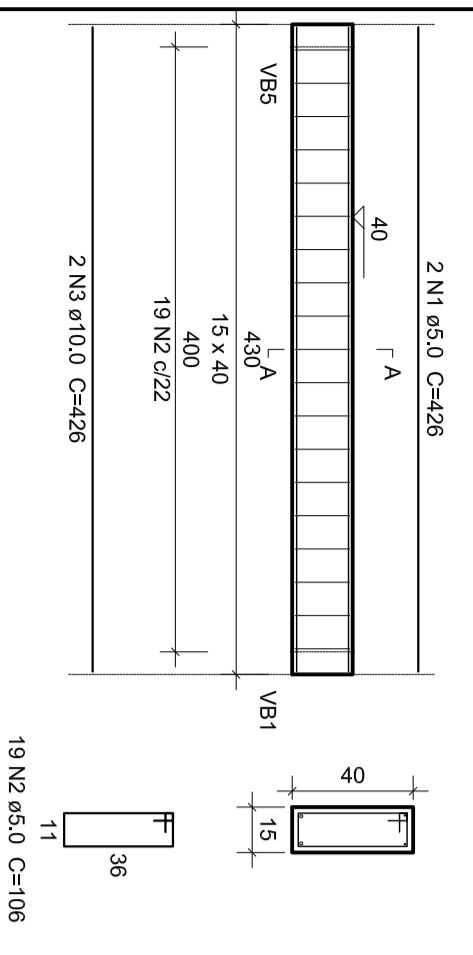
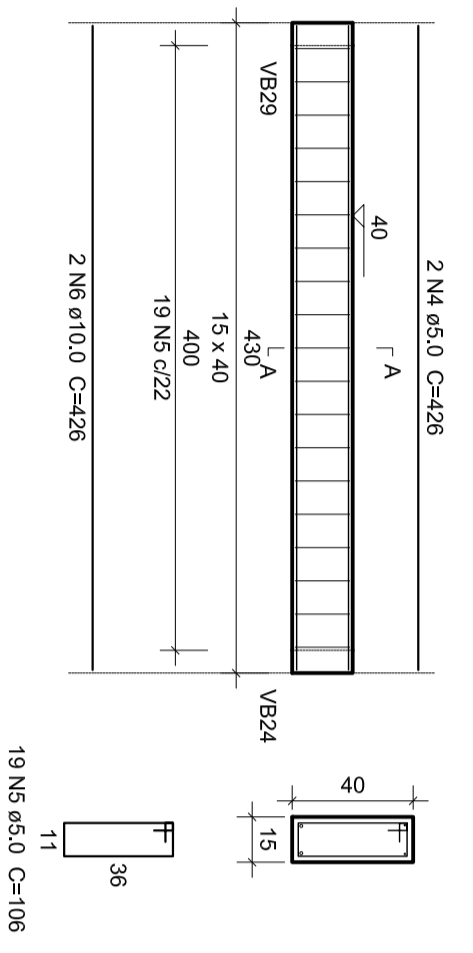


