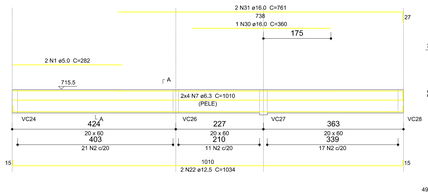
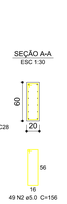
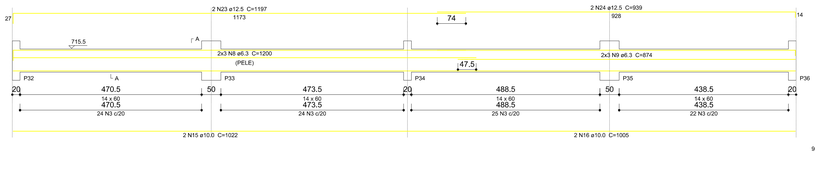
## VC11 (20 x 60)
ESC 1:50




SEÇÃO A-A
ESC 1:30

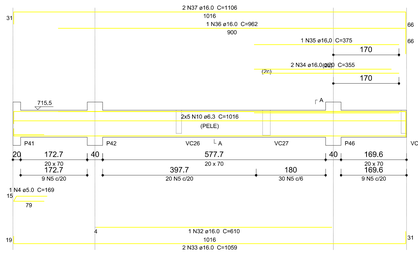



## VC12 (14 x 60)
ESC 1:50

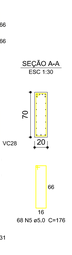



SEÇÃO A-A
ESC 1:30

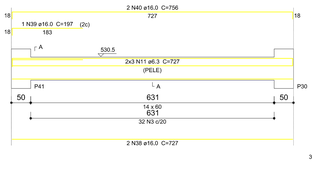
## VC14 (20 x 70)
ESC 1:50




SEÇÃO A-A
ESC 1:30

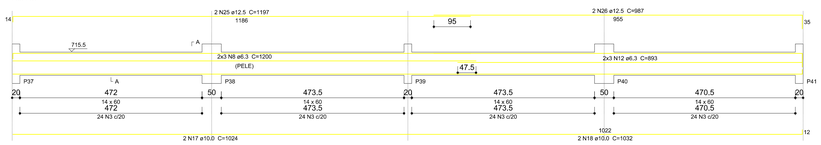



## VC30 (14 x 60)
ESC 1:50

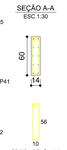



SEÇÃO A-A
ESC 1:30

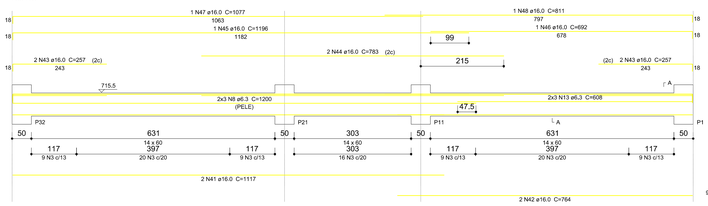
## VC13 (14 x 60)
ESC 1:50



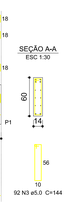

SEÇÃO A-A
ESC 1:30



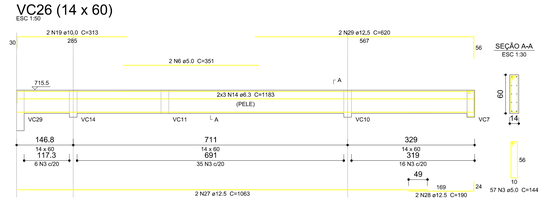

## VC15 (14 x 60)
ESC 1:50




SEÇÃO A-A
ESC 1:30




## VC26 (14 x 60)
ESC 1:50

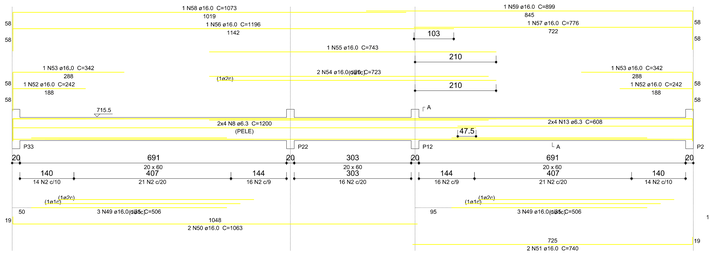



SEÇÃO A-A
ESC 1:30

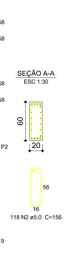
SUSPENSÃO VC7
ESC 1:30



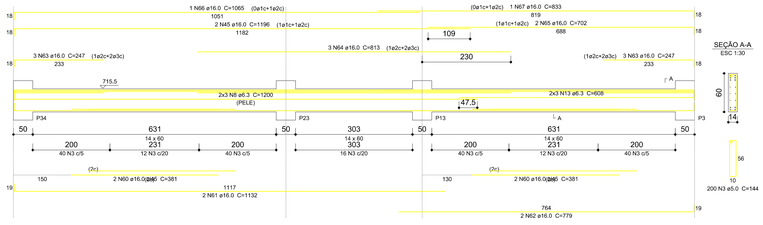

## VC16 (20 x 60)
ESC 1:50




SEÇÃO A-A
ESC 1:30



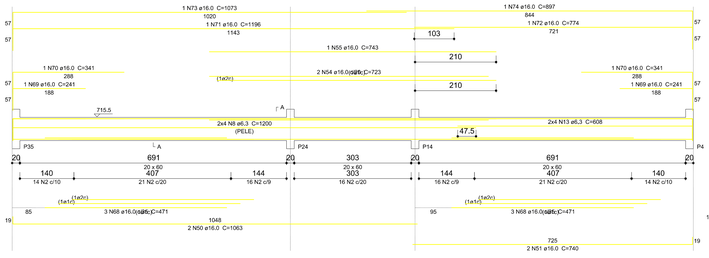

## VC17 (14 x 60)
ESC 1:50



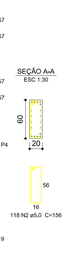

SEÇÃO A-A
ESC 1:30



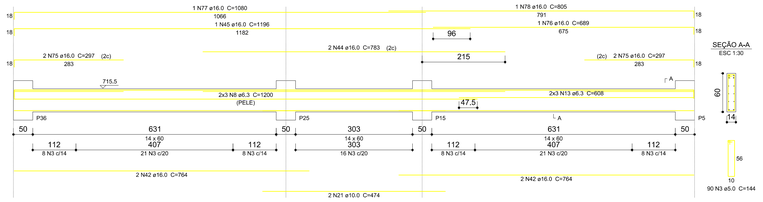

## VC18 (20 x 60)
ESC 1:50




SEÇÃO A-A
ESC 1:30




## VC19 (14 x 60)
ESC 1:50




SEÇÃO A-A
ESC 1:30




### Relação do aço

| | | |
|---|---|---|
| VC11 | VC12 | VC13 |
| VC14 | VC15 | VC16 |
| VC17 | VC18 | VC19 |
| VC26 | VC30 | |

| AÇO | N | DIAM | Q | UNIT (cm) | C.TOTAL (cm) |
|---|---|---|---|---|---|
| CA60 | 1 | 5.0 | 2 | 282 | 564 |
| | 2 | 5.0 | 285 | 156 | 44460 |
| | 3 | 5.0 | 662 | 144 | 95328 |
| | 4 | 5.0 | 1 | 169 | 169 |
| | 5 | 5.0 | 68 | 176 | 11968 |
| | 6 | 5.0 | 2 | 351 | 702 |
