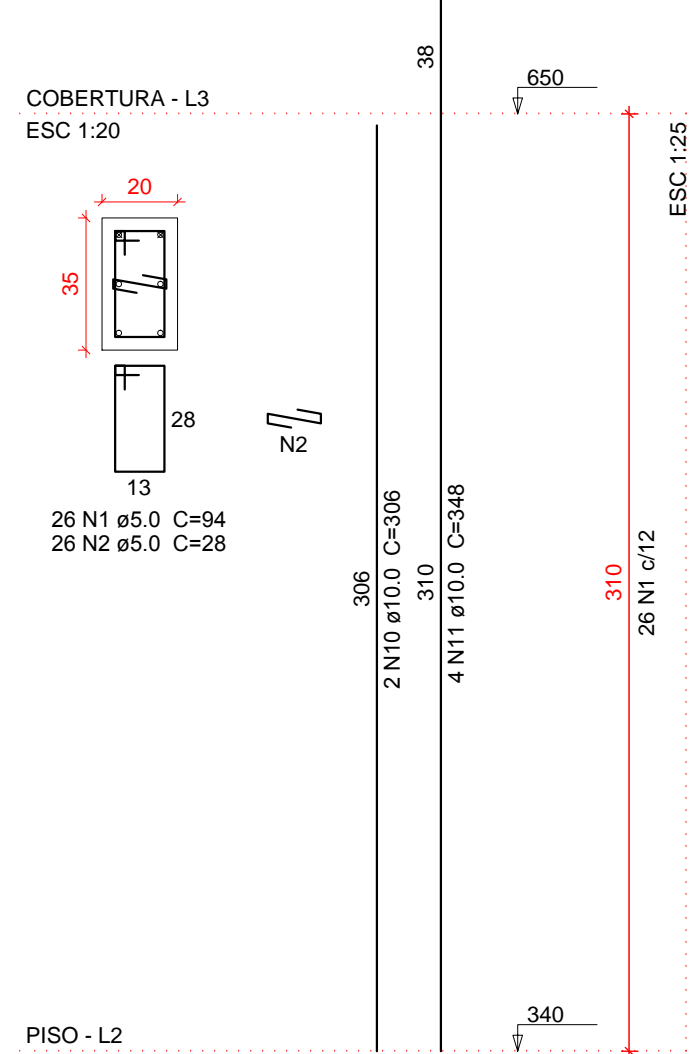
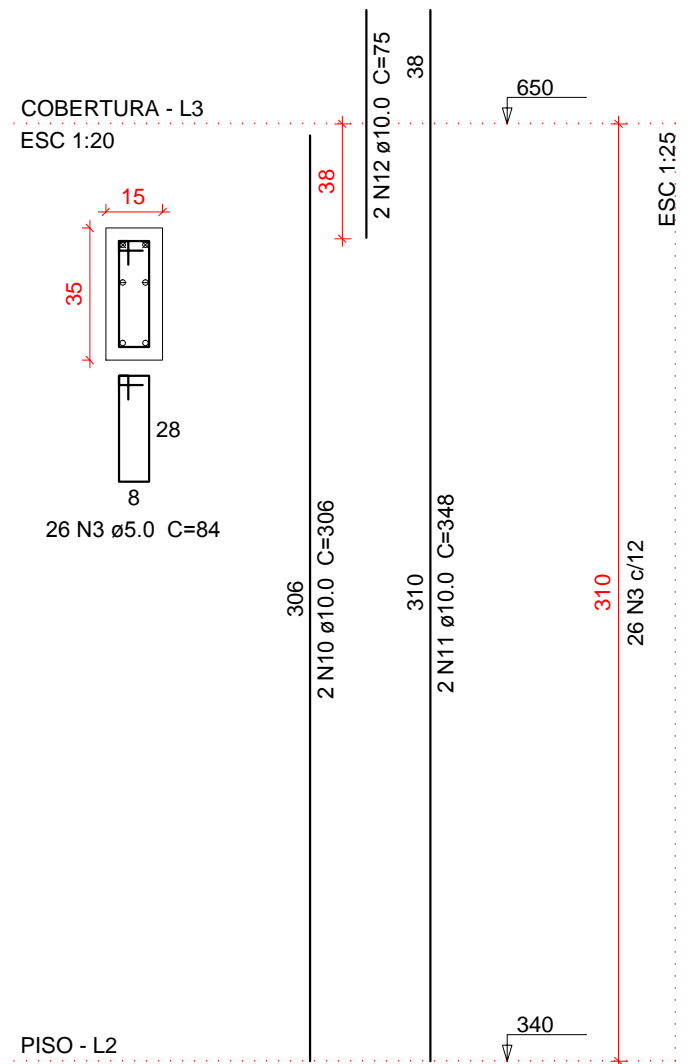


