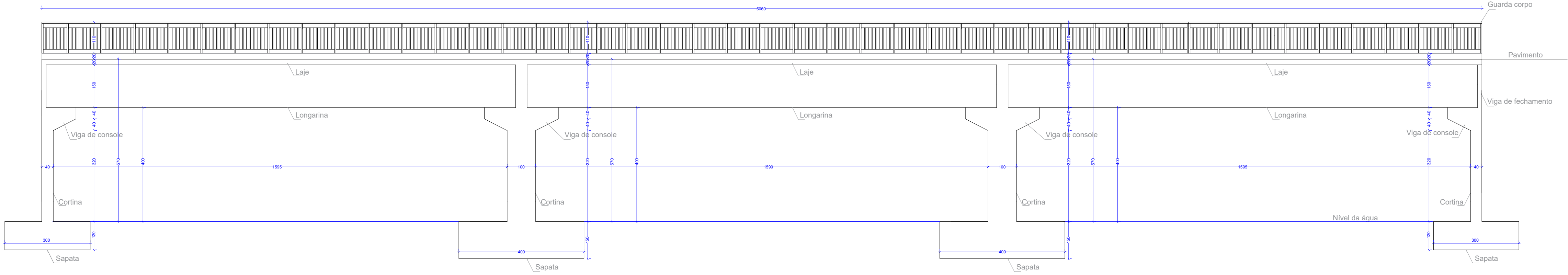
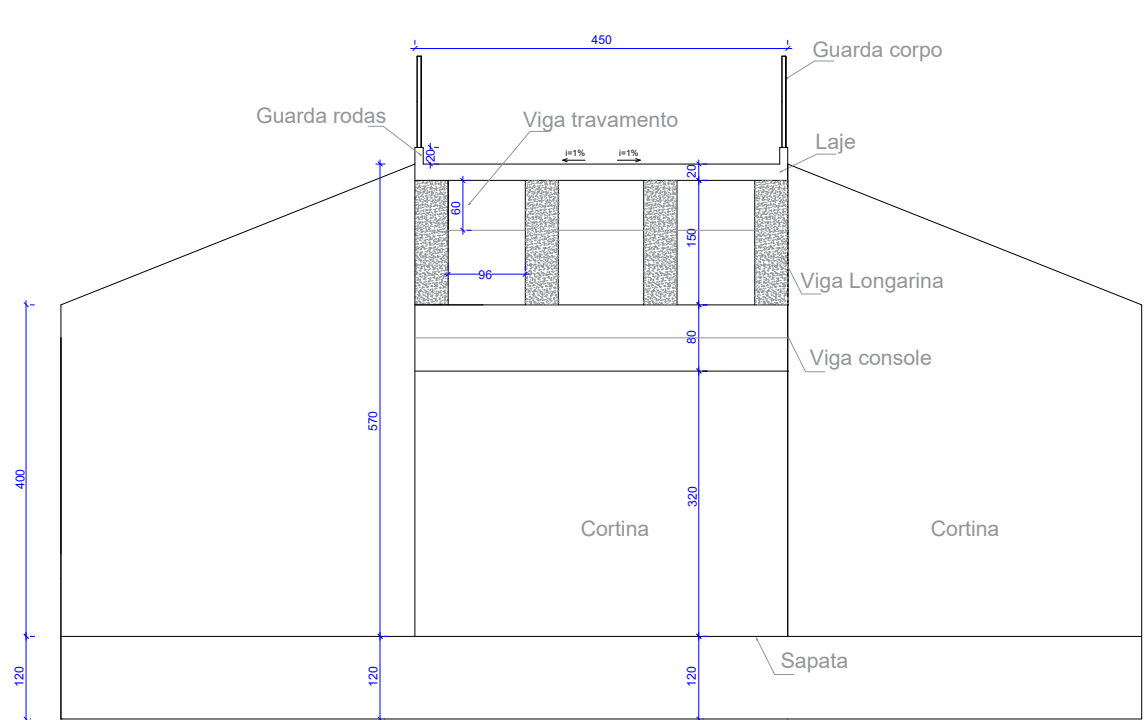


