



Anotação de Responsabilidade Técnica - ART
Lei nº 6.496, de 7 de dezembro de 1977
Conselho Regional de Engenharia e Agronomia do Rio Grande do Sul



ART Número
12462966

| | | |
|-----------------------------------|---|------------------------------|
| Tipo: PRESTAÇÃO DE SERVIÇO | Participação Técnica: INDIVIDUAL/PRINCIPAL | ART Vínculo: 12459241 |
| Convênio: NÃO É CONVÊNIO | Motivo: SUBSTITUIÇÃO DE ART | |

Contratado

| | | |
|---------------------------------|---|---|
| Carteira: RS238128 | Profissional: ALEXANDRE MONTENEGRO COLVERO | E-mail: alexandre@interlynk.com.br |
| RNP: 2218488850 | Título: Engenheiro Civil | |
| Empresa: NENHUMA EMPRESA | | Nr.Reg.: |

Contratante

| | |
|-------------------------------------|------------------------------------|
| Nome: MUNICÍPIO DE IBIRUBÁ | E-mail: |
| Endereço: RUA TIRADENTES 700 | Telefone: |
| Cidade: IBIRUBÁ | Bairro.: CENTRO |
| | CPF/CNPJ: 87564381000110 |
| | CEP: 98200000 UF: RS |


Identificação da Obra/Serviço

| | | |
|--|-----------------------------------|------------------------------------|
| Proprietário: MUNICÍPIO DE IBIRUBÁ | | |
| Endereço da Obra/Serviço: RUA CARLOS PRANKE ESQUINA RUA ARNOLDO TONIN 700 | | CPF/CNPJ: 87564381000110 |
| Cidade: IBIRUBÁ | Bairro: CENTRO | CEP: 98200000 UF: RS |
| Finalidade: OUTRAS FINALIDADES | Vlr Contrato(RS): 4.340,00 | Honorários(RS): 4.340,00 |
| Data Início: 14/03/2023 | Prev.Fim: 19/01/2024 | Ent.Classe: |

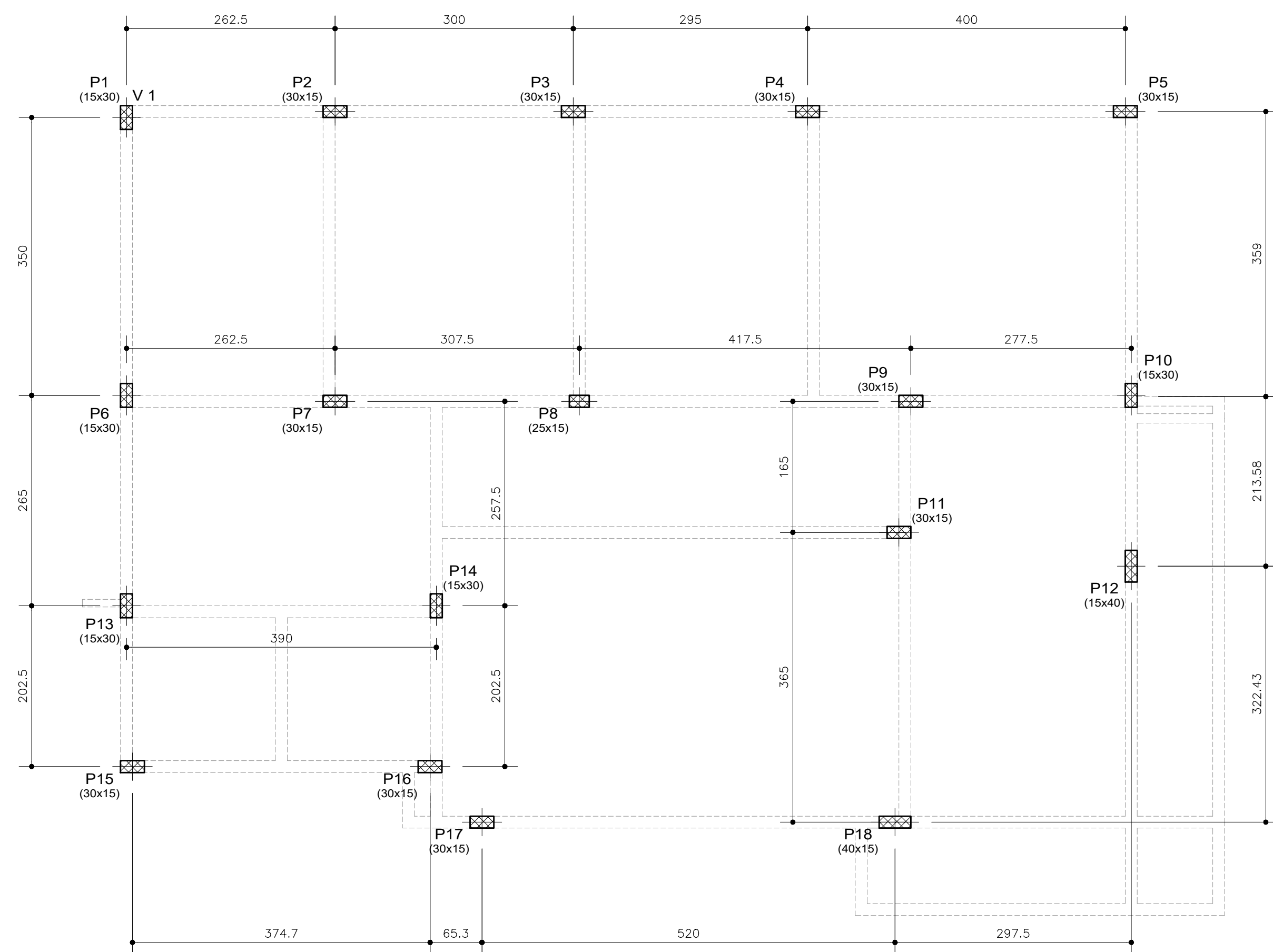
| Atividade Técnica | Descrição da Obra/Serviço | Quantidade | Unid. |
|-------------------|------------------------------|------------|-------|
| Projeto | Estruturas - Concreto Armado | 434,34 | M² |
| Projeto | Fundações Superficiais | 434,34 | M² |

ART registrada (paga) no CREA-RS em 14/03/2023

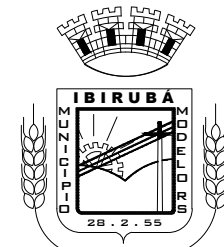
Abel Grave
Abel Grave
Prefeito Municipal
CPF: 000.264.290-55

| | | |
|--------------|--|--|
| Local e Data | Declaro serem verdadeiras as informações acima ALEXANDRE MONTENEGRO COLVERO |  Documento assinado digitalmente ALEXANDRE MONTENEGRO COLVERO Data: 14/03/2023 14:06:28-0300 Verifique em https://validar.itf.gov.br |
| | Profissional | ML Contratante |

A AUTENTICIDADE DESTA ART PODE SER CONFIRMADA NO SITE DO CREA-RS, LINK SOCIEDADE - ART CONSULTA.



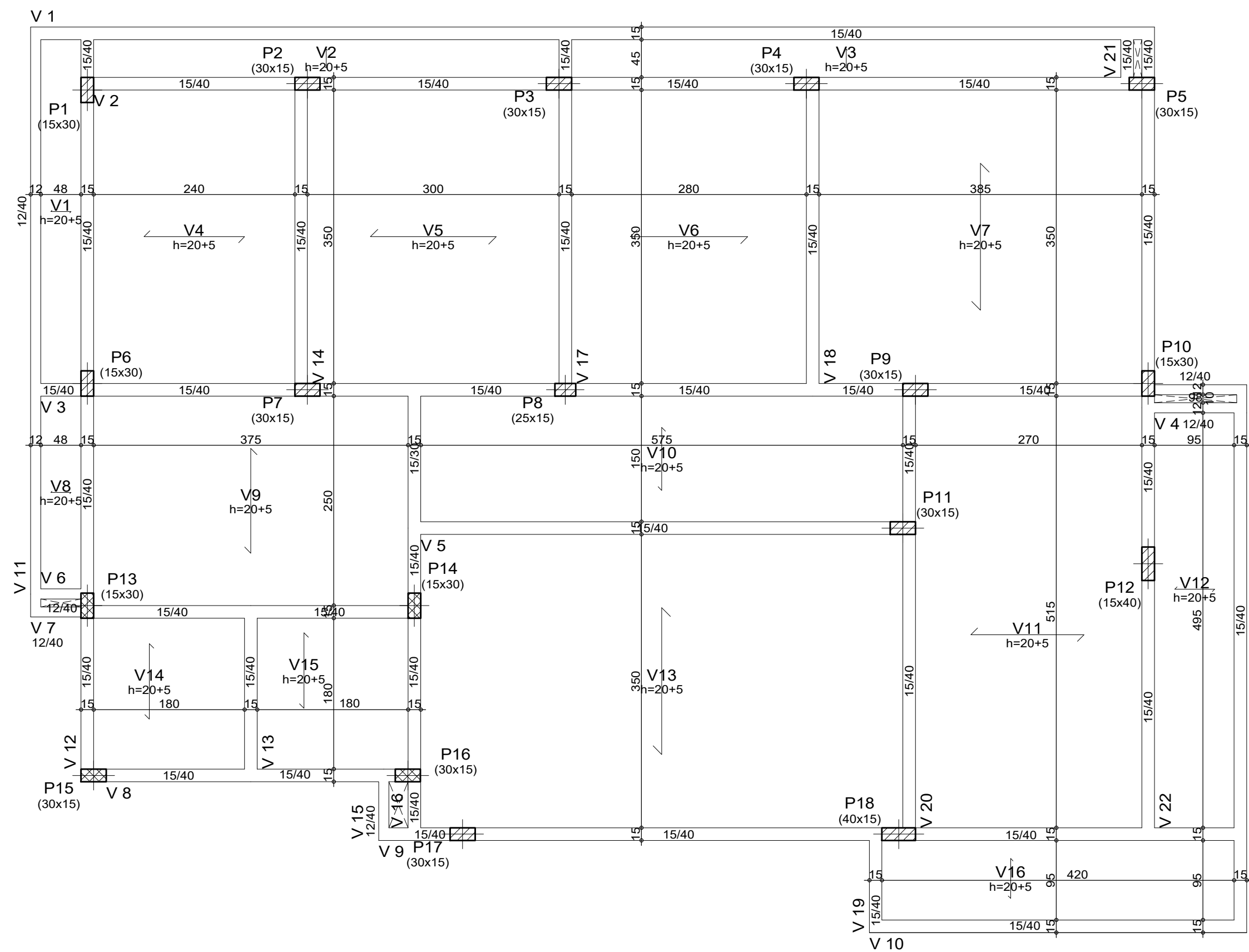
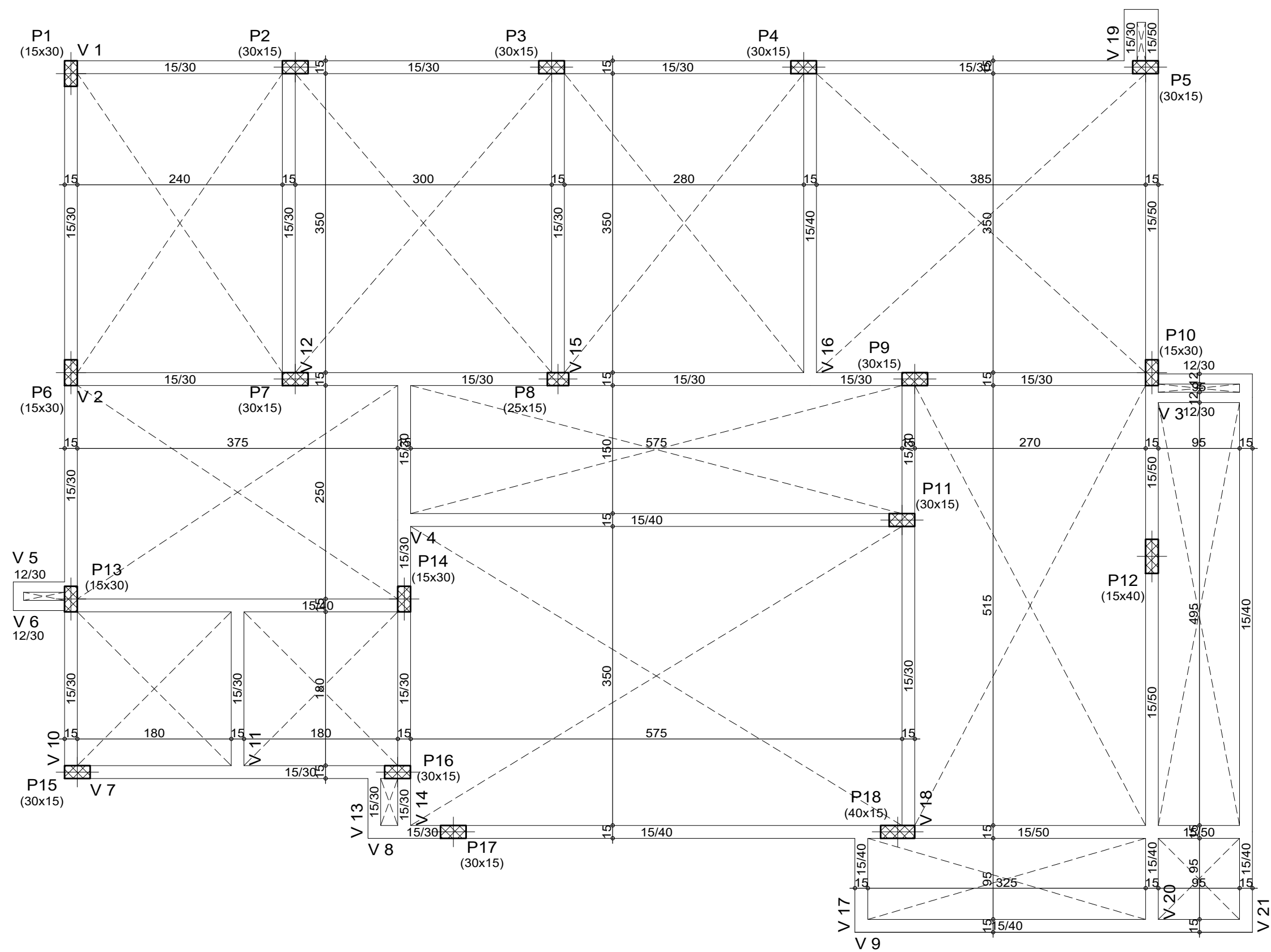
LOCAÇÃO DE PILARES
ESC:1.50



MUNICÍPIO DE IBIRUBÁ

CENTRO DE ACOLHIMENTO DE MENORES

| | |
|---|---|
| <p>OBRA</p> <p>USO: CENTRO DE ACOLHIMENTO DE MENORES</p> <p>LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonini, lado ímpar - Bairro Hermany - IBIRUBÁ/RS</p> | <p>PLANTAS</p> <p>* LOCAÇÃO DE PILARES</p> |
| <p>PROPRIETÁRIO</p> <p>MUNICÍPIO DE IBIRUBÁ</p> | <p>DESENHO</p> <p>Documentos assinado digitalmente ALEXANDRE MONTENEGRO COLVERO Data: 06/02/2024 11:50:36 -0300 Verifique em https://validar.sil.gov.br</p> |
| <p>ÁREA</p> <p>434,34 M²</p> | <p>EXECUÇÃO</p> <p>FRANCHA</p> <p>MAR/2023</p> <p>1/11</p> |

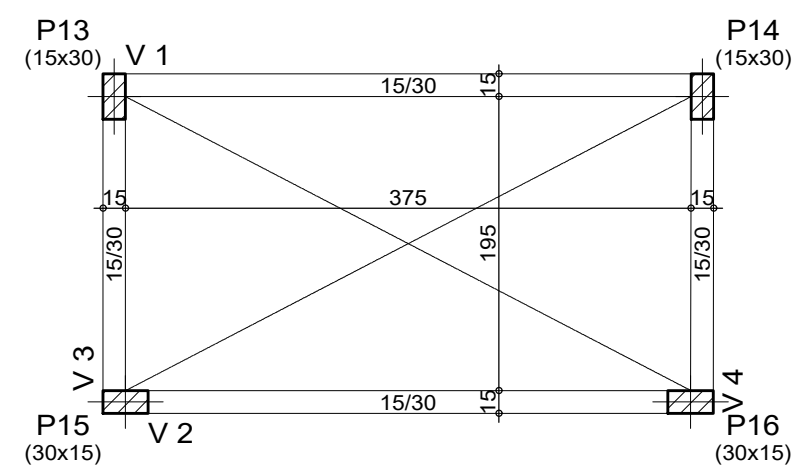


FORMA BALDRAME
ESC: 1.50

| Elemento | BALDRAME | | | |
|--|--------------------------|------------------------------|--------------------------|-------------|
| | Fôrmas (m ²) | Superfície (m ²) | Volume (m ³) | Barras (kg) |
| Vigas | 70.82 | 15.03 | 5.640 | 439 |
| Pilares | 10.30 | - | 0.520 | 126 |
| Total | - | 15.03 | 6.160 | 565 |
| Índices (por m ²) | - | - | 0.388 | 35.62 |
| Superfície total: 15.86 m ² | | | | |

FORMA COBERTURA
ESC: 1.50

| Elemento | COBERTURA | | | |
|---|--------------------------|------------------------------|--------------------------|-------------|
| | Fôrmas (m ²) | Superfície (m ²) | Volume (m ³) | Barras (kg) |
| Lajes de vigotas | - | 117.89 | 10.370 | 396 |
| Vigas | 49.28 | 17.79 | 7.480 | 542 |
| Pilares | 44.55 | - | 2.220 | 235 |
| Total | - | 135.68 | 20.070 | 1173 |
| Índices (por m ²) | - | - | 0.147 | 8.59 |
| Superfície total: 136.51 m ² | | | | |



| Elemento | RESERVATÓRIO | | | |
|---------------------------------------|--------------------------|------------------------------|--------------------------|-------------|
| | Fôrmas (m ²) | Superfície (m ²) | Volume (m ³) | Barras (kg) |
| Vigas | 6.52 | 1.62 | 0.570 | 44 |
| Pilares | 5.24 | - | 0.280 | 27 |
| Total | - | 1.62 | 0.850 | 71 |
| Índices (por m ²) | - | - | 0.472 | 39.44 |
| Superfície total: 1.80 m ² | | | | |

FORMA RESERVATÓRIO
ESC: 1.50



MUNICÍPIO DE IBIRUBÁ

CENTRO DE ACOLHIMENTO DE MENORES

OBRA
USO: CENTRO DE ACOLHIMENTO DE MENORES
LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnoldo Tonelli, lado ímpar - Bairro Hermany - IBIRUBÁ-RS

PLANTAS
* FORMAS

PROPRIETÁRIO
MUNICÍPIO DE IBIRUBÁ

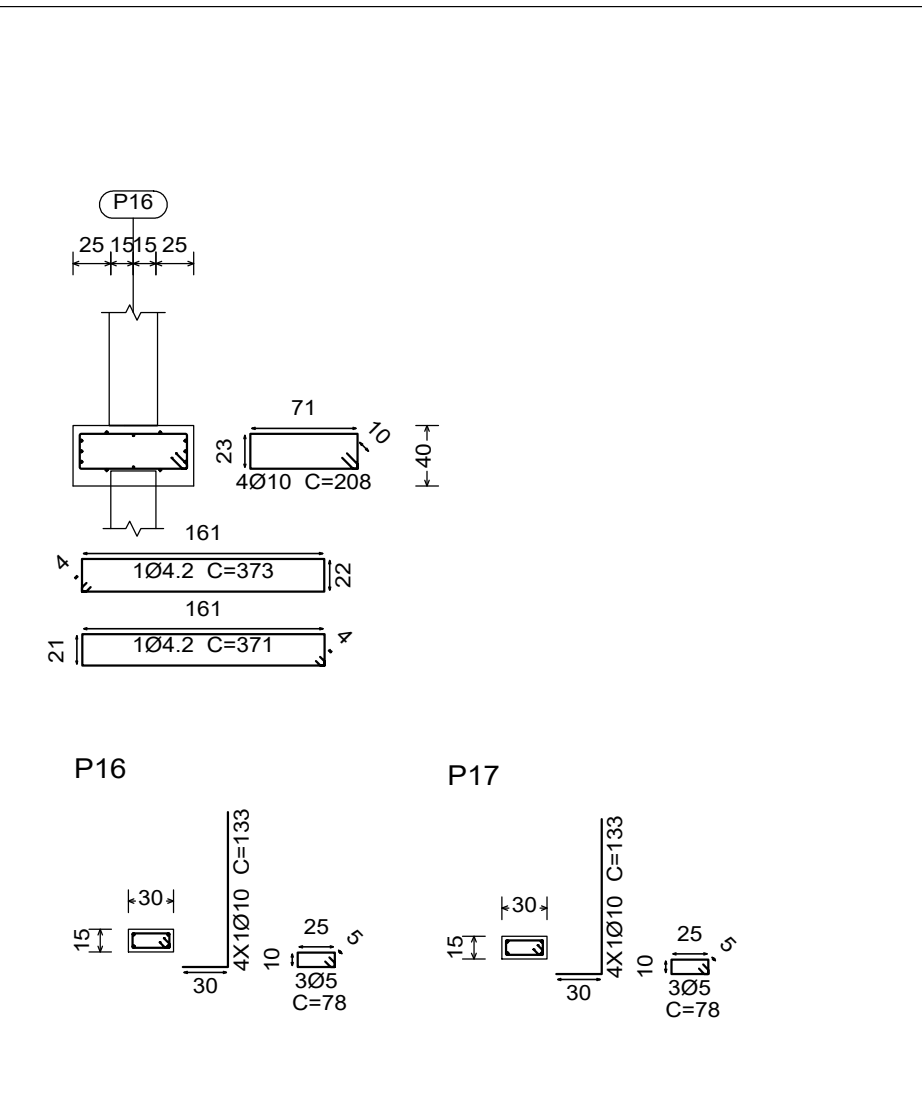
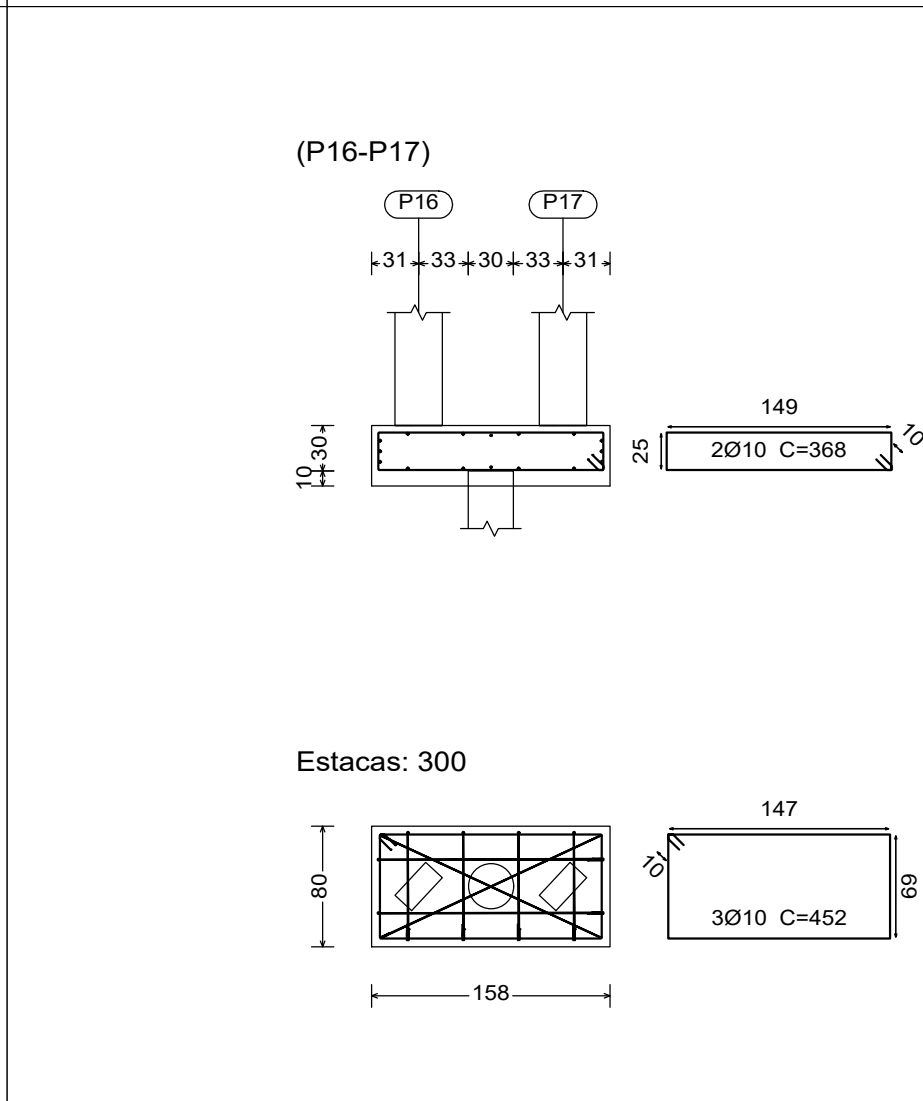
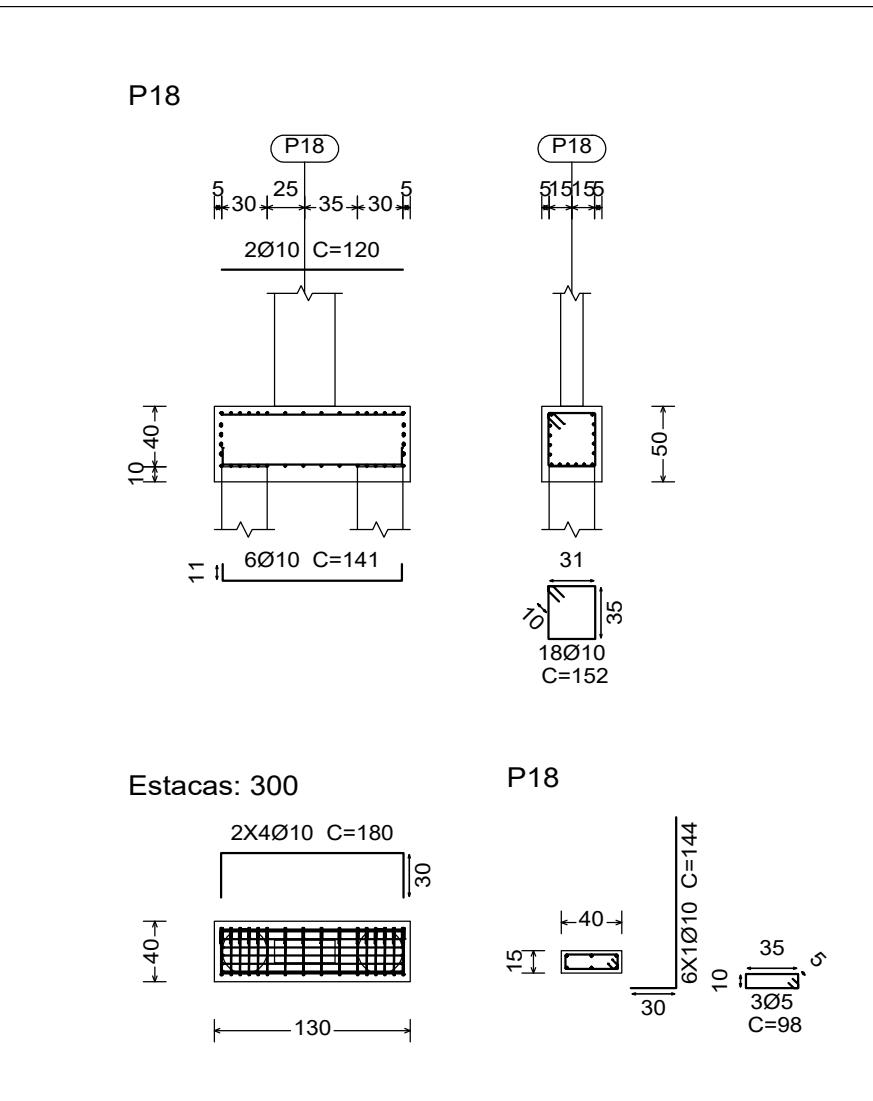
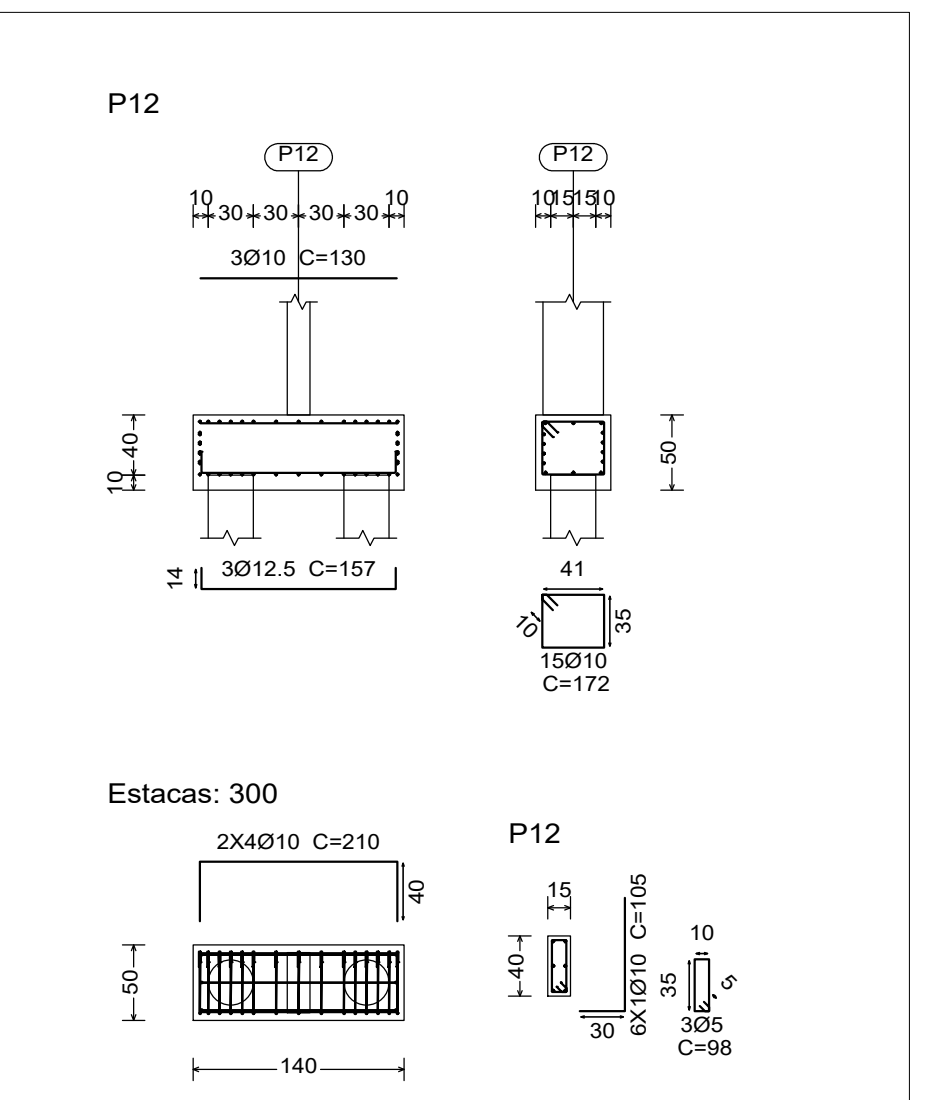
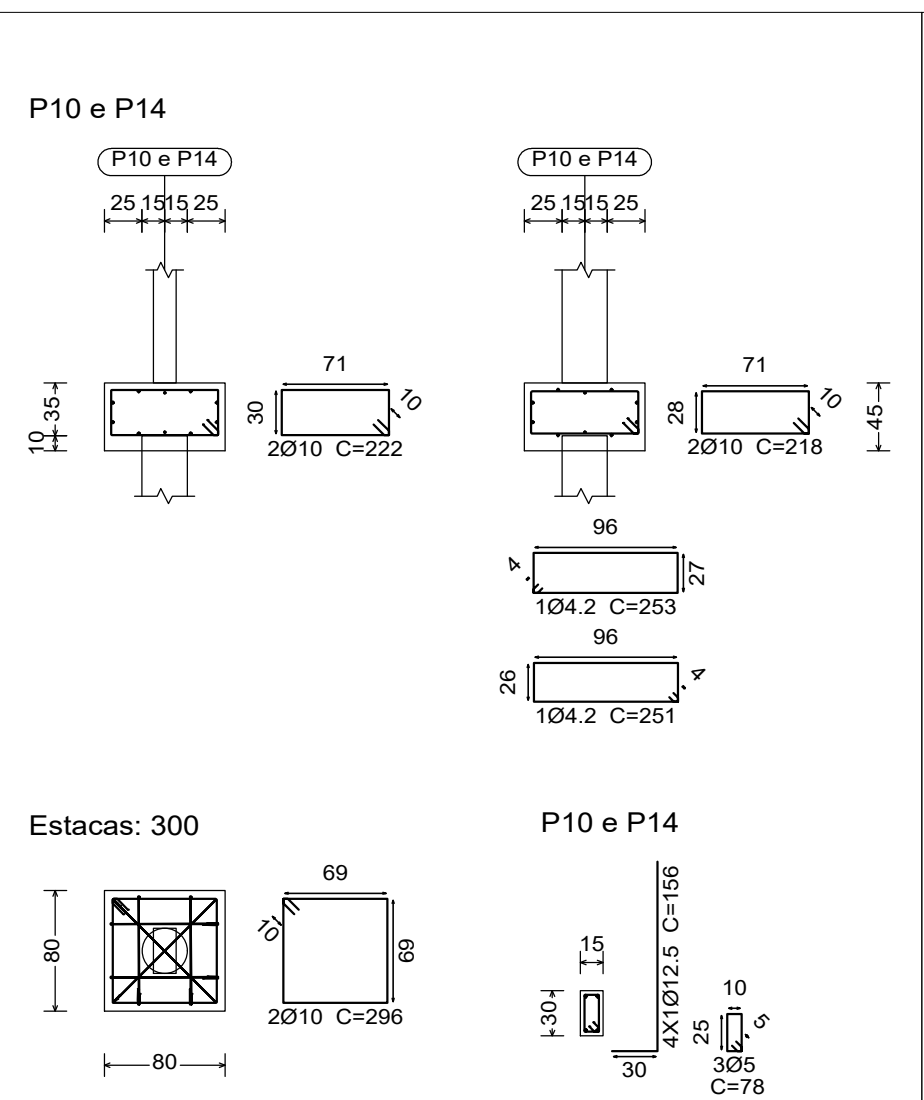
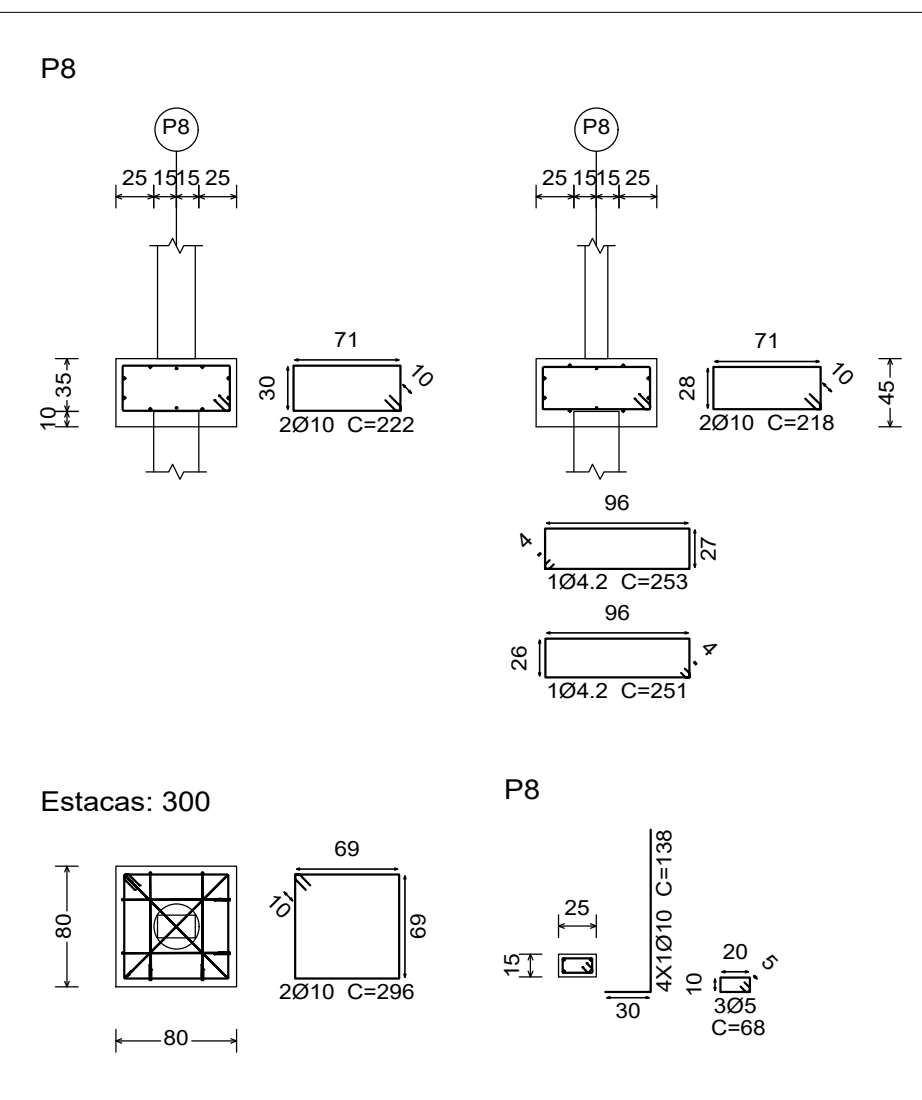
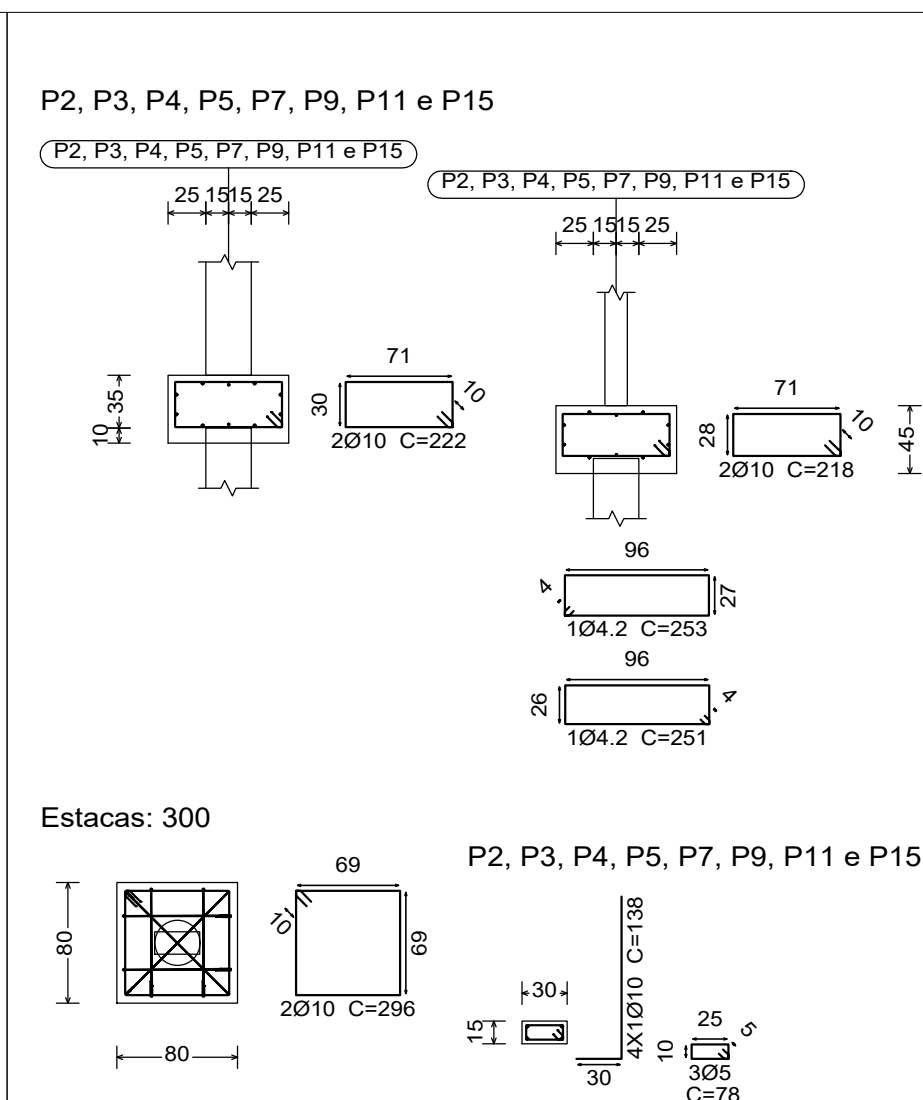
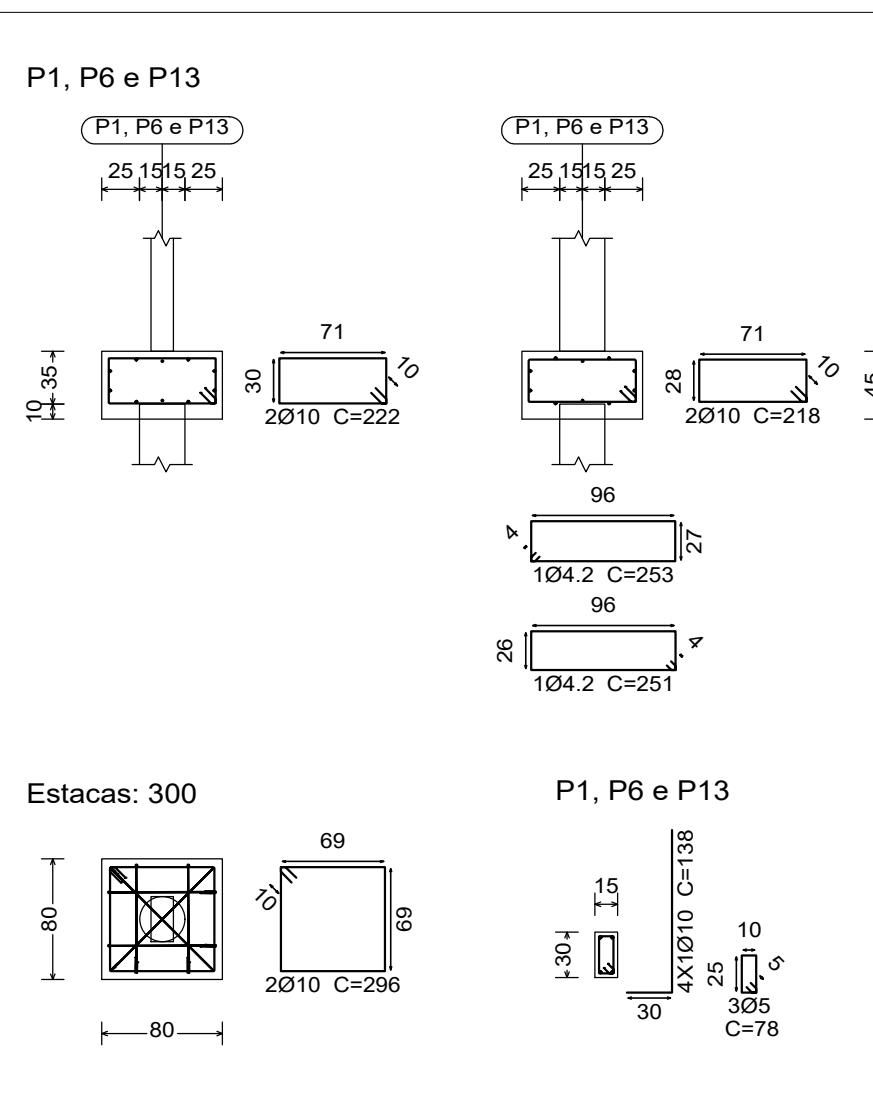
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EXECUÇÃO

ÁREA
434,34 M²

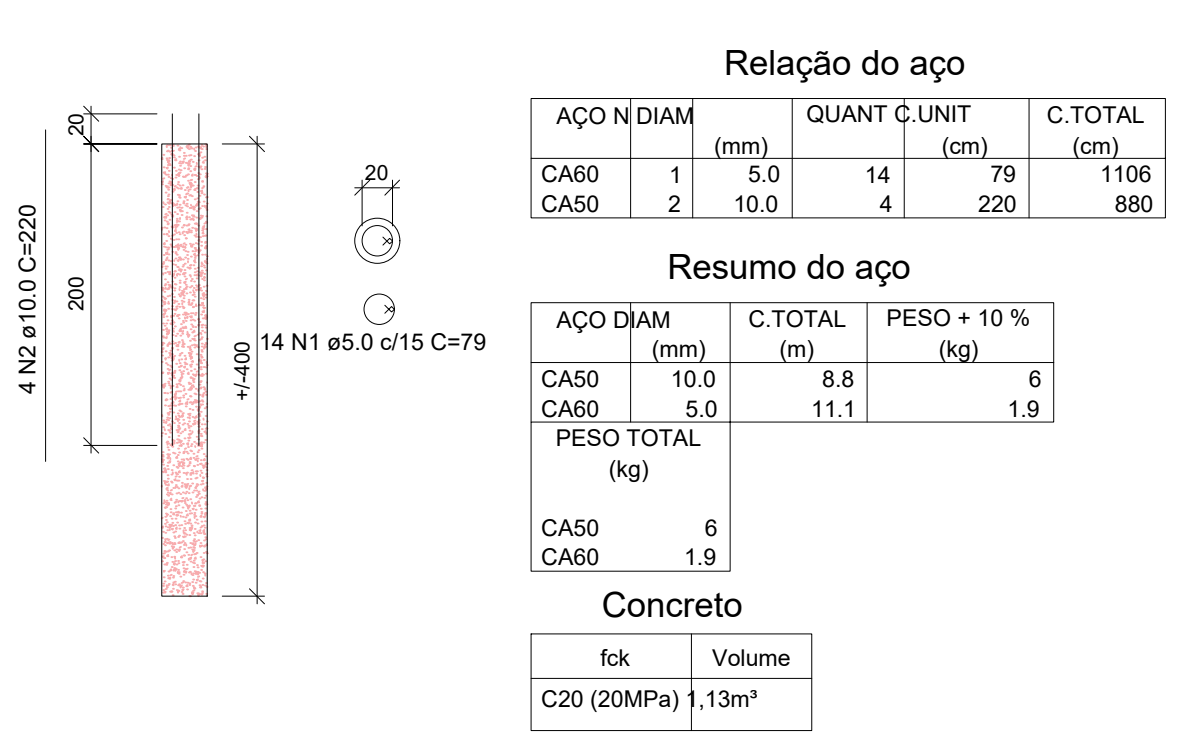
DESENHO
MAR/2023

FRANCHA
2/11



| Resumo Aço Fundação | Comp. total (m) | Peso+10% (kg) | Total |
|---------------------|-----------------|---------------|------------|
| CA-50 Ø10 | 426.3 | 289 | 307 |
| CA-60 Ø12.5 | 17.2 | 18 | |
| CA-60 Ø4.2 | 78.0 | 9 | |
| Total | 43.0 | 7 | 16 |
| | | | 323 |

Detalhamento estaca - Ø30 cm



A profundidade mínima das armaduras, nas estacas é de 2 metros.

MUNICÍPIO DE IBIRUBÁ
CENTRO DE ACOLHIMENTO DE MENORES

OBRA: USO: CENTRO DE ACOLHIMENTO DE MENORES
LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnoldo Tonelli, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ

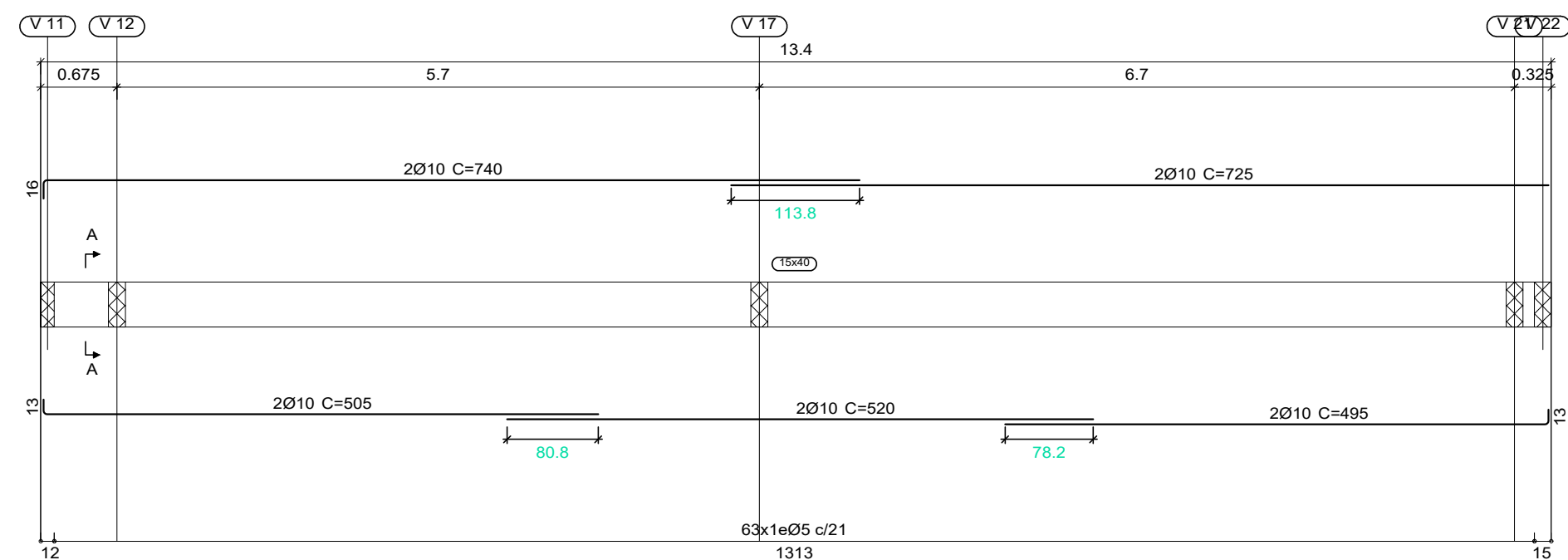
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EXECUÇÃO: PLANTAS * FUNDAÇÕES

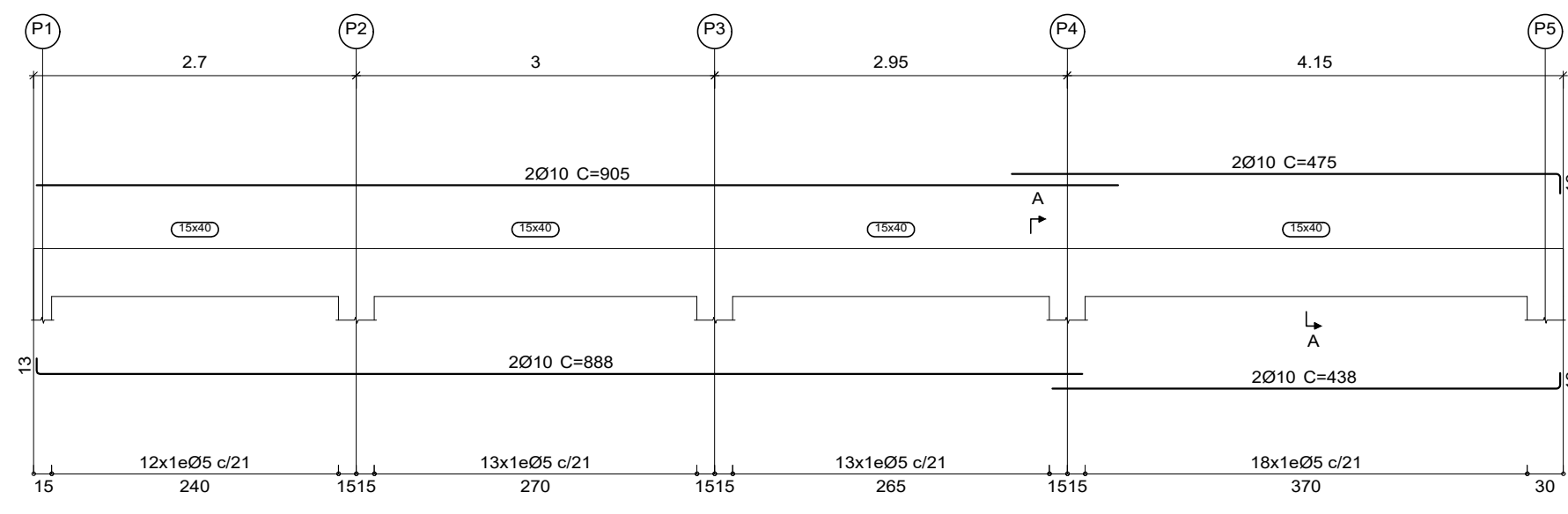
ÁREA: 434,34 M²

FRANCHA: 3/11

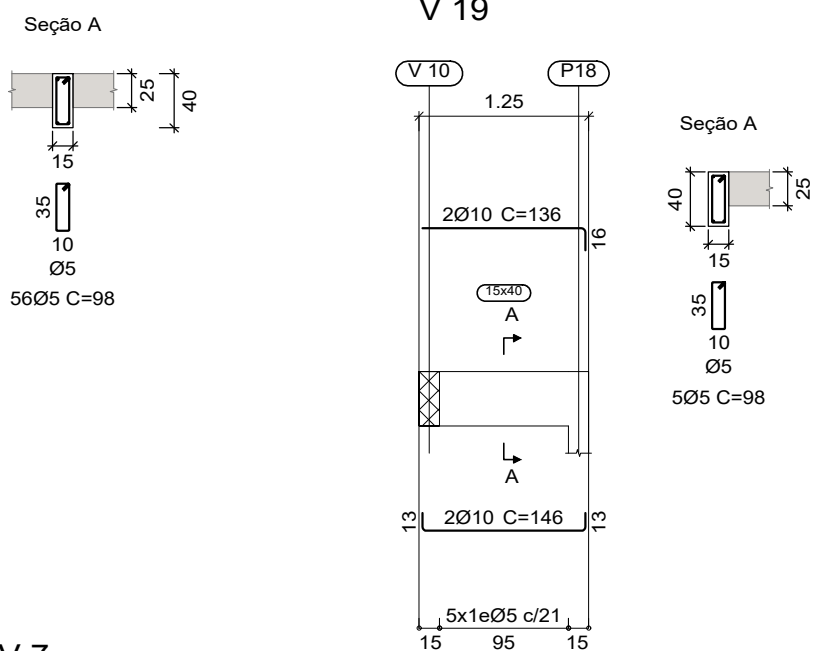
V 1



V 2

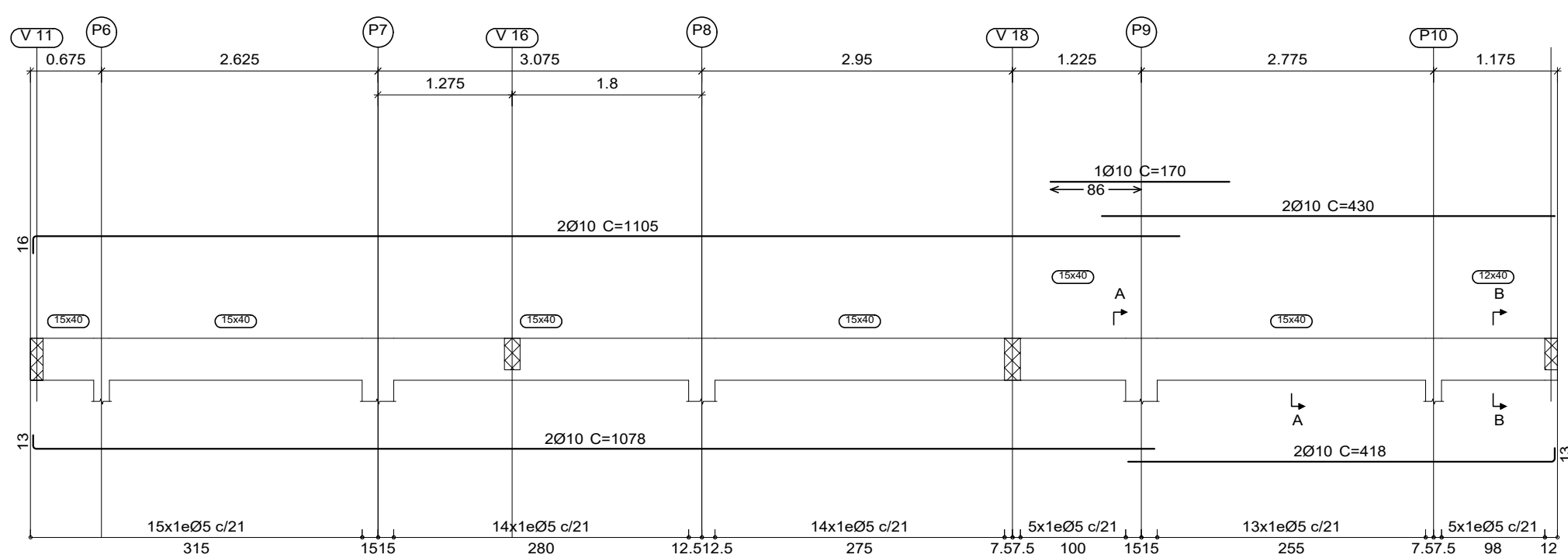


V 19

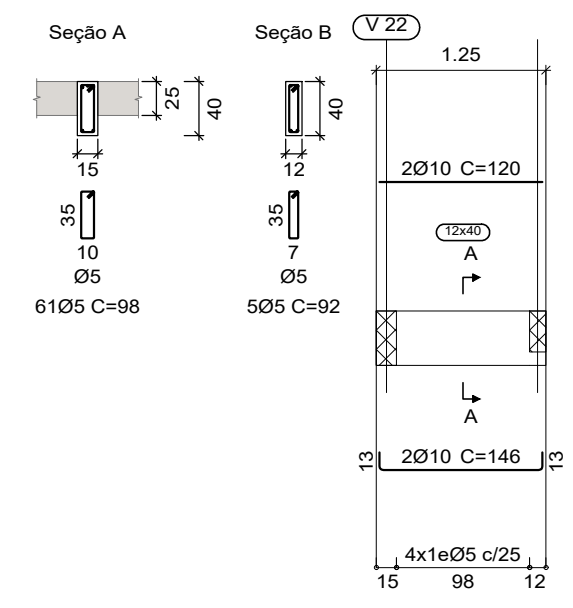


| Resumo Aço | Comp. total | Peso+10% |
|------------------|-------------|----------|
| Desenho de vigas | (m) | (kg) |
| CA-50 | 552.8 | 375 |
| Ø10 | 32.7 | 35 |
| Ø12.5 | 11.5 | 31 |
| CA-60 | 584.0 | 101 |
| Total | | |

