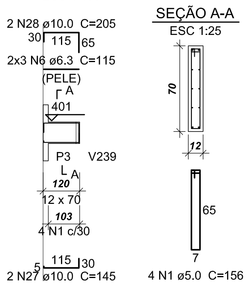
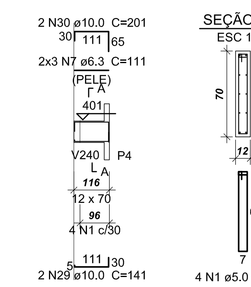
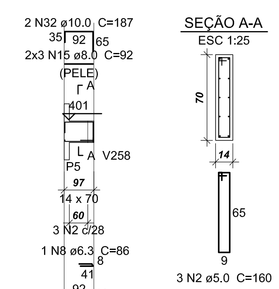
## V201 (12 x 70)
ESC 1:100



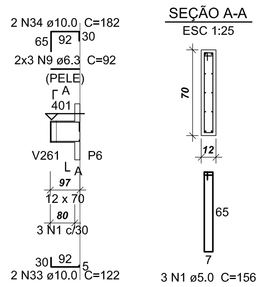

## V202 (12 x 70)
ESC 1:100



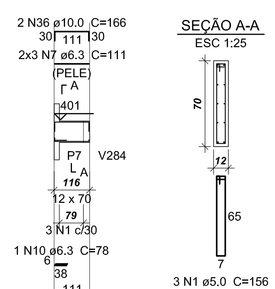

## V203 (14 x 70)
ESC 1:100



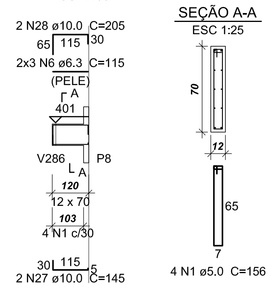

## V204 (12 x 70)
ESC 1:100



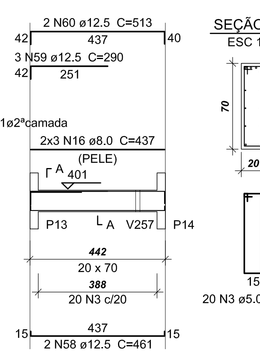

## V205 (12 x 70)
ESC 1:100



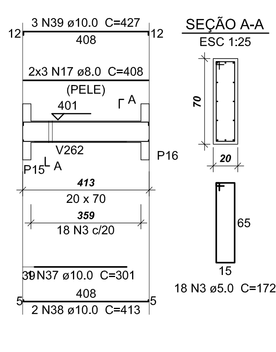

## V206 (12 x 70)
ESC 1:100



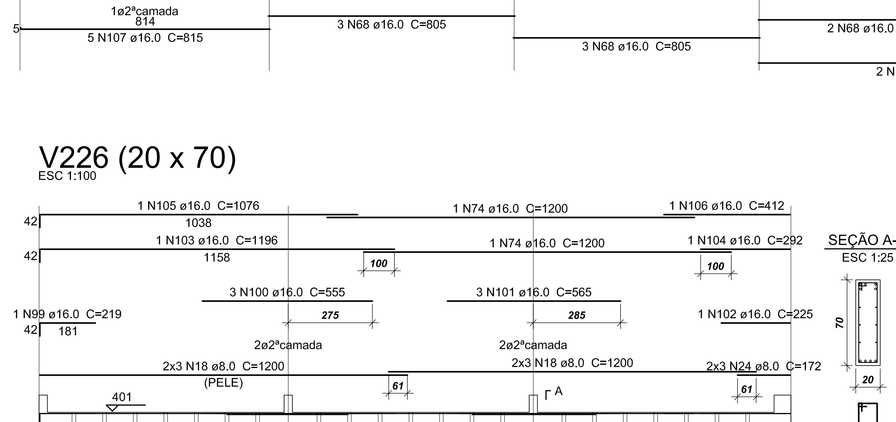

## V208 (20 x 70)
ESC 1:100



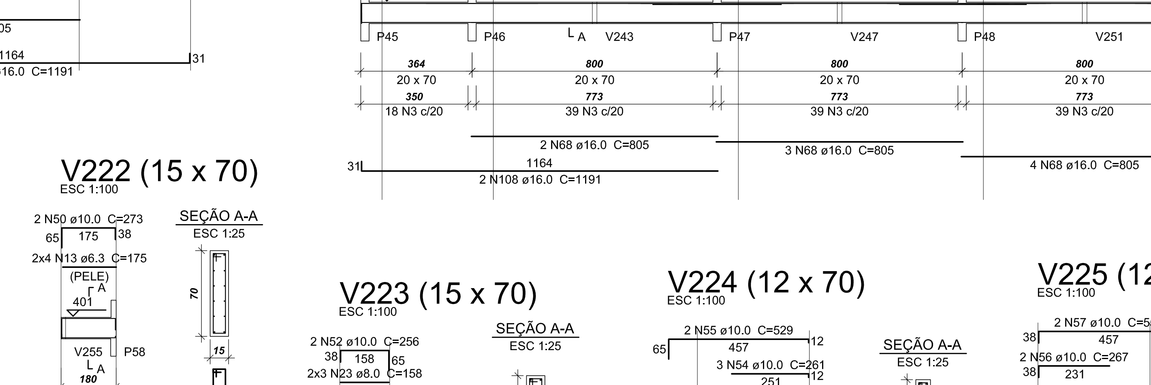

## V210 (20 x 70)
ESC 1:100



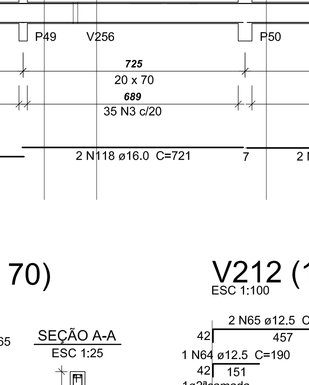

## V207 (20 x 70)
ESC 1:100



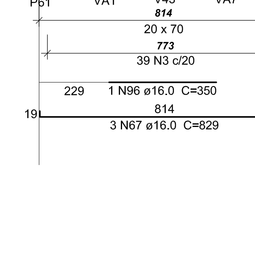

## V209 (20 x 70)
ESC 1:100



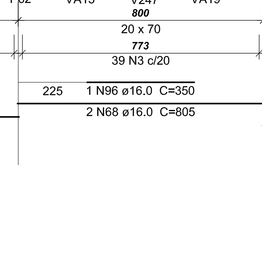

## V211 (12 x 70)
ESC 1:100



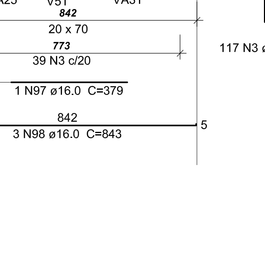

## V213 (20 x 50)
ESC 1:100




## V214 (15 x 70)
ESC 1:100




## V215 (15 x 70)
ESC 1:100



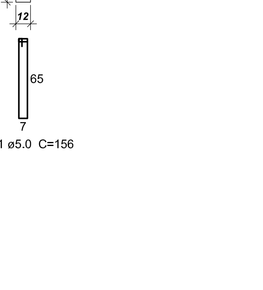

## V216 (20 x 50)
ESC 1:100




## V217 (20 x 70)
ESC 1:100




## V218 (15 x 70)
ESC 1:100




## V219 (20 x 70)
ESC 1:100




