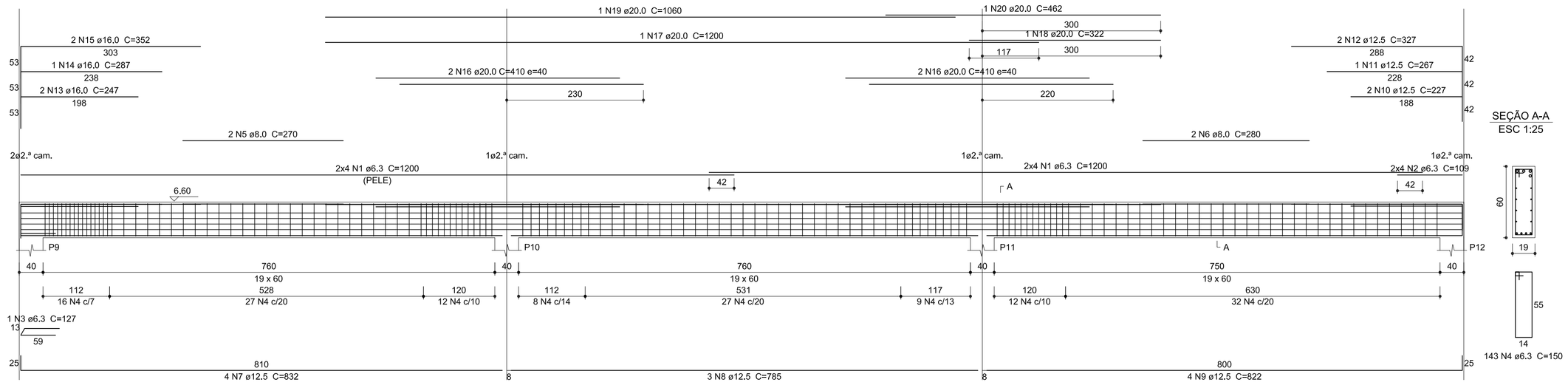
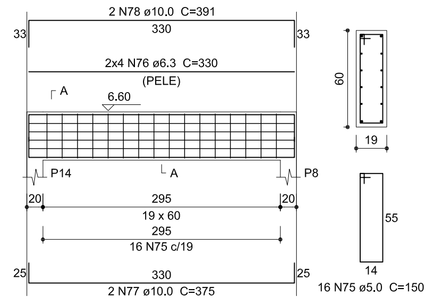
## V304 (19 x 60)