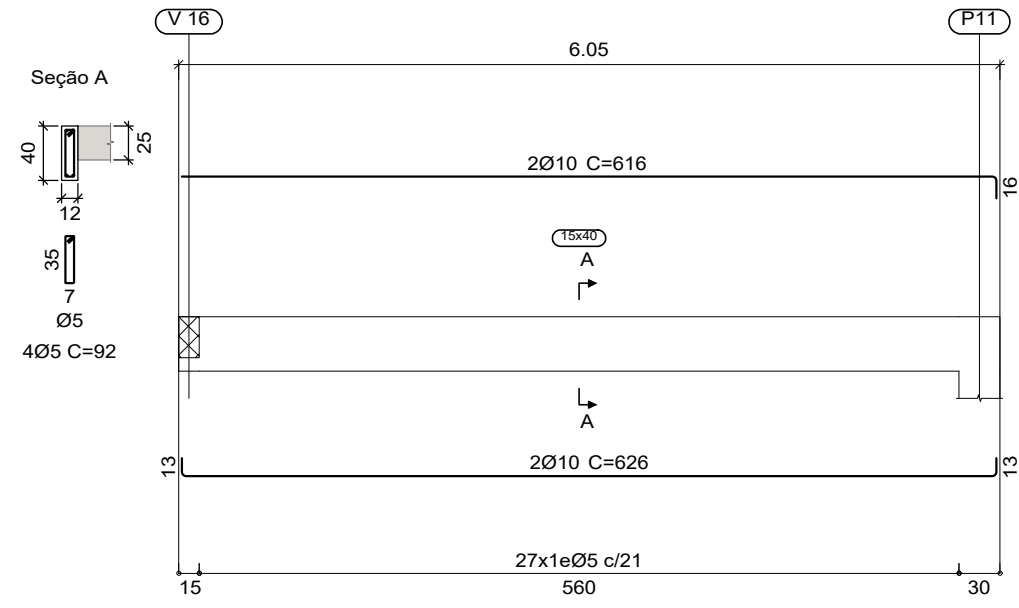
V 3



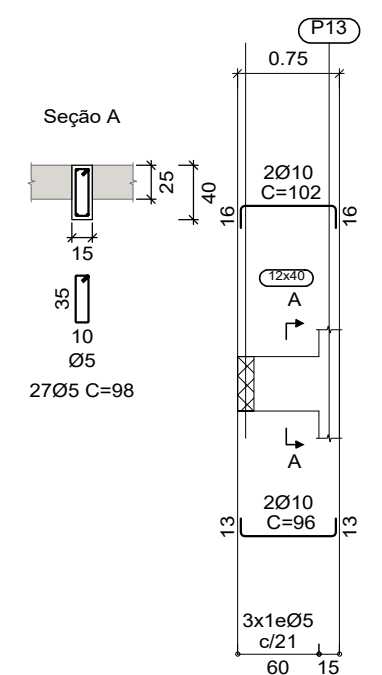
V 4



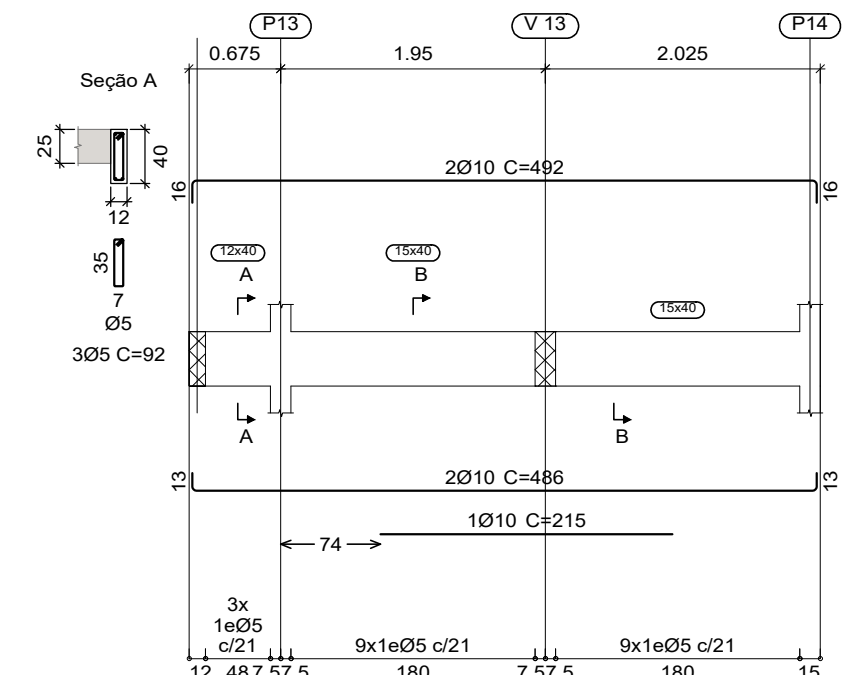
V 5



V 6

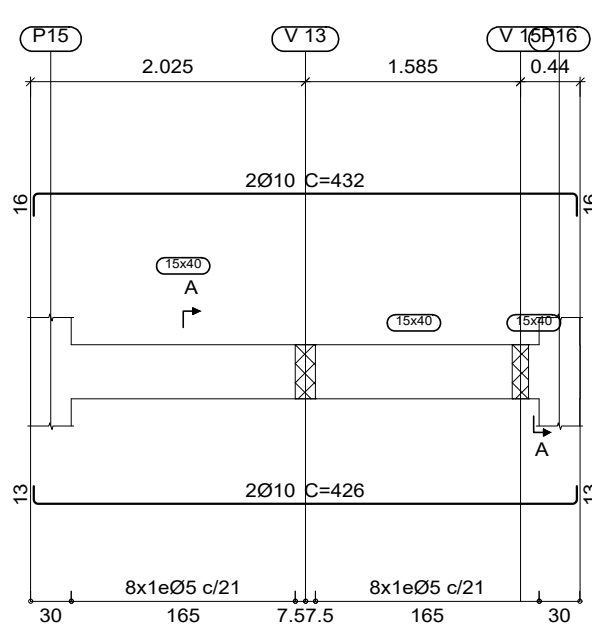


V 7

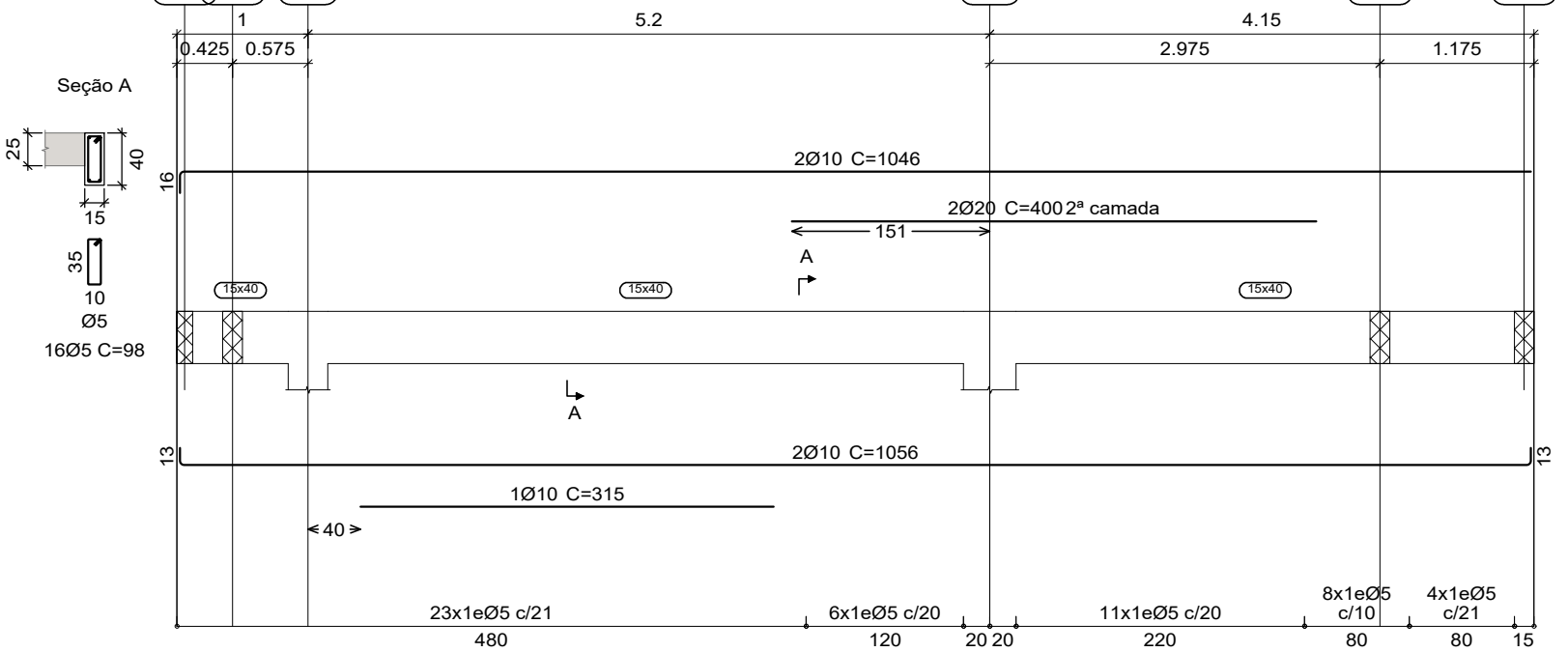


COBERTURA
 Desenho de vigas
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Escala vigas 1:50
 Escala seções 1:50

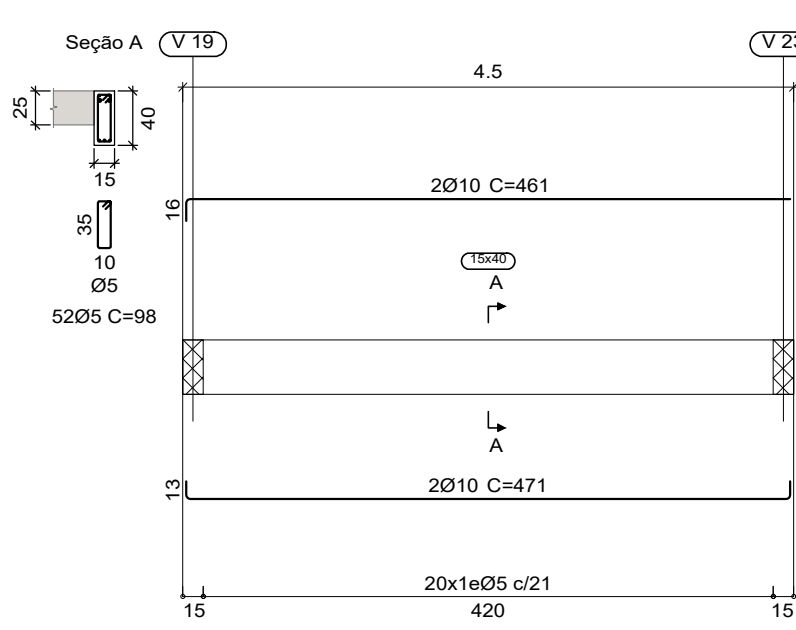
V 8



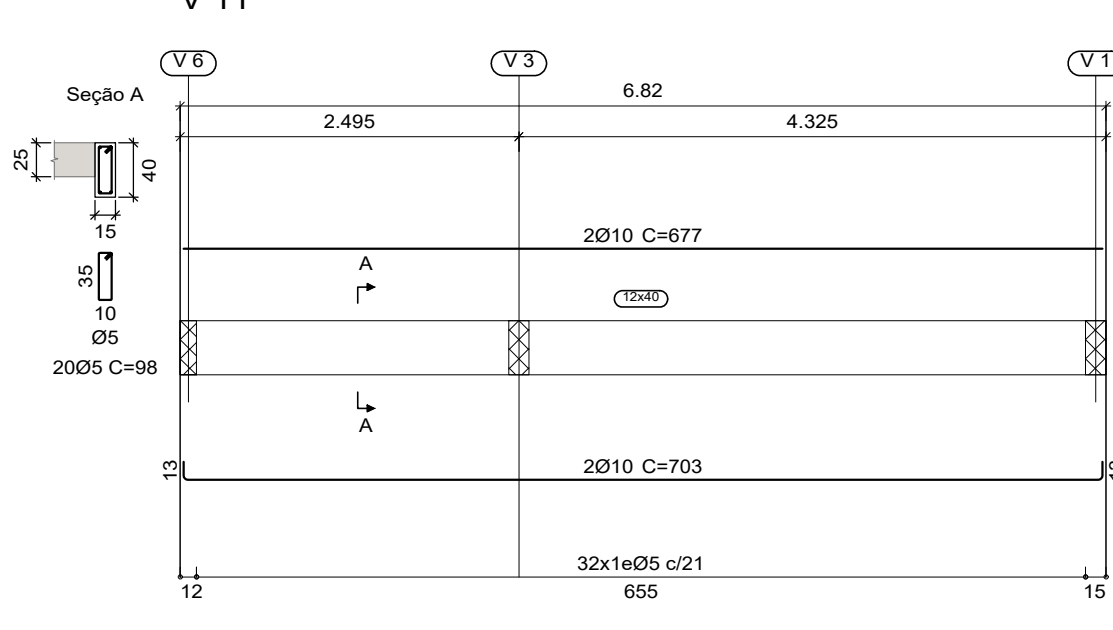
V 9



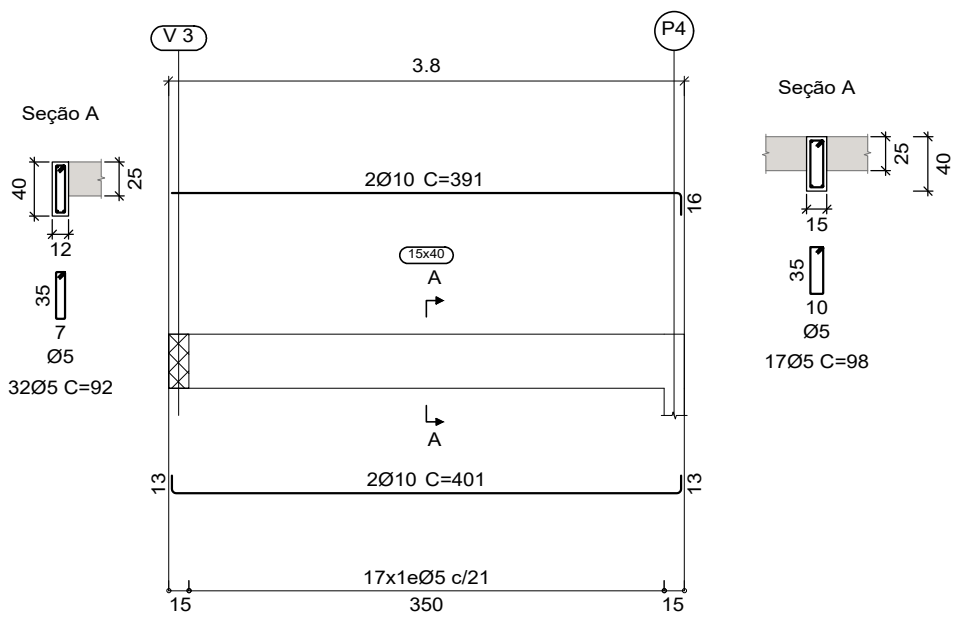
V 10



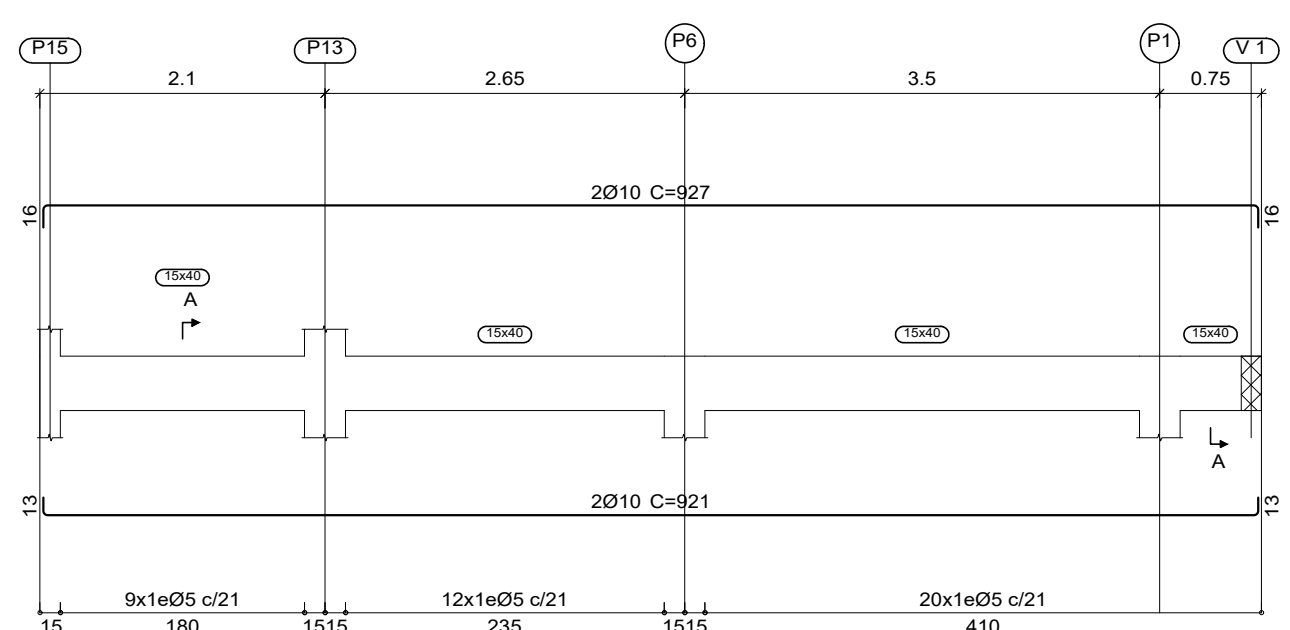
V 11



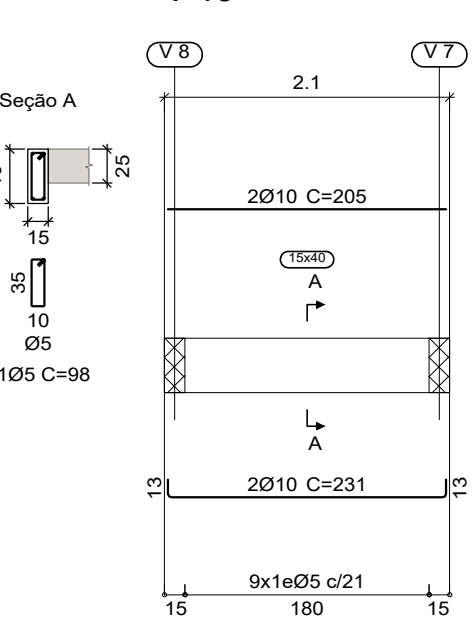
V 18



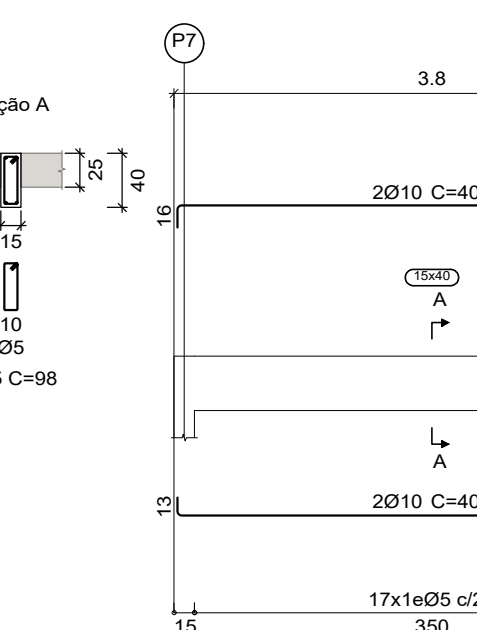
V 12



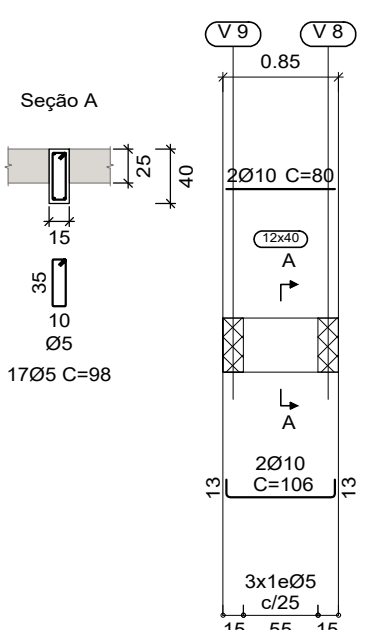
V 13



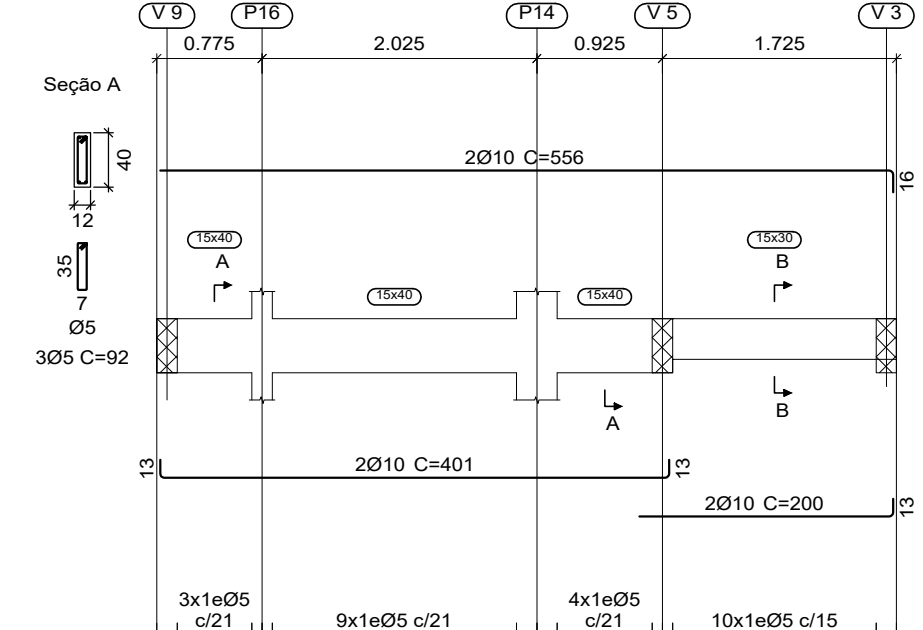
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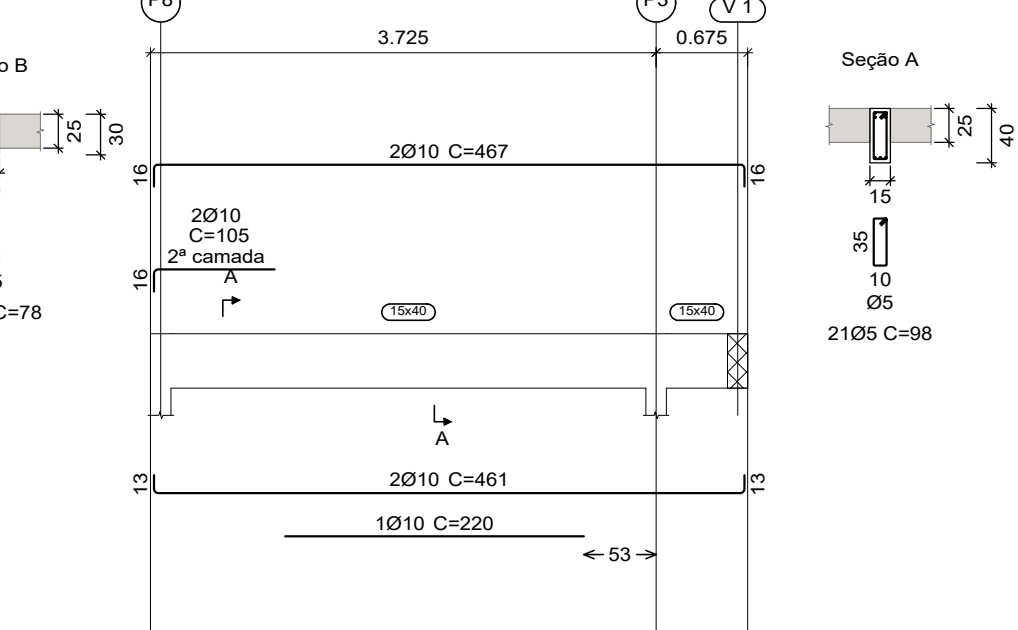
V 15



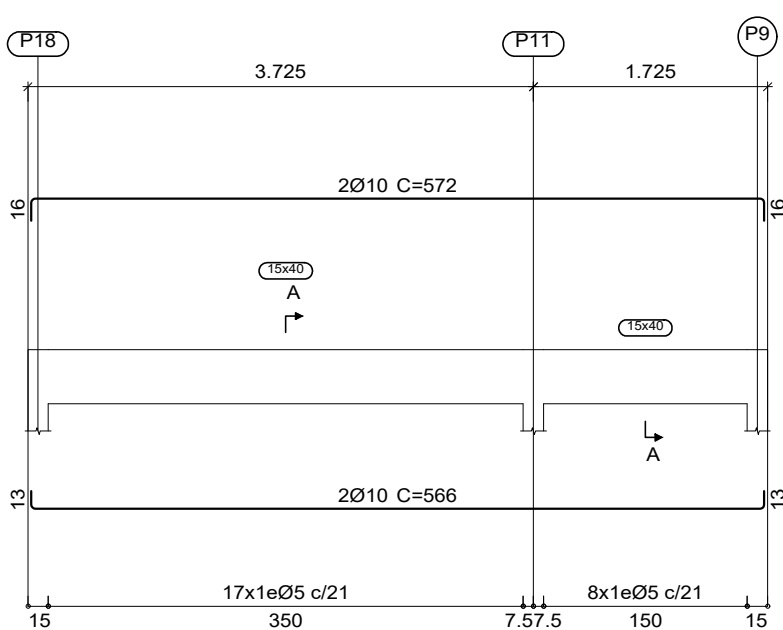
V 16



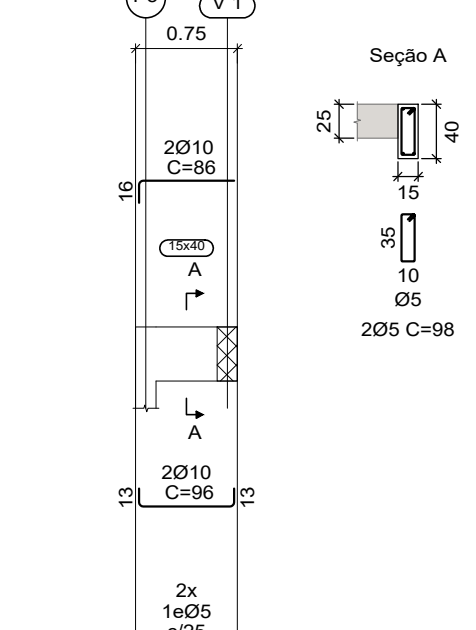
V 17



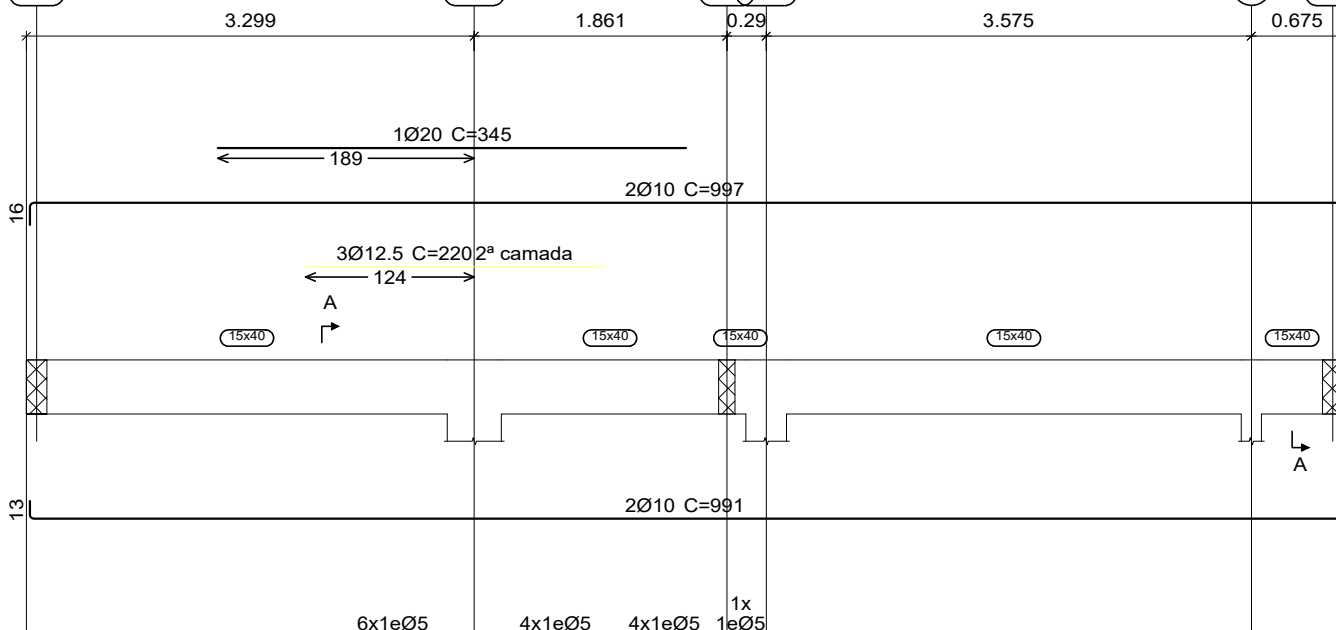
V 20



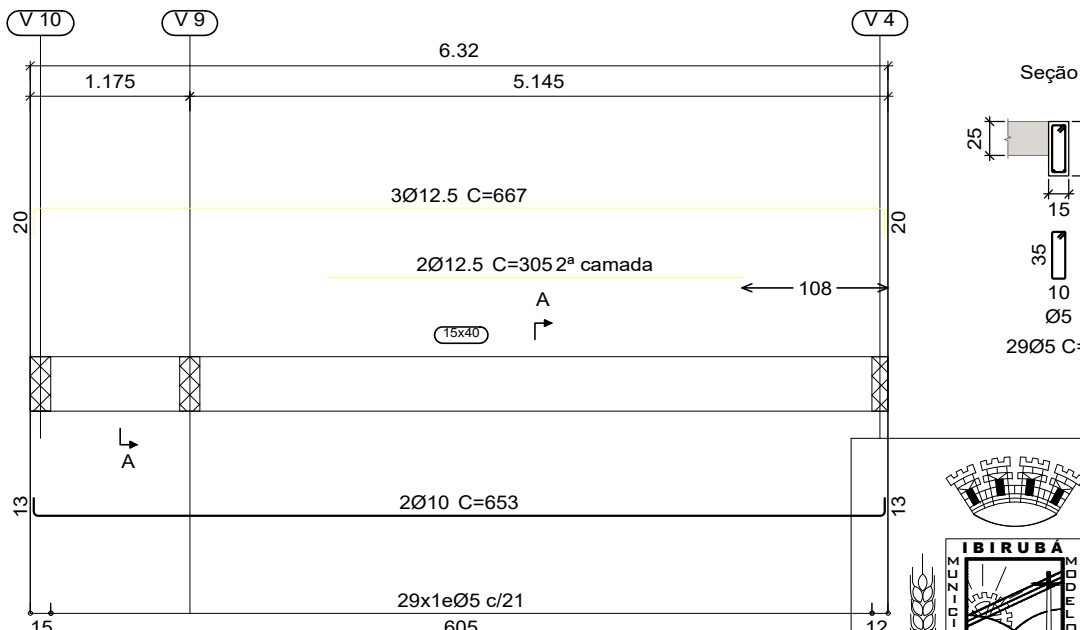
V 21



V 22



V 23



MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

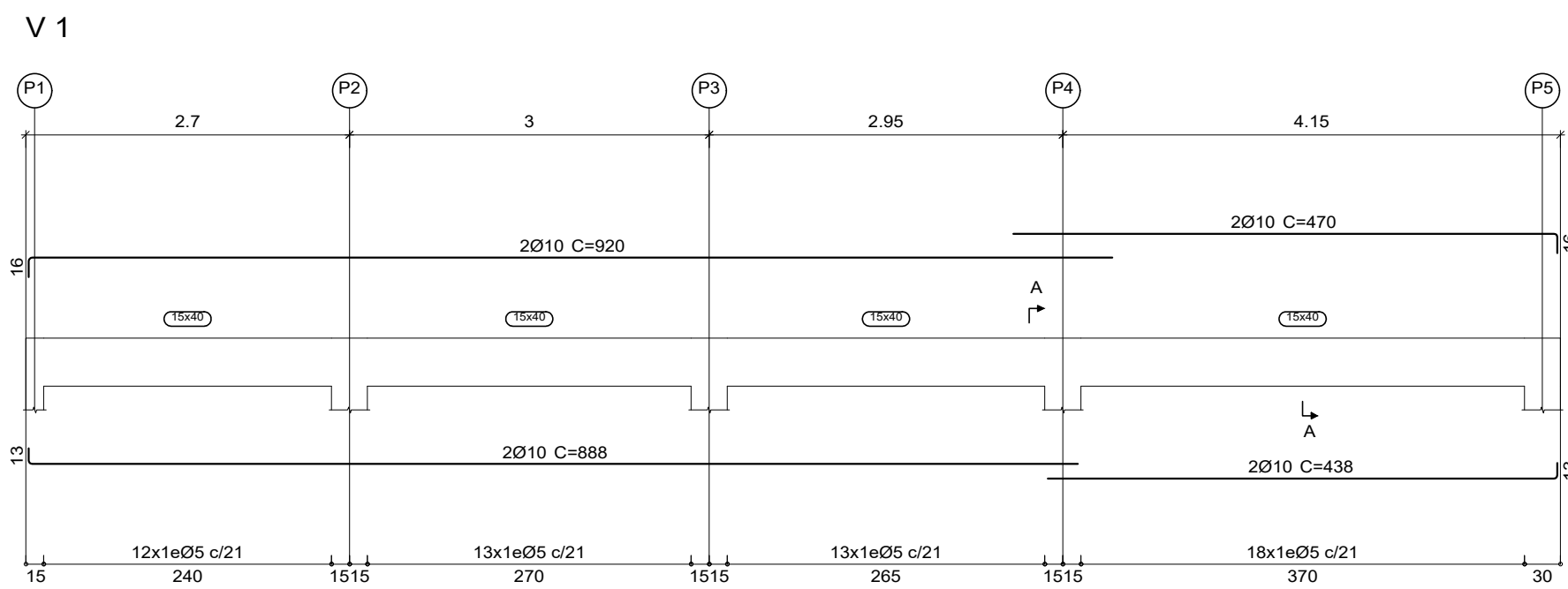
OBRA: USO: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonelli, lado ímpar - Bairro Hermery - IBIRUBÁ/RS

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: OUT/2019

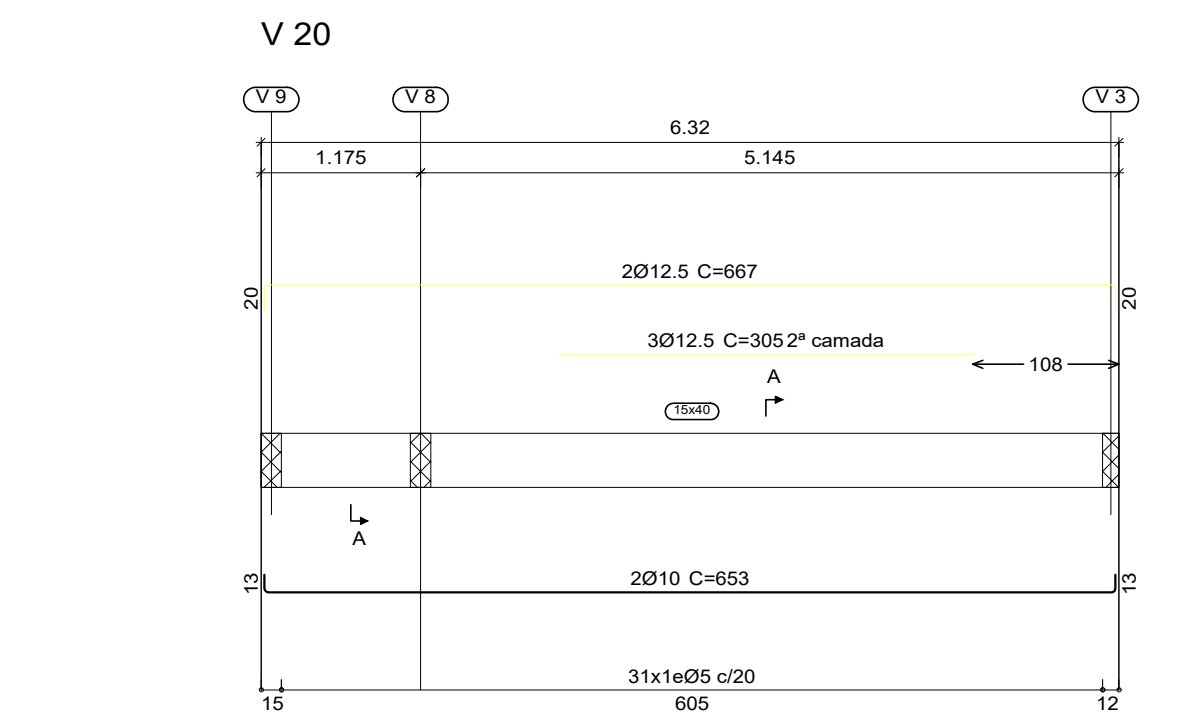
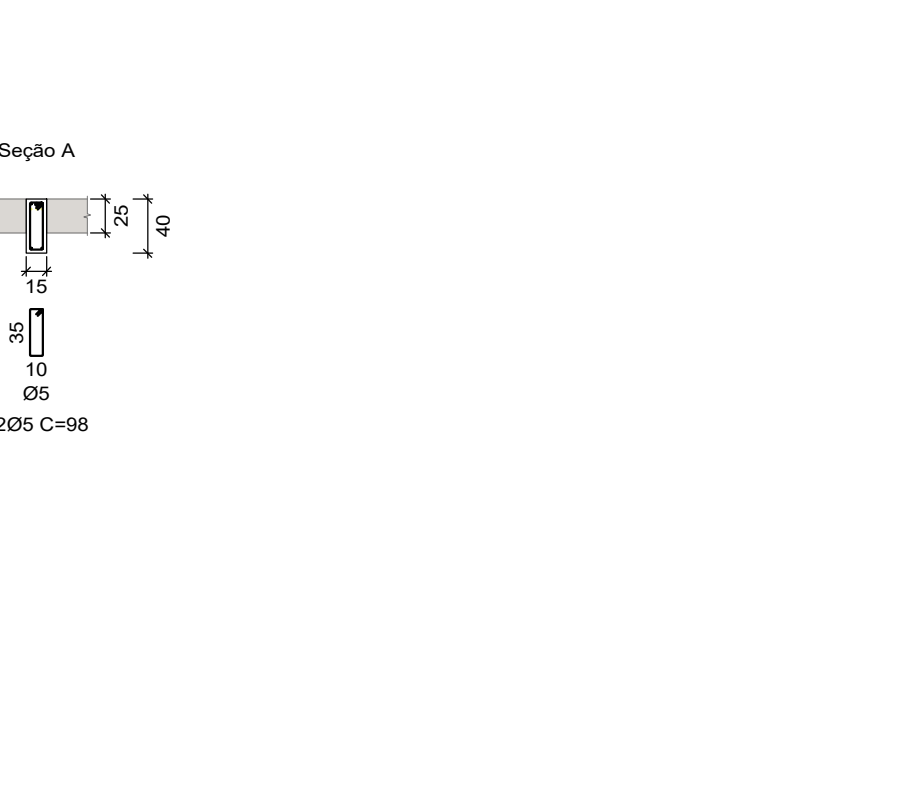
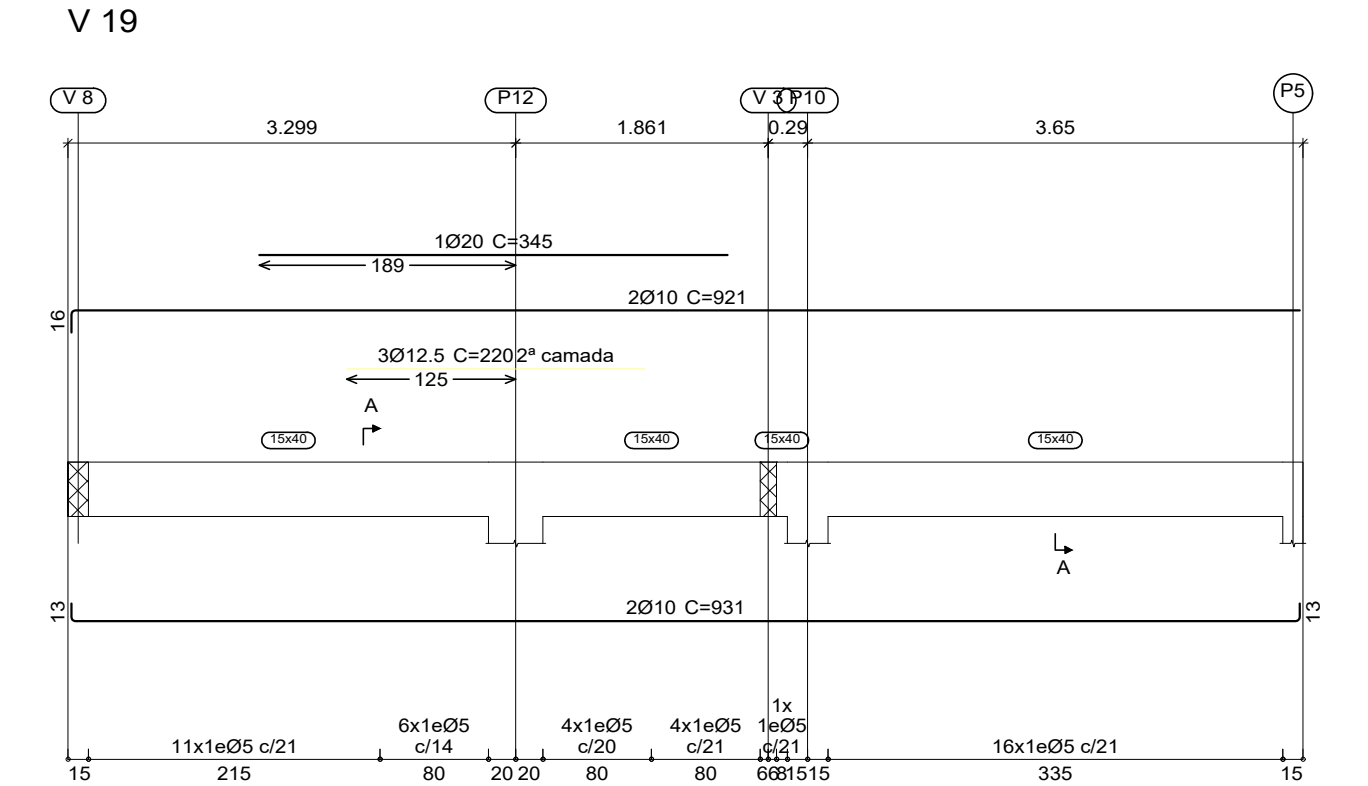
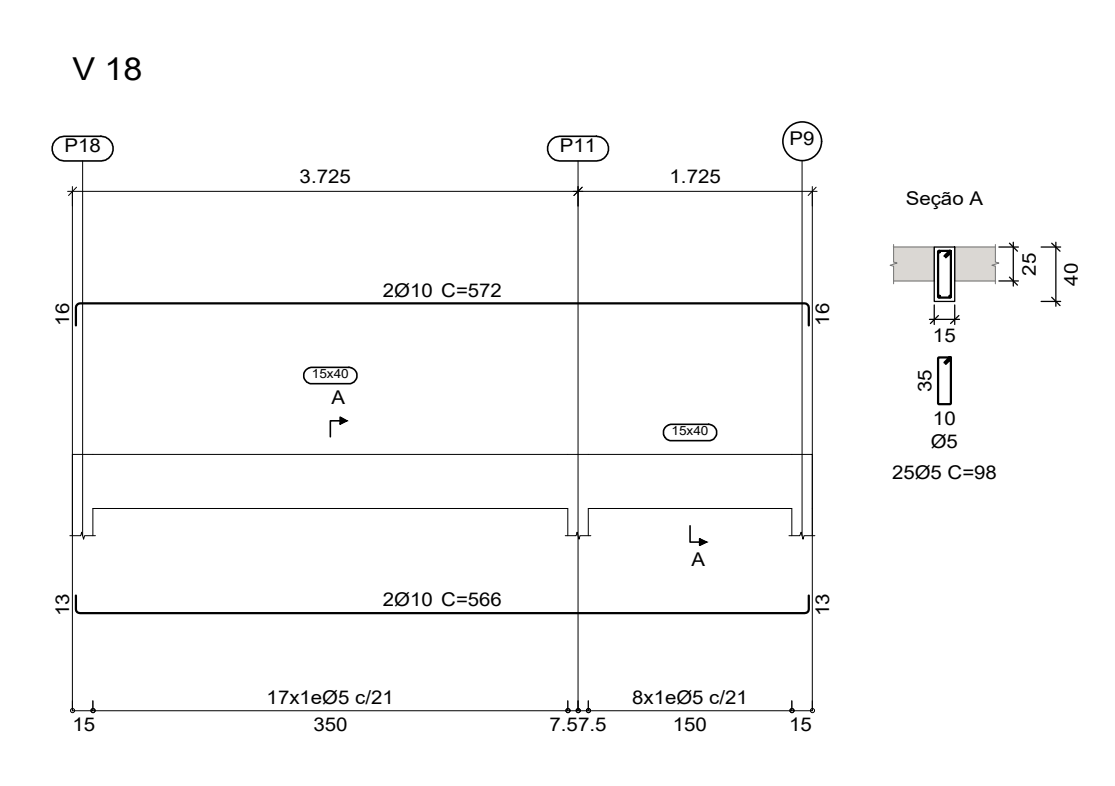
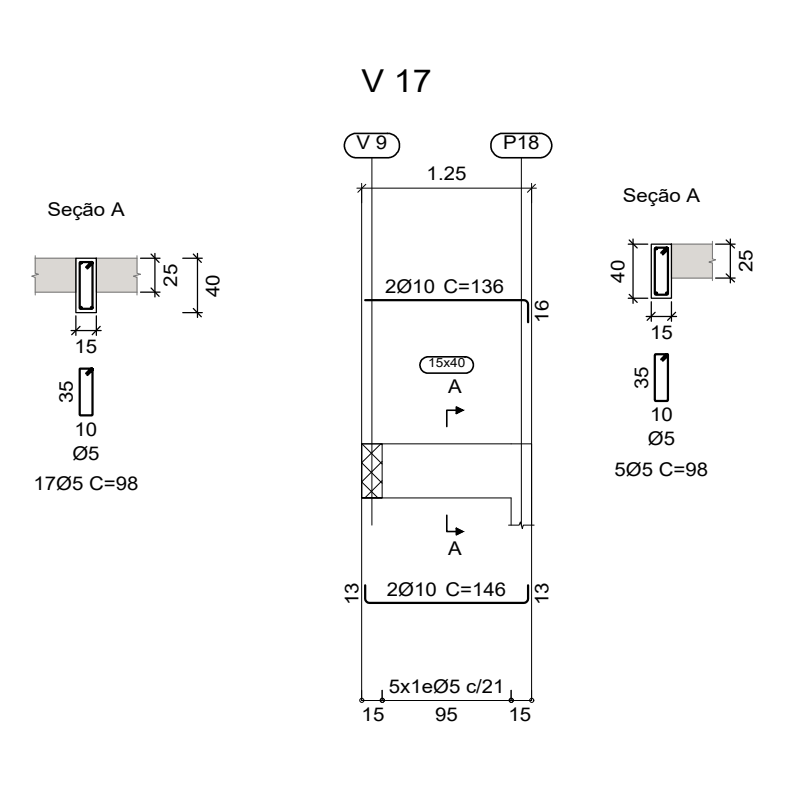
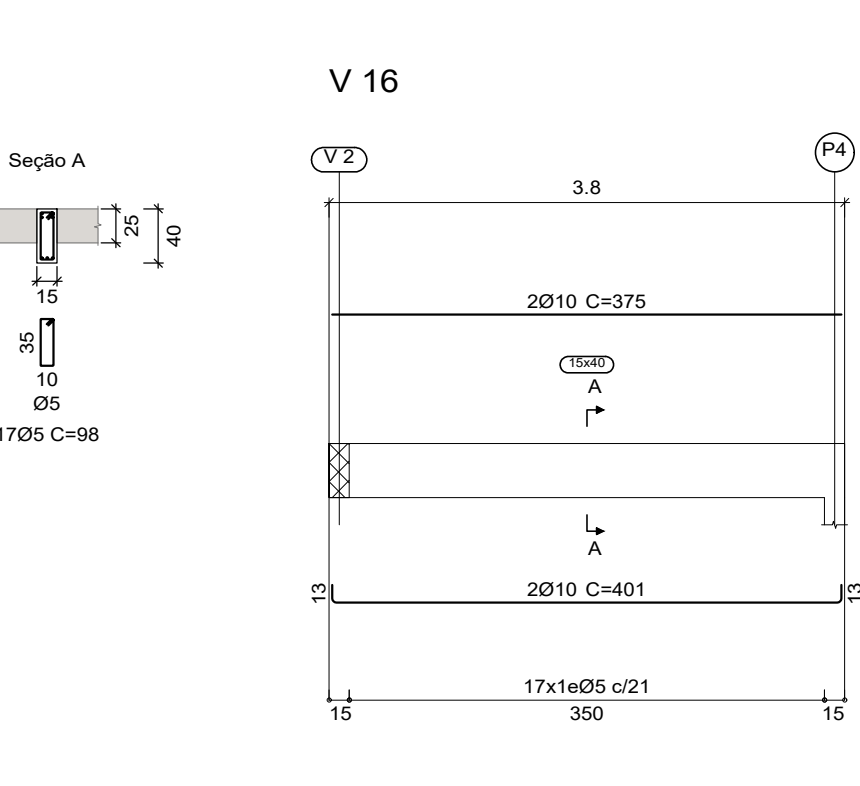
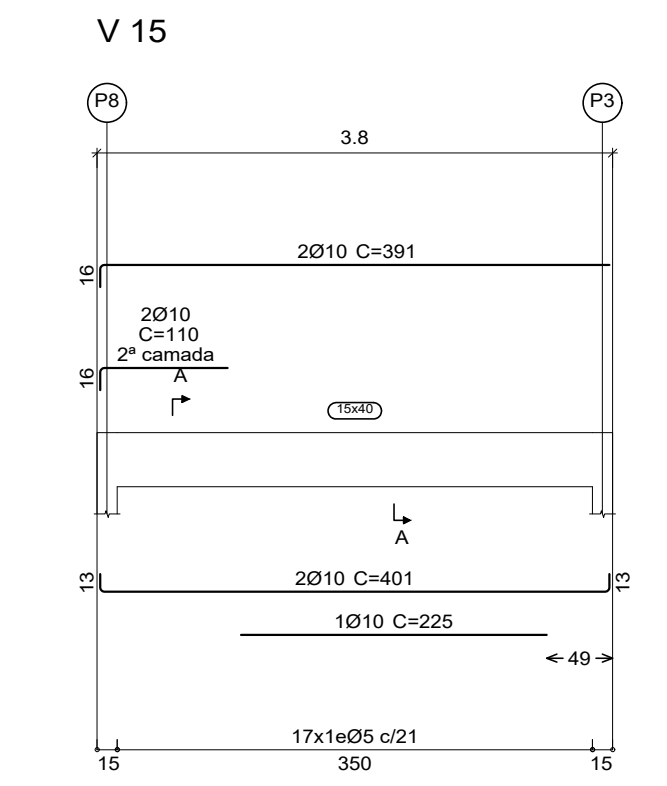
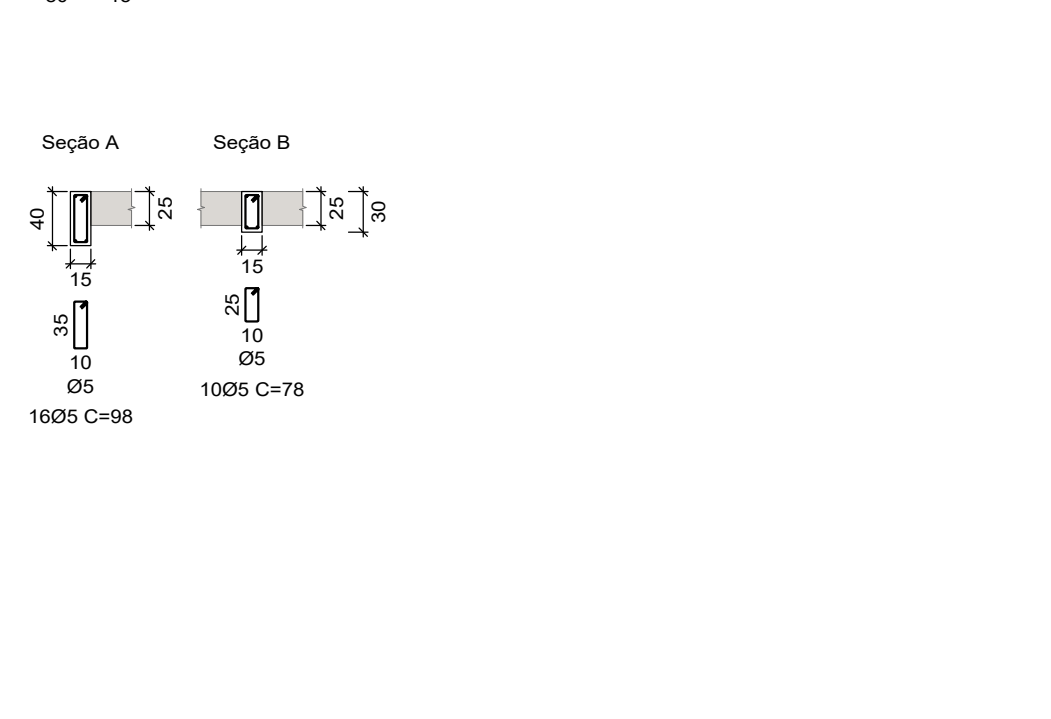
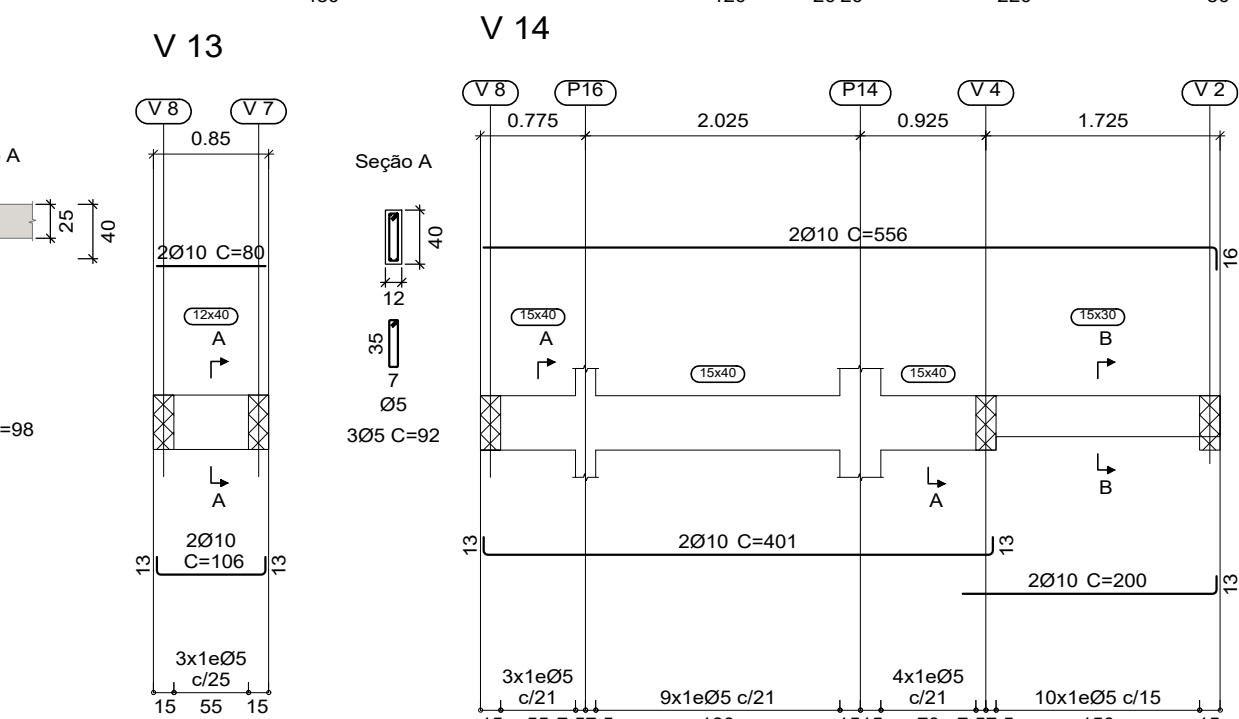
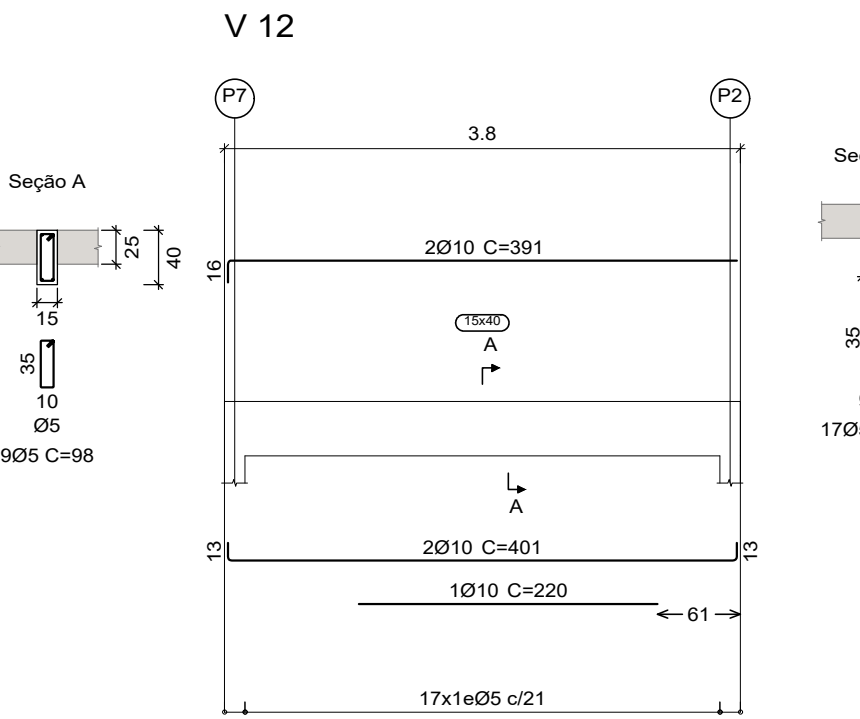
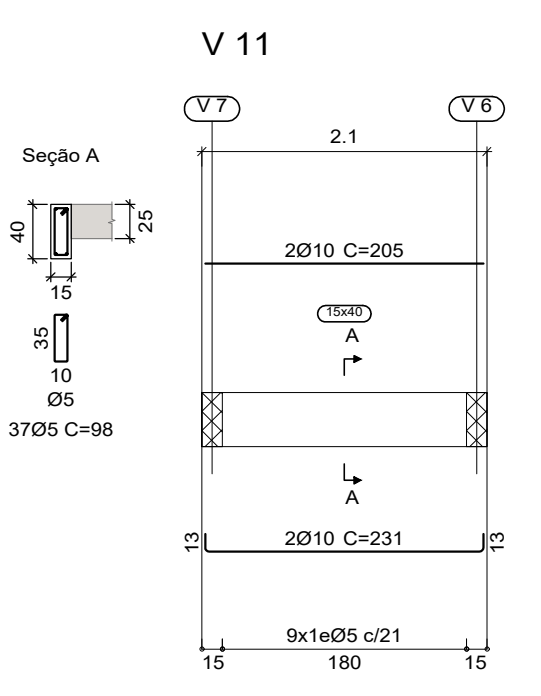
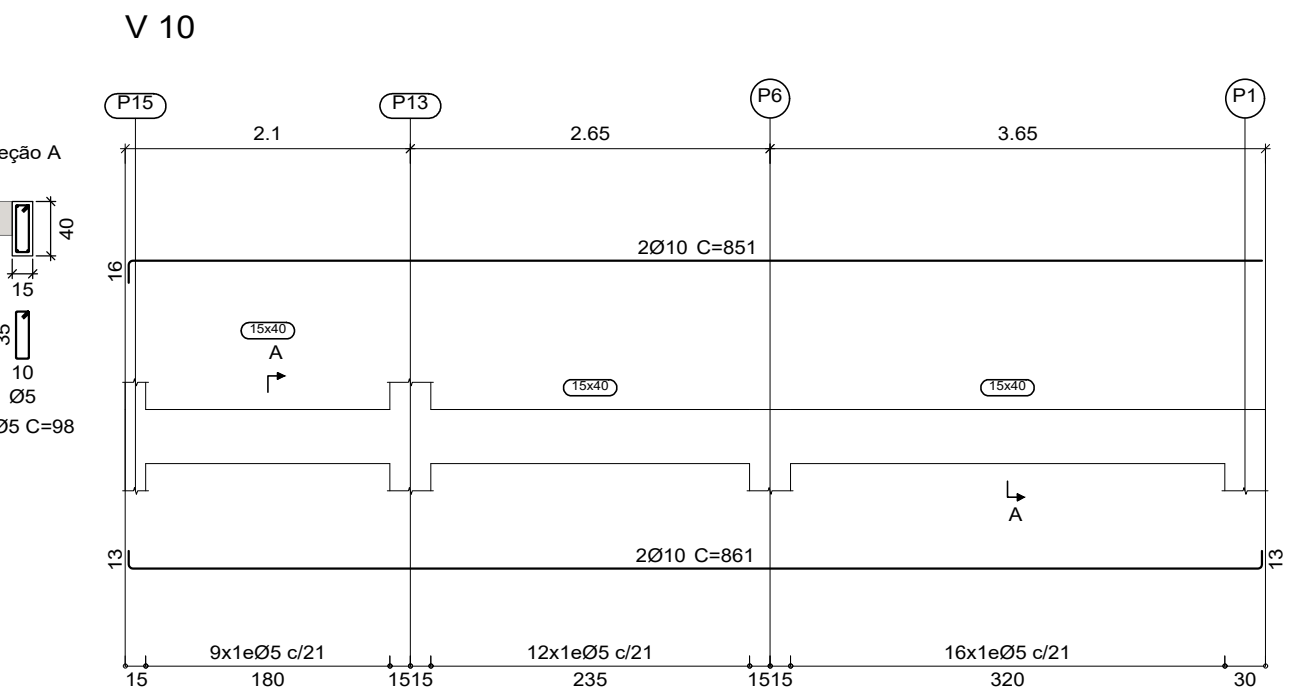
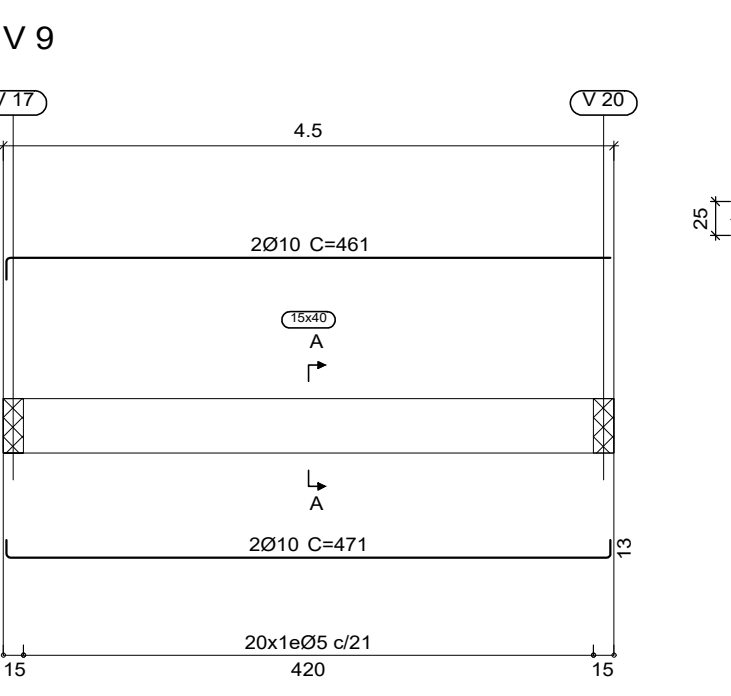
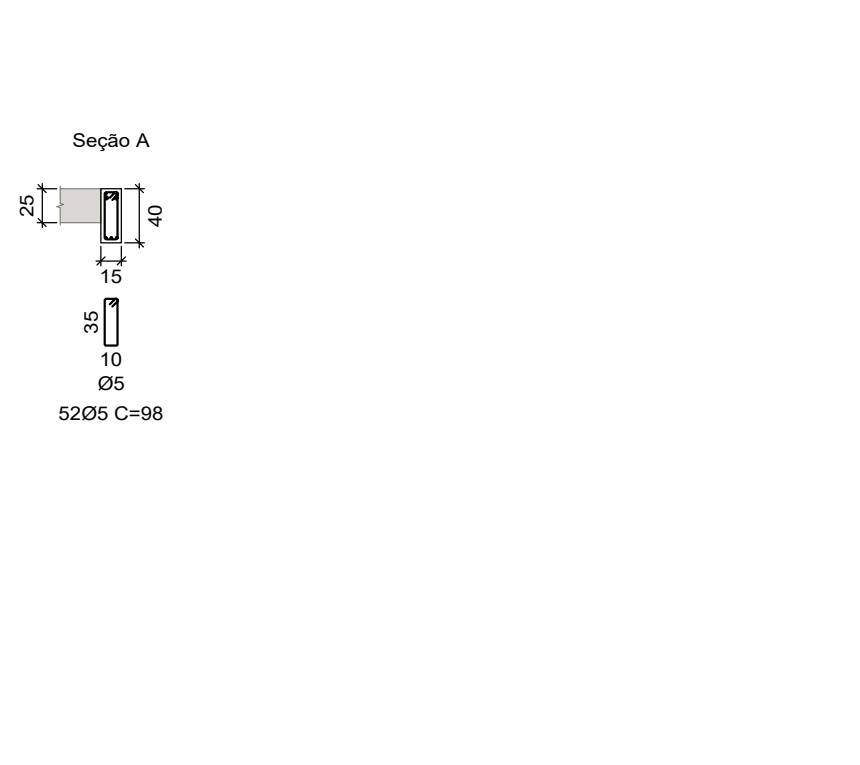
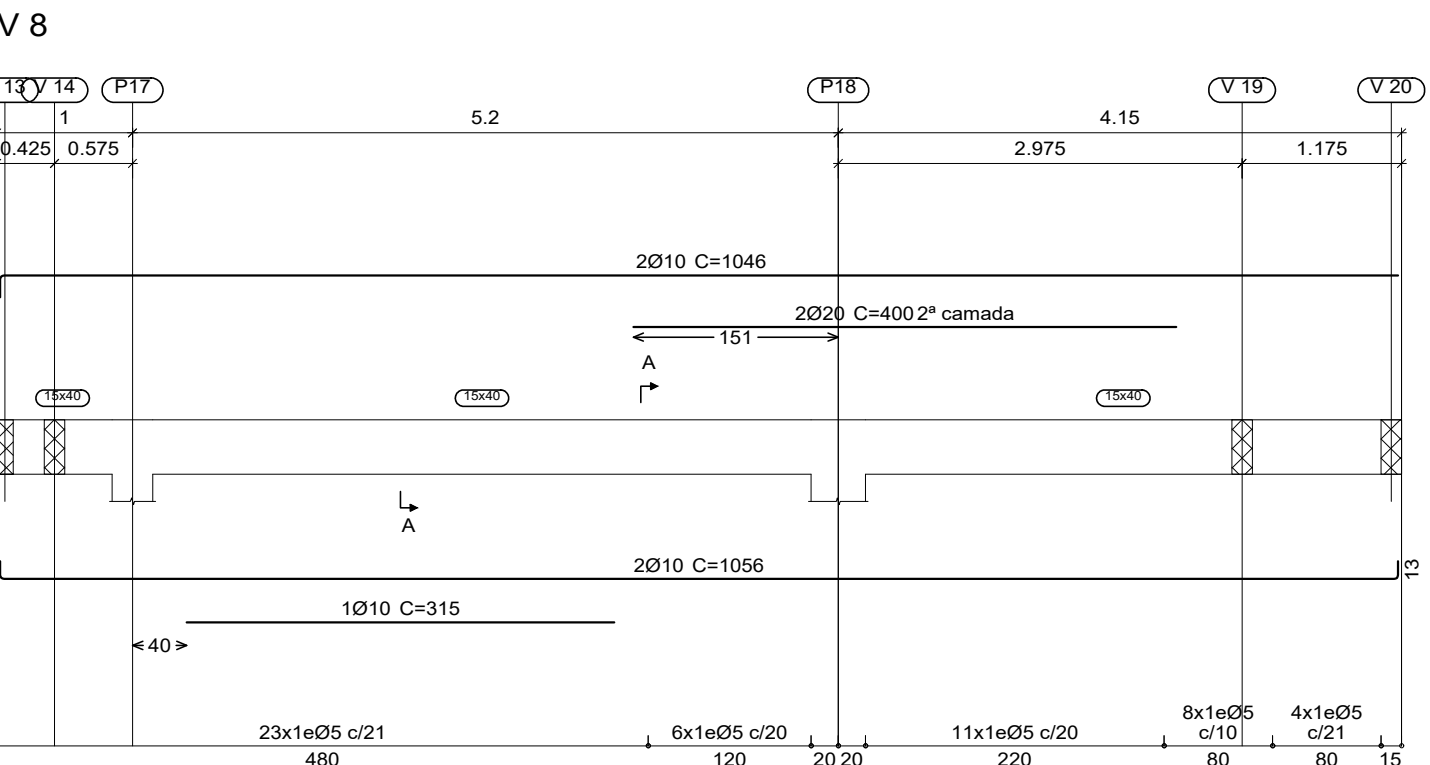
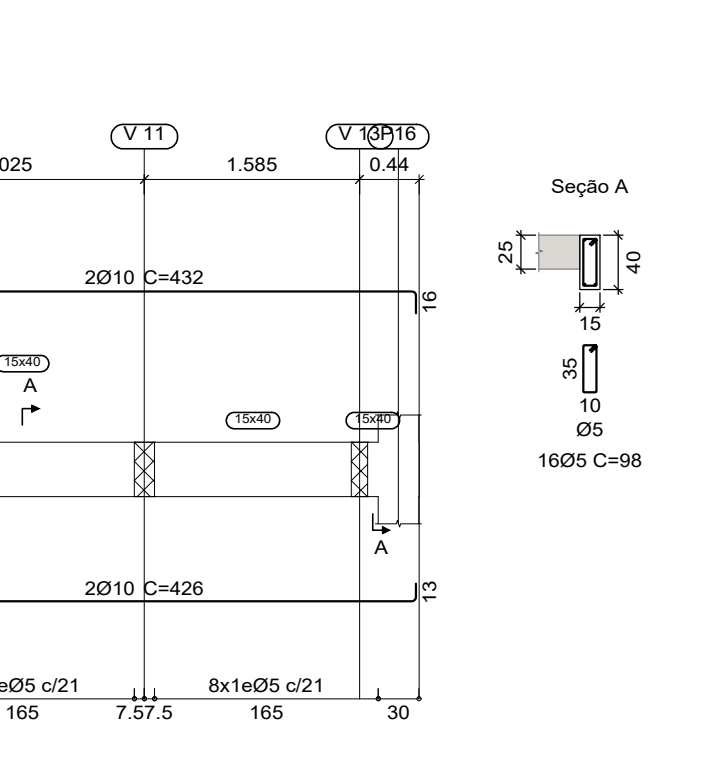
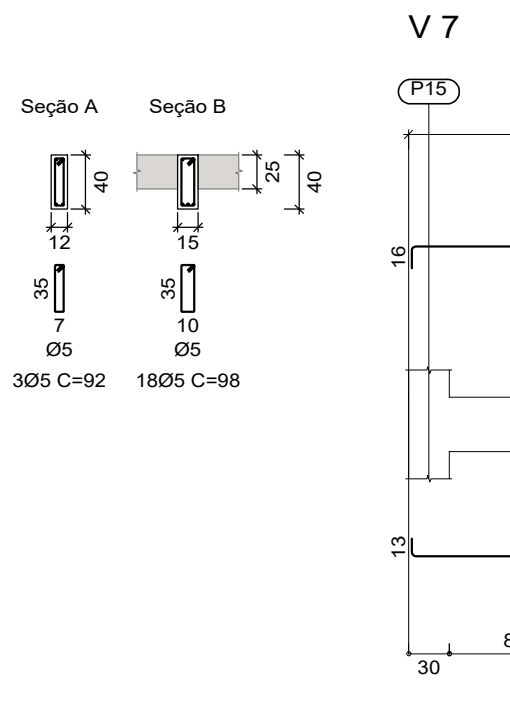
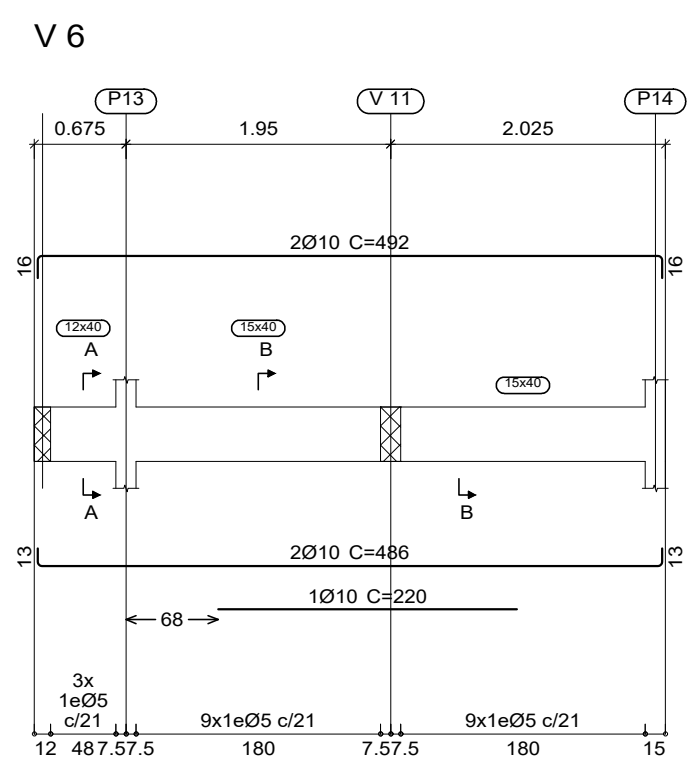
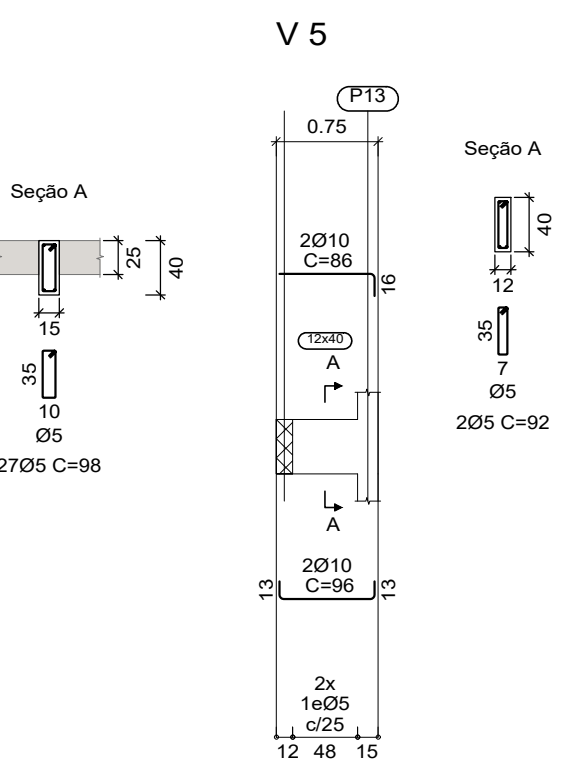
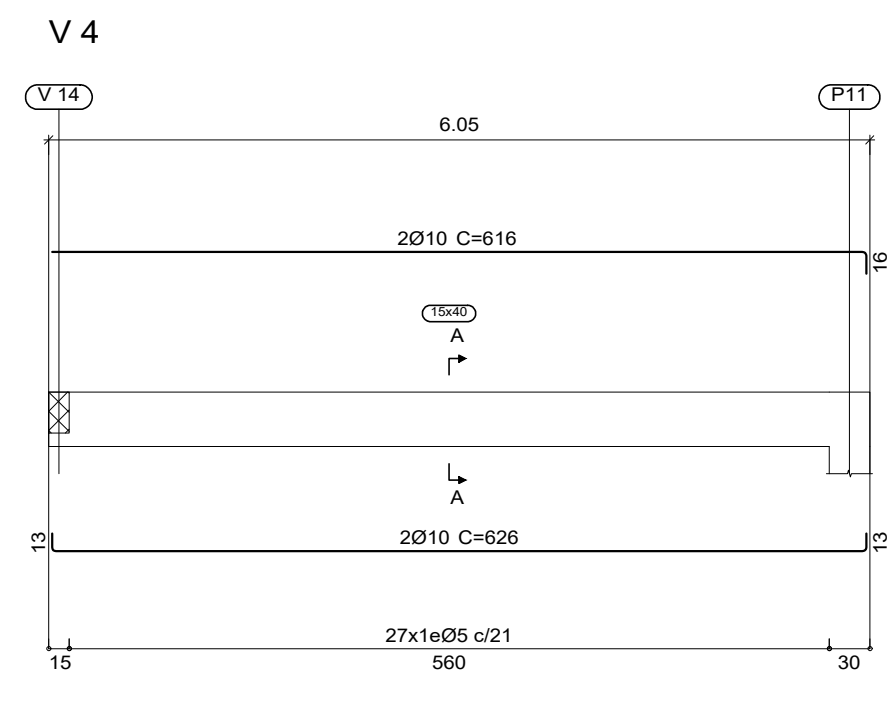
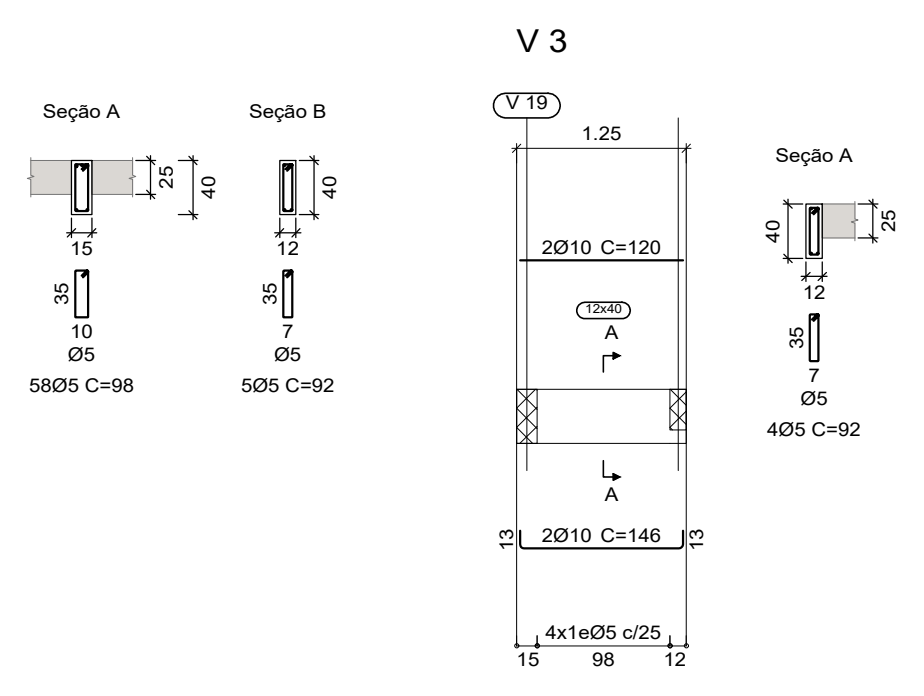
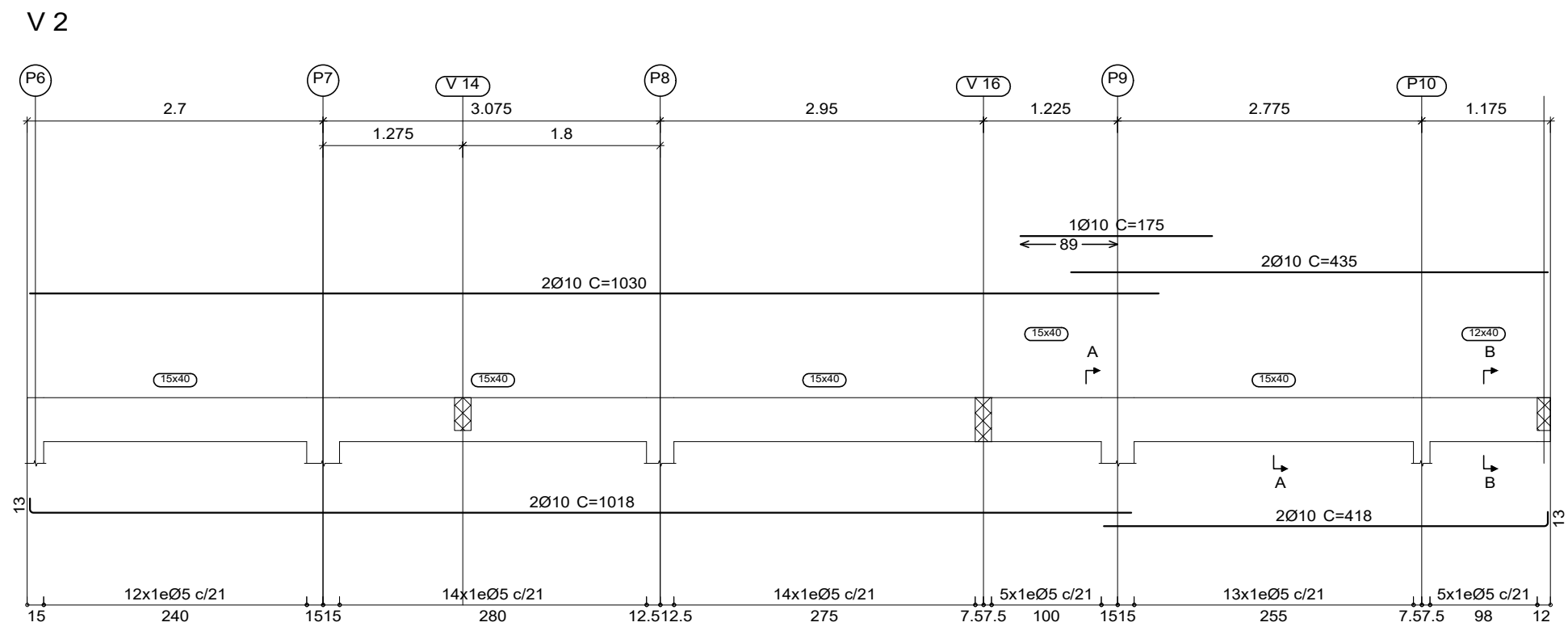
PLANTAS: VIGAS BALDRAME
 EXECUÇÃO: 4/11