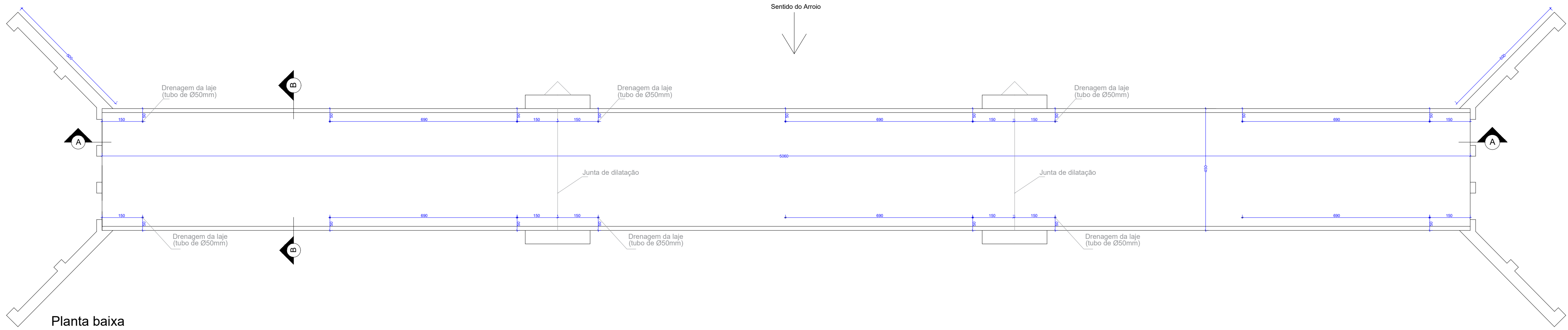
Corte A-A



Corte B-B



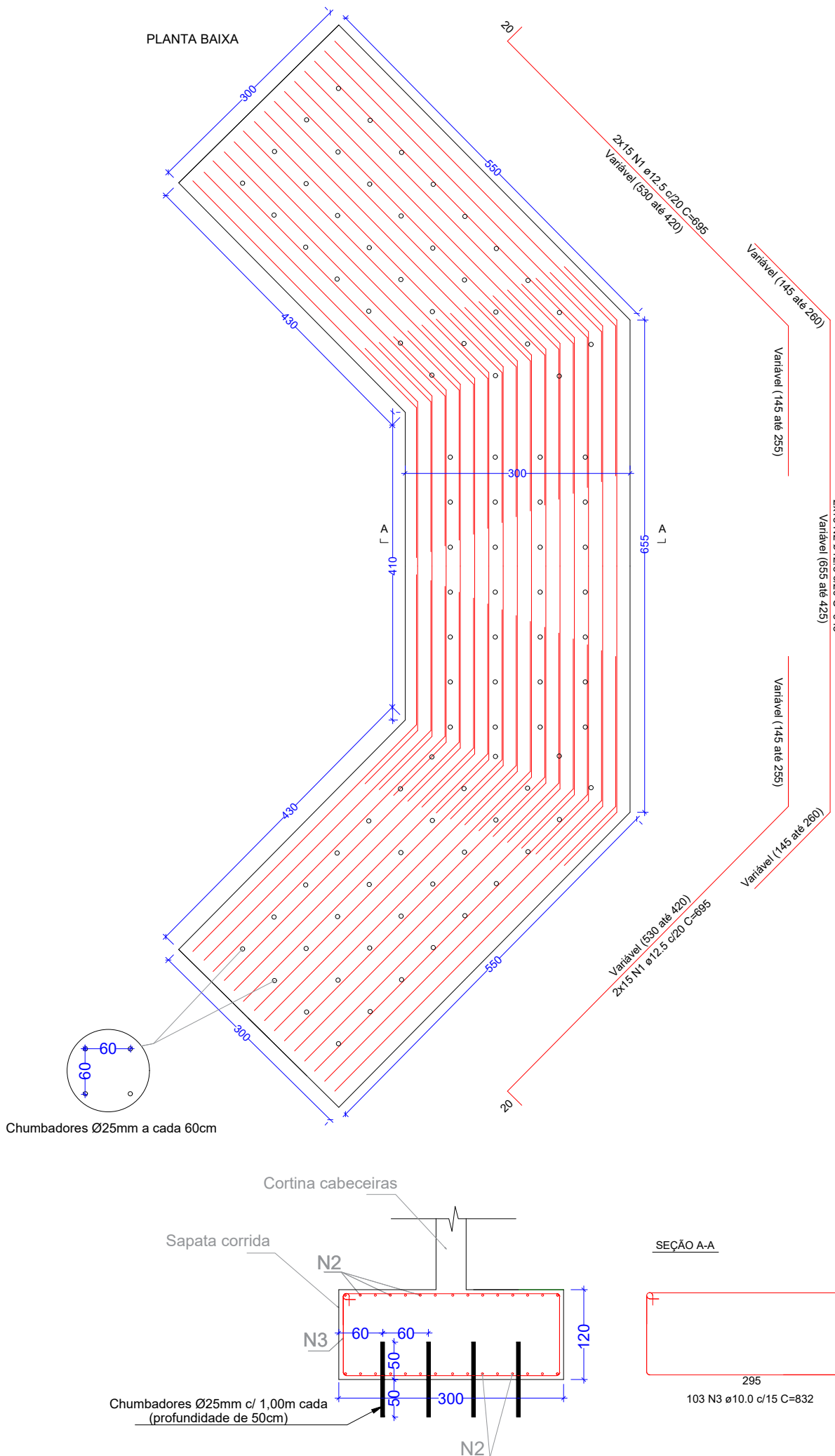
Planta baixa



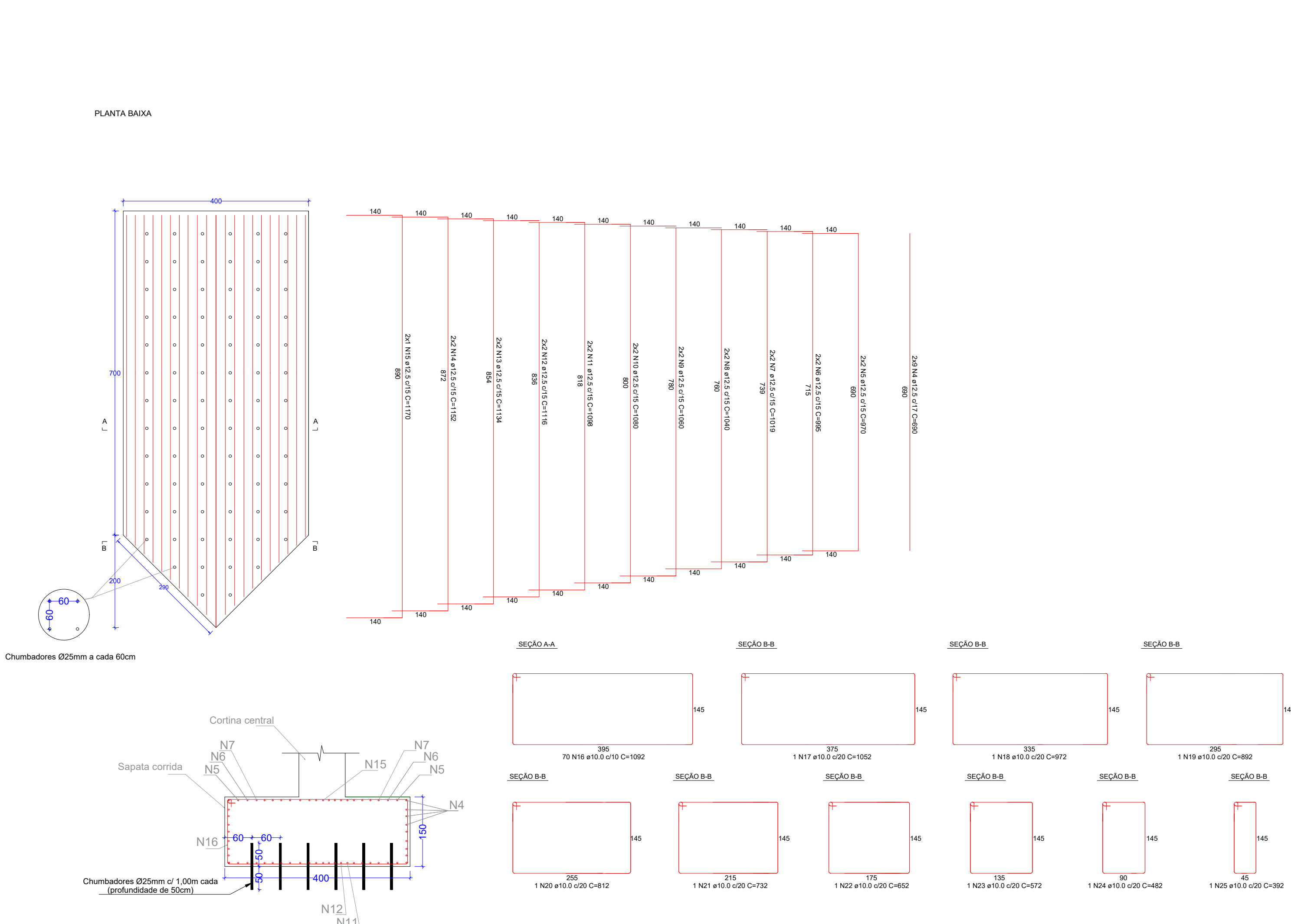
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PROPRIETÁRIO (a) - Prefeitura Municipal de Doutor Ricardo	
PROJETO E RESP. TÉCNICA - Eng. LUIZ ANTONIO CHANAN	
ÁREA TOTAL: 227,75 m²	
01	