**VB48**



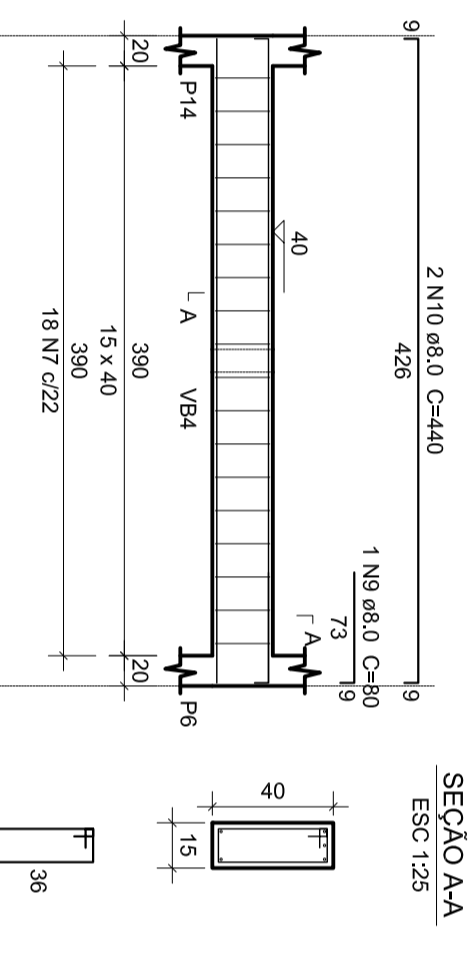
**SEÇÃO AA**  
ESC 1:25

**VB49**



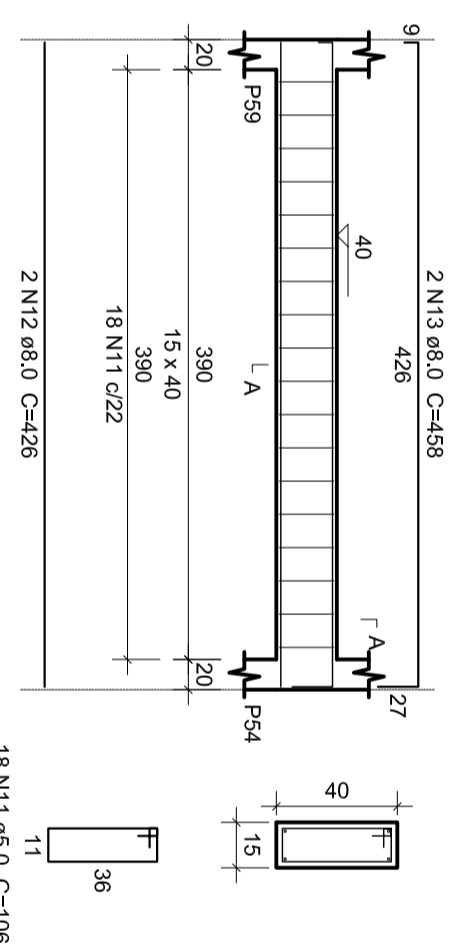
**SEÇÃO AA**  
ESC 1:25

**VB50**



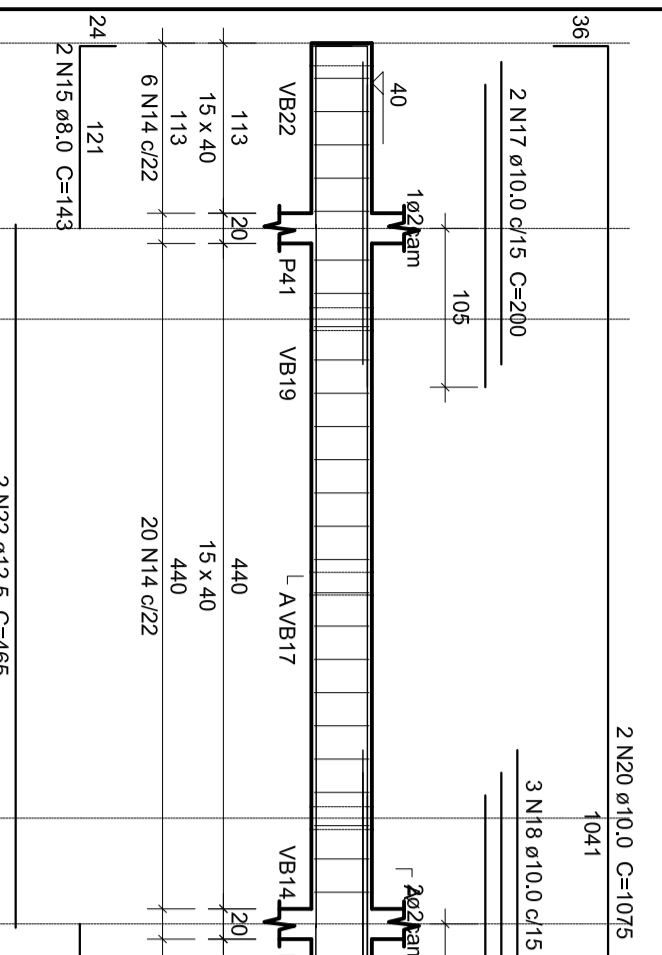
**SEÇÃO AA**  
ESC 1:25

**VB51**



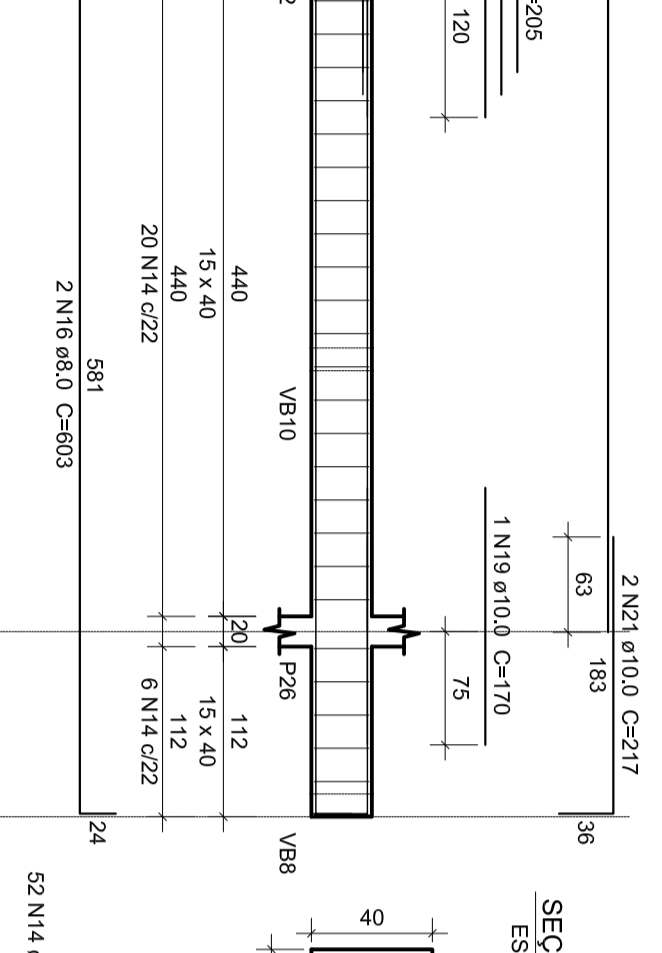
**SEÇÃO AA**  
ESC 1:25

**VB52**



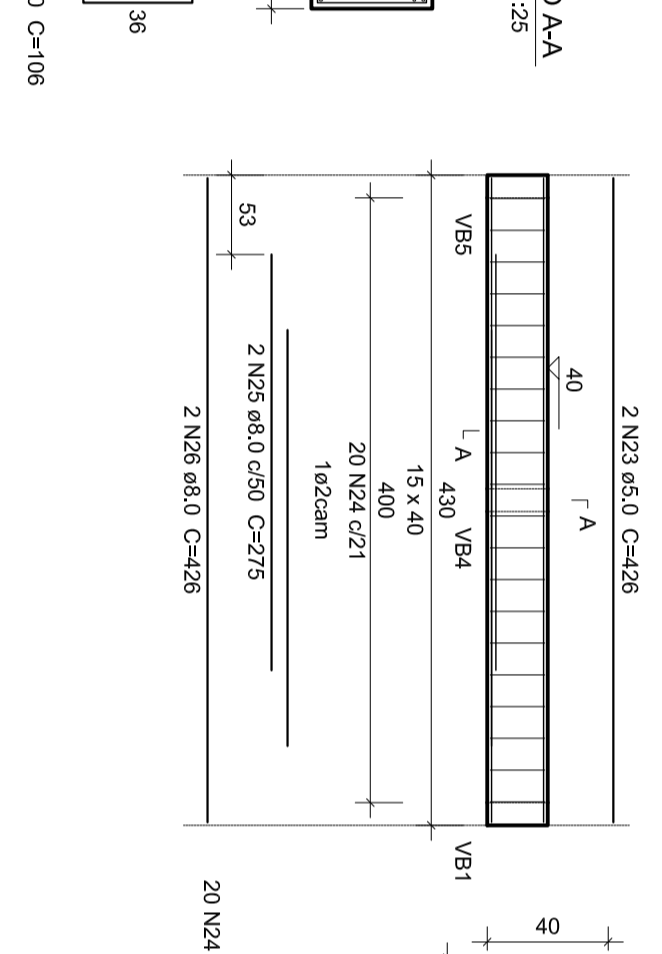
**SEÇÃO AA**  
ESC 1:25

**VB53**



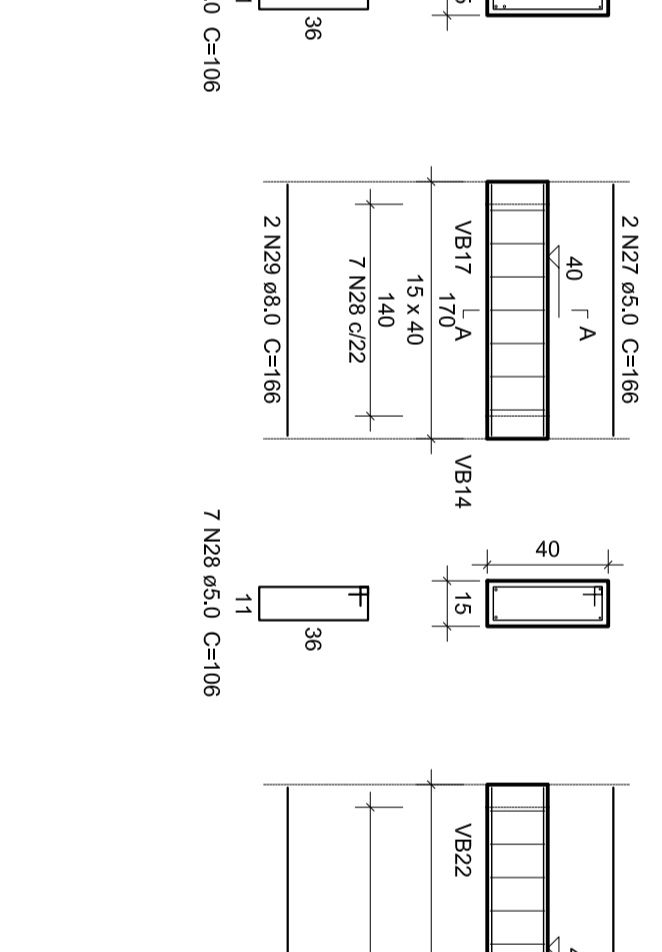
**SEÇÃO AA**  
ESC 1:25

**VB54**



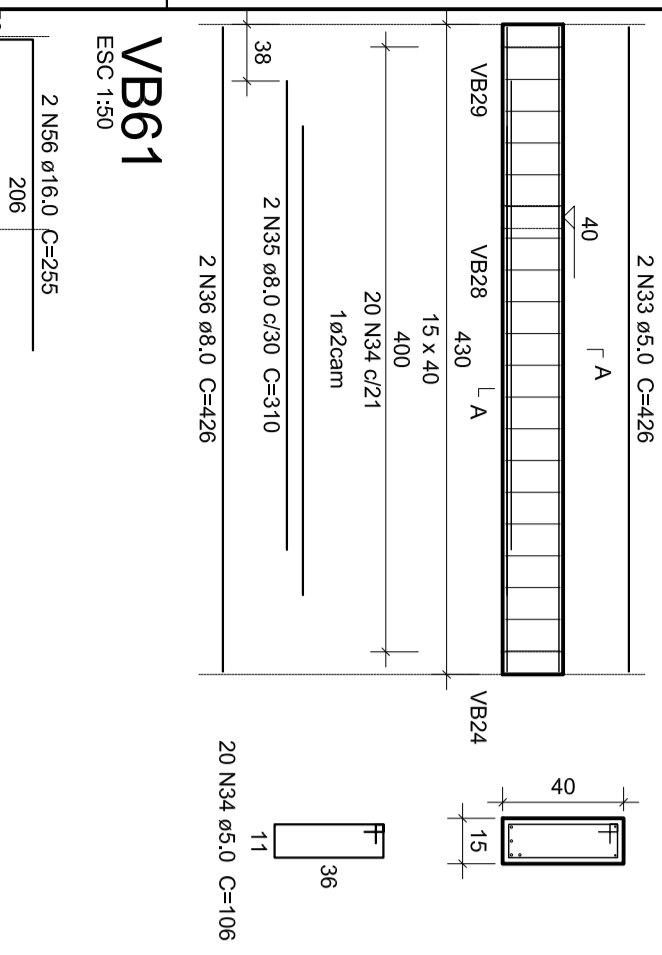
**SEÇÃO AA**  
ESC 1:25

**VB55**



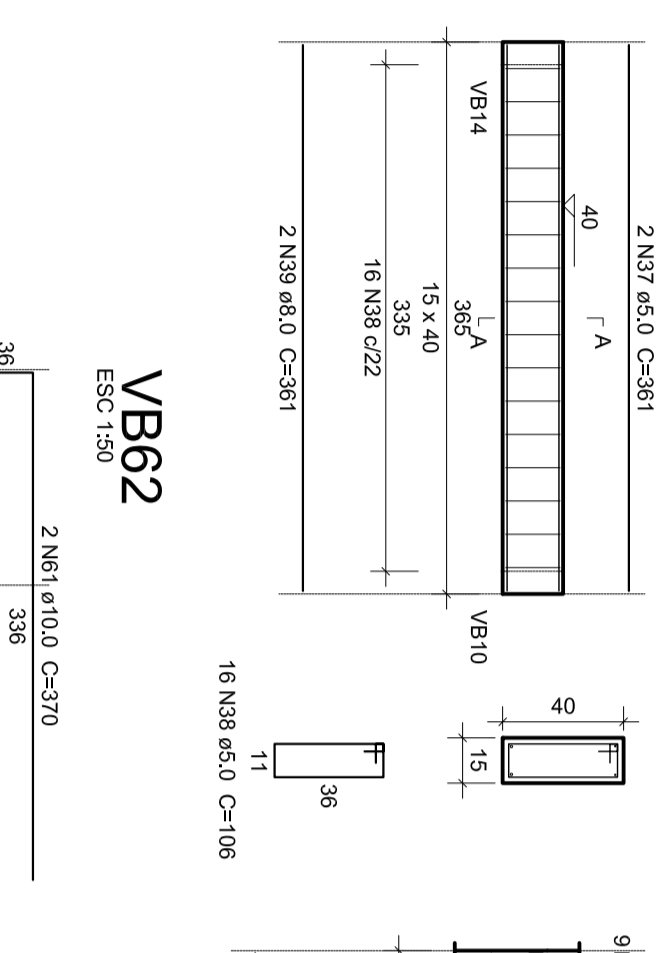
**SEÇÃO AA**  
ESC 1:25

**VB56**



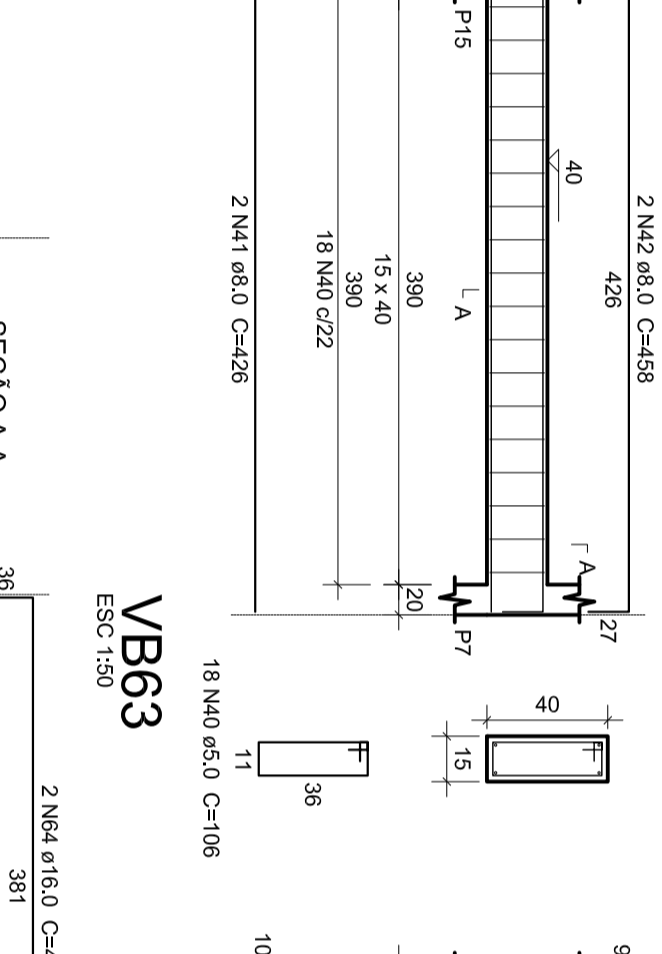
**SEÇÃO AA**  
ESC 1:25

**VB57**



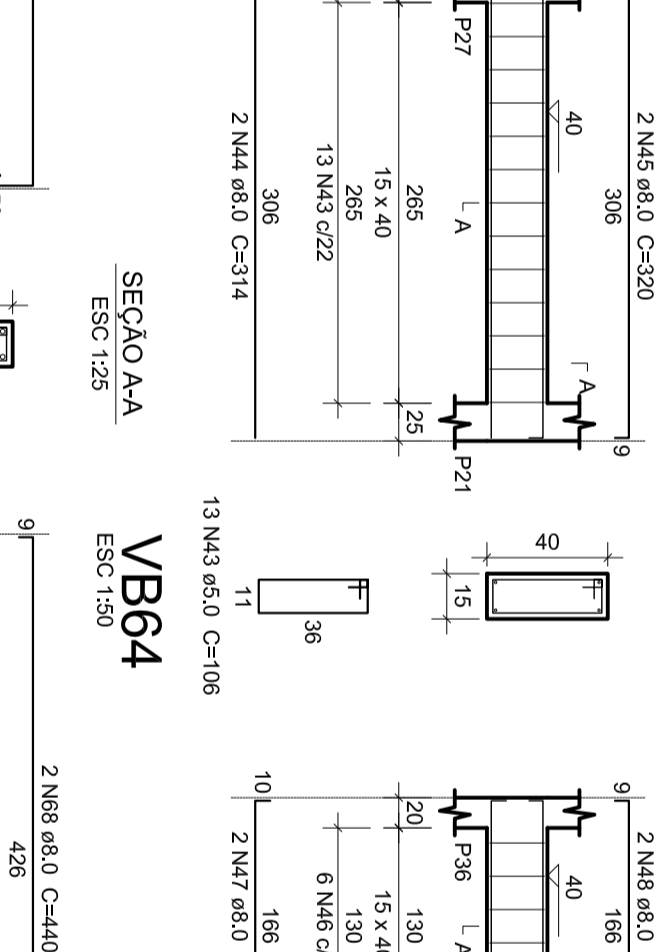
**SEÇÃO AA**  
ESC 1:25

**VB58**



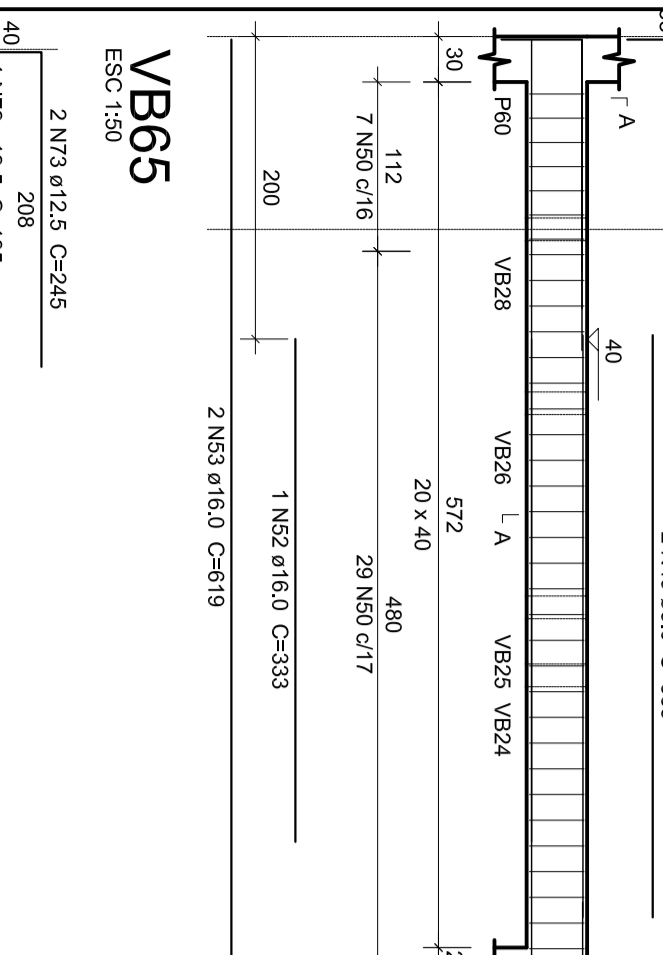
**SEÇÃO AA**  
ESC 1:25

**VB59**



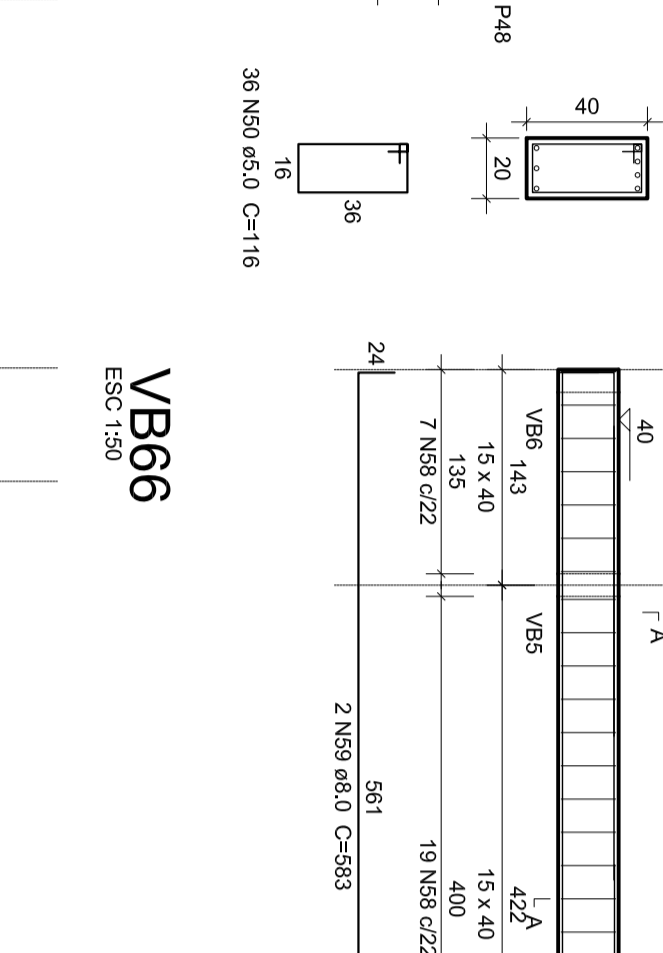
**SEÇÃO AA**  
ESC 1:25

