

ESCALAS: 1/50

ESCADA 01

Diagram showing the plan view of the staircase (Planta de Forma). The staircase is oriented vertically, with a total width of 15x50m and a depth of 15x50m. The height of the staircase is 13.85m. The plan includes a section line A-A and a north arrow.

Key dimensions and levels:

- Width: 15x50m
- Depth: 15x50m
- Height: 13.85m
- Levels: +0.25m, +2.92m, +2.8m, +2.7m, +2.6m, +2.5m, +2.4m, +2.3m, +2.2m, +2.1m, +2.0m, +1.9m, +1.8m, +1.7m, +1.6m, +1.5m, +1.4m, +1.3m, +1.2m, +1.1m, +1.0m, +0.9m, +0.8m, +0.7m, +0.6m, +0.5m, +0.4m, +0.3m, +0.2m, +0.1m, +0.0m, -0.1m, -0.2m, -0.3m, -0.4m, -0.5m, -0.6m, -0.7m, -0.8m, -0.9m, -1.0m, -1.1m, -1.2m, -1.3m, -1.4m, -1.5m, -1.6m, -1.7m, -1.8m, -1.9m, -2.0m, -2.1m, -2.2m, -2.3m, -2.4m, -2.5m, -2.6m, -2.7m, -2.8m, -2.9m, -3.0m, -3.1m, -3.2m, -3.3m, -3.4m, -3.5m, -3.6m, -3.7m, -3.8m, -3.9m, -4.0m, -4.1m, -4.2m, -4.3m, -4.4m, -4.5m, -4.6m, -4.7m, -4.8m, -4.9m, -5.0m, -5.1m, -5.2m, -5.3m, -5.4m, -5.5m, -5.6m, -5.7m, -5.8m, -5.9m, -6.0m, -6.1m, -6.2m, -6.3m, -6.4m, -6.5m, -6.6m, -6.7m, -6.8m, -6.9m, -7.0m, -7.1m, -7.2m, -7.3m, -7.4m, -7.5m, -7.6m, -7.7m, -7.8m, -7.9m, -8.0m, -8.1m, -8.2m, -8.3m, -8.4m, -8.5m, -8.6m, -8.7m, -8.8m, -8.9m, -9.0m, -9.1m, -9.2m, -9.3m, -9.4m, -9.5m, -9.6m, -9.7m, -9.8m, -9.9m, -10.0m, -10.1m, -10.2m, -10.3m, -10.4m, -10.5m, -10.6m, -10.7m, -10.8m, -10.9m, -11.0m, -11.1m, -11.2m, -11.3m, -11.4m, -11.5m, -11.6m, -11.7m, -11.8m, -11.9m, -12.0m, -12.1m, -12.2m, -12.3m, -12.4m, -12.5m, -12.6m, -12.7m, -12.8m, -12.9m, -13.0m, -13.1m, -13.2m, -13.3m, -13.4m, -13.5m, -13.6m, -13.7m, -13.8m, -13.9m, -14.0m, -14.1m, -14.2m, -14.3m, -14.4m, -14.5m, -14.6m, -14.7m, -14.8m, -14.9m, -15.0m, -15.1m, -15.2m, -15.3m, -15.4m, -15.5m, -15.6m, -15.7m, -15.8m, -15.9m, -16.0m, -16.1m, -16.2m, -16.3m, -16.4m, -16.5m, -16.6m, -16.7m, -16.8m, -16.9m, -17.0m, -17.1m, -17.2m, -17.3m, -17.4m, -17.5m, -17.6m, -17.7m, -17.8m, -17.9m, -18.0m, -18.1m, -18.2m, -18.3m, -18.4m, -18.5m, -18.6m, -18.7m, -18.8m, -18.9m, -19.0m, -19.1m, -19.2m, -19.3m, -19.4m, -19.5m, -19.6m, -19.7m, -19.8m, -19.9m, -20.0m, -20.1m, -20.2m, -20.3m, -20.4m, -20.5m, -20.6m, -20.7m, -20.8m, -20.9m, -21.0m, -21.1m, -21.2m, -21.3m, -21.4m, -21.5m, -21.6m, -21.7m, -21.8m, -21.9m, -22.0m, -22.1m, -22.2m, -22.3m, -22.4m, -22.5m, -22.6m, -22.7m, -22.8m, -22.9m, -23.0m, -23.1m, -23.2m, -23.3m, -23.4m, -23.5m, -23.6m, -23.7m, -23