| CA50 | 7 | 6.3 | 8 | 1010 | 8080 |
| | 8 | 6.3 | 46 | 1200 | 55200 |
| | 9 | 6.3 | 6 | 874 | 5244 |
| | 10 | 6.3 | 10 | 1016 | 10160 |
| | 11 | 6.3 | 6 | 727 | 4362 |
| | 12 | 6.3 | 6 | 893 | 5358 |
| | 13 | 6.3 | 34 | 608 | 20672 |
| | 14 | 6.3 | 6 | 1183 | 7098 |
| | 15 | 10.0 | 2 | 1022 | 2044 |
| | 16 | 10.0 | 2 | 1005 | 2010 |
| | 17 | 10.0 | 2 | 1024 | 2048 |
| | 18 | 10.0 | 2 | 1032 | 2064 |
| | 19 | 10.0 | 2 | 313 | 626 |
| | 20 | 10.0 | 1 | 177 | 177 |
| | 21 | 10.0 | 2 | 474 | 948 |
| | 22 | 12.5 | 2 | 1034 | 2068 |
| | 23 | 12.5 | 2 | 1197 | 2394 |
| | 24 | 12.5 | 2 | 939 | 1878 |
| | 25 | 12.5 | 2 | 1197 | 2394 |
| | 26 | 12.5 | 2 | 987 | 1974 |
| | 27 | 12.5 | 2 | 1063 | 2126 |
| | 28 | 12.5 | 2 | 190 | 380 |
| | 29 | 12.5 | 2 | 620 | 1240 |
| | 30 | 16.0 | 1 | 360 | 360 |
| | 31 | 16.0 | 2 | 761 | 1522 |
| | 32 | 16.0 | 1 | 610 | 610 |
| | 33 | 16.0 | 2 | 1059 | 2118 |
| | 34 | 16.0 | 2 | 355 | 710 |
| | 35 | 16.0 | 1 | 375 | 375 |
| | 36 | 16.0 | 1 | 962 | 962 |
| | 37 | 16.0 | 2 | 1106 | 2212 |
| | 38 | 16.0 | 2 | 727 | 1454 |
| | 39 | 16.0 | 1 | 197 | 197 |
| | 40 | 16.0 | 2 | 756 | 1512 |
| | 41 | 16.0 | 2 | 1117 | 2234 |
| | 42 | 16.0 | 6 | 764 | 4584 |
| | 43 | 16.0 | 4 | 257 | 1028 |
| | 44 | 16.0 | 4 | 783 | 3132 |
| | 45 | 16.0 | 4 | 1196 | 4784 |
| | 46 | 16.0 | 1 | 692 | 692 |
| | 47 | 16.0 | 1 | 1077 | 1077 |
| | 48 | 16.0 | 1 | 811 | 811 |
| | 49 | 16.0 | 6 | 506 | 3036 |
| | 50 | 16.0 | 4 | 1063 | 4252 |
| | 51 | 16.0 | 4 | 740 | 2960 |
| | 52 | 16.0 | 2 | 242 | 484 |
| | 53 | 16.0 | 2 | 342 | 684 |
| | 54 | 16.0 | 4 | 723 | 2892 |
| | 55 | 16.0 | 2 | 743 | 1486 |
| | 56 | 16.0 | 1 | 1196 | 1196 |
| | 57 | 16.0 | 1 | 776 | 776 |
| | 58 | 16.0 | 1 | 1073 | 1073 |
