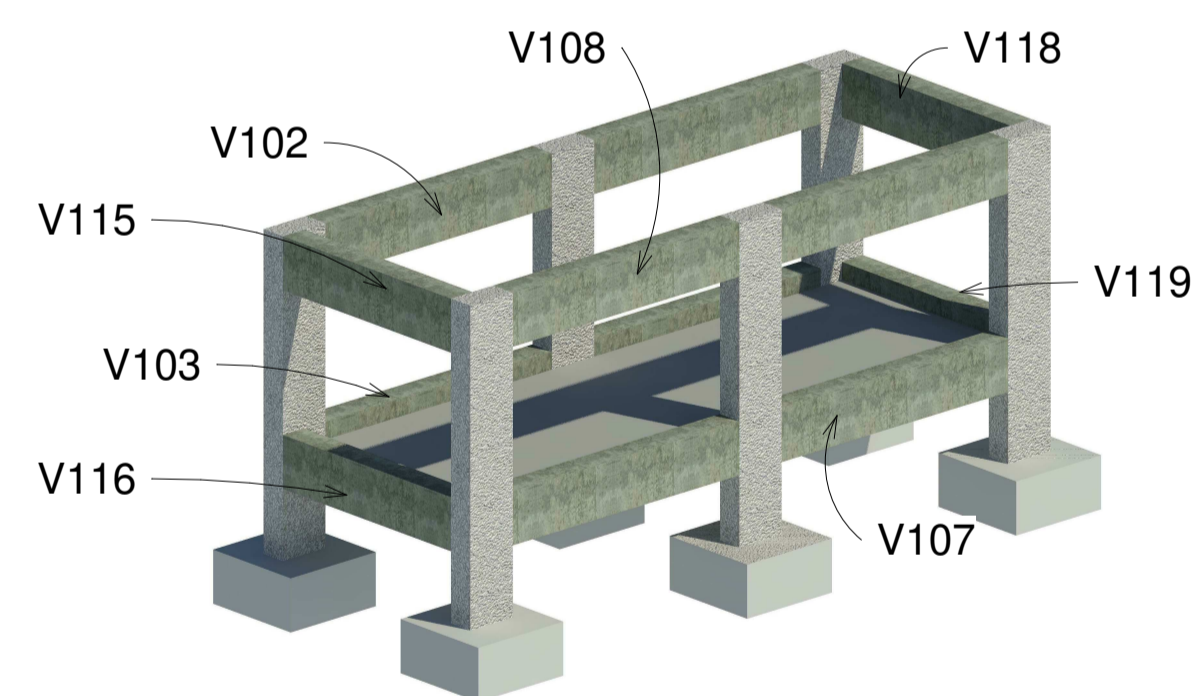




FORMAS - NÍVEL CASA
1 : 50



Perspectiva - Nível Casa



Perspectiva - Piscina

DIMENSÕES DOS PILARES		DIMENSÕES DAS VIGAS - NÍVEL CASA	
PILAR	DIMENSÕES	VIGA	DIMENSÃO
P1	15.0 x 30.0	V101	15.0 x 30.0
P2	15.0 x 30.0	V102	15.0 x 30.0
P3	15.0 x 30.0	V103	15.0 x 30.0
P4	15.0 x 30.0	V104	15.0 x 30.0
P5	15.0 x 30.0	V105	15.0 x 30.0
P6	20.0 x 30.0	V106	15.0 x 30.0
P7	15.0 x 30.0	V107	15.0 x 30.0
P8	15.0 x 30.0	V108	15.0 x 30.0
P9	15.0 x 30.0	V109	30.0 x 40.0
P10	15.0 x 30.0	V110	15.0 x 30.0
P11	15.0 x 30.0	V111	15.0 x 30.0
P12	15.0 x 30.0	V112	15.0 x 30.0
P13	15.0 x 30.0	V113	15.0 x 30.0
P14	15.0 x 30.0	V114	15.0 x 30.0
P15	15.0 x 30.0	V115	15.0 x 30.0
P16	15.0 x 30.0	V116	15.0 x 30.0
P17	15.0 x 30.0	V117	15.0 x 20.0
P18	15.0 x 30.0	V118	15.0 x 30.0
P19	30.0 x 30.0	V119	15.0 x 30.0
P20	15.0 x 30.0	V120	15.0 x 30.0
P21	15.0 x 30.0	V121	15.0 x 30.0
P22	15.0 x 30.0	V122	15.0 x 30.0
P23	15.0 x 40.0	V123	15.0 x 40.0
P24	15.0 x 30.0	V124	15.0 x 40.0
P25	15.0 x 30.0	V125	15.0 x 40.0
P26	15.0 x 30.0	V126	15.0 x 30.0
P27	15.0 x 30.0	V127	15.0 x 50.0
P28	15.0 x 30.0	V128	15.0 x 30.0
P29	15.0 x 30.0		
P30	15.0 x 30.0		
P31	15.0 x 30.0		
P32	15.0 x 30.0		
P33	15.0 x 30.0		
P34	15.0 x 30.0		
P35	15.0 x 30.0		
P36	15.0 x 30.0		
P37	15.0 x 30.0		
P38	15.0 x 30.0		

CONSUMO DE CONCRETO (m³)

	Pilares	Vigas	Lajes
Nível Casa	1.87	6.43	1.94
Pavimento 1	3.35	8.19	11.39
Coberta	2.36	5.52	11.03
Telhado	0.48	1.03	0.57
Caixa D'água	0.05	0.37	0.25

CONSUMO DE AÇO

Ver pranchas de detalhamento*

*para ver quantitativos gerais, como consumo de aço por bitola ou por pavimento, ler o memorial descritivo

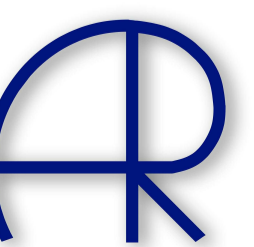


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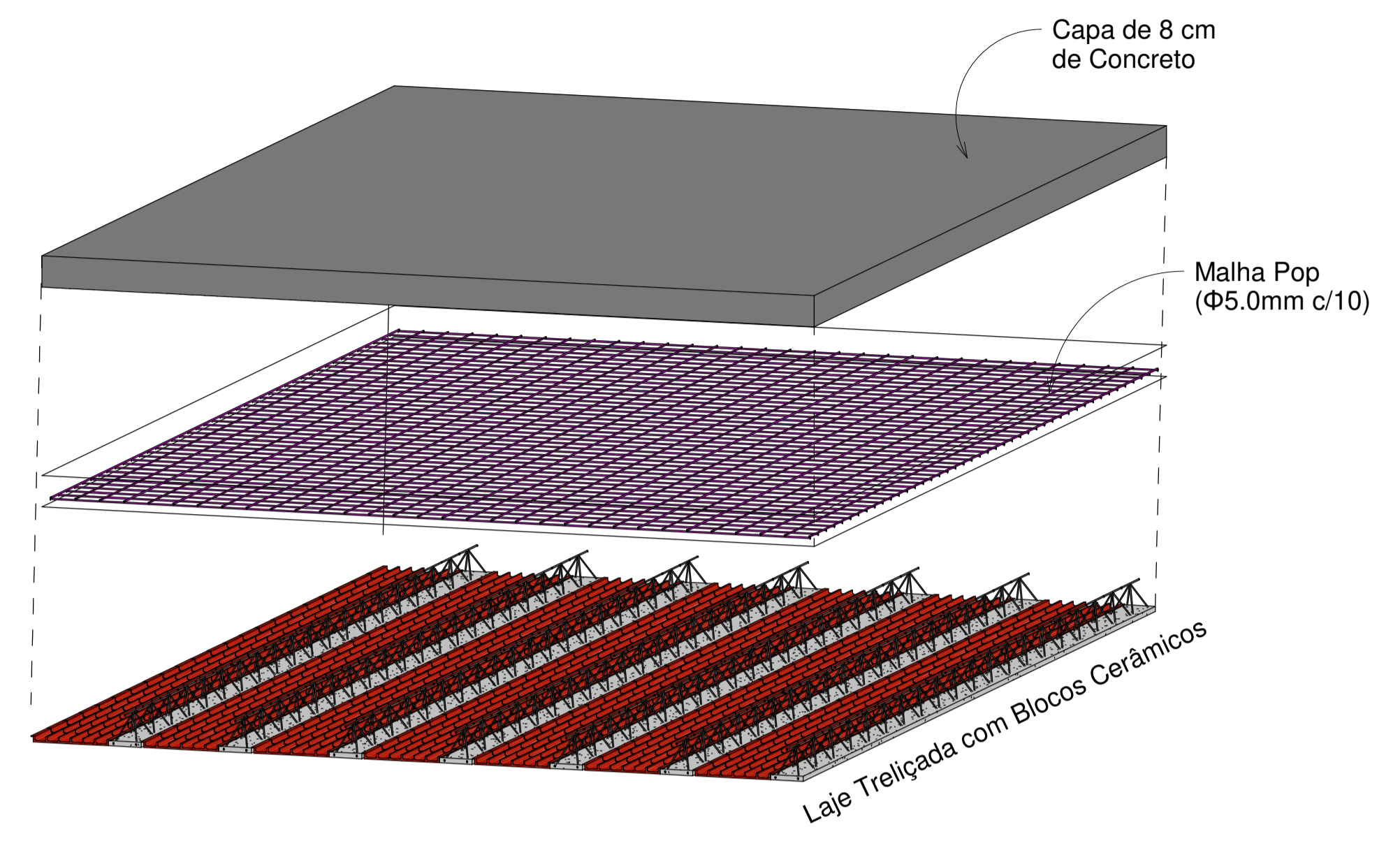
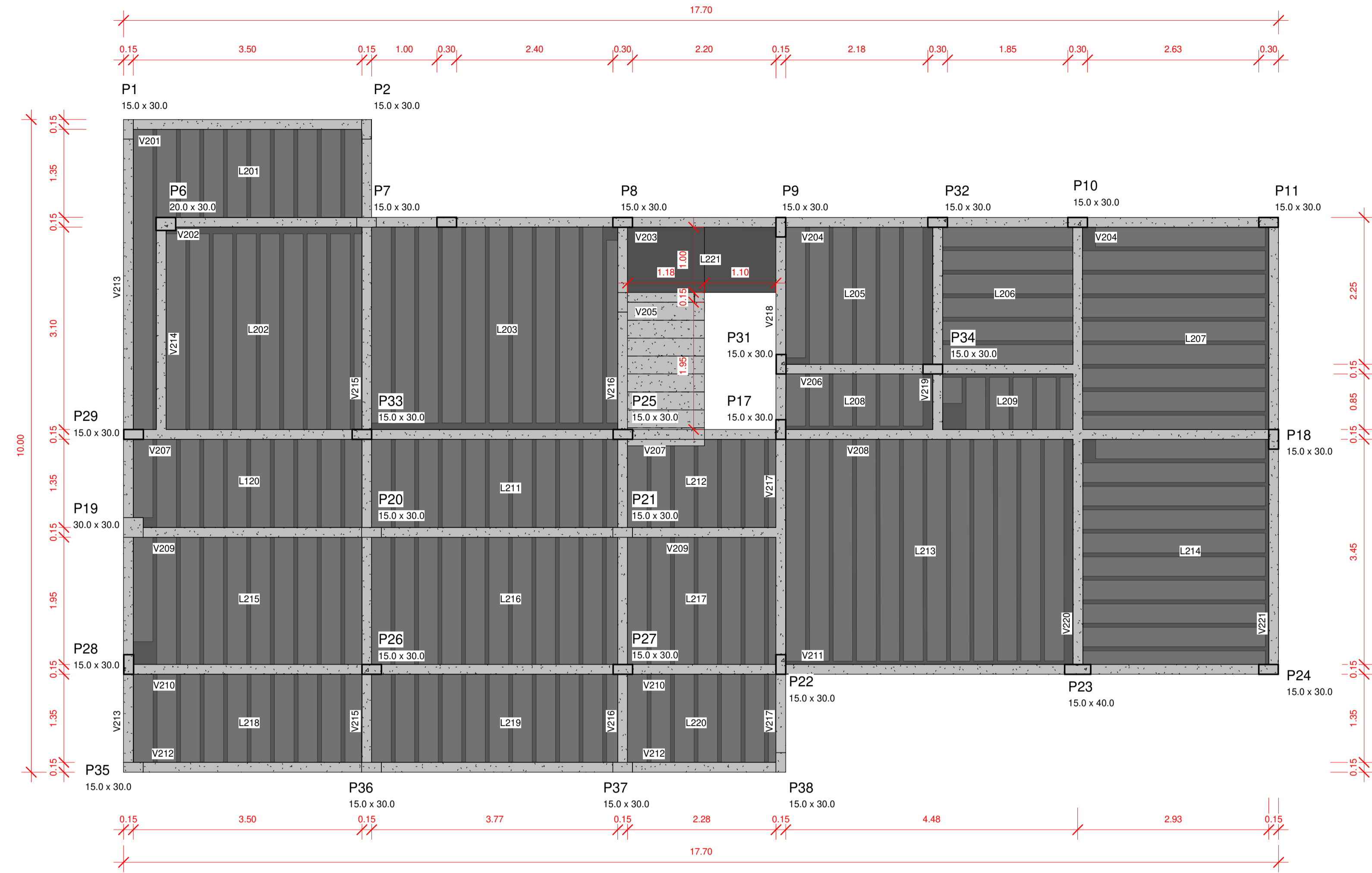
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andrerodrigues.eng.br
contato@andrerodrigues.eng.br

Ciente:	Cleiton Batista Soares de Lima	Prancha nº:	02	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	Plantas de Formas: Nível Casa				
CREA-PB:	161890343-9	ART nº:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		



VIGAS DO PAVIMENTO 1	
Título	Tipo

V201	15.0 x 30.0
V202	15.0 x 40.0
V203	15.0 x 40.0
V204	15.0 x 50.0
V205	15.0 x 30.0
V206	15.0 x 50.0
V207	15.0 x 50.0
V208	15.0 x 50.0
V209	15.0 x 30.0
V210	15.0 x 50.0
V211	15.0 x 30.0
V212	15.0 x 30.0
V213	15.0 x 50.0
V214	15.0 x 30.0
V215	15.0 x 50.0
V216	15.0 x 50.0
V217	15.0 x 30.0
V218	15.0 x 50.0
V219	15.0 x 50.0
V220	15.0 x 60.0
V221	15.0 x 30.0



Perspectiva - Laje

CONSUMO DE CONCRETO (m³)

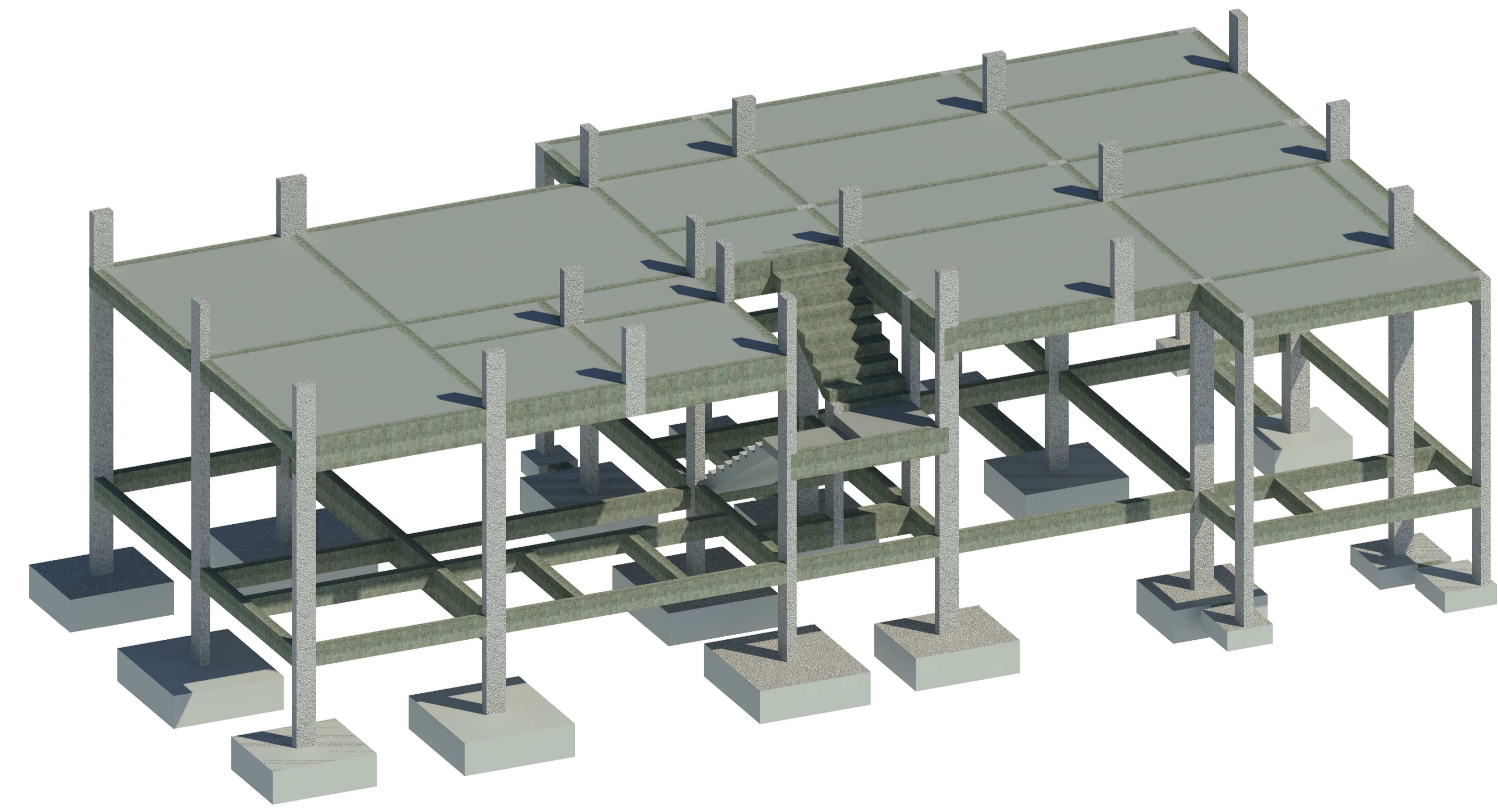
	Pilares	Vigas	Lajes
Nível Casa	1.87	6.43	1.94
Pavimento 1	3.35	8.19	11.39
Coberta	2.36	5.52	11.03
Telhado	0.48	1.03	0.57
Caixa D'água	0.05	0.37	0.25

CONSUMO DE AÇO

Ver pranchas de detalhamento*

*para ver quantitativos gerais, como consumo de aço por bitola ou por pavimento, ler o memorial descritivo

FORMAS - PAVIMENTO 1
1 : 50



Perspectiva - Pavimento 1

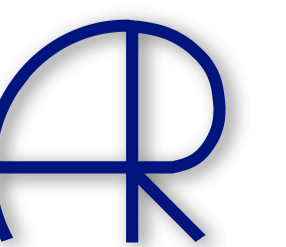


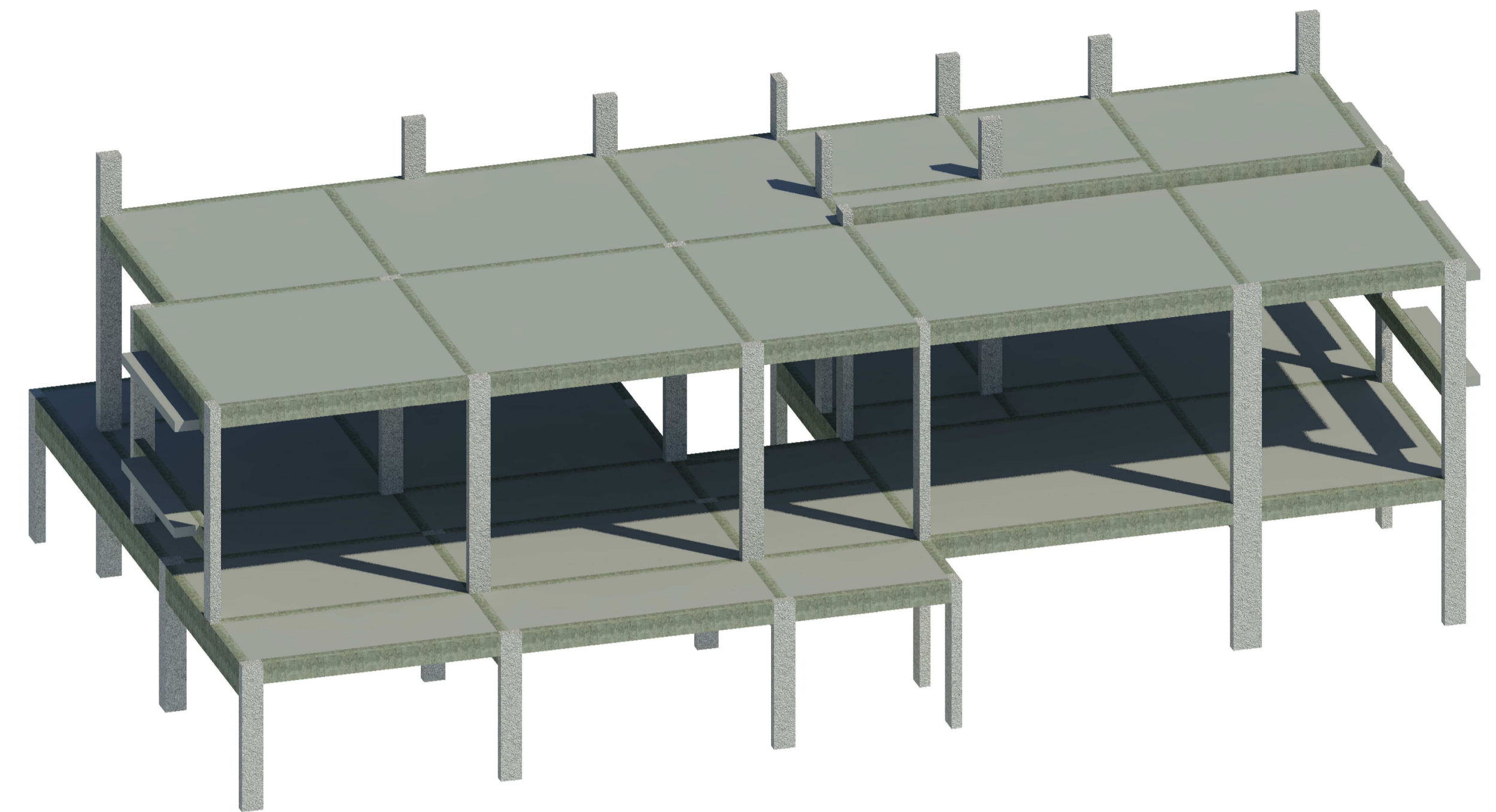
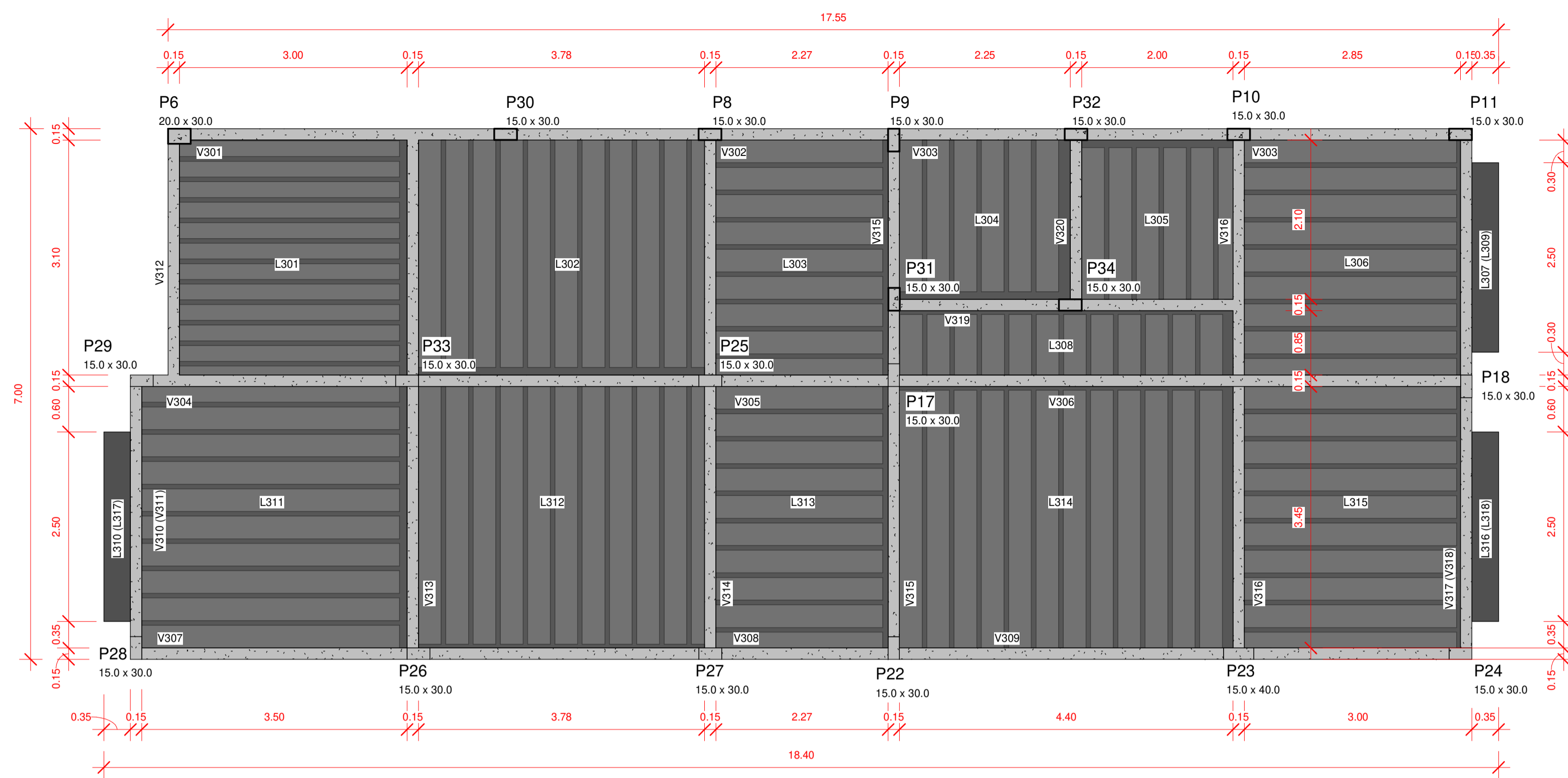
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Engenheiro Estrutural

(83) 9 9644 2240
@andrerodrigueseng
andrerodrigues.eng.br
contato@andrerodrigues.eng.br

Ciente:	Cleiton Batista Soares de Lima	Prancha nº:	03	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	Plantas de Formas: Pavimento 1				
CREA-PB:	161890343-9	ART nº:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		

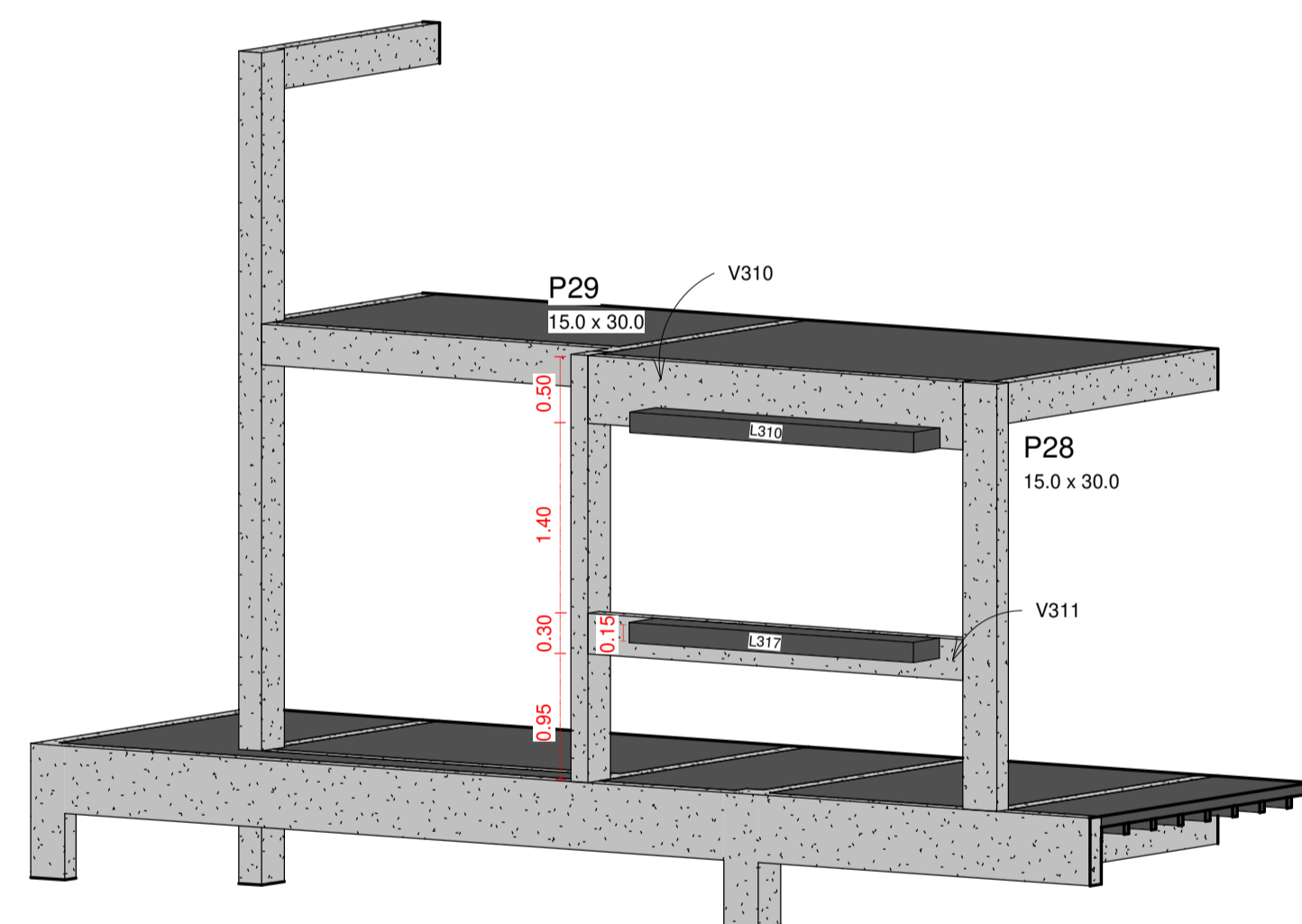




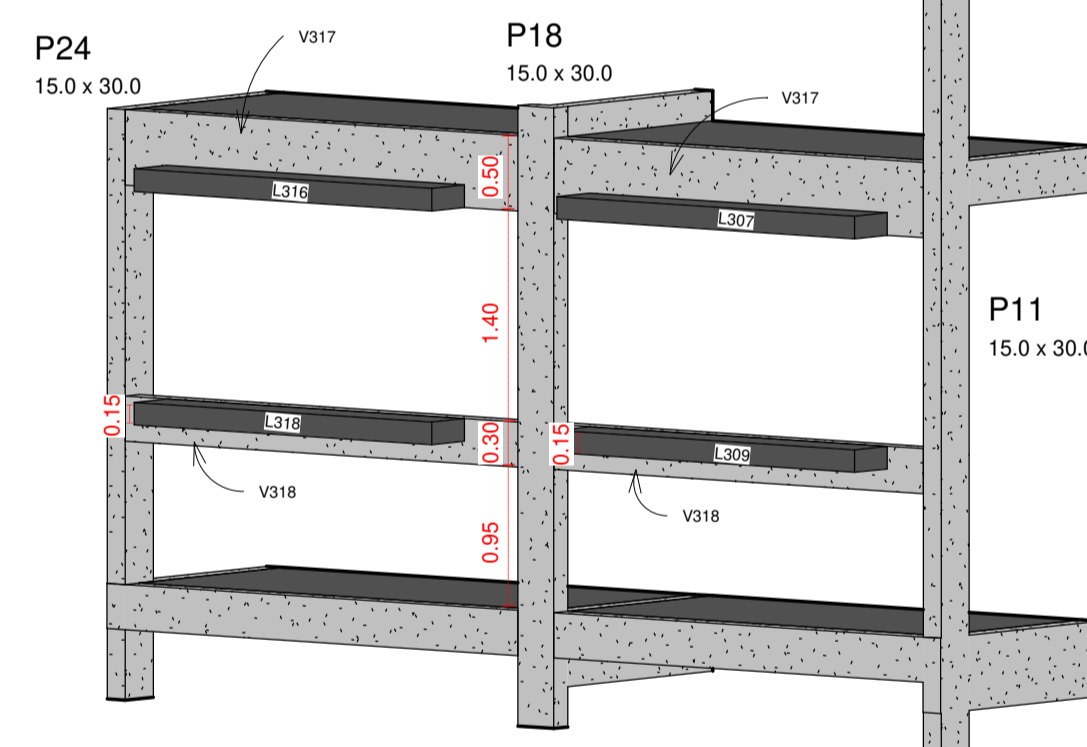
Perspectiva - Coberta

FORMAS - COBERTA

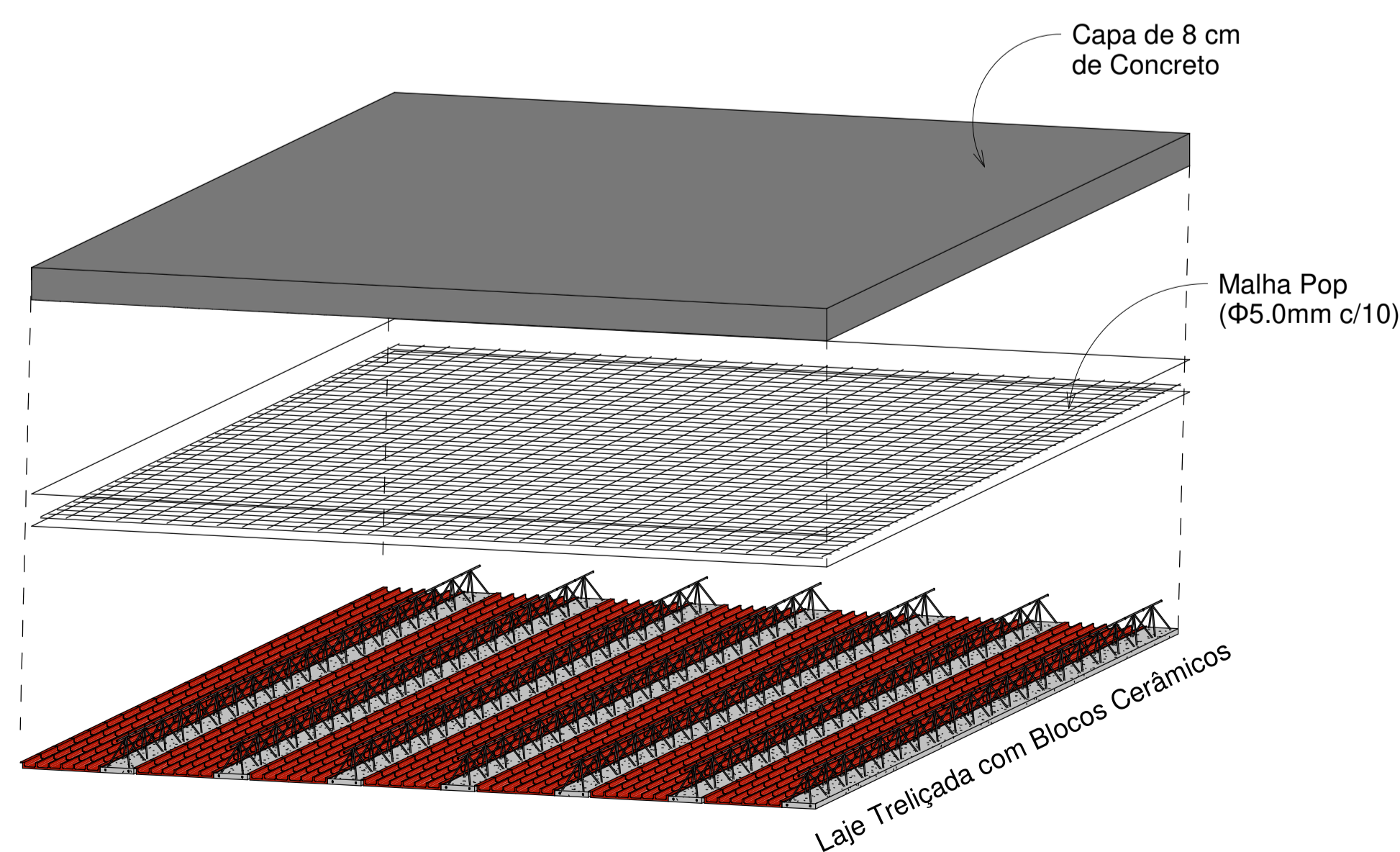
1 : 50



Janela 1 - Perspectiva



Janela 2 e 3 - Perspectiva



Perspectiva - Laje (Coberta)

VIGAS DA COBERTA

VIGAS	DIMENSÕES
V301	15.0 x 30.0
V302	15.0 x 30.0
V303	15.0 x 30.0
V304	15.0 x 30.0
V305	15.0 x 30.0
V306	15.0 x 70.0
V307	15.0 x 30.0
V308	15.0 x 30.0
V309	15.0 x 30.0
V310	15.0 x 50.0
V311	15.0 x 30.0
V312	15.0 x 30.0
V313	15.0 x 30.0
V314	15.0 x 30.0
V315	15.0 x 30.0
V316	15.0 x 50.0
V317	15.0 x 50.0
V318	15.0 x 30.0
V319	15.0 x 30.0
V320	15.0 x 30.0

CONSUMO DE CONCRETO (m³)

	Pilares	Vigas	Lajes
Nível Casa	1.87	6.43	1.94
Pavimento 1	3.35	8.19	11.39
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Telhado	0.48	1.03	0.57
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CONSUMO DE AÇO

Ver pranchas de detalhamento*

*para ver quantitativos gerais, como consumo de aço por bitola ou por pavimento, ler o memorial descritivo

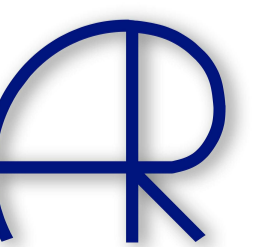


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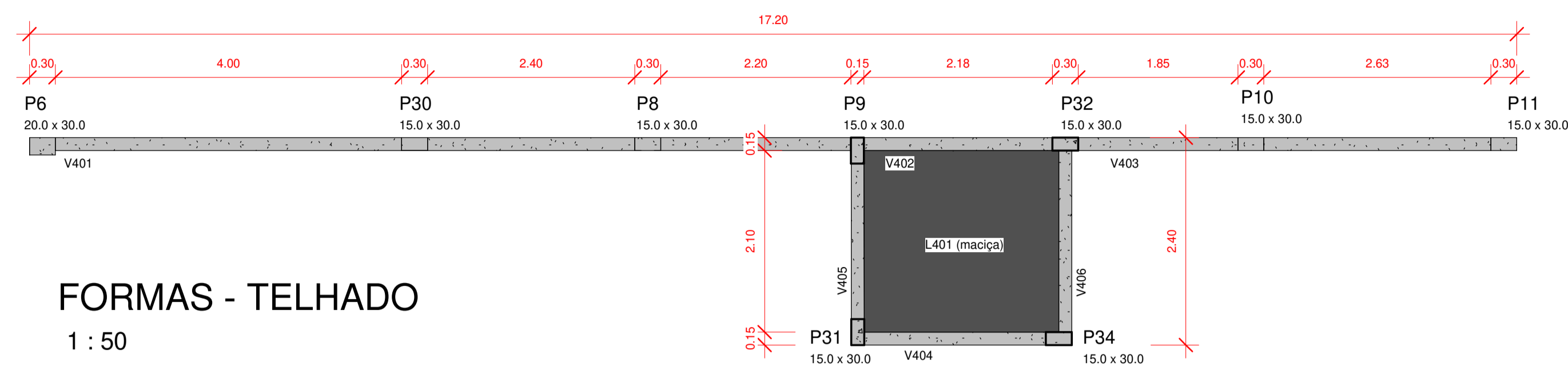
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Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	Plantas de Formas: Coberta	CREA-PB:	161890343-9	ART nº:	Pb20210395879
Data:	06 / 10 / 2021	Escala:	Indicada		

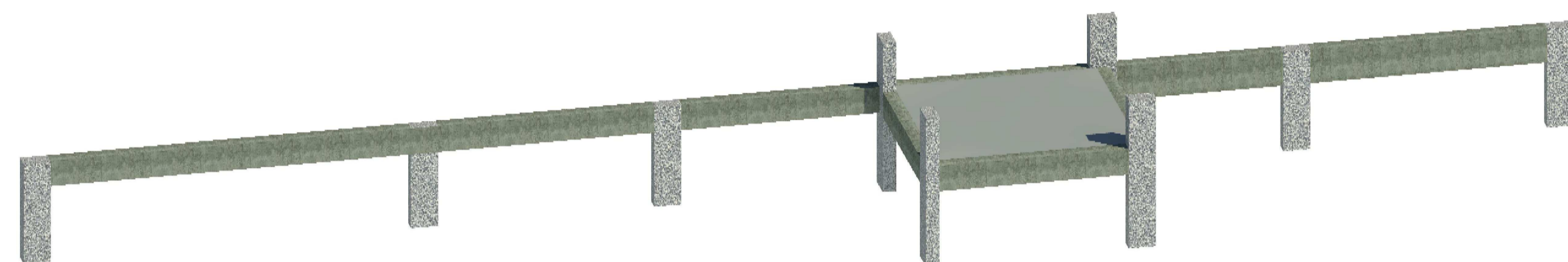


VIGAS DO TELHADO	
VIGA	DIMENSÃO
V401	15.0 x 30.0
V402	15.0 x 30.0
V403	15.0 x 40.0
V404	15.0 x 30.0
V405	15.0 x 30.0
V406	15.0 x 30.0

VIGAS DA CAIXA D'ÁGUA	
VIGA	DIMENSÃO
V501	15.0 x 30.0
V502	15.0 x 30.0
V503	15.0 x 30.0
V504	15.0 x 30.0



FORMAS - TELHADO
1 : 50



Perspectiva - Telhado

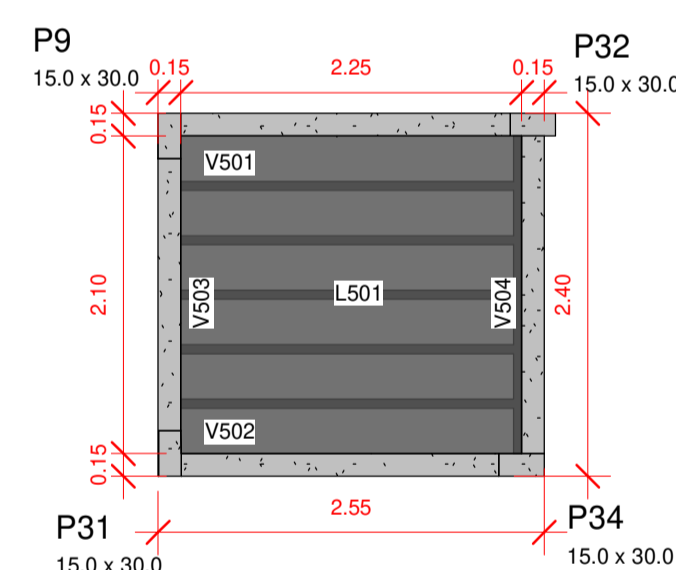
CONSUMO DE CONCRETO (m³)

	Pilares	Vigas	Lajes
Nível Casa	1.87	6.43	1.94
Pavimento 1	3.35	8.19	11.39
Coberta	2.36	5.52	11.03
Telhado	0.48	1.03	0.57
Caixa D'água	0.05	0.37	0.25

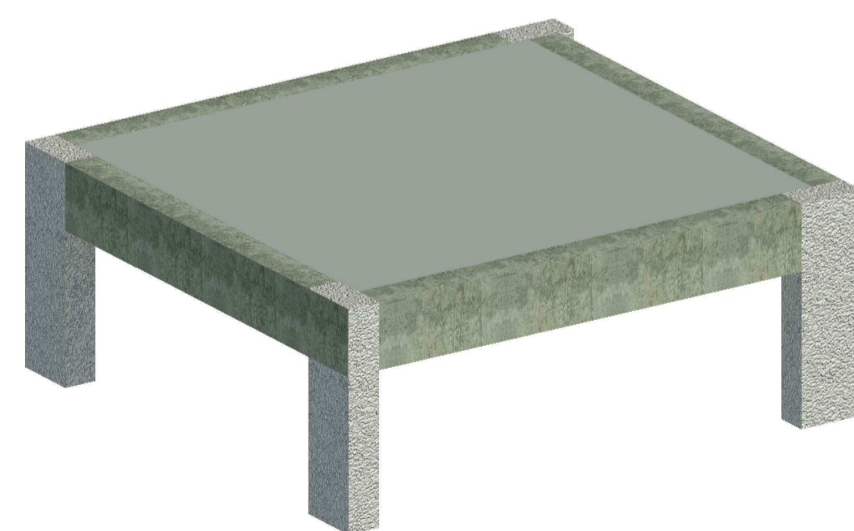
CONSUMO DE AÇO

Ver pranchas de detalhamento*

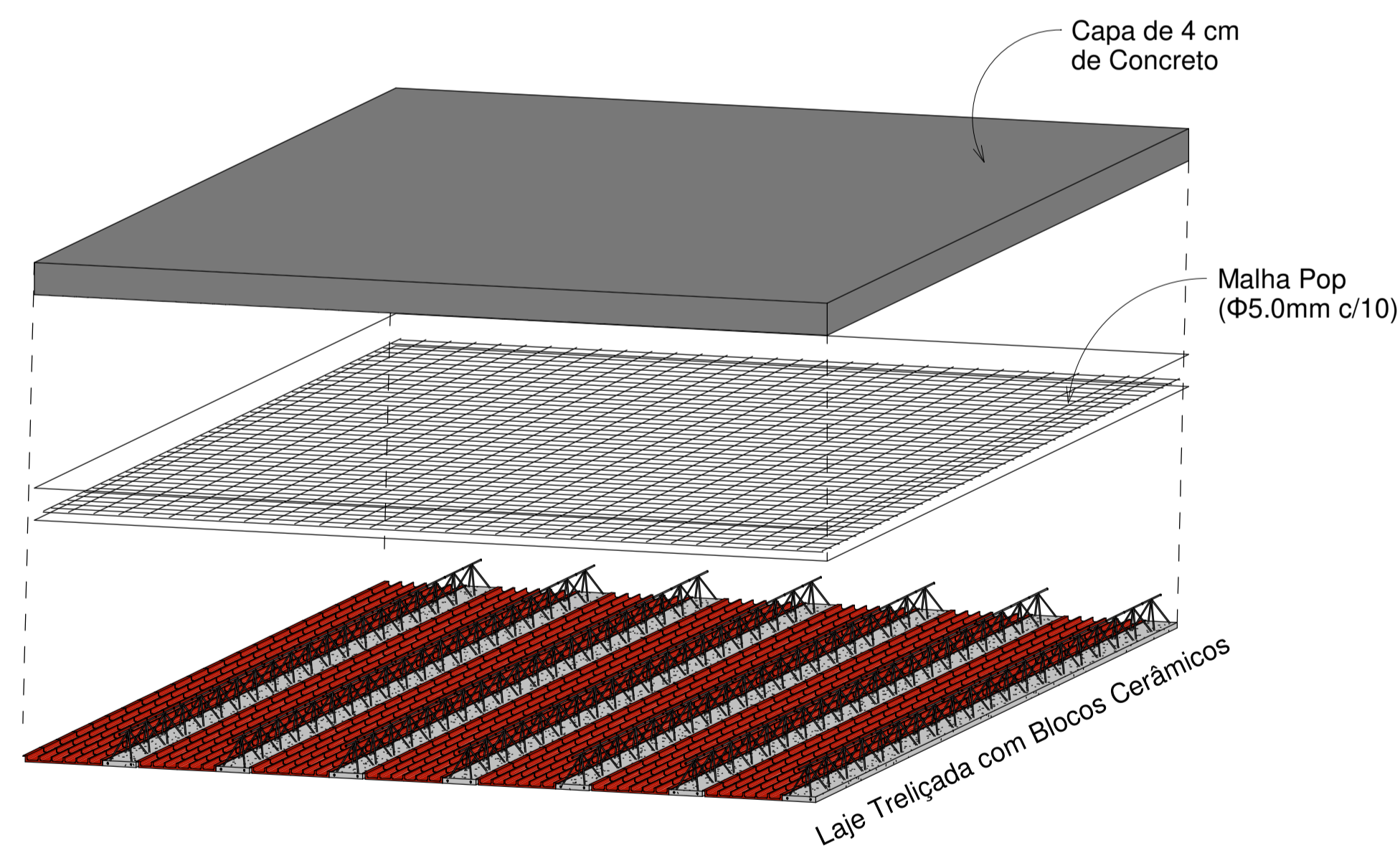
*para ver quantitativos gerais, como consumo de aço por bitola ou por pavimento, ler o memorial descritivo



FORMAS - CAIXA D'ÁGUA
1 : 50




Perspectiva - Caixa D'água



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ANDRÉ RODRIGUES
Engenheiro Estrutural

(83) 9 9644 2240
@andrerodrigueseng
andrerodrigues.eng.br
contato@andrerodrigues.eng.br

Ciente:	Cleiton Batista Soares de Lima	Prancha nº:	05	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	Plantas de Formas: Telhado Caixa D'água				
CREA-PB:	161890343-9	ART nº:			
Data:	06 / 10 / 2021	Escala:	Indicada		

NOTAS ESPECÍFICAS

ABNT NBR 6118:2014 - PROJETO DE ESTRUTURAS DE CONCRETO - PROCEDIMENTO

ABNT NBR 6120:1980 VERSÃO CORRIGIDA:2000 - CARGAS PARA O CÁLCULO DE ESTRUTURAS DE EDIFICAÇÕES - PROCEDIMENTO

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ABNT NBR 8681:2003 VERSÃO CORRIGIDA:2004 - AÇÕES E SEGURANÇA NAS ESTRUTURAS - PROCEDIMENTO

ABNT NBR 8953:2015 - CONCRETO PARA FINS ESTRUTURAIS - CLASSIFICAÇÃO POR GRUPOS DE RESISTÊNCIA E CONSISTÊNCIA

ABNT NBR 12655:2015 VERSÃO CORRIGIDA:2015 - CONCRETO DE CIMENTO PORTLAND - PREPARO, CONTROLE, RECEBIMENTO E ACEITAÇÃO - PROCEDIMENTO

CONSIDERAÇÕES GERAIS

1. CONFERIR MEDIDAS DO PROJETO ARQUITETÔNICO. QUALQUER ALTERAÇÃO DEVE SER NOTIFICADA AOS AUTORES;
2. A EXECUÇÃO DEVERÁ SER FEITA POR PROFISSIONAL HABILITADO E O MESMO DEVERÁ TOMAR CONHECIMENTO DE TODAS AS FOLHAS REFERENTES À OBRA;
3. A RESPONSABILIDADE PELA FISCALIZAÇÃO DA OBRA É DO ENGENHEIRO RESPONSÁVEL TÉCNICO;
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6. OBSERVAR OS NÍVEIS DAS LAJES E VIGAS E VERIFICAR INDICAÇÃO DE DESNÍVEL E CORTES;
7. NAS PEÇAS EM CONTATO COM O SOLO, UTILIZAR 5 cm DE CONCRETO MAGRO.

COBRIMENTO MÍNIMO DAS ARMADURAS

LAJES	2,0 cm
VIGAS E PILARES	2,5 cm
ELEMENTOS EM CONTATO COM O SOLO	4,0 cm

OBSERVAÇÕES

CONCRETO CLASSE Eci	VIGAS E PILARES C25 (25 MPa) 28000 MPa	FUNDAÇÕES C25 (25 MPa) 28000 MPa	LAJES C25 (25 MPa) 28000 MPa
FATOR A/C	< 0,60	< 0,60	< 0,60

NÃO É PERMITIDO A PASSAGEM DE TUBULAÇÕES EM VIGAS E PILARES

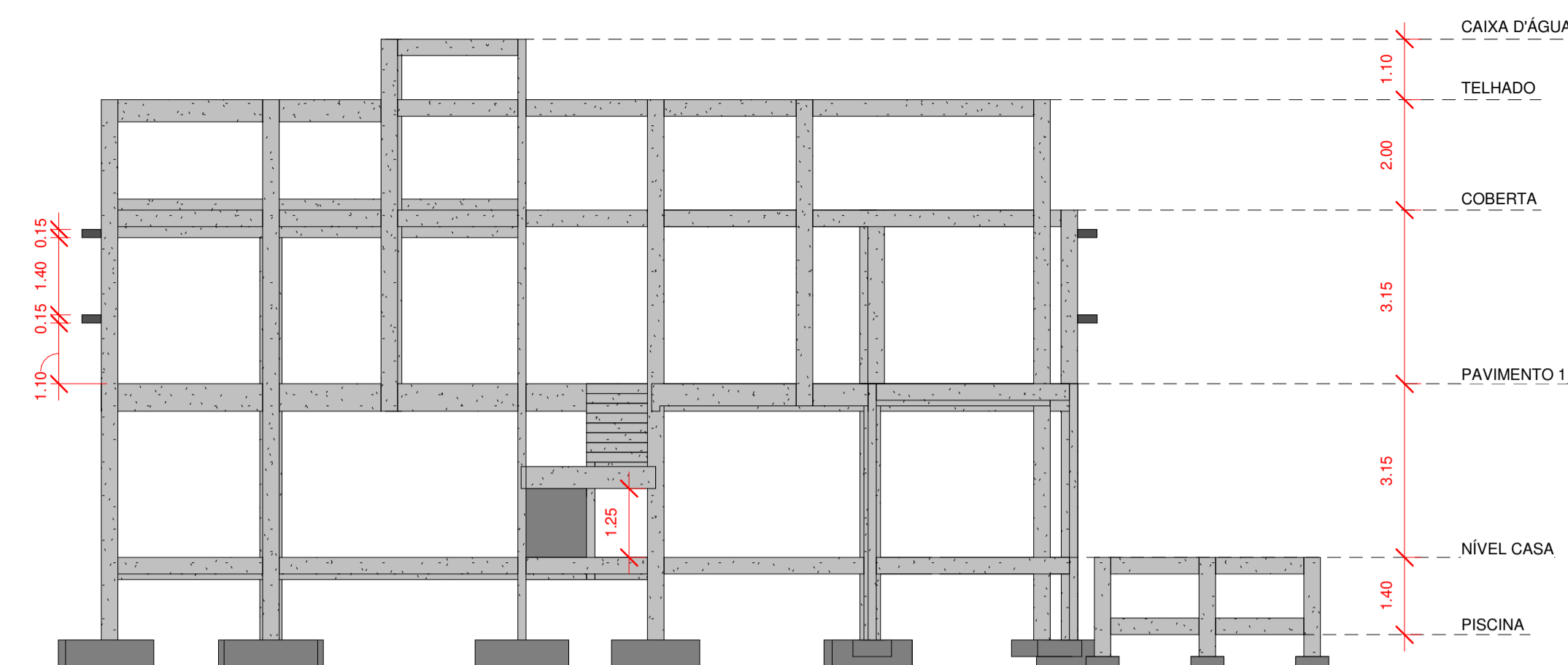


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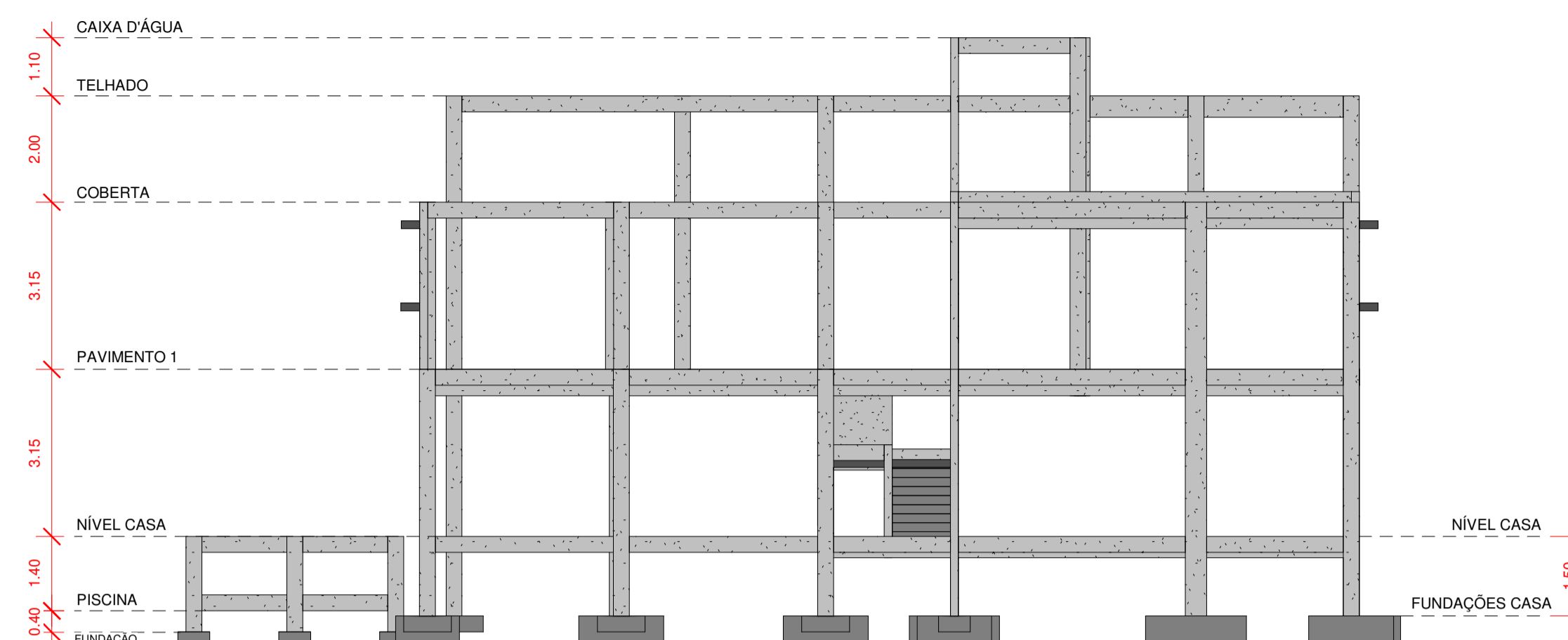
(83) 9 9644 2240
@andrerodrigueseng
andrerodrigues.eng.br
contato@andrerodrigues.eng.br

Ciente:	Cleiton Batista Soares de Lima	Francha nº:	06	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Fachadas e Perspectivas				
CREA-PB:	161890343-9	ART nº:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		



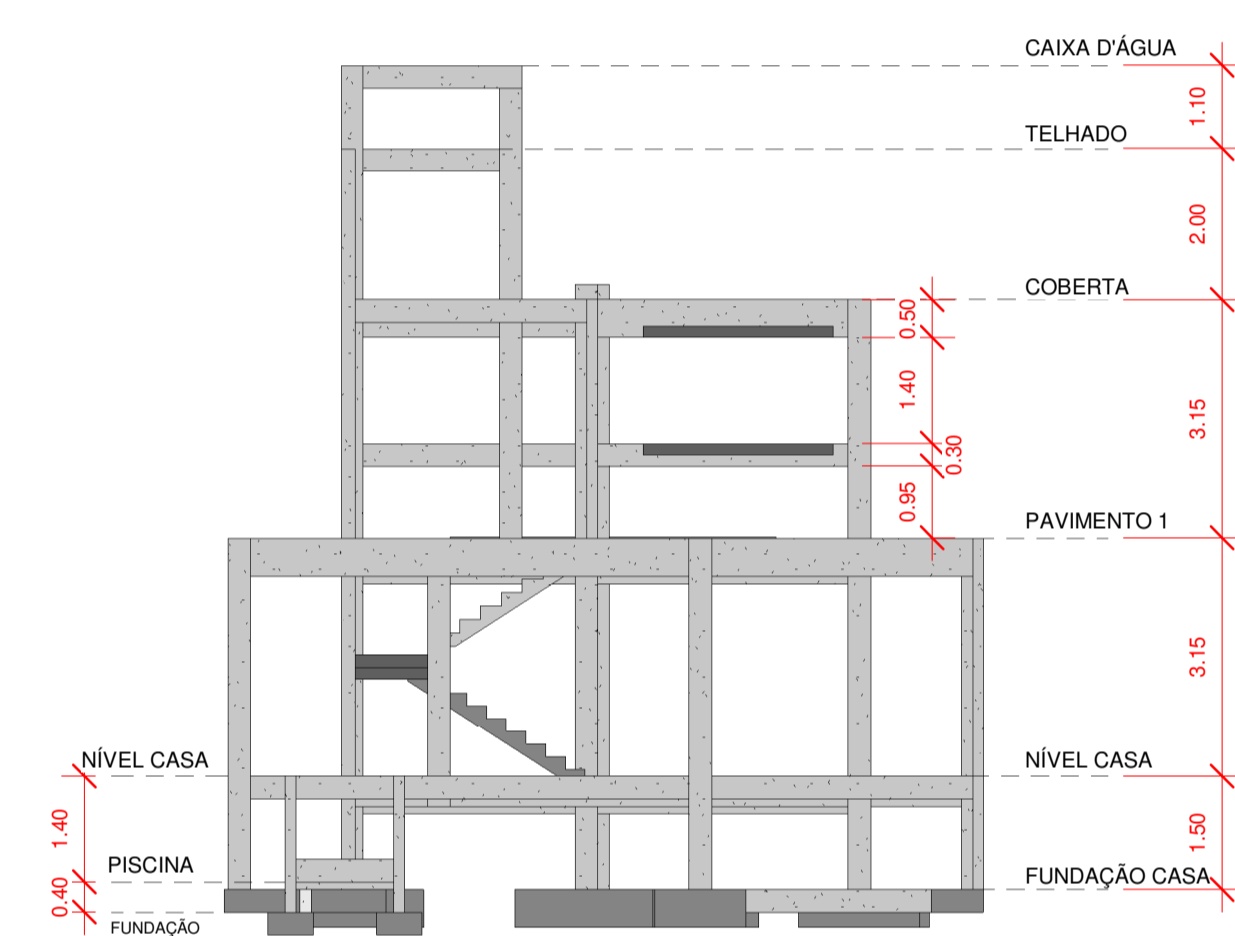
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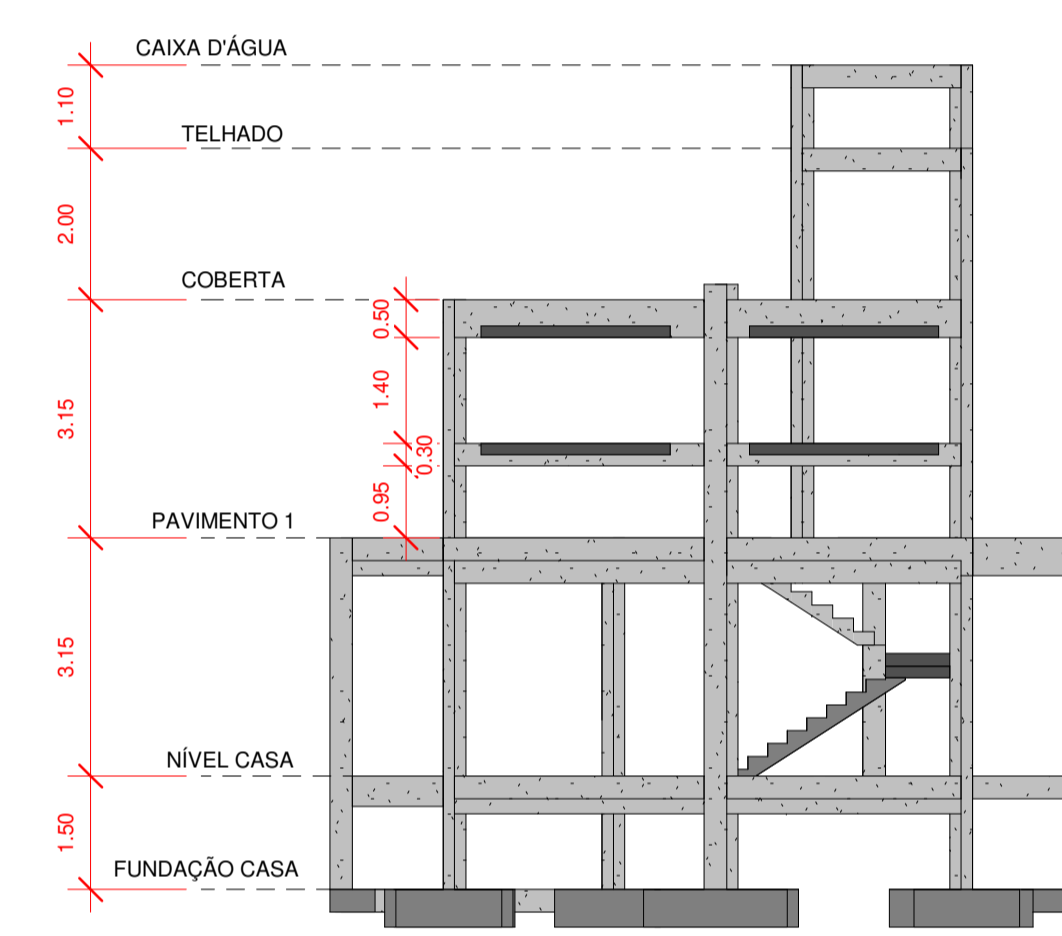
FACHADA LESTE