Detalhamento das fundações nas cabeceiras (x2)



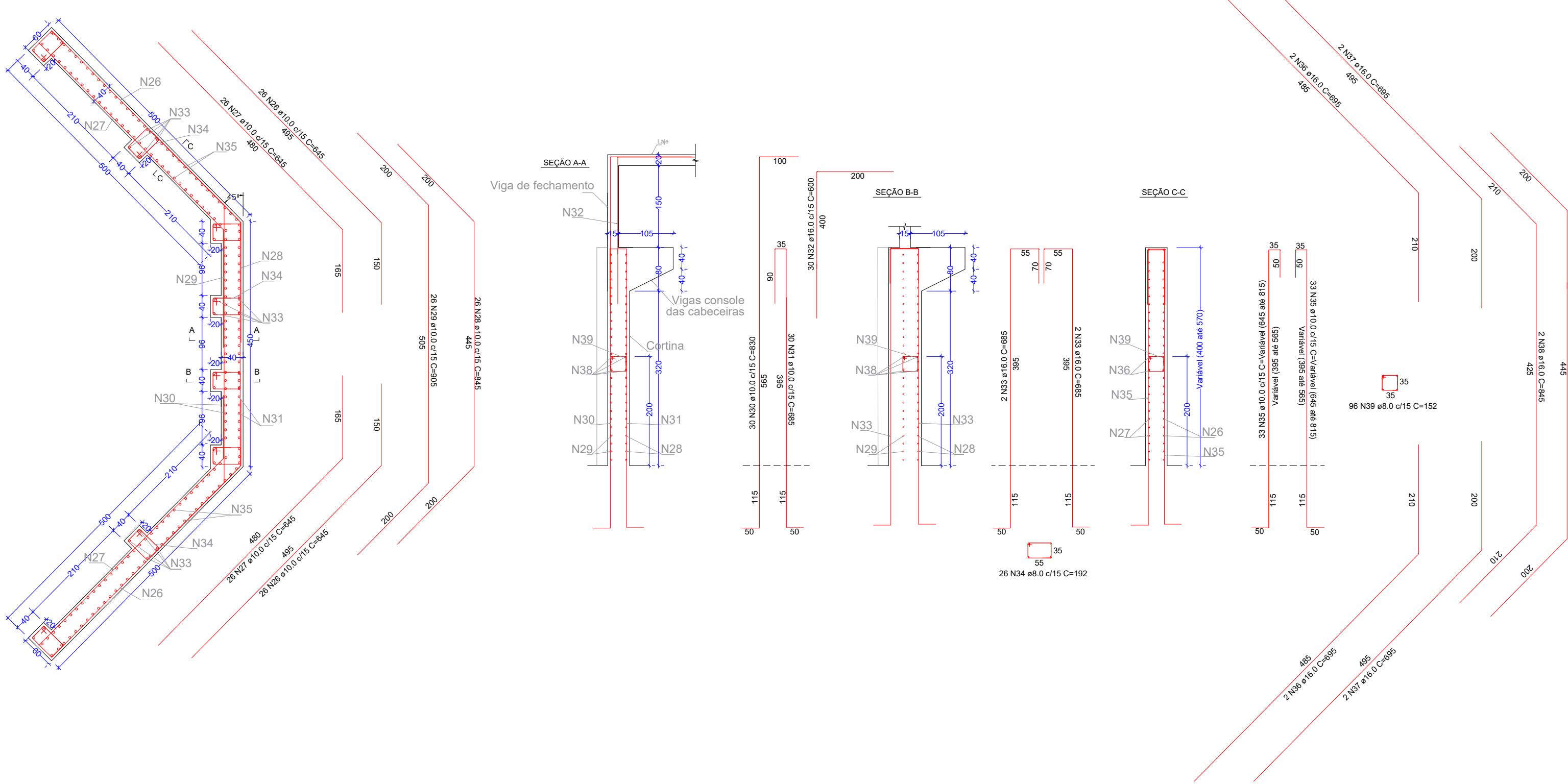
Detalhamento das fundações centrais (x2)