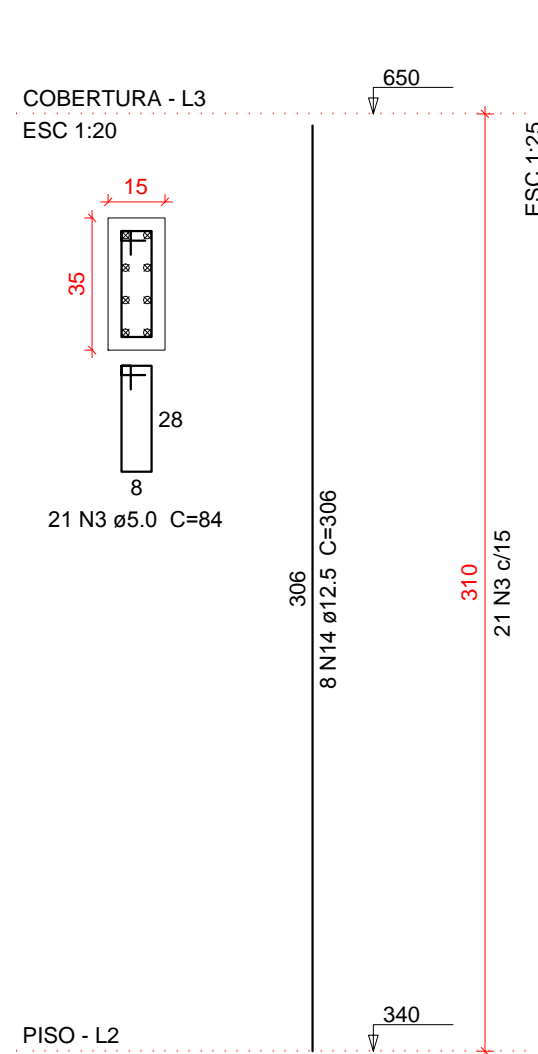
P23=P26



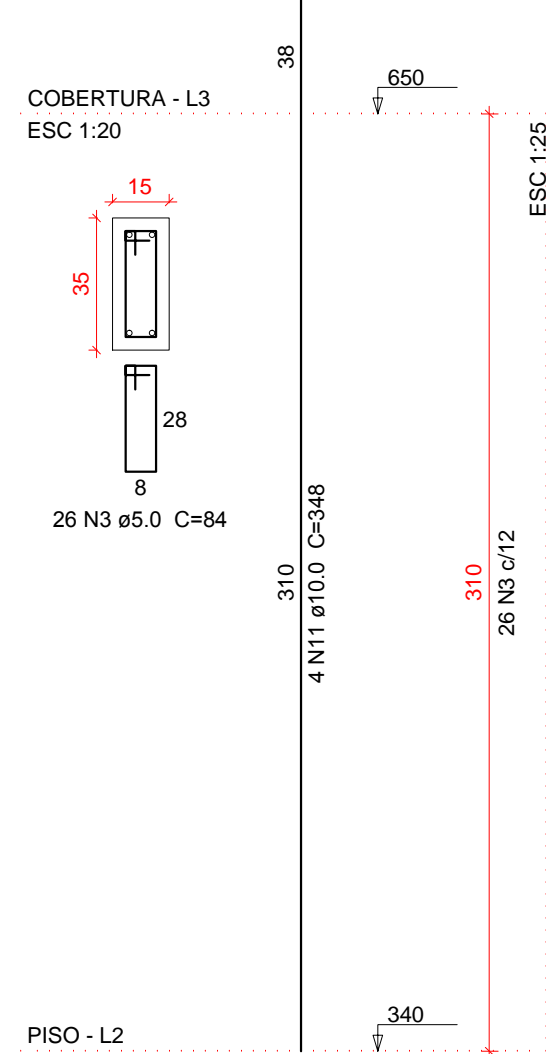
P24=P25=P29=P30=P36



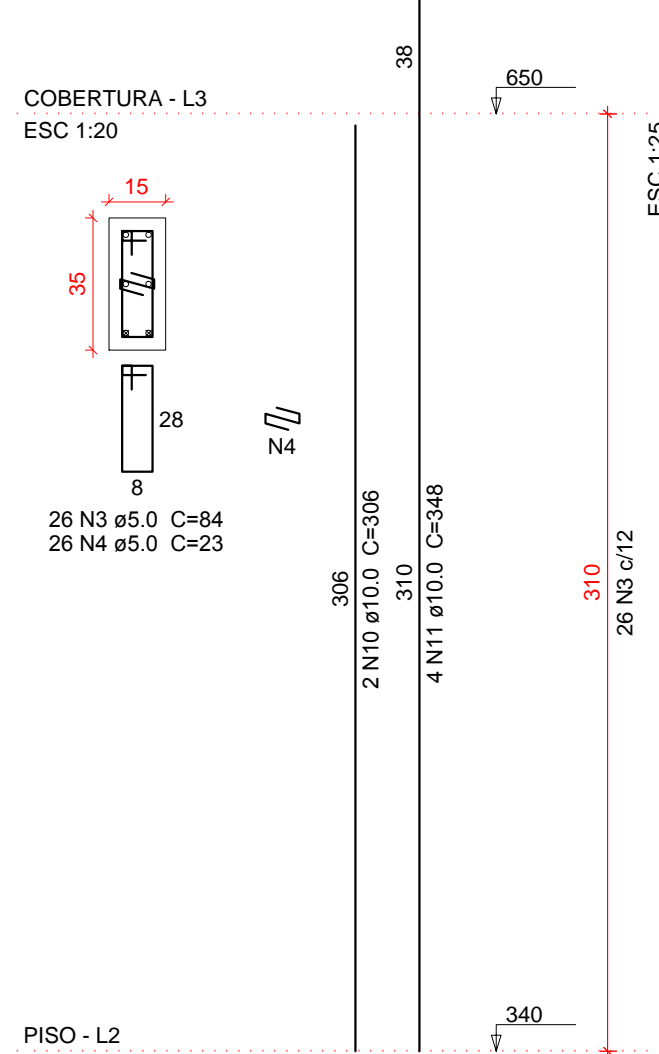
P27



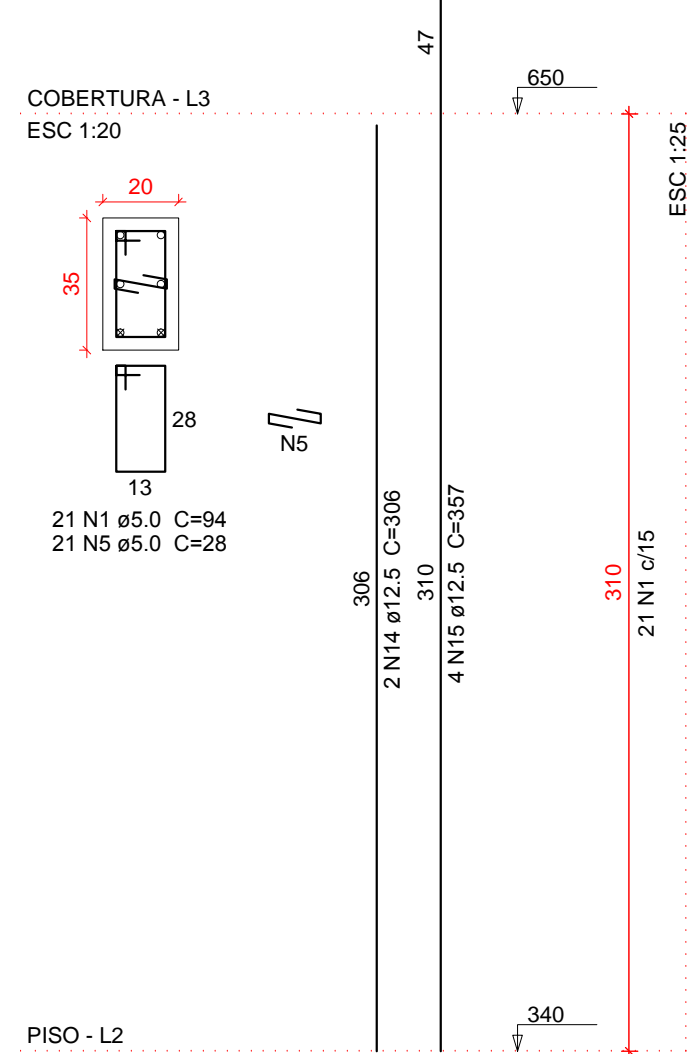
P28



P31=P32



P33



Relação do aço

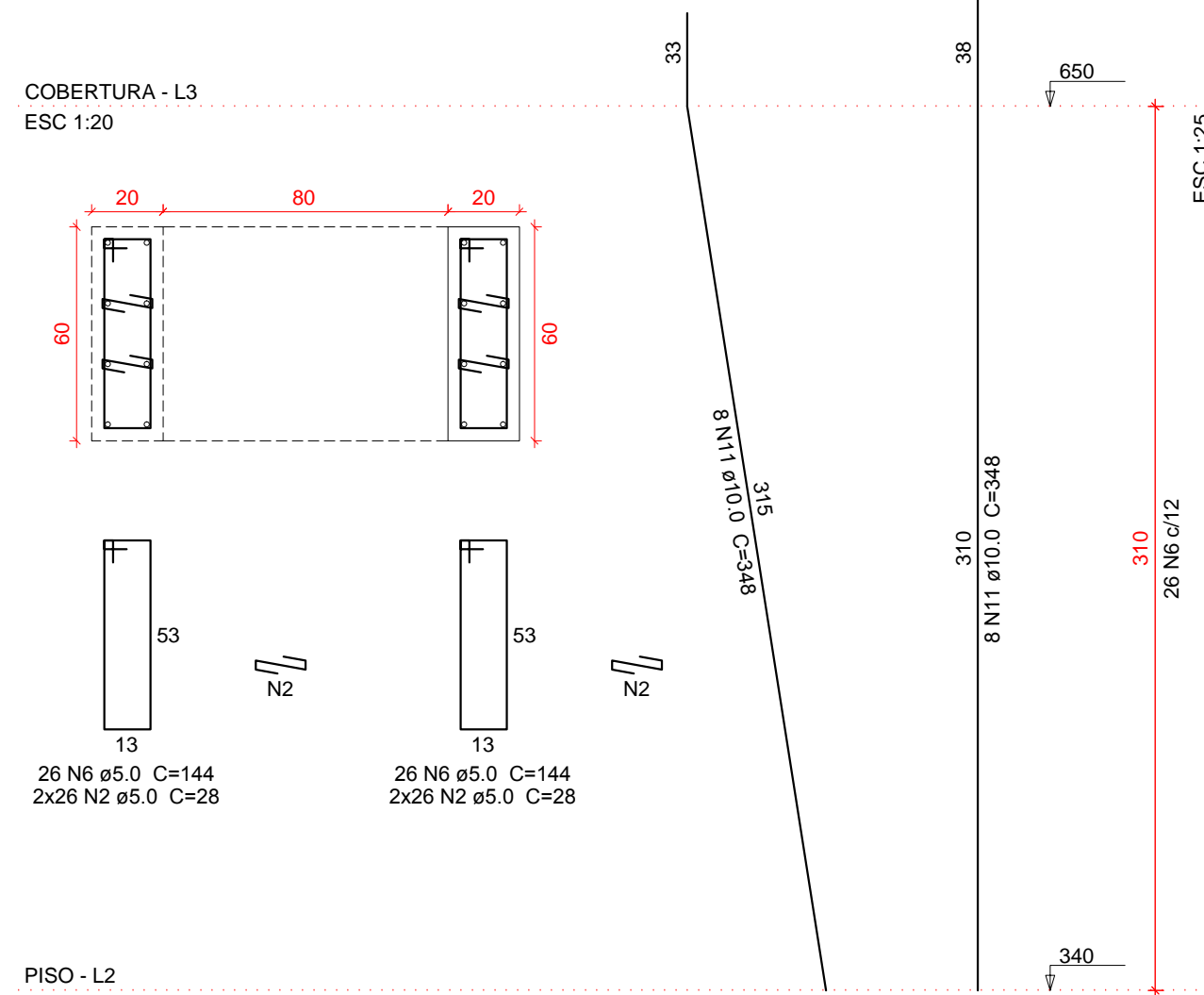
| AÇO  | N  | DIAM (mm) | QUANT | C.UNIT (cm) | C.TOTAL (cm) |
|------|----|-----------|-------|-------------|--------------|
| CA60 | 1  | 5.0       | 73    | 94          | 6862         |
|      | 2  | 5.0       | 156   | 28          | 4368         |
|      | 3  | 5.0       | 250   | 84          | 21000        |
|      | 4  | 5.0       | 104   | 23          | 2392         |
|      | 5  | 5.0       | 21    | 28          | 588          |
|      | 6  | 5.0       | 52    | 144         | 7488         |
|      | 7  | 5.0       | 21    | 23          | 483          |
|      | 8  | 5.0       | 52    | 134         | 6968         |
|      | 9  | 5.0       | 39    | 54          | 2106         |
|      | 10 | 10.0      | 24    | 306         | 7344         |
|      | 11 | 10.0      | 54    | 348         | 18792        |
|      | 12 | 10.0      | 14    | 75          | 1050         |
|      | 13 | 10.0      | 12    | 141         | 1692         |
|      | 14 | 12.5      | 12    | 306         | 3672         |
|      | 15 | 12.5      | 8     | 357         | 2856         |