ÁREA: 434,34 M²

Documentação assinada digitalmente
 ALEXANDRE MONTENEGRO COLVERO
 Data: 06/03/2024 12:50:36-0906
 Verifique em https://validar.br.gov.br



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



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

| Resumo Aço | Comp. total (m) | Peso+10% (kg) | Total |
|--------------|-----------------|---------------|------------|
| CA-50 Ø10 | 452.8 | 307 | |
| Ø12.5 | 29.1 | 31 | |
| Ø20 | 11.5 | 31 | 369 |
| CA-60 Ø5 | 477.2 | 82 | 82 |
| Total | | | 451 |

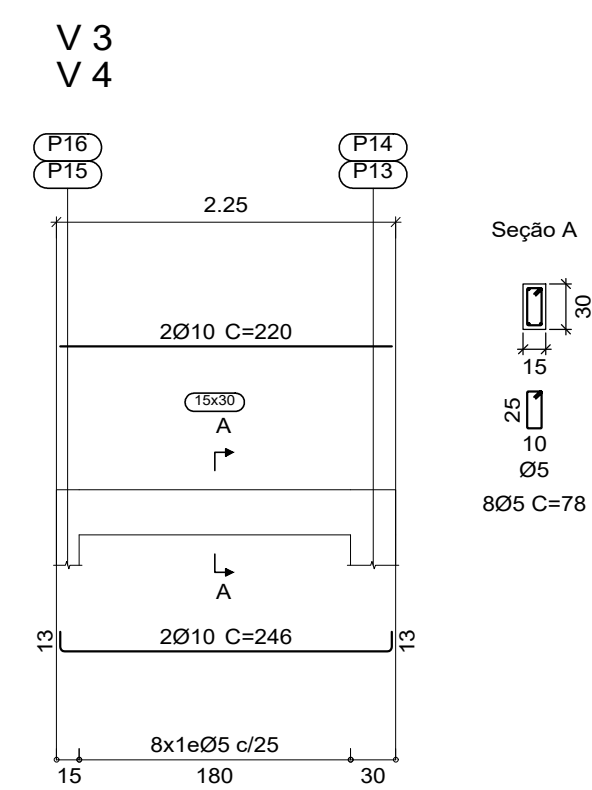
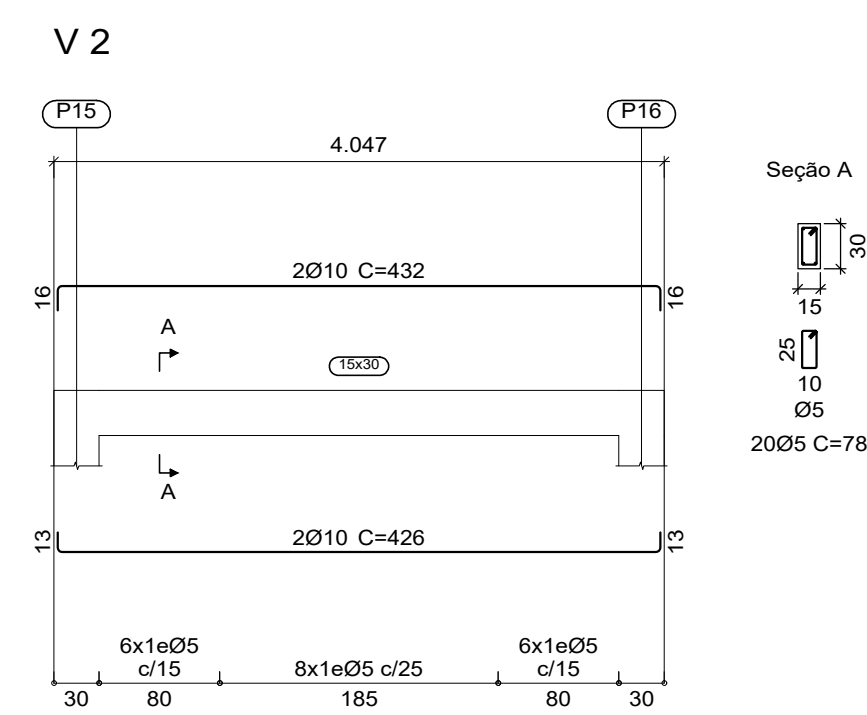
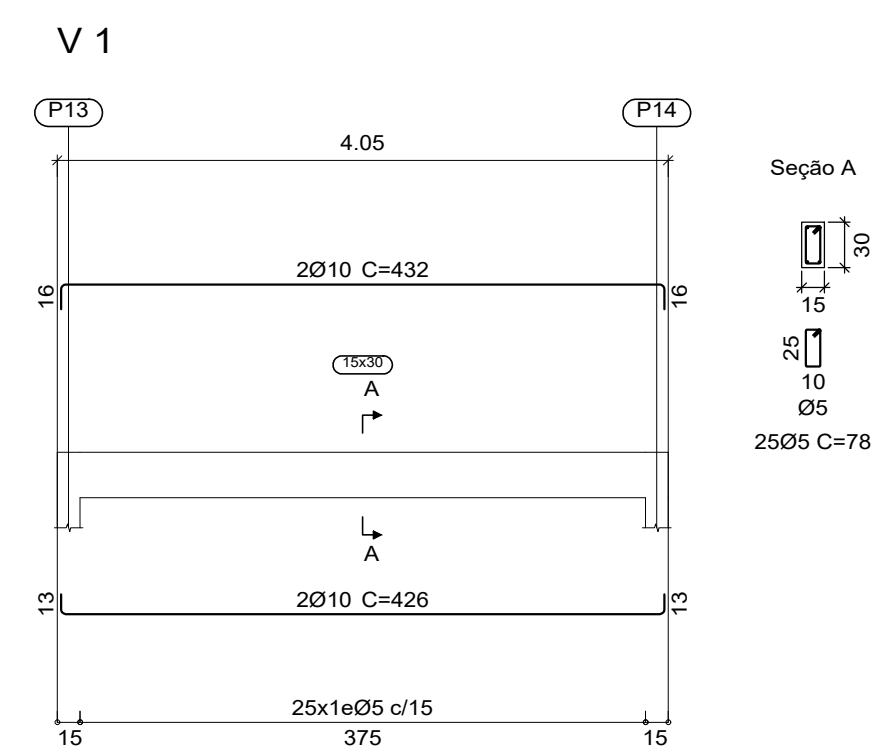
MUNICÍPIO DE IBIRUBÁ
CENTRO DE ACOLHIMENTO DE MENORES

OBRA: VIGAS COBERTURA
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonelli, lado ímpar - Bairro Hermery - IBIRUBÁ/RS

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: MAR/2023
 EXECUÇÃO: 5/11

ÁREA: 434,34 M²

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| Resumo Aço | Comp. total (m) | Peso+10% (kg) | Total |
|--------------|-----------------|---------------|-----------|
| CA-50 Ø10 | 53.0 | 36 | 36 |
| CA-60 Ø5 | 47.6 | 8 | 8 |
| Total | | | 44 |

RESERVATÓRIO
 Desenho de vigas
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60
 Escala vigas 1:50
 Escala seções 1:50
 Escala aberturas 1:50



MUNICÍPIO DE IBIRUBÁ

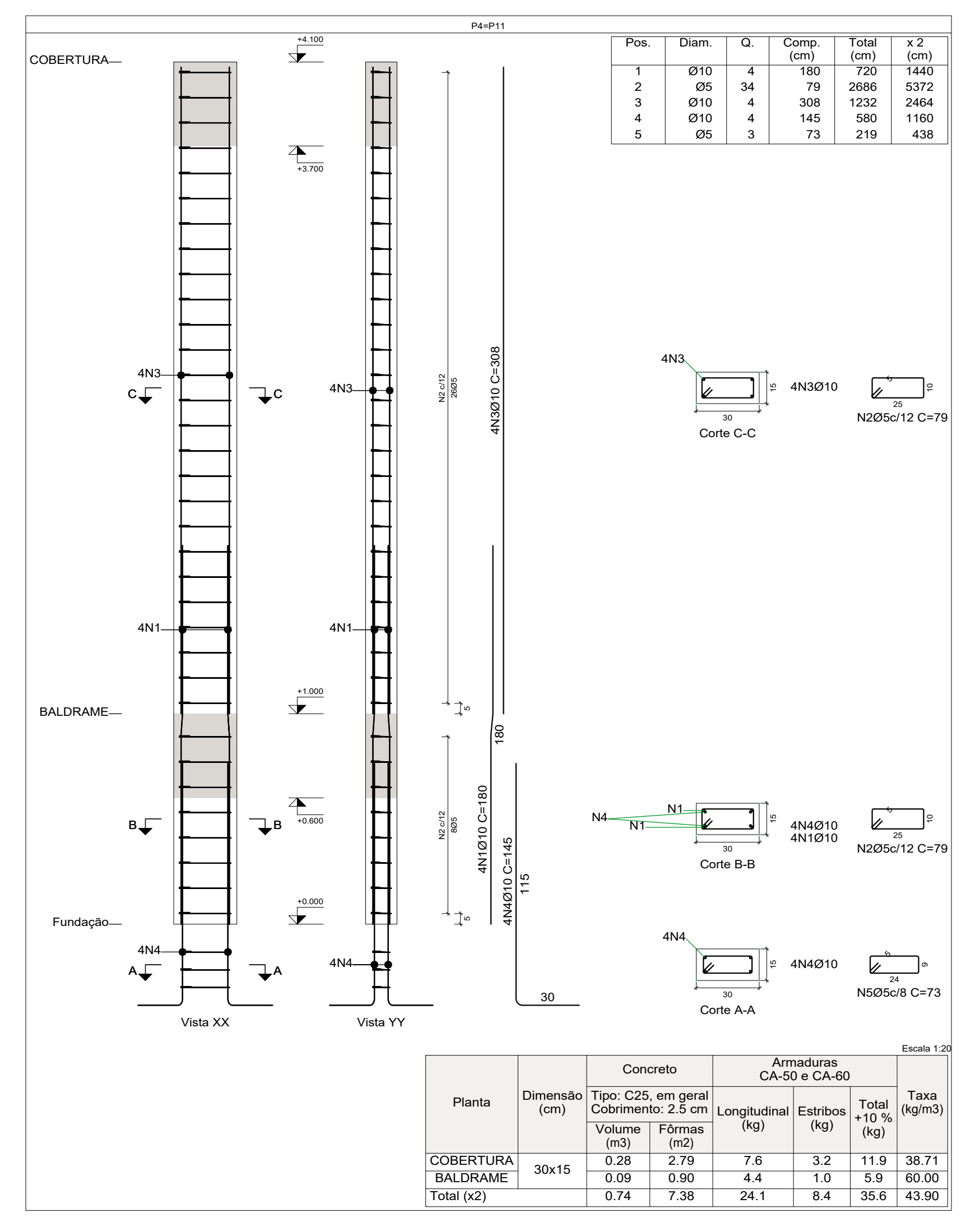
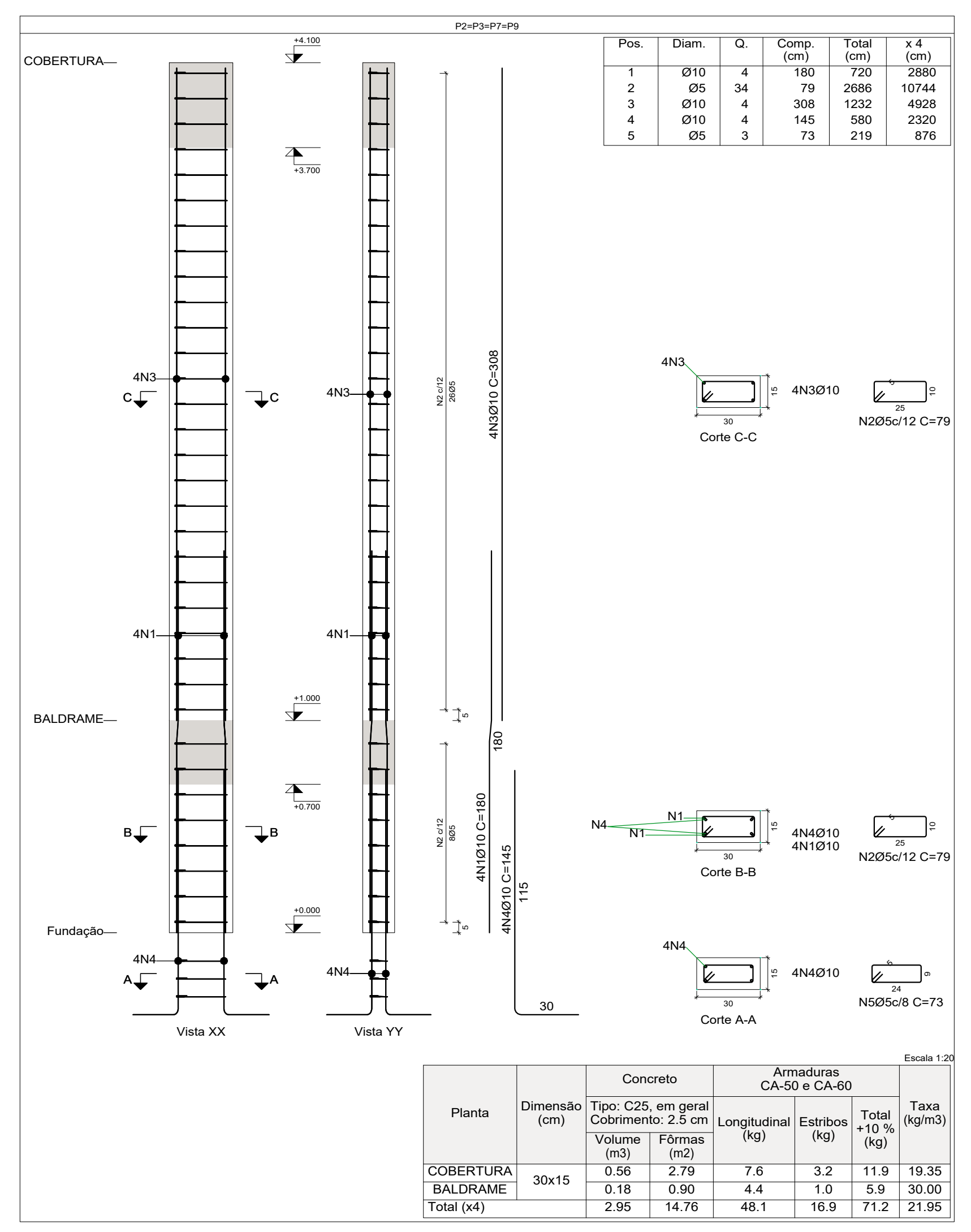
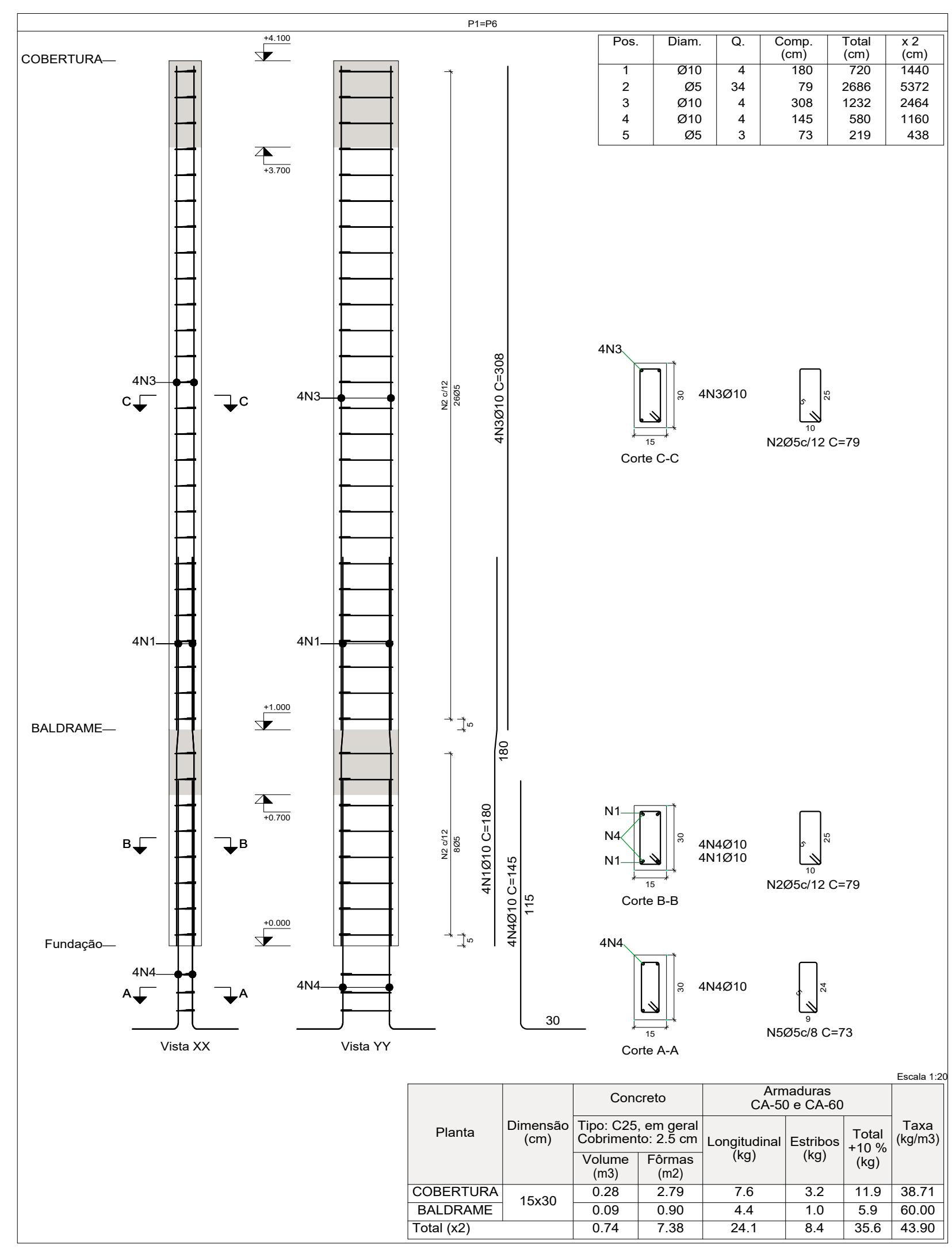
CENTRO DE ACOLHIMENTO DE MENORES

| | |
|---|--|
| <p>OBRA USO: CENTRO DE ACOLHIMENTO DE MENORES LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonini, lado ímpar - Bairro Hermery - IBIRUBÁ/RS</p> | <p>PLANTAS ** VIGAS RESERVATÓRIO</p> |
| <p>PROPRIETÁRIO MUNICÍPIO DE IBIRUBÁ</p> | <p>EXECUÇÃO</p> |
| <p>ÁREA 434,34 M²</p> | <p>DESENHO MAR/2023</p> |
| <p>FRANCHA 6/11</p> | |

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Pilares que nascem em BALDRAME e chegam em RESERVATÓRIO
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60

| Elemento | Pos. | Diam. | Q. | Esquema (cm) | Comp. (cm) | Total (cm) | CA-50 (kg) | CA-60 (kg) |
|-------------|------|-------|----|--------------|------------|----------------|------------|------------|
| P1=P6 | 1 | Ø10 | 4 | | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | | 308 | 1232 | 7.6 | |
| | 4 | Ø10 | 4 | | 145 | 580 | 3.6 | |
| | 5 | Ø5 | 3 | | 73 | 219 | | 0.3 |
| | | | | | | Total+10% (x2) | 17.2 | 5.0 |
| | | | | | | | 34.4 | 10.0 |
| P2=P3=P7=P9 | 1 | Ø10 | 4 | | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | | 308 | 1232 | 7.6 | |
| | 4 | Ø10 | 4 | | 145 | 580 | 3.6 | |
| | 5 | Ø5 | 3 | | 73 | 219 | | 0.3 |
| | | | | | | Total+10% (x4) | 17.2 | 5.0 |
| | | | | | | | 68.8 | 20.0 |
| P4=P11 | 1 | Ø10 | 4 | | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | | 308 | 1232 | 7.6 | |
| | 4 | Ø10 | 4 | | 145 | 580 | 3.6 | |
| | 5 | Ø5 | 3 | | 73 | 219 | | 0.3 |
| | | | | | | Total+10% (x2) | 17.2 | 5.0 |
| | | | | | | | 34.4 | 10.0 |
| | | | | | | Ø5: | 0.0 | 40.0 |
| | | | | | | Ø10: | 137.6 | 0.0 |
| | | | | | | Total: | 137.6 | 40.0 |



MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

OBRA: USO: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonin, lado ímpar - Bairro Hermany - IBIRUBÁ

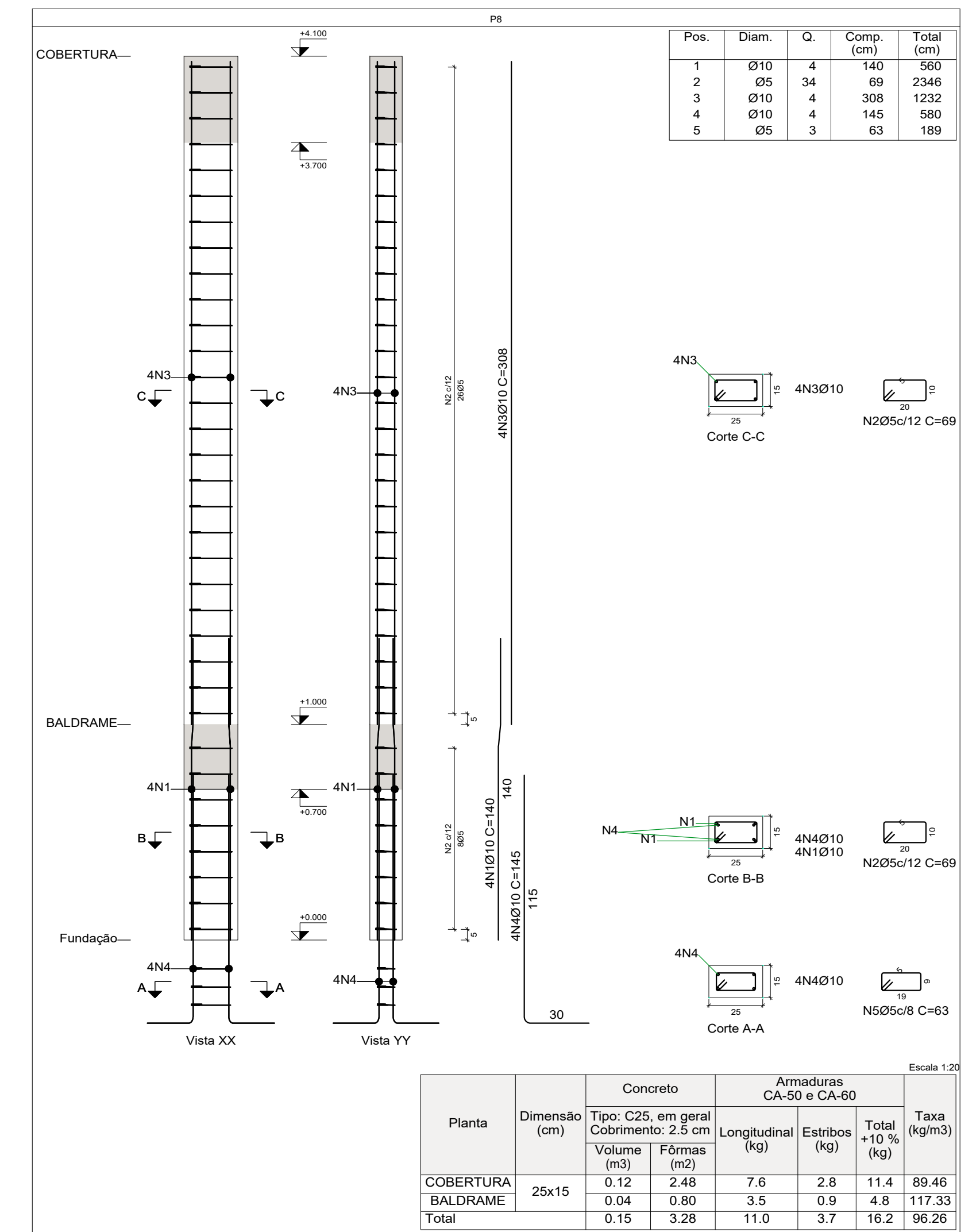
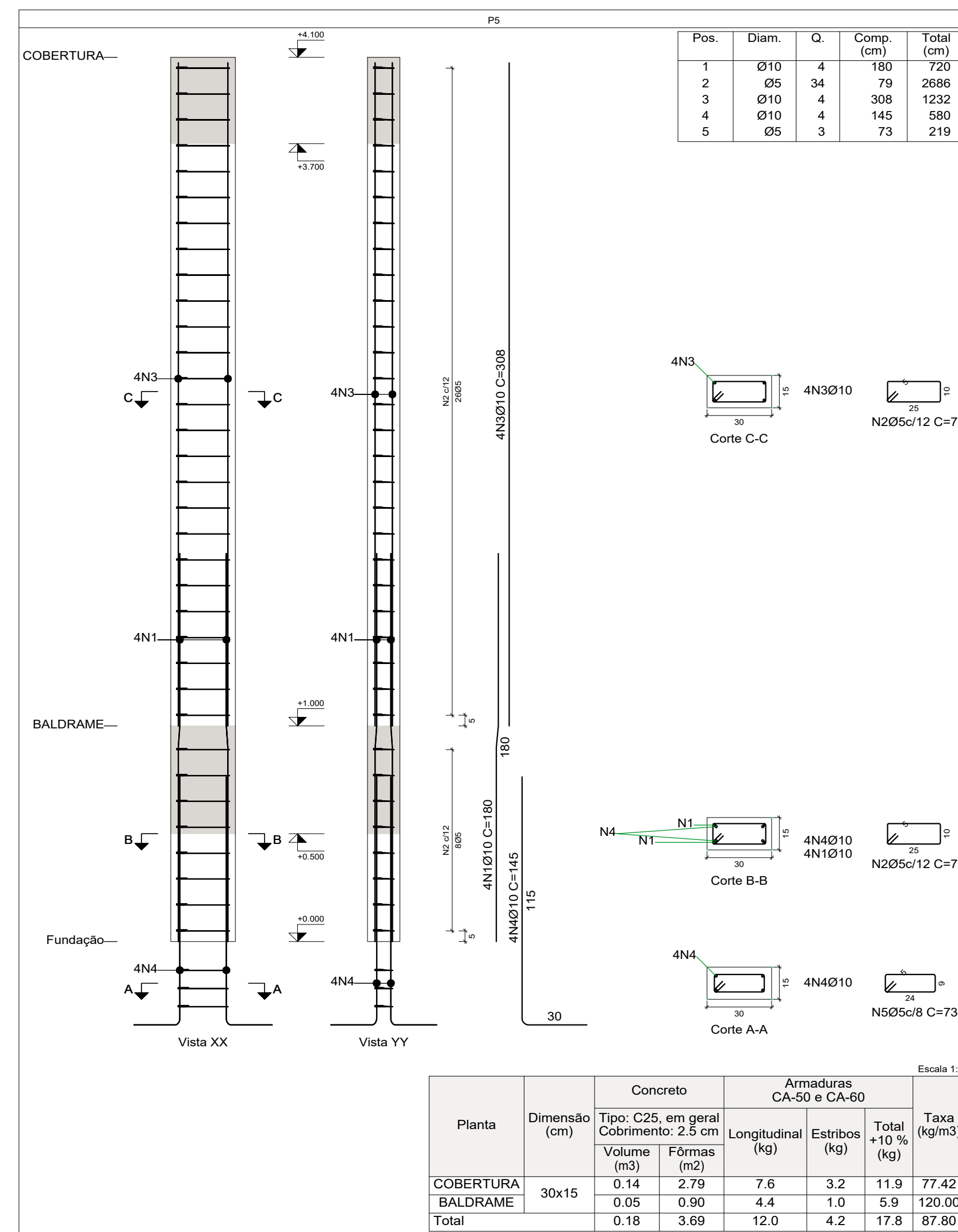
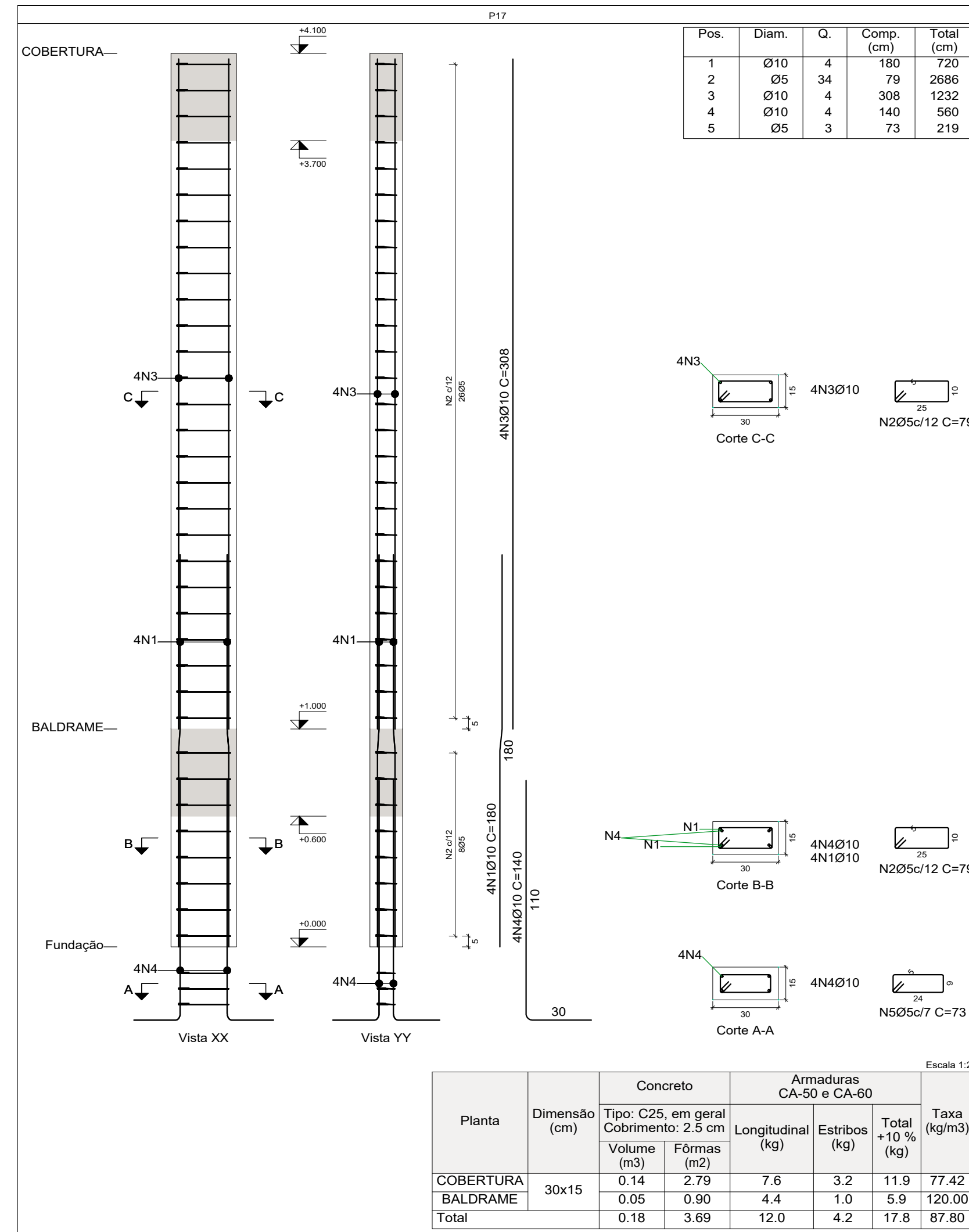
PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: MAR/2023
 EXECUÇÃO: PRANCHA 7/11

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ÁREA: 434,34 M²

Pilares que nascem em BALDRAME e chegam em RESERVATÓRIO
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60

| Elemento | Pos. | Diam. | Q. | Esquema (cm) | Comp. (cm) | Total (cm) | CA-50 (kg) | CA-60 (kg) |
|----------|------|-------|----|--------------|------------|------------|------------|------------|
| P17 | 1 | Ø10 | 4 | | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | | 308 | 1232 | 7.6 | |
| | 4 | Ø10 | 4 | | 140 | 560 | 3.5 | |
| | 5 | Ø5 | 3 | | 73 | 219 | | 0.3 |
| | | | | | Total+10%: | 17.1 | 5.0 | |
| P5 | 1 | Ø10 | 4 | | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | | 308 | 1232 | 7.6 | |
| | 4 | Ø10 | 4 | | 145 | 580 | 3.6 | |
| | 5 | Ø5 | 3 | | 73 | 219 | | 0.3 |
| | | | | | Total+10%: | 17.2 | 5.0 | |
| P8 | 1 | Ø10 | 4 | | 140 | 560 | 3.5 | |
| | 2 | Ø5 | 34 | | 69 | 2346 | | 3.7 |
| | 3 | Ø10 | 4 | | 308 | 1232 | 7.6 | |
| | 4 | Ø10 | 4 | | 145 | 580 | 3.6 | |
| | 5 | Ø5 | 3 | | 63 | 189 | | 0.3 |
| | | | | | Total+10%: | 16.2 | 4.4 | |
| | | | | | Ø5: | 0.0 | 14.4 | |
| | | | | | Ø10: | 50.5 | 0.0 | |
| | | | | | Total: | 50.5 | 14.4 | |



MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

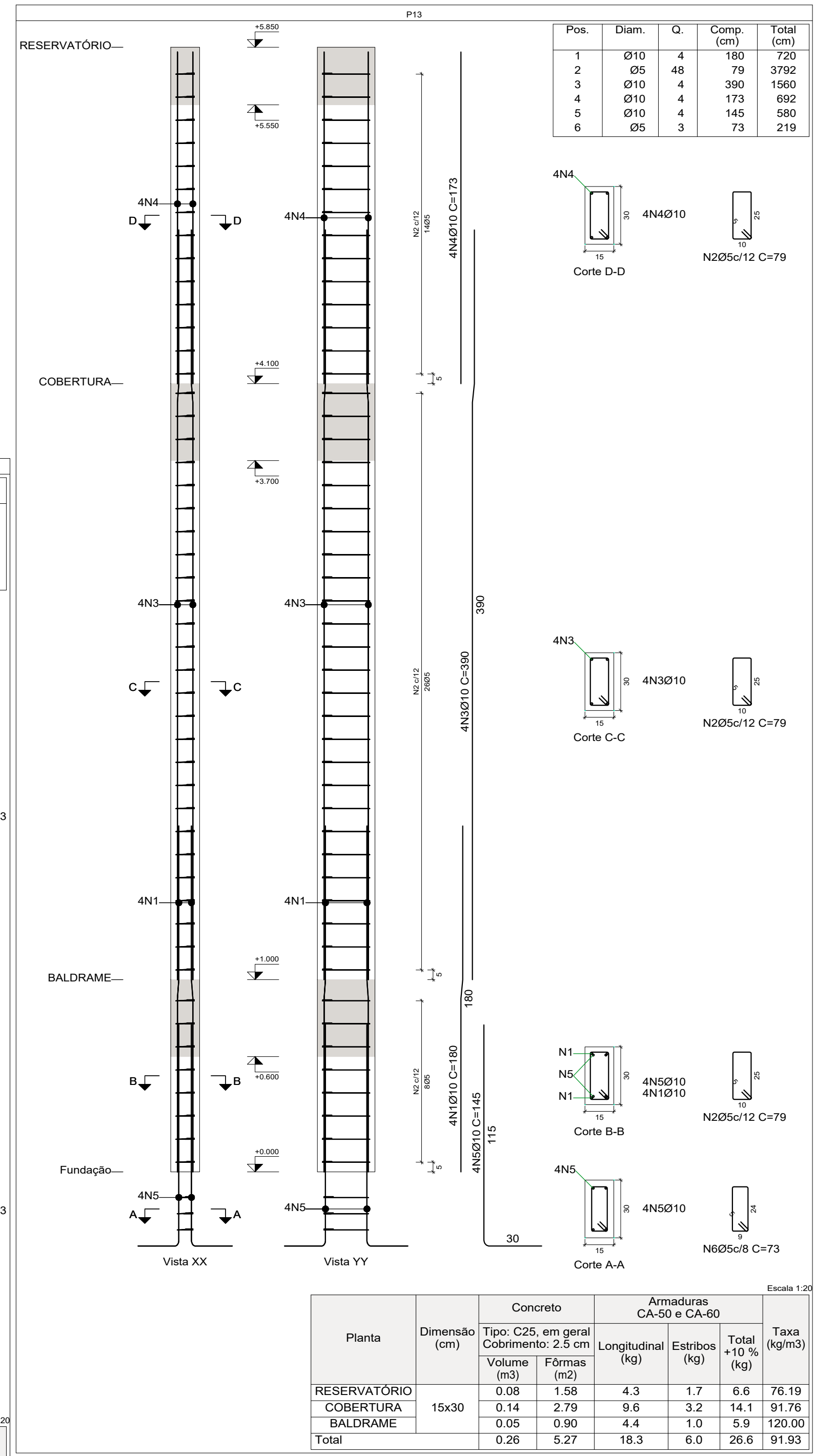
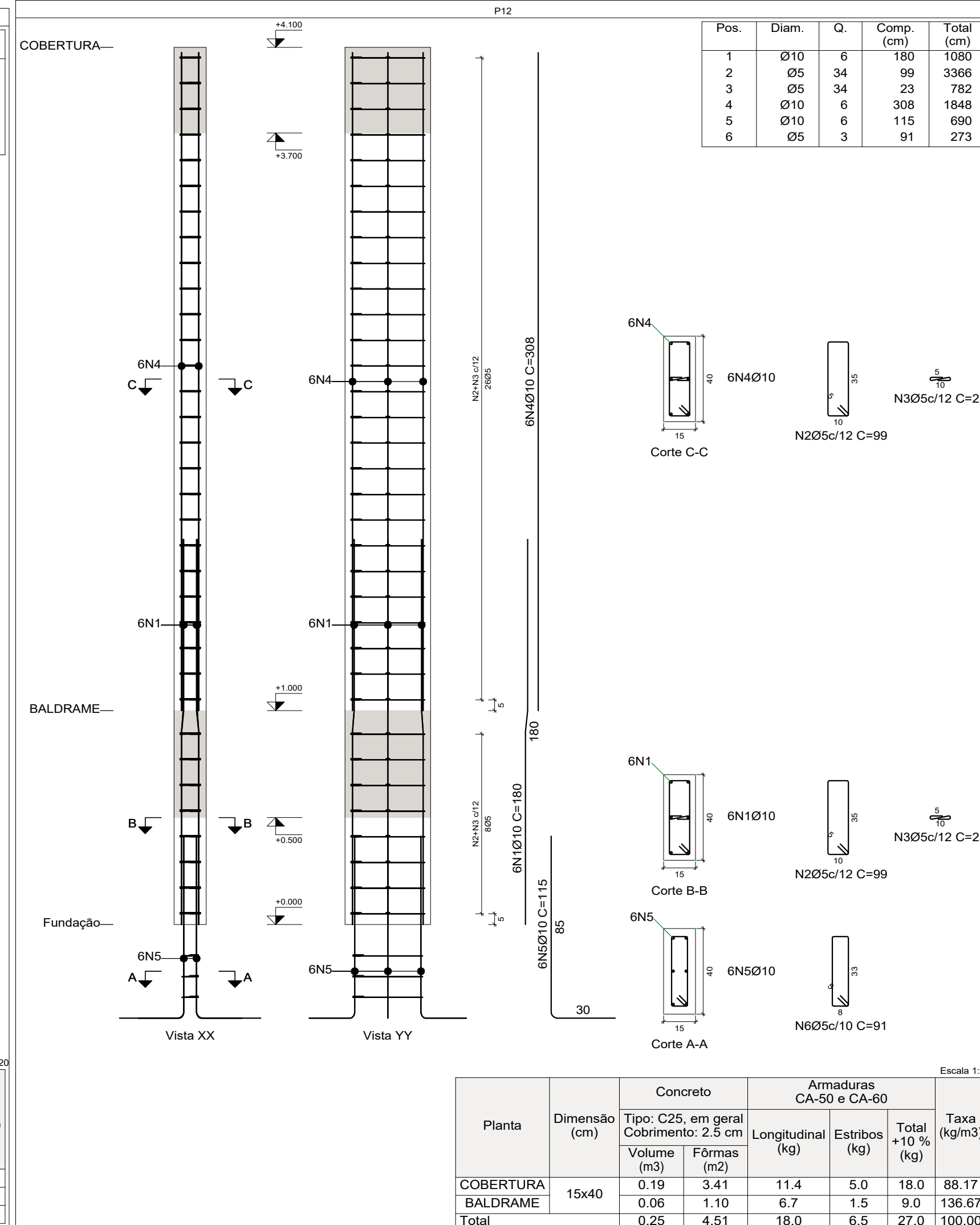
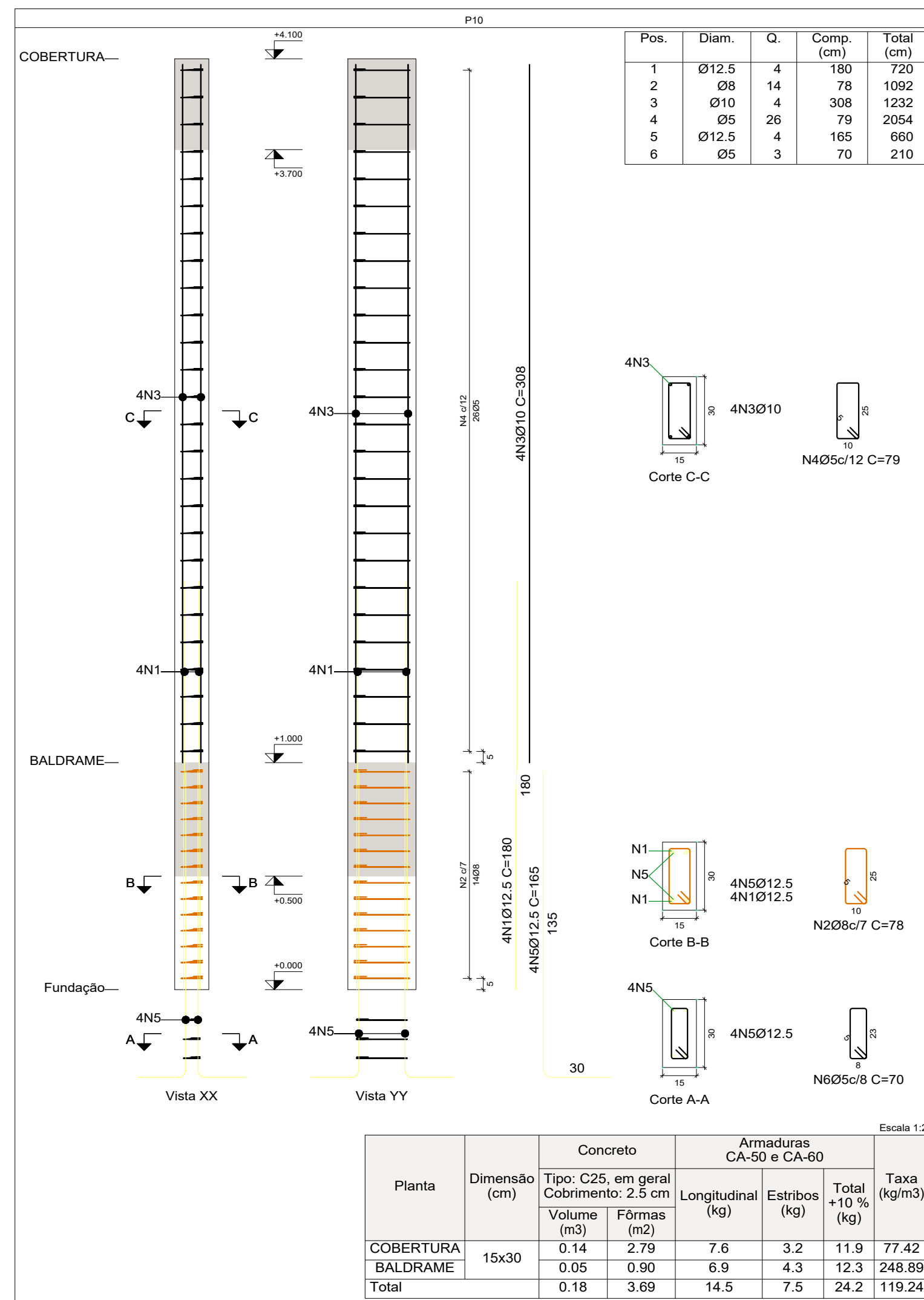
OBRA: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnoldo Tonini, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 EXECUÇÃO: PLANTAS * PILARES

