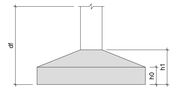
Pilar														Fundação						
Nome	Seção (cm)	X (cm)	Y (cm)	Posição	CAP (cm)	Carga Máx. (tf)	Carga Mín. (tf)	Mx Máximo (kgf.m)		My Máximo (kgf.m)		Fx Máximo (tf)		Fy Máximo (tf)		Nome	Lado B (cm)	Lado H (cm)	FSC (cm)	ho / ha (cm)	h1 / hb (cm)	df (cm)
								Positivo	Negativo	Positivo	Negativo	Positivo	Negativo	Positivo	Negativo							
S1*	-	-476.22	254.15	A-3	-	6.5	4.7	300	-500	600	-900	0.4	-0.5	0.3	-0.3	S1	120	120	-	45	45	45
S2*	-	-49.22	249.15	A-4	-	14.8	10.2	600	-500	600	-700	0.5	-0.6	0.3	-0.4	S2	120	120	-	45	45	45
S3*	-	330.78	254.15	A-5	-	7.1	4.3	400	-400	800	-600	0.5	-0.5	0.4	-0.2	S3	120	120	-	45	45	45
S4*	-	-476.22	-42.85	A-3	-	14.1	10.8	400	-400	600	-700	0.4	-0.6	0.4	-0.4	S4	120	120	-	45	45	45
S5*	-	-49.22	-42.85	A-4	-	29.9	22.9	600	-900	600	-700	0.4	-0.6	0.6	-0.3	S5	120	120	-	45	45	45
S6*	-	330.78	-42.85	A-5	-	13.1	9.3	500	-400	800	-700	0.6	-0.3	0.4	-0.3	S6	120	120	-	45	45	45
S7*	-	-476.22	-440.35	B-3	-	15.7	12.4	400	-500	800	-1000	0.6	-0.6	0.3	-0.4	S7	120	120	-	45	45	45
S8*	-	-49.22	-440.35	B-4	-	34.1	24.2	800	-500	600	-700	0.4	-0.7	0.4	-0.5	S8	120	120	-	45	45	45
S9*	-	325.78	-440.35	B-5	-	21.9	13.7	1500	-1500	3300	-2700	2.0	-1.5	0.9	-1.0	S9	120	120	-	45	45	45
S10*	-	-995.88	-804.44	C-2	-	2.5	1.6	300	-500	600	-600	0.5	-0.6	0.4	-0.1	S10	100	100	-	45	45	45
S11*	-	-778.96	-793.26	C-2	-	1.9	0.6	300	-200	600	-600	0.5	-0.5	0.2	-0.3	S11	120	120	-	45	45	45
S12*	-	-476.22	-805.35	C-3	-	7.6	5.2	400	-200	500	-800	0.3	-0.6	0.2	-0.4	S12	120	120	-	45	45	45
S13*	-	-49.22	-805.35	C-4	-	18.5	13.4	600	-700	1000	-1000	0.7	-0.7	0.3	-0.4	S13	120	120	-	45	45	45
S14*	-	330.78	-805.35	C-5	-	8.8	5.0	500	-500	700	-700	0.5	-0.5	0.3	-0.5	S14	120	120	-	45	45	45
S15*	-	-1224.97	-886.26	C-1	-	2.4	0.7	0	0	0	0	0.1	-0.2	0.1	0.0	S15	100	100	-	45	45	45
S16*	-	-728.59	-933.85	C-2	-	3.7	1.5	300	-200	800	-400	0.7	-0.3	0.2	-0.1	S16	100	100	-	45	45	45
S18*	-	-1152.93	-1079.49	C-1	-	3.5	2.0	600	-400	500	-900	0.4	-0.6	0.2	-0.4	S18	100	100	-	45	45	45
S19*	-	-476.22	-1306.43	D-3	-	3.1	2.0	200	-200	700	-300	0.5	-0.2	0.2	-0.2	S19	100	100	-	45	45	45
S20*	-	-211.22	-1306.43	D-4	-	5.5	4.8	400	0	900	-500	0.7	-0.4	0.0	-0.5	S20	100	100	-	45	45	45
S21*	-	165.67	-1306.43	D-5	-	4.7	4.0	200	-200	600	-200	0.5	-0.3	0.2	-0.2	S21	100	100	-	45	45	45
S22*	-	-476.22	-1517.85	D-3	-	5.5	4.1	100	-400	600	-300	0.4	-0.4	0.3	-0.2	S22	100	100	-	45	45	45
S23*	-	-211.22	-1517.85	D-4	-	29.5	26.3	0	-1600	800	-300	0.6	-0.4	1.5	0.0	S23	100	100	-	45	45	45
S24*	-	165.67	-1517.85	D-5	-	7.9	6.4	200	-200	600	-200	0.4	-0.3	0.2	-0.2	S24	100	100	-	45	45	45
S25*	-	-476.22	-1718.85	D-3	-	8.3	7.1	100	-400	0	-1500	0.0	-1.3	0.3	-0.2	S25	100	100	-	45	45	45
S27*	-	-91.22	-1737.85	D-4	-	3.2	2.9	100	-400	0	-600	0.0	-0.4	0.3	0.0	S27	120	120	-	45	45	45
S28*	-	202.28	-1747.85	D-5	-	4.5	4.1	0	0	0	0	0.5	0.0	0.3	0.0	S28	120	120	-	45	45	45
S29*	-	305.78	-1887.30	E-5	-	4.4	4.0	0	0	0	0	0.3	0.0	0.3	0.0	S29	120	120	-	45	45	45
S30*	-	-476.22	-1938.85	E-3	-	7.4	6.7	200	-200	0	-900	0.0	-0.7	0.2	-0.1	S30	120	120	-	45	45	45
S31*	-	-91.22	-2007.63	E-4	-	7.6	6.8	100	-400	100	-400	0.1	-0.4	0.3	0.0	S31	120	120	-	45	45	45
S32*	-	112.28	-2007.63	E-5	-	14.5	13.2	600	-1600	2200	-1000	1.5	-0.5	1.1	-0.4	S32	120	120	-	45	45	45
S33*	-	-476.22	-2148.85	E-3	-	6.6	5.5	200	-400	200	-200	0.2	-0.2	0.3	-0.2	S33	120	120	-	45	45	45
S34*	-	-211.20	-2168.85	E-4	-	25.3	22.4	2200	-200	0	-400	0.0	-0.2	0.0	-1.6	S34	120	120	-	45	45	45
S35*	-	-476.22	-2346.85	F-3	-	4.3	2.9	300	-200	200	-300	0.2	-0.1	0.1	-0.2	S35	120	120	-	45	45	45
S36*	-	-111.22	-2346.85	F-4	-	8.0	6.8	700	-300	2400	-1600	1.5	-1.0	0.1	-0.7	S36	150	150	-	50	50	50
S37*	-	112.28	-2336.85	F-5	-	7.5	5.4	0	0	0	0	0.2	0.0	0.0	-0.4	S37	120	120	-	45	45	45
S38*	-	305.78	-2336.85	F-5	-	3.2	2.8	0	0	0	0	0.1	0.0	0.0	-0.2	S38	120	120	-	45	45	45

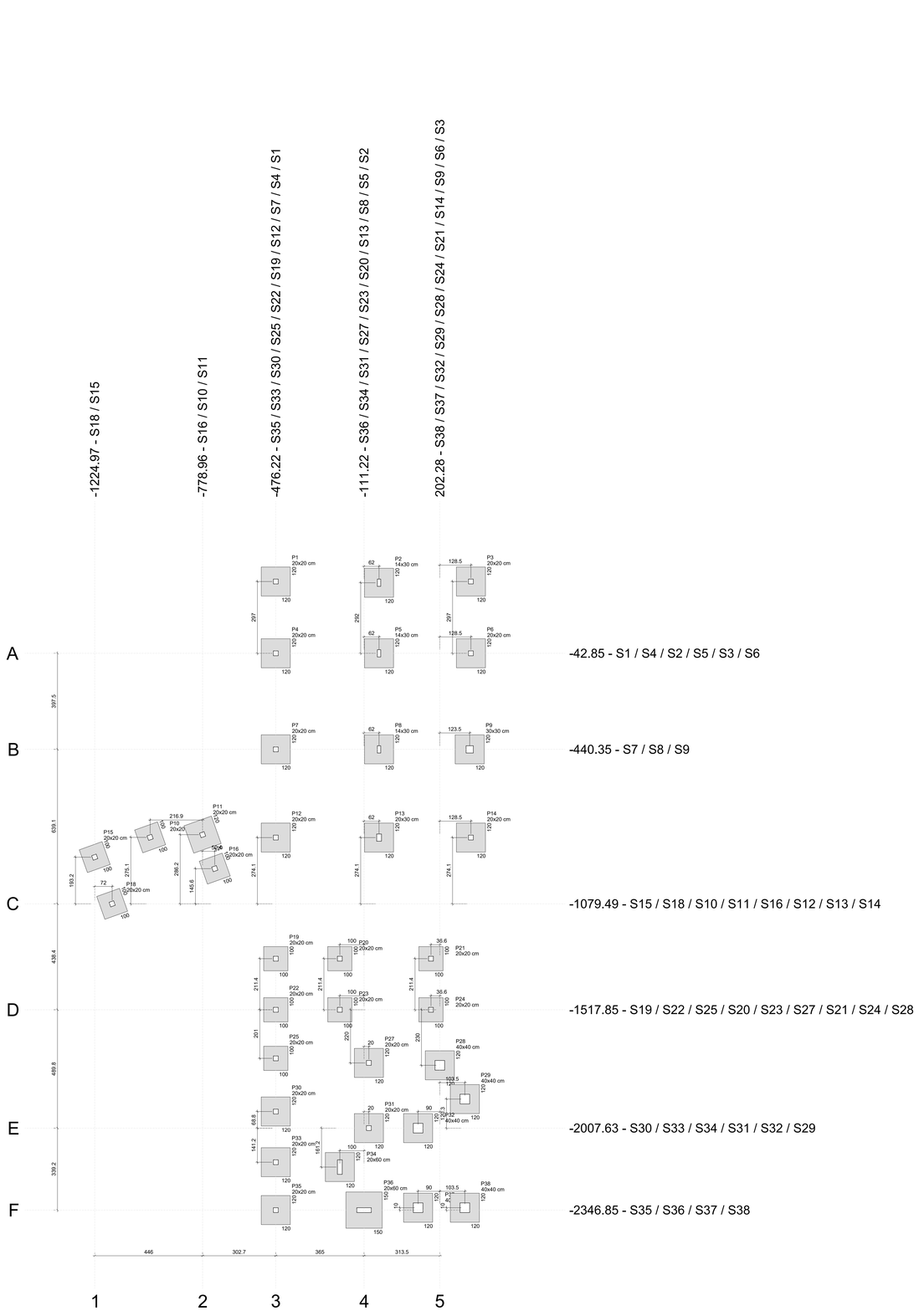
Os esforços indicados nesta tabela são os valores máximos obtidos pela envoltória de todas as combinações definidas para as fundações. Para análises complementares, deve-se consultar o relatório de esforços na fundação, que apresenta os valores calculados para cada combinação.
*Os esforços indicados são referentes ao centro da fundação.





Locação no eixo X	
Coordenadas (cm)	Nome
-1224.97	S15
-1152.93	S18
-995.88	S10
-778.96	S11
-728.59	S16
-476.22	S1, S4, S7, S12, S19, S22, S25, S30, S33, S35
-211.22	S20, S23
-211.20	S34
-111.22	S36
-91.22	S27, S31
-49.22	S2, S5, S8, S13
112.28	S32, S37
165.67	S21, S24
202.28	S28
305.78	S29, S38
325.78	S9
330.78	S3, S6, S14

Locação no eixo Y	
Coordenadas (cm)	Nome
254.15	S1, S3
249.15	S2
-42.85	S4, S5, S6
-440.35	S7, S8, S9
-793.26	S11
-804.44	S10
-805.35	S12, S13, S14
-886.26	S15
-933.85	S16
-1079.49	S18
-1306.43	S19, S20, S21
-1517.85	S22, S23, S24
-1718.85	S25
-1737.85	S27
-1747.85	S28
-1887.30	S29
-1938.85	S30
-2007.63	S31, S32
-2148.85	S33
-2168.85	S34
-2336.85	S37, S38
-2346.85	S35, S36



PLANTA DE LOCAÇÃO

Escala 1:75

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, Nº 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
PLANTA DE LOCAÇÃO