Resumo do aço

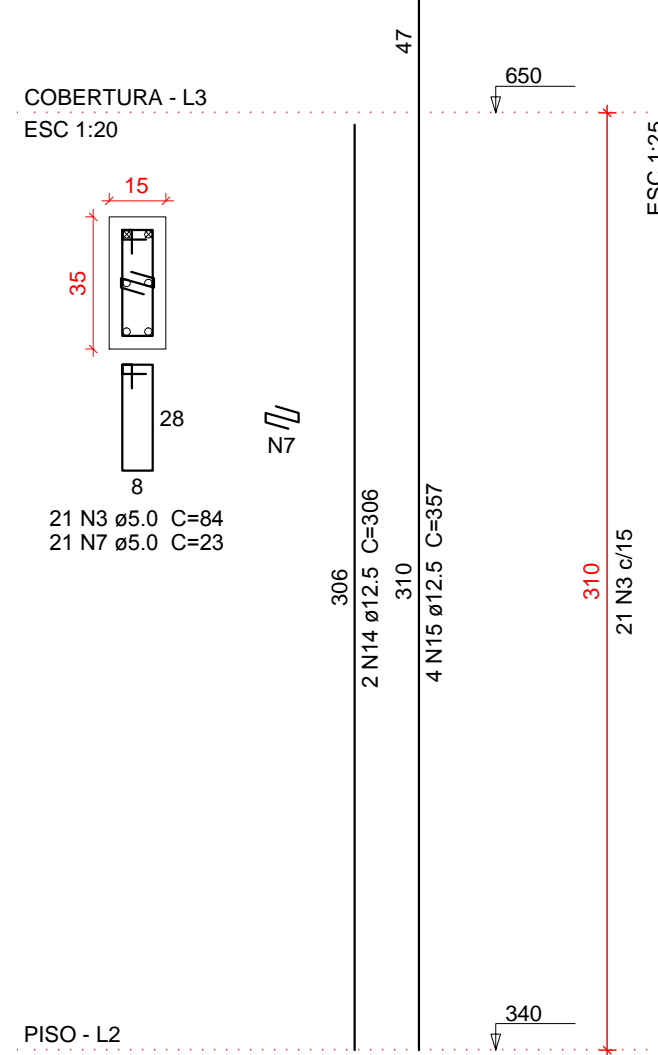
| AÇO             | DIAM (mm) | C.TOTAL (m) | QUANT + 10 % (Barras) | PESO + 10 % (kg) |
|-----------------|-----------|-------------|-----------------------|------------------|
| CA50            | 10.0      | 233.1       | 22                    | 158.1            |
| CA60            | 5.0       | 65.3        | 6                     | 69.2             |
| PESO TOTAL (kg) |           | 429.8       | -                     | 72.9             |