.8m, -23.9m, -24.0m, -24.1m, -24.2m, -24.3m, -24.4m, -24.5m, -24.6m, -24.7m, -24.8m, -24.9m, -25.0m, -25.1m, -25.2m, -25.3m, -25.4m, -25.5m, -25.6m, -25.7m, -25.8m, -25.9m, -26.0m, -26.1m, -26.2m, -26.3m, -26.4m, -26.5m, -26.6m, -26.7m, -26.8m, -26.9m, -27.0m, -27.1m, -27.2m, -27.3m, -27.4m, -27.5m, -27.6m, -27.7m, -27.8m, -27.9m, -28.0m, -28.1m, -28.2m, -28.3m, -28.4m, -28.5m, -28.6m, -28.7m, -28.8m, -28.9m, -29.0m, -29.1m, -29.2m, -29.3m, -29.4m, -29.5m, -29.6m, -29.7m, -29.8m, -29.9m, -30.0m, -30.1m, -30.2m, -30.3m, -30.4m, -30.5m, -30.6m, -30.7m, -30.8m, -30.9m, -31.0m, -31.1m, -31.2m, -31.3m, -31.4m, -31.5m, -31.6m, -31.7m, -31.8m, -31.9m, -32.0m, -32.1m, -32.2m, -32.3m, -32.4m, -32.5m, -32.6m, -32.7m, -32.8m, -32.9m, -33.0m, -33.1m, -33.2m, -33.3m, -33.4m, -33.5m, -33.6m, -33.7m, -33.8m, -33.9m, -34.0m, -34.1m, -34.2m, -34.3m, -34.4m, -34.5m, -34.6m, -34.7m, -34.8m, -34.9m, -35.0m, -35.1m, -35.2m, -35.3m, -35.4m, -35.5m, -35.6m, -35.7m, -35.8m, -35.9m, -36.0m, -36.1m, -36.2m, -36.3m, -36.4m, -36.5m, -36.6m, -36.7m, -36.8m, -36.9m, -37.0m, -37.1m, -37.2m, -37.3m, -37.4m, -37.5m, -37.6m, -37.7m, -37.8m, -37.9m, -38.0m, -38.1m, -38.2m, -38.3m, -38.4m, -38.5m, -38.6m, -38.7m, -38.8m, -38.9m, -39.0m, -39.1m, -39.2m, -39.3m, -39.4m, -39.5m, -39.6m, -39.7m, -39.8m, -39.9m, -40.0m, -40.1m, -40.2m, -40.3m, -40.4m, -40.5m, -40.6m, -40.7m, -40.8m, -40.9m, -41.0m, -41.1m, -41.2m, -41.3m, -41.4m, -41.5m, -41.6m, -41.7m, -41.8m, -41.9m, -42.0m, -42.1m, -42.2m, -42.3m, -42.4m, -42.5m, -42.6m, -42.7m, -42.8m, -42.9m, -43.0m, -43.1m, -43.2m, -43.3m, -43.4m, -43.5m, -43.6m, -43.7m, -43.8m, -43.9m, -44.0m, -44.1m, -44.2m, -44.3m, -44.4m, -44.5m, -44.6m, -44.7m, -44.8m, -44.9m, -45.0m, -45.1m, -45.2m, -45.3m, -45.4m, -45.5m, -45.6m, -45.7m, -45.8m, -45.9m, -46.0m, -46.1m, -46.2m, -46.3m, -46.4m, -46.5m, -46.6m, -46.7m, -46.8m, -46.9m, -47.0m, -47.1m, -47.2m, -47.3m, -47.4m, -47.5m, -47.6m, -47.7m, -47.8m, -47.9m, -48.0m, -48.1m, -48.2m, -48.3m, -48.4m, -48.5m, -48.6m, -48.7m, -48.8m, -48.9m, -49.0m, -49.1m, -49.2m, -49.3m, -49.4m, -49.5m, -49.6m, -49.7m, -49.8m, -49.9m, -50.0m, -50.1m, -50.2m, -50.3m, -50.4m, -50.5m, -50.6m, -50.7m, -50.8m, -50.9m, -51.0m, -51.1m, -51.2m, -51.3m, -51.4m, -51.5m, -51.6m, -51.7m, -51.8m, -51.9m, -52.0m, -52.1m, -52.2m, -52.3m, -52.4m, -52.5m, -52.6m, -52.7m, -52.8m, -52.9m, -53.0m, -53.1m, -53.2m, -53.3m, -53.4m, -53.5m, -53