ÁREA: 434,34 M²
 DESENHO: MAR/2023
 PRANCHA: 8/11

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Pilares que nascem em BALDRAME e chegam em RESERVATÓRIO
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60



| Elemento | Pos. | Diam. | Q. | Esquema (cm) | Comp. (cm) | Total (cm) | CA-50 (kg) | CA-60 (kg) | |
|------------|------|-------|----|--------------|------------|------------|------------|------------|------|
| P10 | 1 | Ø12.5 | 4 | 88 13 80 | 180 | 720 | 6.9 | | |
| | 2 | Ø8 | 14 | 308 | 78 | 1092 | 4.3 | | |
| | 3 | Ø10 | 4 | 308 | 308 | 1232 | 7.6 | | |
| | 4 | Ø5 | 26 | 10 | 79 | 2054 | | 3.2 | |
| | 5 | Ø12.5 | 4 | 135 | 165 | 660 | 6.4 | | |
| | 6 | Ø5 | 3 | 10 | 70 | 210 | 0.3 | | |
| Total+10%: | | | | | | | 27.7 | 3.9 | |
| P12 | 1 | Ø10 | 6 | 90 10 80 | 180 | 1080 | 6.7 | | |
| | 2 | Ø5 | 34 | 23 | 99 | 3366 | 5.3 | | |
| | 3 | Ø5 | 34 | 10 | 23 | 782 | 1.2 | | |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | | |
| | 5 | Ø10 | 6 | 95 | 115 | 690 | 4.3 | | |
| | 6 | Ø5 | 3 | 10 | 91 | 273 | 0.4 | | |
| Total+10%: | | | | | | | 24.6 | 7.6 | |
| P13 | 1 | Ø10 | 4 | 90 10 80 | 180 | 720 | 4.4 | | |
| | 2 | Ø5 | 48 | 79 | 79 | 3792 | 6.0 | | |
| | 3 | Ø10 | 4 | 390 10 80 | 390 | 1560 | 9.6 | | |
| | 4 | Ø10 | 4 | 173 | 173 | 692 | 4.3 | | |
| | 5 | Ø10 | 4 | 115 | 145 | 580 | 3.6 | | |
| | 6 | Ø5 | 3 | 10 | 73 | 219 | 0.3 | | |
| Total+10%: | | | | | | | 24.1 | 6.9 | |
| | | | | | | | Ø5: | 0.0 | 18.4 |
| | | | | | | | Ø8: | 4.8 | 0.0 |
| | | | | | | | Ø10: | 57.0 | 0.0 |
| | | | | | | | Ø12.5: | 14.6 | 0.0 |
| | | | | | | | Total: | 76.4 | 18.4 |

MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

OBRA: USO: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnoldo Tonari, lado ímpar - Bairro Hermery - IBIRUBÁ

PLANTAS: * PILARES

EXECUÇÃO

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ

DESENHO: 434,34 M²

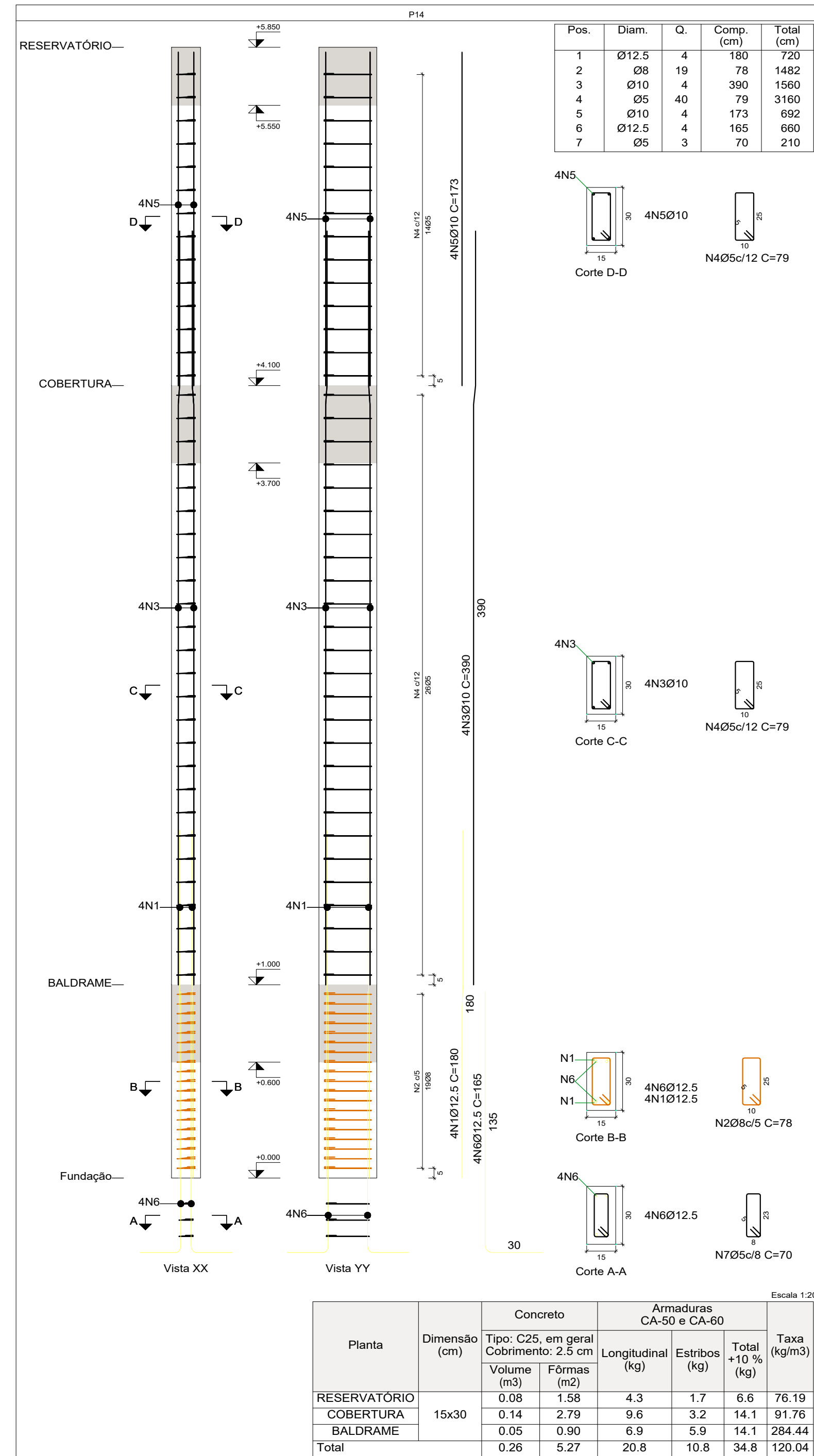
PRANCHA: 9/11

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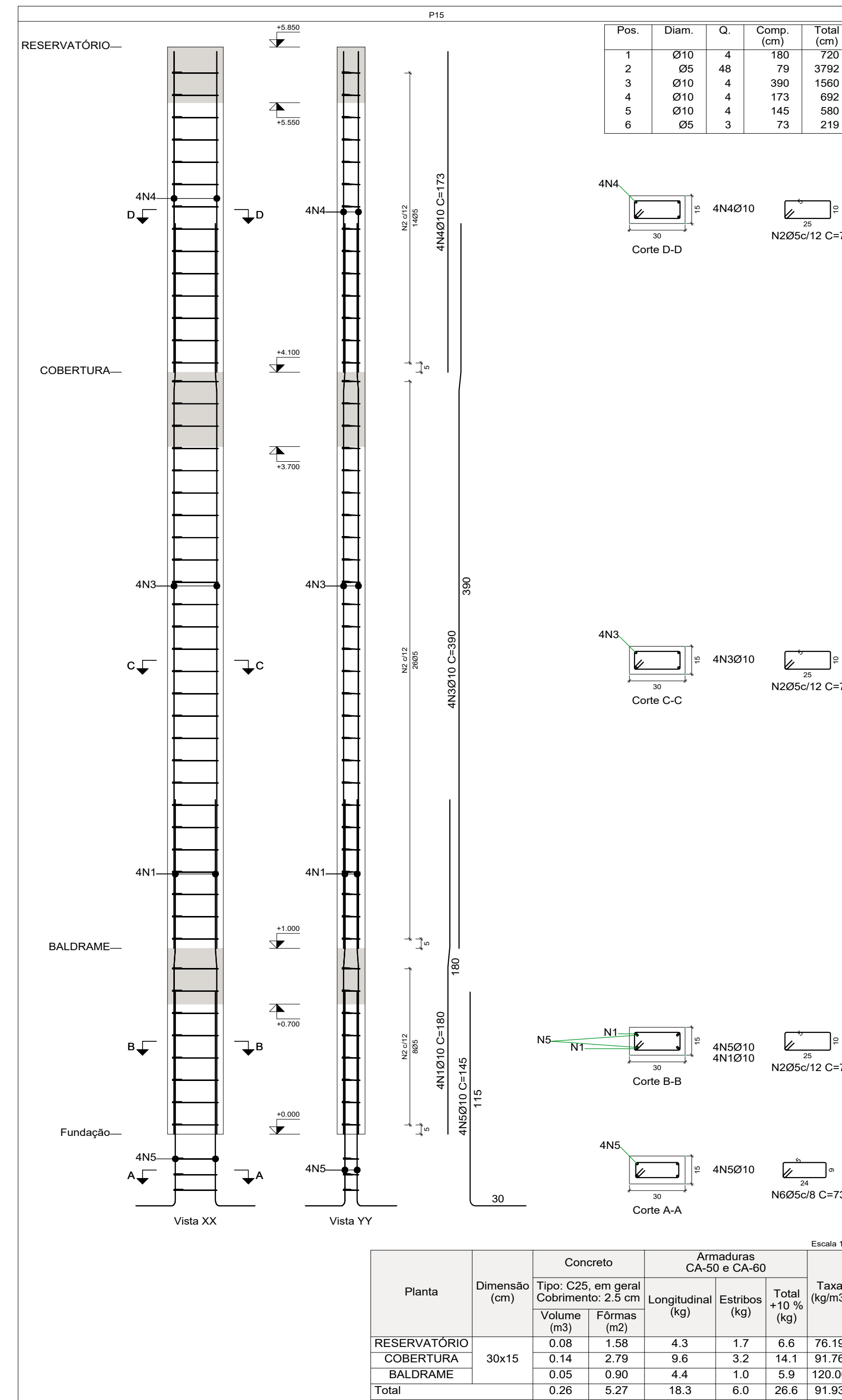
MAR/2023

Pilares que nascem em BALDRAME e chegam em RESERVATÓRIO
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60

| Elemento | Pos. | Diam. | Q. | Esquema (cm) | Comp. (cm) | Total (cm) | CA-50 (kg) | CA-60 (kg) | |
|------------|------|-------|----|--------------|------------|------------|------------|------------|------|
| P14 | 1 | Ø12.5 | 4 | 88 13 80 | 180 | 720 | 6.9 | | |
| | 2 | Ø8 | 19 | 10 | 78 | 1482 | 5.9 | | |
| | 3 | Ø10 | 4 | 300 10 80 | 390 | 1560 | 9.6 | | |
| | 4 | Ø5 | 40 | 173 | 79 | 3160 | | 5.0 | |
| | 5 | Ø10 | 4 | 173 | 173 | 692 | 4.3 | | |
| | 6 | Ø12.5 | 4 | 135 | 165 | 660 | 6.4 | | |
| | 7 | Ø5 | 3 | 70 | 70 | 210 | | 0.3 | |
| Total+10%: | | | | | | | 36.4 | 5.8 | |
| P15 | 1 | Ø10 | 4 | 90 10 80 | 180 | 720 | 4.4 | | |
| | 2 | Ø5 | 48 | 25 | 79 | 3792 | | 6.0 | |
| | 3 | Ø10 | 4 | 300 10 80 | 390 | 1560 | 9.6 | | |
| | 4 | Ø10 | 4 | 173 | 173 | 692 | 4.3 | | |
| | 5 | Ø10 | 4 | 115 | 145 | 580 | 3.6 | | |
| | 6 | Ø5 | 3 | 24 | 73 | 219 | | 0.3 | |
| Total+10%: | | | | | | | 24.1 | 6.9 | |
| | | | | | | | Ø5: | 0.0 | 12.7 |
| | | | | | | | Ø8: | 6.5 | 0.0 |
| | | | | | | | Ø10: | 39.4 | 0.0 |
| | | | | | | | Ø12.5: | 14.6 | 0.0 |
| | | | | | | | Total: | 60.5 | 12.7 |



| Planta | Dimensão (cm) | Concreto | | Armaduras CA-50 e CA-60 | | | Taxa (kg/m3) |
|--------------|---------------|---------------------|------------------|-------------------------|---------------|------------------|--------------|
| | | Tipo: C25, em geral | Cobrimto: 2.5 cm | Longitudinal (kg) | Estribos (kg) | Total +10 % (kg) | |
| RESERVATÓRIO | 15x30 | 0.08 | 1.58 | 4.3 | 1.7 | 6.6 | 76.19 |
| COBERTURA | | 0.14 | 2.79 | 9.6 | 3.2 | 14.1 | 91.76 |
| BALDRAME | | 0.05 | 0.90 | 6.9 | 5.9 | 14.1 | 284.44 |
| Total | | 0.26 | 5.27 | 20.8 | 10.8 | 34.8 | 120.04 |



| Planta | Dimensão (cm) | Concreto | | Armaduras CA-50 e CA-60 | | | Taxa (kg/m3) |
|--------------|---------------|---------------------|------------------|-------------------------|---------------|------------------|--------------|
| | | Tipo: C25, em geral | Cobrimto: 2.5 cm | Longitudinal (kg) | Estribos (kg) | Total +10 % (kg) | |
| RESERVATÓRIO | 30x15 | 0.08 | 1.58 | 4.3 | 1.7 | 6.6 | 76.19 |
| COBERTURA | | 0.14 | 2.79 | 9.6 | 3.2 | 14.1 | 91.76 |
| BALDRAME | | 0.05 | 0.90 | 4.4 | 1.0 | 5.9 | 120.00 |
| Total | | 0.26 | 5.27 | 18.3 | 6.0 | 26.6 | 91.93 |

MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

OBRA: USO: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonari, lado ímpar - Bairro Hermany - IBIRUBÁ

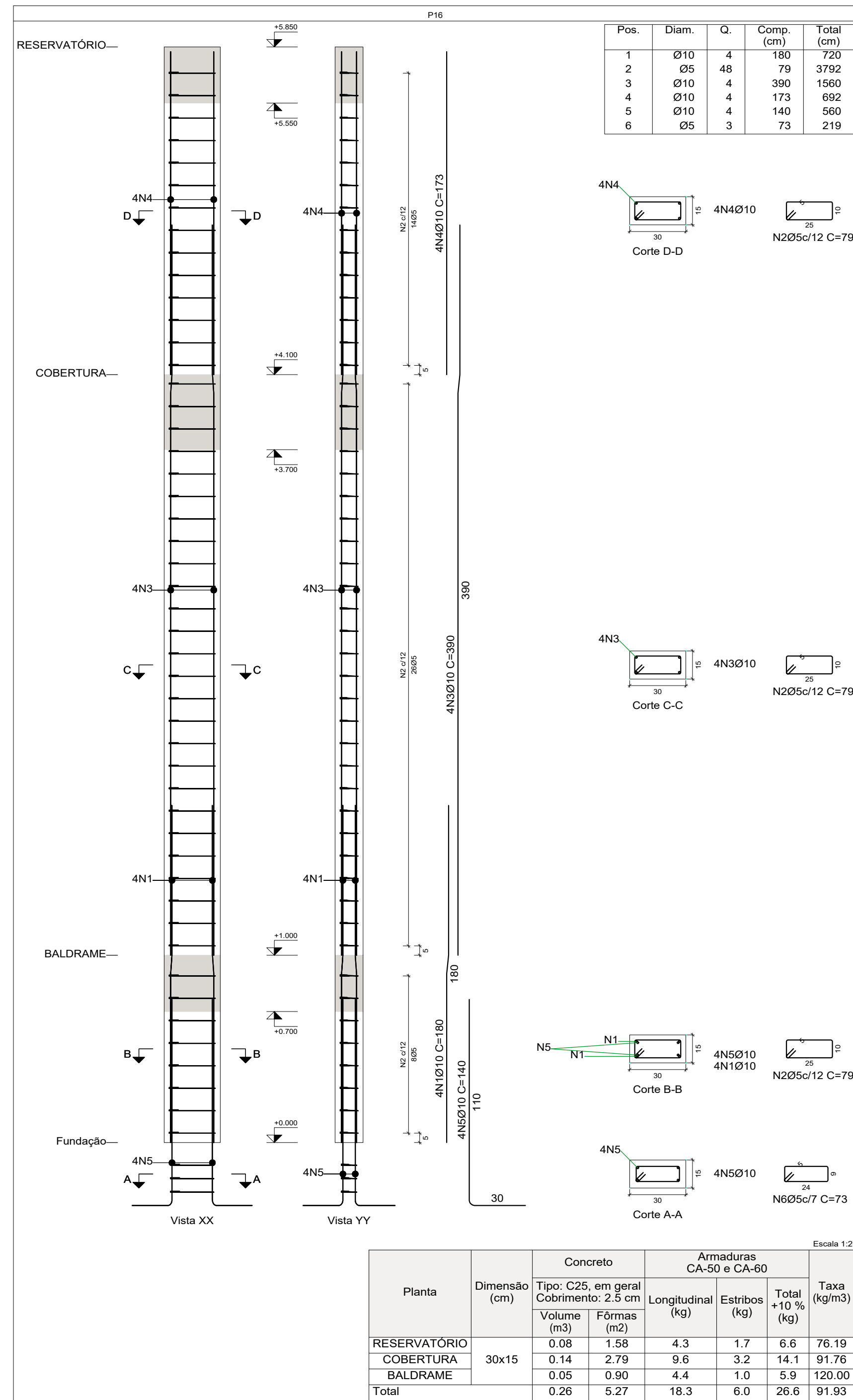
PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: MAR/2023
 PRANCHA: 10/11

EXECUÇÃO: PLANTAS: * PILARES

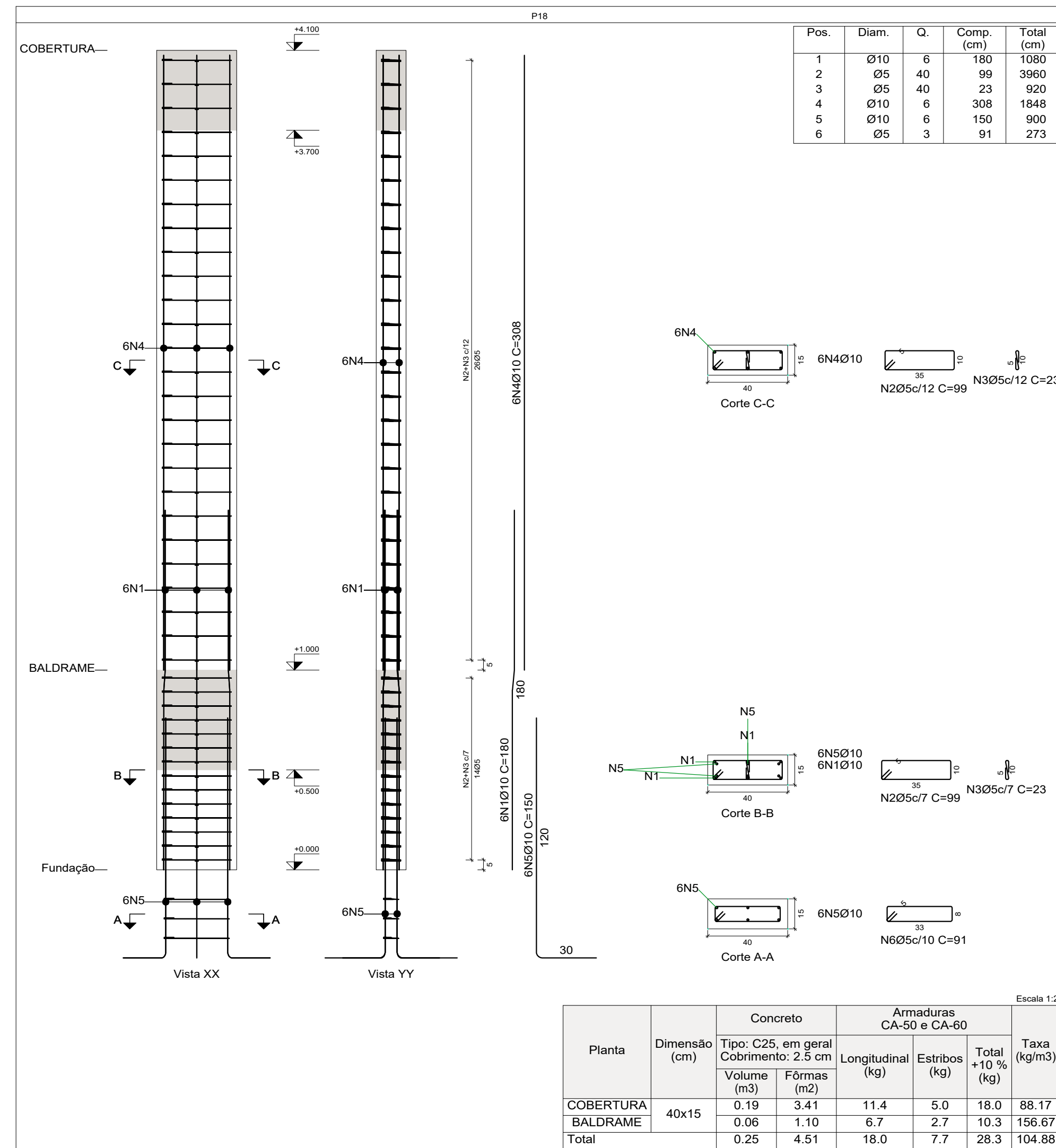
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Pilares que nascem em BALDRAME e chegam em RESERVATÓRIO
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60

| Elemento | Pos. | Diam. | Q. | Esquema (cm) | Comp. (cm) | Total (cm) | CA-50 (kg) | CA-60 (kg) | |
|------------|------|-------|----|--------------|------------|------------|------------|------------|------|
| P16 | 1 | Ø10 | 4 | 90 10 80 | 180 | 720 | 4.4 | | |
| | 2 | Ø5 | 48 | 25 | 79 | 3792 | | 6.0 | |
| | 3 | Ø10 | 4 | 300 10 80 | 390 | 1560 | 9.6 | | |
| | 4 | Ø10 | 4 | 173 | 173 | 692 | 4.3 | | |
| | 5 | Ø10 | 4 | 140 | 140 | 560 | 3.5 | | |
| | 6 | Ø5 | 3 | 24 | 73 | 219 | | 0.3 | |
| Total+10%: | | | | | | | 24.0 | 6.9 | |
| P18 | 1 | Ø10 | 6 | 90 10 80 | 180 | 1080 | 6.7 | | |
| | 2 | Ø5 | 40 | 35 | 99 | 3960 | | 6.2 | |
| | 3 | Ø5 | 40 | 10 | 23 | 920 | | 1.4 | |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | | |
| | 5 | Ø10 | 6 | 120 | 150 | 900 | 5.5 | | |
| | 6 | Ø5 | 3 | 33 | 91 | 273 | | 0.4 | |
| Total+10%: | | | | | | | 26.0 | 8.8 | |
| | | | | | | | Ø5: | 0.0 | 15.7 |
| | | | | | | | Ø10: | 50.0 | 0.0 |
| | | | | | | | Total: | 50.0 | 15.7 |



| Planta | Dimensão (cm) | Concreto | | Armaduras CA-50 e CA-60 | | | Taxa (kg/m3) |
|--------------|---------------|-------------|-------------|-------------------------|---------------|------------------|--------------|
| | | Volume (m3) | Fôrmas (m2) | Longitudinal (kg) | Estribos (kg) | Total +10 % (kg) | |
| RESERVATÓRIO | 30x15 | 0.08 | 1.58 | 4.3 | 1.7 | 6.6 | 76.19 |
| COBERTURA | | 0.14 | 2.79 | 9.6 | 3.2 | 14.1 | 91.76 |
| BALDRAME | | 0.05 | 0.90 | 4.4 | 1.0 | 5.9 | 120.00 |
| Total | | 0.26 | 5.27 | 18.3 | 6.0 | 26.6 | 91.93 |



| Planta | Dimensão (cm) | Concreto | | Armaduras CA-50 e CA-60 | | | Taxa (kg/m3) |
|-----------|---------------|-------------|-------------|-------------------------|---------------|------------------|--------------|
| | | Volume (m3) | Fôrmas (m2) | Longitudinal (kg) | Estribos (kg) | Total +10 % (kg) | |
| COBERTURA | 40x15 | 0.19 | 3.41 | 11.4 | 5.0 | 18.0 | 88.17 |
| BALDRAME | | 0.06 | 1.10 | 6.7 | 2.7 | 10.3 | 156.67 |
| Total | | 0.25 | 4.51 | 18.0 | 7.7 | 28.3 | 104.88 |

| Resumo Aço Pilares | Comp. total (m) | Peso+10% (kg) | Total |
|--------------------|-----------------|---------------|-------|
| CA-50 Ø8 | 25.7 | 11 | |
| Ø10 | 492.4 | 334 | |
| Ø12.5 | 27.6 | 29 | 374 |
| CA-60 Ø5 | 588.3 | 102 | 102 |
| Total | | | 476 |

MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

OBRA
 USO: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonini, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

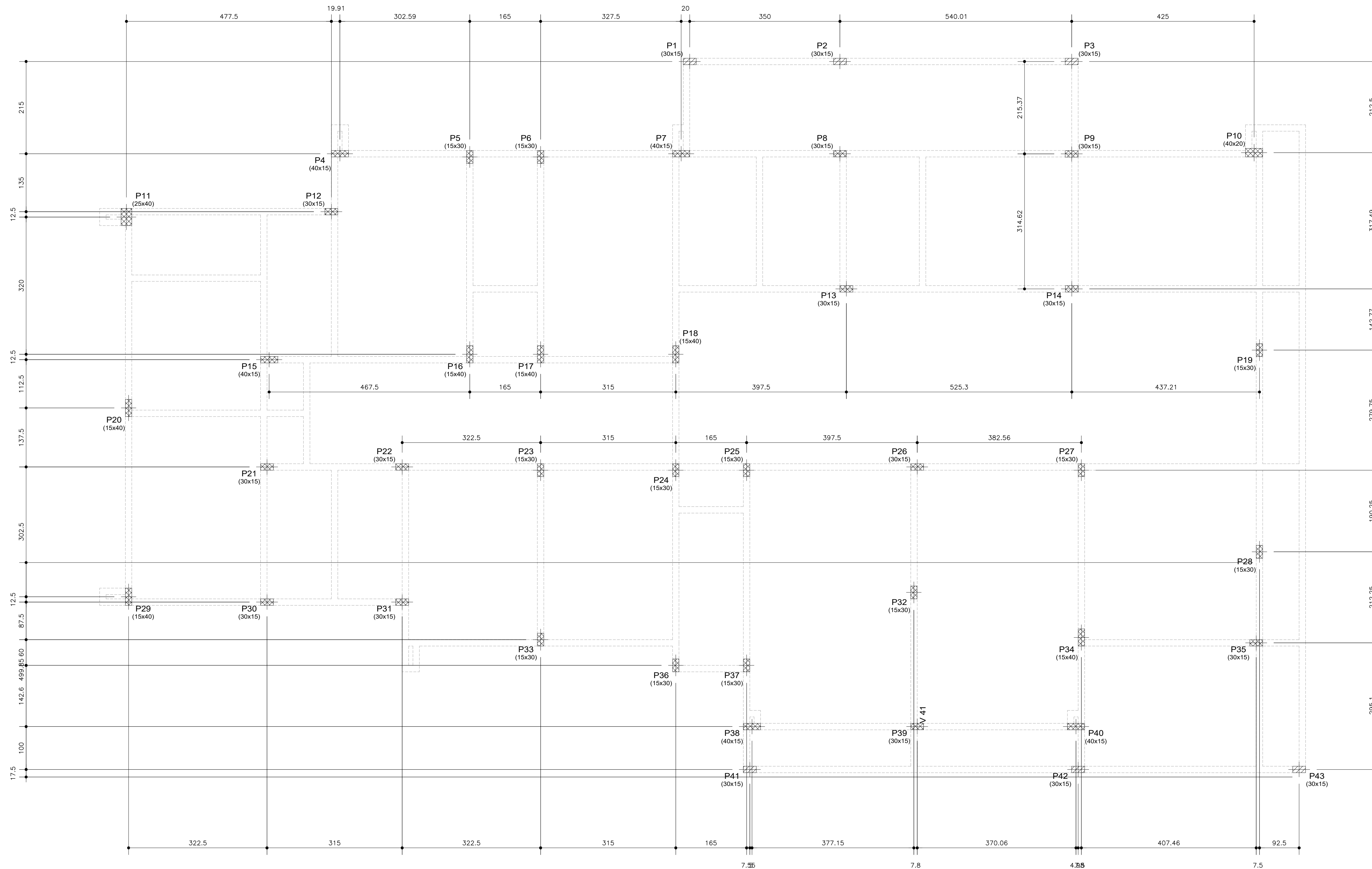
PROPRIETÁRIO
 MUNICÍPIO DE IBIRUBÁ

DESENHO
 MAR/2023

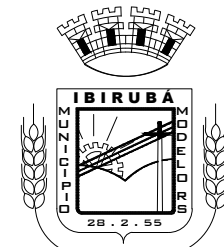
EXECUÇÃO
 PRANCHA
 11/11

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ÁREA
 434,34 M²



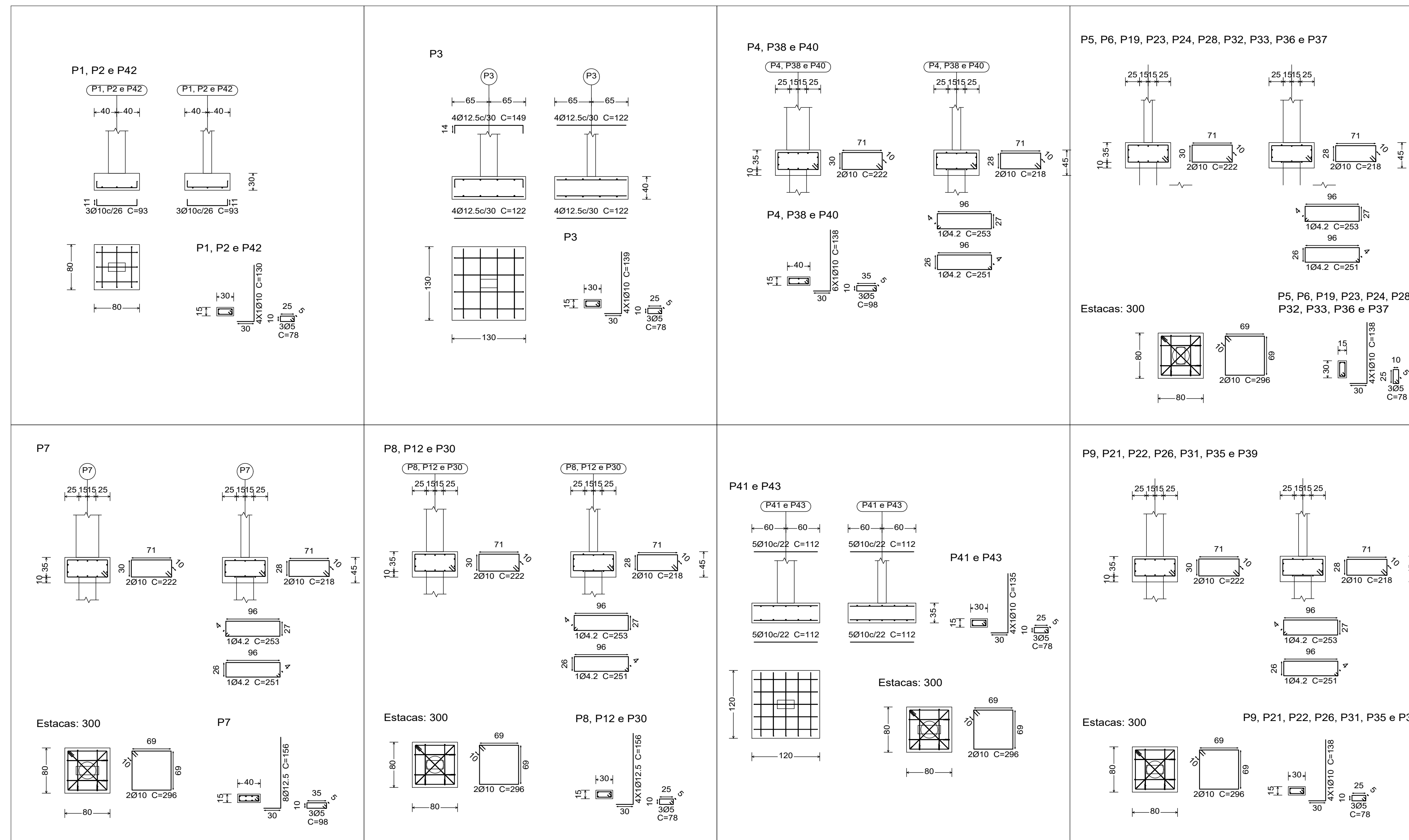
LOCAÇÃO DE PILARES
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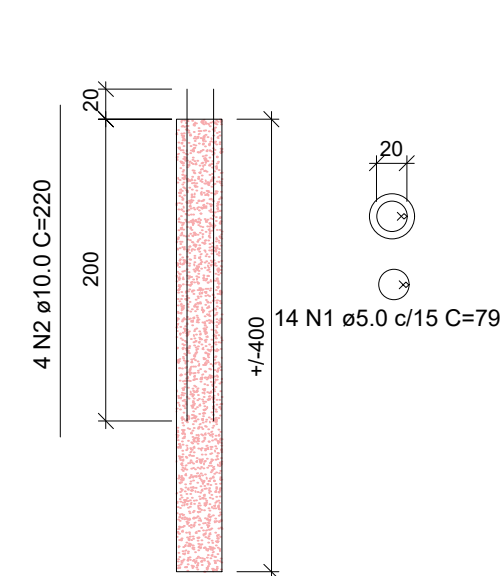
MUNICÍPIO DE IBIRUBÁ

CENTRO DE ACOLHIMENTO DE MENORES

| | |
|---|---|
| <p>OBRA USO: CENTRO DE ACOLHIMENTO DE MENORES LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonini, lado ímpar - Bairro Hermany - IBIRUBÁ-RS</p> | <p>PLANTAS * LOCAÇÃO DE PILARES</p> |
| <p>PROPRIETÁRIO MUNICÍPIO DE IBIRUBÁ</p> | <p>Documento assinado digitalmente ALEXANDRE MONTENEGRO COLVERO Data: 06/02/2024 14:02:23 -0300 Verifique em https://validar.sil.gov.br</p> |
| <p>ÁREA 434,34 M²</p> | <p>DESENHO MAR/2023</p> |
| <p>EXECUÇÃO FRANCHA 1/16</p> | |



Detalhamento estaca - Ø30 cm



Relação do aço

| AÇO | N | DIAM (mm) | QUANT | C.UNIT (cm) | C.TOTAL (cm) |
|------|---|-----------|-------|-------------|--------------|
| CA60 | 1 | 5.0 | 14 | 79 | 1106 |
| CA50 | 2 | 10.0 | 4 | 220 | 880 |

Resumo do aço

| AÇO | DIAM (mm) | C.TOTAL (m) | PESO + 10 % (kg) |
|------------------------|-----------|-------------|------------------|
| CA50 | 10.0 | 8.8 | 6 |
| CA60 | 5.0 | 11.1 | 1.9 |
| PESO TOTAL (kg) | | | |
| CA50 | | | 6 |
| CA60 | | | 1.9 |

Concreto

| fck | Volume |
|-------------|--------|
| C20 (20MPa) | 1,13m³ |

A profundidade mínima das armaduras, nas estacas é de 2 metros.

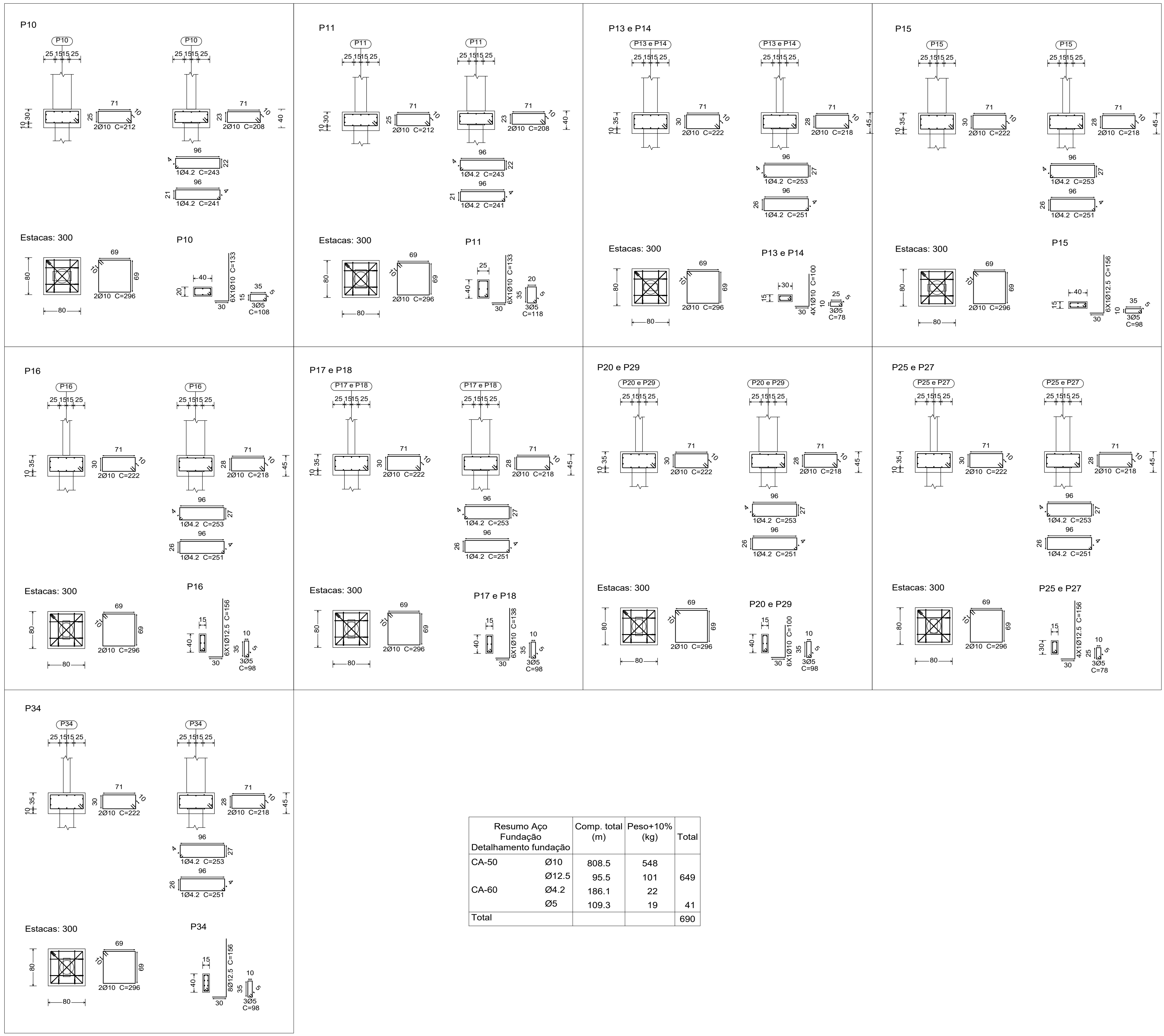
FUNDAÇÕES
ESC: 1.50

MUNICÍPIO DE IBIRUBÁ

CENTRO DE ACOLHIMENTO DE MENORES

| | |
|--|---------------------------------------|
| <p>OBRA USO: CENTRO DE ACOLHIMENTO DE MENORES LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnoldo Tonelli, lado ímpar - Bairro Hermany - IBIRUBÁ/RS</p> | <p>PLANTAS * FUNDAÇÕES</p> |
| <p>PROPRIETÁRIO MUNICÍPIO DE IBIRUBÁ</p> | <p>EXECUÇÃO</p> |
| <p>ÁREA 434,34 M²</p> | <p>DESENHO MAR/2023</p> |
| <p>FRANCHA 2/16</p> | |

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| Resumo Aço Fundação | Comp. total (m) | Peso+10% (kg) | Total |
|---------------------|-----------------|---------------|------------|
| CA-50 Ø10 | 808.5 | 548 | |
| CA-60 Ø12.5 | 95.5 | 101 | 649 |
| CA-60 Ø4.2 | 186.1 | 22 | |
| CA-60 Ø5 | 109.3 | 19 | 41 |
| Total | | | 690 |

FUNDAÇÕES
ESC: 1.50

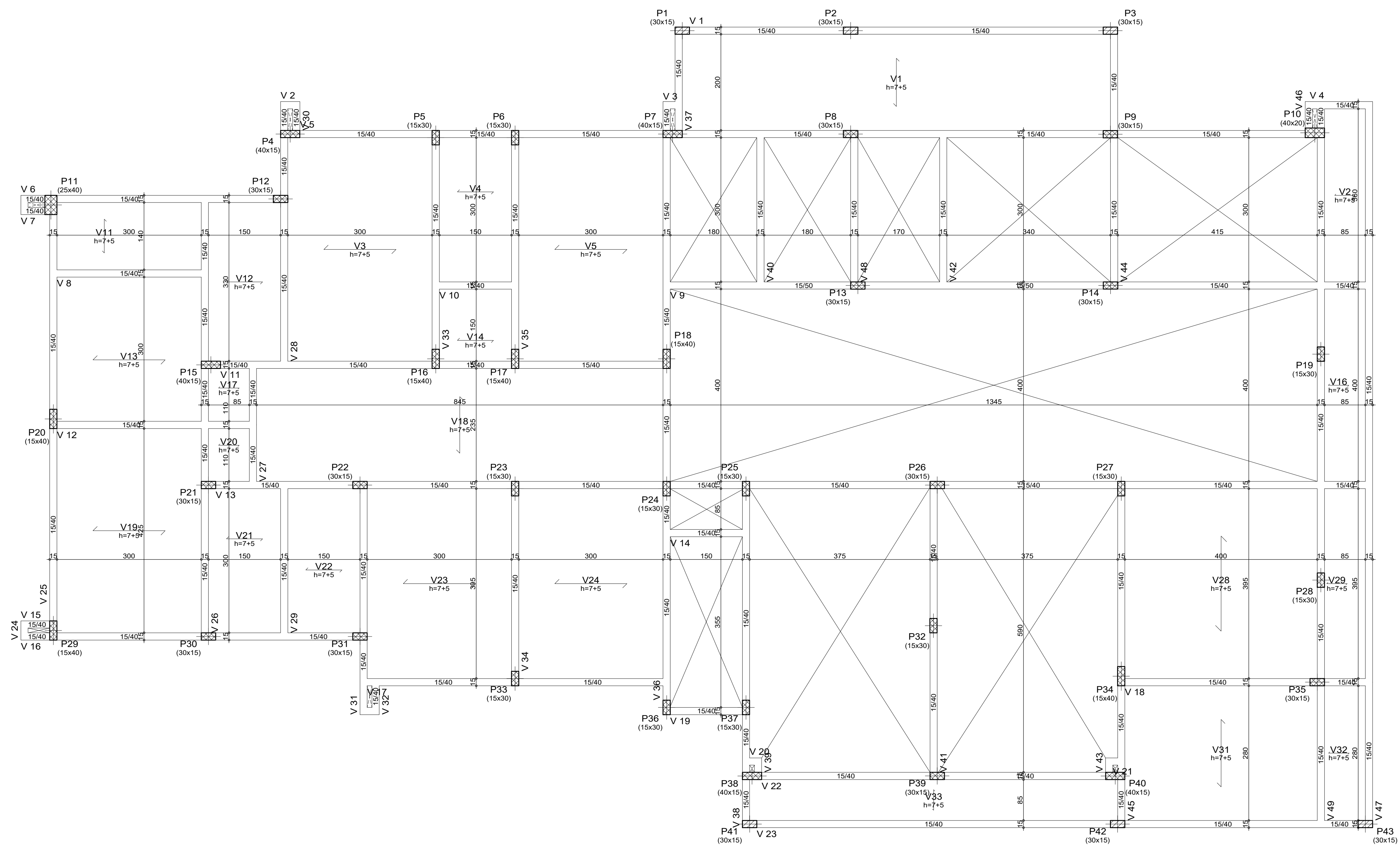


MUNICÍPIO DE IBIRUBÁ

CENTRO DE ACOLHIMENTO DE MENORES

| | |
|--|---------------------------------------|
| <p>OBRA USO: CENTRO DE ACOLHIMENTO DE MENORES LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnoldo Tonelli, lado ímpar - Bairro Hermany - IBIRUBÁ/RS</p> | <p>PLANTAS * FUNDAÇÕES</p> |
| <p>PROPRIETÁRIO MUNICÍPIO DE IBIRUBÁ</p> | <p>EXECUÇÃO</p> |
| <p>ÁREA 434,34 M²</p> | <p>DESENHO MAR/2023</p> |
| <p>FRANCHA 3/16</p> | |

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FORMA BALDRAME
ESC: 1.50

| Elemento | baldrame | | | |
|-------------------------------|-----------------------------|------------------------------|--------------------------|-------------|
| | Formas (m ²) | Superfície (m ²) | Volume (m ³) | Barras (kg) |
| Lajes de vigotas | - | 326.54 | 28.740 | 475 |
| Vigas | 151.80 | 37.38 | 16.180 | 1163 |
| Pilares | 24.78 | - | 1.430 | 370 |
| Total | - | 363.92 | 46.350 | 2008 |
| Índices (por m ²) | - | - | 0.127 | 5.48 |
| Superfície total: | 366.11 m² | | | |



MUNICÍPIO DE IBIRUBÁ

CENTRO DE ACOLHIMENTO DE MENORES

OBRA
USO: CENTRO DE ACOLHIMENTO DE MENORES
LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonelli, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

PLANTAS
* FORMA BALDRAME

PROPRIETÁRIO
MUNICÍPIO DE IBIRUBÁ

DESENHO
MAR/2023

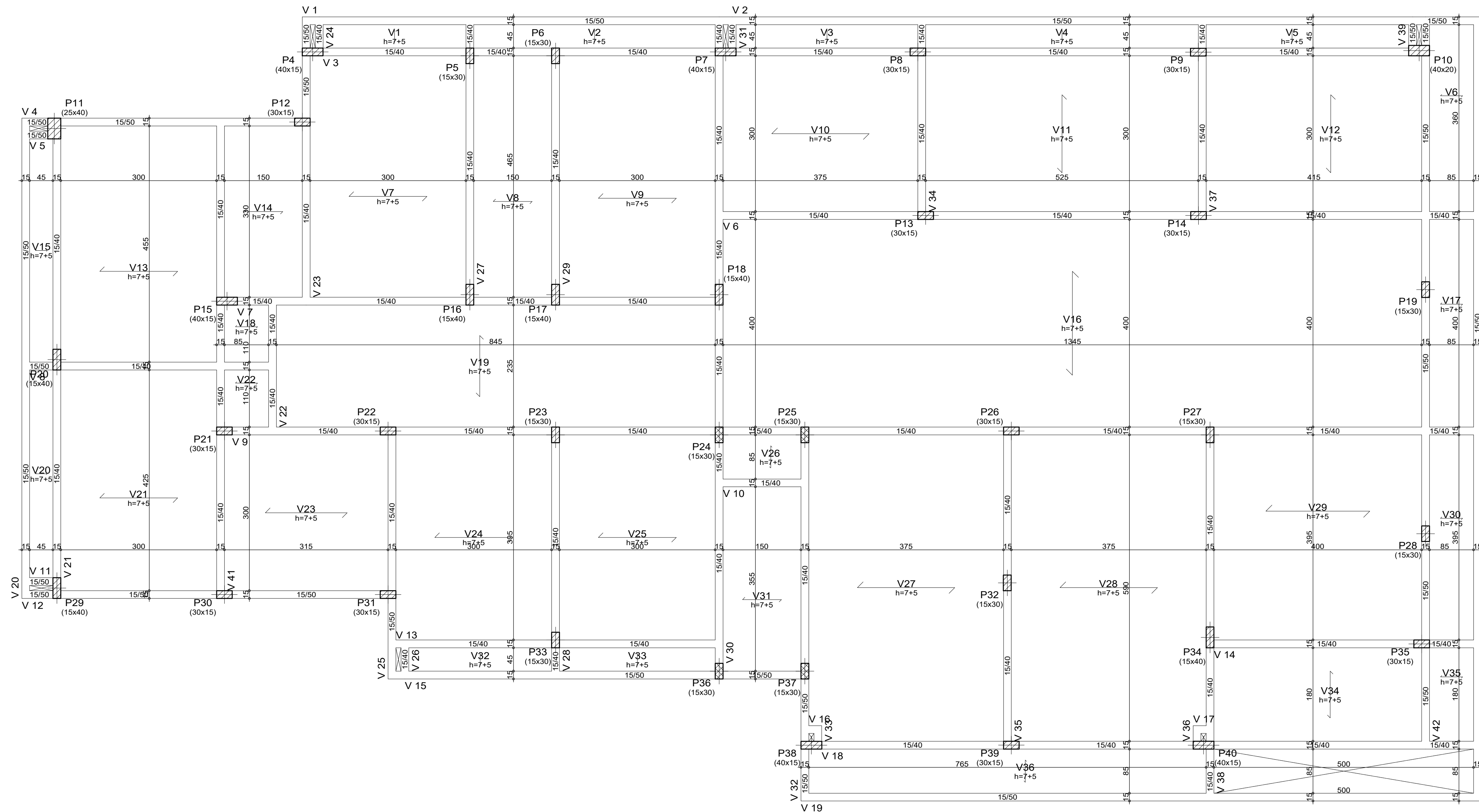
EXECUÇÃO
FRANCHA
4/16

ÁREA
434,34 M²

DESENHO
MAR/2023

EXECUÇÃO
FRANCHA
4/16

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FORMACOBERTURA
 ESC: 1:50

| Elemento | cobertura | | |
|---|--------------------------|------------------------------|--------------------------------------|
| | Fôrmas (m ²) | Superfície (m ²) | Volume Barras (m ³) (kg) |
| Lajes de vigotas | - | 321,26 | 28,270 494 |
| Vigas | 179,42 | 39,90 | 18,360 1090 |
| Pilares | 96,33 | - | 5,110 530 |
| Total | - | 361,16 | 51,740 2114 |
| Índices (por m ²) | - | - | 0,143 5,82 |
| Superfície total: 363,08 m ² | | | |



MUNICÍPIO DE IBIRUBÁ

CENTRO DE ACOLHIMENTO DE MENORES

OBRA
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 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tomasi, lado ímpar - Bairro Hermary - IBIRUBÁ/RS

PLANTAS
 * FORMA COBERTURA

PROPRIETÁRIO
 MUNICÍPIO DE IBIRUBÁ

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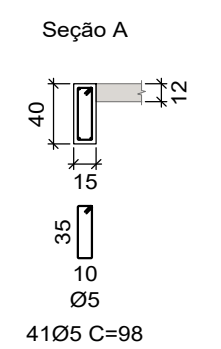
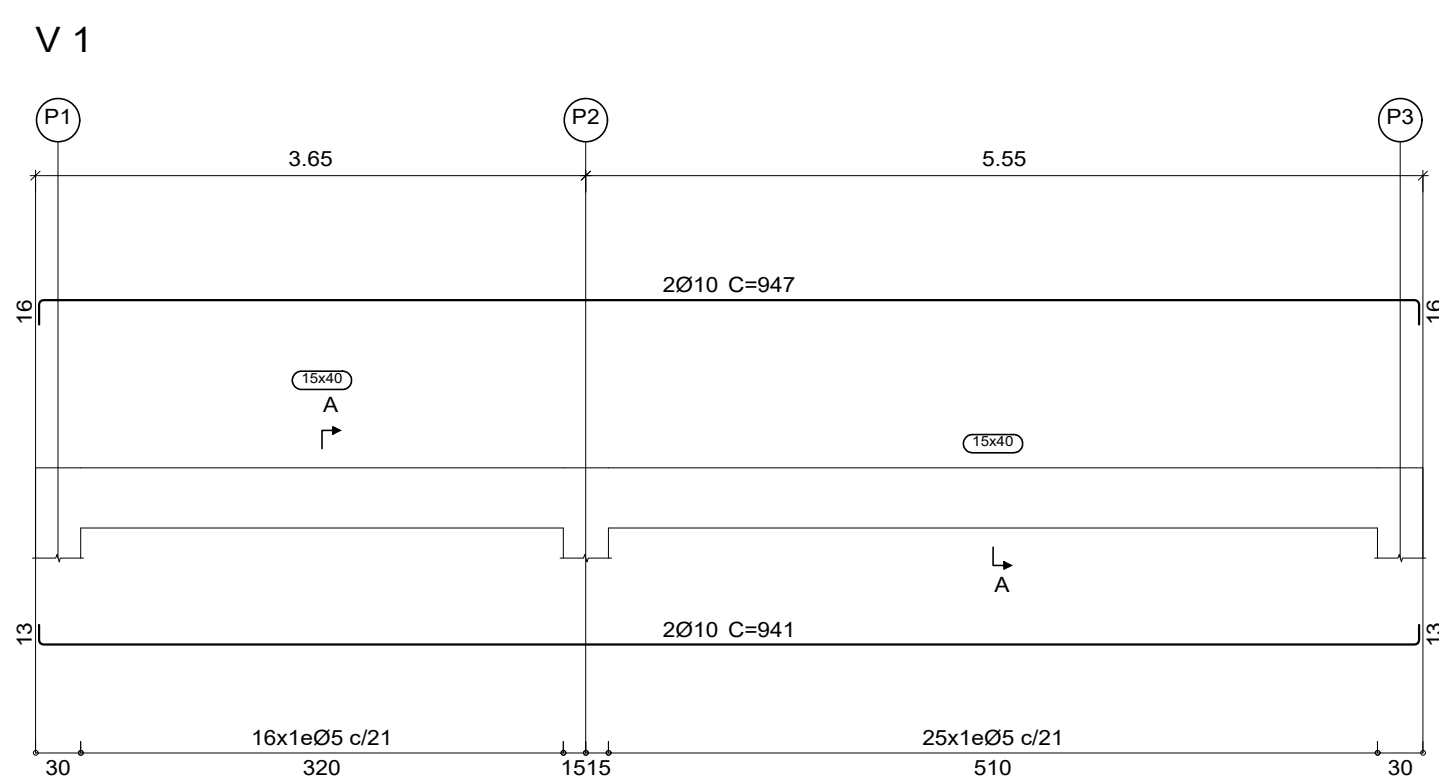
EXECUÇÃO