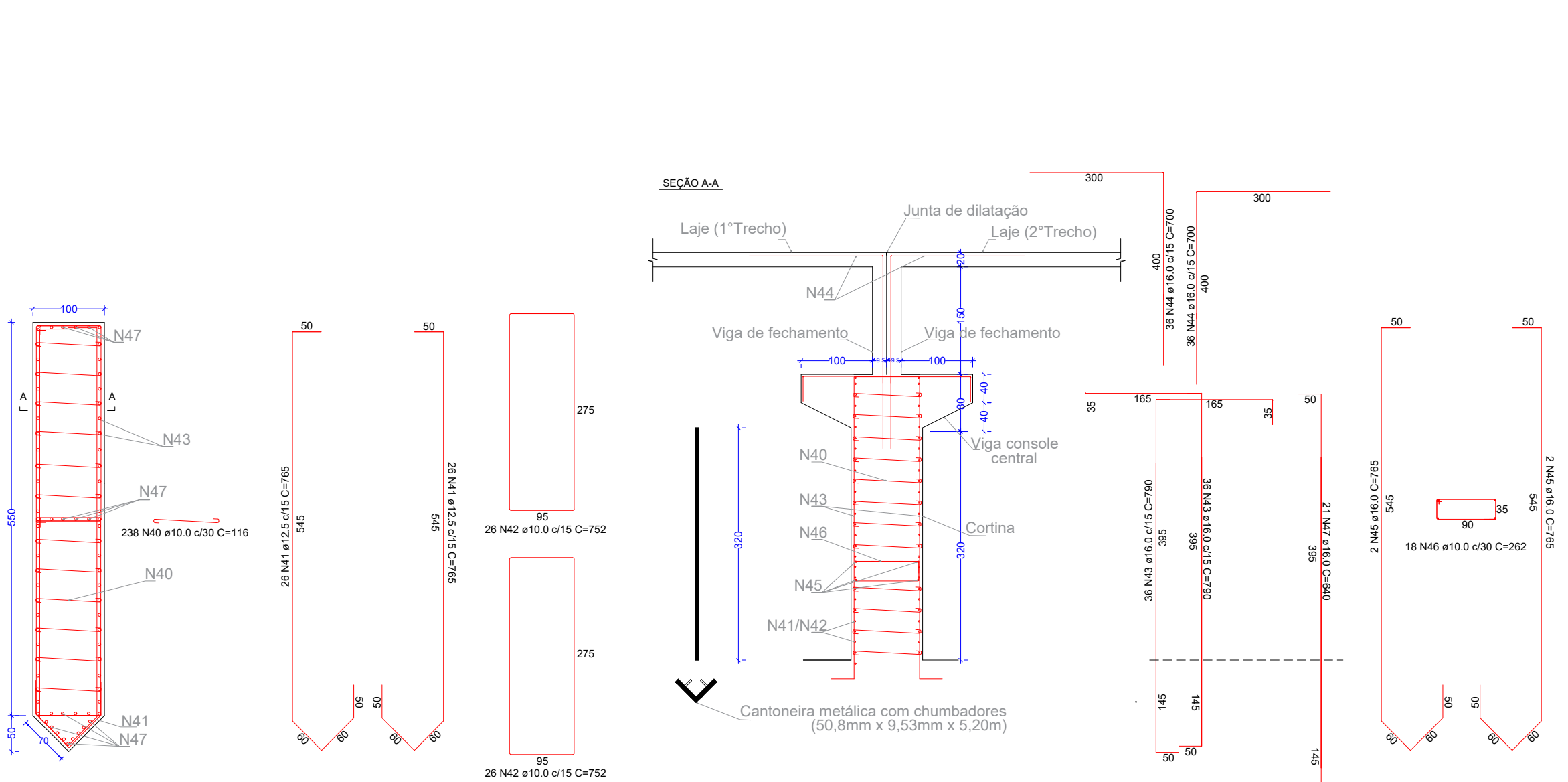
Relação do aço					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	12.5	120	695	83400
	2	12.5	60	945	56700
	3	10.0	206	832	171392
	4	12.5	36	690	24840
	5	12.5	8	970	7760
	6	12.5	8	685	7960
	7	12.5	8	1019	8152
	8	12.5	8	1040	8320
	9	12.5	8	1060	8480
	10	12.5	8	1080	8640
	11	12.5	8	1098	8784
	12	12.5	8	1116	8928
	13	12.5	8	1134	9072
	14	12.5	8	1152	9216
	15	12.5	4	1170	4680
	16	10.0	140	1092	152880
	17	10.0	2	1052	2104
	18	10.0	2	972	1944
	19	10.0	2	892	1784
	20	10.0	2	812	1624
	21	10.0	2	732	1464
	22	10.0	2	652	1304
	23	10.0	2	572	1144
	24	10.0	2	482	964
	25	10.0	2	392	784