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FACHADA SUL

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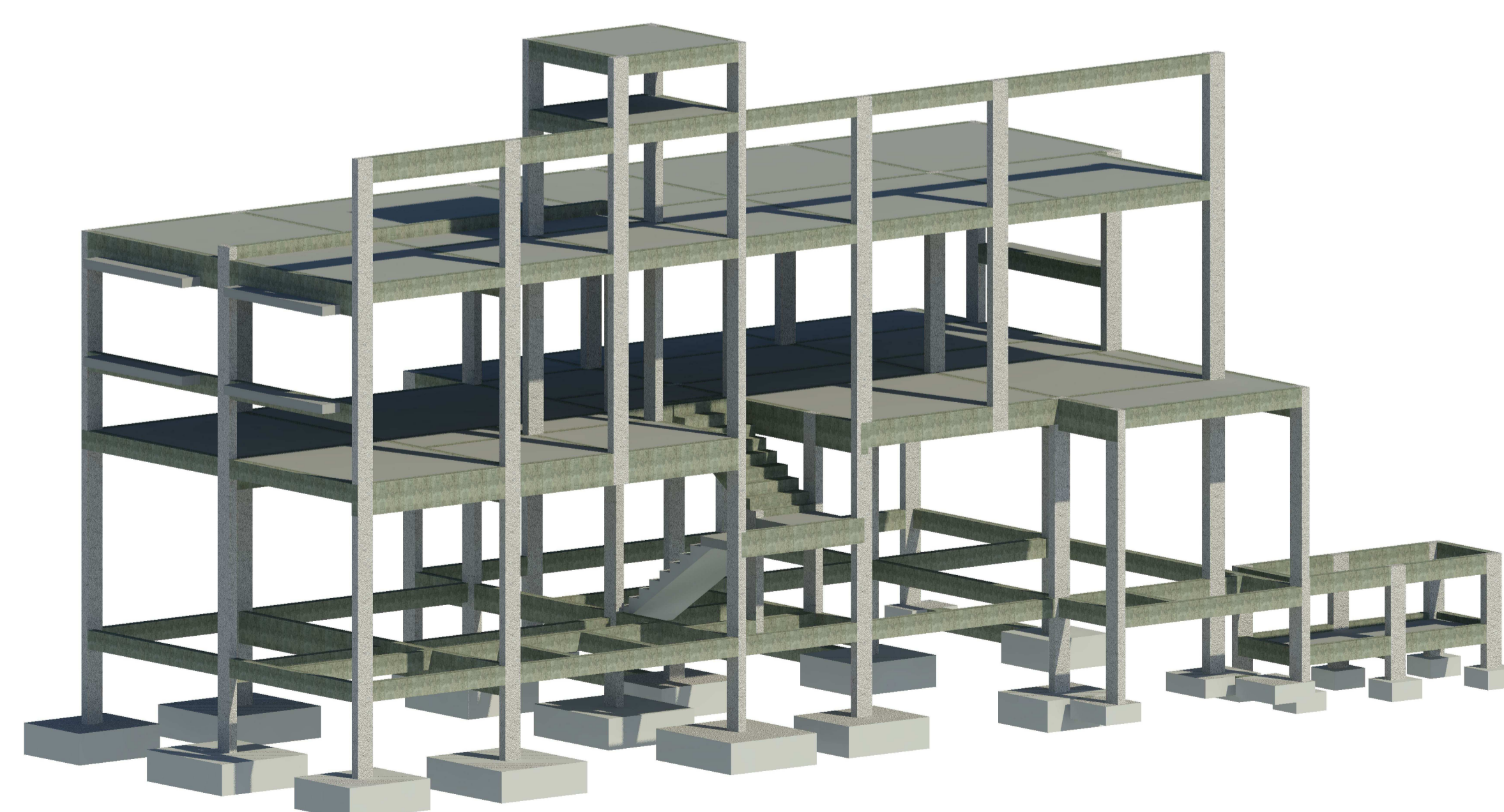


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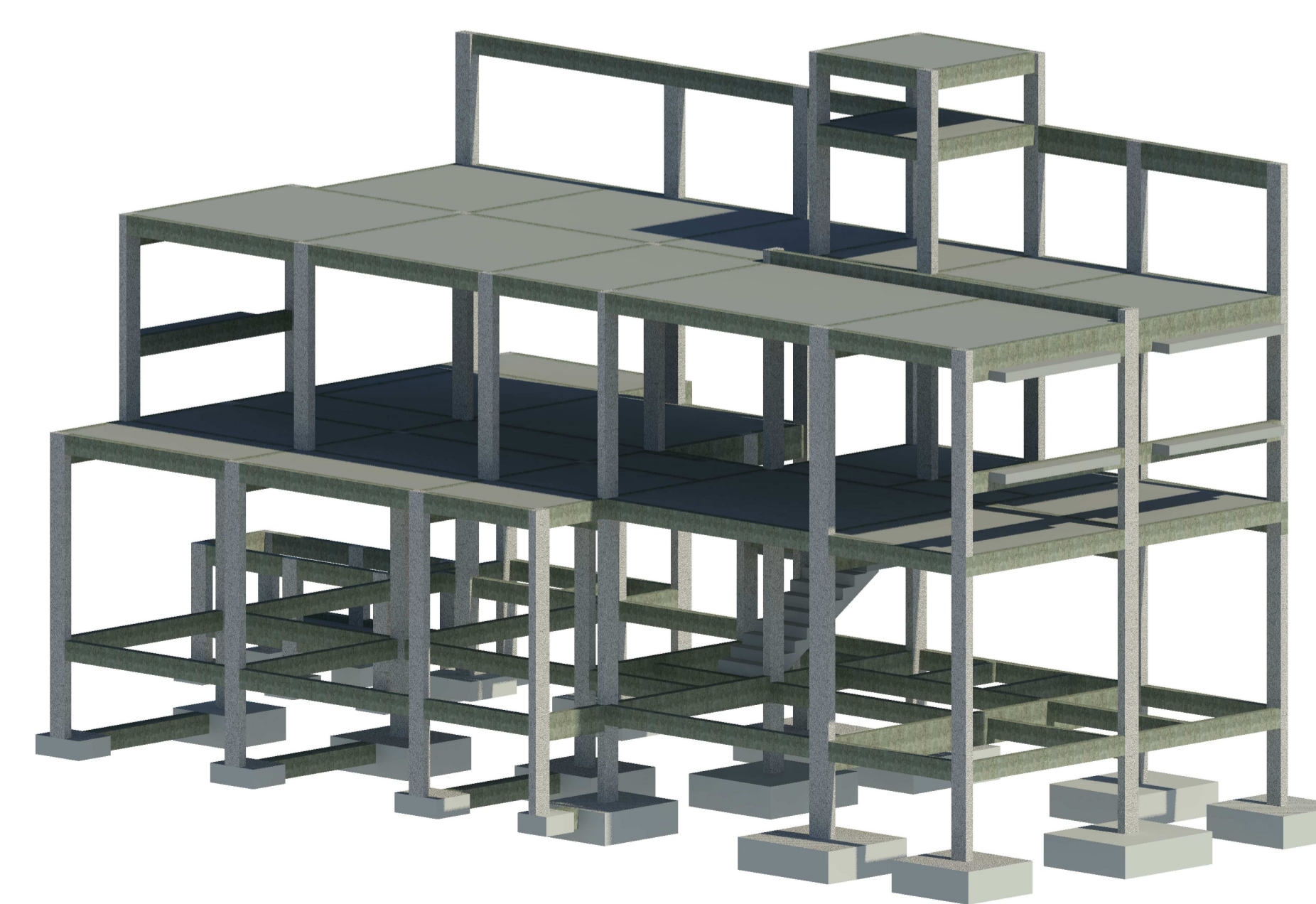
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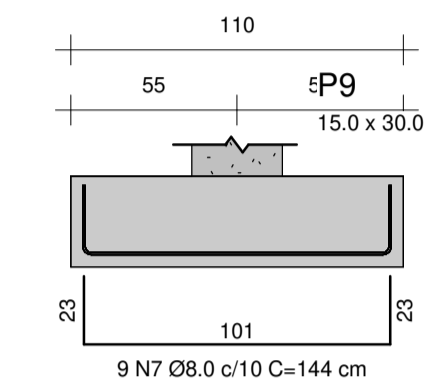
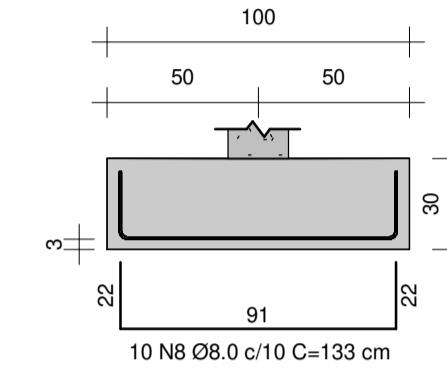
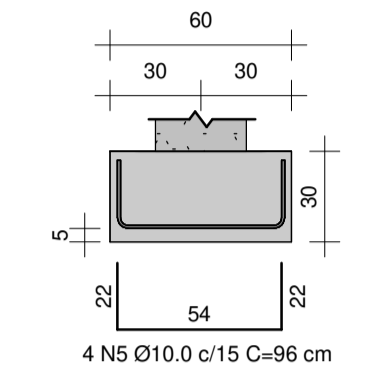
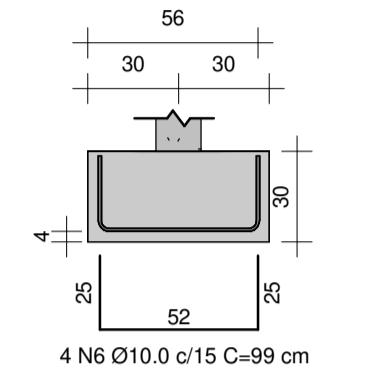
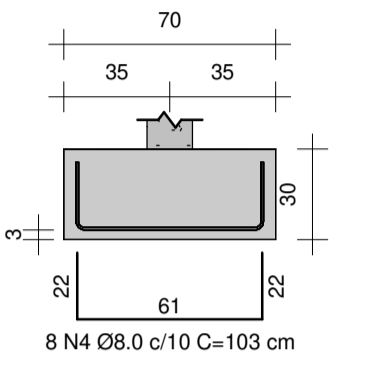
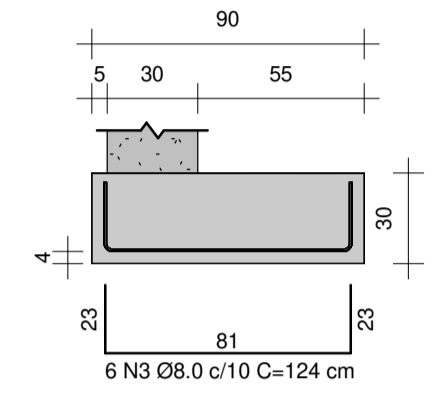
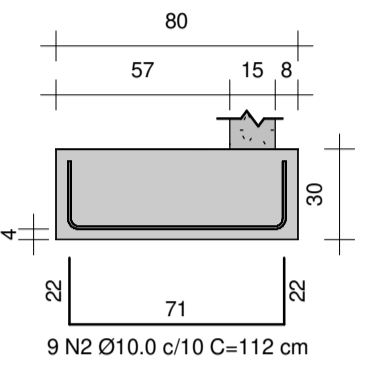
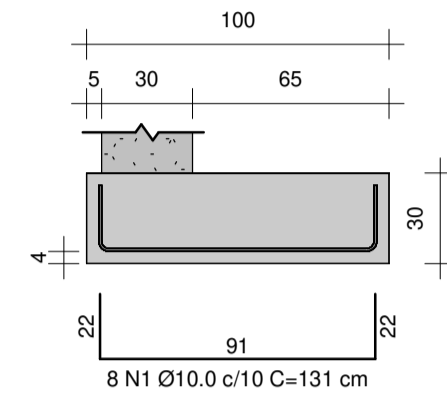
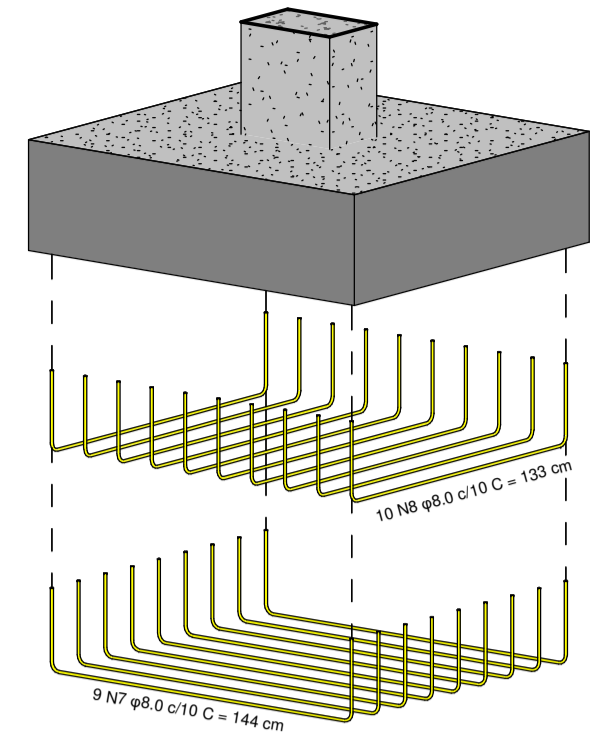
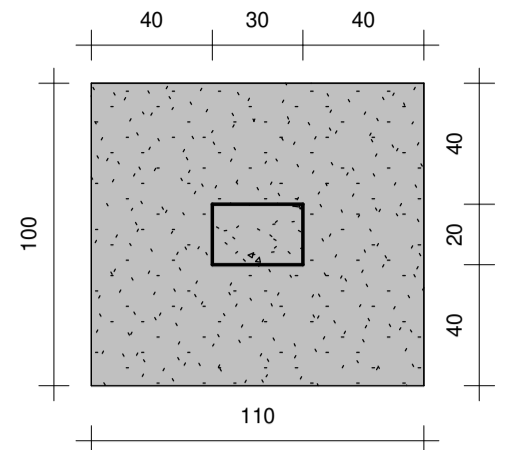
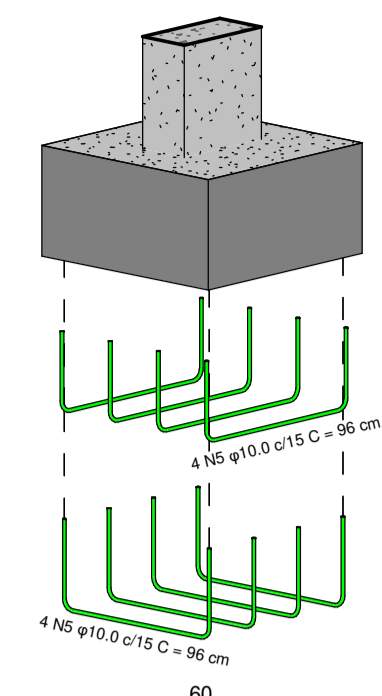
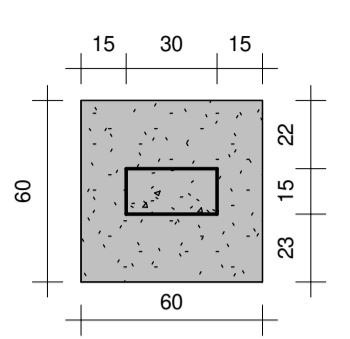
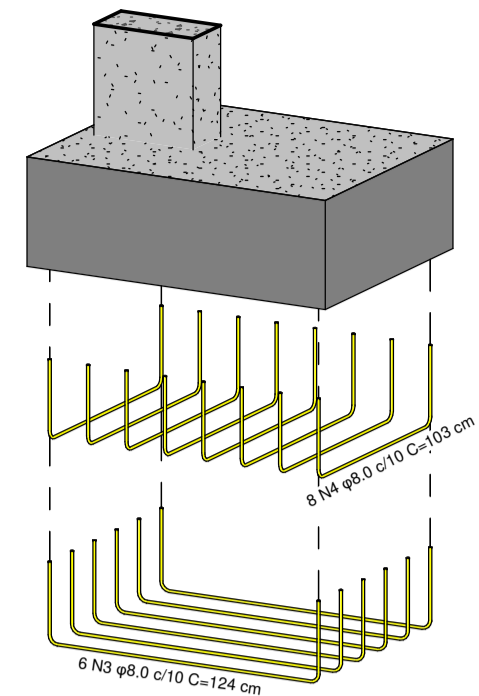
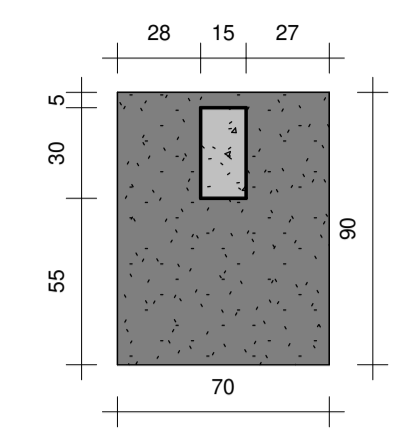
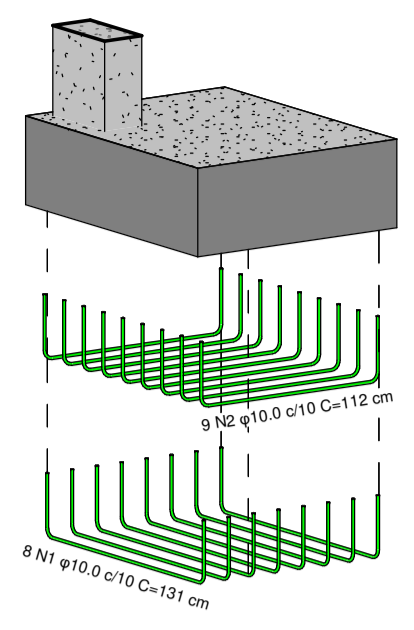
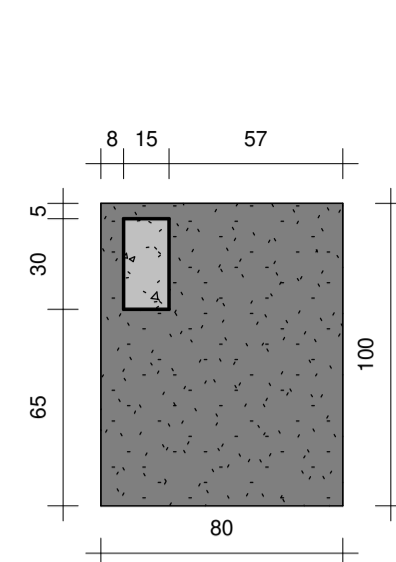
Perspectiva Geral 1



Perspectiva Geral 2



Perspectiva Geral 3



S1

1 : 25

S2

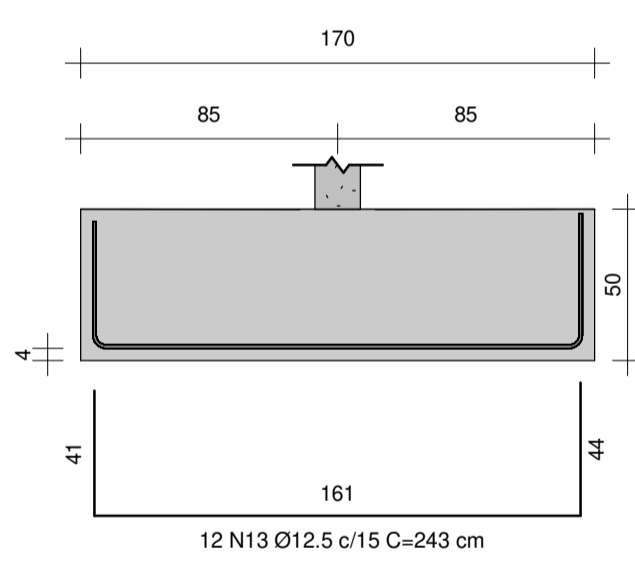
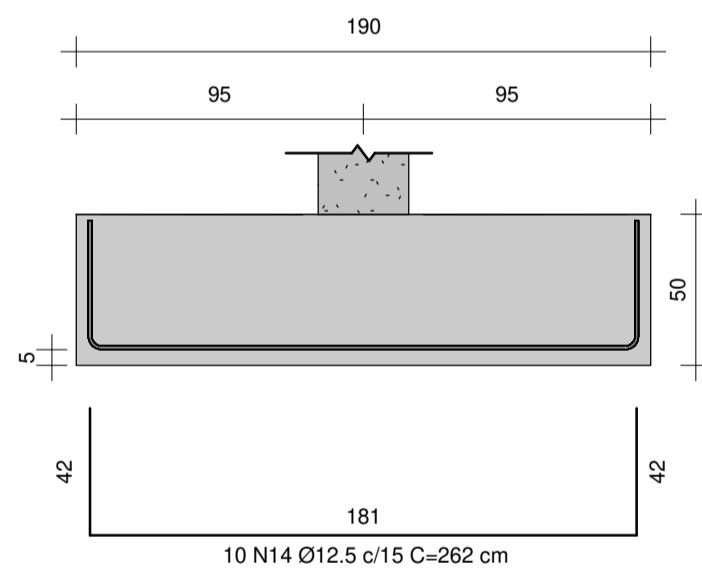
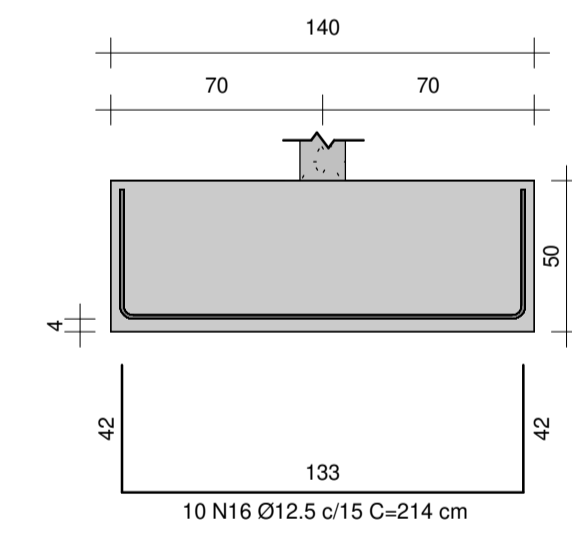
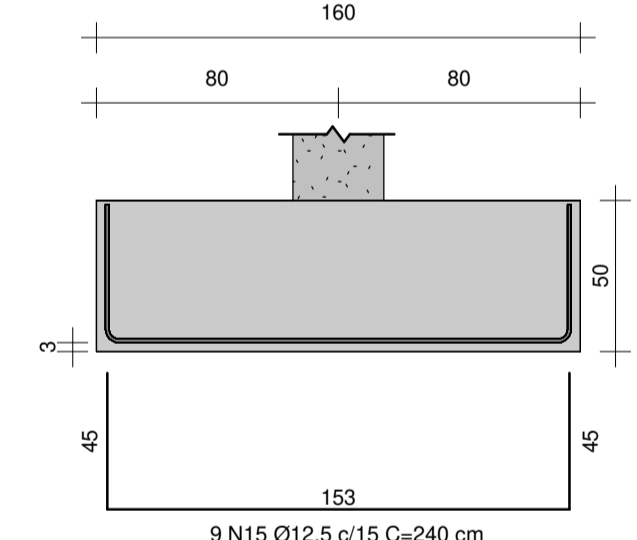
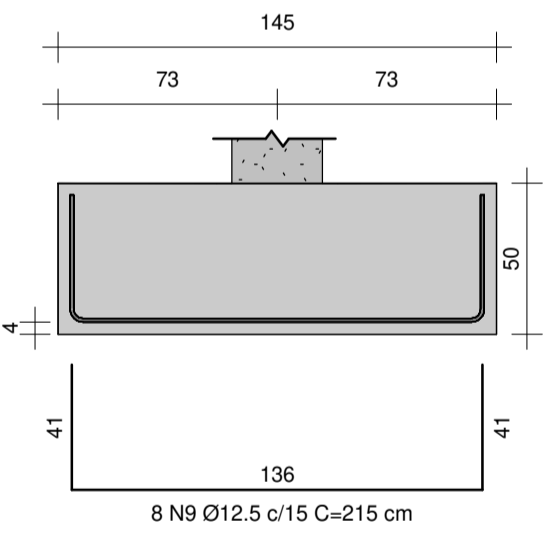
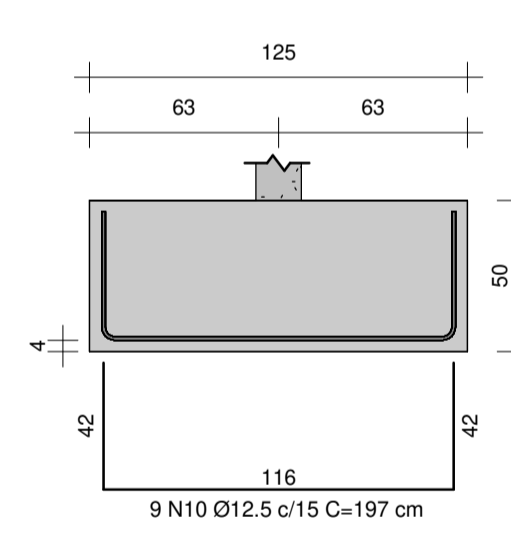
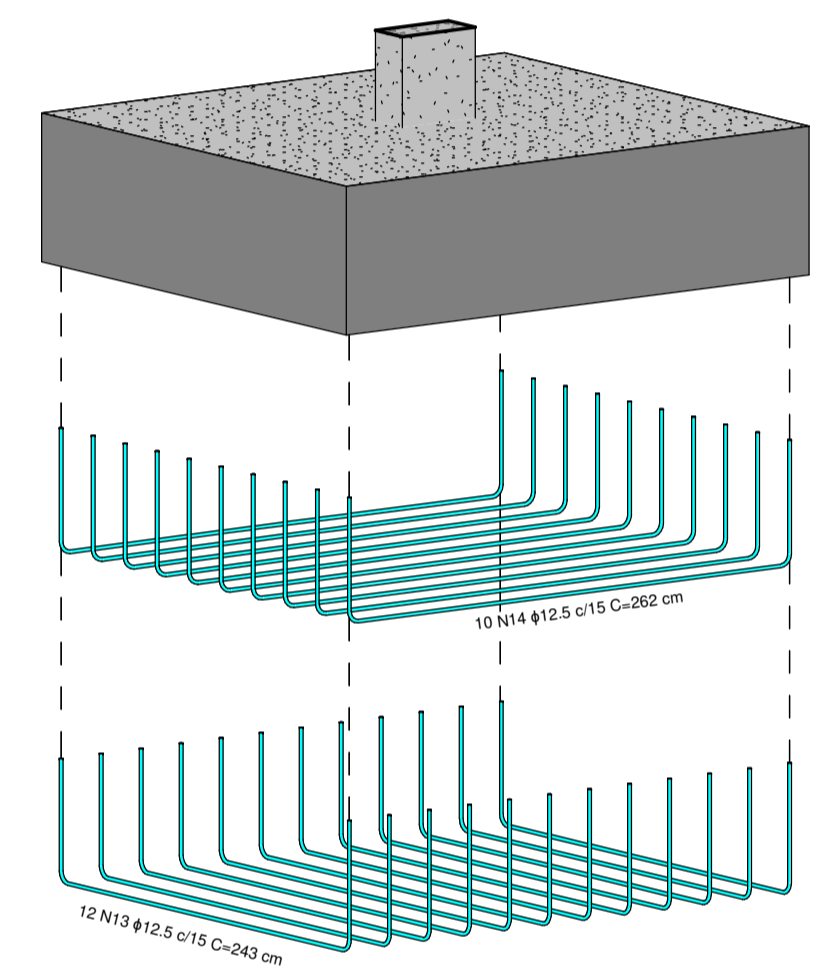
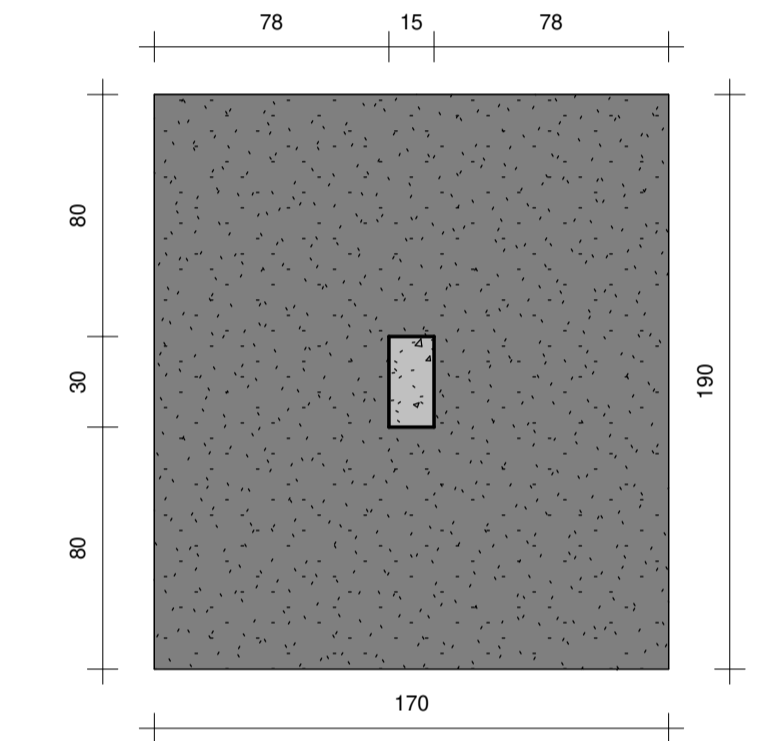
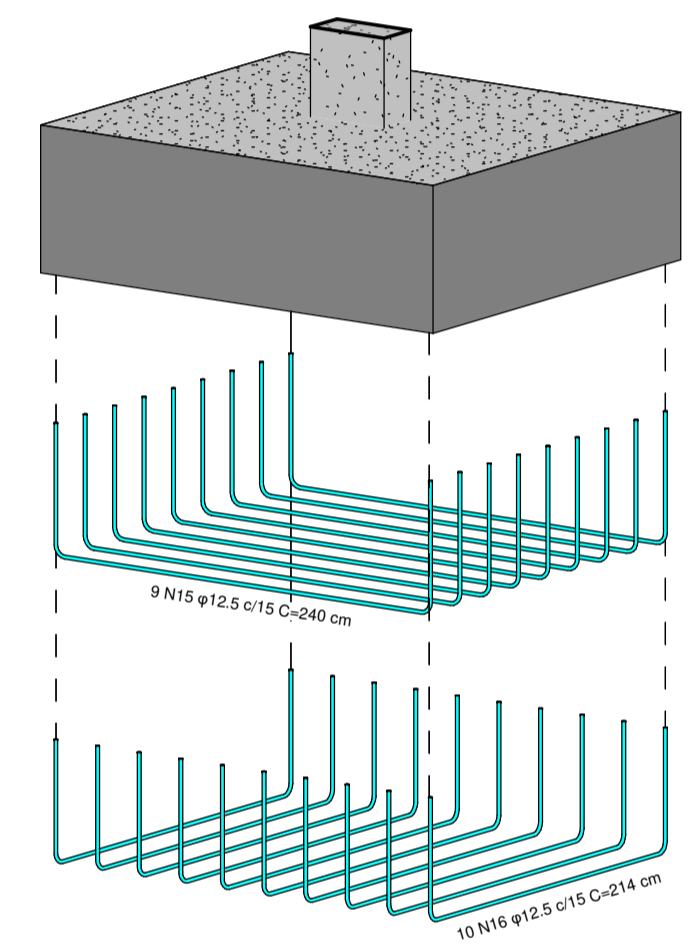
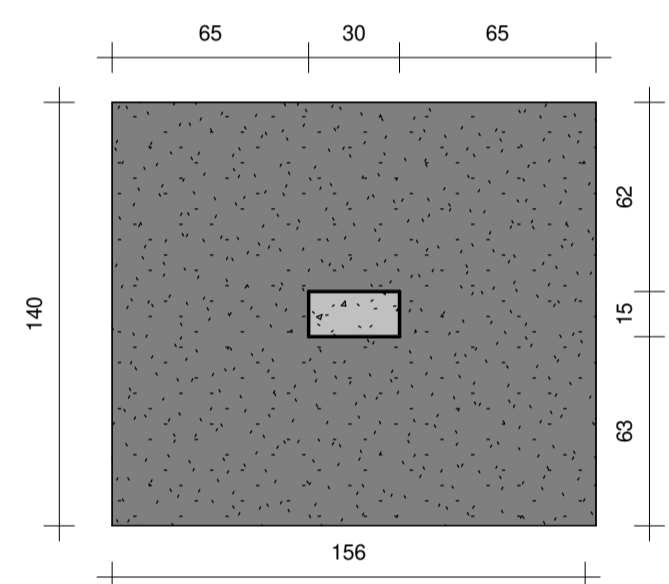
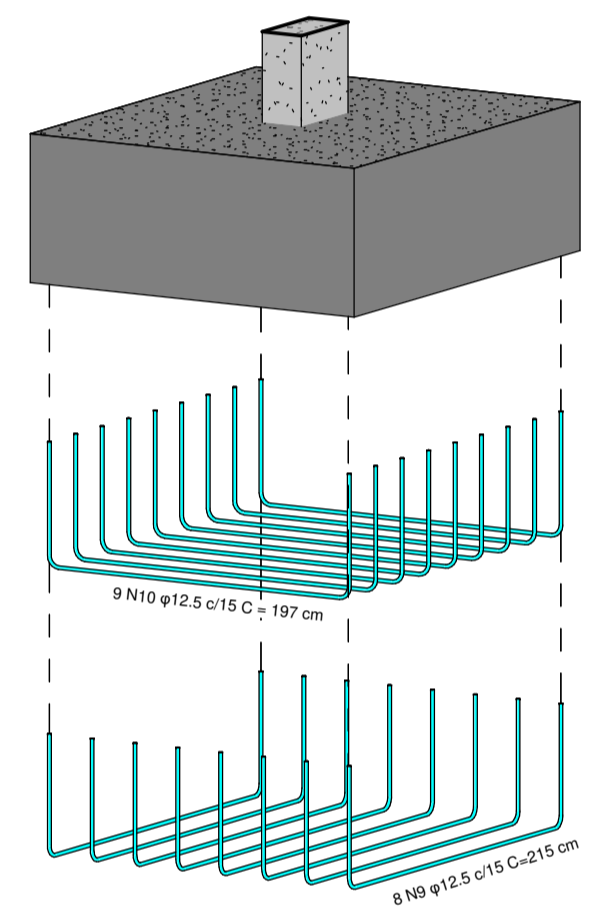
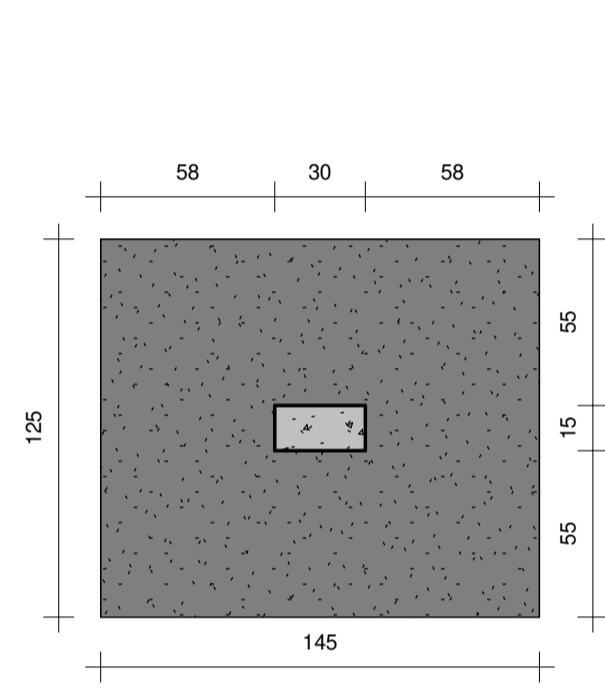
1 : 25

S3, S4, S5, S12, S13 e S14

1 : 25

S6

1 : 25



S7

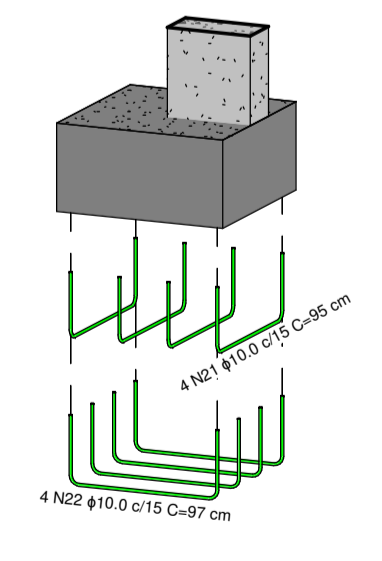
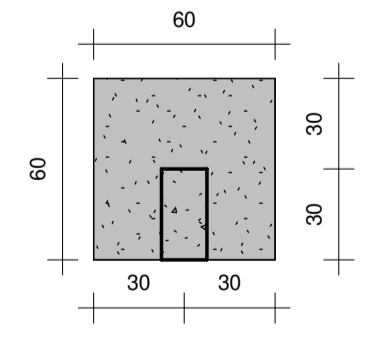
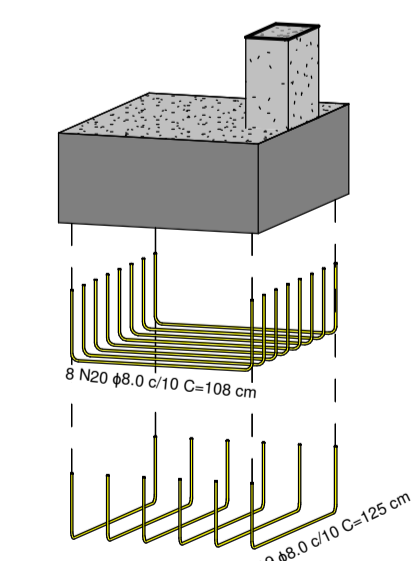
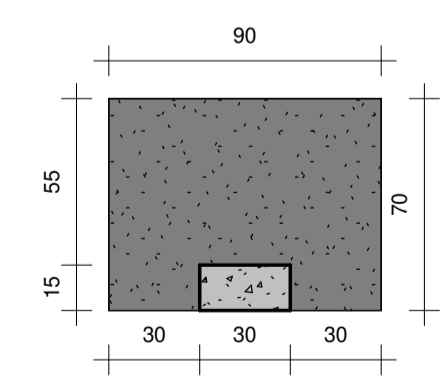
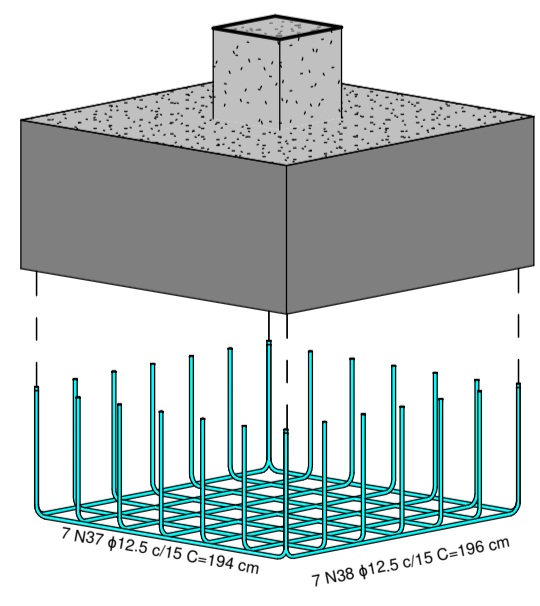
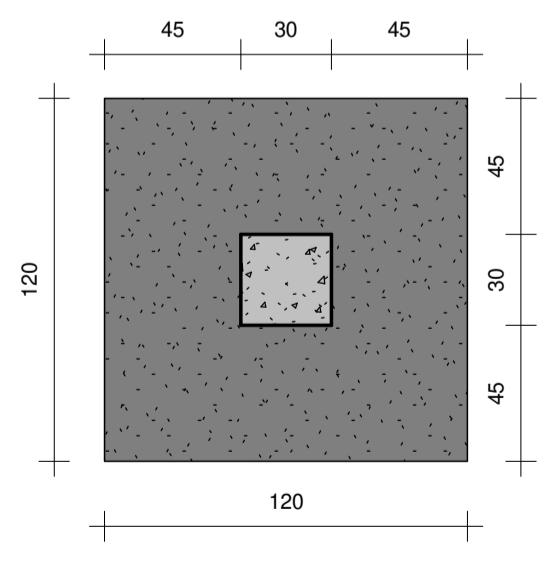
1 : 25

S8, S11, S20, S21, S22 e S24

1 : 25

S9, S10, S17 e S18

1 : 25



S19

1 : 25

S35, S36 e S37

1 : 25

S38

1 : 25

TABELA DE AÇO

ELEM	AÇO	POS	BIT mm	QUANT	COMPRIMENTO UNIT cm	TOTAL cm
S1	50A	1	10	7	118	826
	50A	2	10	5	142	710
S2	50A	1	8	9	108	972
	50A	2	8	7	132	924
S3=S4=S5=S12=S13=S14 (X6)	50A	1	8	36	102	3672
	50A	2	8	36	98	3528
	50A	2	8	11	138	1518
S6	50A	1	8	11	138	1518
	50A	2	8	10	152	1520
S7	50A	1	12.5	10	203	2030
	50A	2	12.5	8	227	1816
S8=S11=S20=S21=S22=S24 (X6)	50A	1	10	78	168	13104
	50A	2	10	66	192	12672
	50A	1	12.5	8	198	1584
S19	50A	2	12.5	8	202	1616
	50A	1	12.5	65	238	15470
S9=S10=S17=S18 (X4)	50A	1	12.5	55	262	14410
	50A	2	12.5	55	262	14410
S35=S36=S37 (X3)	50A	1	8	27	112	3024
	50A	2	8	21	128	2688
	50A	1	10	4	98	392
S38	50A	2	10	4	102	408

RESUMO DE AÇO			
ACO	BIT mm	COMPR m	PESO kgf
50A	8	178	70
50A	10	281	173
50A	12.5	369	356
Peso Total 50A =			600 kgf

Resumo de aço por elemento			
ELEM	PESO kgf	PESO kgf+10%	
S1	9	10	
S2	7	8	
S3=S4=S5=S12=S13=S14	28	31	
S6	12	13	
S7	37	41	
S8=S11=S20=S21=S22=S24	159	175	
S19	31	34	
S23=S9=S10=S17=S18	288	317	
S35=S36=S37	23	25	
S38	5	5	

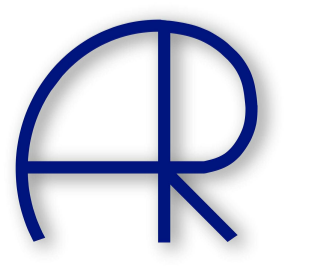


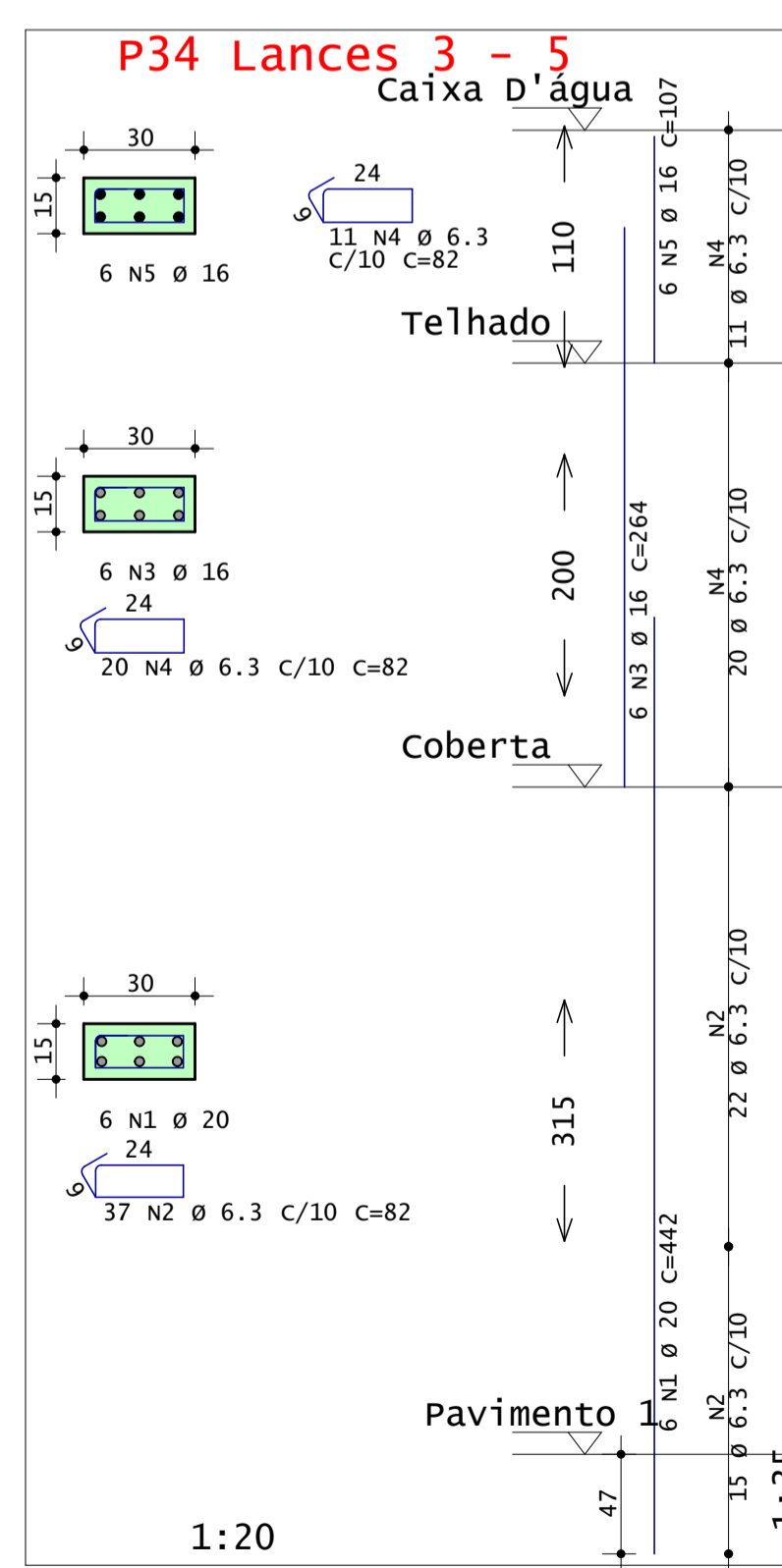
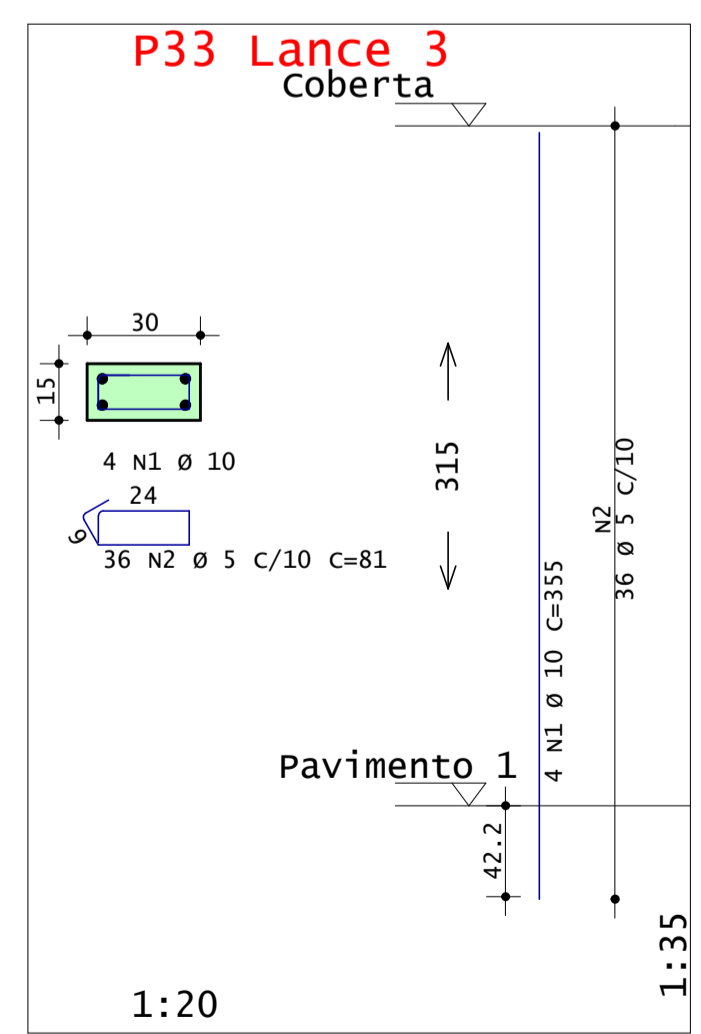
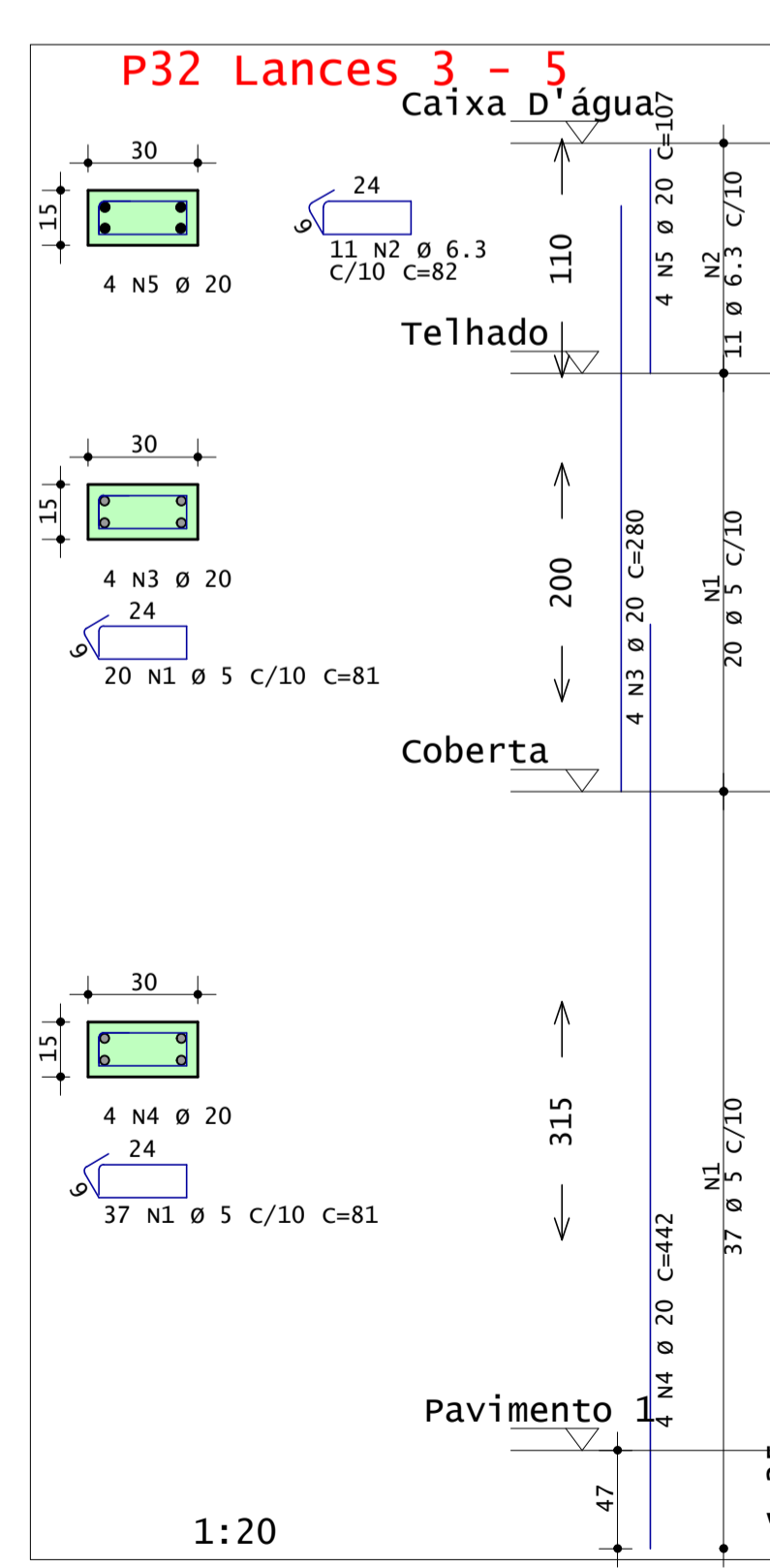
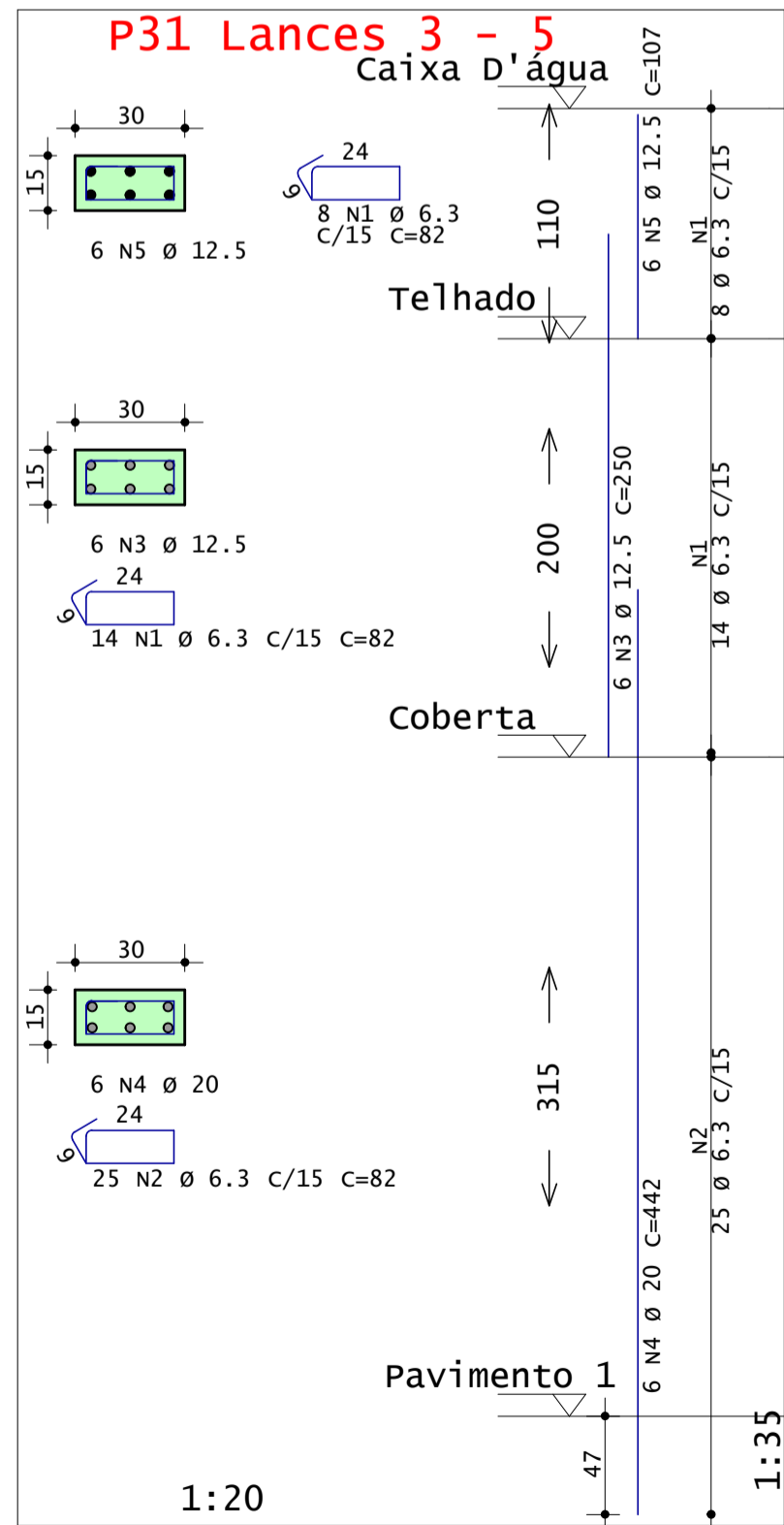
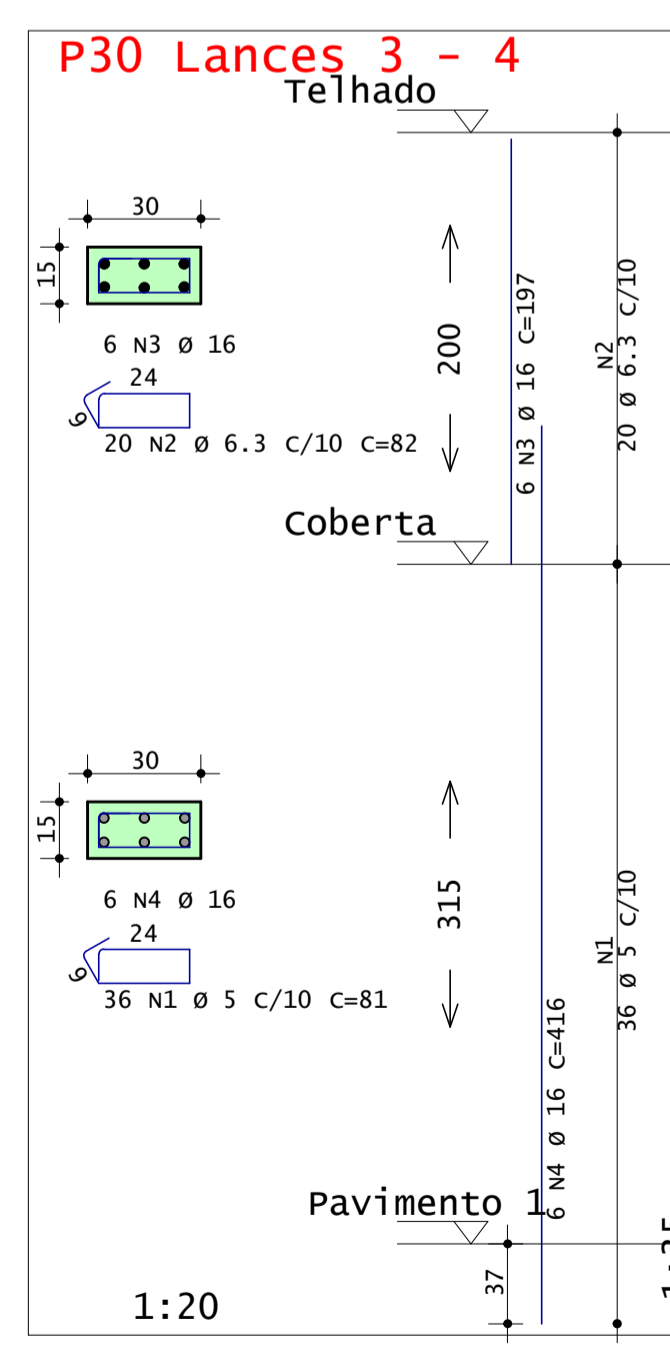
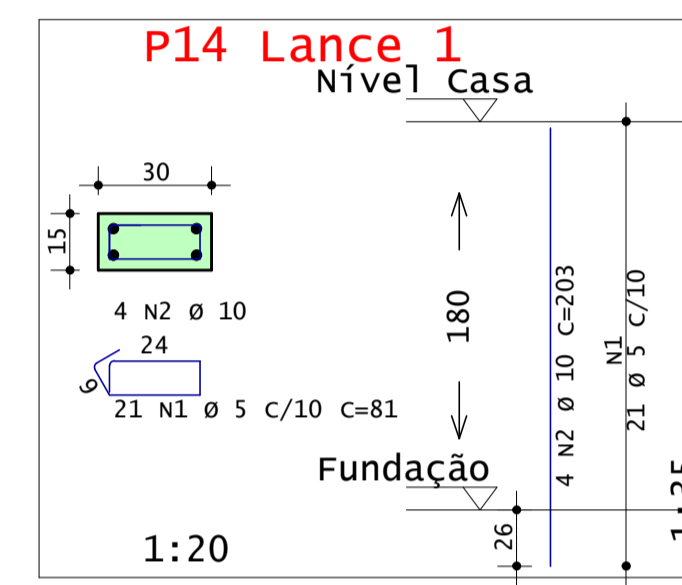
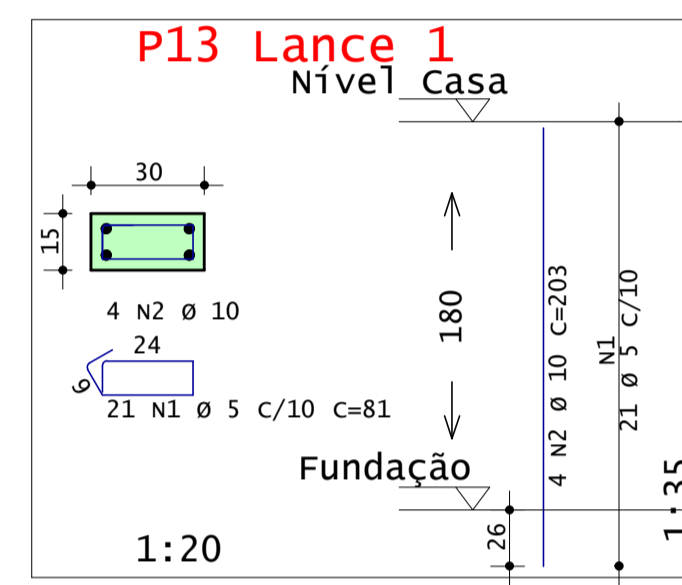
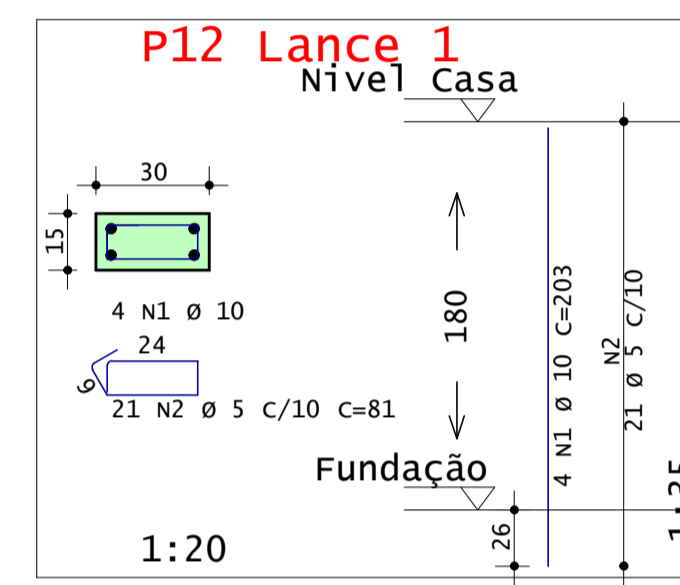
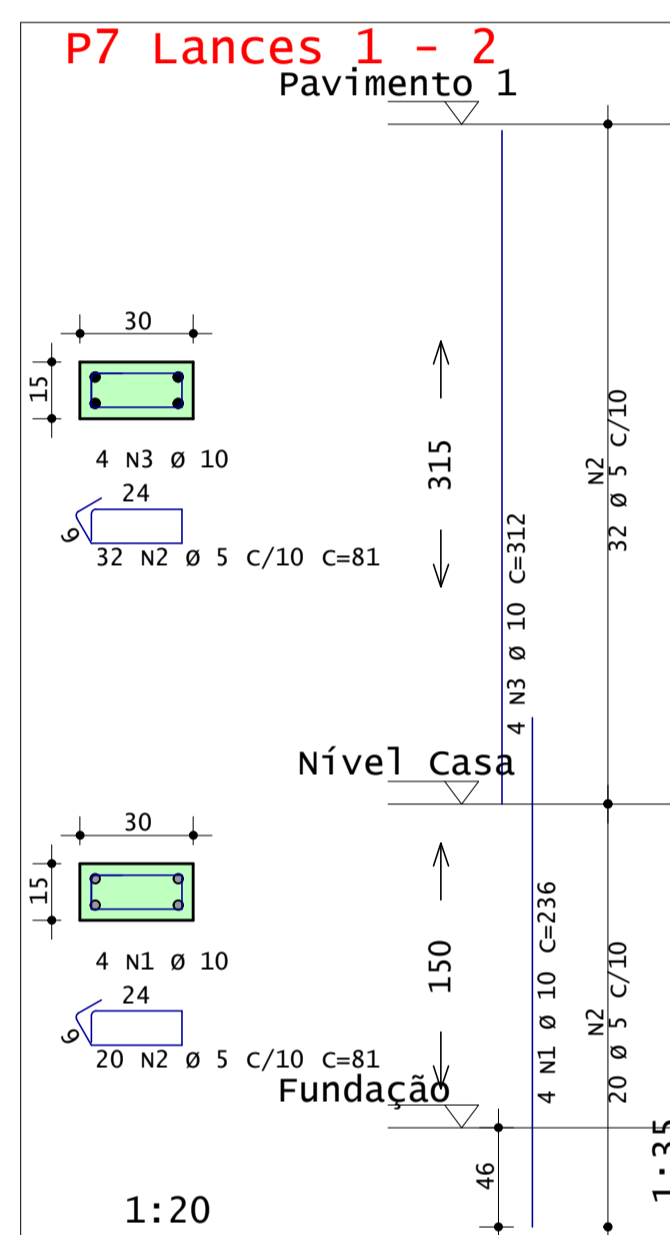
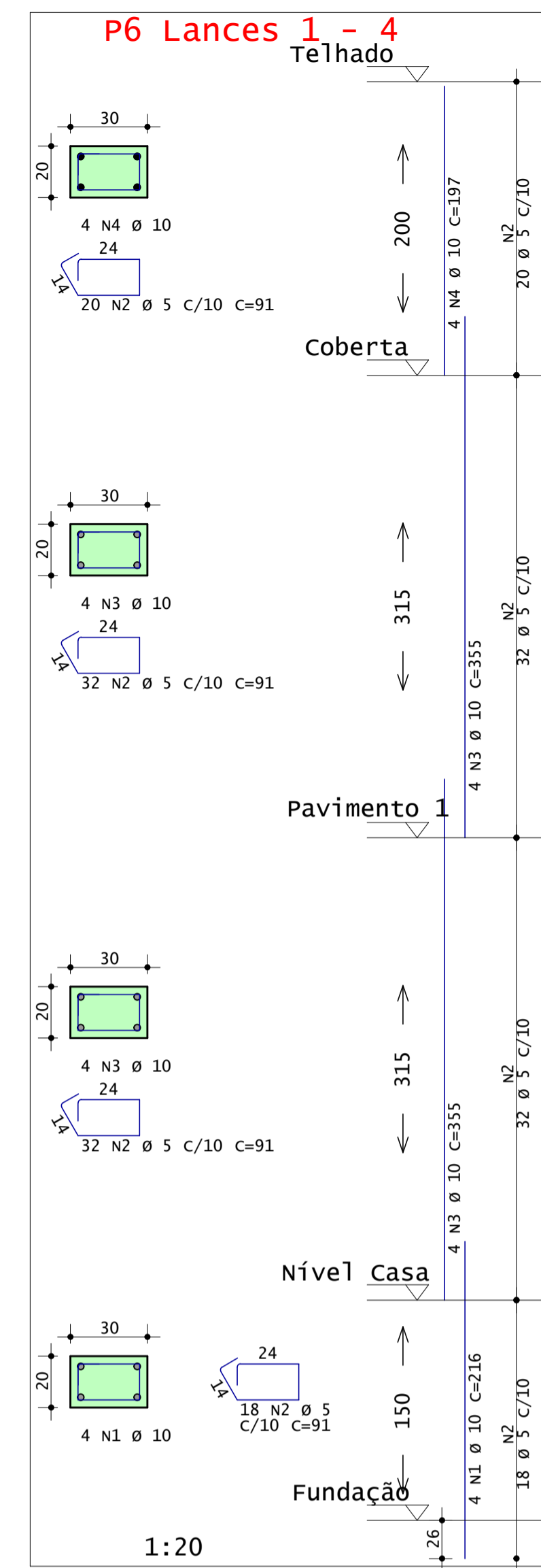
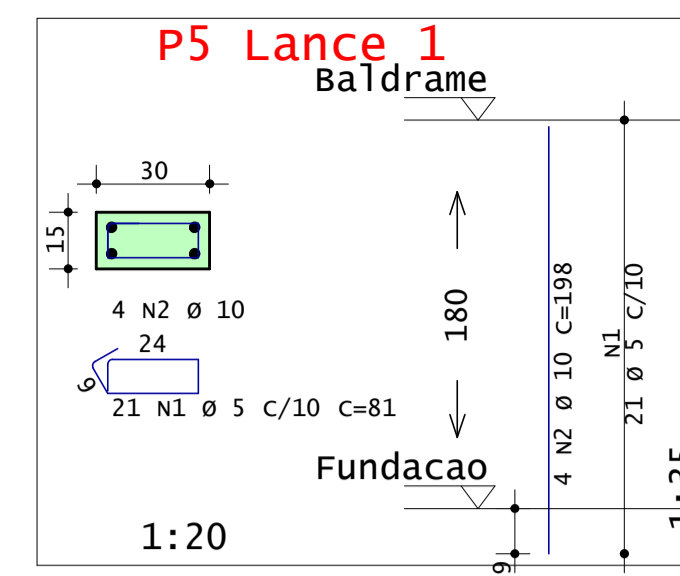
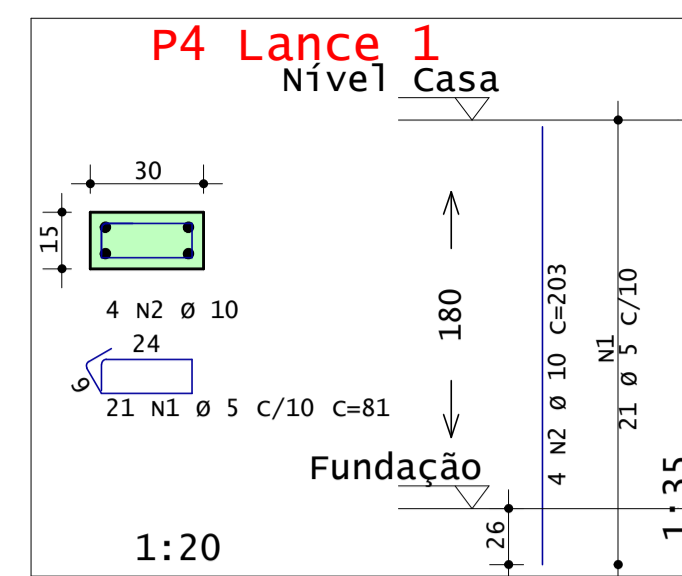
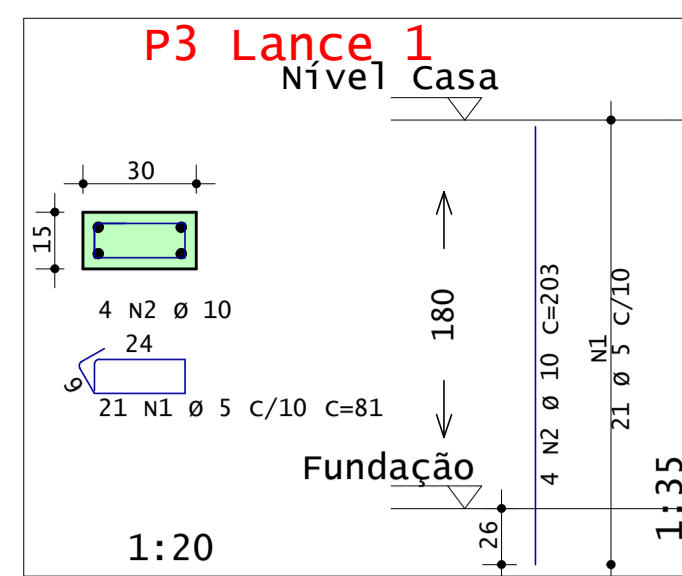
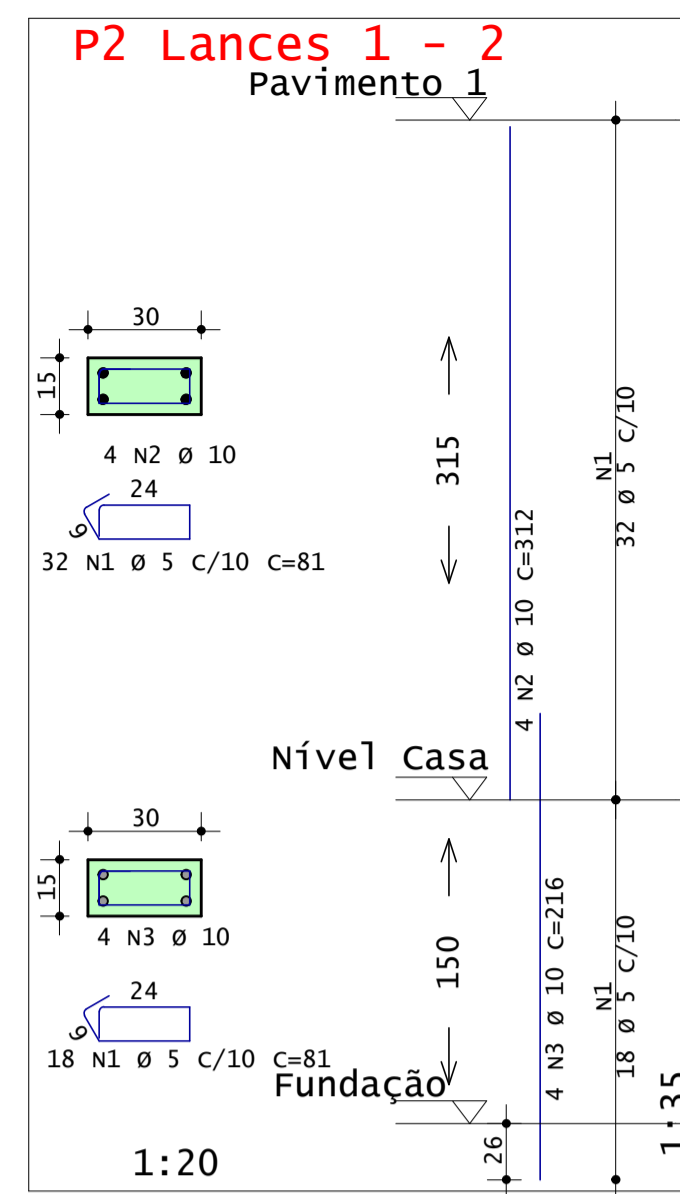
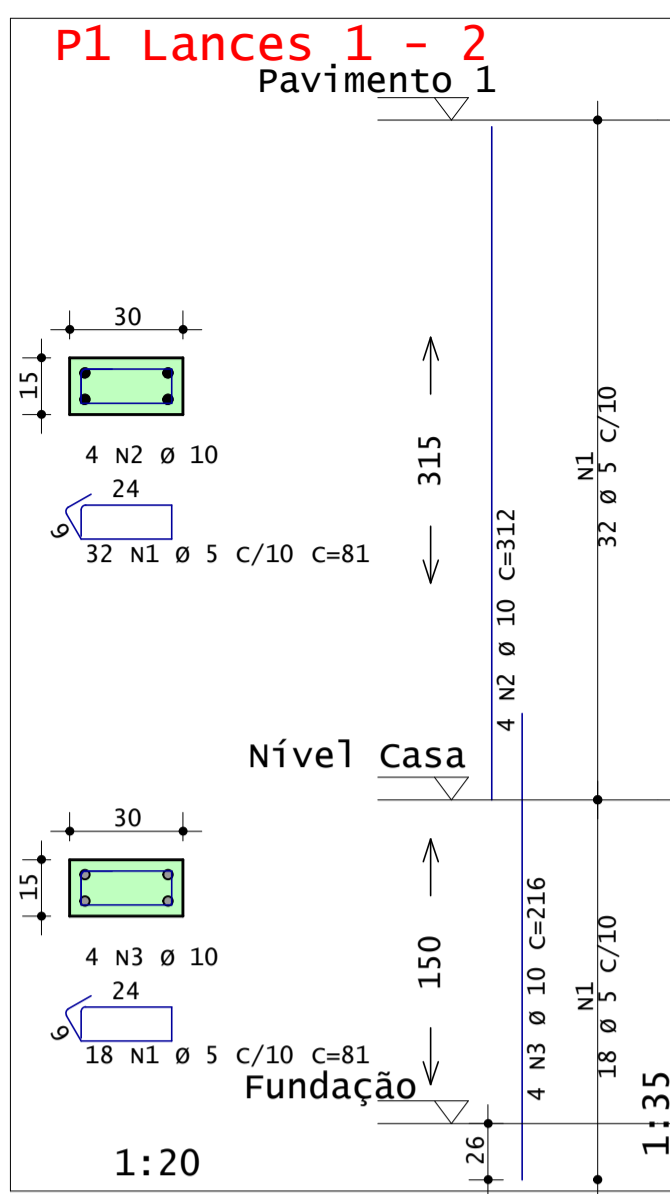
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ANDRÉ RODRIGUES
Engenheiro Estrutural