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

DATA
JANEIRO/2026

EST01

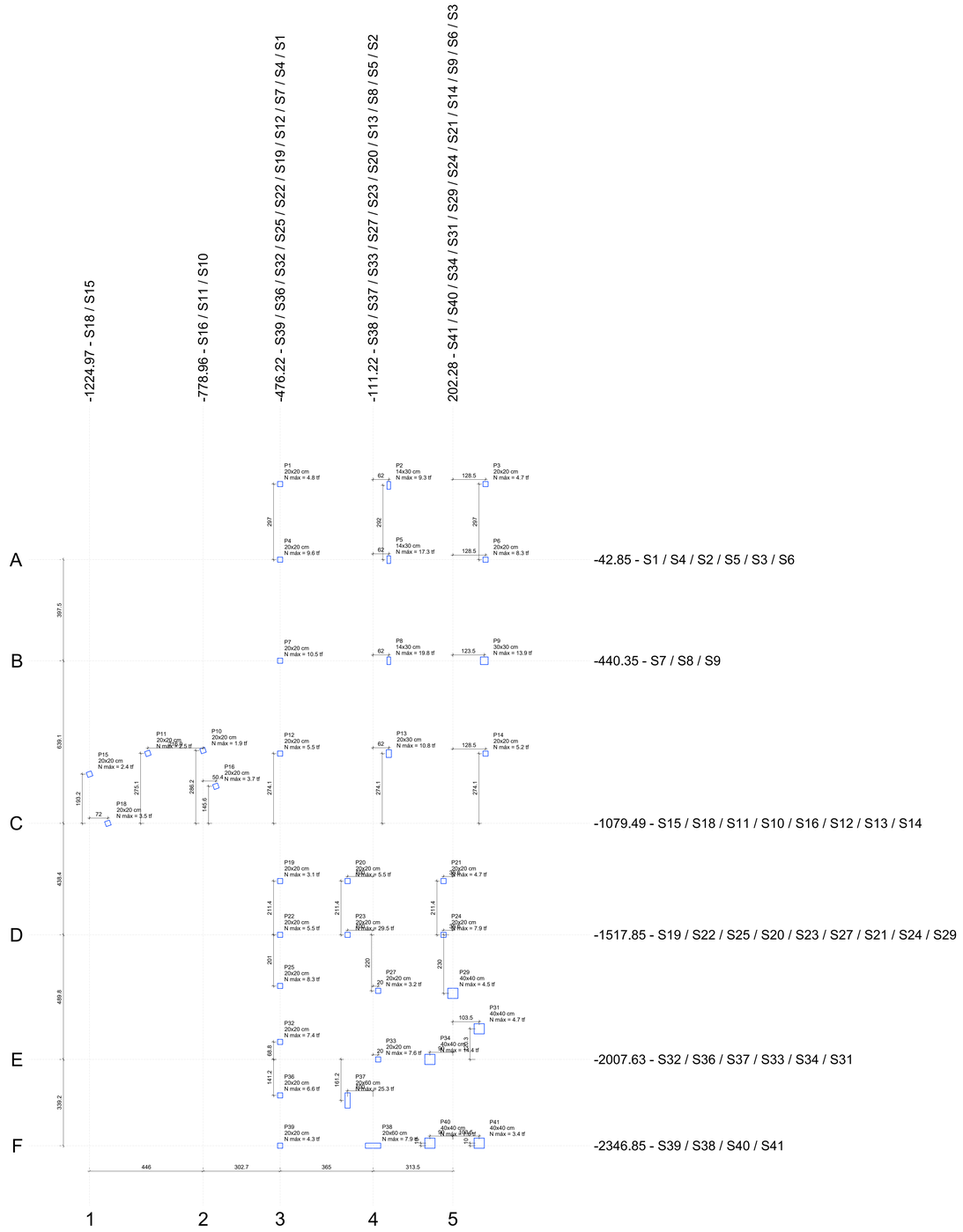
Pilar												
Nome	Seção (cm)	X (cm)	Y (cm)	Carga Máx. (tf)	Carga Mín. (tf)	Mx Máximo (kgf.m)		My Máximo (kgf.m)		Fx Máximo (tf)		Fy Máximo (tf)	
						Positivo	Negativo	Positivo	Negativo	Positivo	Negativo	Positivo	Negativo
S1*	-	-476.22	254.15	4.8	3.8	300	-300	500	-600	0.3	-0.6	0.3	-0.1
S2*	-	-49.22	249.15	9.3	7.5	400	-500	500	-500	0.4	-0.4	0.3	-0.2
S3*	-	330.78	254.15	4.7	3.4	300	-300	700	-700	0.5	-0.3	0.3	-0.3
S4*	-	-476.22	-42.85	9.6	7.6	300	-500	500	-600	0.4	-0.4	0.3	-0.2
S5*	-	-49.22	-42.85	17.3	14.4	400	-700	500	-500	0.4	-0.4	0.5	-0.2
S6*	-	330.78	-42.85	8.3	6.8	300	-300	700	-600	0.5	-0.4	0.3	-0.2
S7*	-	-476.22	-440.35	10.5	8.7	400	-300	700	-700	0.5	-0.6	0.3	-0.2
S8*	-	-49.22	-440.35	19.8	14.8	600	-500	500	-700	0.3	-0.6	0.3	-0.4
S9*	-	325.78	-440.35	13.9	9.3	1000	-900	2700	-2100	1.7	-1.2	0.6	-0.6
S10*	-	-778.96	-793.26	1.9	0.6	300	-200	600	-600	0.5	-0.5	0.2	-0.3
S11*	-	-995.88	-804.44	2.5	1.6	300	-500	600	-600	0.5	-0.6	0.4	-0.1
S12*	-	-476.22	-805.35	5.5	4.0	300	-300	400	-700	0.3	-0.4	0.2	-0.2
S13*	-	-49.22	-805.35	10.8	8.9	500	-600	800	-800	0.6	-0.7	0.3	-0.2
S14*	-	330.78	-805.35	5.2	3.4	400	-200	500	-400	0.4	-0.4	0.2	-0.4
S15*	-	-1224.97	-886.26	2.4	0.7	0	0	0	0	0.1	-0.2	0.1	0.0
S16*	-	-728.59	-933.85	3.7	1.5	300	-200	800	-400	0.7	-0.3	0.2	-0.1
S18*	-	-1152.93	-1079.49	3.5	2.0	600	-400	500	-800	0.4	-0.6	0.2	-0.4
S19*	-	-476.22	-1306.43	3.1	2.0	200	-200	700	-300	0.5	-0.2	0.2	-0.2
S20*	-	-211.22	-1306.43	5.5	4.8	400	0	900	-500	0.7	-0.4	0.0	-0.5
S21*	-	165.67	-1306.43	4.7	3.9	200	-200	600	-200	0.5	-0.3	0.2	-0.2
S22*	-	-476.22	-1517.85	5.5	4.1	100	-400	600	-300	0.4	-0.4	0.3	-0.2
S23*	-	-211.22	-1517.85	29.5	26.3	0	-1600	800	-300	0.6	-0.4	1.5	0.0
S24*	-	165.67	-1517.85	7.9	6.4	200	-200	600	-200	0.4	-0.3	0.2	-0.2
S25*	-	-476.22	-1718.85	8.3	7.1	200	-400	0	-1500	0.0	-1.3	0.3	-0.2
S27*	-	-91.22	-1737.85	3.2	2.9	100	-400	0	-600	0.0	-0.6	0.3	0.0
S29*	-	202.28	-1747.85	4.5	4.1	0	0	0	0	0.5	0.0	0.3	0.0
S31*	-	305.78	-1887.30	4.7	4.2	0	0	0	0	0.3	0.0	0.1	0.0
S32*	-	-476.22	-1938.85	7.4	6.7	200	-200	0	-900	0.0	-0.7	0.2	-0.1
S33*	-	-91.22	-2007.63	7.6	6.8	100	-400	100	-400	0.1	-0.4	0.3	0.0
S34*	-	112.28	-2007.63	14.4	13.1	600	-1600	2200	-800	1.6	-0.4	1.1	-0.4
S36*	-	-476.22	-2148.85	6.6	5.5	200	-400	200	-200	0.2	-0.2	0.3	-0.2
S37*	-	-211.20	-2168.85	25.3	22.4	2200	-200	0	-400	0.0	-0.2	0.0	-1.6
S38*	-	-111.22	-2346.85	7.9	6.7	700	-300	2400	-1500	1.4	-0.9	0.1	-0.7
S39*	-	-476.22	-2346.85	4.3	2.9	300	-200	200	-300	0.1	-0.1	0.1	-0.2
S40*	-	112.28	-2336.85	7.6	5.5	0	0	0	0	0.2	0.0	0.0	-0.4
S41*	-	305.78	-2336.85	3.4	3.1	0	0	0	0	0.1	-0.2	0.1	0.0

Os esforços indicados nesta tabela são os valores máximos obtidos pela envoltória de todas as combinações definidas para as fundações. Para análises complementares, deve-se consultar o relatório de esforços na fundação, que apresenta os valores calculados para cada combinação.
*Os esforços indicados são referentes ao centro da fundação.



Locação no eixo X	
Coordenadas (cm)	Nome
-1224.97	S15
-1152.93	S18
-995.88	S11
-778.96	S10
-728.59	S16
-476.22	S1, S4, S7, S12, S19, S22, S25, S32, S36, S39
-211.22	S20, S23
-111.20	S37
-111.22	S38
-91.22	S27, S33
-49.22	S2, S5, S8, S13
112.28	S34, S40
165.67	S21, S24
202.28	S29
305.78	S31, S41
325.78	S9
330.78	S3, S6, S14

Locação no eixo Y	
Coordenadas (cm)	Nome
254.15	S1, S3
249.15	S2
-42.85	S4, S5, S6
-440.35	S7, S8, S9
-793.26	S10
-804.44	S11
-805.35	S12, S13, S14
-886.26	S15
-933.85	S16
-1079.49	S18
-1306.43	S19, S20, S21
-1517.85	S22, S23, S24
-1718.85	S25
-1737.85	S27
-1747.85	S29
-1887.30	S31
-1938.85	S32
-2007.63	S33, S34
-2148.85	S36
-2168.85	S37
-2336.85	S40, S41
-2346.85	S39, S38



PLANTA DE CARGAS

Escala 1:75

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
FUNDAÇÃO - PLANTA DE CARGAS

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

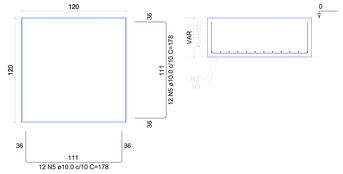
DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

DATA
JANEIRO/2026

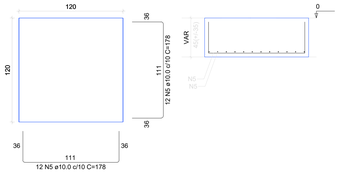
EST02

S1
PLANTA
ESC 1:25



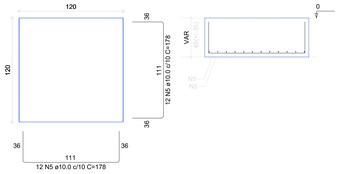
CORTE
ESC 1:25

S2
PLANTA
ESC 1:25



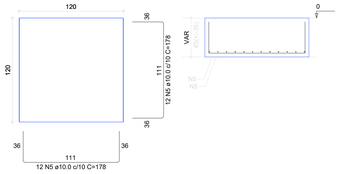
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ESC 1:25

S3
PLANTA
ESC 1:25



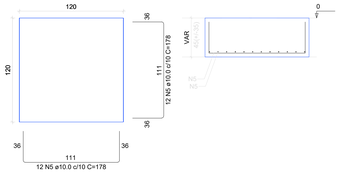
CORTE
ESC 1:25

S4
PLANTA
ESC 1:25



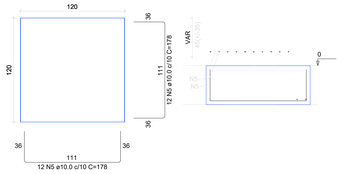
CORTE
ESC 1:25

S5
PLANTA
ESC 1:25



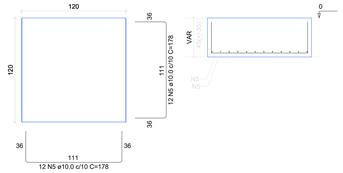
CORTE
ESC 1:25

S6
PLANTA
ESC 1:25



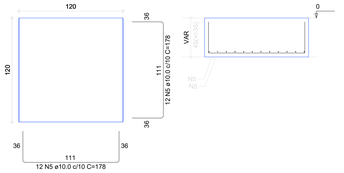
CORTE
ESC 1:25

S7
PLANTA
ESC 1:25



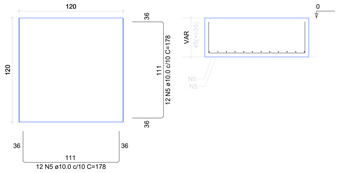
CORTE
ESC 1:25

S8
PLANTA
ESC 1:25



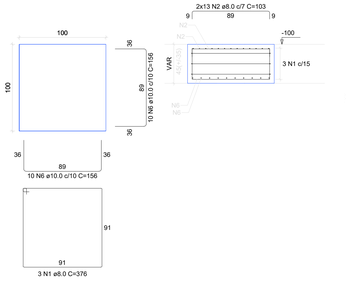
CORTE
ESC 1:25

S9
PLANTA
ESC 1:25



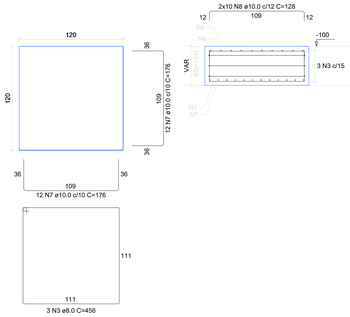
CORTE
ESC 1:25

S10
PLANTA
ESC 1:25



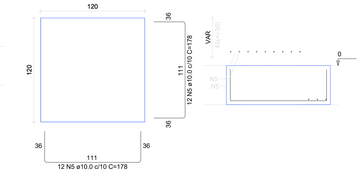
CORTE
ESC 1:25

S11
PLANTA
ESC 1:25



CORTE
ESC 1:25

S12
PLANTA
ESC 1:25



CORTE
ESC 1:25

RELAÇÃO DO AÇO

S1	S2	S3
S4	S5	S6
S7	S8	S9
S10	S11	S12
S13	S14	S15
S16	S18	S19
S20	S21	S22
S23	S24	S25
S27	S28	S29
S30	S31	S32
S33	S34	S35
S36	S37	S38

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	8.0	9	376	3384
	2	8.0	78	103	8034
	3	8.0	3	456	1368
	4	8.0	3	576	1728
	5	10.0	528	178	93984
	6	10.0	60	156	9360
	7	10.0	24	176	4224
	8	10.0	20	128	2560
	9	10.0	160	158	25280
	10	10.0	32	216	6912
	11	10.0	26	158	4108

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	8.0	145.1	13	12 m	60.1
	10.0	1464.3	129	12 m	947.9
PESO TOTAL (kg)					
CA50	1008.1				

Volume de concreto (C-35) = 20.98 m³
Área de forma = 72.48 m²

RELAÇÃO DO AÇO

S38

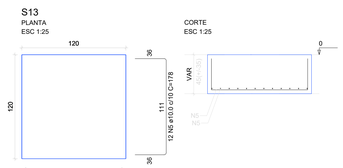
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	10.0	24	178	4272

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	10.0	42.7	4	12 m	27.7
PESO TOTAL (kg)					
CA50	27.7				

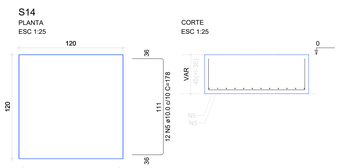
Volume de concreto (C-35) = 0.65 m³
Área de forma = 2.16 m²