1:50



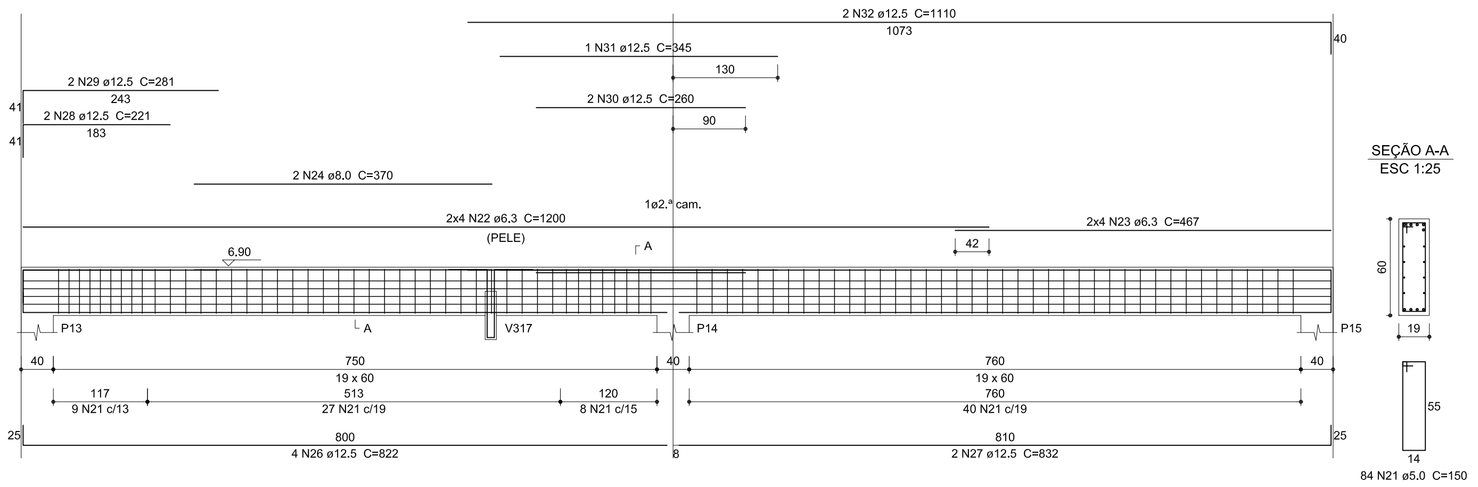

## V320 (19 x 60)

1:50



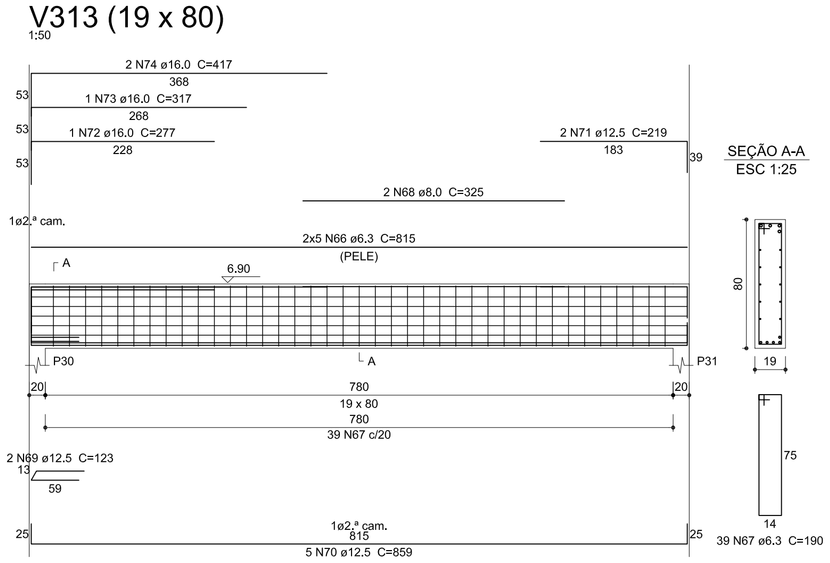

## V305 (19 x 60)

1:50



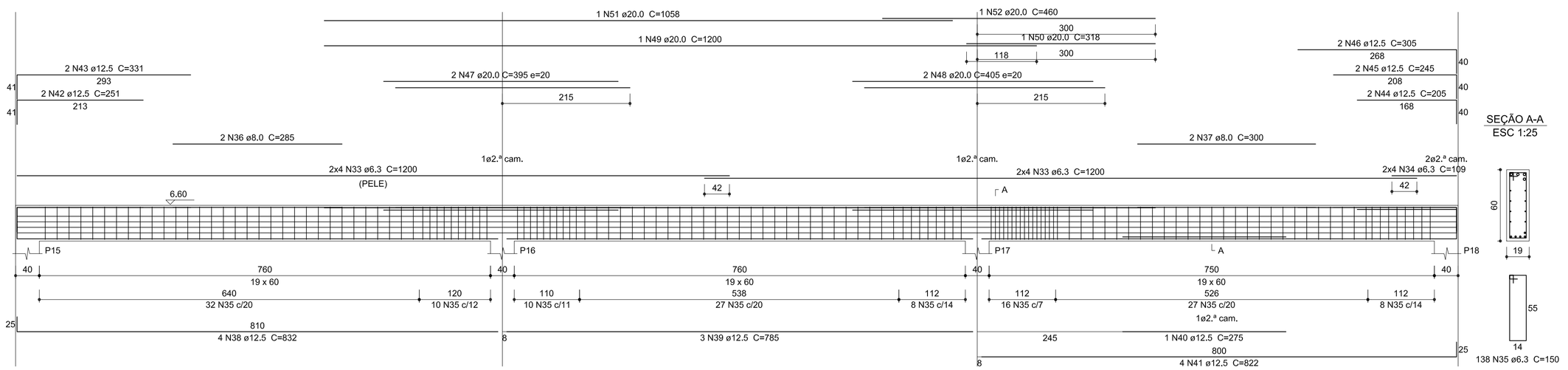

## V313 (19 x 80)

1:50



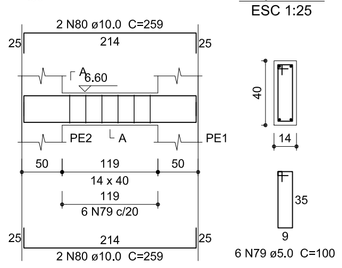

## V306 (19 x 60)

1:50



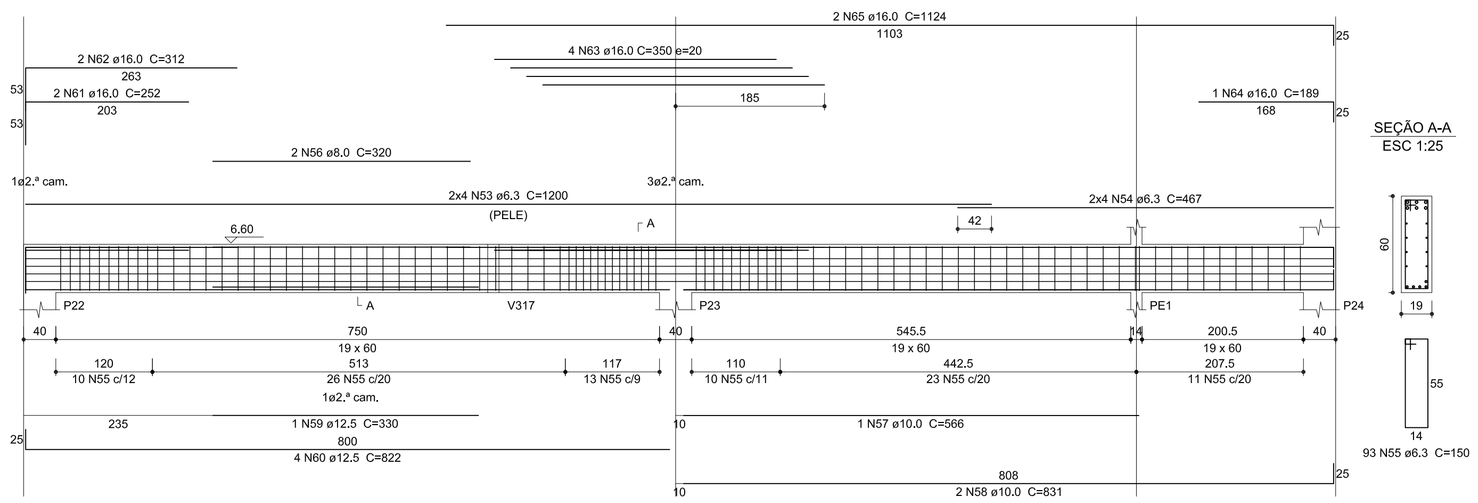

## V321 (14 x 40)

1:50



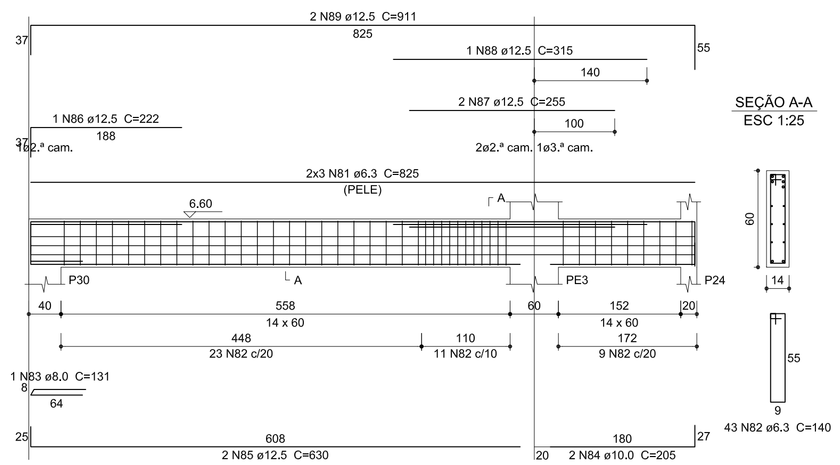

## V308 (19 x 60)

1:50




## V322 (14 x 60)

1:50




## Relação do aço

| ELEMENTO | AÇO | N | DIAM | Q | UNIT (cm) | C.TOTAL (cm) |
|---|---|---|---|---|---|---|
| V304 | CA50 | 1 | 6,3 | 16 | 1200 | 19200 |
| | CA50 | 2 | 6,3 | 8 | 109 | 872 |
| | CA50 | 3 | 6,3 | 1 | 127 | 127 |
| | CA50 | 4 | 6,3 | 143 | 150 | 21450 |
| | CA50 | 5 | 8,0 | 2 | 270 | 540 |
| | CA50 | 6 | 8,0 | 2 | 280 | 560 |
| | CA50 | 7 | 12,5 | 4 | 832 | 3328 |
| | CA50 | 8 | 12,5 | 3 | 785 | 2355 |
| | CA50 | 9 | 12,5 | 4 | 822 | 3288 |
| | CA50 | 10 | 12,5 | 2 | 227 | 454 |
| | CA50 | 11 | 12,5 | 1 | 267 | 267 |
| | CA50 | 12 | 12,5 | 2 | 327 | 654 |
| | CA50 | 13 | 16,0 | 2 | 247 | 494 |
| | CA50 | 14 | 16,0 | 1 | 287 | 287 |
| | CA50 | 15 | 16,0 | 2 | 352 | 704 |
| | CA50 | 16 | 20,0 | 4 | 410 | 1640 |
| | CA50 | 17 | 20,0 | 1 | 1200 | 1200 |
| | CA50 | 18 | 20,0 | 1 | 322 | 322 |
| | CA50 | 19 | 20,0 | 1 | 1060 | 1060 |
| | CA50 | 20 | 20,0 | 1 | 462 | 462 |