## V220 (20 x 70)
ESC 1:100




## V226 (20 x 70)
ESC 1:100




## V222 (15 x 70)
ESC 1:100




## V223 (15 x 70)
ESC 1:100




## V224 (12 x 70)
ESC 1:100




## V225 (12 x 70)
ESC 1:100




## V212 (12 x 70)
ESC 1:100




## Relação do aço

| AÇO | N | DIAM | Q | UNIT (cm) | C.TOTAL (cm) |
|---|---|---|---|---|---|
| CA60 | 1 | 5.0 | 74 | 156 | 11544 |
| | 2 | 5.0 | 3 | 160 | 480 |
| | 3 | 5.0 | 972 | 172 | 167184 |
| | 4 | 5.0 | 40 | 132 | 5280 |
| | 5 | 5.0 | 56 | 162 | 9072 |
| CA50 | 6 | 6.3 | 12 | 115 | 1380 |
| | 7 | 6.3 | 12 | 111 | 1332 |
| | 8 | 6.3 | 1 | 86 | 86 |
| | 9 | 6.3 | 6 | 92 | 552 |
| | 10 | 6.3 | 1 | 78 | 78 |
| | 11 | 6.3 | 24 | 457 | 10968 |
| | 12 | 6.3 | 1 | 92 | 92 |
| | 13 | 6.3 | 8 | 175 | 1400 |
| | 14 | 6.3 | 2 | 77 | 154 |
| | 15 | 8.0 | 6 | 92 | 552 |
| | 16 | 8.0 | 6 | 437 | 2622 |
| | 17 | 8.0 | 18 | 408 | 7344 |
| | 18 | 8.0 | 84 | 1200 | 100800 |
| | 19 | 8.0 | 6 | 144 | 864 |
| | 20 | 8.0 | 6 | 944 | 5664 |
| | 21 | 8.0 | 6 | 431 | 2586 |
| | 22 | 8.0 | 6 | 909 | 5454 |
| | 23 | 8.0 | 6 | 158 | 948 |
| | 24 | 8.0 | 6 | 172 | 1032 |
| | 25 | 8.0 | 6 | 155 | 930 |
| | 26 | 8.0 | 6 | 776 | 4656 |
| | 27 | 10.0 | 4 | 145 | 580 |
| | 28 | 10.0 | 4 | 205 | 820 |