ÁREA
 434,34 M²

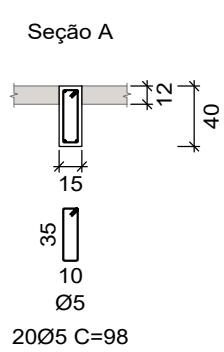
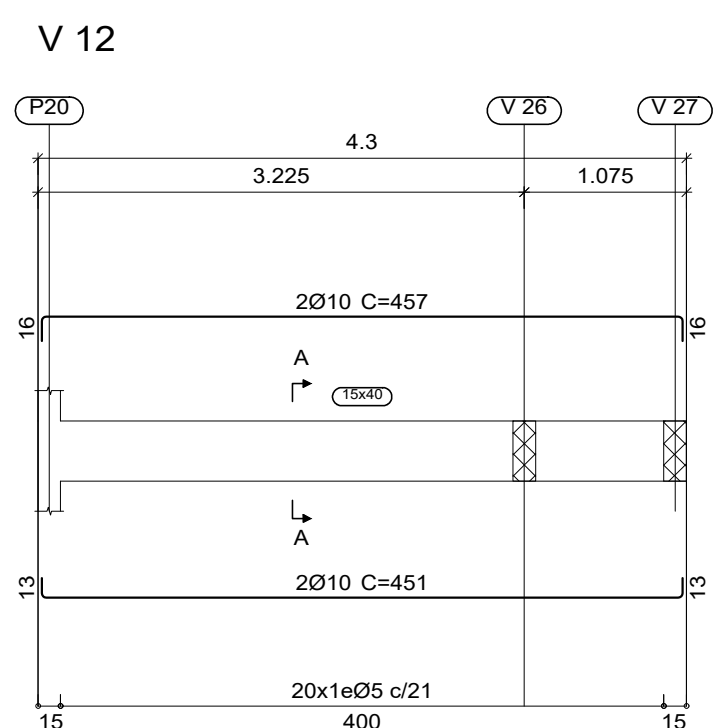
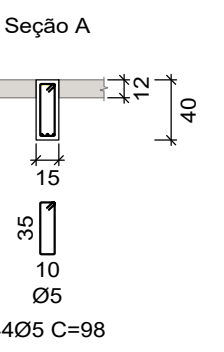
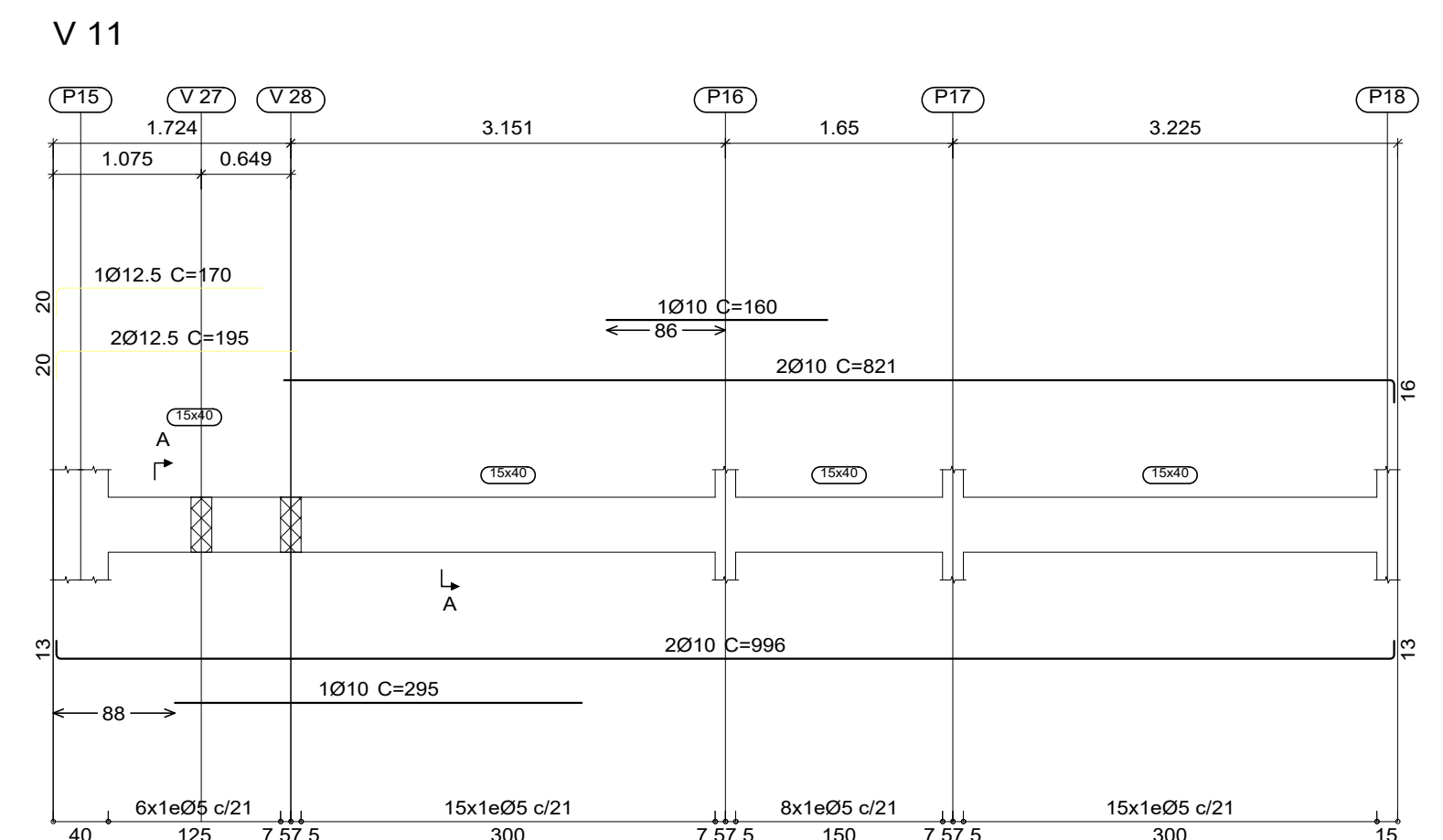
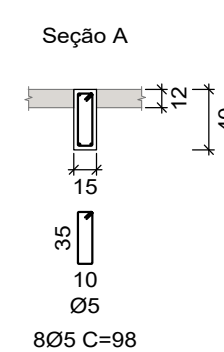
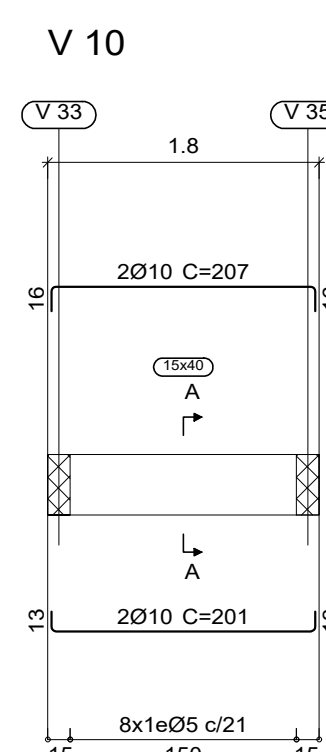
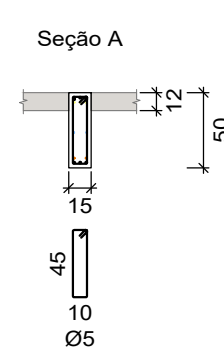
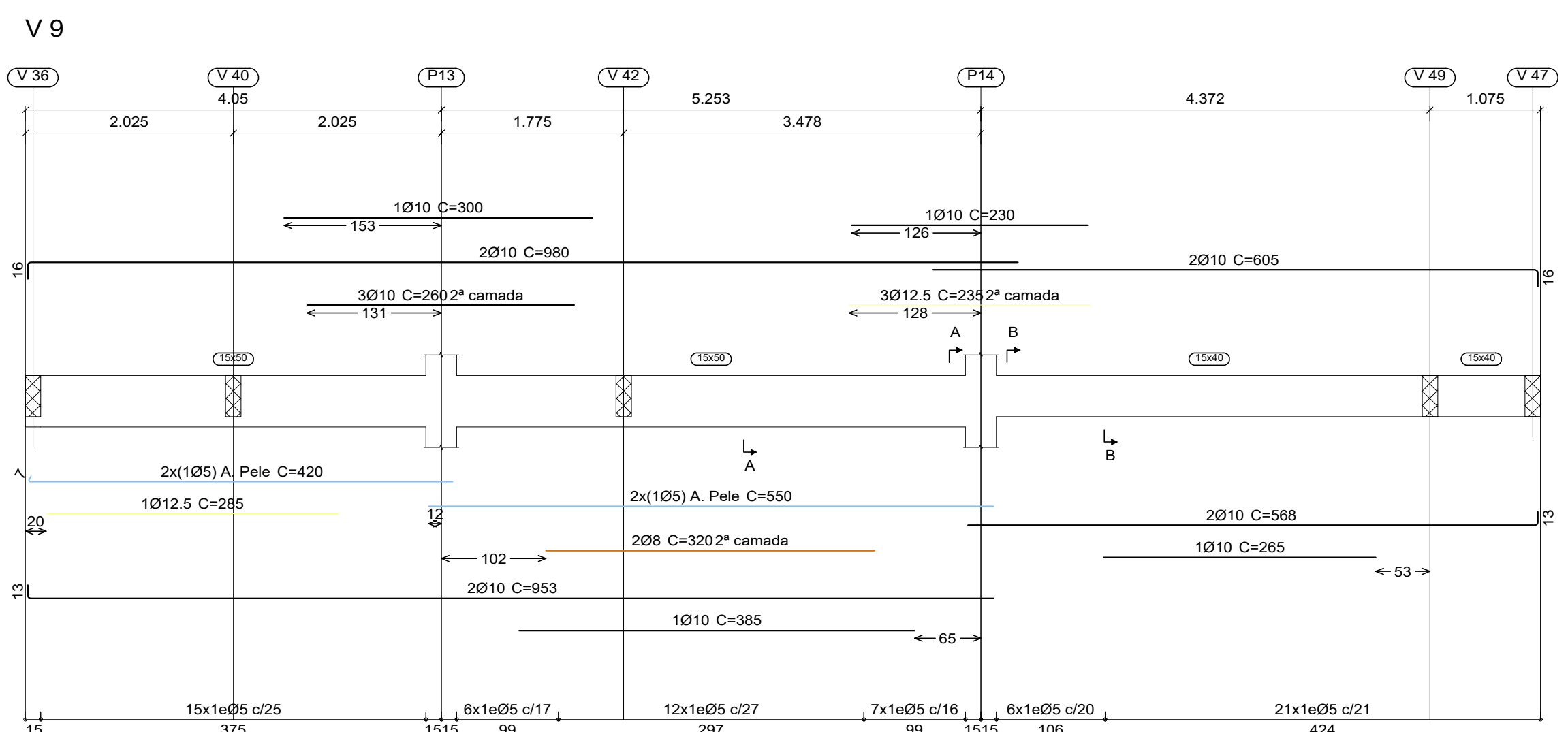
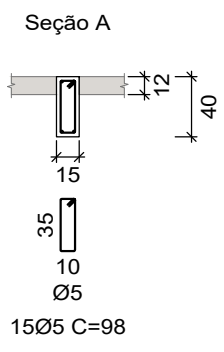
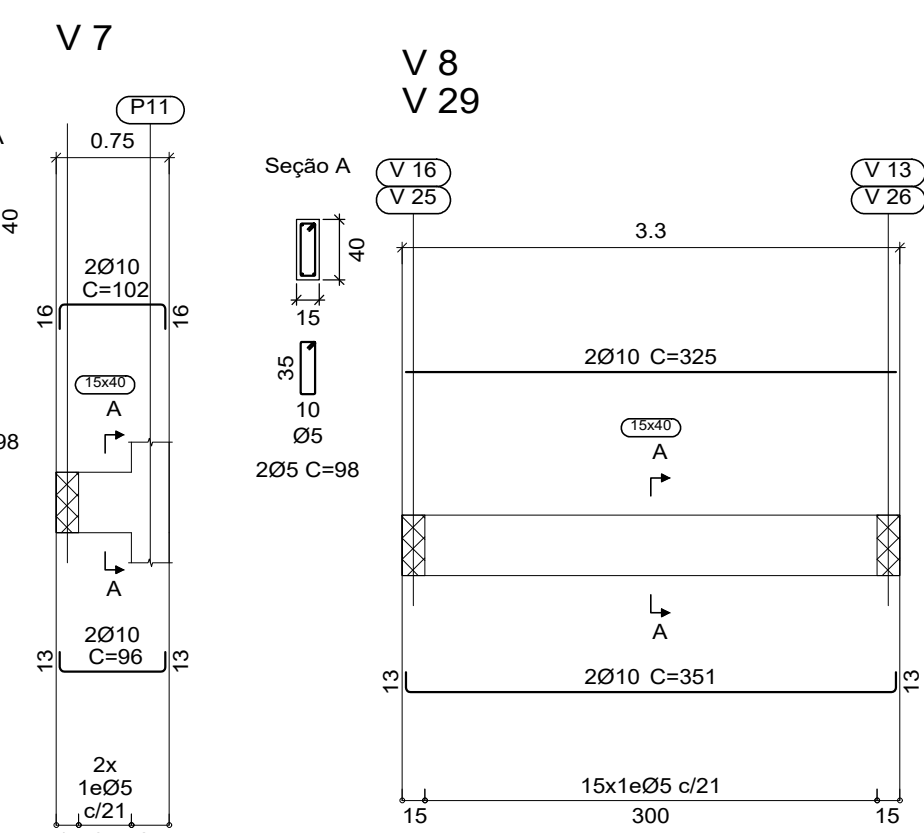
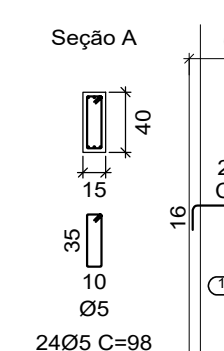
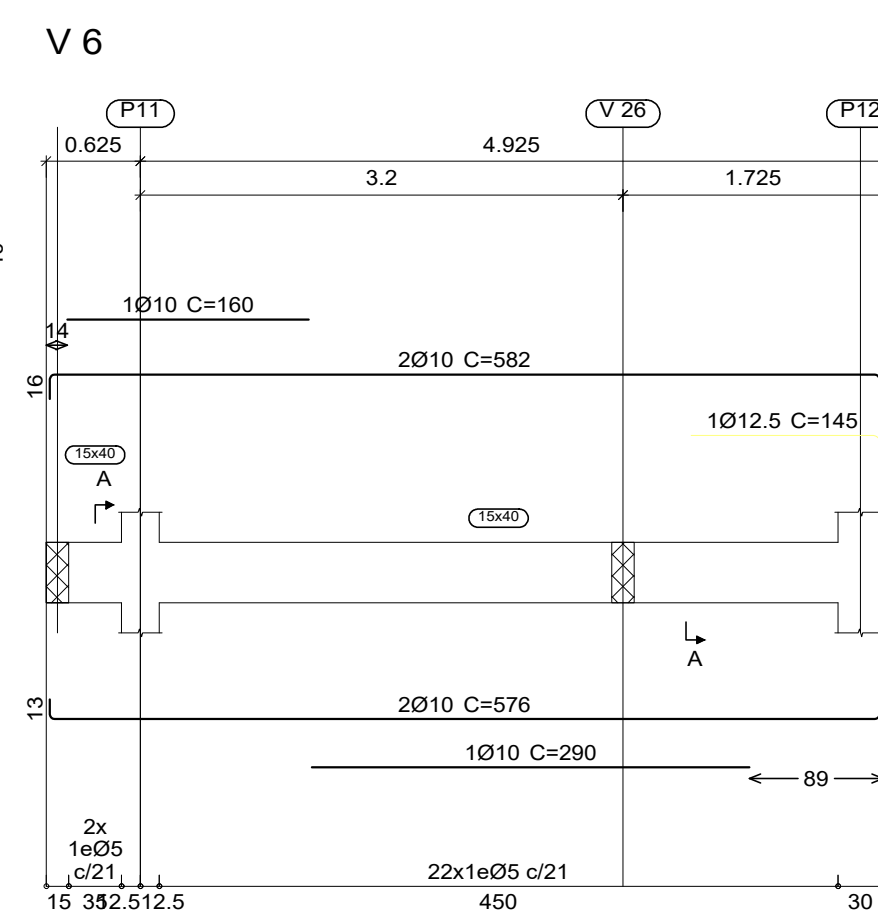
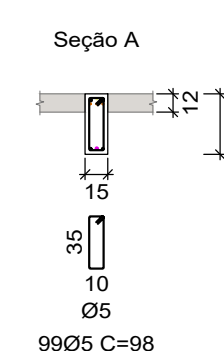
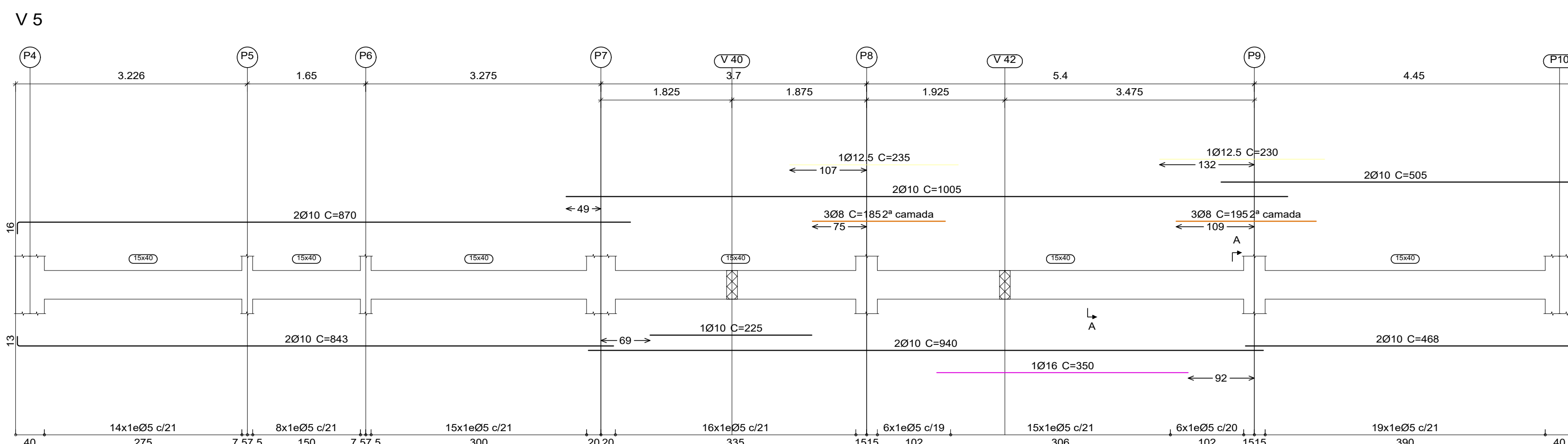
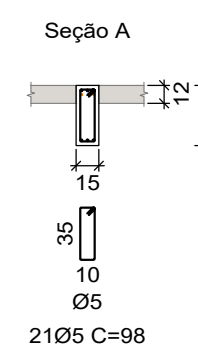
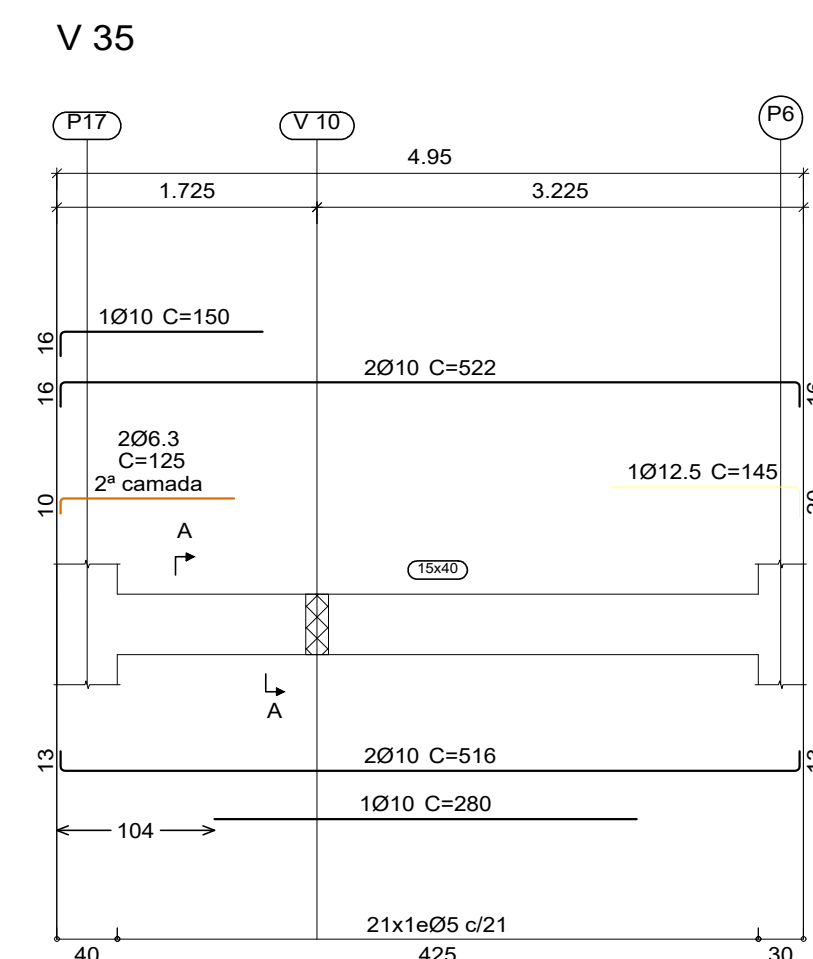
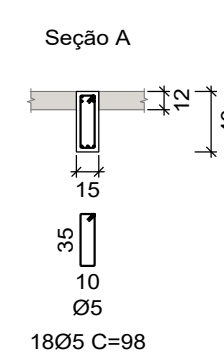
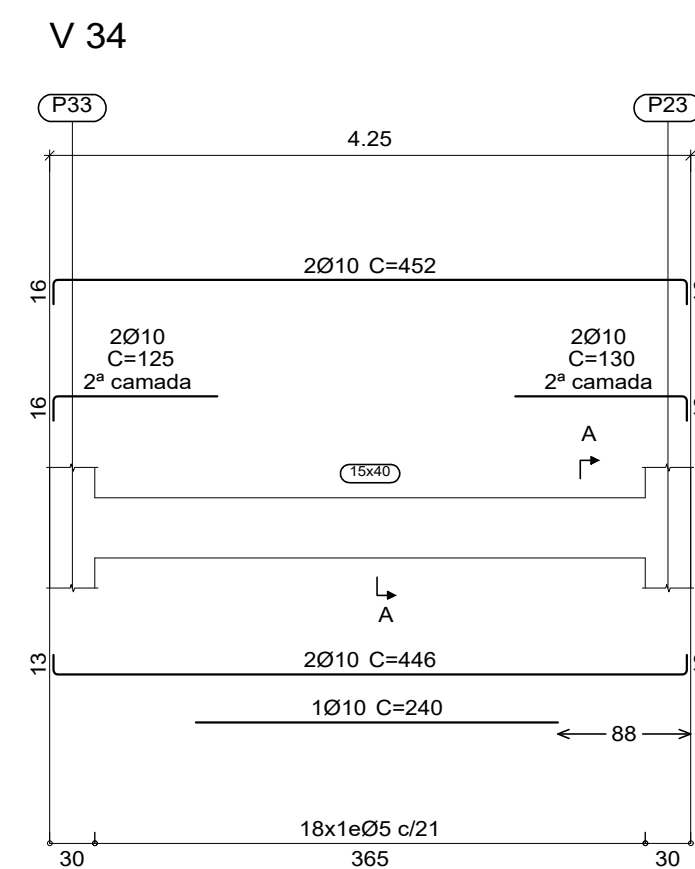
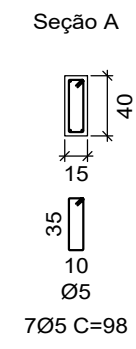
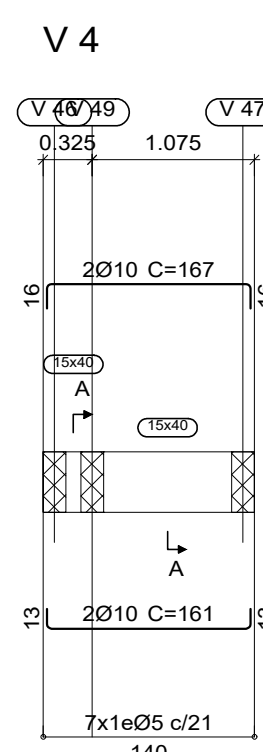
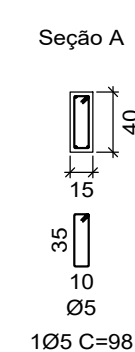
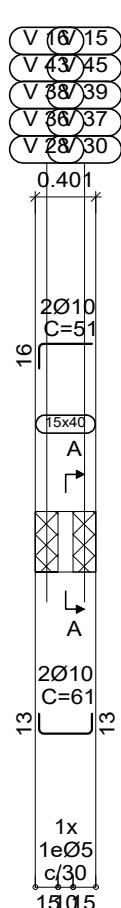
DESENHO
 MAR/2023

FRANCHA
 5/16

baldrame
 Desenho de vigas
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60
 Escala vigas 1:50
 Escala seções 1:50
 Escala aberturas 1:50



V 2
 V 3
 V 20
 V 21
 V 24



MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

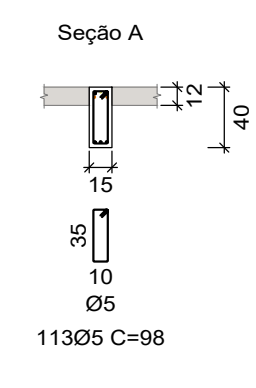
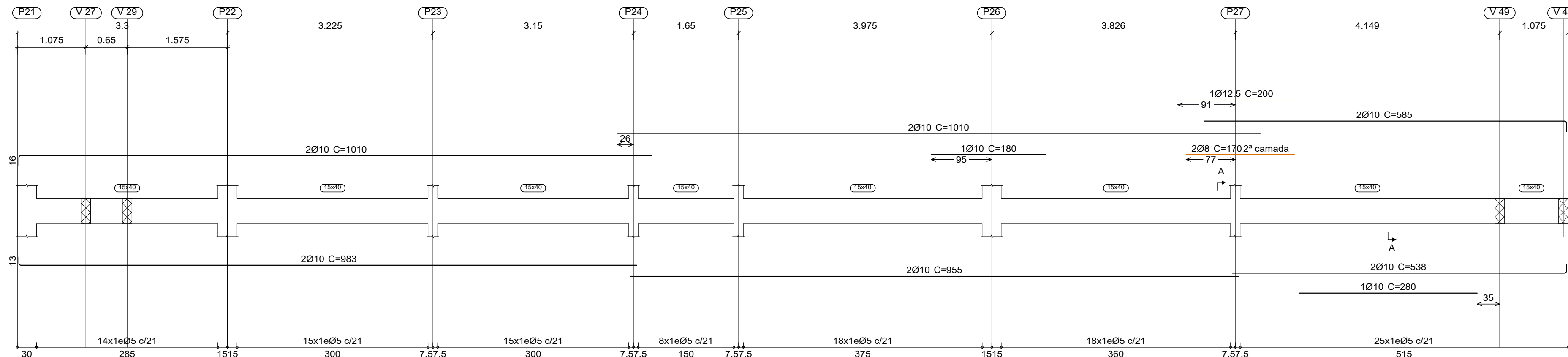
OBRA: USO: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnoldo Tonini, lado ímpar - Bairro Hermery - IBIRUBÁ/RS

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: MAR/2023
 EXECUÇÃO: PRANCHA 7/16

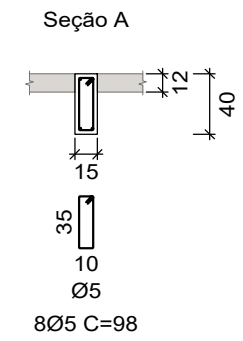
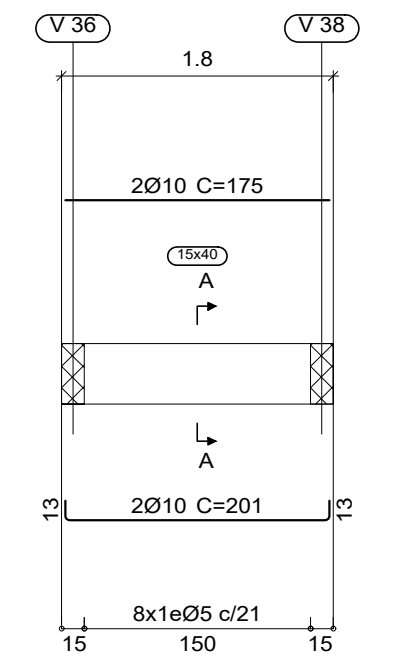
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baldrame
 Desenho de vigas
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60
 Escala vigas 1:50
 Escala seções 1:50

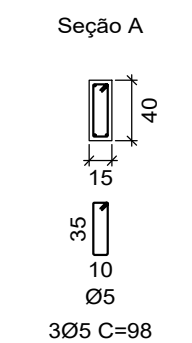
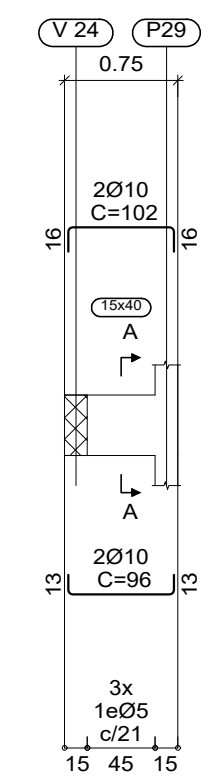
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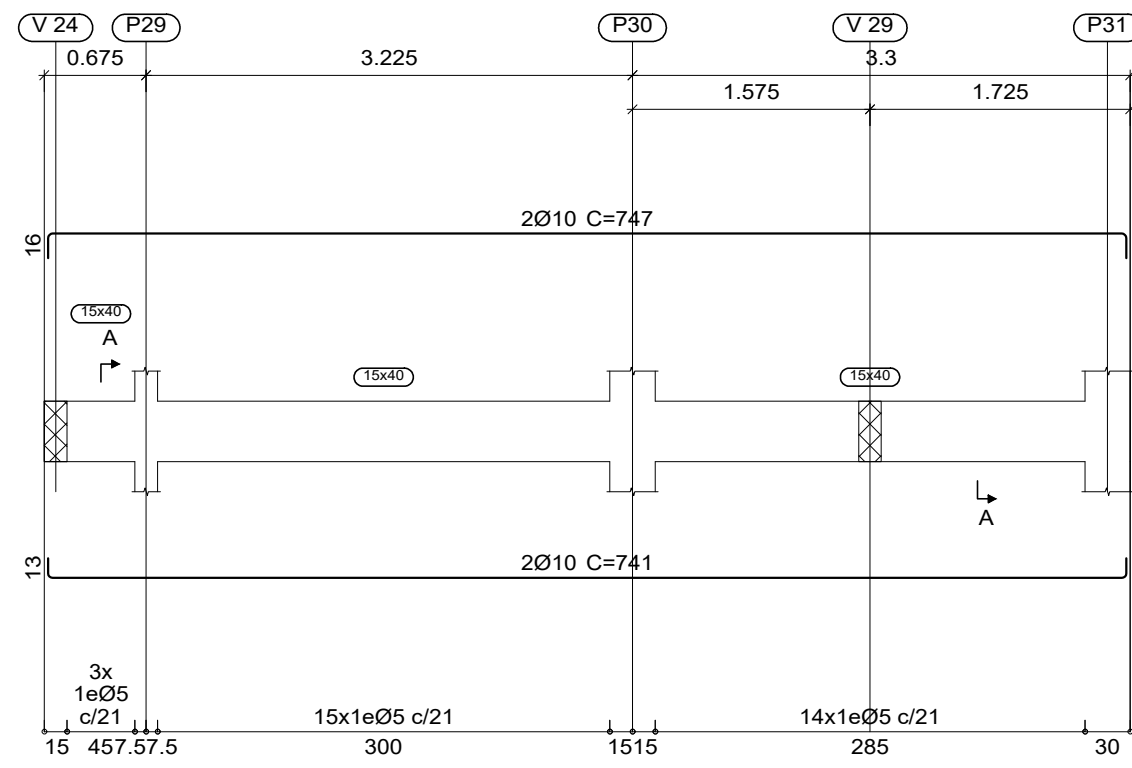
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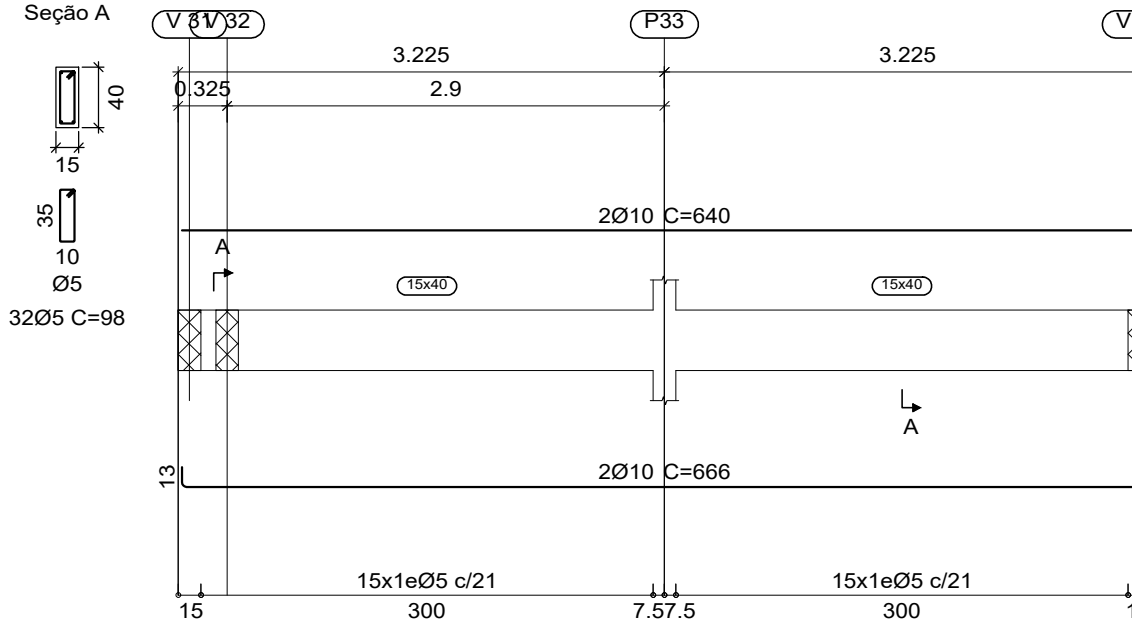
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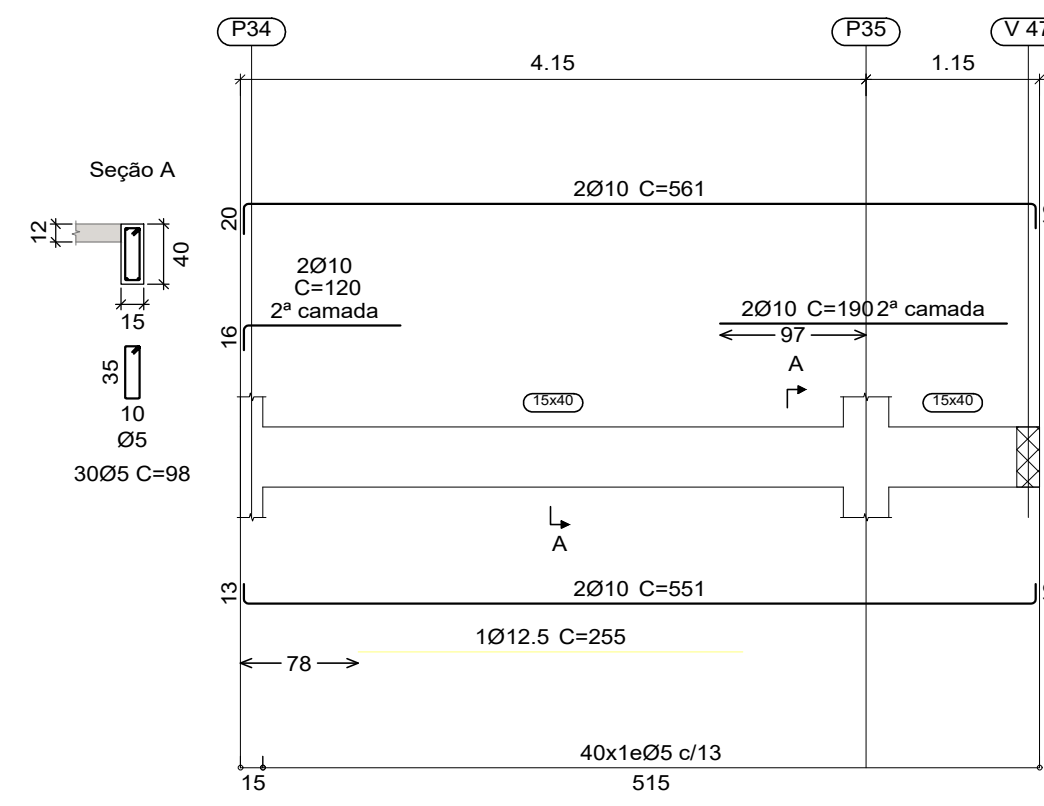
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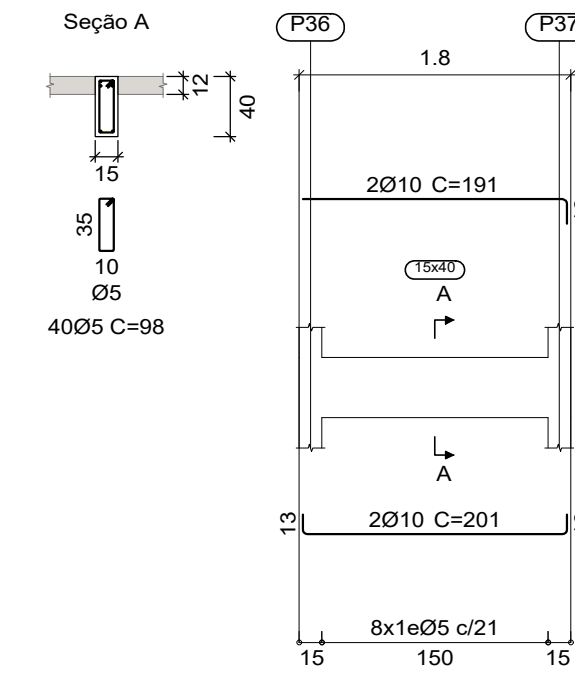
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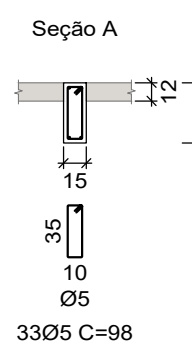
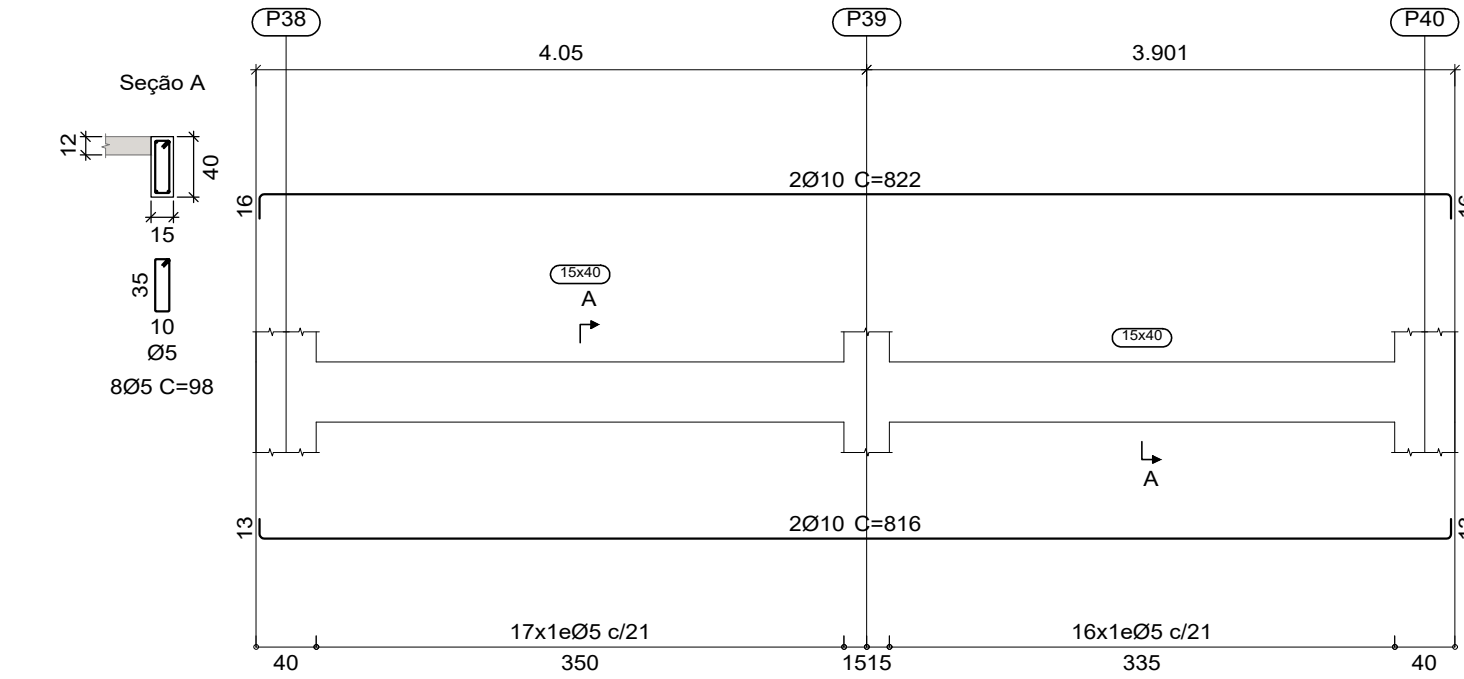
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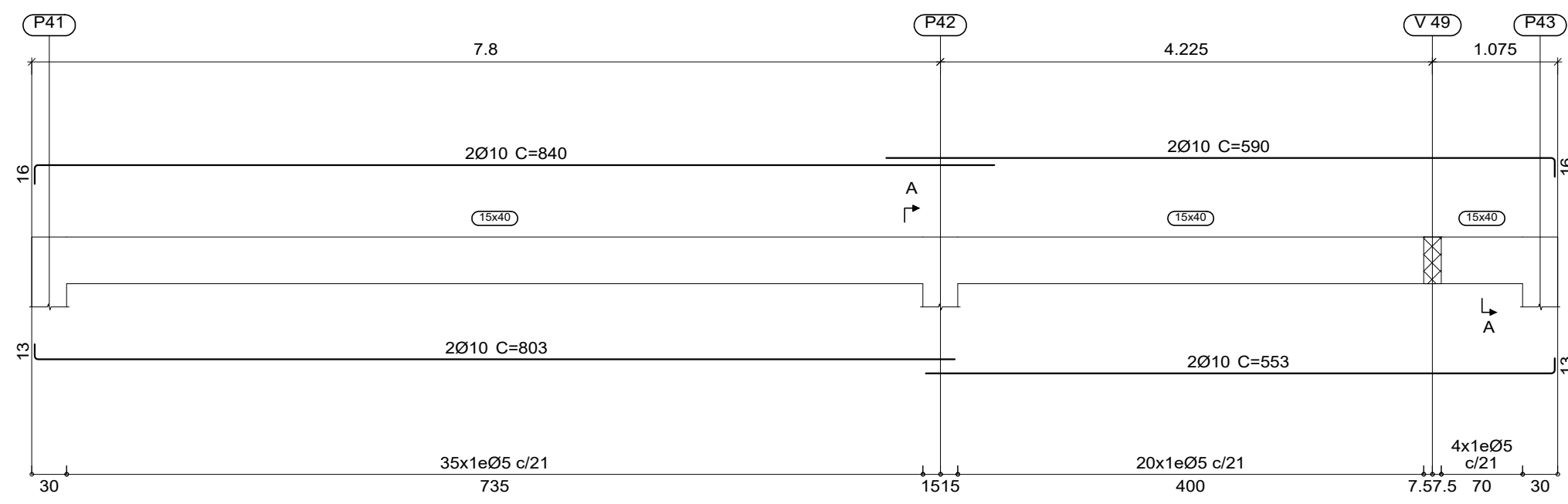
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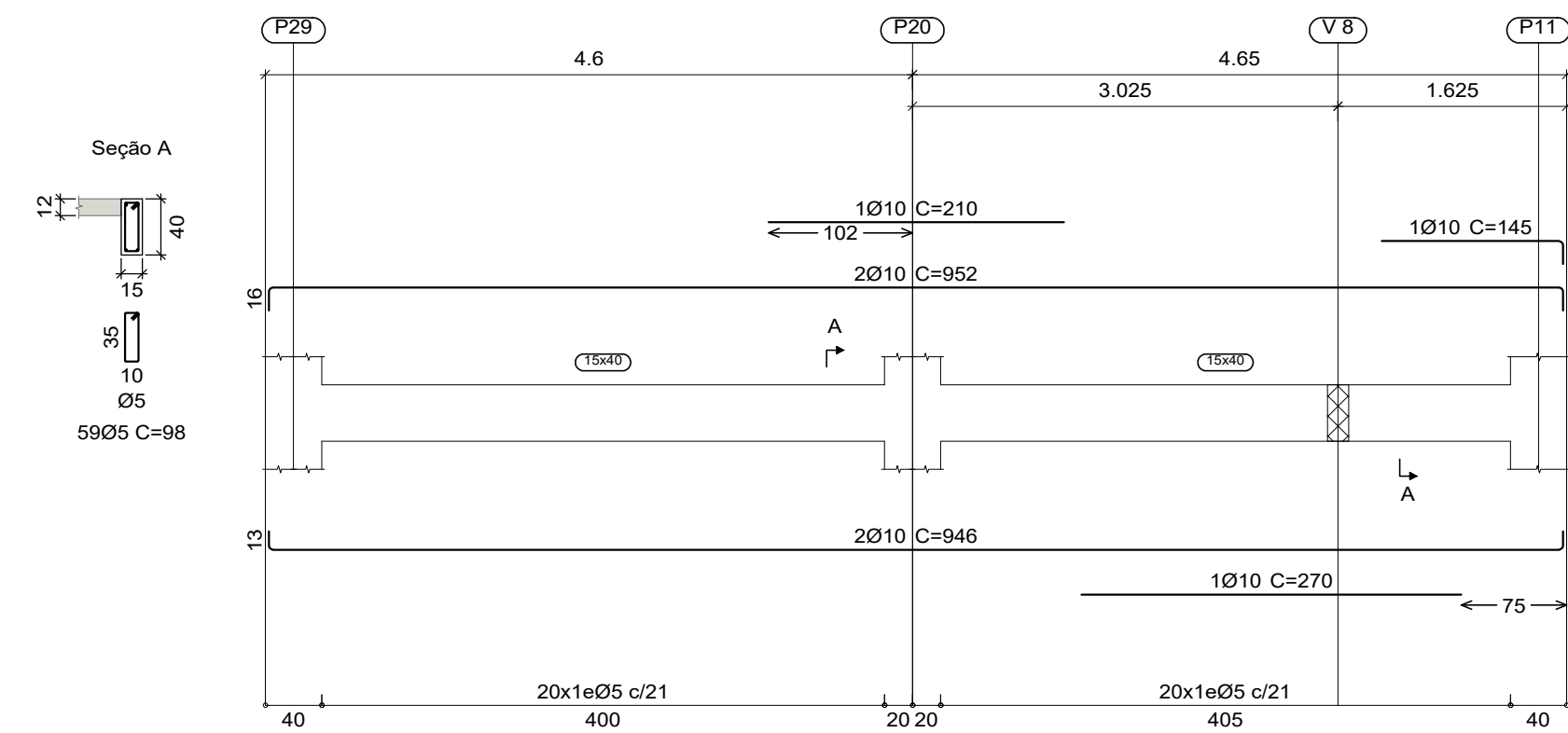
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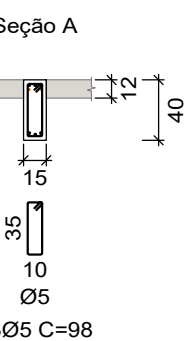
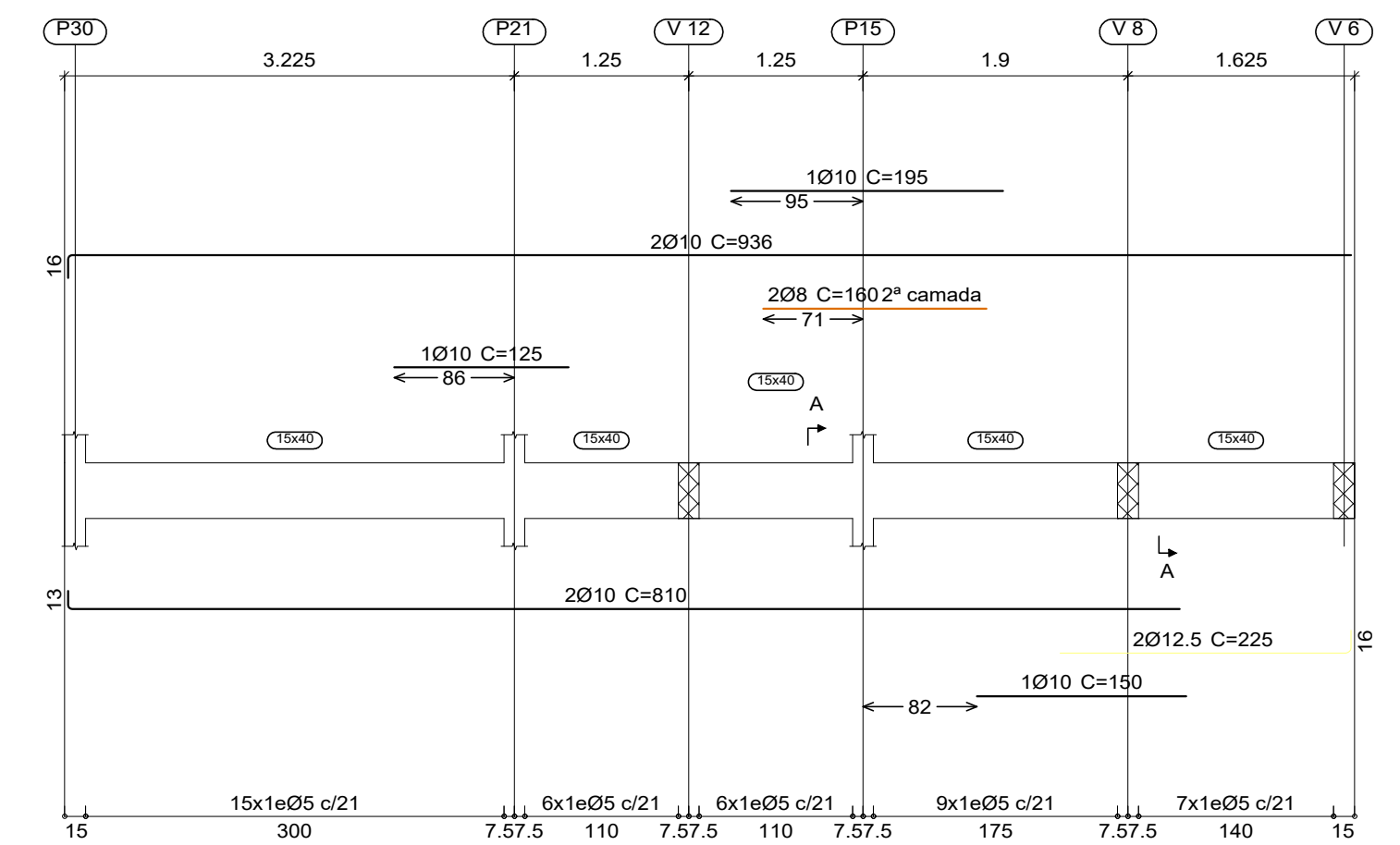
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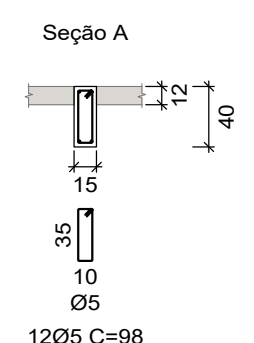
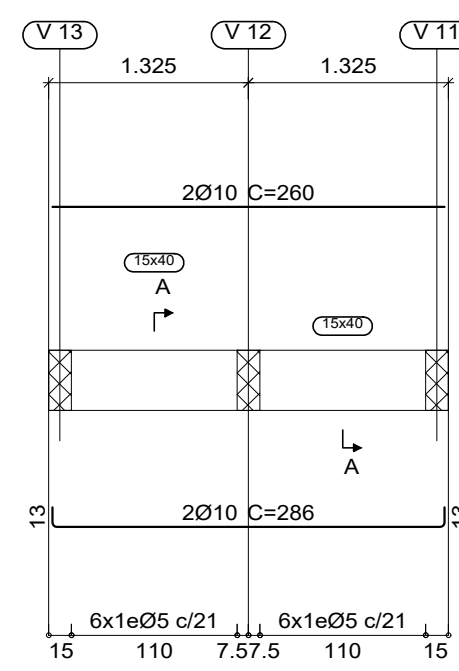
V 25



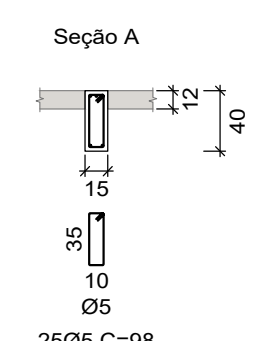
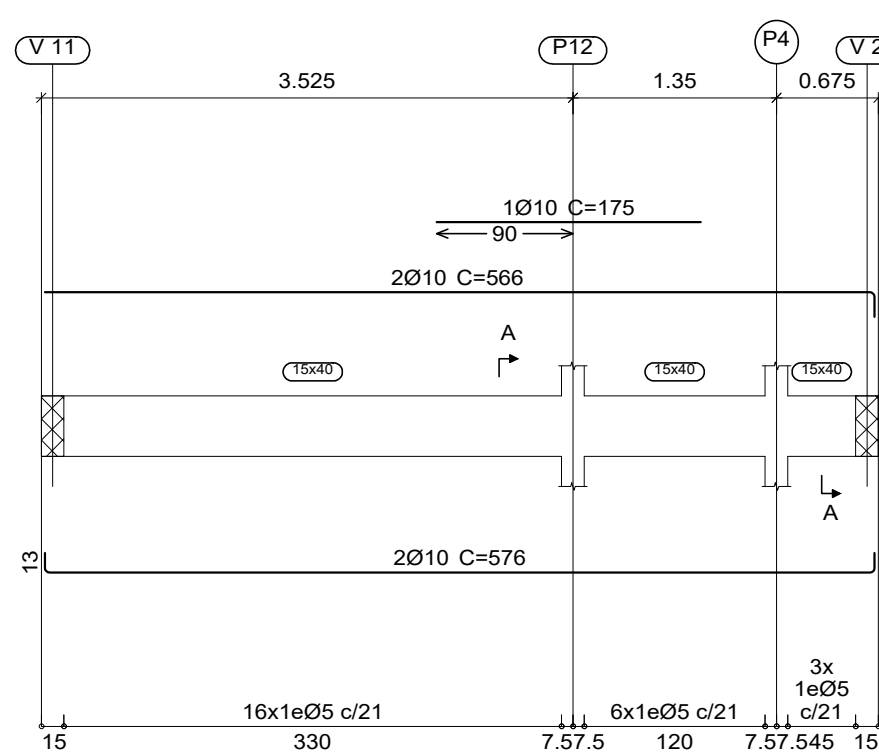
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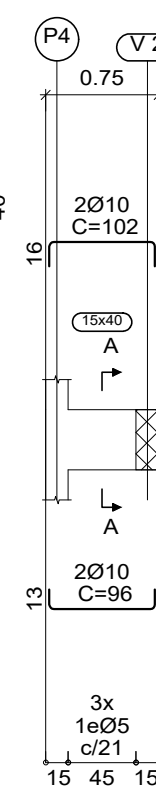
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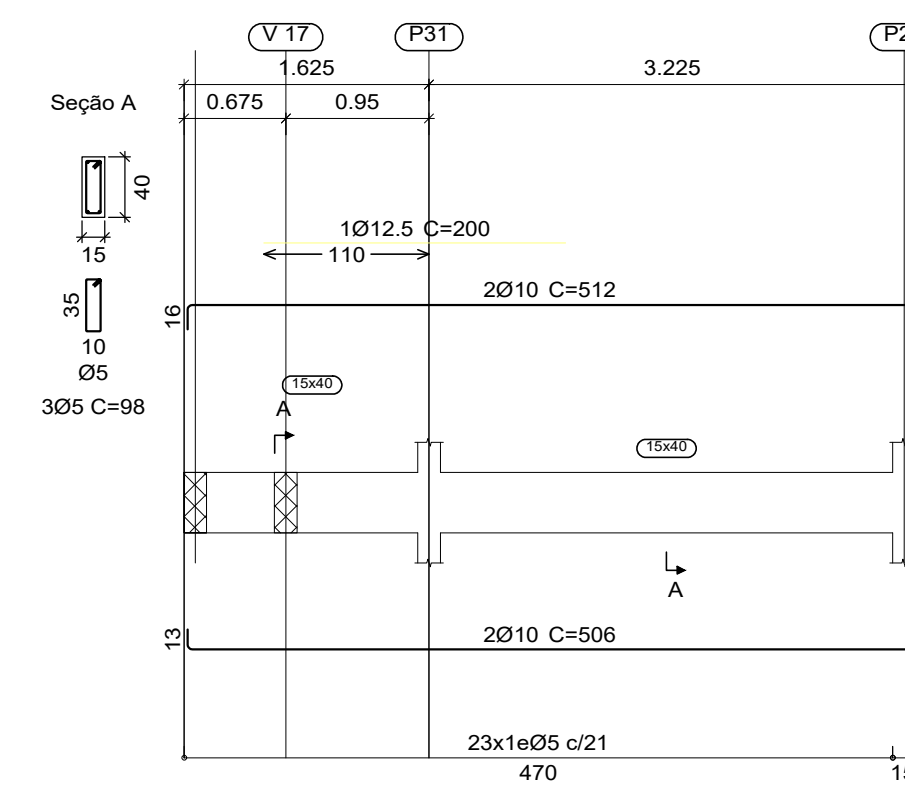
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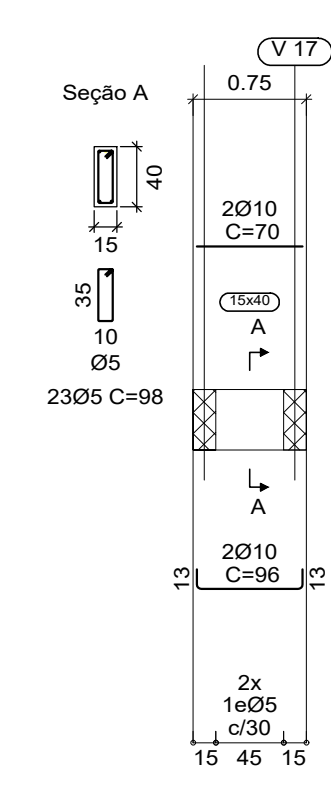
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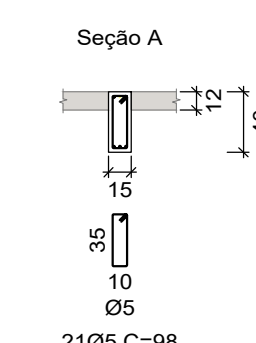
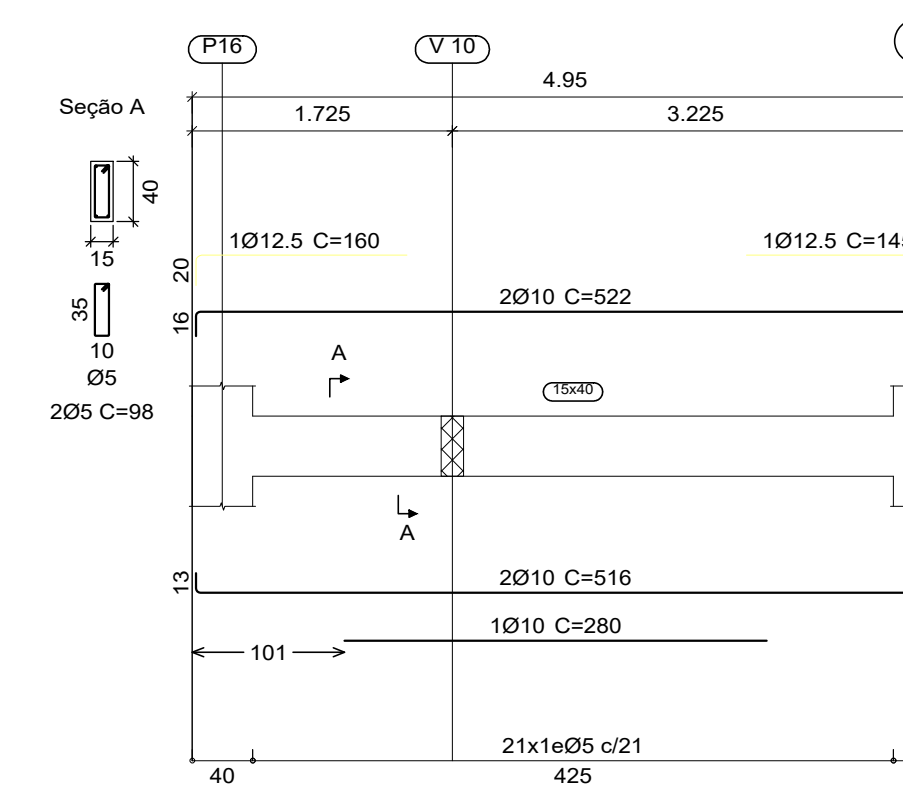
V 31



V 32



V 33



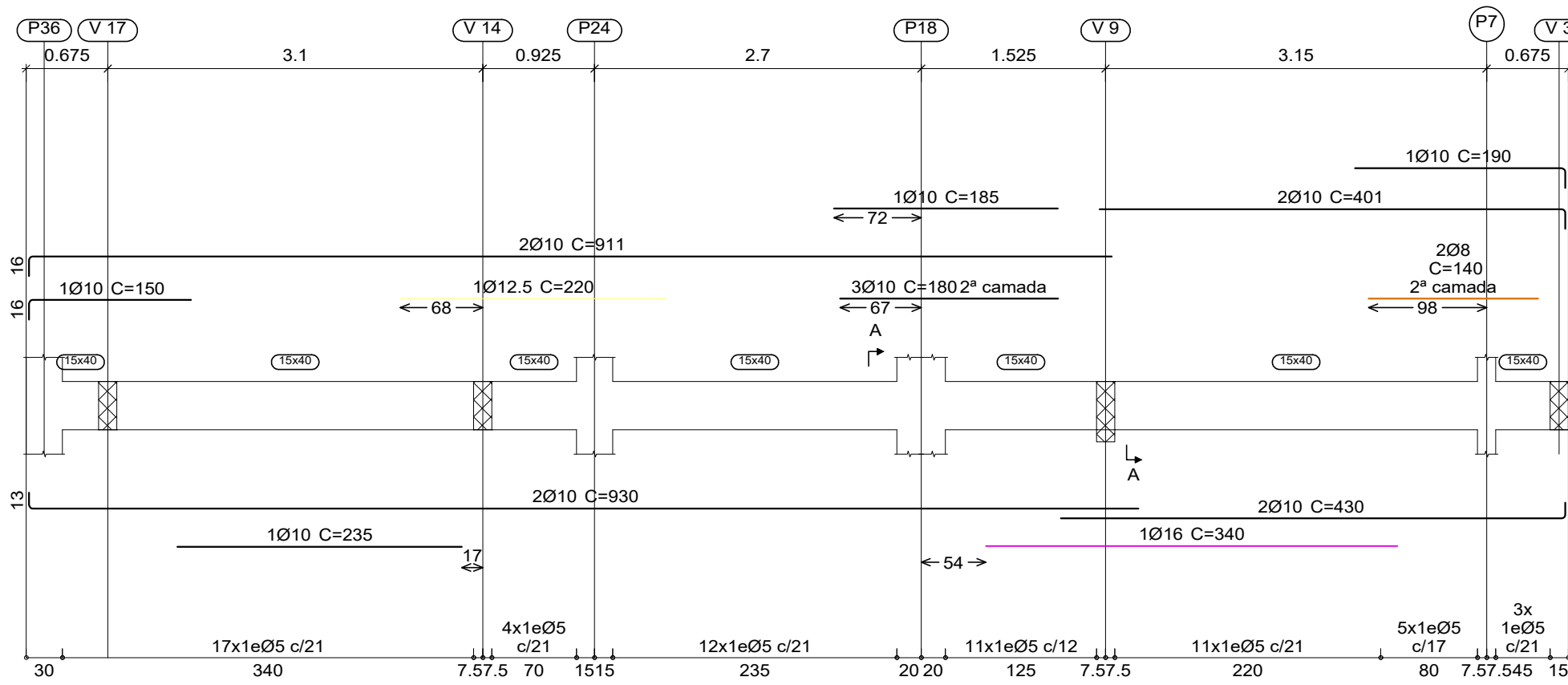
MUNICÍPIO DE IBIRUBÁ
CENTRO DE ACOLHIMENTO DE MENORES

OBRA: USO CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonali, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

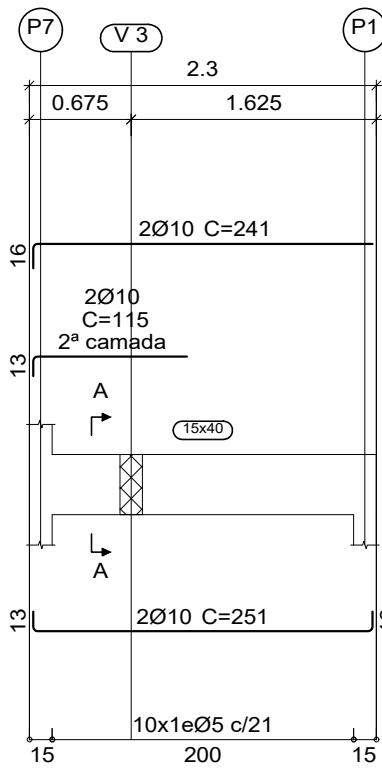
PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: MAR/2023
 EXECUÇÃO: FRANCHA 8/16

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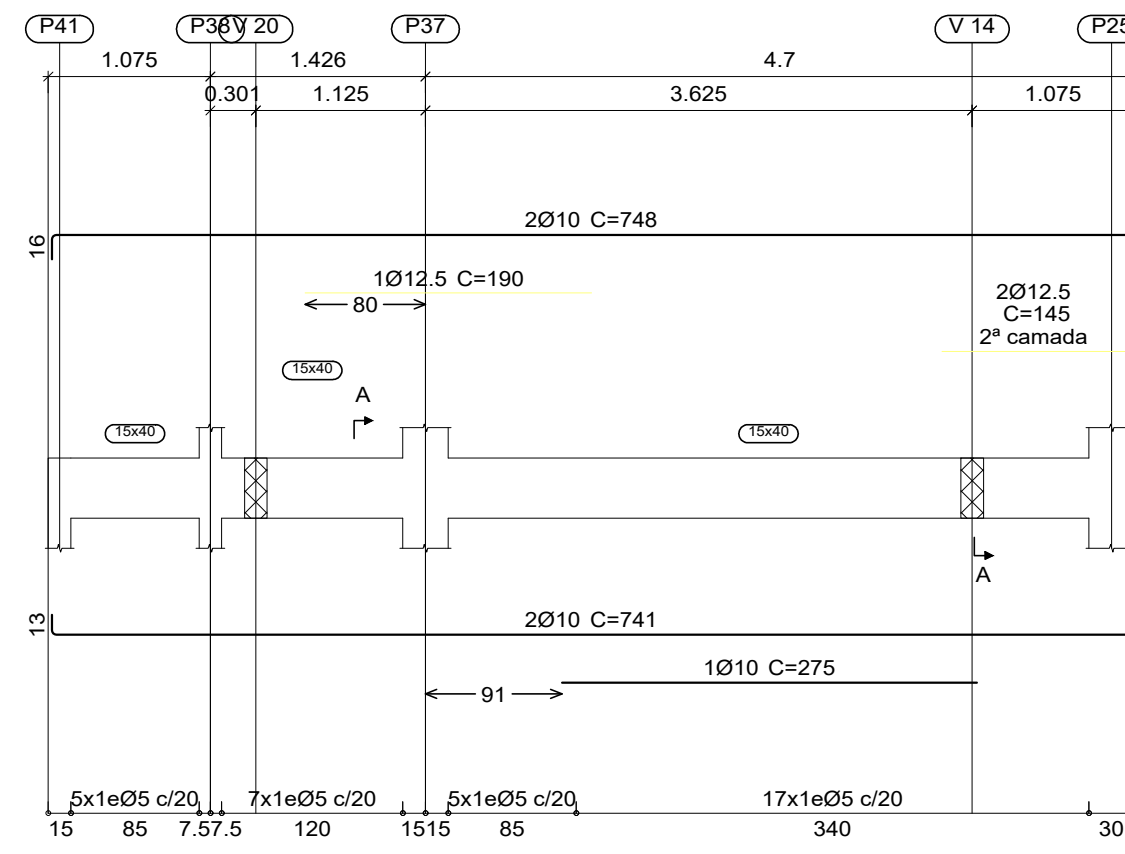
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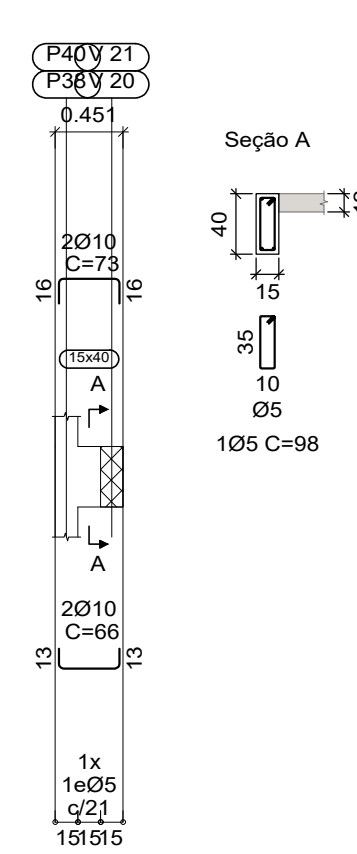
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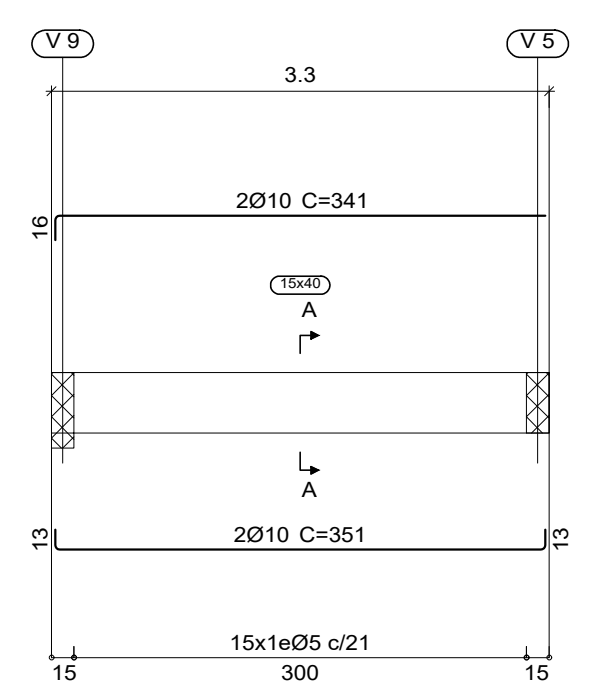
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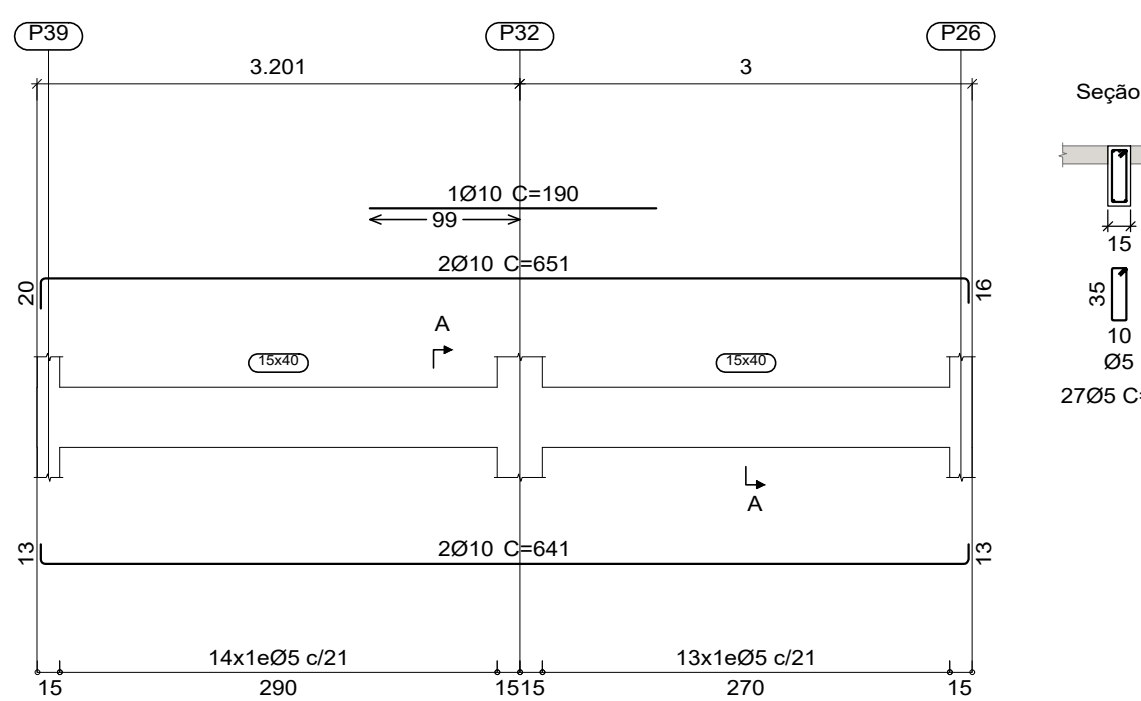
V 39
V 43