**VB60**



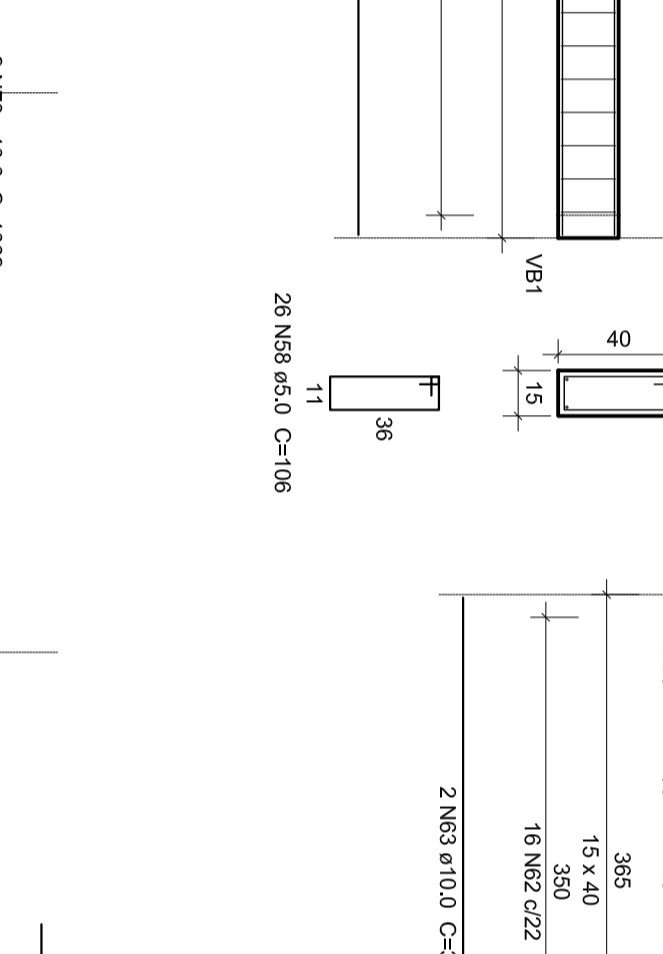
**SEÇÃO AA**  
ESC 1:25

**VB61**



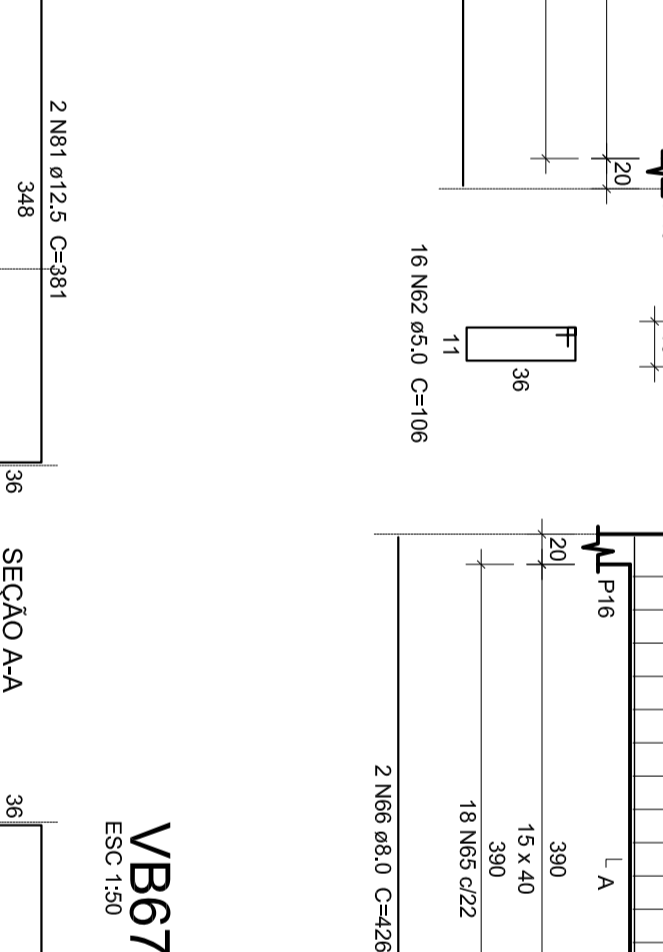
**SEÇÃO AA**  
ESC 1:25

**VB62**



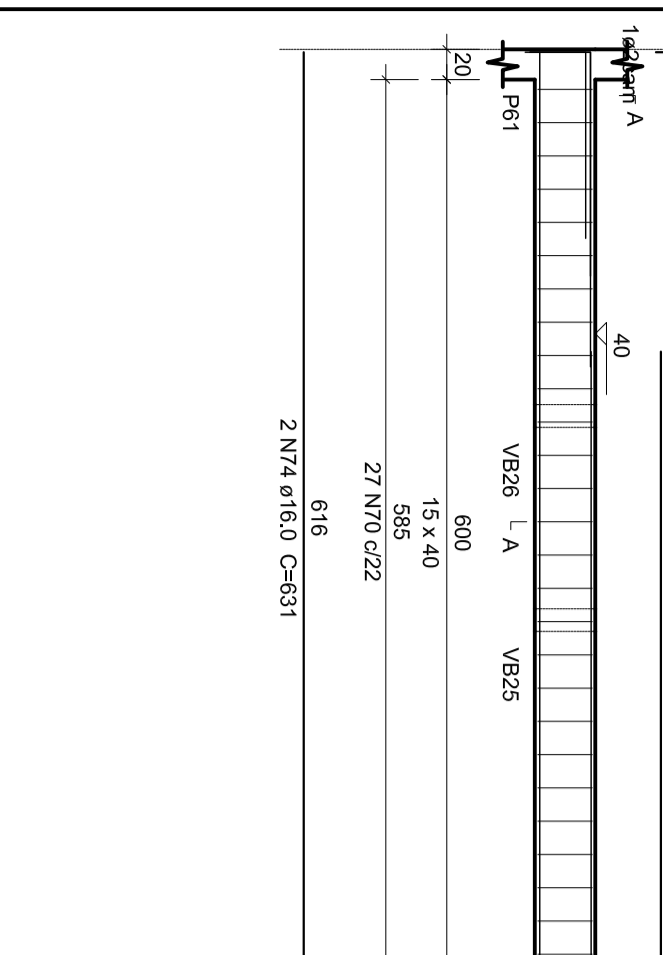
**SEÇÃO AA**  
ESC 1:25

**VB63**



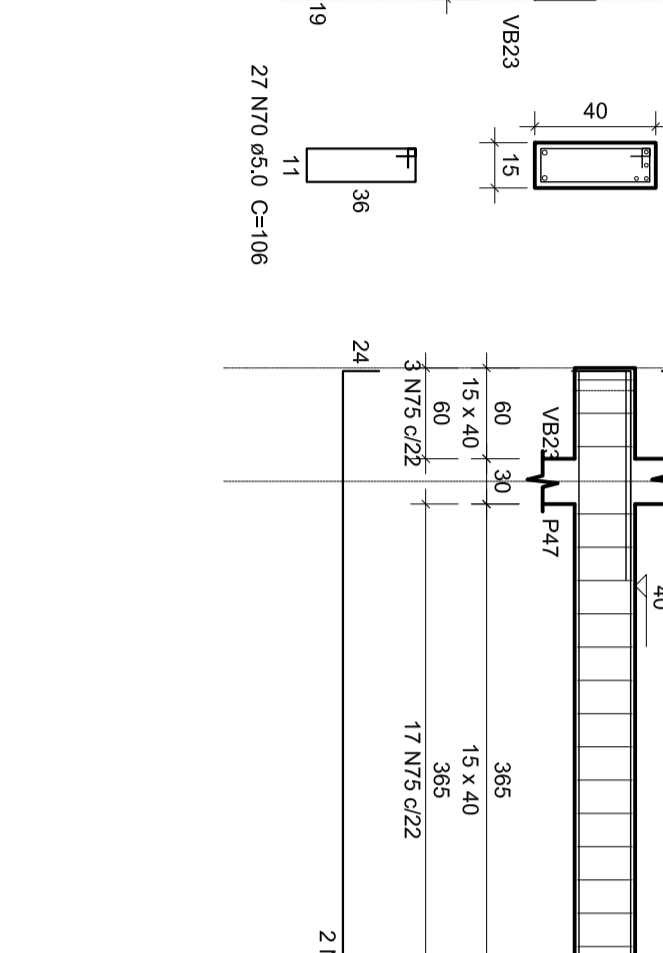
**SEÇÃO AA**  
ESC 1:25

**VB65**



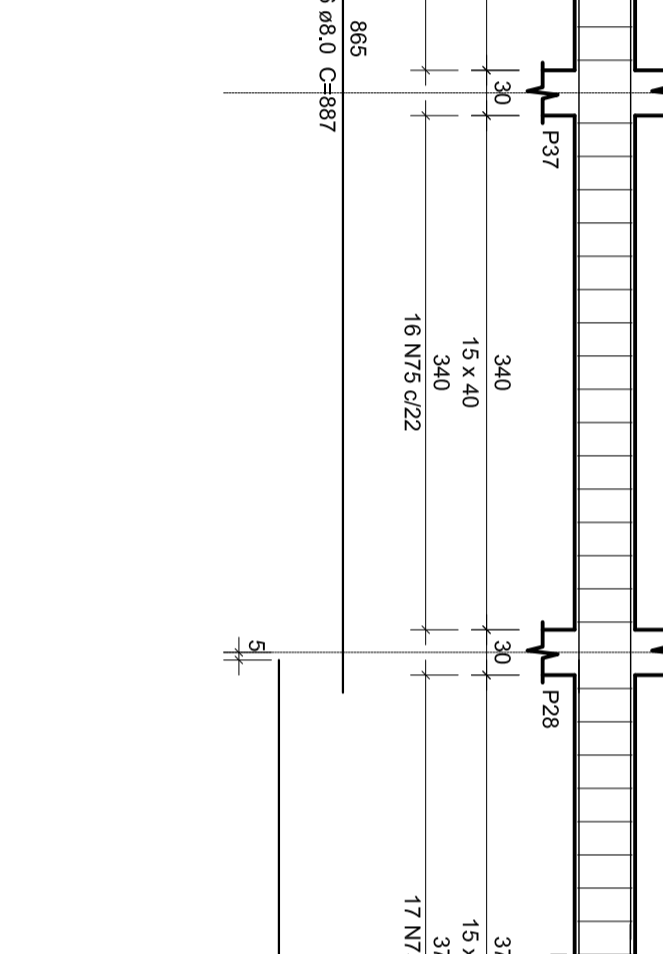
**SEÇÃO AA**  
ESC 1:25

**VB66**



**SEÇÃO AA**  
ESC 1:25

**VB67**



**SEÇÃO AA**  
ESC 1:25

**Relação do aço**

| ELEMENTO | ACO  | N  | DIAM    | QUANT | UNID | C.TOTAL |
|----------|------|----|---------|-------|------|---------|
|          | (mm) |    | (Barra) |       | (cm) | (cm)    |
| VB48     | C650 | 2  | 5,0     | 19    | 426  | 852     |
|          | C650 | 2  | 10,0    | 19    | 426  | 2014    |
|          | C650 | 3  | 10,0    | 2     | 426  | 852     |
| VB49     | C650 | 5  | 5,0     | 19    | 106  | 2014    |
|          | C650 | 6  | 10,0    | 2     | 426  | 852     |