S13
PLANTA
ESC 1:25



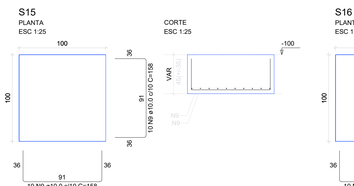
CORTE
ESC 1:25

S14
PLANTA
ESC 1:25



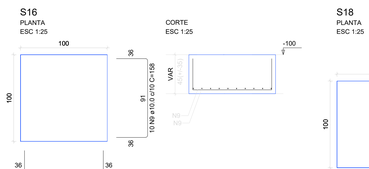
CORTE
ESC 1:25

S15
PLANTA
ESC 1:25



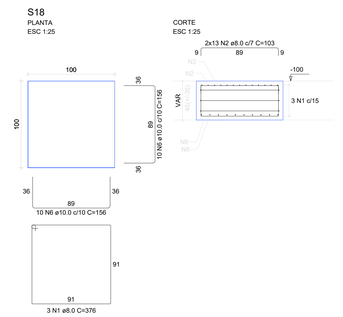
CORTE
ESC 1:25

S16
PLANTA
ESC 1:25



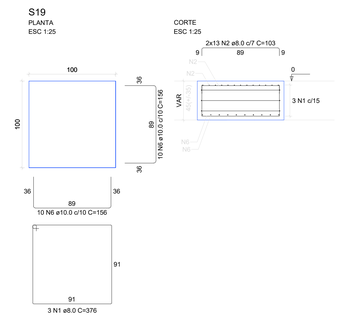
CORTE
ESC 1:25

S18
PLANTA
ESC 1:25



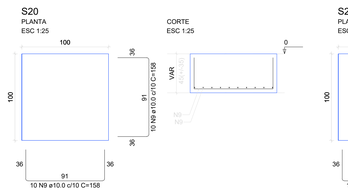
CORTE
ESC 1:25

S19
PLANTA
ESC 1:25



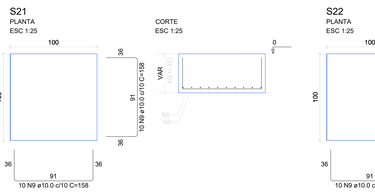
CORTE
ESC 1:25

S20
PLANTA
ESC 1:25



CORTE
ESC 1:25

S21
PLANTA
ESC 1:25



CORTE
ESC 1:25

S22
PLANTA
ESC 1:25

CORTE
ESC 1:25

S23
PLANTA
ESC 1:25

CORTE
ESC 1:25

S24
PLANTA
ESC 1:25

CORTE
ESC 1:25

S25
PLANTA
ESC 1:25

CORTE
ESC 1:25

S38
PLANTA
ESC 1:25

CORTE
ESC 1:25

S27
PLANTA
ESC 1:25

CORTE
ESC 1:25

S28
PLANTA
ESC 1:25

CORTE
ESC 1:25

S29
PLANTA
ESC 1:25

CORTE
ESC 1:25

S30
PLANTA
ESC 1:25

CORTE
ESC 1:25

S31
PLANTA
ESC 1:25

CORTE
ESC 1:25

S32
PLANTA
ESC 1:25

CORTE
ESC 1:25

S33
PLANTA
ESC 1:25

CORTE
ESC 1:25

S34
PLANTA
ESC 1:25

CORTE
ESC 1:25

S35
PLANTA
ESC 1:25

CORTE
ESC 1:25

S36
PLANTA
ESC 1:25

CORTE
ESC 1:25

S37
PLANTA
ESC 1:25

CORTE
ESC 1:25

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
DETALHAMENTO DE SAPATAS

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

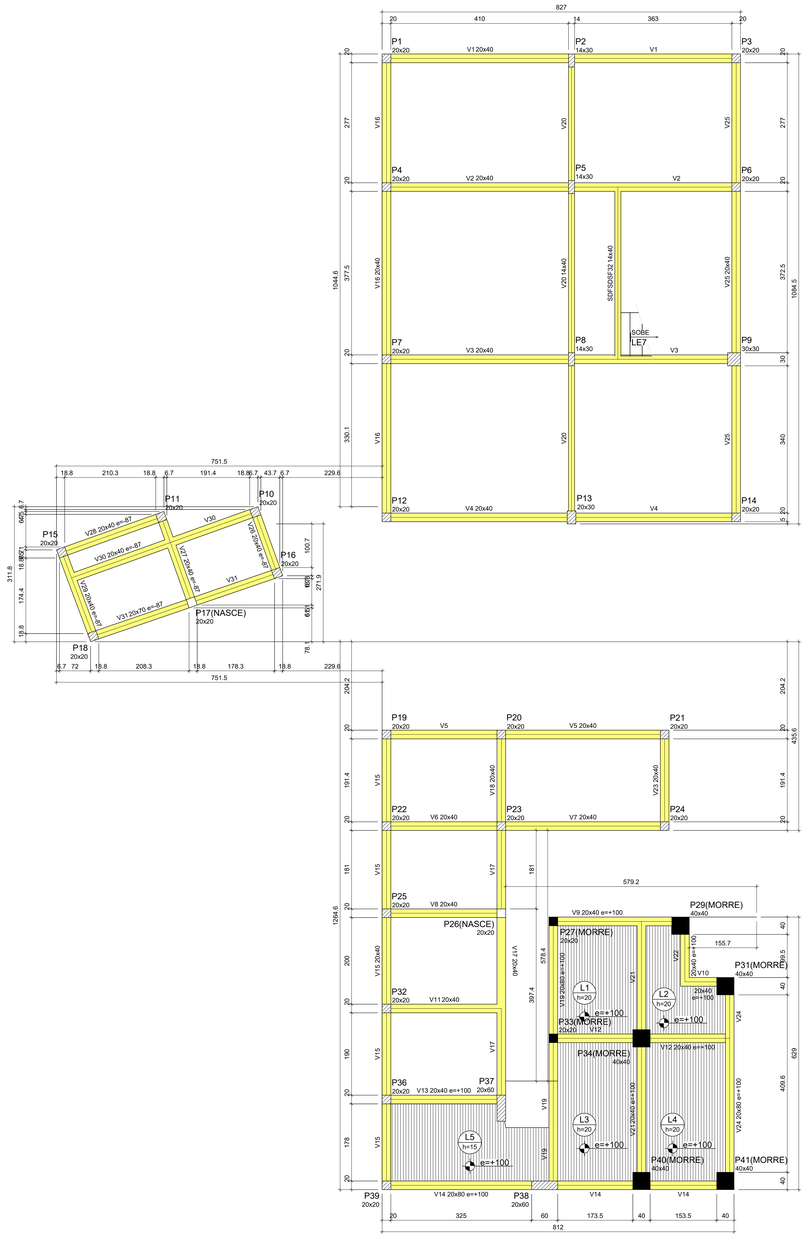
RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

DATA
JANEIRO/2026

EST03



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
SDFSDSF32	14x40	0	160
V1	20x40	0	160
V2	20x40	0	160
V3	20x40	0	160
V4	20x40	0	160
V5	20x40	0	160
V6	20x40	0	160
V7	20x40	0	160
V8	20x40	0	160
V9	20x40	100	260
V10	20x40	100	260
V11	20x40	0	160
V12	20x40	100	260
V13	20x40	100	260
V14	20x80	100	260
V15	20x40	0	160
V16	20x40	0	160
V17	20x40	0	160
V18	20x40	0	160
V19	20x80	100	260
V20	14x40	0	160
V21	20x40	100	260
V22	20x40	100	260
V23	20x40	0	160
V24	20x80	100	260
V25	20x40	0	160
V26	20x40	-87	73
V27	20x40	-87	73
V28	20x40	-87	73
V29	20x40	-87	73
V30	20x40	-87	73
V31	20x70	-87	73

Lajes								
Dados						Sobrecarga (kgf/m²)		
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Peso próprio (kgf/m²)	Adicional	Acidental	Localizada
L1	Maciça	20	100	260	500	1137	150	-
L2	Maciça	20	100	260	500	1137	150	-
L3	Maciça	20	100	260	500	1137	150	-
L4	Maciça	20	100	260	500	137	150	-
L5	Maciça	15	100	260	375	137	150	-

Características dos materiais			
fck (kgf/cm²)	Ecs (kgf/cm²)	fct (kgf/cm²)	Abatimento (cm)
300	268384	29	5.00

Dimensão máxima do agregado = 19 mm

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	20x20	0	160
P2	14x30	0	160
P3	20x20	0	160
P4	20x20	0	160
P5	14x30	0	160
P6	20x20	0	160
P7	20x20	0	160
P8	14x30	0	160
P9	30x30	0	160
P10	20x20	0	160
P11	20x20	0	160
P12	20x20	0	160
P13	20x30	0	160
P14	20x20	0	160
P15	20x20	0	160
P16	20x20	0	160
P17	20x20	-87	73
P18	20x20	0	160
P19	20x20	0	160
P20	20x20	0	160
P21	20x20	0	160
P22	20x20	0	160
P23	20x20	0	160
P24	20x20	0	160
P25	20x20	0	160
P26	20x20	0	160
P27	20x20	100	260
P29	40x40	100	260
P31	40x40	100	260
P32	20x20	0	160
P33	20x20	100	260
P34	40x40	100	260
P36	20x20	0	160
P37	20x60	0	160
P38	20x60	0	160
P39	20x20	0	160
P40	40x40	100	260
P41	40x40	100	260

Legenda dos pilares
Pilar que morre
Pilar que passa
Pilar que nasce

Legenda das vigas e paredes
Viga

FORMA DO PAVIMENTO TÉRREO - CASA 28 (NÍVEL 160)

Escala 1:50

valstra
ENGENHARIA E ARQUITETURA

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, Nº 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
FORMA DO PAVIMENTO TÉRREO

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

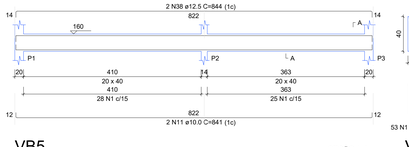
DESENHISTA
RAU WOLOWSKI TARNOWSKI

ESCALA
Indicada

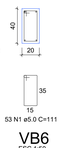
DATA
JANEIRO/2026

EST04

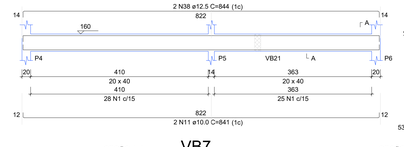
VB1
ESC 1:50



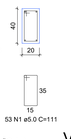
SEÇÃO A-A
ESC 1:25



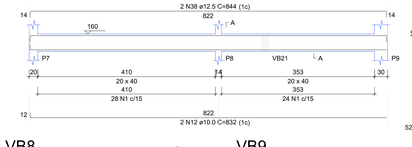
VB2
ESC 1:50



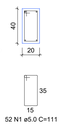
SEÇÃO A-A
ESC 1:25



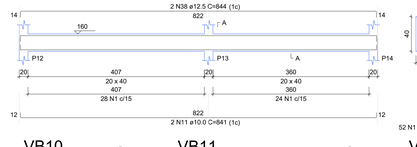
VB3
ESC 1:50



SEÇÃO A-A
ESC 1:25



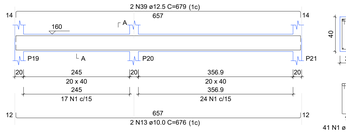
VB4
ESC 1:50



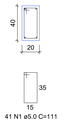
SEÇÃO A-A
ESC 1:25



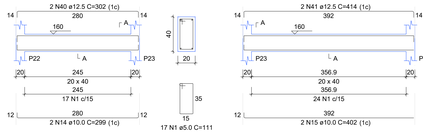
VB5
ESC 1:50



SEÇÃO A-A
ESC 1:25



VB6
ESC 1:50



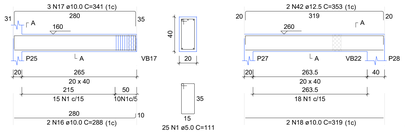
SEÇÃO A-A
ESC 1:25



VB7
ESC 1:50

SEÇÃO A-A
ESC 1:25

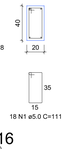
VB8
ESC 1:50



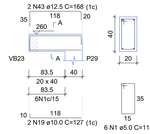
SEÇÃO A-A
ESC 1:25

VB9
ESC 1:50

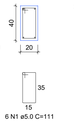
SEÇÃO A-A
ESC 1:25



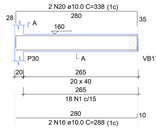
VB10
ESC 1:50



SEÇÃO A-A
ESC 1:25



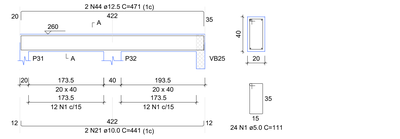
VB11
ESC 1:50



SEÇÃO A-A
ESC 1:25

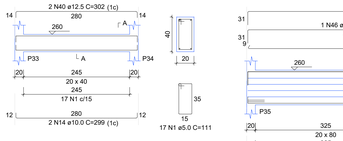


VB12
ESC 1:50



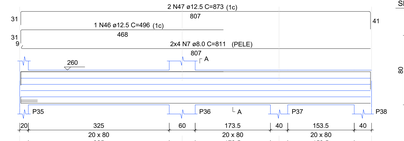
SEÇÃO A-A
ESC 1:25

VB13
ESC 1:50

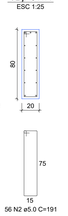


SEÇÃO A-A
ESC 1:25

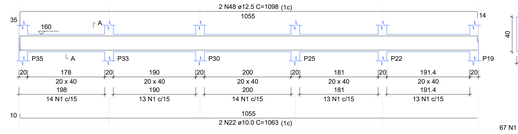
VB14
ESC 1:50



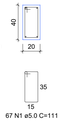
SEÇÃO A-A
ESC 1:25



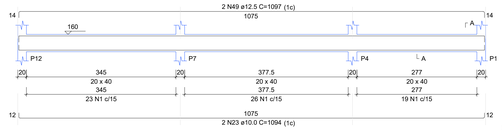
VB15
ESC 1:50



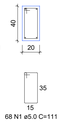
SEÇÃO A-A
ESC 1:25



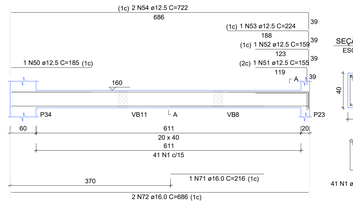
VB16
ESC 1:50



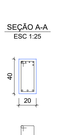
SEÇÃO A-A
ESC 1:25



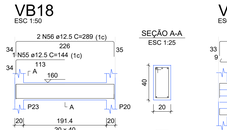
VB17
ESC 1:50



SEÇÃO A-A
ESC 1:25

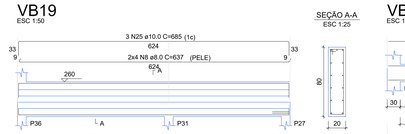


VB18
ESC 1:50



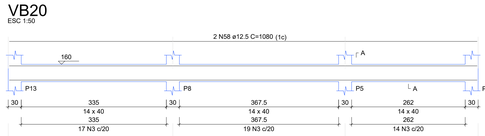
SEÇÃO A-A
ESC 1:25

VB19
ESC 1:50

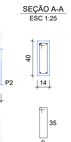


SEÇÃO A-A
ESC 1:25

VB20
ESC 1:50



SEÇÃO A-A
ESC 1:25



VB21
ESC 1:50

Aviso 06 - Viga com apoios sobrepostos. Ajustar detalhamento de acordo com a forma.

SEÇÃO A-A
ESC 1:25

VB22
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB23
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB24
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB25
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB26
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB27
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB28
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB29
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB30
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB31
ESC 1:50

SEÇÃO A-A
ESC 1:25

VB32
ESC 1:50

SEÇÃO A-A
ESC 1:25

RELAÇÃO DO AÇO

VB1	VB2	VB3
VB4	VB5	VB6
VB7	VB8	VB9
VB10	VB11	VB12
VB13	VB14	VB15
VB16	VB17	VB18
VB19	VB20	VB21
VB22	VB23	VB24
VB25	VB26	VB27
VB28	VB29	VB30
VB31	VB32	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	792	111	87912
	2	5.0	123	191	23493
	3	5.0	69	99	6831
	4	5.0	2	275	550
	5	5.0	29	171	4959
CA50	6	6.3	6	89	534
	7	8.0	8	811	6488
	8	8.0	8	637	5096
	9	8.0	8	485	3880
	10	8.0	6	477	2862
	11	10.0	6	841	5046
	12	10.0	2	832	1664
	13	10.0	2	676	1352
	14	10.0	4	299	1196
	15	10.0	2	402	804
	16	10.0	4	288	1152
	17	10.0	3	341	1023
	18	10.0	2	319	638
	19	10.0	2	127	254
	20	10.0	2	338	676
	21	10.0	2	441	882
	22	10.0	2	1063	2126
	23	10.0	4	1094	4376
	24	10.0	2	234	468
	25	10.0	2	685	2055
	26	10.0	2	1080	2160
	27	10.0	2	415	830
	28	10.0	2	634	1268
	29	10.0	2	164	328
	30	10.0	2	245	490
	31	10.0	3	546	1638
	32	10.0	2	183	366
	33	10.0	2	243	486
	34	10.0	2	277	554
	35	10.0	2	240	480
	36	10.0	2	475	950
	37	10.0	3	519	1557
	38	12.5	8	844	6752
	39	12.5	2	679	1358
	40	12.5	4	302	1208
	41	12.5	2	414	828
	42	12.5	2	353	706
	43	12.5	2	168	336
	44	12.5	2	471	942
	45	12.5	2	819	1638
	46	12.5	1	496	496
	47	12.5	2	873	1746
	48	12.5	2	1098	2196
	49	12.5	4	1097	4388
	50	12.5	1	185	185
	51	12.5	1	156	156
	52	12.5	1	159	159
	53	12.5	2	224	224
	54	12.5	2	722	1444
	55	12.5	2	289	578
	56	12.5	2	144	288
	57	12.5	2	648	1296
	58	12.5	2	1080	2160
	59	12.5	2	89	178
	60	12.5	2	94	188
	61	12.5	2	673	1346
	62	12.5	2	188	376
	63	12.5	2	248	496
	64	12.5	2	485	970
	65	12.5	2	186	372
	66	12.5	2	252	504
	67	12.5	2	280	560
	68	12.5	2	243	486
	69	12.5	2	493	986
	70	12.5	2	488	976
	71	16.0	1	216	216
	72	16.0	2	686	1372

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	6.3	5.3	1	12 m	1.4
	8.0	183.3	17	12 m	75.9
	10.0	348.2	31	12 m	225.4
	12.5	363.8	32	12 m	368
	16.0	15.9	2	12 m	26.3
CA60	5.0	1237.5	-	rolo (170 kg)	200.3

PESO TOTAL (kg)	
CA50	697
CA60	200.3

Volume de concreto (C-30) = 13.17 m³
Área de forma = 156.07 m²

valstra
ENGENHARIA E ARQUITETURA

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
DETALHAMENTO DE VIGAS BALDRAME

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

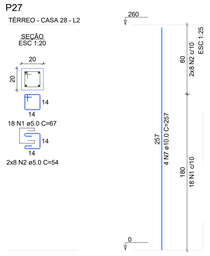
ESCALA
Indicada

DATA
JANEIRO/2026

EST05

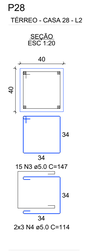
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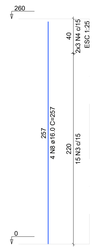
TÉRREO - CASA 28 - L2