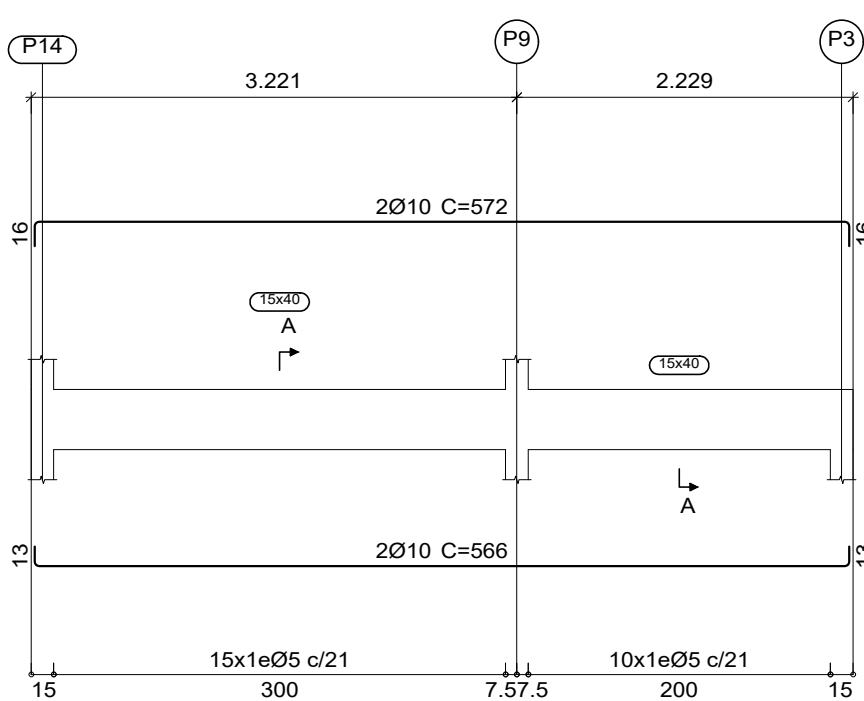
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V 42



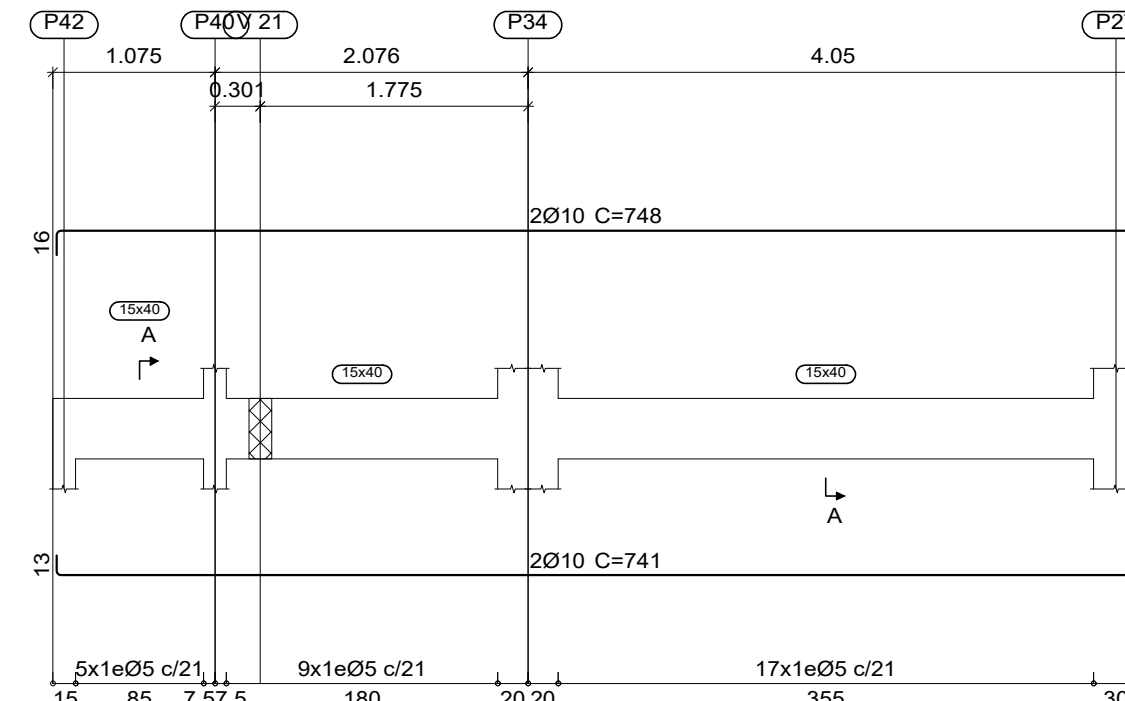
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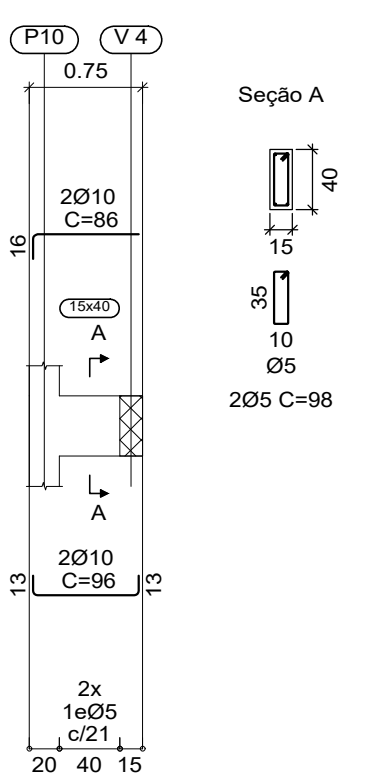
V 44



V 45

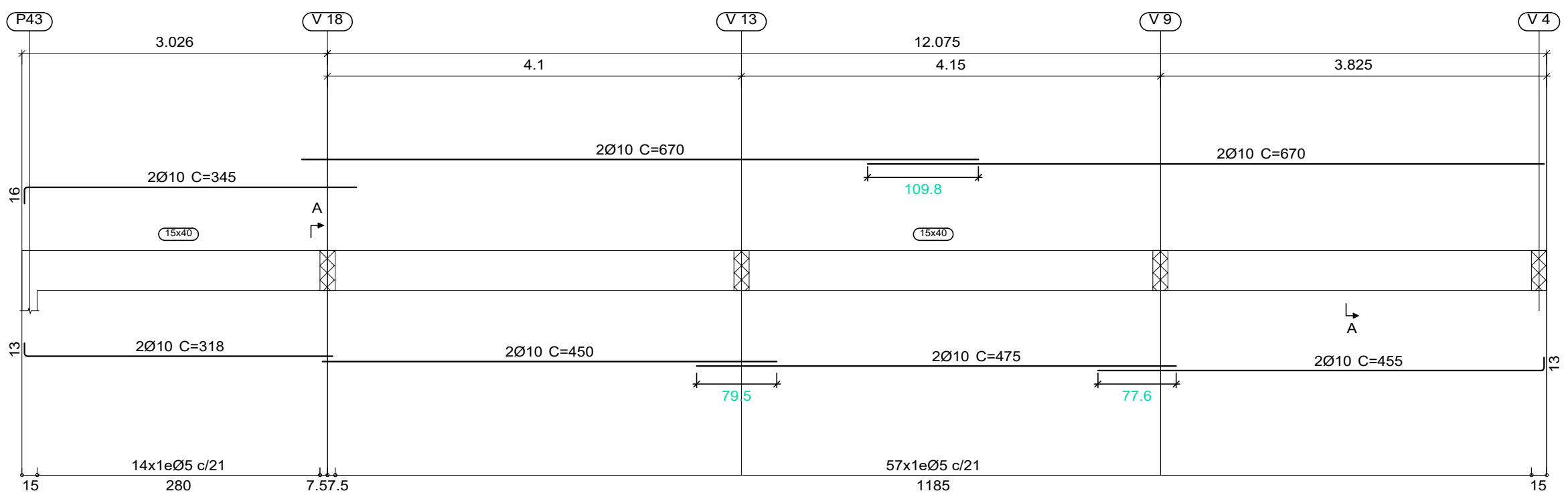


V 46

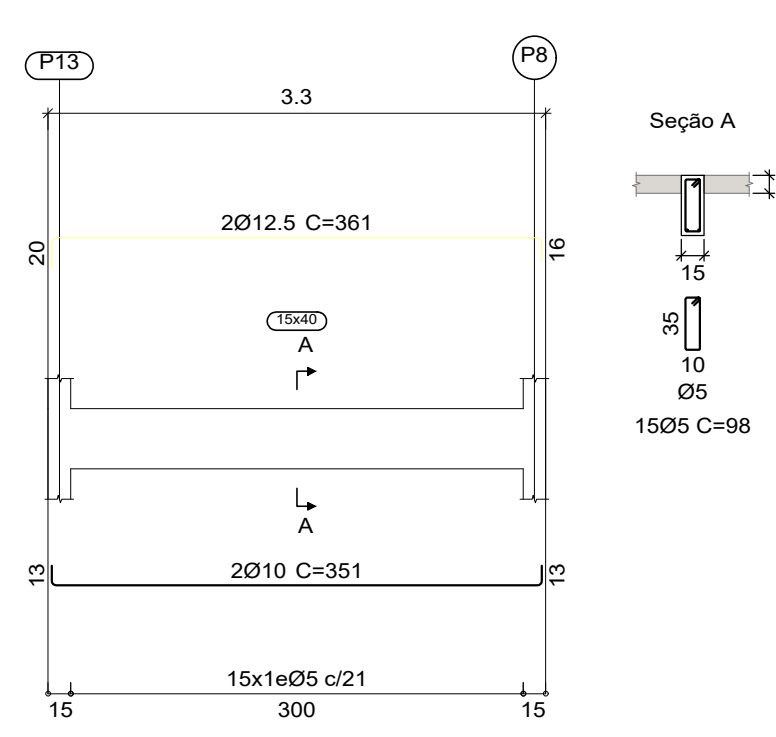


baldrame
 Desenho de vigas
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60
 Escala vigas 1:50
 Escala seções 1:50
 Escala aberturas 1:50

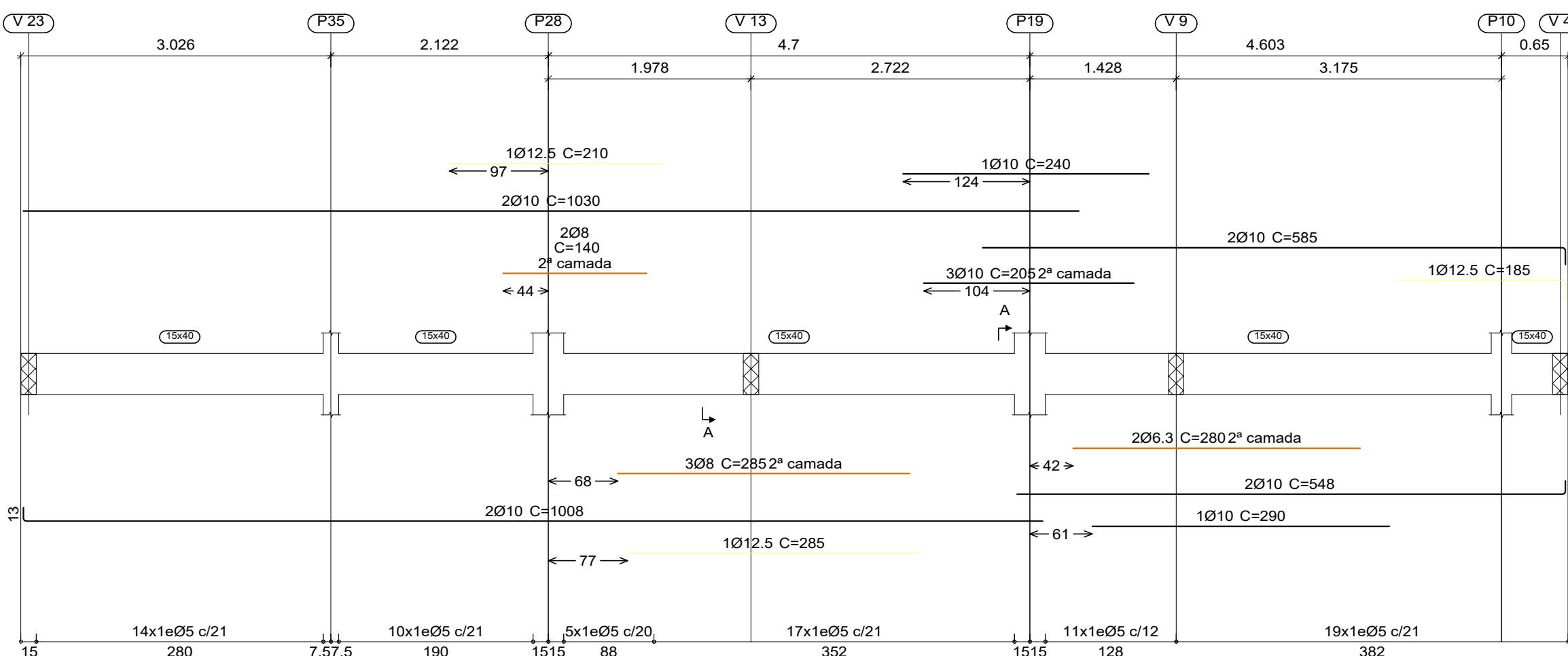
V 47



V 48



V 49



| Resumo Aço | Comp. total (m) | Peso+10% (kg) | Total |
|--------------|-----------------|---------------|-------------|
| CA-50 | Ø6.3 | 8.1 | 2 |
| | Ø8 | 38.6 | 17 |
| | Ø10 | 1255.2 | 851 |
| | Ø12.5 | 58.2 | 62 |
| | Ø16 | 6.9 | 12 |
| CA-60 | Ø5 | 1269.1 | 219 |
| Total | | | 1163 |

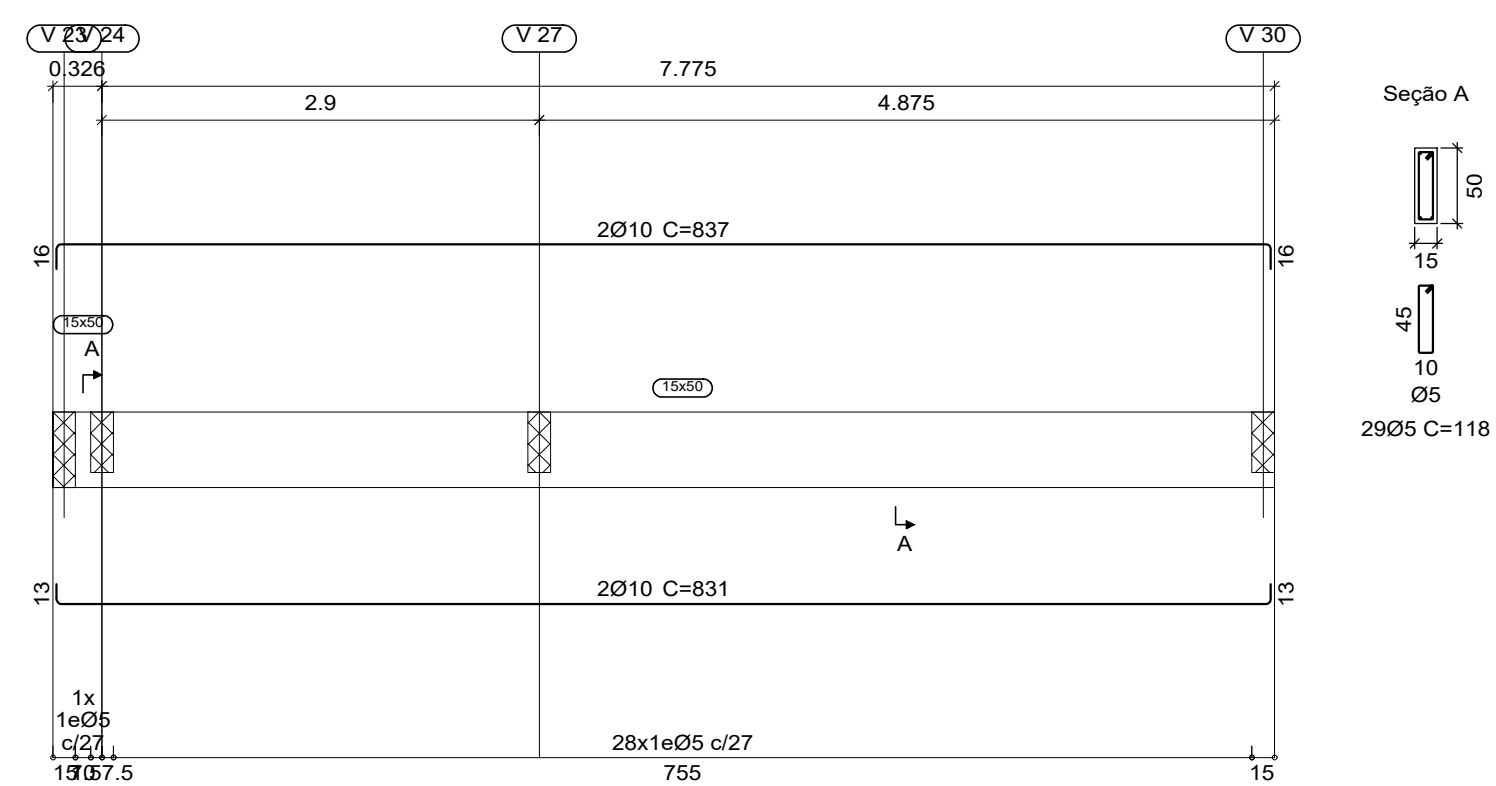
MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

OBRA: USO CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Torres, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

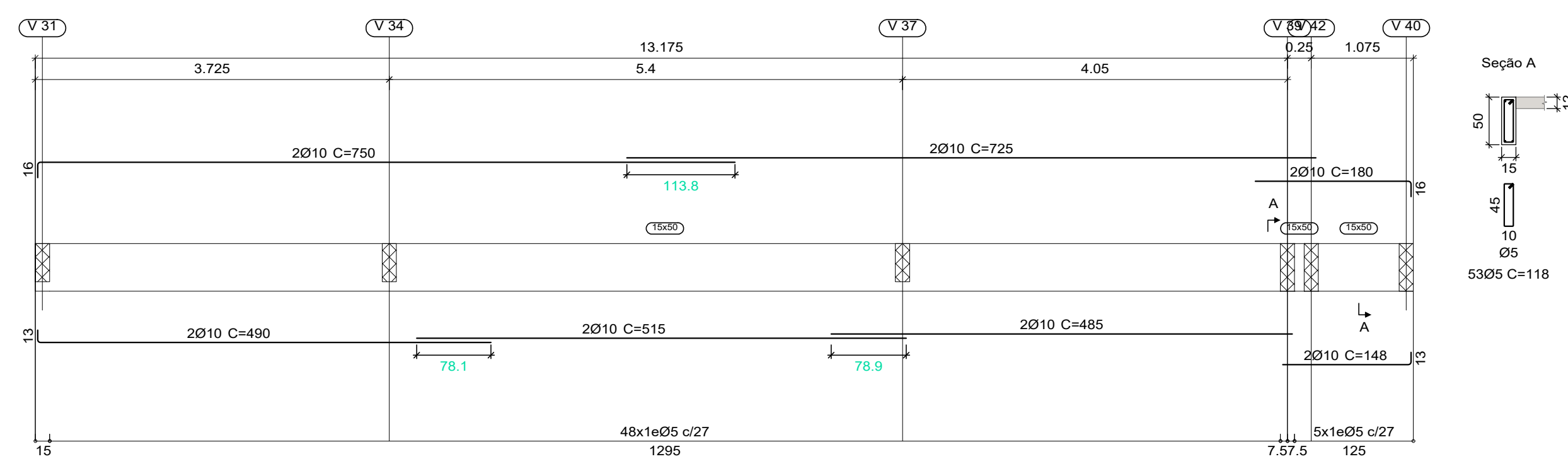
PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: ALBANEIR MONTENEGRO OLIVEIRO
 EXECUÇÃO: VIGAS BALDRAME

ÁREA: 434,34 M²
 DESENHO DATA: 06/02/2024 14:02:14-0300
 PRANCHA: 9/16

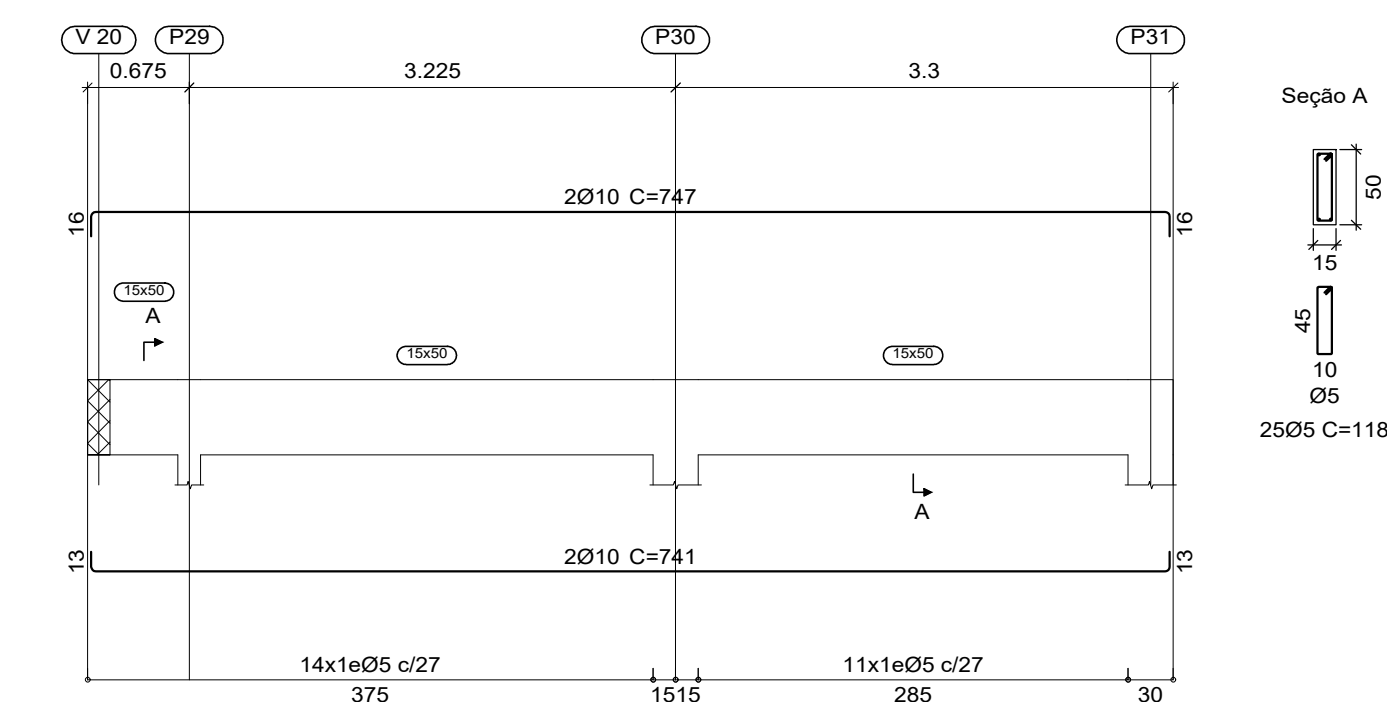
V 1



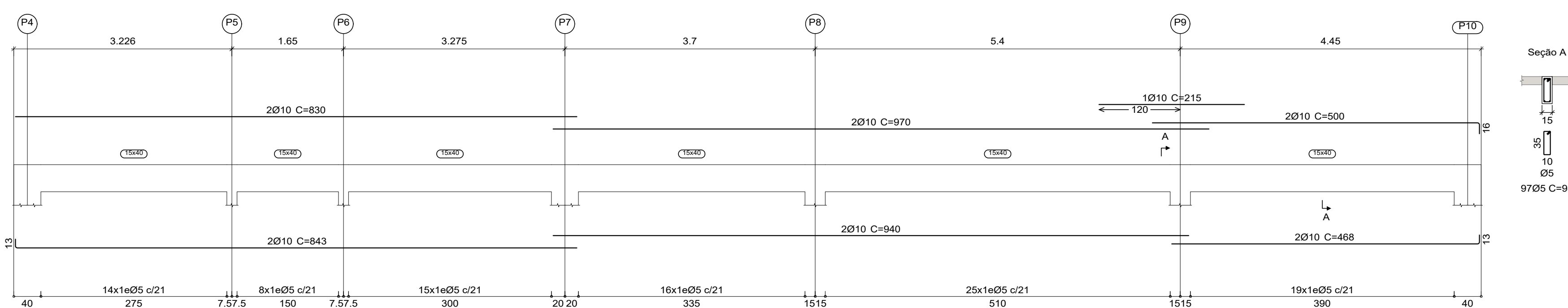
V 2



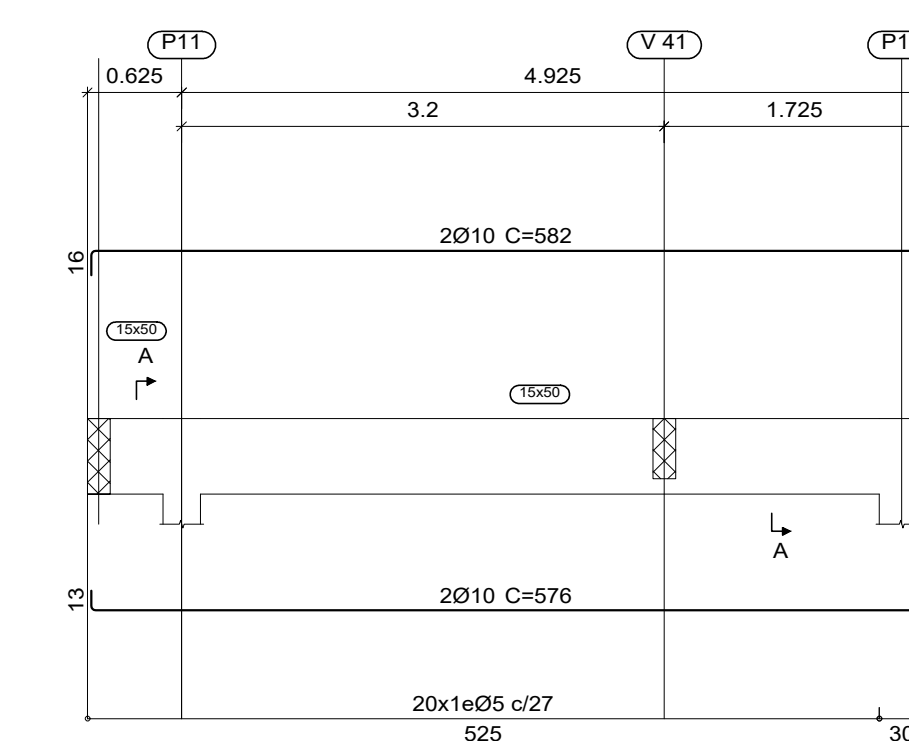
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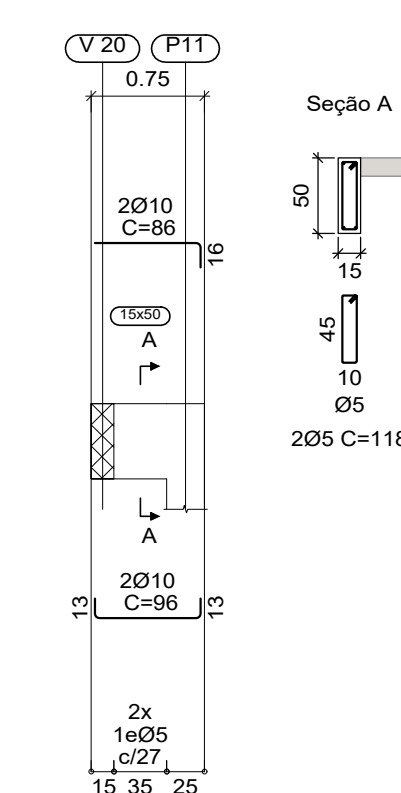
V 3



V 4

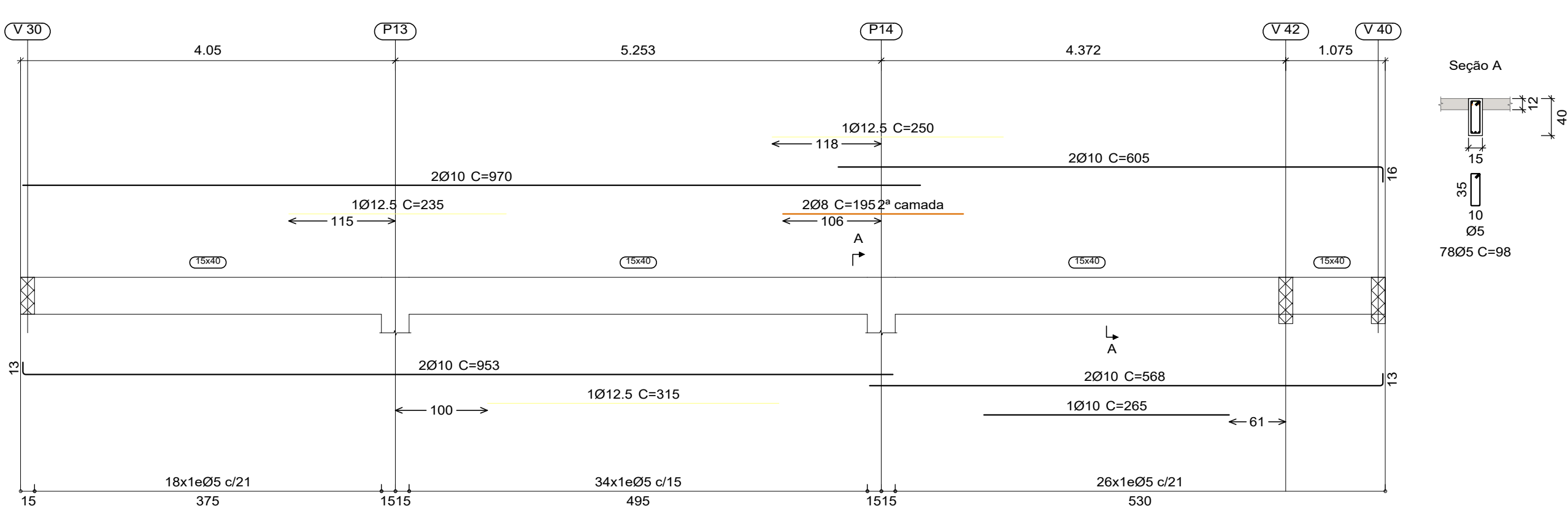


V 5

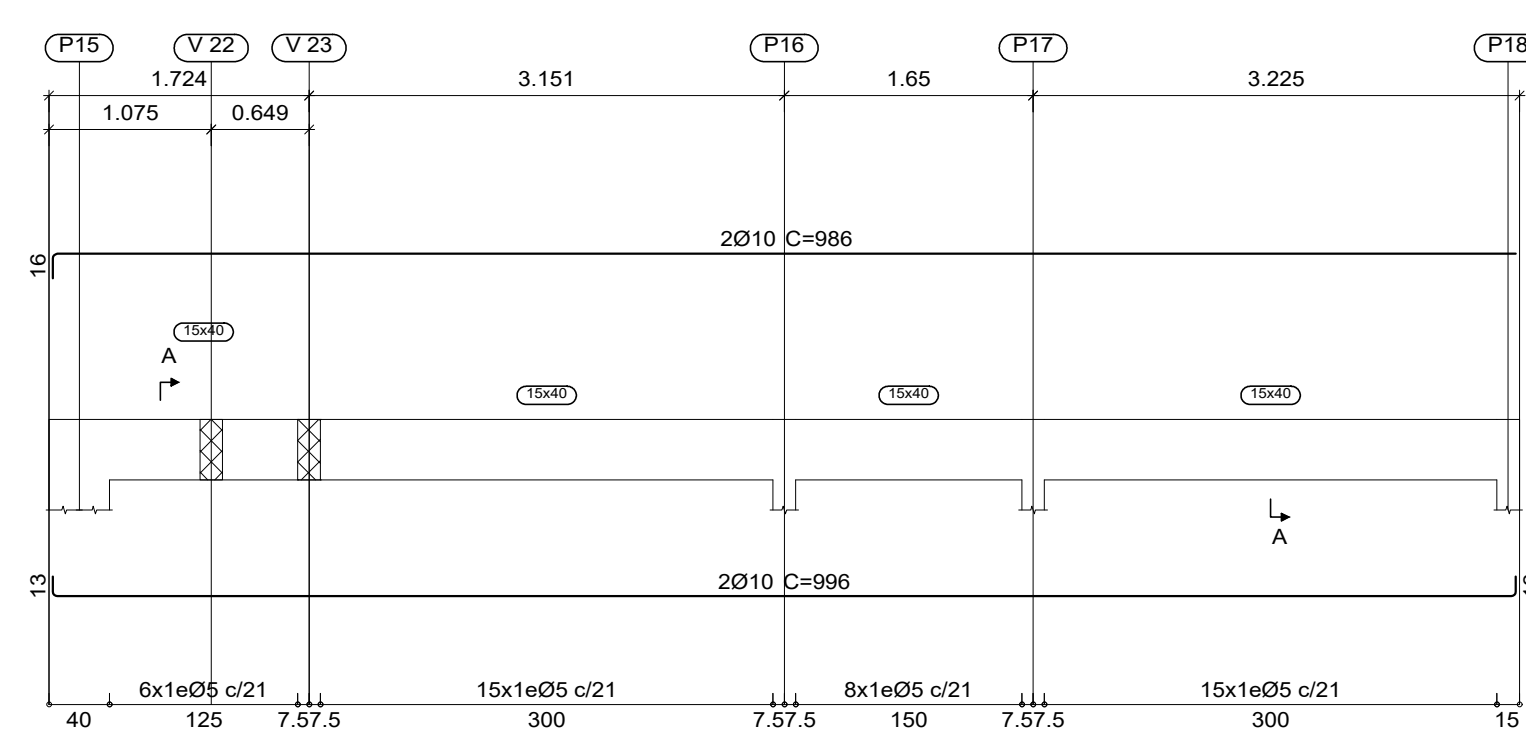


cobertura
 Desenho de vigas
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60
 Escala vigas 1:50
 Escala seções 1:50
 Escala aberturas 1:50

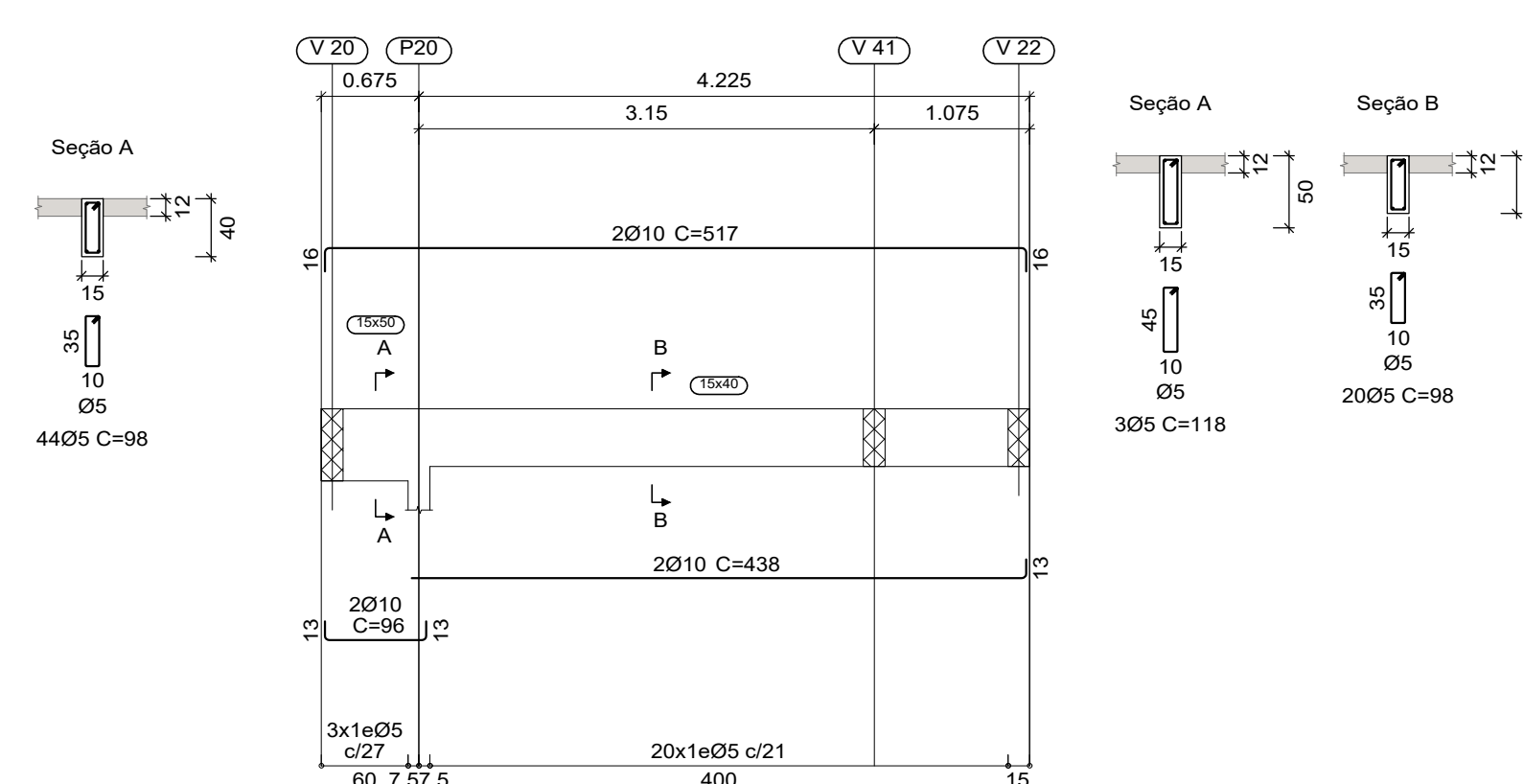
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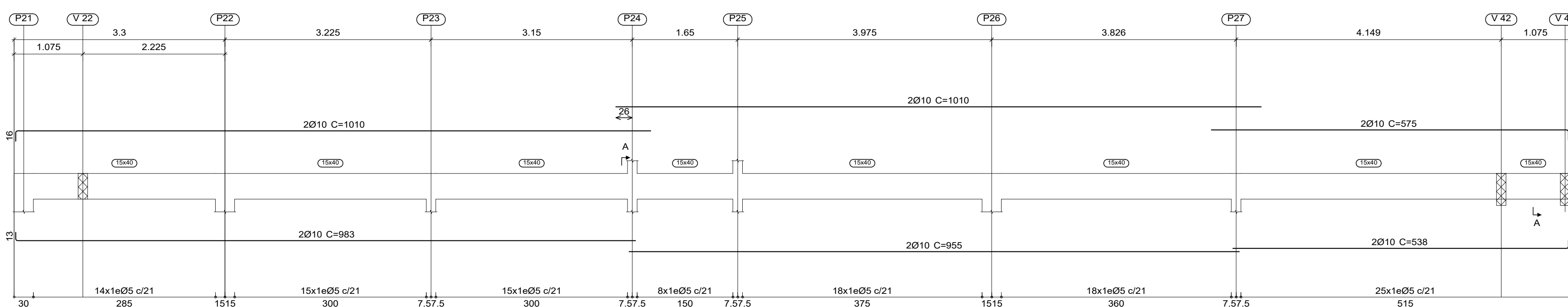
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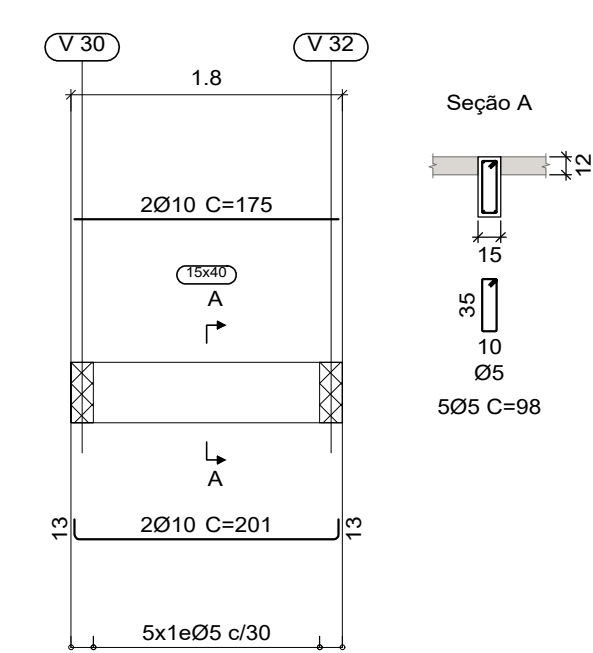
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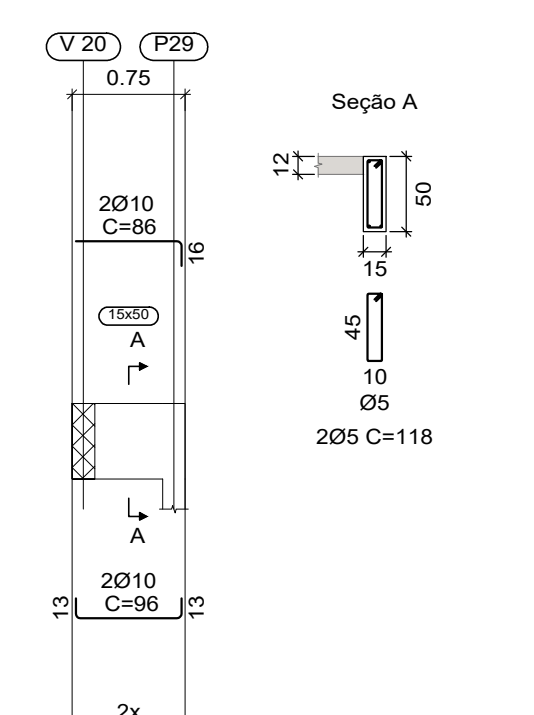
V 9



V 10



V 11



MUNICÍPIO DE IBIRUBÁ
CENTRO DE ACOLHIMENTO DE MENORES

OBRA: USO CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonini, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