| V305 | CA60 | 21 | 5,0 | 84 | 150 | 12600 |
| | CA50 | 22 | 6,3 | 8 | 1200 | 9600 |
| | CA50 | 23 | 6,3 | 8 | 467 | 3736 |
| | CA50 | 24 | 8,0 | 2 | 370 | 740 |
| | CA50 | 25 | 10,0 | 1 | 266 | 266 |
| | CA50 | 26 | 12,5 | 4 | 822 | 3288 |
| | CA50 | 27 | 12,5 | 2 | 832 | 1664 |
| | CA50 | 28 | 12,5 | 2 | 221 | 442 |
| | CA50 | 29 | 12,5 | 2 | 281 | 562 |
| | CA50 | 30 | 12,5 | 2 | 260 | 520 |
| | CA50 | 31 | 12,5 | 1 | 345 | 345 |
| | CA50 | 32 | 12,5 | 2 | 1110 | 2220 |
| V306 | CA50 | 33 | 6,3 | 16 | 1200 | 19200 |
| | CA50 | 34 | 6,3 | 8 | 109 | 872 |
| | CA50 | 35 | 6,3 | 138 | 150 | 20700 |
| | CA50 | 36 | 8,0 | 2 | 285 | 570 |
| | CA50 | 37 | 8,0 | 2 | 300 | 600 |
| | CA50 | 38 | 12,5 | 4 | 832 | 3328 |
| | CA50 | 39 | 12,5 | 3 | 785 | 2355 |
| | CA50 | 40 | 12,5 | 1 | 275 | 275 |
| | CA50 | 41 | 12,5 | 4 | 822 | 3288 |
| | CA50 | 42 | 12,5 | 2 | 251 | 502 |
| | CA50 | 43 | 12,5 | 2 | 331 | 662 |
| | CA50 | 44 | 12,5 | 2 | 205 | 410 |
| | CA50 | 45 | 12,5 | 2 | 245 | 490 |
| | CA50 | 46 | 12,5 | 2 | 305 | 610 |
| | CA50 | 47 | 20,0 | 2 | 395 | 790 |
| | CA50 | 48 | 20,0 | 2 | 405 | 810 |
| | CA50 | 49 | 20,0 | 1 | 1200 | 1200 |
| | CA50 | 50 | 20,0 | 1 | 318 | 318 |
| | CA50 | 51 | 20,0 | 1 | 1058 | 1058 |
| | CA50 | 52 | 20,0 | 1 | 460 | 460 |
| V308 | CA50 | 53 | 6,3 | 8 | 1200 | 9600 |
| | CA50 | 54 | 6,3 | 8 | 467 | 3736 |
| | CA50 | 55 | 6,3 | 93 | 150 | 13950 |