| | 59 | 16.0 | 1 | 899 | 899 |
| | 60 | 16.0 | 4 | 381 | 1524 |
| | 61 | 16.0 | 2 | 1132 | 2264 |
| | 62 | 16.0 | 2 | 779 | 1558 |
| | 63 | 16.0 | 6 | 247 | 1482 |
| | 64 | 16.0 | 3 | 813 | 2439 |
| | 65 | 16.0 | 2 | 702 | 1404 |
| | 66 | 16.0 | 1 | 1065 | 1065 |
| | 67 | 16.0 | 1 | 833 | 833 |
| | 68 | 16.0 | 6 | 471 | 2826 |
| | 69 | 16.0 | 2 | 241 | 482 |
| | 70 | 16.0 | 2 | 341 | 682 |
| | 71 | 16.0 | 1 | 1196 | 1196 |
| | 72 | 16.0 | 1 | 774 | 774 |
| | 73 | 16.0 | 1 | 1073 | 1073 |
| | 74 | 16.0 | 1 | 897 | 897 |
| | 75 | 16.0 | 4 | 297 | 1188 |
| | 76 | 16.0 | 1 | 689 | 689 |
| | 77 | 16.0 | 1 | 1080 | 1080 |
| | 78 | 16.0 | 1 | 805 | 805 |

### Resumo do aço

| AÇO | DIAM | C.TOTAL (m) | PESO + 10 % (kg) |
|---|---|---|---|
| CA50 | 6.3 | 1161.8 | 312.7 |
| | 10.0 | 99.2 | 67.3 |
| | 12.5 | 144.6 | 153.2 |
| | 16.0 | 743.8 | 1291.2 |
| CA60 | 5.0 | 1532 | 259.7 |
| PESO TOTAL | | | |
| CA50 | 1824.4 | | |
| CA60 | 259.7 | | |

Vol. de concreto total (C-25) = 16.37 m³
Área de forma total = 231.27 m²


**FB ENGENHARIA LTDA**
Felisberto & Biava Associados

**FB ENGENHARIA LTDA**
**CNPJ: 08.582.028/0001-96**
**CREA-SC - 82.125-1 - VIDEIRA-SC**

**fb@fbengenharia.com**
**www.fbengenharia.com**
**Fone: (49) 3566.5862**


Projeto: **ESTRUTURAL**

Cliente: **INSTITUTO FEDERAL CATARINENSE**

Projeto: **425**

Obra: **EDIFICAÇÃO PARA SALAS DE AULA E OFICINAS**
Local: **RODOVIA SC 303 - VIDEIRA - SC**

Prancha: **28/32**

Resp. técnico: **Eng. Civil FABIANO BIAVA**
**CREA SC - 67691-9**

Assinatura Proprietário

Descrição: **VIGAS COBERTURA (02/03)**

| Desenho | Unidade | Data | Escala | Área |
|---|---|---|---|---|
| FB ENGENHARIA | CENTÍMETROS | FEVEREIRO 2013 | INDICADA | 2.546,18m² |