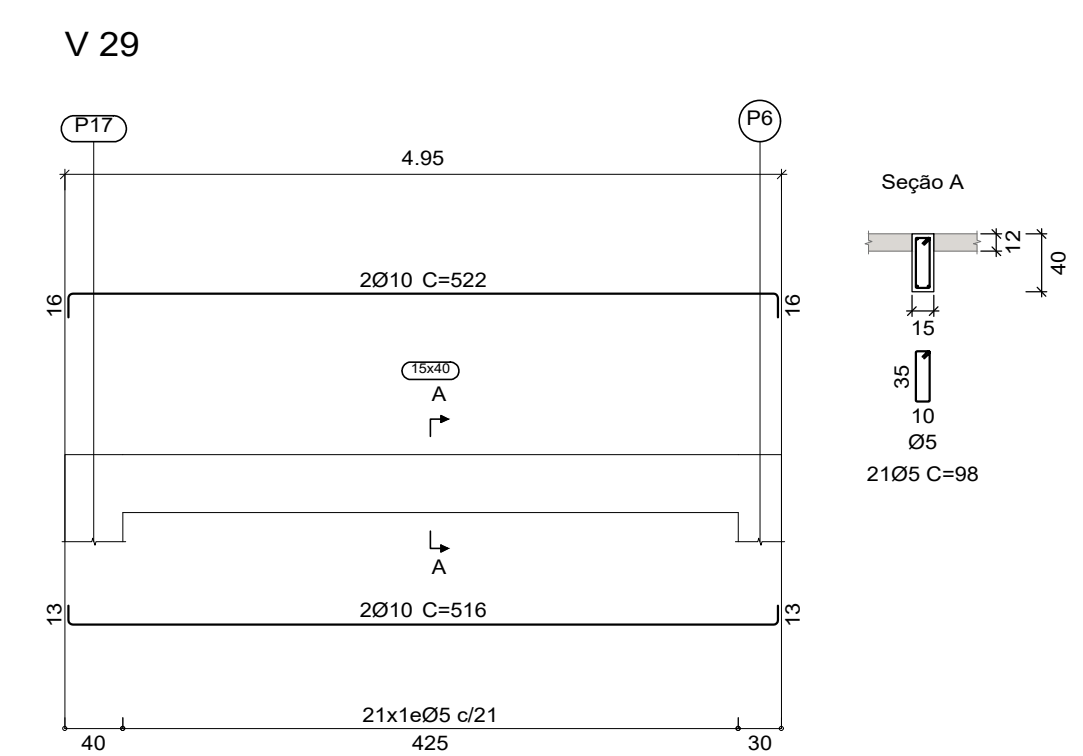
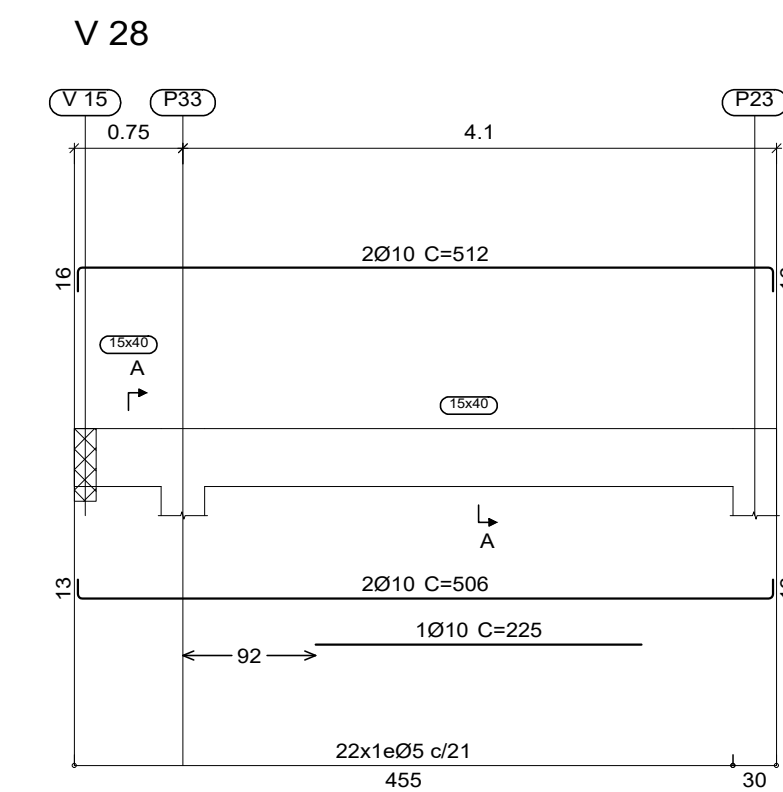
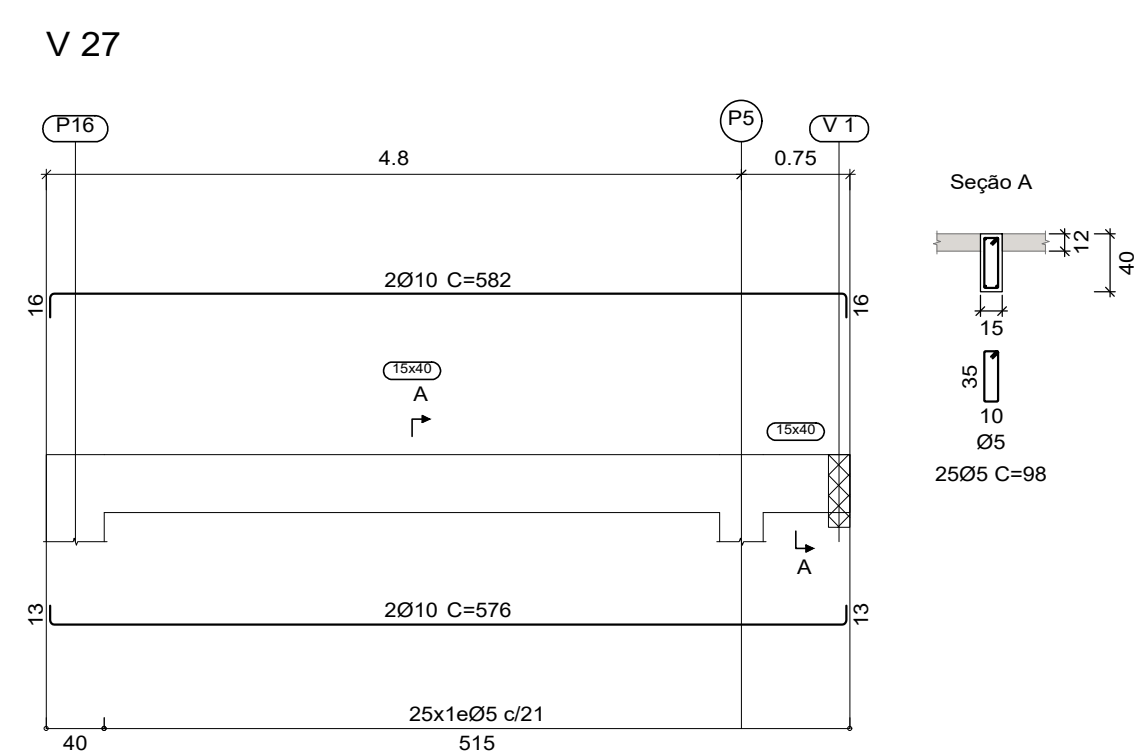
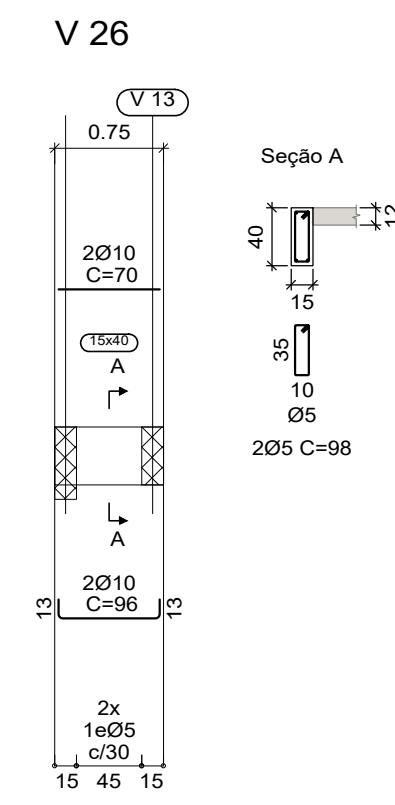
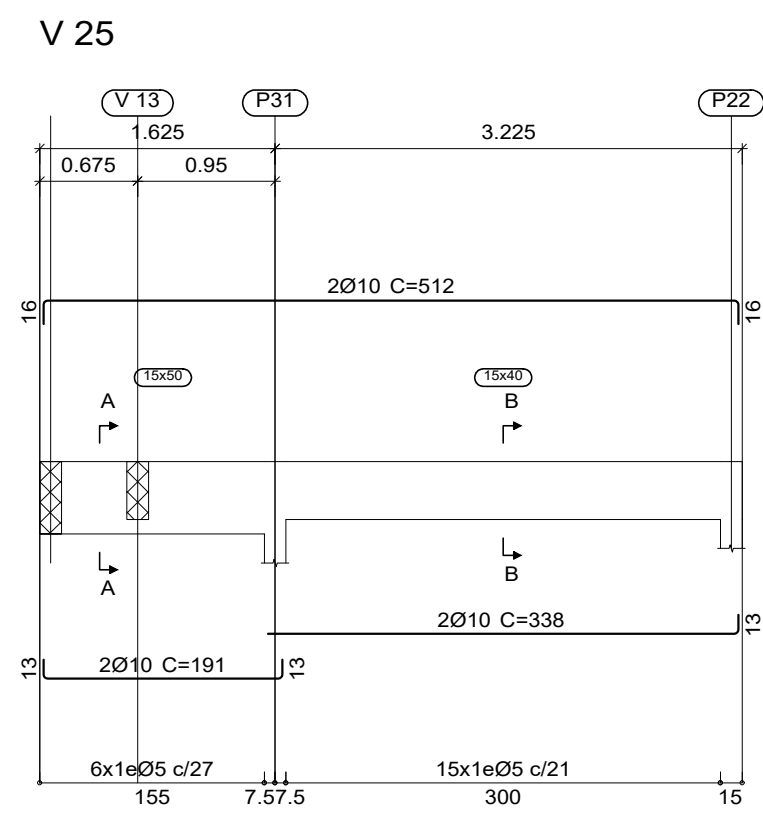
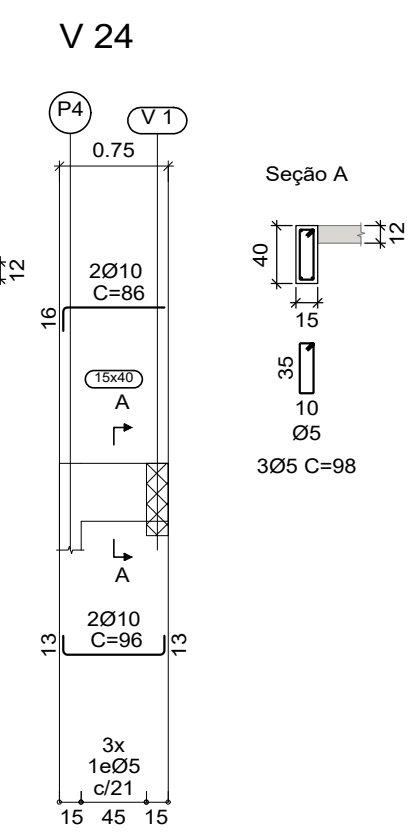
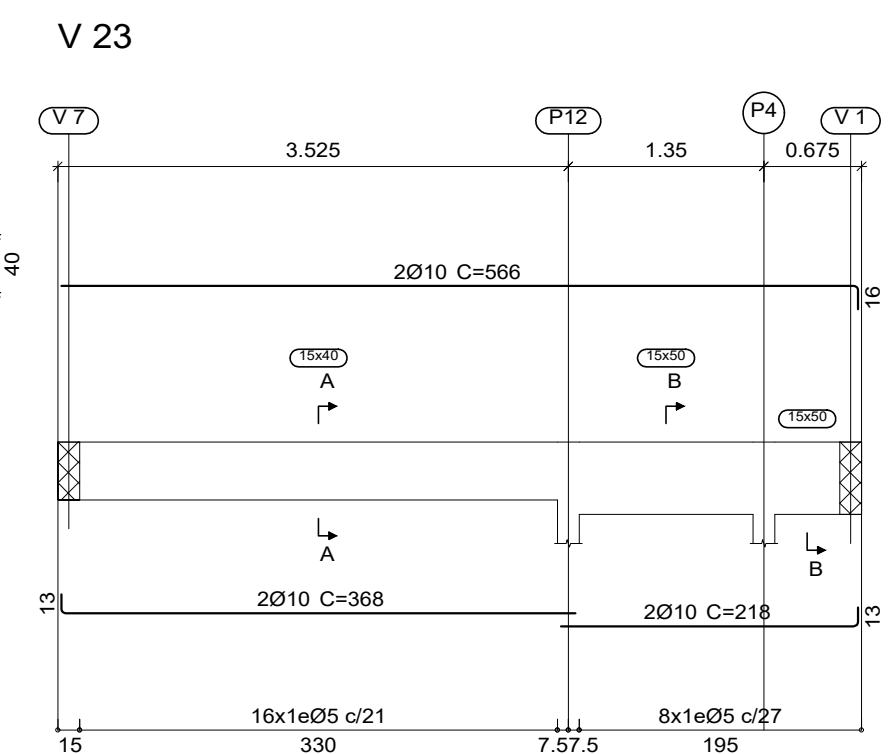
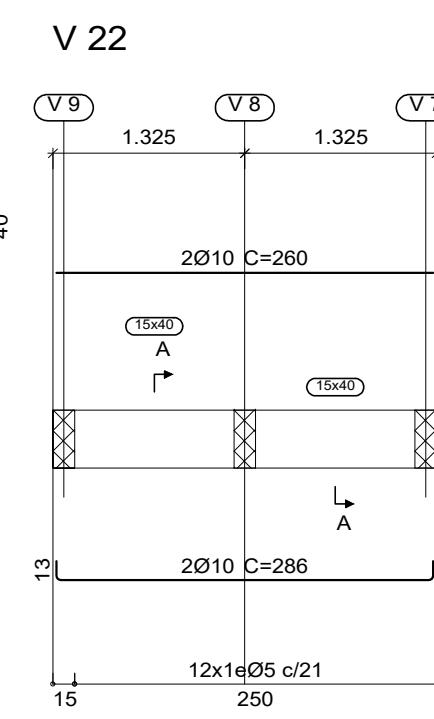
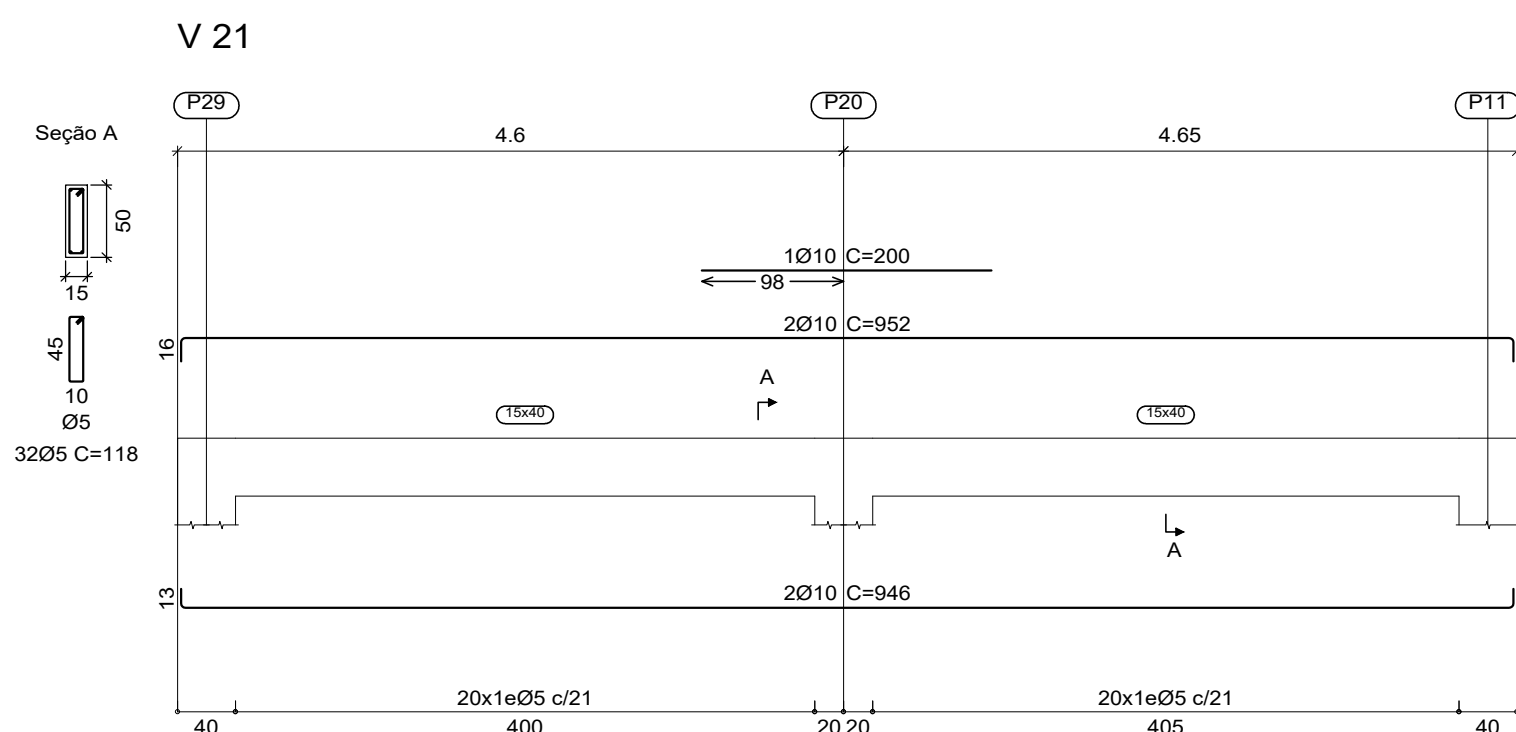
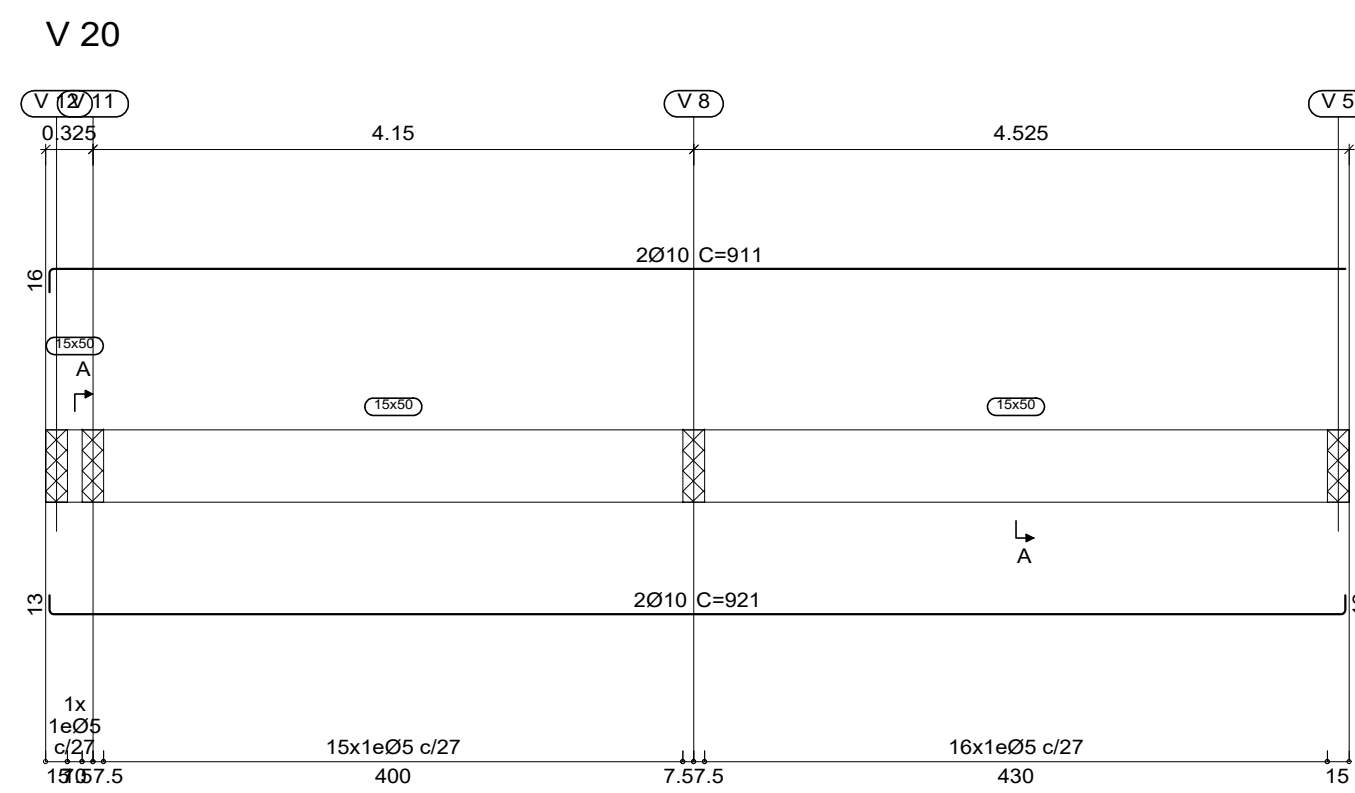
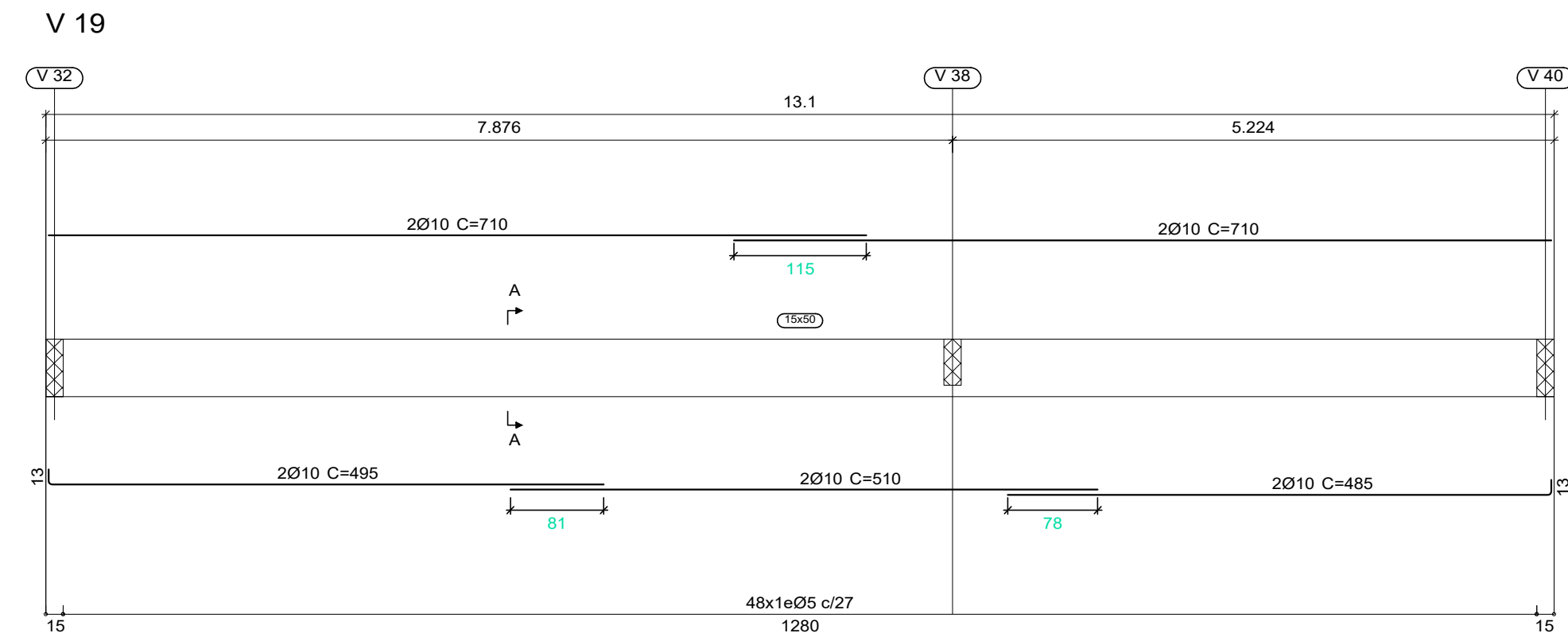
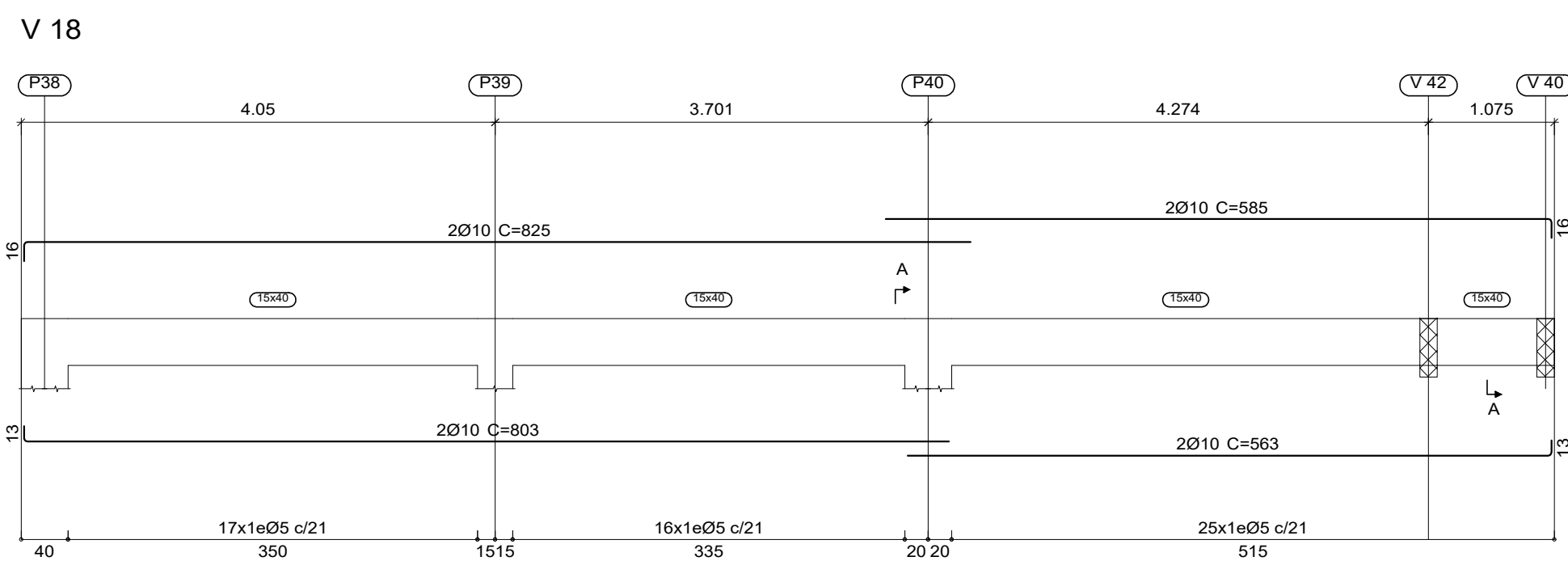
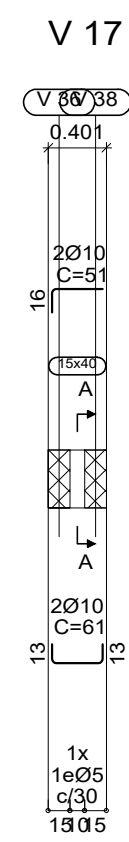
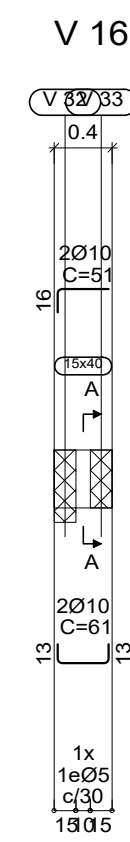
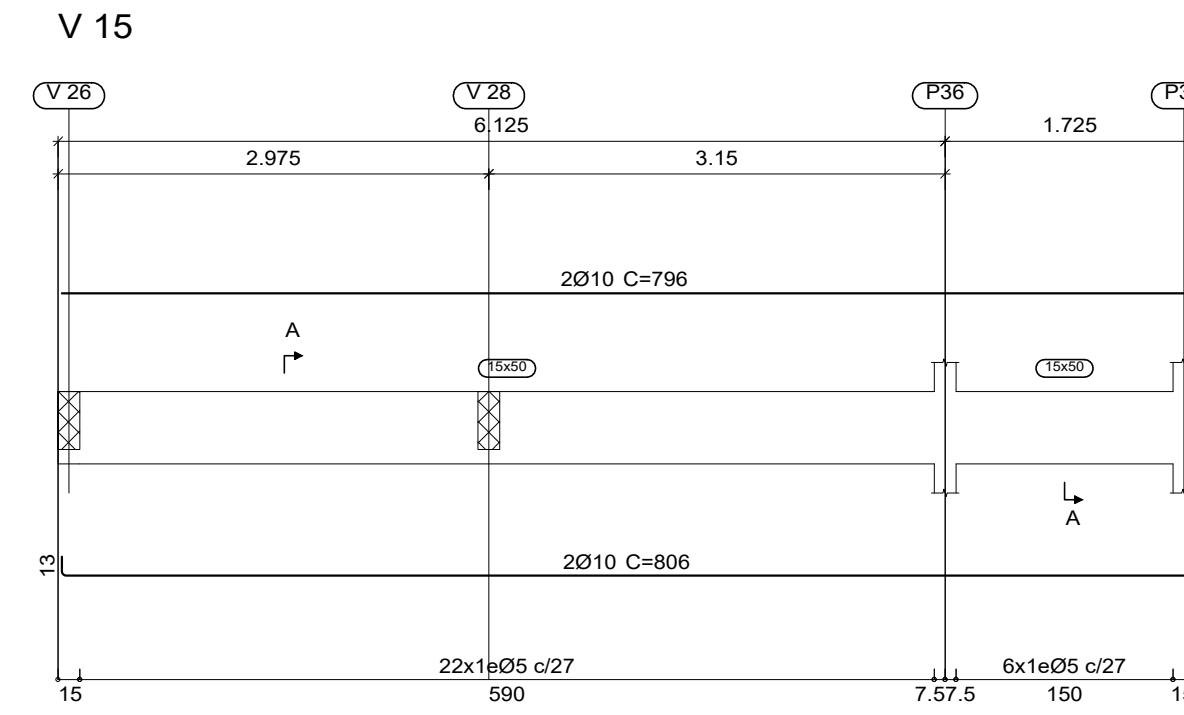
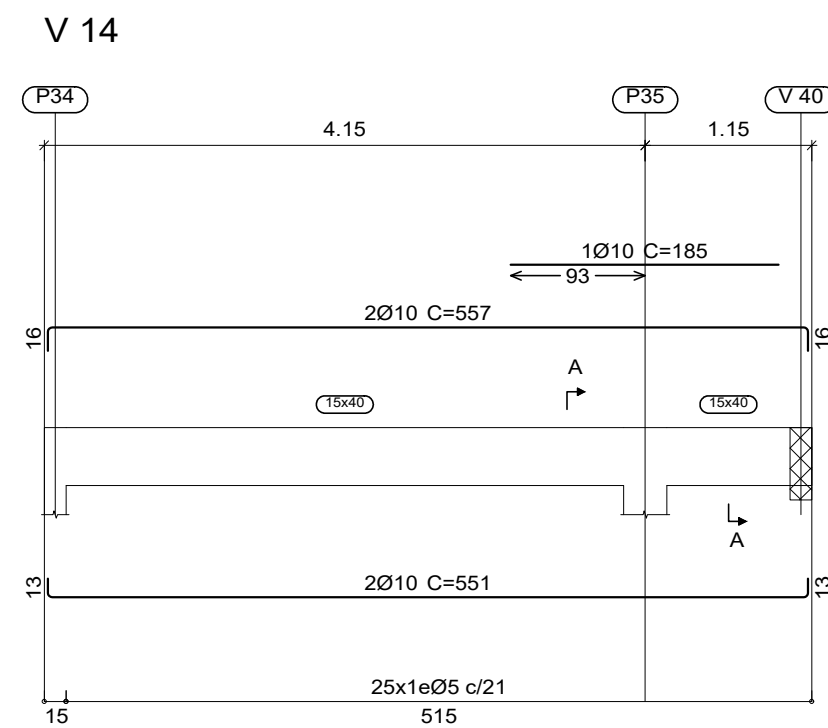
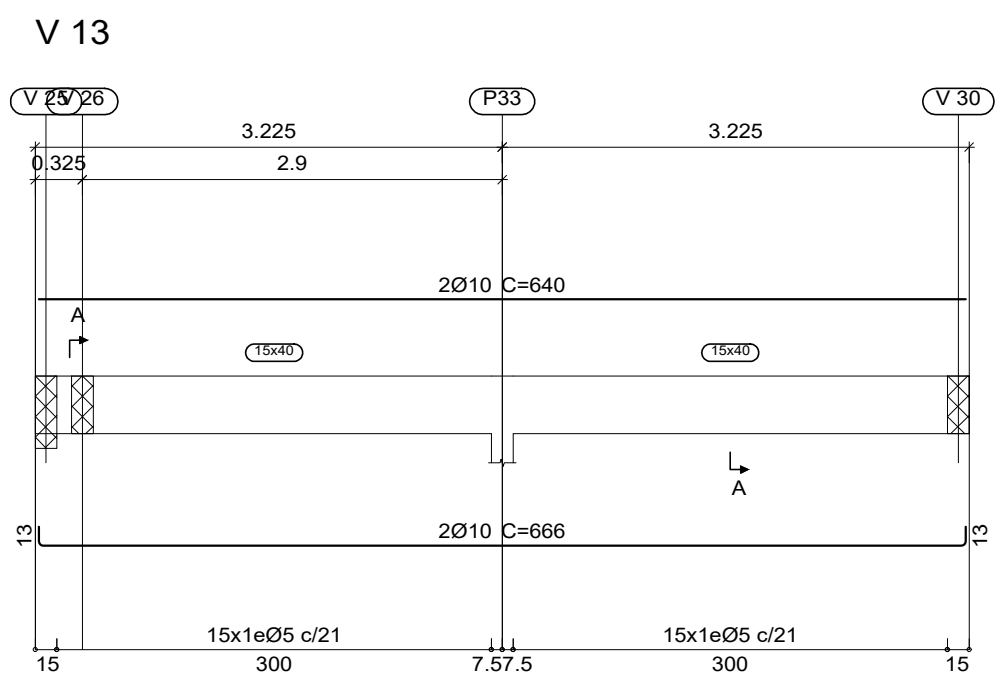
PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: MAR/2023

PLANTAS: VIGAS COBERTURA
 EXECUÇÃO: 10/16

ÁREA: 434,34 M²

gob.br
 Documento assinado digitalmente
 ALEXANDRE MONTENEGRO COLVIERO
 Data: 16/02/2024 14:02:19-1900
 Verifique em https://validar.sil.gov.br

cobertura
 Desenho de vigas
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60
 Escala vigas 1:50
 Escala seções 1:50
 Escala aberturas 1:50



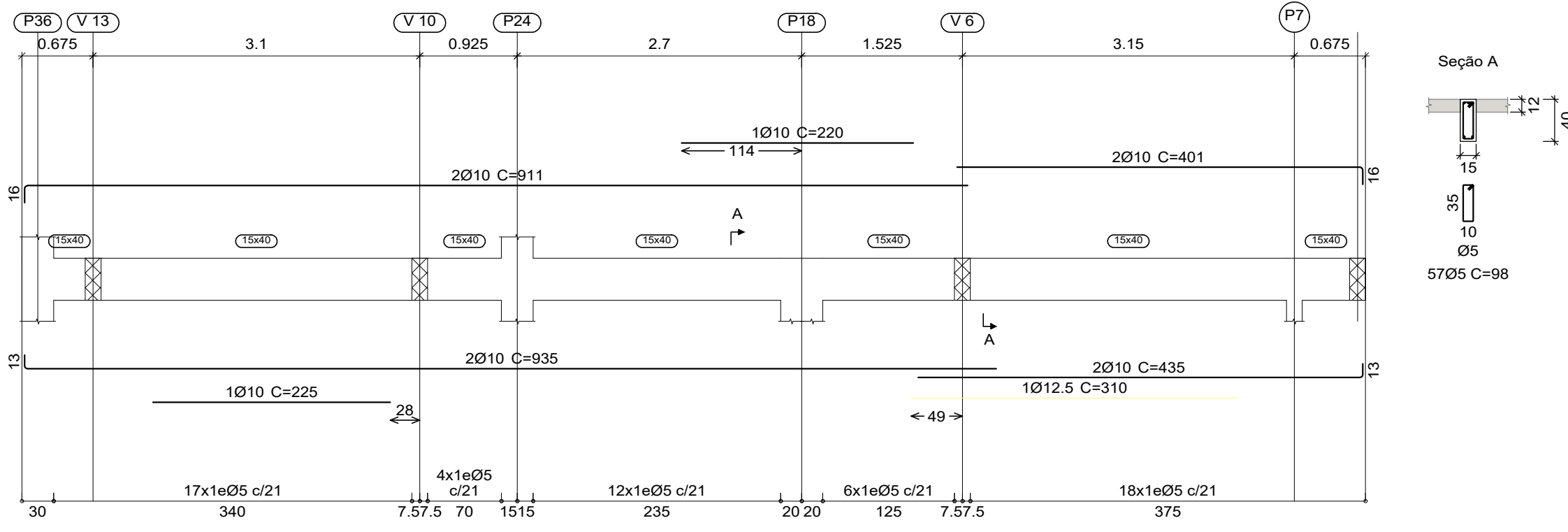
MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

OBRA: USO: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Amoldo Tonini, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

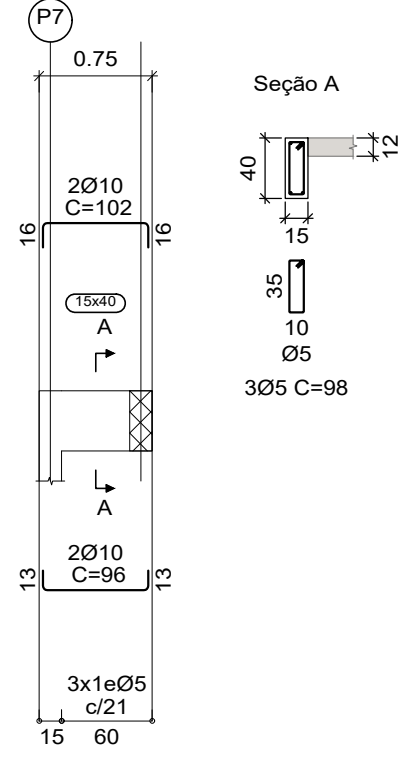
PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 EXECUÇÃO: []

ÁREA: 434,34 M²
 DESENHO: MAR/2023
 PRANCHA: 11/16

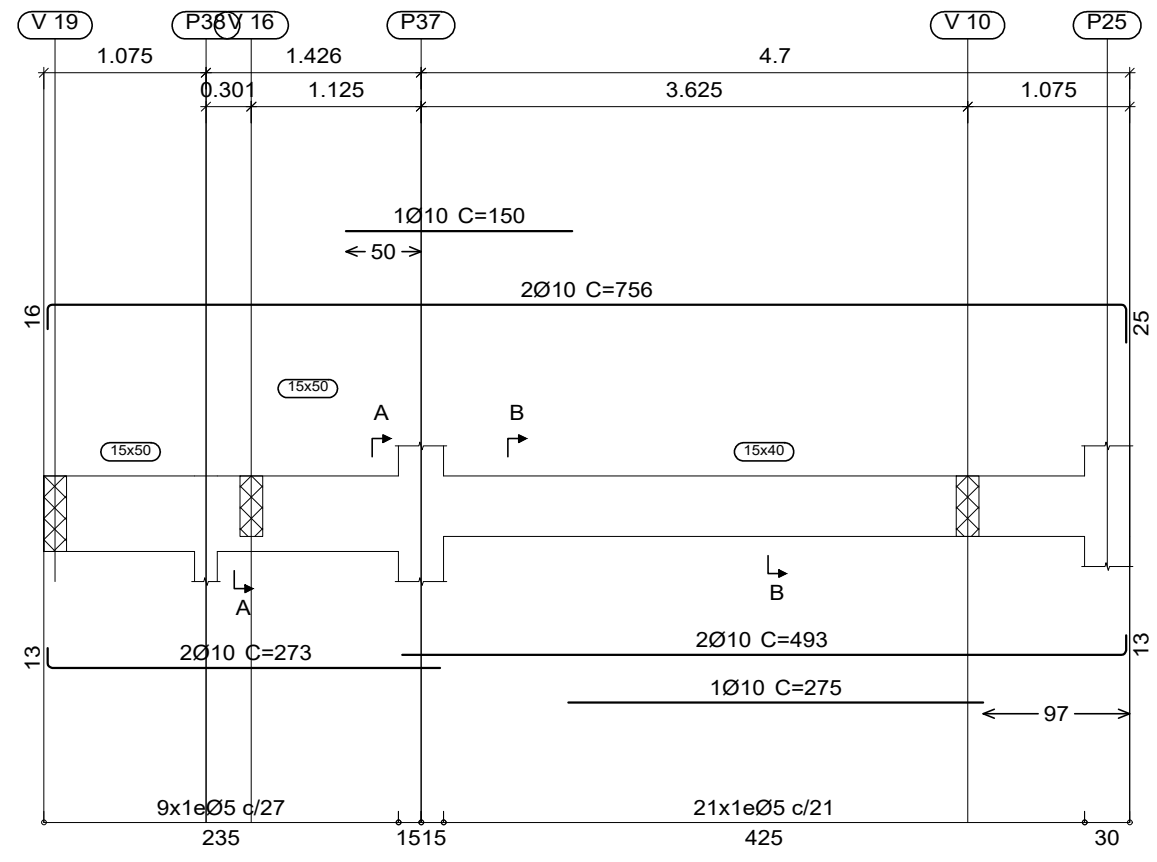
V 30



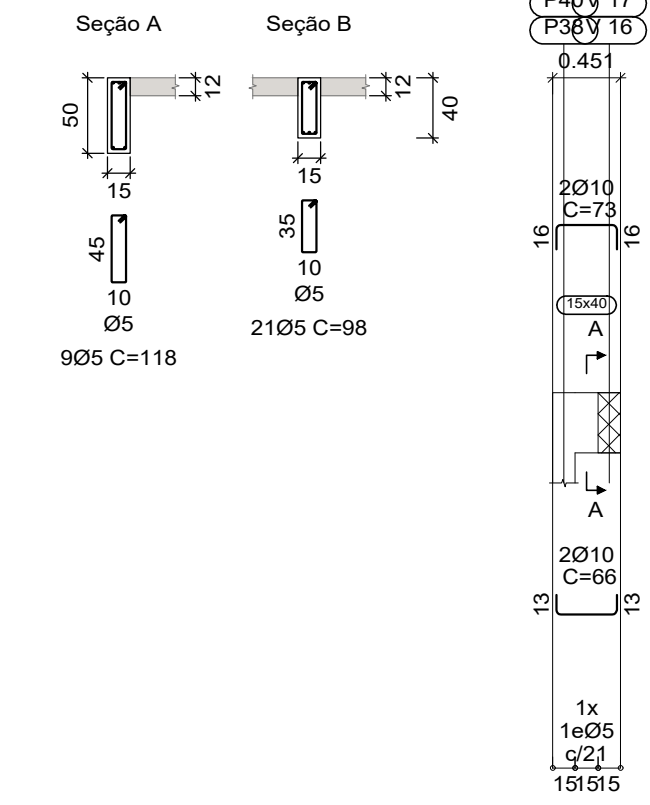
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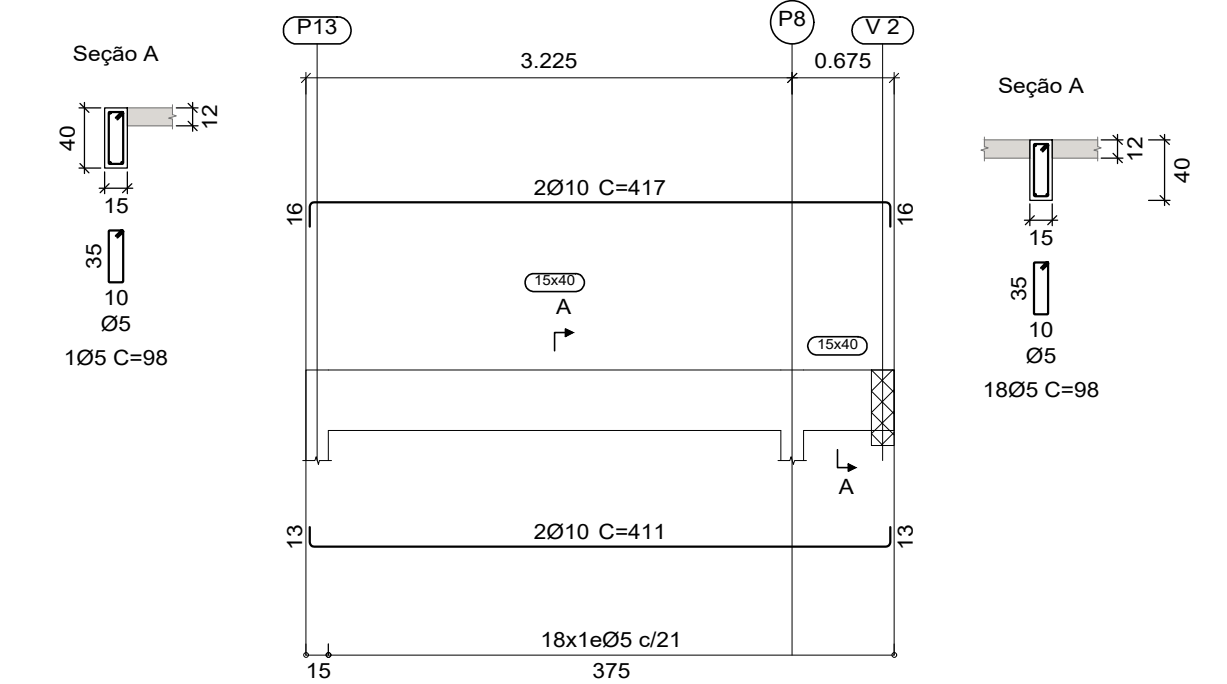
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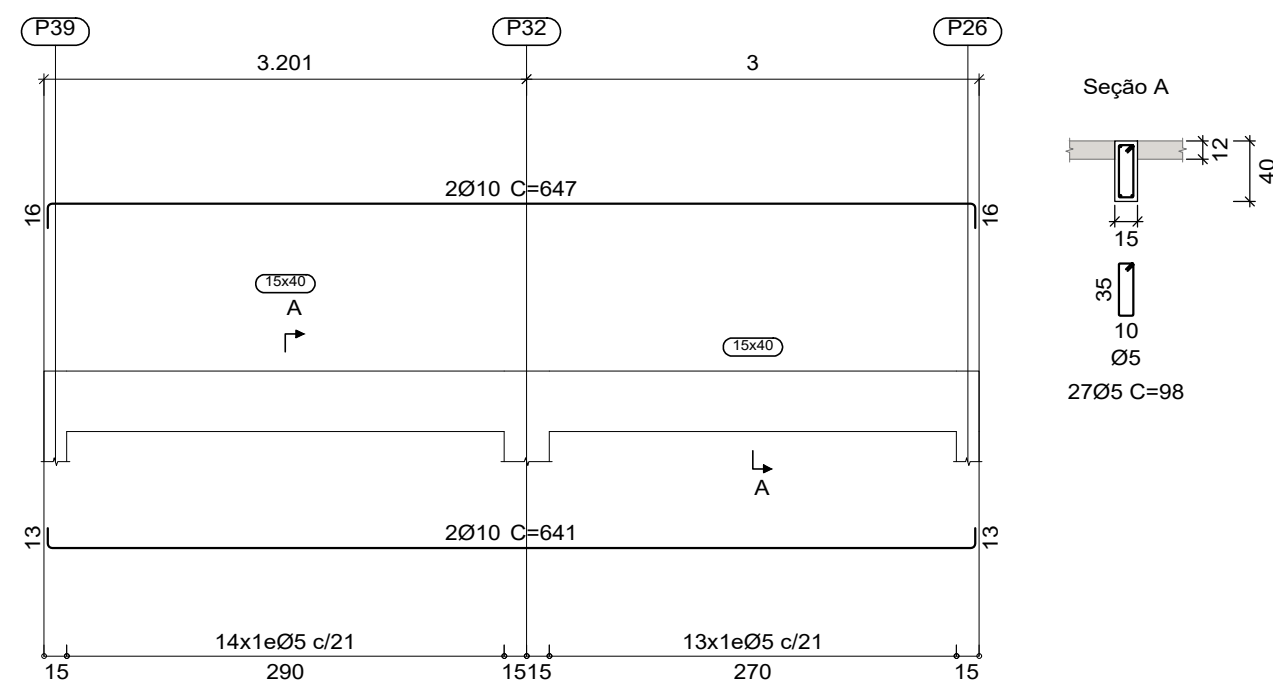
V 33
V 36



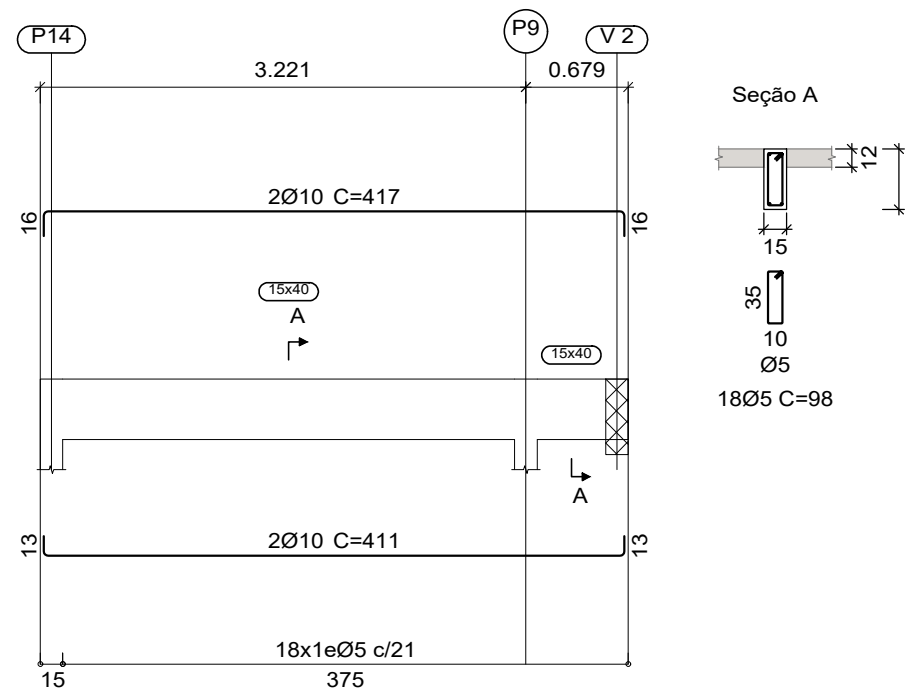
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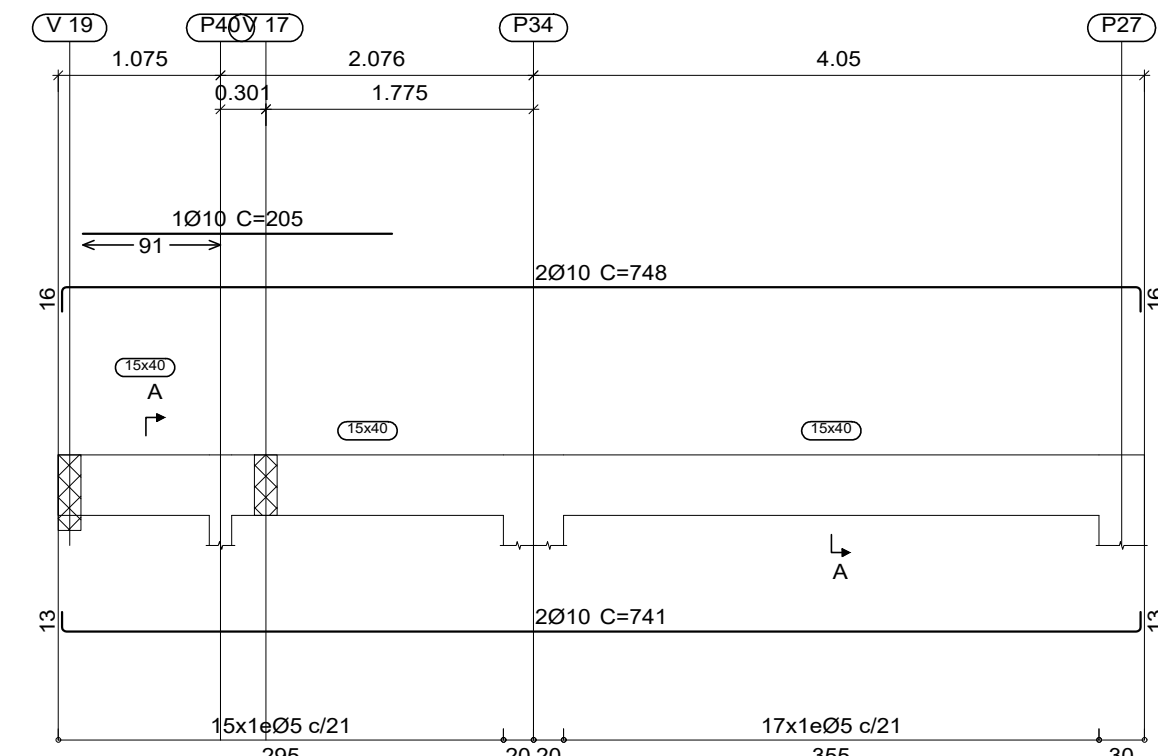
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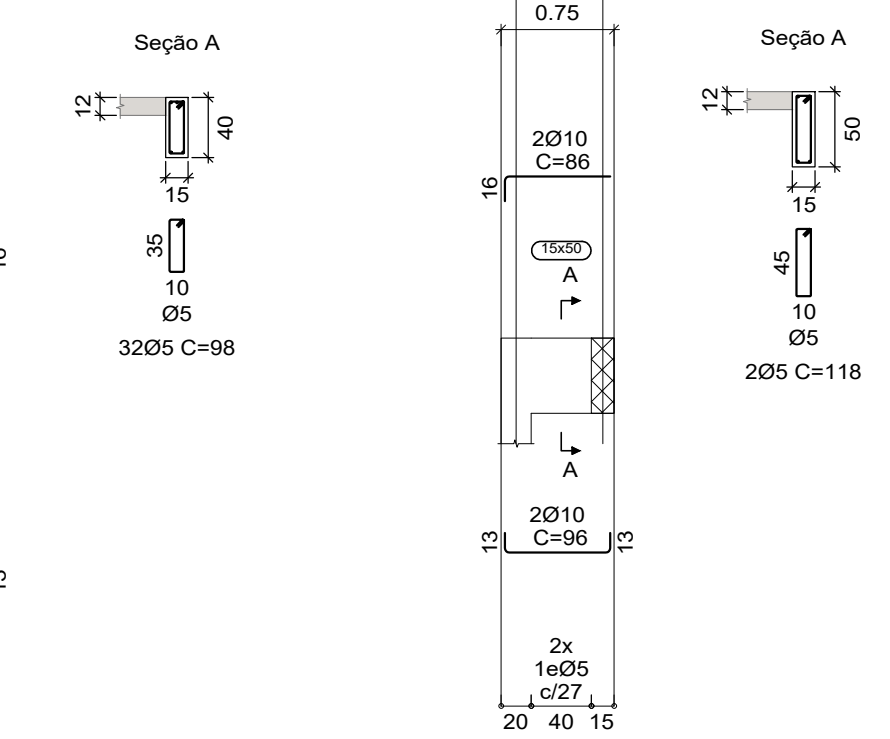
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V 38

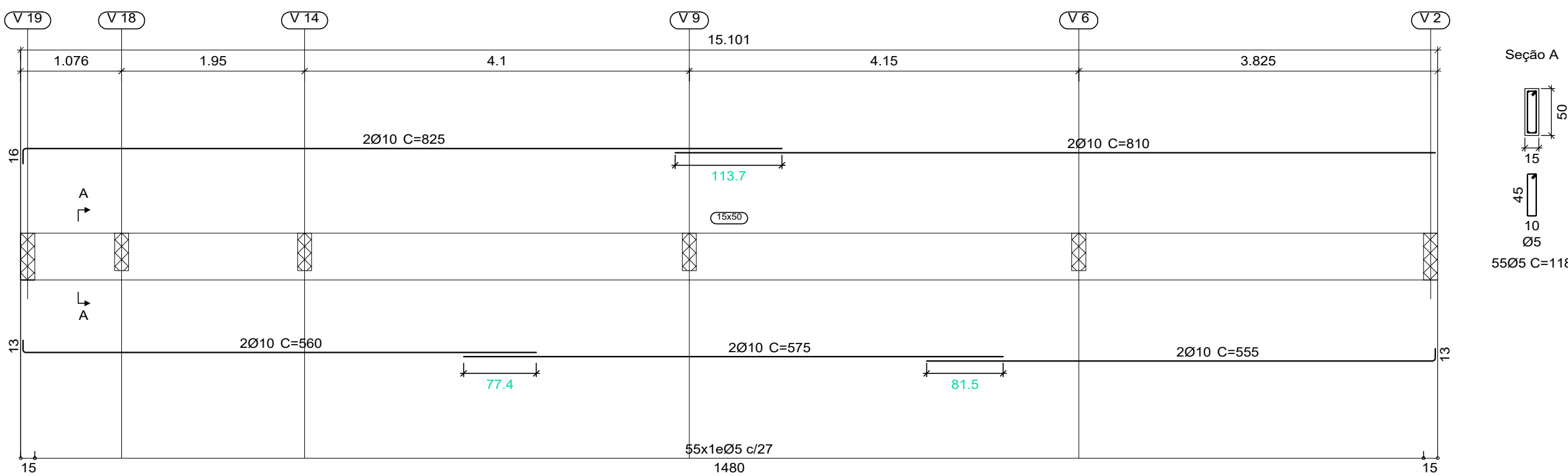


V 39

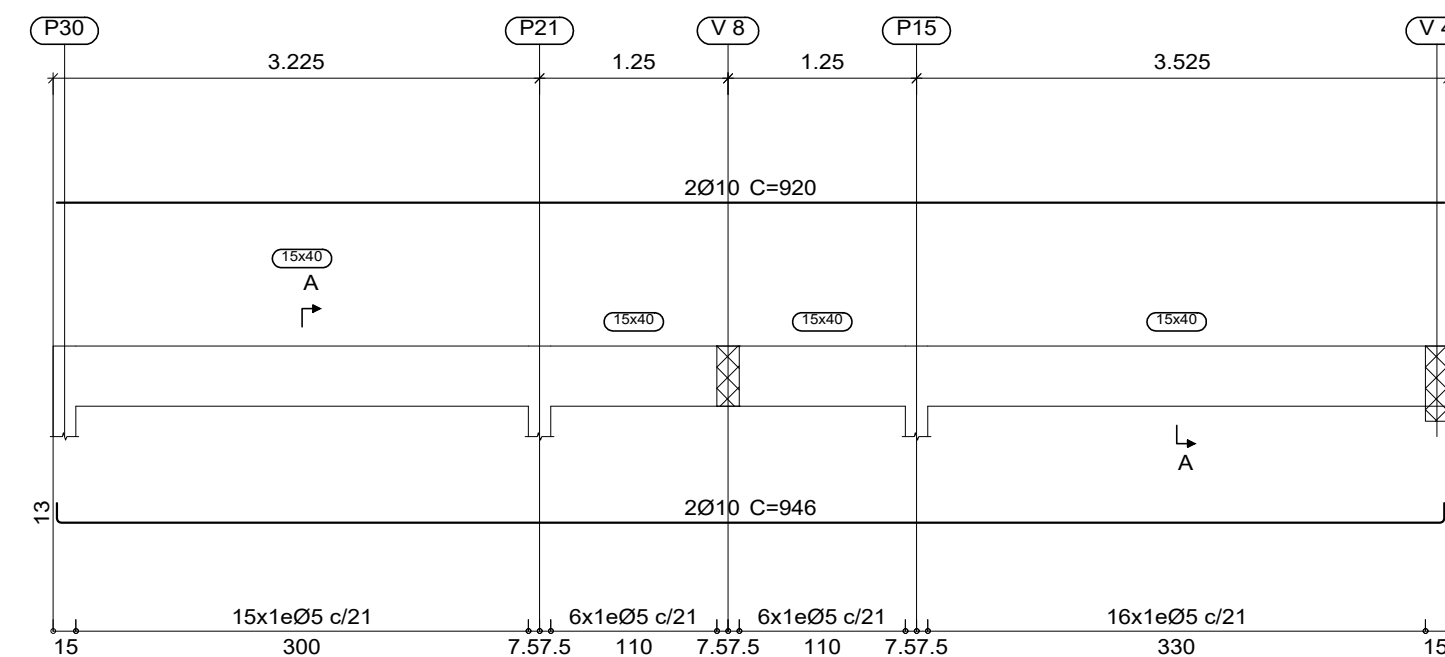


cobertura
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60
Escala vigas 1:50
Escala seções 1:50
Escala aberturas 1:50

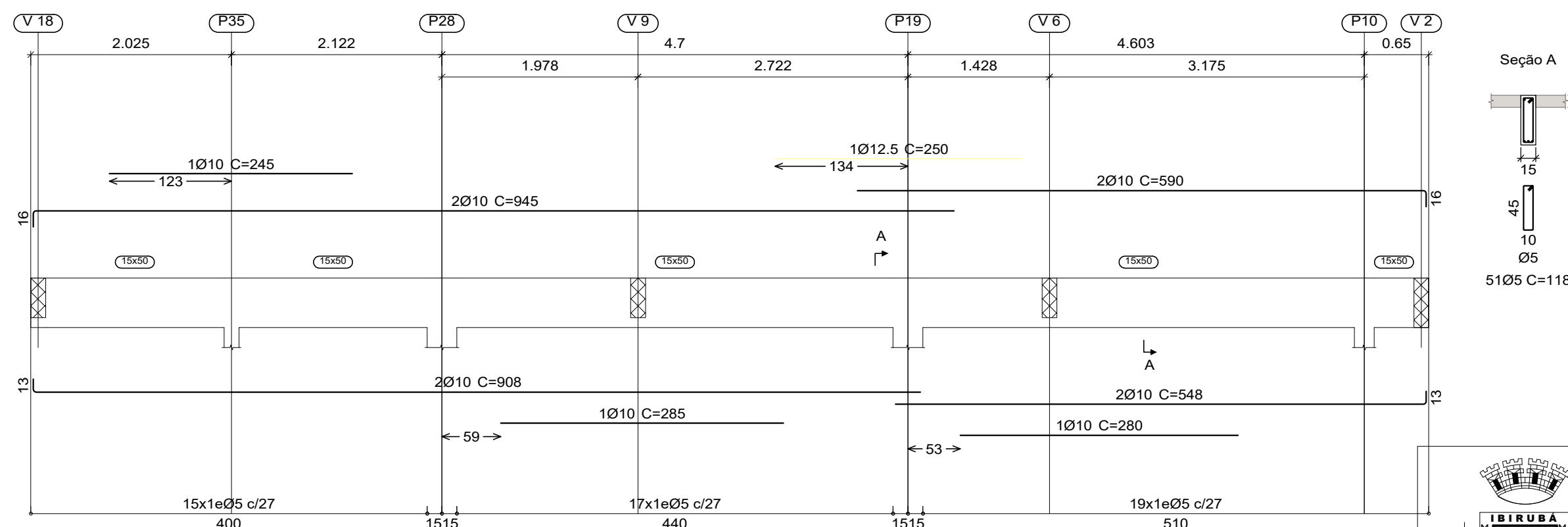
V 40



V 41



V 42



| Resumo Aço | Comp. total (m) | Peso+10% (kg) | Total |
|--------------|-----------------|---------------|-------------|
| CA-50 Ø8 | 3.9 | 2 | |
| Ø10 | 1260.4 | 854 | |
| Ø12.5 | 13.6 | 14 | 870 |
| CA-60 Ø5 | 1272.2 | 220 | 220 |
| Total | | | 1090 |

MUNICÍPIO DE IBIRUBÁ
CENTRO DE ACOLHIMENTO DE MENORES

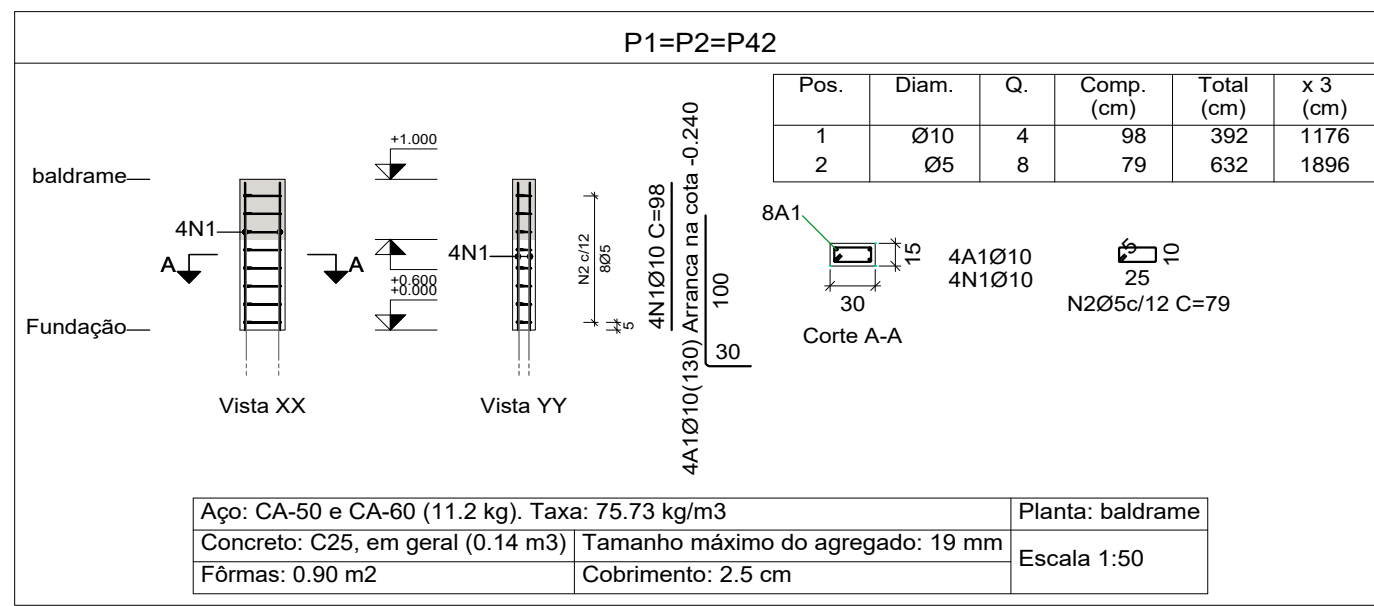
OBRA: USO CENTRO DE ACOLHIMENTO DE MENORES
LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Tonini, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
ÁREA: 434,34 M²