(83) 9 9644 2240
@andrerodrigueseng
andrerodrigues.eng.br
contato@andrerodrigues.eng.br

Ciente:	Cleiton Batista Soares de Lima	Francha nº:	07	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Detalhamento de Sapatas				
CREA-PB:	161890343-9	ART nº:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		





LAÇOS	POS	BIT	QUANT	COMPRIMENTO	TOTAL
		mm		UNIT	
				cm	cm
P1 Lances 1 - 2	60A	1	5	81	4050
	50A	2	10	312	1248
	50A	3	10	216	864
P2 Lances 1 - 2	60A	1	5	81	4050
	50A	2	10	312	1248
	50A	3	10	216	864
P3 Lance 1	60A	1	5	21	1701
	50A	2	10	4	812
P4 Lance 1	60A	1	5	21	1701
	50A	2	10	4	203
P5 Lance 1	60A	1	5	21	1701
	50A	2	10	4	198
P6 Lances 1 - 4	60A	1	10	4	864
	60A	2	5	102	9282
	50A	3	10	8	355
	50A	4	10	4	197
P7 Lances 1 - 2	60A	1	10	4	236
	60A	2	5	52	812
	50A	3	10	4	312
P12 Lance 1	60A	1	10	4	203
	60A	2	5	21	812
P13 Lance 1	60A	1	5	21	1701
	50A	2	10	4	203
P14 Lance 1	60A	1	5	21	1701
	50A	2	10	4	203
P30 Lances 3 - 4	60A	1	5	36	2916
	50A	2	6.3	20	82
	50A	3	16	6	197
	50A	4	16	6	416
P31 Lances 3 - 5	50A	1	6.3	22	1804
	50A	2	6.3	25	2050
	50A	3	12.5	6	1500
	50A	4	20	6	442
	50A	5	12.5	6	107
P32 Lances 3 - 5	60A	1	5	57	4617
	50A	2	6.3	11	82
	50A	3	20	4	280
	50A	4	20	4	442
	50A	5	20	4	107
P33 Lance 3	60A	1	10	4	355
	50A	2	5	36	812
P34 Lances 3 - 5	50A	1	20	6	2652
	50A	2	6.3	37	3034
	50A	3	16	6	1584
	50A	4	6.3	31	2542
	50A	5	16	6	107

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
60A	5	422	65
50A	6.3	120	29
50A	10	172	106
50A	12.5	21	21
50A	16	59	93
50A	20	86	213
Peso Total	60A =		65 kgf
Peso Total	50A =		462 kgf



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ANDRÉ RODRIGUES
Engenheiro Estrutural

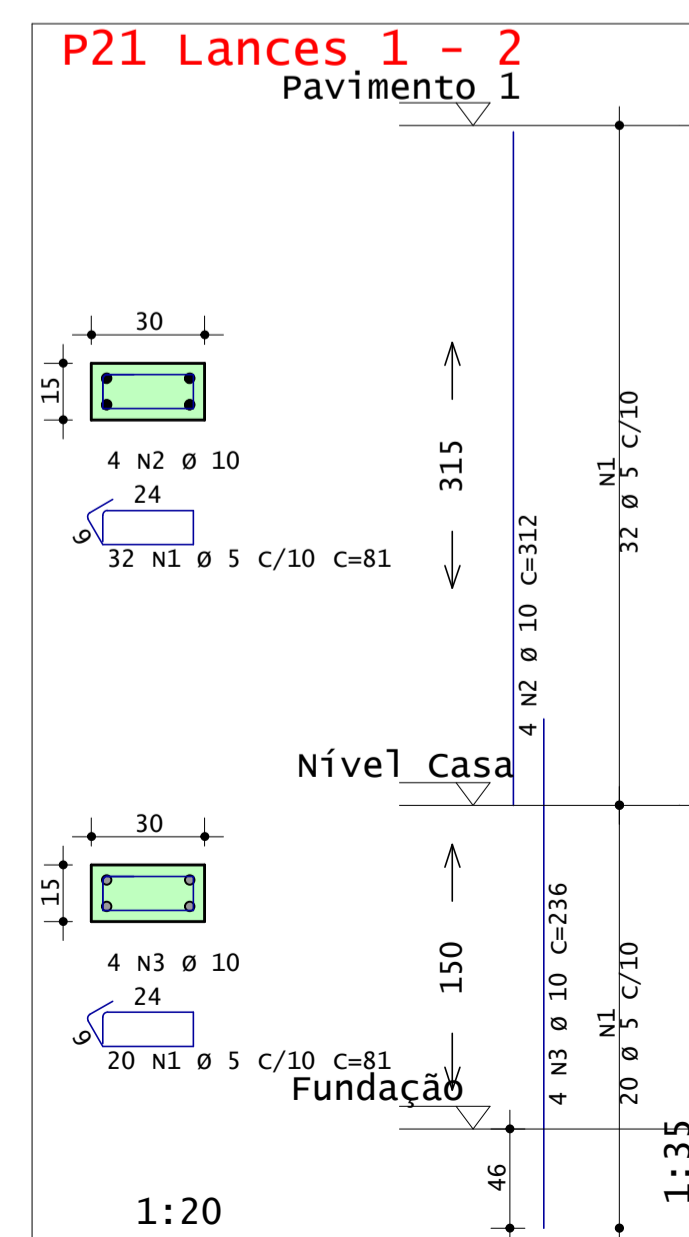
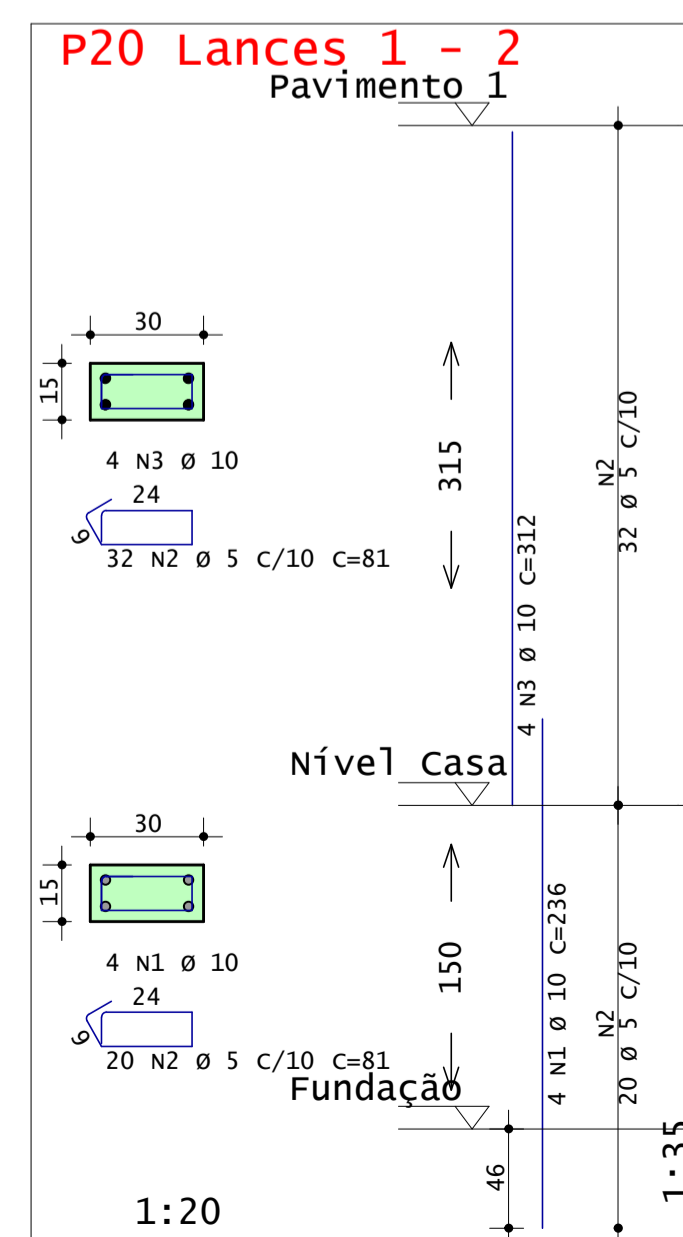
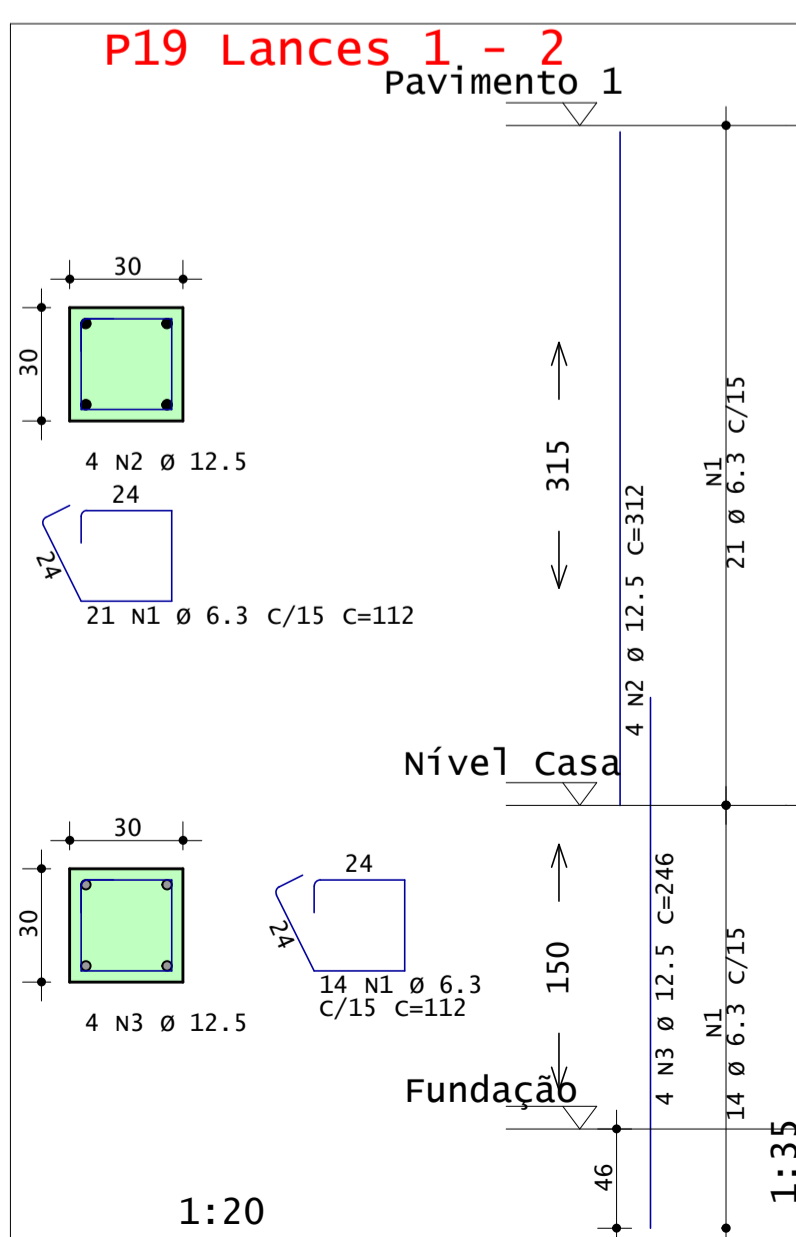
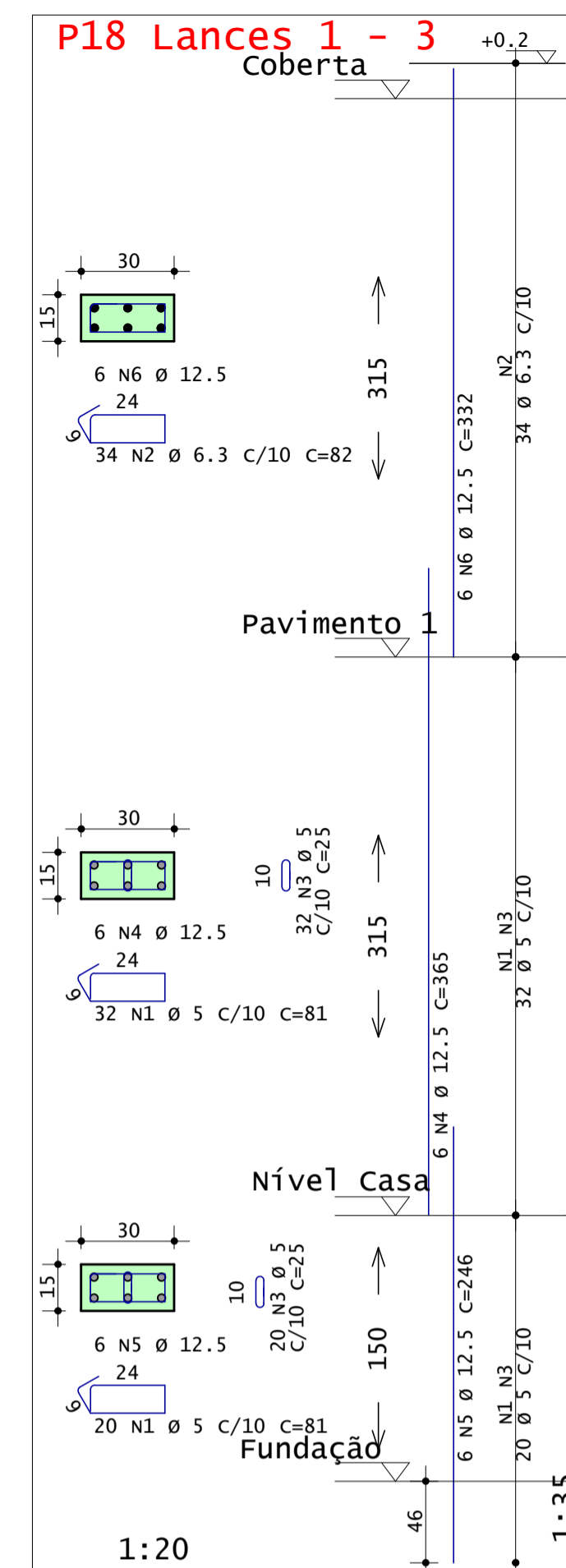
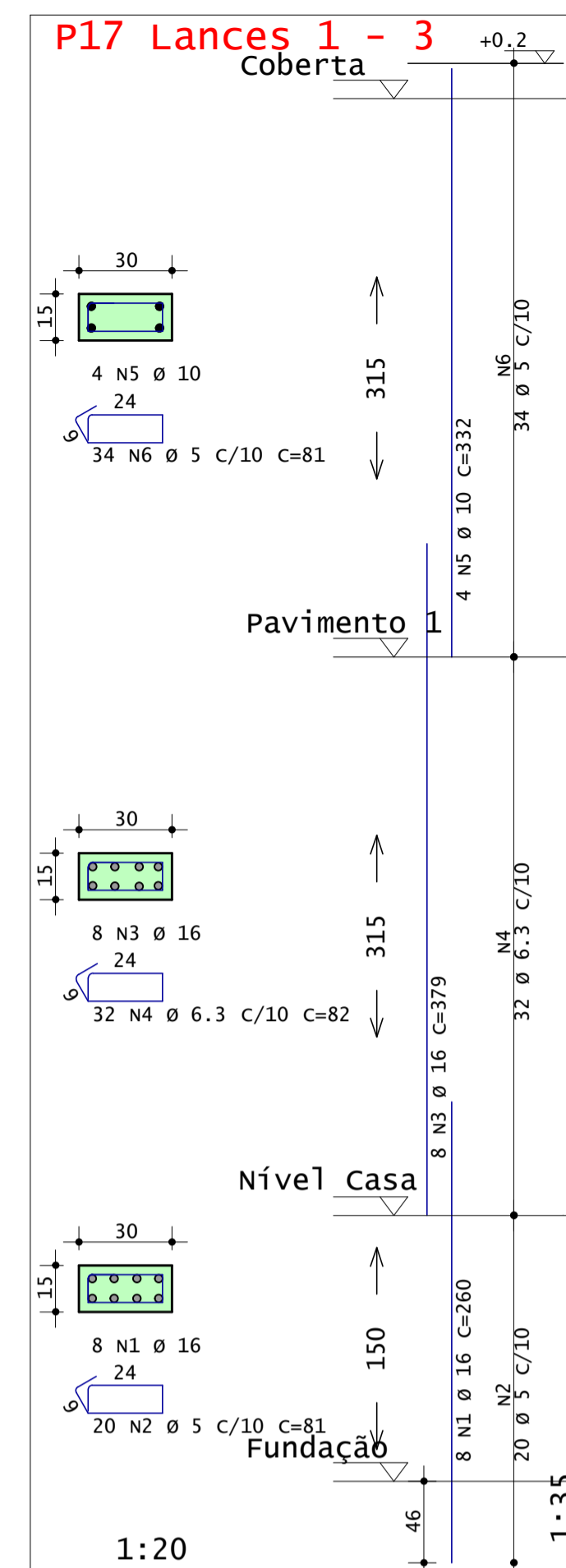
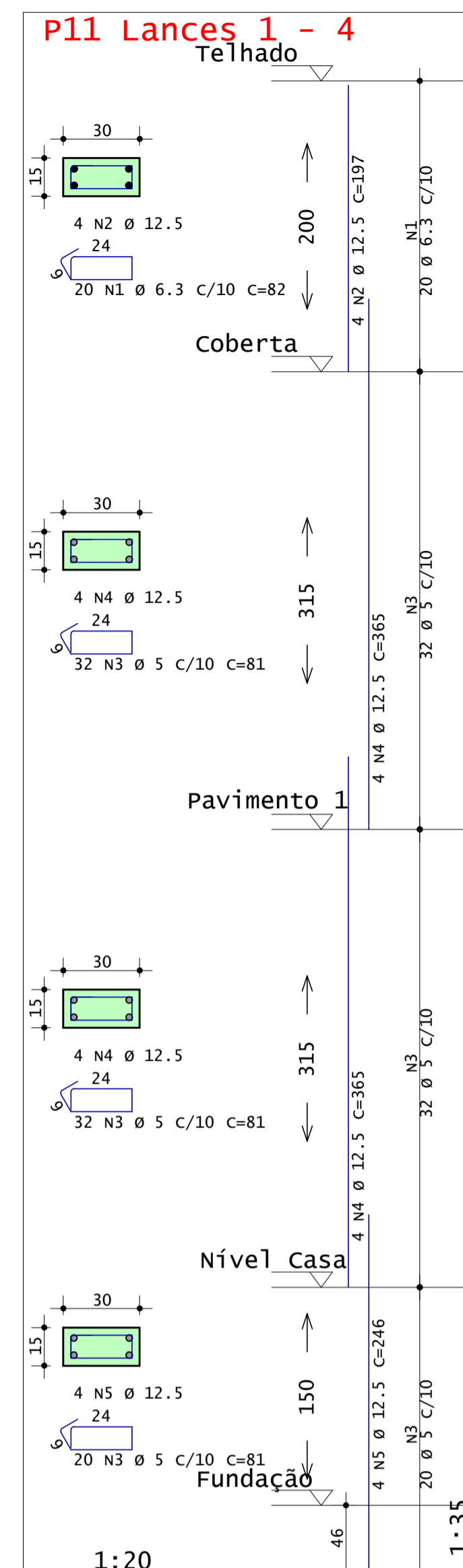
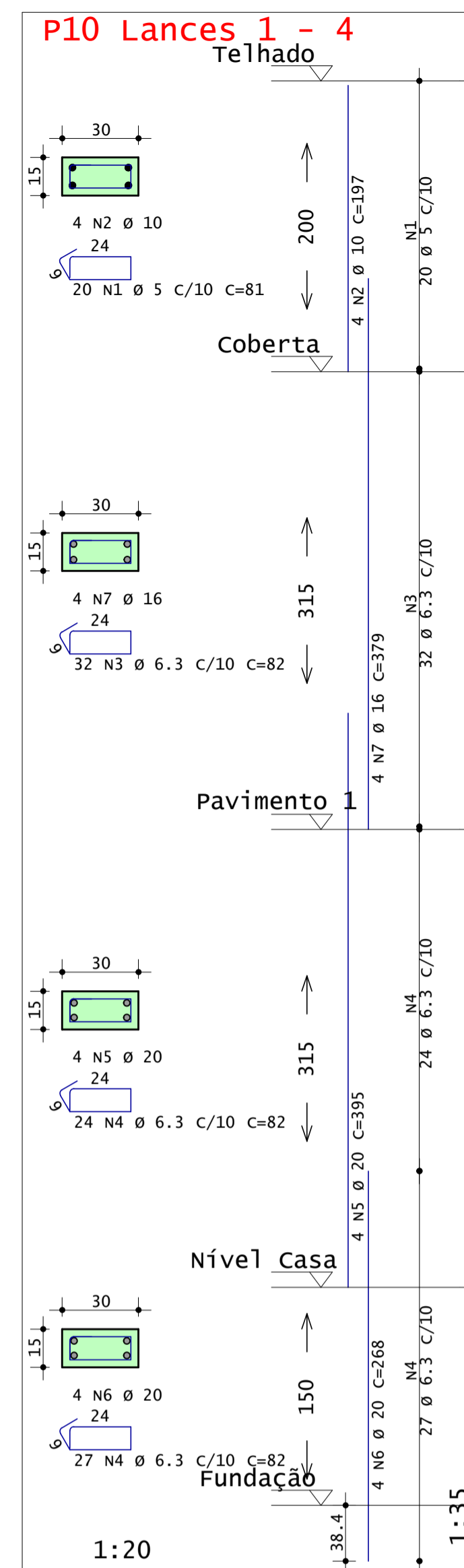
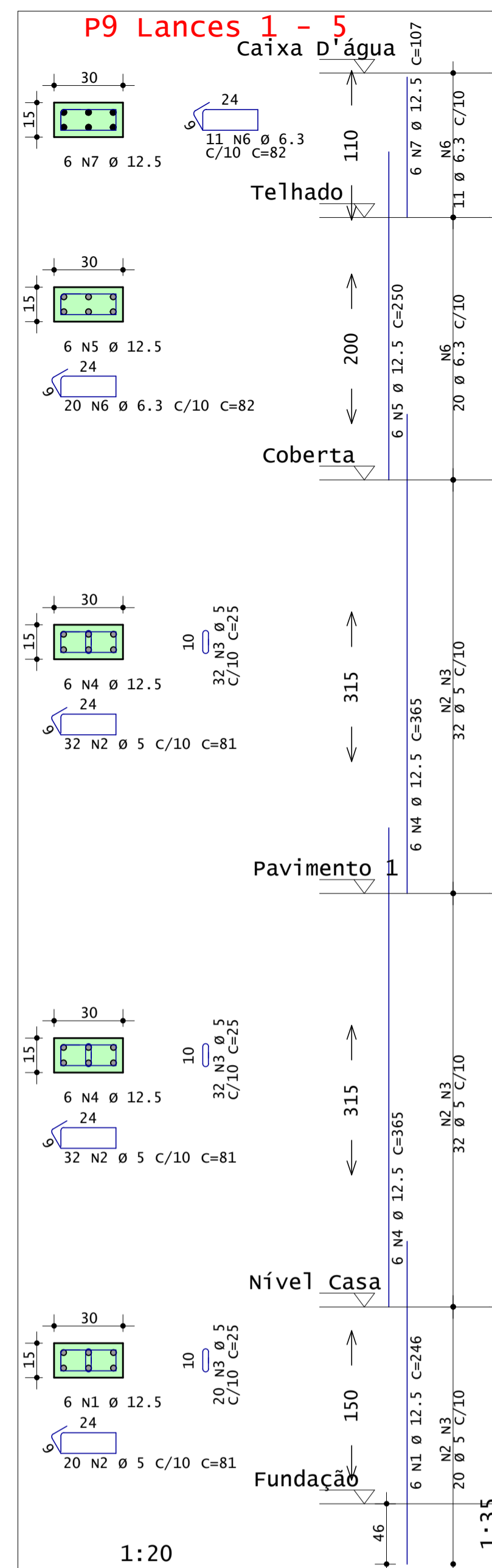
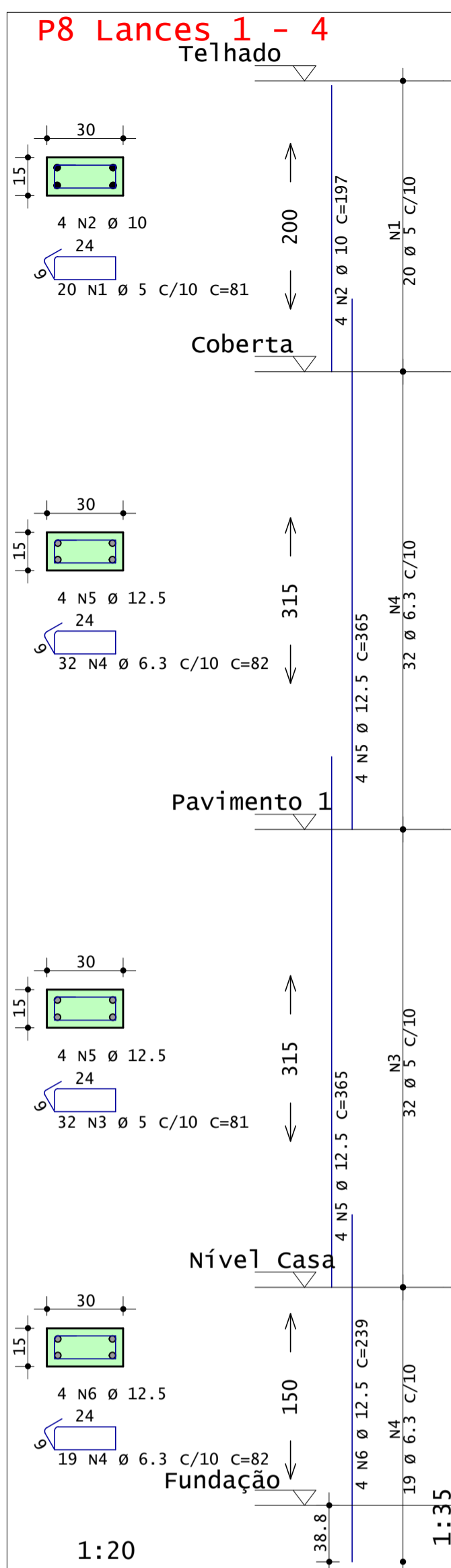
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(83) 9 9644 2240
@andrerodrigueseng

andrerodrigues.eng.br
contato@andrerodrigues.eng.br

Cliente:	Cleiton Batista Soares de Lima	Francha nº:	08	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Detalhamento dos Pilares (1/3)				
CREA-PB:	161890343-9	ART nº:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		





LAÇOS	LAÇO	POS	BIT	QUANT	COMPRIMENTO UNIT	TOTAL
			mm		cm	cm
P8 Lances 1 - 4	60A	1	5	20	81	1620
	50A	2	10	4	197	788
	60A	3	5	32	81	2592
	50A	4	6.3	51	82	4182
	50A	5	12.5	8	365	2920
P9 Lances 1 - 5	50A	1	12.5	6	246	1476
	60A	2	5	84	61	6804
	60A	3	5	84	25	2100
	50A	4	12.5	12	365	4380
	50A	5	12.5	6	250	1500
P10 Lances 1 - 4	60A	1	5	20	81	1620
	50A	2	10	4	197	788
	50A	3	6.3	32	82	2624
	50A	4	6.3	51	82	4182
	50A	5	20	4	395	1580
P11 Lances 1 - 4	50A	1	6.3	20	82	1640
	50A	2	12.5	4	197	788
	60A	3	5	84	81	6804
	50A	4	12.5	8	365	2920
	50A	5	12.5	4	246	984
P17 Lances 1 - 3	50A	1	16	8	260	2080
	60A	2	5	20	81	1620
	50A	3	16	8	379	3032
	50A	4	6.3	32	82	2624
	60A	5	10	4	332	1328
P18 Lances 1 - 3	60A	1	5	52	81	4212
	50A	2	6.3	34	82	2788
	50A	3	5	52	25	1300
	50A	4	12.5	6	365	2190
	50A	5	12.5	6	246	1476
P19 Lances 1 - 2	50A	1	6.3	35	112	3920
	50A	2	12.5	4	312	1248
	50A	3	12.5	4	246	984
P20 Lances 1 - 2	50A	1	10	4	236	944
	60A	2	5	52	81	4212
	50A	3	10	4	312	1248
P21 Lances 1 - 2	60A	1	5	52	81	4212
	50A	2	10	4	312	1248
	50A	3	10	4	236	944

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
60A	5	399	61
50A	6.3	245	60
50A	10	73	45
50A	12.5	245	236
50A	16	66	105
50A	20	27	65
Peso Total	60A =		61 kgf
Peso Total	50A =		510 kgf



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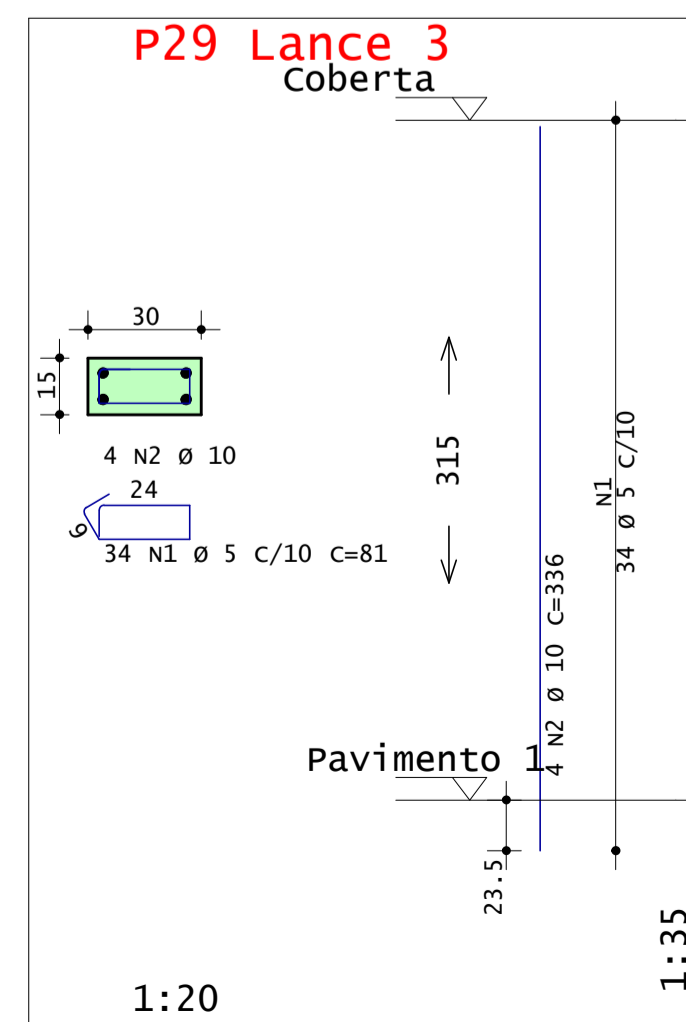
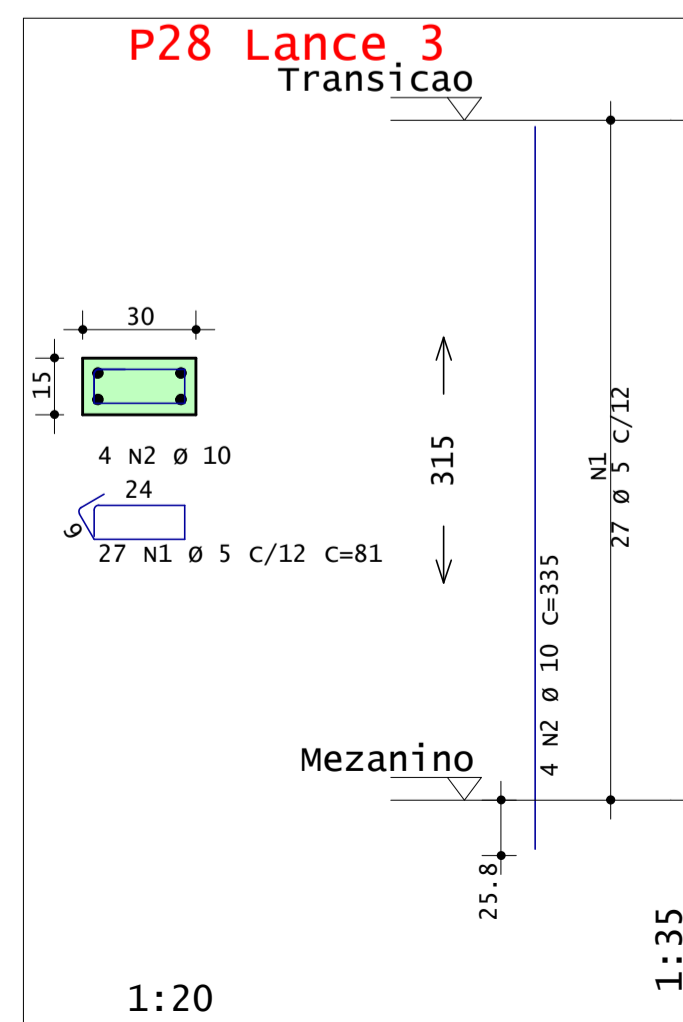
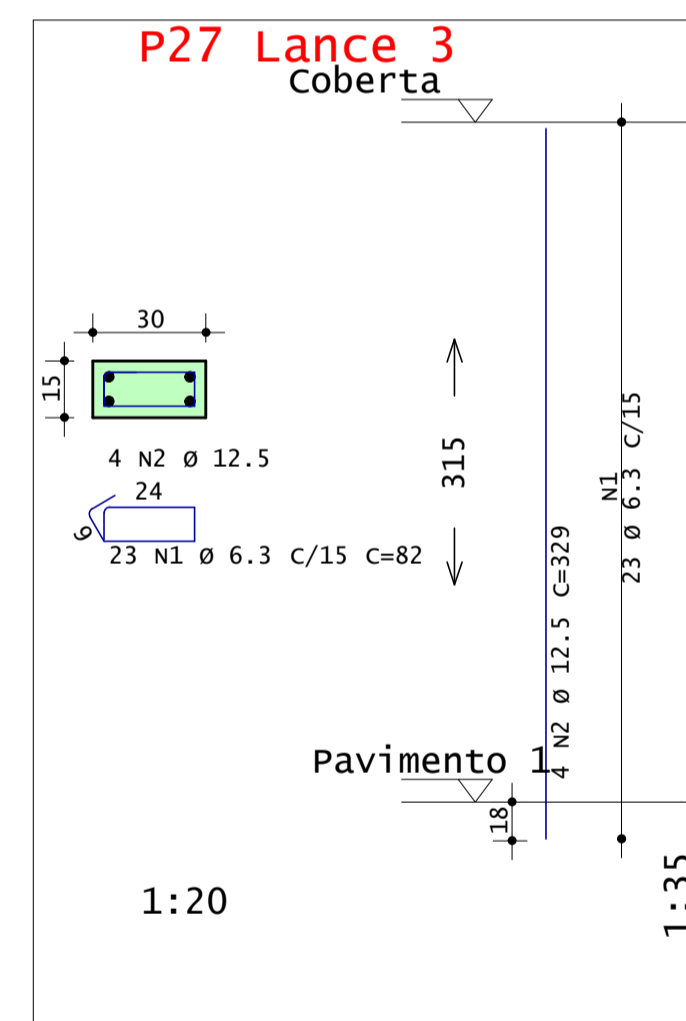
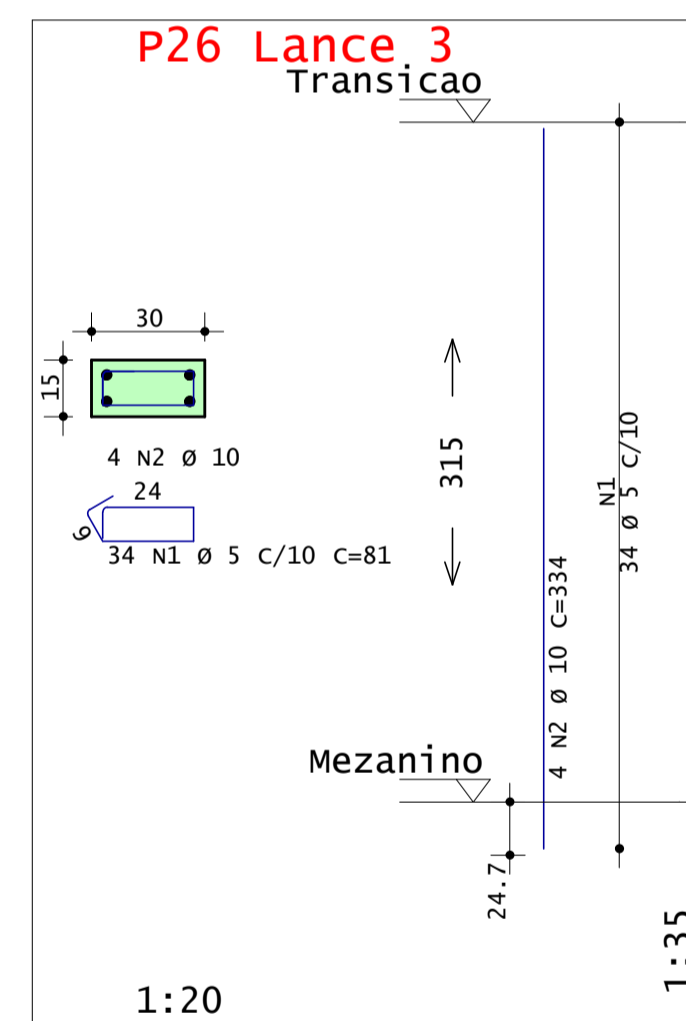
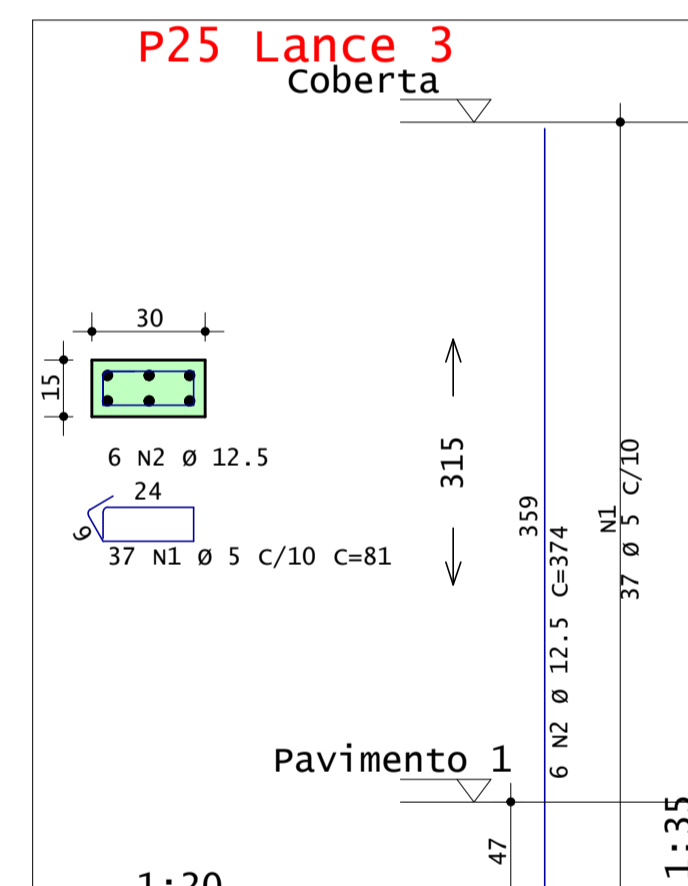
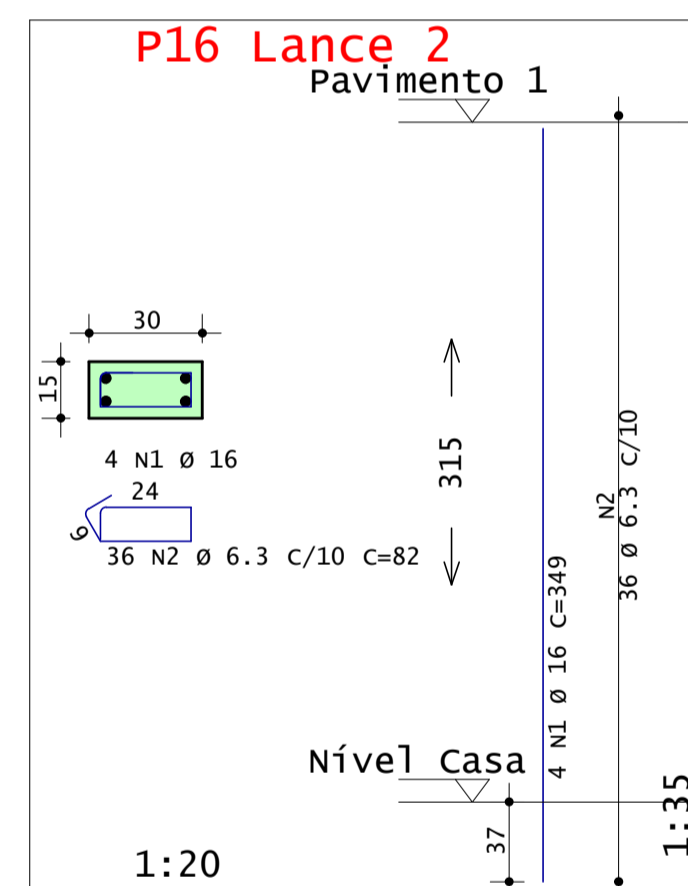
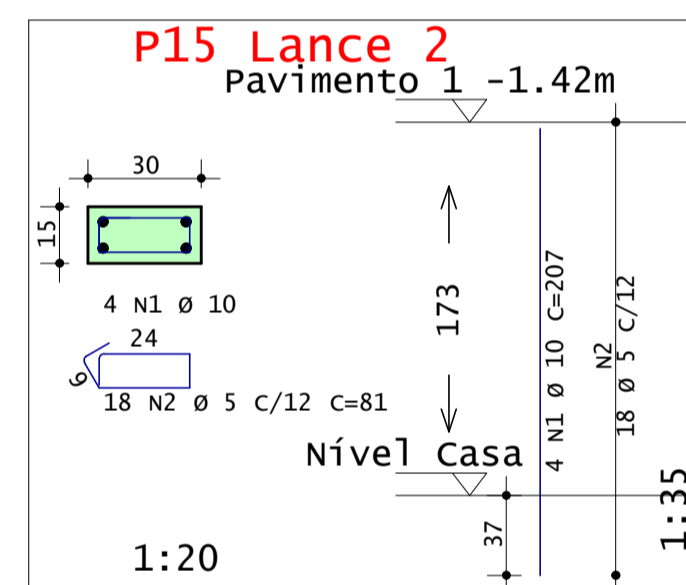
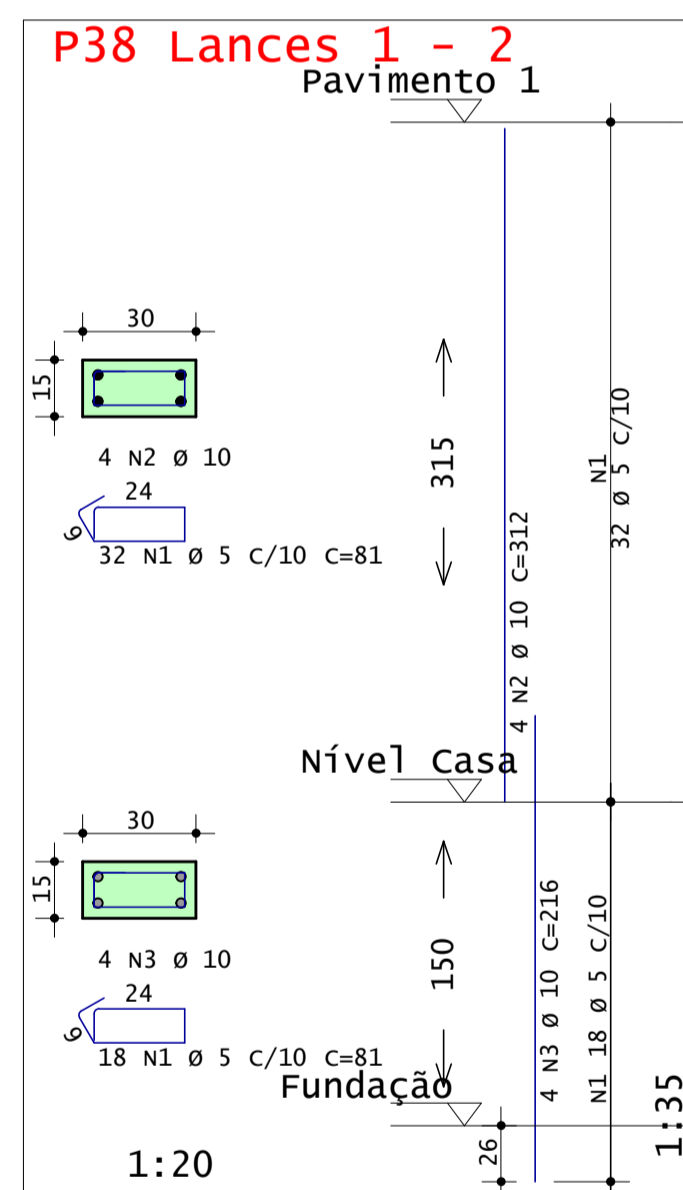
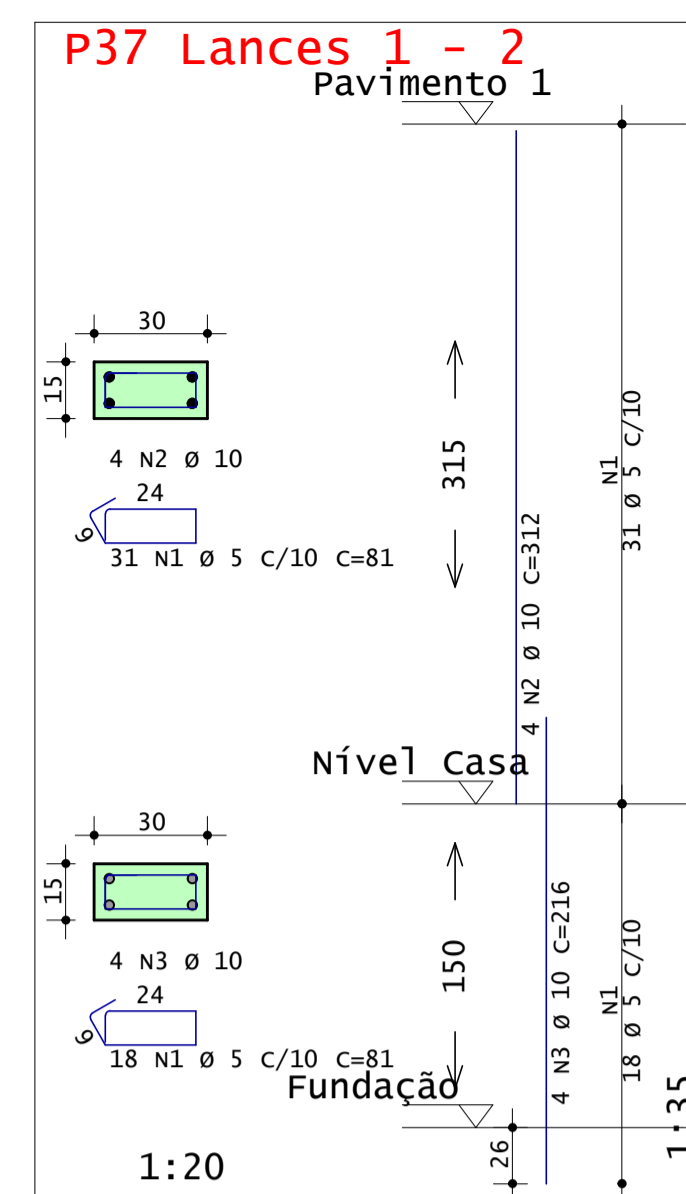
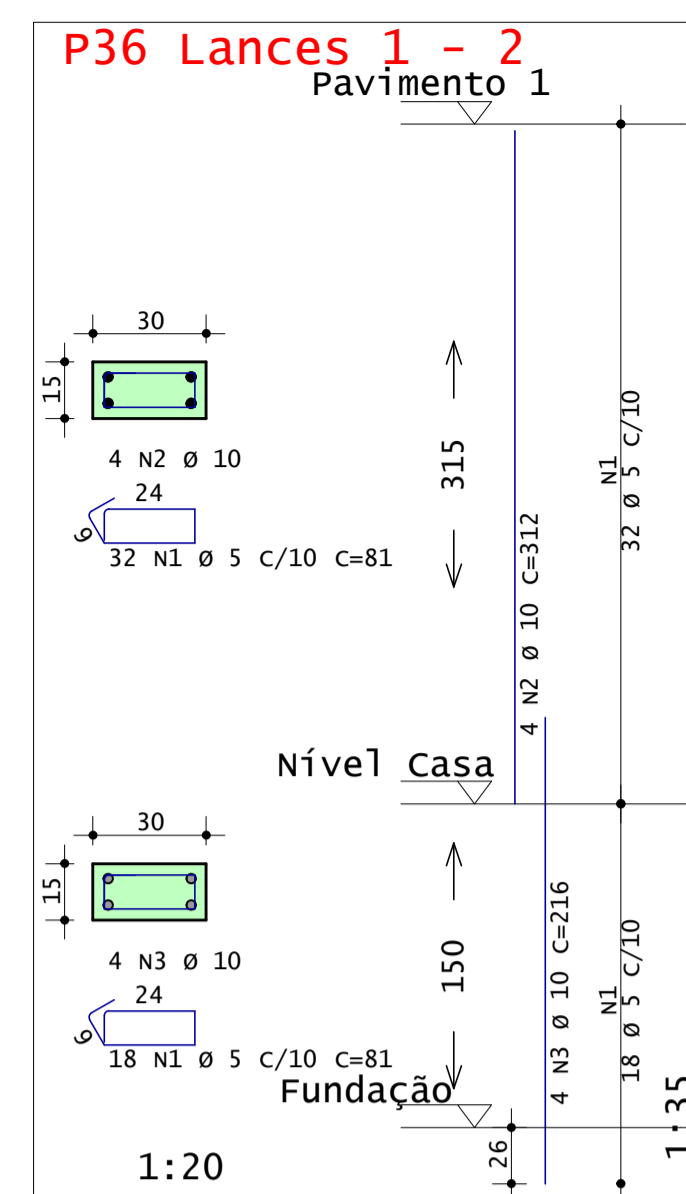
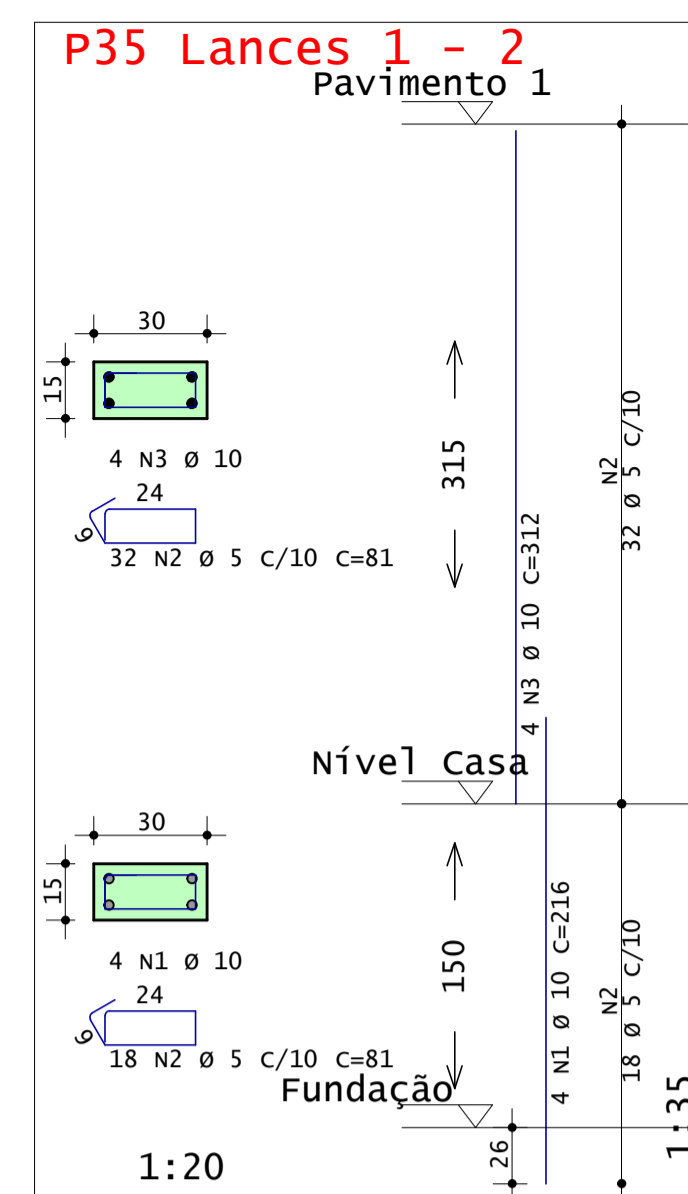
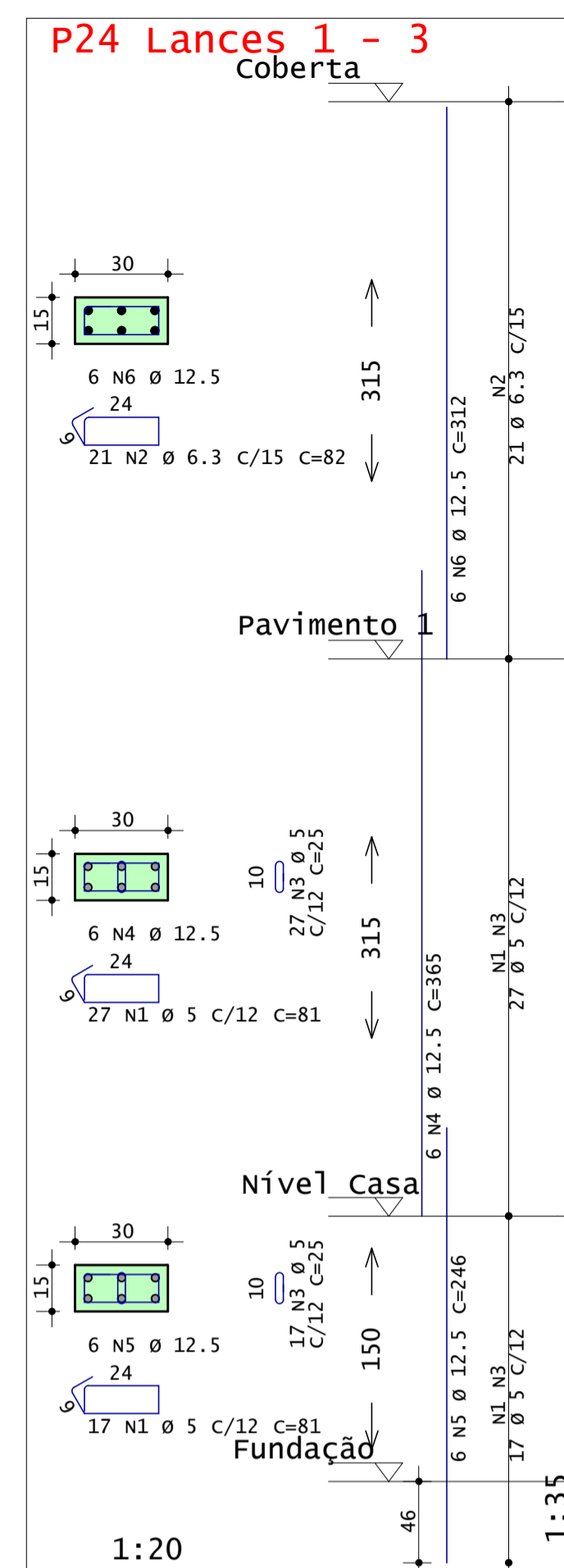
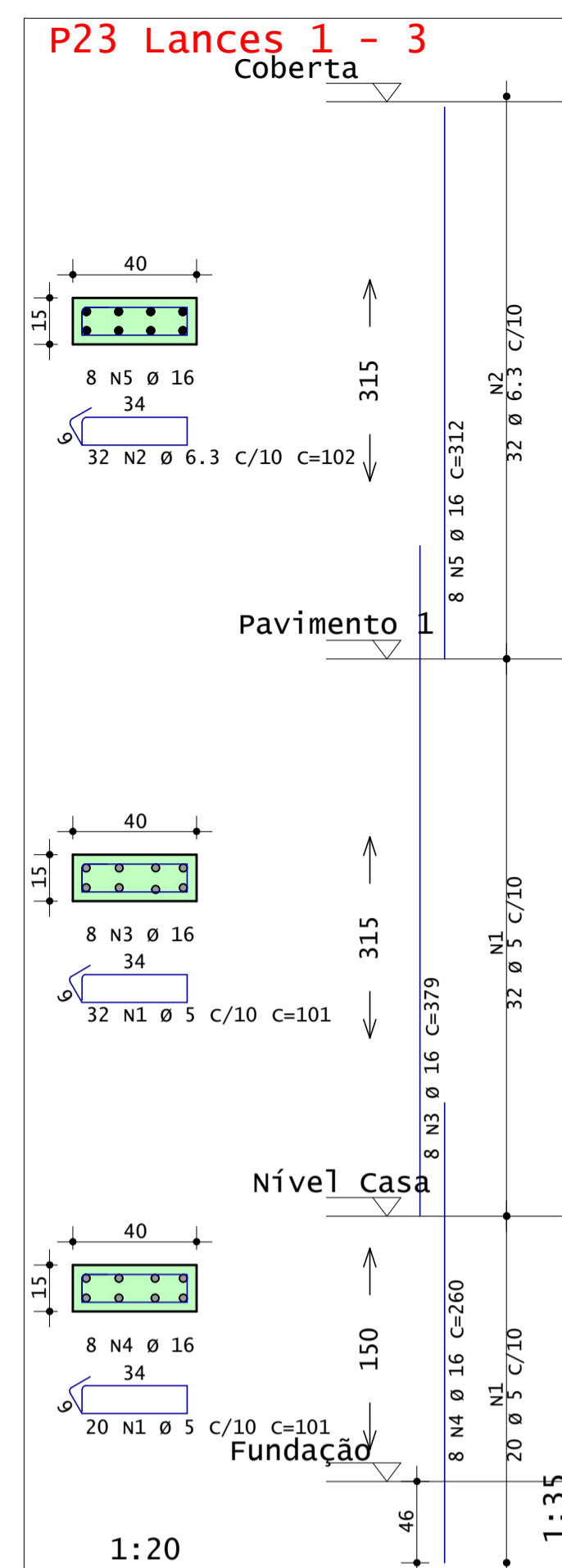
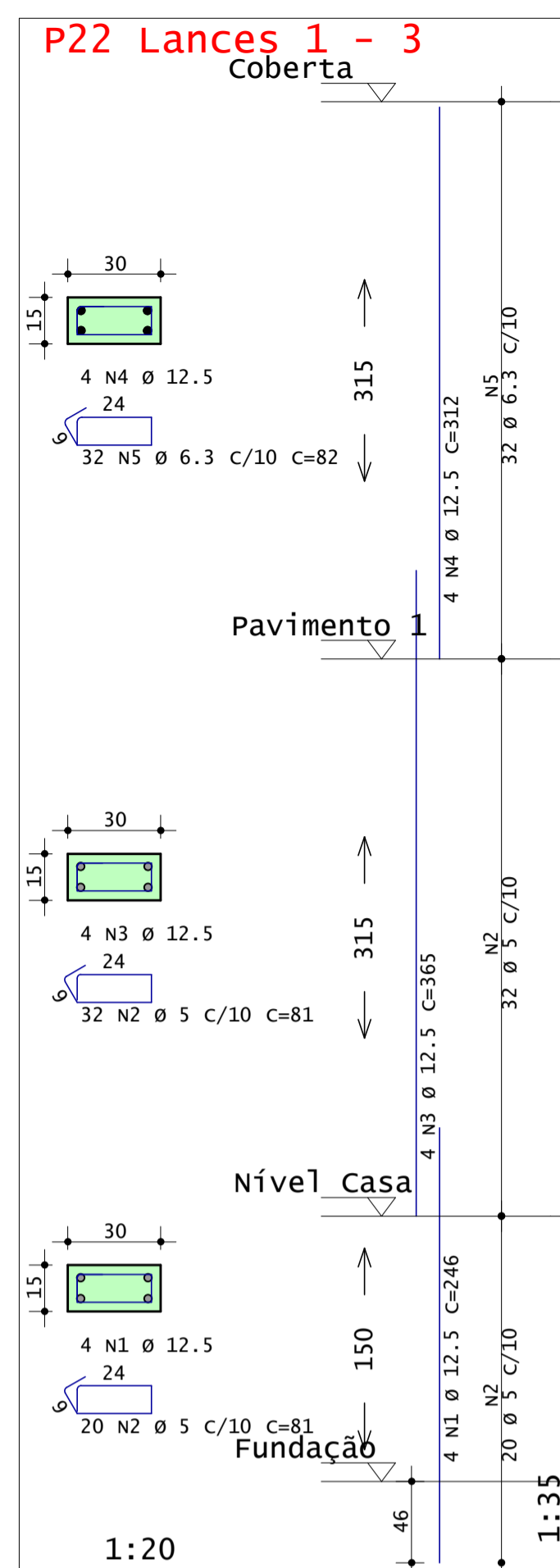
(83) 9 9644 2240
@andrerodrigueseng

