

Technical drawing of a building facade elevation, showing structural elements, windows, and doors. The drawing includes dimensions, material specifications, and labels for various components.

Structural Elements and Dimensions:

- Top horizontal elements:
 - Left: 2 N1 ϕ 10 C=330
 - Right: 2 N5 ϕ 10 C=495
- Horizontal elements below top:
 - Left: 1 N2 ϕ 10 C=160
 - Middle: 2 N3 ϕ 16 C=630
 - Right: 4 N4 ϕ 16 C=320
- Horizontal elements at the bottom:
 - Left: 2 N6 ϕ 10 C=525
 - Middle: 1 N7 ϕ 10 C=285
 - Right: 2 N8 ϕ 10 C=245
 - Far Right: 2 N9 ϕ 10 C=220

Windows and Doors:

- Windows:
 - Left: N10 C/15 (13 ϕ 5), N11 C/20 (12 ϕ 6.3), N12 C/10 (8 ϕ 10)
 - Middle: N10 C/15 (13 ϕ 5), N11 C/15 (11 ϕ 5)
 - Right: N10 C/15 (13 ϕ 5)
- Doors:
 - Left: P76
 - Middle: B57
 - Right: B53, B45

Other Labels and Dimensions:

- Vertical dimensions: 47, 154, 207, 20/50, 38, 153, 161
- Horizontal dimensions: 292 ϕ 5, 153, 161
- Material/Finish: 2aCAM, 20/50, (cassida)
- Other: P66, V34, V32, 2x2 N13 ϕ 5 C=546

Technical drawing of a rectangular plate. The drawing shows a rectangular plate with a central rectangular hole. The dimensions are indicated as follows: the overall width is 15, the overall height is 45, and the central hole has a width of 2x2. The material is specified as CuCr. The drawing includes a scale bar indicating 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

Technical drawing of a rectangular plate. The plate has a width of 15 and a height of 45. There are two horizontal slots, each with a width of 10 and a height of 2. The distance between the centers of the slots is 16. The distance from the top edge to the center of the top slot is 2, and the distance from the bottom edge to the center of the bottom slot is 2.

13 N10 ϕ 5 C=133 24 N10 ϕ 5 C=133
12 N11 ϕ 6.3 C=134
6 N12 ϕ 10 C=137

23 N5 ϕ 6.3 C=114

Technical drawing of a reinforced concrete slab (C=200) showing top and bottom views.

Top View:

- Overall width: 270
- Top reinforcement: 2 N2 Ø 10 C=300
- Bottom reinforcement: 2 N3 Ø 10 C=200
- Distance between reinforcement: 228
- Right side reinforcement: 4 N3 Ø 10 C=200
- Section line A-A with dimensions 20/100

Bottom View:

- Overall width: 580
- Top reinforcement: 2 N5 Ø 10 C=595
- Bottom reinforcement: 2 N4 Ø 10 C=810
- Distance between reinforcement: 778
- Section line A-A with dimensions 20/100
- Bottom reinforcement: 2x7 N7 Ø 6.3 C=781
- Section line A-A with dimensions 20/100

15

Technical drawing of a reinforced concrete slab (P81) showing dimensions and reinforcement details. The drawing includes a plan view and a cross-section view.

Plan View:

- Overall dimensions: 315 (width) x 280 (length).
- Reinforcement details:
 - Top reinforcement: 2 N2 ϕ 12.5 C=620 (top center), 1 N3 ϕ 12.5 C=290 (bottom center).
 - Bottom reinforcement: 3 N1 ϕ 12.5 C=340 (left edge), 3 N4 ϕ 12.5 C=295 (right edge).
- Section line: A-A.

Cross-section View:

- Section line: A-A.
- Reinforcement details:
 - Top reinforcement: N7 ϕ 20 / 23 ϕ 6.3 (top center).
 - Bottom reinforcement: N7 ϕ 20 / 23 ϕ 6.3 (bottom center).
 - Edge reinforcement: 3 ϕ 12.5 (left and right edges).
 - Internal reinforcement: 5 ϕ 12.5 (top and bottom center).
- Section line: A-A.