| VB50     | C650 | 7  | 5,0     | 18    | 726  | 1808    |
|          | C650 | 6  | 8,0     | 2     | 426  | 852     |
|          | C650 | 6  | 8,0     | 2     | 426  | 852     |
| VB51     | C650 | 10 | 8,0     | 18    | 106  | 880     |
|          | C650 | 11 | 5,0     | 18    | 106  | 1908    |
|          | C650 | 12 | 8,0     | 2     | 426  | 852     |
| VB52     | C650 | 14 | 5,0     | 52    | 106  | 5512    |
|          | C650 | 15 | 8,0     | 143   | 106  | 286     |
|          | C650 | 17 | 10,0    | 2     | 200  | 1206    |
|          | C650 | 17 | 10,0    | 2     | 200  | 400     |
|          | C650 | 19 | 10,0    | 2     | 170  | 170     |
|          | C650 | 20 | 10,0    | 2     | 1075 | 2150    |
| VB53     | C650 | 22 | 12,5    | 2     | 426  | 850     |
|          | C650 | 22 | 12,5    | 2     | 426  | 850     |
|          | C650 | 24 | 5,0     | 20    | 106  | 2120    |
|          | C650 | 25 | 8,0     | 2     | 275  | 550     |
| VB54     | C650 | 26 | 8,0     | 2     | 426  | 852     |
|          | C650 | 27 | 5,0     | 2     | 106  | 332     |
|          | C650 | 29 | 8,0     | 2     | 166  | 332     |
| VB55     | C650 | 30 | 5,0     | 2     | 351  | 722     |
|          | C650 | 30 | 5,0     | 16    | 106  | 1686    |
| VB56     | C650 | 32 | 10,0    | 2     | 351  | 722     |
|          | C650 | 32 | 10,0    | 2     | 426  | 852     |
|          | C650 | 34 | 5,0     | 20    | 106  | 2120    |
|          | C650 | 34 | 5,0     | 2     | 351  | 722     |
| VB57     | C650 | 36 | 8,0     | 2     | 426  | 852     |
|          | C650 | 36 | 8,0     | 12    | 351  | 1626    |
|          | C650 | 39 | 8,0     | 12    | 351  | 722     |
| VB58     | C650 | 40 | 5,0     | 18    | 106  | 1808    |
|          | C650 | 41 | 8,0     | 2     | 426  | 852     |
|          | C650 | 42 | 5,0     | 13    | 106  | 1378    |