P28

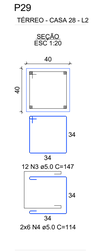
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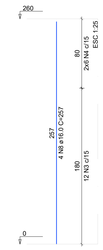




P29

TÉRREO - CASA 28 - L2

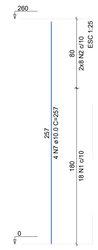




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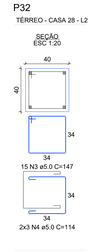
TÉRREO - CASA 28 - L2

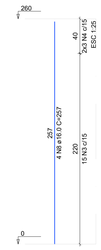




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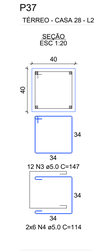
TÉRREO - CASA 28 - L2

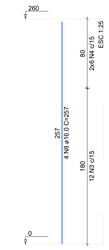




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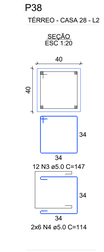
TÉRREO - CASA 28 - L2

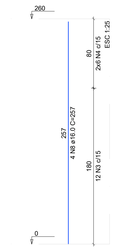




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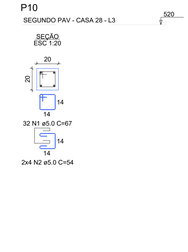
TÉRREO - CASA 28 - L2

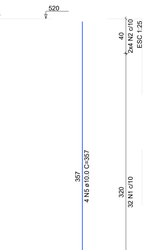




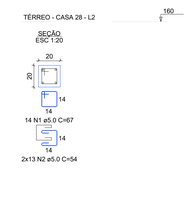
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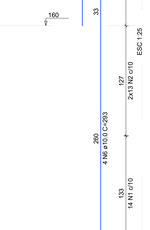
SEGUNDO PAV - CASA 28 - L3





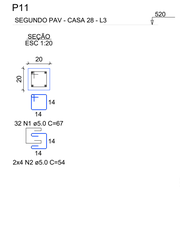
TÉRREO - CASA 28 - L2

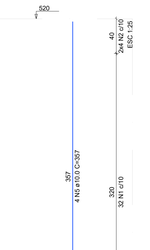




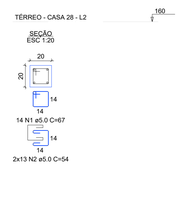
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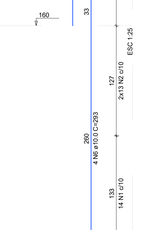
SEGUNDO PAV - CASA 28 - L3





TÉRREO - CASA 28 - L2





RELAÇÃO DO AÇO

P10-L3	P10-L2	P11-L3	
P11-L2	P27-L2	P28-L2	
P29-L2	P31-L2	P32-L2	
P37-L2	P38-L2		

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	128	67	8576
	2	5.0	100	54	5400
	3	5.0	66	147	9702
	4	5.0	48	114	5472
CA50	5	10.0	8	357	2856
	6	10.0	8	293	2344
	7	10.0	8	257	2056
	8	16.0	20	257	5140

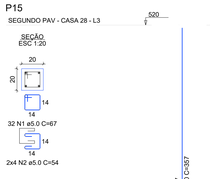
RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	10.0	72.6	7	12 m	47
	16.0	51.4	5	12 m	80.2
CA60	5.0	291.5	-	rolo (170 kg)	47.2
PESO TOTAL (kg)					
CA50	132.2				
CA60	47.2				

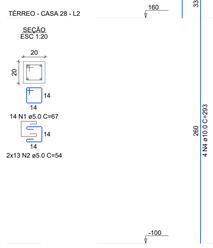
Volume de concreto (C-30) = 2.78 m³
Área de forma = 34.88 m²

P15

SEGUNDO PAV - CASA 28 - L3

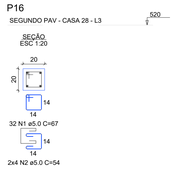


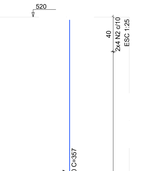
TÉRREO - CASA 28 - L2



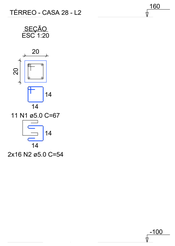
P16

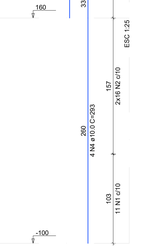
SEGUNDO PAV - CASA 28 - L3





TÉRREO - CASA 28 - L2

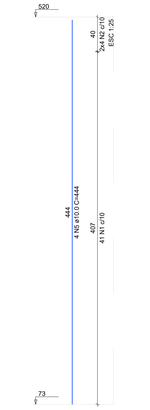




P17

SEGUNDO PAV - CASA 28 - L3

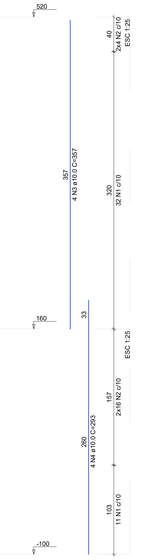




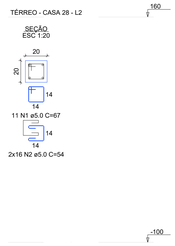
P18

SEGUNDO PAV - CASA 28 - L3



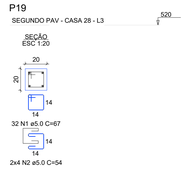


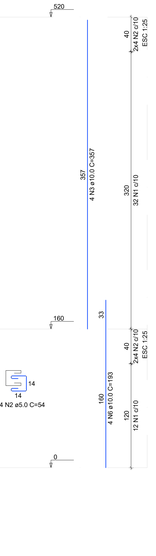
TÉRREO - CASA 28 - L2



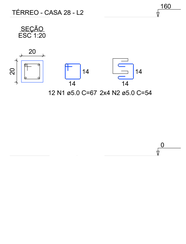
P19

SEGUNDO PAV - CASA 28 - L3





TÉRREO - CASA 28 - L2



P20

SEGUNDO PAV - CASA 28 - L3

TÉRREO - CASA 28 - L2

P21

SEGUNDO PAV - CASA 28 - L3

TÉRREO - CASA 28 - L2

P22

SEGUNDO PAV - CASA 28 - L3

TÉRREO - CASA 28 - L2

RELAÇÃO DO AÇO

P15-L3	P15-L2	P16-L3	
P16-L2	P17-L3	P18-L3	
P18-L2	P19-L3	P19-L2	
P20-L3	P20-L2	P21-L3	
P21-L2	P22-L3	P22-L2	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	349	67	23383
	2	5.0	186	54	10044
CA50	3	10.0	28	357	9996
	4	10.0	12	293	3516
	5	10.0	4	444	1776
	6	10.0	16	193	3088

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	10.0	183.8	17	12 m	119
CA60	5.0	334.3	-	rolo (170 kg)	54.1
PESO TOTAL (kg)					
CA50	119				
CA60	54.1				

Volume de concreto (C-30) = 1.75 m³
Área de forma = 35.10 m²

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

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PROJETO ESTRUTURAL E DE FUNDAÇÕES

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PILARES EM PRUMADA

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INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

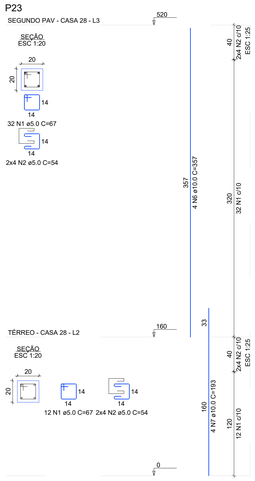
ESCALA
Indicada

DATA
JANEIRO/2026

EST06

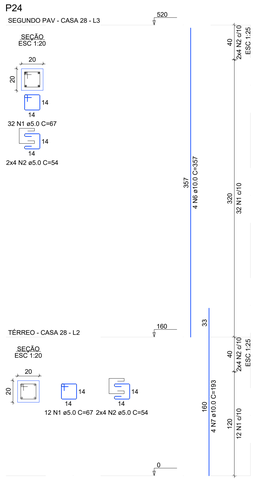
P23

SEGUNDO PAV - CASA 28 - L3



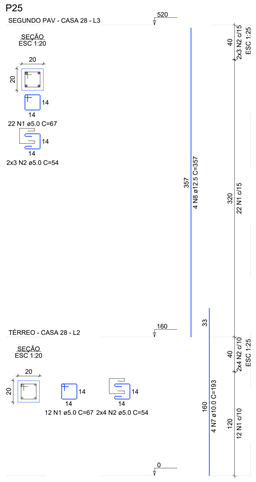
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SEGUNDO PAV - CASA 28 - L3



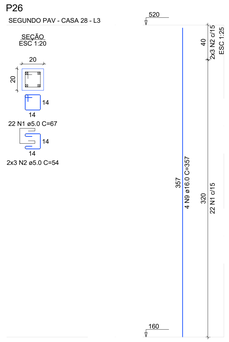
P25

SEGUNDO PAV - CASA 28 - L3



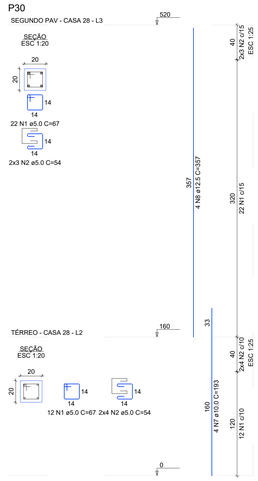
P26

SEGUNDO PAV - CASA 28 - L3



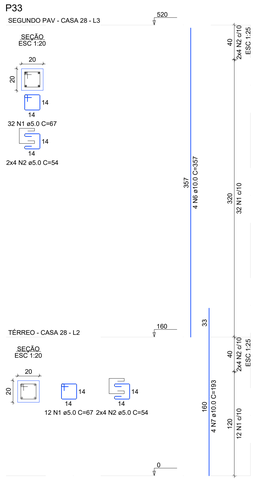
P30

SEGUNDO PAV - CASA 28 - L3



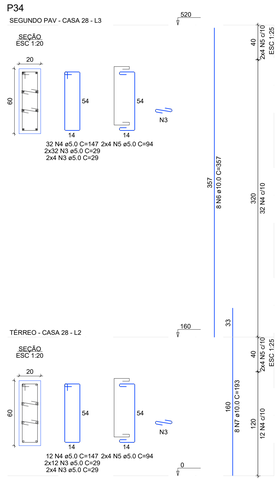
P33

SEGUNDO PAV - CASA 28 - L3



P34

SEGUNDO PAV - CASA 28 - L3



RELAÇÃO DO AÇO

P23-L3, P24-L3, P25-L3, P26-L3, P30-L3, P33-L3, P34-L3, P23-L2, P24-L2, P25-L2, P30-L2, P33-L2, P34-L2, P24-L3, P25-L2, P30-L2, P34-L3

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	222	67	14874
	2	5.0	82	54	4428
	3	5.0	104	29	3016
	4	5.0	44	147	6468
	5	5.0	16	94	1504
CA50	6	10.0	20	357	7140
	7	10.0	28	193	5404
	8	12.5	8	357	2856
	9	16.0	4	357	1428

RESUMO DO AÇO

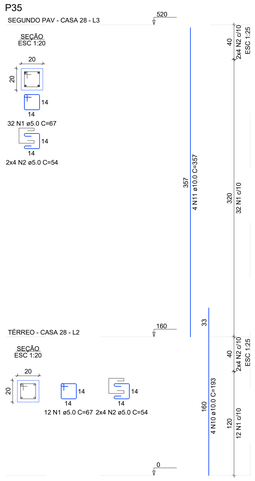
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	10.0	125.4	11	12 m	81.2
	12.5	28.6	3	12 m	28.9
	16.0	14.3	2	12 m	23.7
CA60	5.0	302.9	-	rolo (170 kg)	49

PESO TOTAL (kg)	
CA50	133.8
CA60	49

Volume de concreto (C-30) = 1.81 m³
Área de forma = 32.00 m²

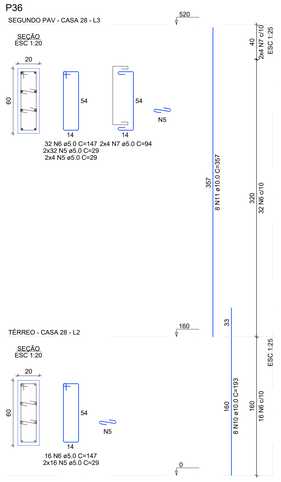
P35

SEGUNDO PAV - CASA 28 - L3



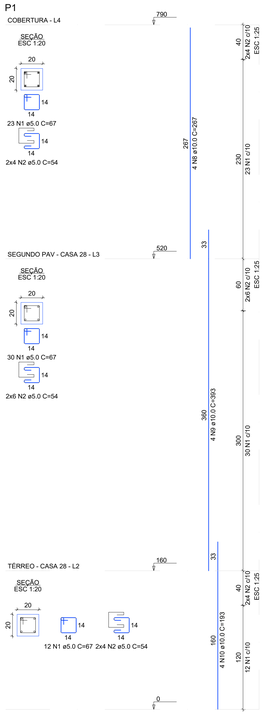
P36

SEGUNDO PAV - CASA 28 - L3



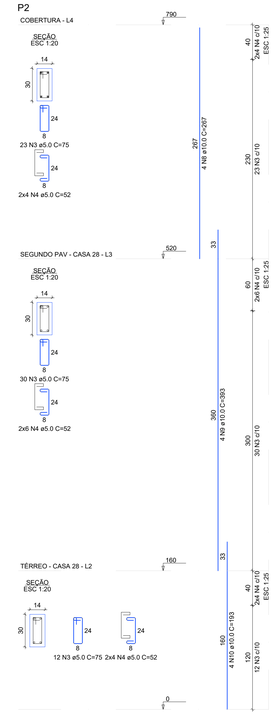
P1

COBERTURA - L4



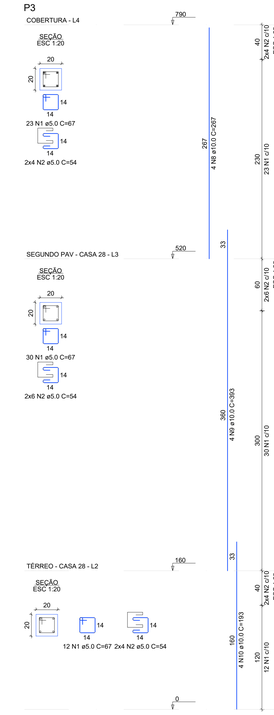
P2

COBERTURA - L4



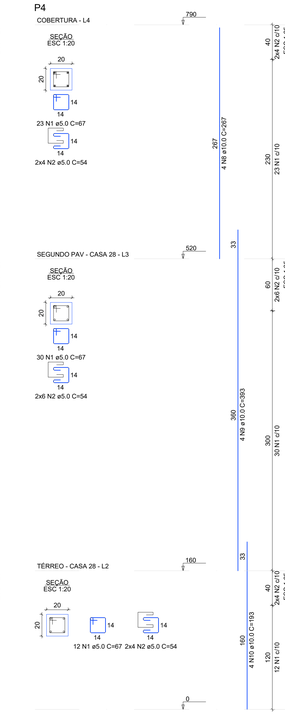
P3

COBERTURA - L4



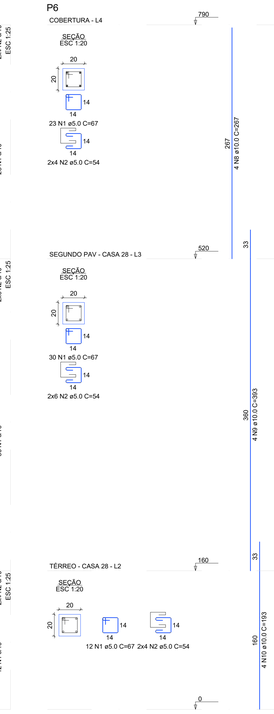
P4

COBERTURA - L4



P6

COBERTURA - L4



RELAÇÃO DO AÇO

P1-L4, P2-L4, P3-L4, P4-L4, P6-L4, P35-L3, P36-L2, P1-L3, P2-L3, P3-L3, P4-L3, P6-L3, P35-L2, P1-L2, P2-L2, P3-L2, P4-L2, P6-L2, P36-L3