ESCADA 01

The image contains two architectural drawings of a staircase.

The top drawing is the **PLANTA DE FORMA** (Plan View). It shows the layout of the staircase within a room. The staircase is labeled **N2-C/20** and **N1-C/12**. It features a landing area labeled **13N7** and a platform labeled **13N4**. The drawing includes dimensions for the staircase width (1.20m) and the landing width (1.20m). There are also dimensions for the staircase depth (1.20m) and the landing depth (1.20m). The drawing is oriented with a north arrow pointing towards the top right.

The bottom drawing is the **CORTE AA** (Section View). It shows a cross-section of the staircase. The staircase is labeled **N2-C/20** and **N1-C/12**. It shows the profile of the staircase steps and the landing area. The drawing includes dimensions for the staircase width (1.20m) and the landing width (1.20m). It also shows the height of the staircase (1.20m) and the height of the landing (1.20m). The drawing is oriented with a north arrow pointing towards the top right.

CORTE AA

Technical drawing of the 'Escada 02' (Staircase 02) showing its layout, dimensions, and structural details. The drawing includes a plan view of the staircase with 24 steps, a section view showing the vertical profile, and a detail view of the staircase structure. Key dimensions include a total width of 3.95m, a total depth of 0.25m, and a total height of 0.93m. The staircase is labeled 'ESCADA 02' and 'V410(15x65)'. The drawing also shows the staircase's connection to the floor and wall, with dimensions for the steps and the overall structure.

DETALHAMENTO DA FERRAGEM

RELAÇÃO DO AÇO ESCADAS

N	Ø	C.UNIT.	QTIDADE	C. TOTAL
	(mm)	(m)	(unit)	(m)
1	10,0	5,50	12	66,00
2	10,0	1,30	24	31,20
3	6,3	1,60	72	115,20
4	8,0	1,70	13	22,10
5	8,0	3,15	4	12,60
6	5,0	0,80	19	15,20
7	10,0	4,31	13	56,03
8	10,0	4,25	12	51,00
9	10,0	4,18	12	50,16

RESUMO GERAL DO AÇO

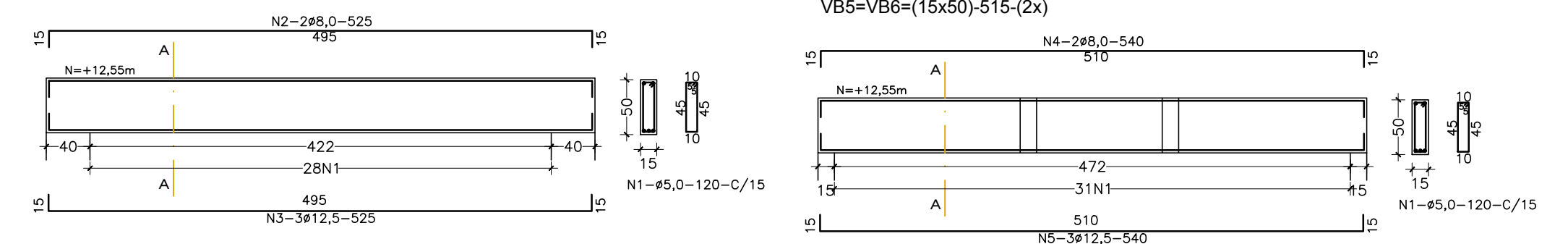
ACO	Ø	C.TOTAL	Kg/m ³ 10%	PESO TOTAL	Nº BARRAS
(CA)	(mm)		(kg)	(kg)	(unit.)
50	6,3	115,20	0,27	31,10	11
50	8,0	34,70	0,44	15,27	4
50	10,0	254,39	0,70	178,07	24
50	12,5	0,00	1,10	0,00	0
50	16,0	0,00	1,76	0,00	0
60	5,0	15,20	0,17	2,58	2
TOTAL		419,49		227,03	41