| VB59     | C650 | 44 | 8,0     | 2     | 320  | 640     |
|          | C650 | 45 | 8,0     | 2     | 106  | 636     |
| VB60     | C650 | 46 | 5,0     | 6     | 106  | 636     |
|          | C650 | 46 | 5,0     | 2     | 180  | 360     |
|          | C650 | 48 | 8,0     | 2     | 385  | 770     |
| VB61     | C650 | 50 | 5,0     | 35    | 116  | 4176    |
|          | C650 | 51 | 8,0     | 3     | 67   | 201     |
|          | C650 | 51 | 8,0     | 2     | 619  | 1238    |
|          | C650 | 54 | 16,0    | 1     | 222  | 202     |
|          | C650 | 55 | 16,0    | 2     | 227  | 227     |
| VB62     | C650 | 55 | 16,0    | 2     | 225  | 510     |
|          | C650 | 56 | 5,0     | 25    | 106  | 2756    |
|          | C650 | 59 | 8,0     | 2     | 353  | 1166    |
|          | C650 | 60 | 10,0    | 1     | 205  | 205     |
| VB63     | C650 | 61 | 10,0    | 12    | 210  | 180     |
|          | C650 | 63 | 10,0    | 2     | 351  | 702     |
| VB64     | C650 | 64 | 16,0    | 18    | 463  | 908     |
|          | C650 | 65 | 5,0     | 2     | 440  | 880     |
|          | C650 | 68 | 8,0     | 2     | 440  | 880     |
|          | C650 | 69 | 8,0     | 2     | 440  | 880     |
| VB65     | C650 | 70 | 5,0     | 27    | 106  | 2862    |
|          | C650 | 72 | 12,5    | 1     | 188  | 188     |
|          | C650 | 73 | 12,5    | 2     | 245  | 490     |
| VB66     | C650 | 74 | 16,0    | 2     | 631  | 1262    |
|          | C650 | 75 | 5,0     | 99    | 106  | 6254    |
|          | C650 | 77 | 8,0     | 2     | 545  | 1090    |
|          | C650 | 78 | 10,0    | 2     | 172  | 344     |
|          | C650 | 79 | 10,0    | 2     | 1082 | 2124    |
|          | C650 | 80 | 12,5    | 2     | 281  | 522     |
|          | C650 | 82 | 5,0     | 2     | 106  | 2120    |
| VB67     | C650 | 83 | 8,0     | 2     | 489  | 938     |
|          | C650 | 84 | 8,0     | 2     | 531  | 1062    |

**Resumo do aço**

| ACO          | DIAM   | C.TOTAL | PESO + 10 % |
|--------------|--------|---------|-------------|
| (mm)         | (mm)   | (kg)    | (kg)        |
| C650         | 10,0   | 1037,7  | 70,3        |
| C650         | 12,5   | 41,2    | 43,6        |
| C650         | 16,0   | 4,7     | 81,6        |
| C650         | 5,0    | 546,9   | 92,7        |
| <b>TOTAL</b> |        |         |             |
| C650         | 2811,1 |         |             |
| C650         | 92,7   |         |             |

Volume de concreto (C-30) = 6,13 m³  
 Área de forma = 95,43 m²

**KENNEDY VASCONCELOS**  
 ENGENHEIRO CIVIL

**CALCULO ESTRUTURAL**  
 INSTALAÇÕES PREDIAIS  
 (85) 9115.9136

**PREFEITURA MUNICIPAL DE SOBRAL**  
**UNID. BASICA DE SAÚDE - CONJ. NOVA CALÇADA - SOBRAL - CE**

PROJETO DE: **ENGENHEIRO CIVIL**  
 Fº KENNEDY M. VASCONCELOS  
 EMBº CIVIL - CREIA/CE12868

DATA DE EMISSÃO: **12/20**