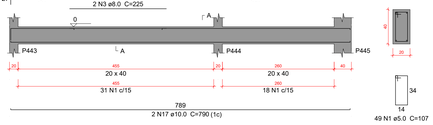
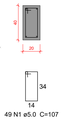
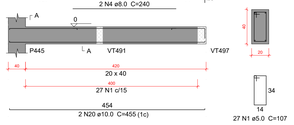
## VT282
ESC 1:50




SEÇÃO A-A
ESC 1:25



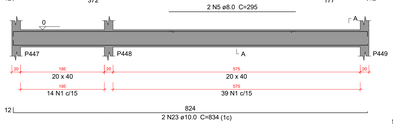

## VT283
ESC 1:50



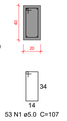

SEÇÃO A-A
ESC 1:25



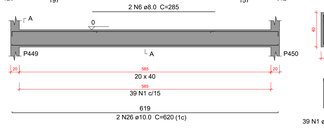

## VT284
ESC 1:50



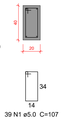

SEÇÃO A-A
ESC 1:25



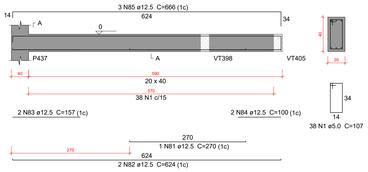

## VT285
ESC 1:50



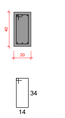

SEÇÃO A-A
ESC 1:25



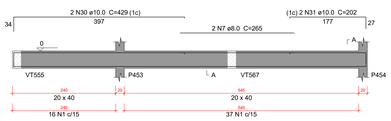

## VT286
ESC 1:50




SEÇÃO A-A
ESC 1:25

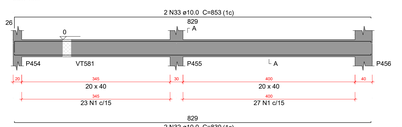



## VT287
ESC 1:50

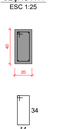



SEÇÃO A-A
ESC 1:25

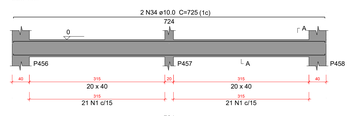
## VT288
ESC 1:50



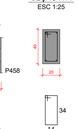

SEÇÃO A-A
ESC 1:25



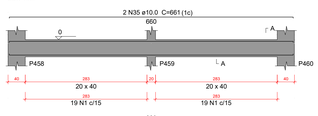

## VT289
ESC 1:50



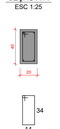

SEÇÃO A-A
ESC 1:25



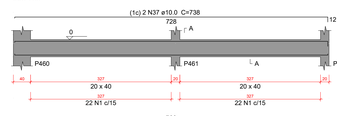

## VT290
ESC 1:50



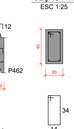

SEÇÃO A-A
ESC 1:25



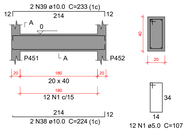

## VT291
ESC 1:50



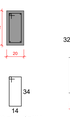

SEÇÃO A-A
ESC 1:25



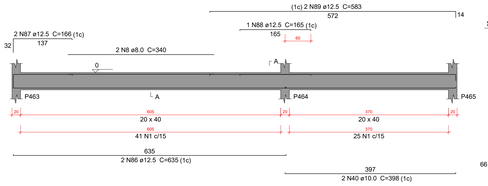

## VT292
ESC 1:50



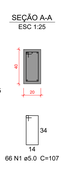

SEÇÃO A-A
ESC 1:25



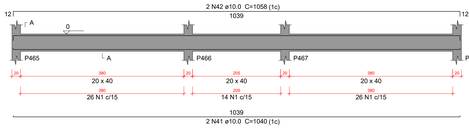

## VT293
ESC 1:50



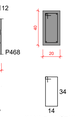

SEÇÃO A-A
ESC 1:25



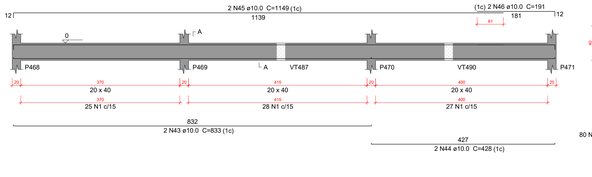

## VT294
ESC 1:50



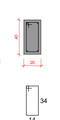

SEÇÃO A-A
ESC 1:25



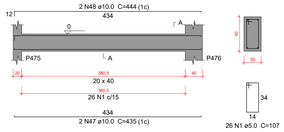

## VT295
ESC 1:50




SEÇÃO A-A
ESC 1:25



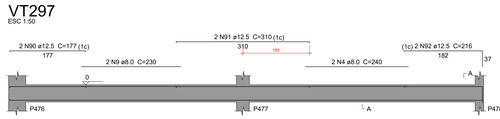

## VT296
ESC 1:50




SEÇÃO A-A
ESC 1:25

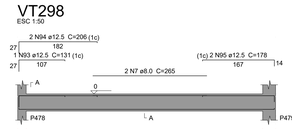



## VT297
ESC 1:50



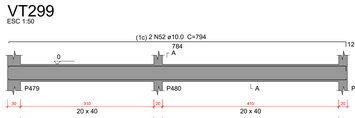

SEÇÃO A-A
ESC 1:25

## VT298
ESC 1:50

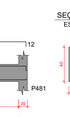



SEÇÃO A-A
ESC 1:25

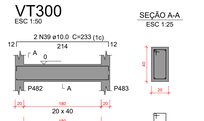