Reinforcement Schedule:

- Top reinforcement: 2x8 N8 ϕ 6.3 C=558.
- Bottom reinforcement: 2x8 N9 ϕ 6.3 C=490.
- Edge reinforcement: 3 N5 ϕ 12.5 C=595 (left edge), 3 N6 ϕ 12.5 C=530 (right edge).

3 ϕ 12.5
8x2 ϕ 6.3
3 ϕ 12.5

49 N7 ϕ 6.3 C=274

Corte A

Top View Dimensions:
 Overall Width: 273
 Overall Height: 30
 Central Hole: $\varnothing 10$
 Slot Width: 10
 Slot Depth: 20/50
 Smaller Holes: $\varnothing 6$, $\varnothing 5$
 Section Line: A-A

Side View Dimensions:
 Total Height: 42
 Base Thickness: 15
 Section Line: A-A

Bottom View Dimensions:
 Overall Width: 270
 Overall Height: 10
 Central Hole: $\varnothing 10$
 Section Line: A-A

5 C=133

N3 Ø 5 C=133

Technical drawing of a reinforced concrete slab (P38) showing reinforcement details. The drawing includes top and bottom views with dimensions and reinforcement specifications.

Top View:

- Dimensions: 275 (width), 340 (length).
- Reinforcement: 2 N2 ϕ 10 C=305 (top), 2 N4 ϕ 10 C=370 (top), 2 N3 ϕ 10 C=200 (bottom), 2 N1 ϕ 6.3 C=235 (bottom).
- Other dimensions: 170, 233, 235.

Bottom View:

- Dimensions: 275 (width), 340 (length).
- Reinforcement: 4 ϕ 10 (top), 2 ϕ 6.3 (bottom), 4 ϕ 10 (bottom).
- Other dimensions: 162, 795, 825.

A section line A-A is indicated.

Diagram of a rectangular reinforced concrete section. The overall width is 400 mm and the overall height is 1000 mm. The effective depth is 720 mm. The reinforcement details are as follows:

- Top reinforcement: 4 bars of 10 mm diameter.
- Bottom reinforcement: 4 bars of 10 mm diameter.
- Side reinforcement: 7 bars of 6.3 mm diameter.

↑

Technical drawing of a bridge deck cross-section showing reinforcement details. The drawing includes a top view of the deck with reinforcement bars (N1, N2, N3, N4, N5, N6, N7, N8, N9, N10, N11, N12, N13, N14, N15) and their respective diameters and spacings. It also shows a side view of the deck with reinforcement bars (N1, N2, N3, N4, N5, N6, N7, N8, N9, N10, N11, N12, N13, N14, N15) and their respective diameters and spacings. The drawing is labeled with dimensions and reinforcement specifications.

Top View Details:

- Reinforcement bars: 2 N1 ϕ 6.3 C=425, 2 N2 ϕ 10 C=255, 2 N3 ϕ 10 C=200, 2 N4 ϕ 6.3 C=300, 2 N5 ϕ 10 C=560, 2 N6 ϕ 10 C=305, 2 N7 ϕ 10 C=305, 2 N8 ϕ 10 C=195, 2 N9 ϕ 10 C=920, 2 N10 ϕ 10 C=740, 2 N11 ϕ 10 C=810, 2 N12 ϕ 10 C=620, 2 N13 ϕ 6.3 C=20, 2 N14 ϕ 6.3 C=909, 2 N15 ϕ 6.3 C=801.
- Dimensions: 225, 170, 185, 257, 138, 232, 275, 165, 20/100, 4 ϕ 10, 227 ϕ 6.3, 145, 795, 905.

Side View Details:

- Reinforcement bars: 2 N1 ϕ 6.3 C=425, 2 N2 ϕ 10 C=255, 2 N3 ϕ 10 C=200, 2 N4 ϕ 6.3 C=300, 2 N5 ϕ 10 C=560, 2 N6 ϕ 10 C=305, 2 N7 ϕ 10 C=305, 2 N8 ϕ 10 C=195, 2 N9 ϕ 10 C=920, 2 N10 ϕ 10 C=740, 2 N11 ϕ 10 C=810, 2 N12 ϕ 10 C=620, 2 N13 ϕ 6.3 C=20, 2 N14 ϕ 6.3 C=909, 2 N15 ϕ 6.3 C=801.
- Dimensions: 225, 170, 185, 257, 138, 232, 275, 165, 20/100, 4 ϕ 10, 227 ϕ 6.3, 145, 795, 905.