Resumo do aço			
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% PERDA (kg)
CA50	10.0	3373.88	2289.85
	12.5	2549.32	2700.49

Detalhamento das cortinas nas cabeceiras (x2)



Detalhamento das cortinas centrais (x2)



Relação do aço					
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	26	10.0	104	645	67080
	27	10.0	104	645	67080
	28	10.0	52	845	43940
	29	10.0	52	905	47060
	30	10.0	60	830	49800
	31	10.0	60	685	41100
	32	16.0	60	800	36000
	33	16.0	64	685	43940
	34	8.0	192	416	79872
	35	10.0	264	730	192720
	36	16.0	8	695	5560
	37	16.0	8	695	5560
	38	16.0	8	845	6760
	39	8.0	192	152	29184
	40	10.0	476	116	55216
	41	12.5	104	765	79560
	42	10.0	104	752	78208
	43	16.0	144	790	113760
	44	16.0	144	700	100800
	45	16.0	8	765	6120
	46	10.0	36	262	9432
	47	16.0	42	640	26880

Resumo do aço			
AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% PERDA (kg)
CA50	8.0	1090.56	473.84
	10.0	6516.36	4422.65
	12.5	795.60	842.77
	16.0	3452.80	5993.37

CONVICÇÃO

ENGENHARIA

Projeto de construção de ponte entre

Linha Graffe / Linha Barra Zeferino

LOCAL: Estrada Linha Graffe, Doutor Ricardo/RS
(29°04'56.29"S - 51°56'30.71"O)