## VT299
ESC 1:50




SEÇÃO A-A
ESC 1:25



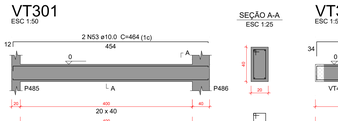

## VT300
ESC 1:50




SEÇÃO A-A
ESC 1:25



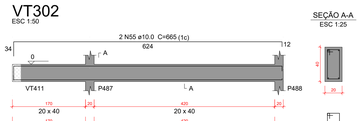

## VT301
ESC 1:50




SEÇÃO A-A
ESC 1:25



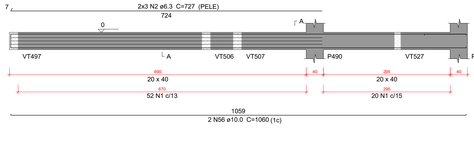

## VT302
ESC 1:50



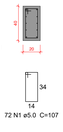

SEÇÃO A-A
ESC 1:25



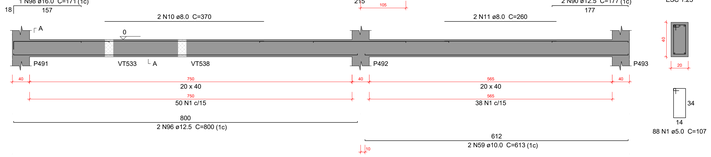

## VT303
ESC 1:50




SEÇÃO A-A
ESC 1:25



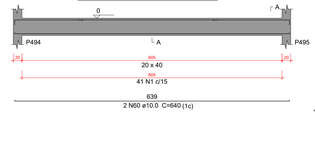

## VT304
ESC 1:50



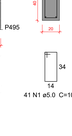

SEÇÃO A-A
ESC 1:25



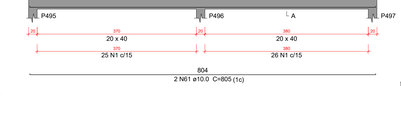

## VT305
ESC 1:50




SEÇÃO A-A
ESC 1:25

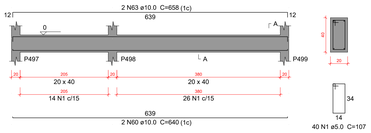



## VT306
ESC 1:50




SEÇÃO A-A
ESC 1:25

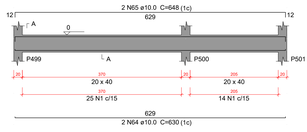
## VT307
ESC 1:50



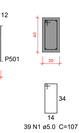

SEÇÃO A-A
ESC 1:25



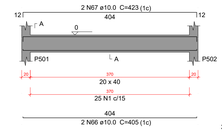

## VT308
ESC 1:50



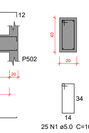

SEÇÃO A-A
ESC 1:25



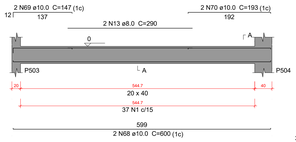

## VT309
ESC 1:50




SEÇÃO A-A
ESC 1:25

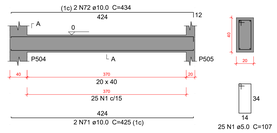



## VT310
ESC 1:50




SEÇÃO A-A
ESC 1:25

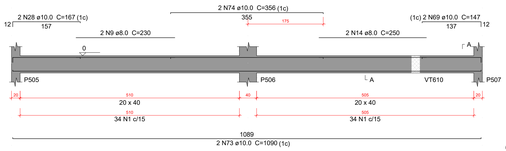
## VT311
ESC 1:50



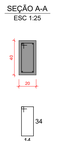

SEÇÃO A-A
ESC 1:25



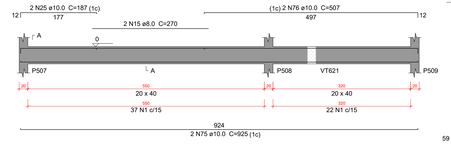

## VT312
ESC 1:50



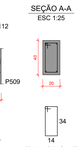

SEÇÃO A-A
ESC 1:25



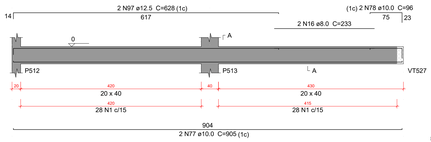

## VT313
ESC 1:50



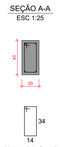

SEÇÃO A-A
ESC 1:25



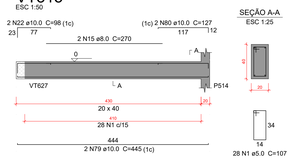

## VT314
ESC 1:50



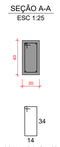

SEÇÃO A-A
ESC 1:25




## VT315
ESC 1:50




SEÇÃO A-A
ESC 1:25




### Relação do aço

| | | |
|---|---|---|
| VT282 | VT283 | VT284 |
| VT285 | VT286 | VT287 |
| VT288 | VT289 | VT290 |
| VT291 | VT292 | VT293 |
| VT294 | VT295 | VT296 |
| VT297 | VT298 | VT299 |
| VT300 | VT301 | VT302 |
| VT303 | VT304 | VT305 |
| VT306 | VT307 | VT308 |
| VT309 | VT310 | VT311 |
| VT312 | VT313 | VT314 |
| VT315 | | |