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	304	67	20368
	2	5.0	128	54	6912
	3	5.0	65	75	4875
	4	5.0	28	52	1456
	5	5.0	104	29	3016
	6	5.0	48	147	7056
	7	5.0	8	94	752
CA50	8	10.0	20	267	5340
	9	10.0	20	393	7860
	10	10.0	32	193	6176
	11	10.0	12	357	4284

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	10.0	236.6	21	12 m	153.2
CA60	5.0	444.4	-	rolo (170 kg)	71.9

PESO TOTAL (kg)	
CA50	153.2
CA60	71.9

Volume de concreto (C-30) = 2.43 m³
Área de forma = 44.71 m²

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

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KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

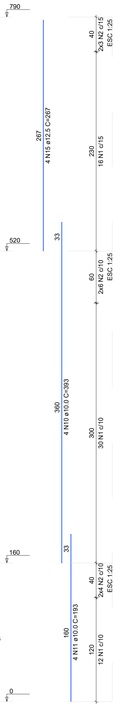
DATA
JANEIRO/2026

EST07

P7

COBERTURA - L4





SEGUNDO PAV - CASA 28 - L3

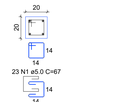


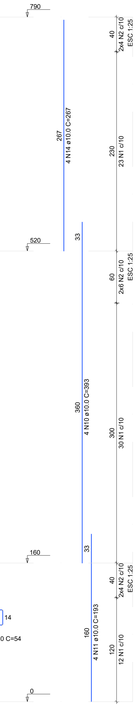
TÉRREO - CASA 28 - L2



P12

COBERTURA - L4

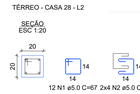




SEGUNDO PAV - CASA 28 - L3

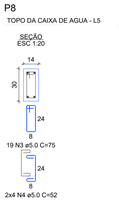


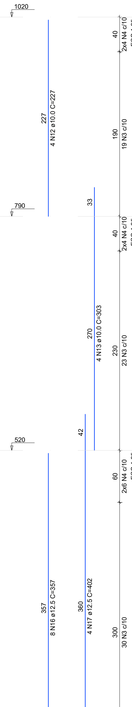
TÉRREO - CASA 28 - L2



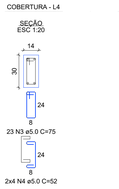
P8

TOPO DA CAIXA DE AGUA - L5

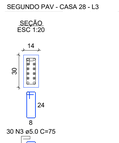




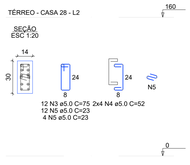
COBERTURA - L4



SEGUNDO PAV - CASA 28 - L3

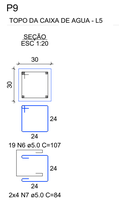


TÉRREO - CASA 28 - L2



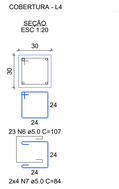
P9

TOPO DA CAIXA DE AGUA - L5

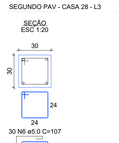




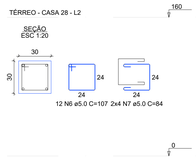
COBERTURA - L4



SEGUNDO PAV - CASA 28 - L3

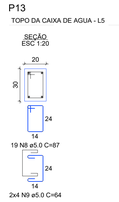


TÉRREO - CASA 28 - L2



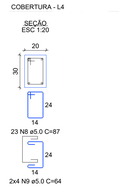
P13

TOPO DA CAIXA DE AGUA - L5

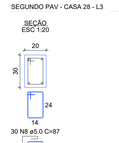




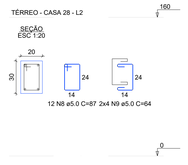
COBERTURA - L4



SEGUNDO PAV - CASA 28 - L3



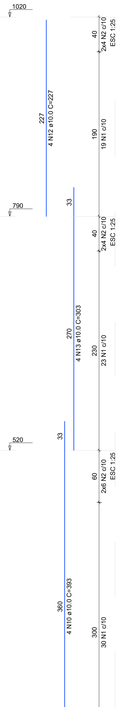
TÉRREO - CASA 28 - L2



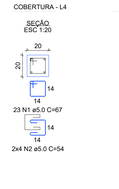
P14

TOPO DA CAIXA DE AGUA - L5





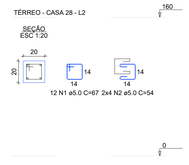
COBERTURA - L4



SEGUNDO PAV - CASA 28 - L3



TÉRREO - CASA 28 - L2



RELAÇÃO DO AÇO

P7-L4	P7-L3	P7-L2
P8-L5	P8-L4	P8-L3
P8-L2	P9-L5	P9-L4
P9-L3	P9-L2	P12-L4
P12-L3	P12-L2	P13-L5
P13-L4	P13-L3	P13-L2
P14-L5	P14-L4	P14-L3
P14-L2		

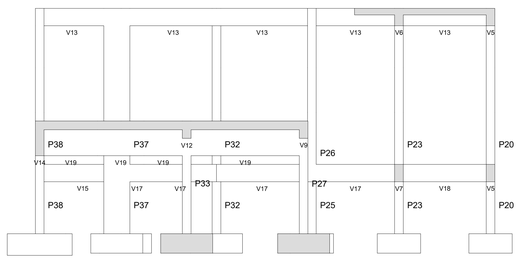
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	207	67	13869
	2	5.0	90	54	4860
	3	5.0	84	75	6300
	4	5.0	36	52	1872
	5	5.0	16	23	368
	6	5.0	84	107	8988
	7	5.0	36	84	3024
	8	5.0	84	87	7308
	9	5.0	36	64	2304
CA50	10	10.0	16	393	6288
	11	10.0	22	193	4246
	12	10.0	12	227	2724
	13	10.0	12	303	3636
	14	10.0	4	267	1068
	15	12.5	4	267	1068
	16	12.5	8	357	2856
	17	12.5	8	402	3216
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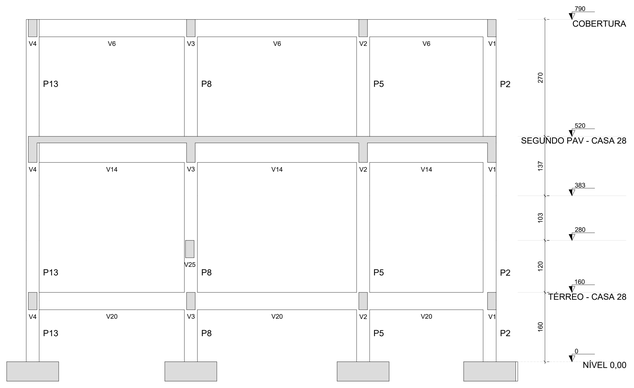
RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	10.0	179.6	16	12 m	116.3
	12.5	106	10	12 m	107.2
CA60	5.0	488.9	-	rolo (170 kg)	79.1

PESO TOTAL (kg)	
CA50	223.5
CA60	79.1

Volume de concreto (C-30) = 3.00 m³
Área de forma = 52.22 m²





CORTE A-A

Escala 1:50

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
PILARES EM PRUMADA E CORTES

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

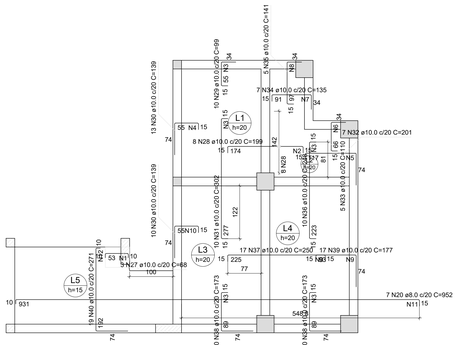
RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

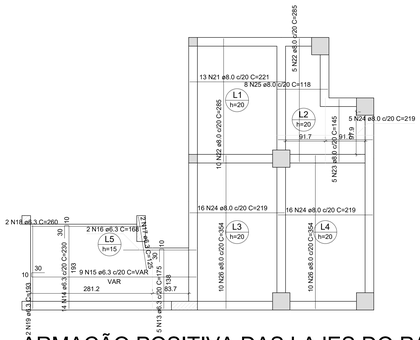
DATA
JANEIRO/2026

EST08



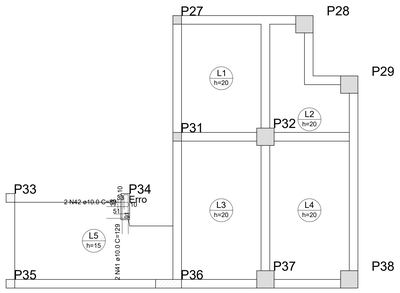
ARMAÇÃO NEGATIVA DAS LAJES DO PAVIMENTO TÉRREO - CASA 28

Escala 1:50



ARMAÇÃO POSITIVA DAS LAJES DO PAVIMENTO TÉRREO - CASA 28

Escala 1:50

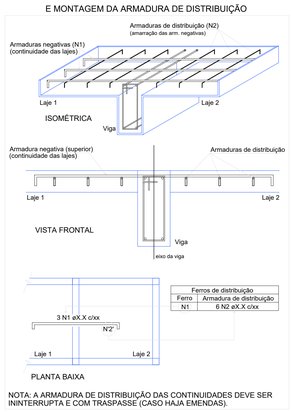


DETALHAMENTO DE PUNÇÃO E CISALHAMENTO DAS LAJES DO PAVIMENTO TÉRREO - CASA 28 (NÍVEL 160)

Escala 1:50

Armaduras de distribuição	
Armadura	Armadura de distribuição
N27	3 N1 ø6.3 c/20 C=47
N28	9 N2 ø6.3 c/20 C=162
N29	3 N3 ø6.3 c/20 C=204
N30	3 N4 ø6.3 c/20 C=270
N31	14 N3 ø6.3 c/20 C=204
N32	6 N5 ø6.3 c/20 C=130
N33	4 N6 ø6.3 c/20 C=104
N34	5 N7 ø6.3 c/20 C=139
N35	5 N8 ø6.3 c/20 C=100
N36	12 N3 ø6.3 c/20 C=204
N37	12 N9 ø6.3 c/20 C=339
N30	3 N10 ø6.3 c/20 C=206
N20	47 N11 ø6.3 c/20 C=133
N38	5 N3 ø6.3 c/20 C=204
N39	5 N9 ø6.3 c/20 C=339
N38	5 N3 ø6.3 c/20 C=204
N40	10 N12 ø6.3 c/20 C=VAR

DETALHE DA ARMADURA SUPERIOR DE CONTINUIDADE DA LAJE E MONTAGEM DA ARMADURA DE DISTRIBUIÇÃO



Ferros de distribuição	
Ferro	Armadura de distribuição
N1	6 N2 øX.X c/xx

NOTA: A ARMADURA DE DISTRIBUIÇÃO DAS CONTINUIDADES DEVE SER ININTERRUPTA E COM TRASPASSE (CASO HAJA EMENDAS).

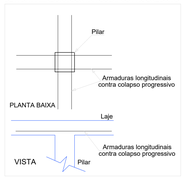
DETALHE DA ARMADURA DE BORDO LIVRE DA LAJE



ARMADURA COM COMPRIMENTO VARIÁVEL

N15	QUANT	C. VAR (cm)	C. UNIT (cm)	C. TOTAL (cm)
A	1	240	278	278
B	1	243	281	281
C	1	260	298	298
D	6	380	418	2508

DET. DA ARMADURA CONTRA COLAPSO PROGRESSIVO



RELAÇÃO DO AÇO

Negativos Positivos Punção

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	3	47	141
	2	6.3	9	162	1458
	3	6.3	39	204	7956
	4	6.3	3	270	810
	5	6.3	6	130	780
	6	6.3	4	104	416
	7	6.3	5	139	695
	8	6.3	5	100	500
	9	6.3	17	339	5763
	10	6.3	3	206	618
	11	6.3	47	133	6251
	12	6.3	10	VAR	VAR
	13	6.3	5	175	875
	14	6.3	14	230	3220
	15	6.3	9	VAR	VAR
	16	6.3	2	168	336
	17	6.3	2	125	250
	18	6.3	2	260	520
	19	6.3	2	193	386
	20	8.0	7	952	6664
	21	8.0	13	221	2873
	22	8.0	15	285	4275
	23	8.0	5	145	725
	24	8.0	37	219	8103
	25	8.0	8	118	944
	26	8.0	20	354	7080
	27	10.0	3	68	204
	28	10.0	8	199	1592
	29	10.0	10	99	990
	30	10.0	23	139	3197
	31	10.0	10	302	3020
	32	10.0	7	201	1407
	33	10.0	5	110	550
	34	10.0	7	135	945
	35	10.0	5	141	705
	36	10.0	10	248	2480
	37	10.0	17	250	4250
	38	10.0	20	173	3460
	39	10.0	17	177	3009
	40	10.0	19	271	5149
	41	10.0	2	129	258
	42	10.0	2	89	178

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	6.3	384.8	34	12 m	98.9
	8.0	306.6	27	12 m	127
	10.0	313.9	28	12 m	203.2
PESO TOTAL (kg)					
CA50	429.1				

Volume de concreto (C-30) = 4.69 m³
Área de forma = 25.82 m²

valstra
ENGENHARIA E ARQUITETURA

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
DETALHAMENTO DE LAJES - TÉRREO

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

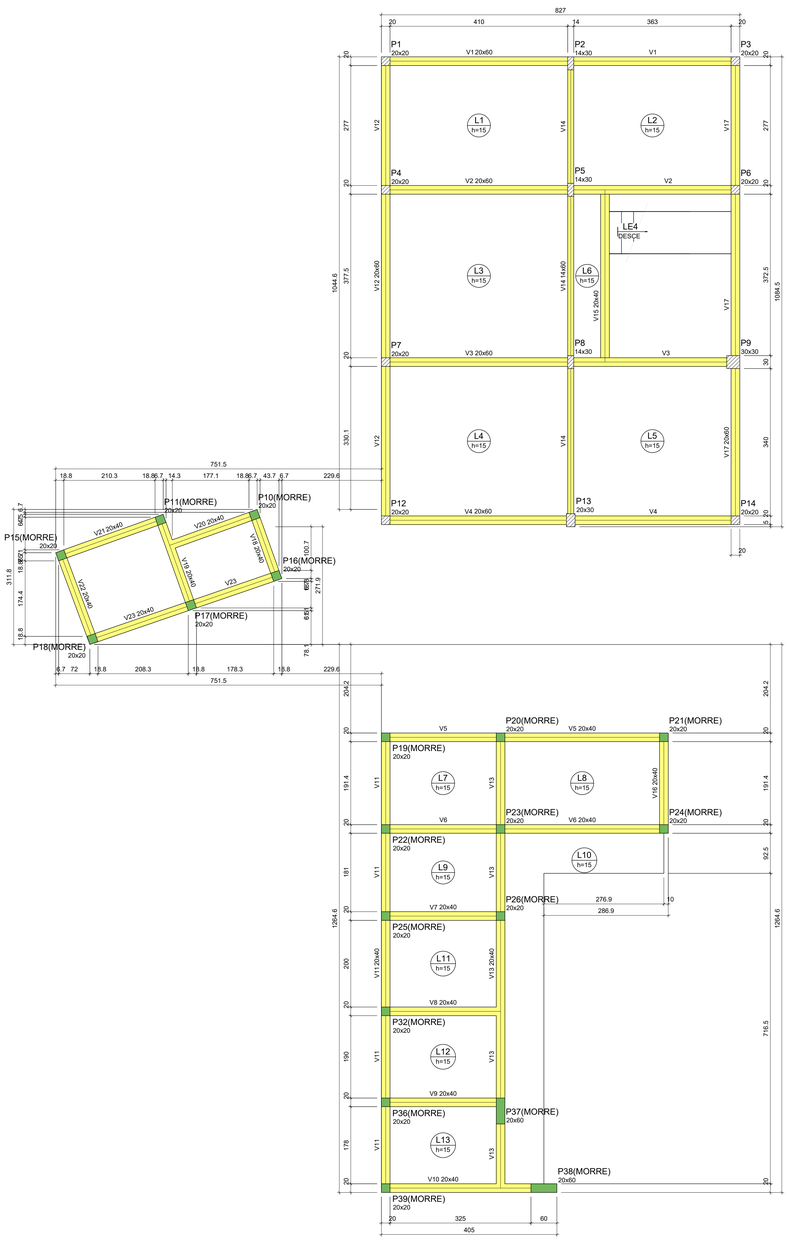
RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