| | CA50 | 56 | 8,0 | 2 | 320 | 640 |
| | CA50 | 57 | 10,0 | 1 | 566 | 566 |
| | CA50 | 58 | 10,0 | 2 | 831 | 1662 |
| | CA50 | 59 | 12,5 | 1 | 330 | 330 |
| | CA50 | 60 | 12,5 | 4 | 822 | 3288 |
| | CA50 | 61 | 16,0 | 2 | 252 | 504 |
| | CA50 | 62 | 16,0 | 2 | 312 | 624 |
| | CA50 | 63 | 16,0 | 4 | 350 | 1400 |
| | CA50 | 64 | 16,0 | 1 | 189 | 189 |
| | CA50 | 65 | 16,0 | 2 | 1124 | 2248 |
| V313 | CA50 | 66 | 6,3 | 10 | 815 | 8150 |
| | CA50 | 67 | 6,3 | 39 | 190 | 7410 |
| | CA50 | 68 | 8,0 | 2 | 325 | 650 |
| | CA50 | 69 | 12,5 | 2 | 123 | 246 |
| | CA50 | 70 | 12,5 | 5 | 859 | 4295 |
| | CA50 | 71 | 12,5 | 2 | 219 | 438 |
| | CA50 | 72 | 16,0 | 1 | 277 | 277 |
| | CA50 | 73 | 16,0 | 1 | 317 | 317 |
| | CA50 | 74 | 16,0 | 2 | 417 | 834 |
| V320 | CA60 | 75 | 5,0 | 16 | 150 | 2400 |
| | CA50 | 76 | 6,3 | 8 | 330 | 2640 |
| | CA50 | 77 | 10,0 | 2 | 375 | 750 |
| | CA50 | 78 | 10,0 | 2 | 391 | 782 |
| V321 | CA60 | 79 | 5,0 | 6 | 100 | 600 |
| | CA50 | 80 | 10,0 | 4 | 259 | 1036 |
| V322 | CA50 | 81 | 6,3 | 6 | 825 | 4950 |
| | CA50 | 82 | 6,3 | 43 | 140 | 6020 |
| | CA50 | 83 | 8,0 | 1 | 131 | 131 |
| | CA50 | 84 | 10,0 | 2 | 205 | 410 |
| | CA50 | 85 | 12,5 | 2 | 630 | 1260 |
| | CA50 | 86 | 12,5 | 1 | 222 | 222 |
| | CA50 | 87 | 12,5 | 2 | 255 | 510 |
| | CA50 | 88 | 12,5 | 1 | 315 | 315 |
| | CA50 | 89 | 12,5 | 2 | 911 | 1822 |