| AÇO | N | DIAM (mm) | QUANT | C.UNIT (cm) | C.TOTAL (cm) |
|---|---|---|---|---|---|
| CA60 | 1 | 5.0 | 1545 | 107 | 165315 |
| CA50 | 2 | 6.3 | 6 | 727 | 4362 |
| | 3 | 8.0 | 2 | 225 | 450 |
| | 4 | 8.0 | 4 | 240 | 960 |
| | 5 | 8.0 | 2 | 295 | 590 |
| | 6 | 8.0 | 2 | 285 | 570 |
| | 7 | 8.0 | 4 | 265 | 1060 |
| | 8 | 8.0 | 2 | 340 | 680 |
| | 9 | 8.0 | 4 | 230 | 920 |
| | 10 | 8.0 | 2 | 370 | 740 |
| | 11 | 8.0 | 2 | 260 | 520 |
| | 12 | 8.0 | 2 | 325 | 650 |
| | 13 | 8.0 | 2 | 290 | 580 |
| | 14 | 8.0 | 2 | 250 | 500 |
| | 15 | 8.0 | 4 | 270 | 1080 |
| | 16 | 8.0 | 2 | 233 | 466 |
| | 17 | 10.0 | 2 | 790 | 1580 |
| | 18 | 10.0 | 2 | 172 | 344 |
| | 19 | 10.0 | 2 | 438 | 876 |
| | 20 | 10.0 | 4 | 455 | 1820 |
| | 21 | 10.0 | 2 | 158 | 316 |
| | 22 | 10.0 | 4 | 98 | 392 |
| | 23 | 10.0 | 2 | 834 | 1668 |
| | 24 | 10.0 | 2 | 382 | 764 |
| | 25 | 10.0 | 6 | 187 | 1122 |
| | 26 | 10.0 | 2 | 620 | 1240 |
| | 27 | 10.0 | 2 | 207 | 414 |
| | 28 | 10.0 | 6 | 167 | 1002 |
| | 29 | 10.0 | 2 | 827 | 1654 |
| | 30 | 10.0 | 2 | 429 | 858 |
| | 31 | 10.0 | 2 | 202 | 404 |
| | 32 | 10.0 | 2 | 830 | 1660 |
| | 33 | 10.0 | 2 | 853 | 1706 |
| | 34 | 10.0 | 2 | 725 | 2900 |
| | 35 | 10.0 | 4 | 661 | 2644 |
| | 36 | 10.0 | 2 | 729 | 1458 |
| | 37 | 10.0 | 2 | 738 | 1476 |
| | 38 | 10.0 | 4 | 224 | 896 |
| | 39 | 10.0 | 4 | 233 | 932 |
| | 40 | 10.0 | 2 | 398 | 796 |
| | 41 | 10.0 | 2 | 1040 | 2080 |
| | 42 | 10.0 | 2 | 1058 | 2116 |
| | 43 | 10.0 | 2 | 833 | 1666 |
| | 44 | 10.0 | 2 | 428 | 856 |
| | 45 | 10.0 | 2 | 1149 | 2298 |
| | 46 | 10.0 | 2 | 191 | 382 |
| | 47 | 10.0 | 2 | 435 | 870 |
| | 48 | 10.0 | 2 | 444 | 888 |
| | 49 | 10.0 | 2 | 1100 | 2200 |