DATA
JANEIRO/2026

EST09



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	20x60	0	520
V2	20x60	0	520
V3	20x60	0	520
V4	20x60	0	520
V5	20x40	0	520
V6	20x40	0	520
V7	20x40	0	520
V8	20x40	0	520
V9	20x40	0	520
V10	20x40	0	520
V11	20x40	0	520
V12	20x60	0	520
V13	20x40	0	520
V14	14x60	0	520
V15	20x40	0	520
V16	20x40	0	520
V17	20x60	0	520
V18	20x40	0	520
V19	20x40	0	520
V20	20x40	0	520
V21	20x40	0	520
V22	20x40	0	520
V23	20x40	0	520

Lajes								
		Dados				Sobrecarga (kgf/m²)		
Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Peso próprio (kgf/m²)	Adicional	Acidental	Localizada
L1	Maciça	15	0	520	375	137	150	-
L2	Maciça	15	0	520	375	137	150	-
L3	Maciça	15	0	520	375	137	150	-
L4	Maciça	15	0	520	375	137	150	-
L5	Maciça	15	0	520	375	137	150	-
L6	Maciça	15	0	520	375	137	150	-
L7	Maciça	15	0	520	375	1137	150	-
L8	Maciça	15	0	520	375	1137	150	-
L9	Maciça	15	0	520	375	1137	150	-
L10	Maciça	15	0	520	375	1137	150	-
L11	Maciça	15	0	520	375	1137	150	-
L12	Maciça	15	0	520	375	1137	150	-
L13	Maciça	15	0	520	375	1137	150	-
LE4	Maciça	18	0	520	772	155	300	-

Características dos materiais			
fck (kgf/cm²)	Ecs (kgf/cm²)	fct (kgf/cm²)	Abatimento (cm)
300	268384	29	5.00

Dimensão máxima do agregado = 19 mm

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	20x20	0	520
P2	14x30	0	520
P3	20x20	0	520
P4	20x20	0	520
P5	14x30	0	520
P6	20x20	0	520
P7	20x20	0	520
P8	14x30	0	520
P9	30x30	0	520
P10	20x20	0	520
P11	20x20	0	520
P12	20x20	0	520
P13	20x30	0	520
P14	20x20	0	520
P15	20x20	0	520
P16	20x20	0	520
P17	20x20	0	520
P18	20x20	0	520
P19	20x20	0	520
P20	20x20	0	520
P21	20x20	0	520
P22	20x20	0	520
P23	20x20	0	520
P24	20x20	0	520
P25	20x20	0	520
P26	20x20	0	520
P32	20x20	0	520
P36	20x20	0	520
P37	20x60	0	520
P38	20x60	0	520
P39	20x20	0	520

Legenda dos pilares
Pilar que morre
Pilar que passa

Legenda das vigas e paredes
Viga

FORMA DO PAVIMENTO SEGUNDO PAV - CASA 28 (NÍVEL 520)

Escala 1:50

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
FORMA DE SEGUNDO PAV

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

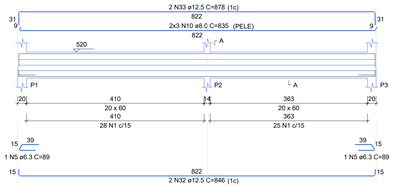
DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

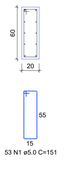
DATA
JANEIRO/2026

EST10

V1
ESC 1:50



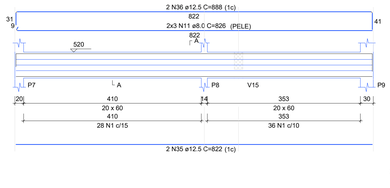
SEÇÃO A-A
ESC 1:25



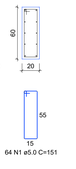
V2
ESC 1:50

SEÇÃO A-A
ESC 1:25

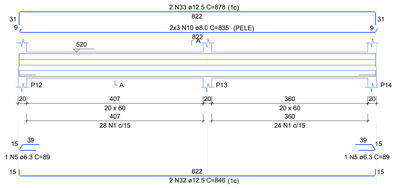
V3
ESC 1:50



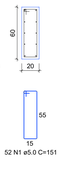
SEÇÃO A-A
ESC 1:25



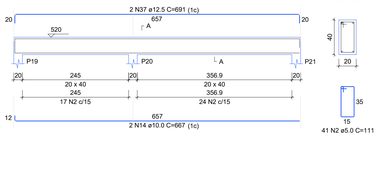
V4
ESC 1:50



SEÇÃO A-A
ESC 1:25

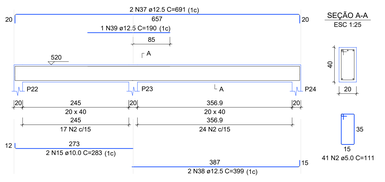


V5
ESC 1:50



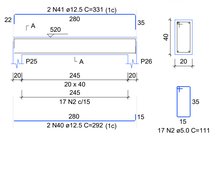
SEÇÃO A-A
ESC 1:25

V6
ESC 1:50



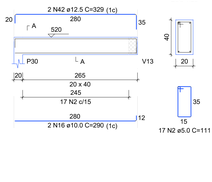
SEÇÃO A-A
ESC 1:25

V7
ESC 1:50



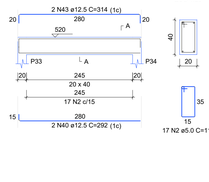
SEÇÃO A-A
ESC 1:25

V8
ESC 1:50



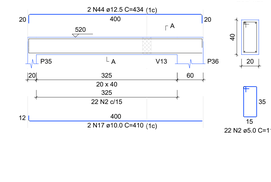
SEÇÃO A-A
ESC 1:25

V9
ESC 1:50



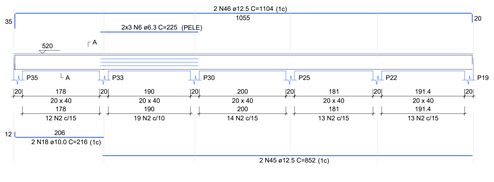
SEÇÃO A-A
ESC 1:25

V10
ESC 1:50

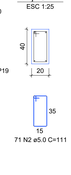


SEÇÃO A-A
ESC 1:25

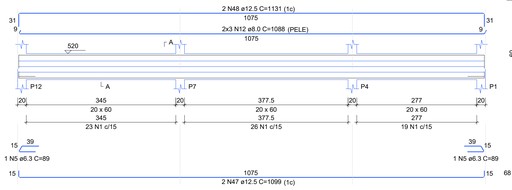
V11
ESC 1:50



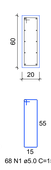
SEÇÃO A-A
ESC 1:25



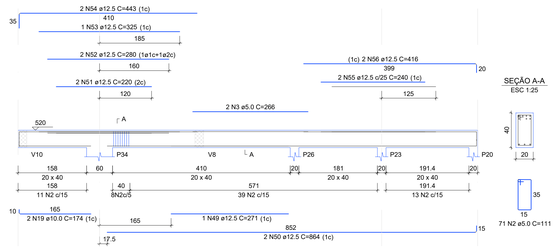
V12
ESC 1:50



SEÇÃO A-A
ESC 1:25



V13
ESC 1:50



SEÇÃO A-A
ESC 1:25

V14
ESC 1:50

SEÇÃO A-A
ESC 1:25

V15
ESC 1:50

SEÇÃO A-A
ESC 1:25

V16
ESC 1:50

SEÇÃO A-A
ESC 1:25

V17
ESC 1:50

SEÇÃO A-A
ESC 1:25

V18
ESC 1:50

SEÇÃO A-A
ESC 1:25

V19
ESC 1:50

SEÇÃO A-A
ESC 1:25

V20
ESC 1:50



SEÇÃO A-A
ESC 1:25

V21
ESC 1:50

SEÇÃO A-A
ESC 1:25

V22
ESC 1:50

SEÇÃO A-A
ESC 1:25

V23
ESC 1:50

SEÇÃO A-A
ESC 1:25

V24
ESC 1:50

SEÇÃO A-A
ESC 1:25

V25
ESC 1:50

SEÇÃO A-A
ESC 1:25

V26
ESC 1:50

SEÇÃO A-A
ESC 1:25

RELAÇÃO DO AÇO

V1	V2	V3
V4	V5	V6
V7	V8	V9
V10	V11	V12
V13	V14	V15
V16	V17	V18
V19	V20	V21
V22	V23	V24
V25	V26	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	369	151	55719
	2	5.0	527	111	58497
	3	5.0	2	266	532
	4	5.0	50	139	6950
CA50	5	6.3	8	89	712
	6	6.3	6	225	1350
	7	6.3	6	424	2544
	8	6.3	6	395	2370
	9	6.3	1	77	77
	10	8.0	18	835	15030
	11	8.0	6	826	4956
	12	8.0	12	1088	13056
	13	8.0	4	1080	4320
	14	10.0	2	667	1334
	15	10.0	2	283	566
	16	10.0	2	290	580
	17	10.0	2	410	820
	18	10.0	2	216	432
	19	10.0	2	174	348
	20	10.0	2	1080	2160
	21	10.0	2	413	826
	22	10.0	2	245	490
	23	10.0	2	183	366
	24	10.0	2	243	486
	25	10.0	2	242	484
	26	10.0	2	277	554
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	29	10.0	4	428	1712
	30	10.0	2	454	908
	31	10.0	2	402	804
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	33	12.5	4	878	3512
	34	12.5	2	882	1764
	35	12.5	2	822	1644
	36	12.5	2	888	1776
	37	12.5	2	691	1382
	38	12.5	1	399	798
	39	12.5	1	190	190
	40	12.5	4	292	1168
	41	12.5	2	331	662
	42	12.5	2	329	658
	43	12.5	2	314	628
	44	12.5	2	434	868
	45	12.5	2	852	1704
	46	12.5	2	1104	2208
	47	12.5	4	1099	4396
	48	12.5	4	1131	4524
	49	12.5	1	271	271
	50	12.5	2	864	1728
	51	12.5	2	220	440
	52	12.5	2	280	560
	53	12.5	1	325	325
	54	12.5	2	443	886
	55	12.5	2	240	480
	56	12.5	2	416	832
	57	12.5	2	1080	2160
	58	12.5	2	447	894
	59	12.5	2	260	520
	60	12.5	2	198	396
	61	12.5	2	258	516
	62	12.5	2	257	514
	63	12.5	2	292	584
	64	12.5	2	255	510
	65	12.5	2	498	996
	66	12.5	2	453	906
	67	12.5	2	429	858

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	6.3	70.5	7	12 m	18.1
	8.0	373.6	33	12 m	154.8
	10.0	143.2	13	12 m	92.7
	12.5	487.2	43	12 m	492.8
CA60	5.0	1217	-	rolo (170 kg)	197
PESO TOTAL (kg)					
CA50	758.4				
CA60	197				

Volume de concreto (C-30) = 12.63 m³
Área de forma = 133.23 m²

valstra
ENGENHARIA E ARQUITETURA

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
DETALHAMENTO DE VIGAS - SEGUNDO PAV

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

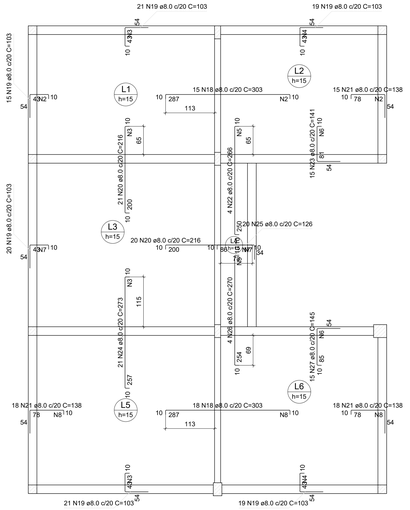
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KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

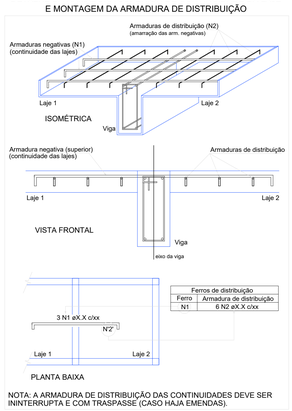
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JANEIRO/2026

EST11



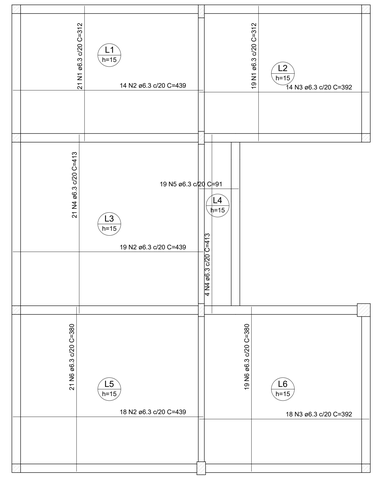
Armaduras de distribuição	
Armadura	Armadura de distribuição
N37	8 N1 ø6.3 c/20 C=84
N18	15 N2 ø6.3 c/20 C=297
N19	3 N3 ø6.3 c/20 C=427
N19	3 N2 ø6.3 c/20 C=297
N20	10 N3 ø6.3 c/20 C=427
N21	4 N2 ø6.3 c/20 C=297
N19	3 N4 ø6.3 c/20 C=380
N22	13 N5 ø6.3 c/20 C=79
N23	4 N6 ø6.3 c/20 C=301
N20	10 N7 ø6.3 c/20 C=398
N19	3 N7 ø6.3 c/20 C=398
N24	13 N3 ø6.3 c/20 C=427
N25	5 N7 ø6.3 c/20 C=398
N26	13 N5 ø6.3 c/20 C=79
N18	15 N8 ø6.3 c/20 C=365
N21	4 N8 ø6.3 c/20 C=365
N19	3 N3 ø6.3 c/20 C=427
N21	4 N8 ø6.3 c/20 C=365
N27	5 N6 ø6.3 c/20 C=301
N19	3 N4 ø6.3 c/20 C=380
N28	13 N9 ø6.3 c/20 C=211
N29	3 N10 ø6.3 c/20 C=265
N29	3 N9 ø6.3 c/20 C=211
N30	8 N11 ø6.3 c/20 C=106
N31	15 N12 ø6.3 c/20 C=159
N29	3 N9 ø6.3 c/20 C=211
N29	3 N13 ø6.3 c/20 C=377
N40	13 N13 ø6.3 c/20 C=VAR
N41	47 N14 ø6.3 c/20 C=VAR
N29	3 N14 ø6.3 c/20 C=201
N32	8 N11 ø6.3 c/20 C=106
N33	15 N12 ø6.3 c/20 C=159
N42	13 N15 ø6.3 c/20 C=VAR
N42	13 N16 ø6.3 c/20 C=210
N39	13 N17 ø6.3 c/20 C=198
N29	3 N15 ø6.3 c/20 C=220
N34	9 N11 ø6.3 c/20 C=106
N29	3 N16 ø6.3 c/20 C=210
N35	8 N12 ø6.3 c/20 C=159
N36	16 N11 ø6.3 c/20 C=106
N29	3 N17 ø6.3 c/20 C=198
N29	3 N10 ø6.3 c/20 C=265

DETALHE DA ARMADURA SUPERIOR DE CONTINUIDADE DA LAJE
E MONTAGEM DA ARMADURA DE DISTRIBUIÇÃO



Ferros de distribuição	
Ferro	Armadura de distribuição
N1	6 N2 øX.X c/xx

NOTA: A ARMADURA DE DISTRIBUIÇÃO DAS CONTINUIDADES DEVE SER ININTERRUPTA E COM TRASPASSE (CASO HAJA EMENDAS).