83 N13 ϕ 6.3 C=234

[illegible]

6 Ø 6.3 C=234

1. DIMENSÕES EM CENTÍMETROS, ELEVAÇÕES EM METROS
2. CONCRETO ESTRUTURAL:
Fck>= 20 MPa (ESTACAS TIPO RAÇA) - ARGAMASSA:
CONSUMO DE CIMENTO>=600,0kg/m3; RELACÃO A/C ENTRE 0,5 E 0,6;
AGREGADO - AREIA.
Fck>= 30 MPa (DEMAIS ELEMENTOS ESTRUTURAIS): CONSUMO DE CIMENTO
CONSUMO DE CIMENTO >=320,0kg/m3.
3. FATOR ÁGUA/CIMENTO MÁXIMO: 0,60
4. CLASSE DE AGRESSIVIDADE II - URBANA
5. MÓDULO DE ELASTICIDADE INICIAL A 28 DIAS IGUAL A 30670 MPa
6. REALIZAR OS PROCEDIMENTOS DE CURA, RETIRADA DE FORMAS E DO
ESCORAMENTO CONFORME NBR 14931:2004 E MEMÓRIAL DESCRITIVO.
PROCEDER COM A CURA MÍDIA POR NO MÍNIMO 07 (SETE) DIAS OU
UTILIZAR A CURA QUÍMICA DOS ELEMENTOS DE CONCRETO.
7. A EXECUÇÃO DA ESTRUTURA DEVERÁ CONTAR COM O ACOMPANHAMENTO DE UM
TECNOLÓGISTA DE CONCRETO
8. O ENGENHEIRO RESPONSÁVEL PELA OBRA DEVERÁ OBEDECER AS
RECOMENDAÇÕES DAS NORMAS TÉCNICAS APLICÁVEIS, DEDICANDO ESPECIAL
ATENÇÃO ÀS SEGUINTES ATIVIDADES:
1.1. CONCRETO: PREPARO, CONTROLE, RECEBIMENTO, TRANSPORTE,
LÂMINA DE LANÇAMENTO, ADIÇÃO DE CEMENTO.
9. 2. FÓRMA: CONFERÊNCIA DAS MEDIDAS E POSIÇÕES, LIMPEZA,
ESTANQUEIDADE, SATURAÇÃO DAS FÓRMAS ABSORVENTES (RETIRAR
EXCESSO DE ÁGUA), CUIDADO COM O USO DOS DESMOLDANTES
E RETIRADA DAS FÓRMAS
10. 3. ARMADO: LIMPEZA, MONTAGEM, COBRIMENTO (USO DE ESPACADORES
TIPO ARMADUROS ADEQUADOS), E GARANTIA DA POSIÇÃO DAS ARMADURAS
ANTES E DURANTE A CONCRETEM.
11. 4. CIMENTOS MÍNIMO DA ARMADURA:
LAJES>=0,2m; VIGAS E PILARES>2,5m; BLOCOS>=5,0CM; ESTACAS>=4,0cm,
OBRA COM RÍGIDO CONTROLO DE QUALIDADE.
12. 5. RECOMENDA-SE QUE OS MATERIAIS (ÁGUA E CONCRETO) UTILIZADOS
NESTE PROJETO SEJAM SUBMETIDOS A ENSAIOS TECNOLÓGICOS
PREVISTO DRENAGEM E/OU IMPERMEABILIZAÇÃO PARA AS CORTINAS
(CONTENÇÕES).
13. 6. CONFERIR MEDIDAS NO LOCAL.