| | 50 | 10.0 | 2 | 595 | 1190 |
| | 51 | 10.0 | 2 | 785 | 1570 |
| | 52 | 10.0 | 2 | 794 | 1588 |
| | 53 | 10.0 | 2 | 464 | 928 |
| | 54 | 10.0 | 2 | 632 | 1264 |
| | 55 | 10.0 | 2 | 665 | 1330 |
| | 56 | 10.0 | 2 | 1060 | 2120 |
| | 57 | 10.0 | 1 | 98 | 98 |
| | 58 | 10.0 | 2 | 1086 | 2172 |
| | 59 | 10.0 | 2 | 613 | 1226 |
| | 60 | 10.0 | 4 | 640 | 2560 |
| | 61 | 10.0 | 2 | 805 | 1610 |
| | 62 | 10.0 | 2 | 823 | 1646 |
| | 63 | 10.0 | 2 | 658 | 1316 |
| | 64 | 10.0 | 2 | 630 | 1260 |
| | 65 | 10.0 | 2 | 648 | 1296 |
| | 66 | 10.0 | 2 | 405 | 810 |
| | 67 | 10.0 | 2 | 423 | 846 |
| | 68 | 10.0 | 2 | 600 | 1200 |
| | 69 | 10.0 | 4 | 147 | 588 |
| | 70 | 10.0 | 2 | 393 | 786 |
| | 71 | 10.0 | 2 | 425 | 850 |
| | 72 | 10.0 | 2 | 434 | 868 |
| | 73 | 10.0 | 2 | 1090 | 2180 |
| | 74 | 10.0 | 2 | 356 | 712 |
| | 75 | 10.0 | 2 | 925 | 1850 |
| | 76 | 10.0 | 2 | 507 | 1014 |
| | 77 | 10.0 | 2 | 905 | 1810 |
| | 78 | 10.0 | 2 | 96 | 192 |
| | 79 | 10.0 | 2 | 445 | 890 |
| | 80 | 10.0 | 2 | 127 | 254 |
| | 81 | 12.5 | 1 | 270 | 270 |
| | 82 | 12.5 | 2 | 624 | 1248 |
| | 83 | 12.5 | 2 | 157 | 314 |
| | 84 | 12.5 | 2 | 100 | 200 |
| | 85 | 12.5 | 3 | 666 | 1998 |
| | 86 | 12.5 | 2 | 635 | 1270 |
| | 87 | 12.5 | 2 | 166 | 332 |
| | 88 | 12.5 | 1 | 165 | 165 |
| | 89 | 12.5 | 2 | 583 | 1166 |
| | 90 | 12.5 | 4 | 177 | 708 |
| | 91 | 12.5 | 2 | 310 | 620 |
| | 92 | 12.5 | 2 | 216 | 432 |
| | 93 | 12.5 | 1 | 131 | 131 |
| | 94 | 12.5 | 2 | 206 | 412 |
| | 95 | 12.5 | 2 | 178 | 356 |
| | 96 | 12.5 | 2 | 800 | 1600 |
| | 97 | 12.5 | 2 | 628 | 1256 |
| | 98 | 16.0 | 1 | 171 | 171 |
| | 99 | 16.0 | 2 | 236 | 472 |
| | 100 | 16.0 | 1 | 214 | 214 |
| | 101 | 16.0 | 2 | 439 | 878 |