Volume de concreto (C-30) = 3.06 m³  
Área de forma = 53.89 m²

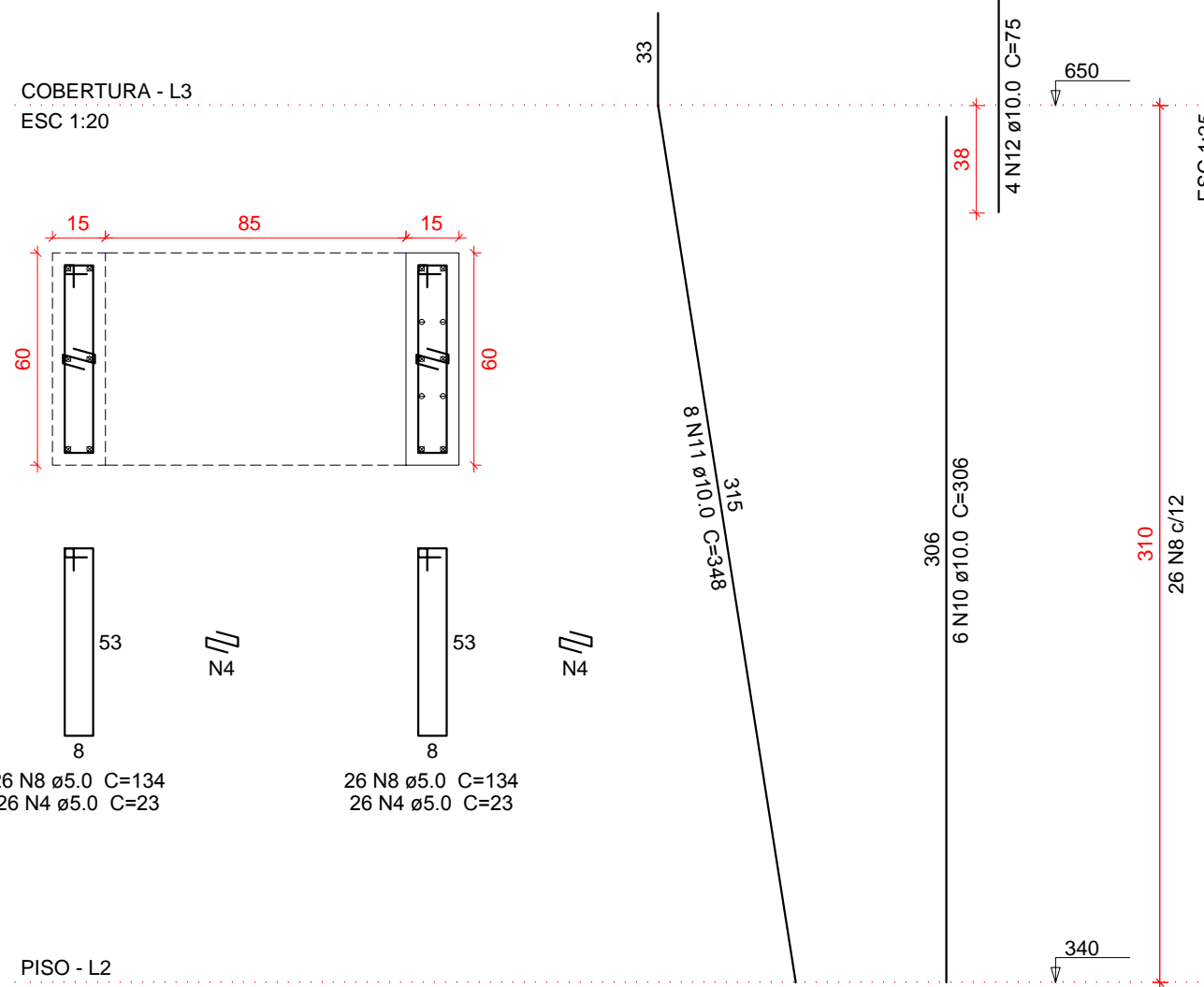
P34



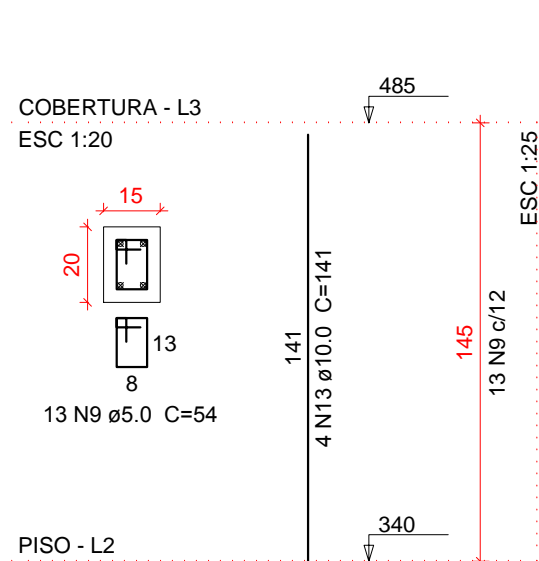
P35



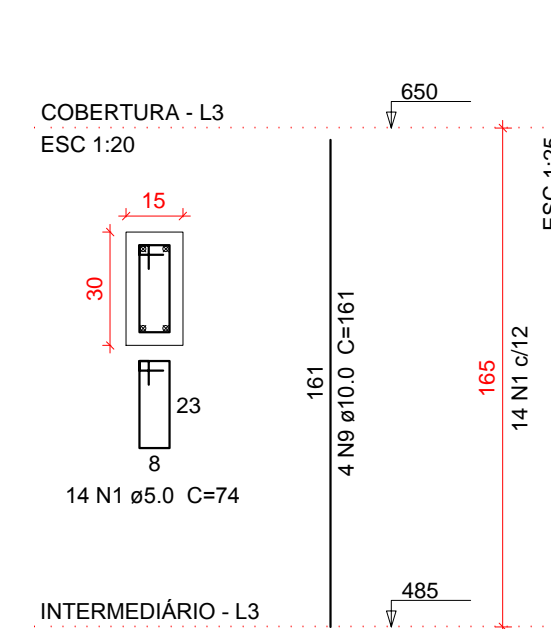
P37



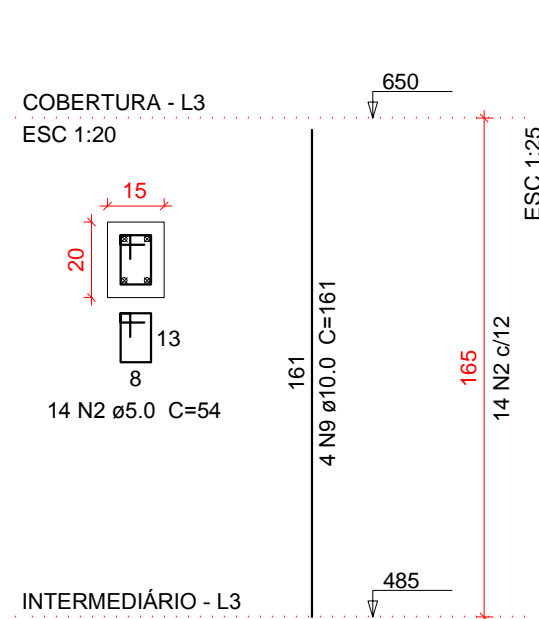
P6=P14=P18



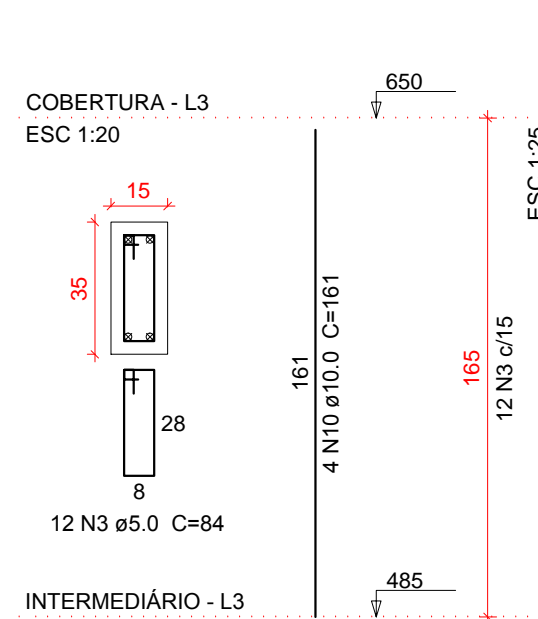
P1=P2=P7



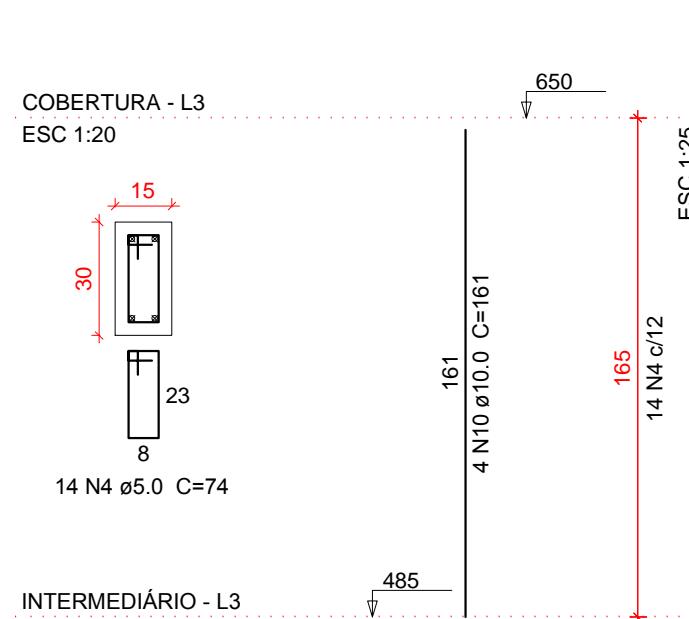
P13



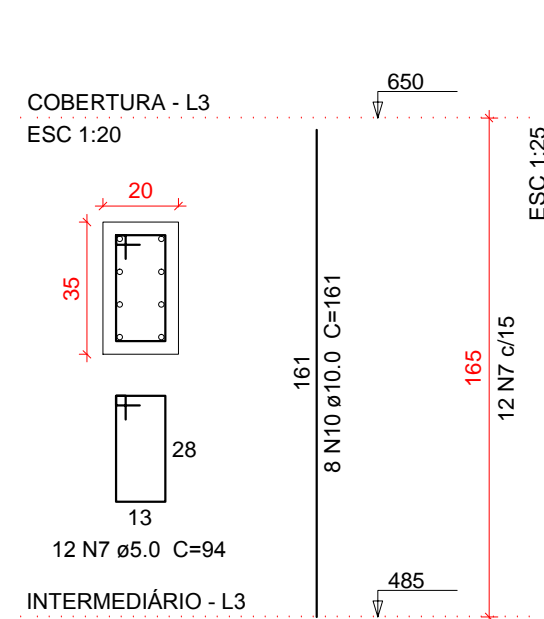
P15



P17



P22



Relação do aço

| AÇO  | N  | DIAM (mm) | QUANT | C.UNIT (cm) | C.TOTAL (cm) |
|------|----|-----------|-------|-------------|--------------|
| CA60 | 1  | 5.0       | 42    | 74          | 3108         |
|      | 2  | 5.0       | 14    | 54          | 756          |
|      | 3  | 5.0       | 24    | 84          | 2016         |
|      | 4  | 5.0       | 38    | 74          | 2812         |
|      | 5  | 5.0       | 9     | 94          | 846          |
