

Technical drawing of a reinforced concrete slab (V837) showing reinforcement details. The drawing includes a plan view and a cross-section view.

Plan View:

- Slab dimensions: 10.0m x 20.0m.
- Reinforcement: 6 N2 ϕ 20 (top), 4 N3 ϕ 20 (bottom), 3 N6 ϕ 20 (bottom).
- Labels: V837, P31, (4R) N10 C/15, (4R) N11 C/20, (4R) N12 C/10, 10 ϕ 20, 5 ϕ 20 V841, 2x3 N13 ϕ 10 C=91, 5 ϕ 12.5 C=175, 3 N8 ϕ 20 C=780, 2 N7 ϕ 20 C=740, 3 N9 ϕ 20 C=610, 3 N4 ϕ 12.5 C=135.

Cross-section View:

- Slab thickness: 150mm.
- Reinforcement: 5 ϕ 20 (top), 3 N4 ϕ 12.5 (bottom), 3 N9 ϕ 20 (bottom).
- Labels: V837, P31, V841, V844, P33, 150, 50/50, 50, 2, 2, 2.

Technical drawing of a bridge deck cross-section showing reinforcement details. The drawing includes a top view and a side view.

Top View:

- Overall width: 355
- Overall height: 40
- Reinforcement bars: 6 N2 ϕ 20 (top), 4 N3 ϕ 20 (bottom), 4 N1 ϕ 8 (middle).
- Dimensions: 240, 239, 10 ϕ 20, 5 ϕ 20, 10 ϕ 20.
- Labels: P34, P36, V848, V852, V858, (4R), N10 C/10, N11 C/15, N1 C/20, C=395, C=270, C=535.

Side View:

- Overall width: 355
- Overall height: 40
- Reinforcement bars: 3 N5 ϕ 12.5 (left), 2 N6 ϕ 20 (top), 2 N7 ϕ 20 (top), 3 N9 ϕ 20 (bottom), 4 N4 ϕ 12.5 (bottom).
- Dimensions: 15, 53, 53, 73, 73, 40.
- Labels: P34, P36, V848, V852, V858, (costeleta), N12 ϕ 10 C=94, C=570, C=740, C=740, C=612, C=780.

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The technical drawing consists of two views of a mechanical part. The top view is a cross-section showing a rectangular block with a central vertical slot. The block has a total width of 20 units and a height of 10 units. The central slot has a width of 8 units. The bottom view is a side view showing the profile of the part. It is a rectangle with a width of 30 units and a height of 45 units. The drawing is labeled with dimensions and tolerances: 10 \pm 20, 8 \pm 20, 30, and 45.

2x27 N10 ϕ 10 C=167
2x36 N11 ϕ 6.3 C=164

Technical drawing of a reinforced concrete slab (Corte A-A) showing dimensions and reinforcement details.

Top View (Plan):

- Overall width: 668
- Reinforcement: 2 N1 ϕ 10 C=770
- Dimensions: 47, 185, 48, 51, 50
- Reinforcement: 1 N2 ϕ 10 C=235
- Angle: 20/80

Side View (Corte A-A):

- Overall height: 15
- Reinforcement: 6x2 ϕ 10
- Dimensions: 75, 19

Bottom View (Plan):

- Reinforcement: N5 C/25 23 ϕ 6.3
- Dimensions: 3 ϕ 10, 2 ϕ 10, 3 ϕ 10
- Reinforcement: 2x6 ϕ 6.3
- Dimensions: 3 ϕ 10, 108, 44
- Reinforcement: 1 N4 ϕ 10 C=350
- Reinforcement: 2 N3 ϕ 10 C=660
- Reinforcement: 2x6 N6 ϕ 6.3 C=613
- Reinforcement: (castella)


Technical drawing of a rectangular plate. The top view shows a rectangle with a central hole of diameter $\phi 10$. The hole is positioned 3 units from the top and bottom edges. The plate has a thickness of 6 units and a width of 6.3 units. A side view shows the plate's profile with a height of 75 units and a width of 15 units.

Technical drawing of a mechanical part with dimensions and tolerances. The drawing includes a top view and a side view. The top view shows a rectangular part with a central hole of diameter 108 and a smaller hole of diameter 5. The side view shows a rectangular part with a central hole of diameter 107 and a smaller hole of diameter 10. The drawing includes dimensions and tolerances for various features, such as 16, 2, 108, 5, C=140, 20/50, N3, C/15, 2 * 5, 3 * 10, V861, 4, 107, 10, C=135, N2, and V862.

Technical drawing of a rectangular plate. The top view shows a central hole with a diameter of 5 mm, indicated by a dimension line with a circle and the number 5. The hole is offset from the top edge by 2 mm. The bottom edge has a dimension of 3 mm. The side view shows a rectangular plate with a height of 45 mm and a width of 15 mm. A corner chamfer is indicated by a 45-degree angle symbol. The material is specified as 5 N3 with a thickness of 5 mm and a hardness of C=133.

RESUMO DE AÇO			
ACO	BIT mm	COMPR m	PESO kgf
60A	5	402	62
50A	6,3	354	87
50A	8	96	38
50A	10	276	170
50A	12,5	142	136
50A	20	280	689
Peso Total	60A =		62 kgf
Peso Total	50A =		1121 kgf

REVISÕES	
<p align="center">MINISTÉRIO PÚBLICO DO ESTADO DE MINAS GERAIS SEDE DAS PROMOTORIAS DE JUSTIÇA DE JUIZ DE FORA</p>	
ENDEREÇO:	ÁREA TERRENO:
RUA JOSÉ CALIL AHOUGI, LOTE F, BAIXADA DO PARAIBUNA	2.996,30m ²
	ÁREA CONSTRUÍDA:
	7.266,36m ²
PROPRIETÁRIO:	CNPJ:
	20.971.057/0001-45
PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DE MINAS GERAIS	

<p align="center">PROJETO DE ESTRUTURA DE CONCRETO ARMADO</p>		
<p>EMPRESA:</p> <p>_____</p> <p>ENGENHEIRO FABRÍCIO SILVA LIMA</p> <p>CREA: 80.082/D-MG</p> <p>EFICÁCIA PROJETOS E CONSULTORIA LTDA</p>		<p>CNPJ:</p> <p>06.301.115/0001-00</p>
<p>RESPONSÁVEL TÉCNICO:</p> <p>_____</p> <p>NELSON URIAS PINTO GARIGLIO DA SILVA</p>	<p>CREA:</p> <p>82.624/D-MG</p>	
<p>CONTEÚDO:</p> <p>ARMAÇÃO DE VIGAS - COBERTURA - 03/09</p>	<p>DATA:</p> <p>31/07/20</p> <p>ESCALA:</p> <p>INDICADA</p>	<p>FOLHA:</p> <p>96/126</p>

1. DIMENSÕES EM CENTÍMETROS, ELEVACOES EM METROS
2. CONCRETO ESTRUTURAL:
Fck>= 20 MPa (ESTACAS TIPO RAIZ) - ARGAMASSA;
CONSUMO DE CIMENTO>=600,0kg/m3; RELAÇÃO 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 MEMORIAL DESCRITIVO.
PROCEDER COM A CURA OMIDA 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
TECNOLOGISTA DE CONCRETO
8. O ENGENHEIRO RESPONSÁVEL PELA OBRA DEVERÁ OBEDECER AS
RECOMENDAÇÕES DAS NORMAS TÉCNICAS APLICÁVEIS, DEDICANDO ESPECIAL
ATENÇÃO AS SEGUINTE ATIVIDADES:
 - 8.1. CONCRETO: PREPARO, CONTROLE, RECEBIMENTO, TRANSPORTE,
LANÇAMENTO, ADENSAMENTO E CURA
 - 8.2. FORMA: CONFERÊNCIA DAS MEDIDAS E POSIÇÕES, LIMPEZA,
ESTANQUEIDADE, SATURAÇÃO DAS FORMAS ABSORVENTES (RETIRAR
EXCESSO DE ÁGUA), CUIDADO COM O USO DOS DESMOLDANTES
E RETIRADA DAS FORMAS
 - 8.3. ARMAÇÃO: LIMPEZA, MONTAGEM, COBRIMENTO (USO DE ESPACADORES
PLÁSTICOS ADEQUADOS), E GARANTIA DA POSIÇÃO DAS ARMADURAS
ANTES E DURANTE A CONCRETAGEM
9. COBRIMENTO MÍNIMO DA ARMADURA:
LAJES=2,0cm; VIGAS E PILARES=2,5cm; BLOCOS=5,0CM; ESTACAS=4,0cm.
OBRA COM RÍGIDO CONTROLE DE QUALIDADE.
10. RECOMENDA-SE QUE OS MATERIAIS (ACO E CONCRETO) UTILIZADOS
NESTE PROJETO SEJAM SUBMETIDOS A ENSAIOS TECNOLÓGICOS
11. PREVER DRENAGEM E/OU IMPERMEABILIZAÇÃO PARA AS CORTINAS
(CONTENCÕES).
12. CONFERIR MEDIDAS NO LOCAL.

27 N5 10 5 C=133

[illegible]

CONFIGURACAO DAS PENAS - FORMATO A1 (401 x 604mm)						
RED	YELLOW	GREEN	CYAN	BLUE	MAGENTA	WHITE
0.25	0.50	0.13	0.30	0.40	1.0	0.80
						0.18