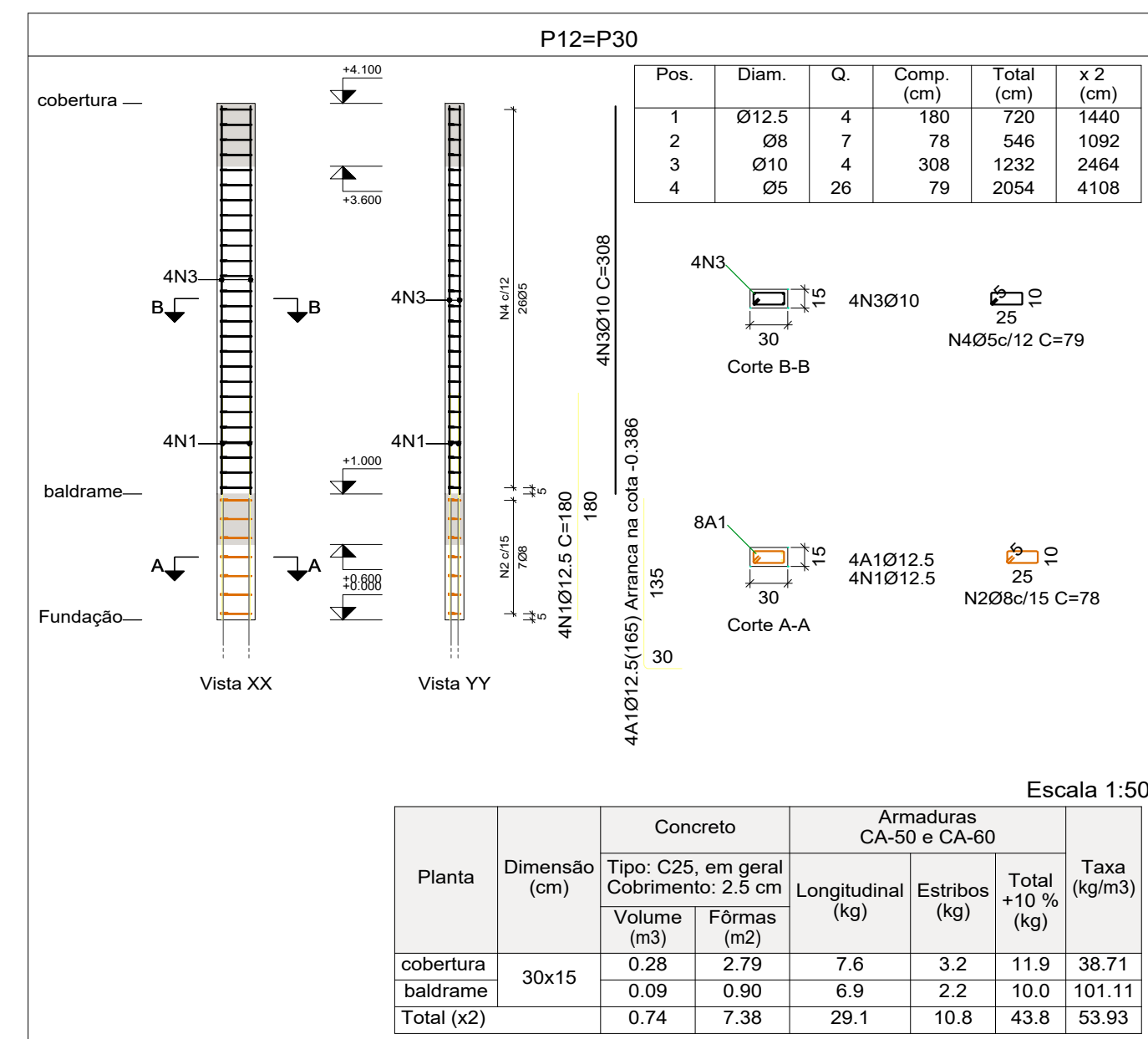
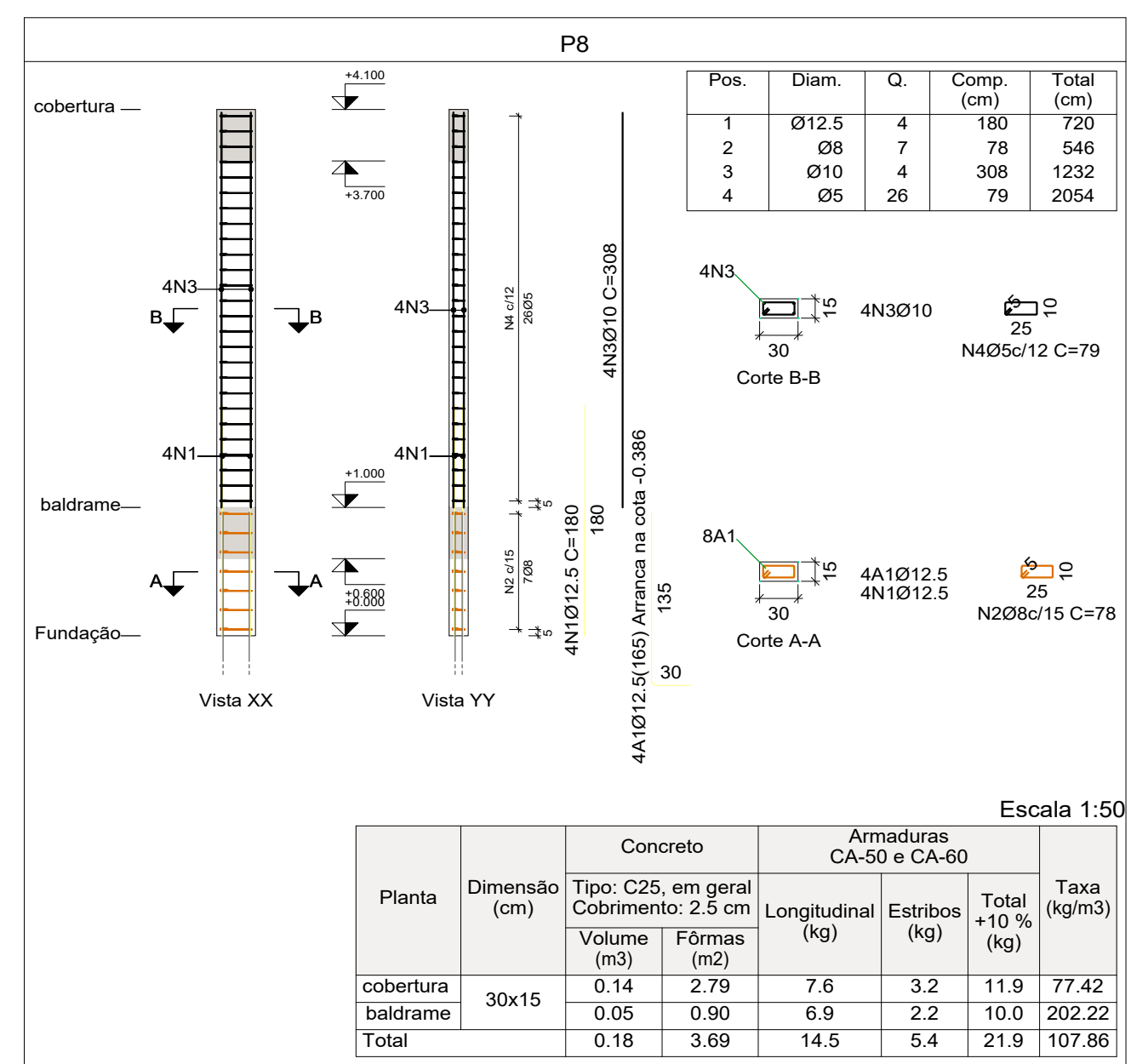
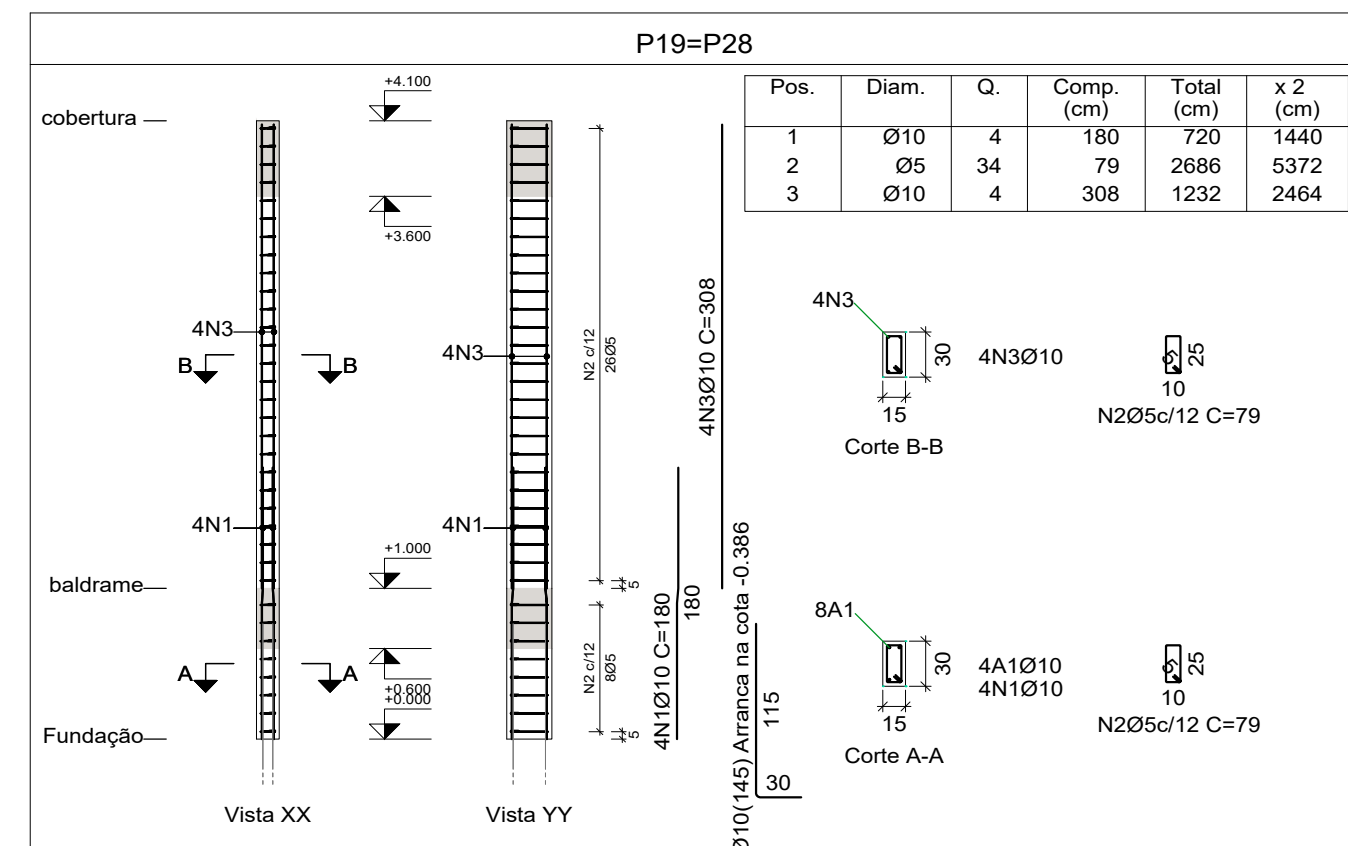
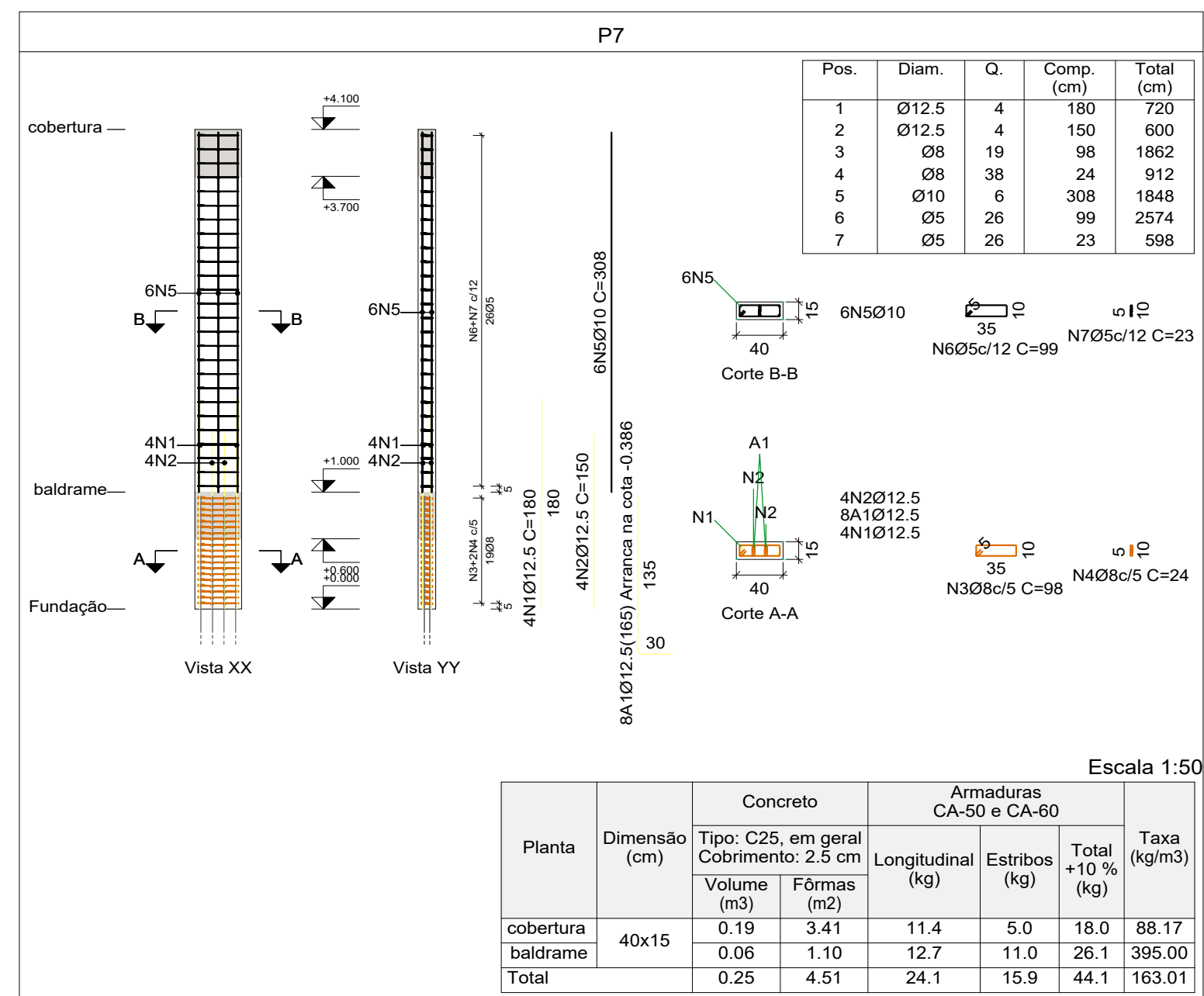
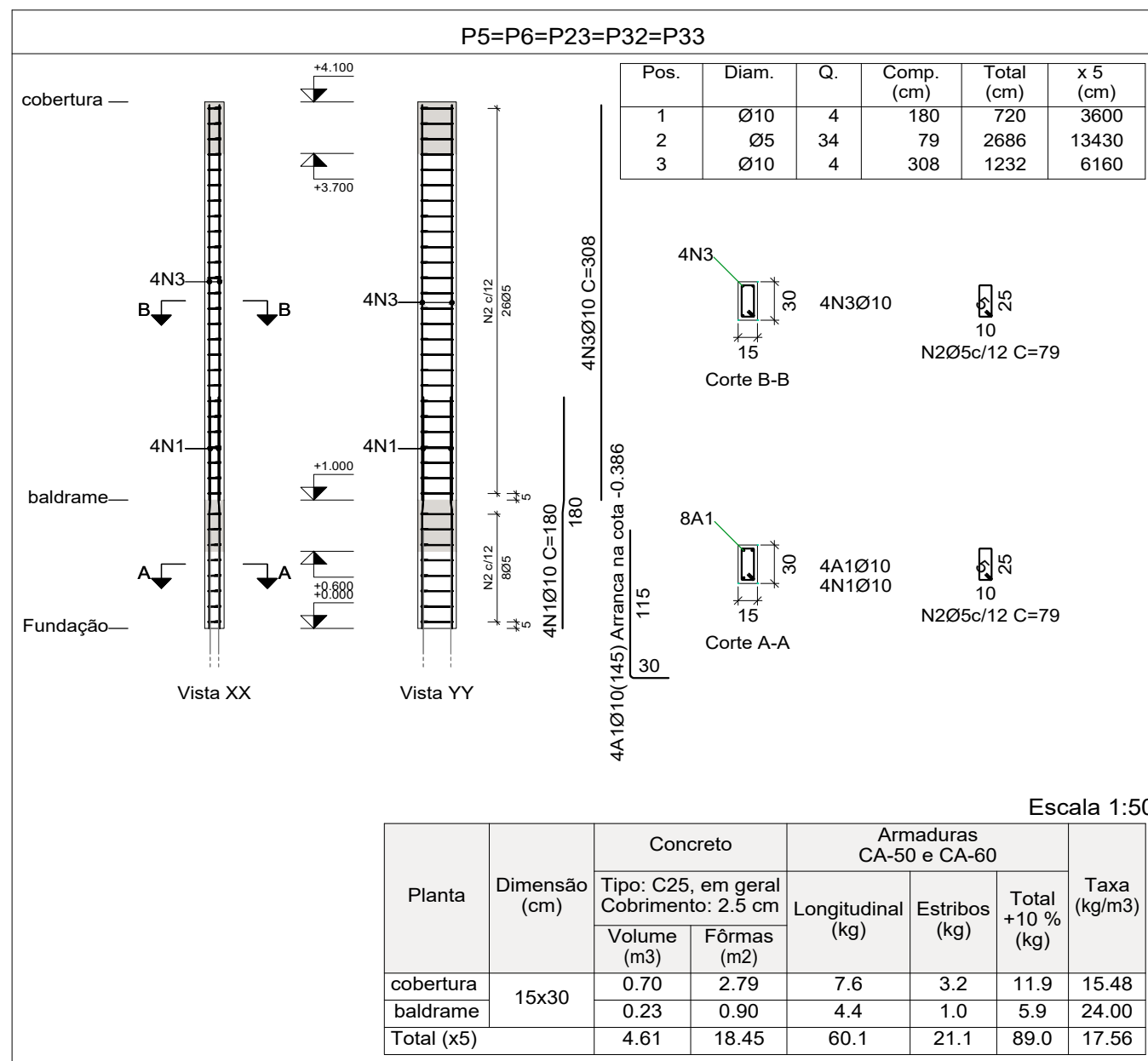
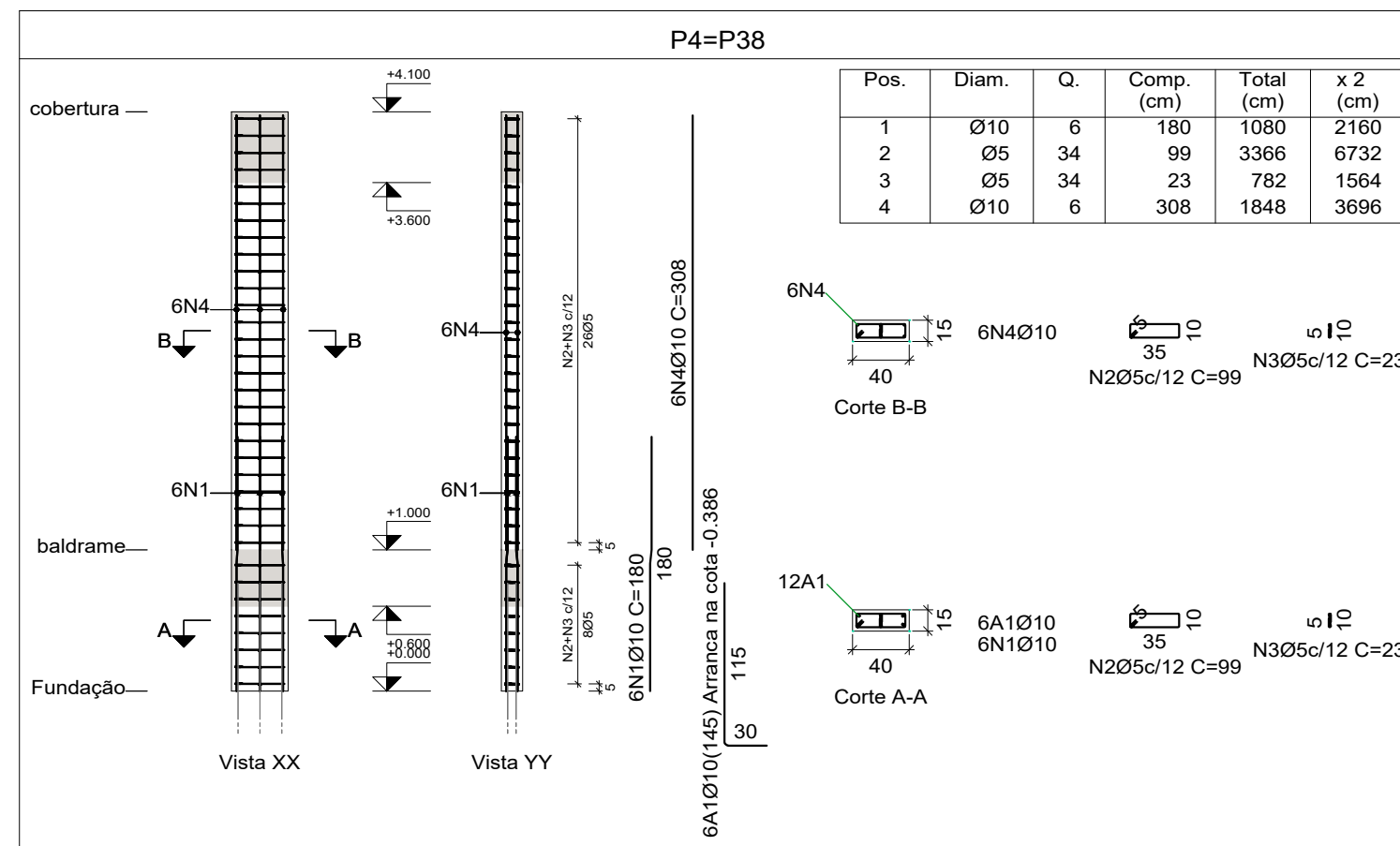
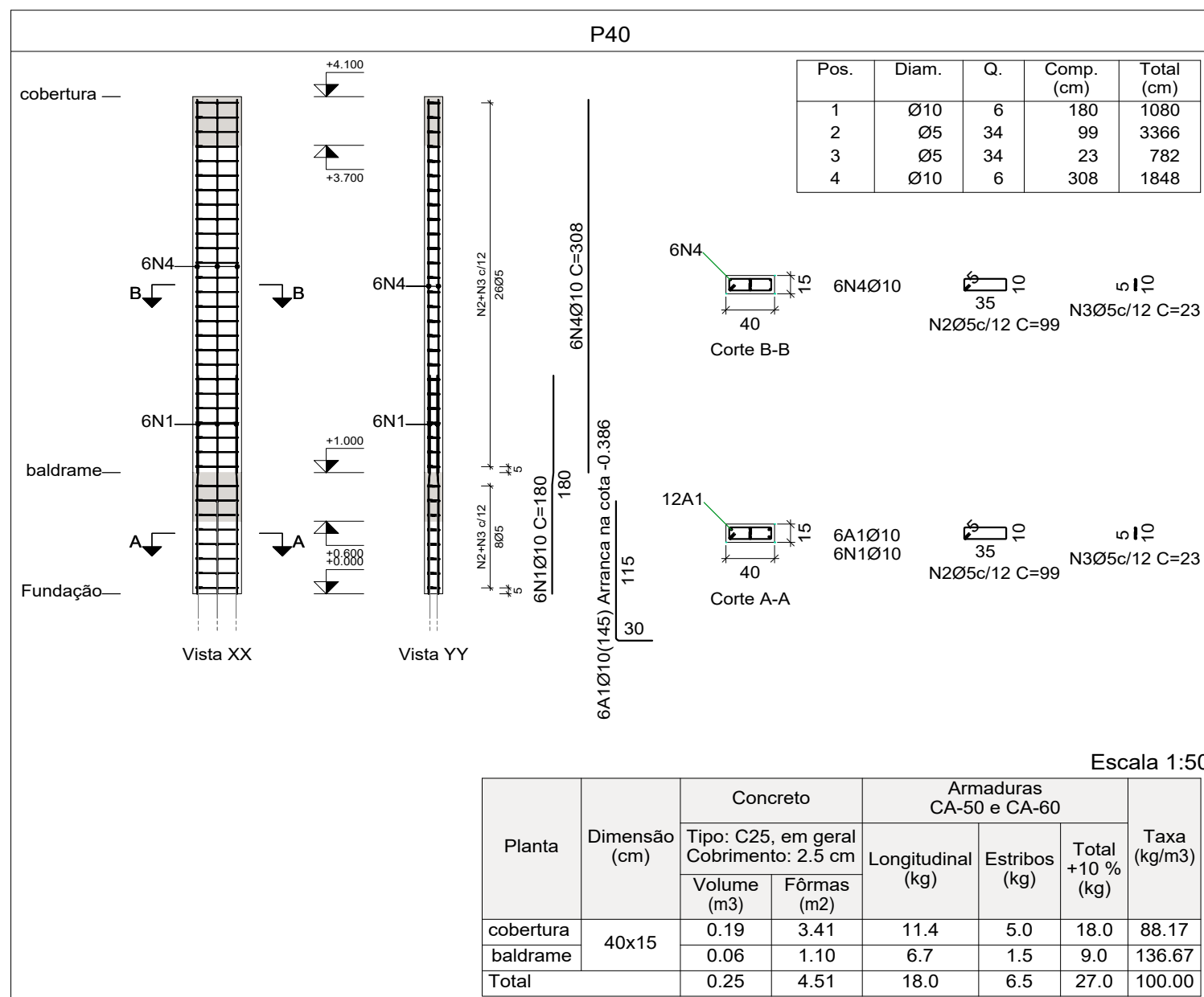
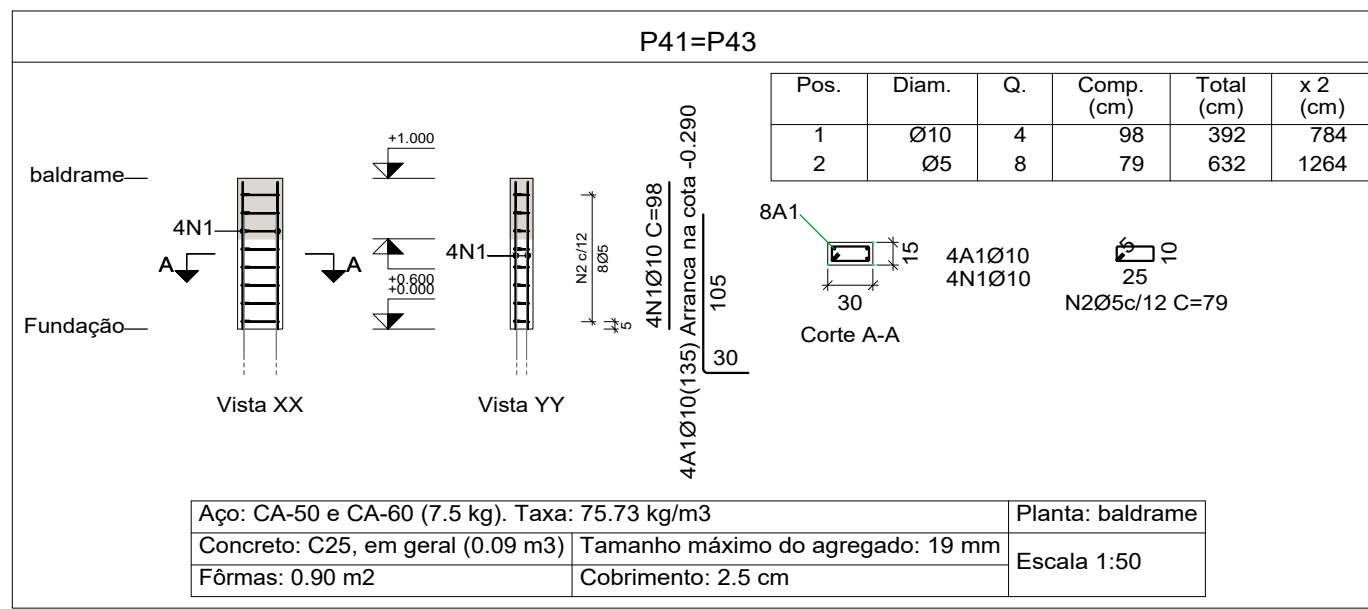
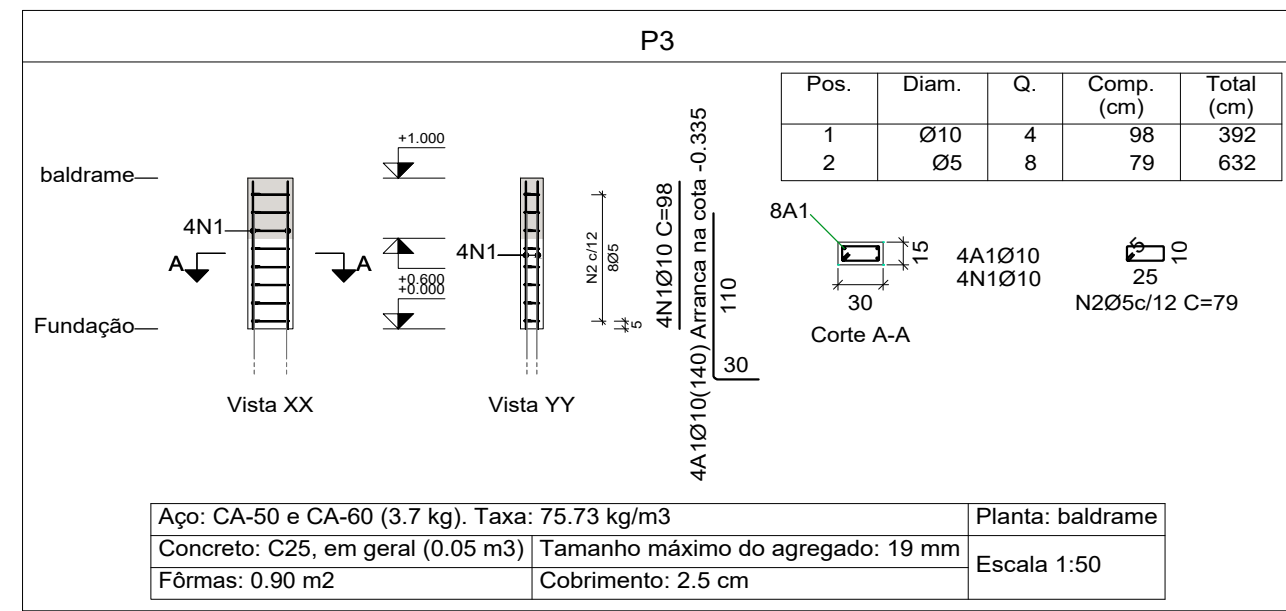
DESENHO: goubert
MAR/2023

PLANTAS: VIGAS COBERTURA
EXECUÇÃO: FRANCHA 12/16

Documento assinado digitalmente:
ALSANORE MONTENEGRO COLIBERO
Data: 06/03/2024 14:04:05 -0300
Verifique em https://validar.rj.gov.br



Pilares que nascem em baldrame e chegam em reservatório
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60



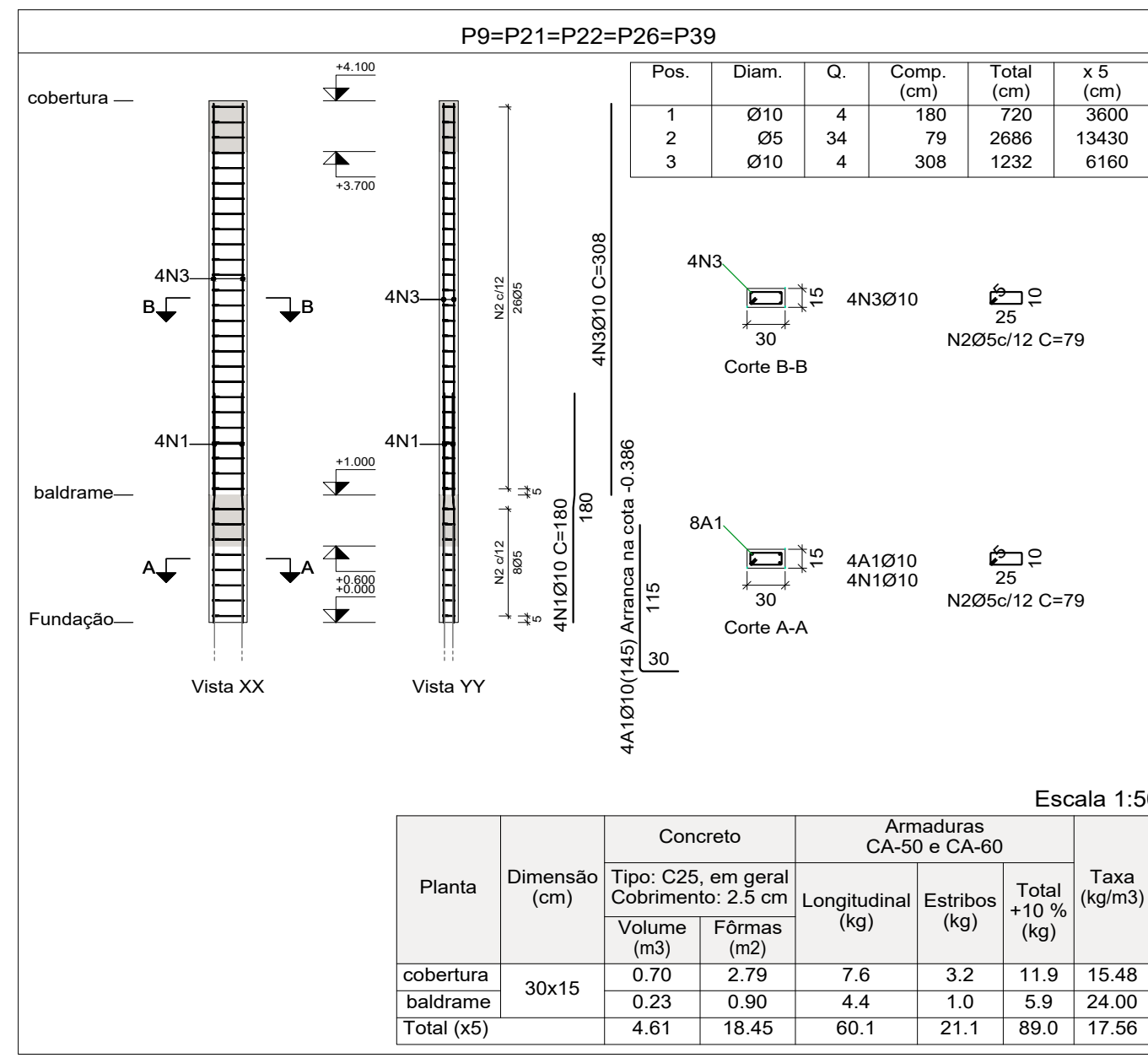
| Elemento | Pos. | Diam. (cm) | Q. | Esquema (cm) | Comp. (cm) | Total (cm) | CA-50 (kg) | CA-60 (kg) |
|-------------------|------|------------|----|--------------|------------|------------|------------|------------|
| P1=P2=P42 | 1 | Ø10 | 4 | 98 | 98 | 392 | 2.4 | |
| | 2 | Ø5 | 8 | 79 | 79 | 632 | | 1.0 |
| Total+10% (x3) | | | | | | | 2.6 | 1.1 |
| P3 | 1 | Ø10 | 4 | 98 | 98 | 392 | 2.4 | |
| | 2 | Ø5 | 8 | 79 | 79 | 632 | | 1.0 |
| Total+10% (x2) | | | | | | | 2.6 | 1.1 |
| P41=P43 | 1 | Ø10 | 4 | 98 | 98 | 392 | 2.4 | |
| | 2 | Ø5 | 8 | 79 | 79 | 632 | | 1.0 |
| Total+10% (x2) | | | | | | | 2.6 | 1.1 |
| P4=P38 | 1 | Ø10 | 6 | 180 | 180 | 1080 | 6.7 | |
| | 2 | Ø5 | 34 | 99 | 99 | 3366 | | 5.3 |
| | 3 | Ø5 | 34 | 23 | 782 | 1564 | | 1.2 |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | |
| Total+10% (x2) | | | | | | | 19.9 | 7.2 |
| Total+10% (x5) | | | | | | | 66.0 | 23.0 |
| P40 | 1 | Ø10 | 6 | 180 | 180 | 1080 | 6.7 | |
| | 2 | Ø5 | 34 | 99 | 99 | 3366 | | 5.3 |
| | 3 | Ø5 | 34 | 23 | 782 | 1564 | | 1.2 |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | |
| Total+10% (x2) | | | | | | | 19.9 | 7.2 |
| P5=P6=P23=P32=P33 | 1 | Ø10 | 4 | 180 | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | 79 | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | 308 | 308 | 1232 | 7.6 | |
| Total+10% (x5) | | | | | | | 13.2 | 4.6 |
| P19=P28 | 1 | Ø10 | 4 | 180 | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | 79 | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | 308 | 308 | 1232 | 7.6 | |
| Total+10% (x2) | | | | | | | 13.2 | 4.6 |
| P7 | 1 | Ø12.5 | 4 | 180 | 180 | 720 | 6.9 | |
| | 2 | Ø12.5 | 4 | 150 | 150 | 600 | 5.8 | |
| | 3 | Ø8 | 19 | 98 | 98 | 1862 | 7.4 | |
| | 4 | Ø8 | 38 | 24 | 912 | 1824 | 3.6 | |
| | 5 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | |
| | 6 | Ø5 | 26 | 99 | 2574 | 5148 | 4.0 | |
| | 7 | Ø5 | 26 | 23 | 598 | 1196 | 0.9 | |
| Total+10% (x2) | | | | | | | 38.6 | 5.4 |
| P8 | 1 | Ø12.5 | 4 | 180 | 180 | 720 | 6.9 | |
| | 2 | Ø8 | 7 | 78 | 78 | 546 | 2.2 | |
| | 3 | Ø10 | 4 | 308 | 308 | 1232 | 7.6 | |
| | 4 | Ø5 | 26 | 79 | 2054 | 4108 | 3.2 | |
| Total+10% (x2) | | | | | | | 18.4 | 3.5 |
| P12=P30 | 1 | Ø12.5 | 4 | 180 | 180 | 720 | 6.9 | |
| | 2 | Ø8 | 7 | 78 | 78 | 546 | 2.2 | |
| | 3 | Ø10 | 4 | 308 | 308 | 1232 | 7.6 | |
| | 4 | Ø5 | 26 | 79 | 2054 | 4108 | 3.2 | |
| Total+10% (x2) | | | | | | | 18.4 | 3.5 |
| Total+10% (x3) | | | | | | | 36.8 | 7.0 |
| Ø5: 0.0 | | | | | | | 76.3 | |
| Ø8: 19.3 | | | | | | | 0.0 | |
| Ø10: 205.4 | | | | | | | 0.0 | |
| Ø12.5: 36.8 | | | | | | | 0.0 | |
| Total: | | | | | | | 261.5 | 76.3 |

MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOGLIMENTO DE MENORES

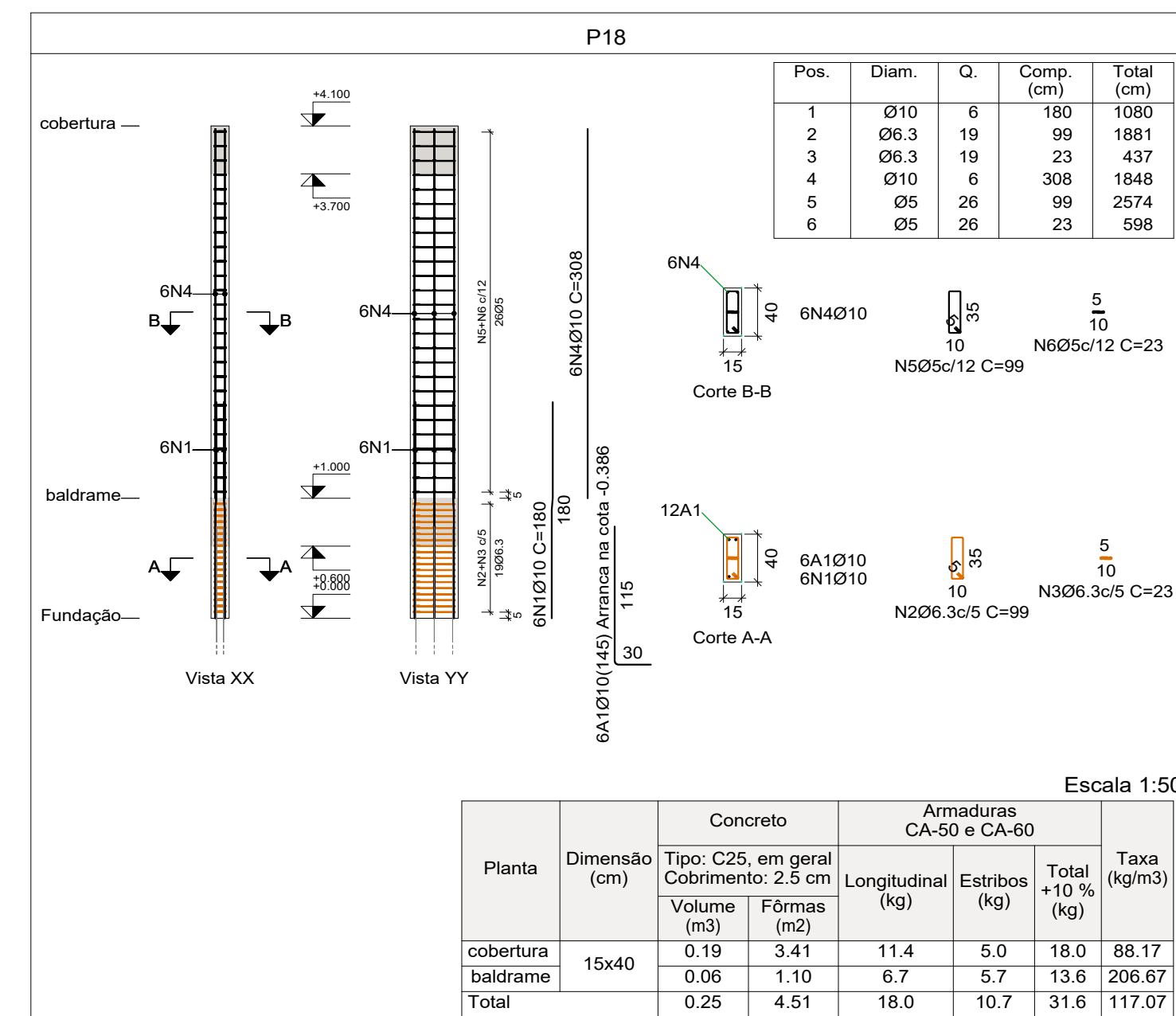
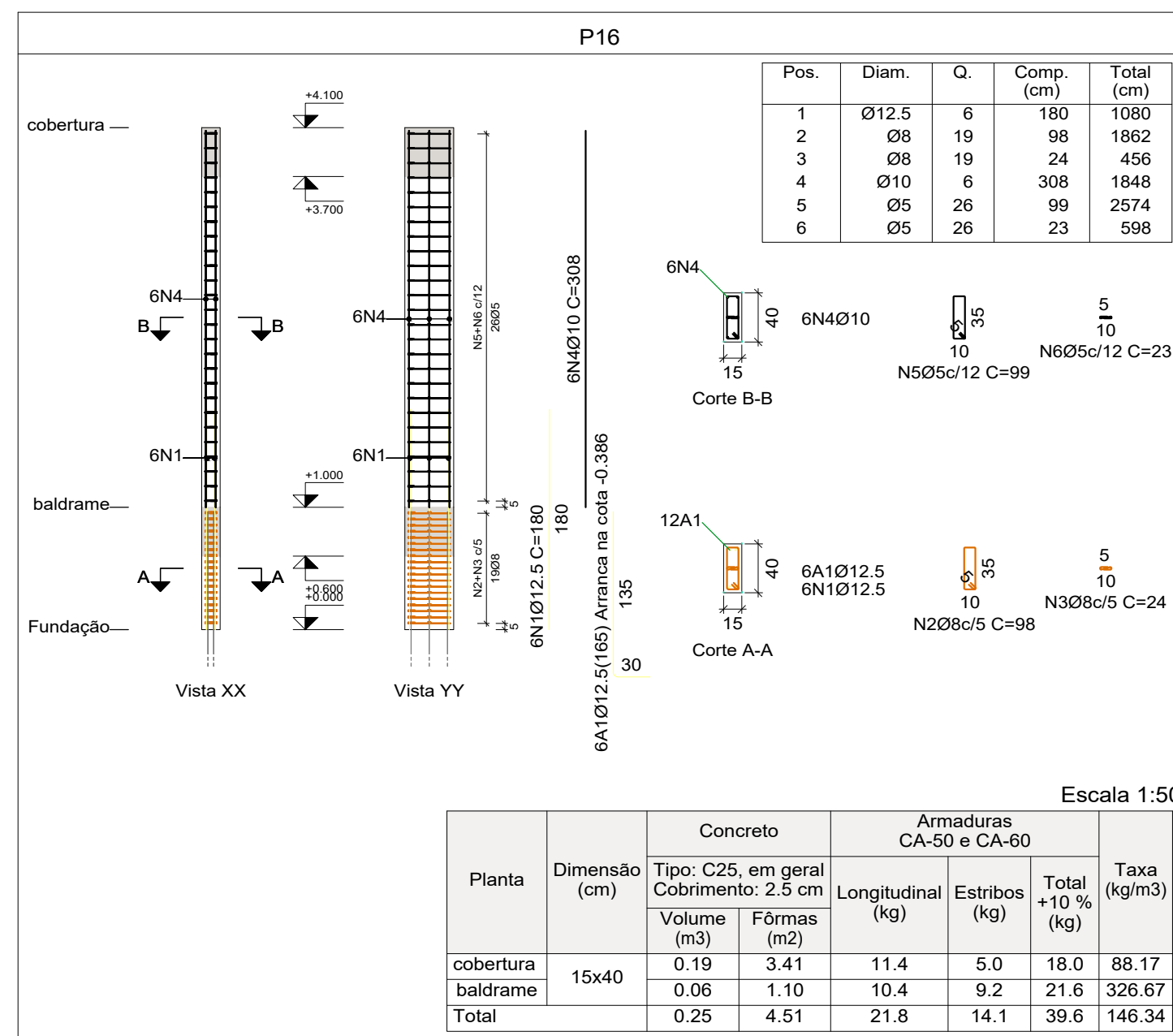
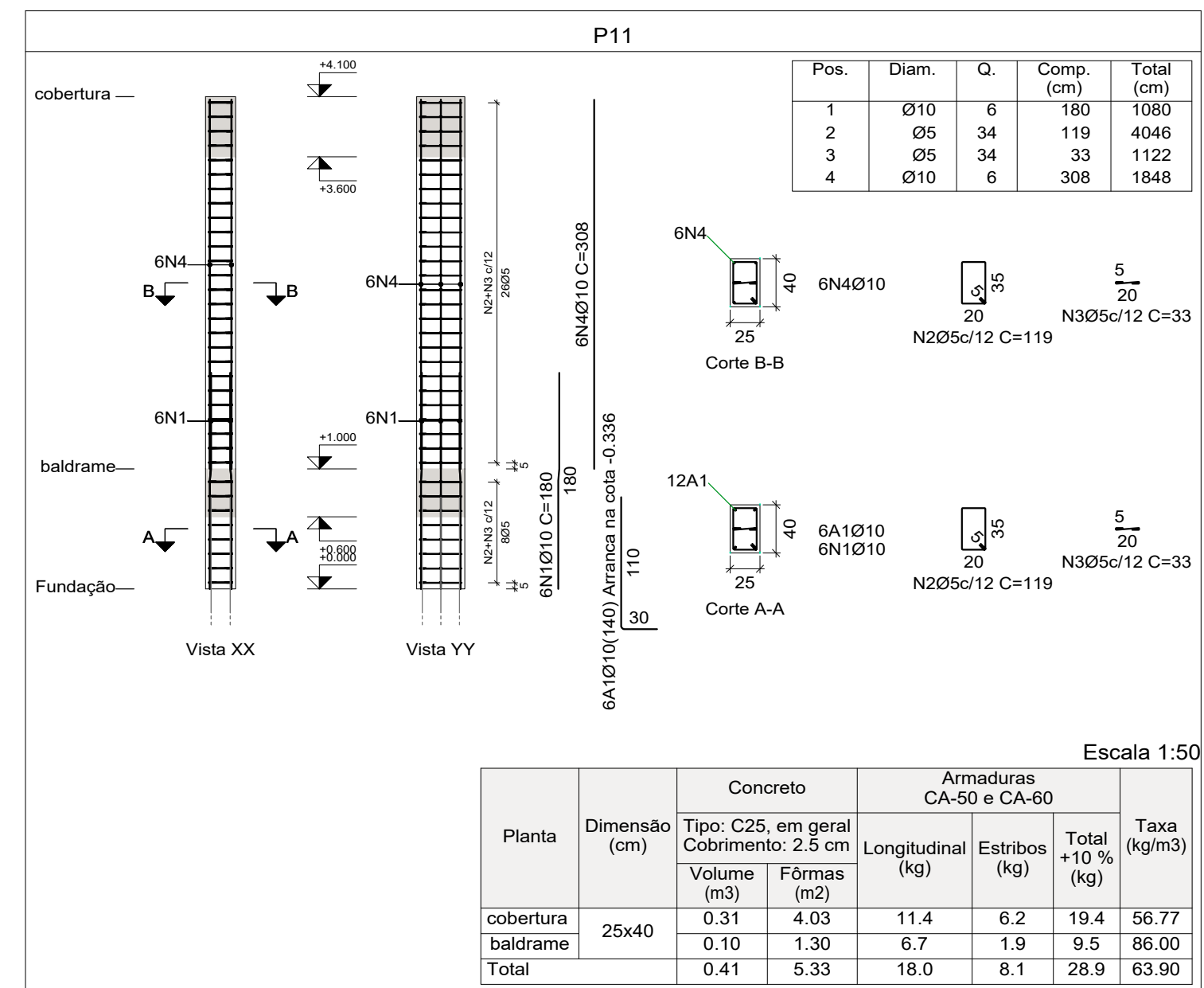
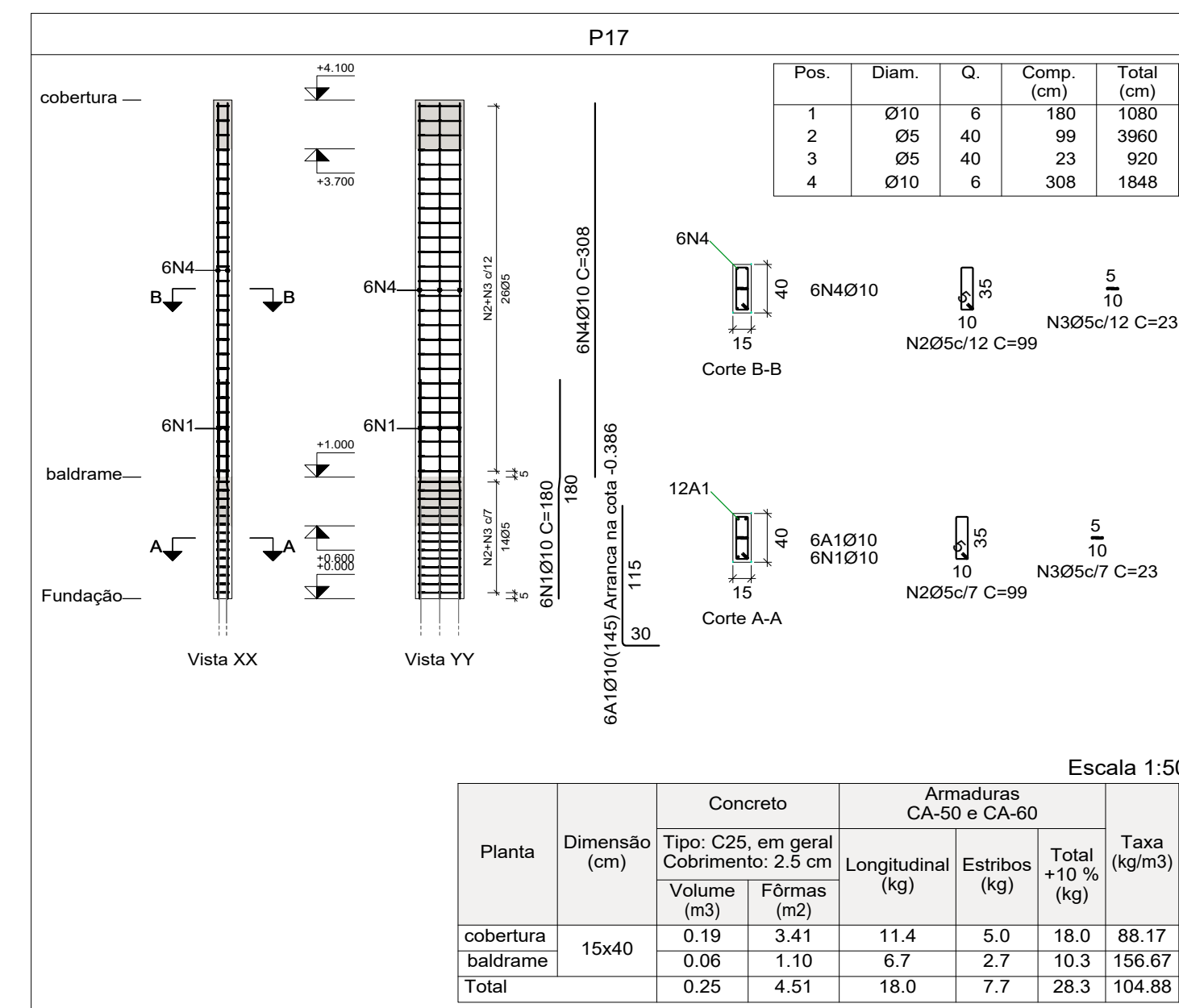
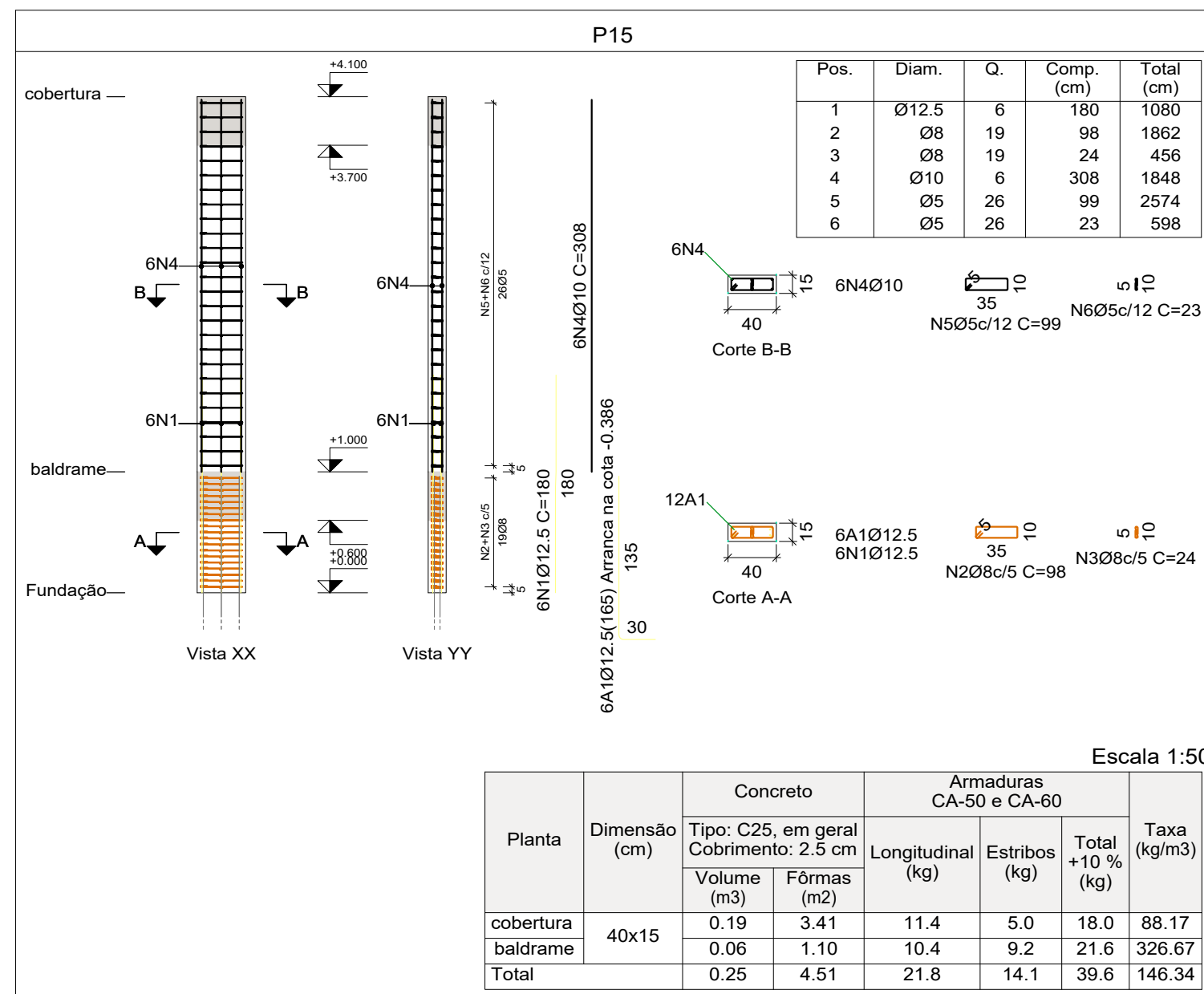
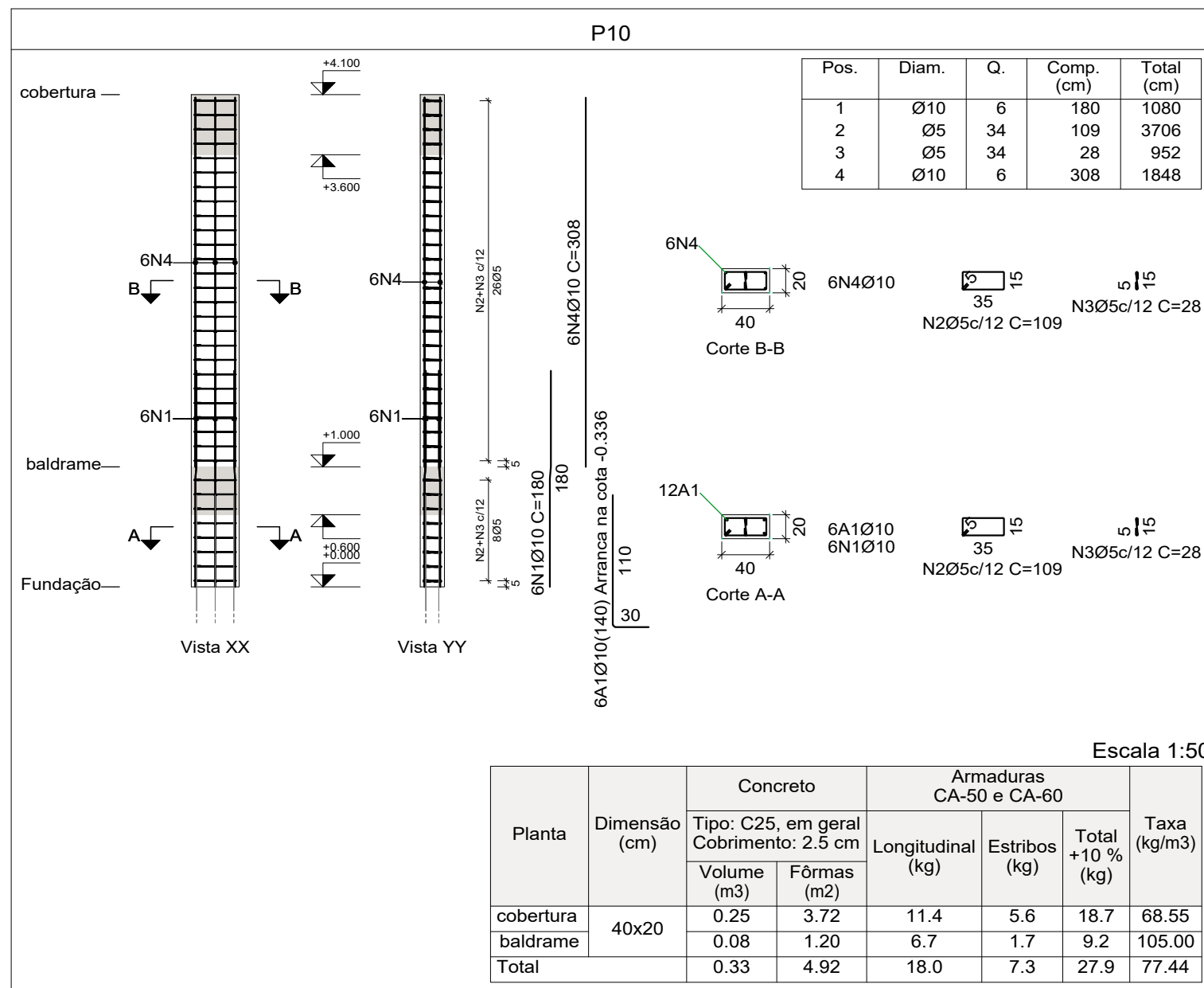
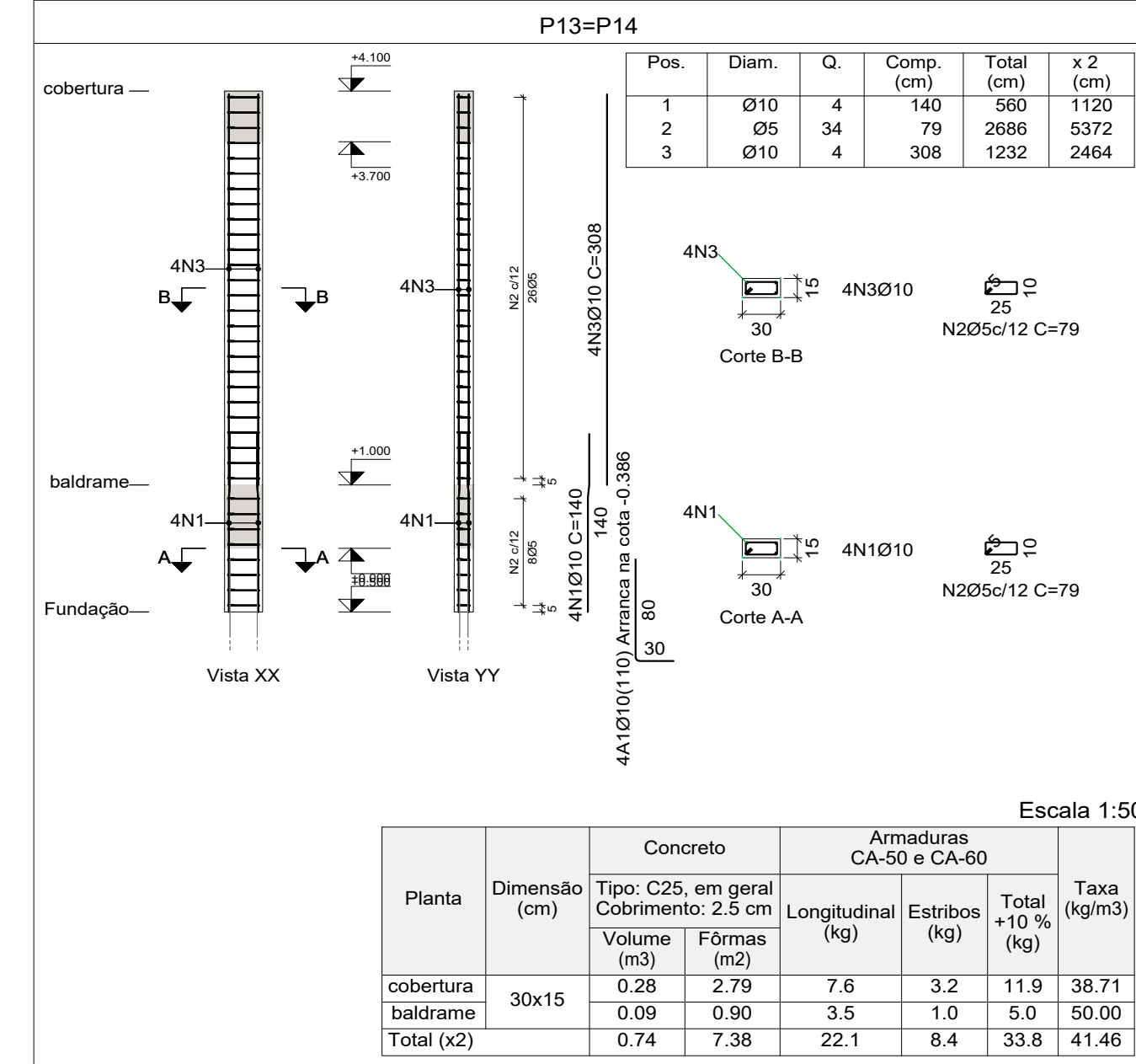
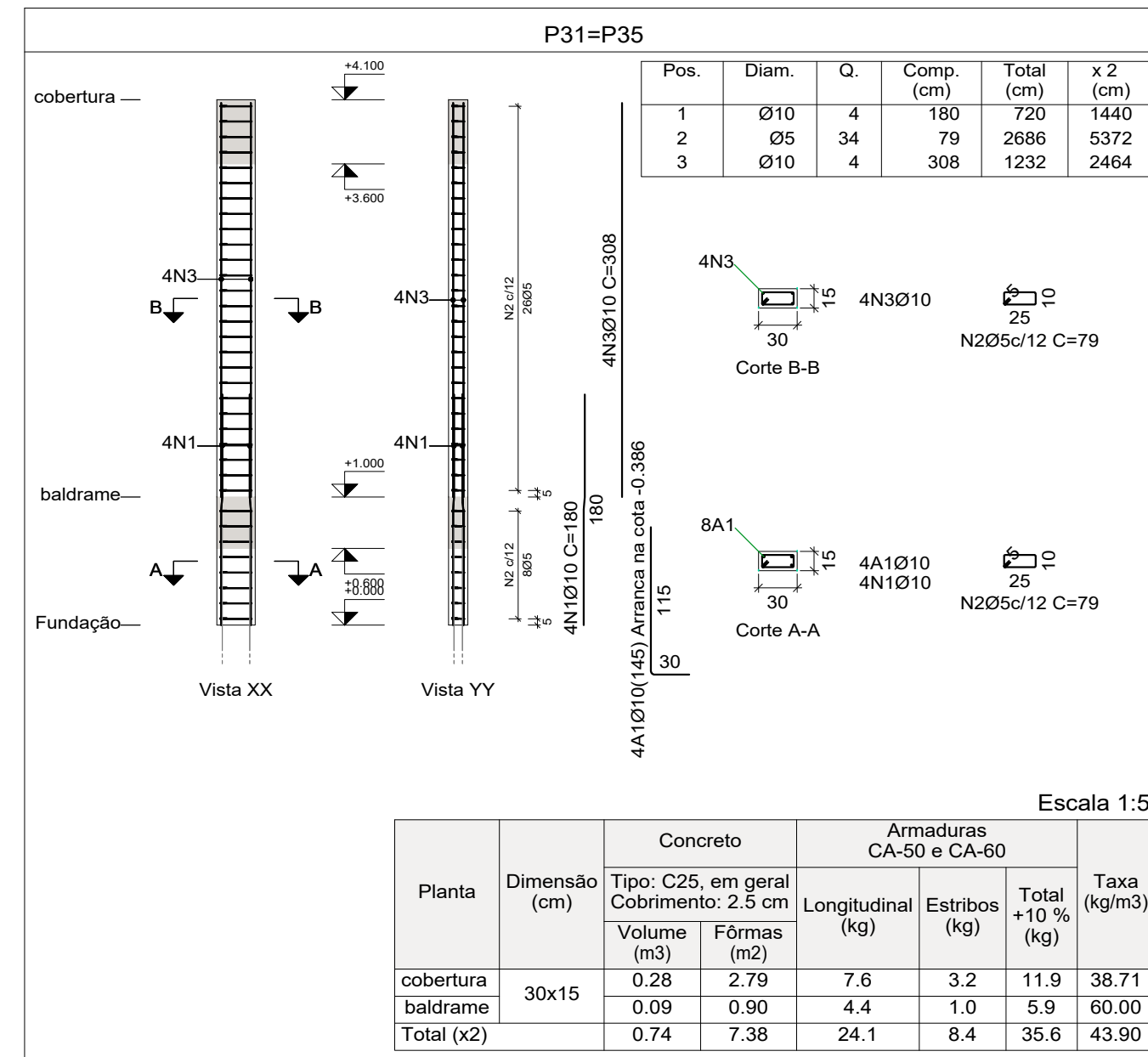
OBRA: USO CENTRO DE ACOGLIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Amoldo Tonini, lado ímpar - Bairro Hermery - IBIRUBÁ

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: 434,34 M²
 EXECUÇÃO: MAR/2023
 PRANCHA: 14/16

Documentação assinada digitalmente
 Alexandre Montenegro Colvoro
 Data: 06/02/2024 14:04:05-0300
 Verifique em: https://validar.rj.gov.br



Pilares que nascem em baldrame e chegam em reservatório
 Concreto: C25, em geral
 Aço das barras: CA-50 e CA-60
 Aço dos estribos: CA-50 e CA-60



| Elemento | Pos. | Diam. | Q. | Esquema (cm) | Comp. (cm) | Total (cm) | CA-50 (kg) | CA-60 (kg) |
|--------------------|------|-------|----|--------------|------------|------------|------------|------------|
| P9=P21=P22=P26=P39 | 1 | Ø10 | 4 | 90-10-80 | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | 25 | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | 308 | 308 | 1232 | 7.6 | 23.0 |
| Total+10% (x5) | | | | | | | 13.2 | 4.6 |
| P31=P35 | 1 | Ø10 | 4 | 90-10-80 | 180 | 720 | 4.4 | |
| | 2 | Ø5 | 34 | 25 | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | 308 | 308 | 1232 | 7.6 | 23.0 |
| Total+10% (x2) | | | | | | | 13.2 | 4.6 |
| P10 | 1 | Ø10 | 6 | 90-10-80 | 180 | 1080 | 6.7 | |
| | 2 | Ø5 | 34 | 25 | 109 | 3706 | | 5.8 |
| | 3 | Ø5 | 34 | 28 | 28 | 952 | | 1.5 |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | |
| Total+10% (x2) | | | | | | | 30.8 | 19.9 |
| P11 | 1 | Ø10 | 6 | 90-10-80 | 180 | 1080 | 6.7 | |
| | 2 | Ø5 | 34 | 25 | 119 | 4046 | | 6.4 |
| | 3 | Ø5 | 34 | 33 | 33 | 1122 | | 1.8 |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | |
| Total+10% (x2) | | | | | | | 34.1 | 9.0 |
| P13=P14 | 1 | Ø10 | 4 | 90-10-80 | 140 | 560 | 3.5 | |
| | 2 | Ø5 | 34 | 25 | 79 | 2686 | | 4.2 |
| | 3 | Ø10 | 4 | 308 | 308 | 1232 | 7.6 | |
| Total+10% (x2) | | | | | | | 12.2 | 4.6 |
| P15 | 1 | Ø12.5 | 6 | 88-13-80 | 180 | 1080 | 10.4 | |
| | 2 | Ø8 | 19 | 25 | 98 | 1862 | 7.4 | |
| | 3 | Ø8 | 19 | 24 | 24 | 456 | 1.8 | |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | |
| | 5 | Ø5 | 26 | 25 | 99 | 2574 | 4.0 | |
| | 6 | Ø5 | 26 | 23 | 23 | 598 | 0.9 | |
| Total+10% | | | | | | | 34.1 | 5.4 |
| P17 | 1 | Ø10 | 6 | 90-10-80 | 180 | 1080 | 6.7 | |
| | 2 | Ø5 | 40 | 23 | 99 | 3960 | | 6.2 |
| | 3 | Ø5 | 40 | 23 | 99 | 3960 | | 1.4 |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | |
| Total+10% | | | | | | | 19.9 | 8.4 |
| P18 | 1 | Ø10 | 6 | 90-10-80 | 180 | 1080 | 6.7 | |
| | 2 | Ø6.3 | 19 | 25 | 99 | 1881 | 4.6 | |
| | 3 | Ø6.3 | 19 | 23 | 23 | 437 | 1.1 | |
| | 4 | Ø10 | 6 | 308 | 308 | 1848 | 11.4 | |
| | 5 | Ø5 | 26 | 25 | 99 | 2574 | 4.0 | |
| | 6 | Ø5 | 26 | 23 | 23 | 598 | 0.9 | |
| Total+10% | | | | | | | 26.2 | 5.4 |
| | | | | | | | Ø5: | 0.0 |
| | | | | | | | Ø6.3: | 6.3 |
| | | | | | | | Ø8: | 20.4 |
| | | | | | | | Ø10: | 22.1 |
| | | | | | | | Ø12.5: | 22.8 |
| | | | | | | | Total: | 270.9 |
| | | | | | | | Ø3.0: | 83.0 |

MUNICÍPIO DE IBIRUBÁ
 CENTRO DE ACOLHIMENTO DE MENORES

OBRA: CENTRO DE ACOLHIMENTO DE MENORES
 LOCALIZAÇÃO: Rua Carlos Pranke, lado par, esquina com a rua Arnaldo Torres, lado ímpar - Bairro Hermany - IBIRUBÁ/RS

PROPRIETÁRIO: MUNICÍPIO DE IBIRUBÁ
 DESENHO: MAR/2023

EXECUÇÃO: PRANCHA 15/16

ÁREA: 434,34 M²

Documentação assinada digitalmente
 ALEXANDRE MONTENEGRO COLVERO
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