| AÇO | POS | BIT (mm) | QUANT | COMPRIMENTO | | | |
|-----|-----|-------------|-------|--------------|---------------|-------|-----|
| | | | | UNIT (cm) | TOTAL (cm) | | |
| V80 | 50A | 1 | 10 | 2 | 330 | 660 | |
| | 50A | 2 | 10 | 1 | 180 | 180 | |
| | 50A | 3 | 16 | 2 | 630 | 1260 | |
| | 50A | 4 | 16 | 4 | 320 | 1280 | |
| | 50A | 5 | 10 | 2 | 495 | 990 | |
| | 50A | 6 | 10 | 2 | 525 | 1050 | |
| | 50A | 7 | 10 | 1 | 285 | 285 | |
| | 50A | 8 | 10 | 2 | 245 | 490 | |
| | 50A | 9 | 10 | 2 | 220 | 440 | |
| | 60A | 10 | 5 | 37 | 133 | 4921 | |
| V81 | 50A | 11 | 6, 3 | 12 | 134 | 1608 | |
| | 50A | 2 | 10 | 7 | 6 | 137 | 827 |
| | 60A | 13 | 5 | 4 | 546 | 2184 | |
| | 50A | 1 | 12, 5 | 3 | 340 | 1020 | |
| | 50A | 2 | 12, 5 | 3 | 620 | 1240 | |
| | 50A | 3 | 12, 5 | 1 | 290 | 290 | |
| | 50A | 4 | 12, 5 | 3 | 295 | 885 | |
| | 50A | 5 | 12, 5 | 3 | 595 | 1785 | |
| | 50A | 6 | 12, 5 | 3 | 530 | 1590 | |
| | 50A | 7 | 6, 3 | 49 | 274 | 13426 | |
| V82 | 50A | 8 | 6, 3 | 16 | 558 | 8928 | |
| | 50A | 9 | 6, 3 | 18 | 490 | 7840 | |
| | 50A | 1 | 10 | 2 | 345 | 690 | |
| | 50A | 2 | 10 | 2 | 285 | 570 | |
| V83 | 60A | 3 | 5 | 14 | 133 | 1862 | |
| | 50A | 1 | 6, 3 | 2 | 280 | 560 | |
| | 50A | 2 | 10 | 2 | 230 | 460 | |
| | 50A | 3 | 10 | 2 | 160 | 320 | |
| V85 | 50A | 4 | 10 | 2 | 565 | 1130 | |
| | 50A | 5 | 6, 3 | 23 | 114 | 2622 | |
| | 50A | 1 | 10 | 2 | 490 | 980 | |
| | 50A | 2 | 10 | 2 | 465 | 930 | |
| V86 | 60A | 3 | 5 | 26 | 133 | 3458 | |
| | 50A | 1 | 10 | 4 | 250 | 1000 | |
| | 50A | 2 | 10 | 2 | 360 | 720 | |
| | 50A | 3 | 10 | 2 | 195 | 390 | |
| V87 | 50A | 4 | 10 | 5 | 545 | 1090 | |
| | 50A | 5 | 10 | 2 | 350 | 700 | |
| | 50A | 6 | 6, 3 | 24 | 234 | 5616 | |
| | 50A | 7 | 6, 3 | 14 | 501 | 7014 | |
| | 50A | 1 | 6, 3 | 2 | 425 | 850 | |
| | 50A | 2 | 10 | 2 | 255 | 510 | |
| | 50A | 3 | 10 | 2 | 200 | 400 | |
| | 50A | 4 | 6, 3 | 2 | 300 | 600 | |
| V88 | 50A | 5 | 10 | 2 | 560 | 1120 | |
| | 50A | 6 | 10 | 2 | 305 | 610 | |
| | 50A | 7 | 10 | 2 | 305 | 610 | |
| | 50A | 8 | 10 | 2 | 195 | 390 | |
| | 50A | 9 | 10 | 2 | 1920 | 1840 | |
| | 50A | 10 | 10 | 1 | 740 | 1480 | |
| | 50A | 11 | 10 | 1 | 810 | 1620 | |
| | 50A | 12 | 10 | 2 | 620 | 1240 | |
| | 50A | 13 | 6, 3 | 83 | 234 | 19422 | |
| | 50A | 14 | 6, 3 | 14 | 909 | 12726 | |
| | 50A | 15 | 6, 3 | 14 | 801 | 11214 | |
| | V89 | 50A | 1 | 6, 3 | 2 | 235 | 470 |
| | | 50A | 2 | 10 | 2 | 305 | 610 |
| | | 50A | 3 | 10 | 2 | 200 | 800 |
| 50A | | 4 | 10 | 2 | 370 | 740 | |
| 50A | | 5 | 10 | 2 | 825 | 1650 | |
| 50A | | 6 | 10 | 2 | 415 | 830 | |
| 50A | | 7 | 6, 3 | 39 | 234 | 9126 | |
| 50A | | 8 | 6, 3 | 14 | 799 | 11186 | |
| V89 | 50A | 1 | 6, 3 | 2 | 395 | 790 | |
| | 50A | 2 | 10 | 2 | 300 | 600 | |
| | 50A | 3 | 10 | 6 | 200 | 1200 | |
| | 50A | 4 | 10 | 2 | 810 | 1620 | |
| | 50A | 5 | 10 | 2 | 595 | 1190 | |
| | 50A | 6 | 6, 3 | 38 | 234 | 8892 | |
| | 50A | 7 | 6, 3 | 14 | 781 | 10334 | |

| RESUMO AÇO CA 50-60 | | | | |
|---------------------|-------------|--------------|--------------|--|
| ACO | BIT (mm) | COMPR (m) | PESO (kg) | |
| 60A | 5 | 124 | 19 | |
| 50A | 6,3 | 1338 | 328 | |
| 50A | 10 | 329 | 203 | |
| 50A | 12,5 | 68 | 66 | |
| 50A | 16 | 25 | 40 | |
| Peso Total | 60A = | 19 kg | | |
| Peso Total | 50A = | 637 kg | | |


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|---------|-----|---------------------------------------|----------|------------|
| EXE | 00 | PROJETO EXECUTIVO - LICITAÇÃO OBRA | EFICÁCIA | 31/07/2021 |
| REVCOMP | 02 | REVISÃO PROJETO EXECUTIVO - REF EXE 2 | EFICÁCIA | 24/07/2021 |
| REVCOMP | 01 | REVISÃO PROJETO EXECUTIVO - REF EXE | EFICÁCIA | 03/07/2021 |
| REVCOMP | 00 | MISSÃO INICIAL EXECUTIVO | EFICÁCIA | 25/04/2021 |
| ANT | 01 | REVISÃO ANTEPROJETO | EFICÁCIA | 20/02/2021 |
| ANT | 00 | MISSÃO INICIAL ANTEPROJETO | EFICÁCIA | 21/11/2020 |
| TIPO | REV | DESCRIÇÃO | DESENHO | DATA |

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| REVISÕES |
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MINISTÉRIO PÚBLICO DO ESTADO DE MINAS GERAIS
SEDE DAS PROMOTORIAS DE JUSTIÇA DE JUIZ DE FORA

| | |
|---|--------------------|
| ENDEREÇO: | ÁREA TERRENO: |
| RUA JOSÉ CALIL AHOUGI, LOTE F, BAIXADA DO PARAIBUNA | 2.996,30m2 |
| | ÁREA CONSTRUÍDA: |
| PROPRIETÁRIO: | 7.266,36m2 |
| | CNPJ: |
| PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DE MINAS GERAIS | 20.971.057/0001-45 |

PROJETO DE ESTRUTURA DE CONCRETO ARMADO

| | |
|---|--|
| EMPRESA: | CNPJ: |
| ENGENHEIRO FABRICIO SILVA LIMA CREA: 80.082/D-MG EFICÁCIA PROJETOS E CONSULTORIA LTDA |  06.301.115/0001-00 |
| RESPONSÁVEL TÉCNICO: | CREA: |
| NELSON URIAS PINTO GARIGLIO DA SILVA | 82.624/D-MG |

| | | |
|--|---------------------|------------------|
| CONTEÚDO: ARMAÇÃO DE VIGAS - FUNDAÇÃO E 1o PAVIMENTO 10/10 | DATA: 31/07/20 | FOLHA: 53/126 |
| | ESCALA: INDICADA | |