| | 29 | 10.0 | 2 | 141 | 282 |
| | 30 | 10.0 | 2 | 201 | 402 |
| | 31 | 10.0 | 2 | 104 | 208 |
| | 32 | 10.0 | 2 | 187 | 374 |
| | 33 | 10.0 | 2 | 122 | 244 |
| | 34 | 10.0 | 2 | 182 | 364 |
| | 35 | 10.0 | 2 | 123 | 246 |
| | 36 | 10.0 | 2 | 166 | 332 |
| | 37 | 10.0 | 1 | 301 | 301 |
| | 38 | 10.0 | 4 | 413 | 1652 |
| | 39 | 10.0 | 3 | 427 | 1281 |
| | 40 | 10.0 | 2 | 257 | 514 |
| | 41 | 10.0 | 2 | 312 | 624 |
| | 42 | 10.0 | 2 | 436 | 872 |
| | 43 | 10.0 | 2 | 467 | 934 |
| | 44 | 10.0 | 2 | 420 | 840 |
| | 45 | 10.0 | 2 | 444 | 888 |
| | 46 | 10.0 | 2 | 633 | 1266 |
| | 47 | 10.0 | 2 | 695 | 1390 |
| | 48 | 10.0 | 2 | 479 | 958 |
| | 49 | 10.0 | 2 | 187 | 374 |
| | 50 | 10.0 | 2 | 273 | 546 |
| | 51 | 10.0 | 2 | 170 | 340 |
| | 52 | 10.0 | 2 | 256 | 512 |
| | 53 | 10.0 | 4 | 487 | 1948 |
| | 54 | 10.0 | 3 | 261 | 783 |
| | 55 | 10.0 | 2 | 529 | 1058 |
| | 56 | 10.0 | 2 | 267 | 534 |
| | 57 | 10.0 | 2 | 555 | 1110 |
| | 58 | 12.5 | 2 | 461 | 922 |
| | 59 | 12.5 | 3 | 290 | 870 |
| | 60 | 12.5 | 2 | 513 | 1026 |
| | 61 | 12.5 | 4 | 480 | 1920 |
| | 62 | 12.5 | 1 | 192 | 192 |
| | 63 | 12.5 | 2 | 560 | 1120 |
| | 64 | 12.5 | 1 | 190 | 190 |
| | 65 | 12.5 | 2 | 558 | 1116 |