☒ AMPLIAÇÃO

☐ INTERIORES

☐ REFORMA

☐ REGULARIZAÇÃO

☒ OBRA NOVA

PROPRIETÁRIO (a) -

Prefeitura Municipal de Doutor Ricardo

PROJETO E RESP. TÉCNICA -

Eng. Luis Antonio Chanan
CREA/RS - 223549

Detalhamento estrutura

ÁREA TOTAL: 227.70 m²

DATA - Agosto de 2024

ESCALA - na prancha

PRINCHA Nº

02

gouvbr
LUIZ ANTONIO CHANAN
Data: 23/08/2024 10:43:04 -0300
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The drawing illustrates the structural details of a reinforced concrete slab (Laje) for a staircase. It includes a plan view, a section view (SEÇÃO B-B), and detailed reinforcement layouts for different parts of the slab.

Plan View (Top Left): Shows the overall dimensions of the slab. The total width is 240 cm, and the total length is 550 cm. The slab is supported by walls on three sides. Reinforcement is shown with N51 bars at the top and N53 bars at the bottom. The slab is divided into sections A and B. The thickness of the slab is 170 cm. The distance between the centerlines of the walls is 550 cm. The distance between the centerlines of the walls is 550 cm. The distance between the centerlines of the walls is 550 cm.

Section View (Top Right): Shows the cross-section of the slab. The total width is 240 cm, and the total height is 210 cm. The slab is supported by walls on three sides. Reinforcement is shown with N51 bars at the top and N53 bars at the bottom. The slab is divided into sections A and B. The thickness of the slab is 170 cm. The distance between the centerlines of the walls is 550 cm. The distance between the centerlines of the walls is 550 cm. The distance between the centerlines of the walls is 550 cm.

Reinforcement Details (Bottom): Shows the reinforcement layout for different parts of the slab. The reinforcement is shown with N51 bars at the top and N53 bars at the bottom. The slab is divided into sections A and B. The thickness of the slab is 170 cm. The distance between the centerlines of the walls is 550 cm. The distance between the centerlines of the walls is 550 cm. The distance between the centerlines of the walls is 550 cm.

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	48	12.5	32	495	15840
	49	10.0	90	357	32130
	50	10.0	30	90	2700
	51	12.5	64	95	6080
	52	12.5	52	595	30940
	53	10.0	16	922	14752
	54	10.0	8	240	1920
	55	10.0	110	582	64020
	56	10.0	72	90	6480

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% PERDA (kg)
CA50	10.0	1220.02	828.02
	12.5	528.60	559.94

SEÇÃO LONGITUDINAL

Detalhamento dos ganchos para sacamento das longarinas deverão ser dimensionado pela empresa executora, de modo que não prejudiquem a estrutura das minas.

2 N54 e16.0 C=1200
1160
275
2 N55 e16.0 C=800
760
2 N54 e16.0 C=1200
1160
2 N55 e16.0 C=800
760
4 N61 e12.5 C=115
100
15
12
Viga de travessamento
N67/68
2x2 N60 e12.5 C=1000 (PELE)
988
Viga de travessamento
N67/68
N66
Viga de travessamento
N67/68
2x2 N60 e12.5 C=1000 (PELE)
988
Viga de travessamento
N67/68
4 N61 e12.5 C=115
100
15
12
1650
L_A
4 N64 e16.0 C=1200
225
15
100
4 N61 e12.5 C=115
6 N63 e25.0 C=700
685
220
1185
6 N62 e25.0 C=1200
220
1185
6 N62 e25.0 C=1200
685
6 N63 e25.0 C=700

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	57	8.0	96	495	47520
	58	8.0	60	442	26520
	59	8.0	120	451	54120
	60	12.5	384	1000	384000
	61	12.5	192	115	22080
	62	25.0	144	1200	172800
	63	25.0	144	700	100800
	64	16.0	96	1200	115200
	65	16.0	48	800	38400
	66	8.0	480	120	57600
	67	12.5	96	200	19200
	68	12.5	96	115	11040
	69	10.0	1980	372	736560
	70	6.3	960	95	91200
	71	8.0	216	192	41472
72	12.5	288	120	34560	
73	8.0	674	445	299930	
74	8.0	60	4500	342000	
75	12.5	96	950	114000	
76	6.3	660	92	60720	