andrerodrigues.eng.br
contato@andrerodrigues.eng.br

Cliente:	Cleiton Batista Soares de Lima	Prancha nº:	09	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Detalhamento dos Pilares (2/3)				
CREA-PB:	161890343-9	ART nº:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		



ANDRÉ RODRIGUES DE VASCONCELOS PL_CAS-PIL-PIL-002-R00-PLT_01/10/2021_08:54:53



ACO	POS	BIT	QUANT	COMPRIMENTO	UNIT	TOTAL
		mm		cm	cm	
P15	Lance 2					
50A	1	10	4	207	828	
60A	2	5	18	81	1458	
P16	Lance 2					
50A	1	16	36	349	1396	
50A	2	6.3	36	82	2952	
P22	Lances 1 - 3					
50A	1	12.5	4	246	984	
60A	2	5	52	81	4212	
50A	3	12.5	4	365	1460	
50A	4	12.5	4	312	1248	
50A	5	6.3	32	82	2624	
P23	Lances 1 - 3					
60A	1	5	52	101	5252	
50A	2	6.3	32	102	3264	
50A	3	16	8	379	3032	
50A	4	16	8	260	2080	
50A	5	16	8	312	2496	
P24	Lances 1 - 3					
60A	1	5	44	81	3564	
50A	2	6.3	21	82	1722	
60A	3	5	44	25	1100	
50A	4	12.5	6	365	2190	
50A	5	12.5	6	246	1476	
50A	6	12.5	6	312	1872	
P25	Lance 3					
60A	1	5	37	81	2997	
50A	2	12.5	6	374	2244	
P26	Lance 3					
60A	1	5	34	81	2754	
50A	2	10	4	334	1336	
P27	Lance 3					
50A	1	6.3	23	82	1886	
50A	2	12.5	4	329	1316	
P28	Lance 3					
60A	1	5	27	81	2187	
50A	2	10	4	335	1340	
P29	Lance 3					
60A	1	5	34	81	2754	
50A	2	10	4	336	1344	
P35	Lances 1 - 2					
50A	1	10	4	216	864	
60A	2	5	50	81	4050	
50A	3	10	4	312	1248	
P36	Lances 1 - 2					
60A	1	5	50	81	4050	
50A	2	10	4	312	1248	
50A	3	10	4	216	864	
P37	Lances 1 - 2					
60A	1	5	49	81	3969	
50A	2	10	4	312	1248	
50A	3	10	4	216	864	
P38	Lances 1 - 2					
60A	1	5	50	81	4050	
50A	2	10	4	312	1248	
50A	3	10	4	216	864	

RESUMO DE AÇO			
ACO	BIT	COMPR	PESO
	mm	m	kgf
60A	5	424	65
50A	6.3	124	30
50A	10	133	82
50A	12.5	128	123
50A	16	90	142
Peso Total		60A =	65 kgf
Peso Total		50A =	378 kgf



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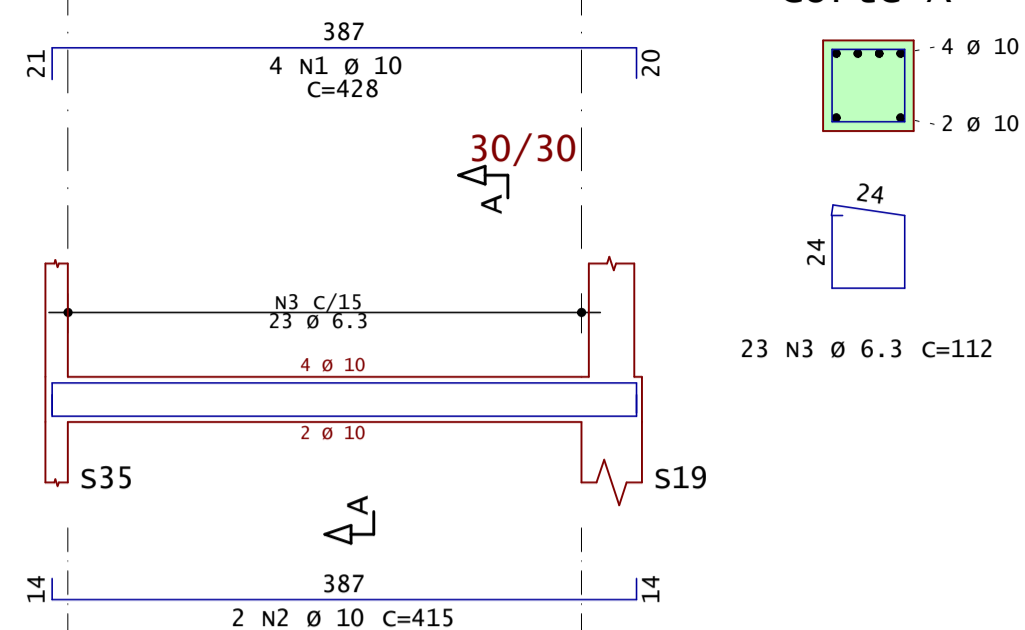
ANDRÉ RODRIGUES
Engenheiro Estrutural

(83) 9 9644 2240
@andrerodrigueseng
andrerodrigues.eng.br
contato@andrerodrigues.eng.br

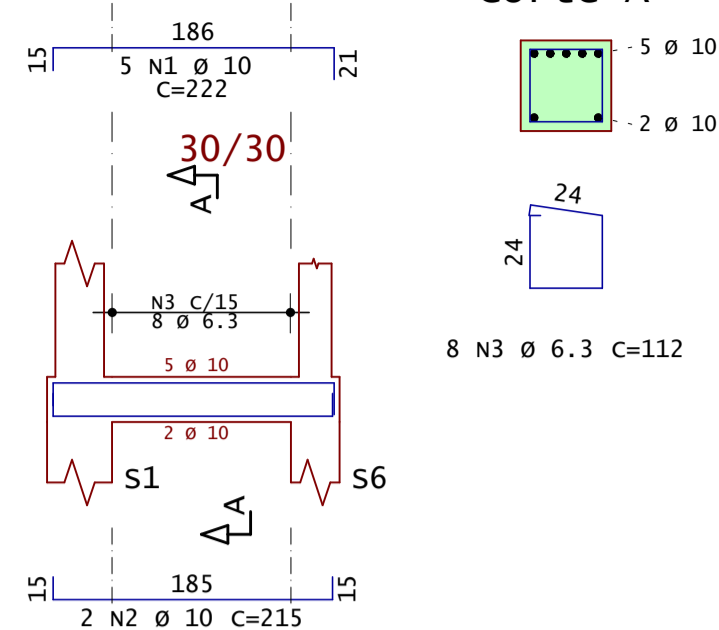
Cliente: Cleiton Batista Soares de Lima	Prancha nº: 10	Revisão nº: 002
Obra: Residência Unifamiliar	Observações: Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo	
Título: • Detalhamento dos Pilares (3/3)		
CREA-PB: 161890343-9	ART nº: Pb20210395879	
Data: 06 / 10 / 2021	Escala: Indicada	



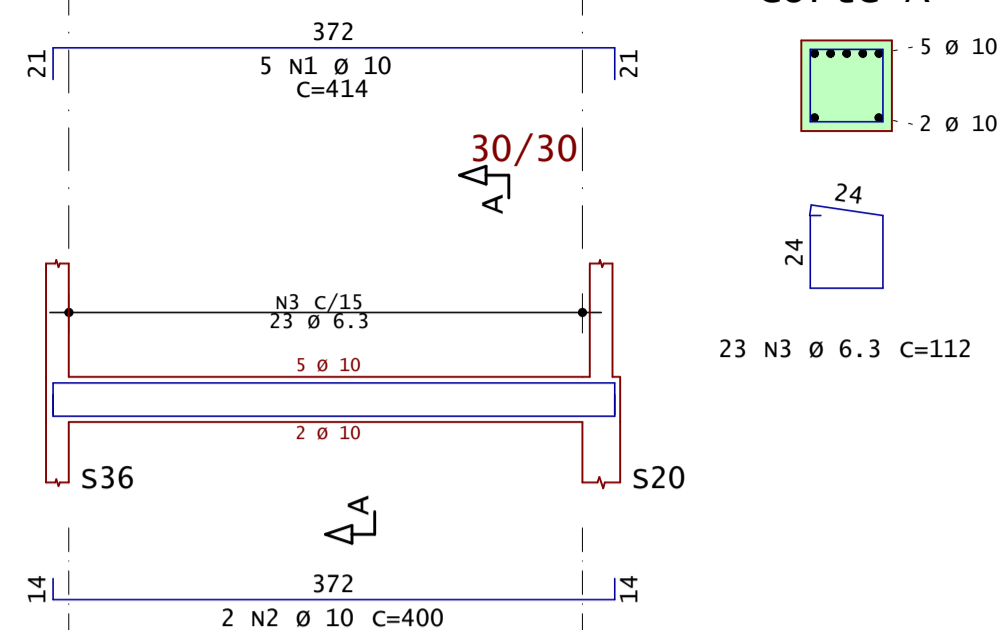
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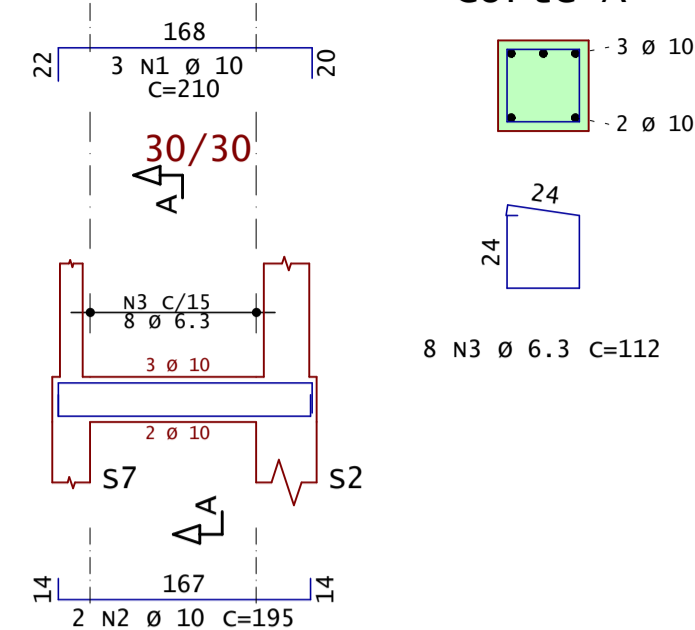
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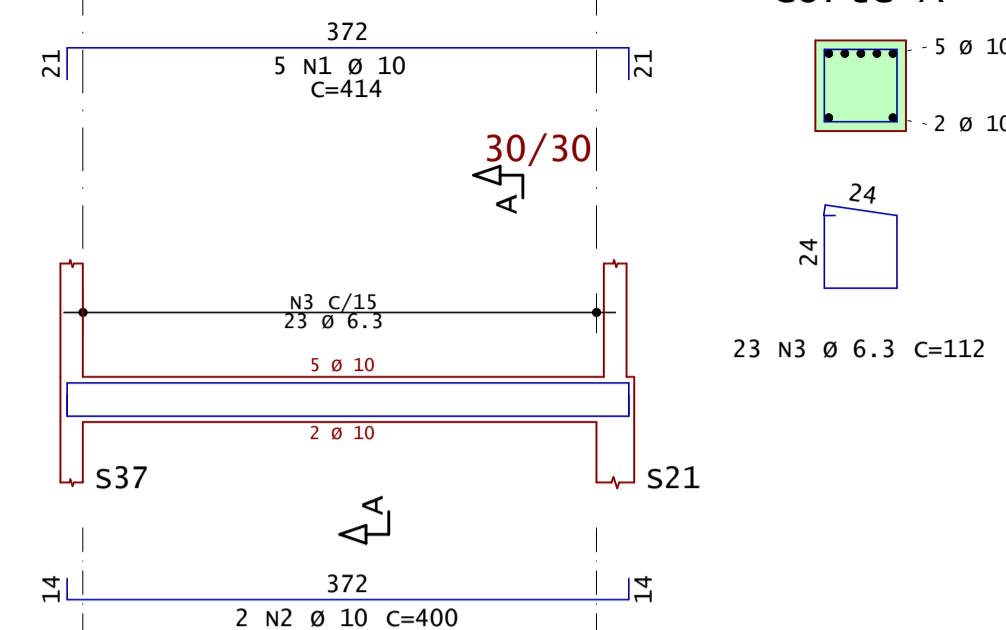
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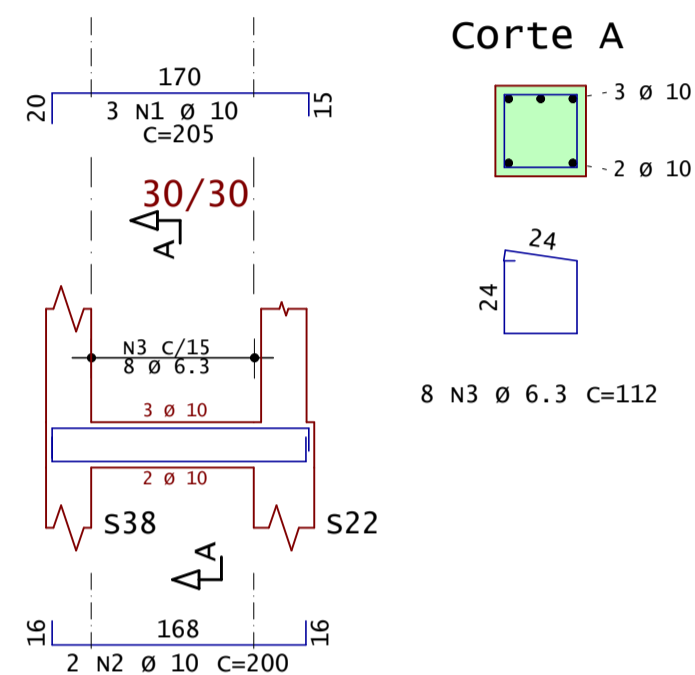
VE4



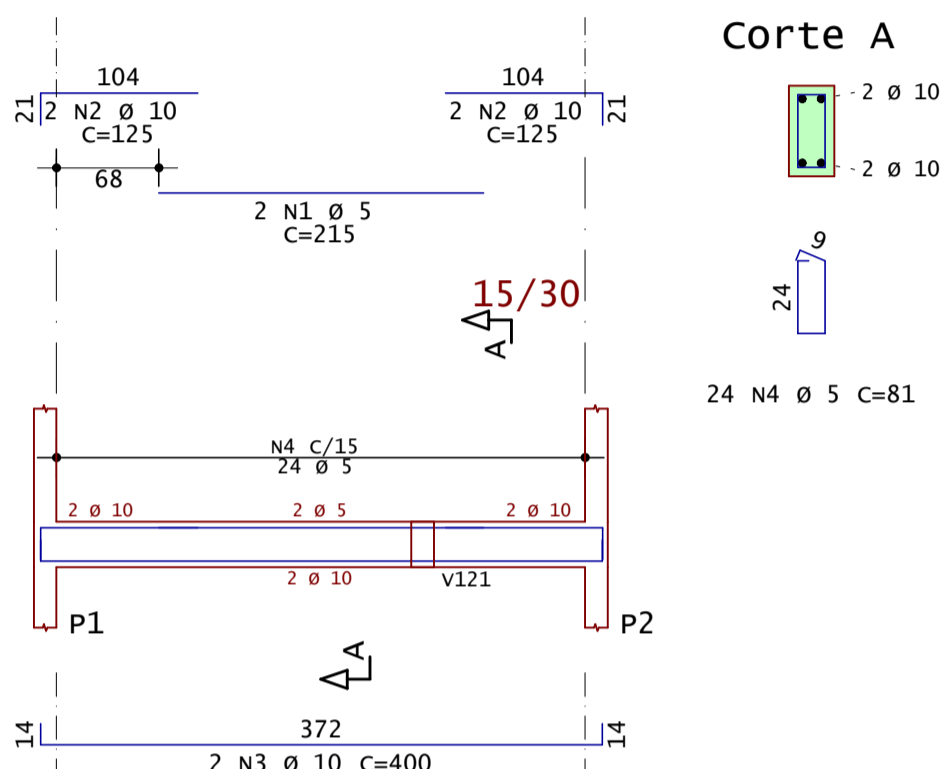
VE5



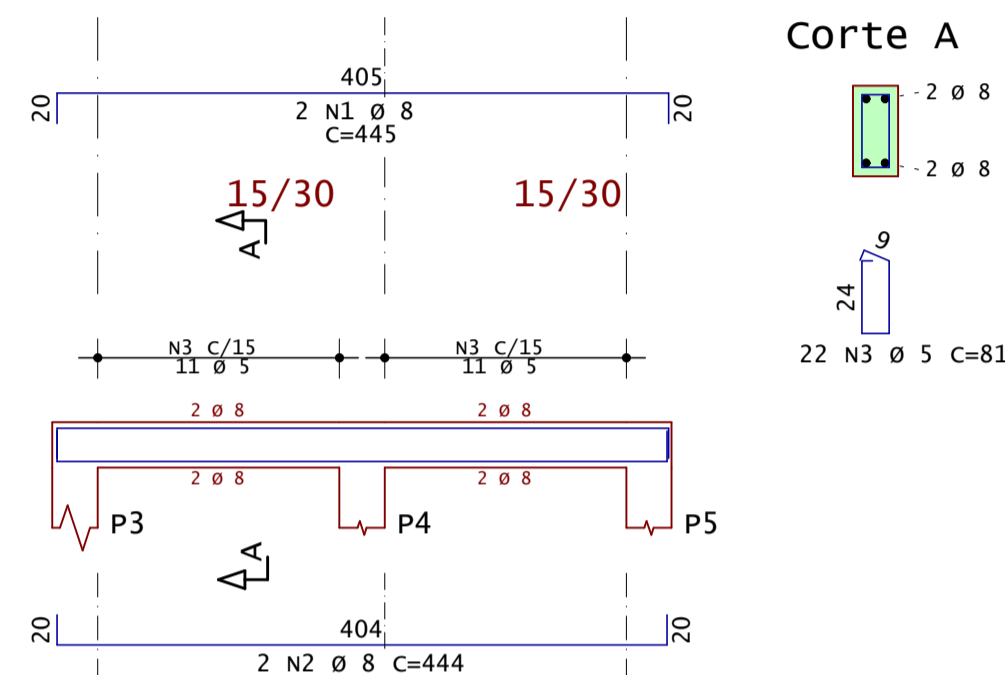
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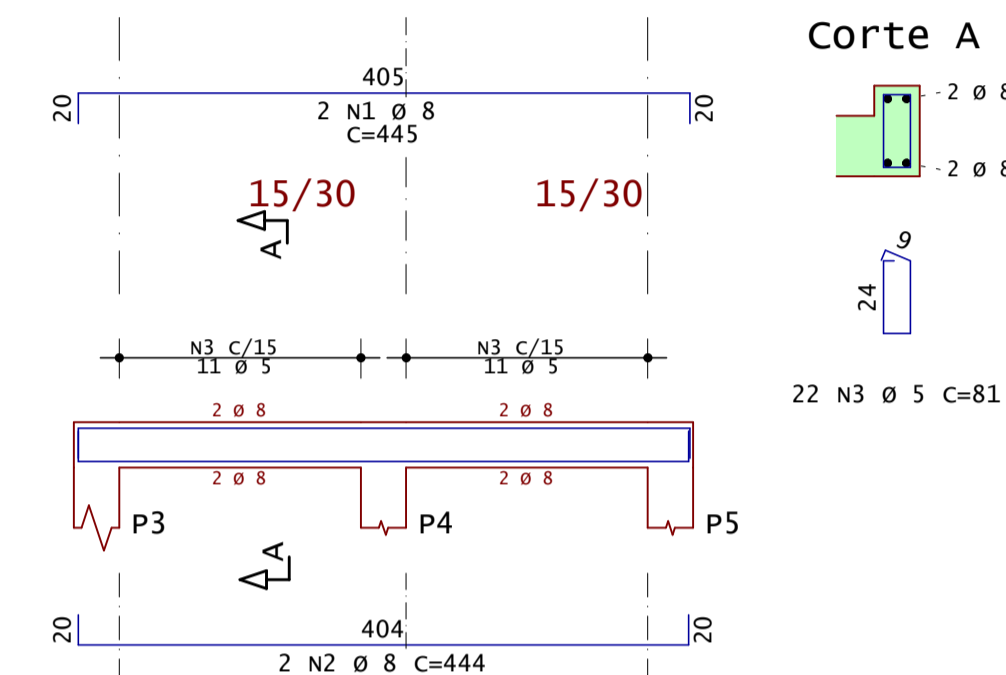
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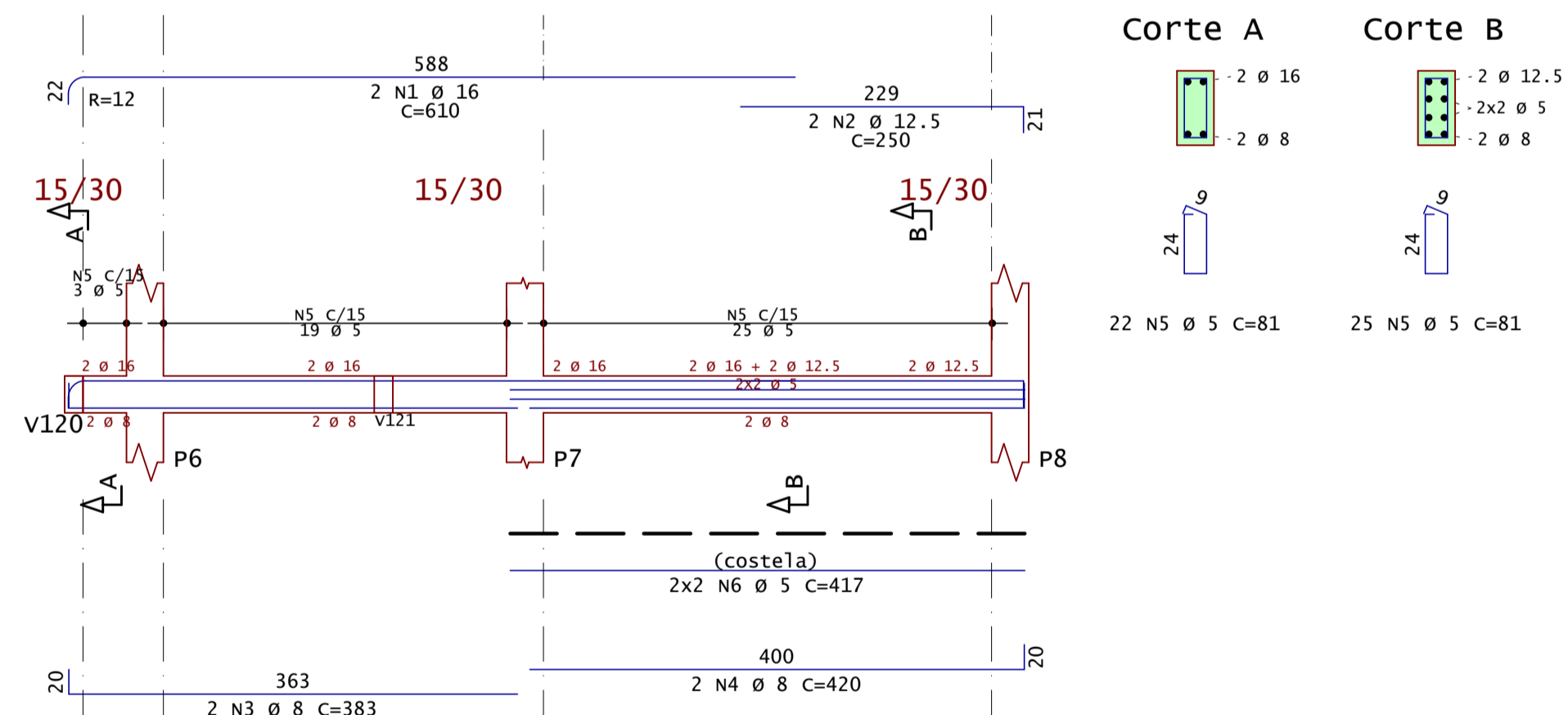
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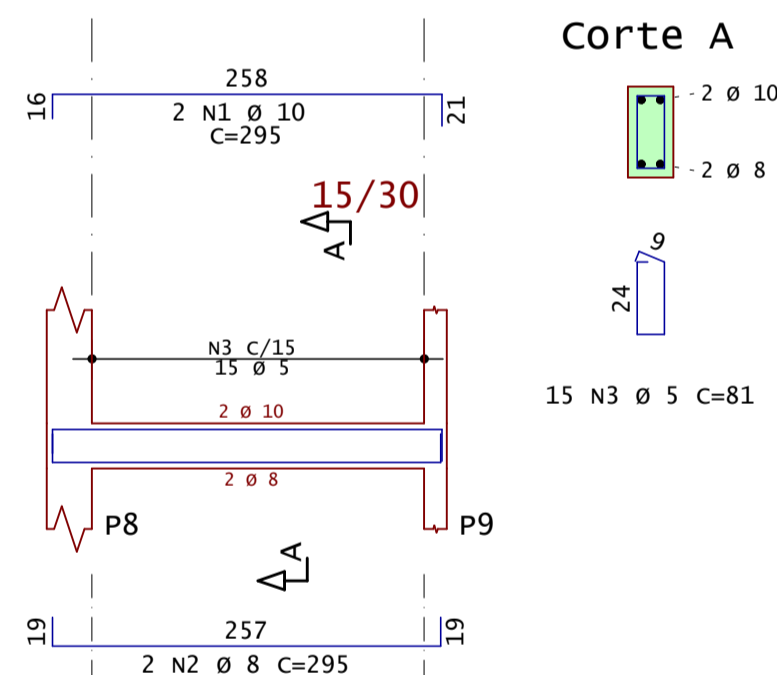
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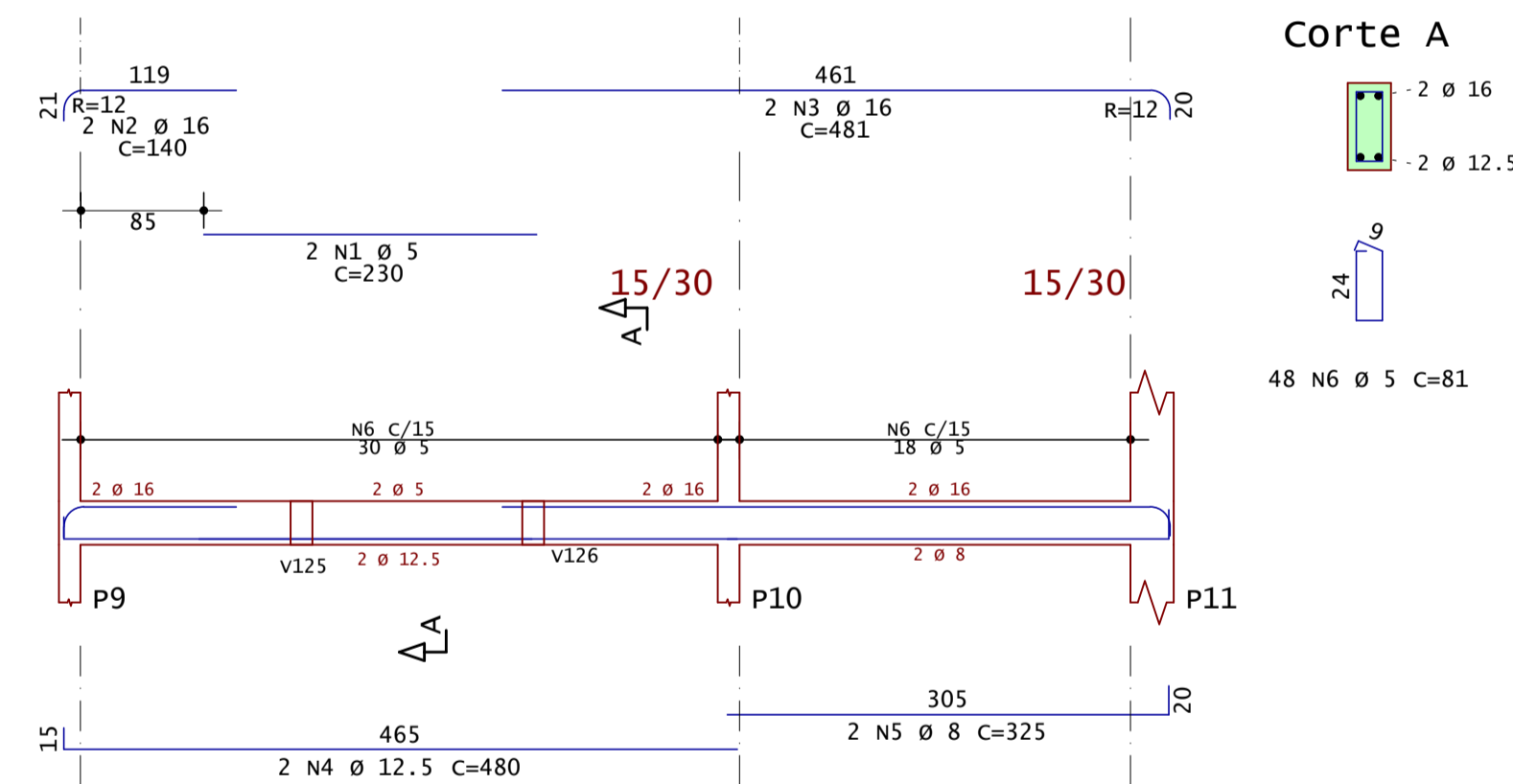
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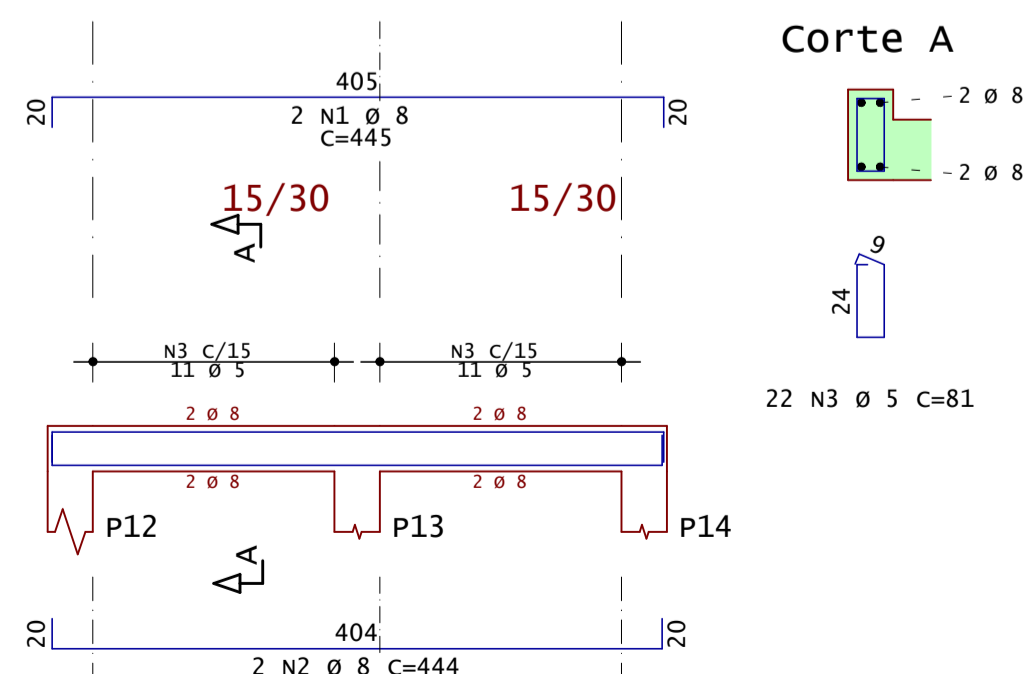
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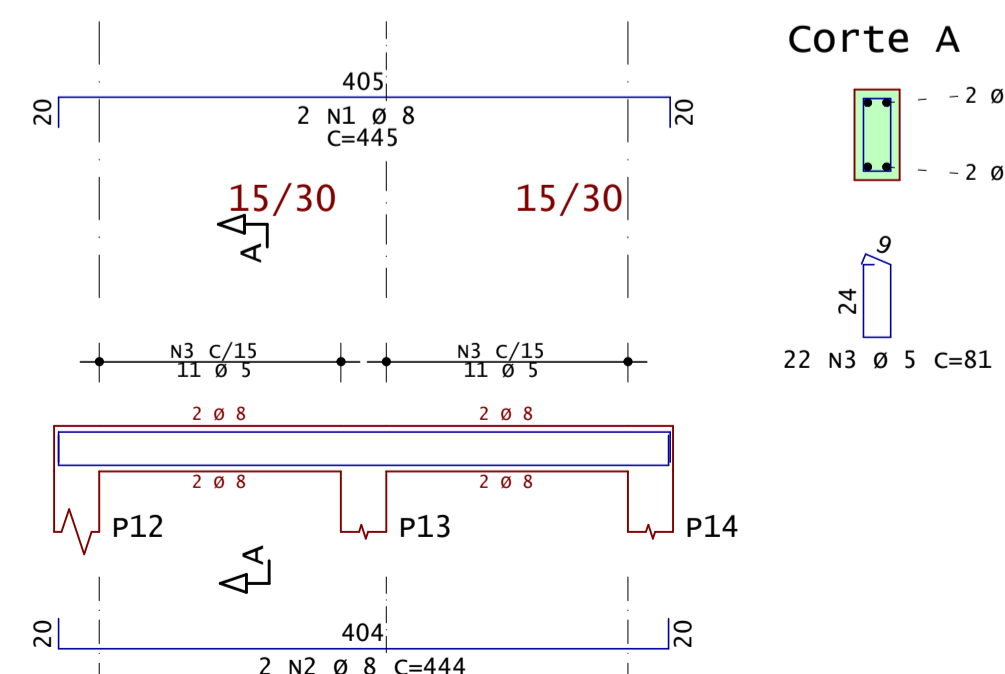
V106



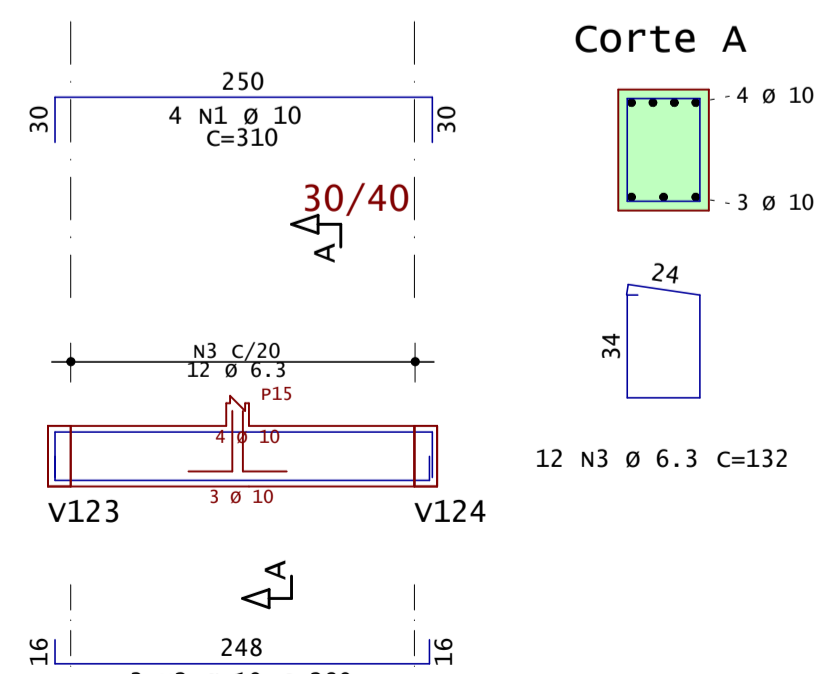
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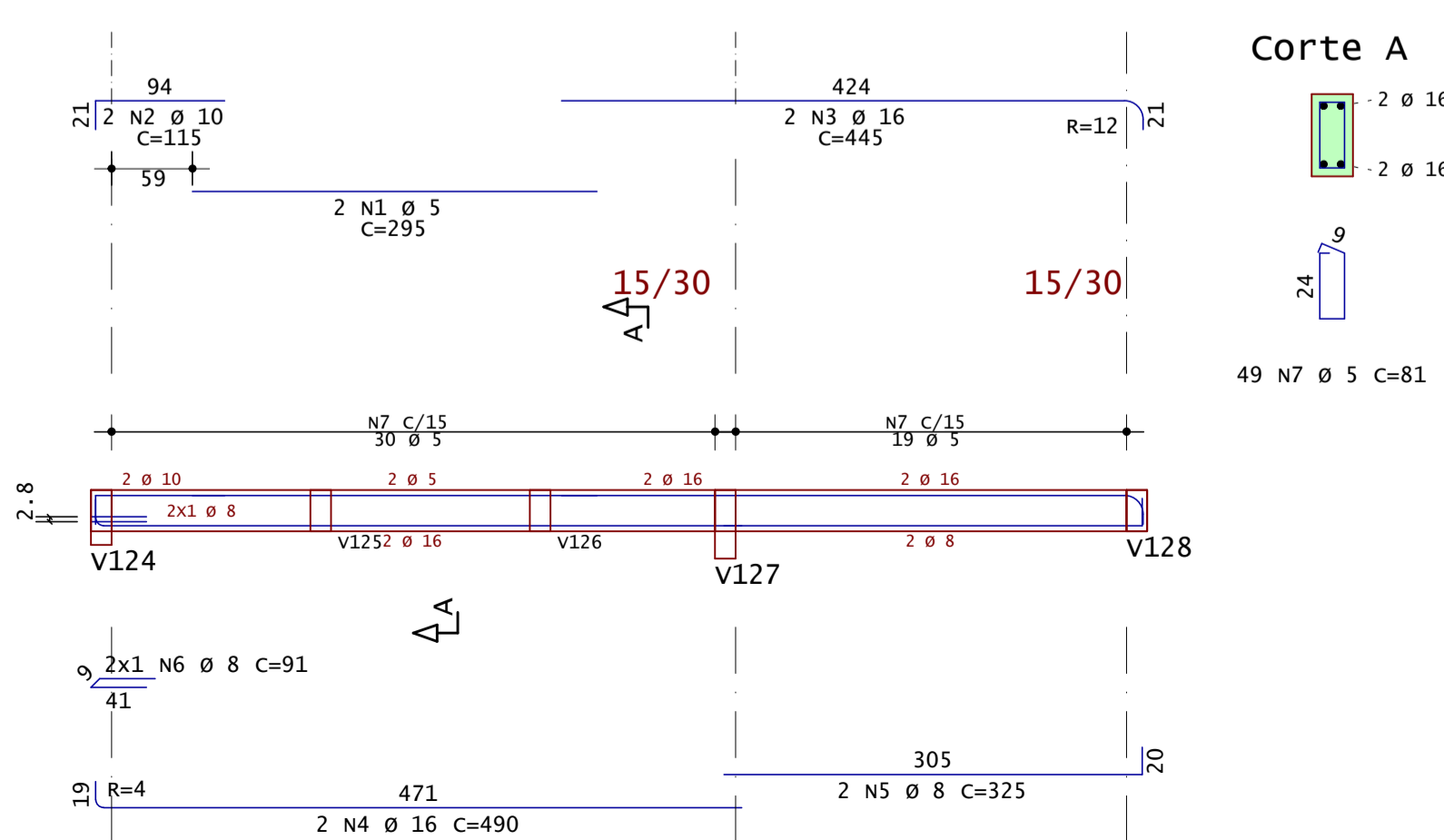
V108



V109



V110



AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
V101	60A	1	5	215	430
	50A	2	4	125	500
	50A	3	10	400	800
	60A	4	5	24	1944
V102	50A	1	8	2	890
	50A	2	8	2	888
	60A	3	5	22	1782
V103	50A	1	8	2	890
	50A	2	8	2	888
	60A	3	5	22	1782
V104	50A	1	16	2	1220
	50A	2	12.5	2	500
	50A	3	8	2	766
	50A	4	8	2	840
	60A	5	47	81	3807
	60A	6	5	4	1668
V105	50A	1	10	2	590
	50A	2	8	2	590
	60A	3	5	15	1215
V106	60A	1	5	2	460
	50A	2	16	2	280
	50A	3	16	2	962
	50A	4	12.5	2	960
	50A	5	8	2	383
	60A	6	5	48	325
	60A	7	8	2	650
	60A	8	2	91	182
	60A	9	5	49	81
V107	50A	1	8	2	890
	50A	2	8	2	888
	60A	3	5	22	1782
V108	50A	1	8	2	890
	50A	2	8	2	888
	60A	3	5	22	1782
V109	50A	1	10	4	1240
	50A	2	10	3	840
	50A	3	6.3	12	1584
V110	60A	1	5	2	295
	50A	2	10	2	230
	50A	3	16	2	890
	50A	4	16	2	980
	50A	5	8	2	325
	50A	6	8	2	91
	60A	7	5	49	81
VE1	50A	1	10	4	1712
	50A	2	10	2	380
	50A	3	6.3	23	830
VE2	50A	1	10	5	1110
	50A	2	10	2	430
	50A	3	6.3	8	896
VE3	50A	1	10	5	414
	50A	2	10	2	800
	50A	3	6.3	23	2576
VE4	50A	1	10	3	630
	50A	2	10	2	390
	50A	3	6.3	8	896
VE5	50A	1	10	5	2070
	50A	2	10	2	800
	50A	3	6.3	23	2576
VE6	50A	1	10	3	615
	50A	2	10	2	400
	50A	3	6.3	8	896

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		m	kgf
60A	5	251	39
50A	6.3	120	29
50A	8	108	43
50A	10	161	99
50A	12.5	15	14
50A	16	43	60
Peso Total	60A =		39 kgf
Peso Total	50A =		254 kgf

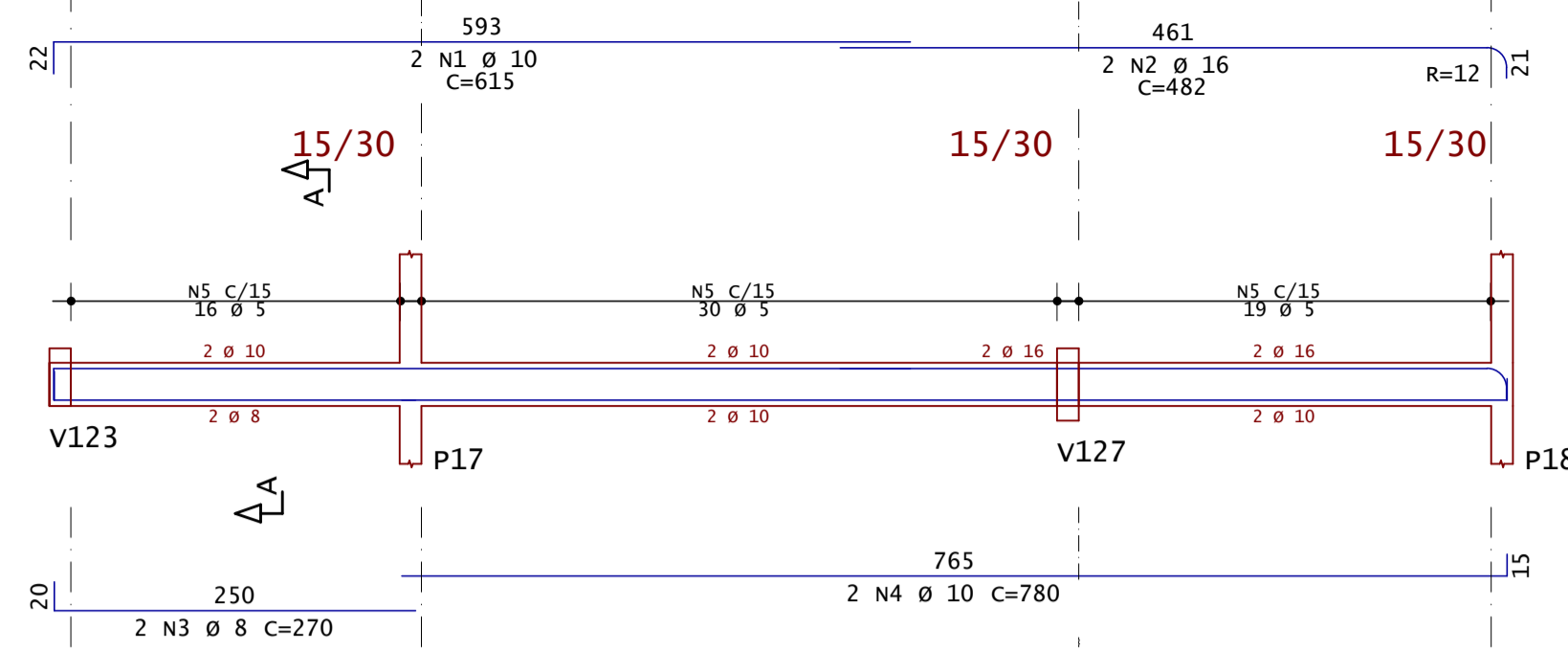


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ANDRÉ RODRIGUES
 Engenheiro Estrutural
 (83) 9 9644 2240 andr@andrrodrigues.eng.br
 @andrrodrigueseng contato@andrrodrigues.eng.br

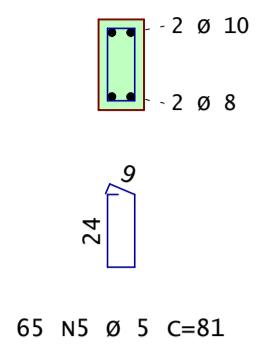
Cliente:	Cleiton Batista Soares de Lima	Prancha nº:	11	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Detalhamento das vigas de equilíbrio; • Detalhamento das vigas baldrame (1/3)	CREA-PB:	161890343-9	ART nº:	Pb20210395879
Data:	06 / 10 / 2021	Escala:	Indicada		