## Resumo do aço

| AÇO | DIAM | C.TOTAL (m) | PESO (kg) |
|---|---|---|---|
| CA50 | 6,3 | 1979 | 495 |
| | 8,0 | 58 | 23 |
| | 10,0 | 71 | 45 |
| | 12,5 | 572 | 572 |
| | 16,0 | 102 | 163 |
| | 20,0 | 121 | 302 |
| CA60 | 5,0 | 203 | 33 |
| PESO TOTAL | | | |
| CA50 | 1600 | | |
| CA60 | 33 | | |

| REVISÕES | DESCRIÇÃO | DATA | RUBRICA |
|---|---|---|---|
| 0 | EMISSÃO INICIAL | 00/00/2009 | NOME |

UIE — UNIDADE DE INFRAESTRUTURA E EDIFICAÇÕES — DEPARTAMENTO DE OBRAS

CENTRO PAULA SOUZA — GOVERNO DE SÃO PAULO

OBRA: CAMPUS CEETEPS EM CRAVINHOS

UNIDADE: ETEC CRAVINHOS

LOCAL / MUNICÍPIO: RUA MARIA CONCEIÇÃO GOUVÊA SIMÕES, S/Nº - CRAVINHOS/SP

ÁREA TÉCNICA: ESTRUTURAL

ESCALA: INDICADAS

FOLHA Nº: EST-021/024

TÍTULO:

PROJETO BÁSICO

BLOCO ADMINISTRATIVO E PEDAGÓGICO

ARMAÇÃO DAS VIGAS DA COBERTURA - 2 / 3

CONSTRUÇÃO

| DESENHO | PROJETO | COORDENAÇÃO |
|---|---|---|
| UIE | UIE | UIE |

| OBSERVAÇÃO | DATA | REVISÃO |
|---|---|---|
| CONFERIR MEDIDAS NO LOCAL | OUT/2017 | R0 |