QUANTITATIVO DAS ESCADAS

ELEMENTO	LARGURA	ALTURA	COMP.	VOLUME	FORMAS
	(m)	(m)	(m)	(m³)	(m³)
ESCADA 01	1,65	0,18	7,95	2,48	22,87
ESCADA 02	1,65	0,18	7,10	2,21	21,19
TOTAIS				4,69	44,06

ESCALA: 1/50

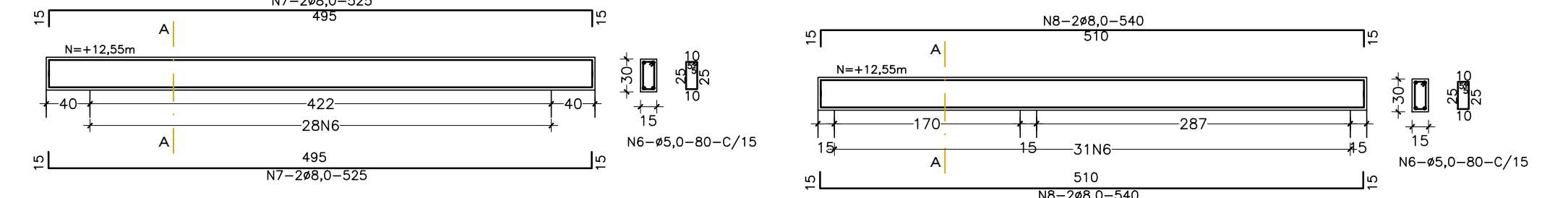
$$VB1=VB2=VB3=VB4=(15 \times 50)-502-(4 \times$$



ESCALA: 1/50

$$VR1=VR2=(15 \times 30)-502-(2 \times)$$

$$VR3=VR4=(15 \times 30)-515-(2x)$$



RELAÇÃO DO AÇO VIGAS

N	Ø	C.UNIT.	QTIDADE C.
	(mm)	(m)	(unit)
1	5,0	1,20	174
2	8,0	5,25	8
3	12,5	5,25	12
4	8,0	5,40	4
5	12,5	5,40	6
6	5,0	0,80	118
7	8,0	5,25	8
8	8,0	5,40	8

RESUMO GERAL DO AÇO

AÇO	Ø	C.TOTAL	Kg/m+10%	PESO TOTAL	Nº BARRAS
(CA)	(mm)		(kg)	(kg)	(unit.)
50	6,3	0,00	0,27	0,00	0
50	8,0	148,80	0,44	65,47	14
50	10,0	0,00	0,70	0,00	0
50	12,5	95,40	1,10	104,94	9
50	16,0	0,00	1,76	0,00	0
60	5,0	303,20	0,17	51,54	28
TOTAL		547,40		221,96	51

QUANTITATIVO DAS VIGAS

ELEMENTO	LARGURA	ALTURA	COMP.	VOLUME	FORMAS
	(m)	(m)	(m)	(m³)	(m³)
VB1=VB2=VB3=VB4	0,15	0,50	20,08	1,58	30,02
VB5=VB6	0,15	0,50	10,30	0,81	15,40
VR1=VR2	0,15	0,30	10,04	0,47	10,39
VR3=VR4	0,15	0,30	10,30	0,49	10,66
TOTAIS				3,35	66,47