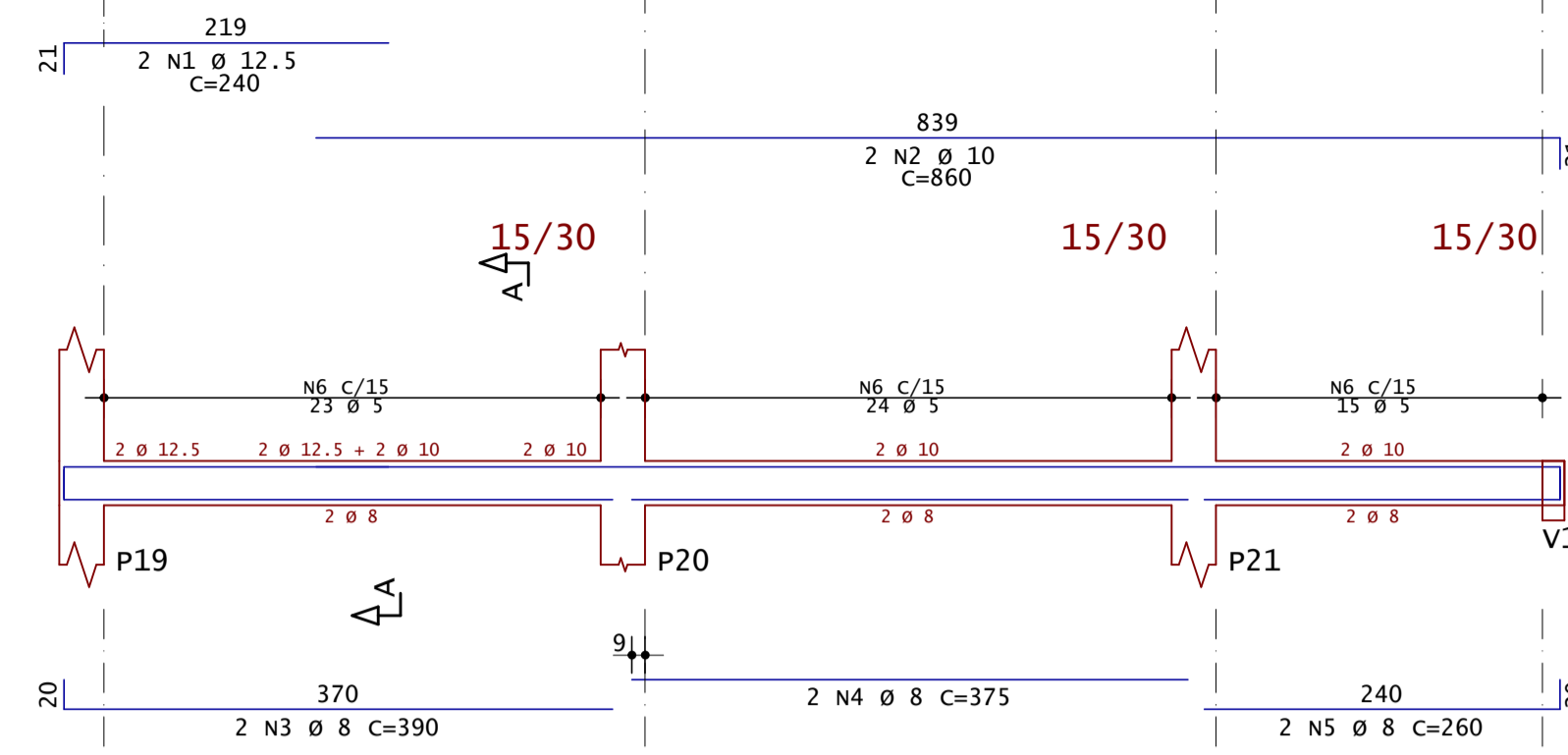
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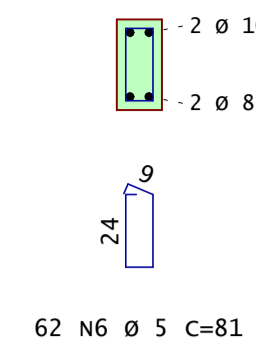
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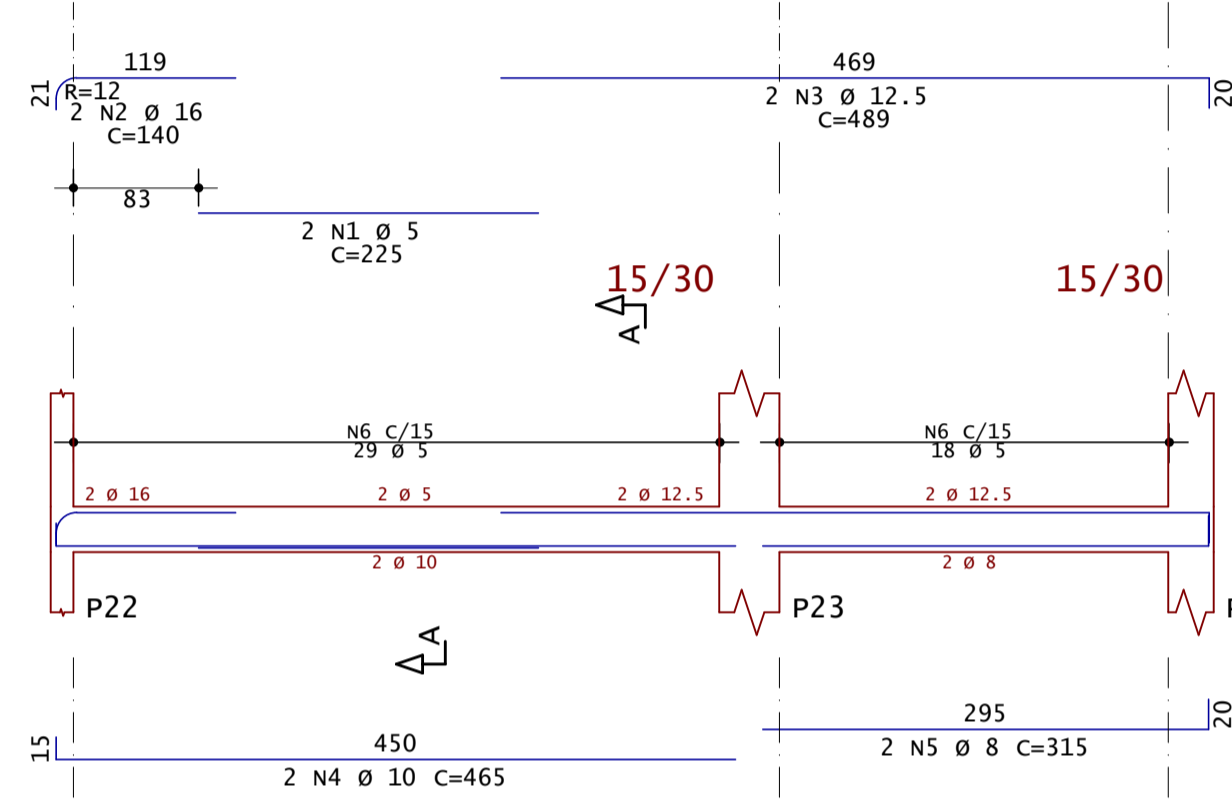
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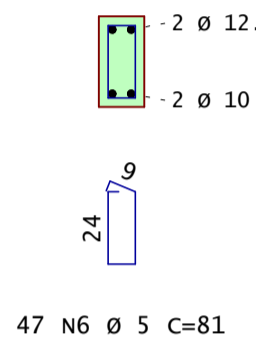
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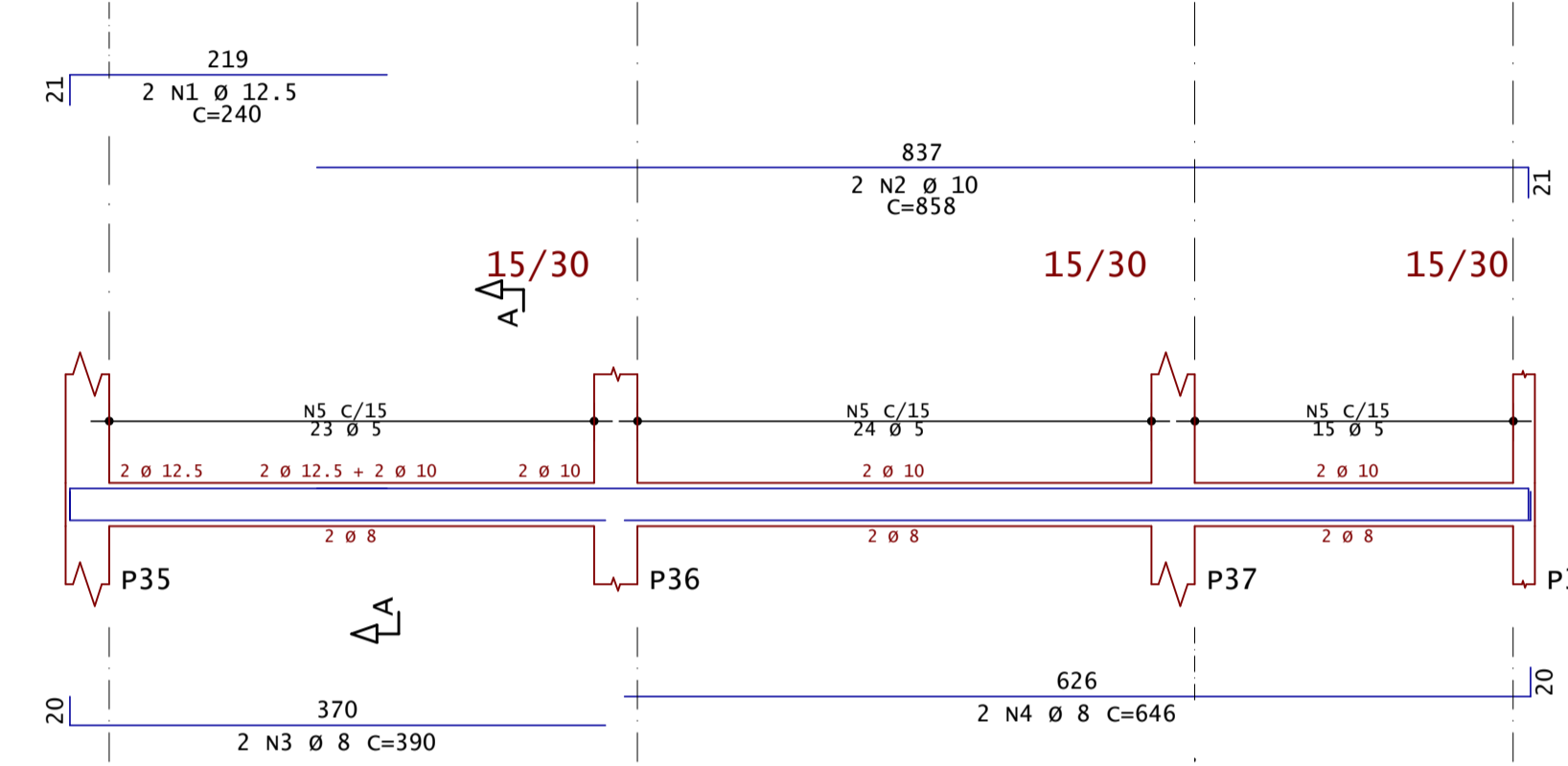
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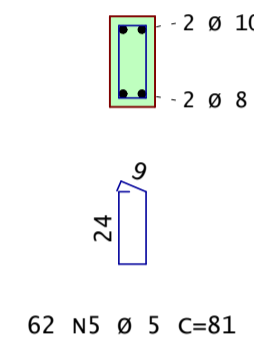
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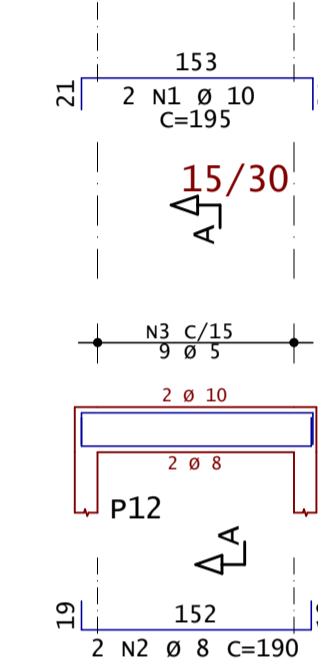
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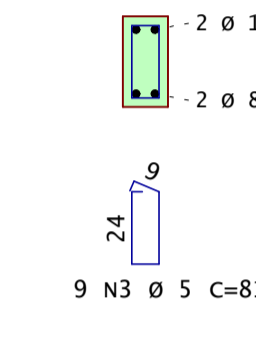
Corte A



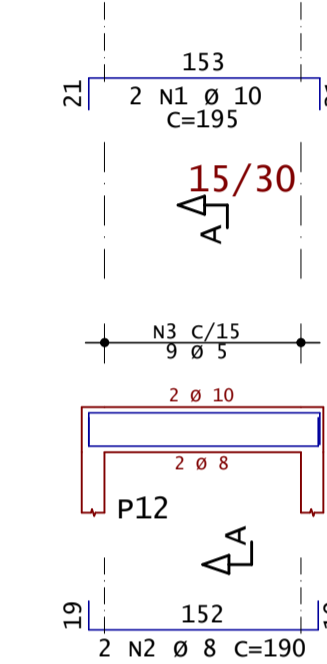
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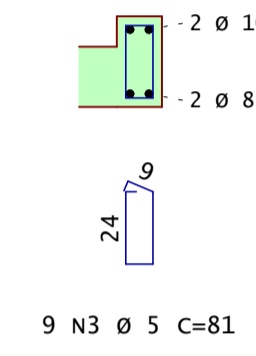
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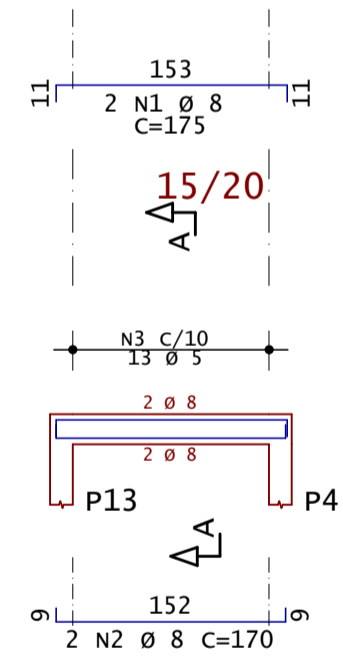
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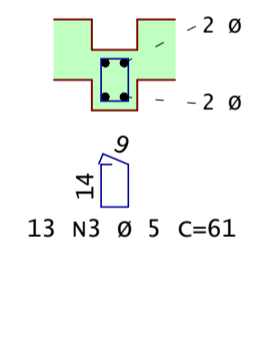
Corte A



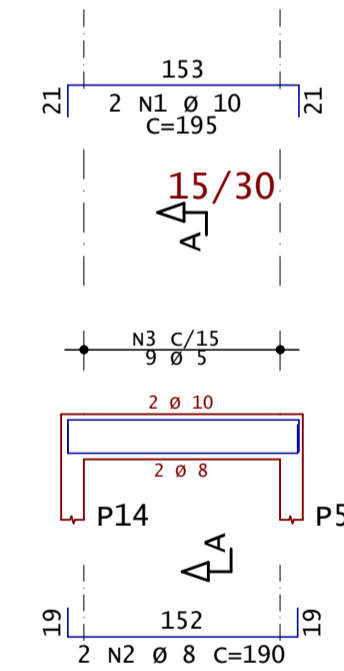
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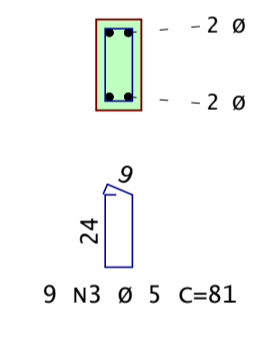
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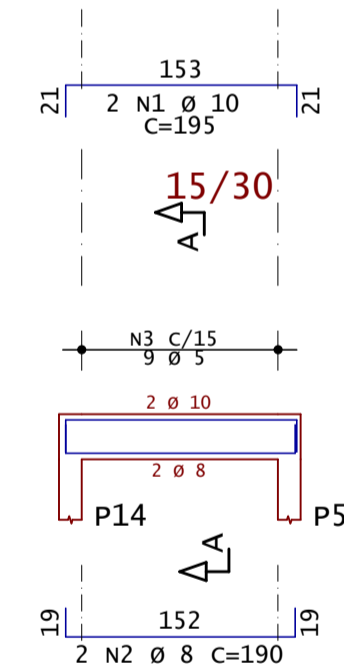
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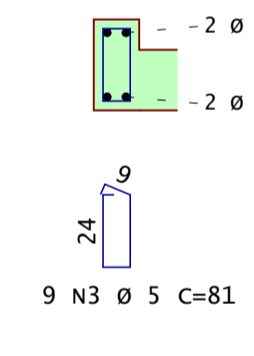
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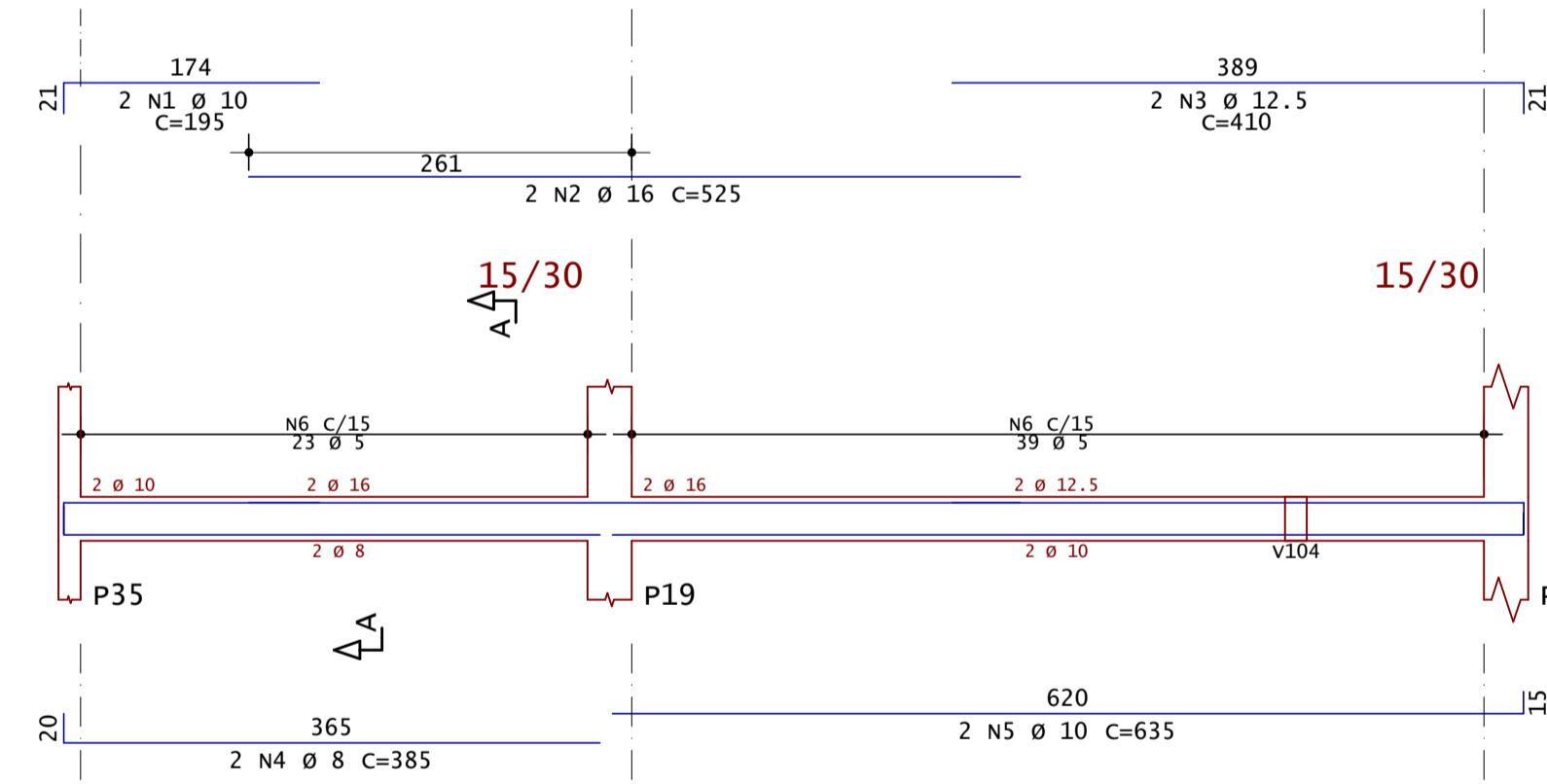
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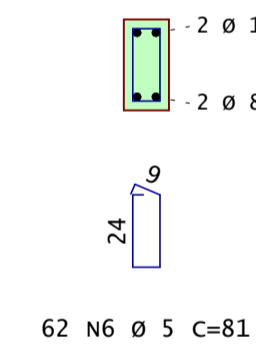
Corte A



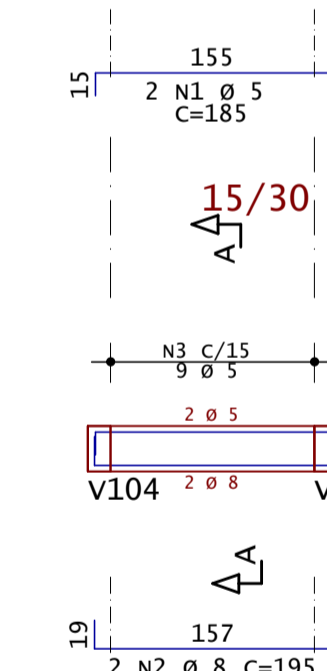
V120



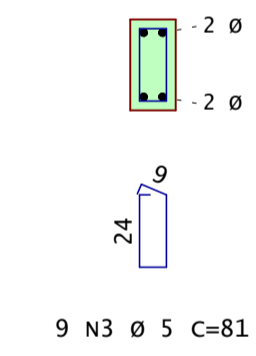
Corte A



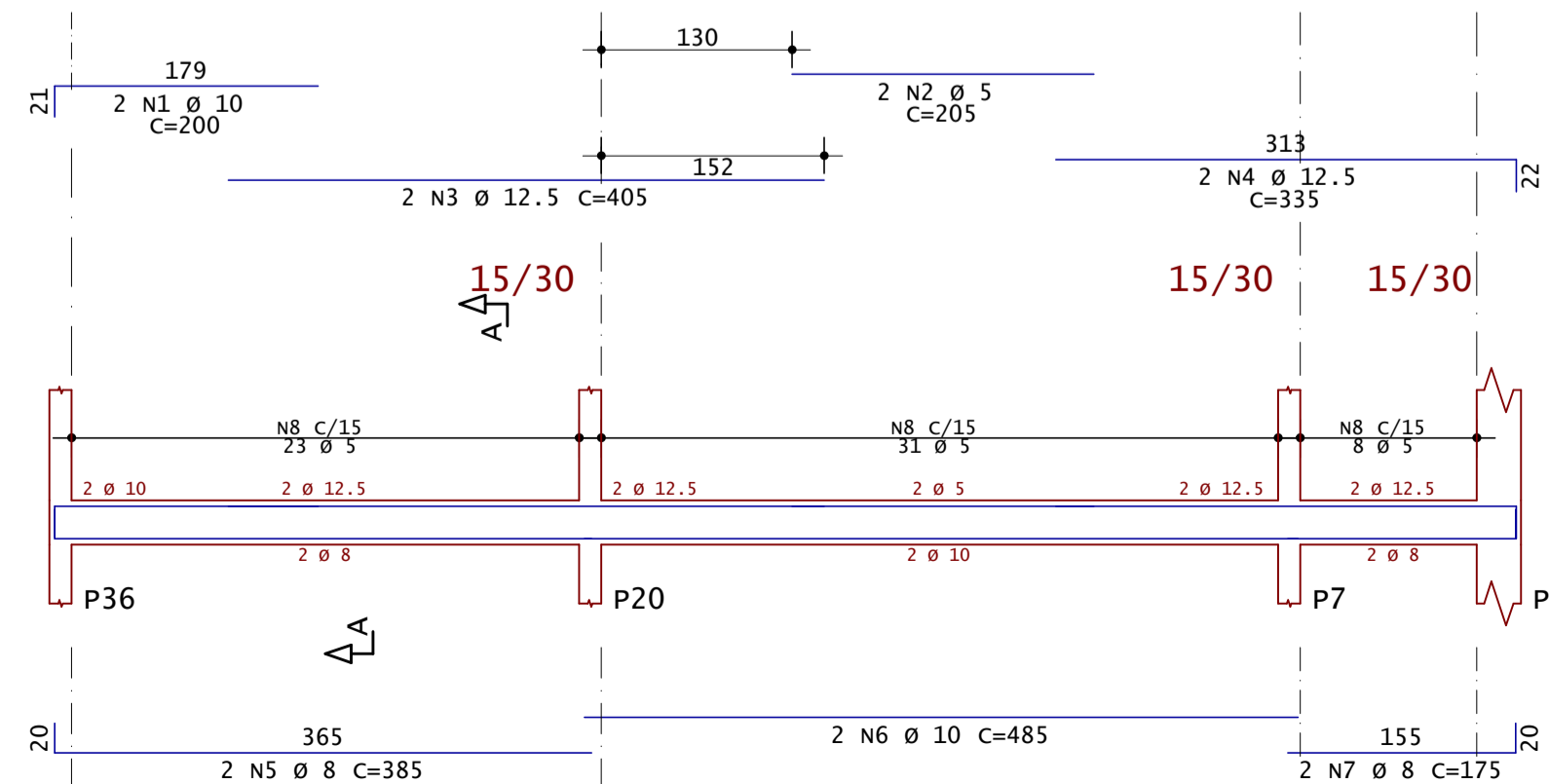
V121



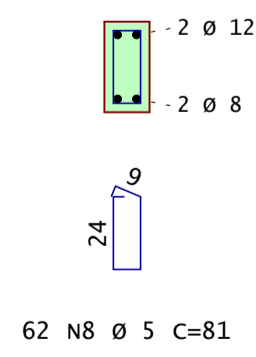
Corte A



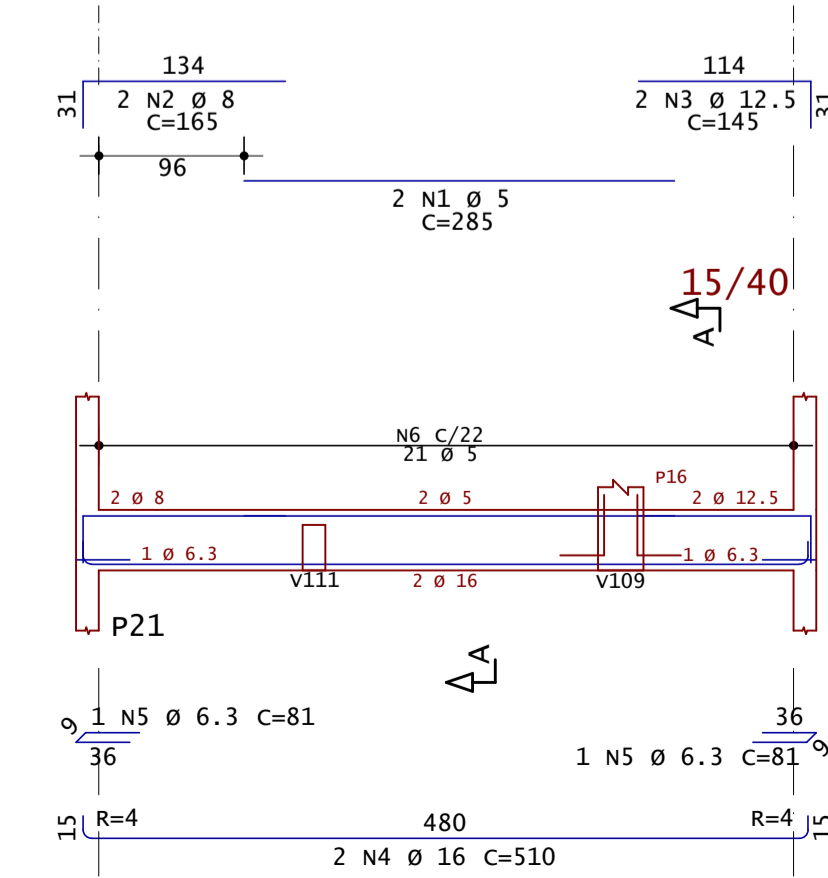
V122



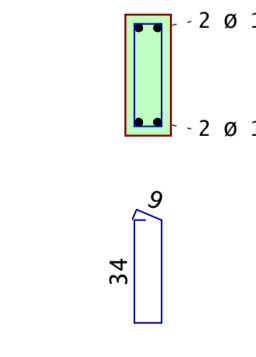
Corte A



V123



Corte A



AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
V111					
50A	1	10	2	615	1230
50A	2	16	2	482	964
50A	3	8	2	270	540
50A	4	10	2	780	1560
60A	5	5	65	81	5265
V112					
50A	1	12.5	2	240	480
50A	2	10	2	860	1720
50A	3	8	2	390	780
50A	4	8	2	375	750
50A	5	8	2	260	520
60A	6	5	62	81	5022
V113					
60A	1	5	2	225	450
50A	2	16	2	140	280
50A	3	12.5	2	489	978
50A	4	10	2	465	930
50A	5	8	2	315	630
60A	6	5	47	81	3807
V114					
50A	1	12.5	2	240	480
50A	2	10	2	858	1716
50A	3	8	2	390	780
50A	4	8	2	646	1292
60A	5	5	62	81	5022
V115					
50A	1	10	2	195	390
50A	2	8	2	190	380
60A	3	5	9	81	729
V116					
50A	1	10	2	195	390
50A	2	8	2	190	380
60A	3	5	9	81	729
V117					
50A	1	8	2	175	350
50A	2	8	2	170	340
60A	3	5	13	61	793
V118					
50A	1	10	2	195	390
50A	2	8	2	190	380
60A	3	5	9	81	729
V119					
50A	1	10	2	195	390
50A	2	8	2	190	380
60A	3	5	9	81	729
V120					
50A	1	16	2	185	370
50A	2	8	2	195	390
60A	3	5	9	81	729
V121					
50A	1	10	2	200	400
60A	2	5	2	205	410
50A	3	12.5	2	405	810
50A	4	12.5	2	335	670
50A	5	8	2	385	770
50A	6	10	2	485	970
50A	7	8	2	175	350
60A	8	5	62	81	5022
V122					
60A	1	5	2	285	570
50A	2	8	2	165	330
50A	3	12.5	2	145	290
50A	4	16	2	510	1020
50A	5	6.3	2	81	162
60A	6	5	21	101	2121

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		m	kgf
60A	5	375	58
50A	6.3	2	0
50A	8	101	40
50A	10	117	72
50A	12.5	45	44
50A	16	33	52
Peso Total		60A =	58 kgf
Peso Total		50A =	209 kgf

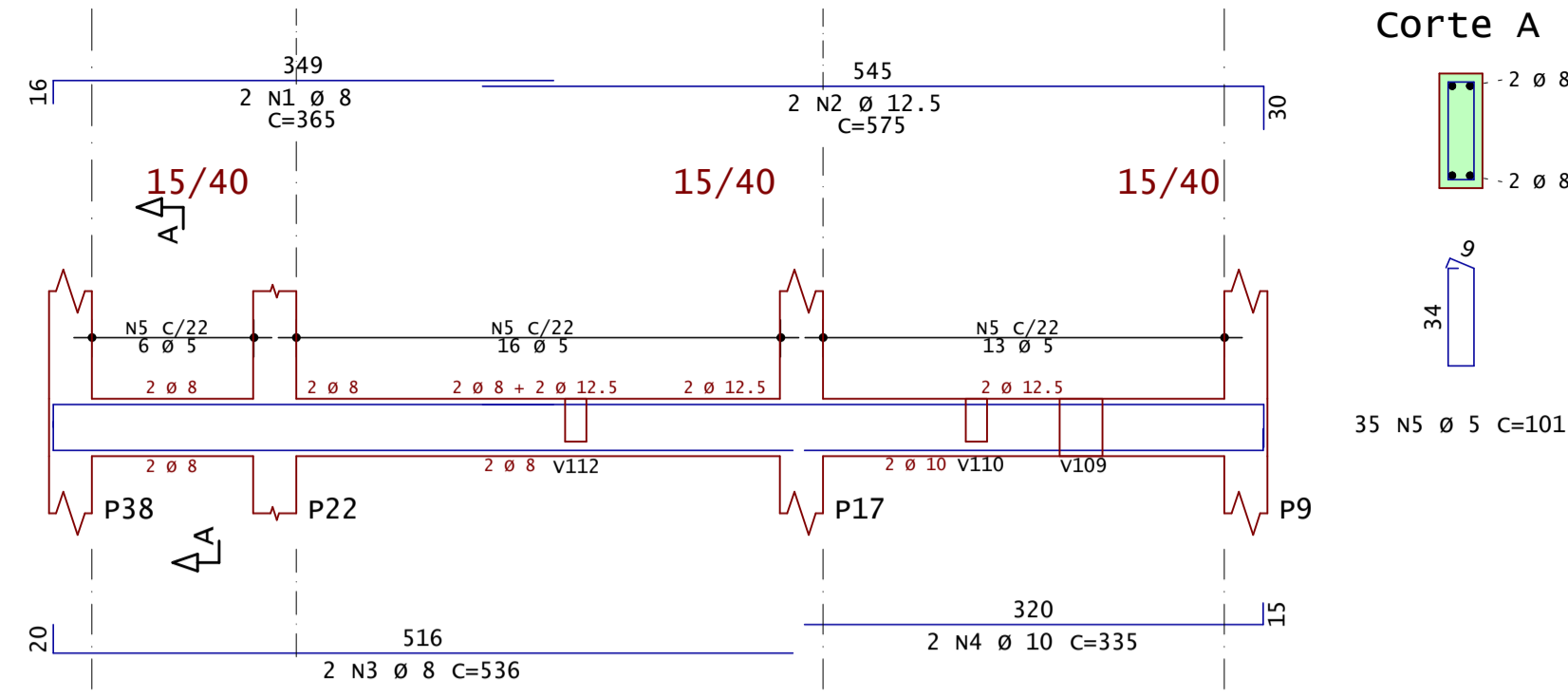


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ANDRÉ RODRIGUES
 Engenheiro Estrutural
 (83) 9 9644 2240
 andrerodrigues.eng.br
 @andrerodrigueseng contato@andrerodrigues.eng.br

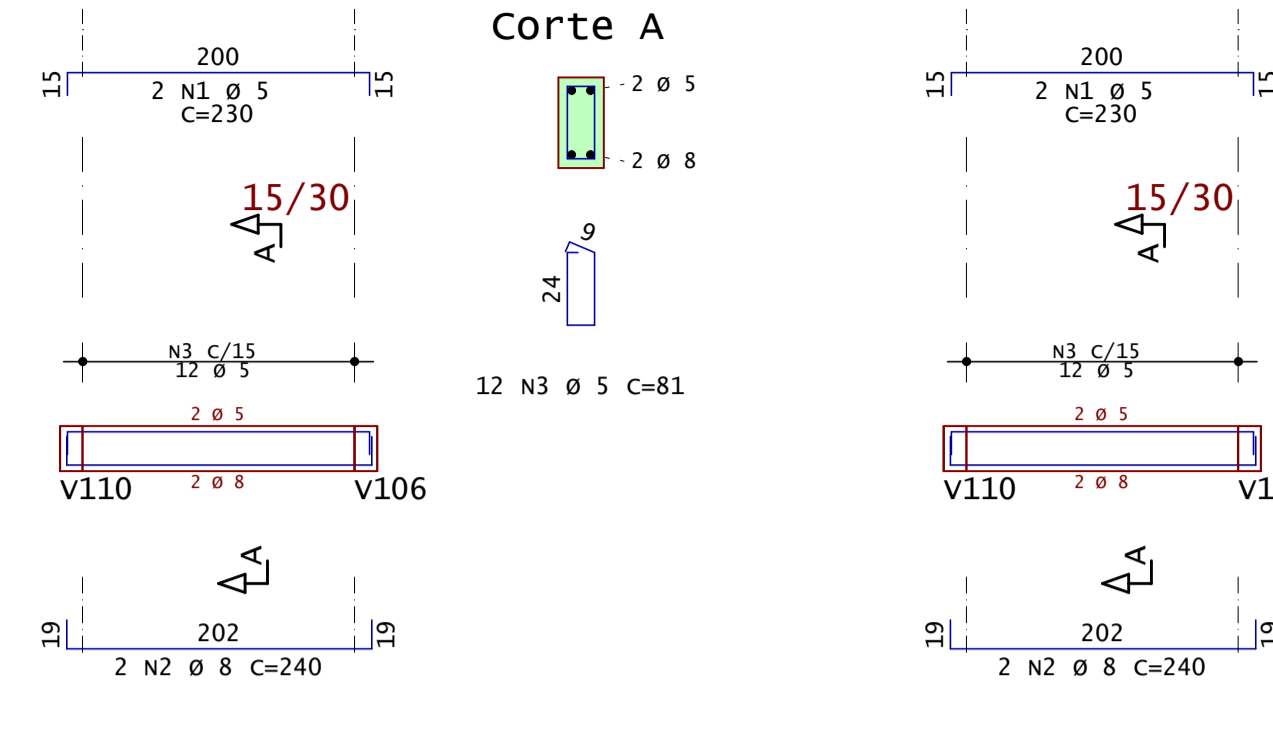
Cliente:	Cleiton Batista Soares de Lima	Prancha nº:	12	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Detalhamento das vigas baldrame (2/3)				
CREA-PB:	161890343-9	ART nº:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		



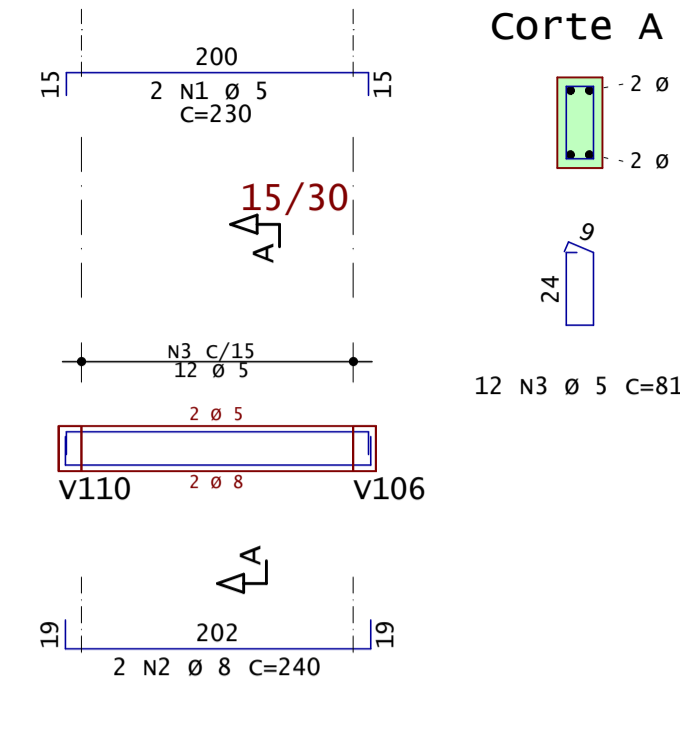
V124



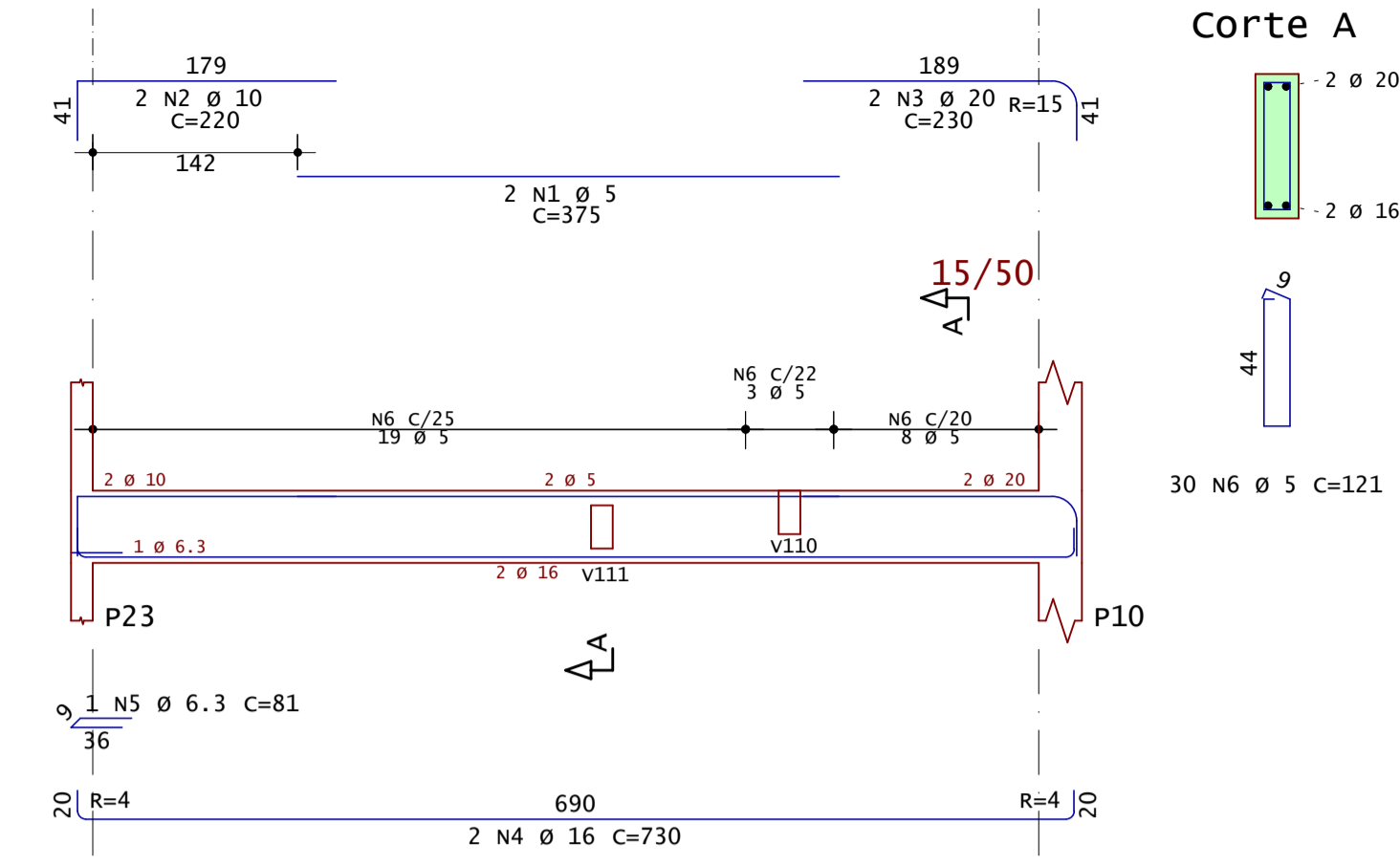
V125



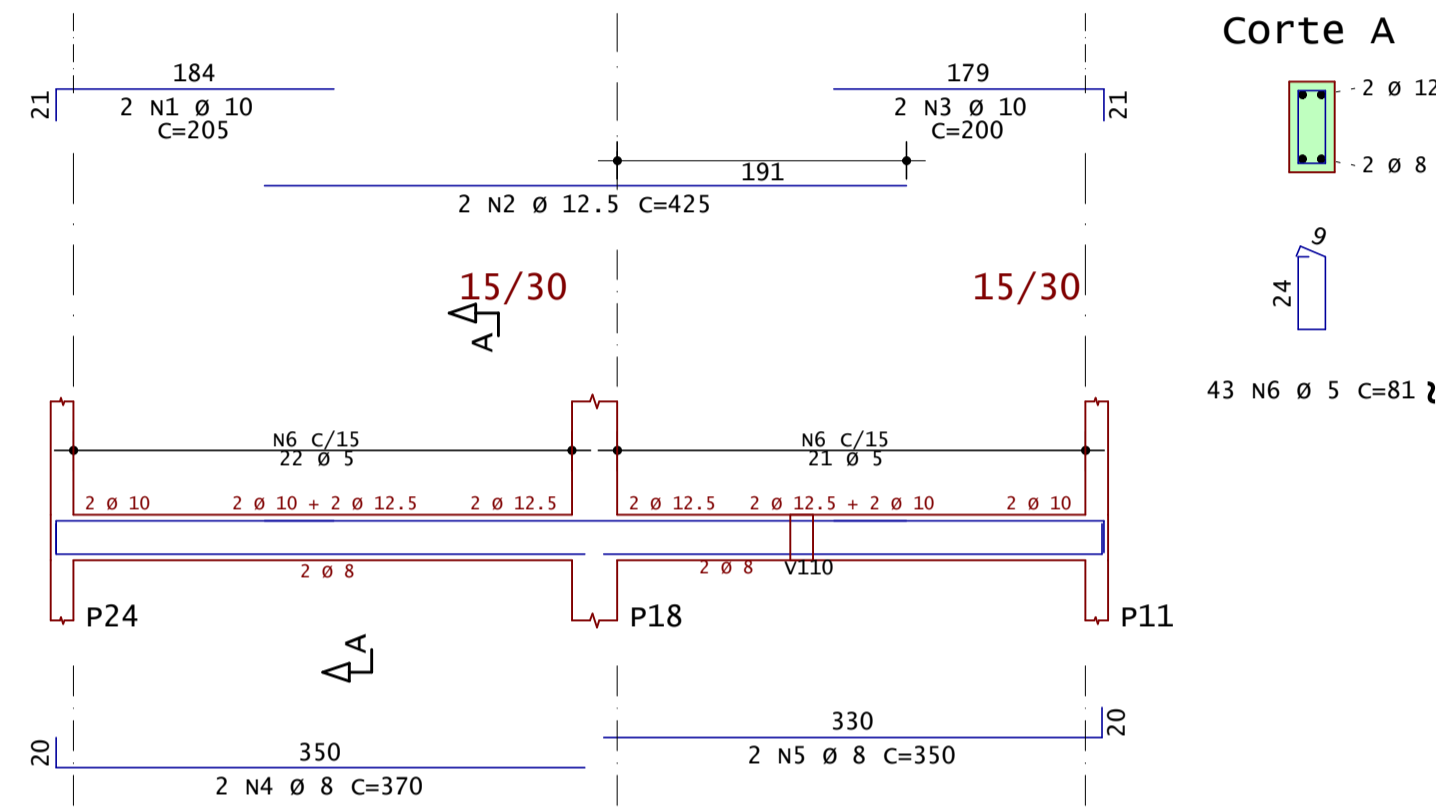
V126



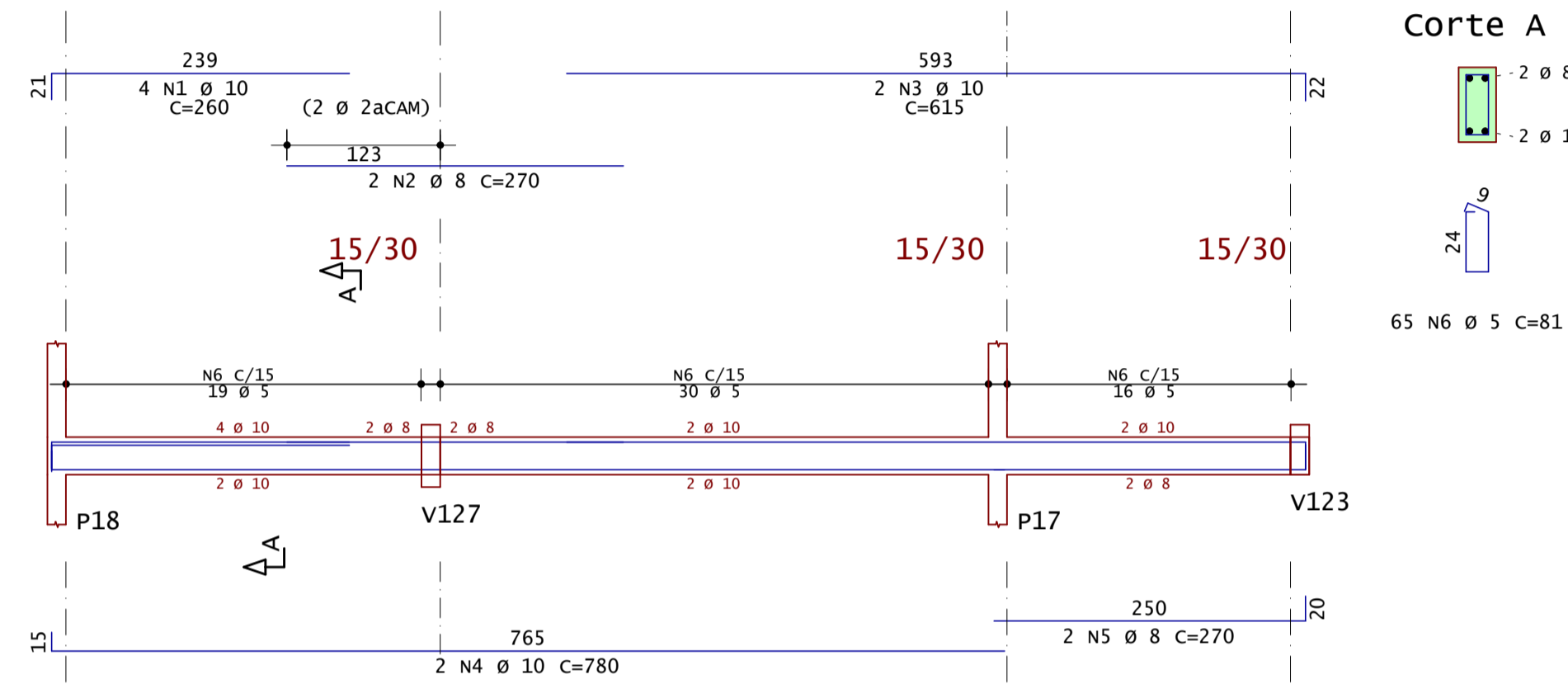
V127



V128



V129



ESTUDO - NAO EXECUTAR

AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
V124	50A	1	8	365	730
	50A	2	2	575	1150
	50A	3	2	536	1072
	50A	4	2	335	670
	60A	5	35	101	3535
V125	60A	1	5	230	460
	50A	2	8	240	480
	60A	3	5	81	972
V126	60A	1	5	230	460
	50A	2	8	240	480
	60A	3	5	12	972
V127	60A	1	5	375	750
	50A	2	10	220	440
	50A	3	2	230	460
	50A	4	16	730	1460
	50A	5	6.3	81	81
	60A	6	30	121	3630
V128	50A	1	10	205	410
	50A	2	12.5	425	850
	50A	3	10	200	400
	50A	4	8	370	740
	50A	5	8	350	700
	60A	6	5	81	3483
V129	50A	1	10	260	1040
	50A	2	8	270	540
	50A	3	10	615	1230
	50A	4	10	780	1560
	50A	5	8	270	540
	60A	6	5	81	5265

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		mm	m
			kgf
60A	5	195	30
50A	6.3	1	0
50A	8	53	21
50A	10	58	35
50A	12.5	20	19
50A	16	15	23
50A	20	5	11
Peso Total	60A =		30 kgf
Peso Total	50A =		110 kgf

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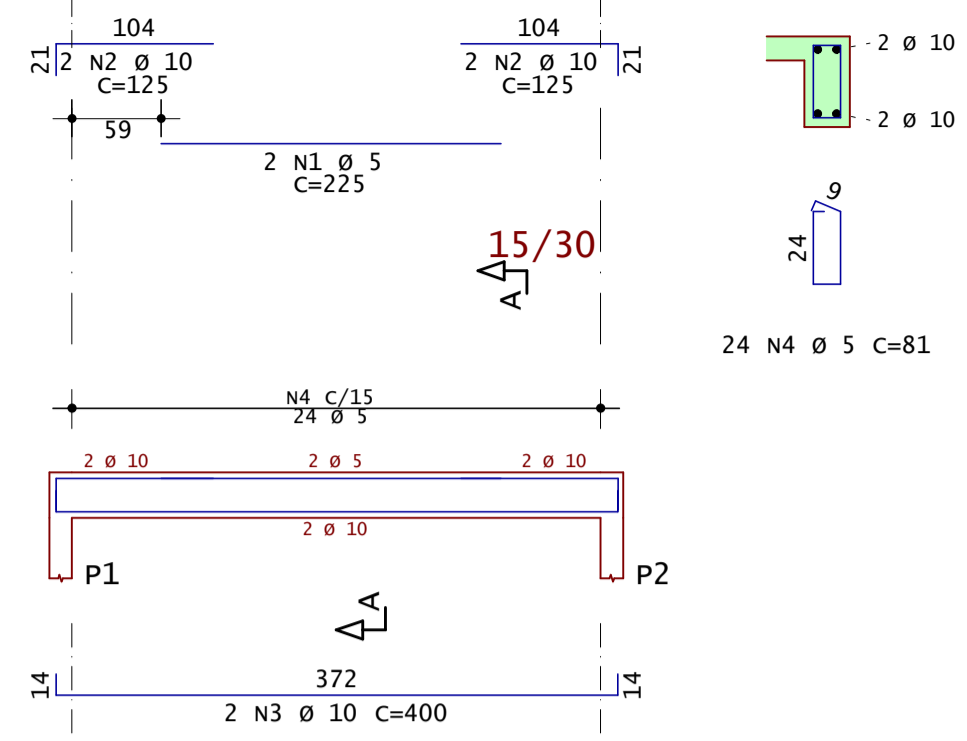
ANDRÉ RODRIGUES
Engenheiro Estrutural

(83) 9 9644 2240
@andrerodrigueseng

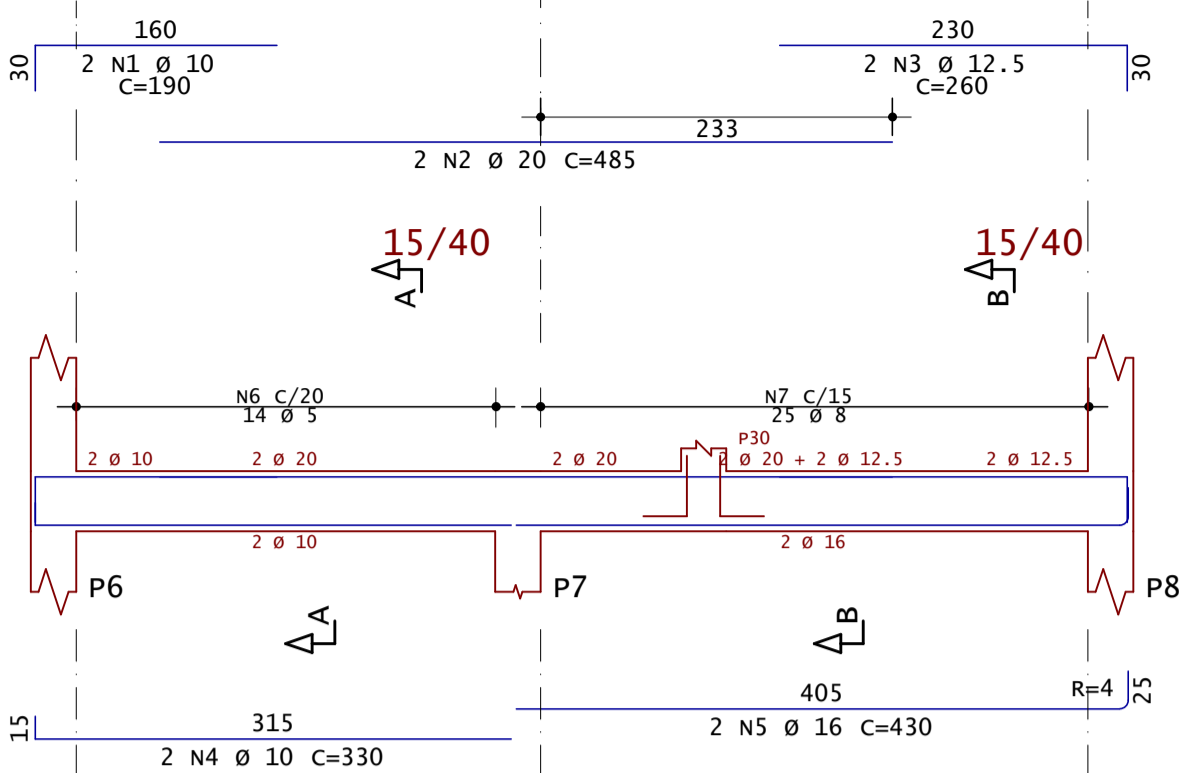
andrerodrigues.eng.br
contato@andrerodrigues.eng.br

Cliente: Cleiton Batista Soares de Lima	Franca nº: 13 Revisão nº: 002
Obra: Residência Unifamiliar	Observações: Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo
Título: • Detalhamento das vigas baldrame (3/3)	
CREA-PB: 161890343-9	
ART nº: Pb20210395879	
Data: 06 / 10 / 2021	Escala: Indicada