### Resumo do aço

| AÇO | DIAM (mm) | C.TOTAL (m) | PESO + 10 % (kg) |
|---|---|---|---|
| CA50 | 6.3 | 43.7 | 11.7 |
| | 8.0 | 97.7 | 42.4 |
| | 10.0 | 799.1 | 541.9 |
| | 12.5 | 124.8 | 132.2 |
| | 16.0 | 17.4 | 30.1 |
| CA60 | 5.0 | 1653.2 | 280.3 |
| PESO TOTAL (kg) | | | |
| CA50 | 758.4 | | |
| CA60 | 280.3 | | |

Volume de concreto (C-35) = 18.22 m³
Área de forma = 228.05 m²

### Características do Projeto

1 – COBRIMENTO DAS ARMADURAS – PILARES E VIGAS: 3 cm
2 – COBRIMENTO DAS ARMADURAS – LAJES E ESCADAS: 3 cm
3 – COBRIMENTO DAS ARMADURAS – FUNDAÇÃO: 4.5 cm
4– PREVER LASTRO DE CONCRETO MAGRO (5 cm) SOB AS ESTRUTURAS EM CONCRETO.

5 – OS VENTOS INCIDENTES NAS FACES X (90°) E Y (0°), RESPECTIVAMENTE, NÃO OCORREM SIMULTANEAMENTE.

### NOTAS 1 : DURABILIDADE

1 – CLASSE DE AGRESSIVIDADE AMBIENTAL: II
2 – MÓDULO DE ELASTICIDADE > 35.42 GPa
3 – FATOR A/C < 0.4
4 – AÇO CA 50A e CA 60B
5 – CONCRETO CLASSE > 35 MPa
6 – CONSUMO DE CIMENTO > 380 Kg/m3

### NOTAS 2 : NORMAS

– NBR 06118 – 2023 – Projeto de Estruturas de Concreto armado
– NBR 06120 – 2019 – Cargas para o Cálculo de Estruturas de edificações – Procedimento
– NBR 06123 – 2023 – Forças Devidas ao Vento em Edificações
– NBR 8681 – 2003 – Ações e Segurança nas Estruturas
– NBR 6122 – 2022 – Projeto e execução de Fundações

### LEGENDA DA PLANTA DE LOCAÇÃO

A ORIENTAÇÃO DOS EIXOS DOS PILARES
1 ORIENTAÇÃO DOS EIXOS DOS PILARES

### NOTAS 3 : GERAIS

1 – Dimensões em Centímetros e Níveis em metros
2 – Conferir as disposição das armaduras antes da concretagem.
3 – A Responsabilidade pela fiscalização da obra é do Eng° resp Técnico.
4 – Aconselhamos moldagem de corpos de prova para cada caminhão betoneira.
5 – Respeitar os prazos mínimos para retirada de formas e escoramentos.
6 – Evitar romper concreto após endurecido, com marreta e talhadeira.
7 – Toda e qualquer alteração no respectivo projeto, o Calculista deverá ser consultado e o mesmo deverá emitir seu parecer por escrito.

# PROJETO ESTRUTURAL

| | | | |
|---|---|---|---|
| PROJETO ESTRUTURAL | CONTRATADO: Kayo Henrique Moreira | CLIENTE: SECRETARIA DE ATENÇÃO ESPECIALIZADA A SAUDE | 37 |
| | Endereço: Rua: Brasília, nº 395 Bairro: Centro, Areado - MG | OBRA: MATERNIDADE - MINISTÉRIO DA SAUDE | |
| Contratado: | Telefone: Cel: (35) 9 9950-7126 | ENDEREÇO OBRA: MINISTÉRIO DA SAUDE | Número Cliente: 01/2024 |
| CREA-MG : 199774/D | Email: engckvit.kayomoreira@gmail.com | | |

| | VERIF | ENTREGA | REVISÃO |
|---|---|---|---|
| DATA | 26/06/2024 | 26/06/2024 | 01 |
| NOME | | | |
| VISTO | | | |

UNIDADE: (EXCETO INDICADO) cm
REFERÊNCIA: (1°DIEDRO)
TÍTULO: DETALHAMENTO DAS VIGAS EM CONCRETO ARMADO NÍVEL DO PAVIMENTO CALÇADA (TÉRREO)

| Classe Concreto-MPa: | ESCALA: | DESENHO NÚMERO: | MOD: | REVISÃO: | FOLHA: |
|---|---|---|---|---|---|
| 35 | INDICADAS EM PLANTA | 37 | EST | 01 | 37 / 85 |