|      | 6  | 5.0       | 18    | 23          | 414          |
|      | 7  | 5.0       | 12    | 94          | 1128         |
|      | 8  | 5.0       | 56    | 74          | 6216         |
|      | 9  | 10.0      | 36    | 161         | 7084         |
|      | 10 | 10.0      | 20    | 161         | 3220         |
|      | 11 | 10.0      | 8     | 103         | 824          |

Resumo do aço

| AÇO             | DIAM (mm) | C.TOTAL (m) | QUANT + 10 % (Barras) | PESO + 10 % (kg) |
|-----------------|-----------|-------------|-----------------------|------------------|
| CA50            | 10.0      | 146.9       | 14                    | 99.6             |
| CA60            | 5.0       | 65.7        | 8                     | 90.8             |
| PESO TOTAL (kg) |           | 339.9       | -                     | 57.6             |

Volume de concreto (C-30) = 2.48 m³  
Área de forma = 42.47 m²

APROVAÇÕES:

A APROVAÇÃO DO PRESENTE PROJETO PELA PREFEITURA, NÃO RECONHECE A PROPRIEDADE DO IMÓVEL



CLEBER LUIS HAHN  
ENGENHEIRO CIVIL - CREA PR 54.815/D

PROJETO E EXECUÇÃO  
RES. ENG. CIVIL - CREA PR 54.815/D

TÍTULO:  
**PROJETO ESTRUTURAL**

OBRA:  
**Comercial em Alvenaria**  
PRETENDENTE:  
**ACIM - Associação Comercial e Empresarial de Mercedes**

ENDEREÇO DA OBRA:  
Rua Doutor Flores / Lote 07 / Quadra 32 / Centro / Mercedes / PR

REFERÊNCIA:  
Armadura de pilares do pavimento COBERTURA

DADOS ESTATÍSTICOS:

VER PROJETO ARQUITETÔNICO

ASSINATURA DO PRETENDENTE:

Associação Comercial e Empresarial de Mercedes  
CNPJ: 72.326.620 / 0001 - 88

RESPONSÁVEL PROJETO / DESENHO:

Eng. Civil Cleber Luis Hahn  
Registro Crea PR - 54.815/D - CPF: 020.404.019-11

RESPONSÁVEL EXECUÇÃO:

DATA:

01 / 2025

PRANCHA:

EST\_013