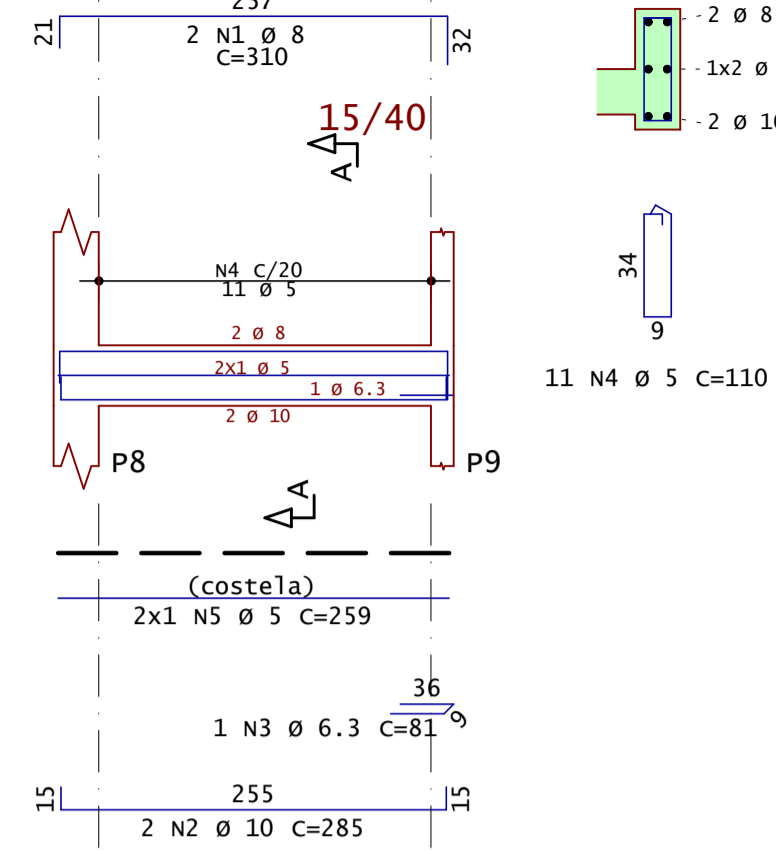
V201



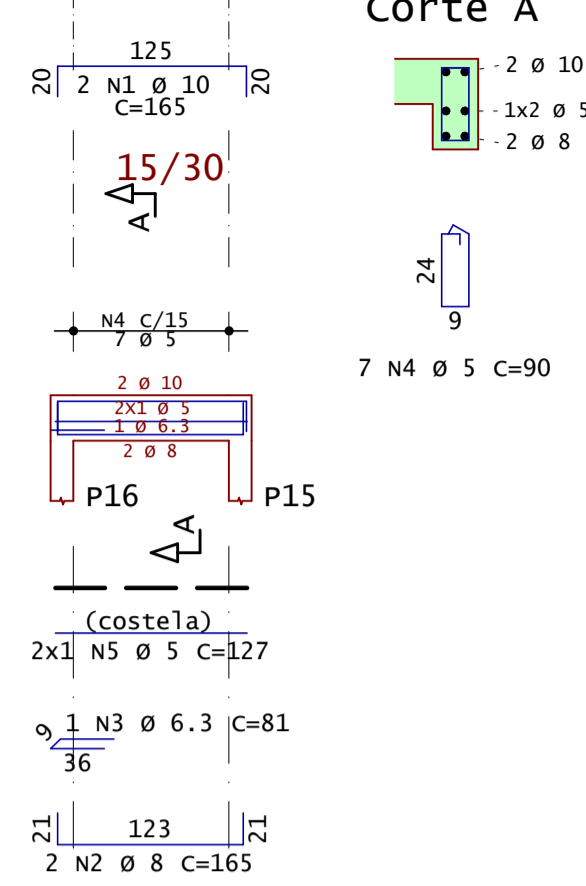
V202



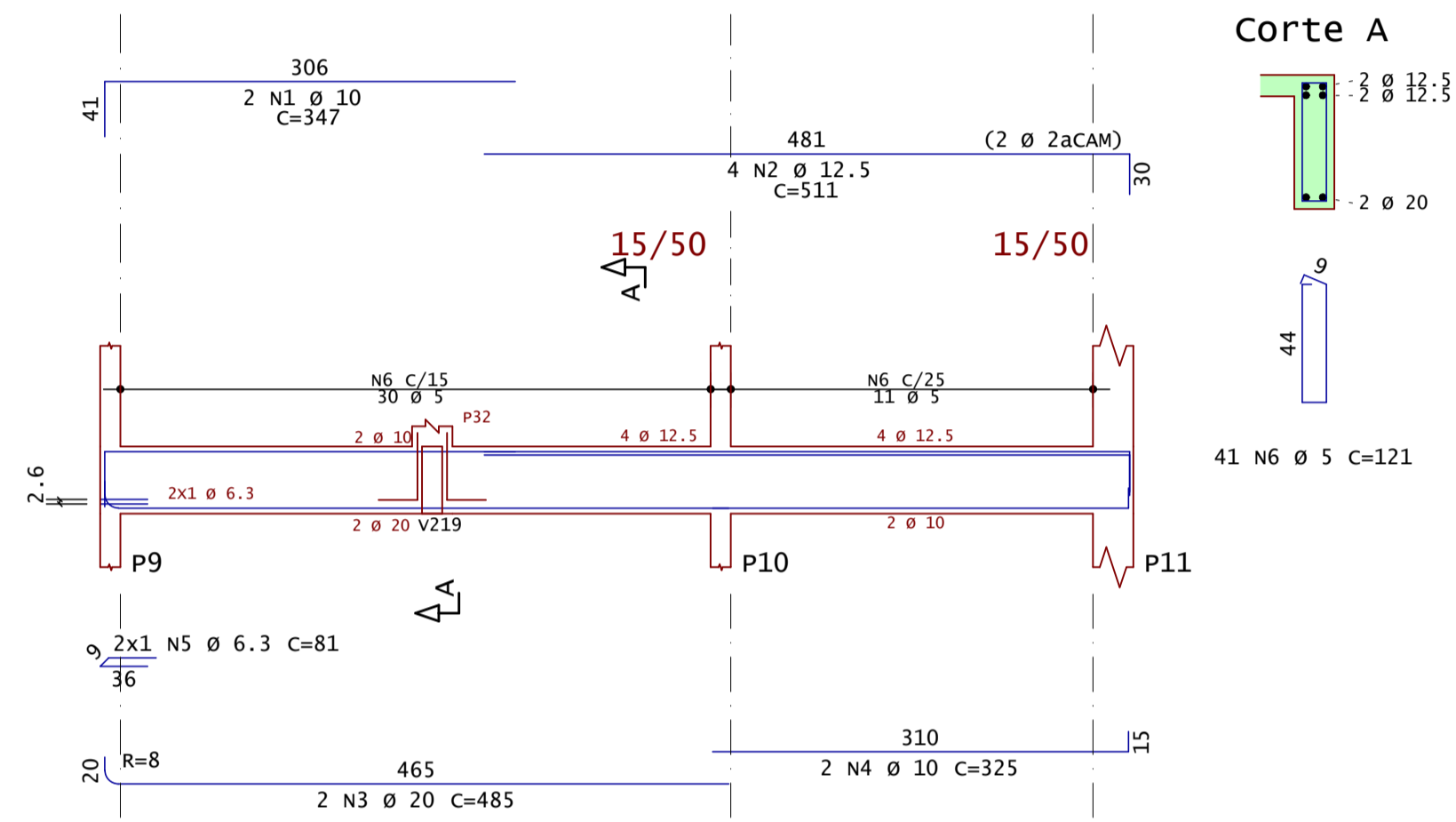
V203



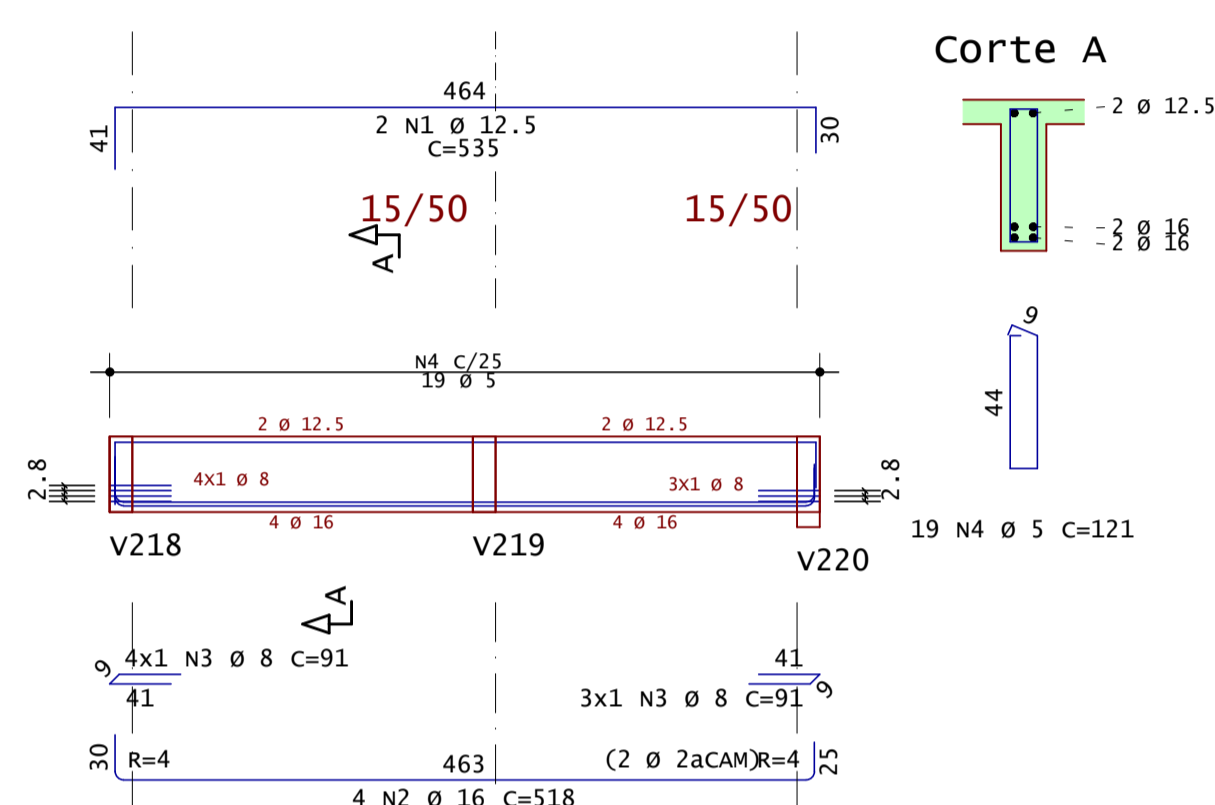
V205



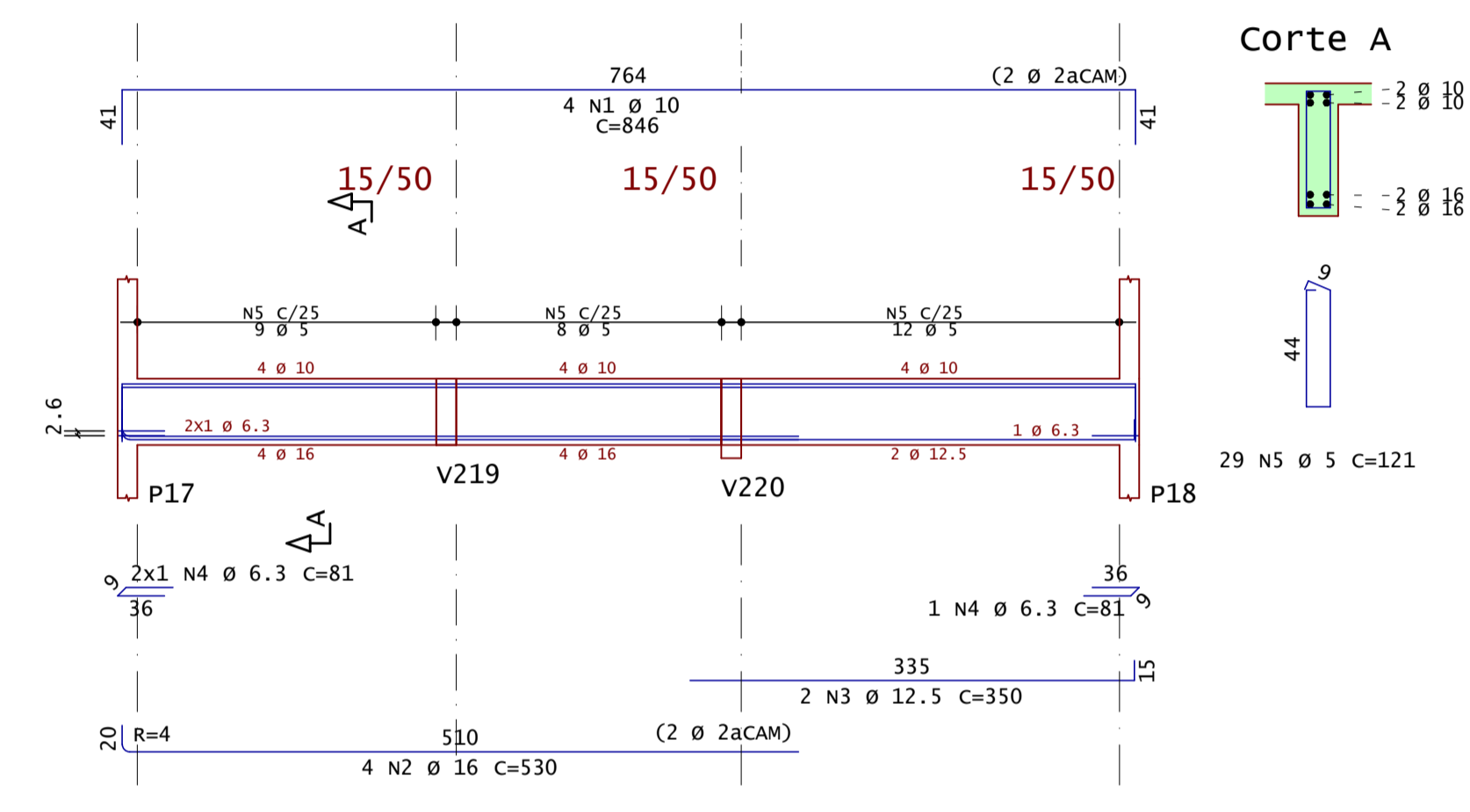
V204



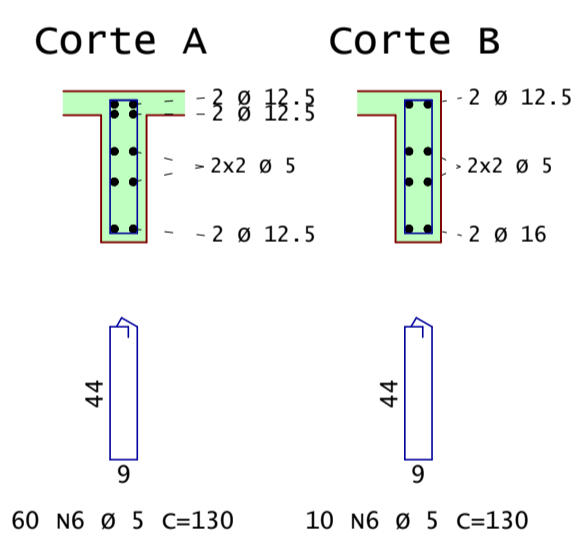
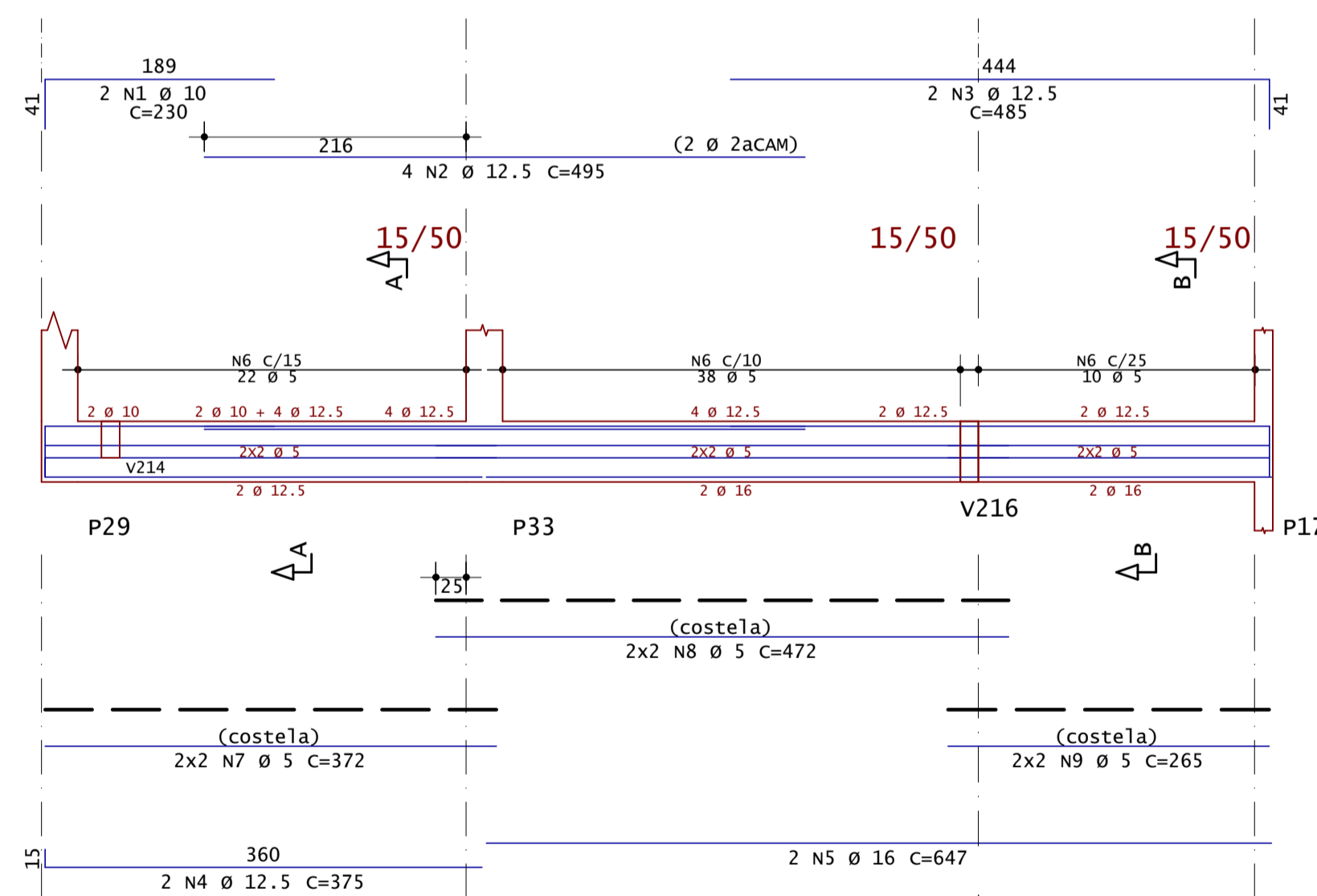
V206



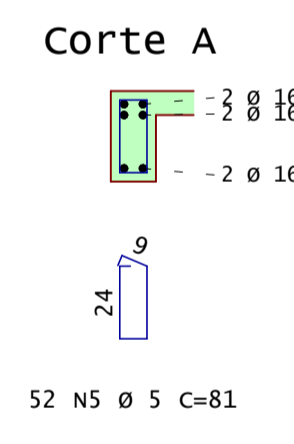
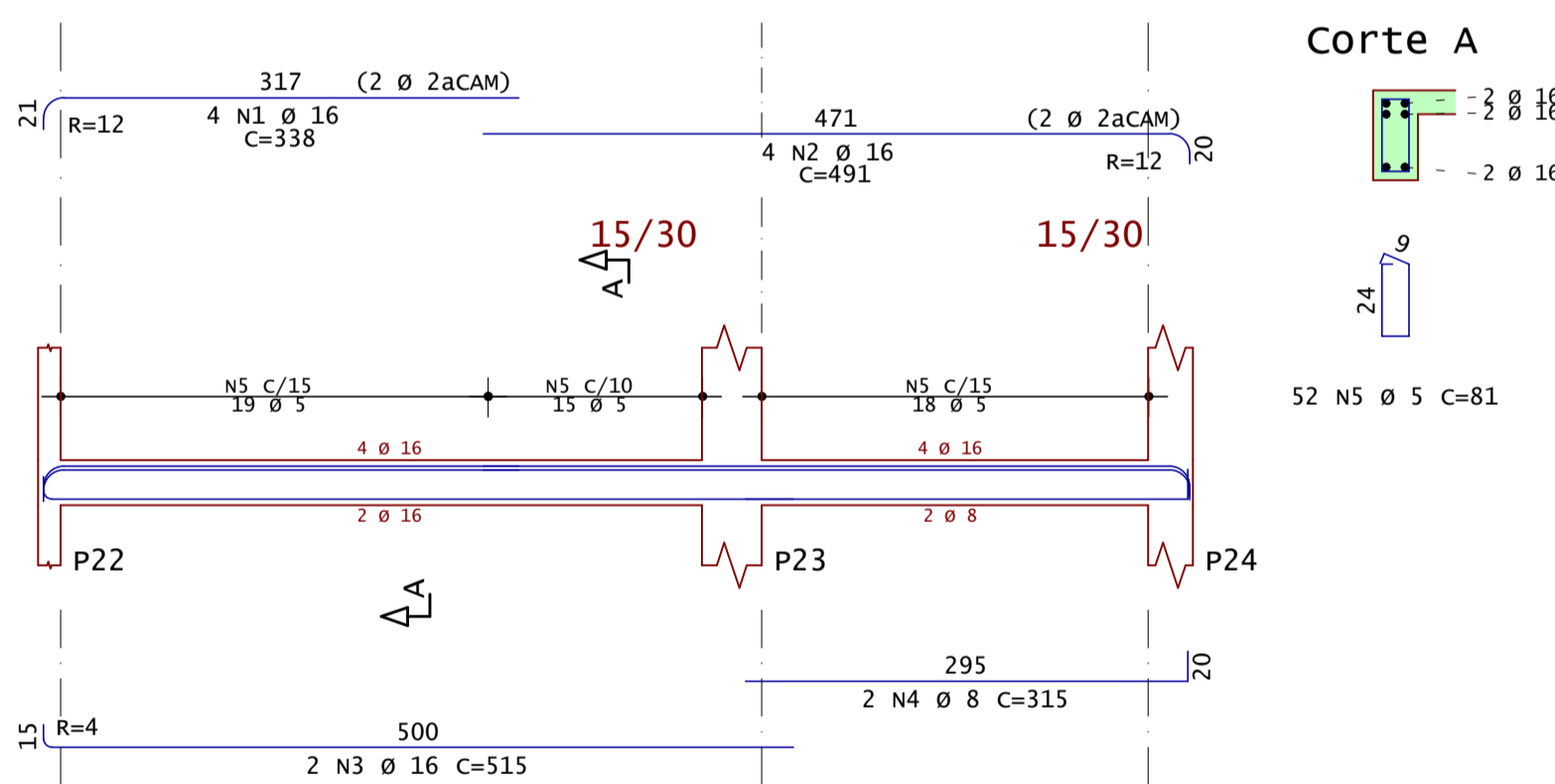
V208



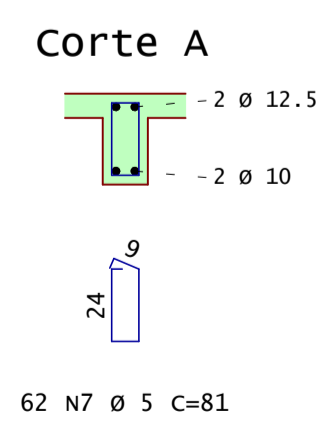
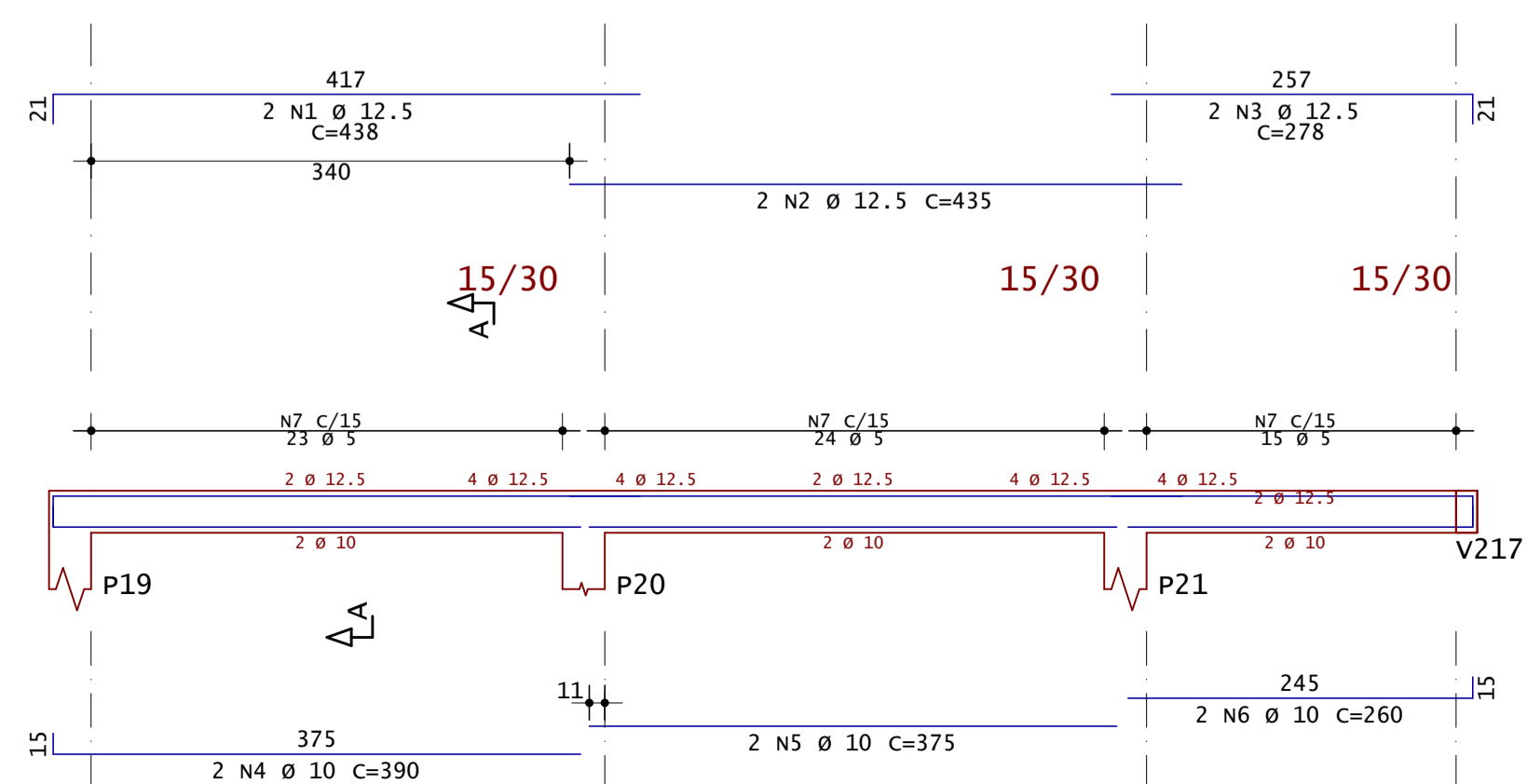
V207



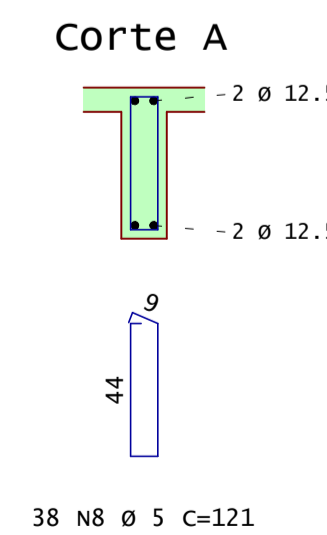
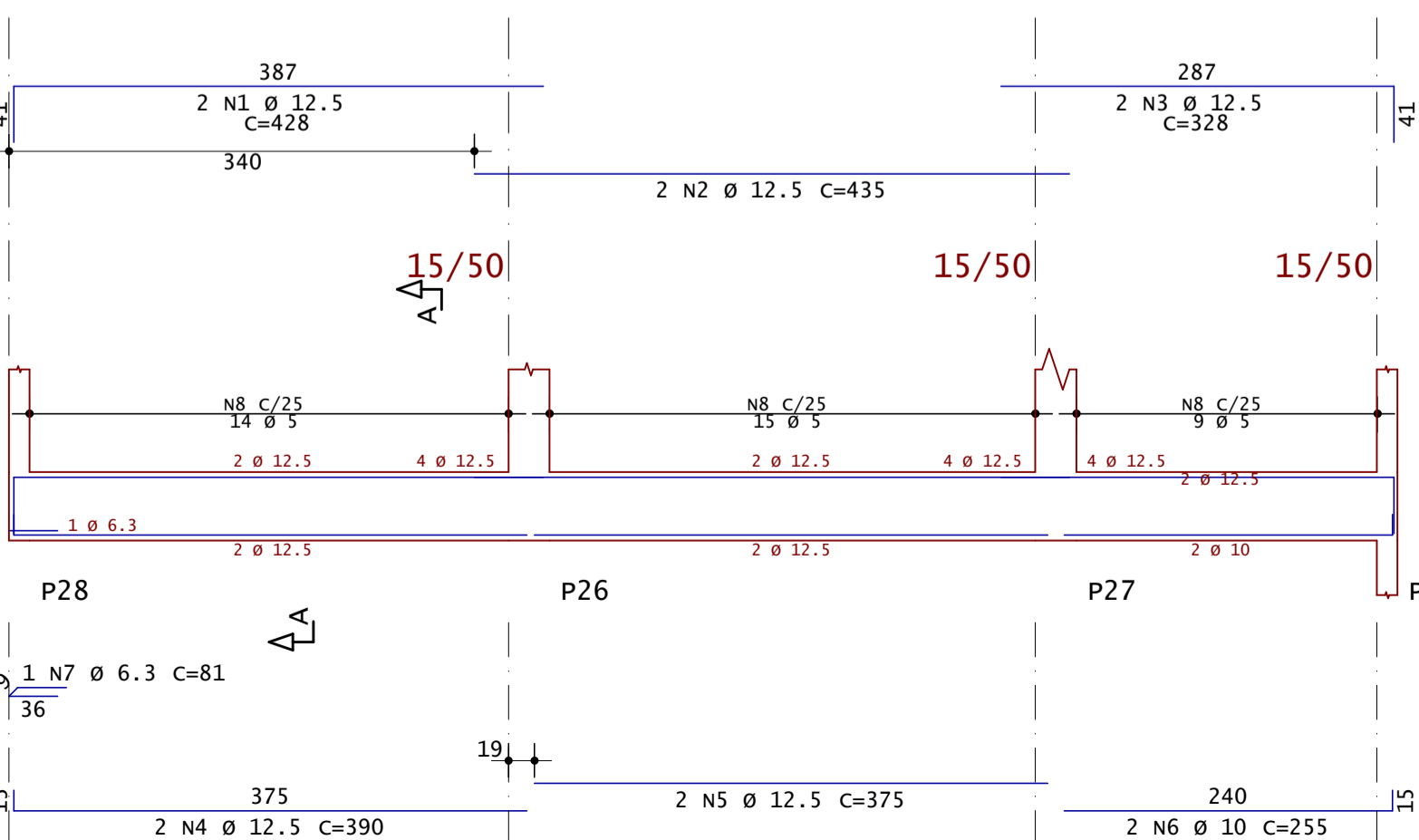
V211



V209



V210



AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
V201					
60A	1	5	2	225	450
50A	2	10	4	125	500
50A	3	10	2	400	800
60A	4	5	24	81	1944
V202					
50A	1	10	2	190	380
50A	2	20	2	285	570
50A	3	12.5	2	260	520
50A	4	10	2	330	660
50A	5	16	2	430	860
60A	6	5	14	101	1414
50A	7	8	25	104	2600
V203					
50A	1	8	2	310	620
50A	2	10	2	285	570
50A	3	6.3	1	81	81
60A	4	5	11	110	1210
60A	5	5	2	259	518
V204					
50A	1	10	2	347	694
50A	2	12.5	4	511	2044
50A	3	20	2	485	970
50A	4	10	2	325	650
50A	5	6.3	2	81	162
60A	6	5	41	121	4961
V205					
50A	1	10	2	165	330
50A	2	8	2	165	330
50A	3	6.3	1	81	81
60A	4	7	90	630	630
60A	5	5	2	127	254
V206					
50A	1	12.5	2	535	1070
50A	2	16	4	518	2072
50A	3	9	7	637	637
60A	4	5	19	121	2399
V207					
50A	1	10	2	230	460
50A	2	12.5	4	495	1980
50A	3	12.5	2	485	970
50A	4	12.5	2	375	750
50A	5	16	2	647	1294
60A	6	5	70	130	9100
60A	7	5	4	372	1488
60A	8	5	4	472	1888
60A	9	5	4	265	1060
V208					
50A	1	10	4	846	3384
50A	2	16	4	530	2120
50A	3	12.5	2	350	700
50A	4	6.3	3	81	243
60A	5	5	29	121	3509
V209					
50A	1	12.5	2	438	876
50A	2	12.5	2	435	870
50A	3	12.5	2	278	556
50A	4	10	2	390	780
50A	5	10	2	375	750
50A	6	10	2	260	520
50A	7	6.3	1	81	81
60A	8	5	38	121	4598
V210					
50A	1	16	4	338	1352
50A	2	16	4	491	1964
50A	3	16	2	515	1030
50A	4	8	2	315	630
60A	5	5	52	81	4212

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		m	kgf
60A	5	446	69
50A	6.3	6	2
50A	8	48	19
50A	10	110	68
50A	12.5	142	137
50A	16	107	169
50A	20	19	48
Peso Total		60A =	69 kgf
Peso Total		50A =	442 kgf

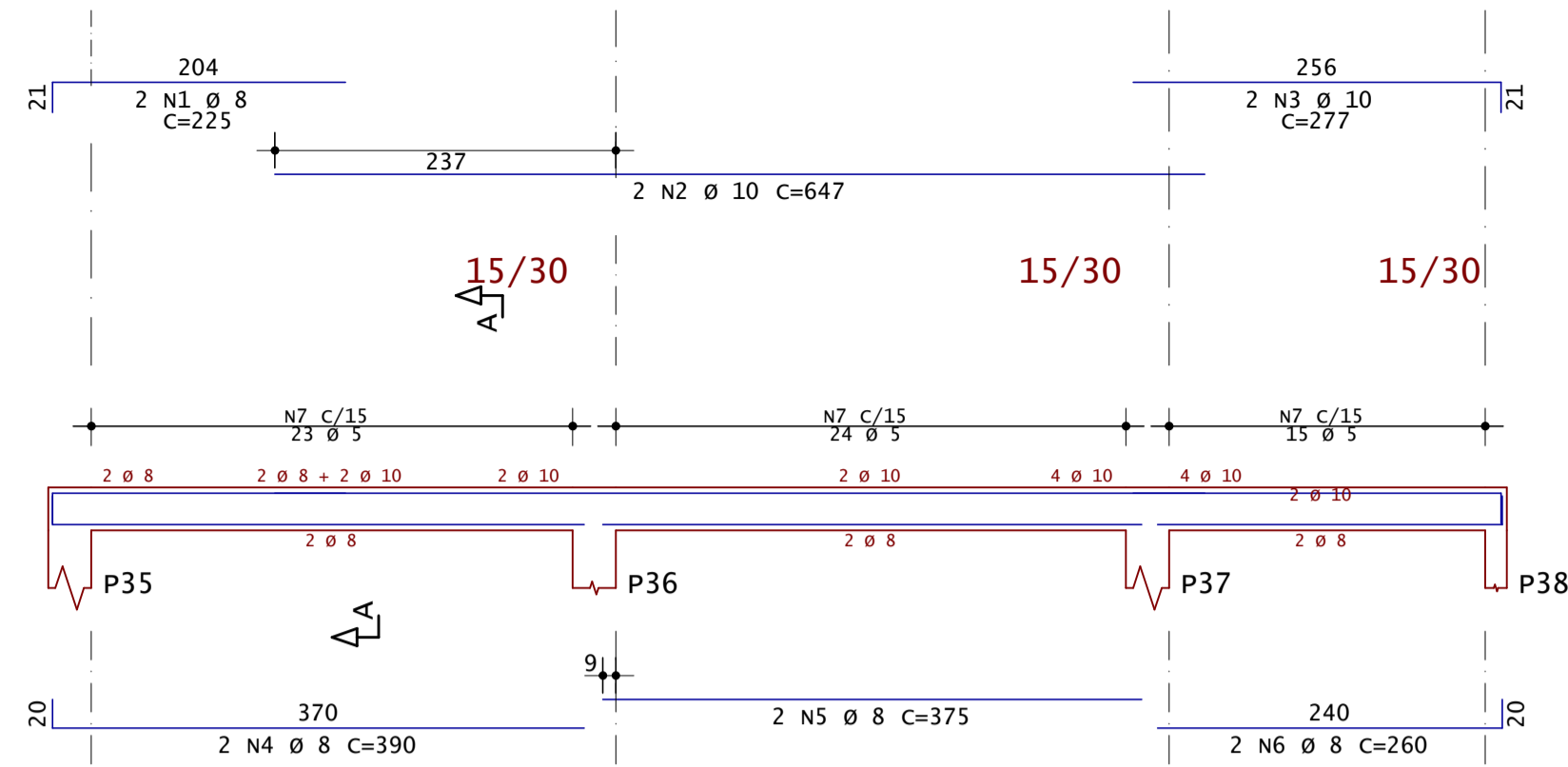
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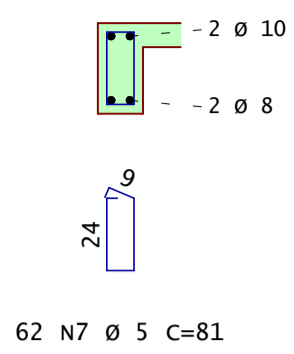
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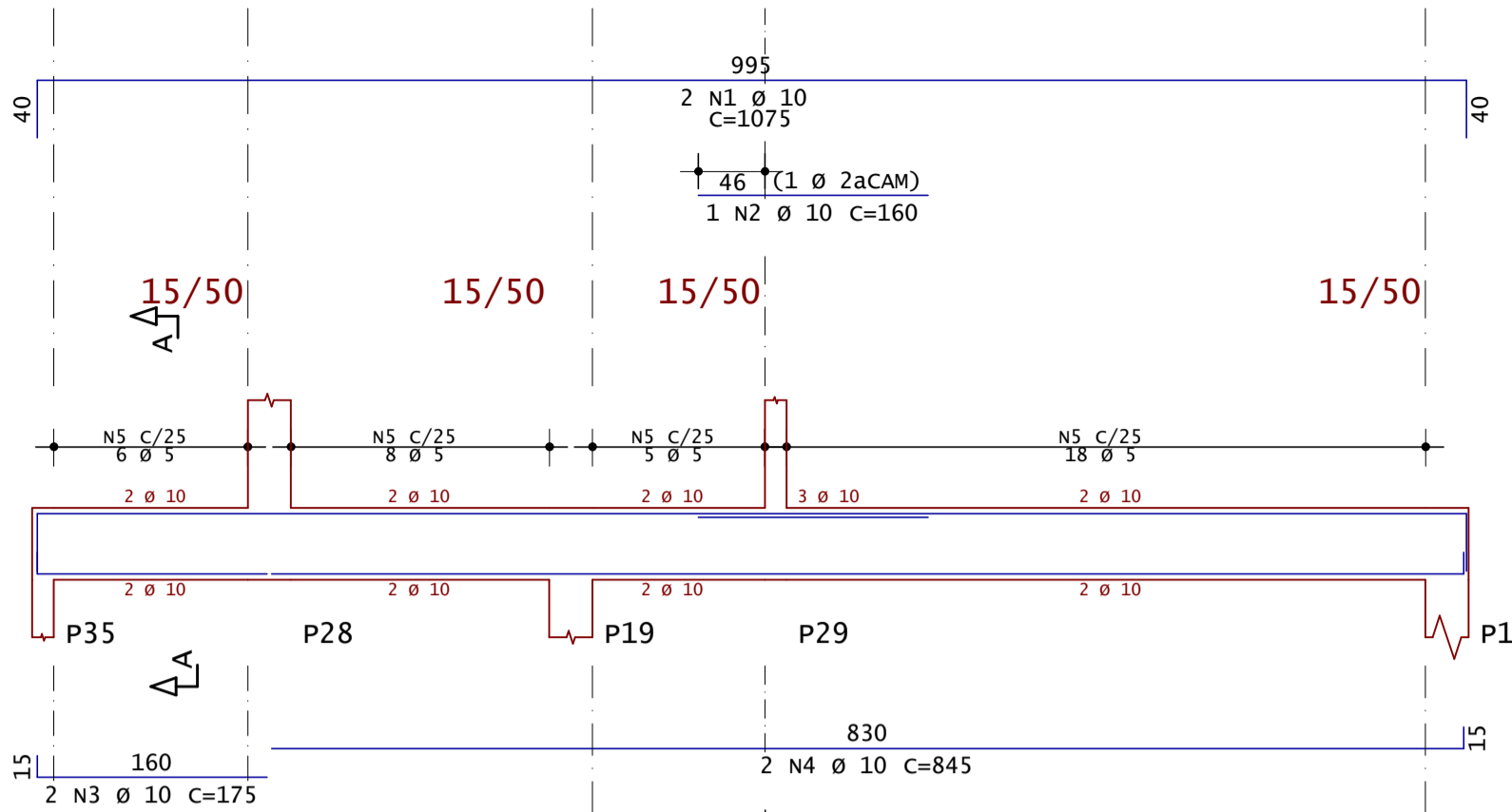
V212



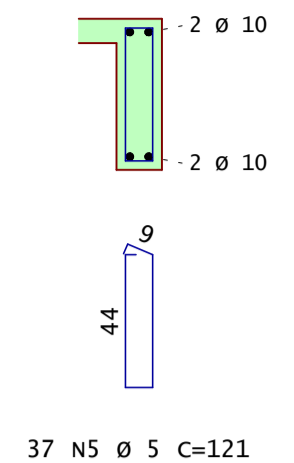
Corte A



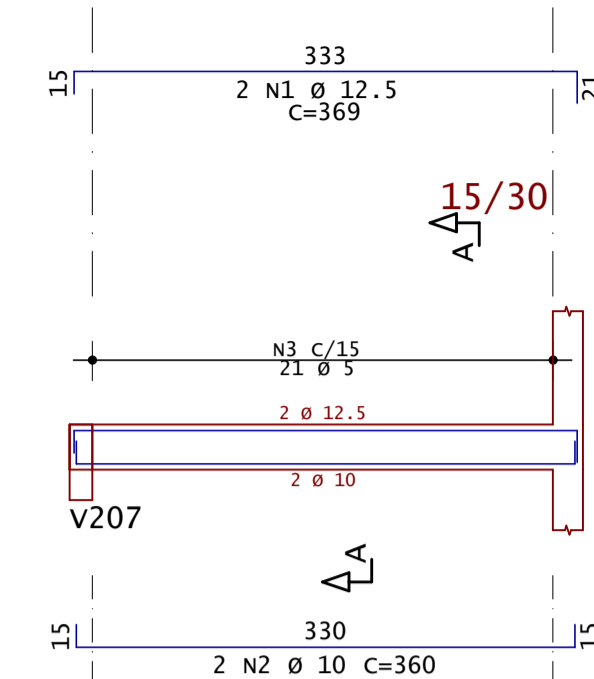
V213



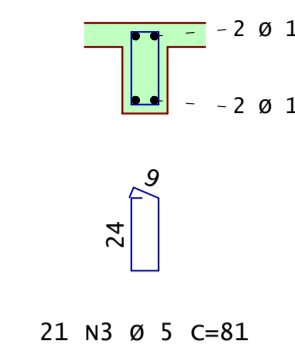
Corte A



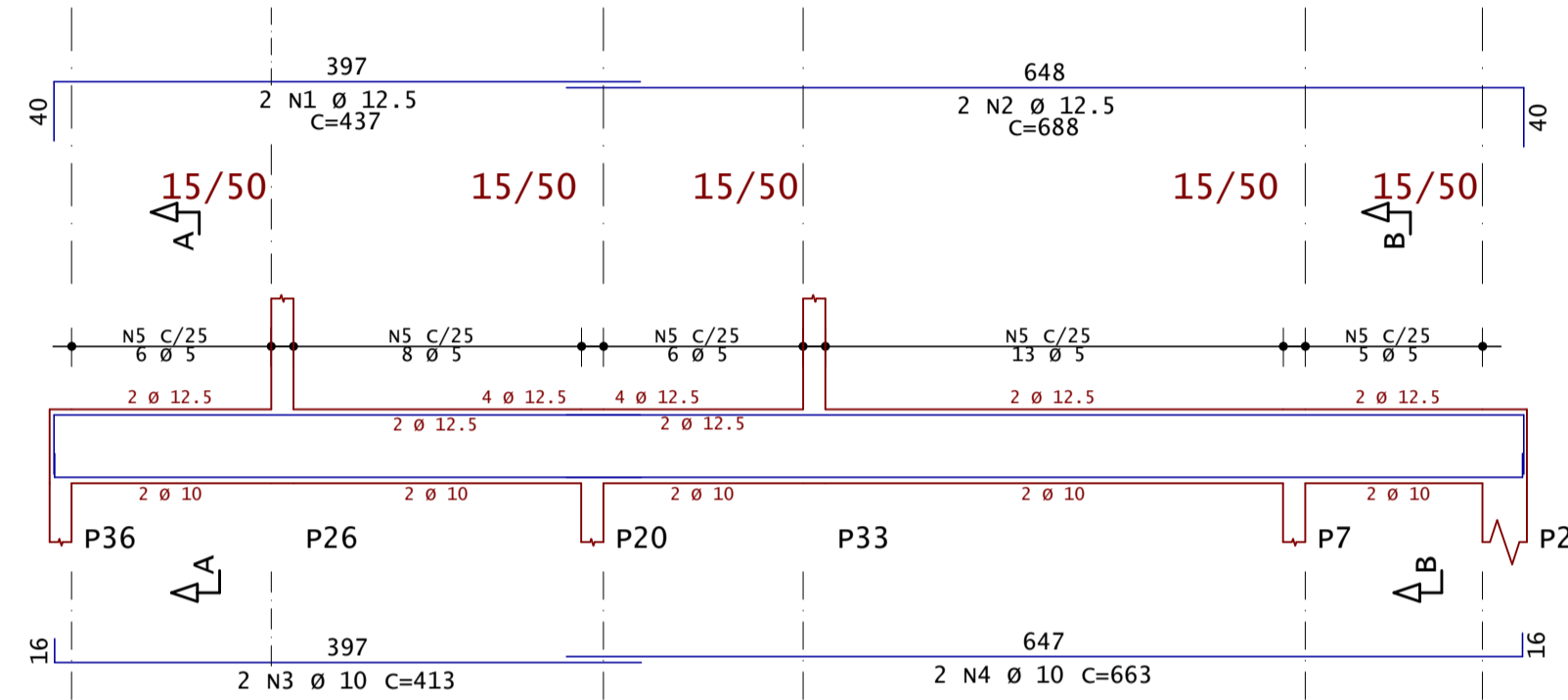
V214



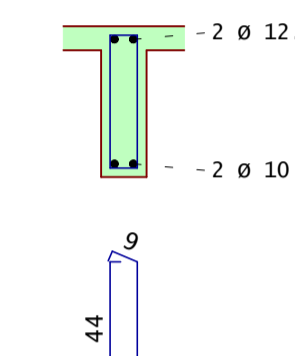
Corte A



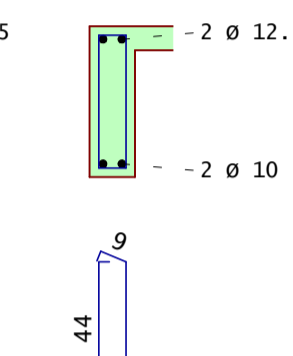
V215



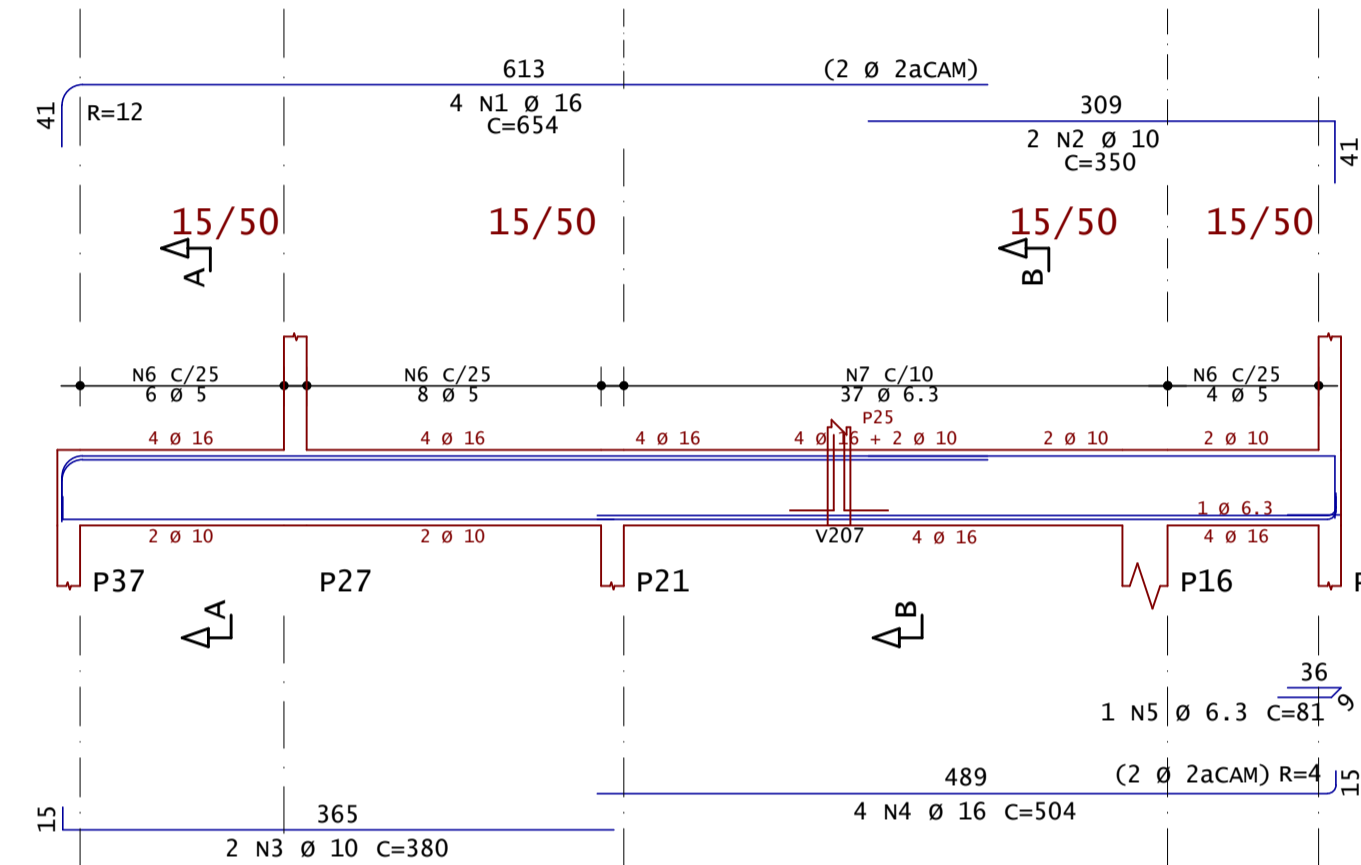
Corte A



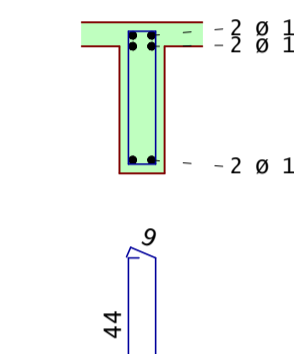
Corte B



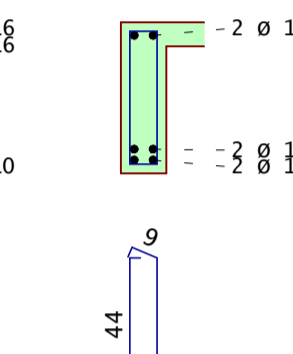
V216



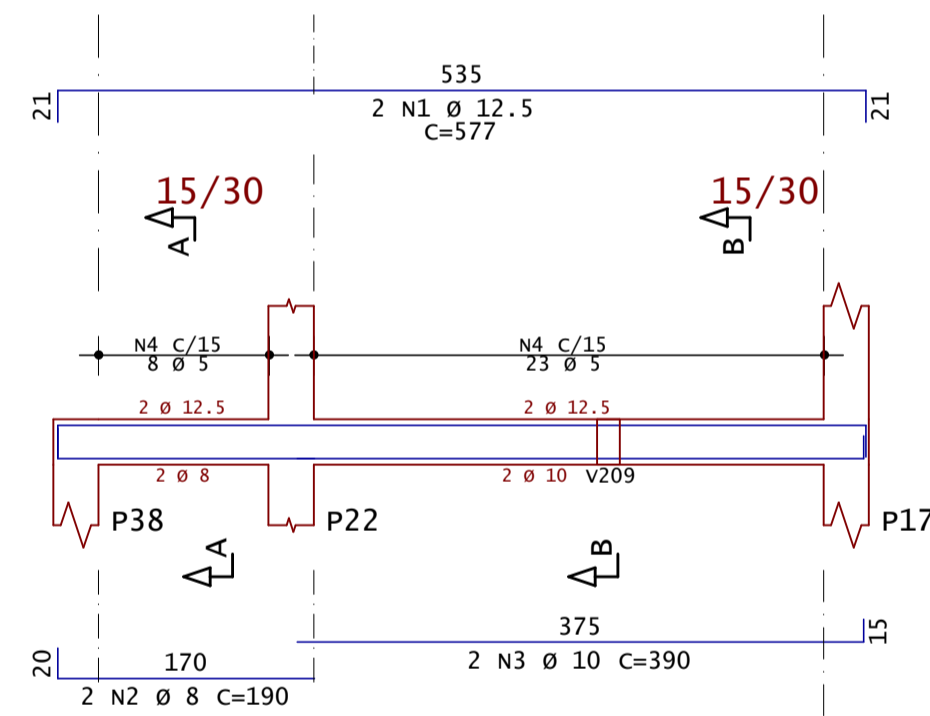
Corte A



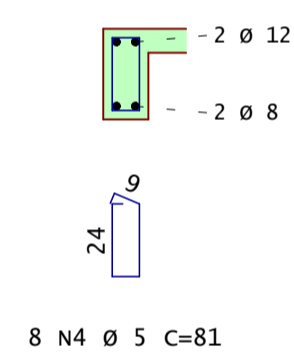
Corte B



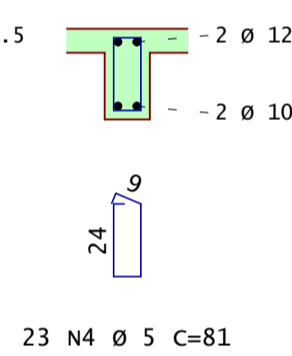
V217



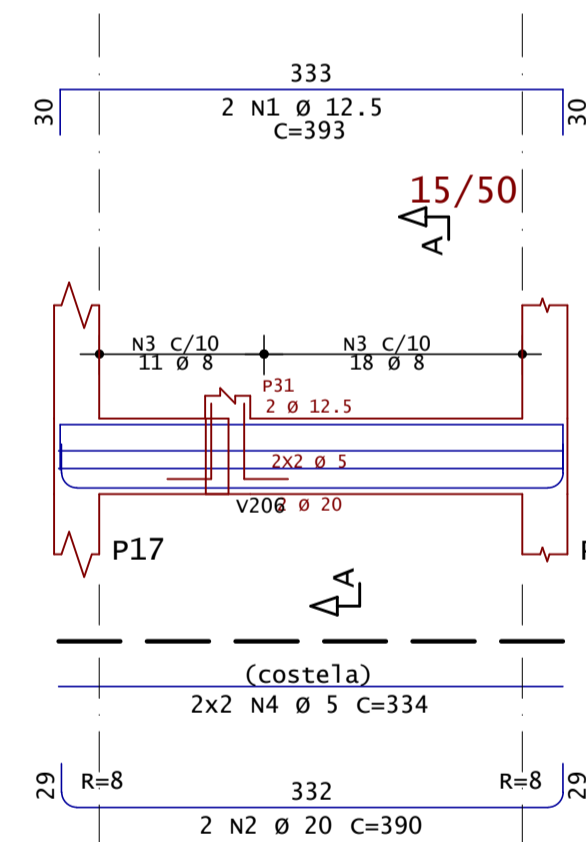
Corte A



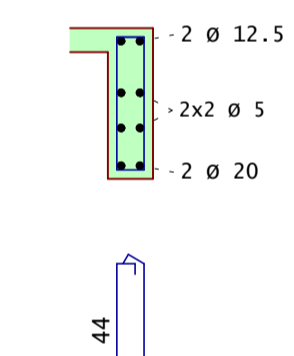
Corte B



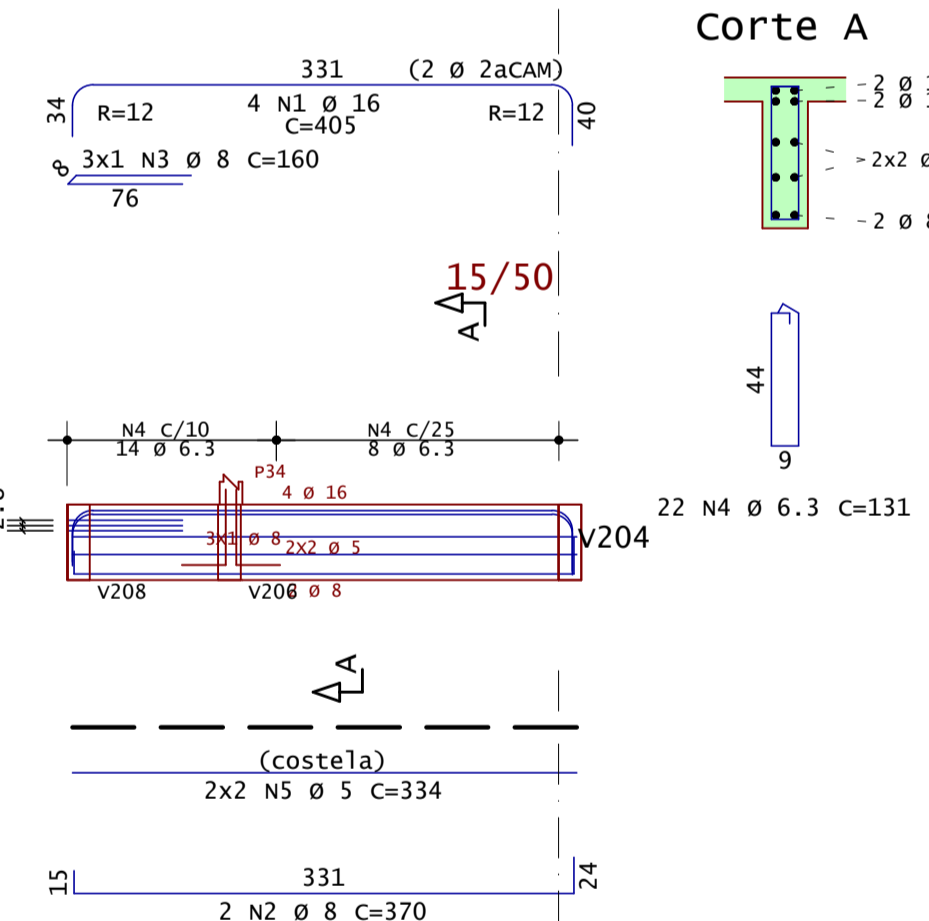
V218



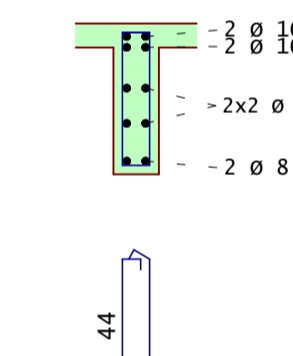
Corte A



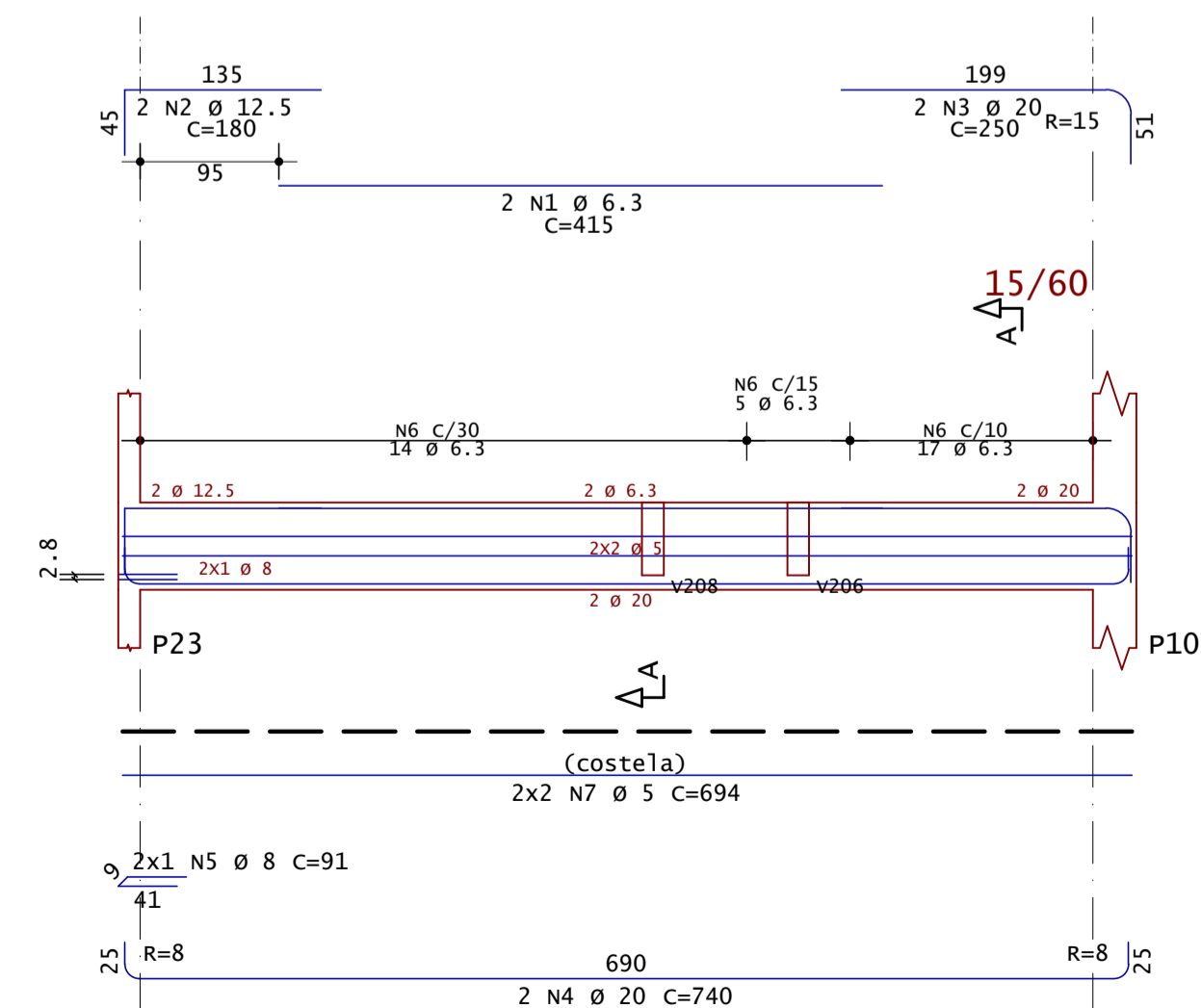
V219



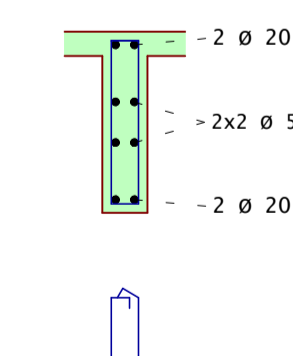
Corte A



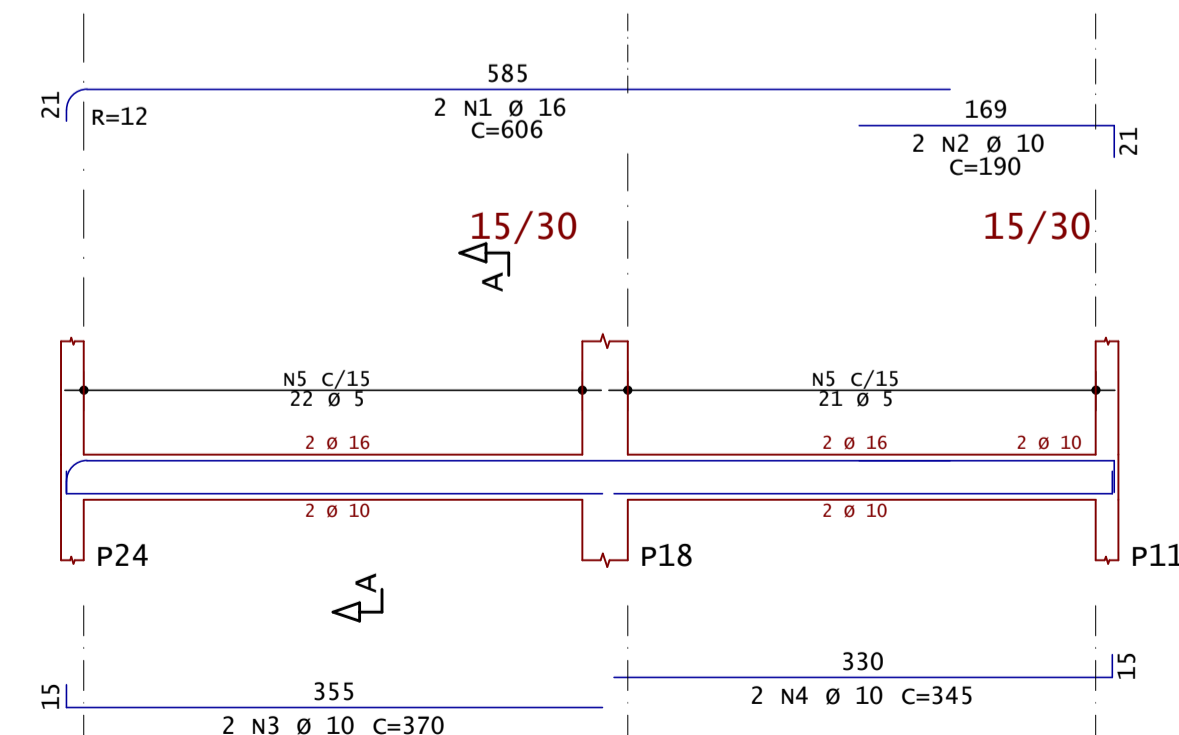
V220



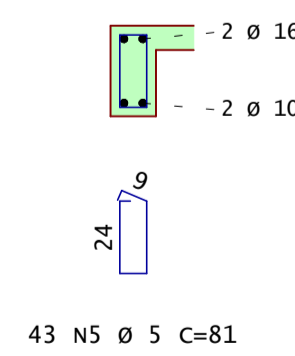
Corte A



V221



Corte A



AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm		cm	cm
V212					
50A	1	8	2	225	450
50A	2	10	2	647	1294
50A	3	10	2	277	554
50A	4	8	2	390	780
50A	5	8	2	375	750
50A	6	8	2	260	520
60A	7	5	62	81	5022
V213					
50A	1	10	2	1075	2150
50A	2	10	1	160	160
50A	3	10	2	175	350
50A	4	10	2	845	1690
60A	5	5	37	121	4477
V214					
50A	1	12.5	2	369	738
50A	2	10	2	360	720
60A	3	5	21	81	1701
V215					
50A	1	12.5	2	437	874
50A	2	12.5	2	688	1376
50A	3	10	2	413	826
50A	4	10	2	663	1326
60A	5	5	38	121	4598
V216					
50A	1	16	4	654	2616
50A	2	10	2	350	700
50A	3	10	2	380	760
50A	4	16	4	504	2016
50A	5	6.3	1	81	81
60A	6	5	18	121	2178
60A	7	6.3	37	122	4514
V217					
50A	1	12.5	2	577	1154
50A	2	8	2	190	380
50A	3	10	2	390	780
60A	4	5	31	81	2511
V218					
50A	1	12.5	2	393	786
50A	2	20	2	390	780
50A	3	8	29	133	3857
60A	4	5	4	334	1336
V219					
50A	1	16	4	405	1620
50A	2	8	2	370	740
50A	3	8	3	160	480
50A	4	6.3	22	131	2882
60A	5	5	4	334	1336
V220					
50A	1	6.3	2	415	830
50A	2	12.5	2	180	360
50A	3	20	2	250	500
50A	4	20	2	740	1480
50A	5	8	2	91	182
50A	6	6.3	36	151	5436
60A	7	5	4	694	2776
V221					
50A	1	16	2	606	1212
50A	2	10	2	190	380
50A	3	10	2	370	740
50A	4	10	2	345	690
60A	5	5	43	81	3483

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		mm	kgf
60A	5	294	45
50A	6.3	137	34
50A	8	81	32
50A	10	131	81
50A	12.5	53	51
50A	16	75	118
50A	20	28	68
Peso Total		60A =	45 kgf
Peso Total		50A =	384 kgf