CONSIDERAÇÕES GERAIS

- 2- PROJETO EM CONFORMIDADE COM AS NORMAS DA ABNT N1819/203 E NBR 1303/1980
- 3- ADOÇÃO RESISTÊNCIA CARACTERÍSTICA DO CONCRETO $f_{ck}=30\text{MPa}$
- 4- CLASSE DE AGRESSIVIDADE AMBIENTAL: ADOTAÇÃO: TIPO II-CLASSE IV (URBANA)
- 5- OBSERVAR O COMPORTAMENTO PARA CASO DE ELEMENTO ESTRUTURAL DE AÇOORDO COM TAB.2.2 DA NBR 1819/203
- 6- ADOÇÃO f_{yk} = 420 MPa, $f_{yk} \text{ para } S_{420}$ = 420 MPa, $f_{yk} \text{ para } S_{500}$ = 500 MPa
- 7- ADOÇÃO AUMENTAMENTO DO CONCRETO DE 10% EM CASO DE 2ª OPORTUNIDADE 2ª OPORTUNIDADE
- 8- PRADO MÍNIMO PARA DEFORMAR E RETIRADA DAS ESFERAS NÃO PODEM SER INFERIOR A 5 AÇAS
- 9- UTILIZAR FATOR AGUA CIMENTO DO CONCRETO MÍNIMO O IGUAL A 0,6
- 10- FLUÊNCIA DO CONCRETO COM TEMPO DE VIDA ÚTIL PREVISTO, MAIOR QUE 50 ANOS
- 11- NÃO É PERMITIDO O UZO DE ADITIVOS CONTENDO CLORISTO NA SUPERFÍCIE DAS ESTRUTURAS DE CONCRETO ARMADO
- 12- DEVE SER ATENDIDA A PRESENCIA OU ACUMULAÇÃO DE AGUA SOBRE AS SUPERFÍCIES DAS ESTRUTURAS DE CONCRETO
- 13- DEIXAR COLARCO DE BETA COM CAMADA DE ESPUMA ENTRE O SOLO E O CONTRA PRISO PARA CONCRETAR A UNIDADE
- 14- CONCRETAR CONTRA PRISO COM CIMENTAÇÃO DE 10 CM
- 15- EXECUTAR LASTRO DE CONCRETO MAGRO, NA BASE DE TODOS OS PISOS

NOTA

- 1- DIMENSÕES E MEDIDAS EM CENTÍMETRO.
- 2- VERIFICAR TODAS AS MEDIDAS NA OBRA.
- 3- LINHAS DE CHAMADAS REFERENTES AS VIGAS, SALVO QUANDO INDICADO.
- 4- LINHAS DE COTA REFERENTES AS VIGAS, SALVO QUANDO INDICADO.
- 5- TODA E QUALQUER MODIFICAÇÃO EM OBRA, DEVERÁ OBTER A DEVIDA APROVAÇÃO DO AUTOR DO PROJETO.
- 6- EM CASO DE DÚVIDAS CONSULTAR O RESPONSÁVEL TÉCNICO PELA OBRA.

 MVBAYERS - SERVIÇOS CNPJ: 07.158.925/0001-67 RUA EXP. CABO HARURY 17ADILSON 783 SALA 01 CENTRO-JARAGUÁ DO SUL/SC Fone: 0XX - 47 - 3084-2776 Email: marcosbay@gmail.com					
CLIENTE:					
PREFEITURA MUNICIPAL DE JARAGUÁ DO SUL SECRETARIA MUNICIPAL DE SAÚDE					
RESPONSÁVEL TÉCNICO(S) VITOR MATIUS BAYERSTORFF- (10-54821-690) Arquiteto de Interiores - CREA 140.140-0/SC					
VITOR MATIUS BAYERSTORFF ENGINEERIN CIVIL - CREASC 175.324/7					
OBJETO:					
PROJETO ESTRUTURAL					
CONTÍDUO -DETALHAMENTO DAS VIGAS DO BARRILETE E RESERVATORIO -DETALHAMENTO DAS ESCADAS					DATA DE EMISSÃO EST-14/14
UBIA UNIDADE BÁSICA DE SAÚDE - GILSON ENGELMANN					
ENDEREÇO RUA 897 - HELMUTH MANSKE - TRÊS RIOS DO NORTE - JARAGUÁ DO SUL - SANTA CATARINA					
TÉCNICO	INDICADAS	SUPERVISOR	DATX	REVISAO	APROVADO
		MARCELO	23/02/2023	RUI-10-09-23	UES-TRESRISOS_10_02_23