AÇO	DIAM (mm)	C.TOTAL (m)	PESO + 10% PERDA (kg)
CA50	6.3	1519.20	409.42
	8.0	8691.62	3776.50
	10.0	7365.60	4999.03
	12.5	5164.80	5471.07
	16.0	1536.00	2666.18
	25.0	2736	11595.98

Figura 1.2: Detalhe da seção A-A da parede de concreto armado. A seção transversal mostra uma parede de 205 cm de altura e 19,5 cm de espessura. A base da parede é apoiada sobre uma cortina de 80 cm de largura. A parede é composta por 30 N59 a 0,20 m (15 C=451). A seção longitudinal mostra a parede com 450 cm de comprimento e 19,5 cm de espessura. A parede é composta por 2 N57 a 0,80 m C=495. A seção transversal também mostra a parede com 205 cm de altura e 19,5 cm de espessura. A parede é composta por 30 N59 a 0,20 m (15 C=451). A seção longitudinal também mostra a parede com 450 cm de comprimento e 19,5 cm de espessura. A parede é composta por 2 N57 a 0,80 m C=495.

Technical drawing of a longarina cross-section. The drawing shows a rectangular section with a total width of 150 and a total height of 150. The section is divided into three equal compartments by vertical walls. The top edge is labeled 'Laje' (slab) and the bottom edge is labeled 'Longarina' (beam). The reinforcement details are as follows:

- Top Reinforcement:** 3 bars of diameter 33, labeled 'N68', 'N72', and 'N67'.
- Bottom Reinforcement:** 2 bars of diameter 15, labeled 'N72' and 'N67'.
- Vertical Reinforcement:** 2 bars of diameter 15, labeled 'N72' and 'N67'.
- Horizontal Reinforcement:** 2 bars of diameter 15, labeled 'N72' and 'N67'.
- Dimensions:** The total width is 150. The distance between the centerlines of the vertical walls is 96. The distance from the centerline of the vertical wall to the centerline of the horizontal wall is 96.

Technical drawing showing a circular structure with a grid and a longitudinal section.

The circular structure is defined by a red grid. The grid is labeled with r_A at the top and L_A at the bottom. The grid is composed of 2x327 N73 and 2x15 C=445 (suas camadas).

The longitudinal section shows the structure's profile. The top edge is labeled N73 and N74. The bottom edge is labeled 2x30 N74 e 0 r15. The section is defined by a red grid. The grid is labeled with r_A at the top and L_A at the bottom. The grid is composed of 2x30 N74 e 0 r15 C=950+950+950+950+950+950 com Transpases de 2 (1m) (suas camadas).

(Lajes separadas pelas juntas de dilatação, portão cada lado utilize duas hastes de 950mm por eixo longitudinal, com transpase de 2 cada.)

Technical drawing of a beam cross-section (SEÇÃO A-A) showing dimensions and reinforcement details. The drawing includes a side elevation and a cross-section view.

Side Elevation:

- Top reinforcement: 2 N75 ϕ 12.5 C=950
- Bottom reinforcement: 2 N75 ϕ 12.5 C=950
- Section length: 938
- Section width: 210
- Section height: 12
- Section centerline: f A
- Section endline: l A

Cross-section View (SEÇÃO A-A):

- Top reinforcement: 110 N76 ϕ 6.3 ϕ 11
- Section height: 35
- Section width: 210
- Section centerline: f A
- Section endline: l A

Technical drawing of a metal structure showing dimensions and components:

- Top tube: $\varnothing 2"$
- Barra chapa $12x12\text{ cm}$ $L=1,10\text{ m}$
- Barra $\varnothing 1\frac{1}{2}"$ $L=1,10\text{ m}$
- Barra $\varnothing 1\frac{1}{2}"$ $L=1,10\text{ m}$
- Chapa de apo. $12x12\text{ cm}$ $\text{esp}=3/8"$
- Detail view: $\varnothing 1/2"$, Barra redonda $1/2"$ $\text{curva } R=10\text{ x }12\text{ cm}$