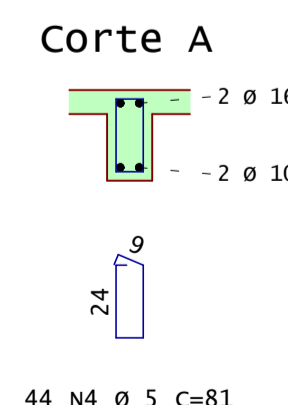
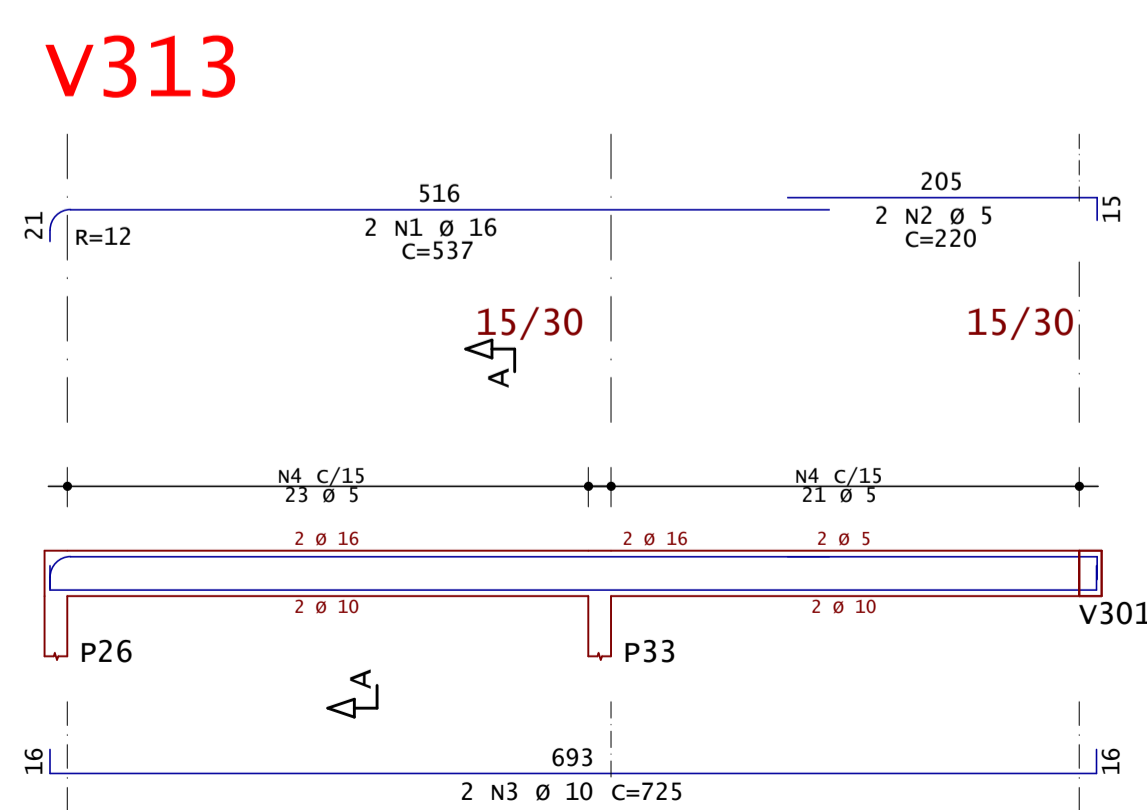
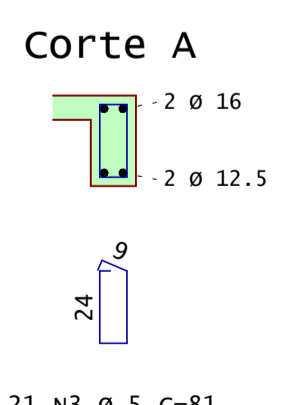
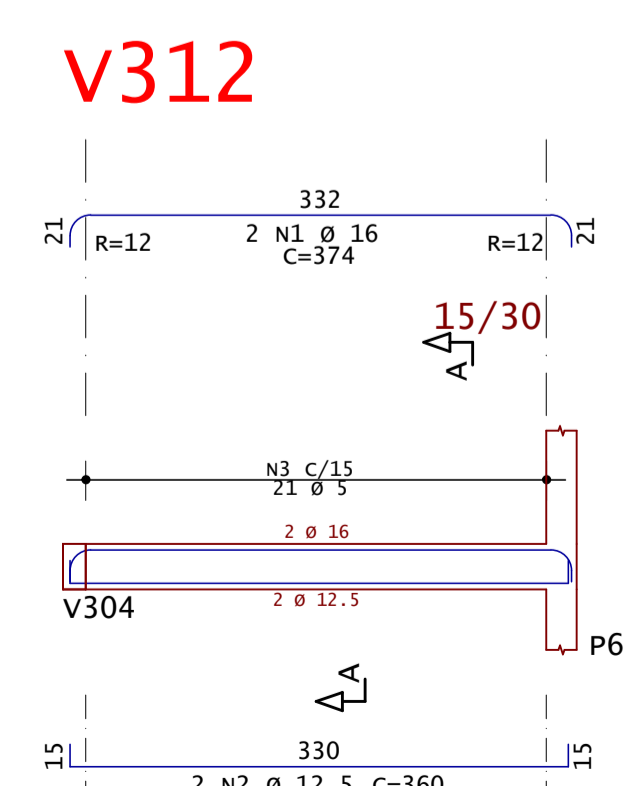
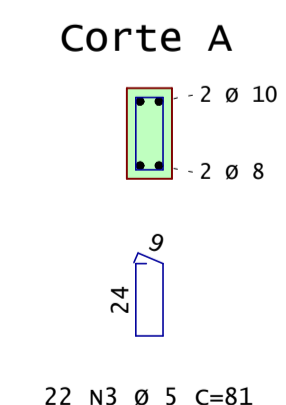
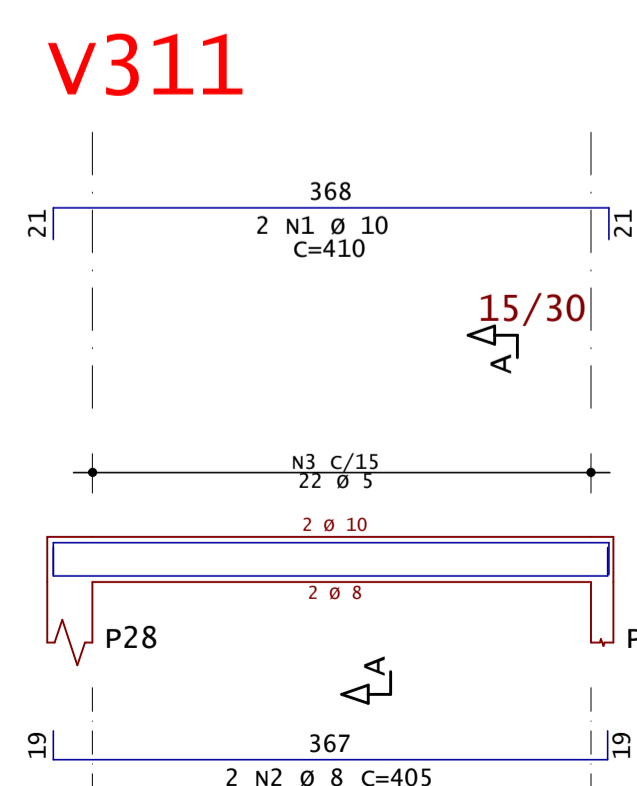
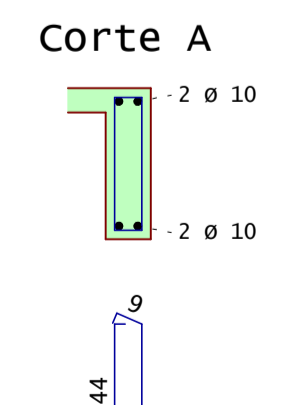
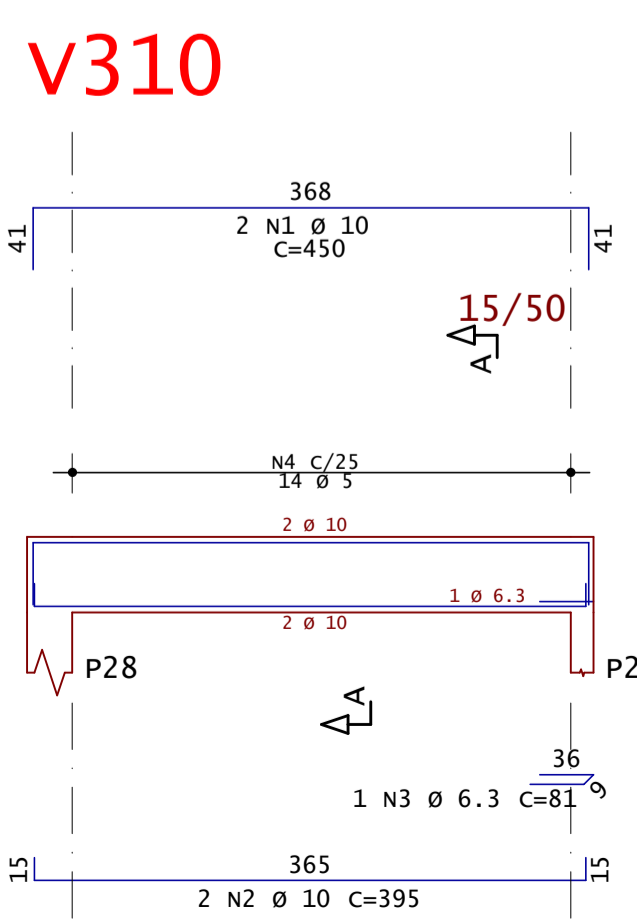
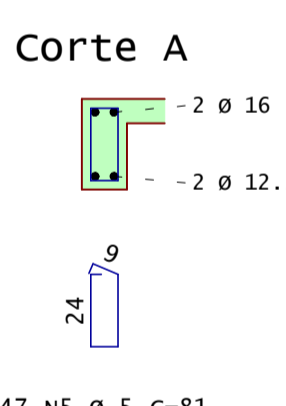
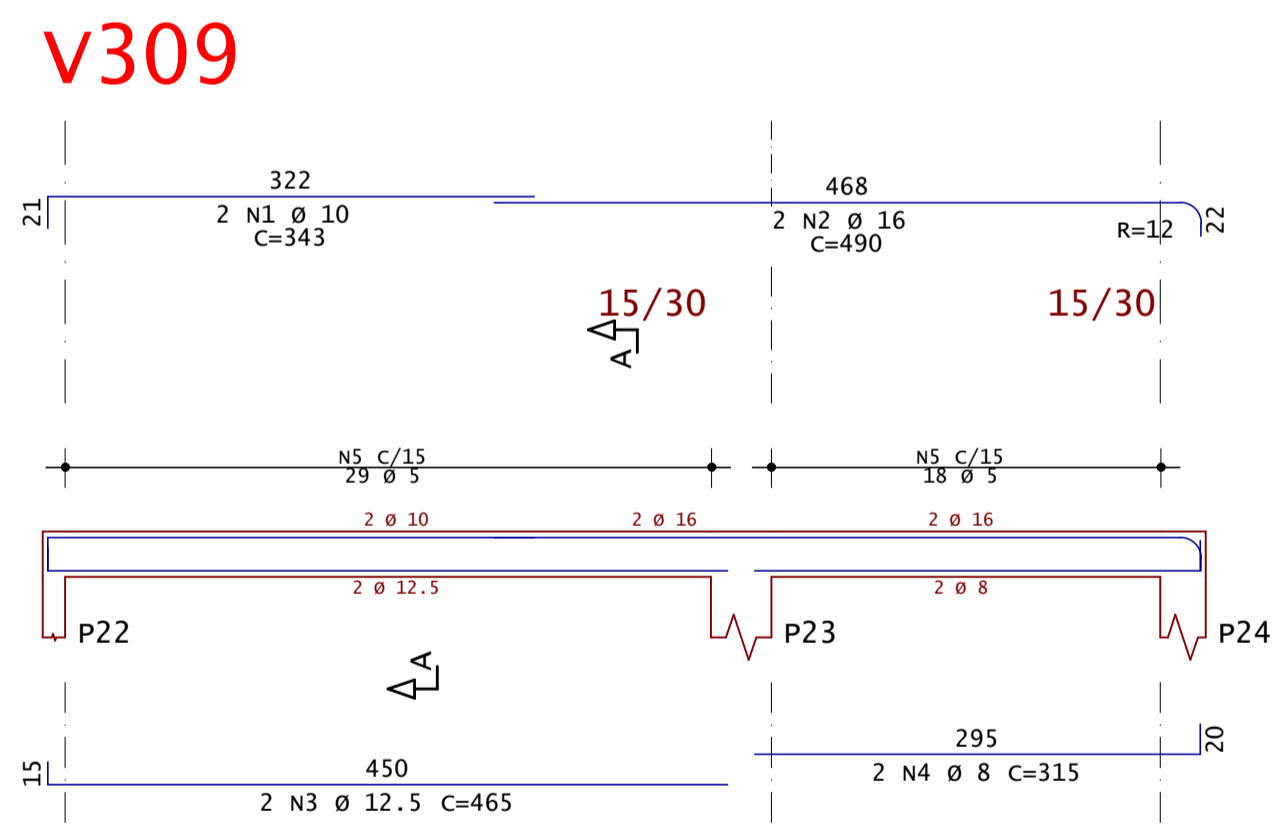
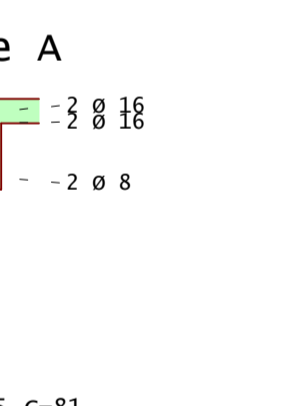
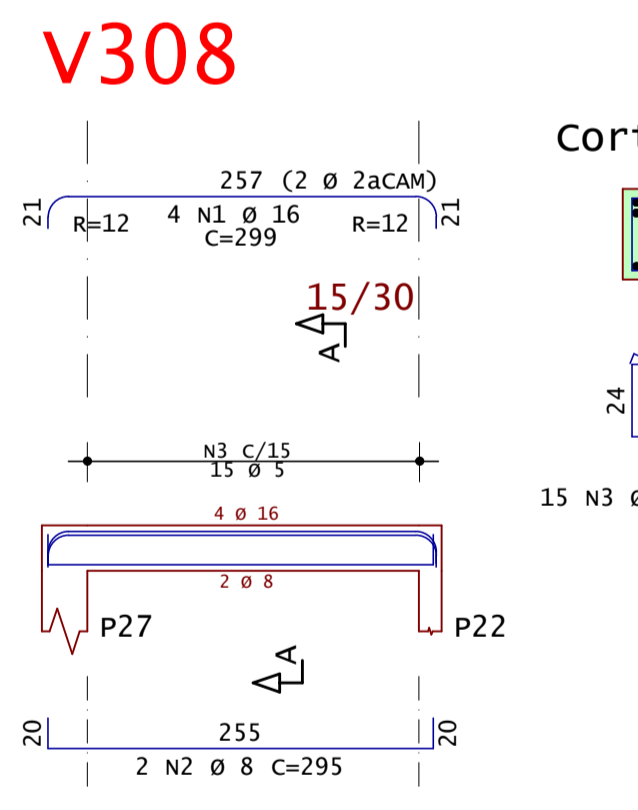
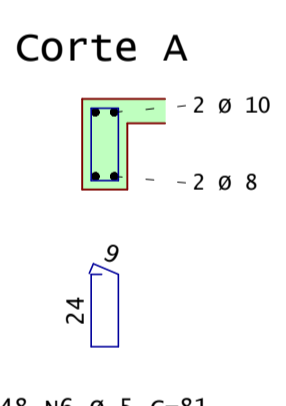
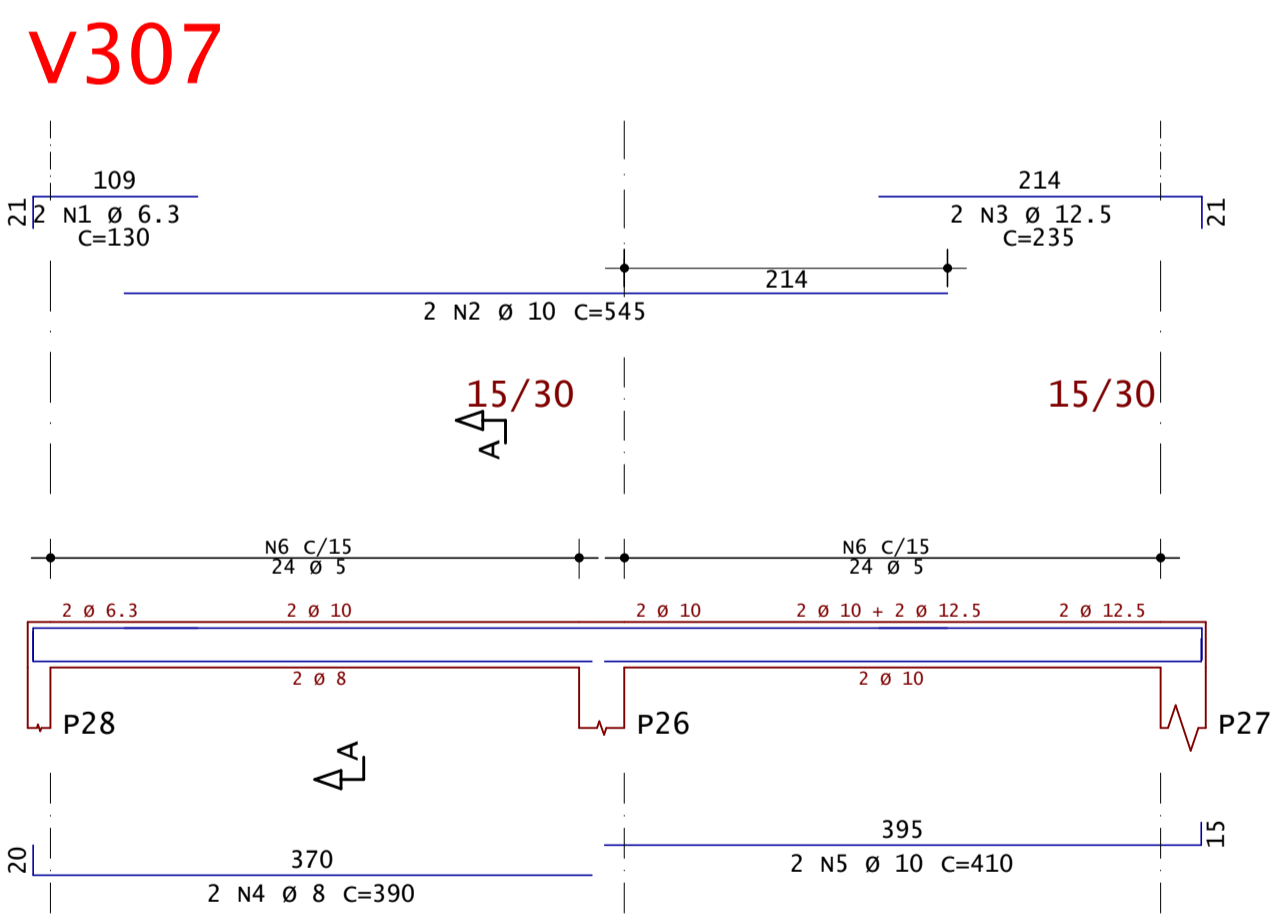
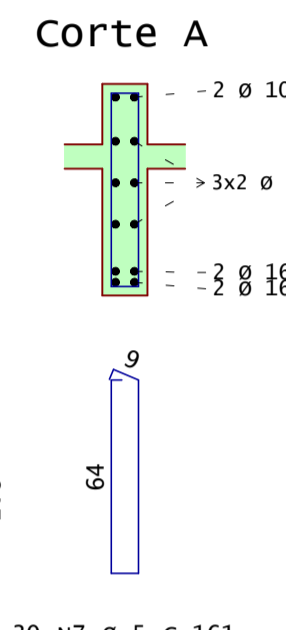
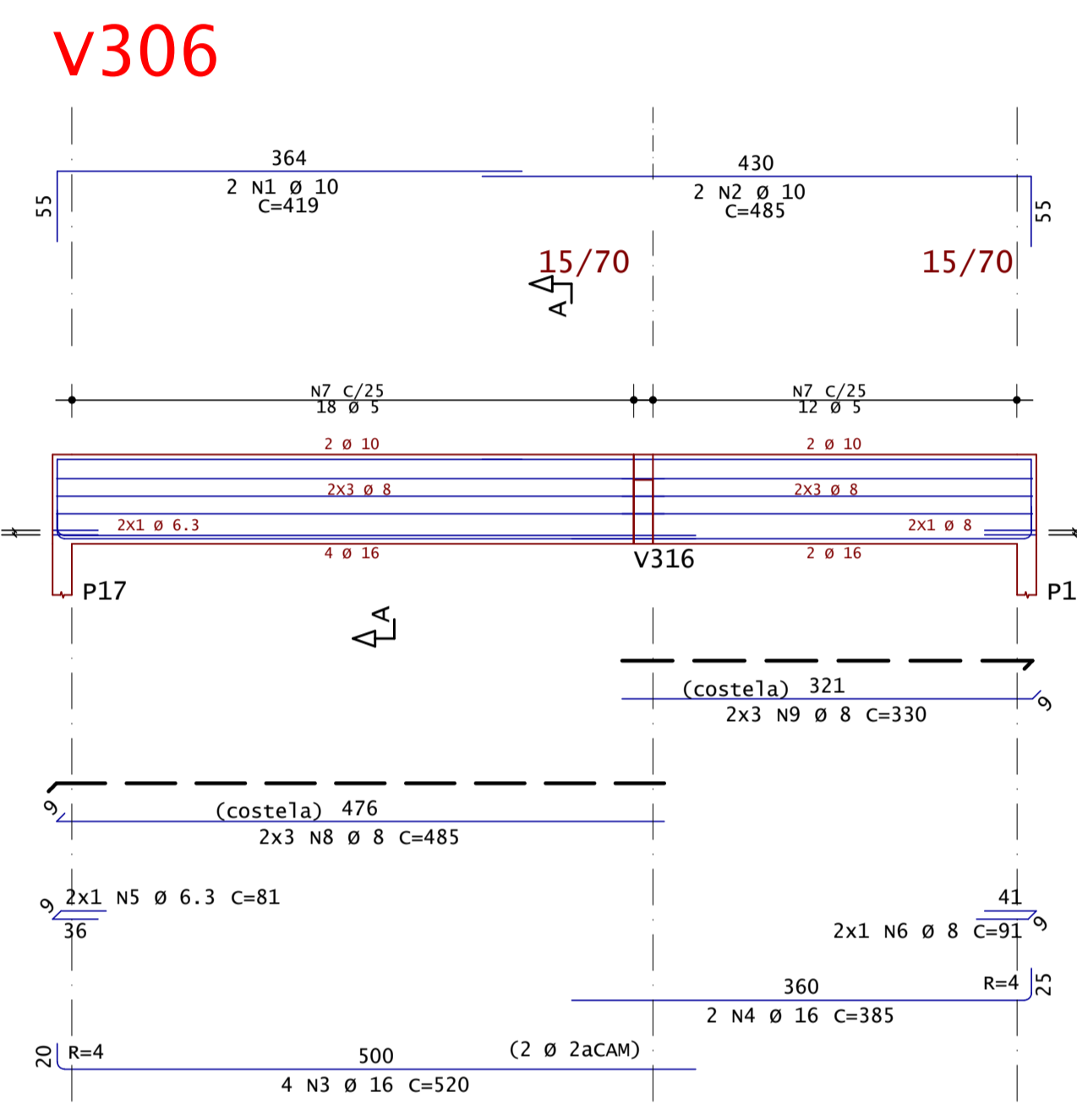
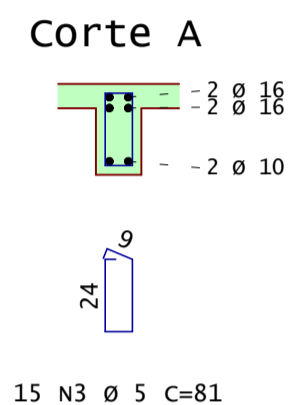
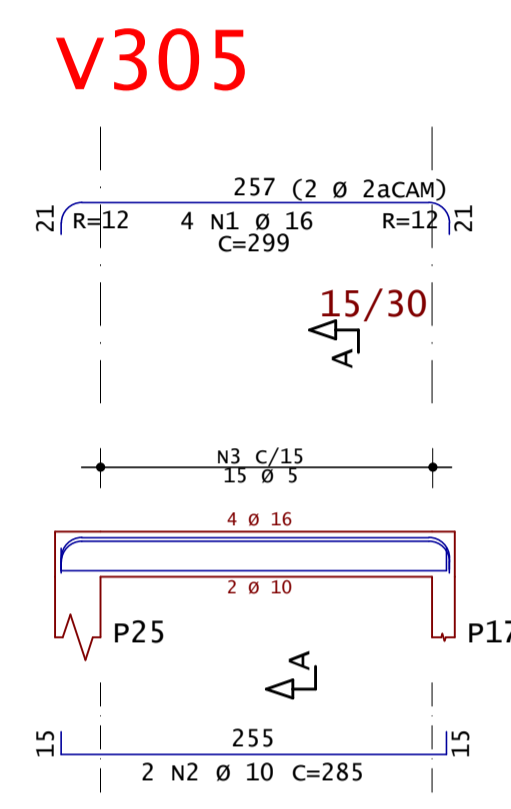
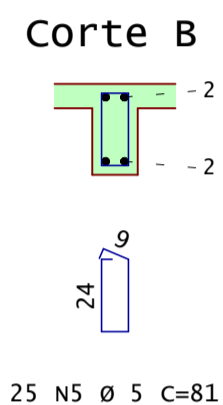
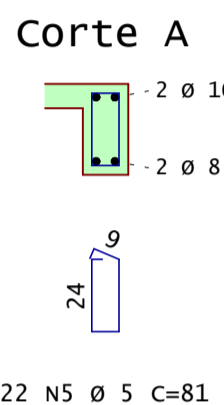
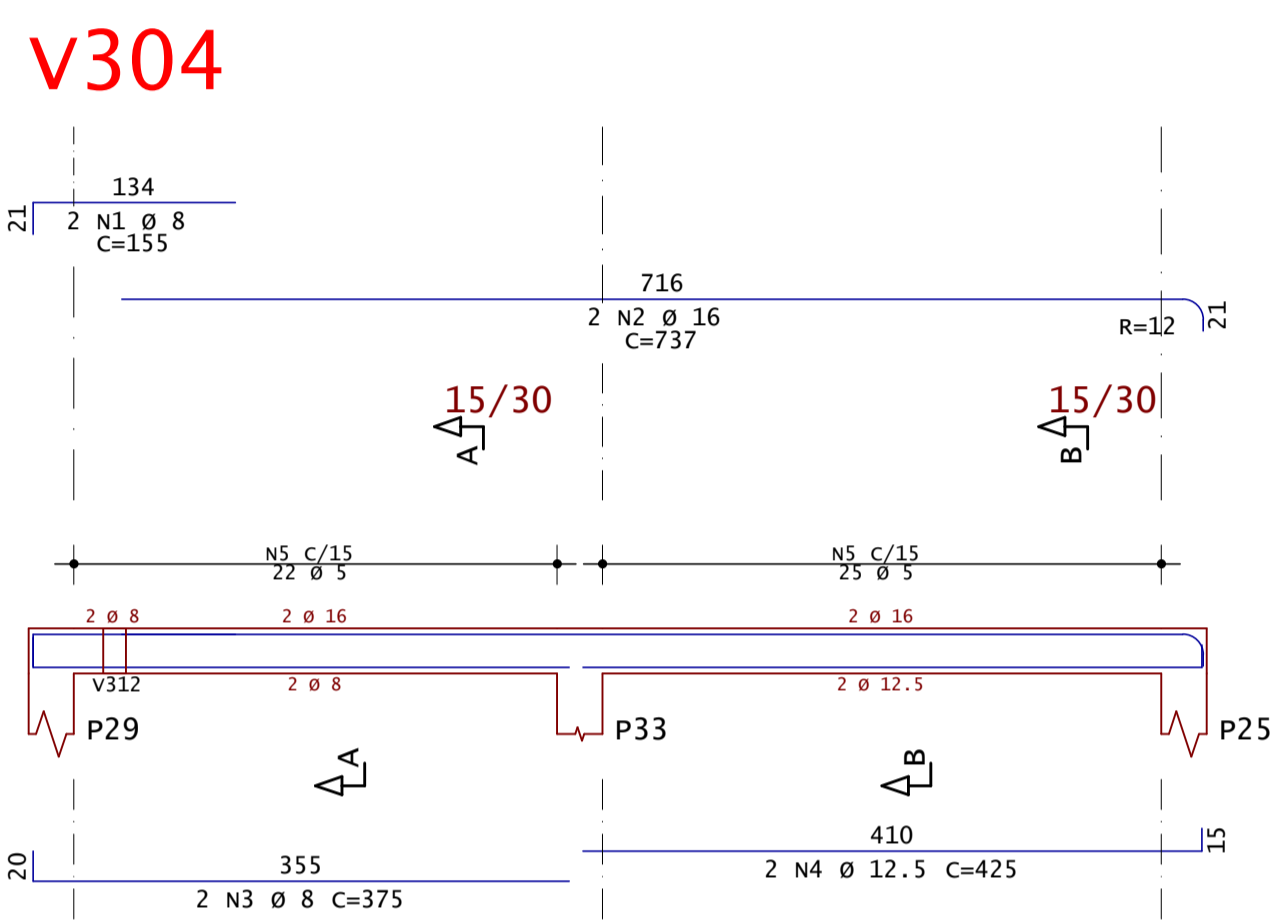
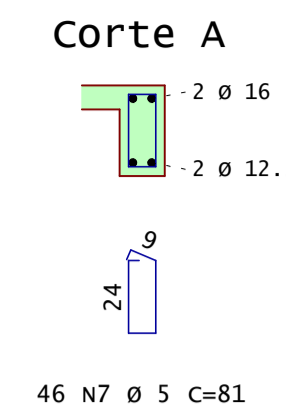
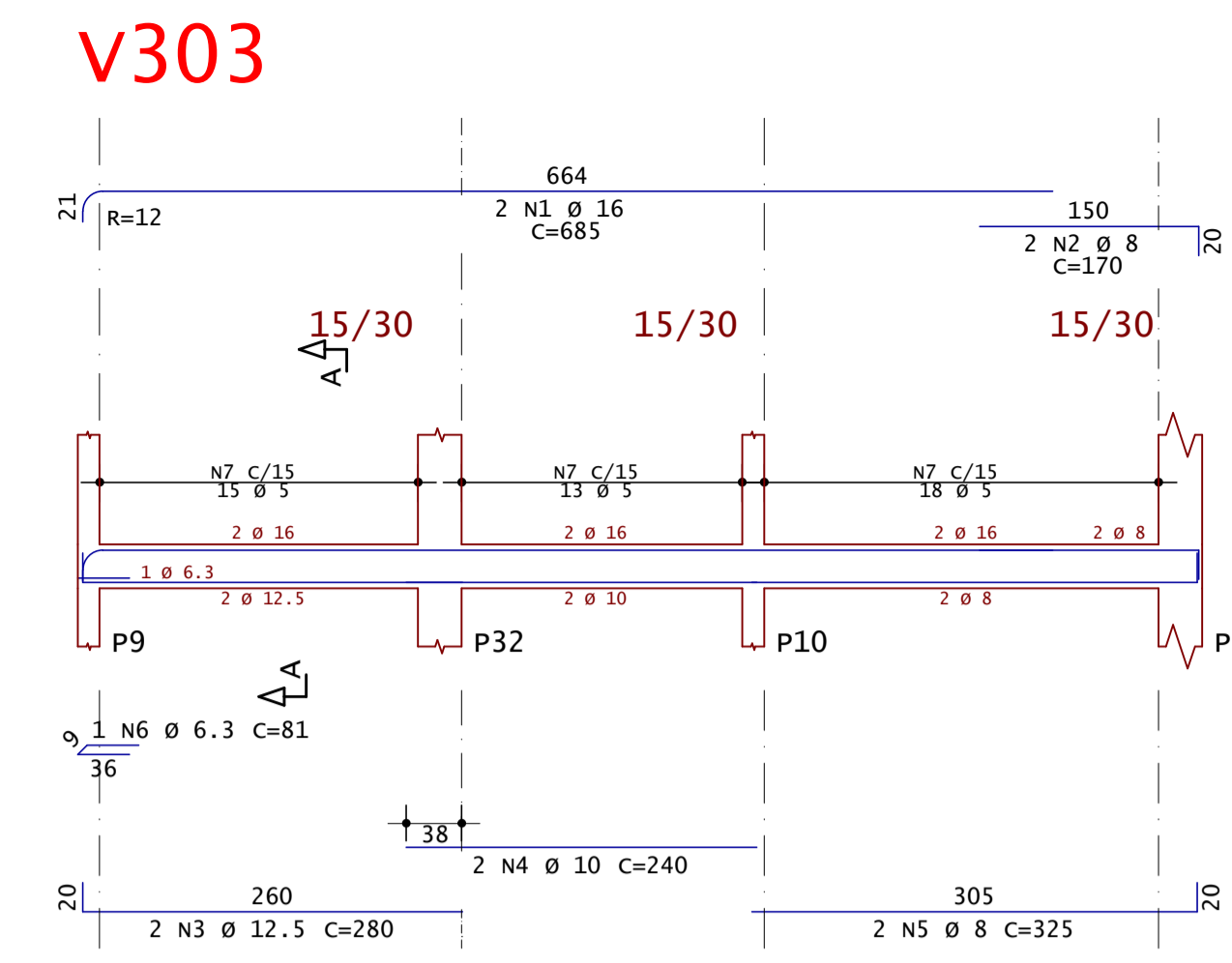
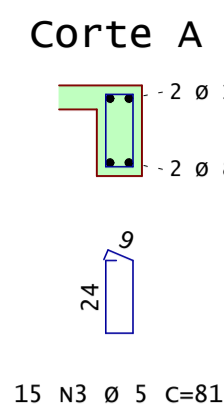
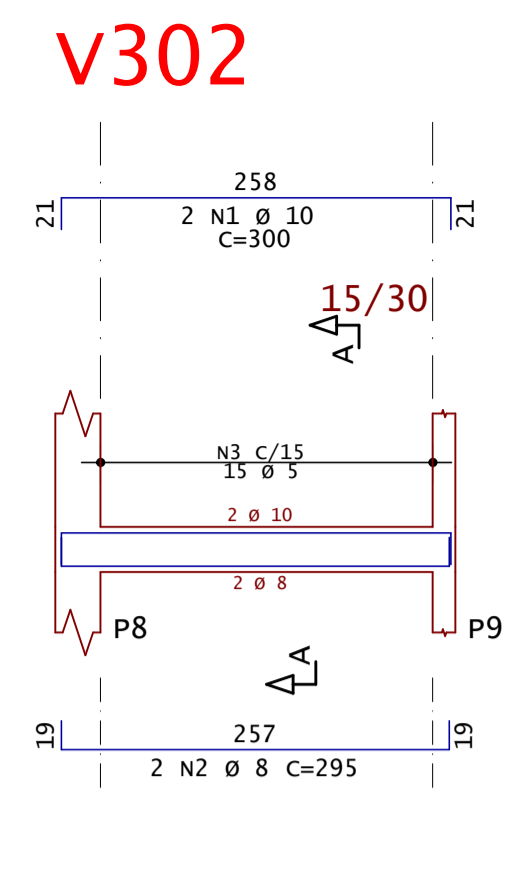
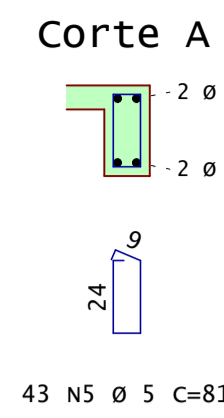
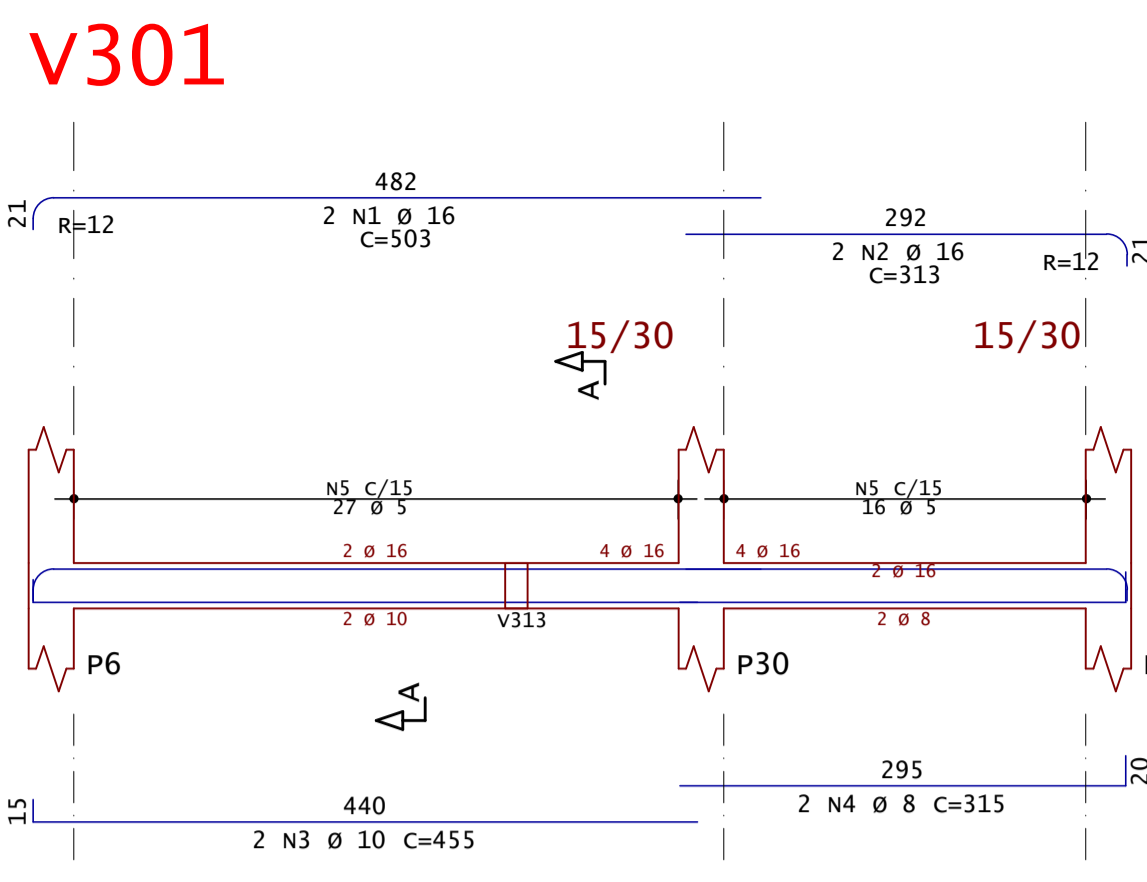
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Cliente:	Cleiton Batista Soares de Lima	Prancha n°:	15	Revisão n°:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Detalhamento das vigas do Pavimento 1 (2/2)				
CREA-PB:	161890343-9	ART n°:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		





AÇO	POS	BIT	QUANT	COMPRIMENTO		
				UNIT	TOTAL	
		mm		cm	cm	
V301	50A	1	16	2	503	1006
	50A	2	16	2	313	626
	50A	3	10	2	455	910
	50A	4	8	2	315	630
	60A	5	5	43	81	3483
V302	50A	1	10	2	300	600
	50A	2	8	2	295	590
	60A	3	15	15	81	1215
V303	50A	1	16	2	685	1370
	50A	2	8	2	170	340
	50A	3	12.5	2	280	560
	50A	4	10	2	240	480
	50A	5	8	2	325	650
	50A	6	6.3	1	81	81
	60A	7	5	46	81	3726
V304	50A	1	8	2	155	310
	50A	2	16	2	737	1474
	50A	3	8	2	375	750
	50A	4	12.5	2	425	850
	60A	5	5	47	81	3807
V305	50A	1	16	4	299	1196
	50A	2	10	2	285	570
	60A	3	5	15	81	1215
V306	50A	1	10	2	419	838
	50A	2	10	2	485	970
	50A	3	16	4	520	2080
	50A	4	16	2	385	770
	50A	5	6.3	2	81	162
	50A	6	8	2	91	182
	60A	7	5	30	161	4830
	50A	8	8	6	485	2910
	50A	9	8	6	330	1980
V307	50A	1	6.3	2	130	260
	50A	2	10	2	545	1090
	50A	3	12.5	2	235	470
	50A	4	8	2	390	780
	50A	5	10	2	410	820
	60A	6	5	48	81	3888
V308	50A	1	16	4	299	1196
	50A	2	8	2	295	590
	60A	3	5	15	81	1215
V309	50A	1	10	2	343	686
	50A	2	16	2	490	980
	50A	3	12.5	2	465	930
	50A	4	8	2	315	630
	60A	5	5	47	81	3807
V310	50A	1	10	2	450	900
	50A	2	10	2	395	790
	50A	3	6.3	1	81	81
	60A	4	5	14	121	1694
V311	50A	1	10	2	410	820
	50A	2	8	2	405	810
	60A	3	5	22	81	1782
V312	50A	1	16	2	374	748
	50A	2	12.5	2	360	720
	60A	3	5	21	81	1701
V313	50A	1	16	2	537	1074
	60A	2	5	2	220	440
	50A	3	10	2	725	1450
	60A	4	5	44	81	3564

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		mm	kgf
60A	5	364	56
50A	6.3	6	1
50A	8	112	44
50A	10	109	67
50A	12.5	35	34
50A	16	125	198
Peso Total	60A =		56 kgf
Peso Total	50A =		344 kgf

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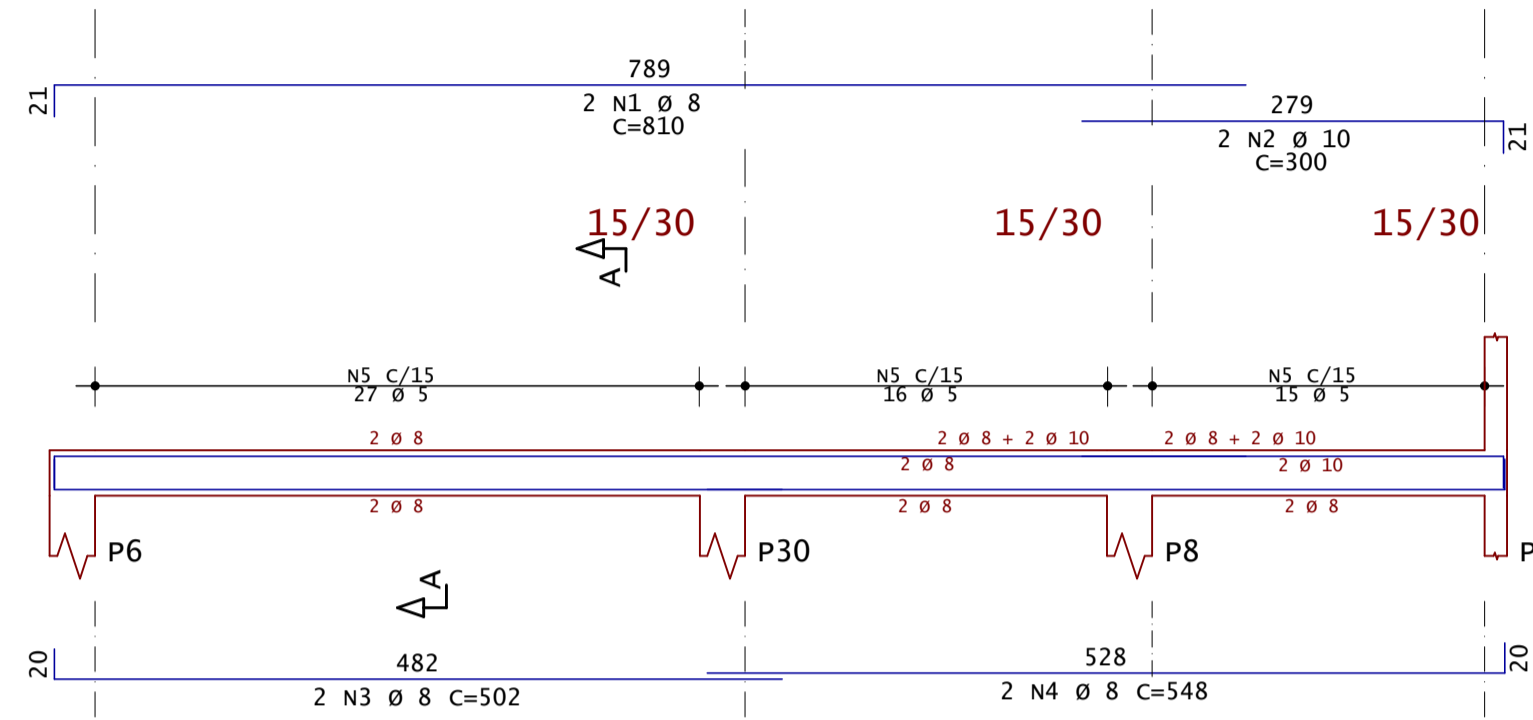
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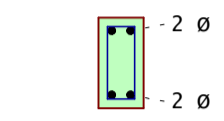
Cliente: Cleiton Batista Soares de Lima Obra: Residência Unifamiliar Título: • Detalhamento das vigas da Coberta (1/2)	Prancha nº: 16 Revisão nº: 002 Observações: Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo
CREA-PB: 161890343-9 Data: 06 / 10 / 2021	ART nº: Pb20210395879 Escala: Indicada



V401

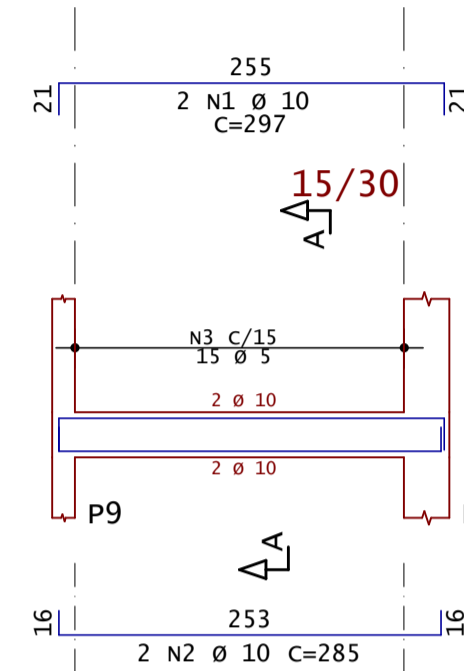


Corte A

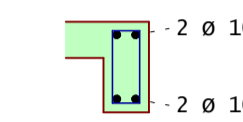


58 N5 Ø 5 C=81

V402

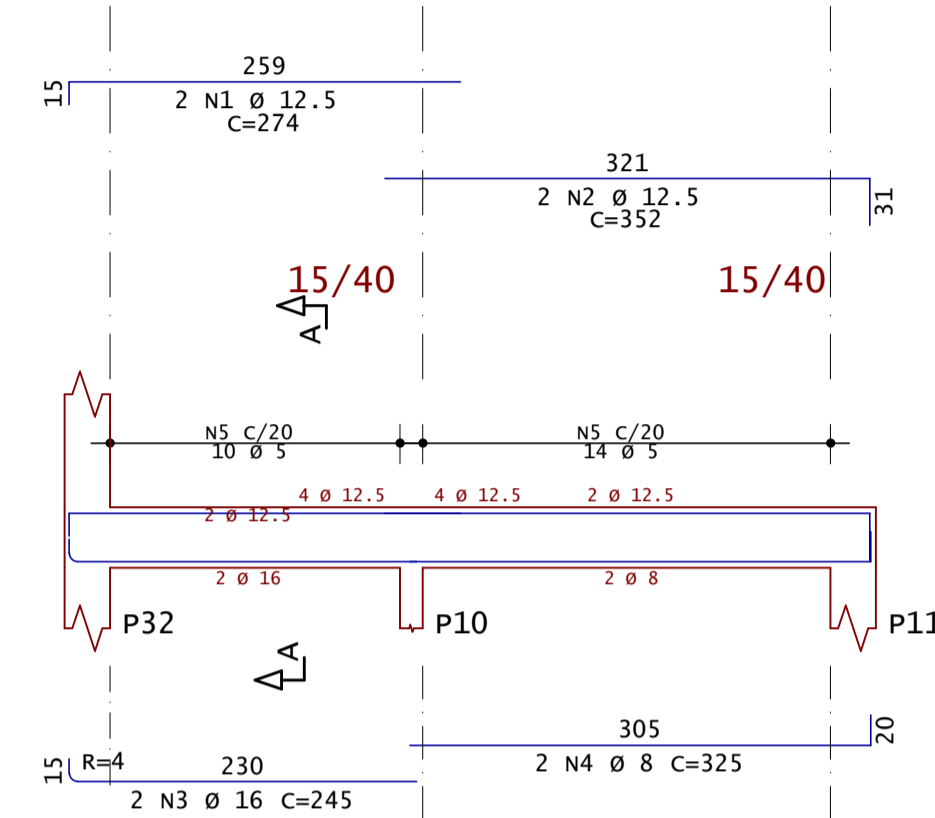


Corte A

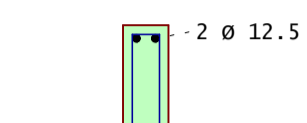


15 N3 Ø 5 C=81

V403

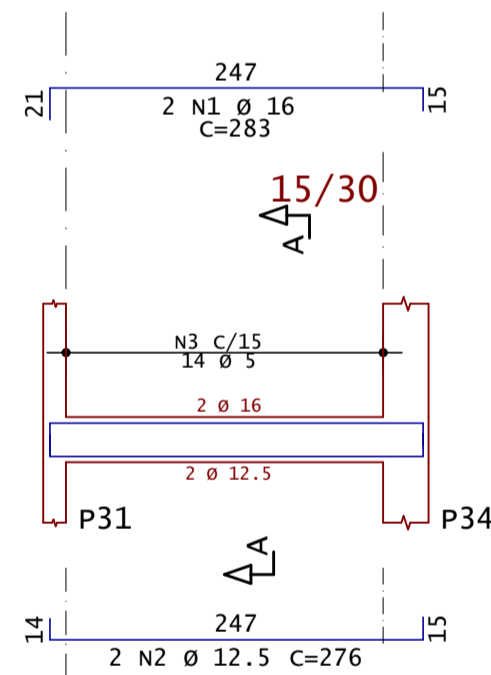


Corte A

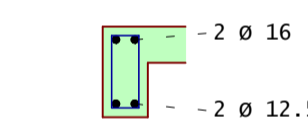


24 N5 Ø 5 C=101

V404

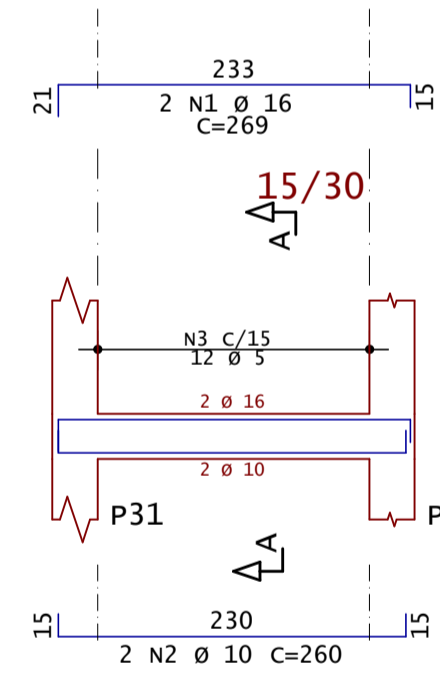


Corte A

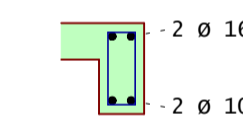


14 N3 Ø 5 C=81

V405

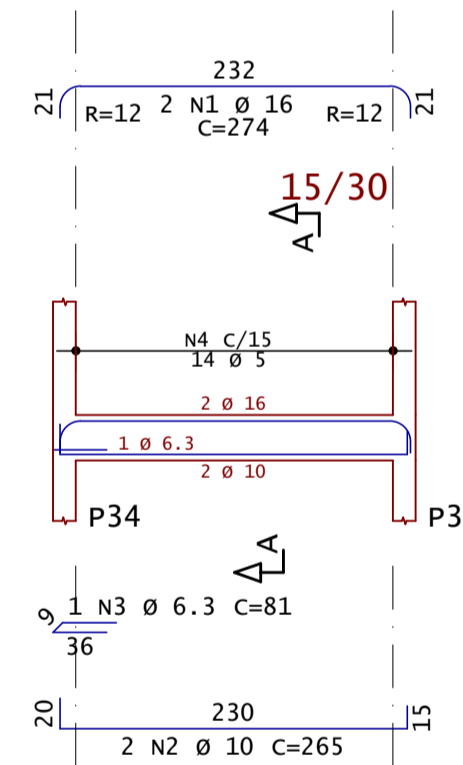


Corte A

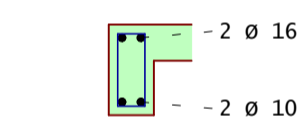


12 N3 Ø 5 C=81

V406

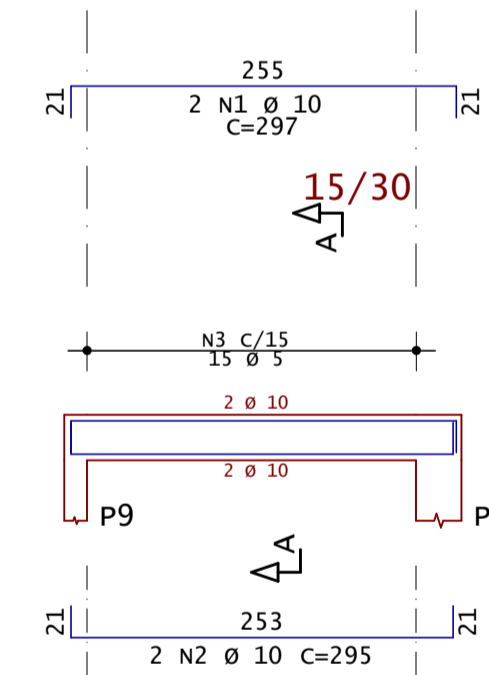


Corte A

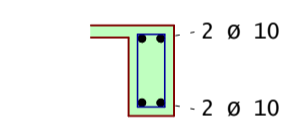


14 N4 Ø 5 C=81

V501

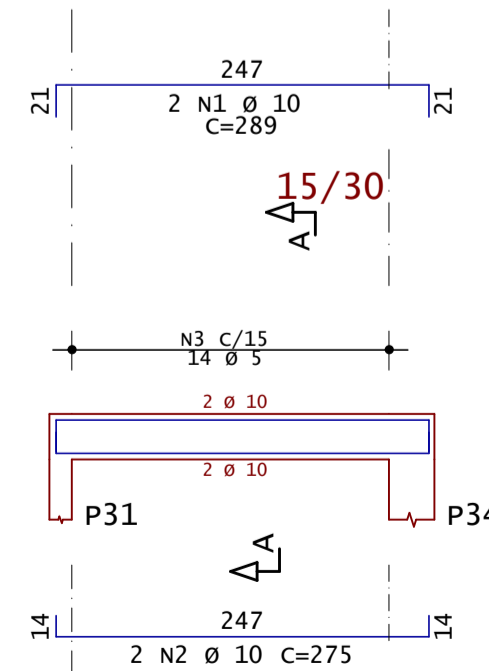


Corte A

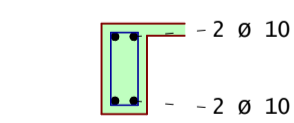


15 N3 Ø 5 C=81

V502

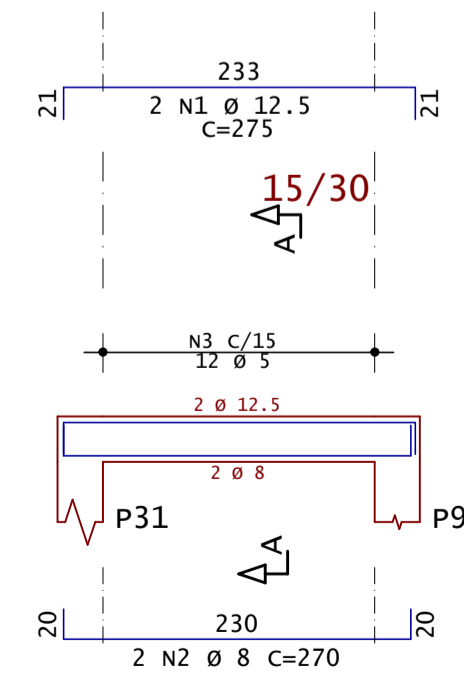


Corte A

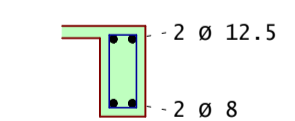


14 N3 Ø 5 C=81

V503

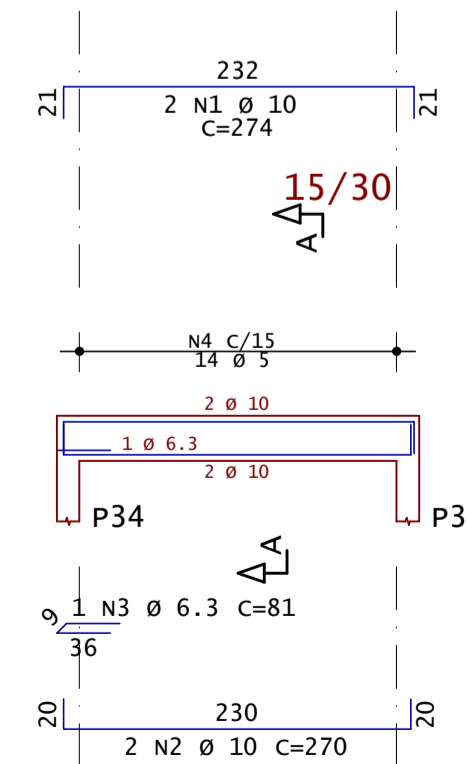


Corte A

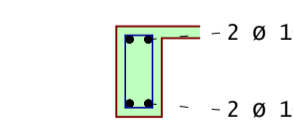


12 N3 Ø 5 C=81

V504



Corte A



14 N4 Ø 5 C=81

AÇO	POS	BIT	QUANT	COMPRIMENTO		
				UNIT	TOTAL	
		mm		cm	cm	
V401	50A	1	8	2	810	1620
	50A	2	10	2	300	600
	50A	3	8	2	502	1004
	50A	4	8	2	548	1096
	60A	5	5	58	81	4698
V402	50A	1	10	2	297	594
	60A	2	10	2	285	570
	60A	3	5	15	81	1215
V403	50A	1	12.5	2	274	548
	50A	2	12.5	2	352	704
	50A	3	16	2	245	490
	50A	4	8	2	325	650
	60A	5	5	24	101	2424
V404	50A	1	16	2	283	566
	50A	2	12.5	2	276	552
	60A	3	5	14	81	1134
V405	50A	1	16	2	269	538
	50A	2	10	2	260	520
	60A	3	5	12	81	972
V406	50A	1	16	2	274	548
	50A	2	10	2	265	530
	50A	3	6.3	1	81	81
	60A	4	5	14	81	1134
V501	50A	1	10	2	297	594
	50A	2	10	2	295	590
	60A	3	5	15	81	1215
V502	50A	1	10	2	289	578
	50A	2	10	2	275	550
	60A	3	5	14	81	1134
V503	50A	1	12.5	2	275	550
	50A	2	8	2	270	540
	60A	3	5	12	81	972
V504	50A	1	10	2	274	548
	50A	2	10	2	270	540
	50A	3	6.3	1	81	81
	60A	4	5	14	81	1134

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		m	kgf
60A	5	160	25
50A	6.3	2	0
50A	8	49	19
50A	10	62	38
50A	12.5	24	23
50A	16	21	34
Peso Total	60A =		25 kgf
Peso Total	50A =		115 kgf



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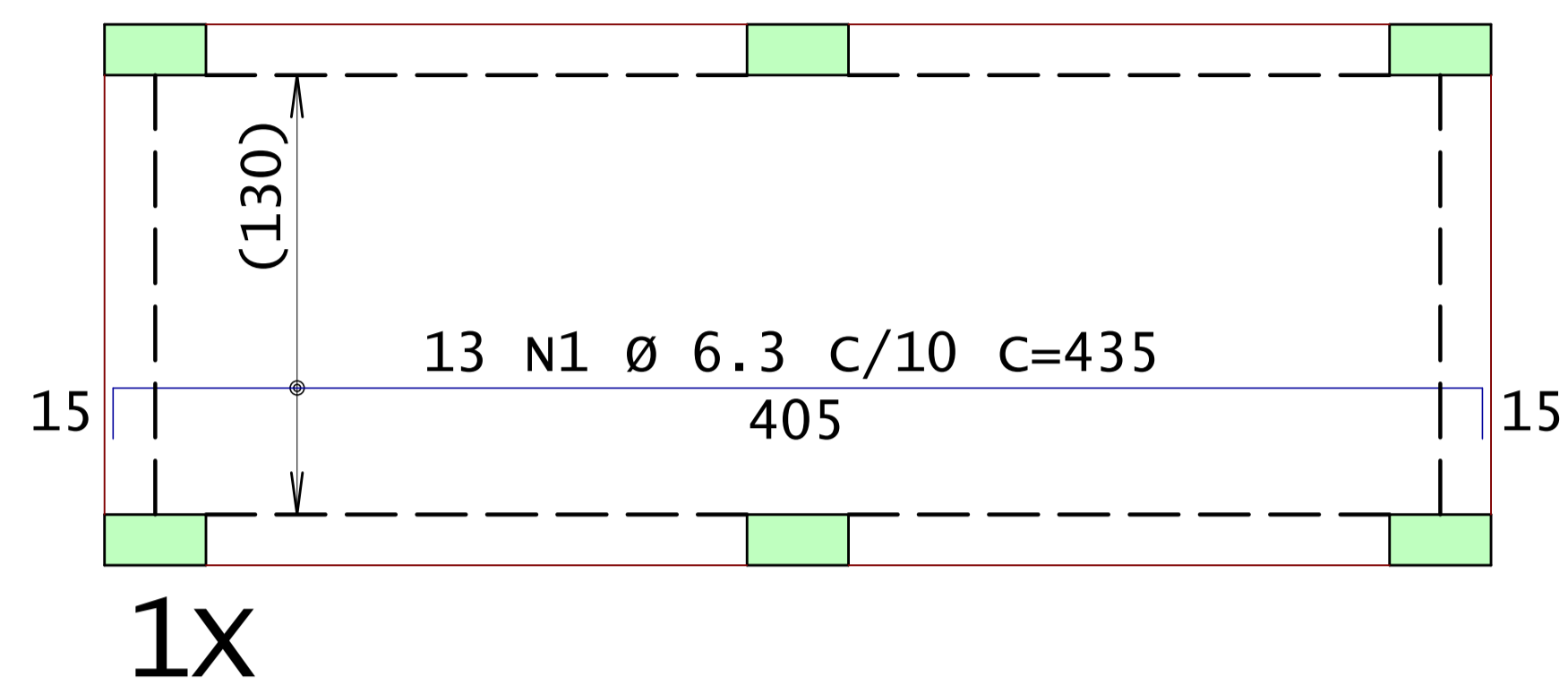
Ciente:	Cleiton Batista Soares de Lima	Prancha nº:	18	Revisão nº:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	<ul style="list-style-type: none"> • Detalhamento das vigas do Telhado • Detalhamento das vigas da Caixa D'água 				
CREA-PB:	161890343-9	ART nº:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	Indicada		



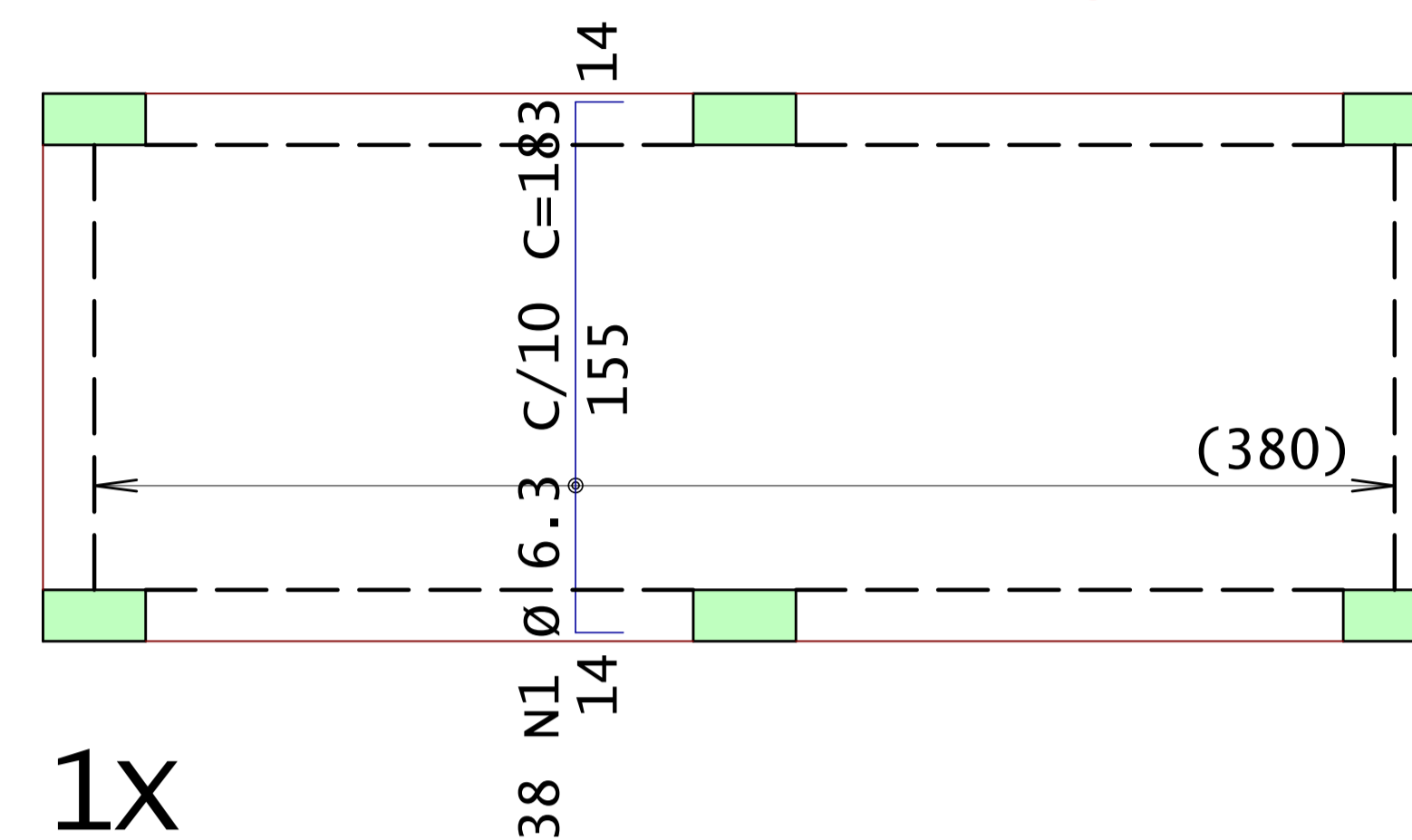
AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
		mm	m	cm	cm
Piscina - Armadura negativa principal					
50A	1	6.3	13	435	5655
Piscina - Armadura negativa secundaria					
50A	1	6.3	38	183	6954
Piscina - Armadura positiva principal					
50A	1	6.3	15	435	6525
Piscina - Armadura positiva secundaria					
50A	1	6.3	38	183	6954

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		m	kgf
50A	6.3	261	64
Peso Total		50A =	64 kgf

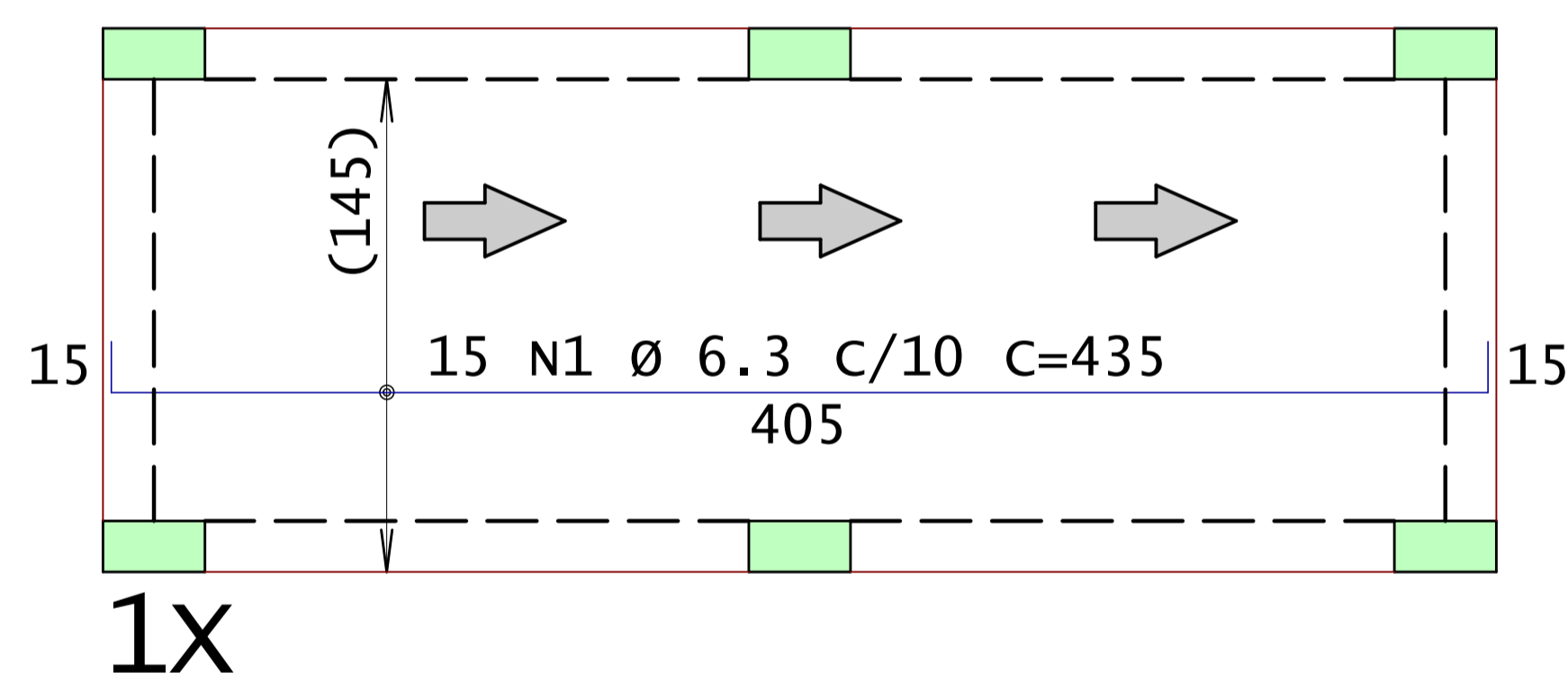
Piscina - Armadura negativa principal



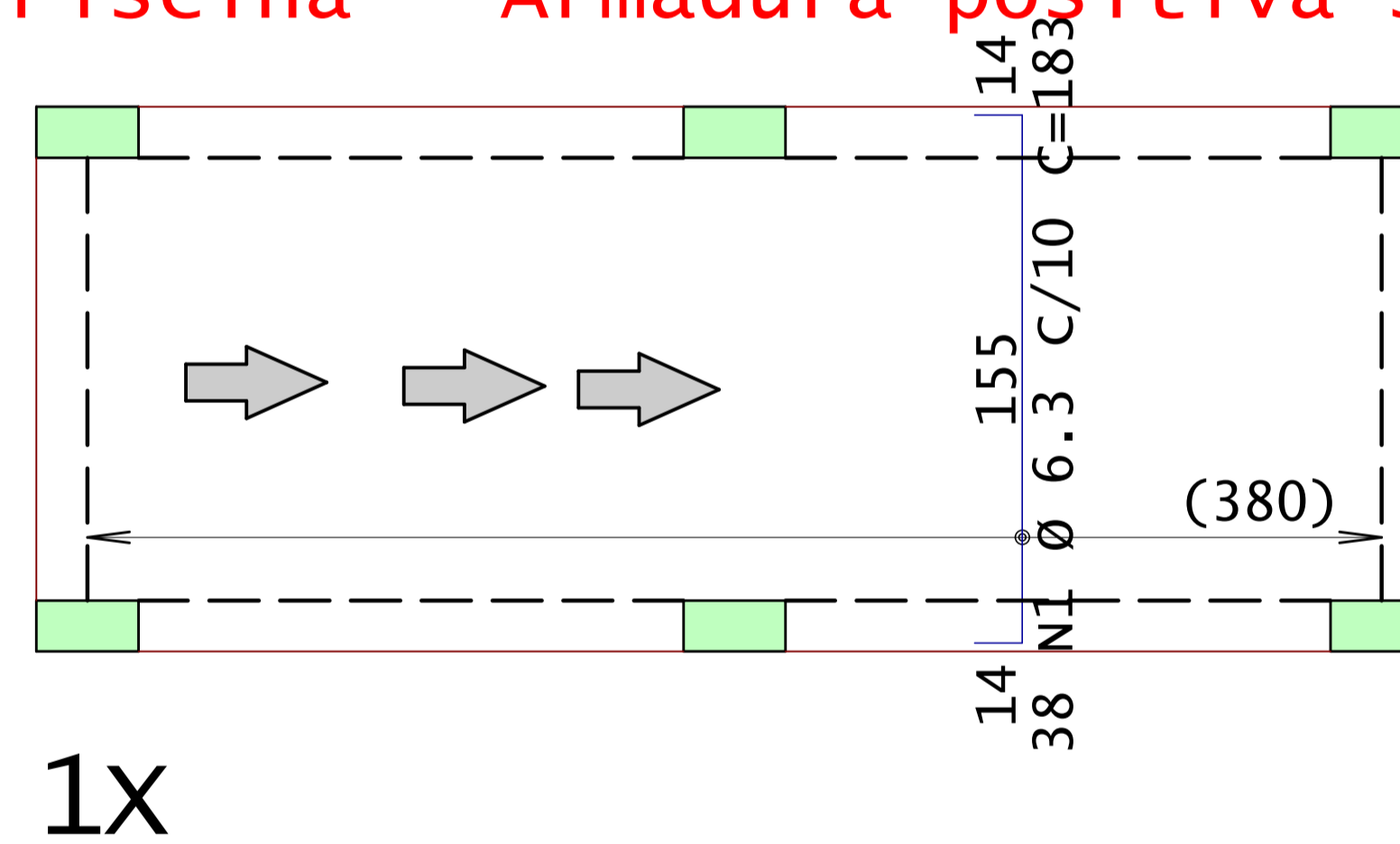
Piscina - Armadura negativa secundaria



Piscina - Armadura positiva principal



Piscina - Armadura positiva secundaria





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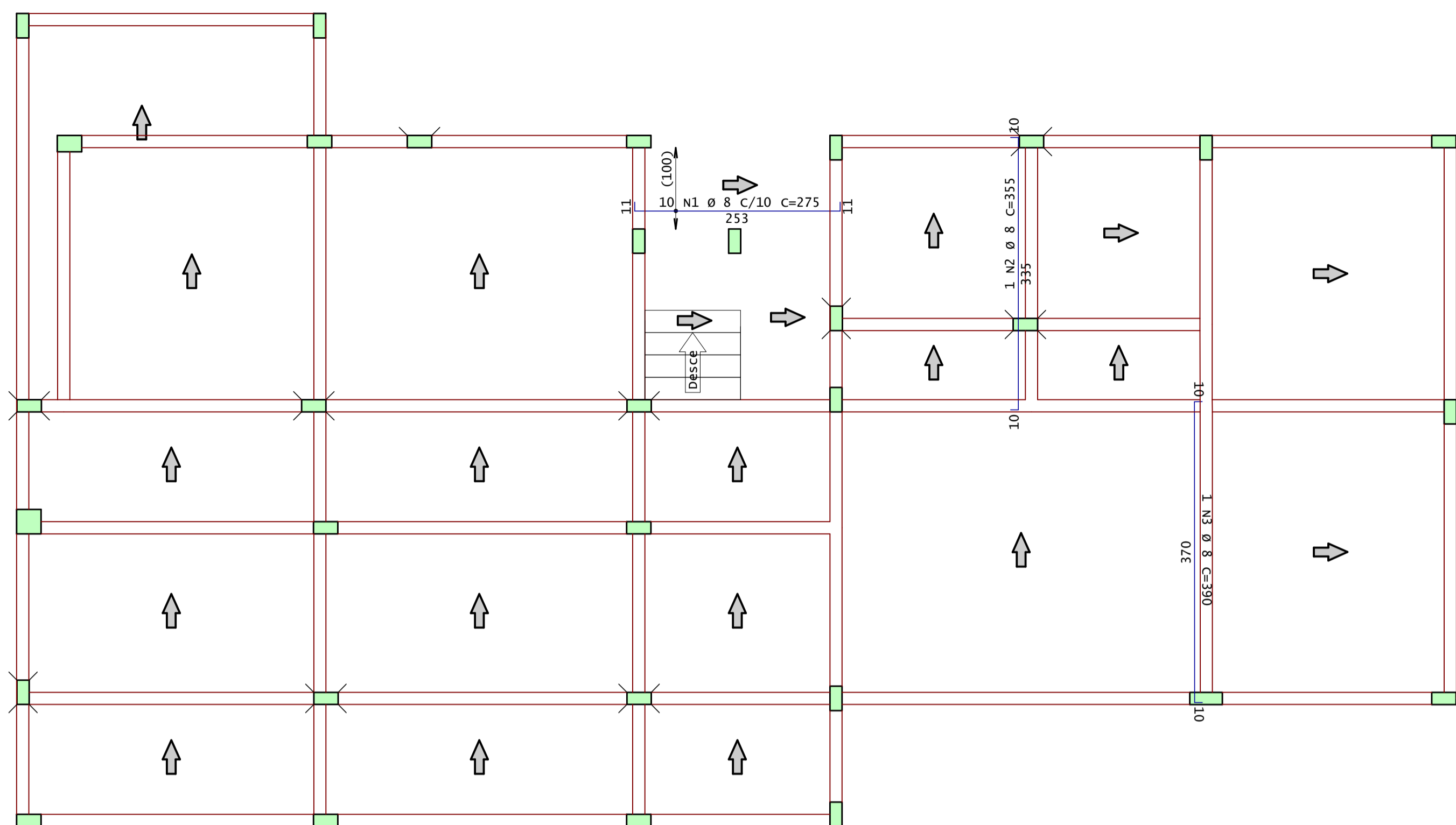
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Cliente: Cleiton Batista Soares de Lima	Franca nº: 19 Revisão nº: 002	
Obra: Residência Unifamiliar	Observações: Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo	
Título: • Detalhamento da Laje da Piscina		
CREA-PB: 161890343-9		ART nº: Pb20210395879
Data: 06 / 10 / 2021		Escala: 1:20

Pavimento 1 - Armadura positiva principal

1X

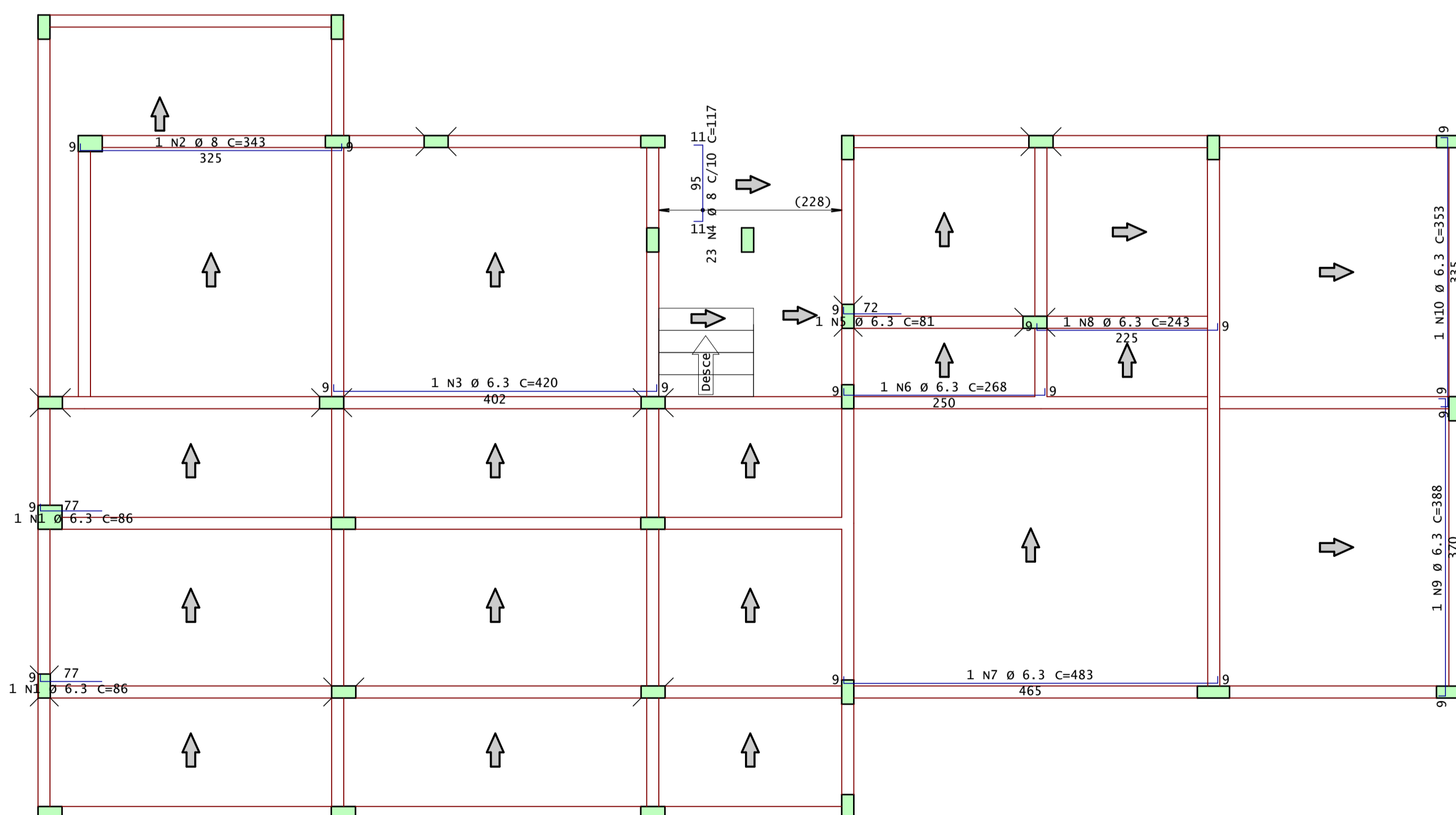


AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
cm					
1o Pavimento - Armadura positiva principal					
50A	1	8	10	275	2750
50A	2	8	1	355	355
50A	3	8	1	390	390
1o Pavimento - Armadura positiva secundaria					
50A	1	6.3	2	86	172
50A	2	8	1	343	343
50A	3	6.3	1	420	420
50A	4	8	23	117	2691
50A	5	6.3	1	81	81
50A	6	6.3	1	268	268
50A	7	6.3	1	483	483
50A	8	6.3	1	243	243
50A	9	6.3	1	388	388
50A	10	6.3	1	353	353

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
m			kgf
50A	6.3	24	6
50A	8	65	26
Peso Total			32 kgf

Pavimento 1 - Armadura positiva secundaria

1X





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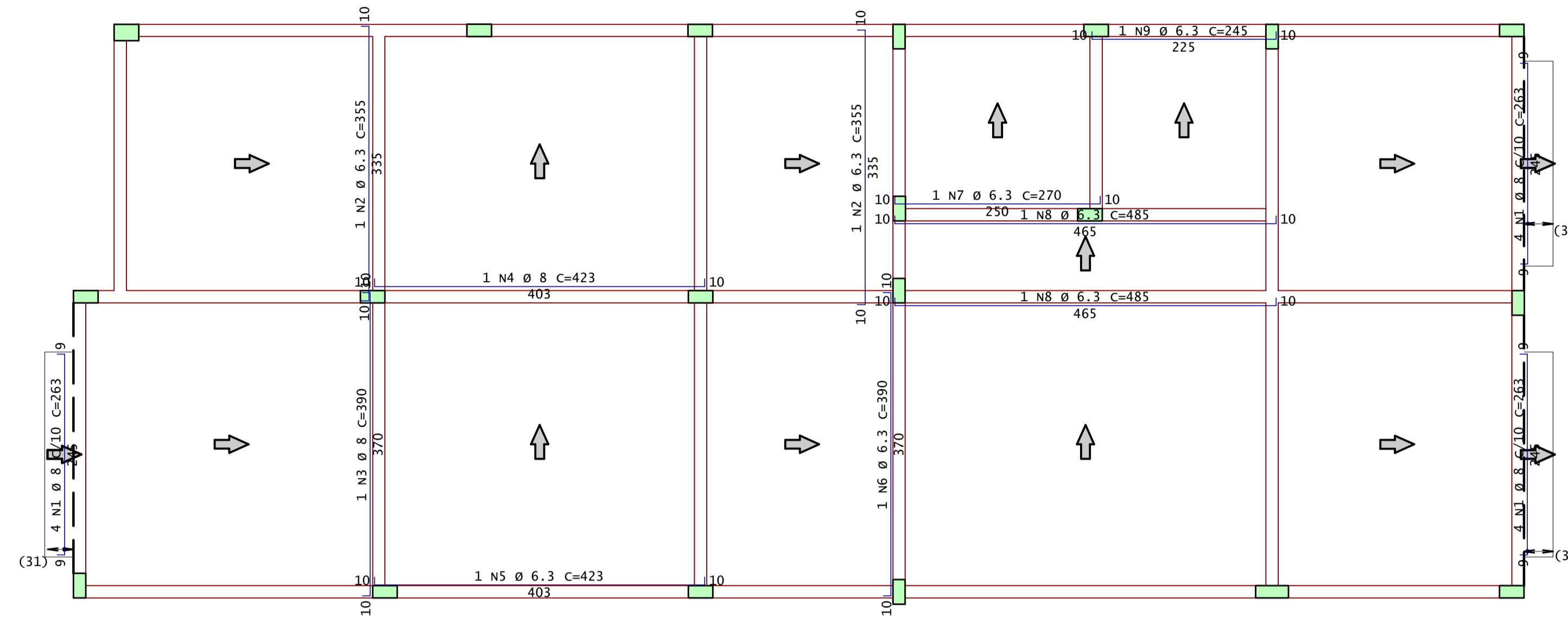
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Cliente: Cleiton Batista Soares de Lima	Franca n°: 21 Revisão n°: 002
Obra: Residência Unifamiliar	Observações: Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo
Título: • Detalhamento das Lajes do Pavimento 1 (2/2)	
CREA-PB: 161890343-9	ART n°: Pb20210395879
Data: 06 / 10 / 2021	Escala: 1:50



Coberta - Armadura positiva secundaria

1X

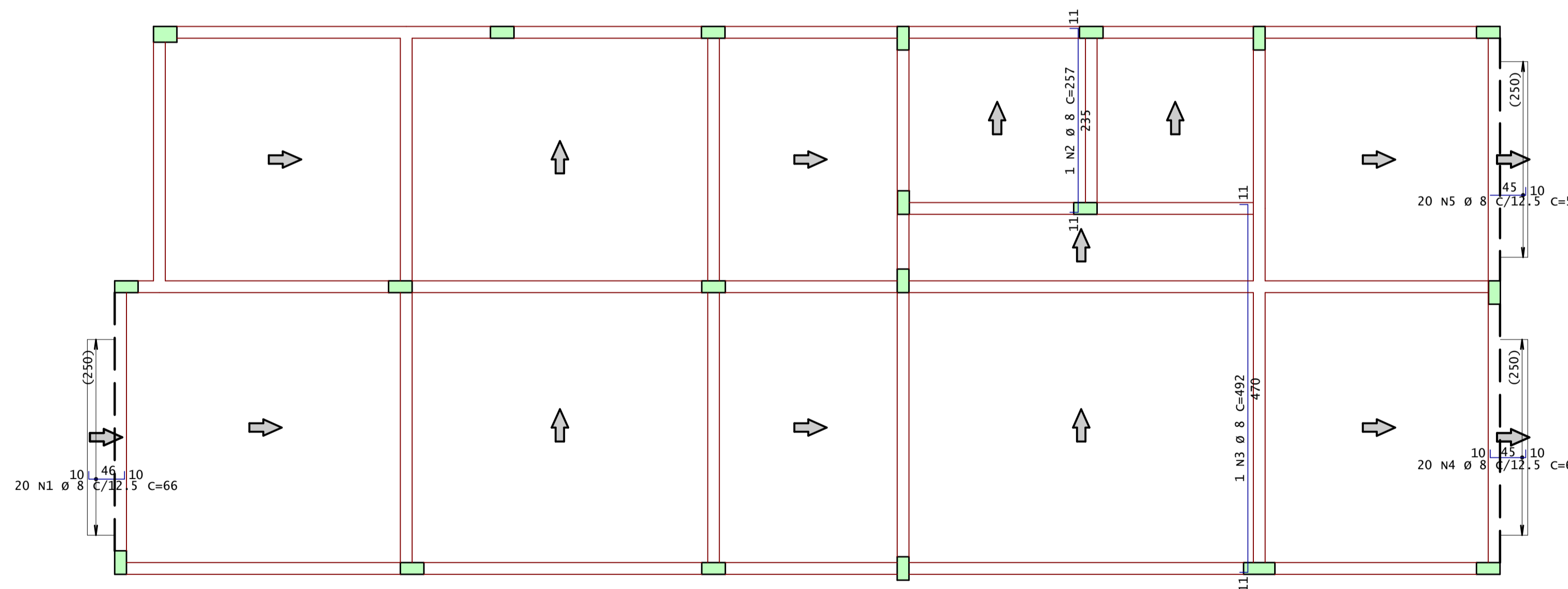


AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
				cm	cm
Cobertura 1 - Armadura positiva principal					
50A	1	8	20	66	1320
50A	2	8	1	257	257
50A	3	8	1	492	492
50A	4	8	20	65	1300
50A	5	8	20	55	1100
Cobertura 1 - Armadura positiva secundaria					
50A	1	8	12	263	3156
50A	2	6.3	2	355	710
50A	3	8	1	390	390
50A	4	8	1	423	423
50A	5	6.3	1	423	423
50A	6	6.3	1	390	390
50A	7	6.3	1	270	270
50A	8	6.3	2	485	970
50A	9	6.3	1	245	245

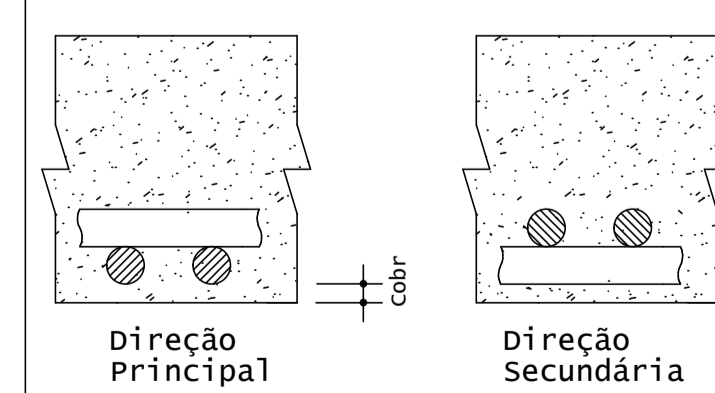
RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
		m	kgf
50A	6.3	30	7
50A	8	84	33
Peso Total		50A =	41 kgf

Coberta - Armadura positiva principal

1X



Detalhe genérico do alojamento de armaduras positivas



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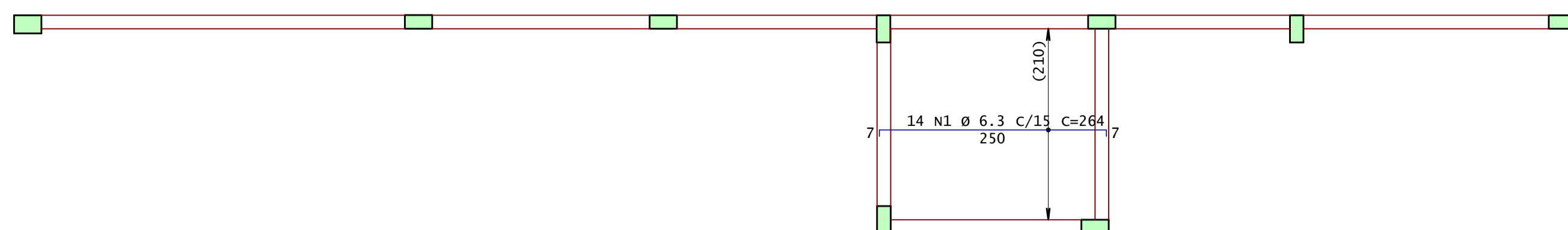
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Ciente:	Cleiton Batista Soares de Lima	Prancha n°:	23	Revisão n°:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Detalhamento das Lajes da Coberta (2/2)				
CREA-PB:	161890343-9	ART n°:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	1:50		



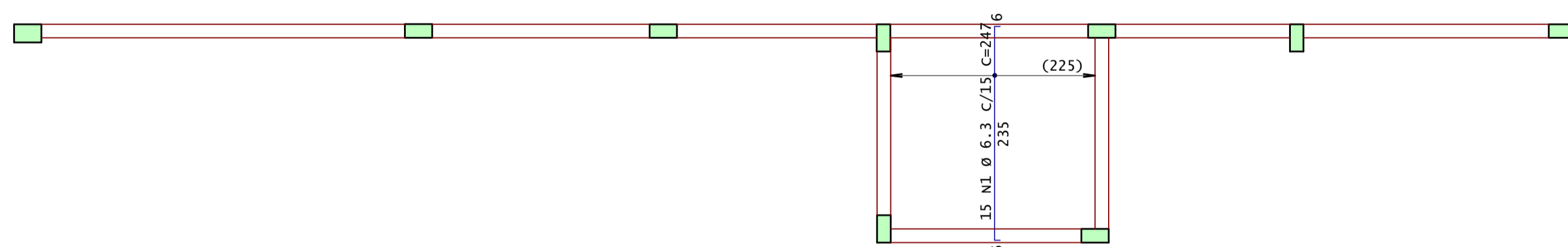
Telhado - Armadura negativa principal

1x



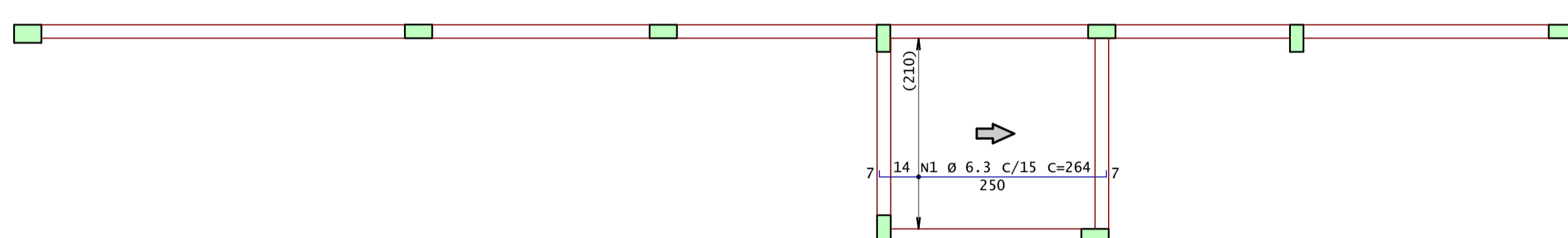
Telhado - Armadura negativa secundaria

1x



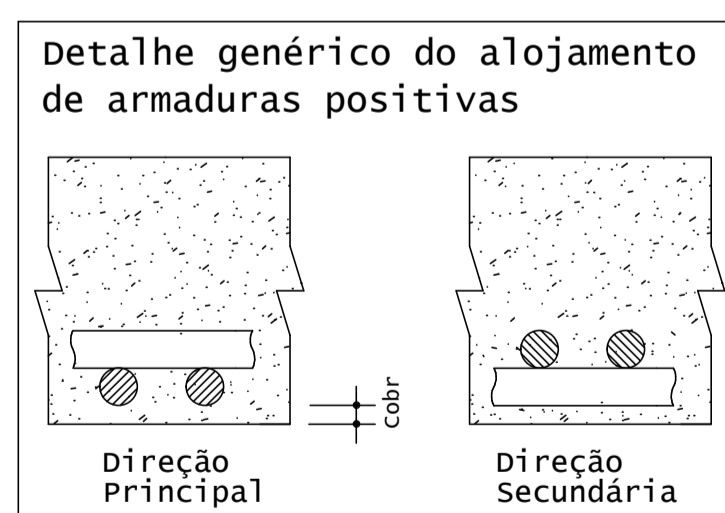
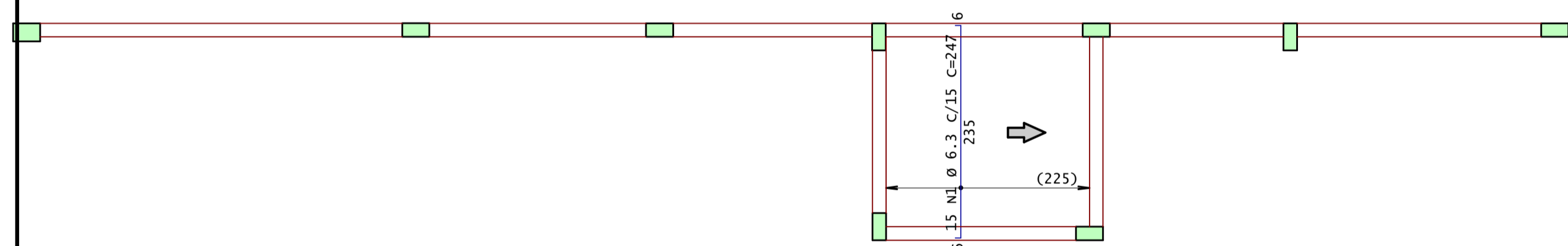
Telhado - Armadura positiva principal

1x



Telhado - Armadura positiva secundaria

1x



AÇO	POS	BIT	QUANT	COMPRIMENTO UNIT	TOTAL
		mm		cm	cm
Telhado - Armadura negativa principal					
50A	1	6.3	14	264	3696
Telhado - Armadura negativa secundaria					
50A	1	6.3	15	247	3705
Telhado - Armadura positiva principal					
50A	1	6.3	14	264	3696
Telhado - Armadura positiva secundaria					
50A	1	6.3	15	247	3705

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
50A	6.3	148	36
Peso Total 50A =			36 kgf



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Ciente:	Cleiton Batista Soares de Lima	Prancha n°:	24	Revisão n°:	002
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo		
Título:	• Detalhamento das Lajes do Telhado				
CREA-PB:	161890343-9	ART n°:	Pb20210395879		
Data:	06 / 10 / 2021	Escala:	1:50		



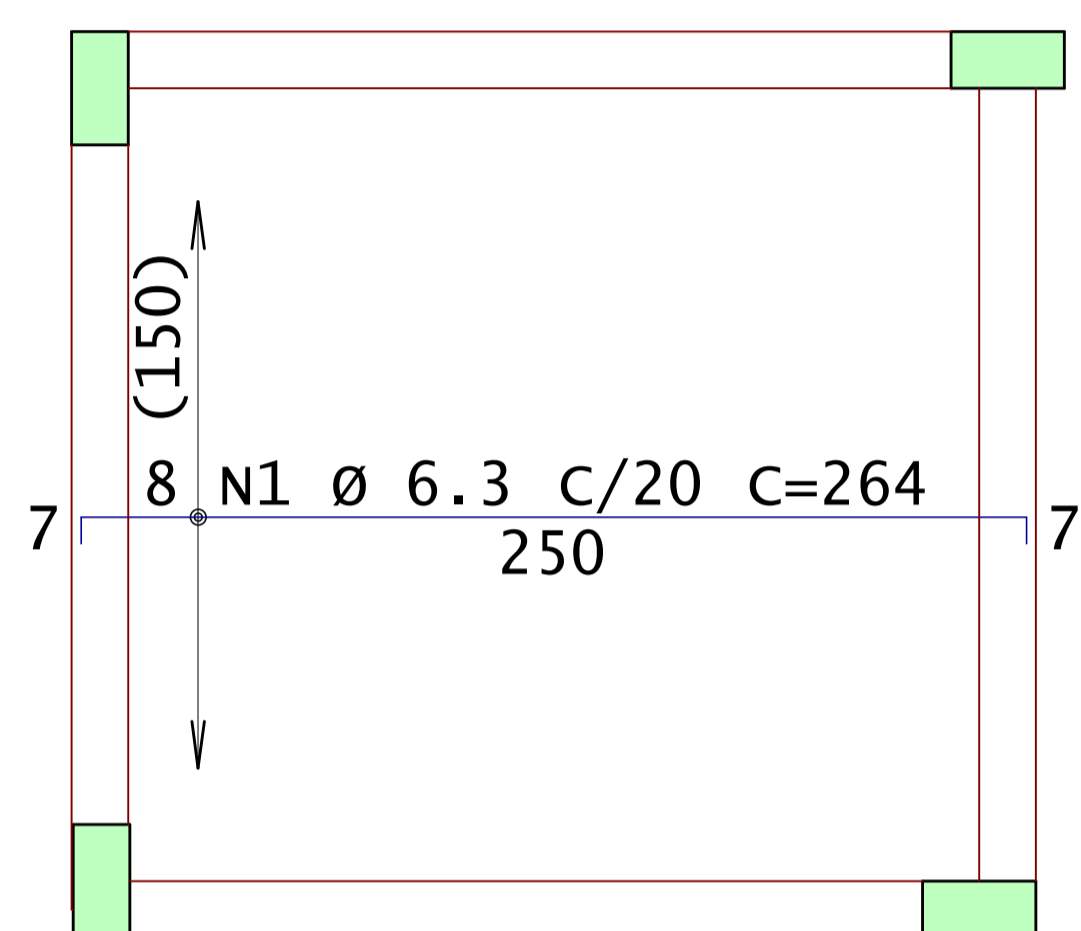
AÇO	POS	BIT	QUANT	COMPRIMENTO	UNIT	TOTAL
		mm		cm	cm	
Caixa D'água - Armadura negativa principal						
50A	1	6.3	8	264		2112
Caixa D'água - Armadura negativa secundaria						
50A	1	6.3	2	120		240
Caixa D'água - Armadura positiva principal						
50A	1	6.3	1	247		247

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
50A	6.3	26	6
Peso Total			50A = 6 kgf

AÇO	POS	BIT	QUANT	COMPRIMENTO	UNIT	TOTAL
		mm		cm	cm	
VT501A (X5)						
TR08634	1		5	245		1225
60A	2		5	255		1275

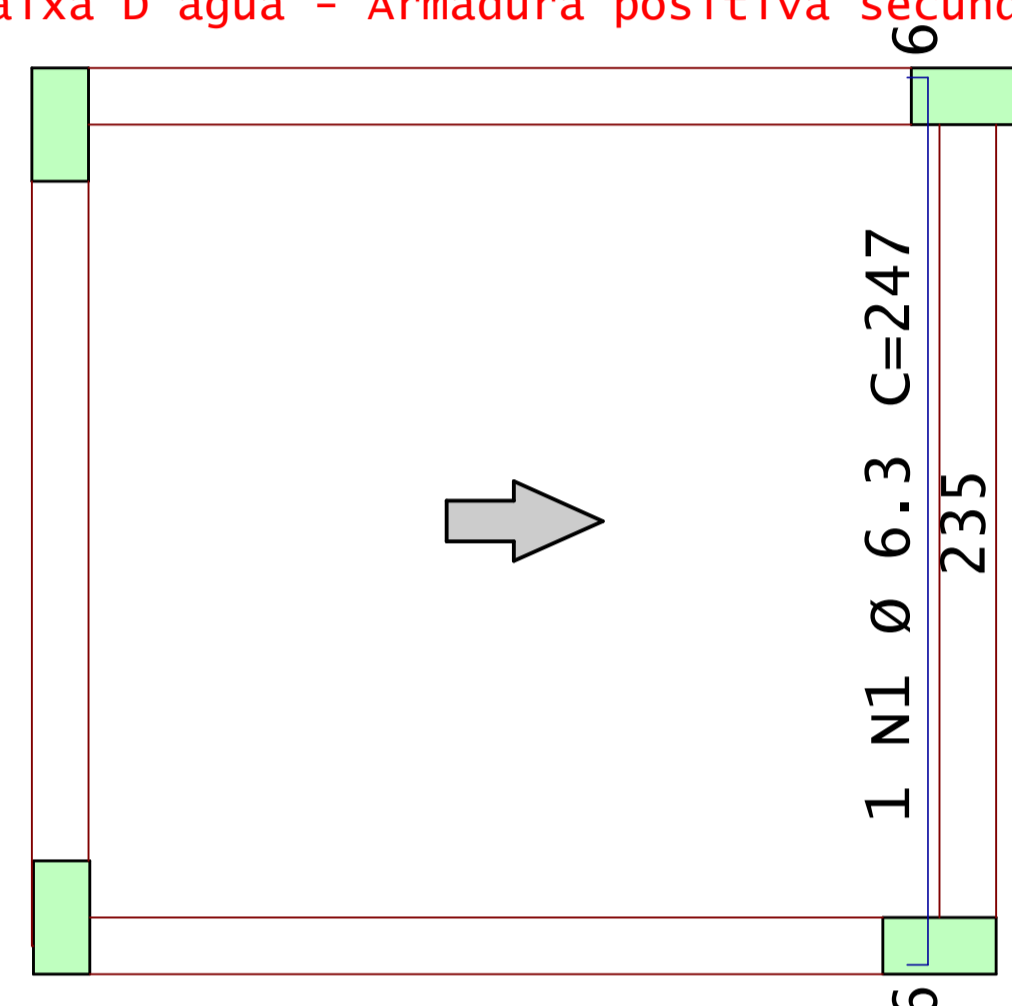
RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
TR08634		12	8
60A	5	13	2
Peso Total			TR08634 = 8 kgf
Peso Total			60A = 2 kgf

Caixa D'água - Armadura negativa principal



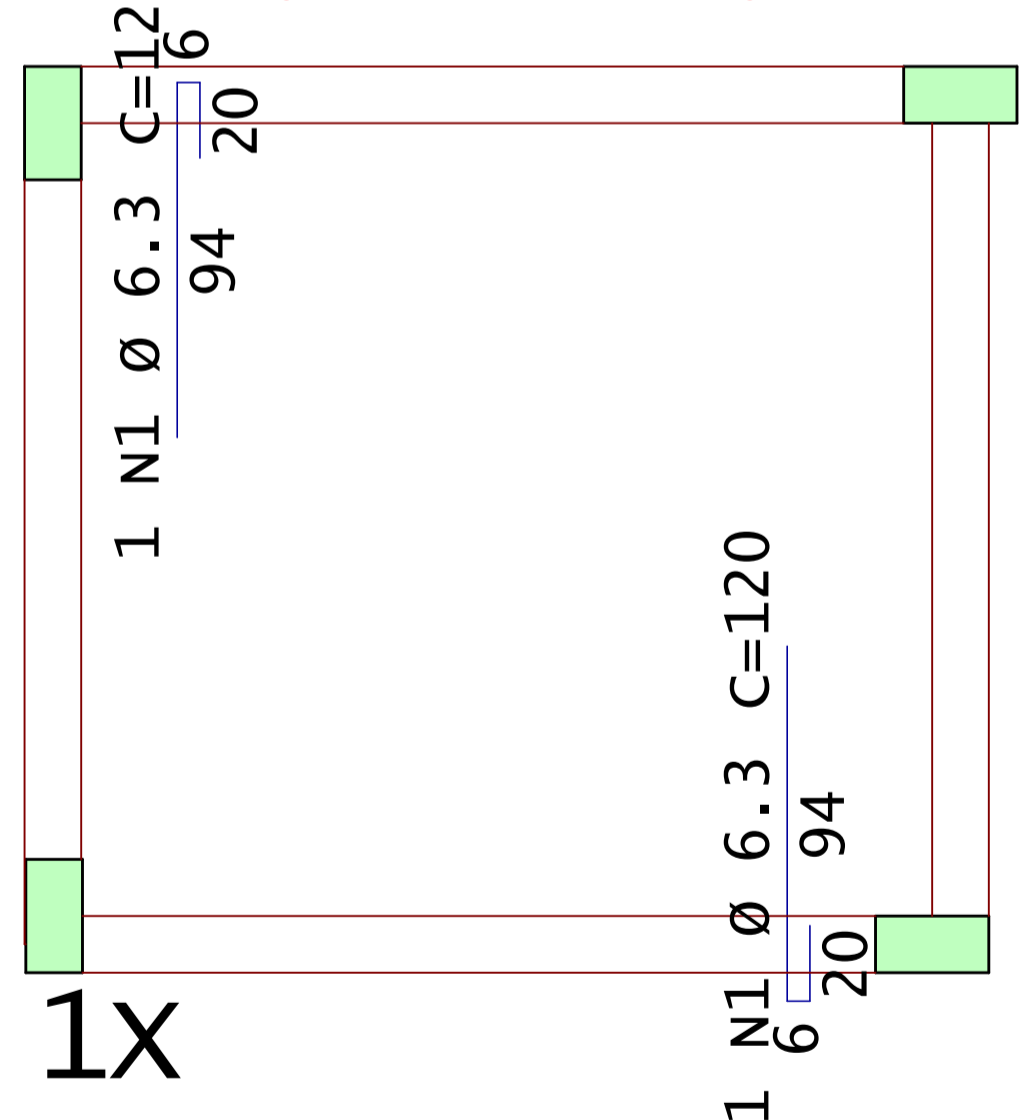
1x

Caixa D'água - Armadura positiva secundaria



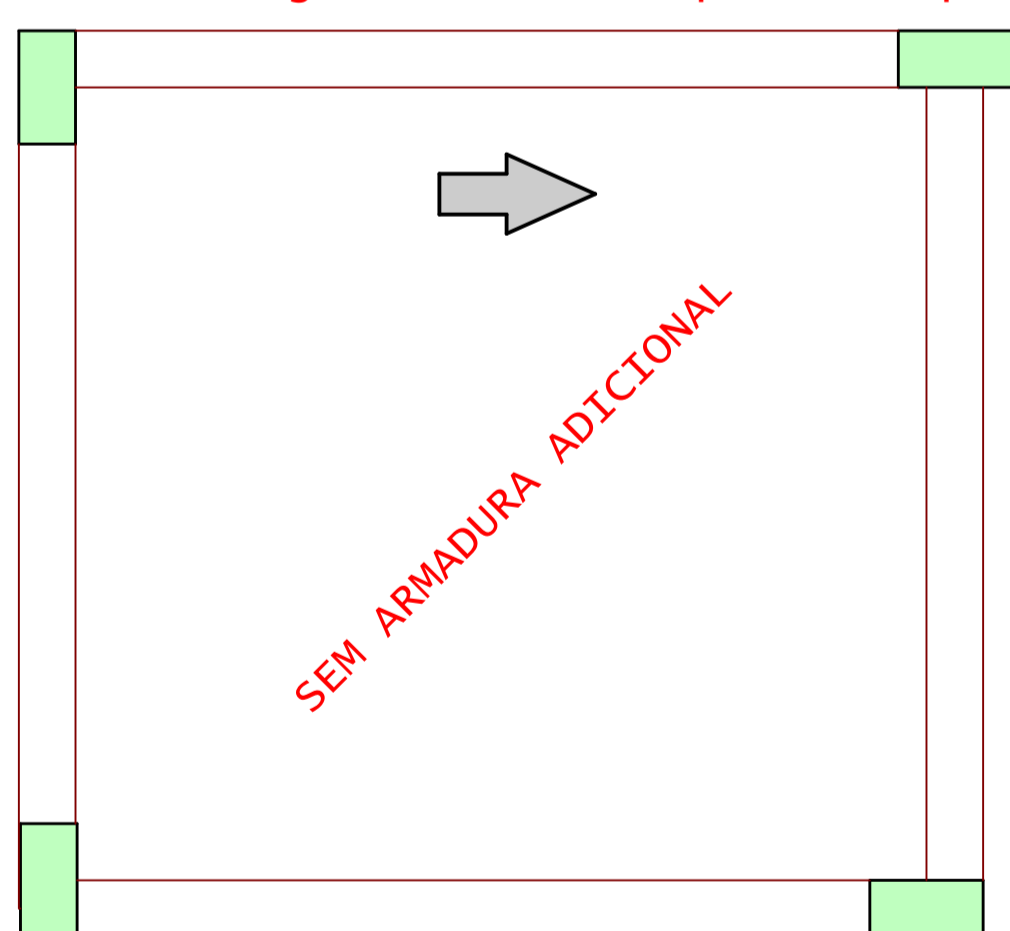
1x

Caixa D'água - Armadura negativa secundaria

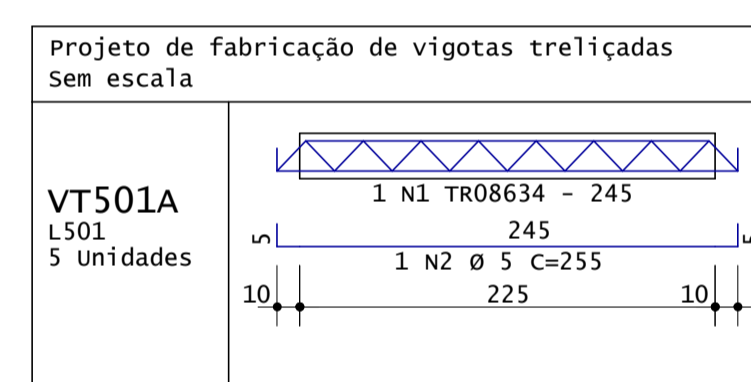


1x

Caixa D'água - Armadura positiva principal



1x



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Ciente: **Cleiton Batista Soares de Lima** Franca n°: **25** Revisão n°: **002**

Obra: **Residência Unifamiliar** Observações: **Concreto: fck 25MPa Eci: 28000 Mpa**

Título: **• Detalhamento das Lajes da Caixa D'água** **Atente-se aos cobrimentos Leia o Memorial Descritivo**

CREA-PB: **161890343-9** ART n°: **Pb20210395879**

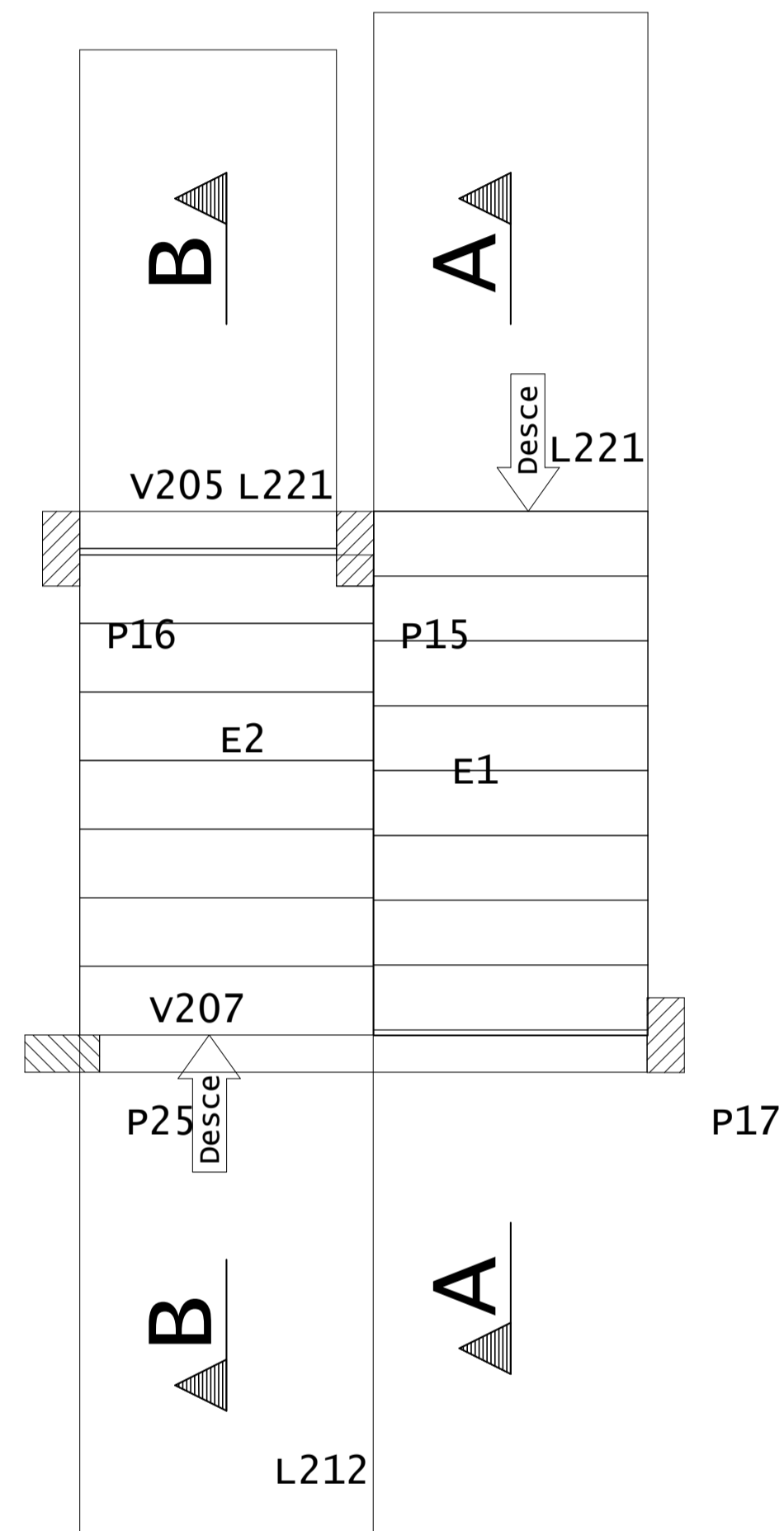
Data: **06 / 10 / 2021** Escala: **1:20**



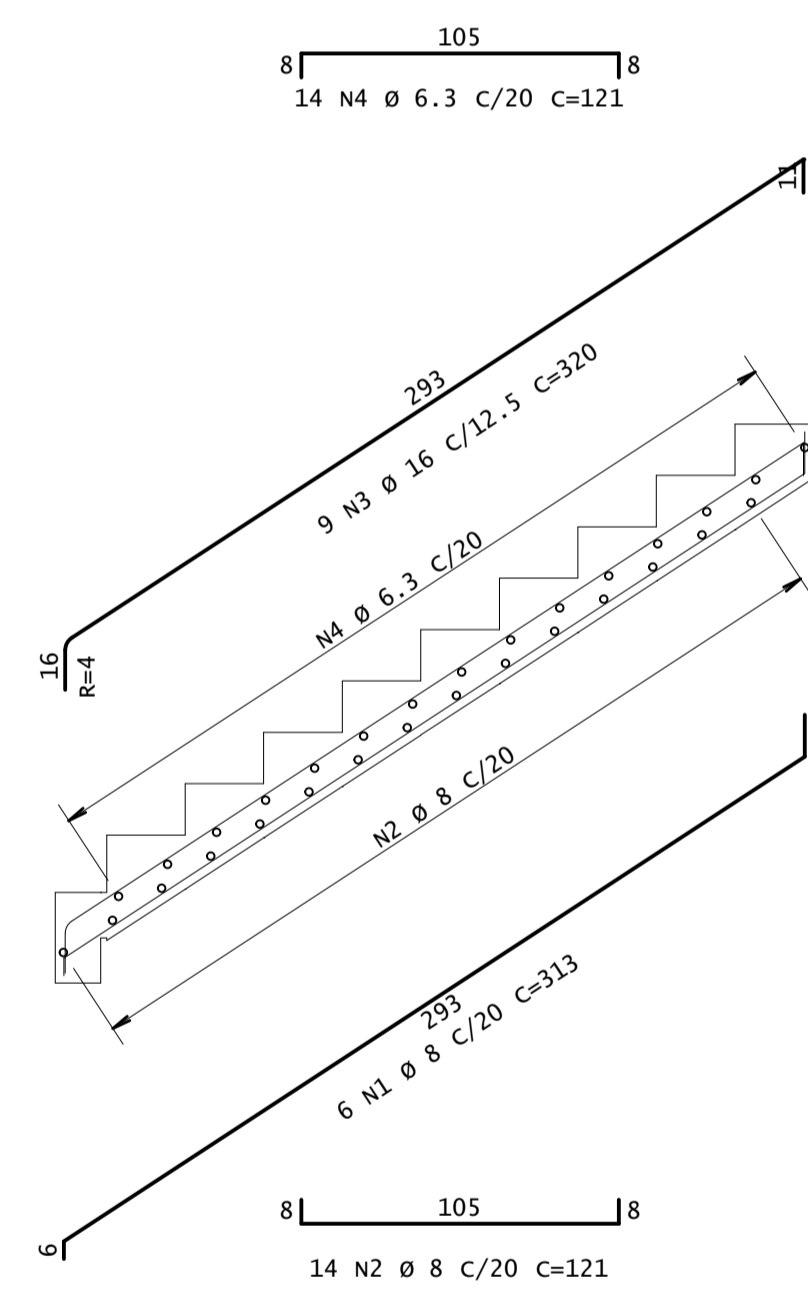
Planta Escada-1 - 1o Pavimento

AÇO	POS	BIT	QUANT	COMPRIMENTO	
				UNIT	TOTAL
Planta Escada-1 - 1o Pavimento					
50A	1	6.3	12	343	4116
50A	2	12.5	14	138	1932
50A	3	8	8	336	2688
50A	4	6.3	30	138	4140
50A	5	8	7	303	2121
50A	6	8	14	125	1750
50A	7	8	7	348	2436
50A	8	6.3	13	125	1625

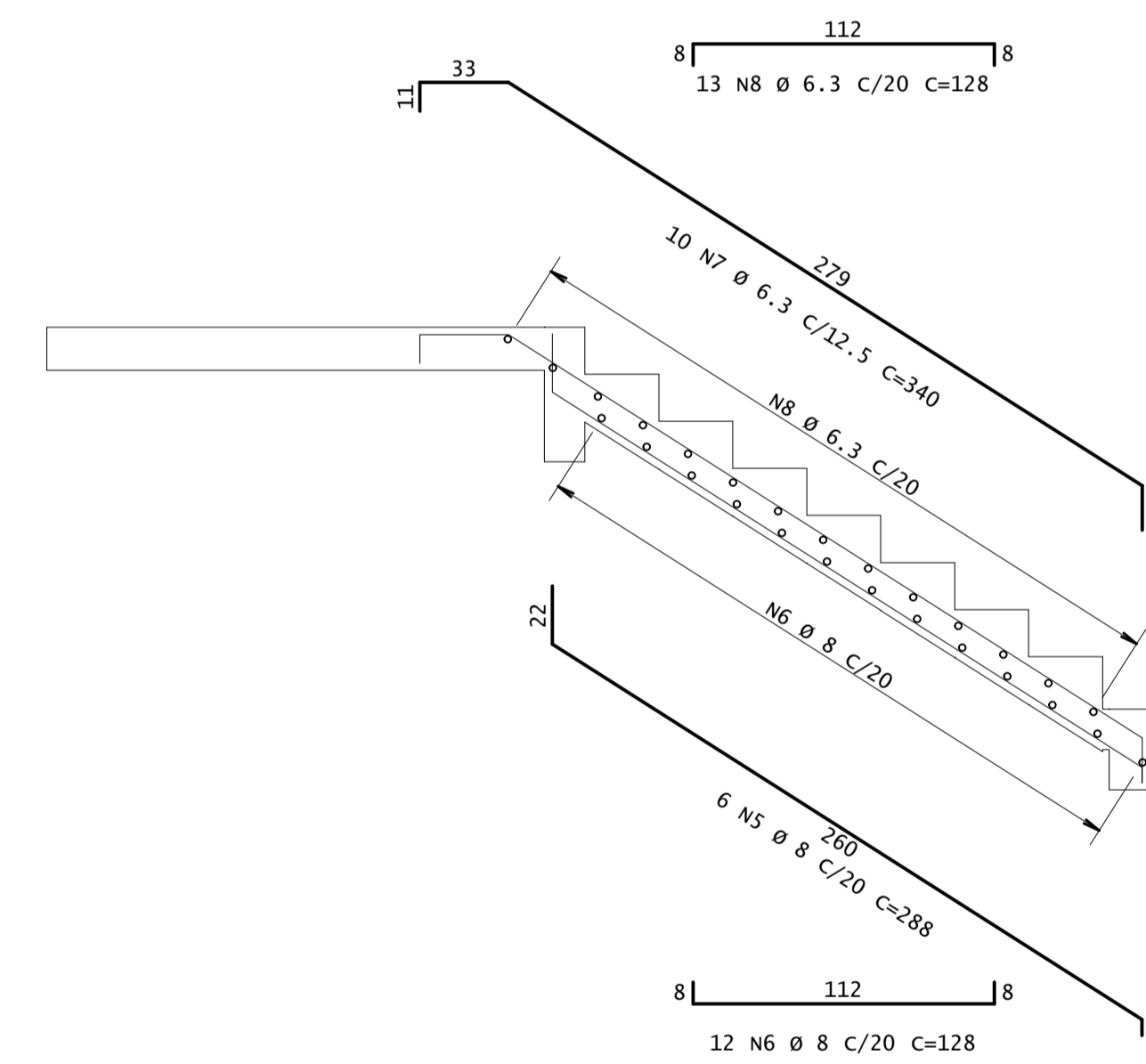
RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
50A	6.3	99	24
50A	8	90	36
50A	12.5	19	19
Peso Total		50A =	78 kgf



Corte A-A



Corte B-B



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Ciente:	Cleiton Batista Soares de Lima	Francha n°:	26	Revisão n°:	002			
Obra:	Residência Unifamiliar	Observações:	Concreto: fck 25MPa Eci: 28000 Mpa Atente-se aos cobrimentos Leia o Memorial Descritivo					
Título:	• Detalhamento da Escada							
CREA-PB:	161890343-9					ART n°:	Pb20210395879	
Data:	06 / 10 / 2021					Escala:	1:50	