DETALHE DA ARMADURA
DE BORDO LIVRE DA LAJE



RELAÇÃO DO AÇO

Positivos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	40	312	12480
	2	6.3	51	439	22389
	3	6.3	32	392	12544
	4	6.3	25	413	10325
	5	6.3	19	91	1729
	6	6.3	40	380	15200
	7	6.3	31	226	7006
	8	6.3	39	280	10920
	9	6.3	10	216	2160
	10	6.3	36	142	5112
	11	6.3	13	213	2769
	12	8.0	10	392	3920
	13	8.0	9	280	2520
	14	8.0	5	418	2090
	15	8.0	5	844	4220
	16	8.0	15	144	2160
	17	8.0	2	108	216
	18	8.0	2	791	1582
	19	8.0	2	331	662
	20	8.0	13	238	3094
	21	8.0	13	228	2964

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	6.3	1026.3	90	12 m	263.7
	8.0	234.3	21	12 m	97.1
PESO TOTAL (kg)					
CA50	360.8				

Volume de concreto (C-30) = 15.77 m³
Área de forma = 106.80 m²

RELAÇÃO DO AÇO

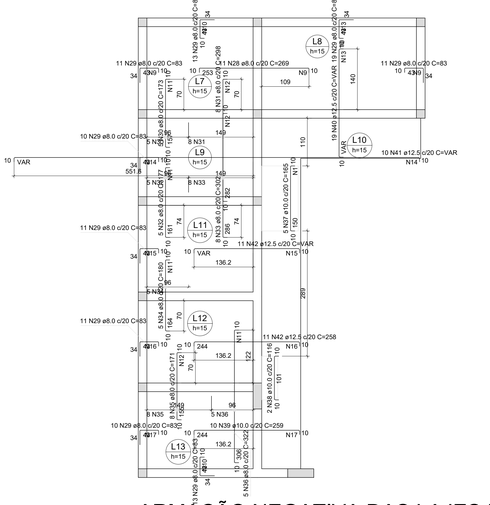
Negativos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	8	84	672
	2	6.3	22	297	6534
	3	6.3	29	427	12383
	4	6.3	6	380	2280
	5	6.3	26	79	2054
	6	6.3	9	301	2709
	7	6.3	18	398	7164
	8	6.3	23	365	8395
	9	6.3	19	211	4009
	10	6.3	6	265	1590
	11	6.3	41	106	4346
	12	6.3	38	159	6042
	13	6.3	16	377	6032
	14	6.3	50	VAR	VAR
	15	6.3	16	VAR	VAR
	16	6.3	16	210	3360
	17	6.3	16	198	3168
	18	8.0	33	303	9999
	19	8.0	115	103	11845
	20	8.0	41	216	8856
	21	8.0	51	138	7038
	22	8.0	4	266	1064
	23	8.0	15	141	2115
	24	8.0	21	273	5733
	25	8.0	20	126	2520
	26	8.0	4	270	1080
	27	8.0	15	145	2175
	28	8.0	11	269	2959
	29	8.0	109	83	9047
	30	8.0	5	173	865
	31	8.0	8	298	2384
	32	8.0	5	177	885
	33	8.0	8	302	2416
	34	8.0	5	180	900
	35	8.0	8	171	1368
	36	8.0	5	322	1610
	37	10.0	5	165	825
	38	10.0	2	116	232
	39	10.0	10	259	2590
	40	12.5	19	VAR	VAR
	41	12.5	10	VAR	VAR
	42	12.5	22	VAR	VAR

RESUMO DO AÇO

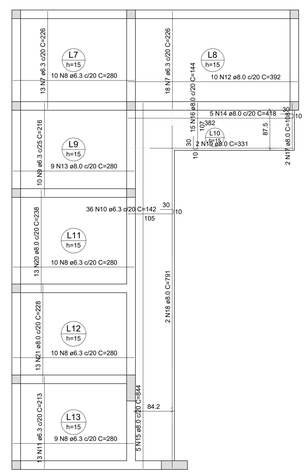
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	6.3	843.1	74	12 m	216.6
	8.0	748.6	66	12 m	310.2
	10.0	36.5	4	12 m	23.6
	12.5	201.9	18	12 m	204.2
PESO TOTAL (kg)					
CA50	754.6				

Volume de concreto (C-30) = 0.00 m³
Área de forma = 0.00 m²



ARMAÇÃO NEGATIVA DAS LAJES DO PAVIMENTO SEGUNDO PAV - CASA 28

Escala 1:50



ARMAÇÃO POSITIVA DAS LAJES DO PAVIMENTO SEGUNDO PAV - CASA 28

Escala 1:50

valstra
ENGENHARIA E ARQUITETURA

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
DETALHAMENTO DE LAJE - SEGUNDO PAV

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

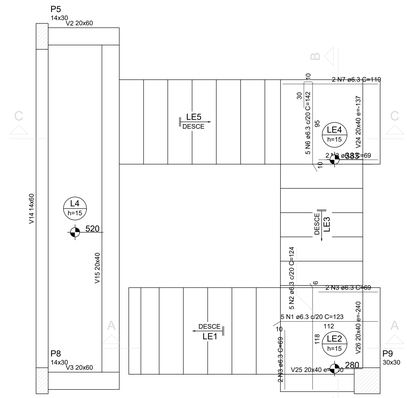
RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

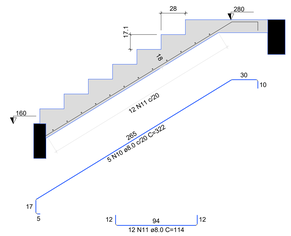
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JANEIRO/2026

EST12



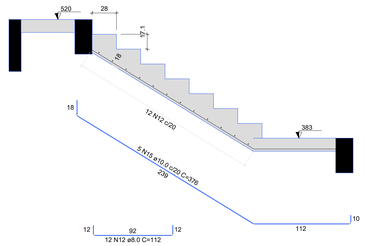
ARMAÇÃO POSITIVA DA ESCADA E1

ESC 1:25



CORTE A-A (LE1)

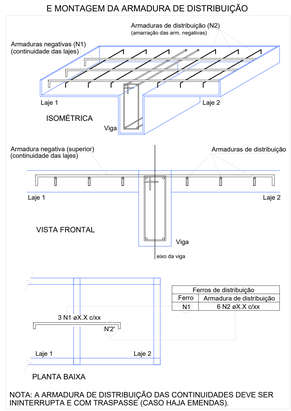
ESC 1:25



CORTE C-C (LE5)

ESC 1:25

DETALHE DA ARMADURA SUPERIOR DE CONTINUIDADE DA LAJE
E MONTAGEM DA ARMADURA DE DISTRIBUIÇÃO



Ferros de distribuição	
Ferro	Armadura de distribuição
N1	6 N2 øX..X c/xx

NOTA: A ARMADURA DE DISTRIBUIÇÃO DAS CONTINUIDADES DEVE SER ININTERRUPTA E COM TRASPASSE (CASO HAJA EMENDAS).

Armaduras de distribuição	
Armadura	Armadura de distribuição
N13	6 N7 ø6.3 c/20 C=VAR
N14	6 N8 ø6.3 c/20 C=VAR
N16	6 N9 ø6.3 c/20 C=97

DETALHE DA ARMADURA
DE BORDO LIVRE DA LAJE



RELAÇÃO DO AÇO

LE1
LE4

LE2
LE5

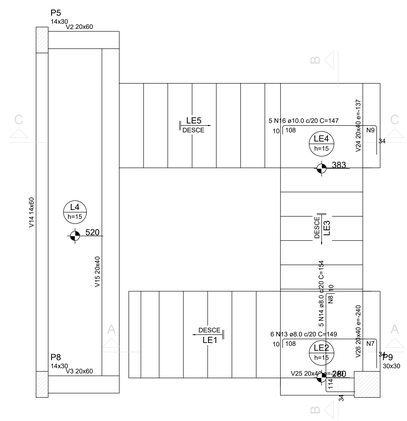
LE3
Negativos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	5	123	615
	2	6.3	5	124	620
	3	6.3	6	69	414
	4	6.3	5	304	1520
	5	6.3	10	104	1040
	6	6.3	5	142	710
	7	6.3	8	110	880
	8	6.3	6	VAR	VAR
	9	6.3	6	97	582
	10	8.0	5	322	1610
	11	8.0	12	114	1368
	12	8.0	12	112	1344
	13	8.0	6	149	894
	14	8.0	5	154	770
	15	10.0	5	376	1880
	16	10.0	5	147	735

RESUMO DO AÇO

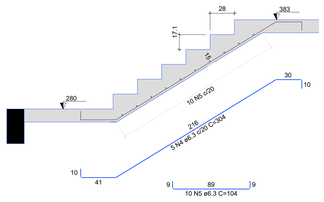
AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	6.3	70.1	7	12 m	18
	8.0	59.9	6	12 m	24.8
	10.0	26.2	3	12 m	16.9
PESO TOTAL (kg)					
CA50	59.7				

Volume de concreto (C-30) = 1.71 m³
Área de forma = 16.11 m²



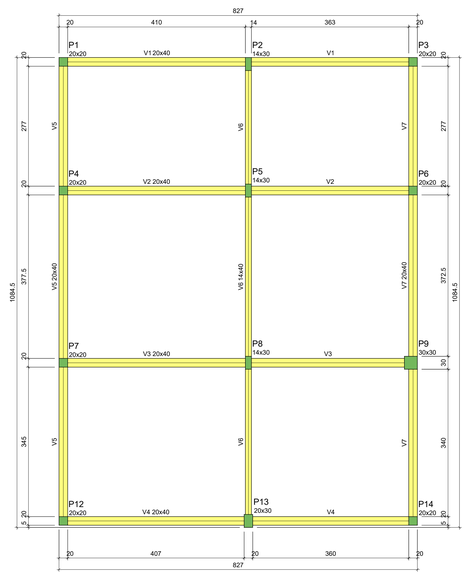
ARMAÇÃO NEGATIVA DA ESCADA E1

ESC 1:25



CORTE B-B (LE3)

ESC 1:25



FORMA DO PAVIMENTO COBERTURA (NÍVEL 790)

Escala 1:50

Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
V1	20x40	0	790
V2	20x40	0	790
V3	20x40	0	790
V4	20x40	0	790
V5	20x40	0	790
V6	14x40	0	790
V7	20x40	0	790

Características dos materiais			
fck (kgf/cm²)	Eca (kgf/cm²)	fct (kgf/cm²)	Abatimento (cm)
300	268384	29	5.00

Dimensão máxima do agregado = 19 mm

Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P1	20x20	0	790
P2	14x30	0	790
P3	20x20	0	790
P4	20x20	0	790
P5	14x30	0	790
P6	20x20	0	790
P7	20x20	0	790
P8	14x30	0	790
P9	30x30	0	790
P12	20x20	0	790
P13	20x30	0	790
P14	20x20	0	790

Legenda dos pilares	Legenda das vigas e paredes
Pilar que morre	Viga

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
DETALHAMENTO DE ESCADAS E FORMA DE COBERTURA

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

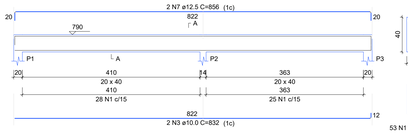
DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

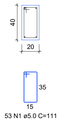
DATA
JANEIRO/2026

EST13

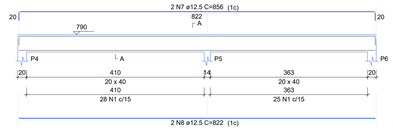
V1
ESC 1:50



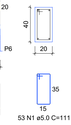
SEÇÃO A-A
ESC 1:25



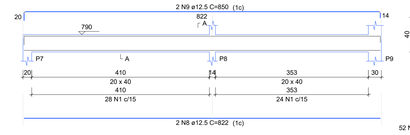
V2
ESC 1:50



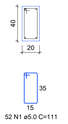
SEÇÃO A-A
ESC 1:25



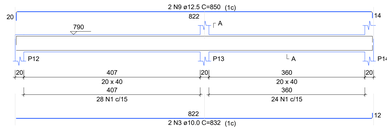
V3
ESC 1:50



SEÇÃO A-A
ESC 1:25



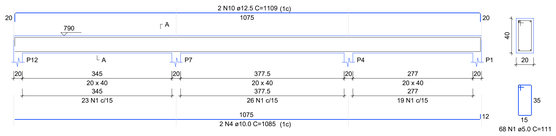
V4
ESC 1:50



SEÇÃO A-A
ESC 1:25

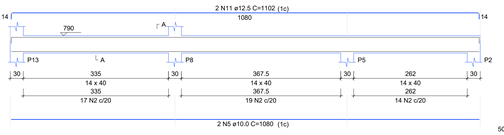


V5
ESC 1:50

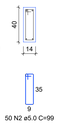


SEÇÃO A-A
ESC 1:25

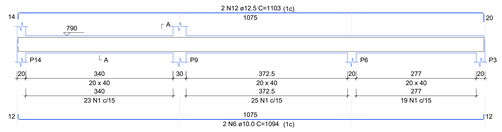
V6
ESC 1:50



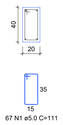
SEÇÃO A-A
ESC 1:25



V7
ESC 1:50



SEÇÃO A-A
ESC 1:25



RELAÇÃO DO AÇO

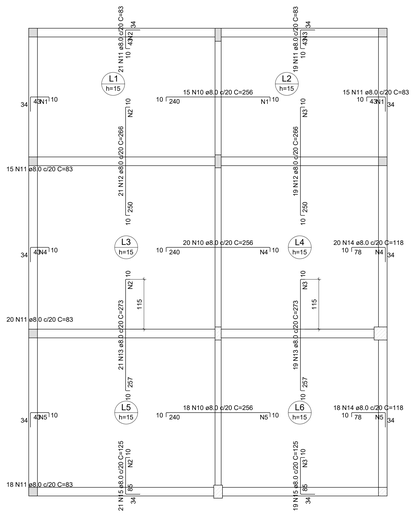
V1 V2 V3
V4 V5 V6
V7

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	345	111	38295
	2	5.0	50	99	4950
CA50	3	10.0	4	832	3328
	4	10.0	2	1085	2170
	5	10.0	2	1080	2160
	6	10.0	2	1094	2188
	7	12.5	4	856	3424
	8	12.5	4	822	3288
	9	12.5	4	850	3400
	10	12.5	2	1109	2218
	11	12.5	2	1102	2204
	12	12.5	2	1103	2206

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	10.0	98.5	9	12 m	63.7
	12.5	167.4	15	12 m	169.3
CA60	5.0	432.4	-	rolo (170 kg)	70
PESO TOTAL (kg)					
CA50	233.1				
CA60	70				

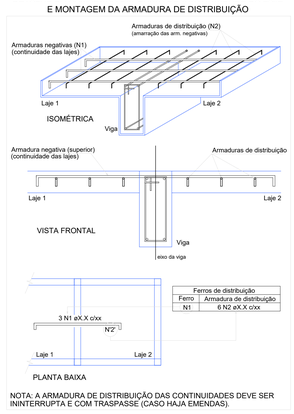
Volume de concreto (C-30) = 4.59 m³
Área de forma = 46.92 m²



ARMAÇÃO NEGATIVA DAS LAJES DO PAVIMENTO COBERTURA
Escala 1:50

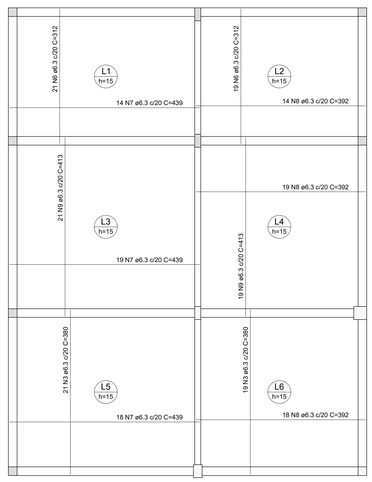
Armaduras de distribuição	
Armadura	Armadura de distribuição
N10	12 N1 ø6.3 c/20 C=297
N11	3 N2 ø6.3 c/20 C=427
N11	3 N1 ø6.3 c/20 C=297
N12	13 N2 ø6.3 c/20 C=427
N11	3 N1 ø6.3 c/20 C=297
N11	3 N3 ø6.3 c/20 C=380
N12	13 N3 ø6.3 c/20 C=380
N10	12 N4 ø6.3 c/20 C=398
N11	3 N4 ø6.3 c/20 C=398
N13	13 N2 ø6.3 c/20 C=427
N14	4 N4 ø6.3 c/20 C=398
N13	13 N3 ø6.3 c/20 C=380
N10	12 N5 ø6.3 c/20 C=365
N11	3 N5 ø6.3 c/20 C=365
N15	5 N2 ø6.3 c/20 C=427
N14	4 N5 ø6.3 c/20 C=365
N15	5 N3 ø6.3 c/20 C=380

DETALHE DA ARMADURA SUPERIOR DE CONTINUIDADE DA LAJE E MONTAGEM DA ARMADURA DE DISTRIBUIÇÃO



Ferros de distribuição	
Ferro	Armadura de distribuição
N1	6 N2 øX.X c/xx

NOTA: A ARMADURA DE DISTRIBUIÇÃO DAS CONTINUIDADES DEVE SER ININTERRUPTA E COM TRASPASSE (CASO HAJA EMENDAS).



ARMAÇÃO POSITIVA DAS LAJES DO PAVIMENTO COBERTURA
Escala 1:50

RELAÇÃO DO AÇO

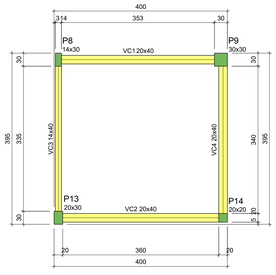
Negativos Positivos

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	18	297	5346
	2	6.3	34	427	14518
	3	6.3	74	380	28120
	4	6.3	19	398	7562
	5	6.3	19	365	6935
	6	6.3	40	312	12480
	7	6.3	51	439	22389
	8	6.3	51	392	19992
	9	6.3	40	413	16520
	10	8.0	53	256	13568
	11	8.0	108	83	8964
	12	8.0	40	266	10640
	13	8.0	40	273	10920
	14	8.0	38	118	4484
	15	8.0	40	125	5000

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	6.3	1338.6	118	12 m	343.9
	8.0	535.8	47	12 m	222
PESO TOTAL (kg)					
CA50	565.9				

Volume de concreto (C-30) = 11.55 m³
Área de forma = 77.01 m²



Vigas			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
VC1	20x40	0	1020
VC2	20x40	0	1020
VC3	14x40	0	1020
VC4	20x40	0	1020

Características dos materiais			
fck (kgf/cm²)	Ecs (kgf/cm²)	fct (kgf/cm²)	Abatimento (cm)
300	268384	29	5.00

Dimensão máxima do agregado = 19 mm

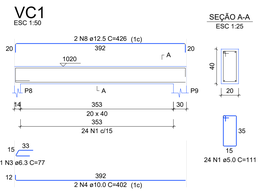
Pilares			
Nome	Seção (cm)	Elevação (cm)	Nível (cm)
P8	14x30	0	1020
P9	30x30	0	1020
P13	20x30	0	1020
P14	20x20	0	1020

Legenda dos pilares	
	Pilar que morre

Legenda das vigas e paredes	
	Viga

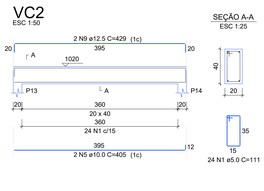
FORMA DO PAVIMENTO TOPO DA CAIXA DE AGUA
Escala 1:50

VC1
ESC 1:50



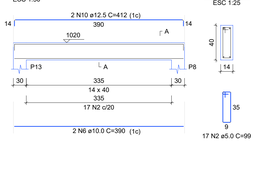
SEÇÃO A-A
ESC 1:25

VC2
ESC 1:50



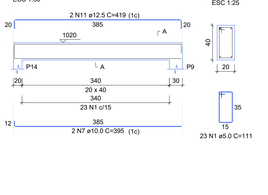
SEÇÃO A-A
ESC 1:25

VC3
ESC 1:50



SEÇÃO A-A
ESC 1:25

VC4
ESC 1:50



SEÇÃO A-A
ESC 1:25

RELAÇÃO DO AÇO

VC1 VC2 VC3
VC4

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA60	1	5.0	71	111	7881
	2	5.0	17	99	1683
CA50	3	6.3	1	77	77
	4	10.0	2	402	804
	5	10.0	2	405	810
	6	10.0	2	390	780
	7	10.0	2	395	790
	8	12.5	2	426	852
	9	12.5	2	429	858
	10	12.5	2	412	824
	11	12.5	2	419	838

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 5% (Barras)	UNIT	PESO + 5% (kg)
CA50	6.3	0.8	1	12 m	0.2
	10.0	31.8	3	12 m	20.6
	12.5	33.7	3	12 m	34.1
CA60	5.0	95.6	-	rolo (170 kg)	15.5
PESO TOTAL (kg)					
CA50	54.9				
CA60	15.5				

Volume de concreto (C-30) = 1.03 m³
Área de forma = 13.68 m²

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

OBRA
IFBA | SALVADOR - CASA 29 | REFEITÓRIO

PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
VIGAS E LAJE DE COBERTURA, FORMA E VIGAS DO TOPO DA CAIXA D'AGUA

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

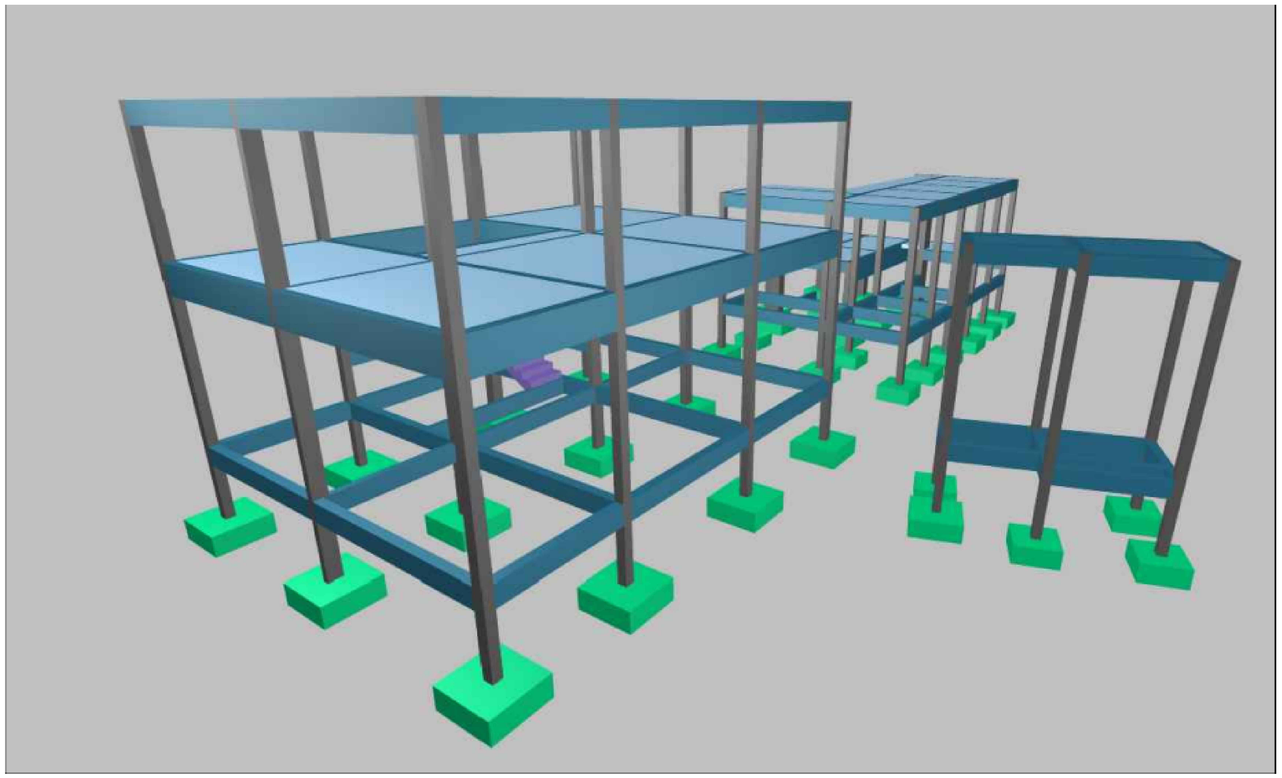
RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

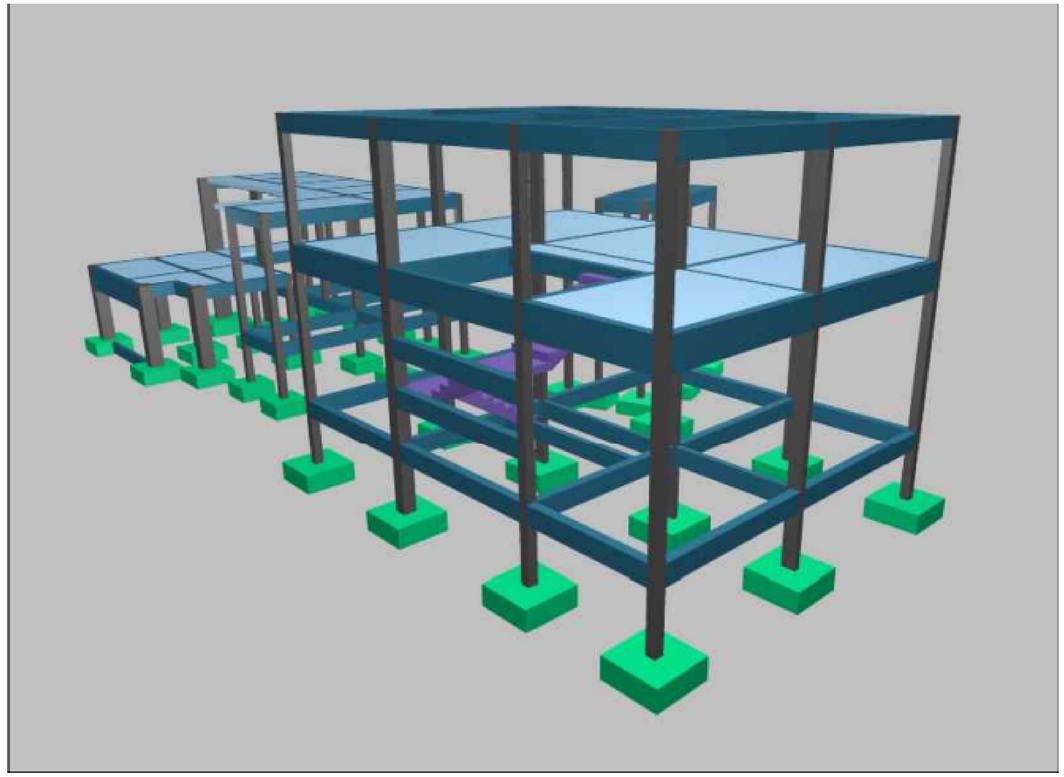
DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

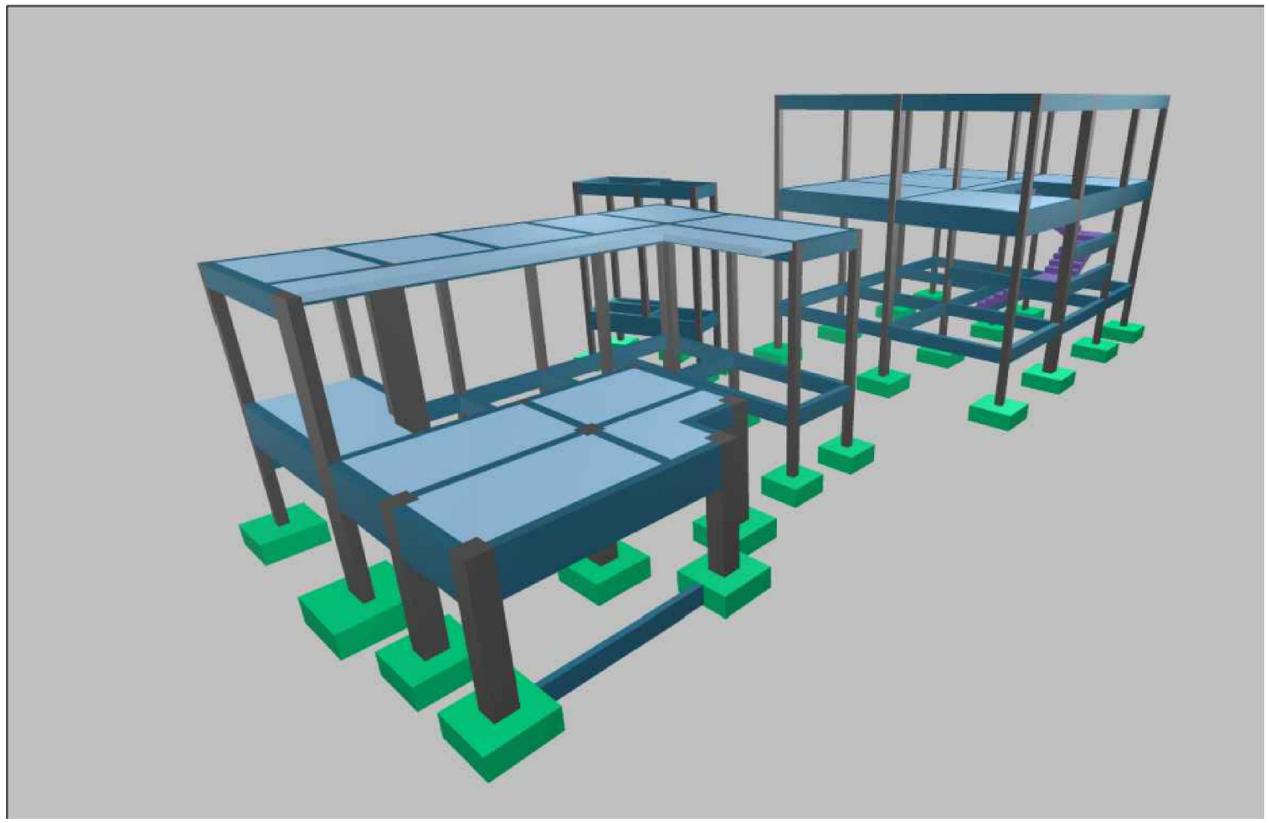
ESCALA
Indicada

DATA
JANEIRO/2026

EST14







valstra
ENGENHARIA E ARQUITETURA

VALSTRA LTDA
CNPJ: 36.692.129/0001-55
AV. DOM JOAQUIM, N° 1515 - BLOCO B, TERCEIRO ANDAR, SALA 02 - TRÊS VENDAS, PELOTAS/RS

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PROJETO
PROJETO ESTRUTURAL E DE FUNDAÇÕES

DESENHOS
VISTAS 3D

PROPRIETÁRIO:
INSTITUTO FEDERAL DA BAHIA - CAMPUS SALVADOR

RESPONSÁVEL TÉCNICO PELO PROJETO
KAROLINE WRUCH BÖHM DE BRITO - CAU 00A2762595

DESENHISTA
RAÚ WOLOWSKI TARNOWSKI

ESCALA
Indicada

DATA
JANEIRO/2026

EST15