## Relação do aço

| AÇO | N | DIAM | Q | UNIT (cm) | C.TOTAL (cm) |
|---|---|---|---|---|---|
| CA50 | 66 | 16.0 | 1 | 515 | 515 |
| | 67 | 16.0 | 15 | 829 | 12435 |
| | 68 | 16.0 | 37 | 805 | 29785 |
| | 69 | 16.0 | 1 | 340 | 340 |
| | 70 | 16.0 | 2 | 220 | 440 |
| | 71 | 16.0 | 6 | 550 | 3300 |
| | 72 | 16.0 | 1 | 292 | 292 |
| | 73 | 16.0 | 1 | 1196 | 1196 |
| | 74 | 16.0 | 19 | 1200 | 22800 |
| | 75 | 16.0 | 1 | 339 | 339 |
| | 76 | 16.0 | 1 | 1065 | 1065 |
| | 77 | 16.0 | 1 | 470 | 470 |
| | 78 | 16.0 | 2 | 485 | 970 |
| | 79 | 16.0 | 2 | 520 | 1040 |
| | 80 | 16.0 | 4 | 575 | 2300 |
| | 81 | 16.0 | 2 | 490 | 980 |
| | 82 | 16.0 | 3 | 545 | 1635 |
| | 83 | 16.0 | 1 | 610 | 610 |
| | 84 | 16.0 | 1 | 1080 | 1080 |
| | 85 | 16.0 | 1 | 730 | 730 |
| | 86 | 16.0 | 2 | 1165 | 2330 |
| | 87 | 16.0 | 2 | 430 | 860 |
| | 88 | 16.0 | 1 | 360 | 360 |
| | 89 | 16.0 | 6 | 495 | 2970 |
| | 90 | 16.0 | 1 | 280 | 280 |
| | 91 | 16.0 | 1 | 430 | 430 |
| | 92 | 16.0 | 1 | 1196 | 1196 |
| | 93 | 16.0 | 1 | 1037 | 1037 |
| | 94 | 16.0 | 1 | 1065 | 1065 |
| | 95 | 16.0 | 1 | 1168 | 1168 |
| | 96 | 16.0 | 2 | 350 | 700 |
| | 97 | 16.0 | 1 | 379 | 379 |
| | 98 | 16.0 | 3 | 843 | 2529 |
| | 99 | 16.0 | 1 | 219 | 219 |
| | 100 | 16.0 | 3 | 555 | 1665 |
| | 101 | 16.0 | 3 | 565 | 1695 |
| | 102 | 16.0 | 1 | 225 | 225 |
| | 103 | 16.0 | 1 | 1196 | 1196 |
| | 104 | 16.0 | 1 | 292 | 292 |
| | 105 | 16.0 | 1 | 1076 | 1076 |
| | 106 | 16.0 | 1 | 412 | 412 |
| | 107 | 16.0 | 5 | 815 | 4075 |
| | 108 | 16.0 | 4 | 1191 | 4764 |
| | 109 | 16.0 | 2 | 485 | 970 |
| | 110 | 16.0 | 3 | 525 | 1575 |
| | 111 | 16.0 | 1 | 410 | 410 |
| | 112 | 16.0 | 1 | 233 | 233 |
| | 113 | 16.0 | 3 | 570 | 1710 |
| | 114 | 16.0 | 1 | 390 | 390 |
| | 115 | 16.0 | 1 | 978 | 978 |
| | 116 | 16.0 | 1 | 1082 | 1082 |
| | 117 | 16.0 | 1 | 1096 | 1096 |
| | 118 | 16.0 | 2 | 721 | 1442 |
| | 119 | 16.0 | 2 | 716 | 1432 |
| | 120 | 16.0 | 1 | 365 | 365 |
| | 121 | 16.0 | 2 | 500 | 1000 |
| | 122 | 16.0 | 1 | 281 | 281 |
| | 123 | 16.0 | 2 | 460 | 920 |
| | 124 | 16.0 | 1 | 395 | 395 |
| | 125 | 16.0 | 1 | 1196 | 1196 |
| | 126 | 16.0 | 1 | 529 | 529 |
| | 127 | 16.0 | 1 | 1075 | 1075 |
| | 128 | 16.0 | 1 | 650 | 650 |
| | 129 | 16.0 | 2 | 479 | 958 |

## Resumo do aço

| AÇO | DIAM | C.TOTAL (m) | PESO (kg) |
|---|---|---|---|
| CA50 | 6.3 | 160.5 | 39.3 |
| | 8.0 | 1334.6 | 526.6 |
| | 10.0 | 225.8 | 139.2 |
| | 12.5 | 73.6 | 70.9 |
| | 16.0 | 1319.4 | 2082.3 |
| CA60 | 5.0 | 1935.6 | 298.3 |
| PESO TOTAL | | | |
| CA50 | 2858.2 | | |
| CA60 | 298.3 | | |

Vol. de concreto total (C-25) = 32.59 m³
Área de forma total = 392.56 m²

| | | |
|---|---|---|
| V201 | V202 | V203 |
| V204 | V205 | V206 |
| V207 | V208 | V209 |
| V210 | V211 | V212 |
| V213 | V214 | V215 |
| V216 | V217 | V218 |
| V219 | V220 | V222 |
| V223 | V224 | V225 |
| V226 | | |

| Nº | DATA | RESPONSÁVEL | DESCRIÇÃO DA REVISÃO: |
|---|---|---|---|
| 01 | 18.06.2013 | | PROJETO ESTRUTURAL |

AS BUILT ENGENHARIA DE PROJETOS LTDA
Rua Jovino do Rosário, 1564 - Boa Vista
CEP 82560-435 - Curitiba - Paraná
asbuiltprojetos@gmail.com - (41)3088-4949

FASE: PROJETO ESTRUTURAL

CONFERIR MEDIDAS NA OBRA

OBRA: ADMINISTRAÇÃO
CAMPUS JANAÚBA

PROPRIETÁRIO: UNIVERSIDADE FEDERAL DOS VALES DO JEQUITINHONHA E MUCURI — CNPJ 16.886.315/0001-57

PRANCHA: FERRAGENS DAS VIGAS: SEGUNDO PAVIMENTO (1)

AUTOR PROJETO: CARLOS HENRIQUE DE SOUZA GONÇALVES
CREA 79620 - Pr

ESCALA: INDICADA — DESENHO: EQUIPE

VERSÃO: VERSÃO 1 — DATA: 18/06/2013 — ÁREA CONSTRUÍDA: 3056,63m² — FOLHA: EST 10/22

ARQUIVO: