

Technical drawing of a reinforced concrete beam cross-section and elevation.

Corte A (Cross-section):

- Top flange width: 135
- Top flange thickness: 45
- Web width: 90
- Bottom flange width: 15
- Top reinforcement: 2 N2 $\varnothing$ 10, C=180, 90
- Bottom reinforcement: 2 N1 $\varnothing$ 6.3, C=320
- Total width: 435

Elevation:

- Supports: P11, P12, P13
- Beam height: 30 $\varnothing$ 6.3/20, 190
- Support width: 18 $\varnothing$ 6.3/20, 193
- Reinforcement details:
 - 2x3 N6 $\varnothing$ 5 C=640
 - 2x3 N7 $\varnothing$ 5 C=220
 - 2 N4 $\varnothing$ 10 C=850
- Total length: 820

Top View:

- Overall dimensions: 515 (width) x 2350 (length).
- Top reinforcement: 2 N1 $\varnothing$ 10, C=560.
- Bottom reinforcement: 2 N2 $\varnothing$ 6.3, C=250.
- Section lines A-A and B-B are indicated.

Side View (Corte A):

- Slab thickness: 15 cm.
- Reinforcement: 3x2 $\varnothing$ 10.
- Clear height: 12 cm.
- Bottom reinforcement: 2 $\varnothing$ 10.

Bottom View:

- Overall dimensions: 515 (width) x 2350 (length).
- Top reinforcement: 15 $\varnothing$ 5 C/20, N4 (299).
- Bottom reinforcement: 19 $\varnothing$ 5 C/20, N4 (375).
- Section lines A-A and B-B are indicated.

Reinforcement Details:

- Top reinforcement: 2x3 N5 $\varnothing$ 5 C=340.
- Bottom reinforcement: 2x3 N6 $\varnothing$ 5 C=400.
- Overall width: 710 cm.
- Overall length: 2 N3 $\varnothing$ 10 C=740.

Technical drawing of a 17N3 (199) bearing. The drawing includes a side view and a cross-section labeled "Corte A".

Side View Dimensions:

- Shaft diameter: 17 N3 Ø 5 C=80
- Outer diameter: 219
- Width: 52

Corte A Dimensions:

- Inner diameter: 15
- Outer diameter: 30
- Width: 7

Technical drawing of a mechanical part, showing a side view and a cross-section A-A.

Side View:

- Overall length: 217
- Central hole diameter: 217
- Small hole diameter: 10
- Material specification: 2 N1 Ø 10 C=255

Corte A A (Cross-section A-A):

- Width: 30
- Height: 18
- Material specification: 2 Ø 10

Other Details:

- Part number: P16
- Material specification: 17 N3 Ø 5 C=80
- Small hole diameter: 22
- Small hole diameter: 17 Ø 5 5/12
- Small hole diameter: N5 (194)
- Small hole diameter: 217
- Small hole diameter: 2 N2 Ø 8 C=255

Technical drawing of a mechanical part, labeled "Corre A". The drawing shows two views: a top view and a side view.

Top View (V47):

- Overall length: 395
- Overall width: 15
- Two circular holes, each with a diameter of 12.5.
- Distance between the centers of the holes: 375.
- Distance from the left edge to the center of the first hole: 2.
- Distance from the right edge to the center of the second hole: 2.

Side View (V51):

- Overall height: 7
- Overall width: 15
- Two circular holes, each with a diameter of 12.5.
- Distance between the centers of the holes: 375.
- Distance from the left edge to the center of the first hole: 2.
- Distance from the right edge to the center of the second hole: 2.

Corre A

Technical drawing of a 2x2 N3 Ø 5 C=275 beam with a 13 N2 Ø 5 C=220 reinforcement bar. The drawing includes a side view and a cross-section 'Corte A'. The side view shows the beam with reinforcement bars V28 and V30, and a central reinforcement bar 13 N2 Ø 5 C=220. The cross-section shows the beam's dimensions: 275 mm width, 15 mm top reinforcement, 10 mm top reinforcement, 2x2 Ø 8 mm reinforcement, 2x2 Ø 8 mm reinforcement, and 10 mm bottom reinforcement. The beam is labeled 2x2 N3 Ø 5 C=275.

Corte A-A

Top View: Shows a beam with a total width of 151 cm. It features two top reinforcement bars (N2) with a diameter of 12.5 mm and a center-to-center spacing (C) of 180 mm. The distance between the centerlines of the top bars is 100 cm. The bottom reinforcement consists of two bars (N1) with a diameter of 6.3 mm and a center-to-center spacing (C) of 340 mm.

Side View: Shows the beam's profile with a total height of 40 cm. It includes a top flange with a height of 15 cm and a bottom flange with a height of 7 cm. The main body of the beam has a height of 25 cm. The reinforcement is labeled as 2 N2, 2 N1, and 2 N4.

Cross-section (Corte A-A): Shows a rectangular cross-section with a width of 151 cm and a height of 40 cm. The reinforcement is labeled as 2 N2, 2 N1, and 2 N4. The bottom reinforcement is labeled as 2 N4, 2 N5, and 2 N6.

Reinforcement Details:

- Top reinforcement: 2 N2 ϕ 12.5 C=180
- Bottom reinforcement: 2 N1 ϕ 6.3 C=340
- Side reinforcement: 2 N4 ϕ 5 C=100
- Bottom reinforcement (castelo): 2x2 N5 ϕ 5 C=575
- Bottom reinforcement: 2 N3 ϕ 10 C=605

[illegible]

Corte A-A

149
2 N2 ø 12.5
C=160

100

209
2 N3 ø 12.5
C=240

2 N1 ø 6.3
C=300

15
2 ø 8
2 ø 10

72
9

28 N5 ø 5 C=110

P24

P25

28 ø 5 C/20
N5 (546)

(coastola)

2x2 N6 ø 5 C=578

578

2 N4 ø 10 C=610

Corte A-A

Top view dimensions: 382 (total width), 2 N1 ϕ 10 C=470 (top reinforcement), 14 (top slab thickness), 18 ϕ 5 C/20 N3 (359) (bottom reinforcement), 2x3 N4 ϕ 5 C=383 (bottom reinforcement), 385 (bottom slab thickness), 2 N2 ϕ 10 C=415 (bottom reinforcement).

Side view dimensions: 15 (top slab thickness), 60 (total height), 3x ϕ 2 (top reinforcement), 2 ϕ 1 (bottom reinforcement), 52 (bottom slab thickness), 7 (bottom reinforcement).

Labels: P25, P26, (castella).

Fck:	≥ 30MPa
Ecl:	≥ 30,7GPa
Cobrimentos:	
LAJES	- 2,5cm
VIGAS	- 3,0cm
PILARES	- 3,0cm
FUNDAÇÕES	- 4,0cm
Faixa de Agressividade Ambiental:	
MODERADA	

	AÇO	POS	BIT	QUANT	COMPRIMENTO		
					UNIT	TOTAL	
					mm	cm	
V1		50A	1	6,3	4	340	1360
		50A	2	10	4	180	720
		50A	3	10	2	600	1200
		50A	5	10	2	620	1240
		50A	5	10	2	320	640
		50A	6	10	2	620	1240
		50A	7	5	69	140	9660
		60A	8	5	6	600	3600
V2		60A	9	5	6	300	1800
		60A	10	5	6	580	3480
		50A	1	6,3	2	280	560
		50A	2	10	4	180	720
		50A	3	10	2	640	1280
		50A	4	6,3	2	340	680
		50A	5	10	4	600	2400
		50A	6	10	2	320	640
V3		50A	7	5	68	140	9520
		60A	8	5	6	580	3480
		60A	9	5	6	300	1800
		60A	10	5	6	580	3480
		50A	1	6,3	2	320	640
		50A	2	10	2	180	360
		50A	3	10	2	480	960
		50A	4	10	2	850	1700
V4		50A	5	10	5	140	5600
		60A	6	5	6	640	3840
		60A	7	5	6	220	1320
		50A	1	10	2	560	1120
		50A	2	6,3	2	250	500
		50A	3	10	2	740	1480
		50A	4	5	34	140	4760
		60A	5	5	6	340	2040
V5		60A	6	5	6	400	2400
		50A	1	10	2	255	510
		50A	2	8	2	255	510
		60A	3	5	17	80	1360
V6		50A	1	10	2	255	510
		50A	2	8	2	255	510
		60A	3	5	17	80	1360
V7		50A	1	8	2	435	870
		50A	2	12,5	2	455	870
		50A	3	5	10	100	1900
		60A	4	5	4	393	1572
V8=V9 (X2)		50A	1	8	8	315	2520
		50A	2	5	28	110	2860
		60A	3	5	8	275	2200
V10		50A	1	6,3	2	340	680
		50A	2	12,5	4	180	720
		50A	3	10	2	605	1210
		60A	4	5	28	100	2800
		60A	5	5	4	575	2300
V11		50A	1	6,3	2	340	680
		50A	2	12,5	4	180	720
		50A	3	10	2	610	1220
		60A	4	5	28	110	3080
		60A	5	5	4	580	2320
V12		50A	1	6,3	2	320	640
		50A	2	12,5	4	180	720
		50A	3	10	10	590	1180
		60A	4	5	27	100	2700
		60A	5	5	4	560	2240
V13		50A	1	6,3	2	300	600
		50A	2	12,5	2	180	360
V14		50A	3	12,5	2	240	480
		50A	4	10	10	610	1220
		60A	5	5	28	110	3080
		60A	6	5	4	578	2312
		50A	1	10	2	470	940
		50A	2	10	2	415	830
		50A	3	5	16	140	560
		60A	4	5	6	383	2338

RESUMO DE AÇO			
AÇO	BIT	COMPR	PESO
	mm	m	kgf
60A	5	937	144
50A	6,3	63	16
40A	8	44	17
50A	10	233	144
50A	12,5	39	37
Peso Total	60A =		144 kgf
Peso Total	50A =		214 kgf

04	REVISÃO DA FACHADA	DL	14/08/2024
03	REVISÃO VIGAS V47,V48 E V51 DO CINTAMENTO	DL	13/12/2023
02	REVISÃO GERAL	DL	18/09/2023
01	CORREÇÃO DAS VIGAS DO CINTAMENTO	DL	11/07/2023
REVISÃO	ASSUNTO	DESENHO	DATA

PAGO	APROVO
CONSELHO PROFISSIONAL	PROPRIETARIO _____ PROJETO _____ PROJETO _____ CONSTRUÇÃO _____

CONSELHO PROFISSIONAL

SOP-CE
SUPERINTENDÊNCIA
DE OBRAS PÚBLICAS



GOVERNO DO
ESTADO DO CEARÁ
Secretaria das Cidades

SECRETARIA DAS CIDADES
SOP - SUPERINTENDÊNCIA DE OBRAS PÚBLICAS

PROJETO: **CENTRO DE EDUCAÇÃO INFANTIL**
PADRÃO 6 SALAS

INTERESSADO: SEDUC	ÁREA TÉCNICA: ESTRUTURA DE CONCRETO ARMADO
------------------------------	--

ENDEREÇO:	ENDREÇA	EXECUTIVO	
MUNICÍPIO:	CONTEÚDO:	ESCALA:	
	40M. VIGAS DO CINTAMENTO	4,00	

CE	ARM. VIGAS DO CIMENTAÇÃO	1720
AUTOR:	(V1,V2,V3,V4,V5,V6,V7,V8,V9,V10,V11,V12,V13,V14)	
CREA:		

TELEPHONE:	EMAIL:	CREA:		
AUTOR:				
TELEPHONE:	EMAIL:			

RESERVA DE PROPRIEDADE INTELECTUAL	DESENHO: DL	PRANCHA: 21
A PROPRIEDADE INTELECTUAL DO PRESENTE PROJETO É RESERVADA A SEUS AUTORES, DE	DATA: 14/08/2024	

ALICADO COM A LEGISLAÇÃO PERTINENTE. CADA DESTA PRODUÇÃO DO QUAL QUERER SEUS ELEMENTOS, QUE NÃO FORMAM OS DETERMINADOS, SERÃO CONSIDERADOS COMO APROPRIAÇÃO ILÍCITA E SERÃO APLICADAS AS LEIS QUE DEPENDEM DITOS DIREITOS A TODOS OS EFEITOS

PRANCHA:

05 18